REPAIR MANUAL

DACIA SOLENZA

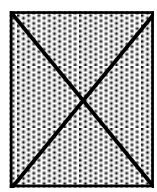
MR 525-1 MECHANICS
ENGINE: E7J
GEARBOX: JH3
TAPV: B41A, B41B, B41C

The reparation methods prescribed by the manufacturer in the present document are established subject to technical specifications in force at the document issuing date.

These are subject to modifications brought by the manufacturer at the fabrication of different assemblies, subassemblies or accessories of its vehicles.

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Ref: 6001999066 **MARCH 2004** **English version**

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0 General poinds vehicle

01 CHARACTERISTICS

Engine – Clutch - Gearbox 01-1
Vehicle identification 01-2

02 LIFTING MEANS

Mobile jack – Adjustable supports 02-1
Elevator positioned under vehicle body 02-2

03 TOWING

All types 03-1

04 LUBRICANTS – INGREDIENTS

Condition 04-1

05 DRAINING – FILLING

Engine..... 05-1
Gearbox 05-2
Power steering 05-3

07 VALUES AND ADJUSTMENTS

Dimensions..... 07-1
Weights (kg)..... 07-2
Capacity - Quality..... 07-3
Accessories belts tension 07-4
Wheels, Tires..... 07-5
Brakes..... 07-6
Dimensions under carriage body 07-7
Checking values of the front axle angles..... 07-8
Checking values of the rear axle angles 07-9

1 Engine and péripheriques

10 ENGINE ASSEMBLY

Ingredients..... 10-1
Oil consumption 10-2
Oil pressure 10-3
Power train group..... 10-4
Separation - Gearbox 10-9
Separation – Unfitting 10-10
Tightening moments 10-11
Special tools..... 10-12
Characteristics 10-13
Dismounting –Remounting..... 10-20
Lower casing 10-39
Oil pump..... 10-41
Multi-purpose support 10-42

11 DISTRIBUTION SYSTEM

Distribution belt 11-1
Cylinder head gasket 11-3

12 FUEL MIXTURE

Characteristics 12-1
Body valve 12-4
Inlet manifold 12-5
Exhaust manifold 12-6
Air filter 12-7

13 FUEL SUPPLY

Supply interruption 13-1
Fuel ramp 13-2
Pump capacity 13-3
Supply pressure 13-4

14 ANTI-POLLUTION

Petrol vapors re-aspiration 14-1
Oil vapors re-aspiration 14-4

16 ALTERNATOR – STARTER

Alternator 16-1
Starter 16-6

17 IGNITION AND INJECTION

Ignition system 17-1
Spark plags 17-3
Injection system 17-4
Characteristics 17-10
Injection / air conditioning strategy 17-11
Idling regime correction 17-12
Idling regime adaptive correction 17-13
Enriching adjustment 17-14
Enriching adaptive correction 17-16
“On Board Diagnostic” system characteristics 17-18
“On Board Diagnostic” lighting conditions 17-19
“On Board Diagnostic” diagnostic conditions 17-20
Diagnostic of combustion misfires detection 17-21
Catalyst diagnostic 17-22
Oxygen sensor diagnostic 17-23
Diagnostic – General 17-25
Diagnostic – Failures interpretation 17-26
Diagnostic – Help 17-60
Diagnostic – Conformity checking 17-61
Diagnostic – States interpretation 17-69
Diagnostic – Parameters interpretation 17-75
Failure locating algorithm 17-83

19 COOLING - EXHAUST - TANK

Characteristics 19-1
Filling - Purging 19-2
Checking 19-3
Cooling system diagram 19-4
Radiator 19-5
Cooling engine fan for vehicles
without air conditioning 19-7
Diagnostic – failures interpretation at vehicles
without air conditioning 19-8
Cooling engine fan for vehicles

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with air conditioning 19-9
Diagnostic – failures interpretation
at vehicles with air conditioning 19-10
Water pump 19-11
Exhaust Assembly..... 19-13
Fuel tank 19-15
Fuel pump 19-22
Fuel filter 19-24
Engine suspension 19-25

2 Transmission

20 CLUTCH

Identification 20-1
Diagnostic 20-2
Clutch disk – Mechanism 20-5
Pressure bearing – Clutch releasing fork 20-7
Engine flywheel 20-8

21 MECHANICAL GEARBOX

Sectional view 21-1
Identification 21-2
Tightening moments in daNm 21-3
Particurarities 21-4
Ratios 21-5
Ingredients 21-6
Capacity, lubricants 21-7
Parts that are replaced after
each dismonting 21-8
Necessary special tools 21-9
Gearbox dismounting 21-10
Replacement of the planetary sealing
gasket (on the vehicle) 21-30
Replacement of the 5-th gear synchroniser
and pinion (on the vehicle) 21-32

29 TRANSMISSION

Front transversal transmission 29-1
Bellows - Bearing assembly to
the gearbox (left) 29-4
Bellows to wheel (left) 29-7
Bellows to gearbox (right) 29-12
Bellows to wheel (right) 29-15

3 Chasis

30 GENERAL

General principle schedule
of the brake circuit 30-1
Tightening moments (in daNm) 30-2
Composition and dimensions
of the main braking system elements 30-6
Braking system diagnostic 30-7
Brake connections and ducts 30-12
Brake fluid 30-13
Braking system purging 30-14
The influence of angles 30-16
Angles checking principle 30-17
Front axles checking and adjustment 30-18

31 FRONT AXLES ELEMENTS

Characteristics 31-1
Suspension arm 31-2
Elastic bushings of the suspension arm 31-5
Suspension ball joint 31-6
Brake lining (pads) 31-7
Checking the brake pads wear 31-9
Brake caliper 31-10
Brake disk 31-12
Steering knuckle 31-13
Steering knuckle bearing (35 x 65 x 35) 31-15
Front suspension 31-16
Shock absorber, Spring 31-17
Spring – shock absorber assembly 31-18
Anti roll bar 31-20
Power train support 31-21

33 REAR AXLES ELEMENTS

Characteristics 33-1
Rear axle 33-2
Rear suspension 33-4
Shock absorber 33-5
Spring 33-6
Brake drum 33-7
Brake cylinder 33-8
Brake shoes 33-10
Bearing 33-13

35 WHEELS AND TIRES

Characteristics 35-1
Wheels balancing 35-4

36 STEERING ASSEMBLY

Steering connecting rods 36-1
Manual steering box 36-3
Steering box pusher 36-4
Noise absorbant bushing 36-5
Bellows 36-6
General 36-7
Power steering box 36-8
Power steering box pusher 36-11
Power steering pump 36-12
Steering column 36-14

37 THE MECHANICAL ELEMENTS CONTROLS

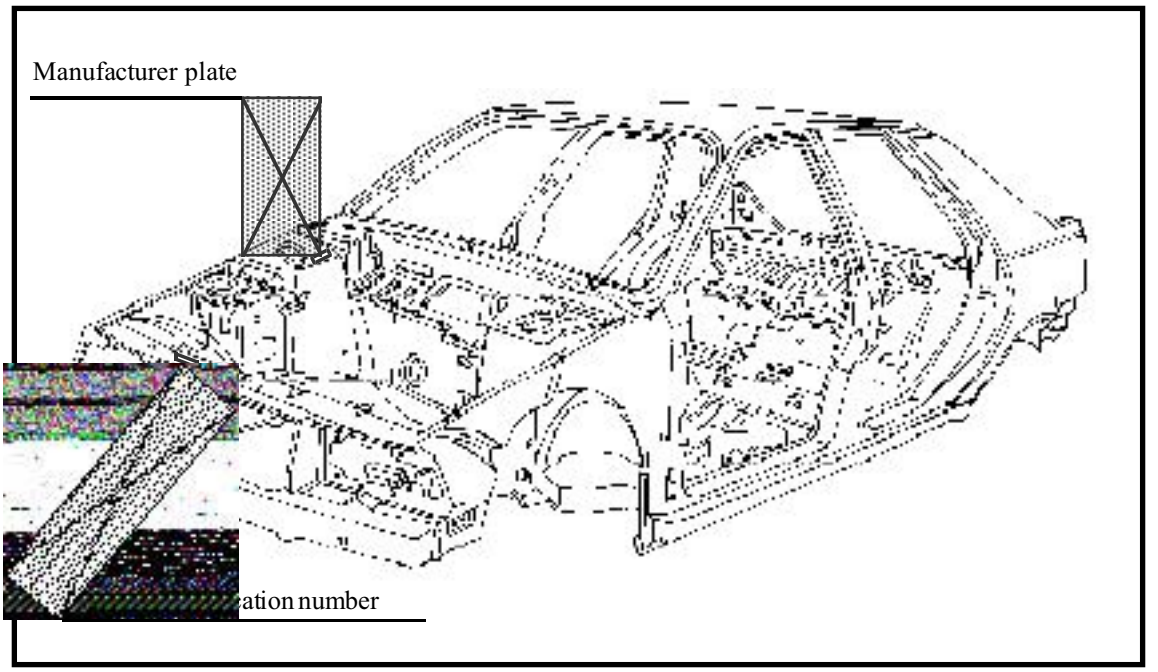
Brake pump..... 37-1
Servobrake 37-3
Air filter – servobrake retainer valve 37-6
Handbrake - adjustment 37-7
Handbrake control lever 37-8
Handbrake secondary cables 37-10
Brake flexible hoses 37-11
Brake pressure controller 37-13
Gears control 37-15
Clutch and brake pedals 37-17
Clutch cable 37-18
Pedals support 37-20
Acceleration control 37-21

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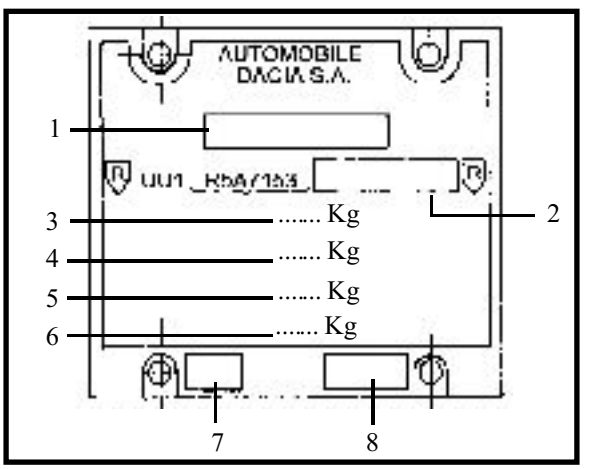
VEHICLETYPE	ENGINE		CLUTCH TYPE	GEARBOX TYPE
	TYPE	CYLINDER CAPACITY (cm^3)		
DACIA SOLENZA	E7J-262	1390	180 CPO 3300	JH3 - 051

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UNITL THE DATE OF 26.06.2003



MANUFACTURER PLATE



The manufacturer plate is located on the radiator front crossbeam.

1. Homologation number
2. Model year code and carriage body manufacturer series.
3. Maximum technical admissible weight of the loaded car
4. Total maximum admissible weight (of the assembly)
5. Maximum technical admissible weight on front axle;
6. Maximum technical admissible weight on rear axle.
7. Vehicle code
8. Trailer maximum authorized weight without braking system

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UNITL THE DATE OF 26.06.2003

VIN IDENTIFICATION NUMBER

VIN IDENTIFICATION NUMBER

Positionn	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Code	U	U	1	R	5	A	7	1	5	3	*	*	*	*	*	*	*

POSITION	CHARACTERS EXPLANATION
1 - 3	– manufacturer world identification, **UU1** – AUTOMOBILE DACIA SA. ROMANIA,
4	– vehicle destination, **R** – vehicle for persons transportation,
5	– power train unit location, **5** – transversal front engine and front drive,
6	– carriage body type, **A** – Hatchback (two volumes sedan) – restyled I,
7	– payload location, **7** – 5 places: 2 front places + 3 rear fix bench places,
8	– gearbox type, **1** – gearbox with 5 + 1 steps,
9	– engine code and vehicle driving post location, **5** – spark ignition engine (cylinder capacity 1400 cm^3), E7J 262 EURO 2, left hand drive, **6** – spark ignition engine (cylinder capacity 1400 cm^3), E7J 262 EURO 3, left hand drive,
10	– year model code - **3** - 2003,
11 - 17	– carriage body manufacturing number.

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STARTING WITH THE DATE OF 26.06.2003

MANUFACTURER'S PLATE DISPOSAL TYPE SELF-ADHESIVE

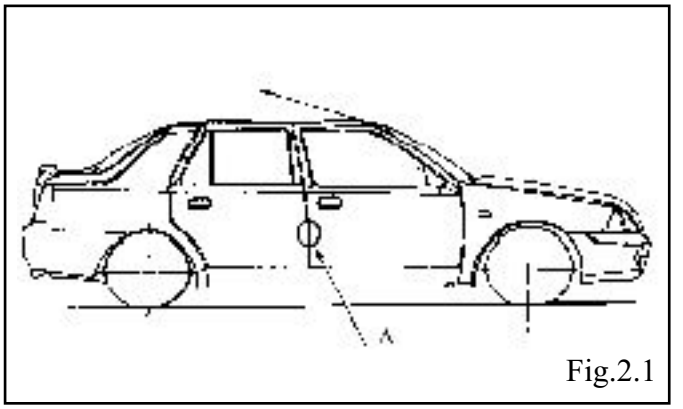
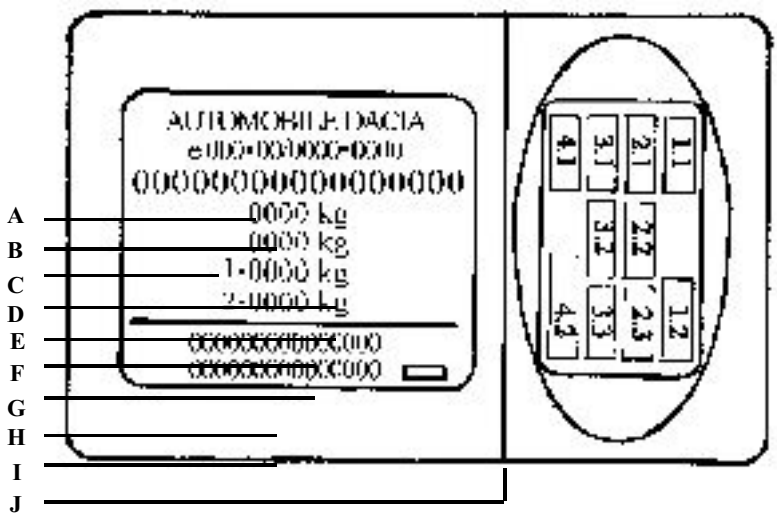


Fig.2.1

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STARTING WITH THE DATE OF 26.06.2003

The MANUFACTURER PLATE**, self-adhesive type, has the bellow presented configuration, with two distinctive areas, presenting : manufacturer's identification data and APV type identification data.**



MANUFACTURER'S IDENTIFICATION DATA

A. Manufacturer's name
B. Community reception number or homologation number.
C. Identification number.
D. Total authorized weight of the loaded vehicle.
E. Total authorized running weight
F. Total weight on front axle.
G. Total weight on rear axle.
H. Additional inscription.
I. Manufacturing date inscription
J. Consignment number.

APV IDENTIFICATION DATA

1.1 Code type auto APV
1.2 Manufacturing number

2.1 Equipping level code
2.2 Additional code for limited serial definition
2.3 Additional code for special serial definition

3.1 Carriage body color code
3.2 Seats upholstery code
3.3 Interior matching code.

4.1 Technical definition code
4.2 Optional equipping code.

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Safety sign (particularly cautions to be observed in case of an intervention)

SPECIAL TOOLS
Cha 280-02 Adequate support on mobile jack
Cha 408-01 Adjusting support on mobile jack
Cha 408-02 Adjusting support on mobile jack

The use of a mobile jack implies the obligatory use of adjustable supports.

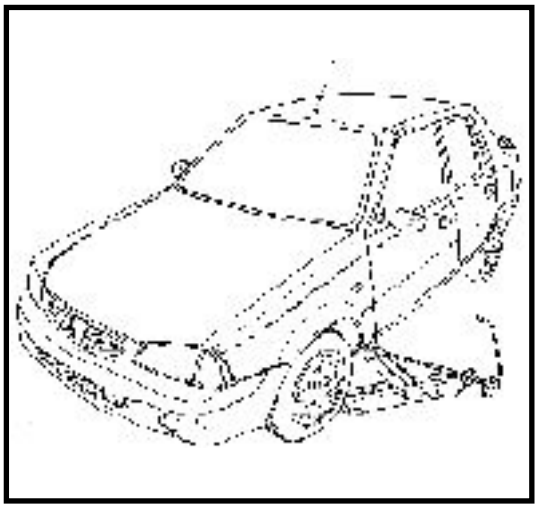
It is forbidden the vehicle lifting using other supporting points (suspension arms, etc) than the ones provided by manufacturer.

LATERAL MOBILE JACK

In order to lift vehicle front or rear part, the same supporting points provided for the vehicle jack are to be used.

This type of jack, is using sockets (supports) **Cha 408-01** or **Cha 408-02**, equipped with the support **Cha 280-02.**

Place it on under the threshold at the front door level and the floor closing plate shall be positioned in the channel of the support.

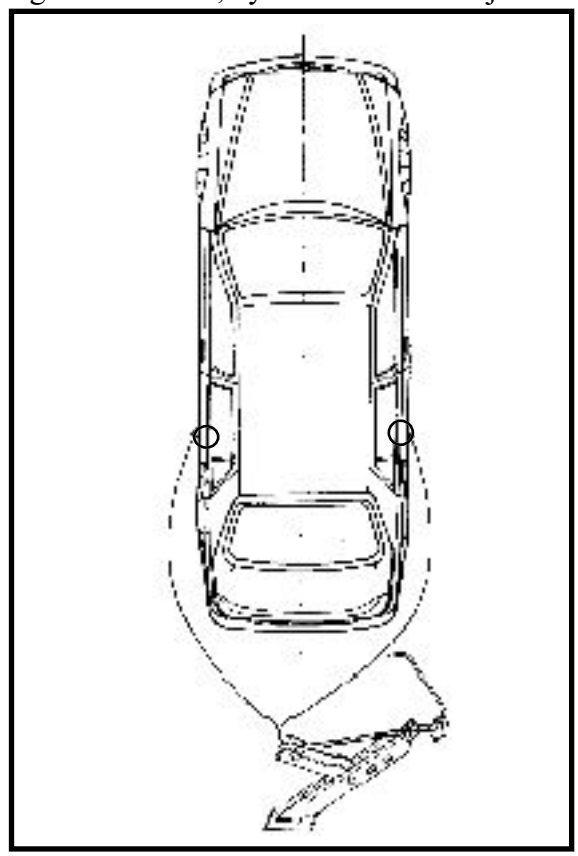


ADJUSTABLE SUPPORTS

The adjustable supports, may be placed under the carriage body, in two ways:

- under the reinforcements provided for the lifting vehicle with the vehicle jack;
- under the supports placed behind the reinforcements.

The positioning of the adjustable supports in the vehicle rear areas is performed by lateral lifting of the vehicle, by means of a mobile jack.



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Elevator positioned under vehicle body

SAFETY SIGN

Situations to be considered:

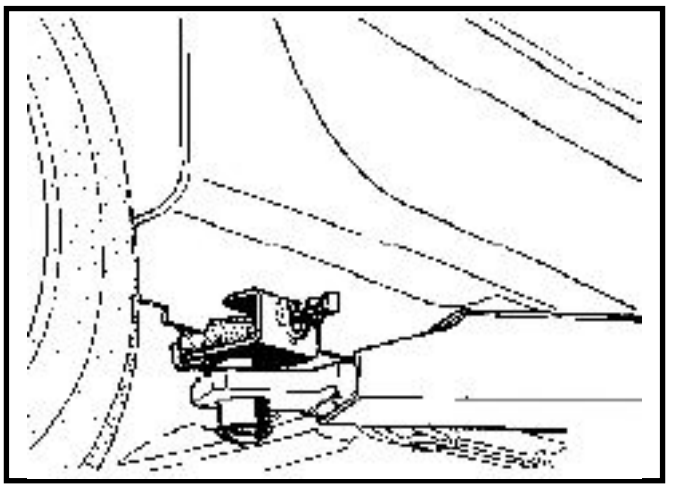
1. SITUATION OF VEHICLE COMPONENTS DISMOUNTING

When there are not available four columns elevators, two columns elevators may be used, in this case, lifting slides shall be placed under the floor closing plate, at the supporting points level of the vehicle jack

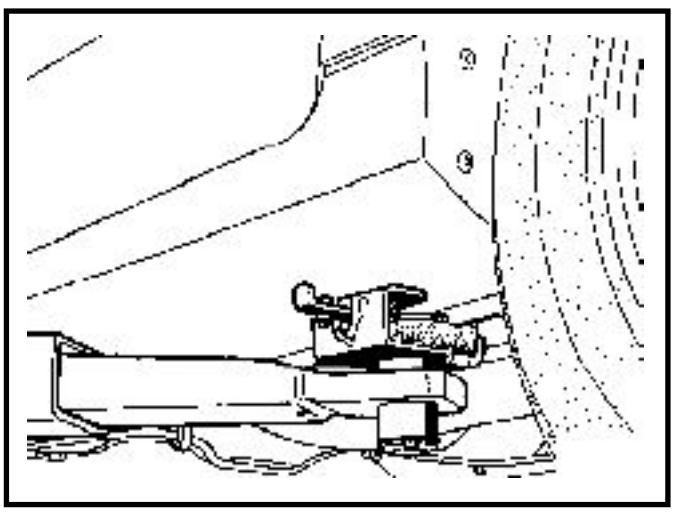
2. PARTICULARLY SITUATION OF POWER-TRAIN DISMOUNTING – RE-MOUNTING

In this specific case, the vehicle carriage body shall be consolidated with the two columns elevator arms using special slides.

REAR



FRONT



These must be obligatory placed at the right of the supporting points of the vehicle jack and must be locked in the holes/windows made in the floor closing plate.

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ATTENTION !
NEVER USE AS TOWING POINTS, THE TRANSMISSION AXLES (PLANETARY SHAFTS).

The towing points, front, or rear, are to be used only for vehicles towing on wheels.
These points cannot be anyhow used for drawing out the damaged vehicle from a trench (hole), or for direct or indirect vehicle lifting on a transport platform.

FRONT (right)



REAR (left)



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PRODUCT	PLACE WHERE IT IS USED
OILING (GREASING)	
Grease **OLISTA LONG TIME 3EP R100137188**	Guiding tube, clutch release fork
Grease **ELF CARDREXA RNT2**	Right transmission joint G.I Transmission joint G.E.
Grease **MOLYKOTE 33M**	Gearbox control rod protection bellows Attachment buffer on anti-roll bar
Grease **UM 185 Li2M**	Steering rack, pinion, oil seal ring (steering box)

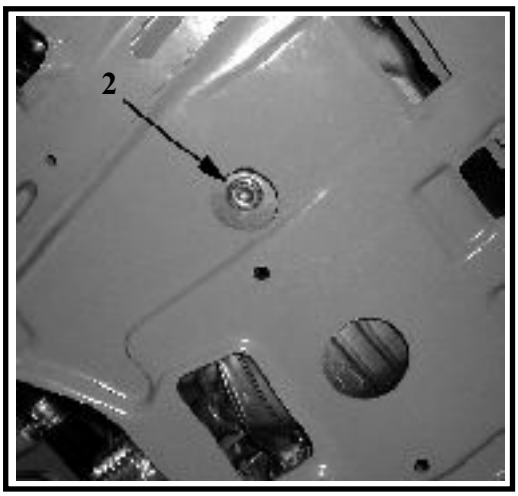
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PRODUCT	PLACE WHERE IT IS USED
ETAN^a ARE	
LOCTITE 518	Water pump Thermostat support Crankshaft half crankcase Gearbox crankcases assembling Thread of the reverse driving contact Crankshaft no.1 bearing cap
LOCTITE 5900 (RHODORSEAL 5661)	Engine lower crankcase
Sealing paste Wurth	Exhaust
SOLDERING	
LOCTITE 270 (FRENBLOC)	Screw of secondary shaft
LOCTITE243 (FRENETANCH)	Crankshaft flywheel screw Engine balance wheel screw
CLEANING	
LOCTITE METALLREINIGER (DECAPJOINT)	Aluminum parts surfaces

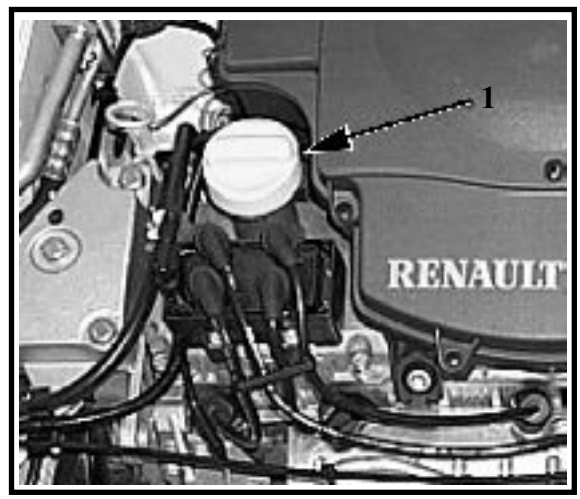
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SPECIAL TOOLS - wrench MOT 1018

Draining : plug (**2**)



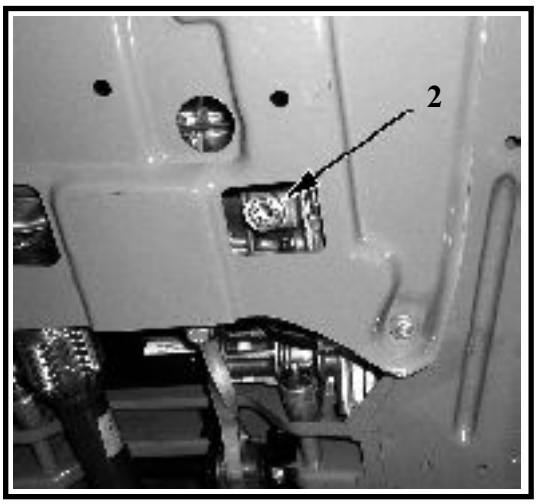
Filling: plug (**1**)



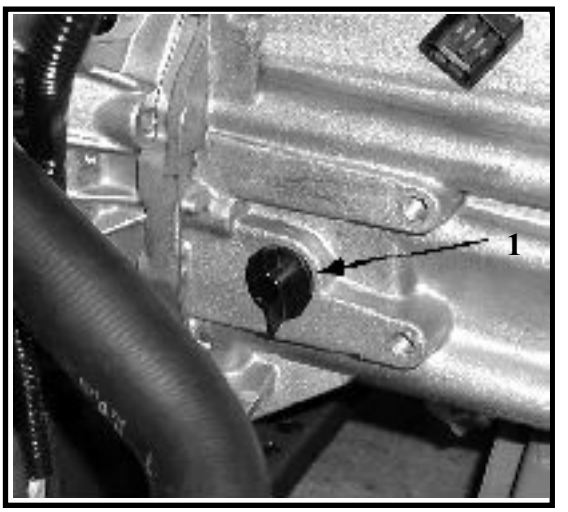
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Special tools - wrench MOT 1018

Drain: plug (**2**)



Fill: plug(**1**)



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ATTENTION !
For filling and addition, only oil DACIA of class DEXTRON II D is to be used.
Circuit capacity: 1 liter.

CIRCUIT FILLING

Fill the reservoir with oil.

In order to fill the circuit with oil, easy rotate the steering wheel in both directions so that steering rack is performing a complete stroke.

Check the oil level in the reservoir and addition if the case.

Start the engine, easy rotate the steering wheel in both directions so that steering rack is performing a complete stroke.

Restore the oil level in the reservoir till MAXI level.

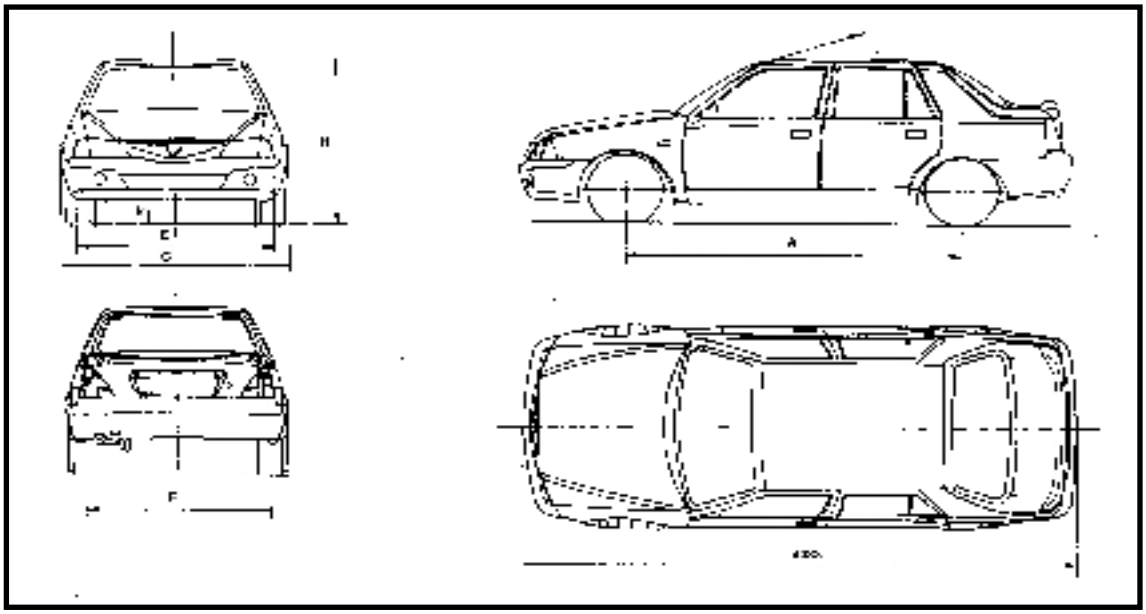
LEVEL CHECKING

Each 10,000 km, check the oil level in the reservoir, that must be between the MINI-MAXI marks.



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Dimensions



Dimensions (mm)	
Total length:	4083
Total width:	G = 1664
Total height: * empty * loaded (authorized maximum total weight)	 H = 1379 1329
Wheelbase * empty * loaded	A = 2476 2479
Front wheeltrack width, ground level measurement * empty * loaded	 E = 1429 1428
Rear wheeltrack width, ground level measurement	F = 1348
Ground clearance (K) * empty * loaded	 - 120

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Weights (kg)

Version		1,4	
Vehicletype		R5A715	R5A716
Unloadedvehicleweight	Minim	1035	1045
	Front	592	602
	Rear	443	443
	Maxim	1075	1085
	Front	632	642
	Rear	443	443
Maximum authorizedweight on axle	Front	730	
	Rear	800	
Maximum technical admissibleweightof the loadedvehicle	Total	1450	1460
	Front	718	728
	Rear	732	732
Maximum technical admissible towing weight(trailerwithout braking system)		450	
Maximum technicaladmissibletowing Weight(trailerwithbraking system)		800	
Maximumadmissibleweight of the assembly		2250	2260
Maximumload on towinghook		40	
Towinghook weight		20	

Optional equipment weight disposal on shafts axles

	Front axle	Rear axle
Airconditioning	23	0
Powersteering	17	0

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DENOMINATION	QUALITY	CAPACITY (l) (approximate)*
Engine oil **DACIA OIL EXTRA**	**SAE 10 W 40; API SJ**	2,9*
Gearbox oil **DACIA OIL EXTRAGEAR**	**SAE 75 W 80 W; API GL 5**	3,5
Breaking fluid	**SAE J 1703 DOT 4**	0,450
Cooling fluid	**50% antigel GLACEOL RX type D 50% distilled water**	6
Refrigerant AC	**HFC – 134 a**	0,600 kg
Compressor oil	**PAG SP 10 or SP 20**	135 cm^3

* to be adjusted at dipstick

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Accessories belts tension

Belts tensioning values are:

- alternator belt	**253 – 273 Hz**
- compressor belt	**150 – 155 Hz**
- power steering pumps belt	**151 – 161 Hz**
- compressor belt / DA pump	**222 ± 8 Hz**

Accessories belt tensioning method.

Belt tensioning is to be performed with cold engine.

Mount the new belt.

Tighten the belt till obtaining the prescribed mounting tensioning

Block the tensioner.

Perform three engine crankshaft rotations.

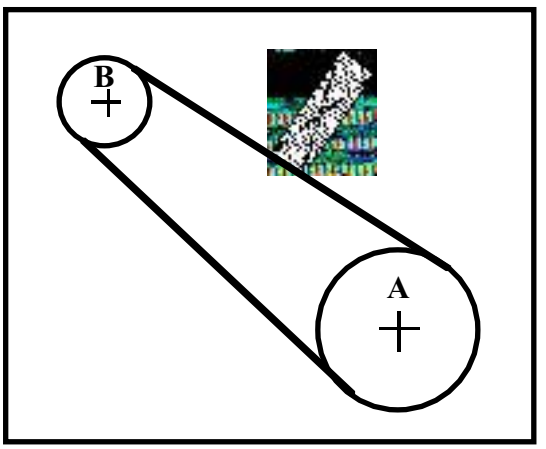
Place the reading head of the MOT 1505 device in the measurement area and check if the belt tensioning is within the mounting prescribed values; restore is necessary.

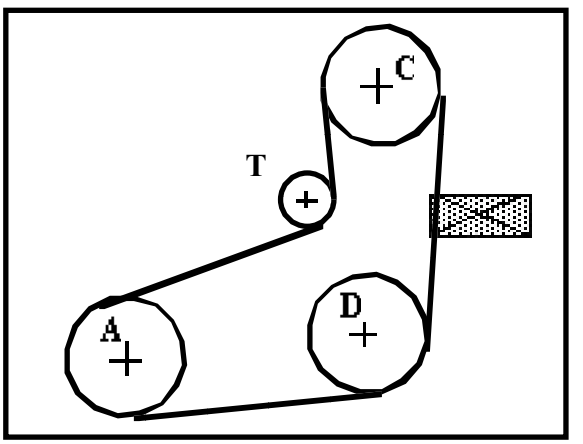
REMARK :

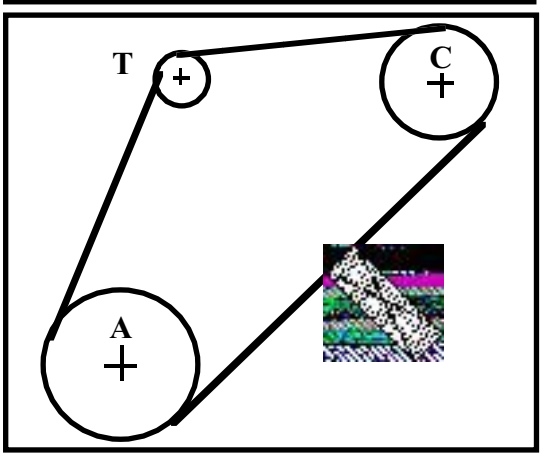
Once a belt is dismounted, is not to be remounted, but replaced.

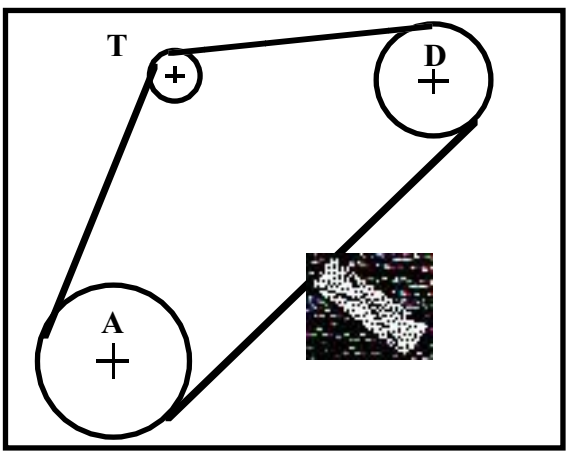
A – crankshaft **C** – Compressor **T** – Tensioner pulley.

B – alternator **D** – Power steering pump Tensioning checking point.









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Vehicle	Wheels	Tires	Inflating pressure (bars) (1)	
			Front	Rear
			Empty/Loaded	Empty/Loaded
SOLENZA	5.5J144 CH43	165 / 65R14	2.0/2.2	2.0/2.1
	5.5B134CH46	165 / 70R13	2.0/2.2	2.0/2.1

(1) Maximum loaded, wheels on the ground.

- tightening moment of the wheels screws : **7.5 daNm**;
- wheel axial run out : maximum 1 mm;
- wheel radial rubout : maximum 1 mm.

The increase of tire temperature during driving implies a growth of the tire pressure with **0.2 – 0.3 bars** compared with the prescribed values.

In case of tires pressure checking immediately after vehicle driving, consider this growth of pressure.

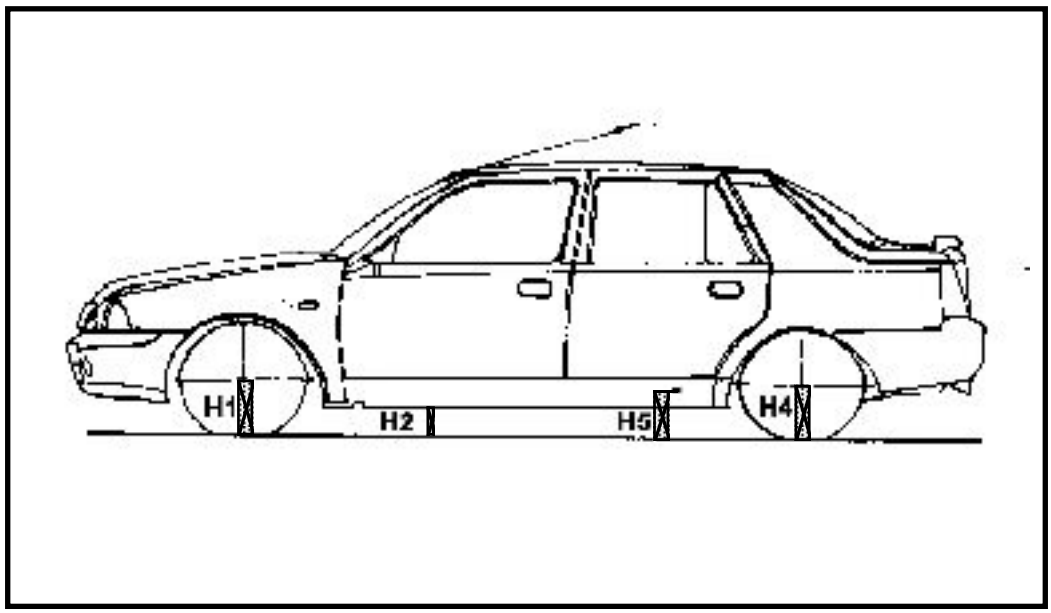
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Vehicle	Brake disk width and drums diameter (mm)				Maxim disk axial run out	
	Front		Rear			
	Normal	Minim	Normal	Minim	Front	Rear
SOLENZA	20	19	228	229	0.04	-

Vehicle	Gaskets thickness (mm)				Brake fluid
	Front		Rear		
	Normal	Minim	Normal	Minim	
SOLENZA	14	7	5	0.5 mm above the rivets	SAE J 1703 DOT 4

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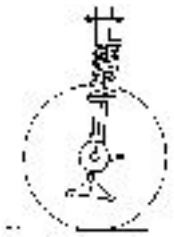
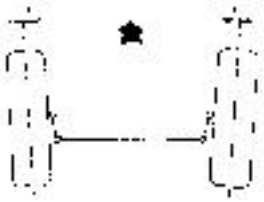
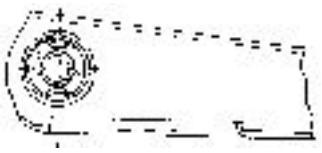
DIMENSIONS UNDER CARRIAGE BODY CONDITIONING ADJUSTMENT OPERATIONS OF THE STEERING ANGLES



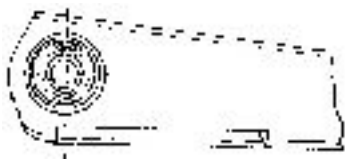
H1, H4 - to be measured in front wheel axle, consequently rear wheel axle.
H2 - to be measured between the lower side of the power train support.
H5 – to be measured between the elastic joint axle of the rear axle arm and the ground.

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Checking values of the front axle angles

ANGLES	VALUES	VEHICLE POSITION	ADJUSTMENTS
CAMBER 	$0^0 03'$ $0^0 20'$ $0^0 36'$ ± 30' $0^0 53'$ $1^0 10'$ Right/leftmaxim difference = of 1^0	H5 - H2 = 100 H5 - H2 = 90 H5 - H2 = 80 H5 - H2 = 70 H5 - H2 = 60	Not adjustable
CASTER 	$-0^0 16'$ $-0^0 10'$ $-0^0 02'$ $0^0 06'$ ± 30' $0^0 15'$ $0^0 24'$ $0^0 35'$ Right/leftmaxim difference = of 1^0	H1 - H2 = 105 H1 - H2 = 98 H1 - H2 = 91 H1 - H2 = 85 H1 - H2 = 78 H1 - H2 = 71 H1 - H2 = 64	Not adjustable
BALL JOINT 	$13^0 36'$ $13^0 25'$ $13^0 14'$ $13^0 03'$ ±30' $12^0 50'$ $12^0 38'$ $12^0 24'$ Right/leftmaxim difference = of 1^0	H1 - H2 = 105 H1 - H2 = 98 H1 - H2 = 91 H1 - H2 = 85 H1 - H2 = 78 H1 - H2 = 71 H1 - H2 = 64	Not adjustable
TOTALPARALLELISM 	Toe in: $0^0 10' \pm 10'$ (for one wheel $0^0 05' \pm 05'$)	Not loaded	Adjustableby rotatingthe tie rod of the steering rod
ELASTIC BUSHINGS TIGHTENING 	-	Not loaded	-

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ANGLES	VALUES	VEHICLE POSITION	ADJUSTMENTS
CAMBER 	$0^0 30' \pm 10'$	Unloaded	Not adjustable
PARALLELISM 	(For two wheels) Closing $0^0 30' \pm 10'$ $2,9\ mm \pm 1\ mm$	Unloaded	Not adjustable
ELASTIC BUSHINGS TIGHTENING 		Unloaded	

PRELIMINARY OPERATIONS TO BE OBSERVED BEFORE CHECKING THE STEERING ANGLES

1. Area (checking surface) – it must be as horizontal as possible.

2. Wheels, tires – check (from equipping point of view) to have same type of wheels and tires on both axles (dimensions, inflating pressure, wear degree). A pronounced wear is not allowing the correct horizontal positioning.

3. Suspension – check the shock absorbers, springs condition and height symmetry under carriage body.

4. Joints – check the elastic joints condition, steering and suspension ball joints clearance, bearings clearances of the front and rear axles

5. Radial and axial runout of the wheels – must not be over 1 mm. This will be compensated with the reading instruments.

6. Manufacturer's method – each vehicle manufacturer is providing the checking conditions, axles weights repartition, and presentation of under carriage body heights, not loaded.

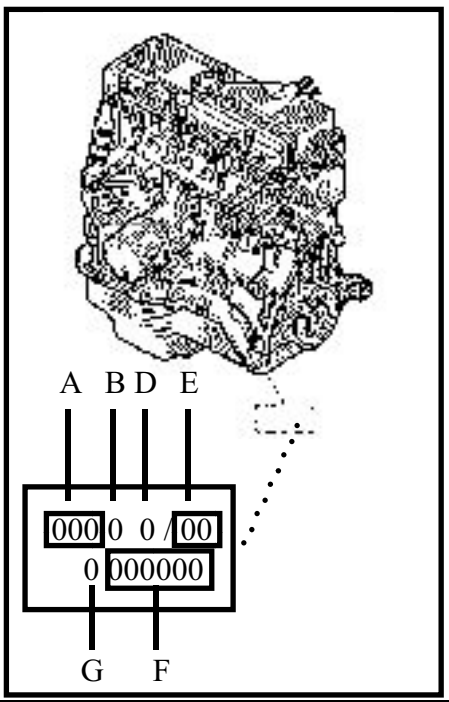
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TYPE	COMPONENTS
Engine oil DACIA OIL EXTRA 10 W40; API SJ	Engine lubrication
RHODORSEAL 5661	Lower crankcase sealing
Loctite FRENETANCH	Crankshaft pulley attachment screw
Loctite 518	Water pump, thermostat support, crankshaft closing casing, crankshaft no. 1 bearing cover
Decapjoint	Cleaning of the aluminum parts surfaces

IDENTIFICARE

Vehicle type		Engine	Gearbox	Cylinder capacity (cm^3)	Bore (mm)	Stroke (mm)	Volume ratio	De-pollution norm
Dacia **SOLENZA**	MA	E7J-262	JH3 - 051	1390	75.8	77	9.5/1	EU 96
	MB	E7J-262						EU 00
	MC	E7J-262						1504

The engine identification is achieved by means of a metallic plate stuck on the engine block.



Markings on metallic plate:

A – engine type
B – engine homologation letter
D – "RENAULT" identification code
E – engine index
G – code for engine assembling factory.
F – engine manufacturing series

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OIL CONSUMPTION MEASURING

a) Oil filling to maximal level

This operation is to be performed when the engine is warm (one engine fan rotation) and after a stabilization of **15 minutes**, necessary to the oil complete draining into the lower crankshaft.

Check the oil at the oil-indicating rod.

Fill to the maximal level.

Seal the draining and filling taps (mark them with paint), for further checking if these have not been dismounted

b) Customer driving time

Ask the customer to drive for about **2000 km** or until the oil reaches the minimal level.

c) Refilling to the maximal level

This operation is to be performed when the engine is warm (one engine fan rotation) and after a stabilization of 15 minutes.

Check the oil at the oil-indicating rod.

Fill to the maximal level.

Write down the oil quantity and the driven mileage after filling to the maximal level.

d) Oil consumption measuring

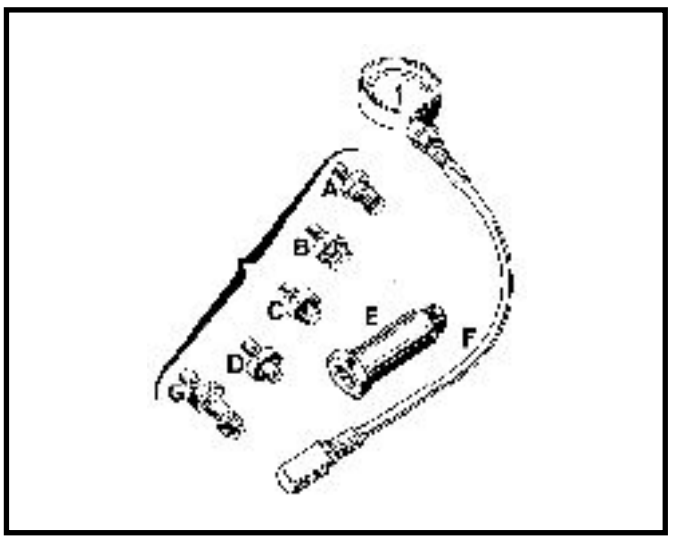
$$\text{OIL CONSUMPTION} = \frac{\text{Oil filled quantity (liter)}}{\text{kilometers (thousand)}}$$

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SPECIAL TOOLS	
MOT 836 - 05	Oil pressure measuring kit

CHECKING

The oil pressure is to be checked when the engine is warm (about **80°C**).



For the engine **E7J**, components **C + E + F** from the oil pressure measuring kit **MOT 836-05** are to be used.

The minimal pressure value should be:
1 bar at idling
3 bar at 4000 rpm.

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TIGHTENING MOMENTS) (daNm)	
Right support attachment screw on engine	6.2
Hydro-elastic buffer attachment nut	3.7
Left elastic buffer attachment nut	6.2
Wheels screws	7.5
Power train-battery attachment screws	2.1
Connecting rod attachment nut on steering cross member support	6.2
Anti-roll connecting rod attachment screw on gearbox connecting rod	10.5
Control bar attachment screw on gearbox connecting rod	2.7
Pipes attachment screws on compressor	2.1
High pressure pipe on DA pump	2.1

The power train dismounting-remounting is to be performed on the engine compartment upper part by means of a mobile lifting device.

DISMOUNTING

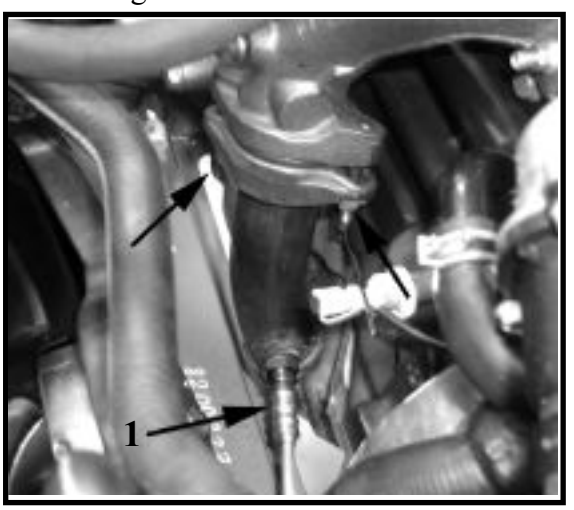
The vehicle is to be placed on a 2–columns elevator.

Dismount:

- battery
- air filter inlet pipe;
- air filter assembly
- engine bonnet;
- front wheels.

Disconnect the oxygen sensor (**1**) connector or the connectors of the two oxygen sensors (**EURO 00**).

Dismount : thermal protection screen and descending tube from the exhaust manifold.

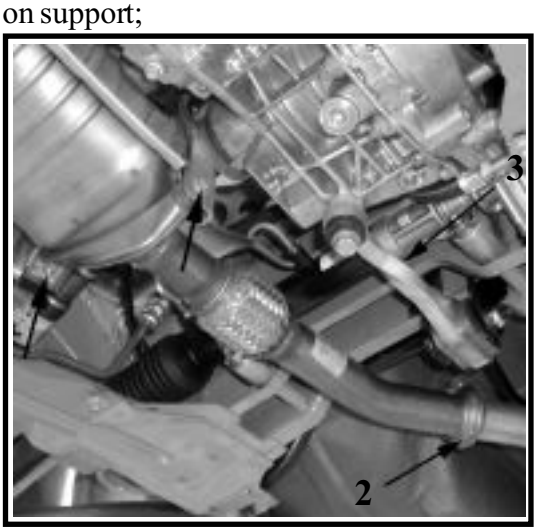


Drain

- the cooling circuit on the water pump inlet pipe;
- oil from gearbox;
- oil from engine if necessary;
- refrigerant fluid to a charging station (vehicles with **AC**);
- oil from the power steering circuit (vehicles with power steering).
- Oil from the power steering circuit (vehicles with power steering);

Dismount:

- engine shield;
- descending tube attachment screws on support;



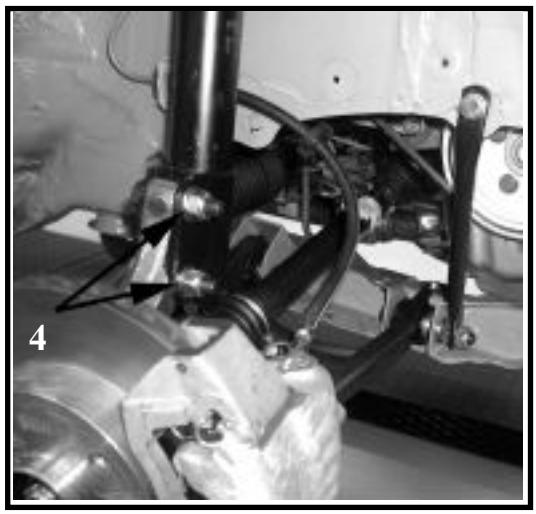
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- collar (**2**) between the descending tube and expansion chamber, remove the descending tube;
- anti-roll connecting rod.

Disconnect the reverse driving contact connector.

Disengage the right planetary transmission, as follows:

- dismount the brake caliper assembly;
- dismount the shock absorber two attachment screw (**4**) on steering knuckle.



Swing over the steering knuckle and extract the planetary transmission from the planetary pinion of the gearbox.

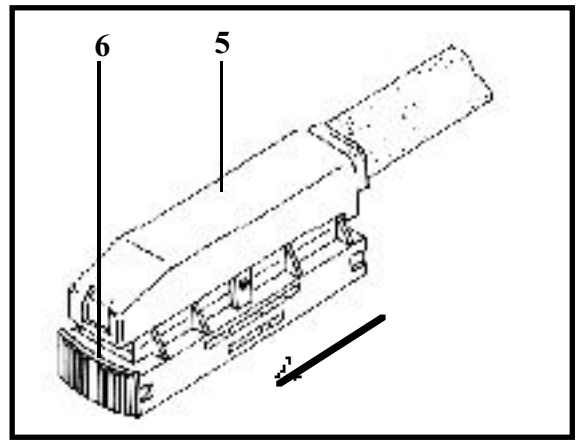
Dismount the left planetary transmission, as follows:

- dismount the steering knuckle nut;
- dismount the planetary transmission attachment screws on the gearbox;
- dismount the brake caliper assembly;
- dismount the shock absorber two attachment screws on steering knuckle;
- swing over the steering knuckle and dismount the planetary transmission.

Dismount the fuse box from the engine compartment.

Disconnect:

- connector (**5**) from the UCE (pull flap (**6**) and then disengage);
- engine wiring from engine fuse box;

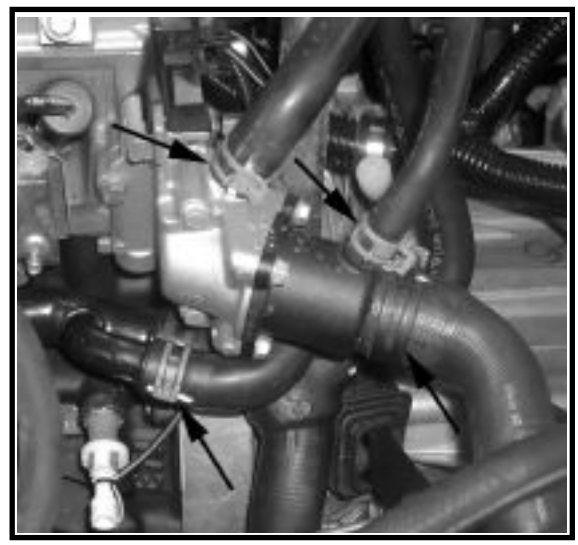


- shock sensor connector;
- cooling engine fan connector;
- DA pressure sensor connector;
- mass wire from the gearbox

Dismount the battery protection shield.

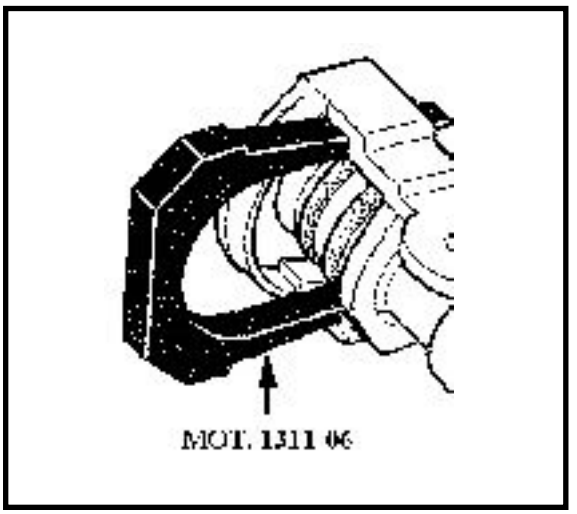
Disconnect by means of the elastic clips pliers **MOT.1202-01**:

- hoses from radiator;
- hoses from thermostat support and from water pump inlet pipe;



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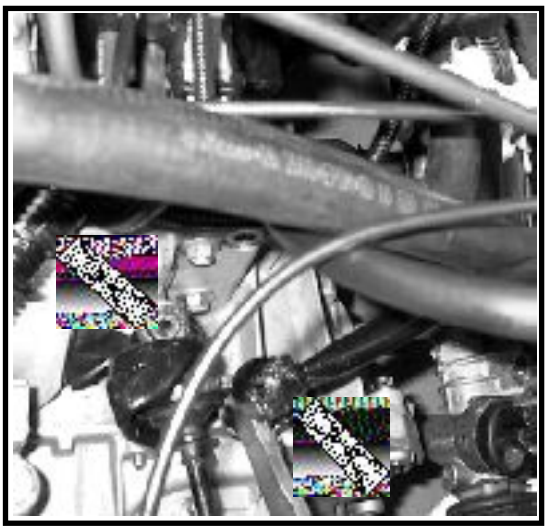
- hoses from gases evacuation vessel;
- petrol vapors recycling pipes from the carbon can and from can purging valve;
- fuel supply pipes (supply and return) from injection ramp by means of the **MOT.1311-06** device.



Dismount the clutch control cable from gearbox.

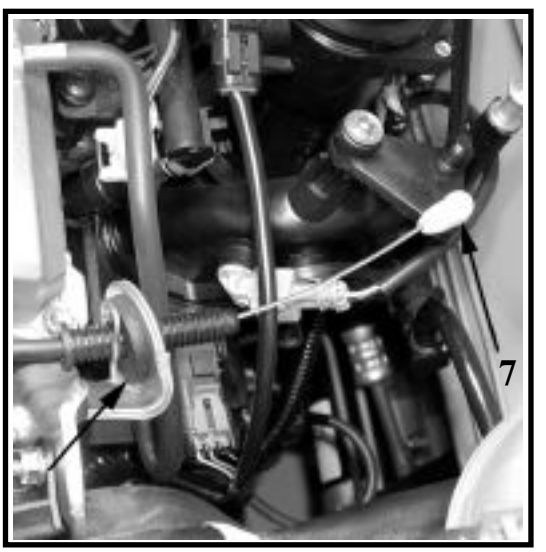


Dismount the connection screw between the gears control rod and gearbox control connecting rod.



To be uncoupled:

- acceleration cable end (**7**) from the valve control lever and extract it from the sleeve (**8**) from support;



- speedometer cable from the gearbox (push the two clamps and extract it);
- cable for right headlamp adjustment and place it near carriage body.

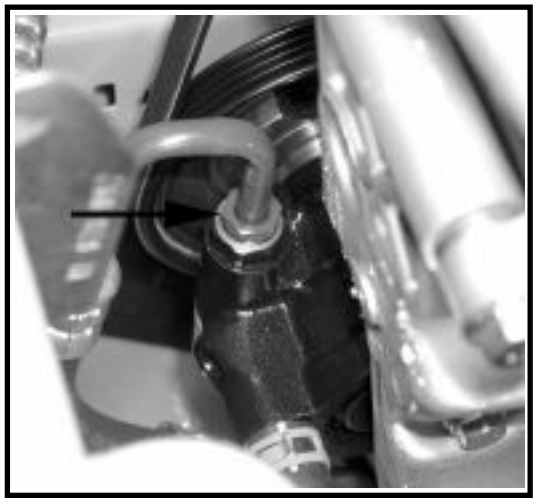
Disconnect the servobrake pipe from the intake manifold.

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Disconnect the pressure controller connector for power steering.

Dismount:

- hoses from oil reservoir for power steering by means of pliers **MOT 1202-01**;
- high pressure pipe from the power steering pump.

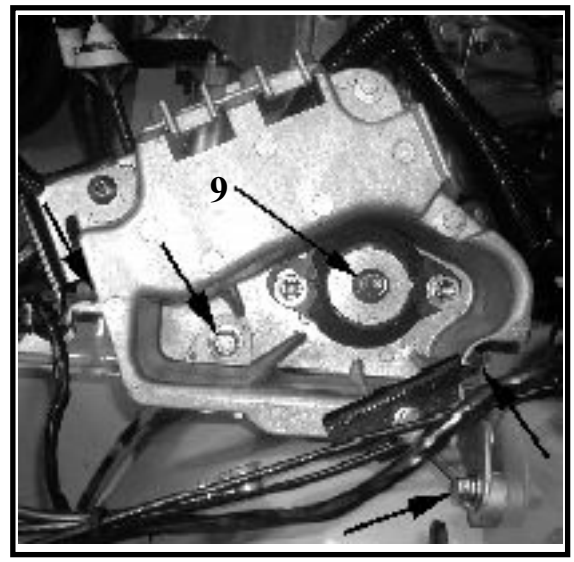


Dismount the refrigerant fluid pipes from compressor (vehicles with AC unit).

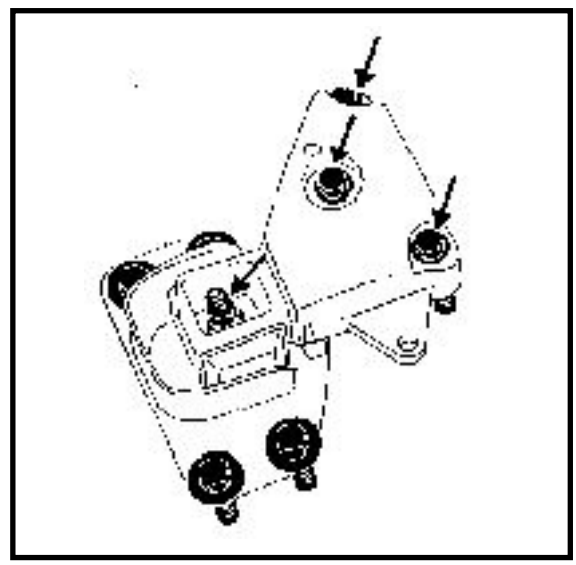


Sustain the power train by means of the two lifting supports using a mobile lifting device (mobile crane).

Dismount the four attachment screws of the power train support-battery and the elastic buffer nut **(9).**



Dismount the hydro-elastic buffer nut (on the right side).



Remove the power train and place it on a support.

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REMOUNTING

Perform the dismounting operations in the reverse order.

Tighten the screws and nuts to the required moment.

Perform:

- filling and purging of the cooling circuit (see chapter **19"Filling and purging**");
- filling with oil of the engine and gearbox;
- filling of the power steering circuit (see chapter **05 " Draining-Filling**)- for vehicles equipped with power steering;
- filling of the air conditioning circuit with refrigerant fluid **HFC 134a** (see chapter **62 "Air conditioning").**

Adjust the clutch pedal stroke (see chapter **37"Clutch control adjustment").**

REMARK:

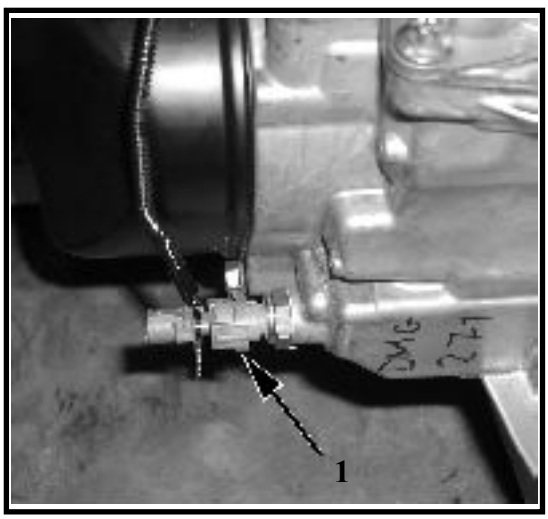
At each operation implying battery dismounting, when reconnecting the battery, introduce the radio code, which is written on the vehicle-purchasing invoice.

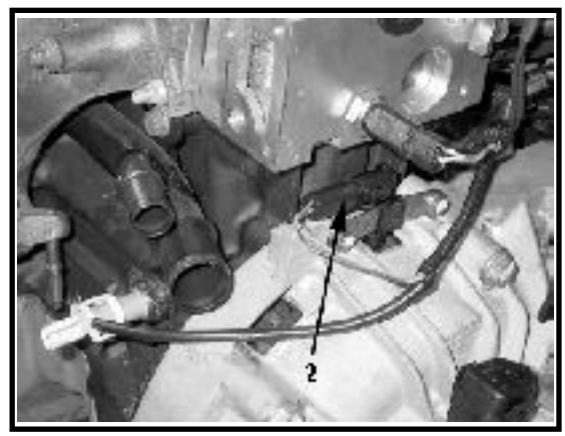
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TIGHTENING MOMENTS (daNm)	▽
RPM sensor	0.8
Starter attachment screws	4.4
Gearbox attachment on engine:	
nuts M 10	4.4
screws M10 - 90	4.4
screws M10 - 35	2.1

DISMOUNTING

Dismount the RPM sensor **2** attachment screws on clutch casing.
Detach the starter electric connections.
Dismount the starter.
Disconnect the electric connector **1** of the reverse driving contact.
Dismount the engine wiring attachment on gearbox.
Dismount the screws and nuts for assembling engine-gearbox.





REMOUNTING

Perform the dismounting operations in the reverse order.
Tighten the nuts and screws to the required moment.

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ENGINE UNFITTING

Dismount:

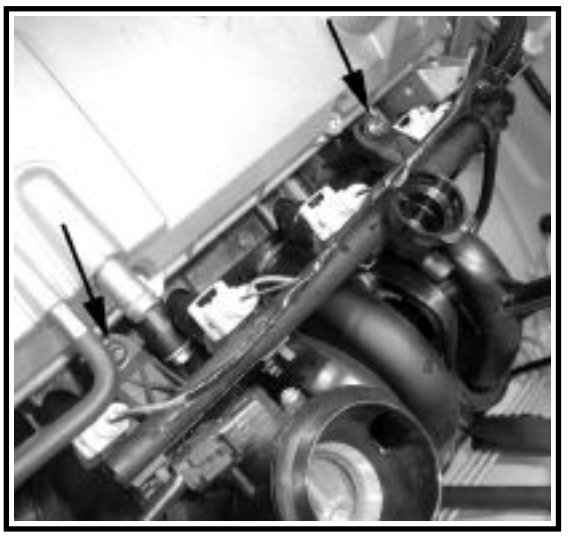
- alternator and its belt;
- oil dipper guide;
- induction coil, after its electric connector and spark plugs cables have been disconnected



Disconnect the electric connectors and dismount the engine wiring.

Dismount then:

- valve body;
- injection ramp;



- clutch disc and mechanism;
- engine flywheel;
- intake manifold;
- thermal screen and exhaust manifold;
- water inlet pipe;
- thermostat support.

For the vehicles equipped with air conditioning unit and/or power steering dismount additionally:

- driving belt tensioner;
- compressor belt;
- compressor electric connector;
- compressor;
- compressor support and intermediary support.



ENGINE FITTING

Perform the dismounting operations in the reverse order.

Tighten the screws and nuts to the required moment.

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TIGHTENING MOMENTS (daNm)	▽
Cylinder head cover attachment screws	1
Distribution belt tightening cam nut	5
Water pump attachment elements: - M6	1
- M8	2.2
Crankshaft pulley screw	2 plus an angle of 68°±6°
Camshaft gear screw	4.5
Rockers ramp screws	2.3
Engine flywheel screws	5 - 5.5
Oil pump screws	2.5
Oil pump cover screws	1
Bearing cover screws	2.5 plus an angle of 43°±6°
Cylinder head screws	see method described at page 10-31
Intake manifold attachment screws	2.5
Exhaust manifold attachment screws	2.5
Spark plugs	2.5 - 3
Lower crankcase screws	1
Rockers adjustment screws	1.5
Oil draining plug	2
Connecting rod cap screws	4.2
Oxygen sensors	4.5
Alternator attachment screws: - M10 - 135	5
- M 8 - 40	2.1
Clutch mechanism	2
Compressor attachment	4
Compressor support	4
Intermediary support	2
Compressor belt tightening glider	2
D.A. pump attachment	2
D.A. pump support : - M8	2
- M10	4
D.A. pump pulley screws	0.8
RPM sensor	0.8
Starter attachment screws	4.4
Gearbox attachment on engine: - nuts M10	4.4
- screws M10 - 90	4.4
- screws M10 - 35	2.1

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NO.	DENOMINATION	SERVICE CODE	DACIA ITEM NO
1	Oil plug wrench	MOT 1018	1001101800
2	Device for mounting the camshaft sealing gasket	MOT 1127-01	1001112701
3	Device for mounting crankshaft sealing gasket towards flywheel	MOT 1129-01	1001112901
4	Device for distribution belt tensioning	MOT 1135-01	1001113501
5	Pliers for elastic clips	MOT 1202-01	1001120201
6	Suitcase for petrol pressure checking	MOT 1311-01	1001131101
7	Connection “J”	MOT 1311-04	1001131104
8	Connection “K”	MOT 1311-05	1001131105
9	Device for connection dismounting	MOT 1311-06	1001131106
10	Pliers for valves oil seal ring dismounting	MOT 1335	1001133500
11	Device for checking the belt tensioning	MOT 1505	1001150500
12	Device for piston shaft mounting	MOT 574-22	1001057422
13	Sector for flywheel fixing	MOT 582	1001058200
14	Device for distribution gear blocking	MOT 799-01	1001079901
15	Device for mounting the crankshaft sealing gasket towards distribution	MOT 550	1001055000
16	Wrench for rockers adjustment	MOT 567-01	1001056701
17	Wrench for oil filter	MOT 555	1001055500
18	Device for power train sustaining	MOT 545	1001054500
19	Device for jackets maintaining or	MOT 484	1001048400
	Jackets maintaining clamps	MOT 588	1001058800
20	Comparing support	MOT 251-01	1001025101
21	Plate for measurement of cylinder jackets over-height	MOT 252-01	1001025201

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CYLINDER HEAD

The cylinder head is not to be re-tightened.

The rockers adjustment is to be performed only at cold, only in case of engine reparation influencing their clearance. The adjustment values are:

- for admission: **0.10 mm;**
- for exhaust: **0.25 mm.**

Cylinder head height	113 ± 0.05 mm
Maximal deformation on the gasket plane **The cylinder head is not to be rectified**	0.05 mm
Combustion chamber volume (with valves and spark plugs)	26.25 cm^3 ± 0.6
Spark plugs tightening moment	2.5 - 3 daNm

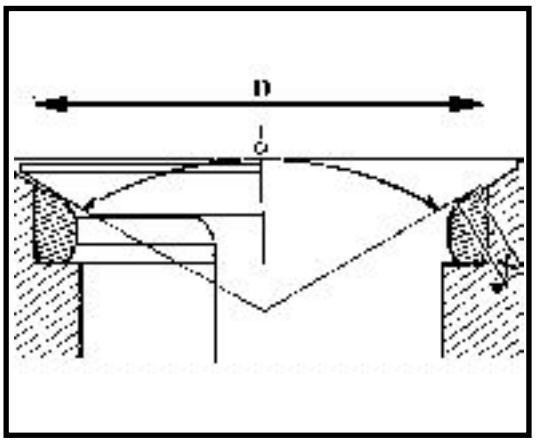
VALVES

Valve rod diameter	7 mm
Sealing face angle: - intake - exhaust	 120^0 90^0
Tray diameter: - intake - exhaust	 37.5 ± 0.1 mm 33.5 ± 0.1 mm

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VALVESSEATS

Sealing face angle(α)	
- intake	120°
- exhaust	90°
Sealingfacewidth(x)	
- intake	1.7 ± 0.1mm
- exhaust	1.7 ± 0.1mm
External diameter(D)	
- intake	38.5 mm
- exhaust	34.5 mm

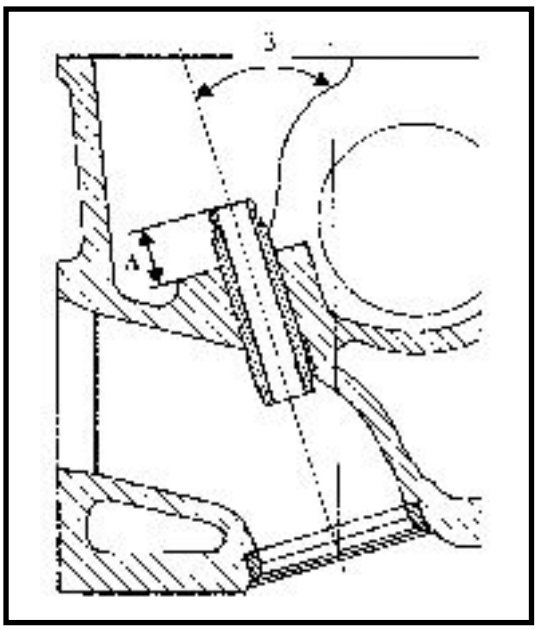


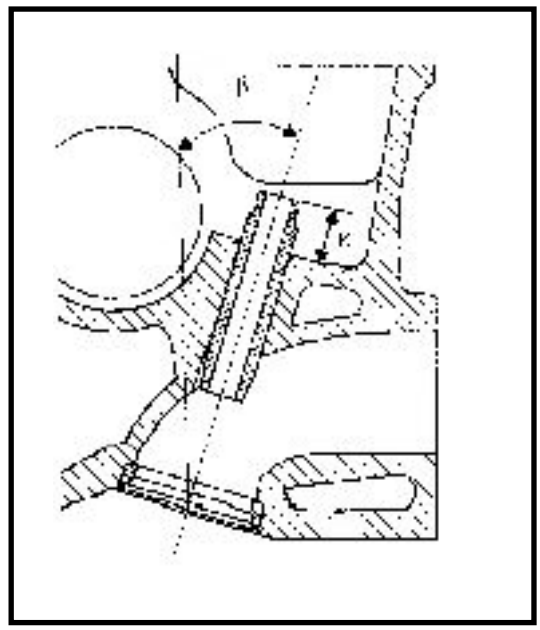
VALVES GUIDES

The valves for both intakeand exhaust are provided with oil-rings, thatmust be replacedat each valvesdismounting.

Internaldiameter	7 mm
External diameter	12 mm
Positionas againstthe spring seatingon cylinderhead:	
- intake (**A**)	12.34mm
- exhaust(**E**)	12.34mm
Tiltas againstvertical(**β**)	17°

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VALVES SPRINGS

The valves springs are identical for both intake and exhaust.

Length in free state (mm)	44.93
Length under load (mm) at: - 27 daNm - 65 daNm	 37 27.6
Length of the stuck coils (mm)	26.01
Coil diameter (mm)	4
Internal diameter (mm)	21.5

CAMSHAFT

Axial clearance (mm)	0.06 - 0.15
Number of bearings	5
Distribution diagram : - intake opening advance - intake closing delay - exhaust opening advance - exhaust closing delay	 -5^0 35^0 41^0 -5^0

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PISTONS

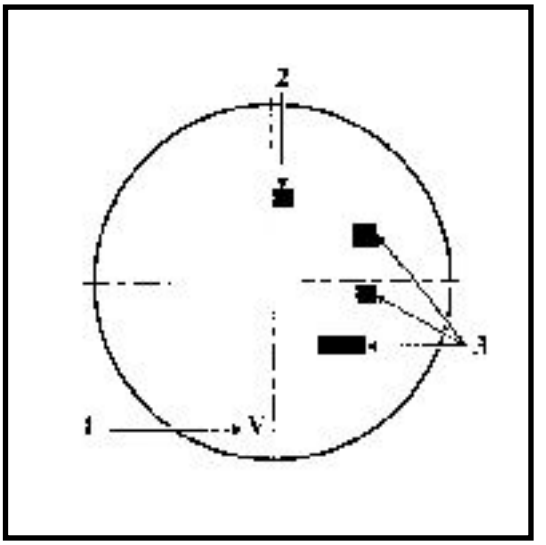
The bolt is fix mounted in the connecting rod and free in piston.

Mounting direction: with the arrow towards flying wheel.

There are three matching classes with the jacket.

Markings on pistons:

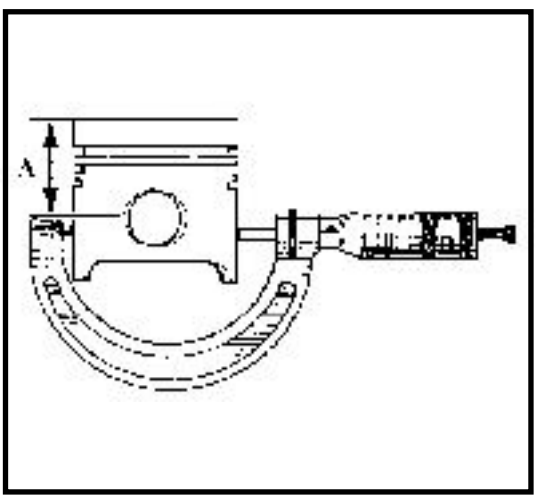
1 – arrow towards flywheel
2 – piston class (A-B-C)
3 – items used by the supplier



Piston class	Piston diameter (mm)	Jacket diameter (mm)	Jacket marking
A	75.765 - 75.775*	75.8 - 75.81*	Green
B	75.775 - 75.785*	75.81 - 75.82*	Blue
C	75.785 - 75.795	75.82 - 75.83	Red

* - these values are not included in classes.

The piston diameter is measured at the value **A = 46 mm**.



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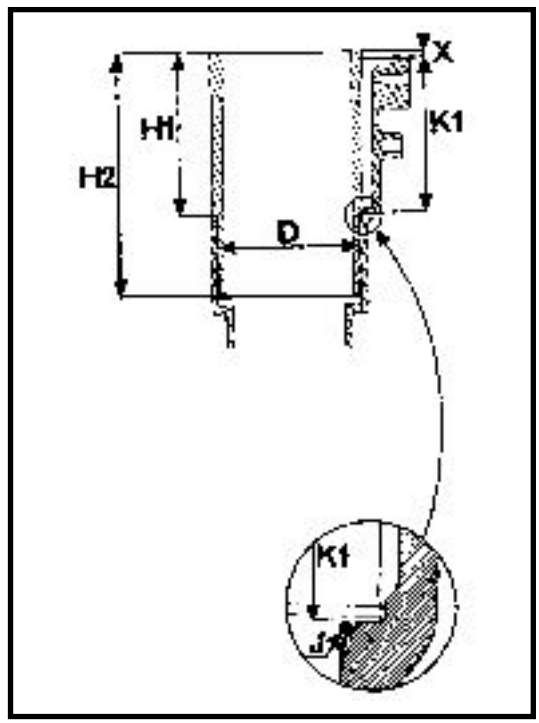
BOLTS

Length (mm)	60
External diameter (mm)	19
Internal diameter (mm)	11

CYLINDER JACKETS

Type: wet removable.
The sealing gasket is **J** rubber ring type.

Internal diameter (mm)	$75.8^{+0,03}$
Jacket height (mm) **H2**	130
Centering diameter (mm) **D**	80.6
Jackets over-height **X** without gasket (mm)	0.02-0.09
Jacket height (mm) **H1**	$91.5^{+0,035}_{+0,005}$
Deep in cylinder block **K1** (mm)	$91.5^{-0,015}_{-0,055}$



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RINGS

Thickness (mm):

- compression ring	1.5
- sealing ring	1.75
- oiling ring	3

CONNECTING RODS

Connecting rod end side clearance: **0.310 to 0.572 mm.**

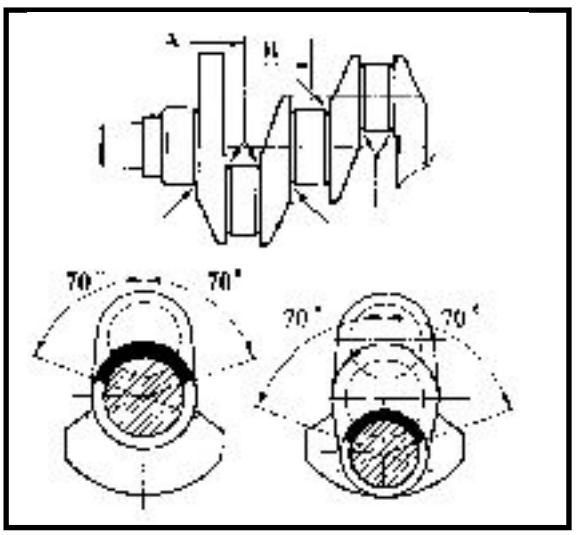
ATTENTION!
It is forbidden the use of punches for marking due to the risk of primer cracks A permanent marker is to be used.

CRANKSHAFT

Number of bearings	5
Bearings diameter (mm)	- nominal: 54.795 ± 0.01 - reparation: 54.550 ± 0.005
Crankpin diameter (mm)	- nominal: $43.98\ ^{-0,02}$ - reparation: $43.73\ ^{-0,02}$
Axial clearance (mm)	- 0.045 - 0.852 with wear - 0.045 - 0.252 without wear

In case of rectifying, rolling must remain at least on **140°** of the crankpins and bearings circumference.

These areas are defined in sections **A** and **B** as per joint drawing



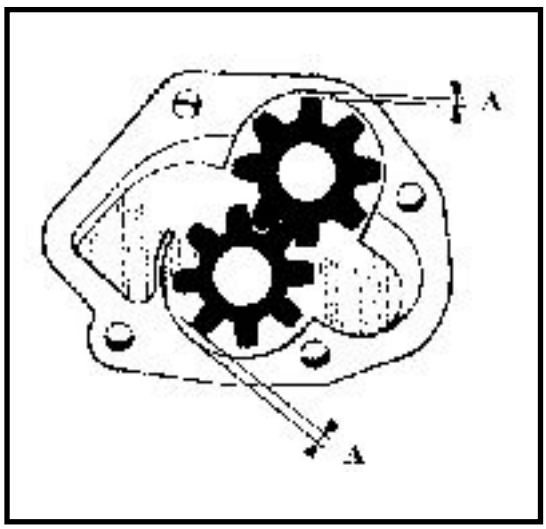
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OIL PUMP

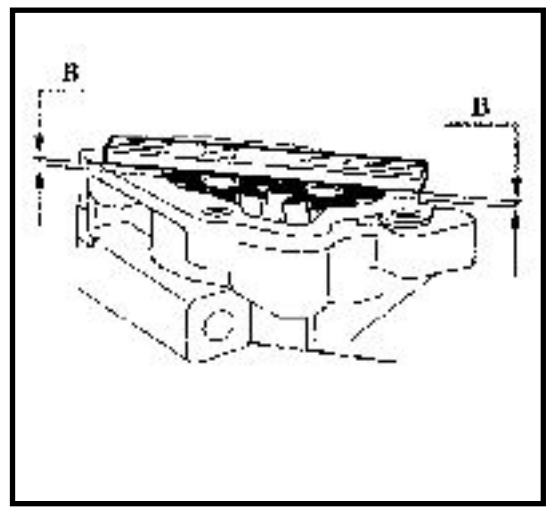
The oil pump is a gear wheels type.
Oil minimal pressure at **80°C** is:
- at idling 1 bar
- at 4000 rpm 3 bar

Dismount the oil pump and check the gearing clearances.
Check:

- clearance **A (mm)**
  - **minim 0.110**
  - **maxim 0.249**



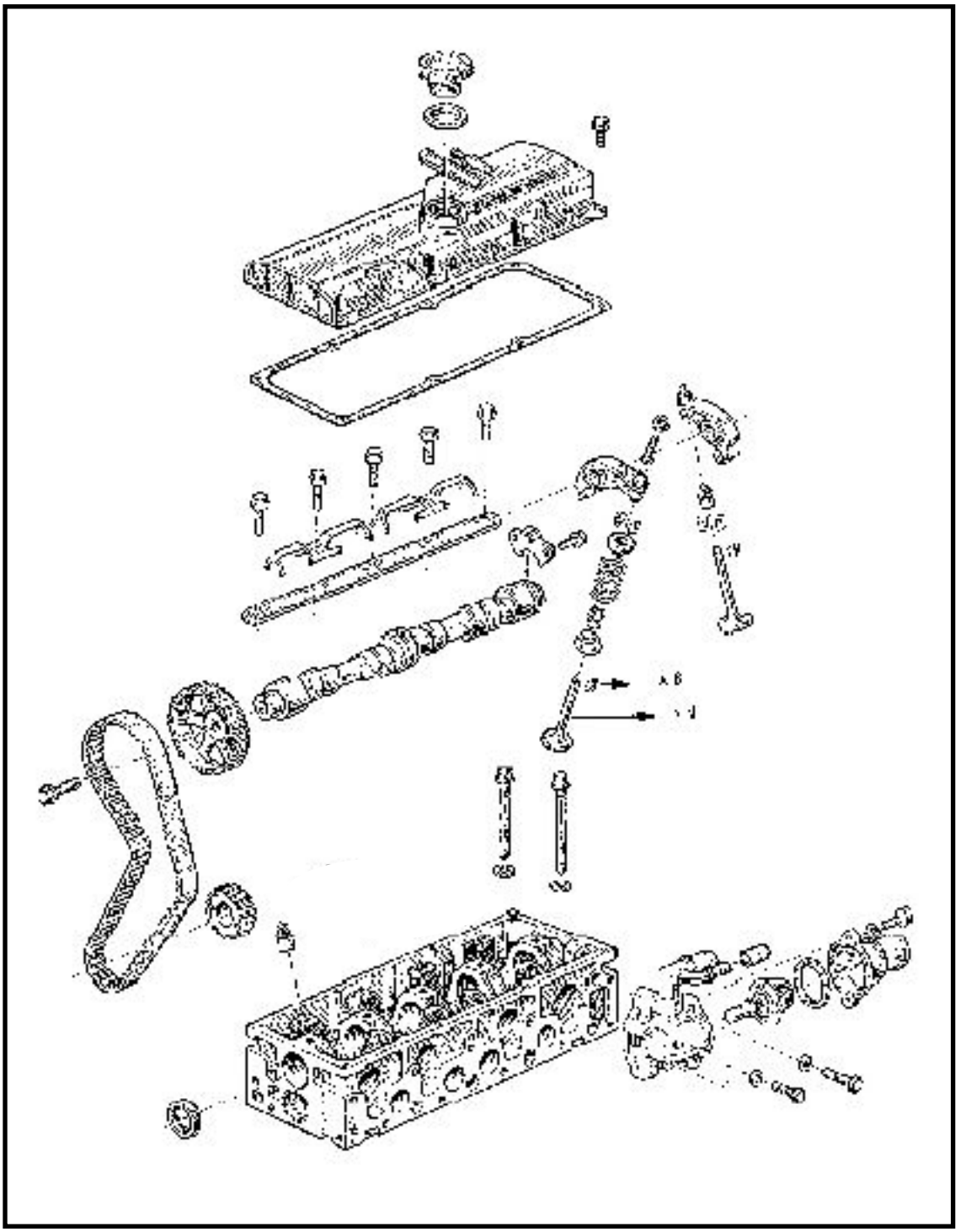
- clearance **B (mm):**
  - **minim 0.02**
  - **maxim 0.86.**



ATTENTION!
Protect the distribution belt and the accessories belt in order to avoid the water and cleaning materials splashing on them.

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CYLINDER HEAD



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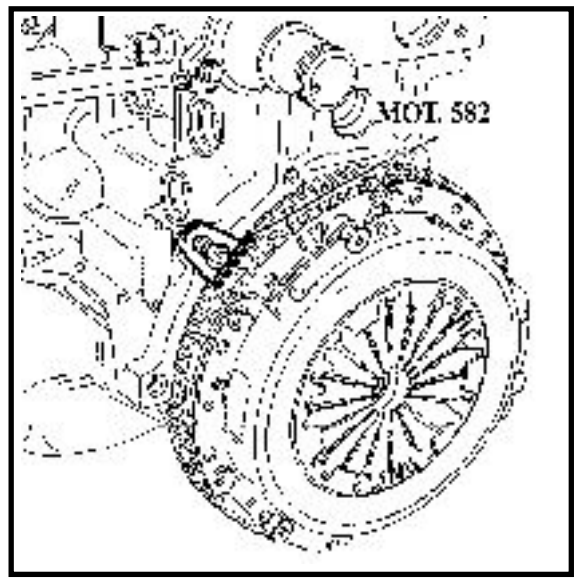
CYLINDER HEAD DISMOUNTING

Drain the oil from the engine.

Dismount:

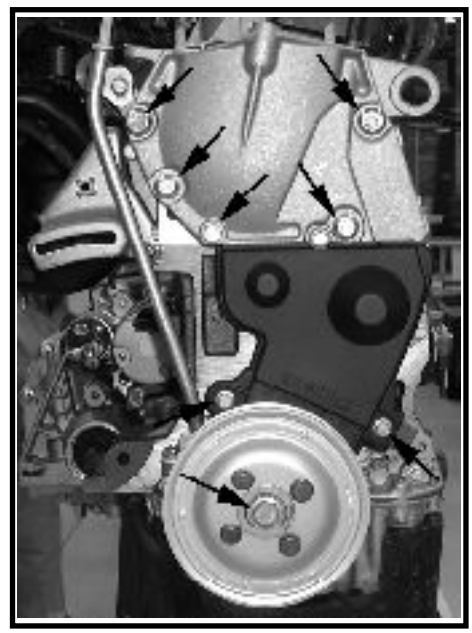
- wiring from the engine;
- compressor and/or power steering pump (for vehicles equipped with air conditioning unit and/or power steering);
- compressor support and/or power steering pump support;
- alternator and its belt.

Block the engine flywheel by means of the **MOT 582 device**.



Dismount :

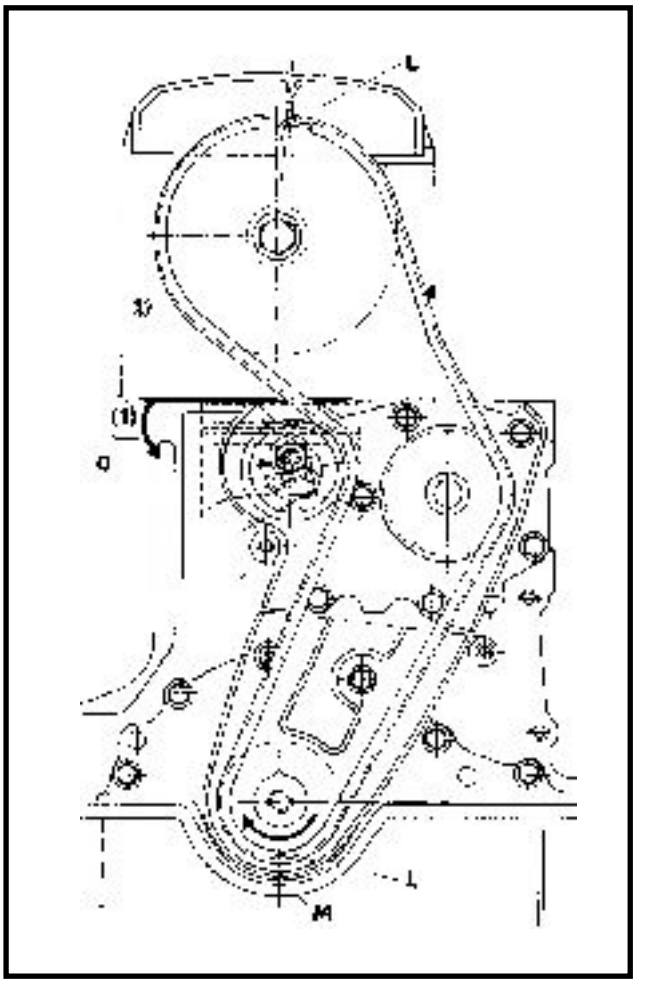
- oil dipper rod support;
- alternator belt tightening clamp;
- crankshaft pulley or pulleys;
- pulley hub;
- distribution belt casings.



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Bring the engine at the setting on point, lining up the mark from the crankshaft gear **L** with the fix mark **M** (the mark **L** from the camshaft being in vertical position as shown in the bellow drawing).

Dismount the nut (**0**) of the tightening roller, then dismount the distribution belt.

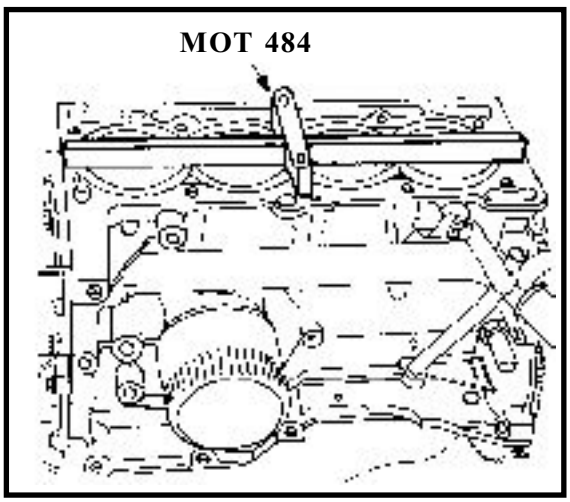


REMARK :

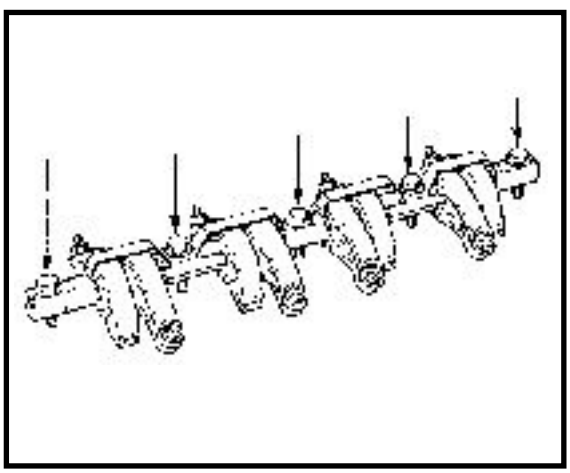
(1) is representing the acting direction of the tightening roller for distribution belt tensioning.

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Dismount:
- cylinder head cover;
- intake manifold and exhaust manifold;
- cylinder head screws, less the one with the centering bushing, that shall be only loosed;
- rotate the cylinder head around the not-dismounted screw by easy hammering by means of a rubber hammer.
- dismount the cylinder head;
- mount the jackets maintaining device **MOT 484** or the clamps **MOT 588.**

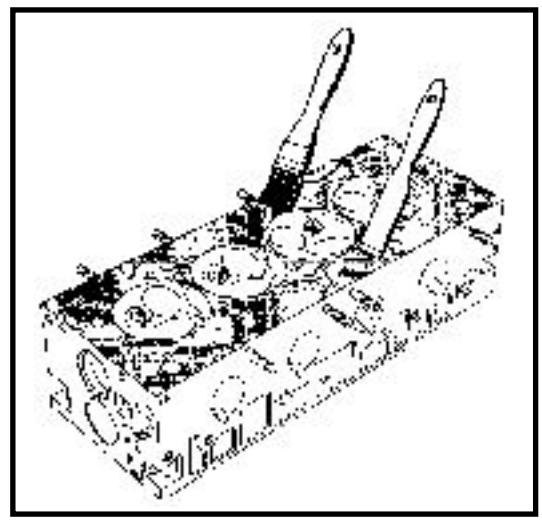


Dismount :
- rocker's ramp;



- camshaft sealing ring
- camshaft gear (to be blocked by means of **MOT 799-01** device);
- camshaft;
- thermostat support;
- spark plugs;
- valves springs;
- valves;
- valves oil sealing rings, by means of the **MOT. 1335** pliers.

Clean the cylinder head by removing the stacked gasket.



It is very important not to scratch the cylinder head on gasket seating face.

The **Decapjoint** product is to be used for removing the remaining gasket stacked pieces.

Apply the product on the area to be cleaned, wait for about **10 minutes**, and then clean with a wooden spatula.

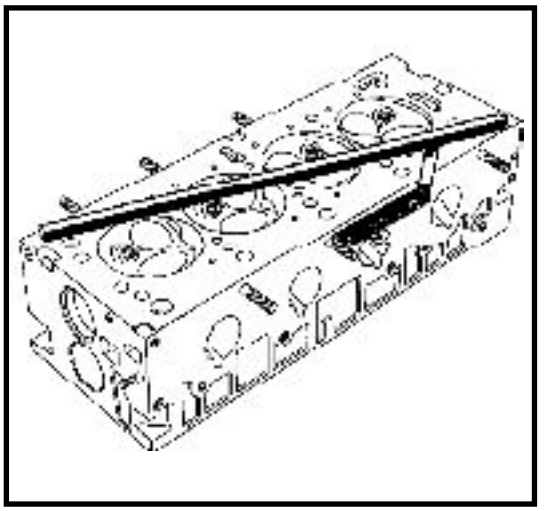
During this operation protection gloves are to be used.

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ATTENTION!

Avoid foreign materials introduction into the oil grooves, otherwise the latter will clog, and consequently the rockers slides and cams rapid damaging.

The cylinder head flatness is checked by means of a ruler and a kit of gauges.



Maximal permitted deformation: **0.05 mm.**

REMARK:

The cylinder head is not to be rectified.

CYLINDER HEAD ASSEMBLING

All parts are to be lubricated with oil.

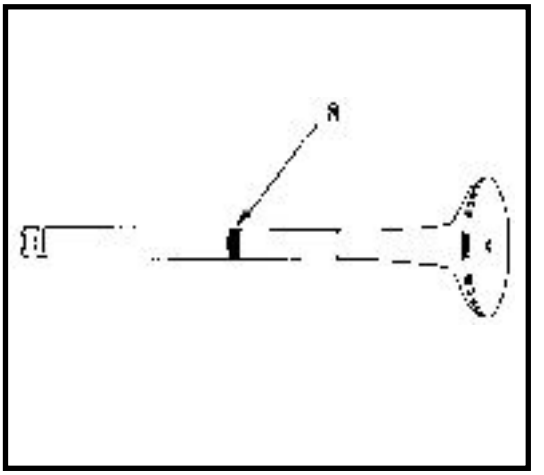
Mount the valve oil sealing rings **2** on the valve guides **3,** by means of an **11-mm socket wrench.**

The followings are to be mounted in order:

- washers **1** from valves springs bottom;
- new valves **4.**

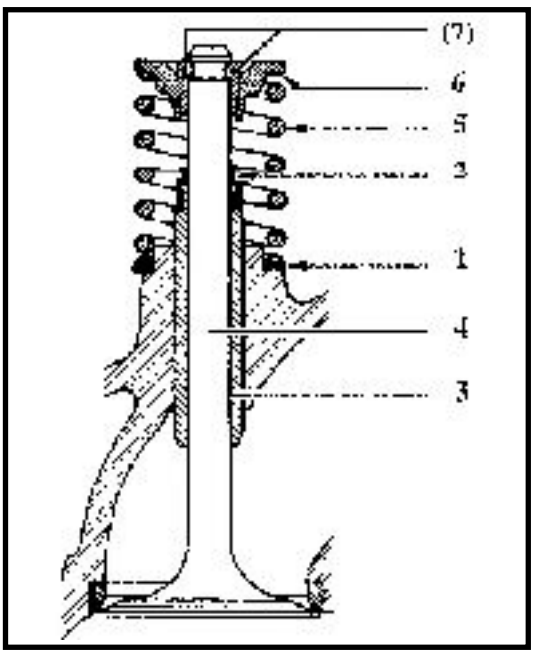
ATTENTION!

New valves must have the same marking 8 with the old ones in order to avoid the damaging of the seat/valve assembly.



- springs **5** (identical for intake and exhaust);
- hoods **6**

Compress the springs **5** then mount the half-cones **7** which are identical for intake and exhaust.

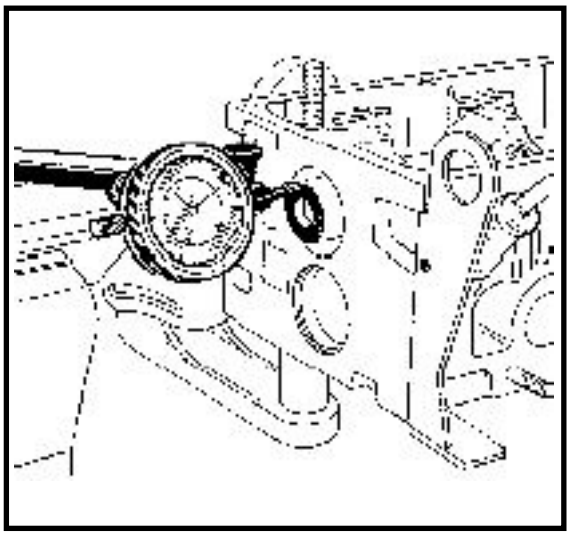


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Lubricate the camshaft with engine oil.

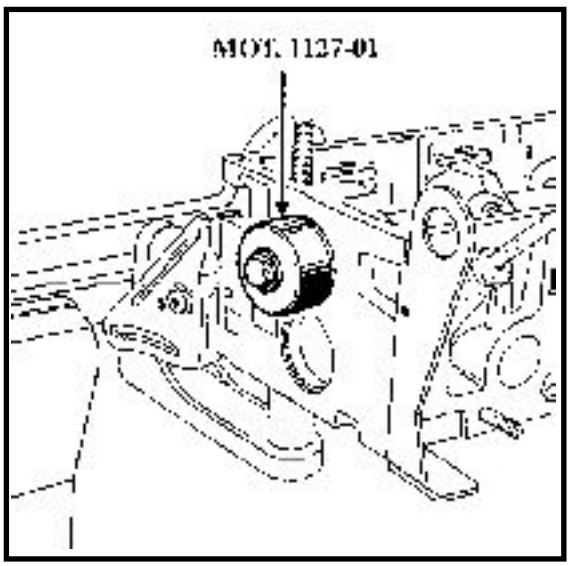
Mount the camshaft and its clamp.

Check the camshaft axial clearance, which must be between **0.06 mm and 0.15 mm**, in case this one is not corresponding, check the clamp and the camshaft.



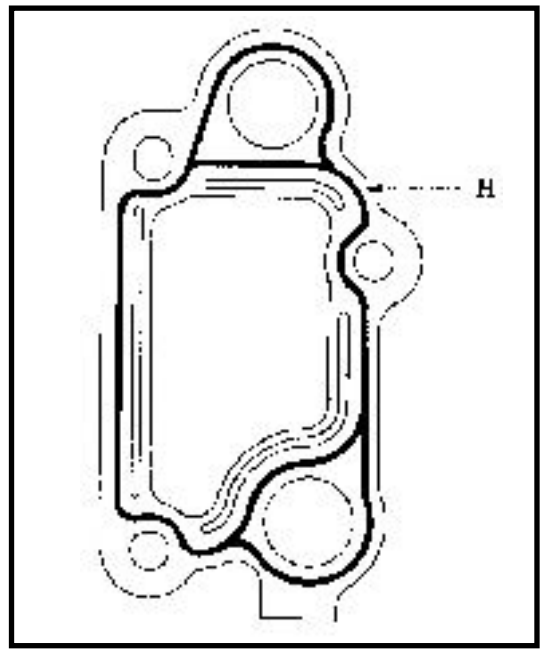
Mount:

- camshaft sealing gasket by means of the **MOT 1127 – 01** device.



- thermostat support; **Loctite 518** is to be used for its sealing.

The layer **H** must be **0.6 till 1 mm** thick and is to be applied as per the following diagram.

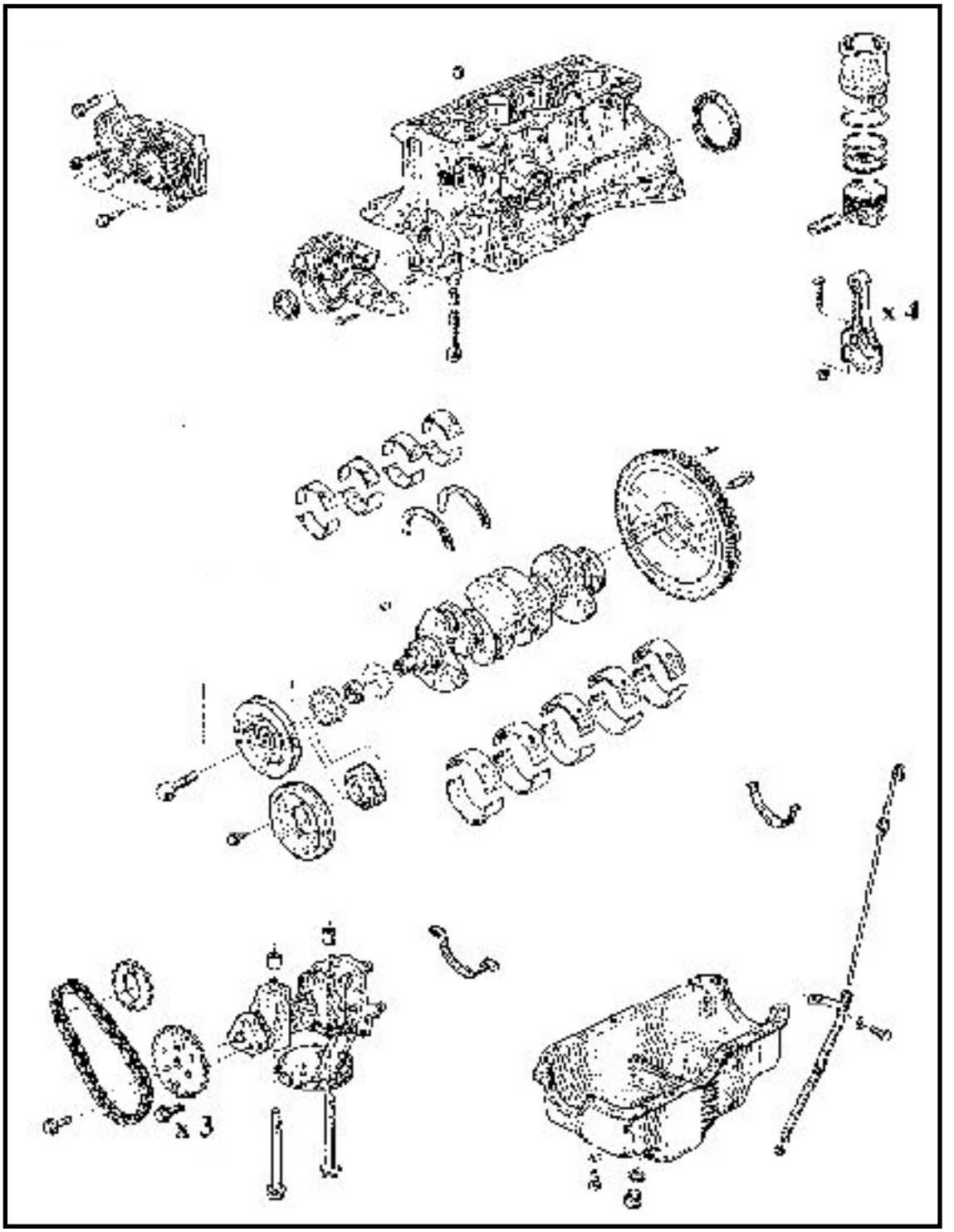


- camshaft gear.

Camshaft gear is to be blocked by means of the **MOT 799 – 01** device and tighten its attachment screw, to the required moment of **4.5 daNm** (lubricate the screw head and thread with engine oil).

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CYLINDERS BLOCK

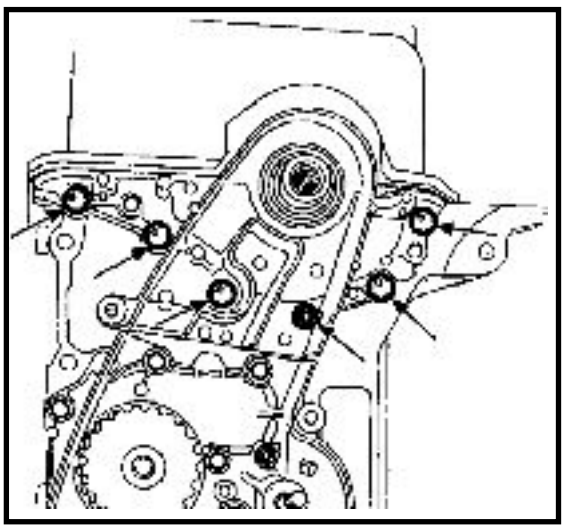


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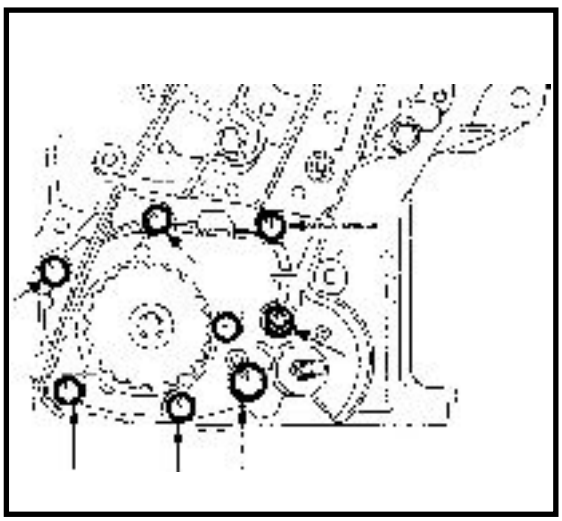
CYLINDERS BLOCK DISMOUNTING

Dismount:

- water inlet pipe and oil dipper rod guide (their sealing is performed by means of rubber rings that must be replaced at each dismounting);
- clutch;
- engine flywheel, immobilized by means of the **MOT 582**;
- lower crankcase;
- crankshaft gear;
- tightening roller;
- crankshaft closing casing



- water pump.



Dismount the oil pump attachment screws.

Dismount the oil pump and its driving chain.

Mark the connecting rod caps compared with the connecting rod body.

ATTENTION!

Do not use punches for marking in order to avoid cracks occurring; a permanent marker is to be used.

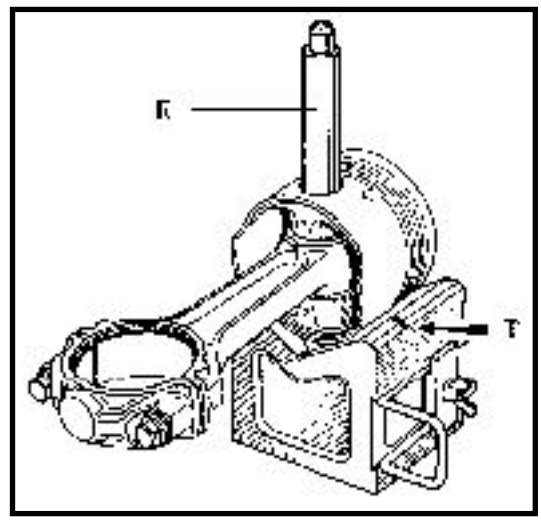
Dismount

- connecting rods caps and the bearings;
- jackets maintaining device **MOT 484** or clamps **MOT 588**;
- assembly jackets-pistons-connecting rods;
- bearings caps and their bearings;
- crankshaft and axial clearance bearings;
- bearings from the cylinders block.

PISTONS SHAFTS DISMOUNTING

Place the piston on the support lining up the piston bolt (shaft) with the gap whole from the support (two **T** lines for marking the whole center are facilitating the lining up).

Remove the bolts using a press by means of the extraction mandrel **E**.



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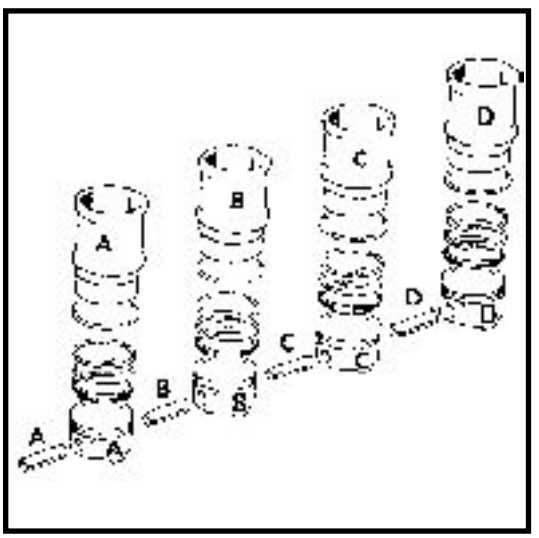
CYLINDERS BLOCK REMOUNTING

Clean the cylinders block, especially the jackets seating and sealing surfaces.

Preparation of assembly "pistons-jackets"

The parts contained in the kit are in pairs.

Mark the parts assembly from **A** to **D** in order to keep the matching.

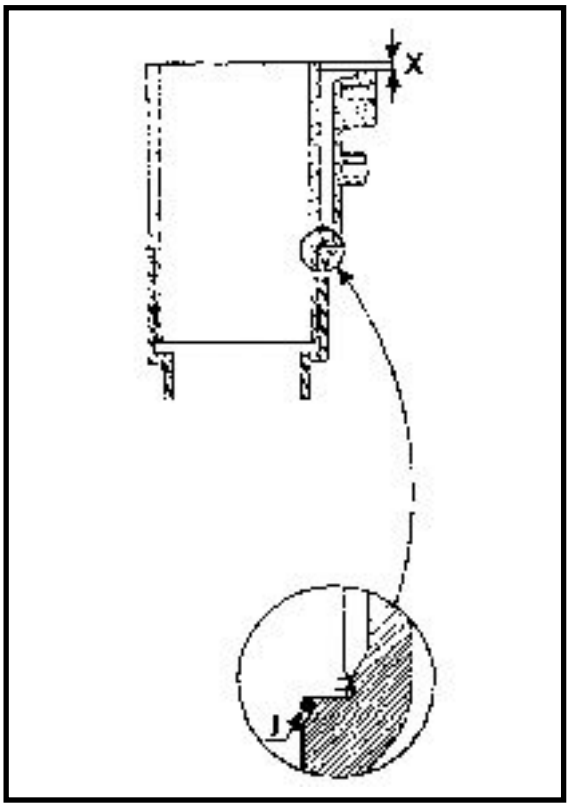


Remove completely the anti-rust foil.

REMARK:
Never scrape the parts.

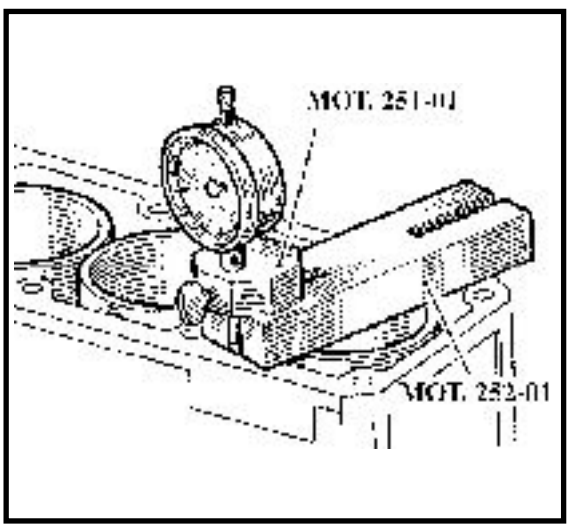
Jackets over-height

These engines are equipped with rubber rings for jackets sealing, ensuring only the sealing, jackets being seated directly on the cylinders block and over-height being done from manufacturing.



The checking of the jackets over-height is to be performed as follows:

- place the jackets in the cylinders block without the sealing ring;
- check the **X** over-height by means of the devices **MOT 251-01 and MOT 252-01.**

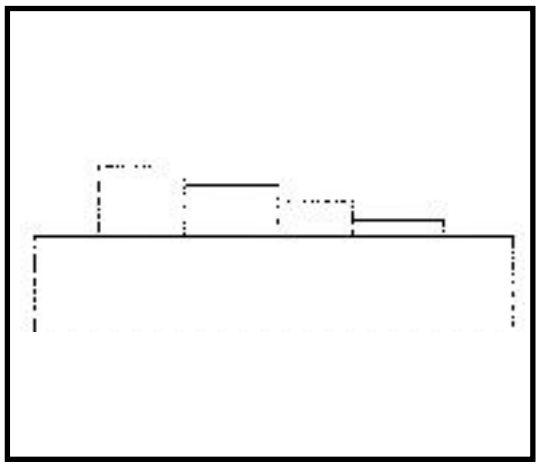


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The over-height **X** must be between **0.02 mm and 0.09 mm.**

Place the jackets in such way that:

- the difference between two joint jackets to be maximum **0.05 mm**;
- the over-height to be in ascending order between cylinders **1** and **4**;



- in case of an incorrect over-height, check the over-height by means of a new kit of jackets, in order to see if the cause is the block or the cylinders jacket or check the theoretical size values of the block and of the jackets.

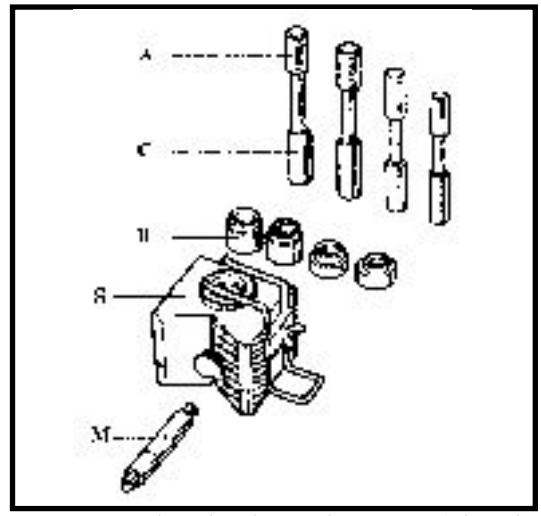
When over-height is correctly obtained, perform the **A, B, C, D** assembly then mark with numbers jackets, pistons and the bolts from **1** to **4** (no.1 towards flywheel) so that the correspondence with the corresponding connecting rods may be achieved.

Pistons bolts mounting

The pistons bolts are fixed in connecting rods and free in pistons.

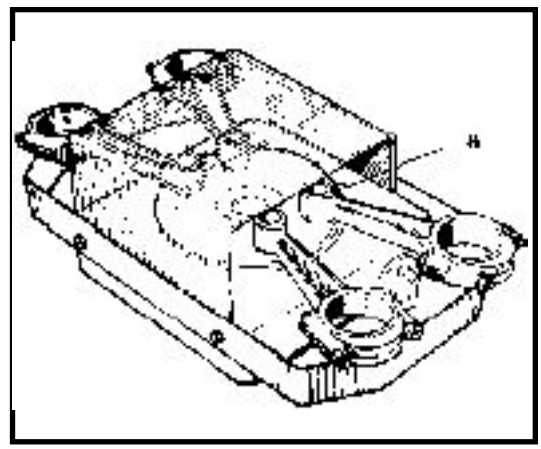
Mount the pistons bolts by means of the **MOT 574-22** that is containing:

- a support for piston (**S**);
- an extracting mandrel (**M**);
- the piston supporting bushings (**B**);
- the bolts for mounting (**A**) provided with their centering guides (**C**).



Use an electric plate of **1500 W** (electric oven) for connecting rods heating.

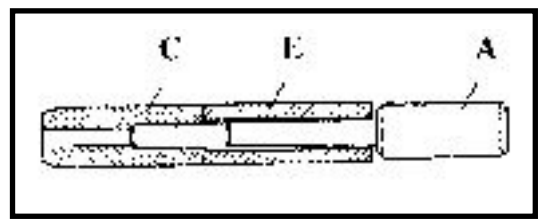
Place the connecting rods on the electric plate so that connecting rod end surfaces are in contact with the heating plate.



Check if the pistons bolts are freely gliding in the new corresponding pistons.

Mount the piston bolt **E** on the mounting bolt **A**.

Screw the centering guide **C** till end and then unscrew it for a quarter of turn.



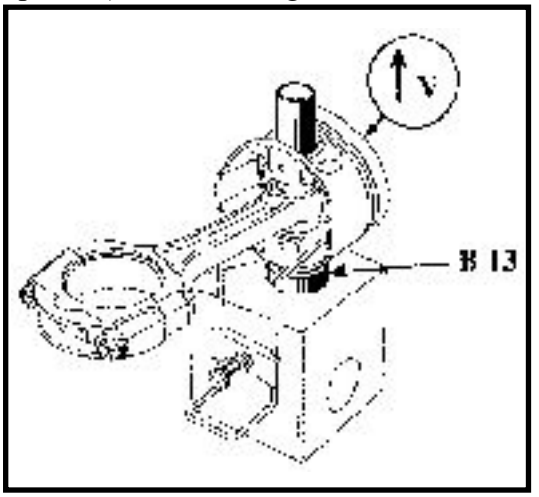
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The arrow marked on the piston head must be oriented towards engine flywheel.

The connecting rods have no mounting direction, but the half-bearings spurs are to be positioned on the same part.

In order to assemble the piston and the connecting rod, proceed as follows:

- place the bushing **B 13** on the support and attach the piston (with the arrow oriented upwards) on the bushing



- lubricate the centering guide and the piston bolt with engine oil;

- check the free gliding of the piston bolt and the piston positioning.

When the connecting rod end is reaching the necessary temperature (about **250 °C**), proceed to the rapid of the piston bolt, as follows:

- introduce the centering guide in the piston;

- position the connecting rod in the piston;

- press till end the piston bold.

Check if the piston bolt is remaining retired as against the piston outer diameter for each of the connecting rod position in the piston.

Rings mounting

Mount the rings on the piston in the following sequence:

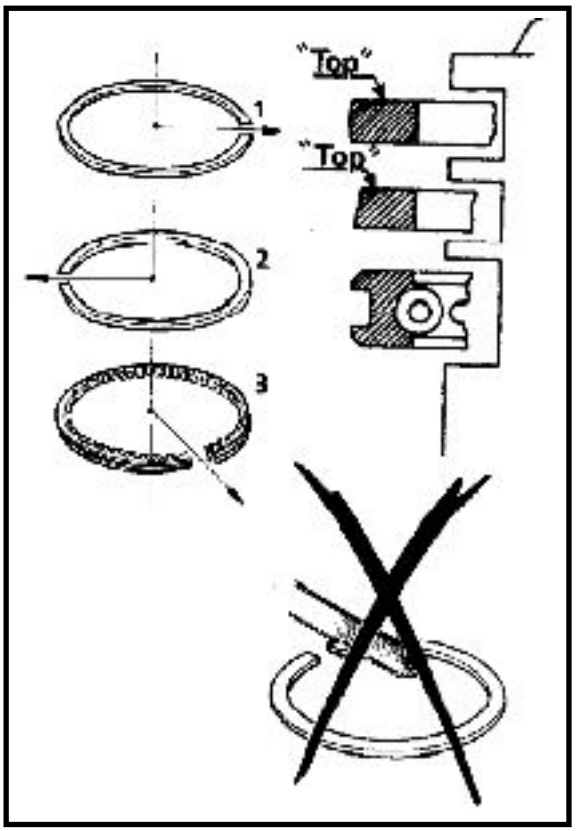
- oiling ring (**3**);

- sealing ring (**2**) with the mark "**TOP**" upwards;

- compression ring (**1**) with the mark "**TOP**" upward.

The compression and sealing rings are to be mounted with the slots disposed at **90°** against de bolt's axle and displaced between them with **180°.** The oiling ring is to be mounted with the slot oriented at 45° against the bolt's axle.

The rings slots being adjusted, shall never be reworked.



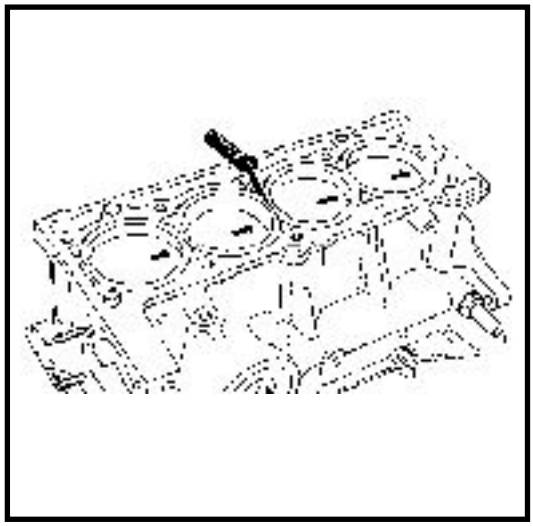
Lubricate the pistons with engine oil.

Mount the assemblies "connecting rod-piston-rings" in the cylinder's jackets, by means of the mounting bushing

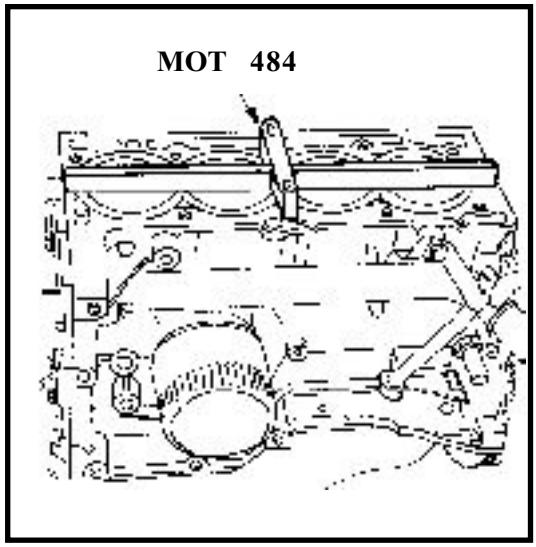
Mount the sealing gaskets on the cylinder jackets.

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Mount the assembly in the block, as per previous established sequence and check and ensure that a **0.1 mm** gauge is passing between jackets.



Block the jackets by means of the device **MOT 484** or the clamps **MOT 588**.

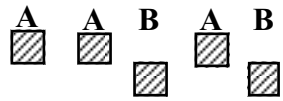


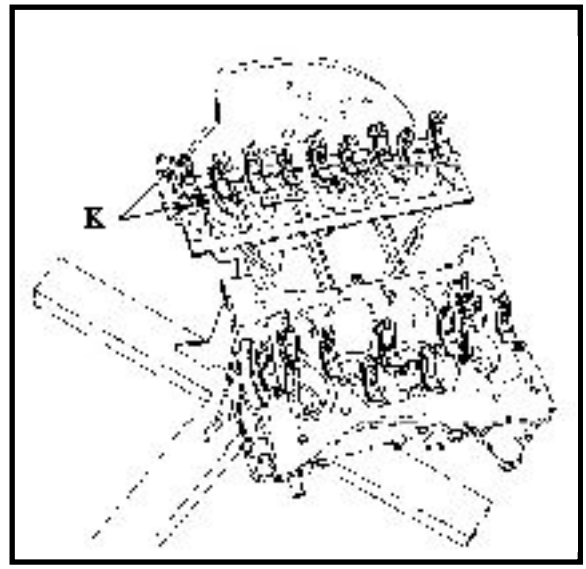
Mount the base bearing on the cylinders block. Hal-bearing lining that are mounted on casing are provided with oiling holes.
The bearings lining are matching with the crankshaft in two classes, as follows:

Marking on bearing	Marking on crankshaft
Red	A
Blue	B

Identidfication of matching classes on crankshaft is performed by marking on the balance-weight of bearing number 5.

Marking example on crankshaft:





Mount connecting rod bearings (connecting rod bearings are the same)

Lubricate the cranckpin and the bearings.

Mount the crankshaft and the axial bearings.

Mount the bearings caps. On the no.1 cap (area **K**) apply a layer of **LOCTITE 518**, between **0.6 and 1 mm** thick.

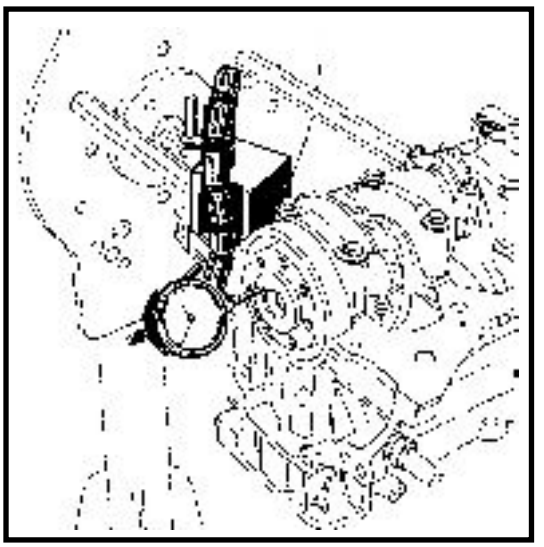
Tighten the bearings caps to a required moment of **2.5 daNm** then to an angle of **43° ± 6°.**

Check the axial clearance of the crankshaft, which must be between:

***0.045 and 0.852 with wear;**

*** 0.045 and 0.252 without wear.**

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The axial bearings may have the following thickness: **2.80, 2.85, 2.90, 295 mm.**

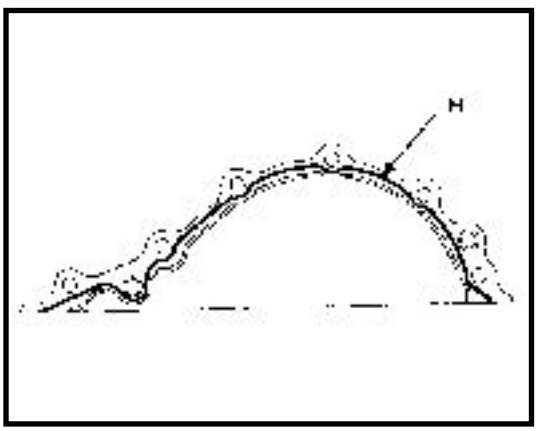
Mount the connecting rods caps and tighten to the required moment of **4.2 daNm**.

Check:

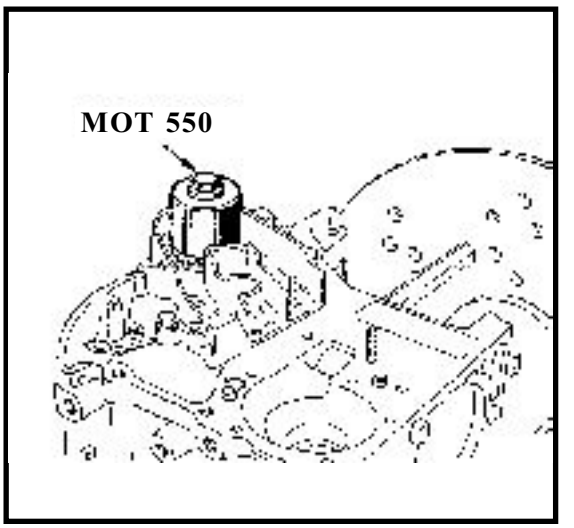
- connecting rods lateral clearance;
- assembly rotation

Mount:

- gear and driving chain of the oil pump;
- oil pump (check the existence of the centering bushings) and tighten the screws to the required moment of **2.5 daNm**;

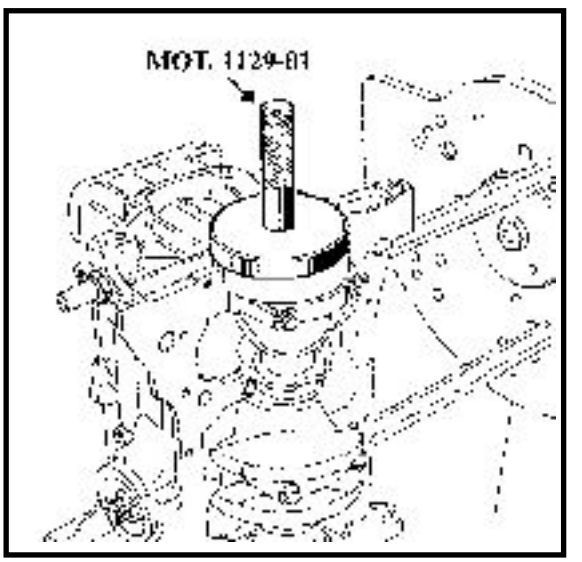


- the crankshaft closing casing; the sealing is performed using **LOCTITE 518** (the layer **H** must be **0.6 – 1 mm** thick);
- sealing gasket from crankshaft closing casing (lubricated with oil) by means of the **MOT 550 device;**



- crankshaft sealing gasket towards flywheel (at no.**1** bearing) by means of the **MOT 1129-01 device.**

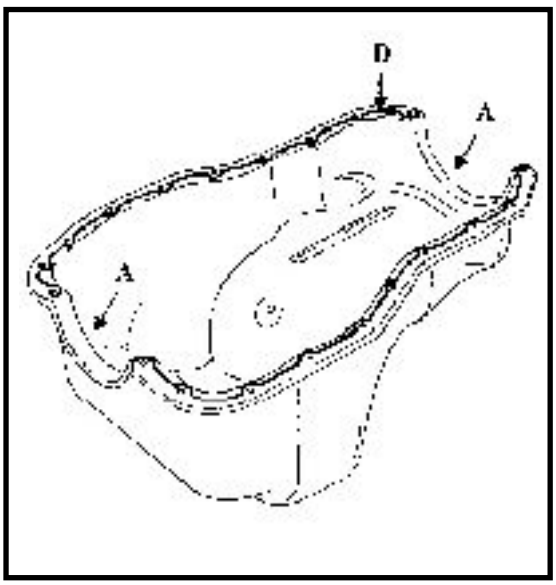
Lubricate the sealing gasket external part and lip with engine oil.



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Mount the lower casing and tighten the screws to the required moment of **1 daNm.** Sealing is performed using **RHODORSEAL 5661**; the layer **D** must be **3 mm** thick.

Do not forget to replace the two half-moon gasket (in area **A**) with new ones.



Mount the engine flywheel; the flywheel attaching screws thread must be lubricate using **LOCTITE FRENETANCH**.

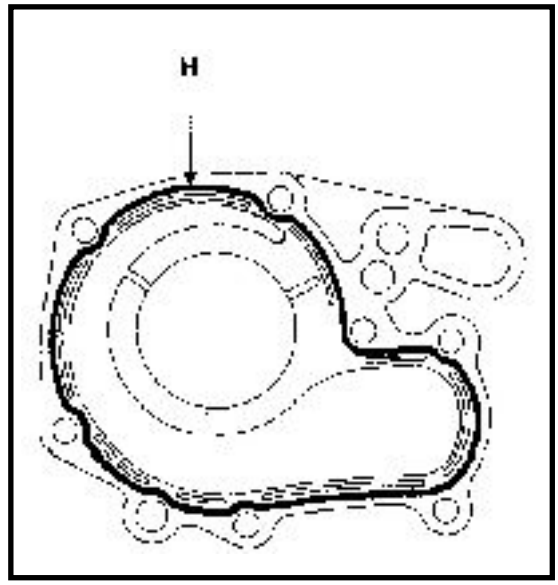
Block the engine flywheel by means of the geared sector **MOT 582** and tighten the attachment screws to the required moment of **5 – 5.5 daNm**.

Center the clutch disk and mount the clutch mechanism (see chapter **20"Clutch").**

Mount the water pump (sealing is performed using **LOCTITE 518**).

Apply a layer of sealant material **H**, **0.6 – 1 mm thick**, according to the drawing.

Tighten the attachment screws to the required moment of **1 -2 daNm.**



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CYLINDER HEAD REMOUNTING

Dismount the blocking device of the cylinders jackets.

Mount:

- cylinder head centering bushing on the block;
- cylinder head new gasket with the marking "**TOP**" upwards;
- cylinder head (lubricate the screws ends and threads with engine oil).

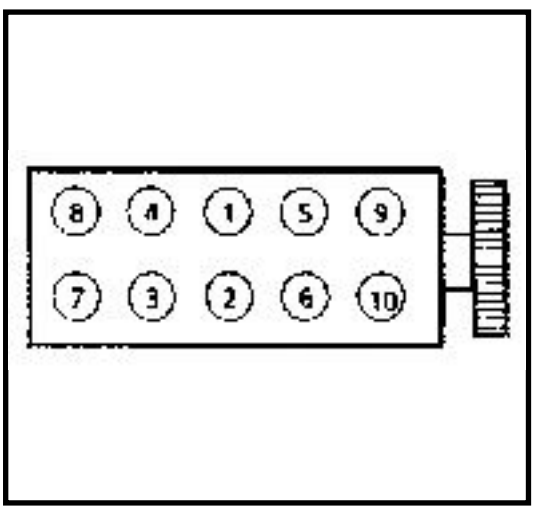
REMARK:

In order to obtain a correct tightening of the cylinder head screws, remove the oil that may be in the cylinder head attachment wholes, by means of a syringe.

CYLINDER HEAD TIGHTENING METHOD

1. GASKET PRE-SETTING

Tighten all screws to the required moment of **2 daNm**, then to an angle of **97° ± 2°**, observing the order indicated in the bellow drawing.



Wait for **3 minutes**, stabilization time.

2. CYLINDER HEAD TIGHTENING

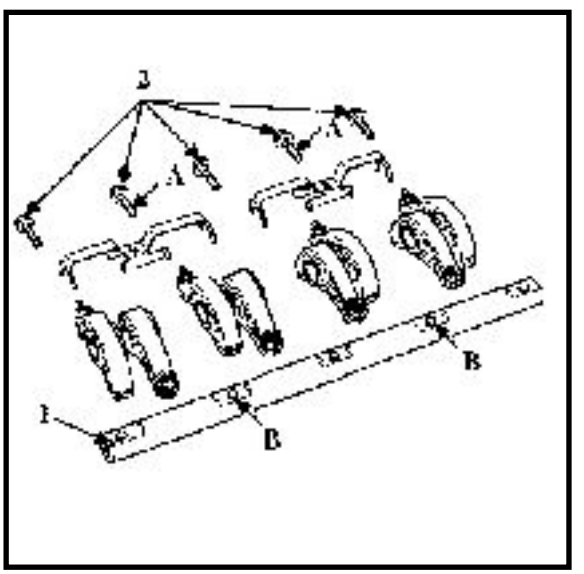
Cylinder head tightening is to be performed successive for the screws groups **1-2, 3-4, 5-6, 7-8 and 9-10;**

- unscrew **1-2** screws until total release;
- tighten the **1-2** screws to the required moment of **2 daNm**, then to **97°±2°**
- repeat the releasing and tightening operation for the screws groups **3-4, 5-6, 7-8 and 9-10.**

The cylinder head is not to be re-tightened.

Continue by mounting:

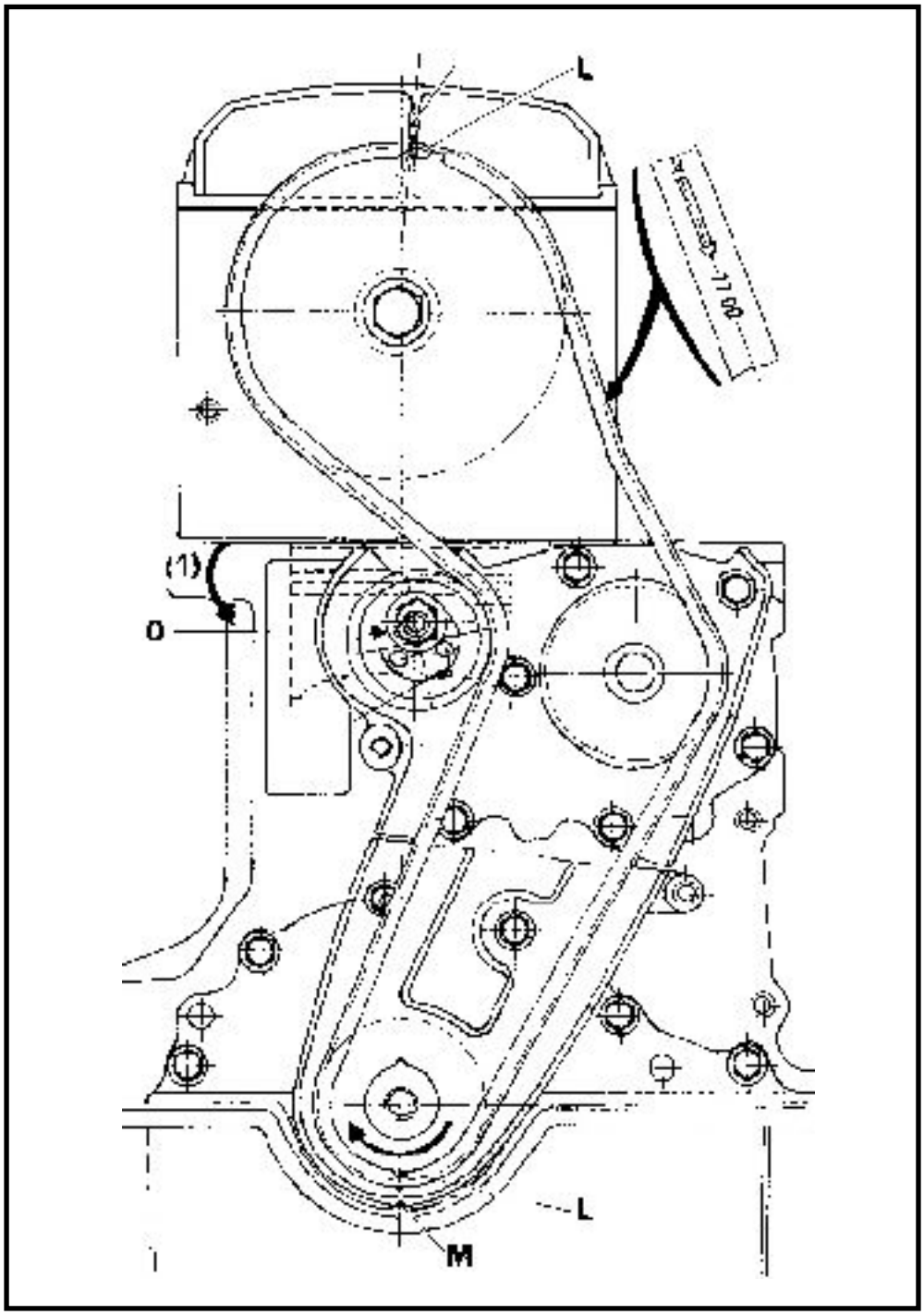
- rockers ramp, positioning item 1 from the shaft towards distribution.



Tighten the ramp attachment screws 2 to the required moment of 2.3 daNm, not be fore lubricating with oil their heads and threads.

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DISTRIBUTION



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DISTRIBUTION ADJUSTMENT

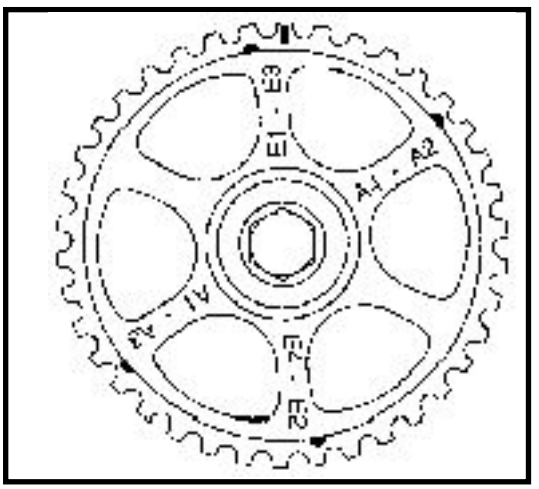
The belt tensioning is to be performed only with cold engine (environment ambient temperature).

On the belt backside, there is an arrow indicating the rotation direction and two marks for setting.

Line up the **L** item from the crankshaft gear with the **M** fix item (item from camshaft gear upward).

ATTENTION!

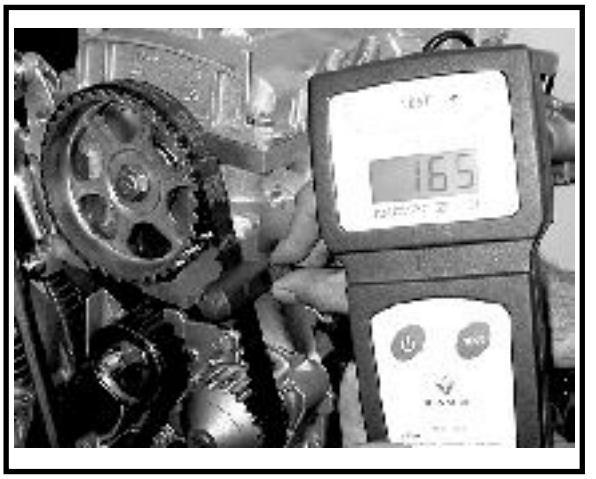
The camshaft gear may have five marks; only the rectangular shaped mark of one tooth is representing UDP (Upper Dead Point), the others are used for rockers adjustment.



Line up the items from the belt with the ones from the gears, observing the mounting direction and starting from the crankshaft gear.

Place the **MOT 1505** device captor (in the position shown in the drawing) at a distance of **5-10** mm against the belt.

Any of the two captors may be used with the condition that both captors are not in the same time in front of the belt.



Make vibrating the belt by means of a finger (the measurement is validated by a device "bip")

Tighten the belt, by acting upon the tightening roller by means of the **MOT 1135-01** device, until obtaining of a value between **210 and 275 Hz.**

Block the tensioning roller and tighten its nut to the required moment of **3 daNm.**

Rotate then, five and a half turns the crankshaft (cylinder no 2 in the rockers adjustment position).

Dismount the tensioning roller nut.

Tighten again the distribution belt until obtaining of a value between **145 and 185 Hz.**

ATTENTION!

If the value of 275 Hz is exceeded, the belt can not be used and its replacement is necessary.

Obligatory tighten the rollers nut **0** to the required moment of **5 daNm**.

If not, this may unloose risking the engine damage.

REMARK:

Once a belt is dismounted, this is not to be remounted, but replaced.

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ROCKERS ADJUSTMENT

Adjustment to be performed only with cold engine.
The adjustment values are:
- admission 0.10 mm
- exhaust 0.25 mm

1. Camshaft gear without marks.

a) Method called " in balance"

Cylinders valves in balance (exhaust end, admission beginning)	Adjust cylinder rocker
1	4
3	2
4	1
2	3

b) Method called " exhaust valve maximum opened"

Rotate the engine (clockwise, as seen from distribution) until the exhaust valve of the cylinder 1 is reaching to the maximum opening and then adjust the clearance at the admission valve of the cylinder 3 and the valve clearance of the cylinder 4.

Proceed in the same way also for the others cylinders as per next table:

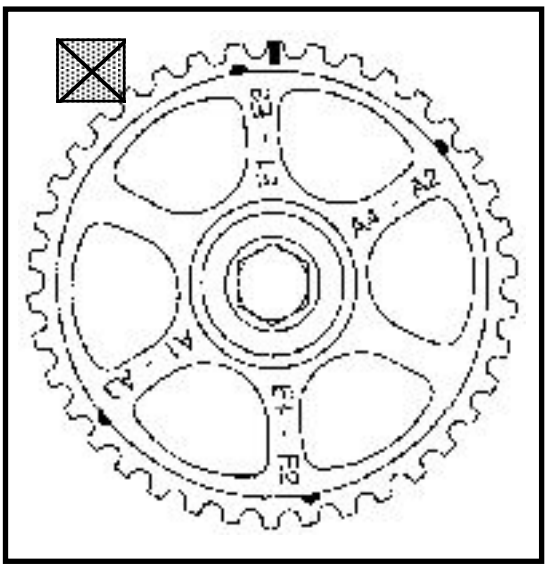
Exhaust valve Maximum opened	Admission valve to be adjusted	Exhaust valve to be adjusted
1	3	4
3	4	2
4	2	1
2	1	3

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2. Camshaft gear with marks

Rotate the engine until is reaching the Upper Dead Point (cylinder 1 at ignition), and then continue until first item:

- adjust: **exhaust 1**
  exhaust 3
- at second item:
  - adjust: **admission 1**
    admission 3
- at third item:
  - adjust: **exhaust 2**
    exhaust 4
- at fourth item:
  - adjust: **admission 2**
    admission 4



Continue to mount:

- cylinder head cover equipped with a new cylinder head gasket, tighten the attachment screws to the required moment of **1 daNm;**
- water inlet pipe and the oil dipper guide (with new sealing rings);
- distribution casings;
- crankshaft pulley or pulleys; tighten the pulley hub screw to the required moment of **2 daNm, then to 68° ± 6°.**

ATTENTION!
If the screw is not properly tighten, this may unloose, which may lead to the oil pump non-drive and to the distribution derangement, consequently to engine damaging.

- intake manifold and exhaust manifold, tighten the attachment screws to the required moment of **2.5 daNm;**
- compressor and/or power steering support;
- alternator (see chapter **16"Alternator**");
- compressor - for vehicles equipped with air conditioning (see chapter **62 "Air conditioning");**
- power steering pump - for vehicles equipped with power steering (see chapter **36 "Power steering pump");**
- belt or accessories belt according to the method described in chapter **07" Accessories belt tensioning".**

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TIGHTENING MOMENTS (daNm)	▽
Lower casing screws	1
Wheels screws	7,5
Tie-rod attachment nut	7,5
Tie rod attachment screw	2,7
Anti-roll connecting rod attachment screw (on frame)	6,2
Anti-roll connecting rod attachment screw (on gearbox)	10,5

DISMOUNTING

Place the vehicle on a two-column elevator.

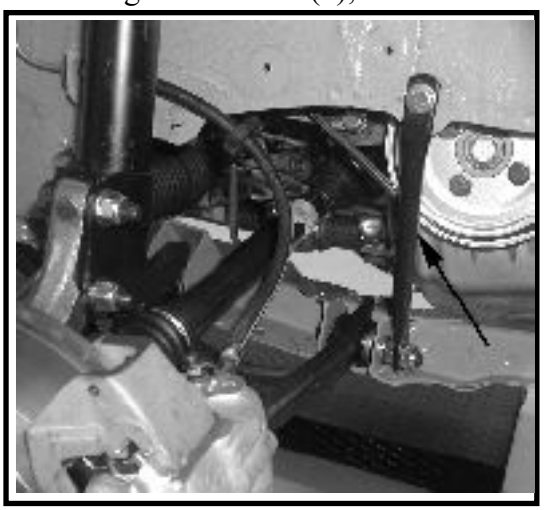
Disconnect the battery.

Drain the oil from engine.

Dismount the engine shield.

Dismount :

- front right wheel;
- front right wheel side fairing;
- right side tie-rod (**1**);



- thermal protection screen;
- descending tube (see chapter **19 "Exhaust"**).
- Anti-roll connecting rod (**2**);



Dismount the lower casing attachment screws.

In order to dismount the screws from crankshaft pulley side, a cardanic joint is to be used.

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REMOUNTING

Clean the lower casing and the cylinders casing of old sealant material.

Apply a layer (**D**) of **RHODORSEAL 5661** of about **3 mm** thick, according to the bellow drawing.

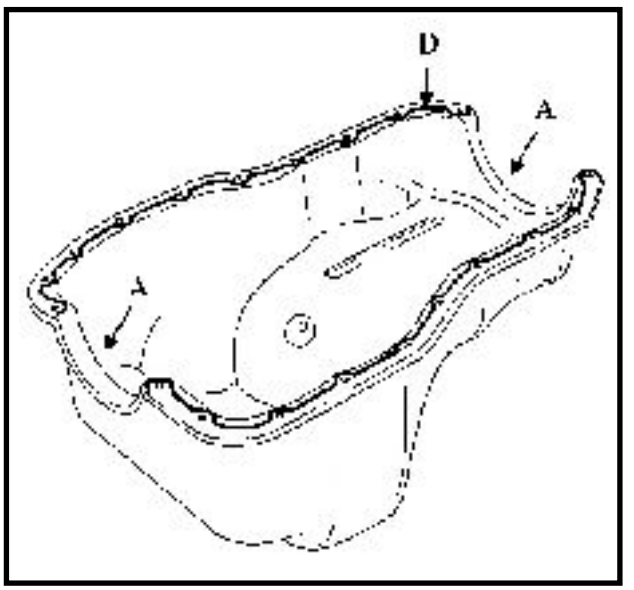
Do not forget the replacement of the two half-moon gaskets from casing ends (A).

Perform the dismounting operations in the reverse order.

Tighten the screws and nuts to the required moment.

REMARK:

Relative displacement between lower casing and cylinders casing, on the assembling surface with the gearbox, must not exceed 0.3 mm.



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TIGHTENING MOMENTS (daNm)	▽
Oil pump attachment screws	**2.5**
Oil pump cap attachment screws	**1**

DISMOUNTING

Drain the oil from the engine.
Dismount:
- lower casing (see chapter **10"Lower casing on vehicle"**).

Dismount the oil pump attachment screws on casing.
Dismount the drive chain from the oil pump gear.
Dismount the oil pump cap.
Check the gears clearance in the oil pump (see chapter **10" Engine assembly")**

REMOUNTING

Perform the dismounting operations in the reverse order;
Fill up engine with oil
Check the oil pressure at **80 °C**:

At idling **1 bar;**
At 4000 rot/min **3 bar.**

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TIGHTENING MOMENTS (daNm)	
Support attachment screws	4
Support upper attachment screws	2

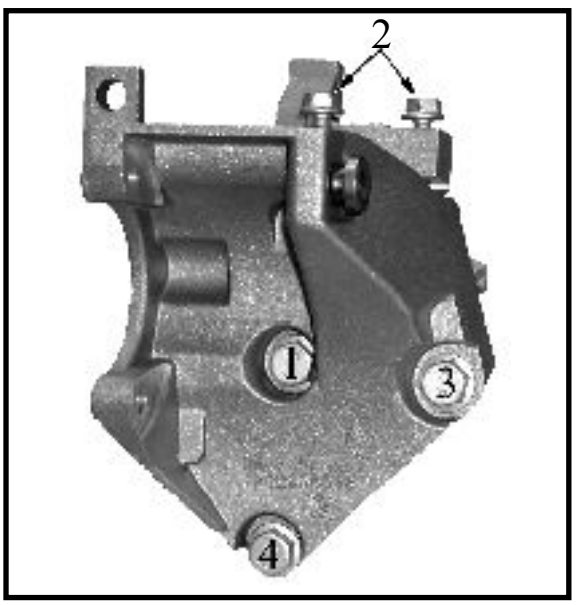
DISMOUNTING

Place the vehicle on a two-column elevator.

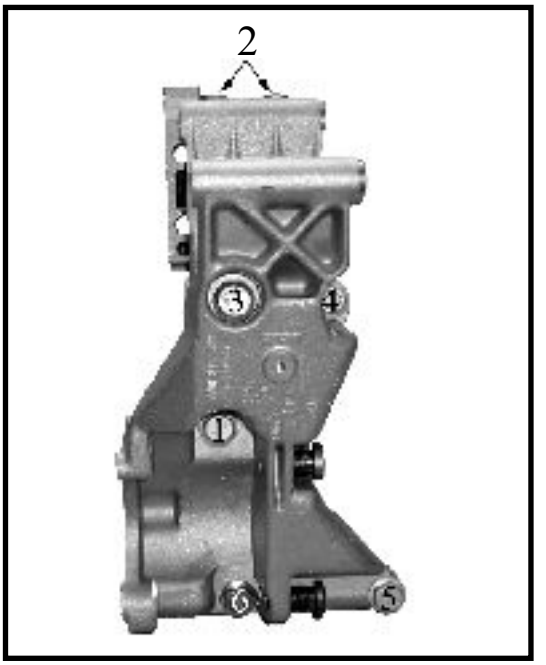
Disconnect the battery.

Dismount:

- compressor (see chapter **62"Air conditioning**") for vehicles equipped with air conditioning unit;
- power steering pump (see chapter **36 " Power steering pump**") for vehicles equipped with power steering.
- Dismount the support attachment screws.



Support AD



Support AC/AD

REMOUNTING

Position the support and pre-tighten the central screw (**1**) to the required moment of **0.25 daNm.**

Mount the others attachment screws.

Tighten to the required moment observing the sequence shown in the drawing.

Remount the other elements by performing the dismounting operations in the reverse order.

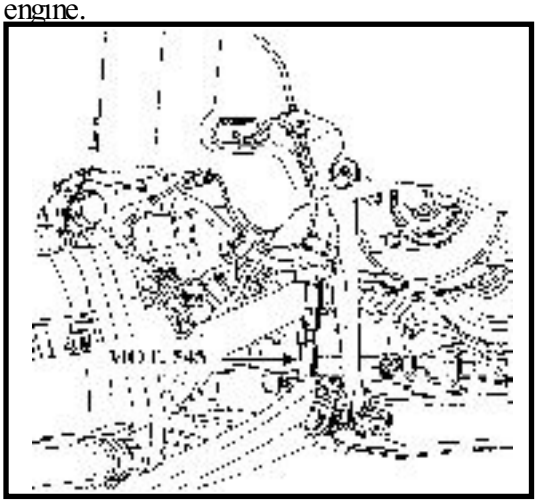
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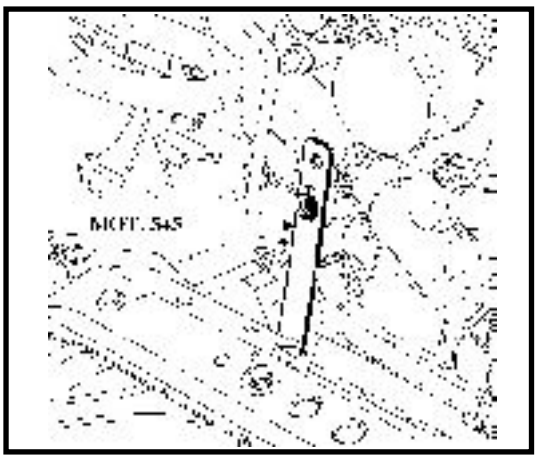
TIGHTENING MOMENTS (daNm)	
Wheels screws	7.5
Crankshaft pulley screw	$2+68^0 \pm 6^0$
Tensioning roller nut	5
Right support screws	6.2
Hydro-elastic buffer nut	3.7

DISMOUNTING

Place the vehicle on a two-column elevator.

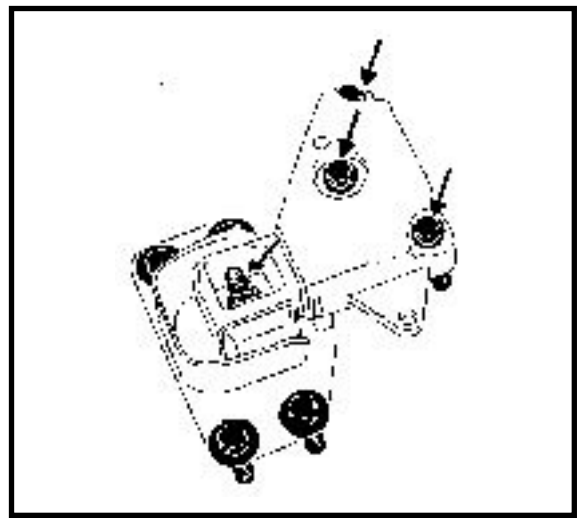
Mount between chassis and cylinder casing, the **MOT. 545** device for sustaining front part engine.



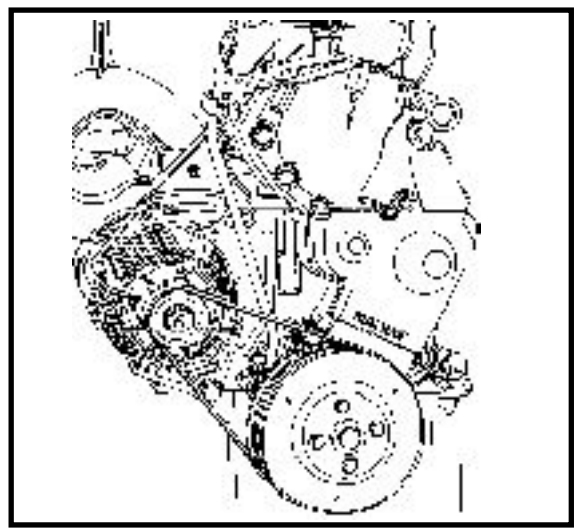


Dismount:

- right front wheel;
- right pendular suspension support;



- accessories belt (for vehicles provided with air conditioning and/or power steering;
- alternator's belt;
- crankshaft's pulley or pulleys and their hub;
- distribution casings.



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Set the engine at setting point (see method described in chapter **10 " Engine assembly", page 10 –19).**

Loosen the tensioning roller nut.

Dismount the distribution belt.

REMOUNTING

Mount a new distribution belt.

Tension the distribution belt to a value of **145 – 185 Hz** by means of the **MOT 1505** device (see the method described in chapter **10 " Engine assembly", page 10 –33**).



Perform the dismounting operations in the reverse order.

Tighten to the required moment the screws.

Remount the pulley for accessories belt (for vehicles equipped with air conditioning and/or power steering).

Obligatory tighten the screw of the crankshaft pulley hub to the required moment of **2 daNm** plus an angle of **68° ± 6 °**

Mount and tension the alternator belt and the accessories belt, observing the method for belts tensioning described in chapter **07 " Accessories belts tensioning ".**

The belts tensioning values are:

Alternator belt	**253 – 273 Hz**
Compressor belt	**150 – 155 Hz**
Power steering pump belt	**151 – 161 Hz**
Compressor / power steering pump belt	**214 – 230 Hz**

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Necessary Special Tools	
MOT 1202-01	Pliers for elastic collars
MOT 1505	Belt tensioning measurement device
MOT 484	Jackets clamping device
	Wrench for angle tightening
	Wrench for "CLIC" collars

TIGHTENING MOMENTS (daNm)	▽
Tensioning roller nut	5
Crankshaft pulley screw	2 + 68° ± 6°
Pendular suspension support screws	6.2
Hydro-elastic buffer nut	3.7
Wheels screws	7.5
Cylinder head screws (see cylinder head tightening method)	

DISMOUNTING

Place the vehicle on a two-columns elevator.

Disconnect the battery.

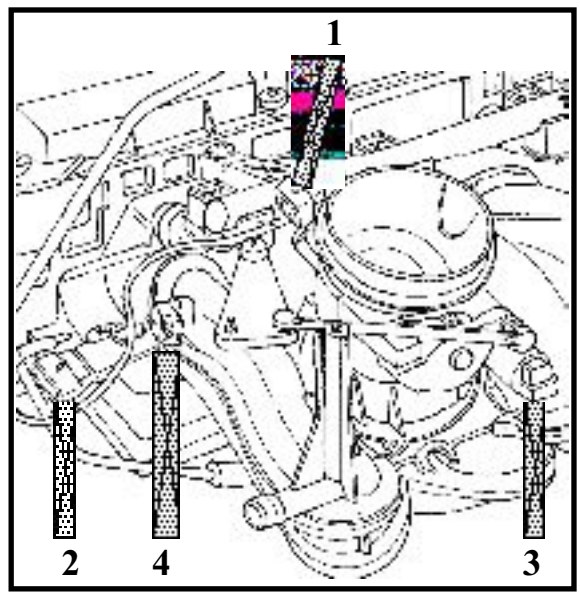
Drain the cooling circuit by the radiator lower part hose.

Dismount the distribution belt (see chapter **11 " Distribution belt ")**

Dismount the air filter

Disconnect:

- acceleration cable from the valve control lever;
- valve position potentiometer connector (**1**);
- atmospheric pressure sensor connector (**2**);
- step-by-step engine connector (**3**);
- temperature sensor connector (**4**) from the inlet manifold

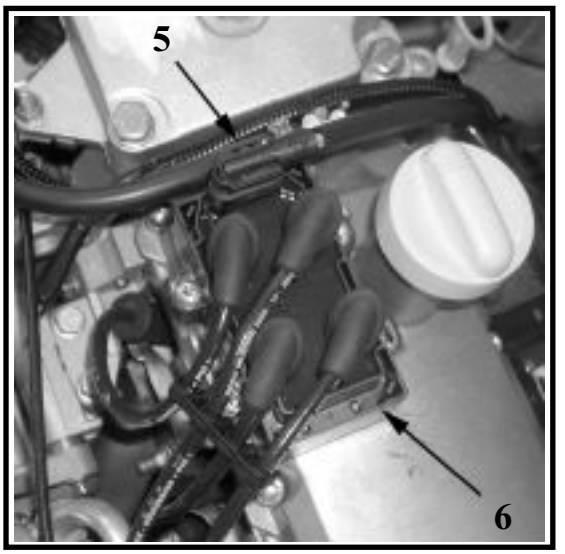


Disconnect:

- induction coil connector (**5**);
- fuel hoses (supply/return);
- injectors connectors;
- spark plugs cables.

Dismount the three attachment screws of the induction coil (**6**).

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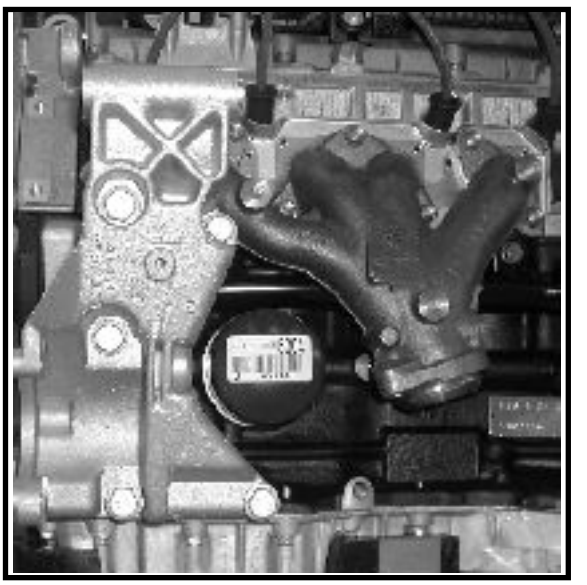


Dismount the hoses from the thermostat support.



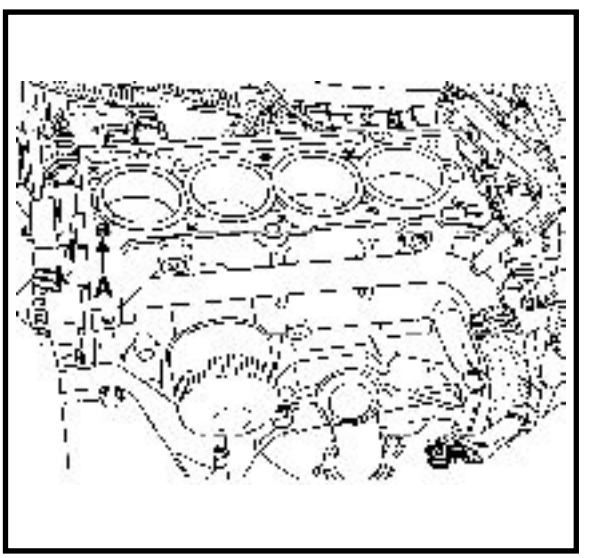
Dismount :

- compressor (see chapter **62 "Air conditioning"**);
- power steering pump (see chapter **36" Power steering pump**);
- alternator (see chapter 1**6 "Alternator"**);
- oil gauge guide;
- thermal screen;
- multi-purpose support;
- exhaust manifold.



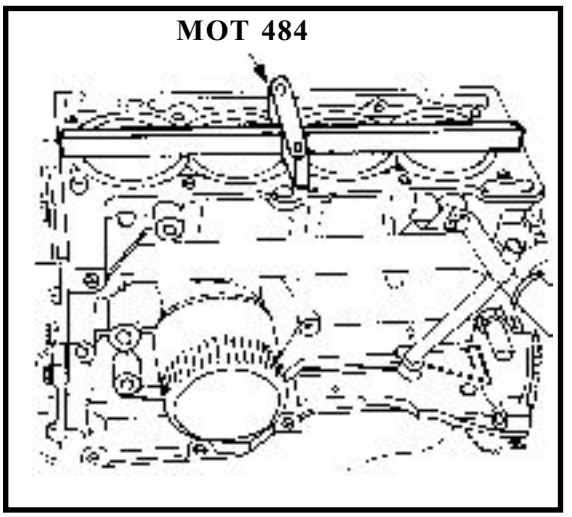
Dismount:

- cylinder head screws except the screw corresponding to **A** position, which is to be loosen, then rotate the cylinder head around the screw remained not-dismounted;
- cylinder head.



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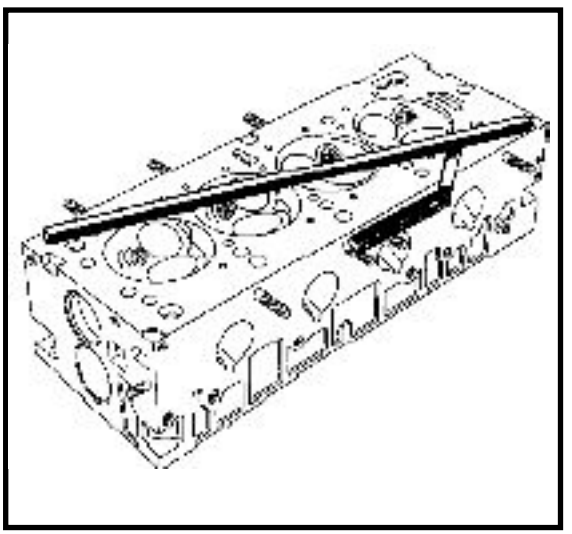
Mount the **MOT 484** device or **MOT 588** clamps for jackets maintenance.



Check the cylinder head smoothness using a lineal and a set of templates.

The maximal admissible deformation: **0.05 mm**.

The cylinder head is not to be rectified!



REMOUNTING

Clean the gasket-seating surface of the cylinder head.

Mount the cylinder head with a new gasket.

Perform the dismounting operations in the reverse order.

Tighten the cylinder head observing the cylinder head tightening method described in chapter **10 "Dismounting-Remounting"**.

Mount the distribution belt (**see chapter 11 "Distribution belt"**).

Adjust the tilters.

Perform the cooling circuit filling and purging (see chapter **19 " Filling and Purging"**).

REMARK:

At each operation implying battery dismounting,
when reconnecting it, introduce the radio code that is written on the vehicle-purchasing invoice.

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Vehicle	Gearbox	ENGINE					
		Type	Index	Bore (mm)	Stroke (mm)	Cylinder capacity (cm^3)	Volumetric ratio
SOLENZA	JH3-051	E7J	262	75,8	77	1390	9,5/1

Engine		Verificări efectuate la ralanti *					Fuel
			Emisii poluanti				
Type	Index	Revolution (RPM)	CO(%) (1)	CO_2(%)	HC (ppm)	Lambda (λ)	(minimum octane number)
E7J	262	750 ± 50	0,5 max	14,5 min	100 max	0,97.... 1,03	Unleaded fuel (CO95)

(**1**) The **CO** value at **2500 rpm** must be maximum **0.3 %**.

〈 For a water temperature of over **80 ° C** and after a steady value of **2500 rpm during 30 sec**; after this, return to idle running and perform measurement of polluting emissions level.

The water and air temperature sensors are of CTN type (negative coefficient of temperature) and their resistance variation subject to the temperature, has the following evolution:

T (^{0}C)	25^{0}C	50^{0}C	80^{0}C	110^{0}C
Air T sensor R (Ohm)	2058 - 2045	816 - 804	315 - 303	141 - 129
Water T sensor R (Ohm)	2300 - 2100	850 - 750	275 - 290	110 - 120

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DENOMINATION	PARTICULARITIES		
UCE injection	SIEMENS - Connector with 90 ways		
Injection system	Sequential multi-point		
Ignition	Static with double coil Ignition controled by UCE injection	PINI	R (W)
		R_{A-C} R_{B-C} R_{1-4} R_{2-3}	0,52 Ω ± 10% 0,52 Ω ± 10% 7,2 KΩ ± 10% 7,2 KΩ ± 10%
Detonation sensor	Sagem – piezo-electric type Tightening moment =2 daNm.		
RPM sensor	ELECTRICFIL or SIEMENS R = 200……270 Ù		
Spark plugs	SAGEM –Type RFC 52 LZ Tightening moment= 2.5 –3 daNm		
Fuel filter	For de-polution norm 1504 Mounted under the vehicle in front the fuel tank. Replacement at every scheduled checking For EURO 0 and EURO 96; Inside the fuel tank, attached on the fuel pump assembly. Do not replace it separately.		
Feeding pump	Immersed in the fuel tank For de-polution norm 1504: - Flow: 1.3 l/min. Pressure: 3 bars at 12 V tension. For EURO 0 and EURO 96: - Pressure: 3.5 bars at 12 V tension.		
Pressure regulator	For de-polution norm 1504: Regulator attached on the injection ramp. Adjusted pressure : 3 ± 0.2 bars at zero depression 2.5± 0.2 bars at 500 mbars depression For EURO 0 and EURO 96: Mounted inside the fuel tank on the fuel pump assembly. Adjusted pressure : 3.5 bars		
Electro-magnetic Injectors	SIEMENS R = 14.5 Ù ± 5 % AT 20 ° C Supply +12V		
Step by step engine	R_{A-D} = 53 Ù 10% at 25° C R_{B-C} = 53 Ù 10% at 25 °C		

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<table>
<tr><th>DENOMINATION</th><th>PARTICULARITIES</th></tr>
<tr><td>Potentiometer with valve</td><td>
<table>
<tr><th>Resistance / Pins</th><th>At idling running</th><th>At maximum acceleration</th></tr>
<tr><td>A - B</td><td>1200 Ω ± 20%</td><td>1200 Ω± 20%</td></tr>
<tr><td>A - C</td><td>1400 Ω ± 20%</td><td>2000 Ω± 20%</td></tr>
<tr><td>B - C</td><td>2000 Ω ± 20%</td><td>1200 Ω± 20%</td></tr>
</table>
</td></tr>
<tr><td>Can purging valve</td><td>SAGEM
Supply voltage = + 12V
R = 26 W ± 7% at 23 °C</td></tr>
<tr><td>Oxygen sensor</td><td>NGK
For EURO 96 : one oxygen sensor mounted upstream of the catalyst.
Generated voltage at 850 °C:
- rich mixture : min 850 mV
- poor mixture : max 100 mV
Heating resistance at 23 °C : 6 W ± 1
For EURO 00 : two oxygen sensors mounted one upstream and one downstream of the catalyst.
Generated voltage at 850 C:
- rich mixture : min 850 mV
- poor mixture : max 100 mV
Heating resistance at 23 °C : 3.3 W ± 0,7</td></tr>
<tr><td>Atmospheric pressure sensor</td><td>DELCO ELECTRONICS
Stopped engine – shows atmospheric pressure 950.....1050 mbars
Idling running engine – 330 ± 40 mbars</td></tr>
</table>

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DISMOUNTING

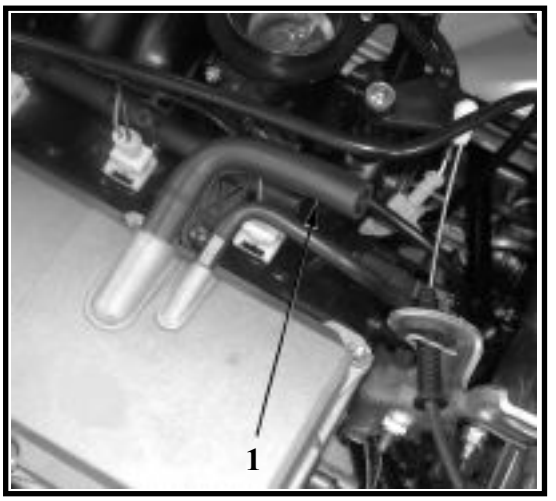
Disconnect the battery.

Dismount the air inlet duct from the battery protection screen.

Dismount the air filter four attachment screws.

Disconnect the hose (**1**) for oil vapors re-aspiration, between the cylinder head cover and the air filter.

Remove the air filter.



Disconnect:

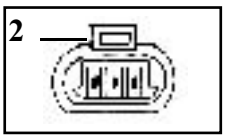
〈 Dismount acceleration cable (disconnect the cable end from the body control lever and extract it from the support sleeve)

〈 connectors

I – of the step-by-step engine



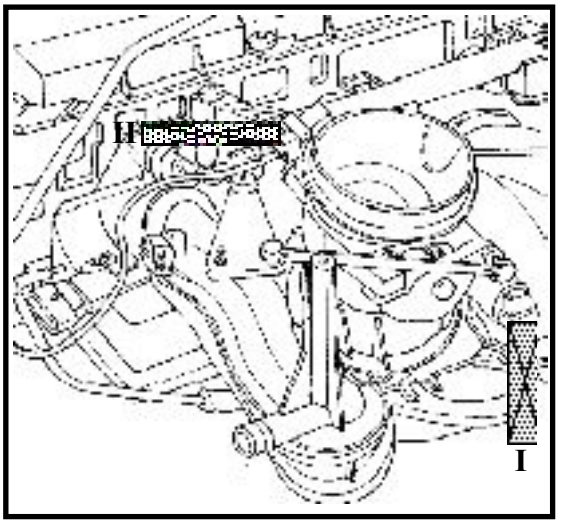
II – of the body potentiometer



(pull upwards the no.2 clamp and disconnect the connector).

Disconnect the body control lever

Dismount the valve body.



REMOUNTING

Replace the valve body gasket.

Perform the dismounting operations in the reverse order.

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TIGHTENING MOMENT (daNm)	▽
Inlet manifold nuts and screws	2,5

DISMOUNTING

Place the vehicle on a two-columns elevator.

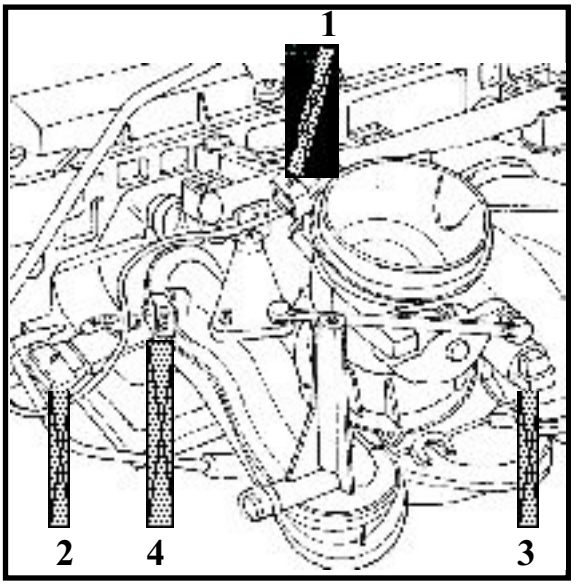
Disconnect the battery.

Dismount:

- the air filter assembly;
- the acceleration cable from the body control lever;
- the injection ramp (see chapter **13 "Injection ramp"**).

Disconnect the electric connectors:

- body position potentiometer (**1**)
- atmospheric pressure sensor (**2**)
- step-by-step engine (**3**);
- air temperature sensor (**4**)



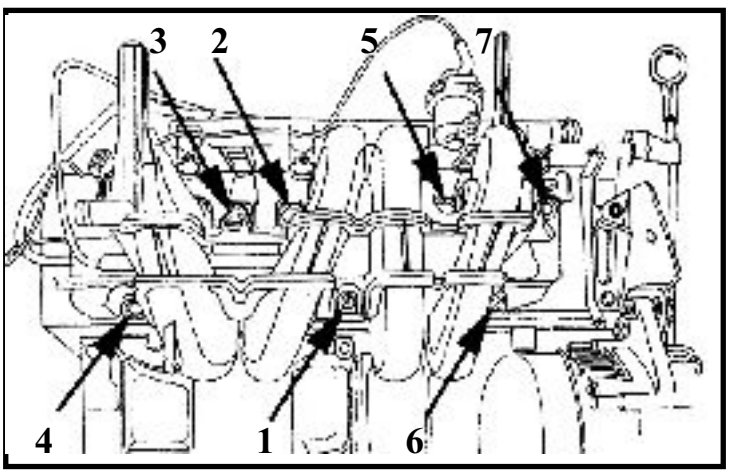
Disconnect the fuel supply ducts (supply and return)

Disconnect the petrol vapors re-aspiration hose from the inlet manifold.

Uncouple the body control lever and remove the valve body.

Dismount the attachment nuts and screws of the inlet manifold.

Extract the inlet manifold



REMOUNTING

Replace the inlet manifold gaskets.

Tighten at the required moment the inlet manifold nuts and screws, observing the sequence shown in the drawing.

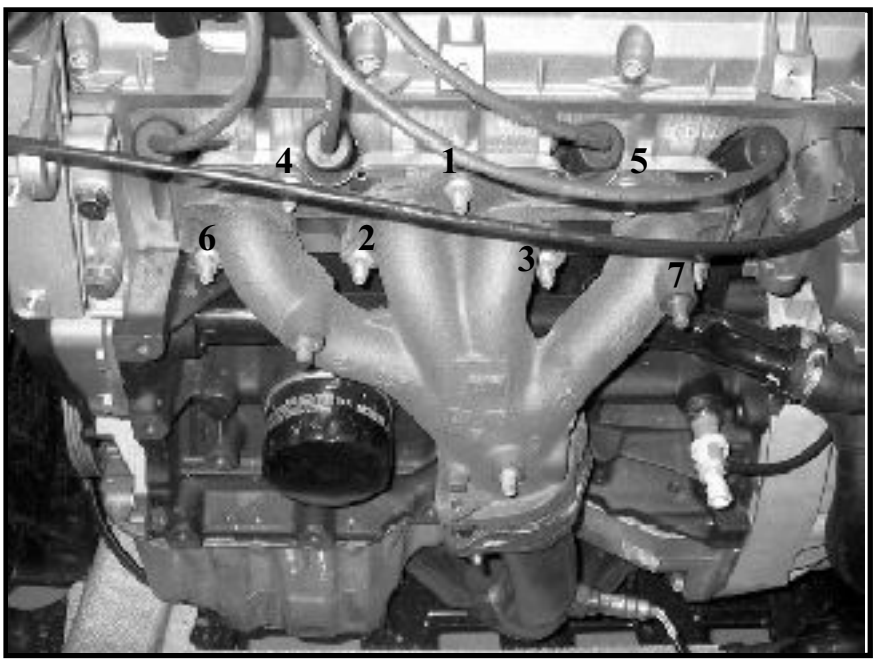
Perform the dismounting operations in the reverse order.

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TIGHTENING MOMENT (daNm)	
Exhaust manifold attachment nuts	2.5
Downward pipe attachment nuts on Exhaust manifold	2

DISMOUNTING

Dismount the multi-purpose support (see chapter **10 " Multi-purpose support")**
Dismount the thermal screen.
Dismount the descending pipe attachment nuts on the exhaust manifold
Dismount the exhaust manifold attachment nuts.
Remove the manifold and its gasket.



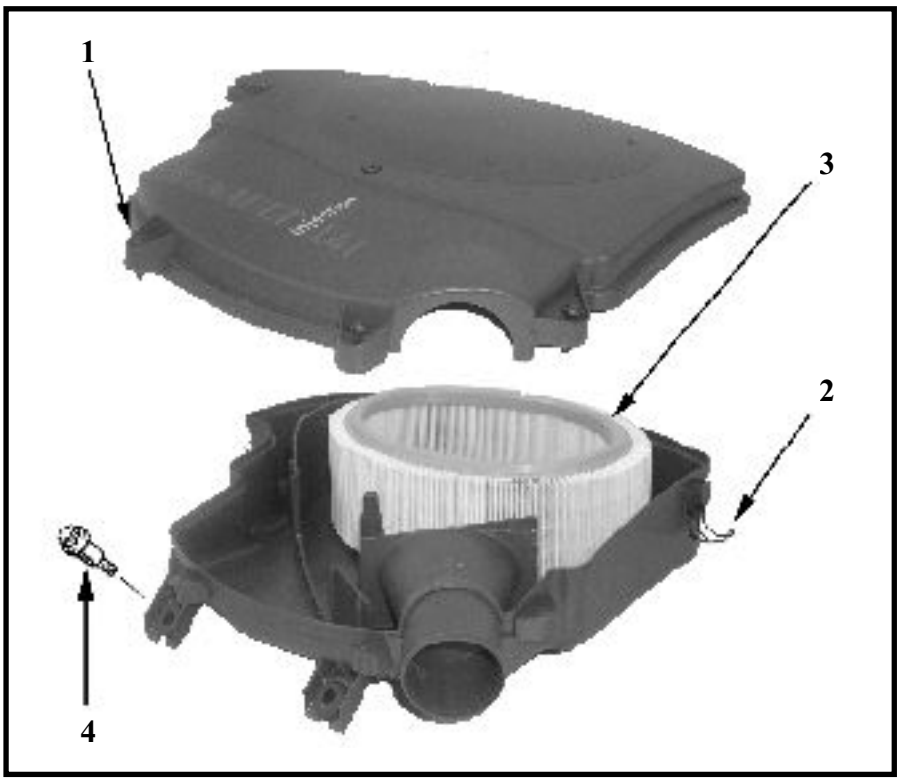
REMOUNTING

Perform the dismounting operations in the reverse order.
Tighten at the required moment, the exhaust manifold attachment nuts, observing the sequence shown in the drawing.

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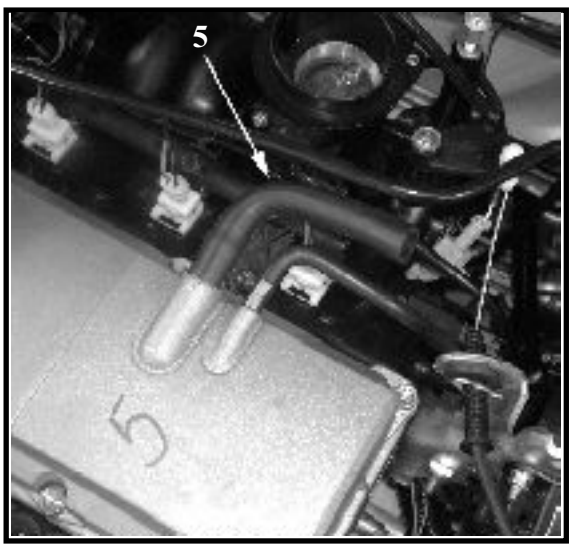
FILTER ELEMENT REPLACEMENT

Dismount the attachments screws (**1**) of the air filter cover.
Detach the attachment clamps(**2**).
Remove the cover and replace the filter element(**3**).



DISMOUNTING OF THE AIR FILTER

Dismount the air filter inlet hose
Dismount the four-attachments screws (**4**) of the air filter on the cylinder head cover and inlet manifold
Lift the air filter and disconnect from the filter, the oil vapors re-aspiration hose (**5**).



REMOUNTING

Perform the dismounting operations in the reverse order.

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REMARK:
Only vehicle observing the de-pollution norm EURO 00 are equipped with shock sensor.

PURPOSE

To avoid the fire hazard due to the fuel losses, that may occur in case of an accident.

OPERATION

The hazard sensor(**1**) is placed in the engine compartment, being mounted on the left shock absorber column.

In case of shock, the sensor ball leaves its lodgement, thus interrupting the electric circuit between the control relay of the petrol electric fuel pump and the electric petrol pump.



HAZARD SENSOR RE-STARTING

The upper part of the hazard sensor is to be pushed to re-position the ball into its lodgement and thus to re-start the sensor.

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ATTENTION !

When opening the fuel circuit, protect by means of a gauze piece against petrol splashing due to residual pressure.

DISMOUNTING

Disconnect the battery.
Dismount the air filter.
Disconnect:

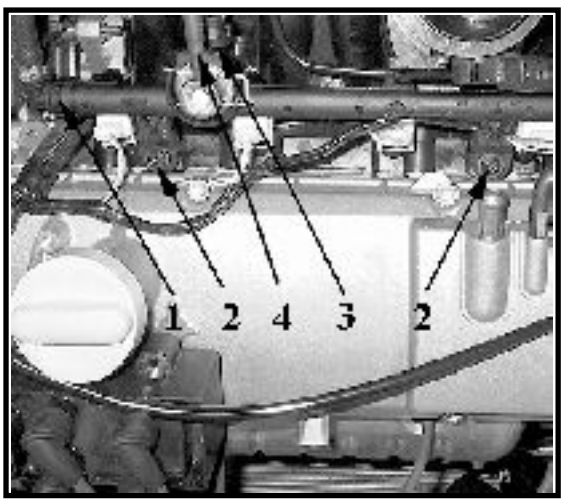
- pipe **1** for fuel supply;
- pipe **3** for fuel return;
- pipe **4** of the pressure controller.

REMARK:

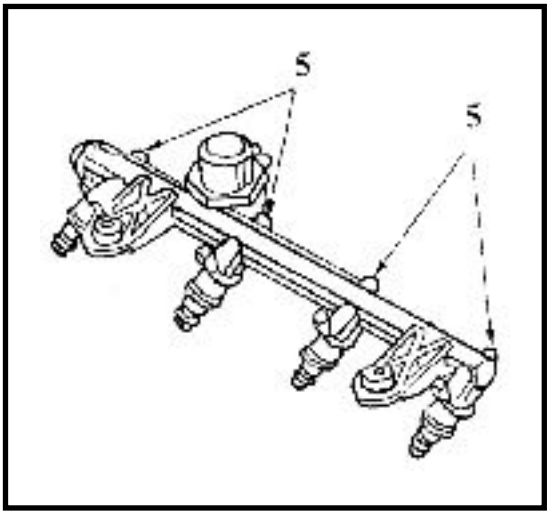
For EURO 00 and EURO 96, the pressure controller and return pipe are placed in the fuel tank.

Dismount the attachment screws (**2**) of the fuel ramp.

Dismount the ramp.



In order to dismount an injector, retrieve the clip **5,** and then extract the injector.



REMOUNTING

Replace the annular gaskets from the injectors bottom; if the injector has been dismounted, the gasket from the injector's head will be also replaced.

In order that petrol fuel supply and return connection are correctly mounted, a "**clic**" must be heard when connecting.

Perform the dismounting operations in the reverse order.

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PUMP CAPACITY CHECKING

SPECIAL TOOLS
Pliers for "CLICK" collars.

IMPORTANT

During this operation, it is obligatory :

- not- smoking and not bringing incandescent objects at the working place;

- protect against petrol splashing due to residual pressure remained in piping during their dismounting.

VEHICLES WITH FUEL RETURN

The checking of the fuel pump capacity is recommended to be performed by the fuel return hose connected on the level transmitter-pump assembly

Disconnect the fuel return pipe (**1**).



Connect on the pipe a hose, one extremity being introduced in a calibrated vessel, from **0 to 2000 ml.**

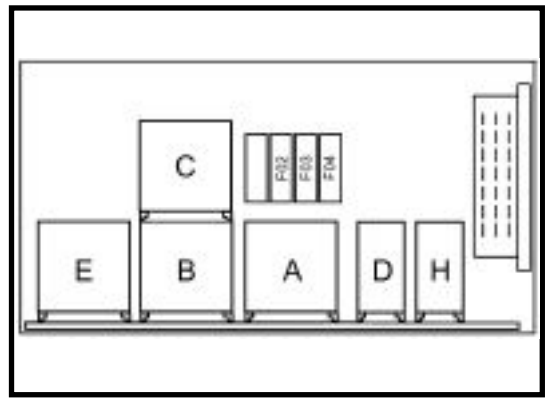
VEHICLES WITHOUT FUEL RETURN

Disconnect the supply pipe from the fuel electric pump assembly

Connect on the pipe a hose, one extremity being introduced in a calibrated vessel from **0 to 2000 ml.**

Start the fuel electric pump by bridging the **3** and **5** terminals of the fuel pump **H** relay (placed in the fuse and relays box from engine compartment)

The pump output must be minimum **1.3 l/ min at 12 V.**



If the output is not correct, check the pump supply voltage (capacity is decreasing by approximate **10%** for a voltage drop of **1 V**).

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SUPPLY PRESSURE CHECKING

SPECIAL TOOLS	
MOT 1311 – 01	Petrol pressure checking kit
MOT 1311 – 04	J - connection
MOT 1311 – 06	Device for connections dismounting.

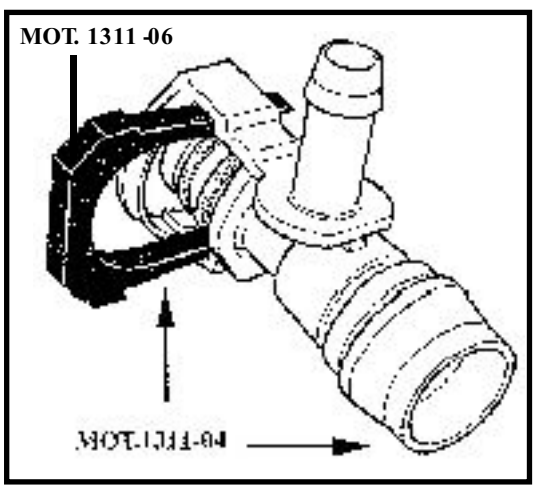
ATTENTION !

When opening the fuel circuit, protect by means of a gauze piece against petrol splashing due to residual pressure from the supply circuit.

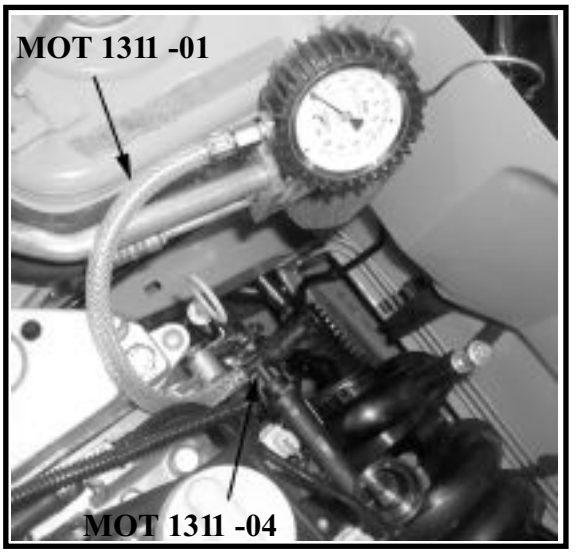
Dismount the air filter.

Disconnect the fuel supply hose.

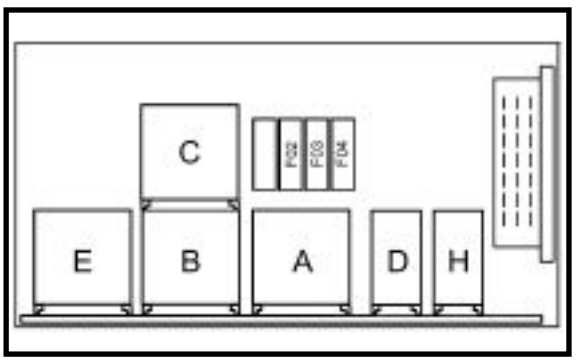
Connect the **MOT 1311-04** device on the ramp, and then reconnect the fuel supply piping to the connection.



Mount the manometer **0 ÷ 10 bar** and the flexible hose **MOT 1311 – 01**.



Bridge the terminals **3** and **5** of the fuel pump relay **H**, placed in the fuse and relays box.

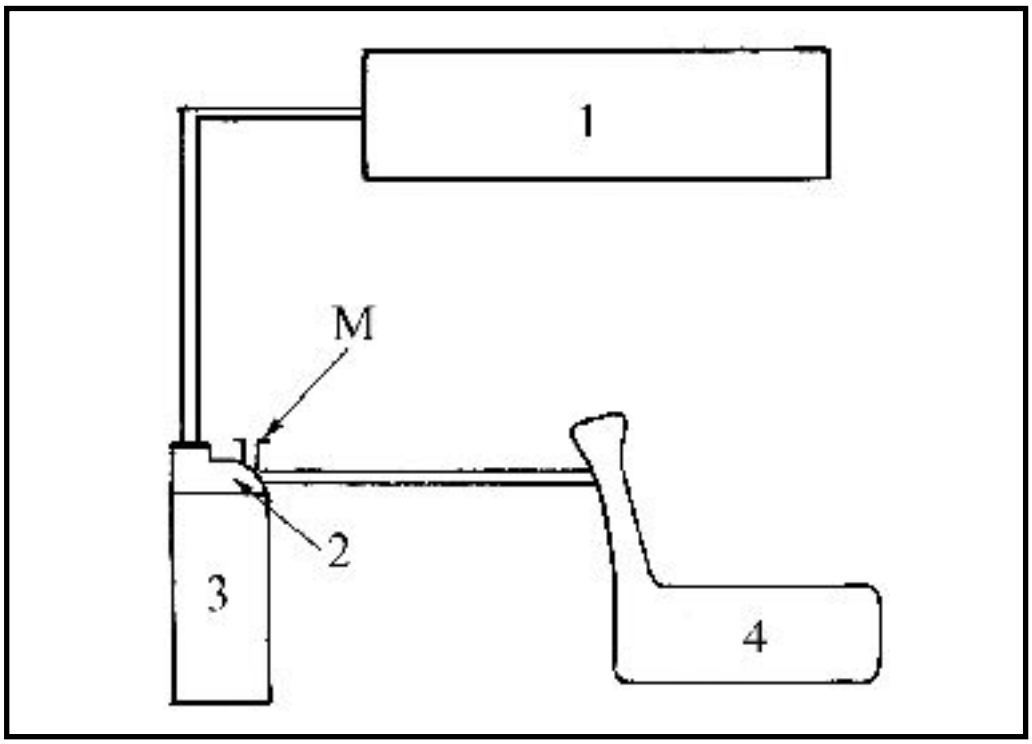


The measured pressure must be **3.5 bars.**

For vehicles with fuel circuit without return (controller mounted on pump), the pressure is constant.

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THE CIRCUIT OPERATING DIAGRAM



1 INTAKE MANIFOLD
2 CAN PURGING VALVE
3 CARBON CAN
4 FUEL TANK
M COMMUNICATION CONNECTION WITH ATMOSPHERE

ATTENTION !
For a normal operation of the circuit, the M connection must be clogged.

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OPERATING PRINCIPLE

The communication of the tank with the atmosphere is done through the carbon can.

The petrol vapors are retained when they are passing through the active carbon from the carbon can.

By means of a purging valve controlled by a RCO signal issued by UCE injection, the petrol vapors are re-aspired through piping by the intake manifold.

The flow section of the purging valve is variable, subject to the balance given by the magnetic field created by supplying the purging valve coil and the power of the spring ensuring the valve closing.

RE-ASPIRATION CONDITIONS

The can-purging valve is controlled by **pin 4** of the UCE injection, in the moment when:

- water temperature > **20 ° C**;
- air temperature > **10 ° C**;
- engine is running over a certain imposed charge;
- valve potentiometer is not in the position **acceleration pedal not pressed**.

By using the CLIP tester, it is possible the reading of the RCO value (opening cyclic ratio).

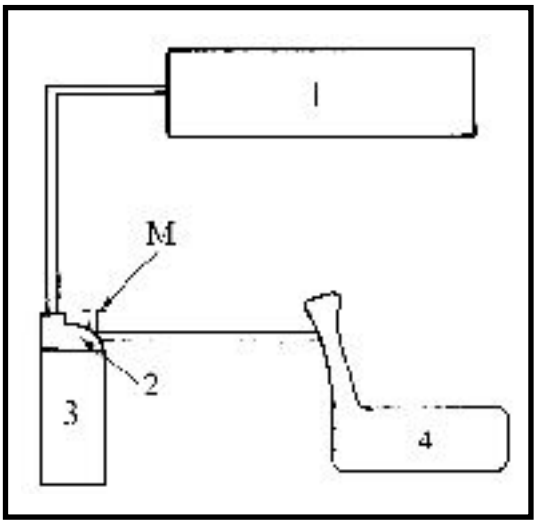
The purging valve is closed for a value smaller than **0.7%.**

OPERATION CHECKING OF THE CAN PURGING VALVE

A defective operation of the petrol vapors re-aspiration system, may lead to an unstable idling or even to the engine stopping.

First of all, check:

- circuit conformity (see the operating diagram)
- piping condition between the can and the fuel tank (sealing circuit clogging).



The (**B**) piping coming from the tank shall be clogged.

Connect a manometer **(-3…+3 bar)** at the (**M**) connection for communication with the atmosphere and check at idling if there is depression.

Is there depression?

YES – Set contact off. Using a vacuum pump, apply a **500 - mbar** depression at the (**A**) piping connection of the purging valve. The value of the red depression must not have a variation more than **10 mbar within 10 seconds.**

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Petrol vapors re-aspiration

If the pressure is varying more than 10 mbar, then the purging valve is defective and the carbon can assembly is to be replaced.

NO – When conditions for purging valve controlling are accomplished and this one is not opening, check its controlling electric circuit (between UCE injection **pin 4** and purging valve), from point of view continuity or short-circuit.

The **RCO** value of the signal received by the purging value from the computer, may be red by means of the CLIP tester in **PR 023**. The minimal value is **0.7 %** (corresponding to the closing position of the purging valve).

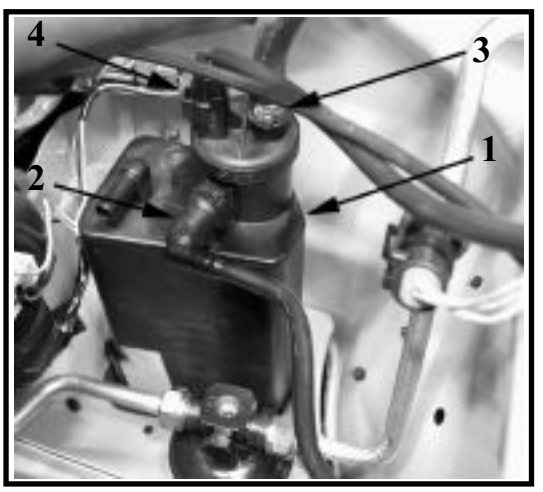
LOCATION – DISMOUNTING

The carbon can assembly (**1**) with incorporated purging valve, is placed on the front right wing lining.

Disconnect the piping (**2**) coming from the tank and piping (**3**) to the engine.

Disconnect the electric connector (**4**) of the purging valve.

Remove the can from the attachment support.

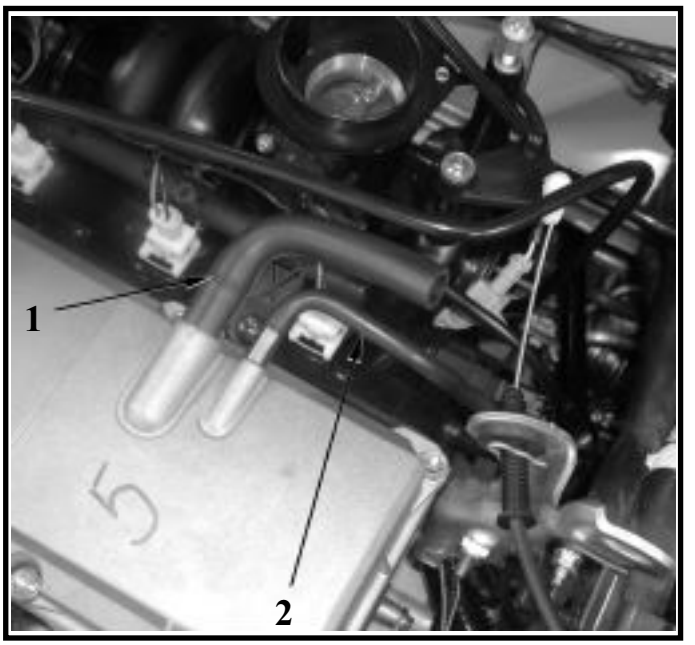


REMOUNTING

Perform the dismounting operations in the reverse order

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CIRCUIT PRESENTATION



1 – Hose for oil vapors re-aspiration, connected upstream of valve body between cylinder head cover and air filter case (the circuit is used for middle and big charges).

2 – Hose for oil vapors re-aspiration, connected downstream of valve body between cylinder head cover and intake manifold.

For a correct operation of the oil vapors re-aspiration system, the hoses must be kept clean and in good condition.

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IDENTIFICATION

ENGINE	ALTERNATOR	INTENSITY
E7J - 262	VALEO A11 VI 87	75A
	VALEO A13 VI 212	80A

CHECKING

After 15 minutes of heating under a **13.5 V** tension.

ENGINE RPM (rot/min)	ALTERNATOR 75A (A)	ALTERNATOR 80A (A)
1000	46	54
2000	68	75
3000	71	80
4000	72	82

OPERATION/DIAGNOSTIC

These vehicles are equipped with alternators with internal ventilation, incorporated voltage regulator, and charging indicator on the instrument panel, which must operate as follows:

- when the contact is set on, the indicator is on;
- after engine starting, the indicator is off;
- if indicator goes on during engine running, then it shows a charging failure.

INCIDENTS SEEKING

A. The indicator is not lighting when setting the contact on

Check :

- the electric connections must be well done;
- the indicator bulb is not worn (when the circuit is mass connected, the bulb must be on).

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B. The indicator is lighting, engine being running.

This shows a charging failure, which may be caused by:
- alternator driving belt broken, charging wire connected to alternator is broken (+ permanent);
- alternator failure (rotor, stator, diodes or brushes);
- voltage regulator failure;
- an over voltage.

C. Client is claiming a charging defect, but the luminous indicator is correctly operating.

If the adjusted voltage is smaller than **13.5 V**, check the alternator.
The defect may be caused by :
- worn diode;
- broken phase;
- collector wear or coal dust.

VOLTAGE CHECKING

Connect a voltmeter to the battery plugs and read its voltage value.
Start the engine and speed the engine till the voltmeter needle is set on the adjusted voltage.
This voltage must be between **13.5 V and 14.8 V**
Connect maximum of consumers; the voltage must still between **13.5 V and 14.8 V**.

ATTENTION !
In case electric arch welding is performed on vehicle obligatory disconnect the battery and the voltage controller (alternator).

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DIAGNOSTIC

Special tool: **CLIP tester** and accessories for physical measurements.

CHARGING CIRCUIT CHECKING

CLIP tester is enabling the alternator checking, by measuring the generated voltage and intensity with and without electric consumers.

REMARK: The ammeter pliers is of inductive type 0 ÷ 1000 A. Its mounting is done without the battery disconnecting, enabling so the memorized data preserving and the adapting values from the injection computer.

Mount the ammeter directly on the alternator exit, having the arrow directed towards the altemator.

The measurements are to be performed in three stages:

- measurement of the battery voltage with contact taken off;
- measurement without consumers of the adjusted voltage and generated intensity;
- measurement, with maximum of consumers, of the adjusted voltage and generated intensity

The values resulting further to the measurements, lead to following interpretations:

- voltage battery (without consumers) < **12.3 V** – indicating discharged battery.

Without consumers:

- adjusted voltage > **14.8 V** – indicating defective regulator;
- adjusted voltage < **13.2** or charging current < **2A** – indicating charging failure.

With consumers:

- adjusted voltage > **14.8** – indicating defective regulator.
- adjusted voltage < **12.7** – indicating that alternator charging current must be checked compared with its characteristics:

INTENSITY (A) / ENGINE	E7J	
Nominal intensity	**75**	**80**
Minimal intensity, generated by the alternator with maximum of consumers under operation	**51**	**60**

If the measured current is too small, check the following:

- alternator wear (collector brushes, etc);
- battery connections;
- engine mass stripe;
- drive belt tension.

If the measured current is correct and the adjusted voltage is too small, the cause may be:

- the vehicle has too many electric consumers;
- the battery is discharged.

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SPECIAL TOOLS	
MOT 1505	Belt tension measurement device

TIGHTENING MOMENTS (daNm)	
Upper attachment screw	2,2
Lower attachment screw	5

Vehicles without air conditioning.

DISMOUNTING

Place the vehicle on a two-column elevator.

Disconnect the battery.

Disconnect the fuel supply pipe.

Dismount:

- air filter;
- oil gauge pipe;
- alternator upper attachment screw;
- alternator's belt;
- alternator tightening clamp.

Lift the vehicle.

Disconnect the alternator electric connectors.

Dismount the alternator lower attachment screw.

Lower the vehicle.

Remove the alternator through the upper part.

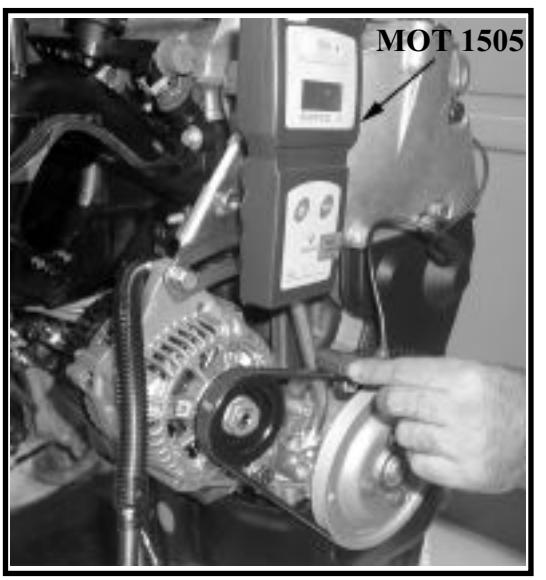


REMOUNTING

Perform the dismounting operations in the reverse order

Tighten the alternator driving belt to **263 HZ ± 10%** by means of the **MOT 1505** device (see the method described in chapter **07 " Accessories belts tightening")**

Tighten to the required moment the alternator's attachment screws.



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Vehicles equipped with air conditioning

DISMOUNTING

Place the vehicle on a two-column elevator

Disconnect the battery

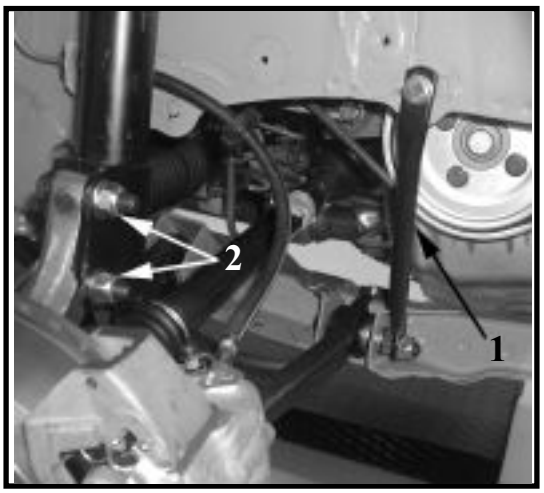
Dismount the alternator upper attachment screw.

Dismount the front right wheel.

Lift the vehicle.

Dismount:

- protection fairing;
- lateral tie-rod (**1**);
- shock absorber two attachment screws (**2**) on steering knuckle.



Swing over the steering knuckle and remove the right planetary transmission from the planetary gear of the gearbox.

Disconnect the electric connectors of the alternator.

Dismount the alternator lower attachment screw.

Dismount the alternator's belt.

Remove the alternator, laterally by the right planetary transmission.

REMARK:

In order to replace the alternator belt, first dismount the accessories driving belt (compressor and/or power steering pump).

REMOUNTING

Perform the dismounting operations in the reverse order.

Tighten the alternator driving belt to **263 HZ ± 10%** by means of the **MOT 1505** device (see the method described in chapter **07 " Accessories belts tightening")**

Tighten to the required moment the alternator's attachment screws.

REMARK:

A dismounted belt is not to be remounted, but replaced.

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IDENTIFICATION

ENGINE	STARTER
E7J - 262	D 907 - M00 2T 13581

DIAGNOSTIC

Special tool : **CLIP tester – TECHNIC** for measuring the battery voltage and the absorbed intensity in the starting stage.

OPERATION ABNORMALITIES THAT MIGHT BE NOTICED

- Battery failure = large voltage drop on starter during engine starting stage.
- Blocked starter = the absorbed current is very high.
- Solenoid failure = the absorbed current is very low.

In order to perform the measurements, it is necessary the engine drive by means of the starter, but stopping the engine starting.

To do that, disconnect the RPM sensor (located on clutch casing).

REMARK:

After performing this checking, erase by means of the CLIP tester, the possible failures memorized by the computer.

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TIGHTENING MOMENTS (daNm)	▽
Starter attachment screws	4.4
Control bar attachment screw on gearbox connecting rod	2.7

DISMOUNTING

Place the vehicle on a two-column elevator.

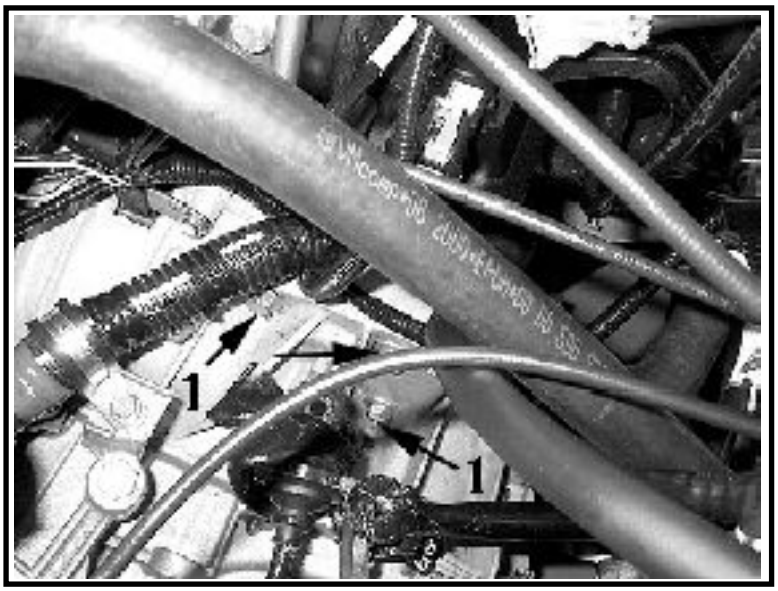
Disconnect the battery.

Dismount the attachment nuts of the gazes exhaust vessel.

Dismount the hoses support attachment nut on the engine lifting support.

Dismount the control bar attachment screw on the gearbox connecting control rod (recover the bushing).

Dismount the starter attachment screws (**1**).



Suspend the vehicle.

Disconnect the starter electric connectors.

Remove the starter through the lower part of the engine compartment.

REMOUNTING

Perform the dismounting operations in the reverse order.

Tighten the screws and nuts to the required moment.

Fill the protection bellows of the gearbox connecting rod joint, with grease **Molycote 33M – 10 ml**.

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PRESENTATION

The system is composed of :
- electronic control unit (UCE injection);
- a double ignition coil;
- four spark plugs;
- spark plugs cables.

OPERATING PRINCIPLE

Subject to the information received from different sensors, but mainly subject to engine RPM and charge, the electronic control unit will establish the advance at ignition, will identify the cylinders being at upper dead point and consequently, will control the corresponding coil to them.

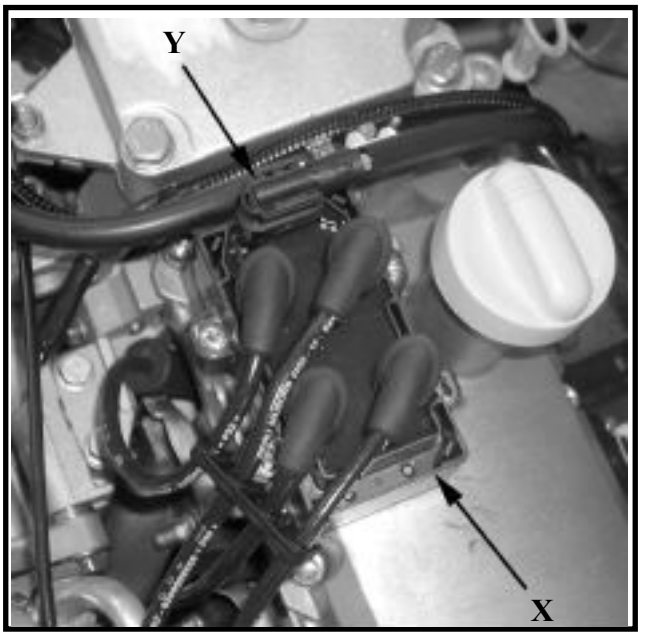
This is producing the spark at the level of the two cylinders being at upper dead point, interrupting the mass connection of the corresponding coil.

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IGNITIONCOIL

The system is including a double coil (X), controlled by the electronic control unit (UCE).

The coil has and electric connector (Y) with four ways, and is simultaneously producing sparks at cylinders 1 and 4, when it is controlled by the pin 32 of the UCE injection and at cylinders 2 and 3, when it is controlled by the pin 1 of the UCE injection.



ELECTRICCONNECTOR

PINS	FUNCTION
A	Controlling ignition to cylinders 1 and 4
B	Controlling ignition to cylinders 2 and 3
C	Supply 12 V (+DC)

CHECKING BETWEENPINS	RESISTANCE
A-C	0.52 ± 10 % Ω
B-C	0.52 ± 10 % Ω
HT- HT	7.2 ± 10 % KΩ

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ENGINE	BRAND	TYPE
E7J - 262	SAGEM	RFC 52 LZ
Distance between electrodes:		0.9 mm
Tighteningmoment:		2.5 - 3 daNm
Flat seat with gasket		

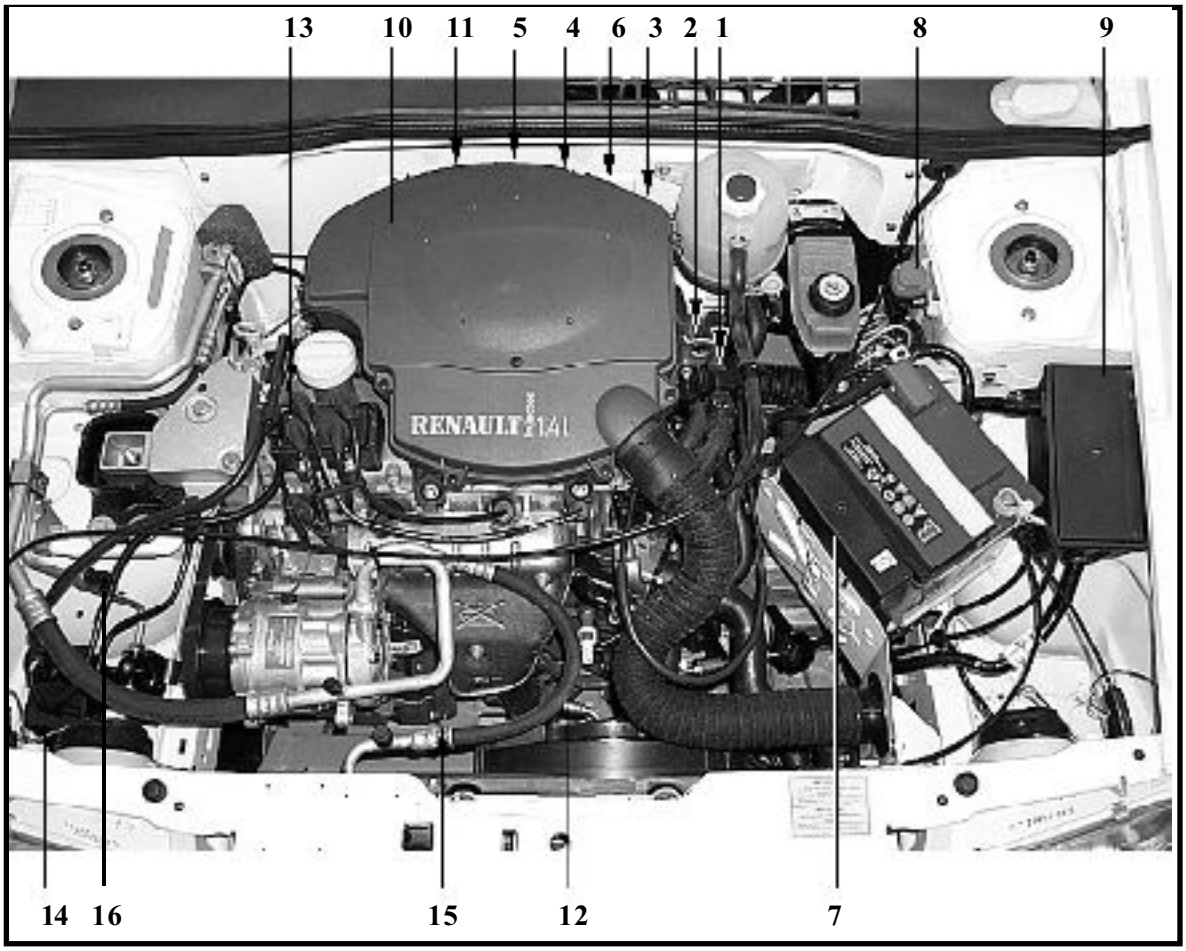
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CHARACTERISTICS

- Electronic control unit (UCE injection) with 90 pins SIEMENS.
- Sequential multi-point injection.
- Controlling one injector each time.
- Static ignition with a double ignition coil.
- Canister purging valve controlled in opening duty cycle.
- Idling regime correction subject to:
  - climate maintenance (air conditioning);
  - battery voltage.
- Maximal regime:
  - **6200 rot/min** for first, second and third speed;
  - **6000 rot/min** for fourth and fifth speed.

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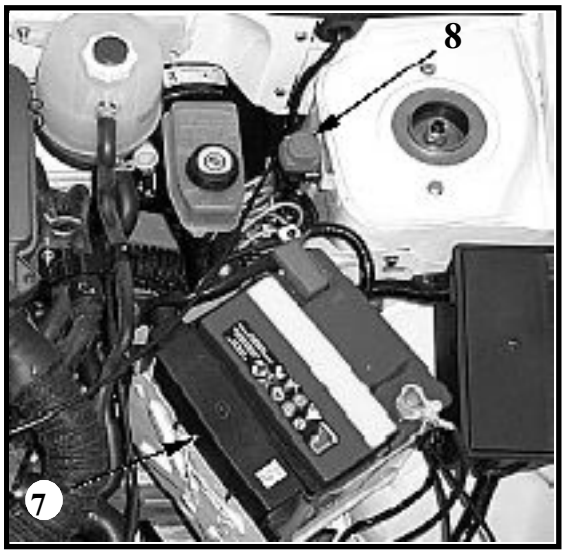
ELEMENTSLOCATION



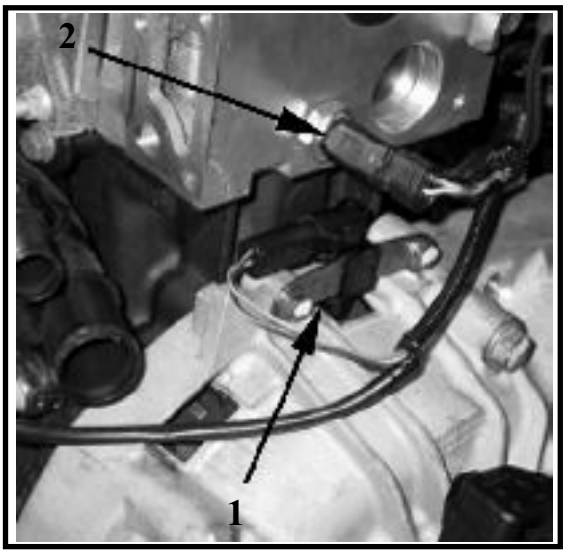
1. RPM sensor (tightening moment : 0.8 daNm);
2. Water temperature sensor (tightening moment: 2.5 daNm);
3. Atmospheric pressure sensor;
4. Step-by-step engine for idling adjustment;
6. Air temperature sensor;
7. UCE injection;
8. Choke sensor;
9. Fuse and relays box;
10. Air filter;
11. Detonation sensor (tightening moment: 2.5 daNm);
12. Oxygen sensor (tightening moment: 4.5 daNm);
13. Ignition coil;
14. Carbon canister with purging valve included;
15. Power steering pressure controller (tightening moment: 1.2 daNm);
16. Air conditioning pressure controller (tightening moment: 0.8 daNm).

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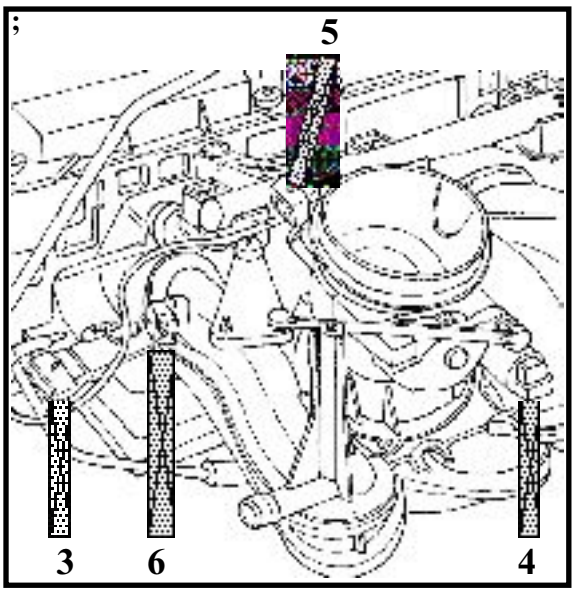
7. UCE injection;
8. Choke sensor;



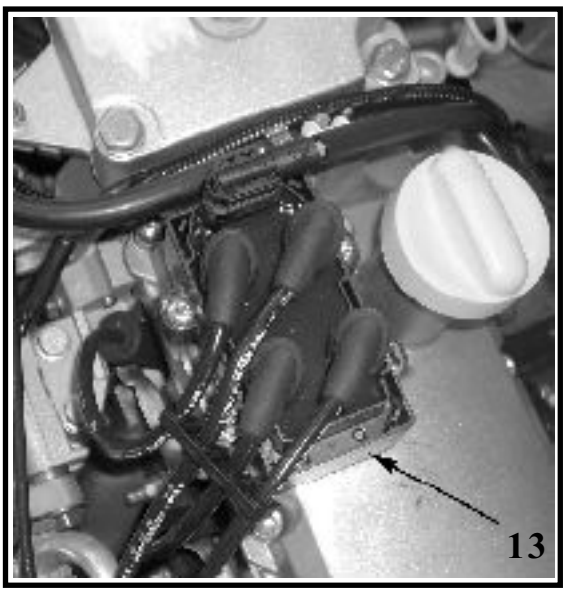
1. RPM sensor;
2. Water temperature sensor;



3. Atmospheric pressure sensor;
4. Step-by-step engine for idling adjustment;
5. Valve position potentiometer;
6. Air temperature sensor;

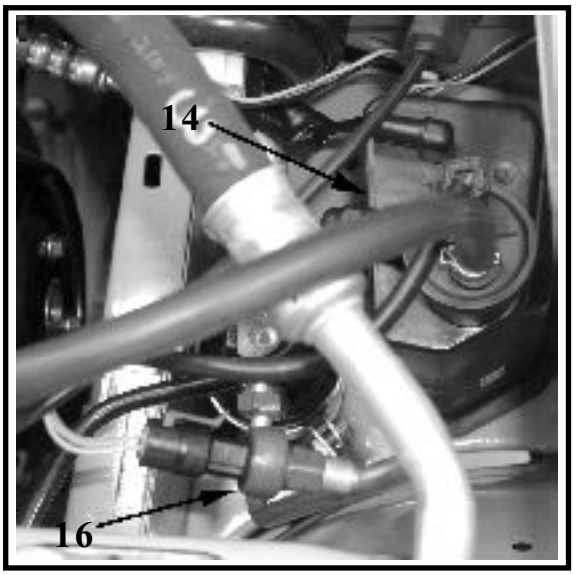


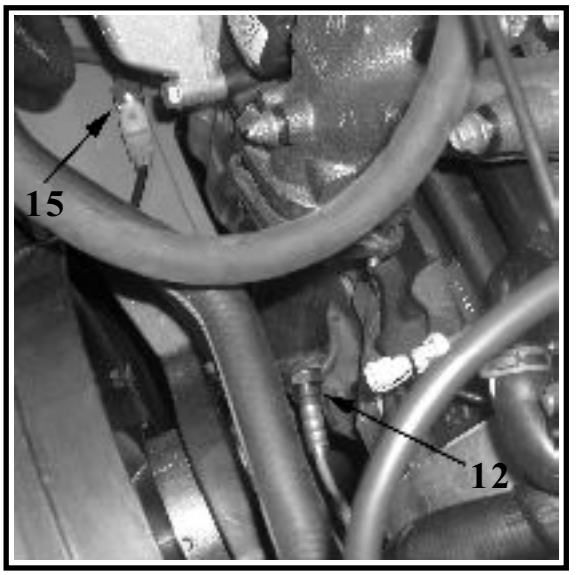
13. Ignition coil;



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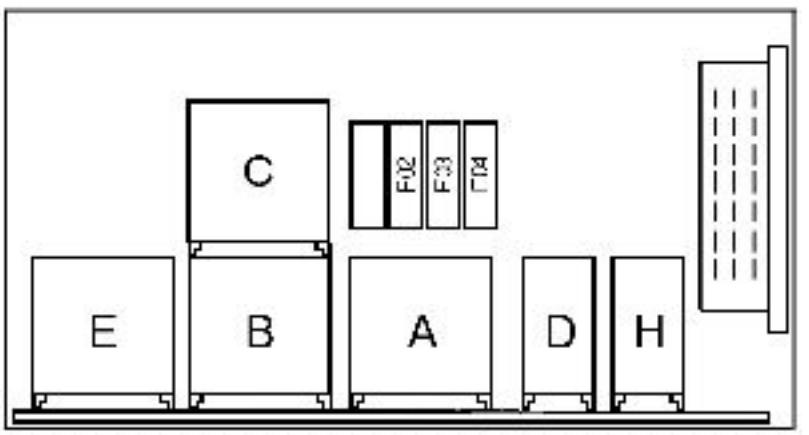
14. Carbon canister with purging valve included;
16. Power steering pressure controller;
12. Oxygen sensor;
15. Air conditioning pressure controller.





In the fusebox located in the engine compartment, the following relays may be identified:

A. Compressor relay
B. Engine cooling fan relay, step I
C. Engine cooling fan relay, step II
D. UCE injection relay, canister-purging valve
E. Fog projectors relay
H. Fuel pump and ignition coil relay



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WATER TEMPERATURE SENSOR

The water temperature sensor (**1**) is sending to UCE injection the information regarding water temperature, and another information is sent to the indicator from the instrument panel, which will show the water temperature.

In case of an alert regarding the water temperature, UCE injection will control the lightening of the water temperature indicator from the instrument panel.

Subject to water temperature, UCE injection will control:

- injection system;
- relays for controlling the engine cooling fan.

When setting the contact on, the water temperature indicator located on the instrument panel, will be lighted for **3 seconds**, then it will turn off.



If after the contact is set off, in the next **2 minutes** from engine stopping, the water temperature is reaching **102 °C**, and then the injection computer is controlling the starting of the engine cooling fan at low speed.

When the temperature is lowering at **95°C**, the engine cooling fan stopping will be controlled; its operation must not exceed **10 minutes** after engine stopping.

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ANTI-STARTING INDICATOR

When setting the contact on, UCE injection is receiving from UCE DECODER a code, which is compared with the one previously memorized; if the two codes are matching, then the engine starting is authorized.

After contact setting on, anti-starting indicator which was previously blinking, will light for three seconds then it will go off, confirming in this way, the key recognizing.

If the key is not good, after setting on the contact, the anti-starting indicator will start blinking faster and the engine starting will be impossible.

OBSERVATION:

For details regarding the vehicle anti-starting system, see chapter 82 "Anti-starting system".

ATTENTION!

UCE injection connecting or disconnecting to the vehicle's wiring is to be performed only when the engine is stopped and the contact off.

If the contact is on or the engine is running, do not loosen or disconnect the battery terminals. It is forbidden the battery replacement on the vehicle if the engine is running or the contact on.

Loosen or rusty contacts at battery terminals and imperfect connections at the injection system wiring are not allowed.

It is forbidden the engine starting with the battery connected to a charging / starting unit.

The battery recharging is to be performed only after disconnecting it from the vehicle wiring and by means of a charging unit with 12 V voltage.

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MULTI-POINT INJECTION CHARACTERISTICS

〈 SIRIUS 32 with 90 pins computer is managing the ignition and the injection.

〈 For diagnostic, CLIP Sagem tester is to be used.

〈 The injection system in use is a sequential multi-point type, injection and ignition phases controlling being based on the SIRIUS 32 computer program logic, starting from the signal received from the RPM sensor.

〈 The presence of the anti-pollution indicator OBD on the instrument panel, that is lighted for 3 seconds when setting the contact on, is specific to the vehicles observing pollution norms EURO 2000. The injection computer of these vehicles is provided with diagnostic system type OBD ("**O**n **B**oard **D**iagnostic).

〈 Idling regime correction is subject to:
- climate maintenance on/off control (air conditioning)
- electrical balance on vehicle, as a result of connecting different electric consumers.

〈 EURO 2000 specific vehicles are provided with two oxygen sensors located in front of the catalyst (upstream oxygen sensor) and after catalyst (downstream oxygen sensor).

〈 At EURO 2000 specific vehicles, the fuel supply is performed at constant pressure (3.5 ± 0.2 bar), the pressure controller placed in the fuel tank being provided for this purpose.

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AIR CONDITIONING UNIT IS USING A COMPRESSOR WITH VARIABLE DISPLACEMENT

The connections injection/air conditioning, are the followings:

- **pin 46** of the injection computer is receiving the information " air conditioning request" further to the air conditioning switch acting;
- **pin 10** of the injection computer will transmit the coupling control of the air conditioning compressor by means of the "A" relay, if the coupling authorization conditions are accomplished.

The information "power absorbed by compressor" displayed when performing diagnostic by means of the CLIP tester, is related to the couple value taken by the compressor. This is of 300-5000W, the minimal displayed value being of 300 W, regardless the compressor coupled / uncoupled condition.

The injection computer is forbidding the compressor coupling in the following situations:

- at less than 16 seconds from engine starting;
- subject to the power requested to the engine by the vehicle driver.
- when the acceleration pedal is fully pressed;
- if the engine RPM is lowering till 550 rot/min (compressor is again coupling if the RPM is reaching to 1800 rot/min);
- if the water temperature has increased to over 110° C;
- if the engine RPM is exceeding 6000 rot/min.

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IDLING REGIME CORRECTION SUBJECT TO BATTERY VOLTAGE AND TO ELECTRIC BALANCE ON VEHICLE.

This correction is dedicated to the compensation of the voltage drop due to the electric consumers starting, when the battery is weaker charged. In this purpose, engine RPM is increased, allowing in this way the alternator rotation increase and consequently of the battery voltage.

More the lower is the voltage, more important the applied correction is. So, a variable correction is applied, starting when voltage is reaching 12,8 V. The correction is starting from the nominal idling RPM and may increase with maximum 150 rot/min additional.

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PRINCIPLE

In engine normal operation conditions at warm, the **RCO** value is varying between a high and a low limit, in order to obtain the nominal idling regime. Further to an operation dispersion (running in, engine clogging, etc), it may be possible that RCO idling value to be situated next to the lower and higher values.

The adaptive correction of the "**RCO** idling" parameter is allowing obtaining of slow variations of the engine air requirement, so that **RCO** value centering on an average nominal vale is obtained. This correction is becoming effective unless the water temperature is over 80°C, at 20 seconds after engine starting and if it is in the nominal idling adjustment phase.

"RCO IDLING" AND " IDLING ENRICHING ADAPTATION" VALUES

PARAMETER	RECOMMENDED VALUE
PR006: Engine regime	750 rot/min
PR022: RCO idling	5% < X < 12%
PR031: Idling enriching adaptation	80 < X < 176

At each engine stopping, the injection computer is controlling the performing of a new positioning of the step-by-step engine, bringing it to the bottom limit. This function so called "re-setting", is maintained for 8 seconds.

INTERPRETATION OF THE PREVIOUSLY MENTIONED PARAMETERS

In the situation of an air excess (infiltration air, valve body inadequate attachment, etc), the idling regime will increase and the **"RCO** idling**"** value will decrease in order to return to the nominal idling regime. The value of the **RCO** idling adaptive correction will decrease in order to centering again the idling adjustment operation.

In case of an air lack (clogging, etc) the reasoning is opposite: "**RCO** idling" is increasing, and the value of the "**RCO** idling" adaptive correction will increase in order to center again the idling operation on an average nominal value.

IMPORTANT: After erasing the failures memorized by the injection computer, it is necessary to start the engine then stop it, in order to achieve in this way the re-setting of the step-by-step engine. Start then again the engine and let it idle run until reaching the nominal idling regime, in order to achieve a correct re-setting of the adaptive correction.

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The engines equipped with UCE injection type SIRIUS 32 are provided with oxygen sensors, as follows:

- one upstream oxygen sensor – for engines corresponding to EURO 96 de-pollution norms.
- one upstream oxygen sensor and one downstream oxygen sensor – for engines corresponding to EURO 2000 de-pollution norms.

OXYGEN SENSORS HEATING

Oxygen sensors heating control is given by UCE injection as follows:

- for upstream oxygen sensor – starting with engine starting.
- for downstream oxygen sensor – after a certain time from engine starting, imposed by the UCE injection charts, being subject to engine RPM and water temperature, red only when the acceleration pedal is not released.

UPSTREAM OXYGEN SENSOR VOLTAGE

After connecting the CLIP tester select " Injection Diagnostic" and refer to "PR009 parameter: Upstream oxygen sensor voltage". The displayed value, expressed in mV, is representing the voltage supplied towards UCE injection by the oxygen sensor placed upstream as the catalyst. When the engine is running in the "closed loop" phase, voltage must fluctuate quickly between the following limits:

- 20 mV ± 50 for poor fuel mixture;
- 840 mV ± 70 for rich fuel mixture.

Smaller is the difference between these two limits, less good the sensor information is (generally this difference is of 500 mV).

DOWNSTREAM OXYGEN SENSOR VOLTAGE

After connecting the CLIP tester select " Injection Diagnostic" and refer to "PR010 parameter: Downstream oxygen sensor voltage". The displayed value, expressed in mV, is representing the voltage supplied towards UCE injection by the oxygen sensor placed after the catalyst. This sensor has the purpose to catalyst diagnostic and to perform a second checking, more exactly, of the fuel mixture enriching. This function is becoming active only after a certain time of engine running at warm and it is not active in the engine idling phase.

When the engine is running in "closed loop" phase and at stabilized speed, voltage must fluctuate having between the maximal and minimal limits a difference of 600-mV ± 100. At deceleration, voltage must be under 200 mV.

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ENRICHING CORRECTION

After connecting the CLIP tester, select “Injection diagnostic” and refer to “PR035 parameter: Enriching correction value”. The value displayed is representing the corrections average imposed by the UCE injection, subject to the fuel mixture enriching, red by the upstream oxygen sensor (the sensor is analyzing the oxygen concentration from the exhaust gases).

The correction value has an average value of 128 and the limits are 0 and 255:

- a value lower than 128 has as result, the request for fuel mixture impoverishment
- a value greater than 128 have as results the request for fuel mixture enriching.

ENRICHING ADJUSTMENT PHASE

Admission in the enriching adjustment phase is becoming effective after a certain time from engine starting, with the condition that water temperature is reaching to over 22°C and 28 seconds from engine starting have passed.

If admission in the enriching adjustment phase is not effective, the value of PR035 parameter is 128.

Even when conditions for enriching adjustment phase beginning are accomplished, UCE injection however, will not take into account the voltage supplied by the downstream oxygen sensor, in the following situations:

- acceleration pedal fully pressed: PR035 is variable and higher than 128;
- sudden acceleration: PR035 is variable and higher than 128;
- deceleration (engine braking) followed by UCE injection detection of the position ”free” of the acceleration pedal: PR035 = 128;
- downstream oxygen sensor failure: PR035 = 128.

WORKING PROCEDURE “DAMAGED” IN CASE OF DOWNSTREAM OXYGEN SENSOR FAILURE

When the voltage supplied towards UCE injection by the downstream oxygen sensor is not correct (showing small or not at all variations) in the enriching adjustment phase, then UCE injection will not pass to the working procedure “damaged” (PR035 = 128) unless the failure has been recognized as being present for 10 seconds. Only in these conditions, the failure will be memorized by the UCE injection.

If UCE injection is detecting a present failure of the oxygen sensor and if this failure has been already memorized, then UCE injection will come out from the enriching adjustment phase, passing to phase “open loop”. In this situation PR035 parameter will not show variations and will have the value 128.

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Enriching adaptive correction

PRINCIPLE

When the engine is in "closed loop" phase, the enriching adjustment is correcting the injection time in order to be able to obtain a fuel mixture with the enriching as close as possible to 1. The correction value is fluctuating around the value 128, within the limits 0 and 255.

Although, variations in time of the components elements parameter of the injection system may occur, this leading to the enriching correction displacement towards 0 or 255, in order to maintain the enrichment at the value 1.

The adaptive correction is allowing the "resetting" of the injection chart in order to bring the enrichment adjustment to the average value 128 and the achievement of an effective constant correction for the enrichment or impoverishment of the fuel mixture.

The adaptive correction of the enrichment adjustment is divided into two components:

- preponderant adaptive correction at engine medium or high charges (adaptive enriching during running);
- preponderant adaptive correction at engine idling or small charges (adaptive enriching during idling).

The adaptive corrections are considering the value 128 as an average value after performing the activation (after erasing the memorized failures) and they have for the next parameters, the following limit values:

PR030 = Adaptive enriching during running $80 < X < 176$

PR031 = Adaptive correction during idling $80 < X < 176$.

The adaptive corrections are not applied unless the engine is warm (water temperature > 80°C), and it is in the "closed loop" phase and the pressure from the inlet manifold is in a certain interval. It is necessary that engine has been run in "closed loop" phase in many of the inlet manifold pressure areas, for which the adaptive correction evolution is starting the compensation of the engine running enriching dispersions.

Therefore, further to UCE injection re-activation, after erasing the memorized failures, when the values PR030 and PR031 are 128, it will be necessary that a specific road test is to be performed.

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ROAD TEST

Test performing conditions:

- warm engine (water temperature > 80°C);
- engine RPM not exceeding 4000 rot/min.

For this test, it is recommended starting from a sufficient low engine RPM, in gearbox third or fourth gear, accelerating then progressively in order to obtain a pressure stability in the inlet (PR001 = inlet manifold pressure) for 10 seconds in each area, as per next table:

Area 1 (mbar)	Area 2 (mbar)	Area 3 (mbar)	Area 4 (mbar)	Area 5 (mbar)
250 ---------- 399	399 ---------- 517	517 ---------- 635	635 ---------- 735	735 ---------- 873
Average 325	Average 458	Average 576	Average 694	Average 813

After performing this test, the corrections will become effective.

PR031 parameter (adaptive enriching at idling) is more fluctuating in the idling and small charges phases, and PR030 parameter (adaptive enriching during running) is more fluctuating in the moment of medium and full charges, but both parameters are active in all areas of inlet manifold pressure evolution.

It is necessary that road test to be followed by a normal driving running, constant and fluctuate, on a 5-10 Km.

After test performing, connect the CLIP tester and refer to the values of PR030 and PR031 parameters. If their values are initially at 128, after correct performing the road test, they must change. Contrary, perform again the road test, strictly observing the imposed conditions.

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"On Board Diagnostic" system characteristics

At vehicles equipped with diagnostic system OBD (On Board Diagnostic), when detecting a cause leading to an excessive pollution, on the instrument panel the OBD indicator will be on, indicating to the driver that vehicle must be repaired to eliminate the pollution cause.

The OBD system is taking into consideration during its operation of the performing the following diagnostics:

- electric diagnostics;
- combustion misfires diagnostics
- functional diagnostic of the upstream oxygen sensor;
- catalyst diagnostic.

Electric and combustion misfires diagnostics are permanently performed.

Functional diagnostic of the upstream oxygen sensor and catalyst diagnostic are performed one time only during one driving, subject to reaching the imposed values of the following parameters, in order to a.m. diagnostics commencement:

- water/air temperature conditions;
- vehicle speed condition (evaluation field);
- engine parameters conditions (inlet manifold pressure, values fields and stability);
- starting timer.

OBD information management is completing classical electric failures management.

In order to meet this requirement, it is obligatory the OBD operation as per following way:

- lighting (or blinking for some failures) of the OBD indicator;
- memorizing of the OBD failures by UCE injection.

EFFECTS ON DIAGNOSTIC AND REPARATIONS

During reparation of vehicles equipped with OBD system, a special attention will be given to avoid the OBD indicator lighting after reparations performing and returning the vehicle to the end-user.

Certain failures can be noticed only during driving, this being the moment when the adaptive values are "learned", so: **The reparation validation is obligatory imposed**.

REMARK: all electric failures leading to pollution limit exceeding, will produce the OBD indicator lighting.

ATTENTION: after each test performing, the contact setting on is imposed (key in M position) before reading the results by means of the CLIP tester. Any contact setting off before reading the test results, will lead to their wrong interpretation.

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CONDITIONS OF OBD INDICATOR LIGHTING

During driving it is possible that certain functions are not subject to diagnostic (for instance due to crowded traffic driving).

Indicator lighting

- it is occurring if the same OBD failure is detected during three consecutive driving or further to an electric failure.

Indicator blinking

- it is occurring if combustion misfires are detected, that may cause the catalyst damage.

Indicator off

- it is occurring if the OBD failure is not happening during three consecutive driving, but the failure in cause will remain memorized by the UCE injection.

In order to cancel the failures memorized by the UCE injection, failures must not be detected during 40 consecutive tests (or to perform the erasing of the memorized failures, by means of the CLIP tester).

OBSERVATION: if a previously detected failure has been not detected again, then the cause may be:

- driving type performed by the end-user, not driving exactly in the conditions imposed for failure detection;
- random character (non-permanent) of the respective failure.

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DIAGNOSTIC CONDITIONS

If when setting on the contact, with stopped engine, one of the following conditions is accomplished:

- air temperature, red by the air temperature sensor, is not situated between –6° and 119°C.
- water temperature, red by the water temperature sensor, is not situated between –6° and 119°C.
- atmospheric pressure is under 775mbar,

then the OBD diagnostics are not authorized until the next contact setting on.

In order to have a correct operation of the OBD diagnostic system, no electric failure of the injection system must exist, even if the lighting of the OBD indicator is not established.

The catalyst and oxygen sensor diagnostics can not be performed in the same time, but one after other.

When the catalyst or oxygen sensor diagnostics are under operation, the canister purging valve is closed, and the adaptive values are "blocked" at the last existent value prior to a.m. diagnostics starting.

TESTS PERFORMING LOGIC

- Solve failures of electric nature.
- Erase all failures by means of the CLIP tester
- Perform the "teaching" stage of all adaptive values by the injection system (if necessary).

OBD COMPLETE ACTIVATION BY MEANS OF CLIP TESTER

- Erase all memorized failures.
- Erase the "learned" values from UCE injection if further to an intervention on an injection system component, a disturbance of the "learned" values took place (step-by-step engine, flywheel or RPM sensor, etc).

RETENTIONS ("LEARNINGS") NECESSARY FOR UCE INJECTION FOR OBD DIAGNOSTIC

〈 COUPLING/SUPPLY RATE LEARNING (state "ET014 = cylinder recognition 1" is PERFORMED with running engine).

This is to be performed as following:

- a deceleration with "cutting" of the petrol injection in the third gear of the gearbox, between 3000-3500 rot/min for at least 2 seconds,
- a second deceleration with "cutting" of the petrol injection in the third gear of the gearbox, between 2400-2000 rot/min, for at least 2 seconds.

〈 MIXTURE ENRICHING ADAPTIVE LEARNING

In order to do that, it is necessary that vehicle is running observing in the same time the pressure ranges mentioned in the chapter " Enriching adaptive correction".

〈 State "ET202 = OBD diagnostic of combustion misfires taken into consideration" must be ACTIVE.

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This diagnostic may detect:

- spark plug fouling or smoking,
- fouling or modification from the normal value of the injectors flow,
- fuel supply system abnormalities (pressure controller, fuel pump,..)
- problems with the electric connections for controlling fuel supply circuits and the injection.

The diagnostic is performed by variations measurement of the engine prompt rotation speed.

Notice of a couple decrease is allowing the defective combustion recognition as failure cause.

This diagnostic is done almost permanently during driving. Non accomplishment of the diagnostic or recognition of the existence of failure, is leading to other OBD diagnostics inhibition.

This diagnostic is enabling the identification of two types of failures:

- destructive combustion misfires, which are causing the catalyst damage. These are generating the immediate blinking of the OBD indicator.
- Polluting combustion misfires, leading to exceeding a pre-established OBD pollution limit.

These are generating the permanent lighting of the OBD indicator, if the cause detection is taken place during three consecutive running.

DETECTION CONDITIONS

At the beginning, it must be checked if the "learning" stages of the adaptive values by the UCE injection have been correctly performed. Also the preliminary conditions imposed when setting the contact on and those from checking moment, must be accomplished.

Check by means of the CLIP tester if the bellow mentioned states are in the following configuration:

ET014 Cylinder 1 recognition---------- DONE

ET202 OBD diagnostic of combustion misfires taken into consideration----------ACTIVE

Detection is accomplished after the water temperature is exceeding 75°C, at three rotation steps, between idling and 4500 rot/min. It is also possible, test performing by maintaining the engine at idling for a period of time of 11 minutes.

ATTENTION: after performing this test, the contact setting on is imposed (key in M position) before reading the results by means of the CLIP tester. Any contact setting off before reading the test results, will lead to their wrong interpretation.

If after test performing, the CLIP tester is noticing the presence of the combustion misfires, refer to the diagnostic method related to this symptom.

CONFIRMATION OF THE REPARATION PERFORMING

- Check by means of the CLIP tester, the bellow states, which must have the following configuration:

ET014 Cylinder 1 recognition ---------- DONE

ET202 OBD diagnostic of combustion misfires taken into consideration ---------- ACTIVE

- No failures is detected by the CLIP tester, and the OBD indicator must be off.

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Catalyst diagnostic

The purpose of the catalyst diagnostic is the detection of the disturbances leading to exceeding an OBD step due to HC pollution emissions.
The catalyst storage capacity of the oxygen is the indicator of its condition. When the catalyst is beginning to ”age”, the storage capacity of the oxygen is diminishing, in the same time with the diminishing of the treatment capacity of the pollution gases.

IMPOSED CONDITIONS FOR DIAGNOSTIC STARTING

The catalyst diagnostic can be not performed but after a certain time of engine operation and only if the preliminary conditions, when setting the contact on, are accomplished and preserved:

- no electric failure
- cylinder’s recognition performed
- no detected combustion misfire.
- non-performing of the catalyst diagnostic after contact setting on.
- correct performing of the “learnings” by the UCE injection.
- water temperature to be over 75°C

Engine	Speed (Km/h)	Regime (rot/min)	Manifold pressure (mbar)	Stabilization period (sec)	Time before authorization (min)
E7J	63-130	1792-4000	430-739	11	17

FAILURES DETECTION

The diagnostic is to be performed on a stabilized range in the fifth gear, at the speed of 70 Km/h. When the diagnostic starting conditions are accomplished, excitation peaks are applied, which is leading to the oxygen bubbles sending to the catalyst. If the catalyst is good, it will absorb the oxygen and the tension of the downstream oxygen sensor will remain at an average value. If the catalyst is used, it will reject the oxygen and the oxygen sensor will wrongly define the phenomenon. The oxygen sensor tension will fluctuate. If the failures is three consecutively times confirmed, the OBD indicator would be on.
The test duration will be not exceeding 52 seconds.

ATTENTION: after performing this test, the contact setting on is imposed (key in M position) before reading the results by means of the CLIP tester. Any contact setting off before reading the test results, will lead to their wrong interpretation.

If after test performing, the CLIP tester is noticing the presence of the combustion misfires, refer to the diagnostic method related to this symptom.

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REPARATION CONFIRMATION

Check by means of the CLIP tester, the bellow states, which must have the following configuration:

- ET103: Catalyst diagnostic taken into consideration ---------- ACTIVE
- ET107: Catalyst diagnostic performed ---------- ACTIVE
- no functional failure of the catalyst is detected by the CLIP tester.

The purpose of the oxygen sensor diagnostic is to detect a disturbance leading to exceeding the OBD step, caused by the HC polluting emissions. Diagnostic is performed by measuring and comparing the oscillating periods of the values red by the oxygen sensors.

The possible degradations of the oxygen sensors, are of two types:

- mechanical degradation of the electric component (case, wire broke) which is to be defined as electric failure.
- chemical degradation f the component, leading to a retardation of the sensor responding time, consequently an increase of the minimal/maximal oscillating period.

When the test conditions are accomplished, perform the average of the periods pointed out by the sensor, retrieving the parasite effects, which are compared with an OBD step average period.

TEST PERFORMING CONDITIONS

Diagnostic of the oxygen sensor can be not performed but after a certain engine running time and in some specific established operation conditions and if the preliminary conditions, achieved when setting the contact n, are achieved and preserved:

- no electric failure
- correct performing of the "learnings" by the UCE injection and of the cylinders recognition.
- no detected combustion misfire.
- Non-performing of the oxygen sensor diagnostic after contact setting on.
- water temperature to be over 75°C

Engine	Speed (Km/h)	Regime (rot/min)	Manifold pressure (mbar)	Stabilization period (sec)	Time before authorization (min)
E7J	63-130	1792-3712	299-799	5	14

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Oxygen sensor diagnostic

FAILURES DETECTION

This diagnostic is to be performed when driving in the fourth or fifth gear, at constant speed (about 70 Km/h) and for a period of minimum 60 seconds.

Engine	Gearbox ratio	Speed (Km/h)	Maximum period (sec)
E7J	V	63-130	52

For the accomplishment of this test, during all its running period, UCE injection is inhibiting the control function of the canister purging valve. UCE injection will issue the recommendation " Oxygen sensors diagnostic taken into consideration".

ATTENTION: after performing this test, the contact setting on is imposed (key in M position) before reading the results by means of the CLIP tester. Any contact setting off before reading the test results, will lead to their wrong interpretation.

If after test performing, the CLIP tester is noticing a failure of the oxygen sensor, refer to the diagnostic method related to this symptom.

REPARATION PERFORMING CONFIRMATION

Check by means of the CLIP tester, the bellow states, which must have the following configuration:

- ET102: Sensors diagnostic taken into consideration ---------- ACTIVE
- ET106: Sensors diagnostic performed ---------- ACTIVE
- no catalyst failure is detected by the CLIP tester and the OBD indicator is off.(mbar).

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This document is presenting the diagnostic for the injection computers SIRIUS 32, which have nr.program E1 and Diag.variant 10.

In order to perform the diagnostic of this injection system, it is necessary to use the following elements:

- Diagnostic Technical Note
- Functional electric diagram of the respective vehicle
- CLIP technical tester, 90 ways terminal (ELE 1497).

DIAGNOSTIC PERFORMING STEPS

- CLIP tester connection to the diagnostic socket for identification of the SIRIUS 32 computer type, of the "E1" program and the diagnostic variant "10".
- Information identification in thedocument "Diagnostic" corresponding to theinjection system.
- Reading and observing of the working instructions presented in the diagnostic documentation.
- Reading of the failures memorized by the injection computer, by means of the CLIP tester and causes identification by means of chapter " Failures interpretation"

DO NOT ERASE THE MEMORIZED FAILURES BEFORE READING THEM BY MEANS OF THE CLIP TESTER

Write the memorized failures, after having previously red by means of the CLIP tester, in order to be taken into consideration and treated, if these are to be themselves erased.

1. Treat all existent failures.

2. Memorized failures:

Perform the operations mentioned in "Recommendations" corresponding to each failure, in order to confirm the failure.

If the failure is becoming present, then it must be treated.

3. For vehicle provided with OBD.

If the failure is memorized and the OBD indicator is on, read the failure context remarks, the corresponding state at" OBD indicator lighting requesting", in order to establish if this is the cause for indicator lighting.

In such case, treat the failure as being present.

REMARK: the state " OBD indicator lighting requesting" may be YES or NO and may be consulted by selecting menu " FUNCTIONS", then OBD INDICATOR LIGHTING".

Perform theconformity checking (evidencing of eventually disturbances not yet declared by the system self-diagnostic).

Validate the reparation performing (failure cause elimination).

Take benefit of the information from the failure-locating tree, in case the problem is persisting.

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DF002 PRESENT OR MEMORIZED	VALVE POTENTIOMETER CIRCUIT 1. DEF : Open circuit or short-circuit

RECOMMENDATIONS	**If failure "DF345: Supply 5 volts potentiometers or transducers" is present or memorized, this must be treated with priority.**
	Conditions for diagnostic application for memorized failure: - Set the contact on and maintain it like this for 10 seconds in the released pedal position. - Easy alter the potentiometer valve position, from released pedal to maximum acceleration. - Maintain the pedal in the maximum pressed position for 10 seconds. (The failure must pass to the presnt state, but it may become again memorized immediately after finishing performing the previous operations).
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET284 : Valve potentiometer circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the connection and the state of the valve potentiometer connector.
Replace its connector if necessary.

Perform measurement of the valve potentiometer resistance (resistance is zero or infinite in case of sure failure).
Check that potentiometer resistance is progressively increasing, by acting upon the valve from released acceleration pedal position to the maximal acceleration pedal.
(Use chapter "Help" in order to compare the measured resistance values compared with recommended ones).
Check if the valve is well acting the potentiometer.
Make it working or replace the potentiometer if necessary.

Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:**
Pin 75 injection computer → pin A valve potentiometer
Pin 74 injection computer → pin B valve potentiometer
Pin 43 injection computer → pin C valve potentiometer.
Fix if necessary

If the problem is persisting after these checking, use the fixing method for failure DF345.

AFTER REPARATION	Perform the operations from "recommendations" for reparaton confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF003 PRESENT OR MEMORIZED	AIR TEMPERATURE SENSOR CIRCUIT 1. DEF : Open circuit or short-circuit

RECOMMENDATIONS	**If failure "DF345: Supply 5 volts potentiometers or transducers" is present or memorized, this must be treated with priority.**
	Conditions for failure detection by the computer: - Set the contact on - If the failure is only memorized, start the engine in order to obtain a temperature variation (an engine cooling fan starting). (The failure must pass to the present state, but it may become again memorized immediately after finishing performing the previous operations).
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET274 : Air temperature sensor circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the connection and the state of the air temperature sensor connector.
Replace the sensor's connector if necessary.

Check that resistance of air temperature sensor is not zero or infinite (sensor sure failure).
(Use chapter "Help" in order to compare the measured resistance values compared with recommended ones).

Replace the air temperature sensor if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:**

Pin 77 injection computer → pin 1 air temperature sensor
Pin 49 injection computer → pin 2 air temperature sensor

Fix if necessary

Check the correct evolution **of the sensor resistance subject to air temperature**.
Replace the air temperature sensor if necessary.

If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF004 PRESENT OR MEMORIZED	WATER TEMPERATURE SENSOR CIRCUIT 1. DEF : Open circuit or short-circuit

RECOMMENDATIONS	**If failure "DF345: Supply 5 volts potentiometers or transducers" is present or memorized, this must be treated with priority.**
	Conditions for failure detection by the computer: - Set the contact on - If the failure is only memorized, start the engine in order to obtain a temperature variation (an engine cooling fan starting). (The failure must pass to the present state, but it may become again memorized immediately after finishing performing the previous operations).
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET275 : Water temperature sensor circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the **connection and the state** of the air temperature sensor connector. Replace the connector if necessary.
Check that resistance of water temperature sensor is not zero or infinite (sensor sure failure). **Use chapter "Help" in order to compare the measured resistance values compared with recommended ones).** Replace the water temperature sensor if necessary. Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:** **Pin 73 injection computer ⟶ pin B1 water temperature sensor** **Pin 13 injection computer ⟶ pin B2 water temperature sensor** Fix if necessary
Check the correct evolution of the sensor resistance subject to the temperature. Replace the water temperature sensor if necessary.
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF006 PRESENT OR MEMORIZED	DETONATIONSENSOR CIRCUIT 1. DEF : Open circuit or short-circuit

RECOMMENDATIONS	Conditions for diagnostic application for memorized failure: Perform a road test with warm and in charge engine. * If the failure is memorized with OBD indicator on, check in the context part, if state “ET289 : Detonation sensor circuit” corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the connection and the state of the detonation sensor connector. Replace the sensor’s connector if necessary.
Check the tightening of the RPM sensor on the engine block Fix if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:** **Pin 20 injection computer ⟶ pin 1 detonation sensor** **Pin 79 injection computer ⟶ pin 2 detonation sensor** **Pin 19 injection computer ⟶ RPM sensor screening** Fix if necessary
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from “recommendations” for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF009 PRESENT OR MEMORIZED	ACTUATORS RELAY CONTROL CIRCUIT 1DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 :short circuit at + 12V.
RECOMMENDATIONS	**Conditions for diagnostic application for memorized failure:** Set the contact on then enter in dialog with the injection computer by means of the CLIP tester. **REMARK:** This failure is of high importance. It is then necessary to be treated before the following ones.

Check **the battery and electric mass condition of the vehicle.** Fix if necessary.
Check **the connection and the connector condition of the actuators relay.** Change the connector if necessary.
Check the presence of **+12 Volts at pin 1 actuators relay.** Fix if necessary.
Check **the actuators relay coil.** Replace the actuators relay if necessary.
Check the insulation and continuity on line **Pin 39 injection computer— >pin 2 actuators relay.** Fix if necessary
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF012 PRESENT OR MEMORIZED	INJECTION ⟹ AC CONNECTION No comments failure

RECOMMENDATIONS	**Conditions for diagnostic application for memorized failure**: Failure is declared present further to a 10 seconds timing with engine running and climate control under operation, state ET009: active (during test, battery voltage must be not under 11 V).

Connect the 90 ways terminal box instead of the injection computer then check the insulation, continuity and absence of the parasite resistance on line 32 of the injection computer. Fix if necessary.
Refer to climate control diagnostic if the incident is persisting.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF014 PRESENT OR MEMORIZED	CANISTER PURGING VALVE CIRCUIT 1.DEF : Open circuit or short-circuit CO :Open circuit CC.O :Shot circuit at mass CC.1 : Short circuit at + 12 V.

RECOMMENDATIONS	**Conditions for diagnostic application for memorized failure:** Set the contact on or launch commend **"AC016: Canister Purging Valve"** **In case of failures addition, treat a most important failure "DF009 actuators relay control circuit"**. * If the failure is memorized with OBD indicator on, check in the context part, if state "ET117: Canister purging control" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check **the connection and the connector state of the canister purging valve**. Change the connector if necessary.
Check the **resistance of the canister purging valve.** Replace the canister purging valve if is necessary.
Check with the contact on, the presence **of +12 Volts at pin 1 of the purging valve**. Fix if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation and the continuity of the line:** **Pin 4 injection computer ⟶ pin 2 canister purging valve** Fix if necessary
Replace the canister purging valve if necessary.
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF017 PRESENT OR MEMORIZED	RPM SIGNAL INFORMATION 1. DEF : Engine flywheel tooting damage 2. DEF: tooth signal absence

RECOMMENDATIONS	In order to perform this diagnostic, the pressure sensor must be not in failure. **Conditions for diagnostic application for memorized failure**: Set the contact off and wait until the communication computer-CLIP tester is lost. Set the contact on, enter in dialog with the computer and eras the memorized failures. Act upon the starter for 10 seconds or make the engine idle running. * If the failure is memorized with OBD indicator on, check in the context part, if state "ET276 : Engine flywheel tooting damage" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the connection and the condition of the RPM sensor connector Replace the connector if necessary.
Check the cleaning state and the correct attachment of the RPM sensor Fix if necessary.
Check the resistance of the RPM sensor. Replace the RPM sensor if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:** **Pin 54 injection computer ⟶ pin A RPM sensor** **Pin 24 injection computer ⟶ pin B RPM sensor** Fix if necessary.
If 1. DEF is occurring, check the **engine flywheel condition.**
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Check that state "ET202: Diagnostic OBD combustion misfires taken into consideration", is ACTIVE. Contrary, it is necessary, the re-activation of "learning" the RPM signal by the injection computer. Fix the others possible failures and then perform the conformity checking.

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DF018 PRESENT OR MEMORIZED	UPSTREAM OXYGEN SENSOR HEATING CIRCUIT 1DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 : short circuit at + 12V.

RECOMMENDATIONS	**Conditions for diagnostic application for memorized failure**: - Start the engine and ensure that state "**AC261: Upstream O2 sensor heating**" is ACTIVE. - Or act upon the actuator control "**AC261: upstream 02 sensor heating**". In case of failures addition, treat as most important failure **"DF009 actuators relay control circuit"**. * If the failure is memorized with OBD indicator on, check in the context part, if state "ET117 : Canister purging control" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check **the connection and the connector state** of the oxygen sensor. Change the connector if necessary.
Check **the heating resistance of the oxygen sensor**. Refer to chapter "**Help**" for **resistance values**. Replace the sensor if necessary.
Check **the presence of +12 Volts on A way of the oxygen sensor**. Fix the electric connection between A way oxygen sensor and the actuators relay.
Connect the 90 ways terminal box instead of the injection computer then **check the insulation, the continuity and the absence of the parasite resistance on line:**: **Pin 63 injection computer ⟶ pin B oxygen sensor** Fix if necessary.
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 022 PRESENT	INJECTION COMPUTER 1 . DEF : Replace the computer

RECOMMENDATIONS	Nothing to mention.

Non-conform or damaged computer. Check if **the computer the one specific for that type of vehicle**. **Do not immediately replace the computer without identifying precisely its damaging cause.**
Perform the following procedure: Set the contact on and enter in dialog with the computer. Erase the failures memorized by the injection computer. Set the contact off and wait for the interruption of the communication computer-CLIP tester. Set the contact on and then enter in dialog with the computer If the failure is persisting, replace the computer.

AFTER REPARATION	Perform a road test followed then by a new checking by means of the CLIP tester. Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 032 PRESENT OR MEMORIZED	WATER TEMPERATURE WARNING CIRCUIT IDEF : Open circuit or short-circuit CO : open circuit CC.O short-circuit at mass CC.1 shot-circuit at + 12 volts

RECOMMENDATIONS	**Conditions for diagnostic application for memorized failure**: Start the engine and maintain it at over 1500 rot/min until engine fun starting or act upon control **AC212: Water temperature warning indicator**.

Check **the connection and the condition of the connetor on the line over-heating indicator**. Replace the connector if necessary.
Check the indicator condition (if by chance this is on) Replace it if necessary.
Check if there is **+12V at indicator**. Fix if necessary, the supply electric routing between the water temperature warning indicator and the corresponding fuse.
Connect the 90 ways terminal box and check the **insulation and continuity on pin 9 line of the injection computer.** Fix if necessary.
If the failure is persisting after this check, refer to Instrument panel diagnostic.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF038 PRESENT OR MEMORIZED	DOWNSTREAM OXYGEN SENSOR HEATING CIRCUIT 1DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 :short circuit at + 12V.

RECOMMENDATIONS	**Conditions for diagnostic application for memorized failure**: - Start the engine and ensure that state "**ET03: downstream O2 sensor heating**" is active wait for an engine fan starting, and then perform a slight acceleration for one minute. - Or actupon the actuator control "**AC262: downstream O2 sensor heating**" * If the failure is memorized with OBD indicator on, check in the context part, if state "ET288 : Downstream oxygen sensor heating circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check **the connection and the connector state** of the oxygen sensor. Change the connector if necessary.
Check **the heating resistance of the oxygen sensor**. Refer to chapter " **Help**" in order to compare **the resistance-measured value with the recommended one**. Replace the sensor if necessary.
Check the presence of **+12 Volts on A pin** of the oxygen sensor. Fix the electric connection between oxygen sensor and the actuators relay, if necessary
Connect the 90 ways terminal box instead of the injection computer **then check the insulation and continuity on line:**: **Pin 65 injection computer ⟶ pin B oxygen sensor** Fix if necessary
If the problem is persisting after these checking, fix the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from "recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 044 PRESENT OR MEMORIZED	ANTI-STARTING CIRCUIT 1 . DEF : Open circuit or short-circuit

RECOMMENDATIONS	Nothing to mention.

Check the connection and condition of the coded line, starting from injection computer pin 58 Replace the computer connector if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the insulation and the continuity of the coded line starting from injection computer pin 58. Fix if necessary
If failure is persisting, refer to anti-starting system diagnostic.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 045 PRESENT OR MEMORIZED	ATMOSPHERIC PRESSURE SENSOR CIRCUIT 1 . DEF : Open circuit or short-circuit 2 DEF : Pressure evolution in manifold
RECOMMENDATIONS	If failure "DF345": Supply 5 volts potentiometers or sensors" is present or memorized, this must be treated as most important.
	Conditions for diagnostic application to memorized failure: Set the contact off and wait until the communication CLIP tester-computer is lost. Set the contact on again, and then enter in dialog with the computer. If it is necessary, start the engine and accelerate to over 608 rot/min for a period of minimum 10 seconds.
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET277 : Atmospheric pressure sensor circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

If failure is present only when engine is running, check with the contact set on, the valve position parameter coherence for: release acceleration pedal and maximum pressed pedal. Easy push the acceleration pedal (from released pedal till maximum acceleration) and check that valve position is regularly increasing. If a.m. are not observed, the information is not conform. In such case, treat the diagnostic of this parameter.
Check the **connector condition** of the atmospheric pressure sensor. Replace the connector if necessary.
Check that pressure sensor is correctly connected from pneumatic point of view.
Check the pressure sensor resistance. Refer to chapter "Help" in order to compare the values of the measured resistance with the recommended ones. Replace the pressure sensor if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:** **Pin 16 injection computer —> pin B atmospheric pressure sensor** **Pin 15 injection computer —> pin A atmospheric pressure sensor** **Pin 78 injection computer —> pin C atmospheric pressure sensor** Fix if necessary.
If the problem is not solved, use the recommended method for DF345 failure.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 052 PRESENT OR MEMORIZED	CYLINDER 1 INJECTOR CIRCUIT 1. DEF Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 : short circuit at + 12 V.

RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Start the engine and **especially stop it immediately the failure is becoming present,** so that catalyst-damaging risk is avoided. In case of failures addition, treat as most important, failure " DF009 actuators relay control circuit"
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET278 : Cylinder injector circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the connection and condition of the injector 1 connector. Replace the connector if necessary.
Check the injector resistance. Refer to chapter "Help" in order to compare the resistance values. Replace the injector if necessary.
When setting the contact on, check the presence of supplying +12 V on pin 1 of the injector 1. Fix, if necessary the electric routing up to actuators relay.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation and continuity** on line**:** **pin 59 injection computer — >pin 2 injector 1** Fix if necessary.
If after these checking the problem is persisting, treat the other failures then perform the conformity checking

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 053 PRESENT OR MEMORIZED	CYLINDER 2 INJECTOR CIRCUIT 1. DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 : short circuit at + 12V.

RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Start the engine and **especially stop it immediately the failure is becoming present,** so that catalyst-damaging risk is avoided. In case of failures addition, treat as most important, failure " DF009 actuators relay control circuit" * If the failure is memorized with OBD indicator on, check in the context part, if state "ET279 : Cylinder 2 injector circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

Check the connection and condition of the injector 2 connector. Replace the connector if necessary.
Check the injector 2 resistance. Refer to chapter "Help" in order to compare the resistance values. Replace the injector if necessary.
When setting the contact on, check the presence of supplying +12 V on pin 1 of the injector 2. Fix, if necessary the electric routing up to actuators relay.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation and continuity** on line**:** **pin 90 injection computer ⟶ pin 2 injector 2** Fix if necessary.
If after these checking the problem is persisting, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 054 PRESENT OR MEMORIZED	CYLINDER 3 INJECTOR CIRCUIT 1 DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 : short circuit at + 12V.
RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Start the engine and **especially stop it immediately the failure is becoming present,** so that catalyst-damaging risk is avoided. In case of failures addition, treat as most important, failure " DF009 actuators relay control circuit". * If the failure is memorized with OBD indicator on, check in the context part, if state "ET280 : Cylinder 3 injector circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the connection and condition of the injector 3 connector. Replace the connector if necessary.
Check the injector 3 resistance. Refer to chapter "Help" in order to compare the resistance values. Replace the injector if necessary.
When setting the contact on, check the presence of supplying +12 V on pin 1 of the injector 3. Fix, if necessary the electric routing up to actuators relay.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation and continuity** on line**:** **pin 60 injection computer —>pin 2 injector 3** Fix if necessary.
If after these checking the problem is persisting, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 055 PRESENT OR MEMORIZED	CYLINDER 4 INJECTOR CIRCUIT 1. DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 : short circuit at + 12V.

RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Start the engine and **especially stop it immediately the falure is becoming present,** so that catalyst-damaging risk is avoided. In case of failures addition, treat as most important, failure " DF009 actuators relay control circuit"
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET281 : Cylinder 4 injector circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

Check the connection and condition of the injector 4 connector. Replace the connector if necessary.
Check the injector 4 resistance. Refer to chapter "Help" in order to compare the resistance values. Replace the injector if necessary.
When setting the contact on, check the presence of supplying +12 V on pin 1 of the injector 4. Fix, if necessary the electric routing up to actuators relay.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation and continuity** on line**:** **pin 89 injection computer ⟶ pin 2 injector 4** Fix if necessary.
If after these checking the problem is persisting, treat the other failures then perform the conformity checking

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 057 PRESENT OR MEMORIZED	UPSTREAM OXYGEN SENSOR CIRCUIT 1.DEF : Open circuit or short-circuit

RECOMMENDATIONS	If failure "DF345" : Supply 5 volts potentiometers or sensors" is present or memorized, this must be treated as most important.
	Conditions for diagnostic application to memorized failure: Set the contact on. Start the engine, ensure that state "ET030: Upstream oxygen sensor heating" is ACTIVE and wait that state "**ET037 : Enriching adjustment**" is ACTIVE, then wait for 5 minutes.
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET285 : Upstream oxygen sensor circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the **connection and condition** of the oxygen sensor connector Check if there is no **water penetration in connector (a possible cause for engine unstable running)** Replace the connector if necessary.
Check for lack of tightening **between the exhaust collector and catalyst**
If the vehicle is running more in the city, perform a cleaning of the oxygen sensor.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:** **Pin 45 injection computer —> pin C oxygen sensor** **Pin 80 injection computer —> pin D oxygen sensor** Fix if necessary.
If the problem is persisting, replace the oxygen sensor.
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 058 PRESENT OR MEMORIZED	DOWNSTREAM OXYGEN SENSOR CIRCUIT 1.DEF : Open circuit or short-circuit

RECOMMENDATIONS	If failure "DF345" : Supply 5 volts potentiometers or sensors" is present or memorized, this must be treated as most important.
	Conditions for diagnostic application to memorized failure: - During road test, smooth driving, after an engine fan starting and state "ET027: Enriching double loop" to be active. - During road test, smooth driving, after an engine fan starting, immediately followed by a deceleration (rising gradient) with state "ET003: Released pedal valve position" active, gearbox ratio engaged and clutched.
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET287 : Downstream oxygen sensor circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

Check the **connection and condition** of the oxygen sensor connector Replace the connector if necessary.
Check for lack of tightening **on the routing between the two oxygen sensors.**
If the vehicle is running more in the city, perform a **cleaning** of the oxygen sensor.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and absence of the parasite resistance on lines:** **Pin 44 injection computer —>pin C oxygen sensor** **Pin 76 injection computer —>pin D oxygen sensor** Fix if necessary.
If the problem is persisting, replace the oxygen sensor.
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 060 PRESENT OR MEMORIZED	IDLINGADJUSTMENT CIRCUIT 1.DEF : Open circuit or short-circuit CO :Open circuit CC.O : Short-circuit at mass CC.1 :Short-circuit at +12 volts

RECOMMENDATIONS	**Conditions for diagnostic application tomemorized failure:** Set the contact on.
	* If the failure ismemorized with OBD indicator on, check in the context part, if state “ET255 : Idling adjustment circuit” corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the **connection and condition** of the step-by-step engine connector for idling adjustment
Replace the connector if necessary.

Check the resistance of the step-by-step engine for idling adjustment. Refer to chapter “Help” in order to compare the measured resistance values with the recommended ones.
Replace the step-by-step engine valves if necessary.

Check the **insulation, continuity and absence of the parasite resistance on lines:**

Pin 12 injection computer ⟶pin Bstep-by-step engine for idling adjustment
Pin 41 injection computer⟶pin A step-by-step engine for idling adjustment
Pin 42 injection computer ⟶pin C step-by-step engine for idling adjustment
Pin 72 injection computer ⟶pin D step-by-step engine for idling adjustment

Fix if necessary.

If the problem is persisting after these checking, treat the other failures then performthe conformity checking.

AFTER REPARATION	After repairing the step-by-step engine for idling adjustment, it may possible that engine is not starting; in this situation, the “learning” stage of the adaptive values by the injection computer must be again performed (see chapter “ Enriching adaptive correction”). Fixany other possible failures then performa conformity checking by meansof the CLIP tester.

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DF 061 PRESENT OR MEMORIZED	CYLINDERS 1-4 IGNITION COIL CIRCUIT 1.DEF : Open circuit or short-circuit CO : Open circuit CC.O : Short-circuit at mass CC.1 : Short-circuit at +12 volts

RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Start the engine and stop it immediately as the failure is occurring as being present (risk for catalyst) or rotate de engine with the starter, without starting it, for 10 seconds.
	In case of failures addition, treat as most important, failure **" DF345 : Supply 5 volts potentiometers or sensors"** and failure **"DF261 : Fuel pump relay circuit"**, if it is /they are present
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET282 : Ignition coil 1-4 circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

Check the **connection and condition** of the coil connector . Replace the connector if necessary.
Check the resistance of the coil resistance of cylinders 1-4. Refer to chapter "Help" in order to compare the measured resistance values with the recommended one. Replace the coil if necessary.
Check the +12 Volts supply existence after fuel pump relay, at pin C of the coil. **If it is necessary, apply the methodology for failure diagnostic "DF261"** Connect the 90 ways terminal box instead of the injection computer then check the insulation and continuity on line: **pin 32 injection computer ⟶ pin A ignition coil.** Fix if necessary.
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 062 PRESENT OR MEMORIZED	CYLINDERS 2-3 IGNITION COIL CIRCUIT 1.DEF : Open circuit or short-circuit CO : Open circuit CC.O : Short-circuit at mass CC.1 :Short-circuit at +12 volts

RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Start the engine and stop it immediately as the failure is occurring as being present (risk for catalyst) or rotate de engine with the starter, without starting it, for 10 seconds.
	In case of failures addition, treat as most important, failure **" DF345 : Supply 5 volts potentiometers or sensors "** and failure **"DF261: Fuel pump relay circuit"**, if it is /they are present.
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET283 : Ignition coil 2-3 circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method.

Check the **connection and condition** of the coil connector . Replace the connector if necessary.
Check the resistance of the coil resistance of cylinders 2 and 3. Refer to chapter "**Help**" in order to compare the measured resistance values with the recommended one. Replace the coil if necessary. **Check the +12 Volts supply existence after fuel pump relay, at pin C of the coil.** **If it is necessary, apply the methodology for failure diagnostic "DF261".**
Connect the 90 ways terminal box instead of the injection computer then check the insulation and continuity on line: **pin 1 injection computer ⟶ pin B ignition coil.** Fix if necessary..
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 064 PRESENT OR MEMORIZED	VEHICLE SPEED INFORMATION

RECOMMENDATIONS	**Conditions for diagnostic application to memorized failure:** Perform a drive test and notice the vehicle speed. Continue to perform the drive test uphill at constant speed. Continue to perform the drive test uphill, the acceleration pedal not being pushed.
	* If the failure is memorized with OBD indicator on, check in the context part, if state "ET223 : Vehicle speed transducer circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

Check the **connection and condition** of the speed transducer connector . Replace the connector if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the **insulation, continuity and the absence of the parasite resistance on line 53** of the injection computer on line.
If the problem is persisting, replace the speed transducer.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures. Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF102 PRESENT OR MEMORIZED	OXYGEN SENSOR FUNCTIONAL FAILURE It shows an incoherent information received b means of the upstream oxygen sensor.

RECOMMENDATIONS	Apply this diagnostic if the failure is present or memorized.

Check for leakage on exhaust line.
If the vehicle is mostly driven in town, perform an oxygen sensor cleaning.
Check the **connection and condition** of the oxygen sensor connector . Replace the connector if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the insulation, continuity and the absence of the parasite resistance on lines: **Pin 45 injection computer → pin C upstream oxygen sensor** **Pin 80 injection computer → pin D upstream sensor** **Pin 63 injection computer → pin B upstream sensor** Fix it if necessary.
If the problem is persisting, replace the oxygen sensor.
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Note any other functional failures. Fix any other possible failures.

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DF 106 PRESENT OR MEMORIZED	CATALYST FUNCTIONAL FAILURE It shows an incoherent information received before and after catalyst by means of the two oxygen sensors.

RECOMMENDATIONS	Apply this diagnostic if the failure is present or memorized.

Check for leakage on exhaust line. Fix it if necessary.
Perform a visual checking of the catalyst condition. O deformation may be the explanation for its non-operation. Check if the catalyst has not previously suffered thermal shocks.
If cold water is getting on a warm catalyst it may cause its damaging.
Check for oil or cooling fluid excessive consumption Ask the client if he has used an additive or a similar product. This type of product may inhibit the catalyst and render it inefficient on short or long term
Check if there was any combustion misfires. These may damage the catalyst.
Check during a drive test for any noises during running.
If the damaging cause has been found, you may replace the catalyst. **If you replace the catalyst without detecting the cause, the new catalyst may be damaged also very quickly.**

AFTER REPARATION	Note any other functional failures. Fix any other possible failures.

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DF 109 DF 110 PRESENT OR MEMORIZED	POLLUTED COMBUSTION MISFIRE DESTRUCTIVE COMBUSTION MISFIRE
RECOMMENDATIONS	State ET014 : Recognition of the cylinder 1 must be active, in order to identify each cylinder. ET093 : combustion misfire on cylinder 1 ET094 : combustion misfire on cylinder 2 ET095 : combustion misfire on cylinder 3 ET096 : combustion misfire on cylinder 4 These will provide information regarding failure cause and location.

A cylinder is declared damaged: **ET093** or **ET094** or **ET095** or **ET096.**	In this situation, the problem is probably due to an element that can act only on one cylinder: **- Problem at injector** **- Problem at spark plug** **- Problem at high voltage cable.** Before replacement, try the spark plug or cable changing to another cylinder.
Cylinders 1 and 4 or damaged: **ET093** and **ET096** or **ET094** and **ET095.**	In this cylinders 2 and 3 declared situation, the problem is probably due to an element that can act only this pair of cylinders: **- Problem at ignition coil, at the high voltage part.** **- Problem at ignition coil, at the control part**
Four cylinders declared damaged: **ET093** and **ET094** or **ET095** and **ET096.**	In this situation, the problem is probably due to an element that can act only on all cylinders: **-Problem at fuel filter** **-Problem at fuel pump** **-Problem on in use fuel type** **-Problem of in use spark plugs**

In case by using this method the problem is not solved, consult the falures diagnostic DF109 / DF 110 CONTINUATION

AFTER REPARATION	Ensure that all failures are solved. Erase all memorized failures. There is no need to erase the "adaptive values" memorized by the injection computer. In order to check the correct reparation of the system, the following conditions must be accomplished: - No more electrical failures; - All "adaptive values" to be memorized by the injection computer; - Warm engine (minimum 75°C); - Run at idling, all consumers being in use for 20 minutes (1 minute DF110); - If the failure is again occurring, repeat the diagnostic.

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DF 109 **DF 110** **CONTINUATION**	

RECOMMENDATIONS	**ET093 : combustion misfire on cylinder 1** ET094 : combustion misfire on cylinder 2 **ET095 : combustion misfire on cylinder 3** ET096 : combustion misfire on cylinder 4 These will provide information regarding failure cause and location.

Check the ignition system (refer to chapter "Help").
Fix it if necessary.

Check the **engine compression.**
Fix it if necessary.

Check the flywheel condition , in order to get a correct information of the engine RPM.
Fix it if necessary.

If no failure has been found, there is a problem on the fuel supply circuit.
In this situation the following must be checked:
- Fuel filter
- Fuel pressure and flow
- Fuel pump condition
- Fuel tank cleaning condition]
- Injectors conditions

Mend the fuel supply circuit.

AFTER REPARATION	Ensure that all failures are solved. Erase the memorized failures. There is no need to erase the "adaptive values" memorized by the injection computer. In order to check the correct reparation of the system, the following conditions must be accomplished: - No more electrical failures. - All "adaptive values" to be memorized by the injection computer. - Warm engine (minimum 75°C) - Run at idling, all consumers being in use for 20 minutes (1 minute DF110).

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DF 118 PRESENT OR MEMORIZED	

RECOMMENDATIONS	On the vehicles equipped with refrigerant fluid pressure transducers, the injection computer is recalculating the value of the PR044 parameter: Compressor absorbed power, starting from the values of the refrigerant fluid pressure. In case of the parameter PR027 deviation from normal values, the value of the PR044 parameter might be wrong.

Check the connection and condition of the connector of the refrigerant fluid pressure transducer. Mend if necessary.
Connect the 90 ways terminal box instead of the injection computer then check the insulation and continuity on lines: **Pin 82 injection computer —> pin A presure transducer** **Pin 83 injection computer —> pin B presure transducer** **Pin 18 injection computer —> pin C presure transducer**
Mend if necessary.
If the problem is persisting, perform a climate control diagnostic.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 120 PRESENT OR MEMORIZED	OBD INDICATOR CIRCUIT 1. DEF : Open circuit or short-circuit CO : open circuit CC.O : shot circuit at mass CC.1 : short circuit at + 12V.

RECOMMENDATIONS	Apply the diagnostic in such way so that failure is present or memorized. **Conditions for diagnostic application at memorized failure:** - Actuator control launching **AC 213 : OBD Indicator**

Check the **insulation, continuity and absence of the parasite resistance** on way 34 of the injection computer. Mend if necessary.
Ensure the **presence of + 12volts** at OBD indicator Check the cockpit fuse box, related to instrument panel supplying.
Replace it if necessary.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 261 PRESENT OR MEMORIZED	FUELPUMP RELAY CIRCUIT 1. DEF Supply failure + after relay 2. DEF Open circuit or short-circuit

RECOMMENDATIONS	**If failure "DF345 : Supply 5 volts potentiometers and sensors" is present or memorized, it must be treated as most important** **Conditions for diagnostic application at memorized failure:** Set the contact on, then enter in dialogue with the computer Or activation of the actuator control " **AC 010 : Fuel pump relay**". **REMARK**: This failure is most important. So it must be treated before the next ones. * If the failure is memorized with OBD indicator on, check in the context part, if state "ET241 : Fuel pump control circuit" corresponding to the OBD indicator lighting request is affirmative. In this case, proceed as per bellow mentioned method

1.DEF	**RECOMMENDATIONS**	It is a failure on the power circuit of the fuel pump relay.

Check the electric continuity f the idleness contact. Mend if necessary.
Check the **connection and condition of the fuel pump relay connector**. Replace the connector if necessary.
Check the **presence of the +12 volts supply at pole 3 of the fuel pump relay** Mend if necessary.
Check with the contact set on and acting the actuator control "AC010 : Fuel pump relay", the **presence of +12 V supply at pole 5 of the fuel pump relay.** Replace the relay if necessary
Check the **insulation and continuity of the connections between:** **Pole 5 fuel pump relay — > pin C ignition coil** **Pole 5 fuel pump relay — > fuel pump** Mend if necessary.
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 261 CONTINUATION	

2.DEF	**RECOMMENDATIONS**	It is a failure on the power circuit of the fuel pump relay.

Check the **connection and condition of the fuelpump relay connector**. Replace the connector if necessary.
Check, with the contact set non, the **presence of the +12 volts supply at pole 1 of the fuel pump relay.** Mend if necessary.
Check the fuelpump relay coil. Replace the fuel pump relay if necessary.
Check the **insulation and continuity of theline:** **Pin 68 injection computer — > pol 2 fuelpump relay** Mend if necessary.
If the problem is persisting after these checking, treat the other failures then perform the conformity checking.

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 271 PRESENT OR MEMORIZED	ACTUATORS RELAY EXIT VOLTAGE 1. DEF Open circuit or short-circuit

RECOMMENDATIONS	**Conditions for diagnostic application at memorized failure:** Set the contact off and wait until the communication with the computer is lost. **REMARK**: If failure "DF009 : Actuators relay control circuit" is present or memorized, it must be treated as most important, because this could be the cause of the failure occurring.

Check the condition of **the battery and of the vehicles electric masses.** Mend if necessary.
Check the **connection and condition of the actuators relay connector**. Replace the connector if necessary.
Check with the contact set on, the **presence of the +12 V supply at pole 3 of the actuators relay**. Fix the electric routing on the line towards the corresponding fuse.
Check with the contact set on, the **presence of +12 V supply at pole 5 of the actuators relay.** Replace the relay if necessary
Check the **insulation and continuity on the line:** **Pin 66 injection computer — > pole 5 actuators relay** Mend if necessary.
Disconnect one by one the elements (injector, canister purging valve…) and **observe the +12 V supply at the exit pole 5 of the actuators relay, in order to identify the damaged one.** **Replace the damaged element.**

AFTER REPARATION	Perform the operations from " recommendations" for reparation confirmation. Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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DF 345 PRESENT	SUPPLY + 5VOLTS POTENTIOMETERS AND SENSORS 1. DEF Open circuit or short-circuit

RECOMMENDATIONS	Check with the contact set on, the parameter **"PR004: computer supplying voltage"** (measured voltage at battery: about 12 volts). - if at limit the value is of 16 volts, it means there is a short-circuit at mass. - if at limit the value is of 10.7 volts, it means there is short-circuit at +12 volts **of one one of the supply ways +5 volts**

Check the **connection and condition** of the connectors of the valve potentiometer, manifold pressure sensor and refrigerant fluid pressure transducer 9if there is on the vehicle).
Replace the connector/connectors if necessary.

Disconnect one by one, the following transducers, if they are passing from state present to memorized: valve potentiometer, manifold pressure transducer and refrigerant fluid pressure transducer (if there is on vehicle).
Treat the failure from the transducer, if necessary.

Check the **insulation ,continuity and the absence of the parasite resistance on lines:**
Pin 74 injection computer ⟶ pin B valve potentiometer
Pin 78 injection computer ⟶ pin C manifold pressure transducer
Pin 83 injection computer ⟶ pin B refrigerant fluid pressure transducer (if there is).
Mend if necessary.

If the problem is persisting after these checking, treat the others failures then perform the conformity checking.
Perform the operations from "recommendations" for reparation confirmation

AFTER REPARATION	Fix any other possible failures Erase the failures memorized by the injection computer. Perform a conformity checking by means of the CLIP tester.

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Valve potentiometer resistance	Track Slider	= 1200Ω ± 20 % = < 1050Ω
Idling regulator resistance	at 25°C	= 53Ω ± 10%
Ignition coil resistance	Primary Secondary	= 0.5 Ω± 5 % = 7200 Ω± 10 %
Injector's resistance	at – 40°C at 20C at 120°C	= 11.1Ω = 14.5Ω ± 5% =20.6Ω
Sensor atmospheric pressure resistance		=50 kΩ
Upstream oxygen sensor heating resistance For engines E7J-260-MA and E7J-262 MB	at 23°C	= 6± 1Ω
Downstream oxygen sensor heating resistance for engines E7J-260-MB, E7J-262-MB orupstream for engine E7J-262-MB	at 23°C	= $3.3^{+0.7}_{-0.3}$ Ω
RPM sensor resistance	at 23°C	= 200 -270Ω
Canister purging valve resistance	at 23°C	= 26Ω ± 7 %

Temperature (°C)	-40	-10	25	50	80	110	120
Air temperature sensor Resistance (ohms)	50000 ± 14 %	9500 ± 10 %	2051 ± 6 %	810 ± 6 %	309 ± 6 %	135 ± 6 %	105 ± 7 %
Water temperature sensor Resistance (ohms)	75780 ± 9 %	12460 ± 9 %	2252 ± 5 %	811 ± 5 %	282 ± 3 %	115 ± 2 %	88 ± 2 %

Ignition system checking:

Check the condition, insulation and continuity of the high voltage cables.
Replace them if necessary.
Check the condition and correct tightening of the ignition spark plugs and if the spark plugs are corresponding with the recommended ones.
Replace them if necessary.
Check the condition of the ignition coil connectors.
Replace if necessary.
Check the condition and the primary and secondary resistance values of the ignition coil.
Replace if necessary
Check the coils supply:
Presence of the +12 volts supply (contact set on).
Check the electric routing between the coil and the actuators relay.
Mend if necessary.

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: Stopped engine, contact set on.

Sequence	Function	Parameter / Controlled state or action	Visualization and Observations	Diagnostic
1	Voltage	ET001 : after contact computer PR004 : computer supplying voltage	ACTIVE	In case of a problem consult the PR004 diagnostic
2	Computer	LC012 : O2 sensor option reading LC017: Engine fan driving with running engine LC019 : upstream oxygen sensor LC020 : downstream oxygen sensor LC036 : low flow fuel pump configuration LC042 : AC cold loop at injection LC048 : climate control configuration reading LC054 : Gearbox type LC096: Compresor with fix clynder capacity	With one wire or three wires With (if the option is existing) With With (if the option is existing) With (if the option is existing) With (if the option is existing) With (if the option is existing) Mechanical gearbox With (if the option is existing)	Nothing to be noticed

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: Stopped engine, contact set on.

Sequence	Function	Parameter / Controlled state or action	Visualization and Observations	Diagnostic
3	Anti-starting	ET002 : Anti starting	PASSIVE	In case of a problem consult the **DF004** diagnostic.
4	Valve position potentiometer	Acceleration pedal released. ET003 : valve position for released pedal. PR017 : measured valve position. PR008 : position memorized value for released pedal. Acceleration pedal slightly pressed. ET003 : released pedal valve position. ET005 : valve position at maximum acceleration Acceleration pedal fully pressed. ET003 : valve position for released pedal. ET005 : valve position at maximum acceleration. PR017 : measured valve position.	 Yes 0 < x < 47 0 < x < 47 NO NO NO YES 170 < x < 255	 In case of a problem consult the **DF017** diagnostic.
5	Water temperature sensor	PR002 : water temperature	X= engine temperature ± 5°C	In case of a problem consult the **PR002** diagnostic
6	Air temperature sensor	PR003 : air temperature	X = under bonnet temperature ± 5°C	In case of a problem consult the **PR003** diagnostic
7	Pressure transducer	PR016 : atmospheric pressure PR001 : manifold pressure	X = atmospheric pressure X = atmospheric pressure	In case of a problem consult the **PR001** diagnostic

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: Stopped engine, contact set on.

Sequence	Function	Parameter / Controlled state or action	Visualization and Observations	Diagnostic
8	Fuel pump	AC010 : Fuelpump relay	The fuel pump must be heard running	In case of a problem consult the **AC010** diagnostic
9	Engine blower	AC271 : low speed engine blower relay AC272 : high speed engine blower relay (if equipped)	The engine blower must be heard running with low speed The engine blower must be heard running with high speed	In case of a problem consult the **ET035 (ET036)** diagnostic
10	Idling regulator	AC014 : idling regulator	Place your hand under it to feel it running.	In case of a problem consult the **ET039** diagnostic
11	Canister purging valve	AC016 : canister purging valve	Canister purging valve in operation	In case of a problem consult the **ET032** diagnostic
12	Climate control	AC003 : Climate control compressor	Compressor must couple	In case of a problem consult the **ET070** diagnostic
13	Indicators	AC212 : water temperature indicator AC213 : OBD indicator AC 005 : rate changing indicator (if equipped)	Indicator must be on Indicator must be on Indicator must be on	In case of a problem consult the **AC212 / DF120 (ET092)** diagnostic / diagnostics

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: Warm engine at idling and no consumers.

Sequence	Function	Parameter/Controlled state or action	Visualization and Observations	Diagnostic
1	Battery voltage	ET001 : +after contact computer PR004 : computer supply voltage If PR004= Then PR006 : engine regime	ACTIVE 13 <X < 145V X<12.8V 750 < X< 910rpm	In case of a problem consult the PR004 diagnostic
2	Fuel pump control	ET020 : Fuel pump relay control	ACTIVE	In case of a problem consult the AC010 diagnostic
3	Actuator	ET025 " Actuators relay control control	ACTIVE	In case of a problem consult the DF009 diagnostic
4	RPM signal	ET060: RPM signal to running engine	ACTIVE	In case of a problem consult the DF017 diagnostic
5	No1 cylinder recognition	ET014 : No.1 cylinder recognition	PERFORMED (only if ET011 Active)	Nothing to be noticed
6	Oxygen sensor heating	ET030 : Upstream O2 sensor heating conditions ET031 : Downstream O2 sensor heating (if present)	ACTIVE ACTIVE	Check operation
7	Valve potentiometer	ET003 : valve position at released pedal	YES	In case of a problem consult the DF017 diagnostic
8	Idling adjustment	ET039 : Idling adjustment PR006 : Engine regime PR041 : Idling regime indication PR022 : RCO idling	ACTIVE 750 < X< 775rpm = PR006 ± 25 rpm Values specified in chapter : "Adaptive correction of the idling regime"	In case of a problem consult the ET039 diagnostic
9	Pressure circuit	PR001: Manifold pressure PR016: Atmospheric pressure	250 < X< 500mb X = Atmospheric pressure	In case of a problem consult the PR001 diagnostic

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: Warm engine at idling and no consumers.

Sequence	Function	Parameter/Controlled state or action	Visualization and Observations	Diagnostic
10	Anti-detonation circuit	PR013 : Detonation average signal	20 < X < 100	In case of a problem consult the PR0013 diagnostic
11	Enriching adjustment	ET037 : Enriching adjustment PR009 : Upstream O2 sensor voltage PR 035 : Enriching correction value	ACTIVE 200 < X < 840 mV 0 < X < 255 Average value 128	In case of a problem consult the ET037 diagnostic
12	Climate control (controlled AC)	ET009 : Climate control request ET070 : Climate control compressor	ACTIVE If injection is authorizing the compressor coupling ACTIVE If injection is authorizing the compressor coupling	In case of a problem consult the **ET00, ET070 and DF18** diagnostic or chapter "Injection/CA strategy"
	According to conditions and requests of the injection computer, water temperature, electric consumption, refrigerant fluid pressure	E035 : fan low speed If state ET038 : accelerated idling Then parameter PR006 : Engine regime	ACTIVE Fan must run at low speed ACTIVE 850 < X < 960 rpm	
	If type Info PA complete or cold loop present in injection	PR044 : Absorbed power by AC compressor	300<X<5000 W **(X<300W if the injection is not authorizing the the compressor coupling)**	
	If type cold loop in injection	PR027 : Refrigerant fluid pressure	2< X < 6 bar	

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: Warm engine at idling and no consumers.

Sequence	Function	Parameter/Controlled state or action	Visualization and Observations	Diagnostic
13	Engine Fan	ET035 : Low speed engine fan PR002 : Water temperature ET036 : High speed engine fan (if equipped with AC). PR002 : Water temperature	PASSIVE Engine fan must run when engine water temperature is exceeding 99°C ACTIVE Engine fan must run when engine water temperature is exceeding 102 ° C	In case of a problem consult the **ET035 (ET036)** diagnostic

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: During a drive test

Sequence	Function	Parameter/Controlled state or action	Visualization and Observations	Diagnostic
1	Canister purging	ET032 : Canister purging PR023 : RCO canister purging valve	ACTIVE X > 1.5 % and variable	Nothing to be noticed
2	Speed vehicle	PR018 : Vehicle speed	X = The speed red on the speedometer in Km/hour	In case of a problem consult the PR018 diagnostic
3	Detonation sensor	Vehicle in charge PR013 : Detonation average signal PR015 : Anti-detonation correction.	X is variable and different of 0 0° < X <7° RAC	In case of a problem consult the PR013 diagnostic
4	Downstream oxygen sensor	PR010 : Oxygen sensor voltage Running in full charge At deceleration, after an acceleration with the pedal fully pressed.	Do not take into consideration voltage at idling The sensor is showing enriched mixture, X is increasing with a small responding time The sensor is showing poor mixture, X is decreasing with a small responding time.	Nothing to be noticed

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RECOMMENDATIONS	The values shown on this conformity checking are only as indication. **Performing conditions**: During a drive test

Sequence	Function	Parameter/Controlled state or action	Visualization and Observations	Diagnostic
5	Enriching adaptation	After memorizing the adaptation values PR030 : Enriching adaptation in operation E7J PR031 : Enriching adaptation idling E7J	 80<X< 176 80<X< 176	 In case of a problem consult the **PRO030** and **PR031** diagnostic
6	Pollution emission	At 2500 RPM, after running At idling after stabilization	CO < 0.3 % CO_2 > 13.5 % O_2 < 0.8 % HC < 100 ppm 0.97 <λ < 1.03 CO < 0.5 % HC < 100 ppm 0.97 <λ < 1.03	In case of a problem consult the "Anti-pollution technical note"

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ET009	CLIMATE_CONTROL_REQUEST

RECOMMENDATIONS	No failure must be present or memorized.

The injection computer is not noticing the air conditioning starting control.
Check the **insulation and continuity on the line from pin 23** (climate control of type Info Power Absorbed by compressor)**or from pin 46** (climate control of type Logical connection) of the injection computer. Mend if necessary.
If the problem is persisting consult the climate control diagnostic.

AFTER REPARATION	Restart the conformity checking from the beginning.

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ET035	LOWSPEEDENGINEFAN

RECOMMENDATIONS	No failure on the water temperature sensor circuit must be present in order to perform this diagnostic.

Check: - engine fan condition - engine fan resistance condition - condition f the engine fan mass connection - low speed engine fan supply - supply line between engine fan and engine fan relay Mend if necessary.
Check the connection and condition of the connector of the low speed engine fan relay Replace the connector if necessary.
Remove the relay of the low speed engine fan Check, with the contact set on, the supply presence +12 volts at pole 1 of the relay. Mend if necessary.
Measure the relay coil resistance. Replace the relay of the low speed engine fan, if necessary.
Connect the 90ways terminal boxinstead of the computer and check the **insulation, continuity and absence of theparasite resistance on theconnection between:** **Pin 8 injection computer —>Relay of the low speed engine fan** Mend if necessary.

AFTER REPARATION	Restart the conformity checking from the beginning.

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ET036	HIGHSPEED-ENGINEFAN

RECOMMENDATIONS	No failure on the water temperature sensor circuit must be present in order to perform this diagnostic

Check: - engine fan condition - engine fan resistance condition - condition of the engine fan mass connection - high speed engine fan supply - supply line between engine fan and engine fan relay Mend if necessary.
Check the **connection and condition of the connector of the high speed engine fan relay** Replace the connector if necessary.
Remove the relay of the high speed engine fan Check, with the contact set on, the supply presence +12 volts at pole 1 of the relay. Mend if necessary.
Measure the **relay coil resistance.** Replace the relay of the high-speed engine fan, if necessary.
Connect the 90 way terminal box instead of the computer and check the **insulation, continuity and absence of the parasite resistance on the connection between:** **Pin 38 injection computer —> Relay of the high speed engine fan** Mend if necessary.

AFTER REPARATION	Restart the conformity checking from the beginning.

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ET037	ENRICHING ADJUSTMENT

RECOMMENDATIONS	No failure must be present or memorized.

Check the connection and condition of the upstream oxygen sensor connector Mend if necessary
Check the ignition Check the tightening of the canister purging valve (a leak is appreciably disturbing the mixture enriching achievement). Check the tightening of the exhaust line. Check the tightening of the intake manifold. If the vehicle is driven only in town, the sensor may be clogged (try in charge driving). Check the petrol pressure. If idling is unstable, check the valves clearance and the distribution. If necessary, replace the oxygen sensor.
Check the presence of **+12 volts supply** on upstream oxygen sensor. Check the **insulation and continuity of the connections between:** **Pin 45 injection computer ⟶ Pin C upstream oxygen sensor** **Pin 80 injection computer ⟶ Pin D upstream oxygen sensor** Mend if necessary.

AFTER REPARATION	Restart the conformity checking from the beginning.

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ET039	IDLINGADJUSTMENT

RECOMMENDATIONS	No failure must be present or memorized. Attention to the recommended value of idling RPM: PR041

Check the **connection and condition** of the idling regulator connector.
Replace the connector if necessary.

Check the resistance of the idling regulator.
Replace the idling regulator if necessary

Check the **insulation and continuity of the connections** between:
Pin 12 injection computer ⟶ pin B idling regulator
Pin 41 injection computer ⟶ pin A idling regulator
Pin 42 injection computer ⟶ pin C idling regulator
Pin 72 injection computer ⟶ pin D idling regulator
Mend if necessary.

Idling regime <minimal limit	**RECOMMENDATIONS**	**The idling RPM is too low**

- Check the enriching adjustment operation.
- Clean the air supply circuit (valve body, idling regulator), which may be clogged.
- Check the engine oil level (too high ? bubbling).
- Check the engine compressions.
- Check the valves clearances and the distribution setting.
- Check the ignition.
- Check the injectors.

If all checked elements are correct, replace the idling regulator

Idling regime >maximal limit	**RECOMMENDATIONS**	**The idling RPM is too high**

- Check the oil level
- Check the good operations of the atmospheric pressure sensor.
- Check possible leaks at piping connected to the inlet manifold.
- Check the electric valves with pneumatic control.
- Check the manifold gaskets.
- Check the gaskets of the valve body.
- Check tightening at servo-brake.
- Check the presence of nozzles in the connection hoses of the oil vapors re-aspiration circuit.
- Check the valves clearance and the distribution setting.

If all checked elements are correct, replace the idling regulator

AFTER REPARATION	Restart the conformity checking from the beginning.

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ET070	CLIMATE CONTROL COMPRESSOR

RECOMMENDATIONS	No failure must be present or memorized.

Check the **insulation and continuity** on the line starting from pin 10 of the injection computer.
Mend if necessary.

If the incident is persisting, consult the climate control diagnostic

AFTER REPARATION	Restart the conformity checking from the beginning.

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PR001	MANIFOLDPRESSURE

RECOMMENDATIONS	No failure must be present or memorized.

Incoherent manifold pressure, contact on	**Check the** insulation, continuity and the absence of the parasite resistance **of the comections between:** **Pin 15injection computer— > pin A pressure transducer** **Pin 16injection computer— >pin B pressure transducer** **Pin 78injection computer— > pin C pressure transducer** Mend if necessary.
Manifold pressure < minimal pressure at idling	
Incoherent atmospheric pressure (PR016)	If all checked elements are correct, replace the transducer.

Manifold pressure > maximal pressure at idling	Check : - Sealing between manifold and transducer. - Valves clearance. - Canister purging valve operation - Cylinders compression - Lack of leaking at inlet manifold (“false air”) - Exhaust is not clogged.
	If all these elements are correct, replace the transducer.

AFTER REPARATION	Restart the conformity checking from the beginning.

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PR002	WATER TEMPERATURE

RECOMMENDATIONS	No failure must be present or memorized.

If the value red is incoherent, check that sensor is correctly following the standard curve "resistance subject to temperature".
Replace the sensor if this is presenting deviations (Observation: the presence of the deviations from normal values of a sensor are often due further to an electric shock).

Check the insulation, continuity and the absence of the parasite resistance of the connections between:

Pin 13 injection computer ⟶ pin B2 water temperature sensor

Pin 73 injection computer ⟶ pin B1 water temperature sensor

Mend if necessary.

AFTER REPARATION	Restart the conformity checking from the beginning.

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ET003	AIRTEMPERATURE

RECOMMENDATIONS	No failure must be present or memorized.

If the value red is incoherent, check that sensor is correctly following the standard curve "resistance subject to temperature".
Replace the sensor if this is presenting deviations (Observation: the presence of the deviations from normal values of a sensor are often due further to an electric shock).

Check the insulation, continuity and the absence of the parasite resistance of the connections between:

Pin 49 injection computer —— >pin 1 air temperature sensor

Pin 77 injection computer —— >pin 2air temperature sensor.

Mend if necessary.

AFTER REPARATION	Restart the conformity checking from the beginning.

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PR004	COMPUTER SUPPLYING VOLTAGE

RECOMMENDATIONS	No failure must be present or memorized. No consumers

Under contact	**If voltage >Min, the battery is discharged:** Check that charging voltage is correct with and without consumers.
	If voltage> Max, the battery is probably, too charged: Check that charging voltage is correct with and without consumers.
At idling	**If voltage <Min, the charging voltage is to weak :** Check that charging circuit in order to detect the origin of this problem.
	If voltage > Max, the chaging voltage is too strong: The alternator-charging regulator is damaged. Fix this problem and check the electrolyte level in the battery.
If the battery and the charging circuit are correct.	The problem must be treated using the DF345 diagnostic method : Supply +5 volts potentiometers and sensors

AFTER REPARATION	Restart the conformity checking from the beginning.

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PR017	VALVE POSITION

RECOMMENDATIONS	No failure must be present or memorized.

Limit memorizing of **PR008** or non-detection of the released acceleration pedal **ET003** or non-detecting of pressed acceleration modified.	**Check that** potentiometer mechanical limitter has not been Check the acceleration control **(friction,** pedal **ET005 obstacle,…).**
	Check the **valve potentiometer resistance.** **Replace the valve potentiometer, if necesary.**
	Check the insulation, continuity and the absence of the parasite resistance of the connection between: Pin 43 injection computer ⟶ pin C valve potentiometer Pin 74 injection computer ⟶ pin B valve potentiometer Pin 75 injection computer ⟶ pin A valve potentiometer

The valve position is fixed **(PR017)**	Check that potentiometer is mechanically coupled to the valve. If necessary, replace the transducer.

AFTER REPARATION	Restart the conformity checking from the beginning.

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PR030 **PR031**	**ENRICHING ADAPTATION IN OPERATION** **ENRICHING ADAPTATION AT IDLING**

RECOMMENDATIONS	No failure must be present or memorized. Perform the steps for memorizing the adaptation values by the injection computer.

Erase the computer memory. At warm, when idling adjustment, observe these parameters :
- If one of these parameters is moving towards the minimal limit, there is not sufficient petrol or there is too much air. - If one of these parameters is moving towards the minimal limit, there is too much petrol or there is not sufficient air. (See chapter " Enriching adaptive correction) for the exact limit values)
Ensure the cleaning condition and the good operation of : - fuel filter - fuel pump - fuel circuit - fuel tank - air supply piping - air filter - spark plugs
Check : - Engine compressions - Valves clearance - Ignition

AFTER REPARATION	Restart the conformity checking from the beginning.

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AC010	FUEL PUMP RELAY

RECOMMENDATIONS	No failure must be present or memorized. Before perform this checking, check the lines correspondence on the electric diagram adequate to that vehicle.

Check that choke sensor is in operating condition Mend the choke sensor if necessary.
Check the continuity between ways 1 and 3 of the choke sensor. If there is no continuity, replace the choke sensor.
Check, under starter operation, the presence of the **+12 volts at way 3** of the choke sensor connector. If there is no +12 volts, restore in function the line from way 3 of the choke sensor to pole 5 of the fuel pump relay.
Check the wiring condition and the mass presence at the fuel pump.
Check the wiring **insulation and contnuity**: **Way 3 choke sensor → fuel pump** Mend if necessary.
If the incident is persisting, replace the fuel pump.

AFTER REPARATION	Restart the conformity checking from the beginning.

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AC212	WATER TEMPERATURE WARNING INDICATOR

RECOMMENDATIONS	No failure must be present or memorized.

Check the mass presence on the indicator line, after control activating. Mend if necessary
If a short-circuit has occurred at the supply circuit +12 volts on the indicator line, the instrument panel may be damaged.
If the incident is persisting, consult the instrument panel diagnostic

AFTER REPARATION	Restart the conformity checking from the beginning.

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RECOMMENDATIONS	Do not use these information but before performing the complete checking by means of the CLIP tester

IMPOSSIBILITY OF COMMUNICATION UCE INJECTION CLIP TESTER **ALP 1**

STARTING PROBLEMS
(engine is not starting or is difficulty starting) **ALP 2**

IDLING PROBLEMS (unstable idling) **ALP 3**

INTERMEDIATE ACCELERATION OR DECELERATION
(engine unstable running) **ALP 4**

ENGINE OPERATION BREAKDOWN **ALP 5**

ENGINE STOPPING **ALP 6**

ENGINE NOISE **ALP 7**

SMOKE **ALP 8**

PERFORMANCES LIST **ALP 9**

FUEL CONSUMPTION **ALP 10**

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ALP 1	IMPOSSBILITYOFCOMMUNICATION UCHINJECTIONCLIPTESTER

RECOMMENDATIONS	Nothing to be noticed

Ensure that not the CLIP tester is the cause of the failure, by trying to communicate with the computer of another vehicle.
Check connection between CLIP tester and the vehicle diagnostic socket (cable condition).
Check the condition of the injection fuses, engine and cockpit.
Mend if necessary.

Check the presence of the supply **+12 V** at pin **16** and of the **mass** at pins **4** and **5** of the diagnostic device socket.
Mend if necessary.

Connect the 90 ways terminal box instead of the computer and check the insulation, continuity and absence of the parasite resistance of the connections between:

- **pin 28 injection computer —> mass**
- **pin 33 injection computer —> mass**
- **pin 3 injection computer —> mass**
- **pin 56 injection computer —> pin 7 diagnostic socket**
- **pin 26 injection computer —> pin 15 diagnostic socket**
- **pin 29 injection computer —> fuse**
- **pin 30 injection computer —> fuse**

Mend if necessary.

AFTER REPARATION	Perform a checking by means of the CLIP tester.

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ALP 2	STARTING PROBLEMS engine is not starting or is difficulty starting)

RECOMMENDATIONS	Do not consult this diagnostic but before performing a complete checking by means of the CLIP tester.

Check that starter is well operating

Check there is petrol in the fuel tank (fuel indicator failure).
Ensure that vehicle is supplied with adequate fuel.

Check that supply circuit hoses are not broken (especially further to a dismounting)
Check the condition of the fuel filter
Check the condition of the fuel tank
Check that fuel tank aeration is taking place.

Check the electric supply of the fuel pump.
Check the good operation of the choke sensor.

Check the motor of the idling regulator.
In order to unblock it, you may slightly hit it.

Disconnect the connection hose between the canister purging valve and the intake manifold.
Clamp the connection hose in order to stop the air passing.
If there are no more disturbances, the cause is the canister purging valve.

Check the spark plugs and ignition coil condition
Check that these elements are specific to that vehicle.

Check that the exhaust route is not clogged and the catalyst is not clogged.

Check the engine compressions

Check the flywheel condition

Check the distribution setting on.

AFTER REPARATION	Perform a checking by means of the CLIP tester.

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ALP 3	IDLING PROBLEMS (unstable idling)

RECOMMENDATIONS	Do not consult this diagnostic but before performing a complete checking by means of the CLIP tester.

Check if there is petrol in the fuel tank (fuel indicator failure)
Check if the vehicle is supplied with adequate fuel

Check that supply circuit hoses are not broken (especially further to a dismounting)
Check the condition of the fuel filter
Check the condition of the fuel tank
Check that fuel tank aeration is taking place.

Check the connection and the condition of the idling regulator connector.
Replace the connector if necessary.

Check the motor of the idling regulator
In order to unblock it, you may slightly hit it.

Disconnect the connection hose between the canister purging valve and the intake manifold.
Clamp the connection hose in order to stop the air passing.
If there are no more disturbances, the cause is the canister purging valve.

Check the spark plugs and ignition coil condition
Check that these elements are specific to that vehicle.

Check that the exhaust route is not clogged and the catalyst is not clogged.

Check, by means of the oil dipstick, that oil level is not too high.

Check for lack of sealing at servo-brake (noise).

Check the intake manifold condition

Check if the valve body is not clogged

Check the engine compressions.

Check the engine flywheel condition

Check the distribution setting on.

AFTER REPARATION	Perform a checking by means of the CLIP tester.

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ALP 4	INTEMPERATE ACCELERATION OR DECELERATION (engine unstable running)

RECOMMENDATIONS	Do not consult this diagnostic but before a complete checking by means of the CLIP tester

Check if air filter is not deformed.

Check if there is petrol in the fuel tank (fuel indicator failure)
Check if the vehicle is supplied with adequate fuel

Check that supply circuit hoses are not broken (especially further to a dismounting)
Check the condition of the fuel filter
Check the condition of the fuel tank
Check that fuel tank aeration is taking place.

Disconnect the connection hose between the canister purging valve and the intake manifold.
Clamp the connection hose in order to stop the air passing.
If there are no more disturbances, the cause is the canister purging valve.

Check the spark plugs and ignition coil condition
Check that these elements are specific to that vehicle.

Check that the exhaust route is not clogged and the catalyst is not clogged.

Check the sealing of the exhaust manifold.

Check, by means of the oil dipstick, that oil level is not too high.

Check for lack of sealing at servo-brake (noise).

Check the intake manifold condition

Check if the valve body is not clogged

Check the engine compressions.

Check that brake calipers, drums and bearings are not gripped.
Check that tires are inflated

Check the engine flywheel condition

Check that cooling system is properly operating

AFTER REPARATION	Perform a checking by means of the CLIP tester.

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ALP 5	ENGINE OPERATION BREAKDOWN

RECOMMENDATIONS	Do not use these information but after performing complete checking by means of CLIP tester.

Check the followings :
- fuel conformity;
- lack of air circuit clogging, supply circuit and fuel circuit;
- lack of important air leak;
- injection pump setting on;
- injectors.

AFTER REPARATION	Perform a road test then a checking by means of CLIP tester. Fix possible detected failures.

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ALP 6	ENGINE STOPPING

RECOMMENDATIONS	Do not use these informations but after performing complete checking by means of CLIP tester.

Check the followings :
- lack of air circuit clogging, supply circuit and fuel circuit.
- lack of fuel leak
- injectors
- injecton pump
- engine
- supply **+12V** after setting on the contact at **pin 81** of the injection computer.

AFTER REPARATION	Perform a road test then a checking by means of CLIP tester. Fix possible detected failures.

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ALP 7	ENGINE NOISE

RECOMMENDATIONS	Do not use these information but after performing complete checking by means of CLIP tester.

Check the followings:
- lack of air leak;
- pre-heating spark plugs;
- injection pump setting on;
- injectors;
- injection pump;
- engine;
- combustion pre-chambers.

AFTER REPARATION	Perform a road test then a checking by means of CLIP tester. Fix possible detecetd failures.

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ALP 8	SMOKE

RECOMMENDATIONS	Do not use these informations but after performing complete checking by means of CLIP tester.

Check the followings:
- injection pump setting on;
- injectors;
- injection pump;
- lack of air leak;
- pre-heating spark plugs;
- engine.

AFTER REPARATION	Perform a road test then a checking by means of CLIP tester. Fix possible detected failures.

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ALP 9	LACK OF PERFORMANCES

RECOMMENDATIONS	Do not use these informations but after performing complete checking by means of CLIP tester.

Check the followings :
- fuel conformity;
- lack of air circuit clogging, supply circuit and fuel circuit;
- lack of fuel leak and air leak;
- injection pump setting on;
- engine compression;
- injectors;
- injection pump;
- pre-heating spark plugs.

AFTER REPARATION	Perform a road test then a checking by means of CLIP tester. Fix possible detected failures.

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ALP 10	FUEL CONSUMPTION

RECOMMENDATIONS	Do not use these informations but after performing complete checking by means of CLIP tester.

Check the followings :
- air filter;
- diesel filter;
- vahicle exploitation conditions;
- injectors.

AFTER REPARATION	Perform a road test then a checking by means of CLIP tester. Fix possible detected failures.

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COOLING FLUID QUANTITY AND QUALITY

ENGINE	QUANTITY* (liters)	QUALITY	CHARACTERISTICS
E7J	6	Antifreeze type D GLACEOL RX	Protection until –40°C

〈 **Mixture : 50% concentrated antifreeze + 50% distilled water.**

THERMOSTAT

ENGINE TYPE	OPENING START (°C)	OPENING END (°C)	STROKE (mm)
F8Q	**89**	**101**	**7.5**

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The heating radiator has no valve.

The fluid circulation is permanently done in the heating radiator, this leading to the engine cooling.

FILLING

Open the purging screw located on the water pipe between engine and climate control radiator.

Fill up the circuit by the expansion vessel hole

Tighten the purging screws in the moment when the fluid is flowing in a continuos jet.

Start the engine, maintaining it at **2500 rot/min**.

Adjust the fluid level in the expansion vessel, during about **4 minutes.**

Close the cap of the expansion vessel.

PURGING

Let the engine run for **10** minutes at **2500 rot/min**, until engine fan starting (necessary period for automatic gas purge).

Check if the fluid level in the expansion vessel is nearby the mark "Max".

Do not open the purging screws with the engine running.

Retighten the expansion vessel cap with the warm engine.

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Checking

SPECIAL TOOLS	
MS 554-01	Adapter for M.S. 554-07
MS 554-06	Adapter for M.S. 554-07
MS 554-07	Kit for checking the cooling system sealing

1. CIRCUIT SEALING CHECKING

Mount the adapter **M.S 554 –01** instead of the expansion vessel valve.

Connect at the adapter, the **M.S. 554-07** device.

Warm the engine, then stop it.

Pump, in order to create pressure in the circuit.

Stop pumping at a value lower with **0.1 bar** then the valve calibrating value (**1.2 bar)**

The pressure must not drop, if not, check for leak and fix it.

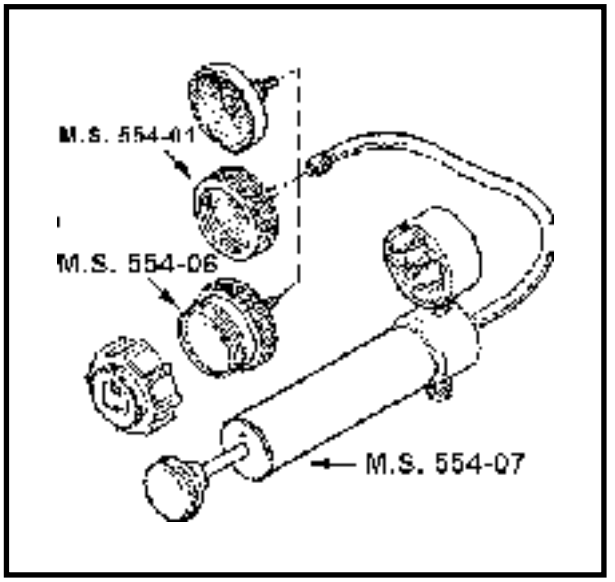
Progressively unscrew the device connection for cooling circuit decompressing then unscrew the device, and mount back the expansion vessel valve.

2. CHECKING ALVE CALIBRATION

Mount the expansion vessel valve on adapter **M.S. 554-06** and connect it to the **MS 557-07** device.

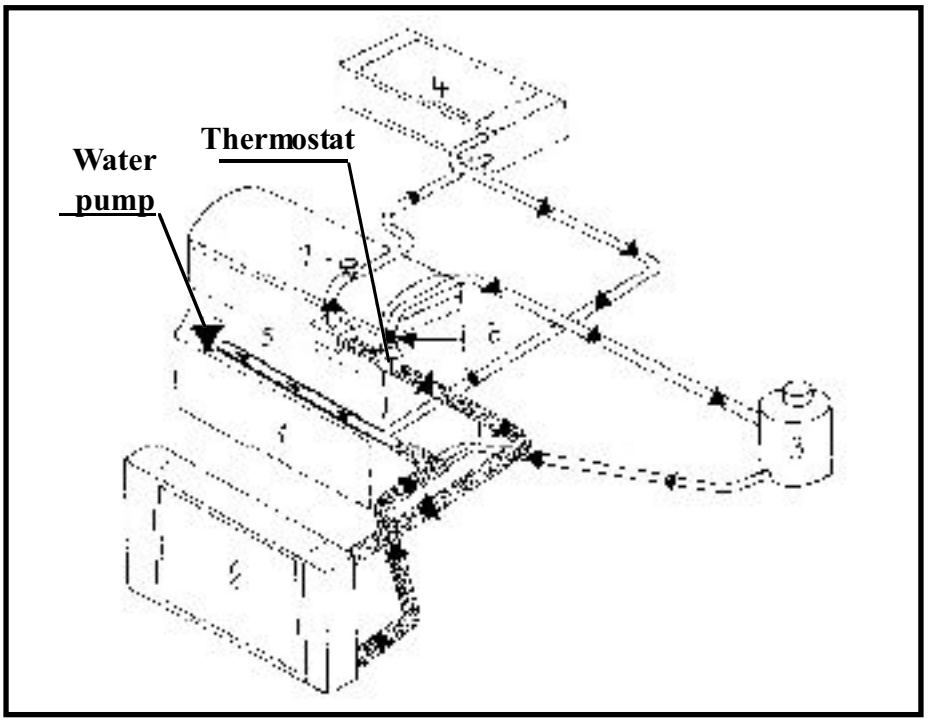
Pump to increase the pressure, this must be stabilized at the valve calibration value 1.2 with a checking tolerance of ± **0.1 bar.**

The calibration value of the expansion vessel valve is**: 1.2 bar.**



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Cooling system diagram



Composition :

1. **Engine**
2. **Coolingradiator**
3. **Expansion vessel**
4. **Heatingradiator**
5. **Thermostat support**
6. **Nozzle Ø 3**
7. **Purgingscrew**

T. Thermostat

The operation of the engine fan is controlled by the UCE injection, as follows:

1. **For vehicles without air conditioning**
   – cooling engine fan cooling is starting when water temperature is over 99°C;
   – cooling engine fan cooling is stopping when water temperature is lower than 96°C.
2. **For the vehicles with air conditioning.**
   - cooling engine fan cooling is starting on first step when water temperature is over 99°C;
   - cooling engine fan cooling is starting on second step when water temperature is over 104°C;
   - cooling engine fan cooling is switching from second step to first step, when water temperature is lower than 101°C;
   - engine fan cooling is stopping when water temperature is lower than 96°C.

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Radiator

SPECIAL TOOLS	
MOT 1202 - 01	Pliers for elastic clips
MOT 453	Hoses clamp

DISMOUNTING

Drain the air conditioning unit – for the vehicles with air conditioning (see chapter 62" Filling – Draining the air conditioning circuit").

Disconnect the battery

Dismount the air inlet duct from the battery screen.

Detach from clips the oil reservoir from the battery screen, for the vehicles equipped with power steering.

Clamp the hoses from radiator by means of **MOT 453** device.

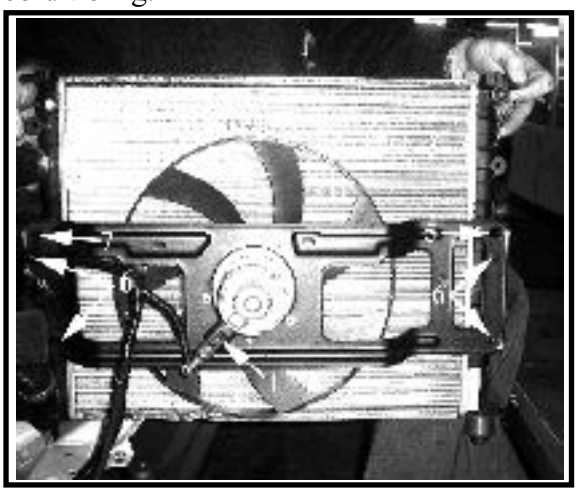
Dismount the hoses from radiator by means of the pliers for elastic clips **MOT 1202-01** and recover the cooling fluid.

Disconnect the engine fan connector (**1**).

Detach the wiring from clips (**2**) and (**3**).

Disconnect the resistance connector (**4**), for the vehicles with air conditioning.

Carefully release the engine fan from the four attachment clips (**5**) on the radiator- for the vehicles equipped with air conditioning, consequently, the four screws (**6**) are dismounted, for the vehicles without air conditioning.



The vehicles without air conditioning.

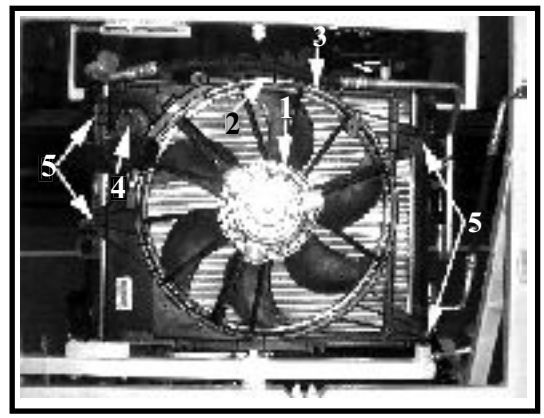
Carefully remove the engine fan from the sustaining points (**7**).

Dismount the radiator off the side attachment supports on the radiator upper cross beam.

Disconnect the two pipes from condenser.

Release the radiator from the lower supporting buffers together with the condenser and recover the cooling fluid from the radiator.

Dismount the condenser attachment screws on the cooling radiator (for vehicles with air conditioning).



For vehicles with air conditioning.

REMOUNTING

Mount the condenser on the new cooling radiator (for vehicles with air conditioning).

Mount the radiator-condenser assembly on the vehicle, by supporting it in the lower elastic supports and attach it in the supports of the radiator upper cross beam.

Mount the engine fan assembly on the sustaining supports (**7**) and attach it in the four screws (for vehicles without air conditioning).

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* For the vehicles with air conditioning :

- Connect the two pipes to the condenser.
- Connect the engine fan resistance connector (**1**) and the engine fan connector, then attach it by clips.

Connect the battery.

Attach in clips the oil reservoir for power steering and the air inlet pipe on the battery screen.

Perform the cooling circuit filling and purging.

Perform the air conditioning circuit filling with refrigerant fluid HFC 134a (0.600 Kg) and check for refrigerant fluid leak (for vehicles with air conditioning).

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DISMOUNTING

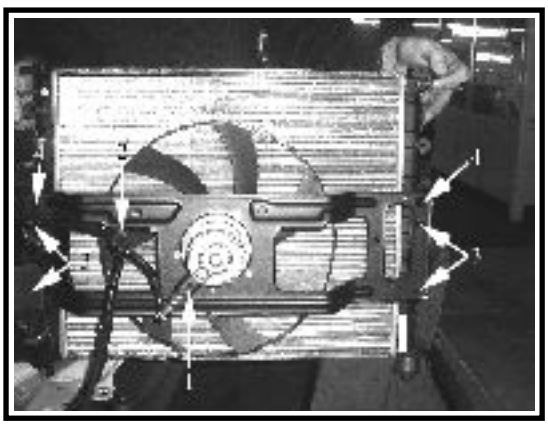
Disconnect the battery (-) terminal.
Remove the air inlet pipe from the attachment of the battery screen.
Detach from clips the oil reservoir of the power steering from the battery screen.
Disconnect the engine fan connector (**1**) and detach from clips wiring of point (**2**)
Dismount the four attachment screws (**3**) of the engine fan on radiator.
Carefully dismount the engine fan assembly from guiding points (**4**).

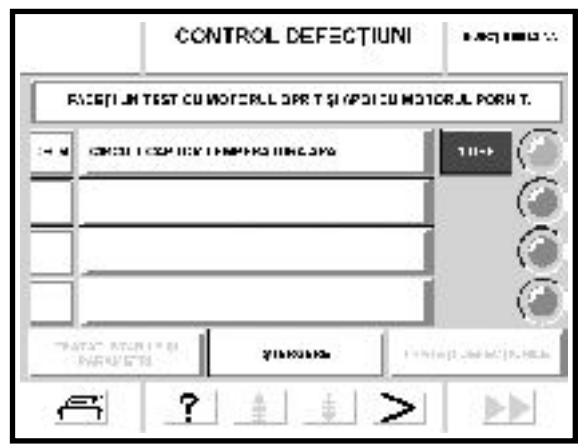
REMOUNTING

Check the condition of the fan impeller and of the engine fan electric motor.
Carefully position the engine fan assembly in the guiding points **(4).**
Mount the attachment screws (**3**) of the assembly on the radiator.
Connect the engine fan connector (**1**).
Attach in clips the wiring in point (**2**).
Attach in clips the power steering oil reservoir on the battery screen.
Mount the air inlet pipe.

Connect the battery (-) terminal. In case the vehicle is equipped with programmable radio-cassettes player, electronic clock, etc, there are to be re-programmed before returning the vehicle to the client.

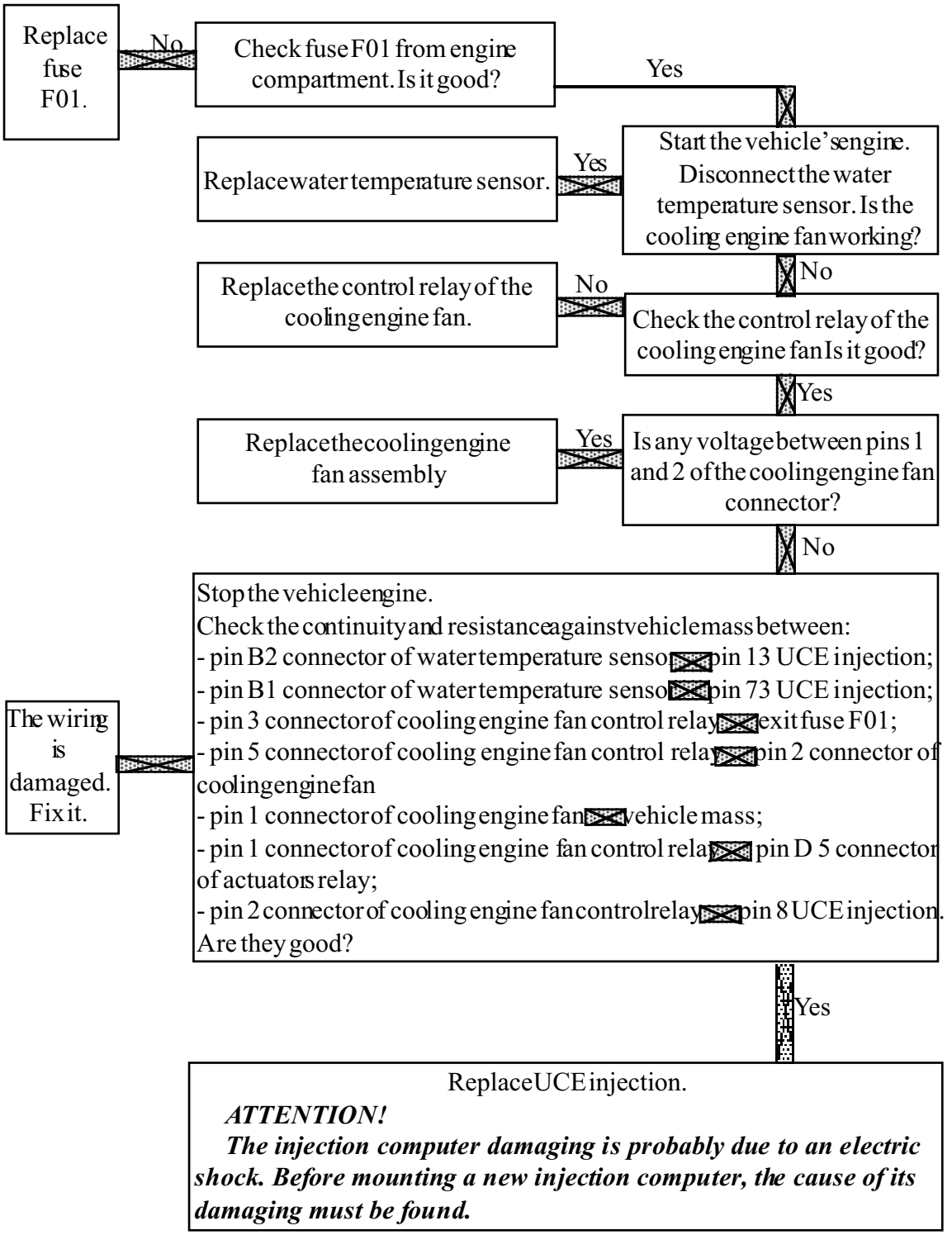
Check the engine fan operation: start the vehicle engine and disconnect the water temperature sensor. The engine fan must start. Reconnect the water temperature sensor then by means of the CLIP tester erase the memorized failure corresponding to the water temperature sensor.





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COOLING ENGINE FAN NOT WORKING
(for vehicles without air conditioning)



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DISMOUNTING

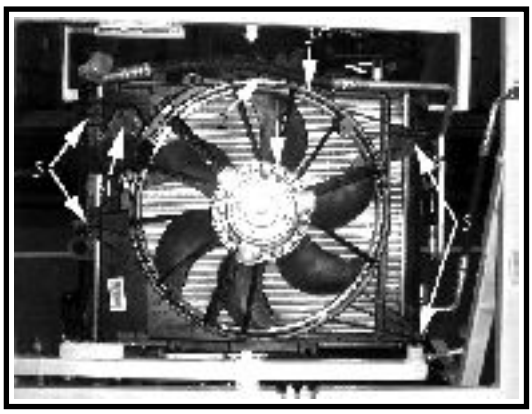
Disconnect the battery (-) terminal.
Remove the air inlet pipe from the attachment of the battery screen.
Detach from clip the power steering oil reservoir from the battery screen.
Disconnect the engine fan connector (**1**)
Detach wiring from clips (**2**) and (**3**).
Disconnect the connector of the cooling engine fan resistance (**4**).
Carefully dismount the engine fan assembly from the radiator, from sustaining points **(5).**

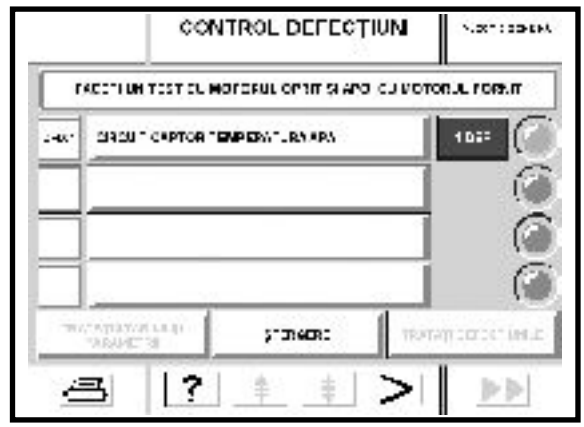
REMOUNTING

Check the condition of the fan impeller and of the engine fan electric motor.
Carefully mount the engine fan assembly in the sustaining points **(5).**
Connect the connector of the engine fan resistance (**4**).
Connect the cooling engine fan connector (**1**) and attach it in clip (3) then in clip (**2**).
Attach in clips the power steering oil reservoir on the battery screen. Mount the air inlet pipe.

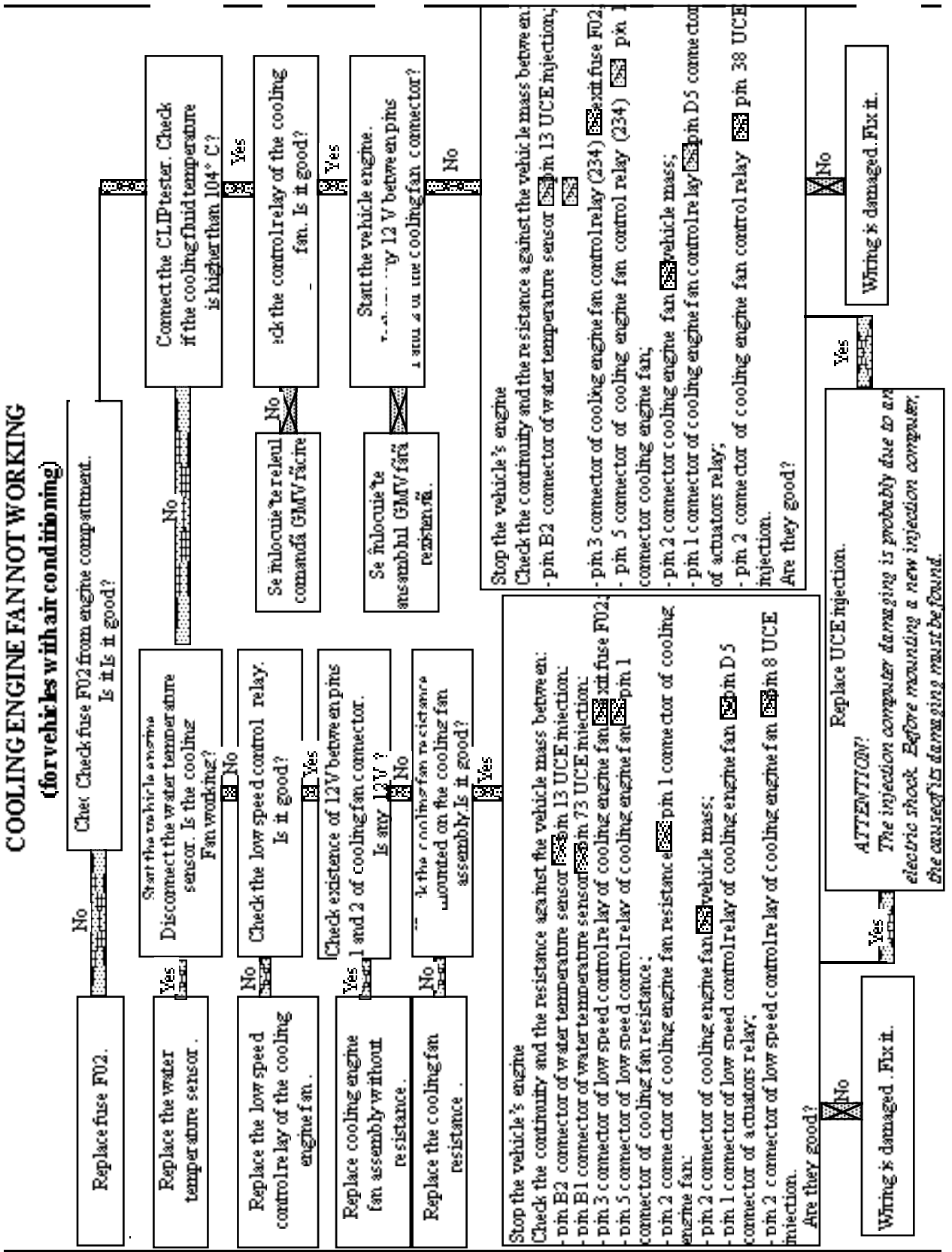
Connect the battery (-) terminal. In case the vehicle is equipped with programmable radio-cassettes player, electronic clock, etc, there are to be re-programmed before returning the vehicle to the client.

Check the engine fan operation: start the vehicle engine and disconnect the water temperature sensor. The engine fan must start. Reconnect the water temperature sensor then by means of the CLIP tester erase the memorized failure corresponding to the water temperature sensor.





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COOLING ENGINE FAN NOT WORKING
(for vehicles with air conditioning)
Chec Check fuse F02 from engine compartment. Is it Is it good?
No
Replace fuse F02.
Yes
Start the vehicle engine Disconnect the water temperature sensor. Is the cooling Fan working?
No
Replace the water temperature sensor .
Yes
Connect the CLIP tester. Check if the cooling fluid temperature is higher than 104° C?
No
Yes
Check the low speed control relay. Is it good?
No
Replace the low speed control relay of the cooling engine fan .
Yes
ck the control relay of the cooling fan. Is it good?
No
Se înlocuie te releul comandă GMV răcire
Yes
Check existence of 12V between pins 1 and 2 of cooling fan connector. Is any 12V ?
No
Replace cooling engine fan assembly without resistance.
Yes
Start the vehicle engine. y 12 V between pins the cooling fan connector?
No
Se înlocuie te ansamblul GMV fără rezistență.
k the cooling fan resistance mounted on the cooling fan assembly.Is it good?
No
Replace the cooling fan resistance .
Yes
Stop the vehicle's engine
Check the continuity and the resistance against the vehicle mass between:
- pin B2 connector of water temperature sensor pin 13 UCE injection;
- pin 3 connector of cooling engine fan control relay (234) exit fuse F02;
- pin 5 connector of cooling engine fan control relay (234) pin 1 connector cooling engine fan;
- pin 2 connector cooling engine fan vehicle mass;
- pin 1 connector of cooling engine fan control relay pin D5 connector of actuators relay;
- pin 2 connector of cooling engine fan control relay pin 38 UCE injection.
Are they good?
No
Wiring is damaged. Fix it.
Yes
Replace UCE injection.
ATTENTION!
The injection computer damaging is probably due to an electric shock. Before mounting a new injection computer, the causes its damaging must be found.
Yes
No
Wiring is damaged . Fix it.
Stop the vehicle's engine
Check the continuity and the resistance against the vehicle mass between:
- pin B2 connector of water temperature sensor pin 13 UCE injection;
- pin B1 connector of water temperature sensor pin 73 UCE injection;
- pin 3 connector of low speed control relay of cooling engine fan exit fuse F02;
- pin 5 connector of low speed control relay of cooling engine fan pin 1 connector of cooling fan resistance;
- pin 2 connector of cooling engine fan resistance pin 1 connector of cooling engine fan;
- pin 2 connector of cooling engine fan vehicle mass;
- pin 1 connector of low speed control relay of cooling engine fan pin D5 connector of actuators relay;
- pin 2 connector of low speed control relay of cooling engine fan pin 8 UCE injection.
Are they good?
No
Wiring is damaged . Fix it.

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SPECIAL TOOLS	
MOT. 1202-01	Pliers for elastic clips
MOT. 1505	Device for belts tension measurement
MOT. 1135-01	Device for distribution belt tensioning
MOT. 545	Engine sustaining device

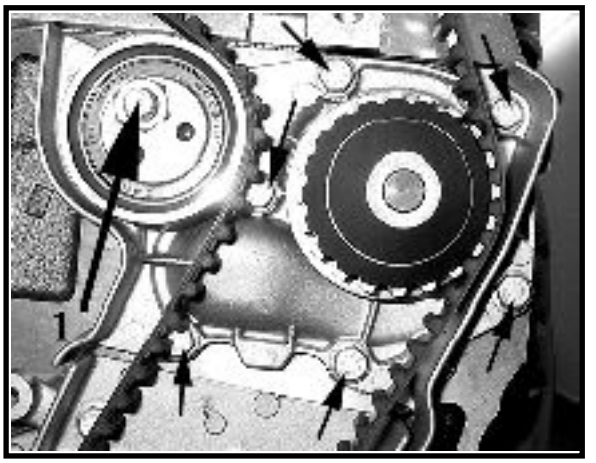
TIGHTENING MOMENTS (daNm)	
Tightening cam nut	5
Crankshaft pulley hub screw	$2+68^{0}\pm 6^{0}$
Right pendular support screws	6.2
Hydro-elastic buffer nut	3.7
Water pump screws	2.2
Water pump nut	1
Wheels screws	7.5

DISMOUNTING

Place the vehicle on a two columns elevator
Disconnect the battery
Drain the cooling circuit using the lower hose from the water pump.
Dismount:

- distribution belt (**see chapter 11 "Distribution belt");**
- tightening cam (**1**);
- water pump attachment screws and nut.

Remove the water pump through the upper part of the engine compartment.



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CLEANING

It is very important not to scratch the surfaces for gaskets of the aluminum parts.

In order to dissolve the gasket particles stacked, product "**Decapjoint**" is to be used.

Apply the product on the surfaces to be cleaned, leave it for about **10 minutes**, then clean using a wood paletteknife.

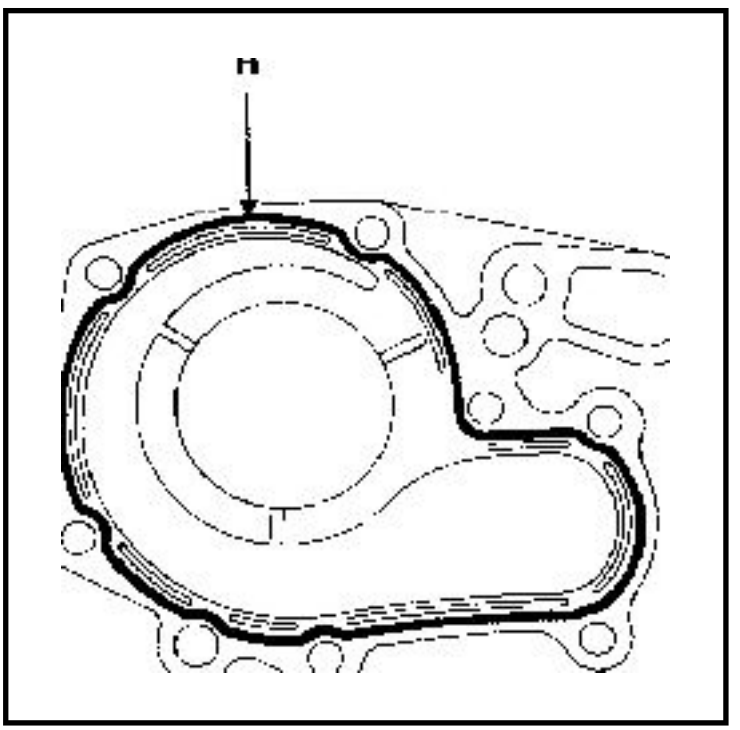
During performing this operation, use protection gloves.

REMOUNTING

The water pump sealing is ensured by means of **LOCTITE 518** ; layer **H**, is **0.6 – 1 mm** thick and must be applied according to the bellow presented drawing.

Remount the distribution belt (see chapter **11 "Distribution belt** ").

Perform the cooling circuit filling and purging (see chapter **"Filling– Draining")**



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ATTENTION !

Descending pipe in operation, may reach high temperatures and consequently must not come in contact with flammable materials which may lead to their auto-ignition.

Catalytic converter is to be mechanical shock protected.

DISMOUNTING

In order to dismount the noise absorber assembly (**1**), lift the vehicle on an elevator and perform the following operations:

Loosen the nuts (**2**) of the attachment collar between the expansion chamber (**3**) and the noise silencer (**1**).

Dismount the three attachment elastic supports of the noise absorber, on the carriage body, rear part.

Release the noise silencer.

In order to dismount the assembled expansion chamber (**3**), perform the following operations:

Dismount the collar (**4**) and disengage the expansion chamber assembled with the descending pipe.

Dismount the three elastic supports of the assembled expansion chamber.

Loosen the attachment collar nuts (**2**) and remove the assembled expansion chamber by easy rotation and onward pulling.

In order to dismount the descending pipe assembly (**6**), perform the following operations:

Dismount the engine shield.

Dismount the catalytic converter attachment nuts (**7**) on the two studs of the exhaust manifold flange.

Dismount the attachment screws of the converter support (**5**).

For EURO 96, dismount the oxygen sensor located in upstream of the catalytic converter.

For EURO 00, dismount the oxygen sensors located in upstream, consequently, in downstream of the catalytic converter.

Dismount the collar (**4**) and disengage the assembled catalytic converter from the assembled expansion chamber.

Remove the descending pipe.

REMOUNTING

Perform the dismounting operations in the reverse order.

Ensure a perfect sealing between the exhaust assembly elements, using sealing paste **Wurth**, on the joining area length (inside) between the noise absorber – expansion chamber (**0.013 Kg**);

The oxygen sensor gasket is to be replaced at each dismounting.

The tightening moment between noise absorber and expansion chamber is: **3.6 daNm**.

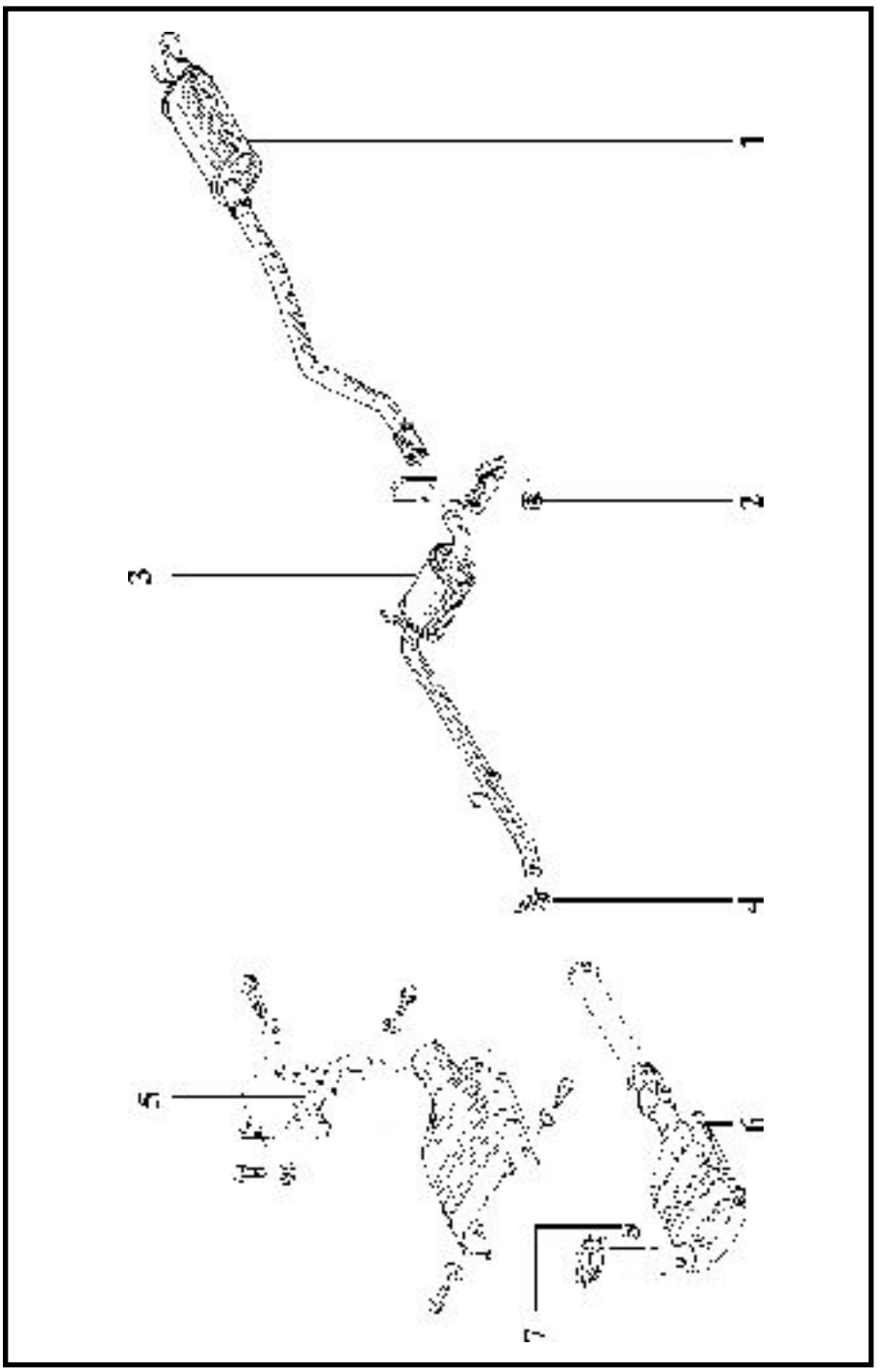
The tightening moment of descending pipe attachment nuts on the exhaust manifold flange is: **2 daNm**.

Tightening moment between the catalytic converter and expansion chamber: **2.5 daNm**.

All elements are to be assembled having the ambient temperature.

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Assembl exhaust



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Fuel tank

IMPORTANT:

During the intervention on the fuel tank and on the fuel supply circuit, at the working place, do not smoke and do not bring near any incandescent parts.

Fuel tank draining is not implying tank dismounting. The access is allowed through the vehicle interior (trunk).

Dismount:

- trunk carpet;
- visiting whole cover (by dismounting the three attachment screws);
- disconnect the rapid coupling A;
- adjust to exit A, an enough long hose to be introduced in a vessel outside the vehicle.

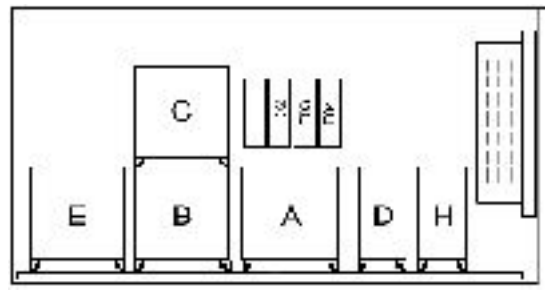


From the fuse box located inside the engine compartment, remove the **H** relay of the petrol pump and bridge across plugs **3** and **5** of the relay connector, ensuring the petrol pump working (**12V**).

Stop the pump working when petrol discontinuous draining s noticed.

Detach the plugs bridge.

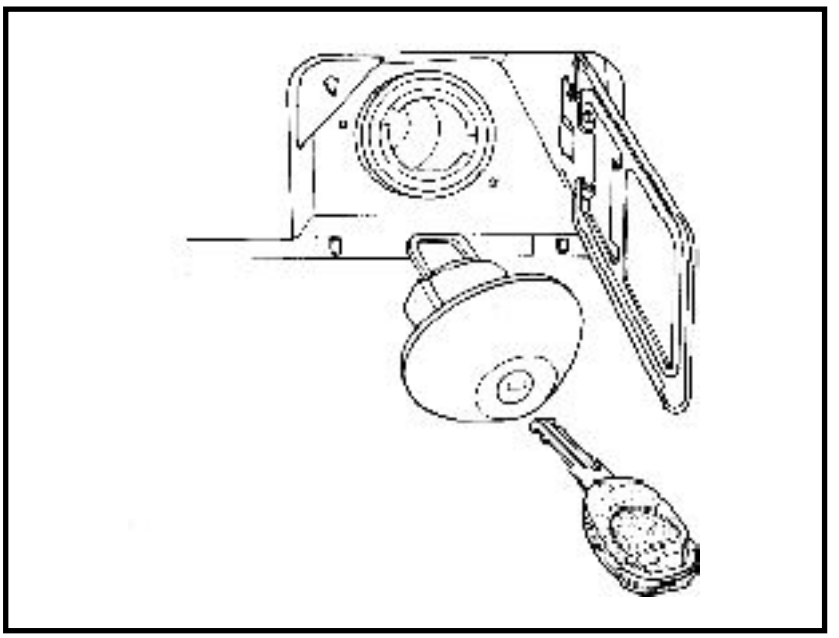
Mount the petrol pump relay.



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FILLINGCAP

The fuel tank is having a filling cap, sealed-type, with key. The filling cap for unleaded fuel has a filler whole incompatible with a classical filling gun (lead has a negative effect upon the de-pollution system: oxygen sensor and catalyst)



In case of vehicle overturning, the anti-overturning valve is getting blocked, avoiding in this way, the petrol leakage towards the carbon can.

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Fuel tank

DISMOUNTING

Drain the fuel tank (**4**)

Disconnect the battery.

Remove the trunk carpet.

Dismount the tank visiting cover from the three attachment screws.

Disconnect the electric connector f the fuel pump assembly and detach from clips the connection from the fuel supply pipe.

Take out the spare wheel and release it together with its support.

Remove the filling cap (**2**) and dismount the two attachments screws of the upper filling cap.

Lift the vehicle on a two columns elevator.

Dismount the four-attachments screws (**6**) of the fuel tank on the carriage body, then maintained in tilted position, disconnect the rapid coupling on the anti-overturning valve (**7**).

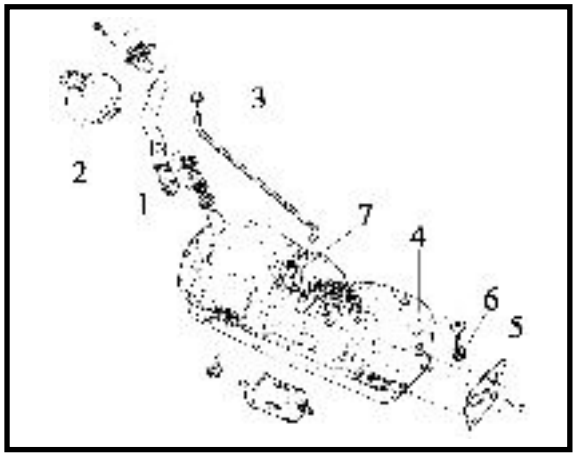
Detach from clips collar (**3**) of the aerating pipe on the upper filling cap.

Release the fuel tank together with the aerating connection

Dismount the thermal screen (**5**) off the three maintaining clips.

Dismount the attachment clip (**1**) of the filling cap muff on the lower filling cap.

Dismount the fuel pump assembly by dismounting the attachment nut by means of the **MOT 1397** device.



REMOUNTING

Perform the dismounting operations in the reverse order.

The tightening moment of the fuel tank attachments screws on the carriage body is of **2.1 daNm** and the tightening moment for fuel pump assembly attachment nut, is of minimal **7daNm**.

REMARK :
Collar (1) is for single use only.

When remounting, use a new click collar (**1**), for the attachment of the lower filling cap connection on the fuel tank.

REMARK:
At remonting, for each 2 back screws attachement fuel tank, aply 0.002 kg FIXAMED M 28, for to realise security moment.

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Fuel tank

VEHICLES WITHOUT VISITING CAP

TIGHTENING MOMENTS (daNm)	▽
Fuel tank attachment screws	2.1

IMPORTANT :
During this operation it is compulsory:
- not smoking and not approaching with incandescent objects in the working area,
- keep away from fuel spraying when disconnecting the fuel connections, protect the sensitive area of fuel leak.

DISMOUNTING

Place the vehicle on a two-column elevator.

Disconnect the battery (-) terminal.

Dismount the fuel tank cap.

Drain the fuel tank through the filling cap, by means of a draining pneumatic or electric pump.

Dismount the attachments screws (**1**) of the upper filling cap.

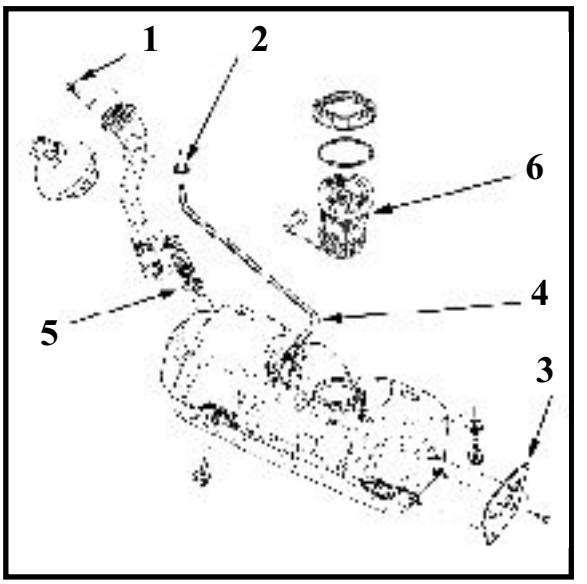
Lift the vehicle by means of the elevator.

Dismount the four attachment screws of the fuel tank.

Dismount the attachment clip (**2**) of the aeration hose (**4**) on filling cap.

Carefully lower the tank and disconnect it:
- wiring connector;
- fuel supply pipe;
- petrol vapors re-aspiration pipe (for petrol engines);
- fuel return pipe (for Diesel engines);

Extract the aeration hose on top of tank crossbar and dismount the tank.



Dismount:
- protection shield (**3**);
- filling cap attachment clip (**5**) on tank;
- fuel pump assembly (**6**).

REMOUNTING

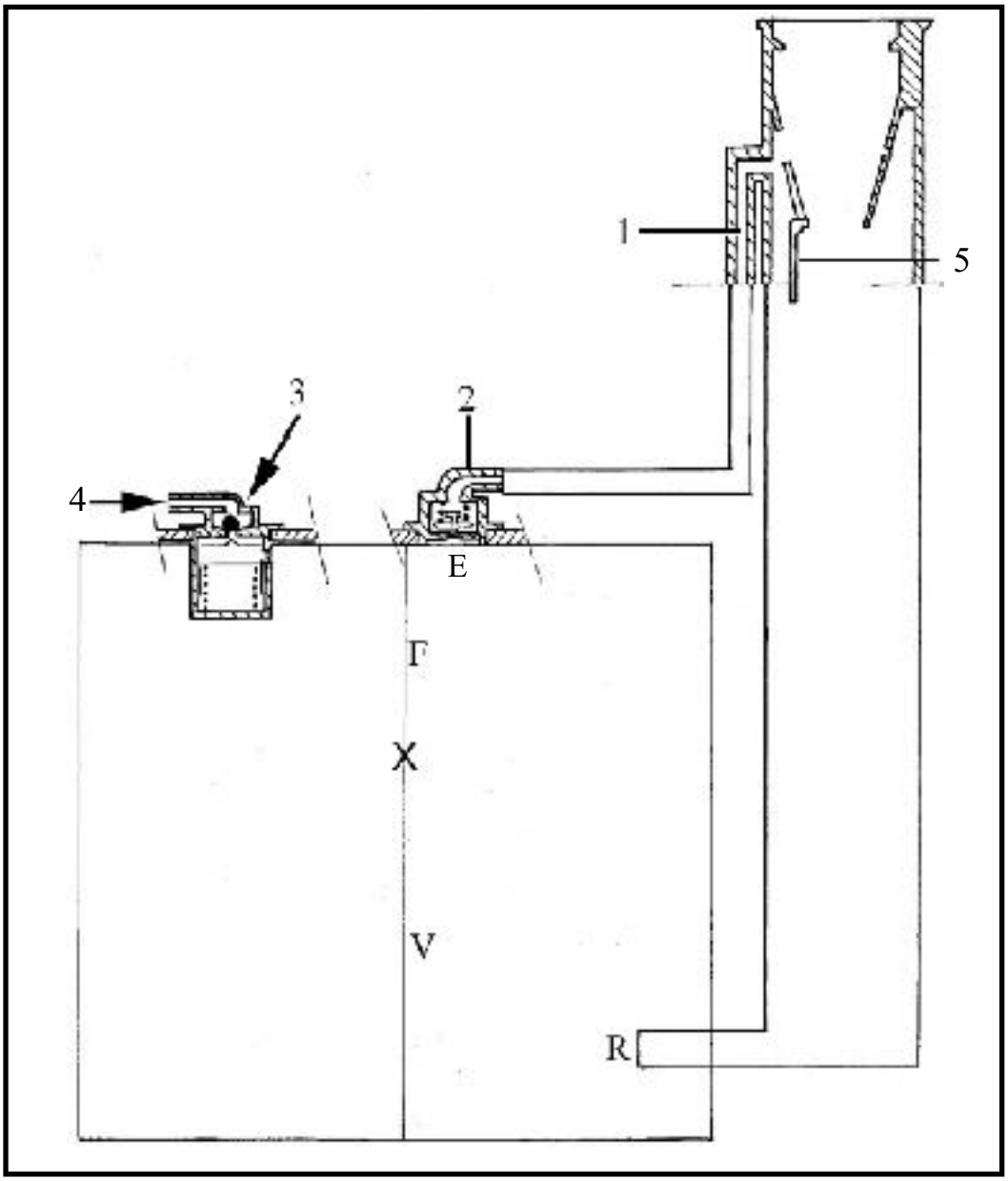
Perform the dismounting operations in the reverse order.

Tighten to the required moment the fuel tank attachment screws (2.1 daNm); the thread of the two rear attachment screws is to be lubricated before mounting with Fixamed M28 (necessary quantity – 2 grams).

Replace the single use clip (**5**) with a tightening clip **"CAILLAU"**.

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TANK DIAGRAM



1. Aerating pip
2. Safety valve (over pressure, depression)
3. Anti-overturning valve
4. Pipe connection to carbon can
5. Restrictor

E. Air evacuation orifice during filling

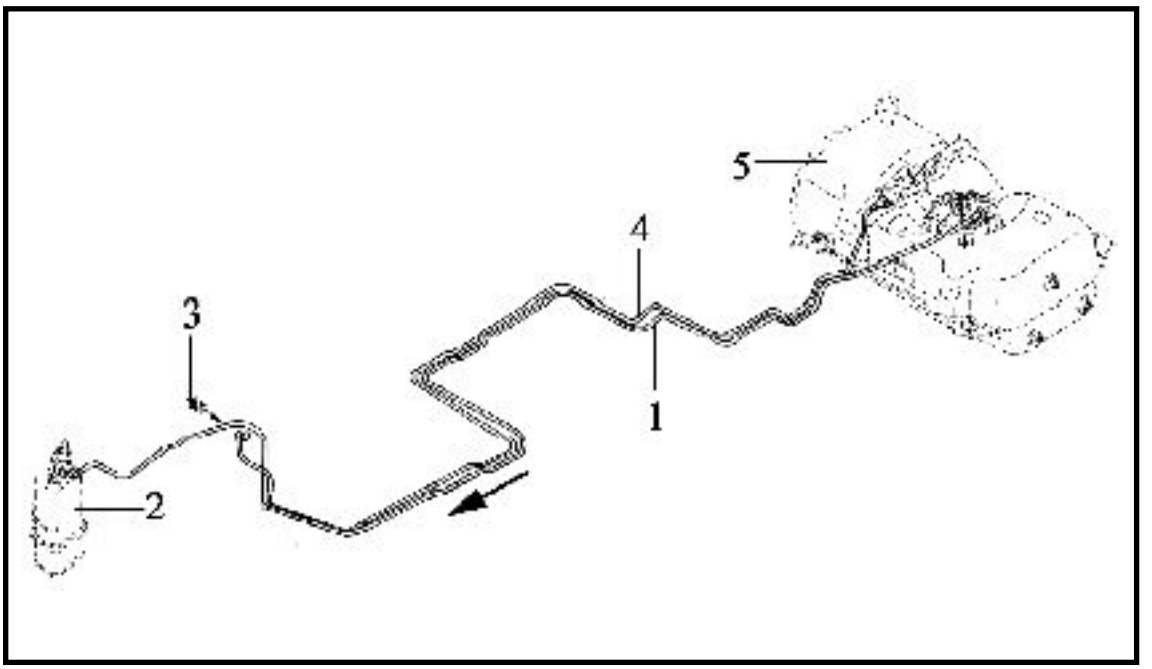
F. Air volume enabling fuel dilatation.

R. Fuel cap.

V. Maximal admissible fuel volume.

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FUEL CIRCUIT DIAGRAM



1. Supply pipe
2. Carbon can
3. Piping attachment clip
4. Vapor re-aspiration pipe.
5. Fuel tank.

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Valves function

Safety valve (over pressure, depression)

In case recycling circuit of the petrol vapors is clogged, this valve is avoiding the over-pressure (inflated tank) or the depression (by fuel consumption - the tank is flattening).

Restrictor

Does not allow leaded fuel filling in the tank.

Anti-overturning valve

In case of vehicle overturning, this is avoiding the fuel leakage through the pipe leading to the carbon can.

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Fuel pump

SPECIAL TOOLS	
MOT 1397	Wrench for dismounting the fuel pump assembly nut

TIGHTENING MOMENTS (daNm)	▽
Fuel pump assembly nut	7

IMPORTANT

During the intervention on the fuel tank or on the fuel supply circuit, it is absolutely necessary:

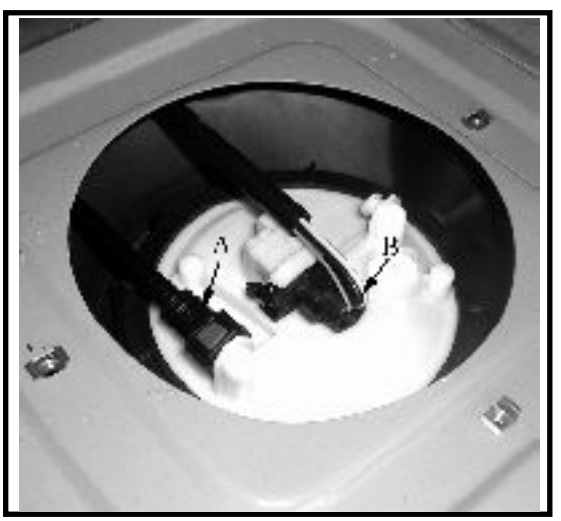
- not smoking and not bringing near any incandescent parts in the working area;
- guard against possible petrol leakage, due to residual pressure remained on piping, when dismounting.

DISMOUNTING

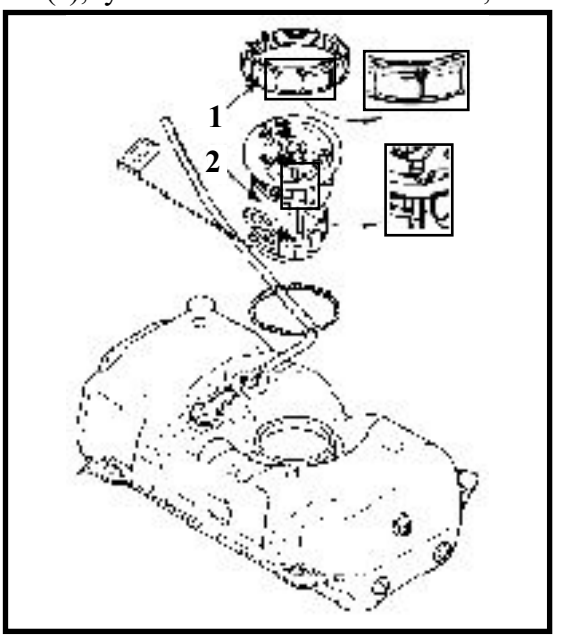
In order to dismount the fuel pump assembly it is not necessary the tank dismounting, the access being done through the vehicle trunk.

In order to do that:

- disconnect the battery;
- dismount the attachment screws of the fuel tank visiting cover;
- disconnect the electric connector (B) of the fuel pump assembly supply;
- disconnect the rapid coupling (A) of the fuel supply pipe.



Dismount the fuel pump assembly (2) attachment nut (1), by means of the MOT 1397 device, after



previously marking on the fuel tank the position of the arrow existing on the pump cap.

Release the fuel pump assembly.

REMOUNTING

Mount the fuel pump assembly on the fuel tank observing the marking done when dismounting.

Mount the attachment nut of the fuel pump assembly.

Tighten the nut by means of the MOT 1397 device, so that the arrow from the nut meets the arrow from the fuel pump assembly (this is ensuring the minimal necessary tightening for sealing achievement.

REMARK :

After each dismounting, obligatory replace the nut and its gasket
The gasket will have the same color with the dismounted one.

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VEHICLES WITHOUT VISITING CAP

SPECIAL TOOLS	
MOT 1397	Wrench for pump assembly dismounting-remounting

TIGHTENING MOMENTS (daNm)	
Fuel tank attachment screws	2.1
Pump assembly attachment nut	7

In order to dismount the fuel pump assembly, it is necessary the fuel tank dismounting.

IMPORTANT

During this operation it is compulsory:

- not smoking and not approaching with incandescent objects in the working area,

- keep away from fuel spraying when disconnecting the fuel connections,

- protect the sensitive area of fuel leak.

DISMOUNTING

Dismount the fuel tank.

Dismount the attachment nut of the fuel pump assembly by means of the wrench MOT 1397.

Dismount the fuel pump assembly

ATTENTION!

When dismounting the nut, take care that fuel pump assembly is not geared in rotation with the nut, which may lead to float rod distortion and consequently to fuel level wrong indication.

Remark:

If until fuel pump mounting on tank, more than an hour is taken into consideration, remount the nut on the tank, in order to avoid any distortion.

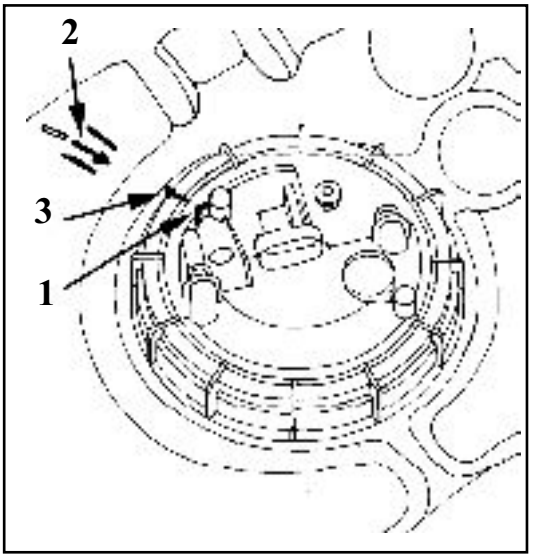
REMOUNTING

Replace the sealing gasket of the fuel pump assembly. The gasket shall have the same color with the dismounted one.

Mount the fuel pump assembly so that arrow (**1**) from the fuel pump assembly is corresponding to the arrow (20 from the tank.

Position the nut and tighten it by hand to maximum possible, preventing the pump assembly rotation

Tighten the nut by means of the **MOT 1397** wrench until arrow (**3**) from the nut is aligned with the marks from fuel tank and pump assembly

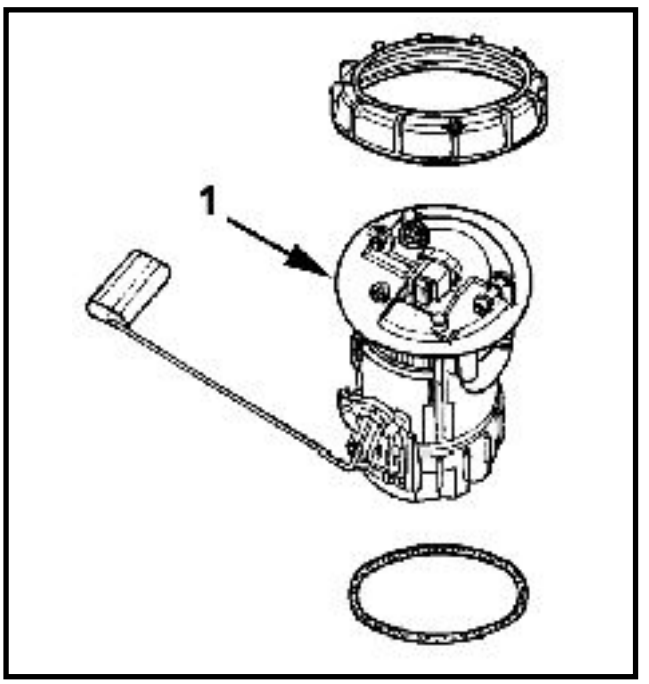


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Fuel filter

For **EURO 2** and **EURO 3**

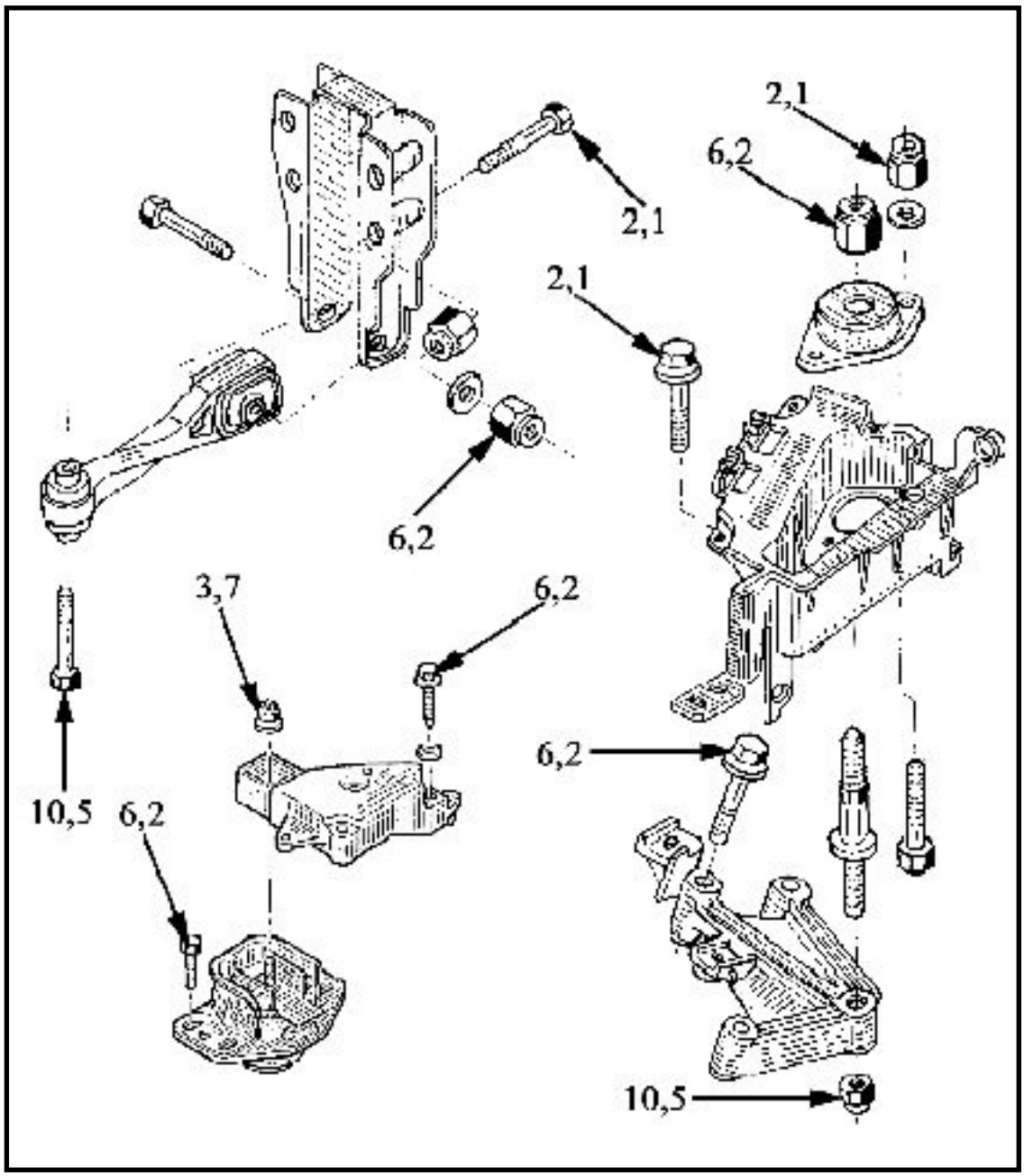
The fuel filter is mounted on the fuel pump assembly placed in the fuel tank.
Its replacement is implying the replacement of the entire fuel pump assembly (**1**).



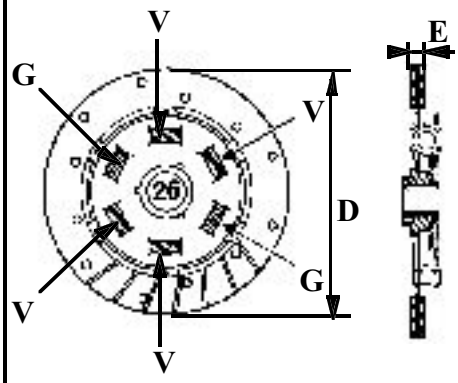
For de-pollution norm **1504**
The fuel filter is attached on the front side of the fuel filter.
It is recommended, the fuel filter replacement, every 20 000 Km.

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TIGHTENING MOMENTS (daNm)



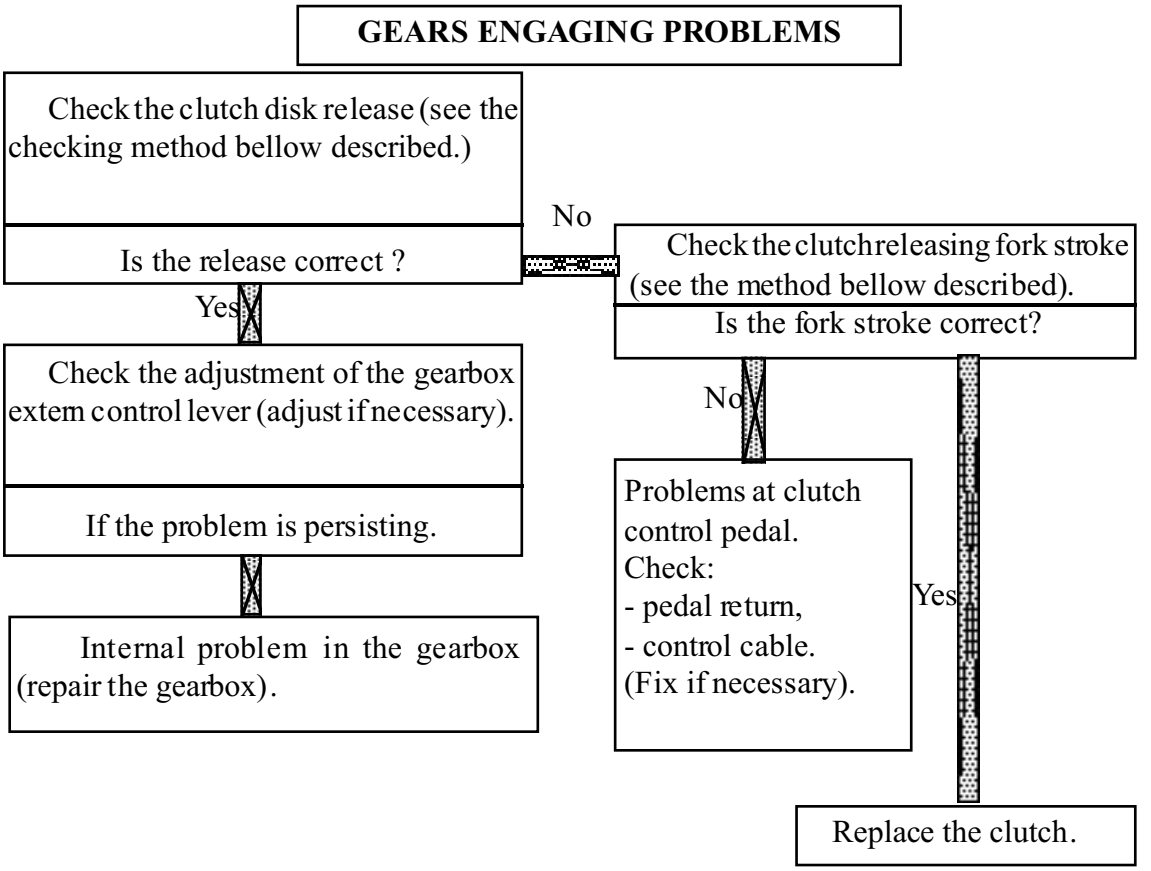
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Vehicle type	Engine type	Mechanism	Disk
SOLENZA	E7J	 180 CPO 3300	26 grooves D = 181.5 mm E = 6.8 mm V: Green G: Grey 

CHARACTERISTICS

- Single disk dry clutch cable controlled.
- Clutch mechanism with diaphragm spring.
- Clutch disk with elastic hub.
- Pressure bearing with balls permanently in contact with the diaphragm (constant pressing force).

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CHECKING METHOD
" DISK RELEASE "

The checking is to be performed at idling, with warm engine.
- release the clutch,
- wait for three seconds,
- engage the reverse driving (engagement must be performed without noise).

CHECKING METHOD
" CLUTCH RELEASING FORK STROKE "

By means of a lineal perform the following operations:
- measure the distance between the fork upper part and the clutch cable support, in the clutched position;
- measure the distance between the fork upper part and clutch cable support, in the clutch releasing position;
- calculate the difference between the two values (the fork active stroke) and compare it with the reference value (**29 mm).**

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EFFECT OF TREPIDATION

Check for oil leaks at the clutch casing level.

If there are no leaks.

Fix the oil leak and replace the clutch disk if necessary.

Check the tightening and the condition of the gearbox and engine supports (fix it if necessary).

If the incident is persisting.

Check the clutch control (fix it if necessary).

If the incident is persisting.

Check the idle regime (unstable or incorrect).
Fix it if necessary.

If the incident is persisting.

Replace the clutch.

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NOISE AT FREE CLUTCH
(oppressive and regular noise subject to engine regime)

Check for oil leaks at clutch casing level.

Fix the oil leak and replace the clutch disk if necessary.

If there are no leaks.

Check the engine running at idling (unstable or incorrect).
Fix it if necessary.

If the incident is persisting

Check the tightening and condition of the gearbox and engine supports (fix it if necessary).

If the incident is persisting.

Replace the clutch.

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REPLACEMENT

This operation is to be performed after dismounting the gearbox –engine assembly and after their separation.

S.D.V. -uri necesare	
MOT 582	**Flywheel immobilizing sector**
AMB 1518	**Clutch centering device**

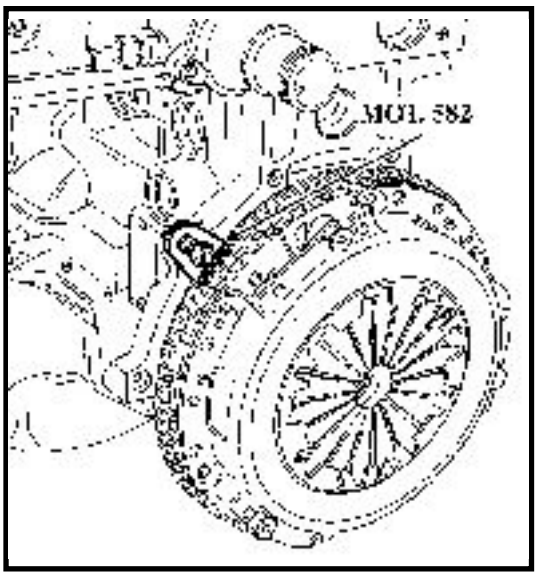
TIGHTENING MOMENTS (daNm)	
Clutch mechanism attachment screws	2

DISMOUNTING

Mount the immobilizing sector **MOT 582.**

Dismount the clutch mechanism attachment screws.

Dismount the mechanism and the clutch disk.



Perform a visual checking of :

- the wear of the engine flywheel and of the mechanism plate;
- the condition crown toothing for starter;
- the sealing at crankshaft sealing gasket level;
- the wear of the pressure bearing guide and of the control fork;
- the conditions of the clutch shaft grooves.

Replace the damaged parts and clean the clutch shaft grooves.

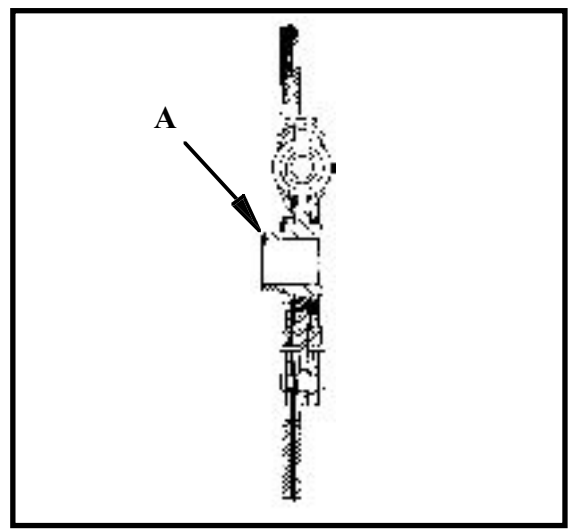
REMOUNTING

Degrease the friction surface of the engine flywheel.

Clean the grooves of the clutch shaft.

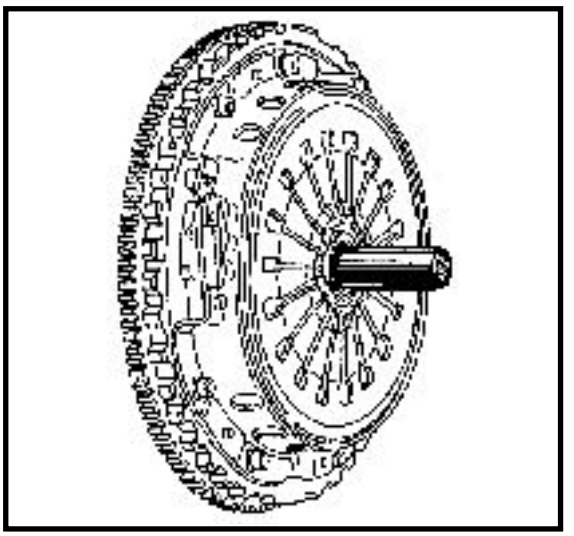
Check the disk sliding on the clutch shaft

Mount the clutch disk (with hub protuberance (**A**) towards the engine flywheel).



Center the clutch disk by means of the centering device **AMB 1518.**

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Mount the clutch mechanism.

Progressively screw "**radial way**", the mechanism attachment screws, then tighten them to the required moment.

Dismount the immobilizing sector **MOT 582.**

Lubricate with grease **OLISTA LONG TIME 3EP R100 137188.**

- bearing guiding tube;
- clutch releasing fork sliders;
- fork joint.

Check the pressure bearing sliding on guiding tube.

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REPLACEMENT

This operation is to be performed after separation of the gearbox. from engine

DISMOUNTING

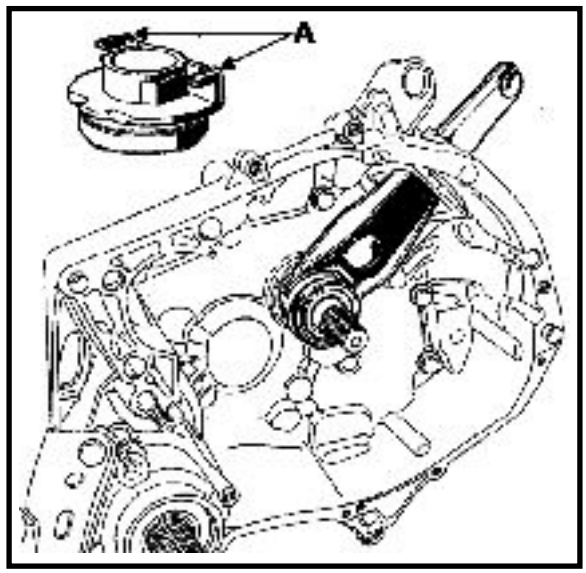
Dismount:
- pressure bearing by swinging over the fork;
- protection bellows and remove the clutch-releasing fork.

REMOUNTING

Lubricate the guiding tube, slides and fork joint with grease **OLISTA LONG TIME 3EP R100 137188.**

Mount the fork and the protection bellows.

Mount the pressure bearing on the guiding tube with groins (**A)** clips-attached on fork



Check the pressure bearing sliding on guiding tube.

REMARK:

In case of an intervention not implying the gearbox dismounting, or after gearbox mounting, the control fork is not to be lifted because the pressure bearing groins (A) may come out from the clutch-releasing fork.

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REPLACEMENT

This operation is to be performed after dismounting the clutch mechanism and the gearbox.

SPECIAL TOOLS	
MOT 582	**Flywheel immobilizing sector**

TIGHTENING MOMENTS (daNm) ▽	
Flywheel screws	**5 ÷ 5,5**

DISMOUNTING

Mount the immobilizing sector **MOT 582.**
Dismount the flywheel attachment screws.
The screws are not to be reused.
Dismount the engine flywheel.

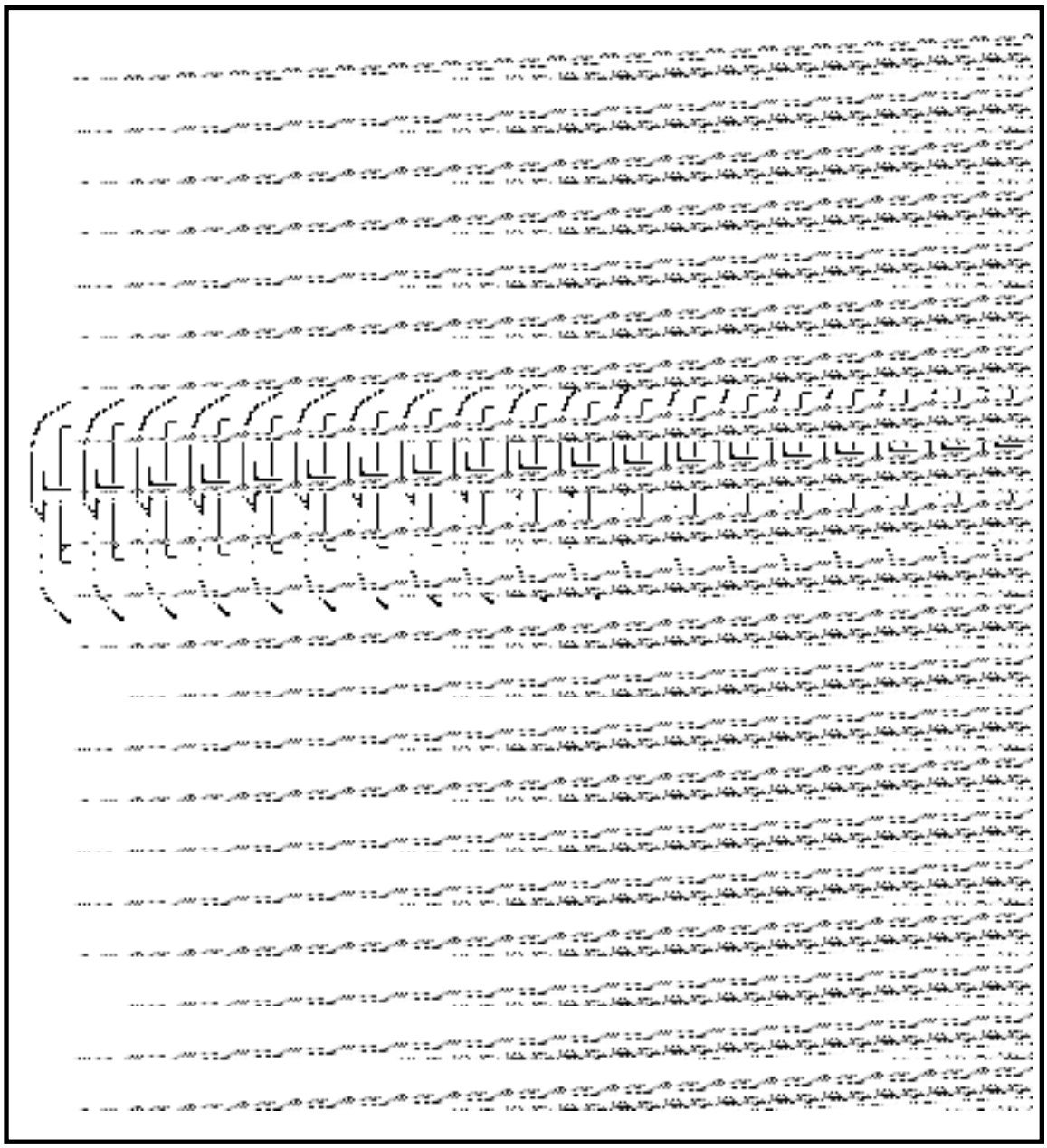
REMOUNTING

Clean the holes thread from the crankshaft by means of a dry gauze.
Degrease the flywheel seating surfaces on the crankshaft.
Mount the flywheel with new screws (the screws thread shall be lubricated with **LOCTITE FRENETANCH).**
Tighten the screws to the required moment.
Dismount the immobilizing sector **MOT 582**

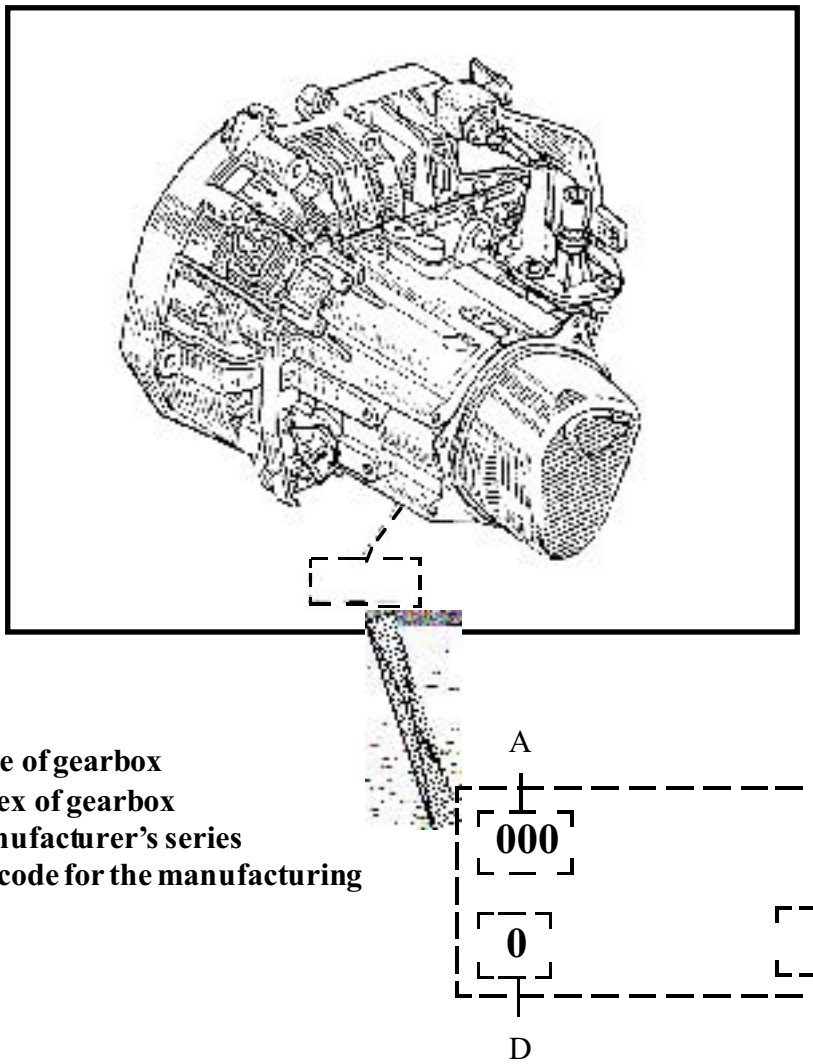
REMARK
The flywheel attachment screws are to be replaced after each dismounting.

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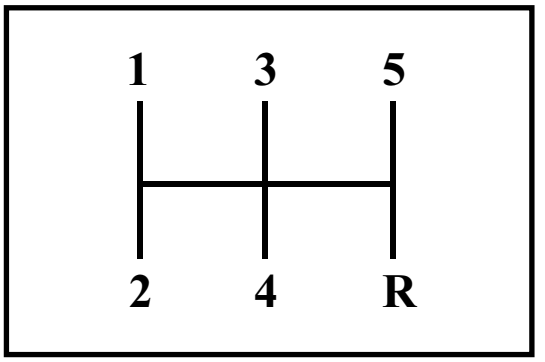
A - type of gearbox
B – index of gearbox
C – manufacturer's series
D – the code for the manufacturing

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TIGHTENING MOMENTS (daNm)	▽
Attachment screws of the mechanism crankcase on the clutch – differential case	2.5
Secondary shaft screw	7
Primary shaft nut	19
Back cap fixing screws	2.5
Oil draining plug	2.5
Reverse driving contact	2.5
Screws for fixing the bellows assembly – left transmission cap assembly	2.5
Screws for fixing gearbox on engine case (M10 – 90)	4.4
Screws for fixing gearbox on engine case (M10 – 35)	2.1
Nuts for fixing gearbox on engine	4.4
LOCTOU blocking element fixing screw	0.5
Screws for fixing RPM sensor on the clutch case	0.8
Screws for fixing the control axle assembly	2
Screws for fixing clutch cable support	4.8

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Grila de viteze este identică cu cea de la cutiile de viteze montate pe automobilele **Dacia SupeRNova.**



To engage the reverse driving, the gearbox lever is brought in neutral position, then it is engaged like in any other gear gear

The synchronizers are **BORG – WARNER** type.

The synchronizing hub – sliding collar, and the synchronizing hub – shaft assemblies are composed of matching parts .

The synchronizing hubs are freely mounted on the secondary shaft and axially maintained by means of ring type safety devices.

The cylindrical moment of the differential is not adjustable.

The differential assembly is supported on the gearbox crankcases by means of ball bearings.

The primary and secondary shafts support at the clutch side is done by means of roll – bearings, which get into direct contact with the shaft (the bearings do not have inner ring, its purpose being taken over by the shafts).

The reverse driving pinion is delivered mounted on the shaft.

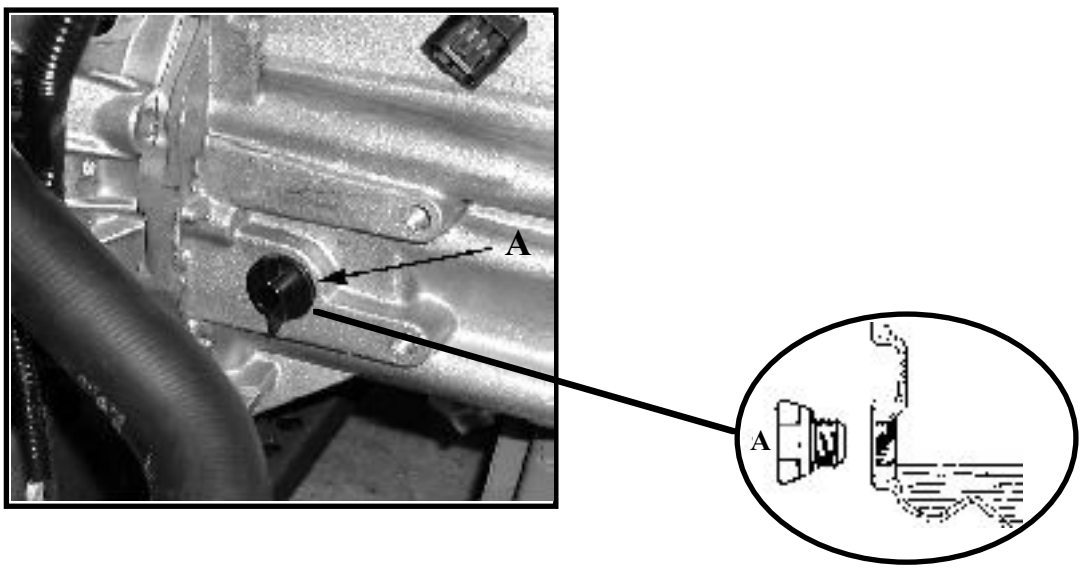
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GB INDEX	VEHICLE	MAIN TRANSMISSION	MILEAGE GEARING
JH3-051	SOLENZA	15/56	21/19

GEARSTEP	I	II	III	IV	V	R.D.
NR. OF TEETH	41/11	43/21	39/28	35/34	31/39	39/11
RATIO	3.727	2.048	1.393	1.029	0.795	3.545

CAPACITY, LUBRICANTS

Oil used : **Dacia Extragear 75 W – 80 W; API GL5**
The oil quantity needed for the gearbox operation is **3.5 liters**.
The oiling of the gearbox parts is done by splash lubrication
Checking of the oil level is done through the filling plug **A.**

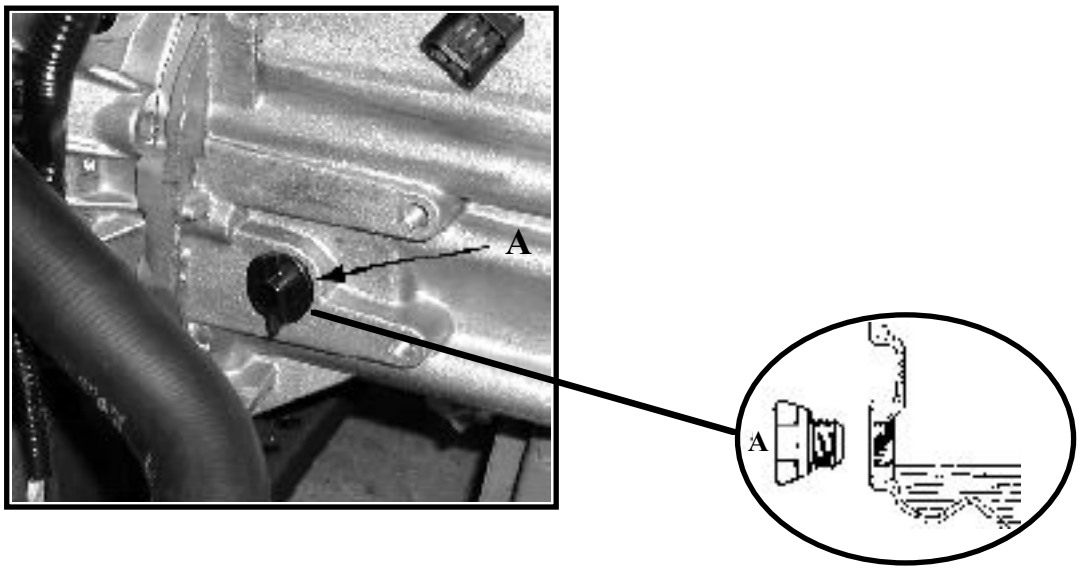


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TYPE	USE
LOCTITE518	Crankcases assembling Thread of reverse driving contact
LOCTITEFRENBLOC	Secondary shaft screw

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Oil used : **Dacia Extragear 75 W – 80 W; API GL5**
The oil quantity needed for the gearbox operation is **3.5 liters**.
The oiling of the gearbox parts is done by splash lubrication
Checking of the oil level is done through the filling plug **A.**



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The following parts are to be replaced, if they have been dismounted:

- oil seal rings;
- fastening rings;
- elastic pins;
- primary shaft nut;
- the bushing under the pinion of the 5 – th gear;
- the outer safety devices of the bearings of the primary and the secondary shafts;
- the tore gaskets.

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SERVICE CODE	DENOMINATION	DACIA ITEM NUMBER
C.V. 22- 01	Bearings extractor body	1002 216401
C.V. 945	Chuck for mounting the planetary pinion oil ring	1002 094500
C.V. 946	Chuck for safety mounting	1002 094600
C.V.551	Device for mounting/dismounting bearings of the mechanism casing	1002 055100
C.V. 949	Device for mounting/dismounting the elastic pins	1002 094900
C.V.1000	Extractor for the fixed pinion of the 5 th gear from the secondary shaft	1002 100000
C.V. 1059	Bushing kit for mounting/dismounting the differential bearings	1002 105900
C.V. 1170	Hub extractor of the 5 th gear	1002 117000
C.V. 1175	Screw for mounting the fixed pinion 5 th gear	1002 117500
C.V.552	Extractor of the secondary shaft bearing from the clutch – differential crankcase.	1002 055200
C.V.31 – 01	Set of punches for elastic pins dismounting/ remounting	1002 259401
C.V. 1162	Chuck for replacing control bearing bushings	1002 116200
C.V. 553	Device for dismounting/remounting the clutch shaft bearing	1002 055300
C.V. 554	Bushing for depressing the differential assembly	1002 055400
C.V. 560	Set of punches for dismounting/remounting blocking pin of thereverse driving shaft.	1002 056000

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ATTENTION !

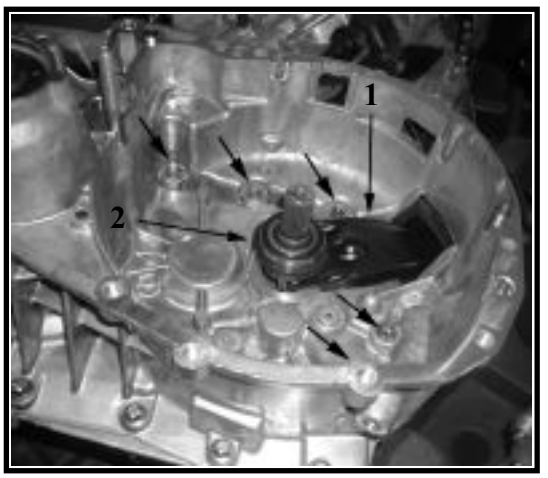
The dismounting and checking of the parts must be done on a surface coated with rubber or soft plastic.

Before taking apart the gearbox from the vehicle, drain the oil from the gearbox.

DISMOUNTING

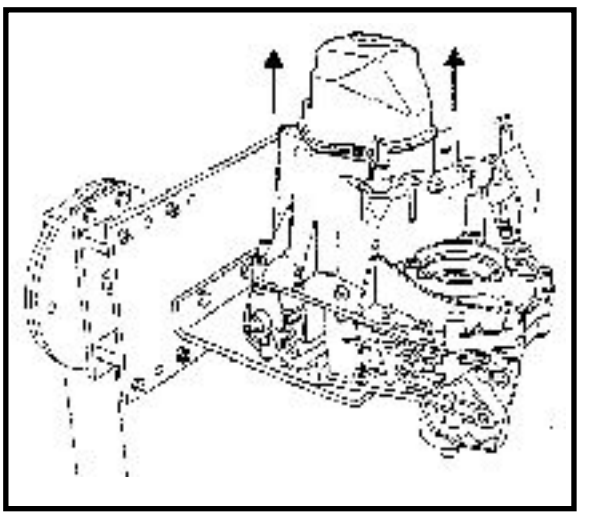
Dismount :

- clutch release fork (**1**) ;
- pressure bearing (**2**) ;
- the screws located inside the clutch crankcase.



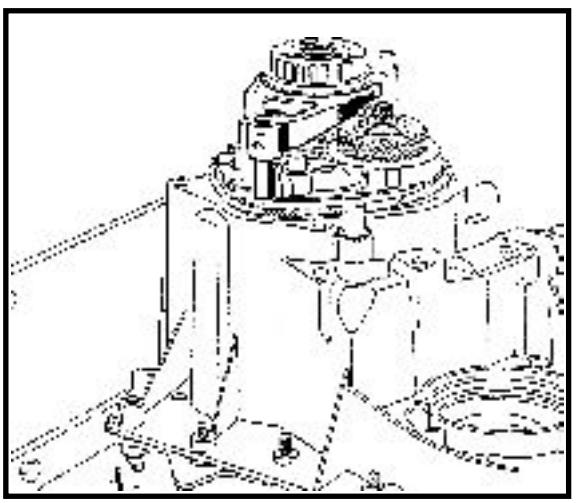
Dismount the cap attachment screws.

The back cap of the gearbox is extracted so that its setting surface should is remaining parallel to the conjoined surface of the gearbox, because this cap is containing an oiling groove situated in the cylinder bore of the primary shaft.



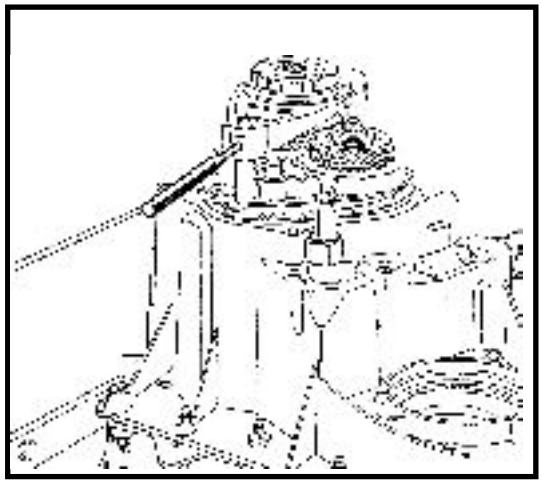
Engage the **1**-st gear with the control lever and the **5**-th gear by manually shifting of the **5**-th gear fork.

Dismount the primary shaft nut and the secondary shaft screw.



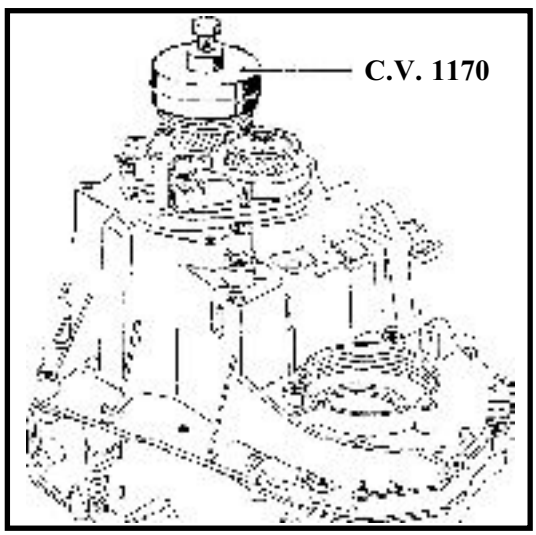
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Dismount the elastic pin of the **5 th** gear, by means of the **C.V. 31 – 01** mandrel.

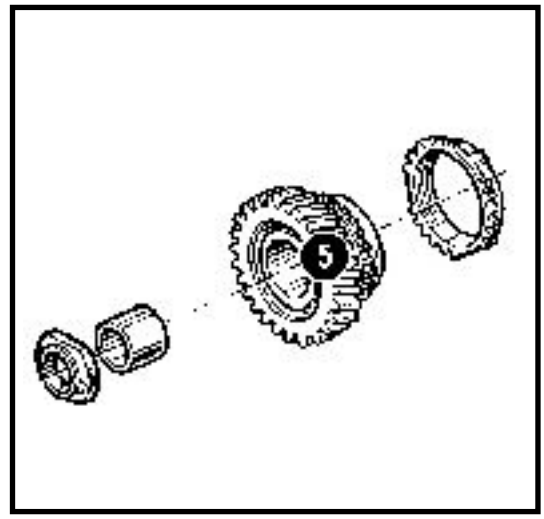


Dismount the fork and the sliding collar of the **5 th** gear.

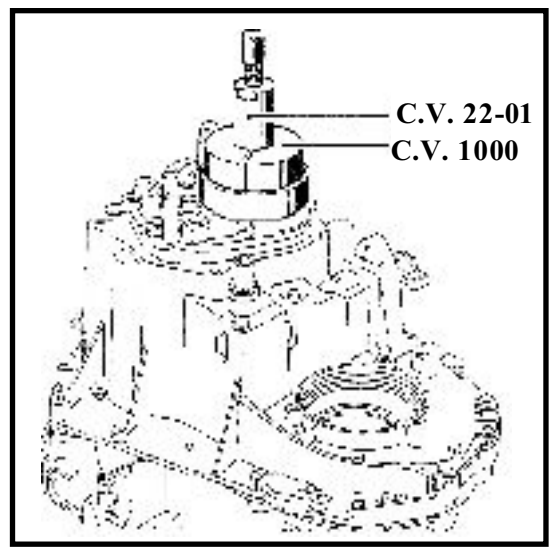
The hub of the **5 th** gear synchronizer is extracted by means of the **C.V. 1170** extractor.



Dismount the synchronizer ring of the **5** – th gear, the inner bushing of the pinion, the pinion and its supporting washer.



Dismount the fixed pinion of the **5 th** gear by means of the **C.V. 1000** extractor and the body extractor **C.V. 22 -01**.

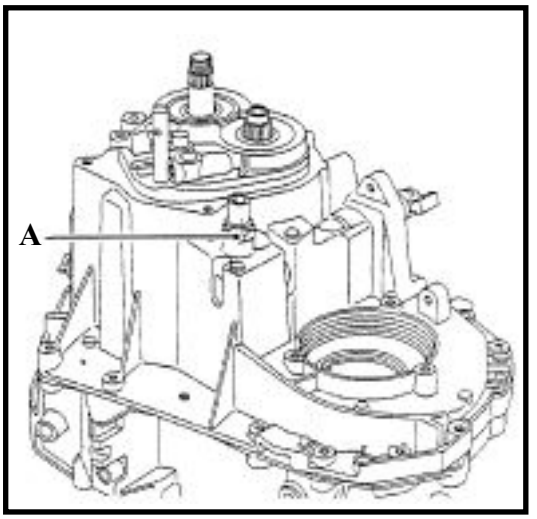


The gearbox is set in the neutral point, then the **3-d** gear is engaged.

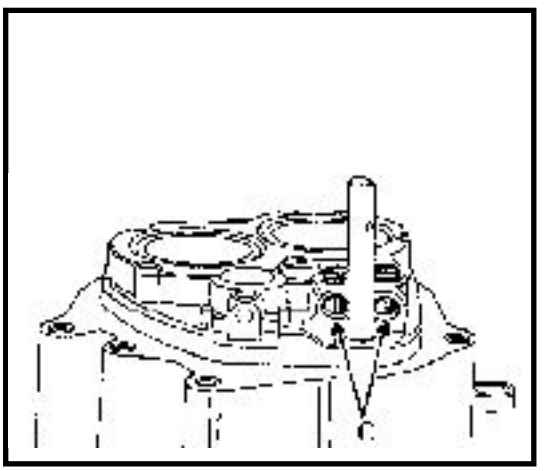
Dismount the external screws fixing the mechanisms crankcase

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Dismount the reverse driving contact (**A**).

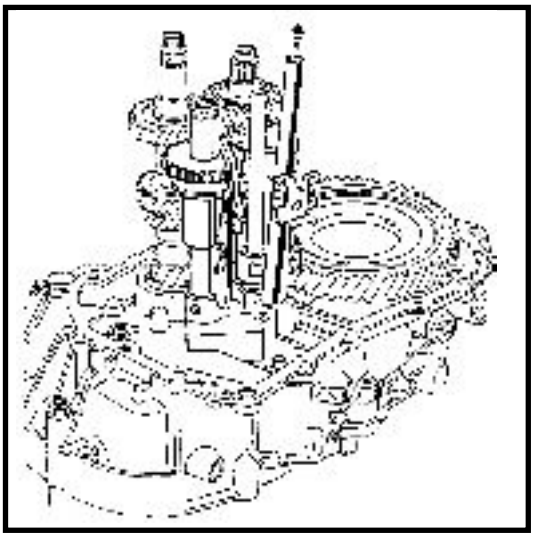


In order to recover the balls and the locking springs of the **1-2** and **3-4** shafts, two magnets placed in the **C** orifices are used.

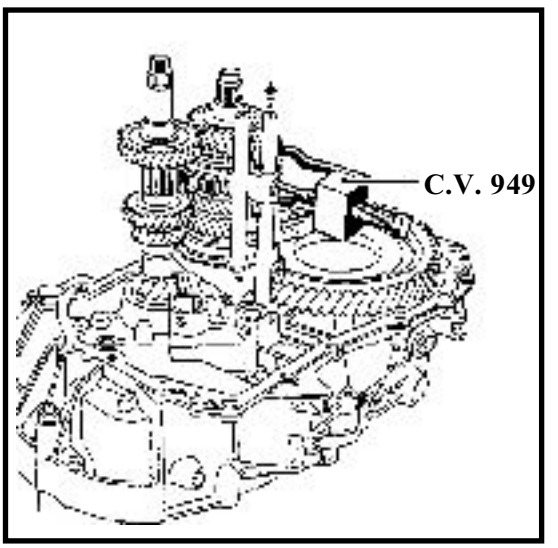


Pull the control shaft towards exterior and separate the crankcases

Dismount the reverse driving control shaft and the **5**-th gear.



Remove the pin of the **3-4** fork by means of the **C.V. 949** device and dismount the **3-4** shaft and fork assembly

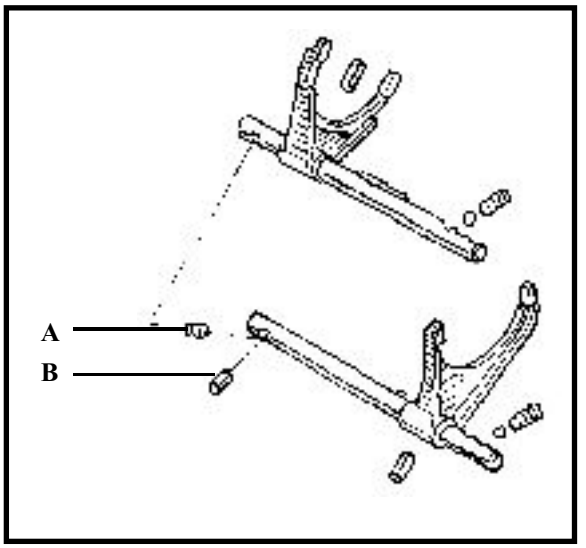


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Dismount the secondary shaft assembly together with the axle and **1-2** fork.

Place vertically the secondary shaft, with the pinion of the **1**-st gear downwards, so that the other pinions will not fall down.

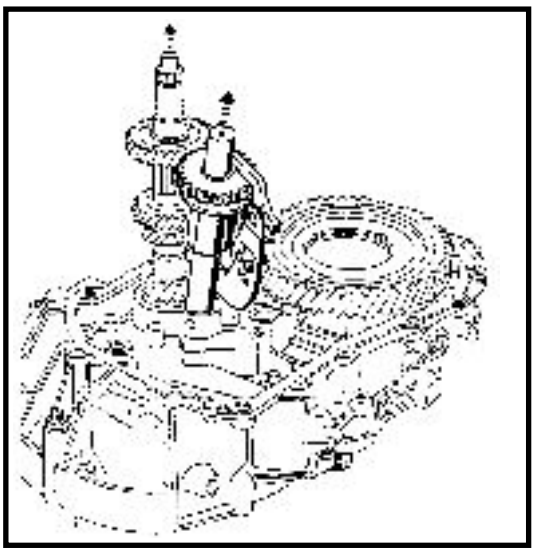
Recover the locking pins **(A)** and **(B)** of the control axles.



Dismount the attachment elastic pin of the reverse driving shaft, by means of the mandrel **C.V. 560**.



Remove the primary shaft together with the reverse driving shaft and pinion.



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SHAFTS

THE PRIMARY SHAFT

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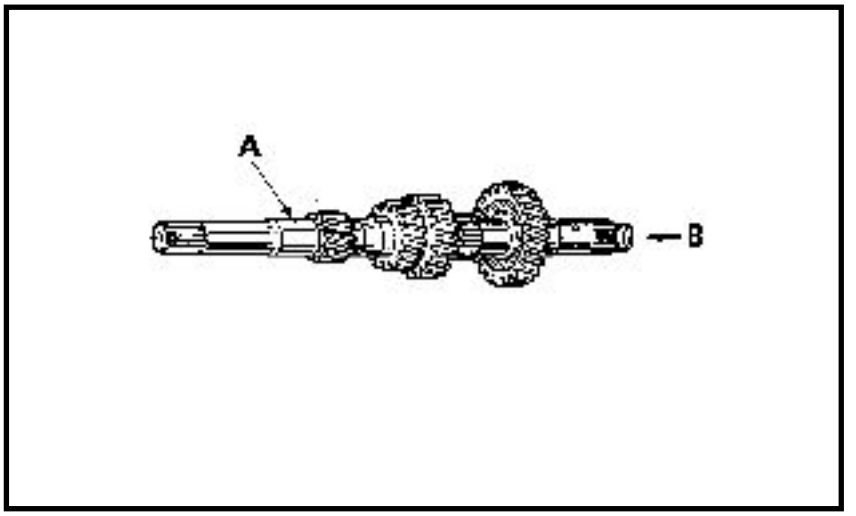
The primary shaft shall not be repaired and is not adjustable.

The shaft has a groove (**B**) for oiling the **5**-th gear free pinion.

Clean the oiling – groove of the **5** th gear

The oil seal ring in front of the shaft and the bearing cams are in direct contact with the shaft.

Check the condition of the shaft surface in the operation area (**A**) of the oil seal; ring , and if this shows ridges or irregularities, it will be replaced.



REPLACING THE BEARINGS OF THE PRIMARY SHAFT

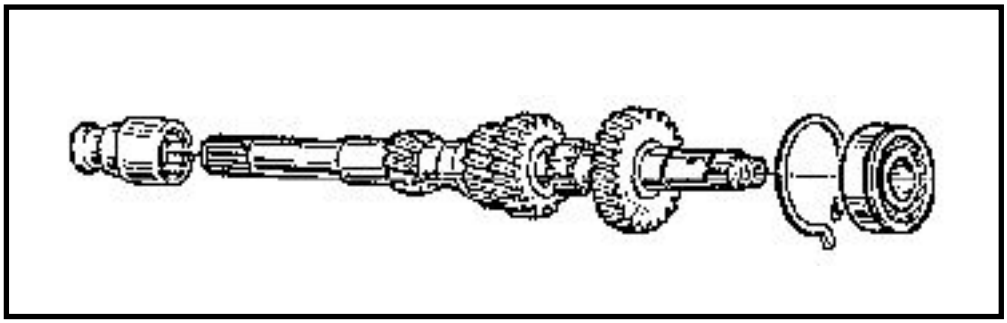
The bearings of the primary shaft are freely mounted on it

There are two types of bearings:

- a cylindrical one with balls, pressed into the mechanism crankcase;
- a cylindrical one with rolls, pressed into the clutch-differential crankcase, together with the clutch shaft oil seal ring.

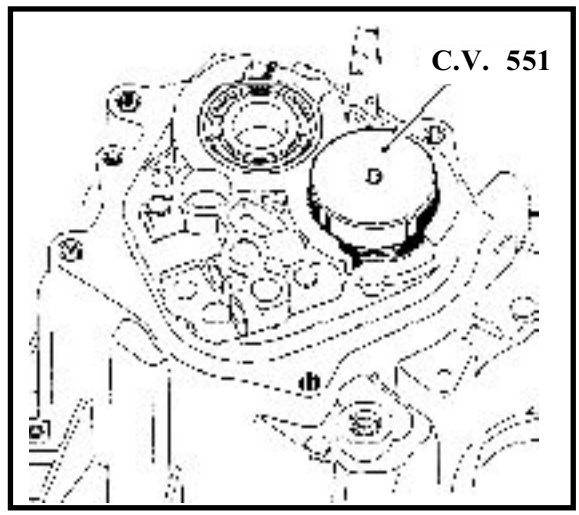
The bearings replacement is to be done only with identical bearings with the original ones.

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BEARING DISMOUNTING OFF THE MECHANISMS CRANKCASE

The safety ring of the bearing (the holding ring) is enlarged by means of a pair of safety pincers, then the bearing is extracted from the crankcase by hammering towards the inside of the mechanisms crankcase, by means of the **C.V. 551** device.



BEARING REMOUNTING OF THE MECHANISMS CRANKCASE

Replace the safety of the bearings with a new one, then this one is introduced into its groove in the mechanisms crankcase, so that its position is observed as compared to the crankcase (the safety shows a shoulder).

The bearing is pressed from the exterior of the mechanisms crankcase towards the inside of it, until the safety fits into the groove carved on the outer ring of the bearing.

Mounting of the bearing is performed by means of the **C.V. 551** device.

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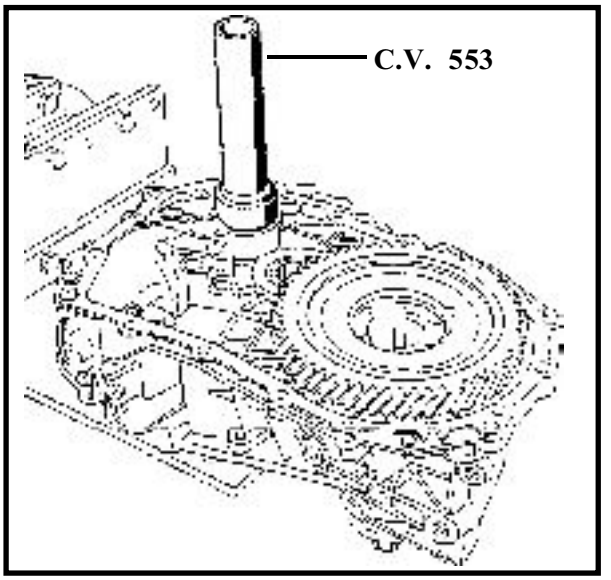
BEARING DISMOUNTING FROM THE CLUTCH-DIFFERENTIAL CRANKCASE

Dismount the clutch shaft bearing towards the clutch opposite direction, by means of the **C.V. 553 device.**

Ensure that device is well fixed upon depressing the bearing.

BEARING REMOUNTING FROM THE CLUTCH-DIFFERENTIAL CRANKCASE

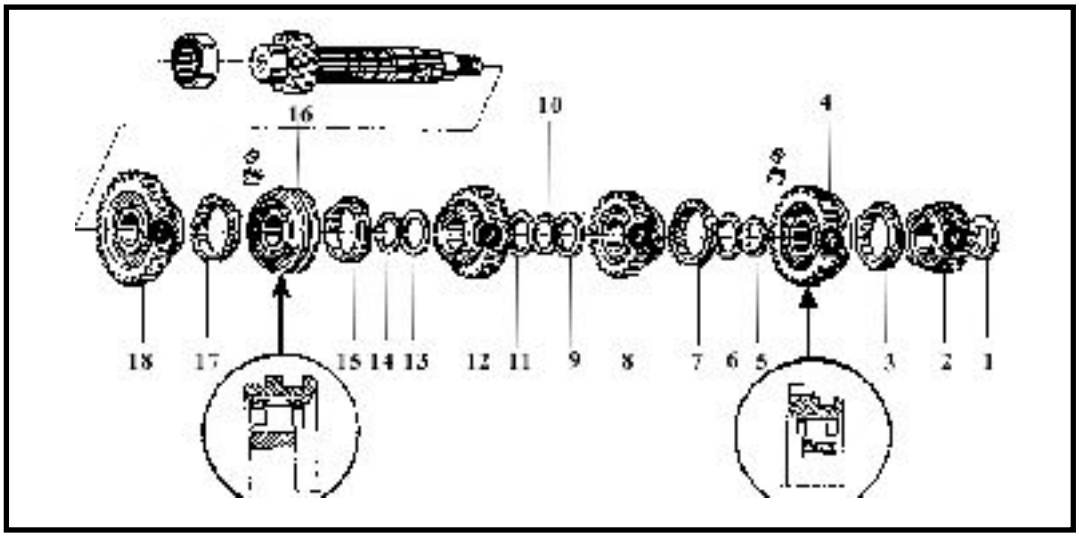
The remounting shall be performed using the same **C.V. 553** device, the mounting direction of the bearing being towards the clutch.



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SECONDARY SHAFT

SECONDARY SHAFT DISMOUNTING



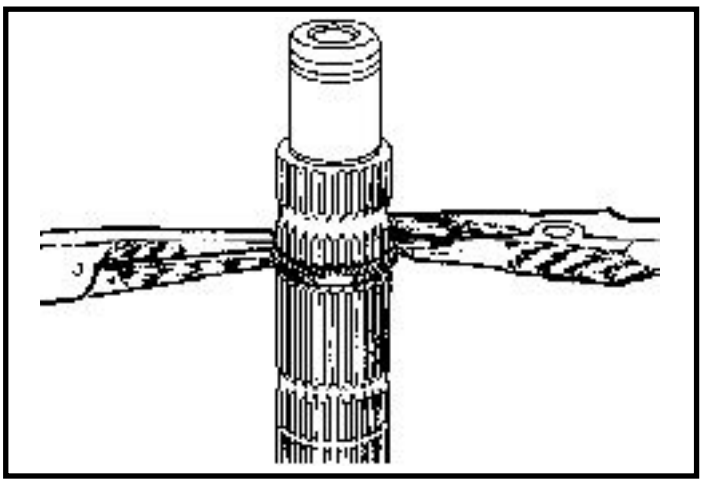
Dismounting of the secondary shaft is performed starting from the 4 th gear.
Dismount the elements, in the following order:

1. – the support washer
2. – gear IV pinion
3. – synchronizing ring;
4. – synchronizer for gears III and IV;
5. – stopping ring;
6. – grooved washer;
7. – synchronizing ring;
8. – pinion of gear III;
9. – grooved washer;
10. – stopping ring;
11. – grooved washer;
12. – gear pinion II;
13. – grooved washer;
14. – stopping ring;
15. – synchronizer ring;
16. – synchronizer for gears I and II;
17. – synchronizing ring;
18. – gear I pinion.

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The stopping rings are to be replaced after each dismounting.

For mounting and dismounting the stopping rings, a pair of safety pincers to keep the ends apart, and, on the opposite side, a pair of flat tipped pincers to prevent the stopping ring breaking, are to be used.



SECONDARY SHAFT REASSEMBLING

Before reassembling the secondary shaft, perform the parts checking, as follows:

- the pinions and claw tooth must not show chips or excessive wear;
- ensure that working surfaces of the shafts and the inner parts of the pinions do not show traces of gripping or abnormal wear.

When reassembling, clean the oiling grooves made in the secondary shaft and all its component parts are to be pre – oiled.

Take into consideration that synchroniser hubs are matched with the slidings.

It is recommended to mark the positions of the sliding compared to the hubs.

The stopping rings are to be replaced after every dismounting.

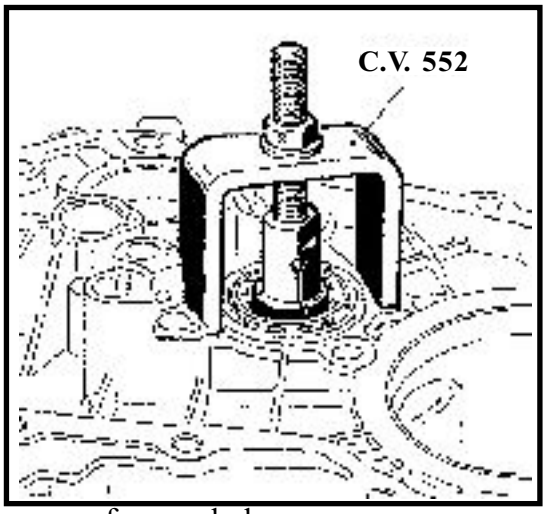
Reassembling of the secondary shaft shall be done by performing the dismounting operations in the reverse order.

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REPLACEMENT OF THE SECONDARY SHAFT BEARINGS

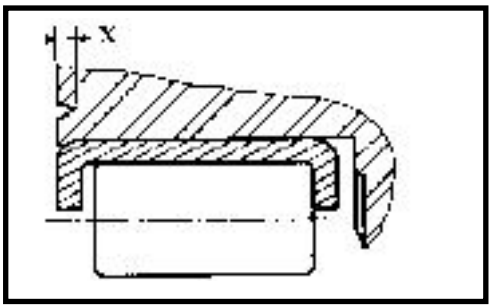
The secondary shaft bearing from the mechanisms crankcase is identical to the one from the primary shaft so that its dismounting and remounting are performed in the same way as for the primary shaft.

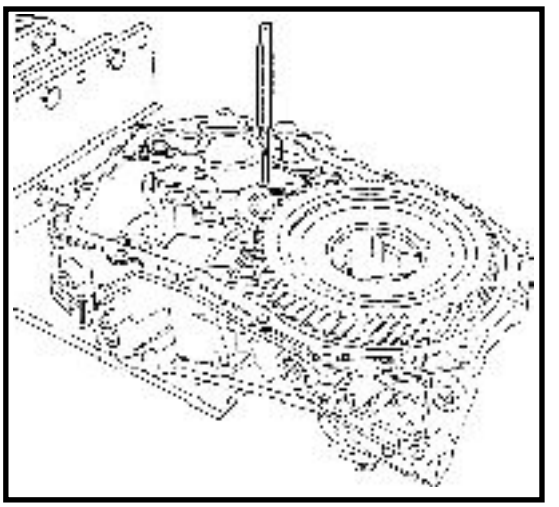
Bearing dismounting and mounting in the clutch crankcase is performed by means of the **C.V. 522** device.



The bearing is set by means of a mandrel (puncher) in four equidistant points on a **55 mm** diameter.

X = 0,9 ÷ 1,3 mm.



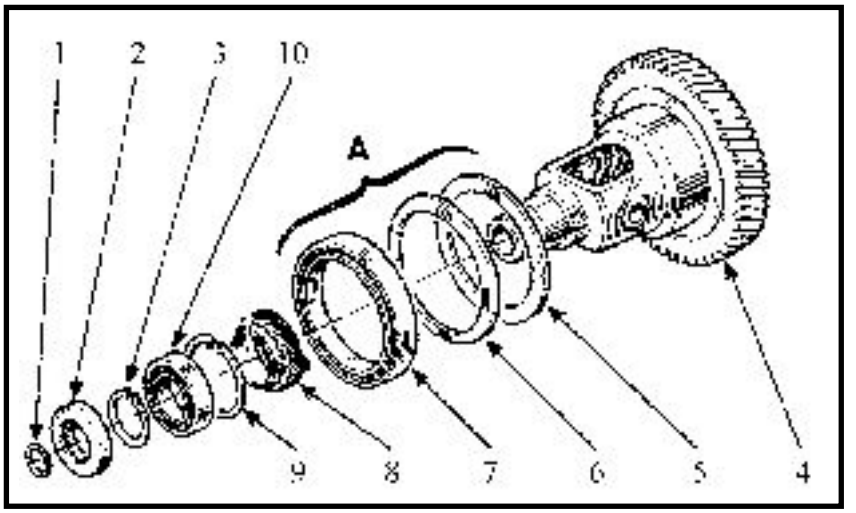


NOTE:

When dismounting the bearing from the clutch-differential crankcase, the deflector located behind the bearing will be damaged, being necessary its replacement with a new one (this is ensuring the inside oiling of the secondary shaft).

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DIFFERENTIAL



The differential of the **JH3-051** gearbox is the simple type (with two satellites and two planetary wheels, one of which making a common body with the tulip of the planetary transmission).

This differential is supported in the clutch– differential crankcase by means of two cylindrical bearings equipped with balls of various sizes.

The two bearings are pressed in the clutch– differential crankcase.

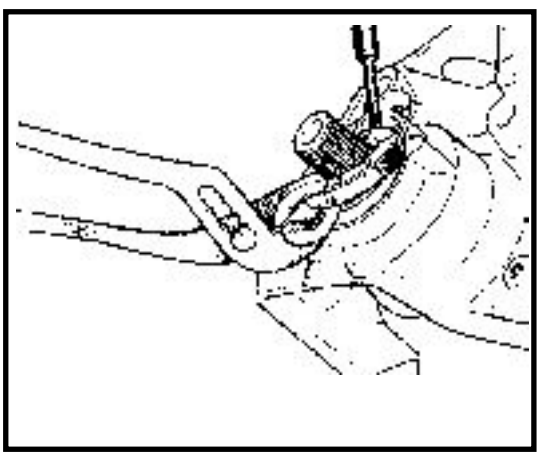
The crown of the main transmission is assembled by hooping, on the differential crankcase.

DIFFERENTIAL DISMOUNTING

This operation is to be performed after separating the crankcases.

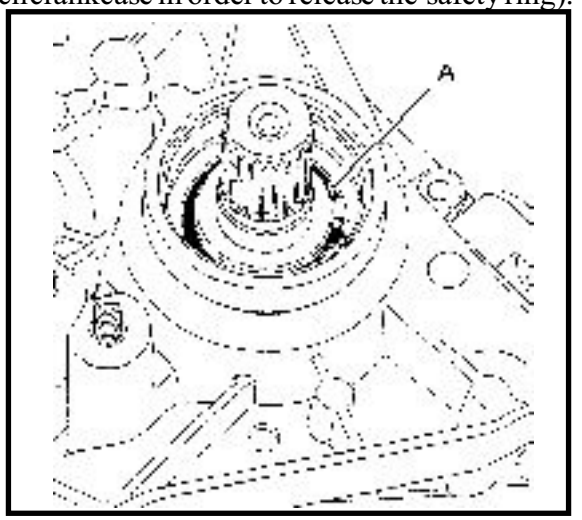
The zero ring **(1)** is removed from the right planetary shaft, then by means of a pins extractor and a hammer, the sealing gasket **(2)** is gently hit in order to make it pivoting.

The oil seal ring is carefully pulled along the grooved part of the planetary pinion in order not to deteriorate the grooves.



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The stopping safety device **(A)** is extracted, by means of a pincers from the differential crankcase (press on clutch crankcase in order to release the safety ring).



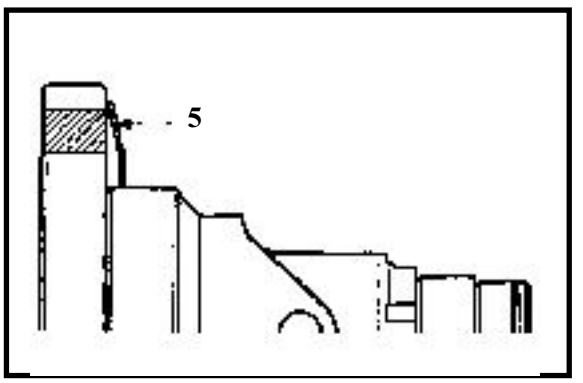
The differential assembly is dismounted using a press, by means of a bushing **C.V. 554** (the bushing is pressing on the differential crankcase).

Dismount the spacer washer **(5)** and the elastic concave washer **(6).**

The crown of the speedometer **(8)** is dismounted from the outside of the differential casing.

REMOUNTING THE DIFFERENTIAL

Remounting of the differential assembly is performed in the reverse order of the dismounting operations, only this time the spacer that is mounted between the lateral surface of the crown and the support bearing, shall be positioned with the concave side towards the crown.



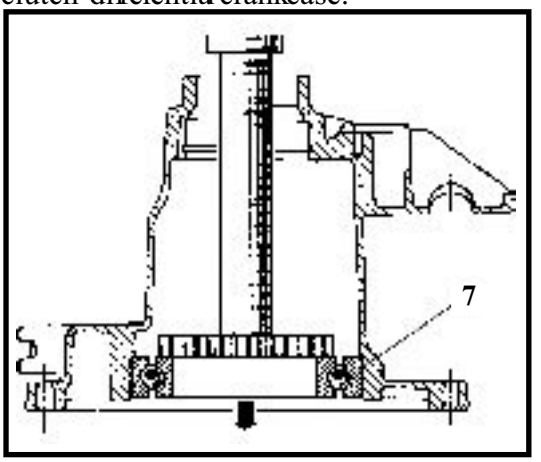
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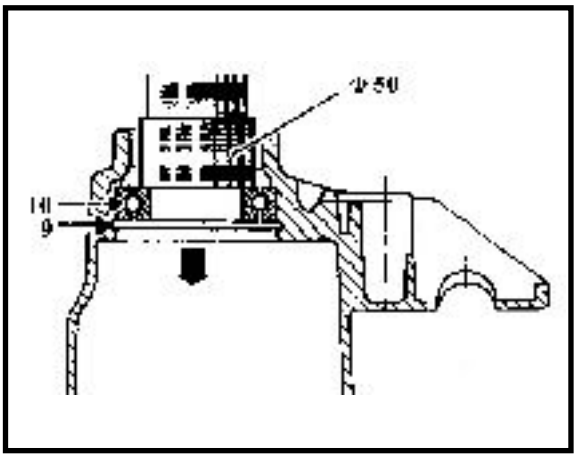
DIFFERENTIAL BEARINGS REPLACEMENT

DISMOUNTING

In order to extract the big bearing **(7),** of the differential from the clutch-differential crankcase, a profiled metallic strap is used, which is pressed by means of an extension, at a press.

In order to dismount the other bearing **(10),** first extract the safety **(9)**, then press with a press on the bearing by means of a sleeve with the outer diameter of **50 mm,** towards the inside of the clutch-differential crankcase.



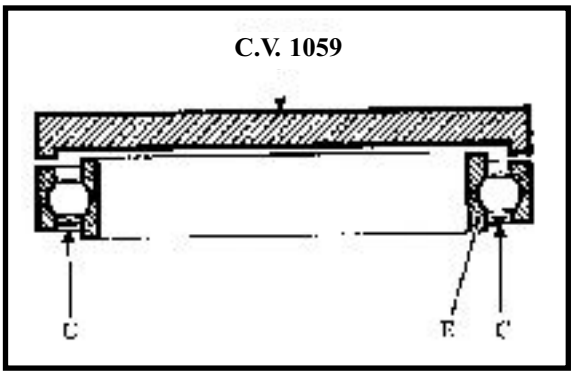


REMOUNTING

In case of the bearing **(7)**, its cage **C** must be oriented towards the opposite side of the differential crown

In order to press this bearing into the clutch crankcase, the **C.V. 1059** device is used, which is pressing on the outer ring of the bearing.

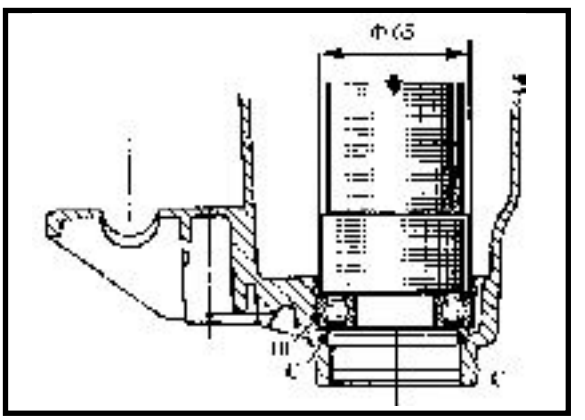
C.V. 1059



When remounting the other bearing (**10**), its cage **C** must be oriented towards the opposite side of the differential crown.

For pressing, the **65 mm** diameter sleeve of the **C.V.1059** device is used, which is pressed on the outer ring of the bearing

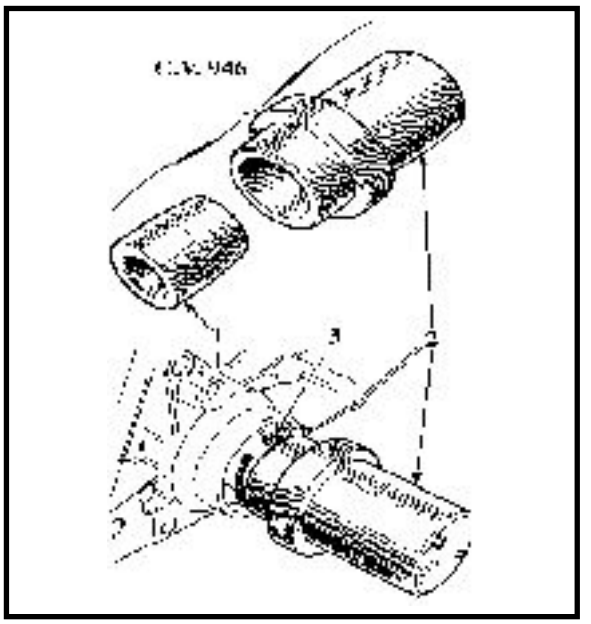
Remount the bearing maintaining safety.



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MOUNTING OF THE DIFFERENTIAL ASSEMBLY IN THE CLUTCH CRANKCASE

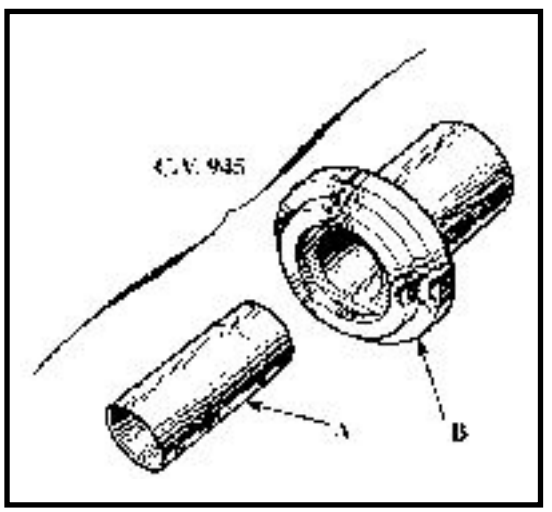
The differential assembly is pressed into the crankcase, then the stopping safety device **(3)** is mounted on the planetary shaft by means of the **C.V. 946** device.

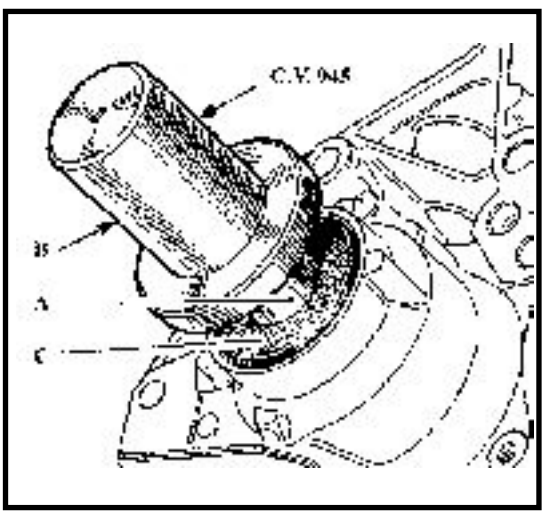


Rotate the differential assembly and check the speedometer pinion rotation.

Remounting of the (**C**) planetary oil seal ring is performed after this has been oiled, by means of the **CV 945** device and the (**A**) protector.

Mount the oiled protector (**A**), on the planetary pinion and position the oil seal (**C**) by means of the (**B**) device.





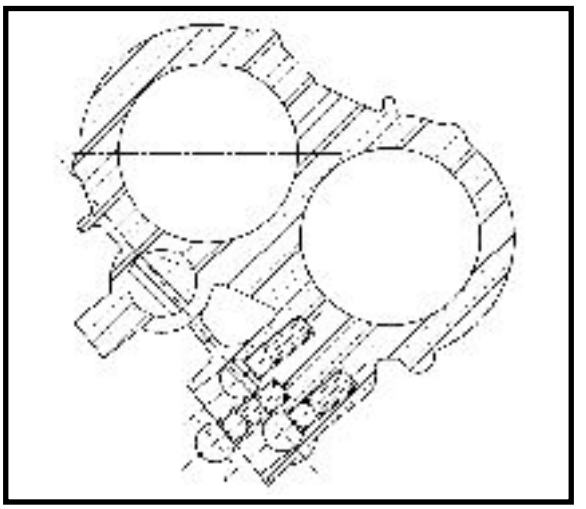
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INTERNAL CONTROLS

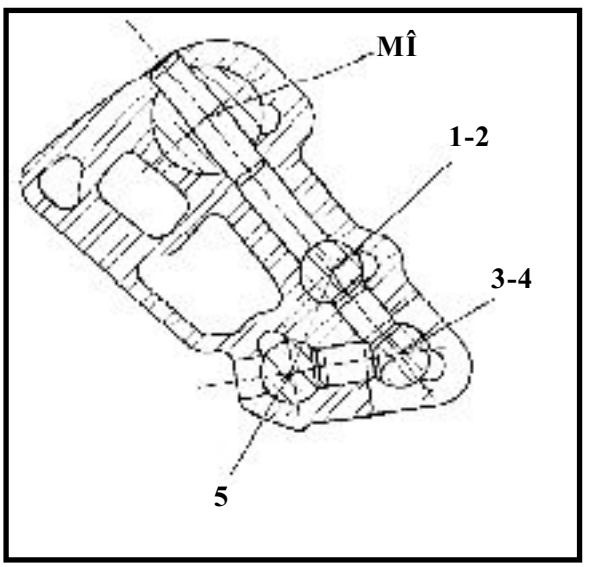
The internal control axles must not show any deformations or wear on the milling for locking balls, and their sliding on bearings must be done freely, without excessive clearance.

The contact surfaces of the forks with collar of the rocking must not show either deformations nor wear.

Ensuring of the control forks axles is performed by means of the balls and springs placed in the holes made in the mechanisms crankcase.



The locking of the control axles is done by means of some cylindrical rolls mounted inside the clutch–differential crankcase.



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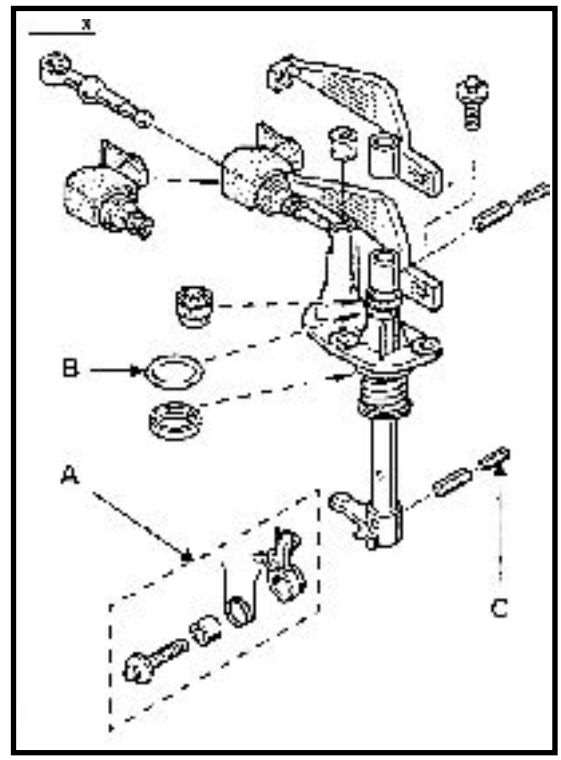
CONTROLAXLEDISMOUNTING

This operation is to be performed after crank-cases separation.

The control axle is provided with a blocking element **"LOCTOU" –(A)** attached on the crankcase.

The sealing is ensured by means of the tore gasket **(B).**

Remove the elastic pin of the selection lever **(C),** then dismount the attachment screws, and retrieve the control axle assembly



In order to replace the bearing bushing of the control axle, the **CV 1162** device, or a tube with the outer diameter **16.5 mm** are to be used. Before mounting the bushing shall be oiled.

CONTROLAXLEREMOUNTING

When remounting the control axle, replace the selection finger pin with a new one.

Remounting is done by performing the dismounting operations in the reverse order, after all parts have been oiled with oil.

Tighten all attachment screws of the control axle assembly at the required moment of **2 daNm.**

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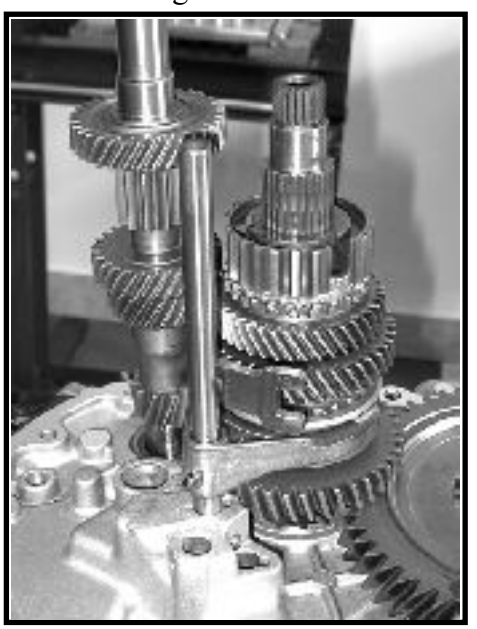
CRANKCASES ASSEMBLING

The assembling surfaces must be flat (small imperfections can be eliminated by means of a thin file).

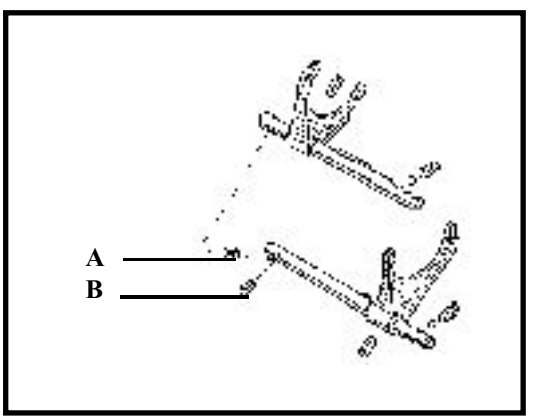
Place the axle and **1-2** fork, assembled, on the **1-2** sliding collar of the secondary shaft.

The two shafts (primary and secondary) are taken together with the fork and **1-2** axle and positioned at the same time into the clutch – differential crankcase.

The crown and the secondary shaft are rotated until the end of the secondary shaft fits into the bearing.



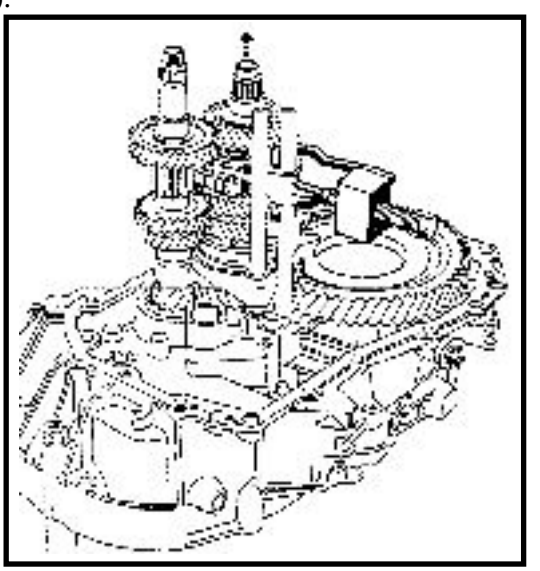
Mount the blocking roll of the shaft° **(A).**



With the **1 – 2** axle in free position, the following are mounted:

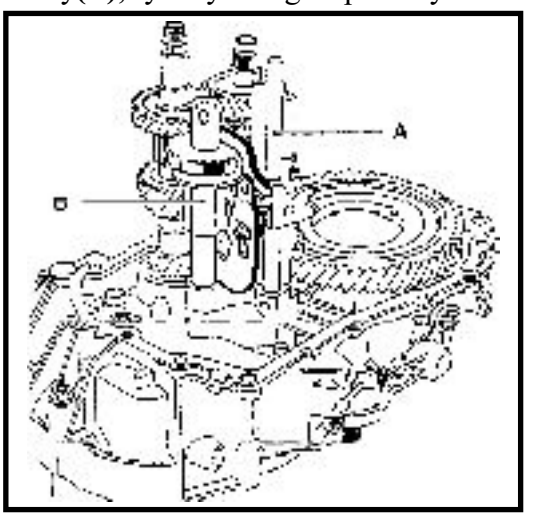
- synchronizing assembly **3 – 4** together with the axle and the **3 – 4** fork;
- mount the pin of the fork **3 – 4** by means of the **CV 949** device.

Mount the blocking roll of the **5** th gear axle **(B)**.



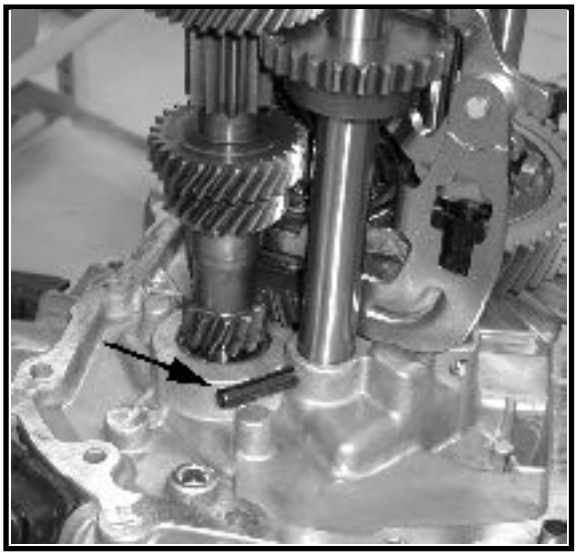
After that, mount the followings:

- the control axle for the **5** –th gear and reverse driving **(A);**
- the axle and the reverse driving pinion assembly **(B),** by easy lifting the primary shaft.



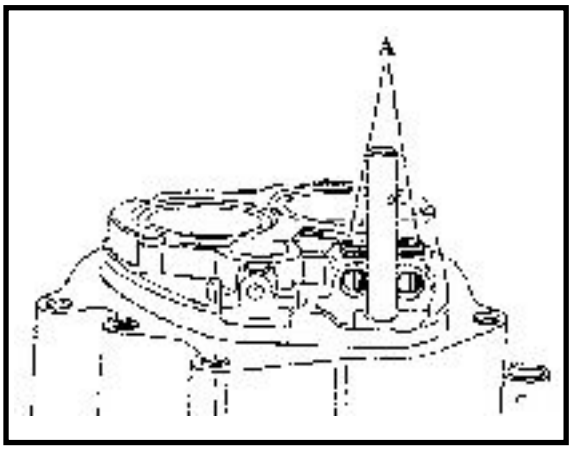
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Mount the elastic pin for reverse driving axle attachment by means of the **C.V. 560** mandrel.



Ensure the correct positioning of the two centering bushings and of the magnet.

Mount the springs and the locking balls **1-2** and **3-4** in the mechanisms crankcase, then the false axes **A** with a **13-mm** diameter are introduced.



Check the positioning of the **5 th** gear oiling collector and of the aerating connection.

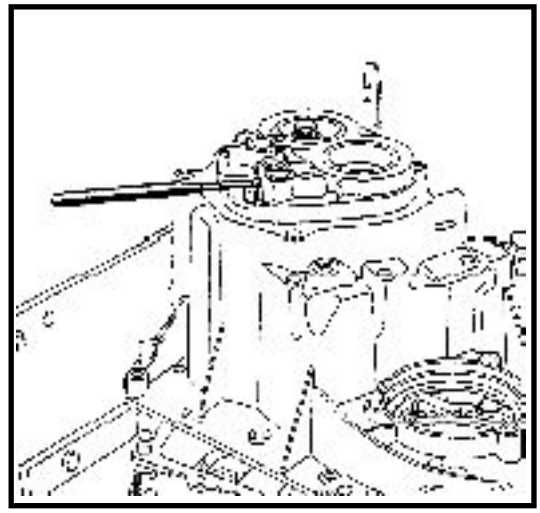
Additionally, ensure (check) if the aerating tube is not damaged or clogged.

Apply a continuos layer of **LOCTITE 518** on the gasket surface between the clutch crankcase and the mechanism crankcase.

Engage the **3 -d** gear.

Mount the spring and the **5 th** gear locking ball into the crankcase of the mechanism.

Compress the locking ball and mount the mechanisms crankcase.



Mount the attachment screws and tighten them at the required moment of **2,5 daNm**, after rotating the primary shaft, in order to ensure o correct bearings setting.

Retrieve the false axes.

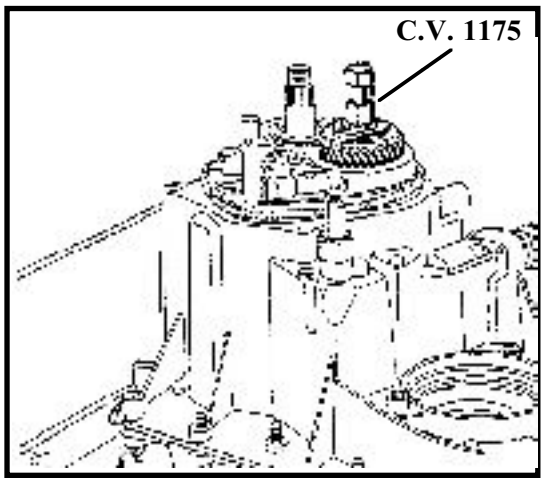
REMARK :

The tightening at the required moment of all the screws must be done in no more than 30 minutes after the mounting of the mechanisms crankcase, because of the polymerization of LOCTITE 518.

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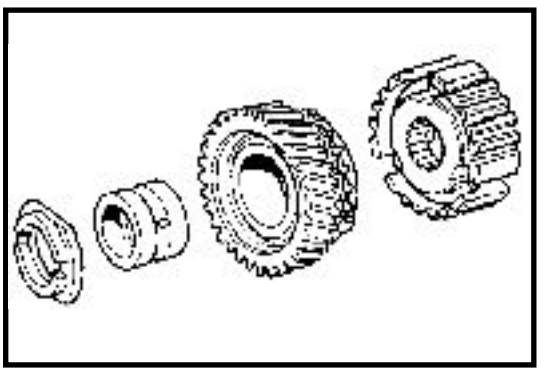
Mount the 5-th gear fix pinion on the secondary shaft by means of the **C.V. 1175** device.

Dismount the **C.V. 1175** device and mount the secondary shaft screw, oiled with **3** drops of **LOCTITE FRENBLOC.**



Remount on the primary shaft, observing the following sequence:

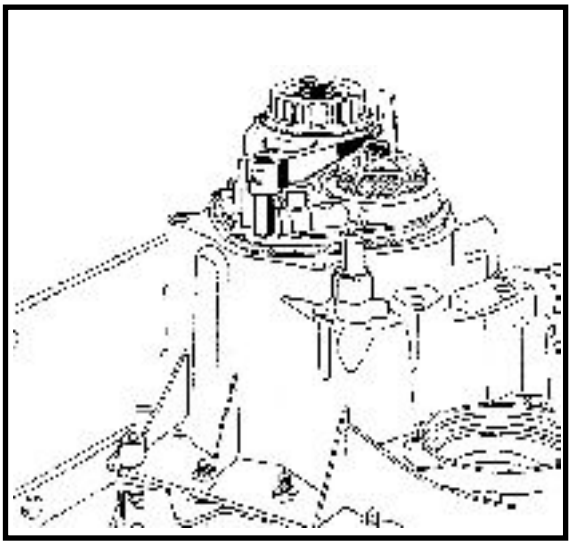
- the support washers (with the larger side towards the pinion)
- the bushing under the pinion;
- the free **5** th pinion equipped with its synchroniser ring ;
- the 5-th gear hub equipped with its spring
- the fork together with the **5** th sliding collar



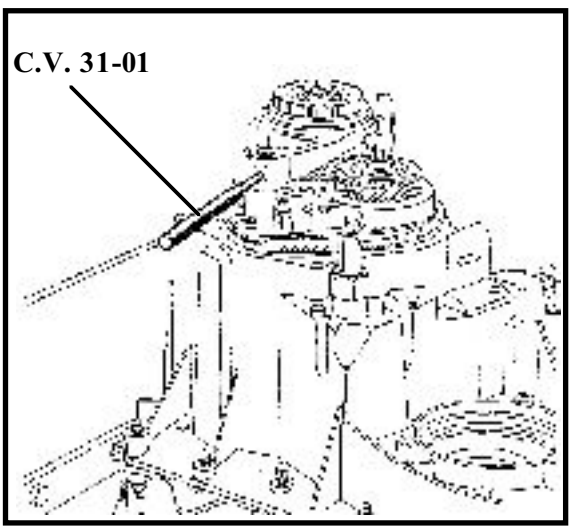
Engage the 1-st gear with the gear lever and the **5** th gear by sliding the 5-th gear fork on its axle.

Mount the nut and the screw and tighten them at the required moment:

- primary shaft nut : **19 daNm;**
- secondary shaft screw : **7 daNm.**

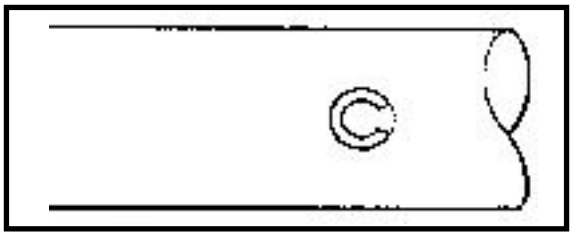


Mount the pin of the **5 th** gear fork by means the **CV 31 01** device.



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Observe the mounting direction, the pin slot must be oriented towards the back cap.



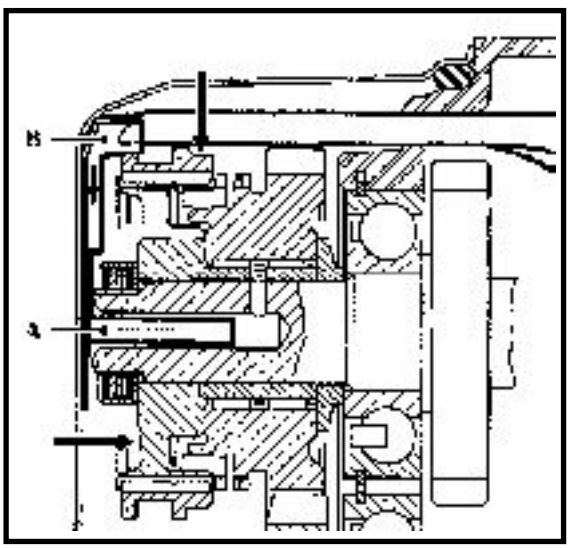
Bring the gearbox in the neutral position

Mount a new gasket to ensure the back cap sealing.

Mount the back cap with the **A** groove in the primary shaft, and the oiling collector in the **B** oil collecting groove, and tighten the screws at the required moment of **2,5 daNm**.

Check the correct gears shifting.

Mount the reverse driving connector.



Mount the clutch control fork and the pressure bearing.

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SDV-uri SPECIALE NECESARE	
C.V. 945	Mandrin montare garniturã etanºare planetarã

TIGHTENING MOMENTS (daNm)	
Shock absorber attachment nut on steering knuckle	7.5
Wheel attachment screws	7.5
Oil draining plug	2.5

DISMOUNTING

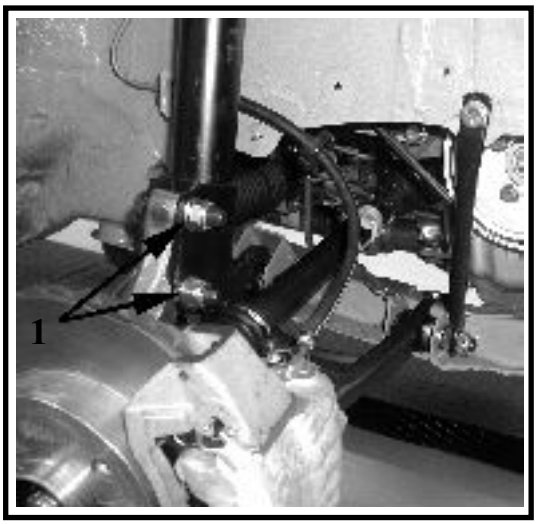
Place the vehicle on a two-columns elevator.

Dismount the right front wheel.

Drain the oil off the gearbox.

Dismount :

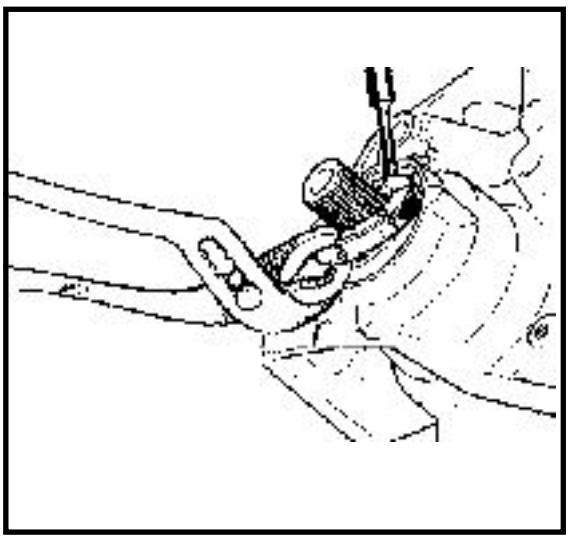
- the wheel protector
- the shock absorber attachment nuts **(1)** on steering knuckle.



Rock the steering knuckle and disconnect the planetary transmission from the gearbox.

Remove the "O" ring off the planetary shaft, then, by means of a pins mandrel and a hammer,
is gently hit in order to make it pivoting in its place.

Remove the sealing gasket by means of a pliers, taking care not to damage the planetary pinion grooves.



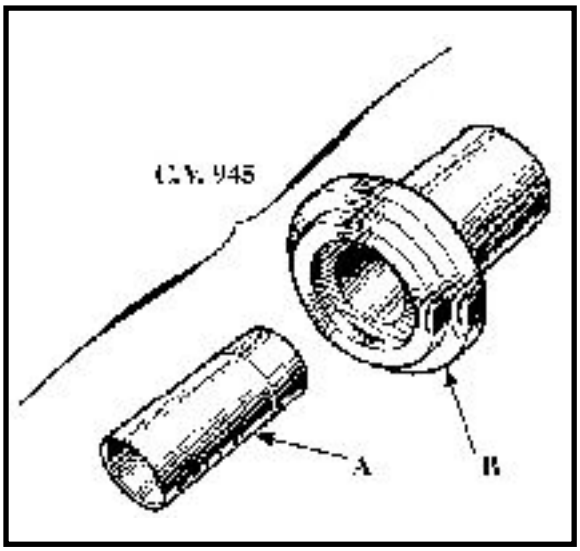
REMOUNTING

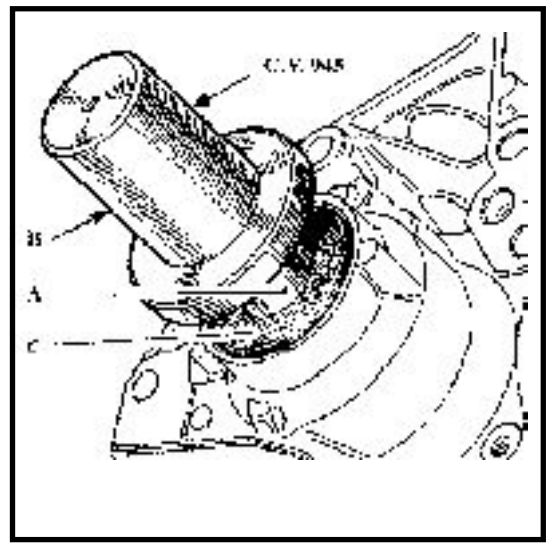
Lubricate with oil the new sealing gasket.

Mount the sealing gasket by means of the **C.V. 945** device.

Mount the protector (A) lubricated with oil, on the planetary shaft and position the gasket **(C)** by means of the device **(B).**

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Position and mount the planetary transmission on the planetary pinion.
Perform the dismounting operations in the reverse order
Tighten at the required moment the screws and the nuts.
Perform the oil filling of the gearbox.
Check the gearbox sealing.

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NECESSARY SPECIAL TOOLS	
C.V. 22 – 01	Bearings extractor body
C.V. 31 - 01	Mandrels set for elastic pins
C.V. 1000	Extractor for the 5-th gear fix pinion C.V.
1170	Extractor for the 5-th gear hub.
C.V. 1175	Screw for mounting the 5-th gear fix pinion

Tightening moments (daNm)	
Primary shaft nut	19
Secondary shaft screw	7
Wheel attachment screws	7.5
Back cap attachment screws	2.5
Oil draining plug	2.5

DISMOUNTING

Place the vehicle on a two columns elevator.

Dismount the front left wheel

Drain the oil off the gearbox.

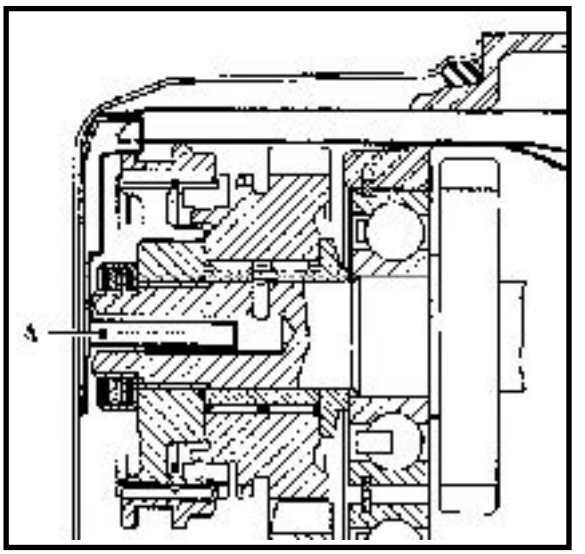
Disconnect the connector of the reverse driving contact

Dismount the cross-tie rod **(1)**.

Dismount the attachment screws of the back cap.



Remove the back cap on the gearbox horizontal axle direction, because the cap is provided with an oiling groove (**A**), which is penetrating into the primary shaft.



Engage the **1**-st gear.

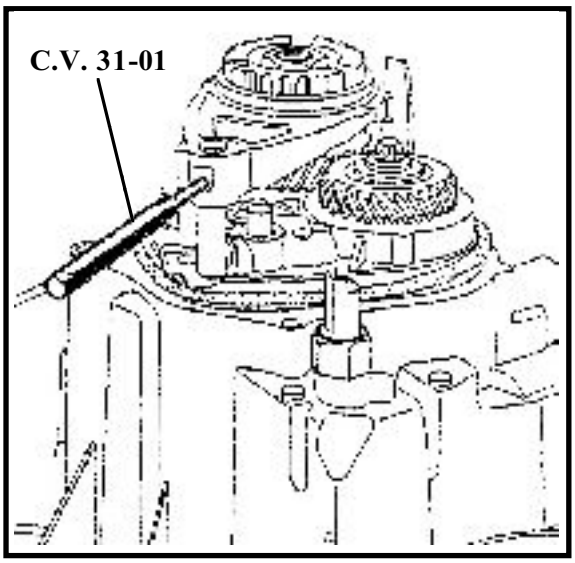
Dismount the elastic pin of the 5-th gear fork by means of the mandrel **C.V. 31 – 01.**

Engage the **5**-th gear by hand.

Dismount:

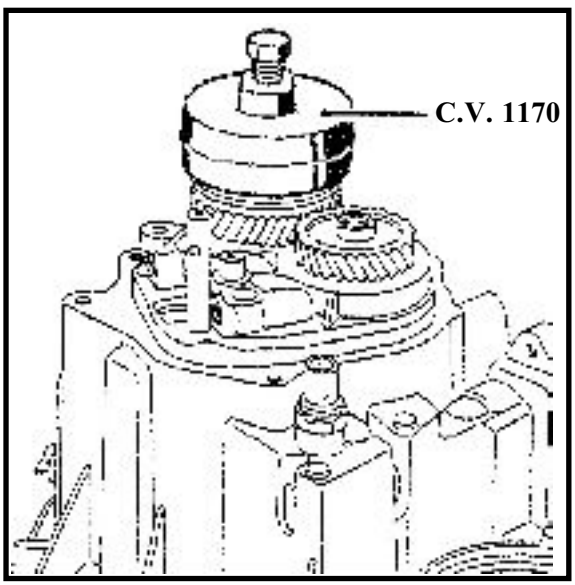
- the nut from the primary shaft and the screws from the secondary shaft.
- the **5**-th gear fork and sliding collar.

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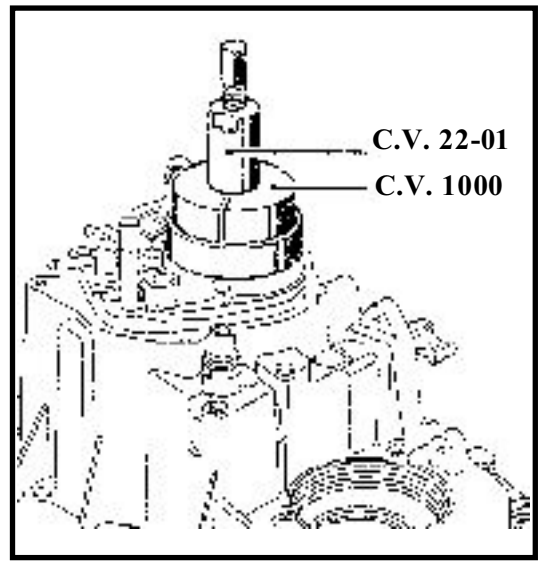
Bring the gearbox in the neutral position.

Extract the synchroniser hub by means of the extractor **C.V. 1170**.



Dismount the 5-th gear assembly

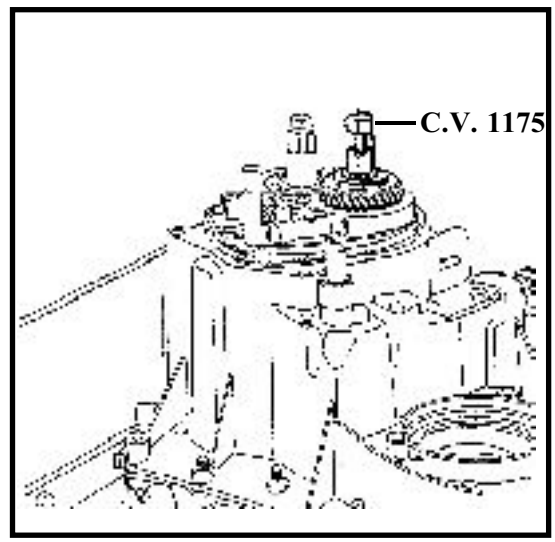
Dismount the 5-th gear fix pinion by means of the extractor **C.V. 1000** and the body extractor **C.V. 22 - 01**.



REMOUNTING

Mount on the secondary shaft the **5**-th gear fix pinion by means of the **C.V. 1175** device

Dismount the **C.V. 1175** device.



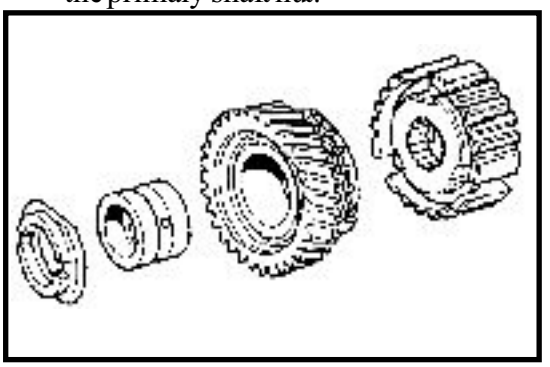
Apply three drops of **Loctite FRENBLOC** on the screw thread of the secondary shaft.

Mount the secondary shaft screw.

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Mount on the primary shaft, in the following sequence:

- the support washer (with the larger side towards the pinion)
- the bushing under the pinion;
- the free **5** th pinion equipped with its synchroniser ring ;
- the fork together with the **5**-th gear sliding collar;
- the primary shaft nut.



Engage the **1**-st gear with the gear lever and the **5**-th gear by sliding the **5**-th gear fork on its axle.

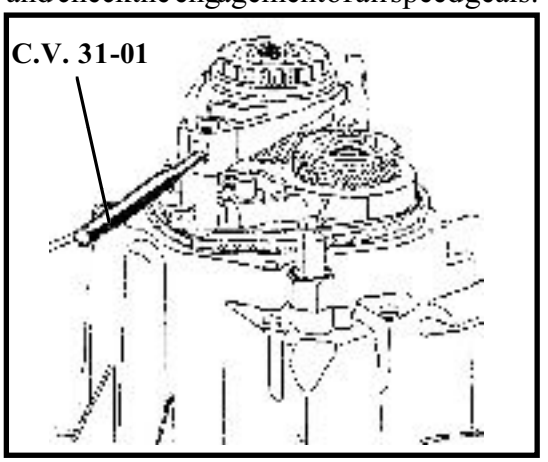
Tighten at the required moment:

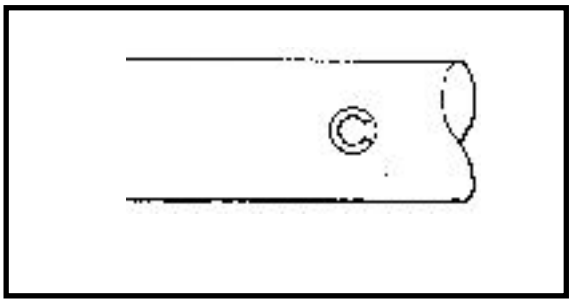
- the primary shaft nut: **19 daNm**;
- the secondary shaft screw: **7 daNm**.

Mount the pin of the 5-th gear fork by means the **CV 31 01** device.

The pin slot must be oriented towards the back cap.

Bring the gearbox in the neutral position and check the engagement of all speed gears.



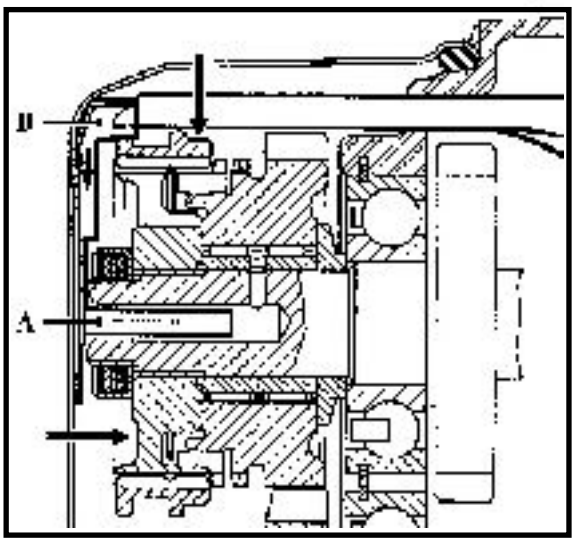


Mount a new tore gasket to ensure the back cap sealing.

Mount the back cap with the (**A**) groove in the primary shaft, and the oiling collector in the (**B**) oil collecting groove.

Tighten the back cap screws at the required moment of **2,5 daNm**.

Mount the reverse driving contact connector.



Check the correct gears shifting.

Perform the filling with oil of the gearbox .

Check the gearbox sealing.

Mount the two cross-tierods.

Mount the right front wheel.

Tighten the screws and the nuts at the required moment.

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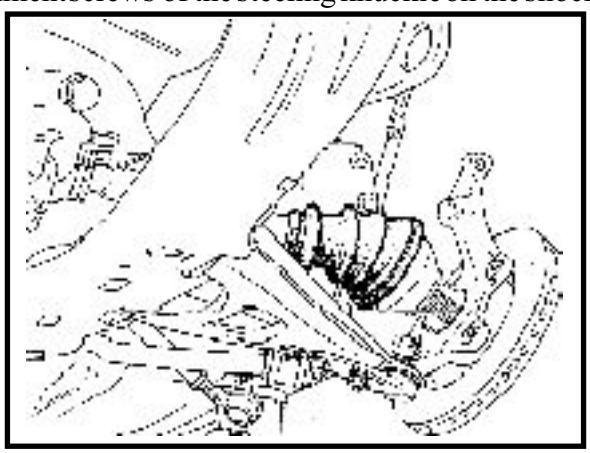
SPECIAL TOOLS	
RO 604-01	Hub immobilizing device
PF 476	Ball joint extractor

TIGHTENING MOMENTS (daN/m)	
Transmission nut	28
Screw for fixing the bellows lid on the gearbox	2,5
Wheels attachment screw	7,5
Screws, nuts for fixing the steering knuckle on the shock absorber	10,5
Screw for fixing the caliper on the steering knuckle	6,5
Nut for steering ball joint	4

DISMOUNTING THE SIDE TO WHEEL

Loosen the left wheel screws.
Lift the vehicle on an elevator with two columns.
Dismount the wheels.
Dismount the screws that attach the brake disk assembly on the steering knuckle.
Unscrew the transmission nut by means of the RO 604 – 01 device.
Dismount :

- the nut of the steering ball joint;
- steering ball joint from the steering knuckle, by means of the PF 476 extractor;
- the attachment screws of the steering knuckle on the shock absorber end.



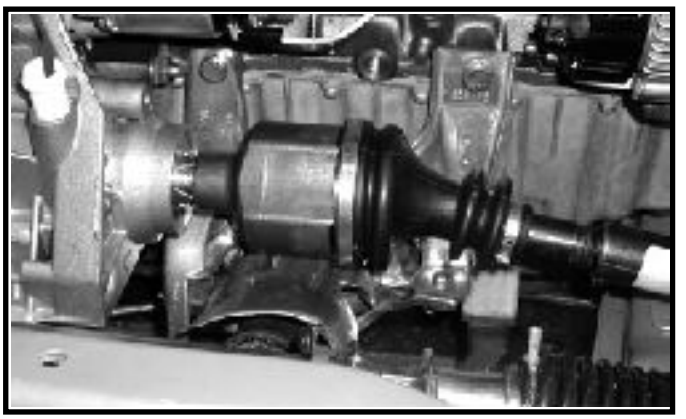
Push the transmission in the steering knuckle and incline the latter.
Dismount the transmission, the wheel side.

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DISMOUNTING – THE SIDE TO THE GEARBOX

The right side

Due to the solution assumed by the manufacturer, the transmission joint (the tulip of the transmission) with the transmission shaft of the gearbox shall be performed only by mea the grooves.



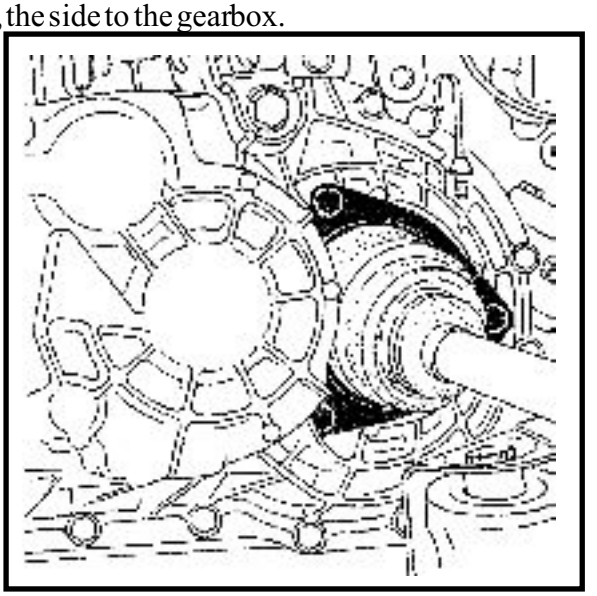
The dismounting of the transmission, the side to the gearbox, shall be performed by axial displacement - extract the transmission tulip from the transmission shaft.

The left side

Drain the oil of the gearbox.

Dismount :

- the three screws for fixing the bellows – lid assembly on the gearbox;
- the transmission, the side to the gearbox.

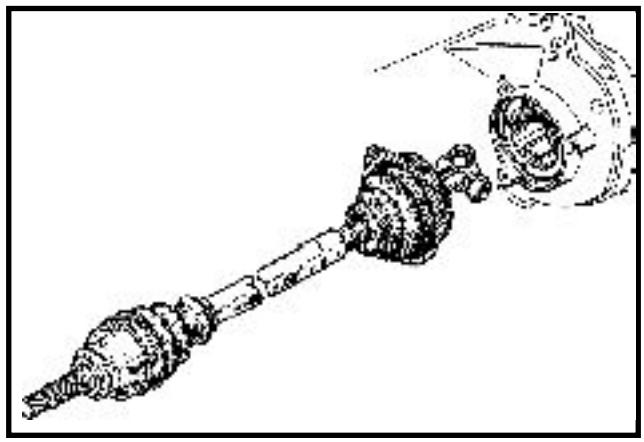


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REMOUNTING-THE SIDE TO THE GEARBOX

The left side

Engage the transmission GI joint in the gearbox (the transmission position as horizontally as possible)



Mount the three attachment screws of the bellows lid on the gearbox.

The right side

Grease the tulip frame grooves (the grooves area) and the transmission shaft of the gearbox with transmission oil.

Engage the transmission GI joint (the tulip) on the transmission shaft of the gearbox (the transmission position must be as horizontally as possible).

REMOUNTING- THE SIDE TO THE WHEEL

For both sides

Engage the transmission in the steering knuckle, this one being necessary to freely enter, so that threaded area of the steering knuckle is allowing to remounting the transmission nut.

Perform then the dismounting operations in the reverse order.

Observe the tightening moments.

Remount the brake disk assembly.

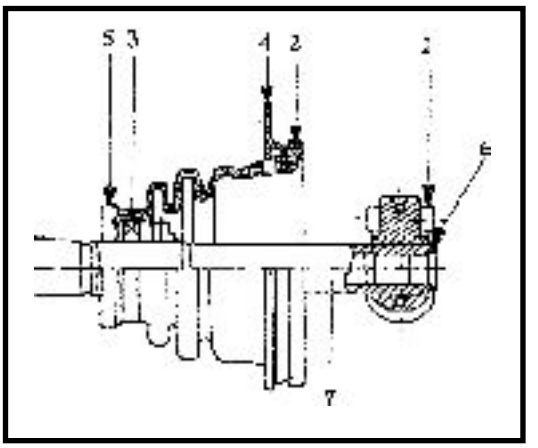
Refill the gearbox with oil.

Press several times the brake pedal to enable caliper piston coming in contact with the brake pads.

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THE JOINT TO THE GEARBOX - GI

SPECIAL TOOLS
Bearing mounting chuck on the shaft PF 1331

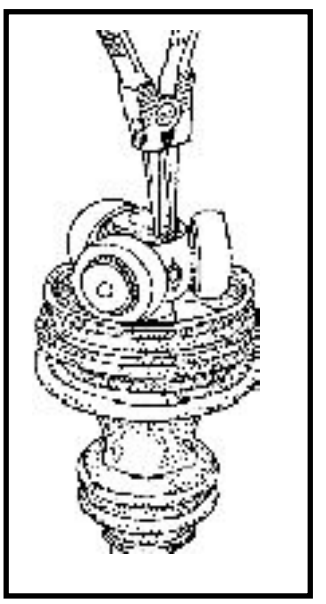


1. Tripod assembled
2. Bellows
3. bearing
4. bellows attachment lid
5. deflector
6. blocking ring
7. transmission shaft

DISMOUNTING

It is forbidden to use thinner for components parts cleaning.

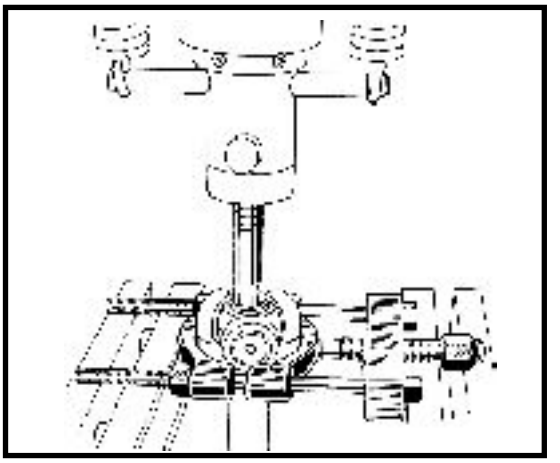
Dismount the blocking ring from the groove made on the transmission shaft, using a special pincers for these types of rings.



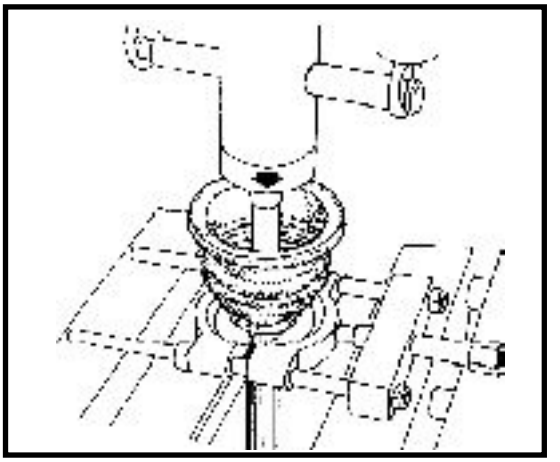
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Using a press, extract the assembled tripod, sustained it on an extractor, FACOM U 53 G type, protecting the tripod clogs.

Before extracting, mark the position of the tripod compared to the transmission shaft end.

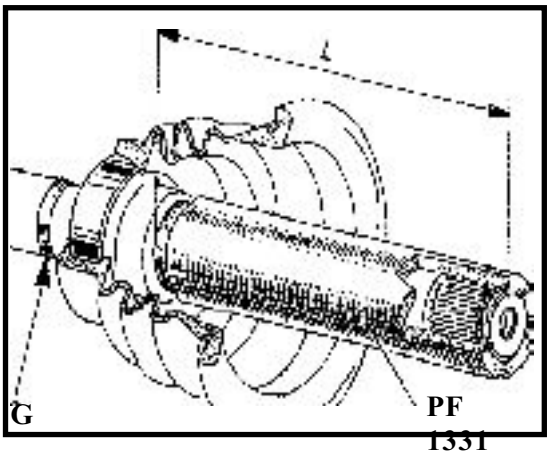


Dismount the bellows - deflector bearing in the same manner like tripod dismounting



REMOUNTING

In order to be correctly positioned on the shaft, the bearing must be pressed to achieve the value L = 118 ± 0.2 mm between the back side of the bearing and the shaft extremity. This value is obtained by means of the PF 1331 device, when mounting, its extremity is at the level of the shaft.



IMPORTANT:

In order to avoid the deformation of the bearing, which includes a sealing gasket (annular oil seal), the pressing effort must be constant (do not hammer).

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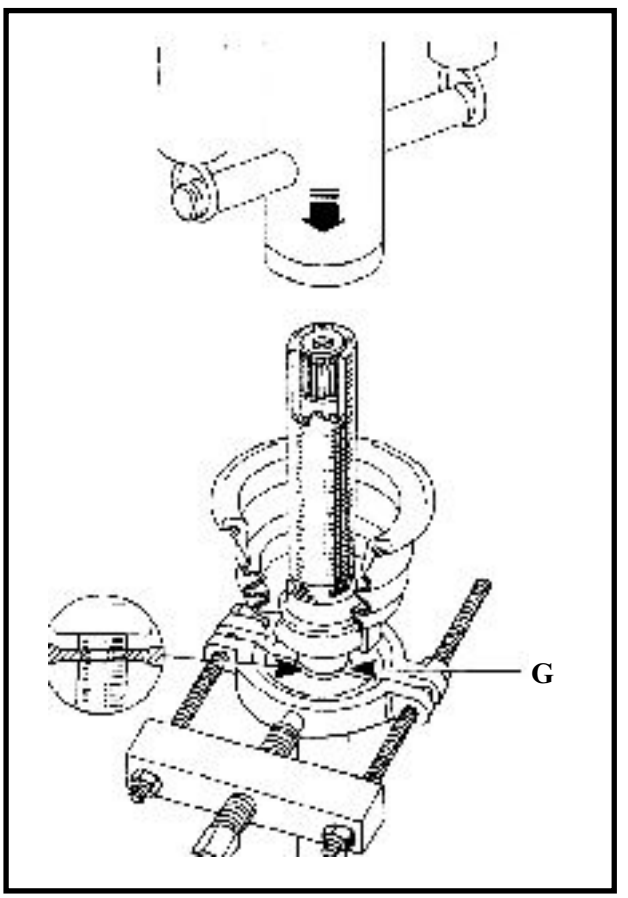
Maintaining the transmission on the press, on both sides, shall be ensured on the G groove made on shaft, by means of a device type FACOM U 53 G, (the flat side towards bellows) in order to avoid the deflector damages on the wheel side.

The pressing effort of the bearing on the transmission shaft ahas the value of = 100 – 700 daN.

Press again the assembled tripod on the transmission shaft observing the marks made when depressing.

The presse effort of the tripod assembly on the grooved area of the shaft end, shall be between 60 – 600 daN.

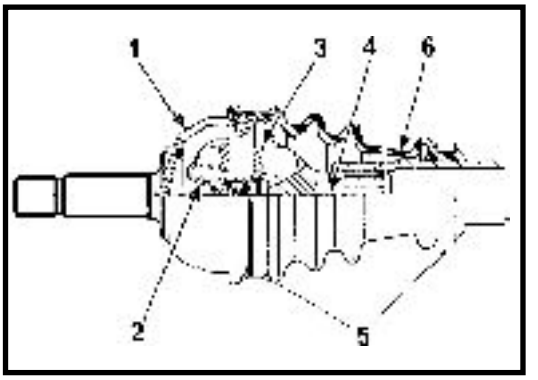
Remount the blocking ring (Zegerlock) in the groove made on the transmission shaft.



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JOINT TOWARDS WHEEL

SPECIAL TOOLS	
GE 86 joint bellows replacement device	PF 537-04



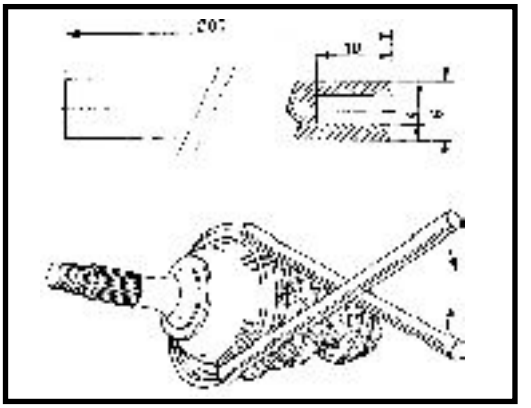
1. Steering knuckle casing ass.
2. Retainer star
3. Tripod to the wheel
4. Tulip shaft
5. Maintaining collars
6. Rubber protection bellow

DISMOUNTING

Dismount the two maintaining collars off the bellows by means of two rods, locally manufactured (see the drawing)

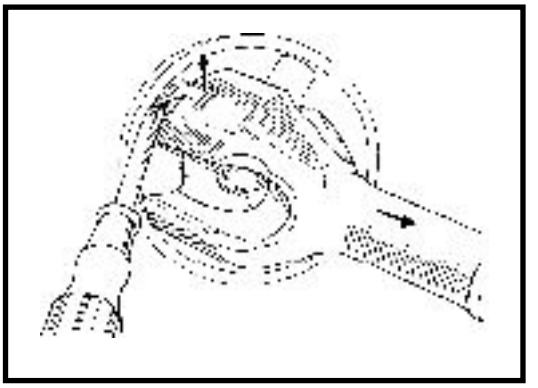
Cut and remove the damaged bellows.

Remove as much grease as possible.



Mark one of the groove routes of the shaft subject to its working corresponding clog by marking with a centre punch on casing outer consequently on the shaft.

Detach the connection between the transmission shaft and the steering knuckle casing, lifting one by one the arms of the retaining star from the three stamps performed on the petals of the shaft tulip.



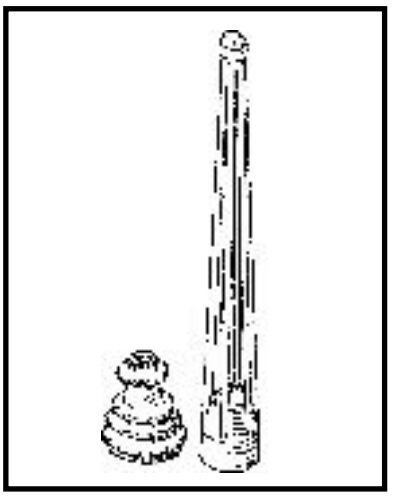
WHEN DISMOUNTING, DO NOT DEFORM THE ARMS OF THE RETAINING STAR

Retrieve the head and the spring from the tripod to wheel.

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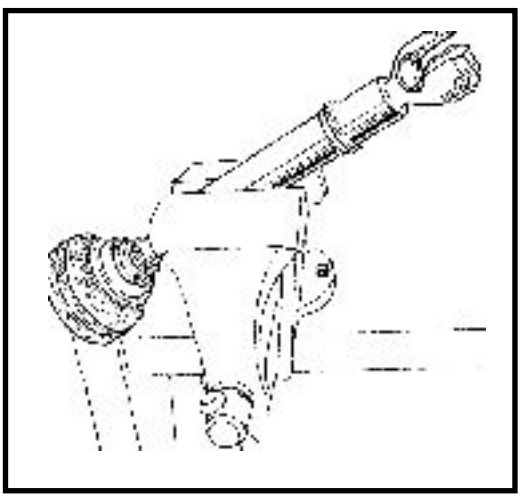
REMOUNTING

The mounting of the new bellows is to be performed by means of the **PF 573 – 04** device.



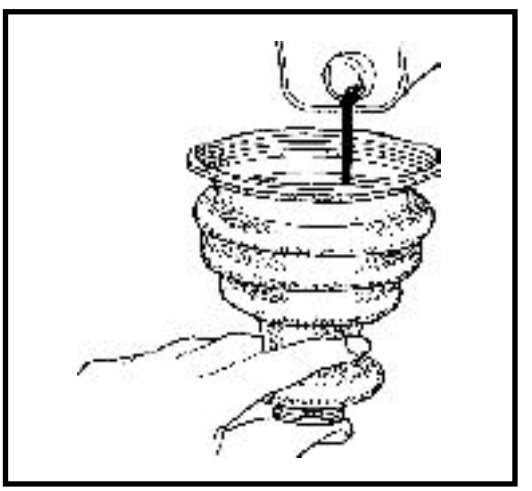
Catch the inclined transmission in a vice with soft jaws in order to avoid the shaft damaging.

Engage the **PF 537 – 04** device over the tulip of the transmission shaft.



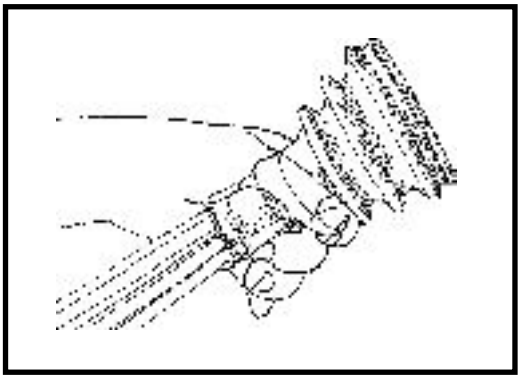
Obturate the small extremity of the bellows and, abundantly grease with automatic transmission oil or ELF CARDREXA RNT 2 grease:

- the all outer surface of the **PF 537 – 04** device,
- the inner part of the bellows, especially its smaller diameter part (this operation is performed for slipping help).

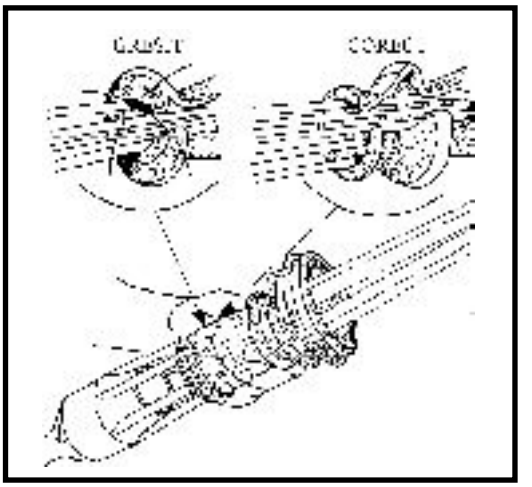


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Introduce the smaller diameter of the bellows on the **PF537 – 04** device.



Cover a hand with clean gauze and place it on the bellows in such a way as to stretch the first fold.



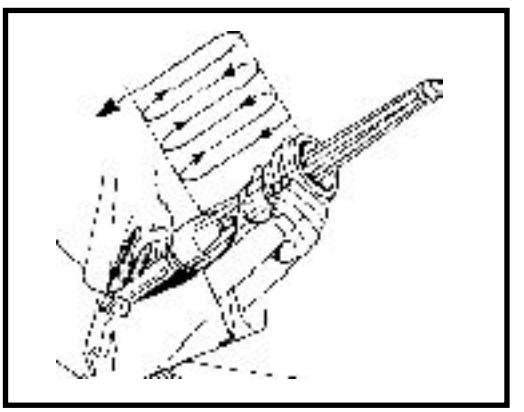
Take support with the hip on the edge of the vice (lateral side).

Place the other hand around the first one and strongly pull it, taking care that first fold is not huddled together.

Bring the bellows as close as possible to the device cylindrical part and let it release till half stroke.

It is recommended to perform many times this operation (maximum 5 times).

When easy slipping is noticed, make so that bellows is passing over the device cylindrical part, the operation being performed without stopping.



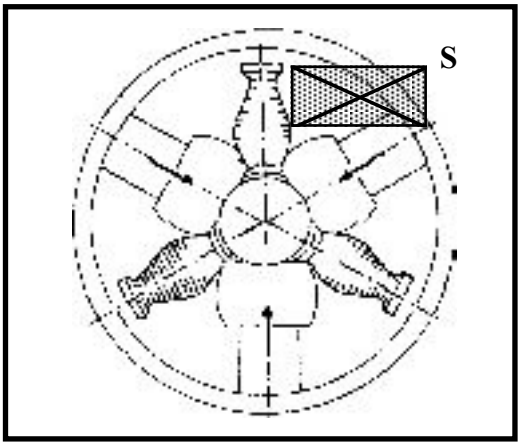
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Catch the steering knuckle casing in a vice with soft jaws.

Put the spring and head in the tripod groove.

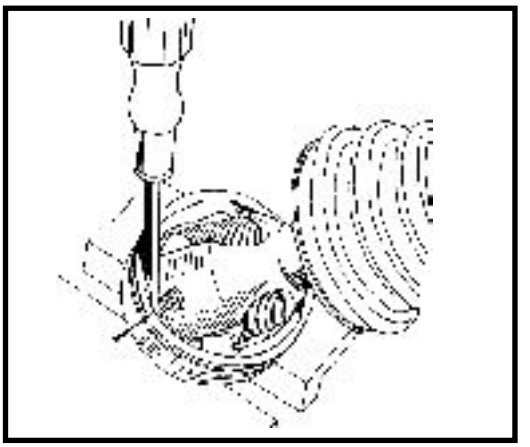
Brings the clogs to the center.

Position the retaining star (**S**), and each of its arms, being at the bisecting lines of the angles formed by the tripod arms.



Introduce the transmission shaft in the steering knuckle casing, positioning it, subject to the marks (the three clogs penetrating in the three rolling routes of the shaft).

Slides slowly the transmission shaft, in order to engage one arm of the retaining star in the marked point of the transmission shaft, and press it for correct centering.



Placing the other retaining star two arms, it will be made easy by a screwdriver, with its end modified as per drawing:

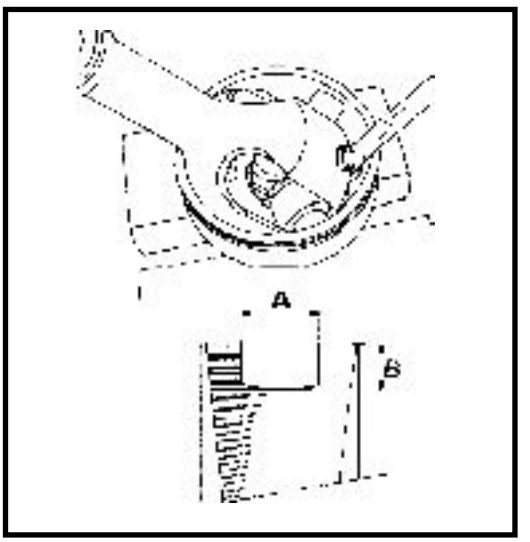
A = 5 mm B = 3 mm

Ensure that retaining star arms are correctly positioned in the shaft marks.

Check by hand, the joint operation.

Must not exist any hard point.

Distribute in the bellows and in the steering knuckle casing the grease prescribed dosage.



NOTE

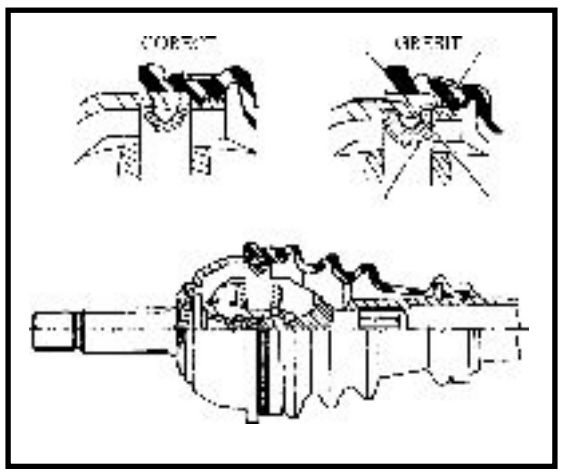
It is obligatory to observe the quantity and type of the prescribed grease, 2 l $^{+1}$ cl, ELF CARDREXA RNT 2.

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Position the two bellows beads in the grooves of the steering knuckle casing, consequently on the transmission shaft tube.

Place a non-cutting, round headed rod between the transmission shaft and the bellows in order to dose the amount of air inside.

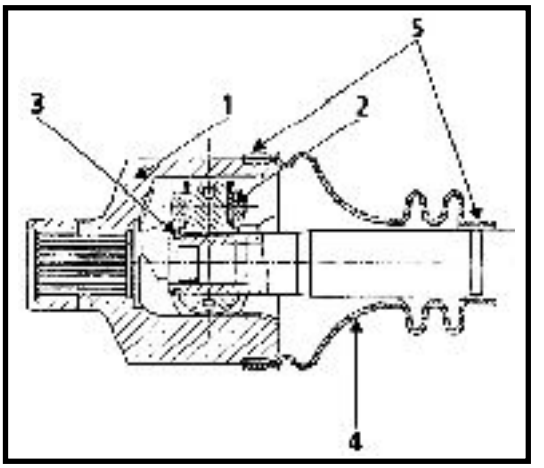
Mount the two collars, by means of the two rods used also at the dismounting operation.



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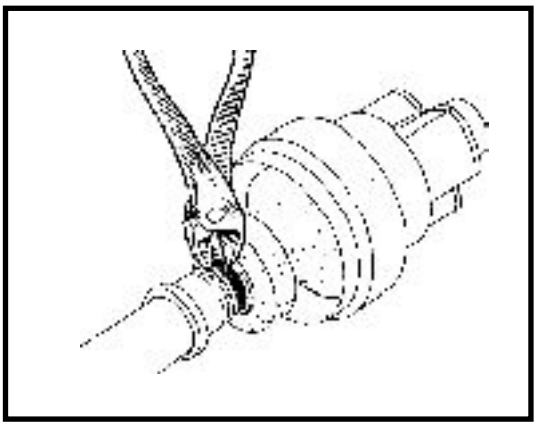
JOINT TOWARDS GEARBOX - GI

1. Tulip
2. Tripod
3. Blocking ring
4. Rubber bellows
5. Maintaining collars

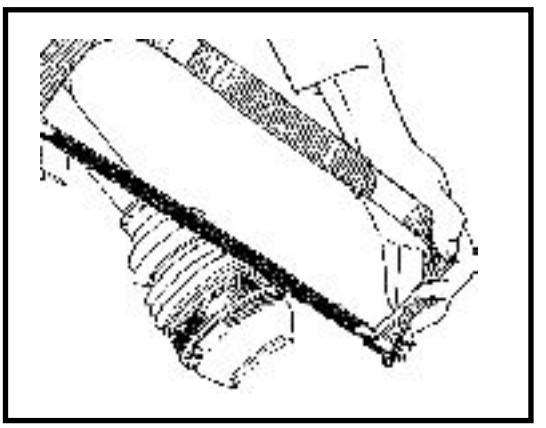


DISMOUNTING

Cut the maintaining collar.

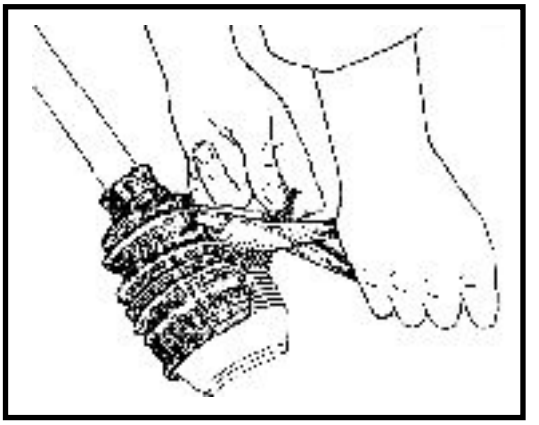


Cut by means of a saw the existent collar, taking care not to scratch the tulip in the mounting area with the bellows.

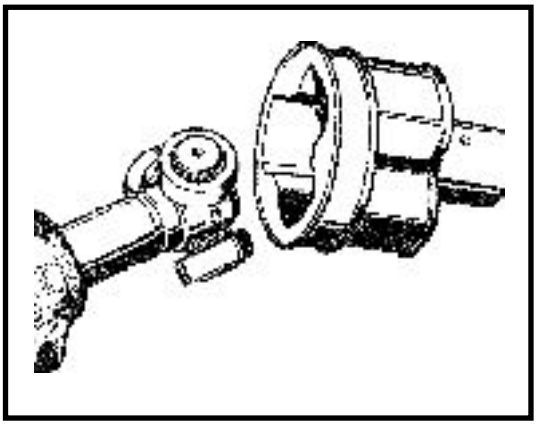


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Cut the bellows.



Remove maximum of grease.



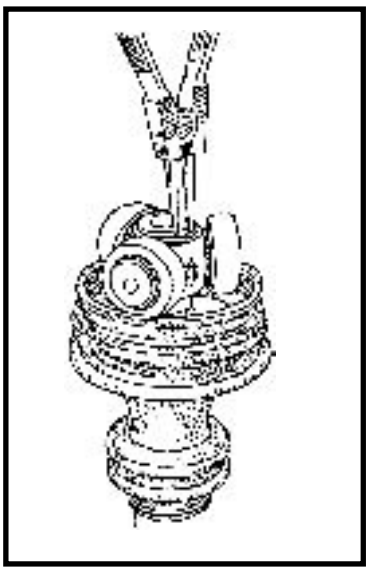
NOTE :

The tulip not being equipped with a hood having retaining wings, dismounting is to be performed without forcing.

It is avoided the cams exit from the trunnions (tripod arms) because the roll-needles and the cams are paired and must be not reversed.

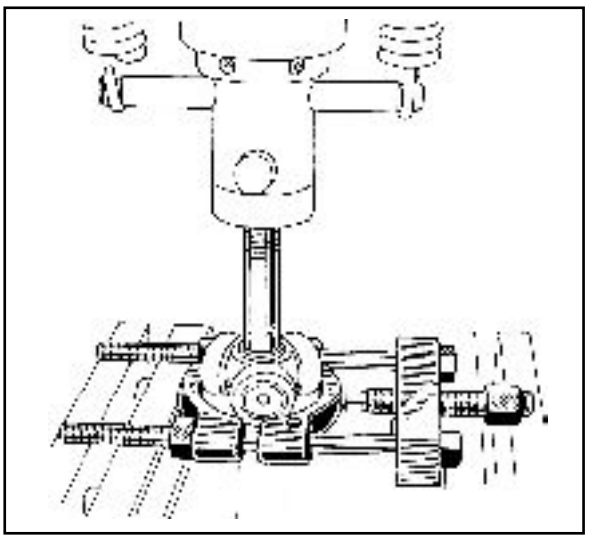
Never use thinner to wash the component parts.

Dismount the blocking ring



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Using a press, extract the assembled tripod, sustain it on an extractor type FACOM U 53 G, protecting the clogs of the tripod.



REMOUNTING

Grease the transmission shaft to help the protection bellows putting back (positioning of the smallest diameter of the bellows on the transmission shaft).

The tripod is fixed and mounted in the position marked on dismounting.

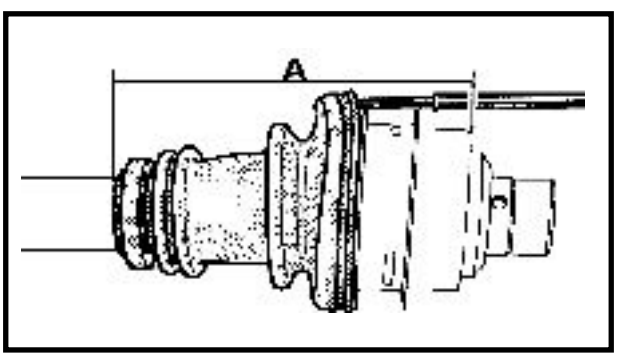
Three points of crimping are made at 120° C by metal heading of the transmission shaft grooves.

Distribute the grease prescribed quantity in the bellows and in the tulip casing.

Correctly position the bellows in the tulip-casing place.

A non-cutting, round-headed rod is introduced between the bellows and the tulip casing to dose the air amount contained inside the bellows.

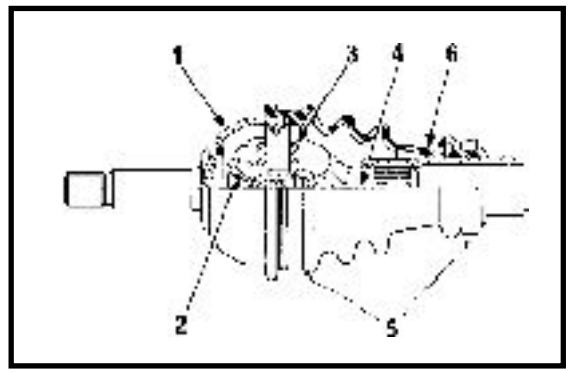
Lengthen or compress the bellows until value A = 190 mm is obtained (the value between the extremity of the bellows and the extremity of the tulip casing) then from this position extract the rod and remount the collars.



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JOINT TOWARDS THE WHEEL – GE

1. Steering knuckle casing assembled
2. Retaining star.
3. Tripod to wheel
4. Tulip shaft
5. Maintaining collars
6. Protection rubber bellows



DISMOUNTING

Dismount the two maintaining collars using two rod s locally produced (see the method previously described for dismounting the joint GE, left transmission)

Cut and remove the damaged bellows.

Take out maximum of grease.

In order to replace the joint GE protection bellows, it is necessary to dismount/remount the GI joint parts (see the method previously described).

REMOUNTING

Grease the rod of transmission shaft with grease.

Introduce the protection bellows of the GE joint.

Distribute the prescribed dosage of grease for GE joint.

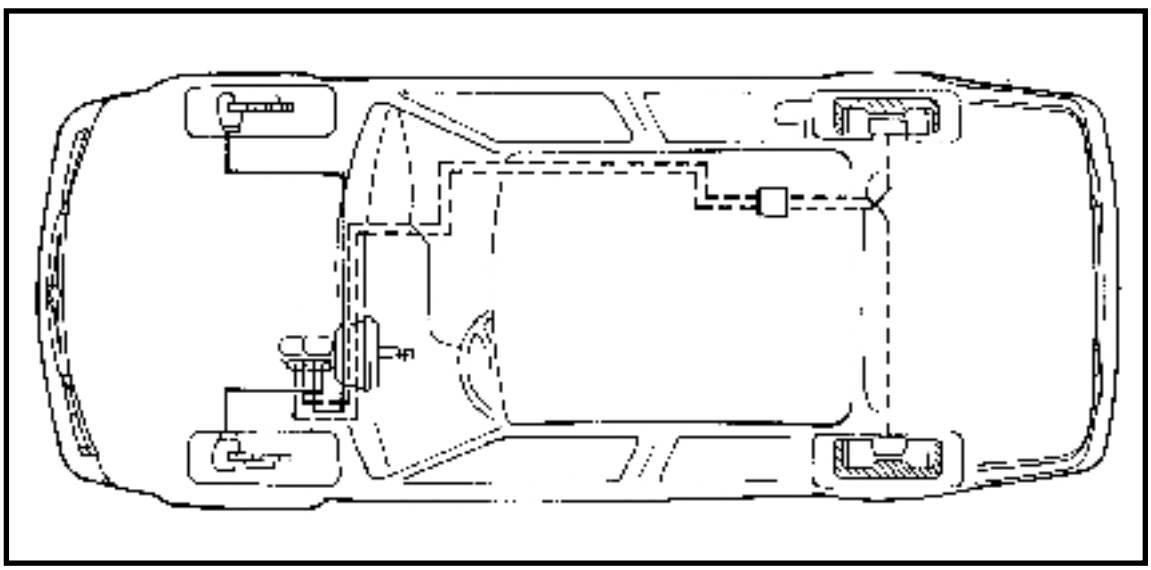
Position the bellows beads in the grooves of the steering knuckle casing, consequently on the transmission shaft tube and mount the collars (see the method described at mounting GE joint bellows, left transmission)

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DACIA SOLENZA vehicles, are equipped with hydraulic braking system, brake pump with by-pass double circuit, braking booster, brake limiter in order to avoid the rear wheels blocking
Front brakes are disc type and rear brakes are hub type.
Brake discs are ventilated.

BRAKING IN PARALLEL, WITH BRAKE LIMITER

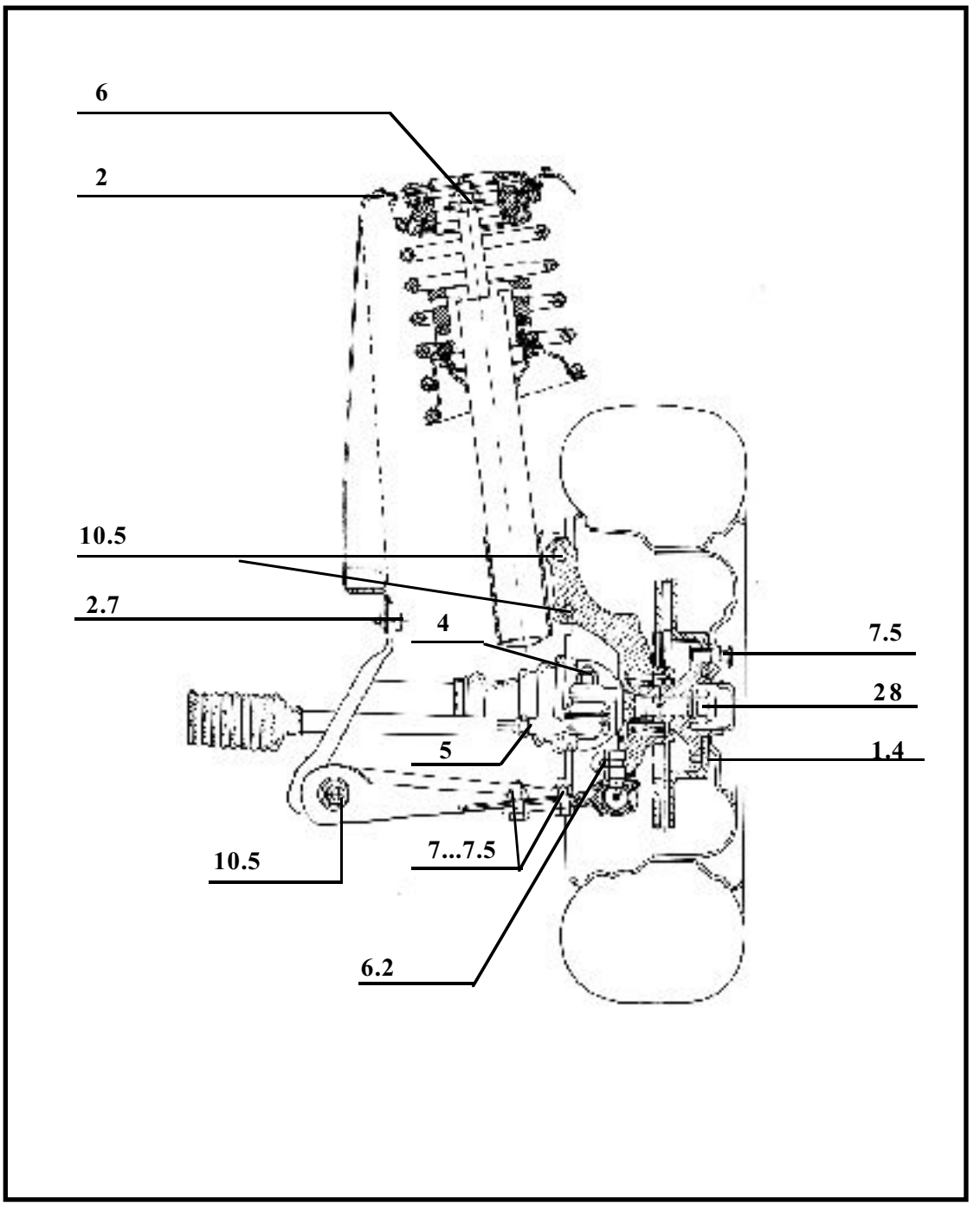
GENERAL PRINCIPLE SCHEDULE OF BRAKE CIRCUIT IN PARALLEL, WITH BY – PASS CIRCUIT



——————— Front brake circuit
– – – – – – – – – Rear brake circuit

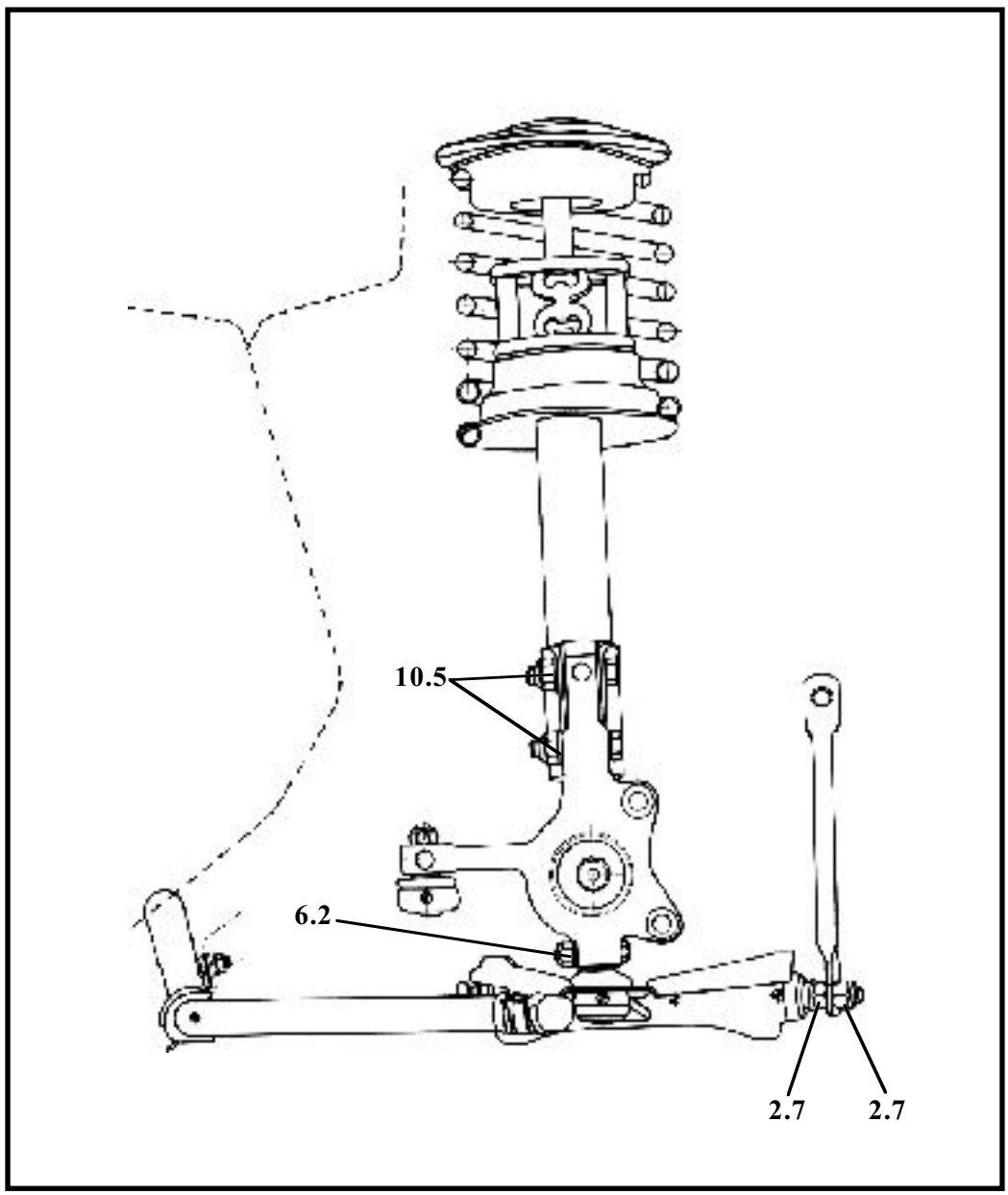
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FRONTHALF-AXLE



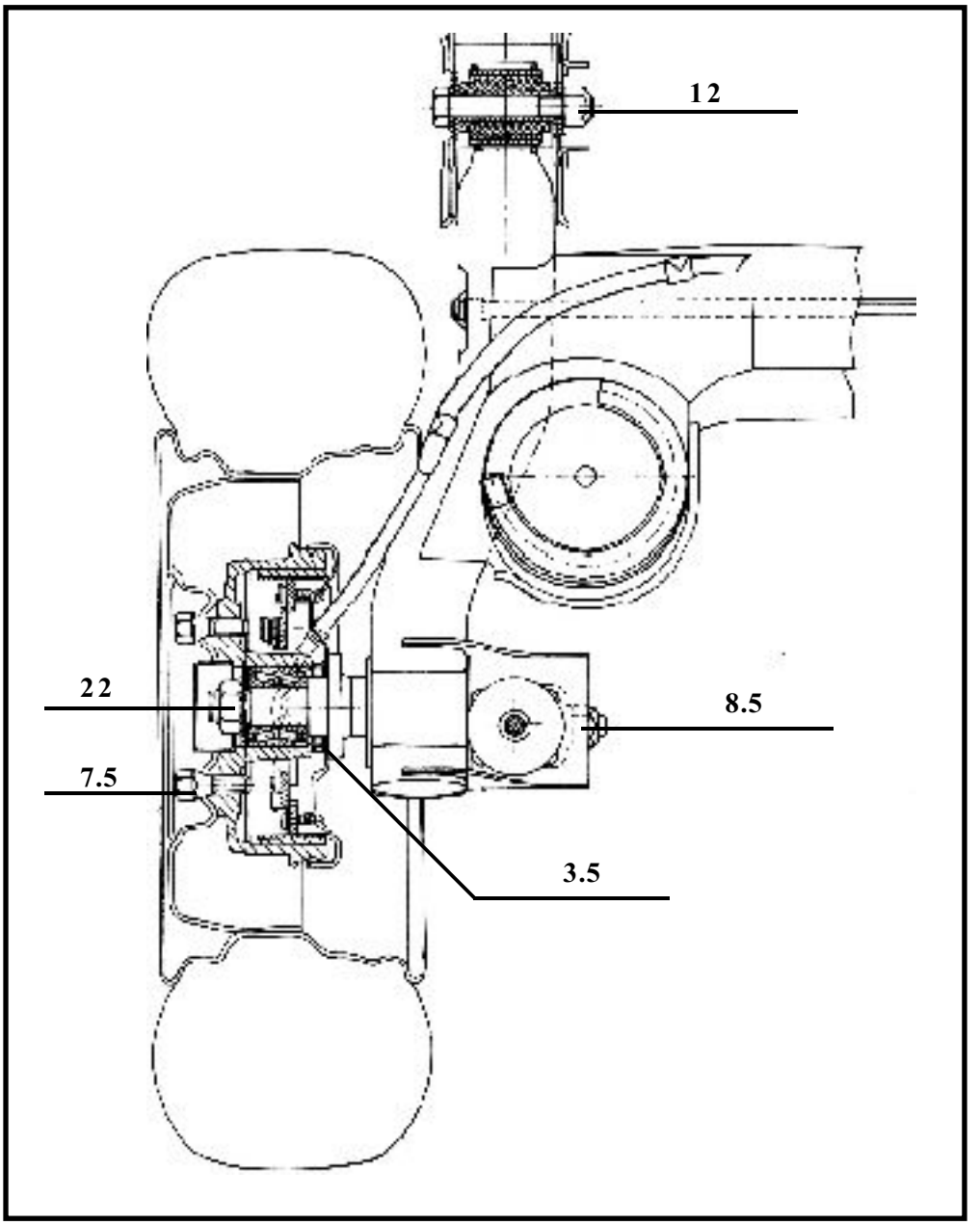
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FRONTHALF-AXLE



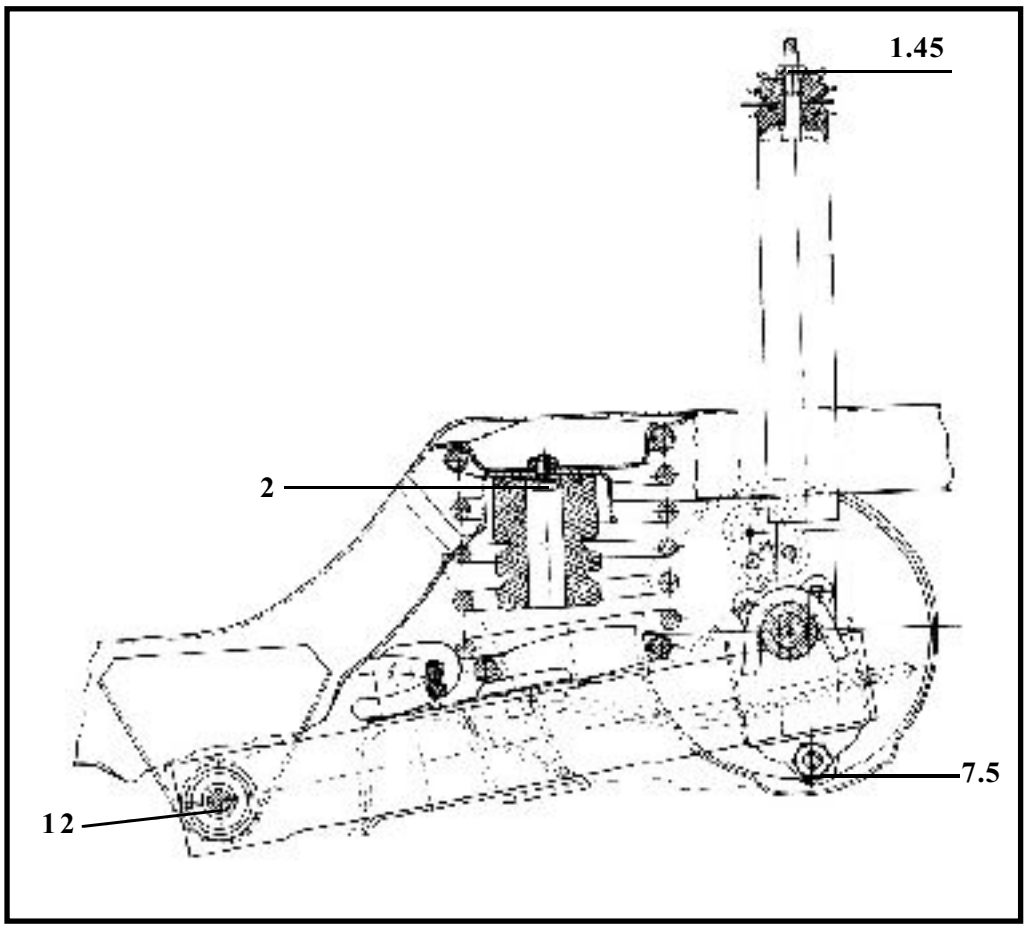
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REAR AXLE



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REAR AXLE

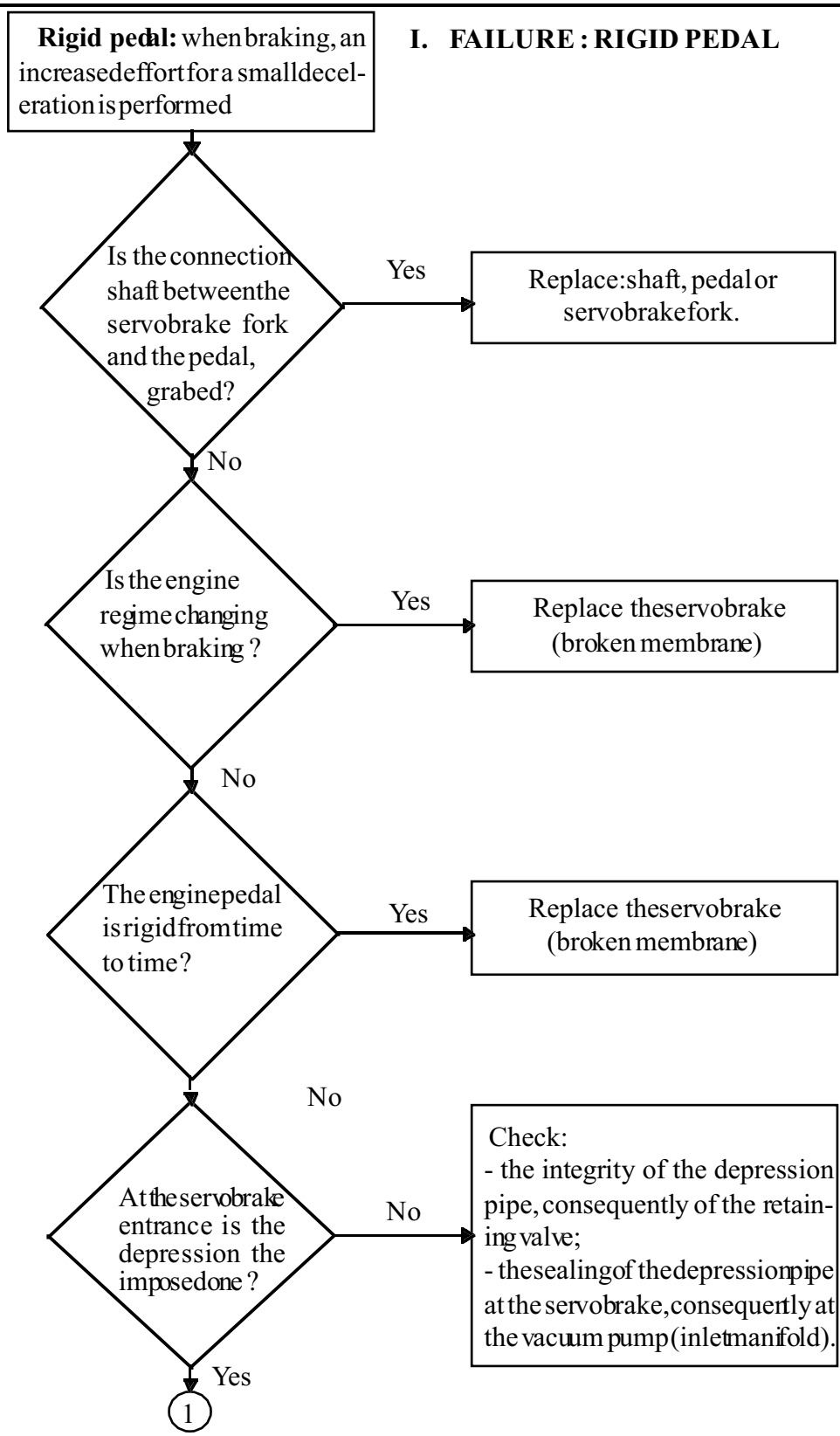


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Front brakes	
- brake caliper bore diameter	→ 54 mm
- brake disk diameter	→ 235 mm
- disk axial runout measured at → 215	0. 04 mm
- brake disk maximal thickness	20 mm
- brake disk minimal thickness	19 mm
- braking pad thickness (support included)	14 mm
- brake pad minimal thickness (support included)	7 mm
Rear brakes	
- wheel braking cylinder bore diameter	→ 22 mm
- new drum diameter	→ 228 mm
- drum diameter after grinding	→ 229 mm
- braking shoes lining width	40 mm
- braking shoes lining thickness	5 mm
- minimal accepted braking lining height above rivets	0.5 mm
Master cylinder	
- diameter of bore	20.6 mm
Brake fluid reservoir	without alarm sensor
Pressure limiter	for circuit in parallel
Servobrake master vac 7"	177.8 mm

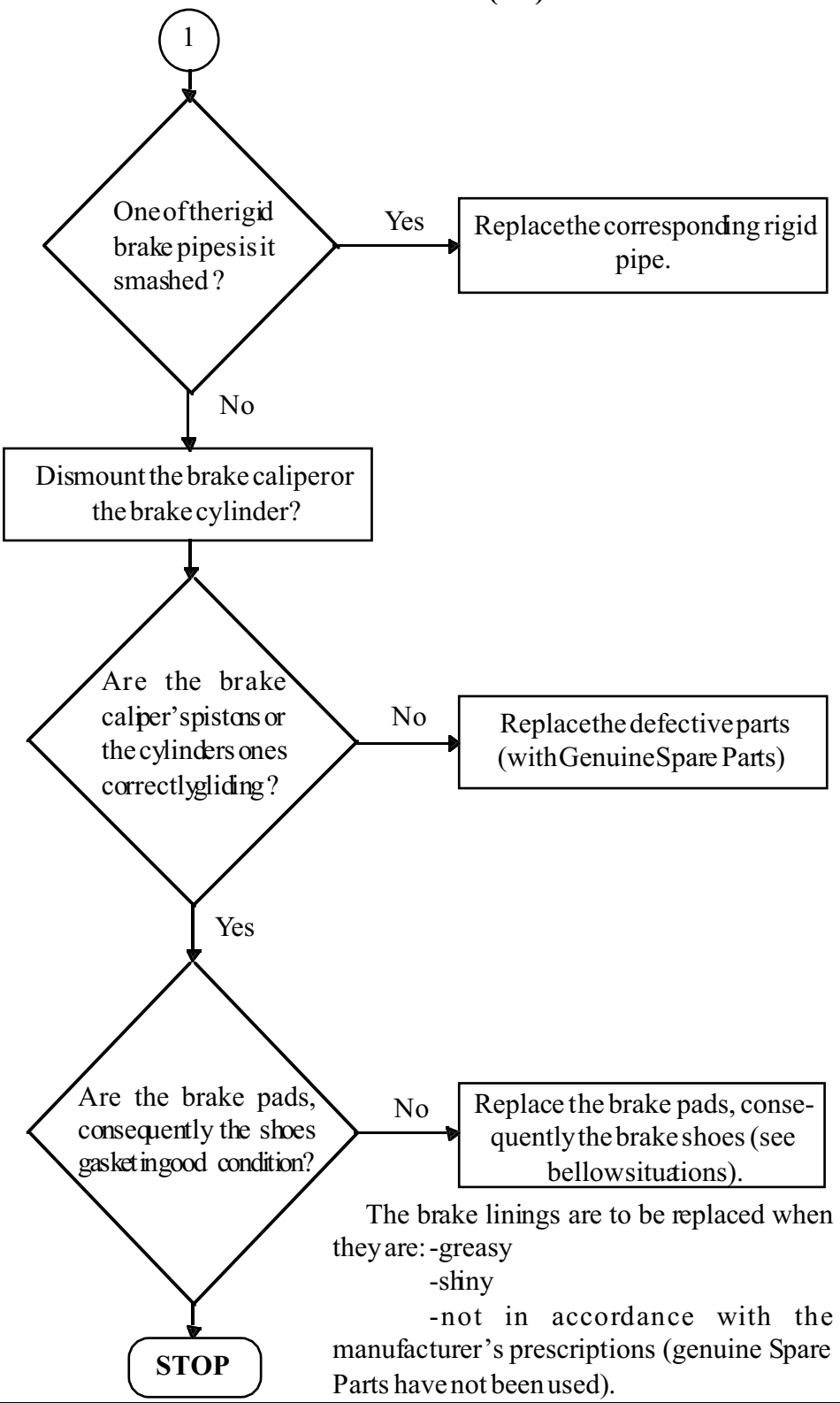
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I. FAILURE : RIGID PEDAL



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I. FAILURE : RIGID PEDAL (ctd)



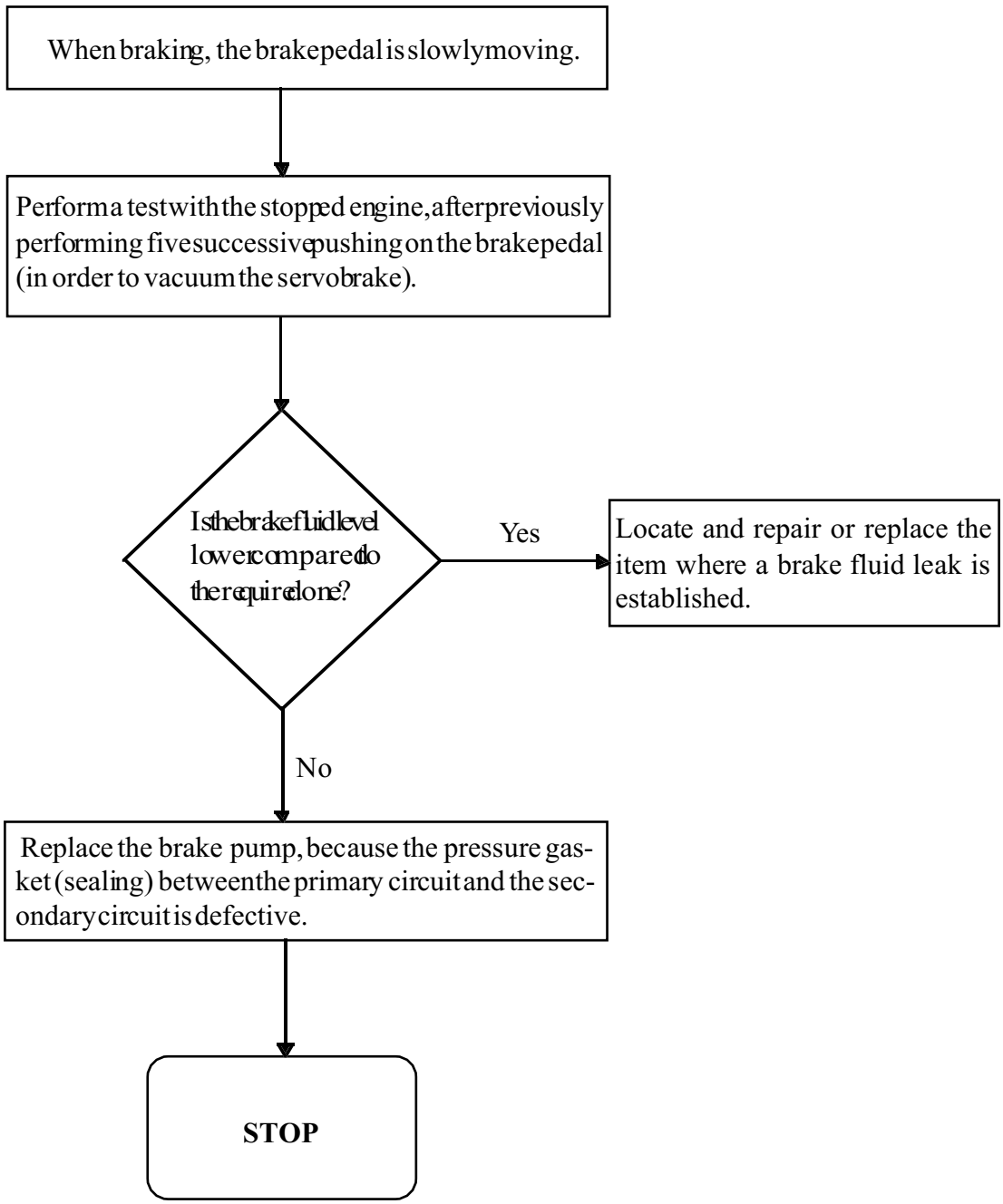
The brake linings are to be replaced when they are: -greasy

-shiny

-not in accordance with the manufacturer's prescriptions (genuine Spare Parts have not been used).

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II. FAILURE : LONG PEDAL



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I. CONSTANT EFFECT TO THE PEDAL

EFFECTS	POSSIBLE CAUSES
Tough pedal: High effort for small deceleration	- **Assistance defect** - **Brake linings:** - greasy - stacking to the disk (non-conform) - heating, prolonged braking with constant pedal press - **Stuck piston** - **Rigid duct narrowed (flattening)**
Elastic pedal In order to diagnose, an incident where the use was normal is to be analyzed and two tests are to be performed: **1. While driving the vehicle :** Interpretation test: pedal stroke/deceleration rate. **2. While vehicle is stopped, engine cut.** Additional test of brake pedal press: Perform five consecutive pressings on the brake pedal in order to vacuum the servobrake, before taking into consideration the test result.	- **Air presence in the circuit:** defective purging - **Internal leak in the braking circuit.** - **Leak of fluid from** reservoir (external fluid leak from braking circuit)
Long pedal The test is to be performed with stopped vehicle and cut engine. **REMARK:** **It is necessary to perform five consecutive pressings on the brake pedal, in order to vacuum the servobrake before taking into consideration the test result.**	Automatic adjustment : hand brake cable too tighten. - **Important and asymmetric wear of the brake linings** - **Stroke too ample between the servobrake pushing rod and the brake pump** - **Brake fluid having high temperature.**
Floor pedal The test is to be performed with stopped vehicle and cut engine. **REMARK :** **Perform five consecutive pressings on the brake pedal, in order to vacuum the servobrake before taking into consideration the test result.**	- **Hydraulic leak (check the sealing of the braking system components)** - **Sealing gaskets defects of the two brake pump circuits.** - **Brake fluid having high temperature**

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II. CONSTANT EFFECT AT BEHAVIOUR

EFFECTS	POSSIBLE CAUSES
Brakes not accomplishing the required braking distance	**- Non-uniform worn brake linings (backing off);** **- Brake linings slightly greased;** **- Springs with modified characteristics.**
Vibrating brakes	**- Brake disks with high wobbling;** **- Inconstancy brake disks width;** **- Particles abnormal deposit on brake disks (oxidation between linings and disk).**
When braking, the vehicle (front part) is left/right deviating	**- Front axle suspension, steering (to be checked);** **- Stuck piston;** **- Tires – wear, inflation pressure;** **- Rigid duct narrowed (flattening).**
Braking	**- Stuck piston;** Automatic adjustment : hand brake cable very tighten. ***REMARK :*** ***Automatic recovering is performed by means of the brake pedal, if there is no abnormal tension in the hand brake cable when released (hand brake released).*** **- Return spring.**
Heating brakes	**- Insufficient hydraulic stroke of the brake pump, not allowing the return at rest of the brake pump pistons (brake pump remaining under pressure);** **- Stuck pistons or hardly returning;** **- Rigid duct narrowed (flattening);** **- Defective adjustment of the hand brake control.**

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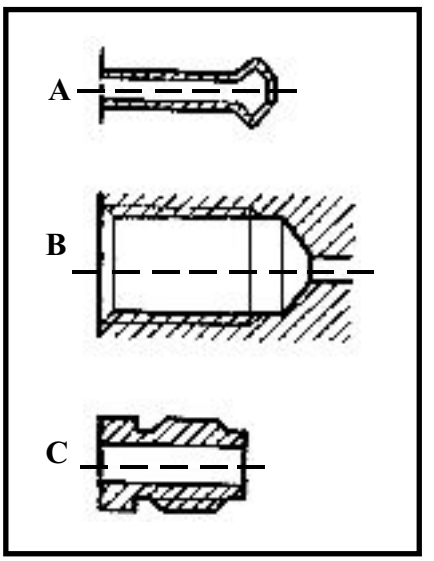
The connection between the brake ducts and the brake pump, brake calipers, pressure limiter is performed by means of the connections threaded with metric pitch.

PARTS IDENTIFICATION

The cupping shape of the steel ducts **(A)**

The shape of the threaded lengths on parts (**B**)

Connections of ducts (**C**)



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PERIODIC CHANGE OF THE BREAK FLUID

The manufacturing conception of the brakes equipping the Dacia vehicles especially the ventilated disk brake, enable the maximum diminishing of the fluid vaporization, even in case of intensive using of brakes (mountain area), due to good disk cooling.

The brake fluids, suffer in all cases a slight degradations during the use, by a slight humidity absorption, that makes necessary the complete replacement after a period of time or after some driving (4 years or 60,000 driven km)

COMPLETION OF THE BRAKE FLUID LEVEL

The wear of brakes pads and shoes, leads to a gradually diminution of brake fluid level in its reservoir.

It is useless to compensate this diminution, because the level will be restored when changing the brake pads and shoes.

Obviously, in the meantime, the level of brake fluid in reservoir must not go down bellow the MINI mark.

HOMOLOGATED BRAKE FLUIDS

The mixture in the braking circuit of two non different brake fluids may leads to important risks mainly due to gasket damage, incompatible with new fluid.

In order to avoid such risks, it is obligatory to use only brake fluid recommended by the producer, i.e. : **SAEJ 1703, DOT 4.**

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Braking system purging

The air existence in the hydraulic circuit may be noticed by an elastic displacement of the brake pedal, sometimes even, close to the floor. This fact is more evident with the engine running.

GENERAL RECOMMENDATIONS

· Always use for completion or total changing the brake fluid **SAE J 1703 , DOT 4**.

· In case of changing the brake fluid it is necessary to wash the system with industrial alcohol.

· During the purging, the brake fluid from the reservoir must not go down bellow the MINIM level marked on the reservoir.

To perform the purging, one person will stay on the driver place, to press the brake pedal and the other one will perform the purging at purging points, using a 500 ml vessel, a transparent plastic tube and brake fluid for completion.

REMARK:
The brake fluid obtaine4d during performing the purging operation IS NOT TO BE REUSED, but after 48 hours, to avoid air bubbles introduction in the hydraulic circuit.

PROCEDURE

Place on the purging screw, a transparent tube with its end in a vessel with brake fluid and proceed as follows:

- press the brake pedal slowly;
- dismount the bleeding screw, maintaining the full stroke of the pedal;
- tighten the bleeding screw;
- slowly release the brake pedal.

Repeat the same procedure until complete cease of bubbles.
Proceed in the same way also for the other purging places.
Take into consideration the existence all the time of the brake fluid in the reservoir.

OBSERVATION : Before beginning the purging procedure, dismount the I.C.P. contact from the brake pump that it will be remounted at the end of the operation, brake pedal released.

It is important to observe the following sequence of the purging points:

1. Main brake cylinder;
2. Left rear wheel brake cylinder;
3. Right rear wheel brake cylinder;
4. Caliper of front right wheel;
5. Caliper of front left wheel;
6. By-pass circuit through main cylinder purge.

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OPERATING CONDITIONS

The vehicle is on ground, in rear axle half-loaded position.

CHECKING THE BRAKE SYSTEM SEALING

The vehicle will be idle running.

After purging the front and rear circuits, check if the level of brake fluid in reservoir is within the **MIN**I and **MAXI** marks. Press the brake pedal and maintain it constant for 30 s, during this time the pedal shall not change its place.

In case leaking is occurring, check by visual inspection all the elements of the braking system, eliminate leaking and restart a.m. operations.

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The influence of angles

The influence of different angles over the road behavior, stability and abnormal wear preventing of the vehicle tires.

CAMBER

The exit from the tolerance field of the left or right wheel camber, may have as result:

- tires external or internal edge wear (excessive positive or negative camber);
- steering is deviating towards the camber angle is more pronounced (asymmetry), a deviation from the trajectory is taking place, which must be corrected by means of the steering wheel (the pronounced wear on the tire in question is occurring);

CASTER

A larger difference of 1° between the right side caster and left side, may have as result:

- a deviation from the trajectory, which must be corrected by means of the steering wheel, the abnormal tires wear (the pronounced wear on the tire in question is occurring), tough steering, instability when turning.

PARALLELISM

This adjustment has little importance over the vehicle road behavior.

Anyhow, note the followings:

- a prominent closing may lead to tires external edges wear.
- a prominent opening may lead to tires interior edges wear.

DIMENSIONS UNDER CARRIAGE BODY

These are especially influencing the different angles of the steering geometry.

A vehicle, which has run a large amount of km, it will have under the carriage body, dimensions smaller than a new vehicle.

This is the reason why some vehicle manufacturers, are prescribing, when the checking is done with empty vehicle, different under carriage body dimensions and their respective places where these values must be taken. Other vehicle manufacturers are recommending the suspension compression by means of special (specific) tools or loading repartition in different places.

These different procedures (as performing ways) have as final purpose, the cancellation of the vehicle suspension lowering, which has driven an important number of Km, compared with its initial condition.

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PRELIMINARY CHECKING

Before starting the steering angles checking, it will be necessary to check the following points and exclude the possible non-conformities.

1. Tires and rims checking, regarding:

- type and dimension;
- inflating pressure;
- wear degree.

2. Joints :

- elastic bearings and bushings condition;
- ball joints clearance;
- bearing clearance;
- steering wheel column clearance.

3. Tires runout and axial runout (compensation is to be performed by means of the reading instruments);

4. Dimensions symmetry under carriage body (suspension condition).

5. Manufacturer's method: each vehicle manufacturer is prescribing the checking conditions, loading repartition on axles, under carriage body dimensions presentation.

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THE SEQUENCE OF THE OPERATIONS

Due to the geometric conception of the front axle, the modification of one of one-side angles (camber, ball joint, parallelism) has no major impact on the value of other side angles (caster being the one with higher influence).

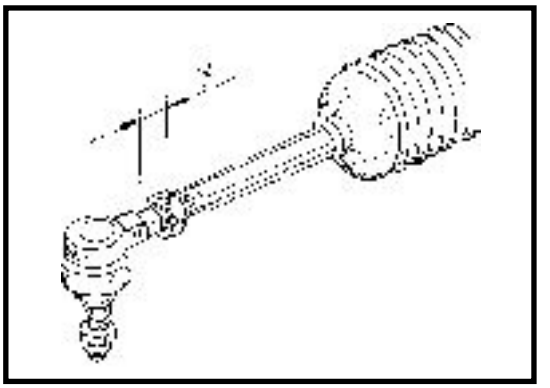
The modification of these angles does not occur during vehicle exploitation, but only as a consequence of a vehicle accident.

In order to check the front axle angles, it is important to observe the following sequence:

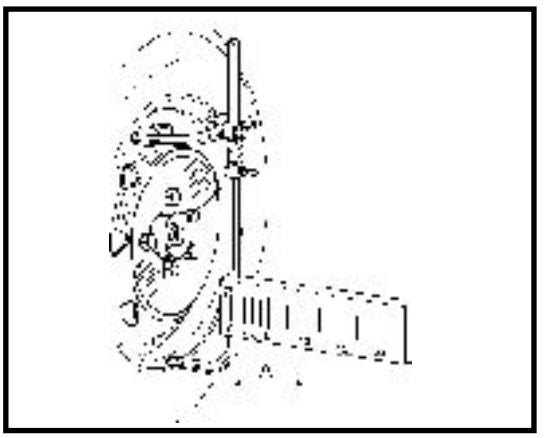
- placing the vehicle on rotating plates;
- braked vehicle;
- suspension checking for placing the vehicle at its free height;
- ensuring that front wheels are such disposed for straight line driving;
- attachment of the optical devices on the vehicle, observing the manufacturer instructions.

REPARTITION CHECKING AND ADJUSTMENT

Check the "X" dimension symmetry of the connecting rods.



Reading of the "A" value on the scale.



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Case 1. The symmetry dimension **"X"** is correct - the value **"A"** is equaled distributed on both sides.

Case 2 . The symmetry dimension **"X"** is incorrect - read the value **"A"** on each side, adds it, and calculate the average value, establishing the value for each side.

Example:

Right side value **: A = 16**

Left side value : **A = 10**

16 + 10 = 26; 26 : 2 = 13

Operate the steering rods tie bar, restoring the same value for both sides: **A = 13**.

In this position, lock the rotating plates at zero point;

Check in the following sequence:

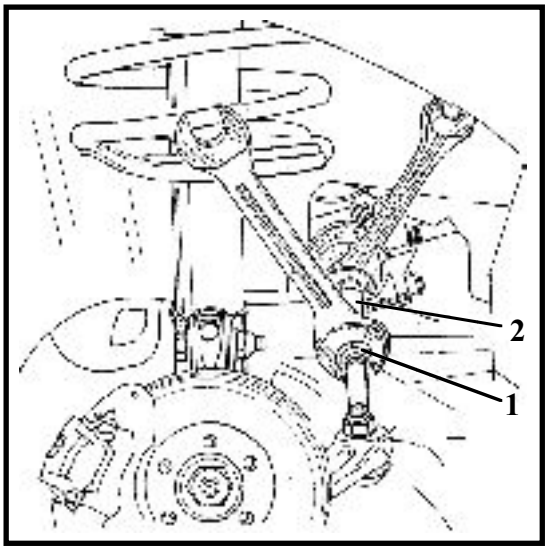
- caster angle;
- ball joint angle;
- camber angle;
- parallelism.

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PARALLELISM ADJUSTMENT

Loosen the lock nut **(1)** maintaining the tie rod of steering connecting rod **(2)** in a fixed position.

Act upon the tie rod of steering connecting rod taking into account its rotation sense, in order to obtain the convergence or divergence and also the fact that one of its complete rotation leads to an axial displacement of **1.5 mm.**



After obtaining the correct parallelism, tighten the lock nut to the required moment of 5 **daNm.**

Three situations may appear:

NR. CRT.	PARALLELISM	REPARTITION	CORRECTION WHICH MUST PERFORMED
1.	**CORRECT**	**INCORRECT**	Perform the same rotations number of the tie rod connecting rod on left side and on the right side until obtaining the same value **"A".**
2.	**INCORRECT**	**CORRECT**	Adjust the parallelism at the same value for left and right side ensuring the same value **"A"** on both sides.
3.	**INCORRECT**	**INCORRECT**	Perform first the repartition in order to balance the value **"A"** on each side, than adjust the parallelism (see Case 2}.

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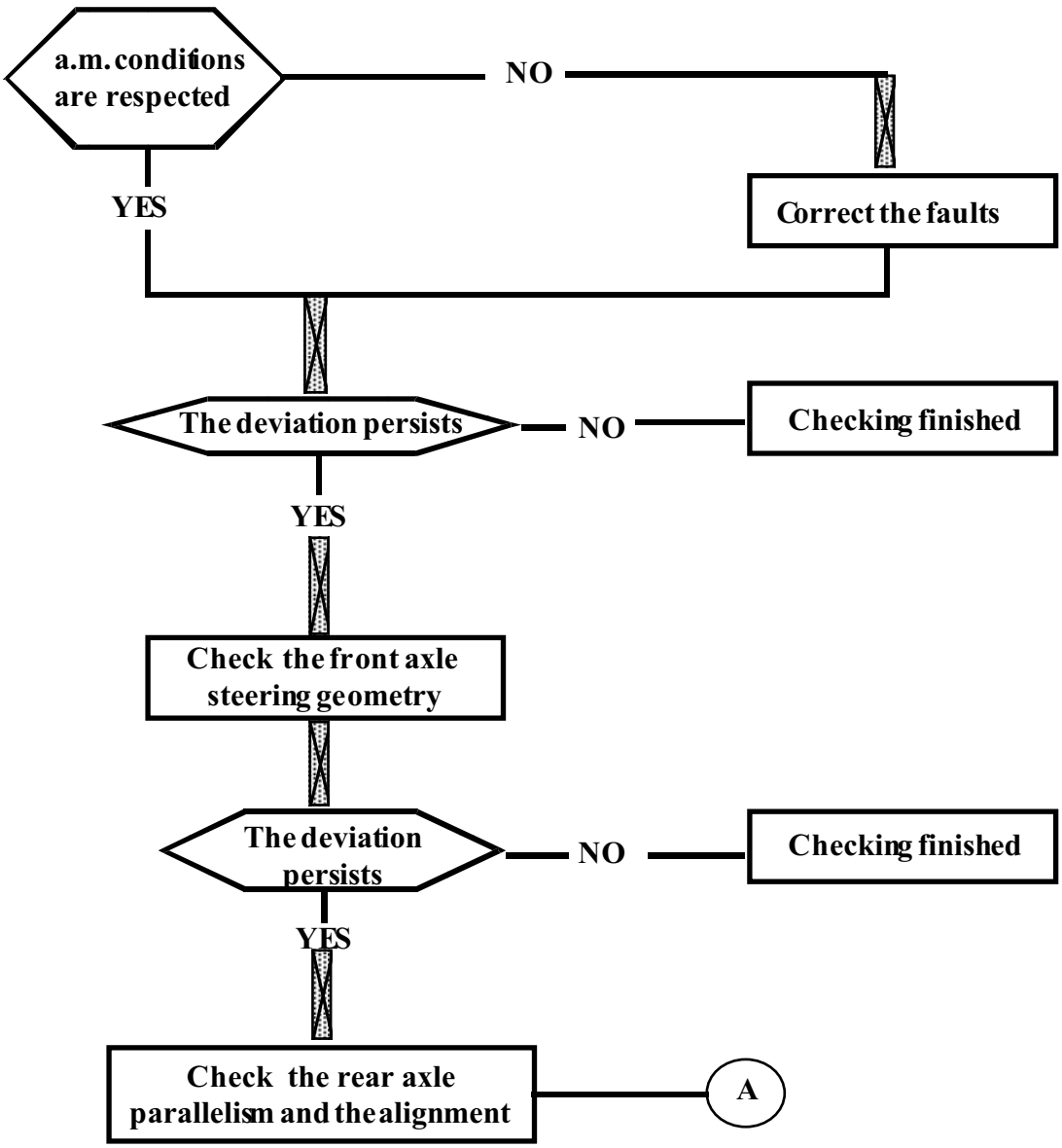
THE DEVIATION TO THE LEFT OR TO RIGHT AT STABLE SPEED

Perform the preliminary checking:

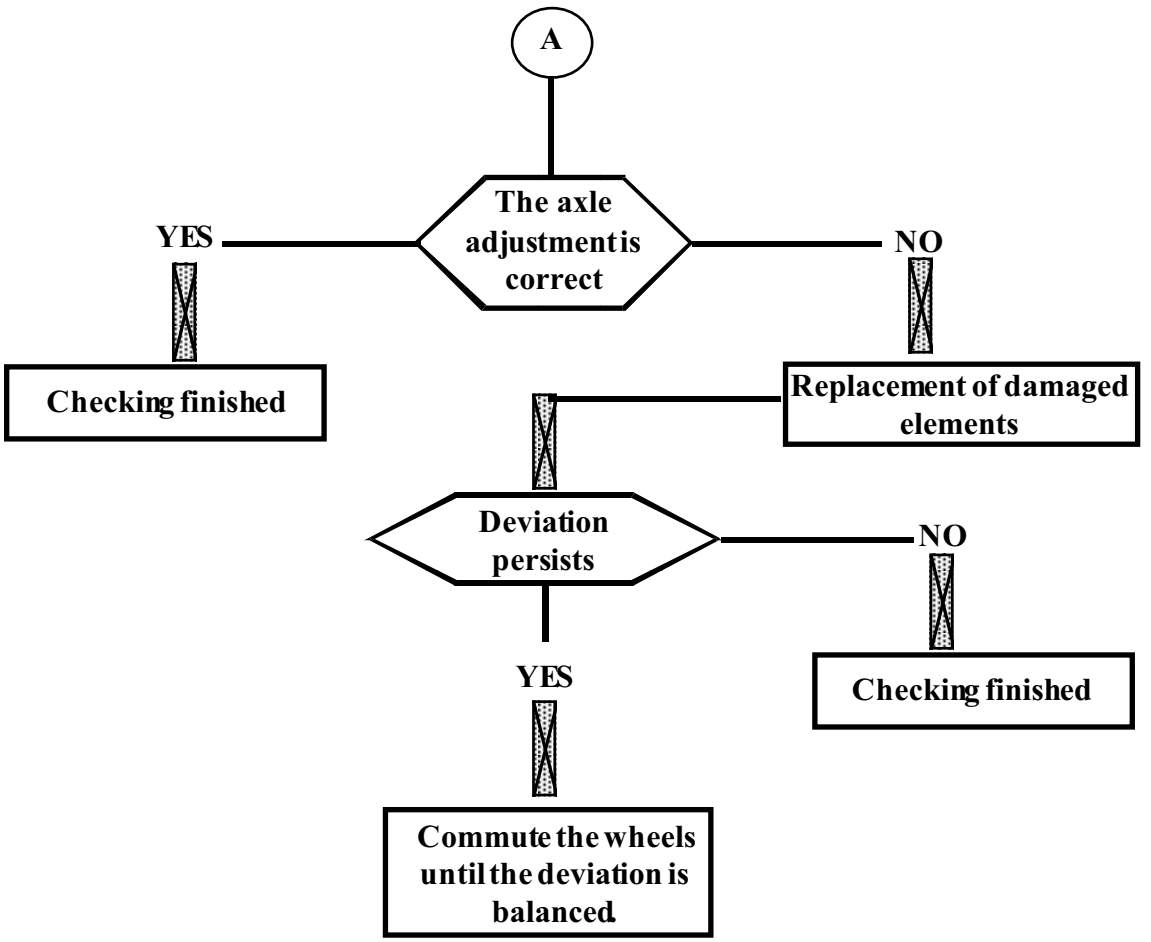
Wheels (front, rear) :
- pressure
- dimensions
- types
- balancing

Joints clearance:
- bushings

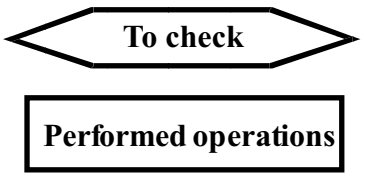
Checking points heights:
- symmetry



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CAPTION :



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The front axle is composed of two joint half axles with independents wheels, designed for the suspension type Mc.Pherson.

The joints of front half axle arm are done by means of an elastic bearing (chassis side) and by means of a suspension ball joint (wheel side)

The transmission of the motion to the wheels is done by means of two planetary axles, not equal, with homocinetic tripod joints.

The wheel hub is assembled in the steering knuckle by means of a sealed bearing.

The brake disks are ventilated.

TIGHTENING MOMENTS (daNm)	▽
Wheel attachment screw	7.5
Suspension arm shaft nuts	10.5
Attachment nut of the ball joint screw	6.2
The nut of the attachment screw of the steering knuckle with the shock absorber	10.5
Transmission nut	28.0
Steering ball joint nut	4.0
Attachment anti roll bar screws	4.0
Connecting strap screws	2.7
Attachment screws of the suspension ball joint on the arm	7…..7.5
Attachment screws of the disk on the hub	1.4
Aux. connecting rod - assembled connecting rod end stop nut	5.0
Assembled connecting rod end - rack joint body	5.0

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TIGHTENING MOMENTS (daNm)	▽
Wheels attachment screws	7.5
Suspension arm shaft nuts	10.5
Attachment nut of the ball joint screw	6.2
Anti – roll bar bearings screws	4.0
Ball joint attachment screws nuts on the arm	7….7.5
Straps attachment screws	2.7

REMARK :

The dismounting-remounting operations are identical for both half axles (specifying that on the right side one strap is provided and on the left side two straps are provided).

DISMOUNTING

Disconnect the battery.

Loosen the front wheels attachments screws.

Lift the vehicle on an elevator with two columns.

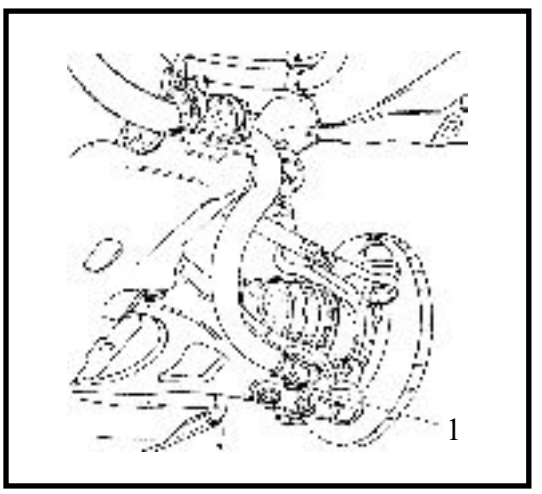
Dismount the two wheels.

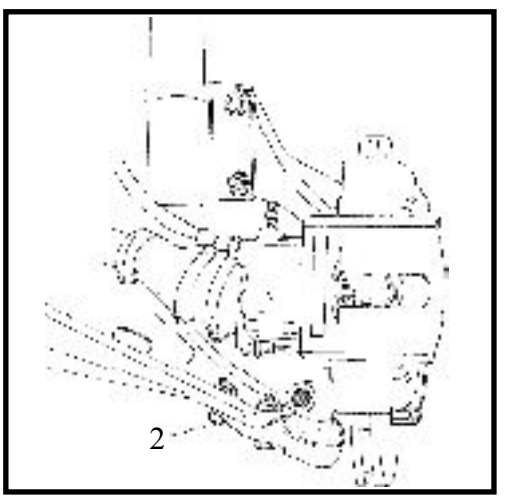
Dismount the anti roll bar attachments screws (**1**) on the suspension arms.

Detach the anti roll bar.

Dismount :

- the suspension upper ball joint screw **(2)** and nut on the steering knuckle;
- the upper attachment strap screw on the right/left wing lining
- the nuts (**3**) and the arm attachment axles on the power train and the strap (straps);
- the arms.





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REMOUNTING

REMARK :
Ensure the presence of the protection plate (A) on the suspension ball joint axle.

Perform the operations in the following sequence:

– Arm attachment on the power train support without tightening to the required moment the axles nuts (**3**) .

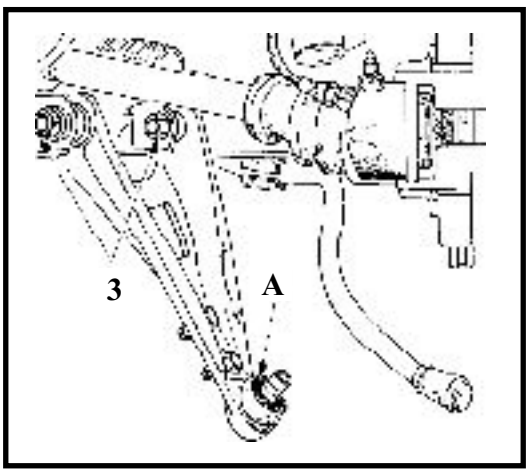
– Ball joint mounting in the steering knuckle

– Attachment of the ball joint screw and tightening its nut to the required moment ;

Mount the wheels, tighten the screws to the required moment, and then with the vehicle on wheels, continue with:

– Remounting the anti roll bar by tightening to the required moment the attachment screws.

– Tightening the shaft arm nuts and fixing the strap (straps) – **(4)** to the upper part, by tightening the screws to the required moment.



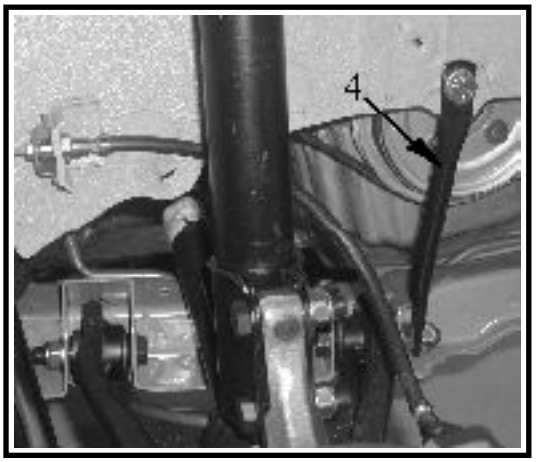
REMARK :
When remounting the attachment buffers on the anti roll bar, put inside them 1 g of grease type MOYKOTE 33 MEDIUM.
When remounting the suspension arm axles, use new self-locking nuts.

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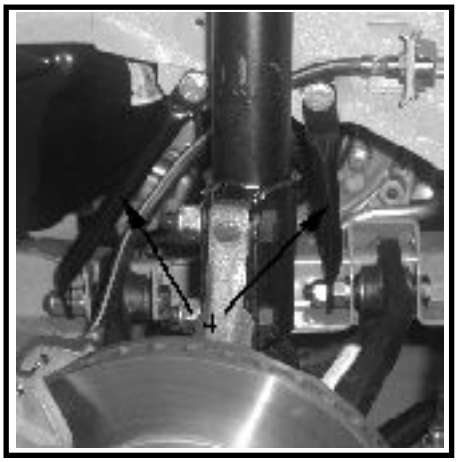
Suspension arm

The mounting of the arm attachment axles and of the straps on the frame, is different from left side to right side.

RIGHT SIDE



LEFT SIDE



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Necessary Special Tools	
P.F. 601	Bushings mounting device
P.F. 602	Bushing extractor

REPLACEMENT

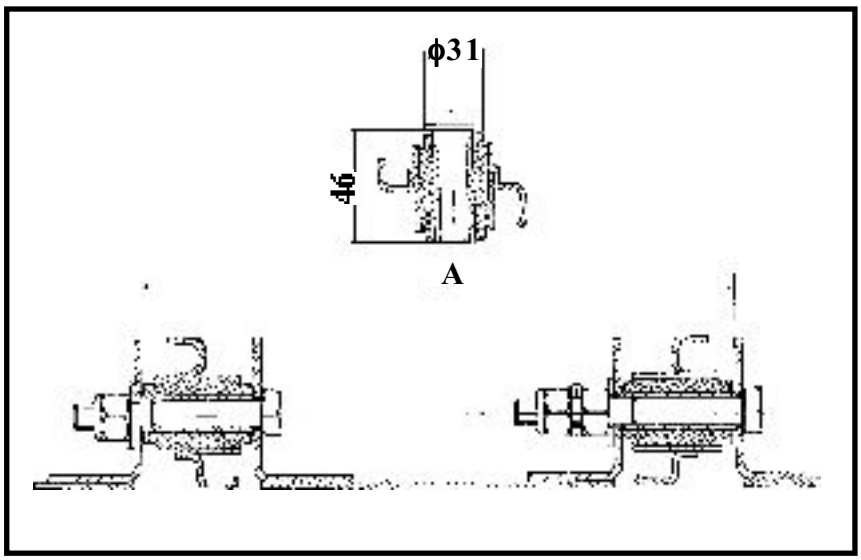
This operation implies bushings replacement one by one, in order to maintain their centering as to the arm shaft. The operation is to be performed using a press (mechanical/manual driving)

Dismount one of the bushings, by means of the **PF 602** device, using a **31 mm** outside diameter rod.

Mount the new bushing, observing the value **A = 239 ± 0.4 mm**.

Dismount the second bushing, proceeding in the same a.m. shown way, in order to maintain the value **A = 239 ± 0.4 mm**

Mounting of the elastic bushings is performed by means of the device **PF 601**.



REMARK :

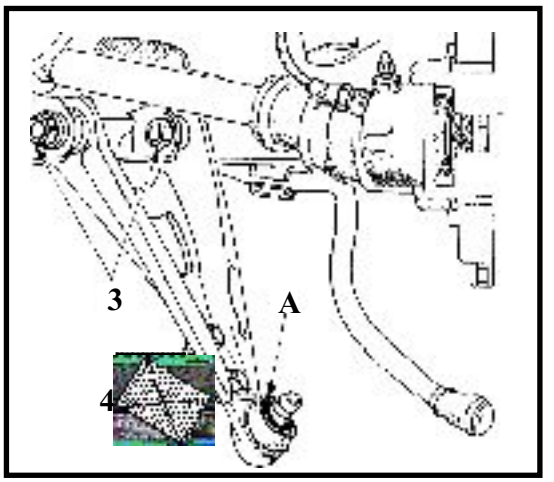
The elastic bushings are to be mounted on the suspension arm by pressing, with continuos pressing on the outside bushing, avoiding hammering.

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DISMOUNTING

Perform the same operations as for dismounting the suspension arm.

Unscrew the two attachment nuts **(3)** of the arm shafts, without their dismounting



Dismount :

- the ball joint attachment screws **(4)** on the arm;
- the ball joint.

REMARK :

When dismounting the suspension ball joint off the arm, check by visual inspection if the corresponding holes from the suspension arm, are out of round.
If they are out of round, obligatory replace the suspension arm.

REMOUNTING

REMARK :

Ensure the presence of the protection plate (A) on the suspension ball joint axle.

Mount the suspension ball joint on the arm, by means of the two attachment screws **(4)** and tighten their nuts to the required moment.

Perform then, the same operations as for suspension arm remounting, observing the tightening moments.

PROTECTION BELLOWS REPLACEMENT

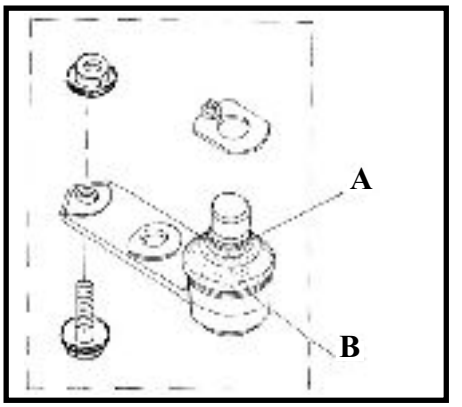
Dismount the damaged bellows.

Clean the ball joint in the area covered by the bellows (ball joint body and pin).

Fill the new bellows with approximate 3 g MOS_2 special grease.

Mount the new bellows on the ball joint.

Place on the bellows by means of a resistant thread, the fixing clip **(B),** then the fixing clip A (Ø= 19).



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Brake lining (pads)

SPECIAL TOOLS
FR 500 Pushing piston device

REMARK :

In order to maintain the brake efficiency, the replacement of the brake lining (pads) shall be made only in complete kit.

Brake pads brand TEXTAR are to be used as spare parts.

DISMOUNTING

Loosen the front wheel attachment screws.

Lift the vehicle by means of a two-column elevator.

Dismount the front wheel.

Disconnect the wear sensor wire.

Remove: - the safeties of the wedges (**1**);

- the wedges, by sliding them.

Detach the caliper assembly from the fork together with the flexible hose.

Remove:

- the brake pads from fork seats (maintaining springs are attached with them);

- the maintaining springs from the brake pads.



REMARK :

It is forbidden to push the brake pedal after the calipers were dismounted from the fork.

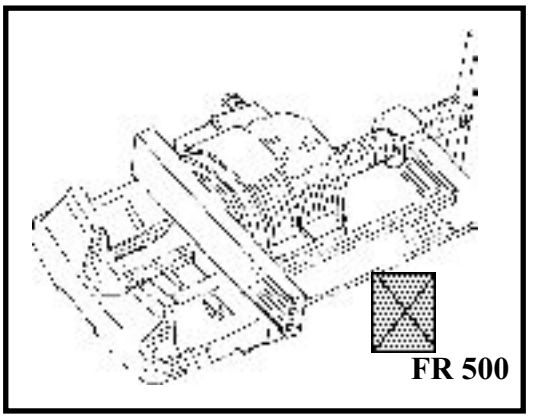
If the brake pads are not fully used but on their friction surface, especially in the middle pad channel, there are material traces, it is recommended the cleaning of these surfaces in order to avoid the noise when braking.

Irregularly wear of one brake pad or wear differences between the inner pad the outside pad, greater than 10% of the minimum remaining lining, impose the kit replacement.

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REMOUNTING

Push the caliper piston by means of the **FR 500** device.



Remount :

- the maintaining springs on the brake pads;
- the brake pads their places in the fork, assembled with the maintaining springs;
- the caliper
- the wedges and their locks

Press several times the brake pedal, in order to place in contact the caliper piston with the brake pads.

Mount the wheels

Get down the vehicle from the elevator.

Tighten to the required moment, the front wheels attachments screws.

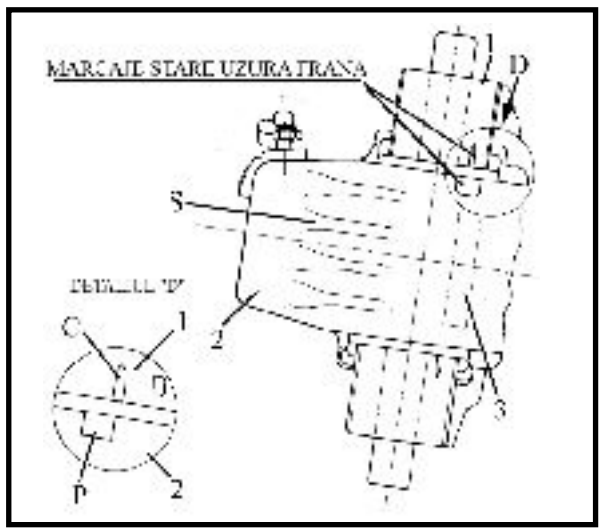
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Checking the brake pads wear

Point of view construction, the front brake is a ventilated disc type with floating caliper and fork (**1**) attached by means of the screws to the steering knuckle.

Brake linings (**3**) (brake pads) are "TEXTAR" type, without wear sensor.

The wear checking is performed by comparing the mark (**P**) from the caliper, with the (**C**) mark from the fork



Maximum wear of the brake lining (brake pads) is token into consideration and their obligatory replacement is imposed, when the protuberance (**P**) from the caliper (**2**) is as seen in "**D**" close-up, against the middle of the channel "**C**" from the fork **(1).**

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Brake caliper

TIGHTENING MOMENTS (daNm)	
Wheel screws	7.5
Rigid duct on front flexible screw	1.5
Purging screw	1
Flexible hose - caliper	1.7

DISMOUNTING

Loosen the front wheel attachment screws.

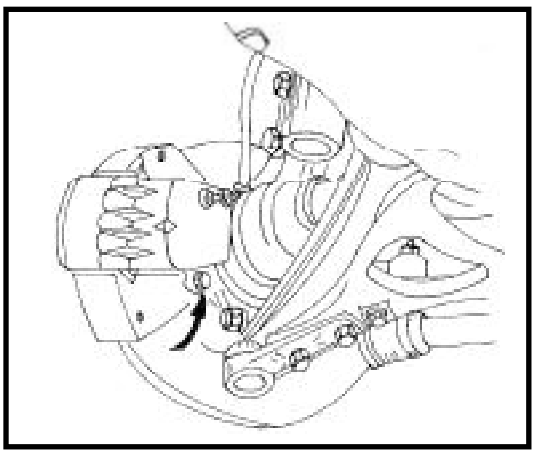
Lift the vehicle by means of a two-column elevator

Dismount the wheel.

Drain the brake fluid from the reservoir

Remove the locks and the caliper wedges.

Unscrew the rigid duct screw from the brake flexible hose and detach the caliper assembly



REMARK :

If it is necessary to dismount the caliper fork, dismount the attachment screws on the caliper fork.

When remounting the fork, replace the Grower washers, tighten the screws to the required moment of 6.5 daNm then seal them with FIXAMED R 58.

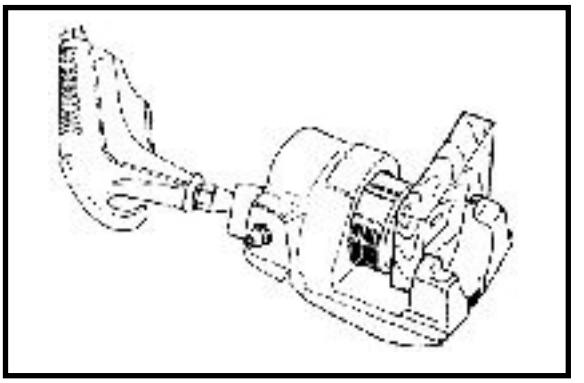
REPAIRING

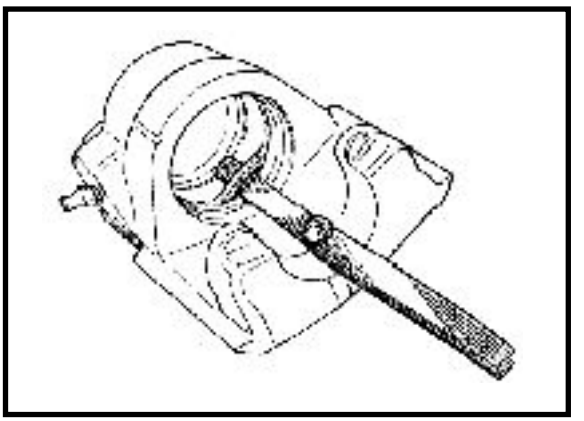
Dismount the protection gasket.

Extract the piston using a wooden wedge and a compressed air source.

Remove the sealing gasket from its seat in the caliper groove by means of a blade.

Clean with alcohol the parts, replace the damaged ones, mounting being performed in the dismounting reverse order, after previously all parts have been oiled with brake fluid.





REMARK :

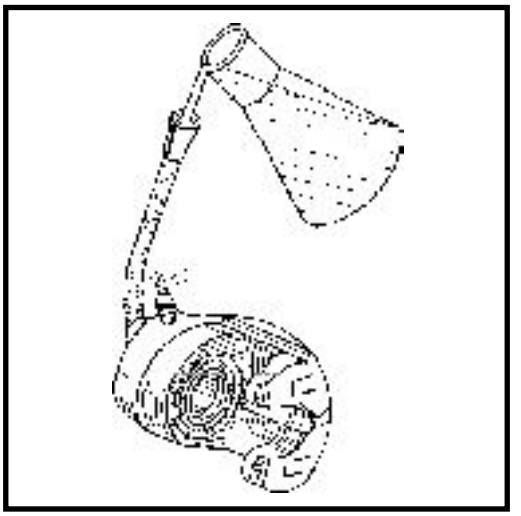
Before remounting on the fork, check the sealing of the assembled caliper.

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REMOUNTING

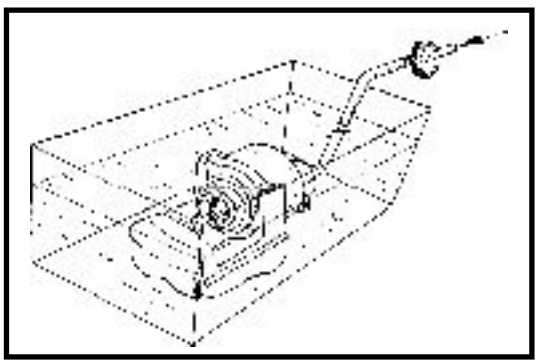
Perform the dismounting operations in the reverse order plus the following operations:

- filling of the caliper with brake fluid in order to facilitate the brake system purging;
- purging the brake system.



BRAKE CALIPER SEALING CHECKING

Connect to the caliper, a pressure gauge attached to a compressed air source.
Place a wooden wedge in order to block the piston
Create a **0.3 bars** pressure in the caliper
Dip the caliper into a vessel with alcohol.
Move the piston several times to remove the air from the sealing gasket seat.
Check the sealing at various pressures, without exceeding the pressure of **2 bars**.
If the brake shows air leaks by the piston, perform its dismounting.
Replace the piston, the gasket, or the caliper body, as the case stands.
Perform again the sealing test.



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Brake disk

REMARK :
The brake disks can be not rectified.

A bigger wear or an important mark on the brake disk braking surfaces impose obligatory its replacement.

- The minimal accepted thickness: **19 mm**;
- The maximum accepted axial deviation **0.04 mm** on a diameter of Ø **215**.

TIGHTENING MOMENTS (daNm)	▽
Brake caliper fork attachment screw on steering knuckle	**6.5**
Disk attachment screw on the hub	**1.4**
Front wheel steering knuckle nut	**28**
Wheel screws	**7.5**

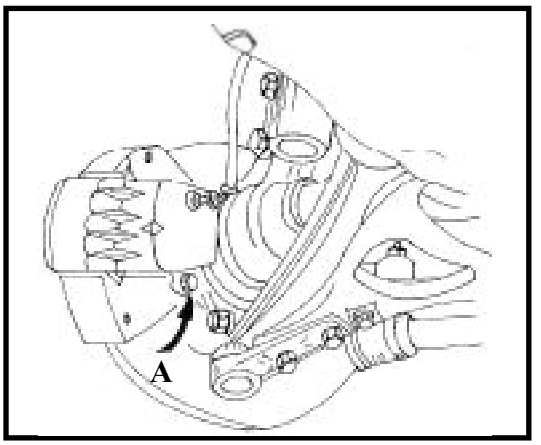
DISMOUNTING

Loosen the front wheel attachment screws.

Lift the vehicle by means of a two columns elevator

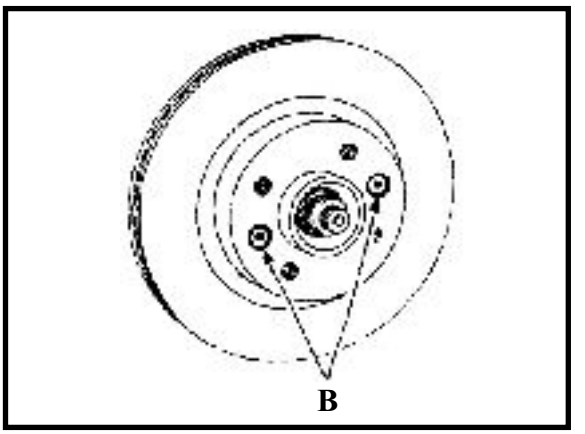
Dismount :

- the wheel;
- the two attachment screws **(A)** of the brake disk assembly on the steering knuckle ;
- the two sunk screws **(B)** attaching the disk on the hub.



Dismount the brake disk. Before remounting, check :

- the wear of the brake flexible hoses;
- the wear of the brake pads and replace them if necessary.



REMOUNTING

Remount :

- the disk on the hub by means of the two sunk screws **(B)** and tighten them to the required moment;
- the brake disk assembled on the steering knuckle, tightening the (**A**) screws to the required moment.

Press the brake pedal several times, in order to bring the piston in contact with the brake pads.

REMARK :
In case of replacing the brake disk it is absolutely necessary to replace the brake pads (TEXTAR brand).

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SPECIAL TOOLS	
Hub disk extractor	PF 600
Ball joint extractor	PF 476

TIGHTENING MOMENTS (daNm)	
Wheel attachment screw	7.5
Steering ball joint nut	4.0
Transmission nut	28.0
Attachment fork screw on steering knuckle	6.5
Screw nut of the steering knuckle attachment with the shock absorber leg	10.5
Attachment screw nut of the ball joint with the steering knuckle	6.2

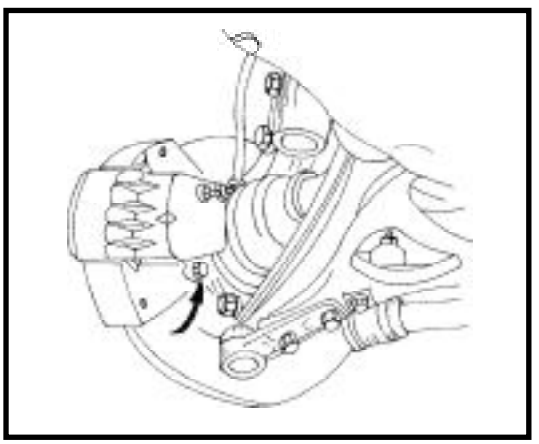
DISMOUNTING

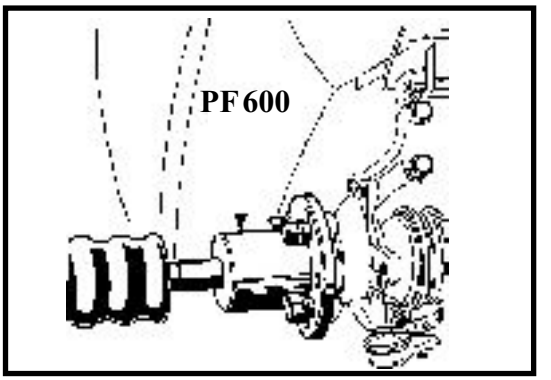
Loosen the front wheel attachment screws.

Lift the vehicle by means of an elevator with two columns

Dismount :

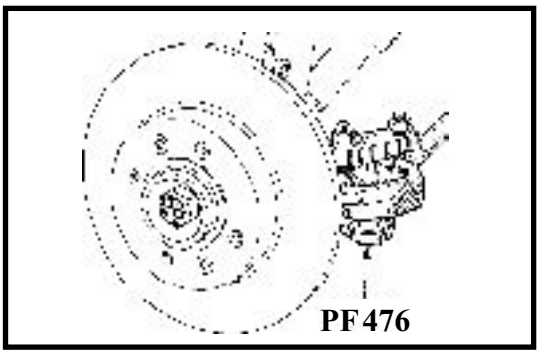
- the wheel
- the brake disk assembly together with the flexible connection,.
- the transmission gear nut;
- the brake disk assembly by means of the **PF 600** extractor.





Continue by dismounting the steering knuckle, observing the operations sequence:

- dismount the steering ball joint nut;
- depress the steering ball joint by means of the **PF 476** extractor;
- dismount the two screws that attach the steering knuckle on the shock absorber leg;
- dismount the attachment screw of the steering ball joint – steering knuckle;
- detach the steering knuckle.



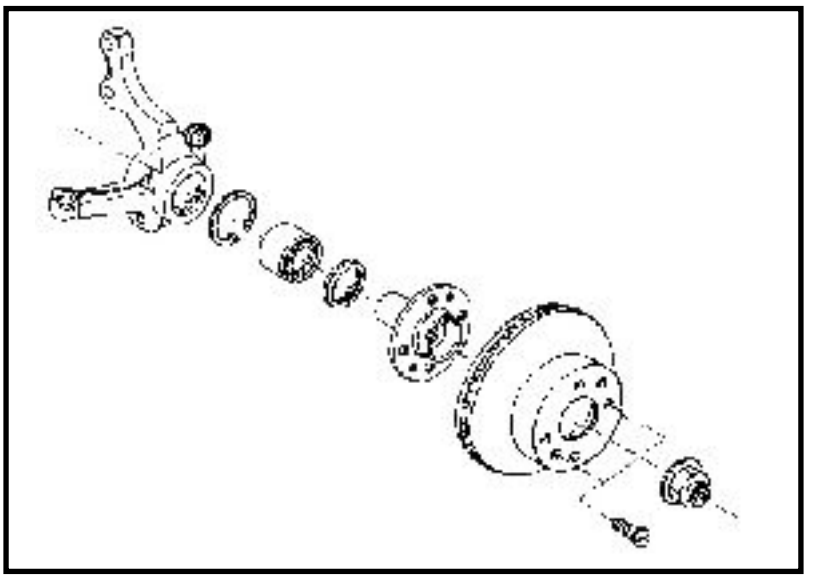


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REMOUNTING

REMARK :
Before remounting check the wear of the bearing, that shall be replaced if the grease is flown.

Position and press the steering knuckle together with the hub – disk assembly performing the operations in the reverse order, after previously having greased the steering knuckle grooves.



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Steering knuckle bearing (35 x 65 x 35)

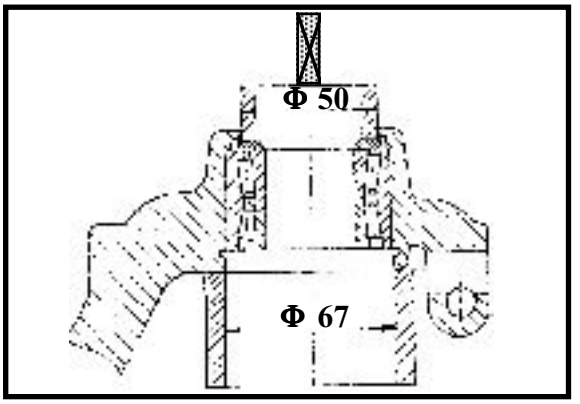
DISMOUNTING

Dismount the steering knuckle (see method "Dismounting steering knuckle).

Remove the safety ring (bore ring) from the interior of the steering knuckle.

Depress the biconical bearing, using a → **50 mm** outer diameter rod.

Place the steering rod using a bushing with inner diameter → **67 mm.**

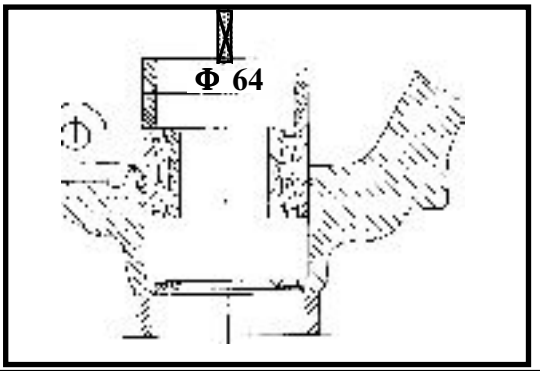


REMOUNTING

Introduce in the steering knuckle the bearing support washer

Press the bearing in the steering knuckle, by means of a → **63** mm diameter bushing.

Mount the safety ring in the channel of the steering knuckle bore.

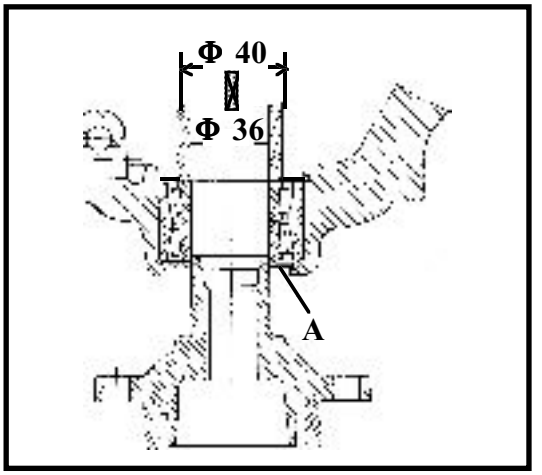


REMARK:

The operation shall be performed so that bushing is not pressed on the bearing support washer, in order to perform a correct mounting and not to damage the bearing.

The steering knuckle-bearing assembly is to be placed above the hub and after centering the support washer, press the bearing on the hub, using a bushing with the inner diameter of Ø**36 mm** and an exterior diameter of Ø **40 mm.**

Continue with the mounting of the steering knuckle assembly on the vehicle (see the method "**Remounting steering knuckle**")

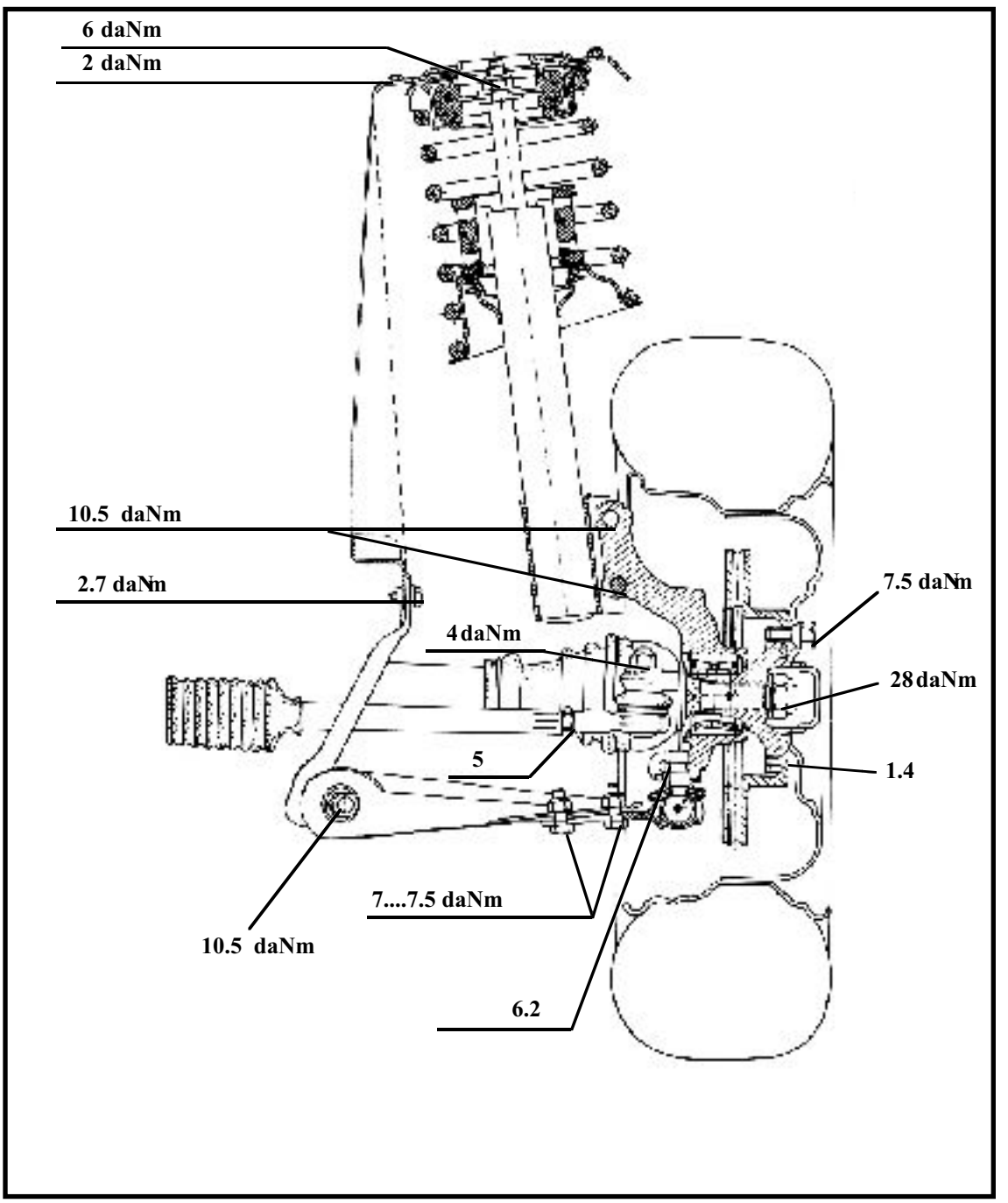


REMARK :

When replacing the bearing, its spacer is also to be obligatory replaced.

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CROSS SECTION



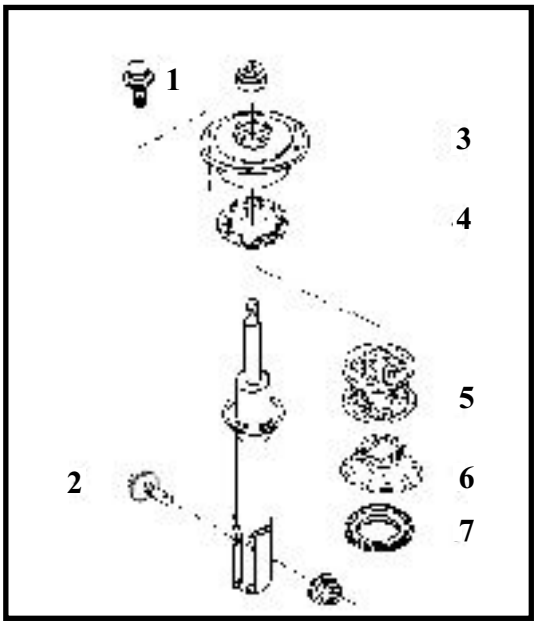
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TIGHTENING MOMENTS (daNm)	▽
Shock absorber rod nut	6
Shock absorber lower attachment nut	10.5
Shock absorber upper attachment screws	2

The shock absorbers are stored in horizontal position. In these conditions, it is possible that shock absorbers working vertically, to get depressed.

Therefore, before mounting on the vehicle, it is necessary to perform the shock absorbers pressing, by alternatively shifting the shock absorber rod (upwards and downwards), the shock absorber being in vertical position.

SHOCK ABSORBER



1. Upper attachment nut
2. Lower attachment screw
3. Filtering block
4. Upper plate
5. Shock buffer
6. Lower plate
7. Axial bearing

The coil diameter of the front axle spring is $\varnothing 13{,}1^{+0{,}08}_{-0}$ mm.

REMARK :
Make sure that springs of every axle have the same characteristics.

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DISMOUNTING SPRING-SHOCK ABSORBER ASSEMBLY OFF THE VEHICLE

SPECIAL TOOLS	
Device	SUS 600
Combined wrench	SUS 601

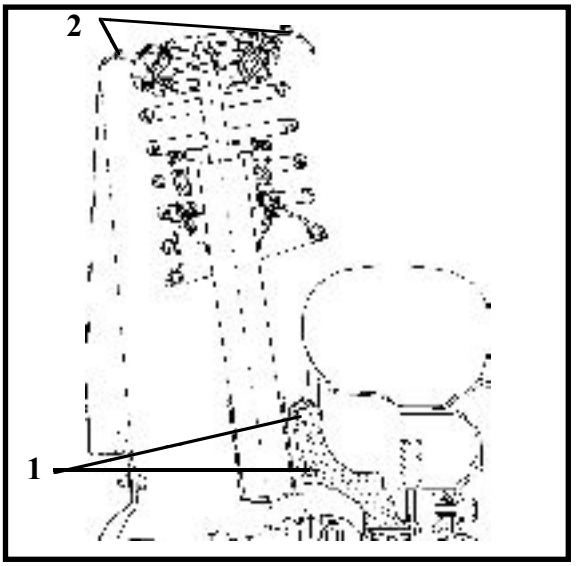
Loosen the front wheel attachment screws.

Lift the vehicle by means of a two-column elevator.

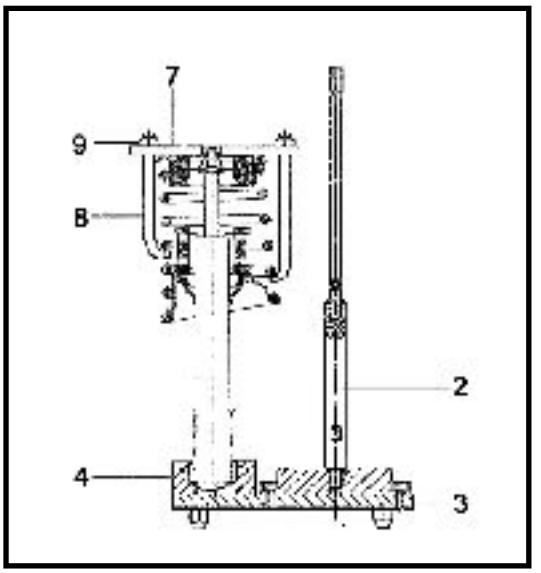
Dismount:

- the wheel;
- the steering knuckle attachment screws **(1)** to the shock absorber leg;
- the two upper attachment screws **(2)** of the shock absorber on the carriage body.

Take out the spring – shock absorber assembly, by pressing on the lower arm, in order to avoid the shock absorber getting in contact with the transmission bellows.



SPRING DETACHMENT FROM SHOCK ABSORBER



Place the shock absorber on the shock absorber support **(4),** of the base plate **(3)** of the **SUS 600** device.

Place the compression plate **(7)** on the filtering block and position the rods grips **(8)** on the spring lower last but one coil.

Compress the spring by alternatively tightening the nuts **(9)** till release it from the lower plate of the shock absorber.

Dismount the upper attachment nut of the shock absorber by means of the **SUS 601** combined wrench.

Take out the spring

Place the spring on the **SUS 600** device shaft **(2).**

Place on the shaft the lock bushing **(6)**, the spacer **(5)**, and tighten the crank (**1**) to the required moment till the lock bushing **(6)** comes into contact with the filtering block of the shock absorber.

Loosen alternatively the nuts (**9**) and take out the plate **(7)** and the rods grips **(8)**.

Release the spring by means of the crank **(1)** and detach from the shaft (2), the filtering block of the shock absorber, the upper plate, and the spring.

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SPRING-SHOCK ABSORBER ASSEMBLY REMOUNTING ON THE VEHICLE

Place the spring on the **SUS 600** device shaft **(2).**

Position on the spring the upper plate and the filtering block of the shock absorber.

Put on the shaft the lock bushing **(6)** and the spacer **(5).**

Compress the spring by means of the crank **(1).**

Place the compression plate **(7)** on the filtering block and position the rods grips **(8)** on the spring last but one coil.

Tighten the nuts **(9)** till the rods grips **(2)** came in contact with the spring coil.

Detach the crank **(1)** and remove the compressed spring from the shaft **(2).**

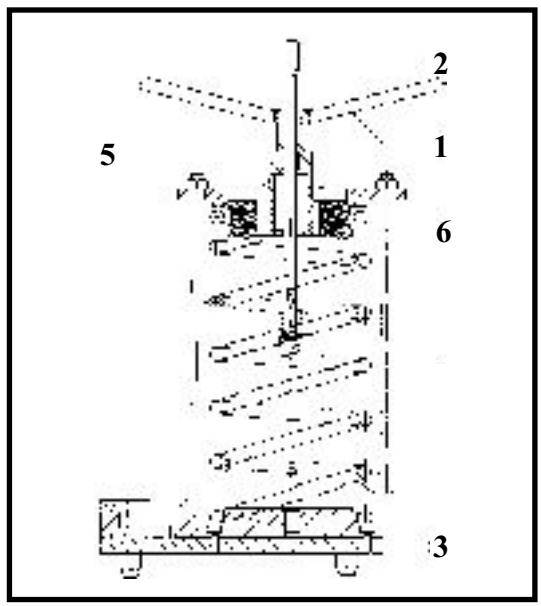
Place the shock absorber in the support **(4).**

Place on the shock absorber the axial bearing, the lower plate, the buffer, and the spring.

Mount the upper attachment nut of the shock absorber by means of the **SUS 601** combined wrench and tighten to the required moment.

Loosen the nuts **(9)** and take out the plate **(7)** with the rods grips **(8)**.

Mount the spring-shock absorber assembly on the vehicle, in the reverse order of dismounting.



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Anti roll bar

TIGHTENING MOMENTS (daNm)	
Clamp screws for attaching the elastic bushings on longitudinal girder	4
Clamps screws for attaching bushings on arm	4

BARÃ ANTIRULIU FAπÃ
Diametrul (mm)
Φ 24

DISMOUNTING

Lift the vehicle by means of a two-column elevator.

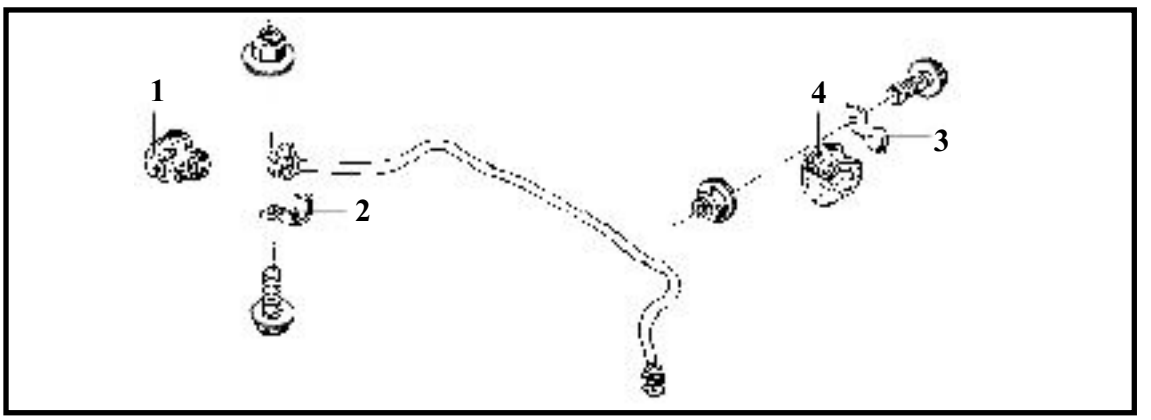
Unscrew:

- the clamps attachment screws of the power train support and remove the attachment buffers;
- the clamps attachment screws on arm and remove the supporting bushings.

Dismount the anti-roll bar.

Check the state of the attachment buffers and of the supporting bushings.

Replace the items showing damages.



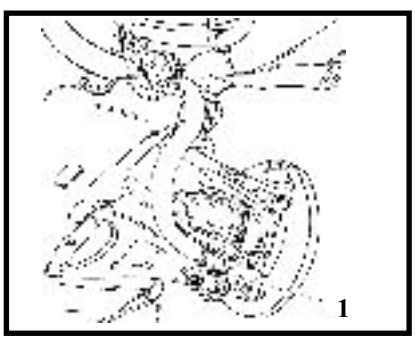
REMOUNTING

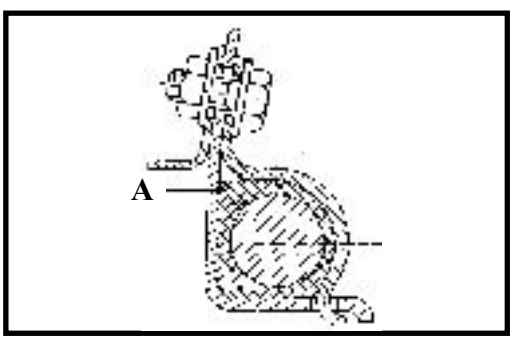
Mount the supporting bushings and the attachment bushings on the anti-roll bar.

Mount the anti-roll bar assembled both on arms as well as on the power train support.

Lower the vehicle with the wheels on the ground.

Tighten to the required moment, the screws of supporting bushings attachment clamps on the power train support as well as the screws of bar attachment clamps on the suspension arms.





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TIGHTENING MOMENTS (daNm)	
Wheels attachment screws	7.5
Shock absorber lower attachment screws to the steering knuckle arm	10.5
Connecting straps upper attachment screws	2.7
Anti-roll connection rod attachment screws to the steering crossbar support	6.2
Connection screw of the steering column lower shaft-steering box gear	2.1

ATTENTION !

Dismounting of the front axles screws and nuts implies their obligatory replacement and tightening to the required moments.

DISMOUNTING

Disconnect the battery.

Dismount:

- connection screw of the steering column lower shaft-steering box gear;
- thermal screen attachment nuts on exhaust manifold and remove the thermal screen;
- attachment studs descending pipe – exhaust manifold.

Loosen the front wheels screws.

Lift the vehicle by means of a two-column elevator.



Dismount the engine shield.

Drain oil from power-assisted steering circuit (see chapter 05).

Drain oil from gearbox (see chapter 05).

Dismount:

- front bumper 9 see chapter 55);
- left/right front wheels fairing (see chapter 56);
- connecting straps upper attachments power train support – carriage body;
- upper attachments of the shock absorption connecting straps (connecting straps of suspension arms shafts-carriage body);
- brake calipers off the fork and suspend the calipers;
- connection clip of descending pipe-expansion chamber and remove the descending pipe.

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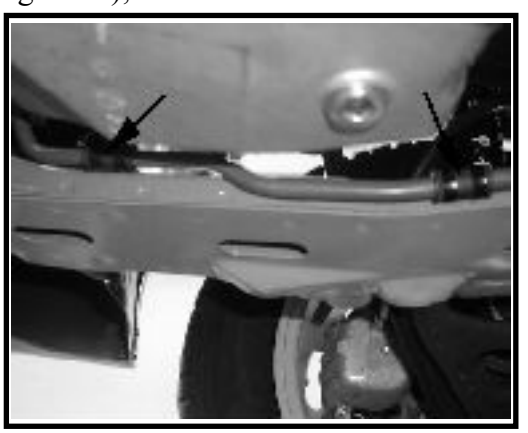


Attach a parts support under the power train support and dismount:

- connection screw anti-roll connecting rod- steering box crossbar support and tilt over the anti-roll connecting rod downward.



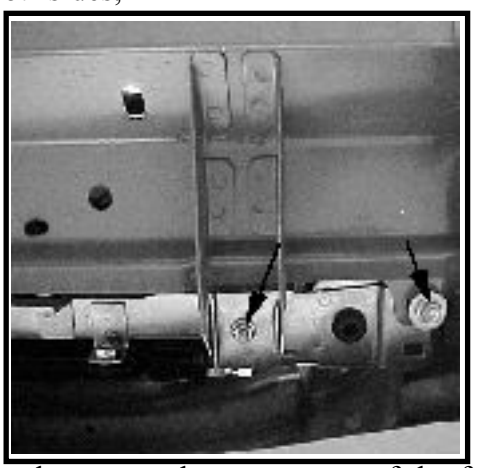
- clamps attachment of the high pressure duct of the power-assisted steering (on the right side);



- clamps attachment of the low pressure duct of the power-assisted steering (on the left side);



- attachment screws of the bellows-bearing GI joint assembly, left transmission on the gearbox;
- lower attachment of the cooling radiator, on both sides;



- lower attachment screws of the front shock absorbers, both on left and right side;
- steering knuckle arms;
- left transmission from the gearbox;
- right transmission from the gearbox.

Carefully lower the parts support towards ground.

Dismount the attachment screws of the power train support to the longitudinal girders, both at front part as well at rear part.

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REMOUNTING

Perform the dismounting operations in the reverse order, observing the tightening moments.

In case a new steering box is to be mounted, perform the parallelism adjustment, observing the parallelism adjustment procedure previously described.

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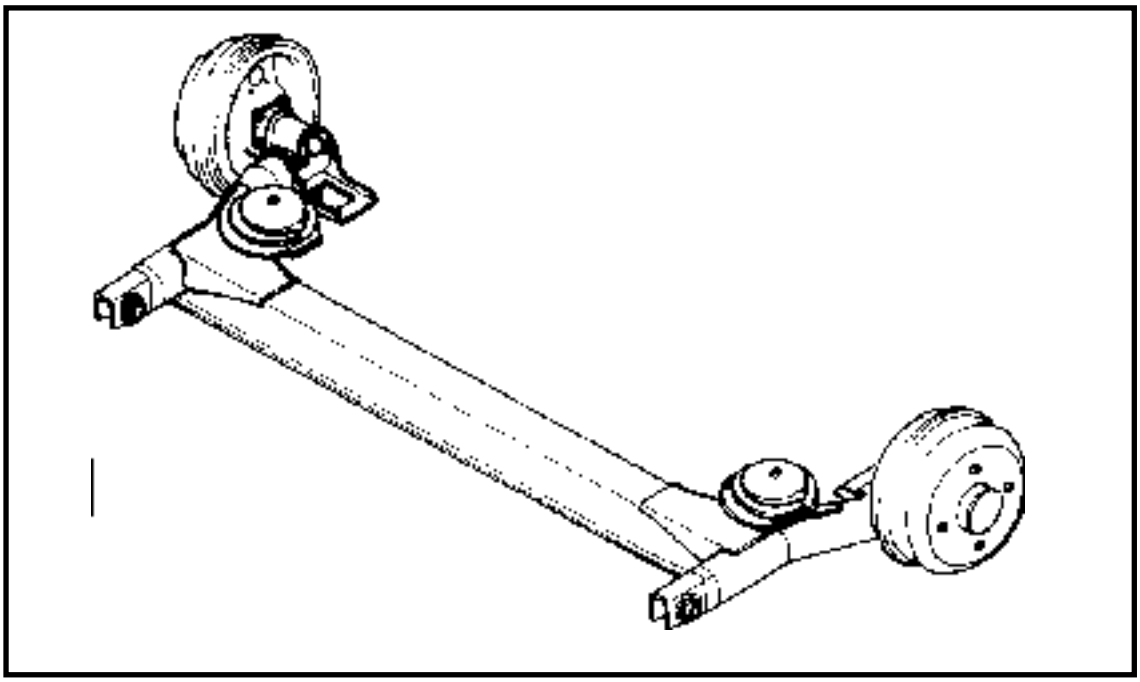
Characteristics

The rear axle is composed of an axle having a " **U** " shaped torsion profile to which arms are welded

For the transversal stability and the resistance fatigue improvement of the cross-bar, the axle is equipped with a **Ø 21-mm** diameter stabilizer bar. The bar is inserted by welding on both ends in the axle side arms.

The connection of the axle with the chassis is realized by elastic bushings of the spiral spring and the double effect telescopic shock absorber.

The drum and the hub constitute a common body, and are mounted on the steering knuckle by means of a be-conical sealed bearing.



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SPECIAL TOOLS	
Drum cover extracting pliers	R0 441
Hub extractor	PF 600
Dismounting pliers for shoes return spring	FR03
Shoes protectors	FR09
Pliers for maintaining brake cylinders pistons	FR05A
Dynamometer wrench	MOT30
Comparing dial gauge	R0541A

TIGHTENING MOMENTS (daNm)	
Wheel attachment screw	7.5
Axle attachment nut	12
Shock absorber bottom attachment nut	7.5
Rear axle arm elastic bushing axle nut	12.0
Brake rigid piping connection screw	1.5
Purging screw	1.0

DISMOUNTING

Loosen the rear wheels attachments screws.

Lift the vehicle on two-column elevator.

Dismount the rear wheels.

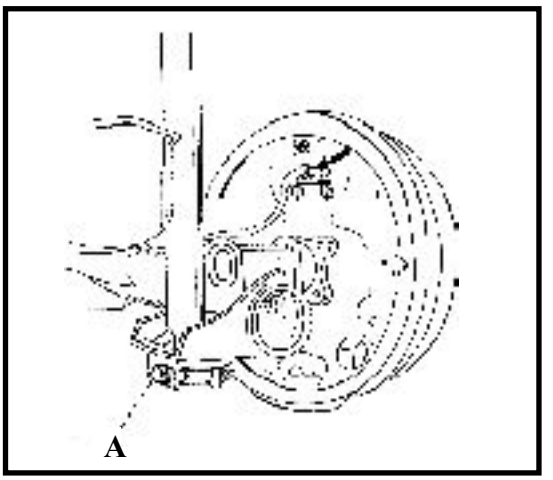
Drain the braking system.

Dismount the brake drums.

Disconnect the two-connector screws of the brake rigid piping from the brake cylinder.

Detach the connections of the secondary cable from the hand brake levers and remove the cable from the brake plates.

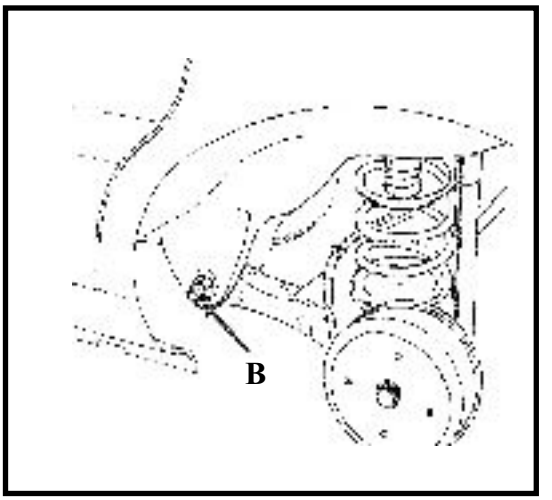
Dismount the operating rod support of the brake limiter from the right side axle arm, after previously both arms protectors have been dismounted.



Dismount the lower attachment screws (**A**) of the shock absorber with the rear axle.

Push upward the shock absorbers.

Dismount the springs.



Dismount the connecting screws (**B**) between the rear axle arms and the chassis.

Dismount completely the rear axle.

Check the elastic bushings condition.

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REMOUNTING

Before remounting, lubricate with grease the attachment screws of the rear axle shock absorber bottom and the chassis, consequently, the connecting screws rear axle-chassis.

Line up the arms bearings right to the chassis supports, mounting the nuts with the screws assembling the axle to the chassis, without tightening them to the moment,

Remount the springs.

Compress the axle so that rear springs are backed on the tray and mount the shock absorber lower attachment screws.

Tighten to the prescribed moment the connecting screws.

Perform the dismounting operations in the reverse order.

Check the maximum allowed axial clearance of the bearing using a dial gauge and the support **RO541A.**

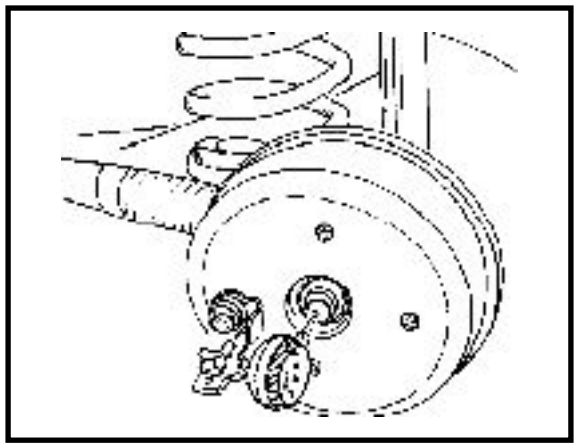
REMARK :
The maximum allowed axle clearance of the bearing is 0.05mm.

Mount the rear wheels, lower the vehicle on the ground.

Tighten to the required moment, the rear wheels attachment screws.

Refill with fluid the brake circuit.

Purge the braking system.

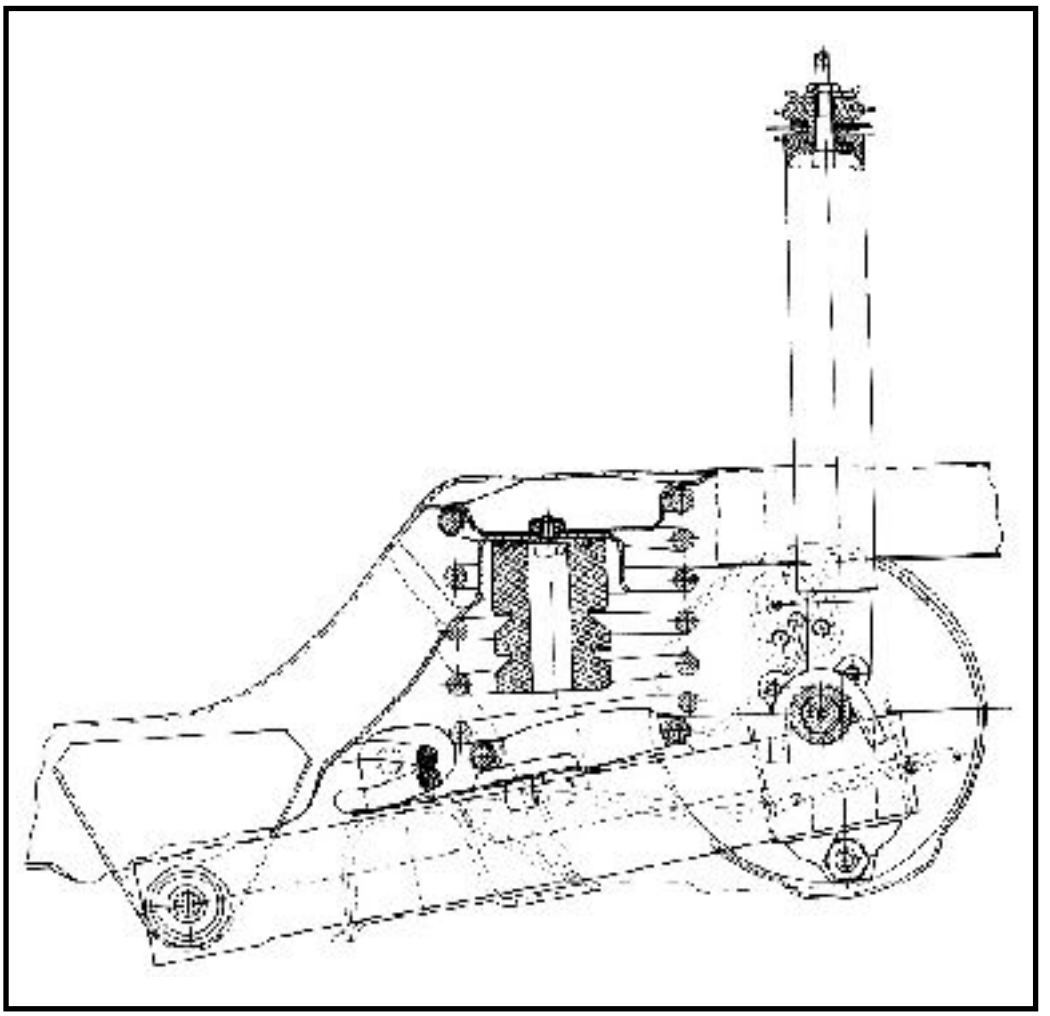


Adjust the hand brake cable.

Adjust the clearance at the limiter-operating rod (see chapter **37- Brake limiter adjustment).**

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LONGITUDINAL SECTION



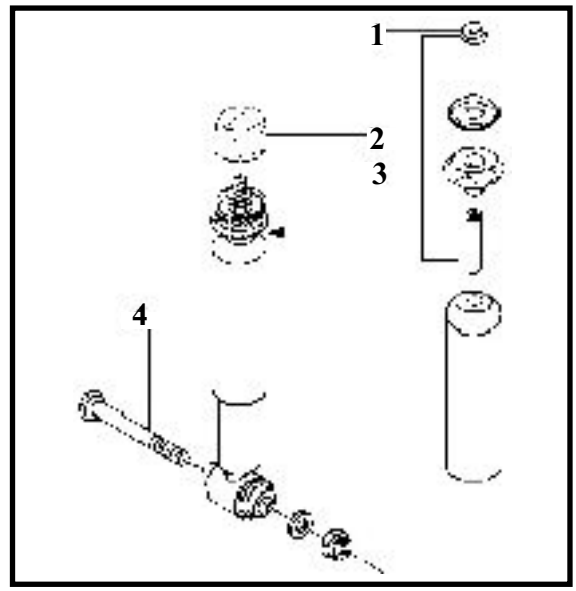
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TIGHTENING MOMENTS (daNm)	
Shock absorber lower attachment nut	7.5
Shock absorber upper attachment nut	1.35

REMARK :

The shock absorbers are stored in horizontal position. In these conditions, it is possible that shock absorbers working vertically, to get depressed.

Therefore, before mounting on the vehicle, it is necessary to perform the shock absorbers pressing, by alternatively shifting the shock absorber rod (upwards and downwards), the shock absorber being in vertical position.



1. Upper attachment nuts
2. Protector
3. Upper buffer
4. Lower attachment screw.

DISMOUNTING

Remove the shock absorber protector **(2)**;
Dismount the upper attachment screws **(1)** (through the trunk);
Loosen the rear wheels screws.
Lift the vehicle by means with a two-column elevator.
Dismount the rear wheels;
Dismount the inner attachment screw **(4)**;
Dismount the shock absorber.

REMOUNTING

Perform in reverse order the dismounting operations, observing the required tightening moments.

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SPECIAL TOOLS	
Device	**SUS 600**

TIGHTENINBG MOMENTS (daNm)	
Wheel attachment screw	**7.5**
Shock absorber lower attachment nut	**7.5**

Rear axle spring coil diameter is of $\phi\ 16^{+0,08}_{-0}$ mm.

DISMOUNTING

Place the locking clamp of the **SUS 600** device, in order to maintain the spring compressed.

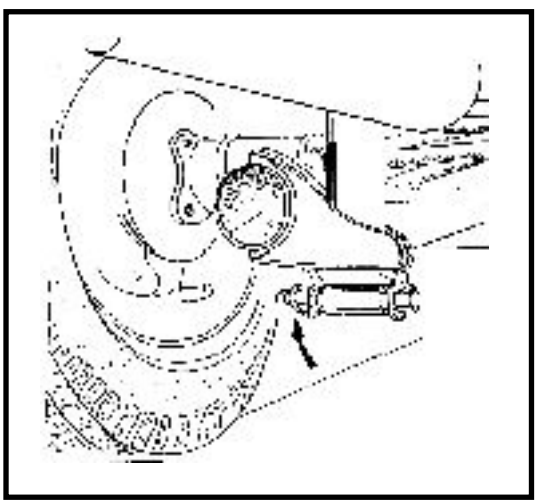
Loosen the screws of the wheel on the side where the dismounting is performed.

Lift the vehicle by means of a two-column elevator.

Dismount the wheel.

Dismount the shock absorber lower attachment nut and screw.

Push the axle and remove the spring.



REMOUNTING

Perform the dismounting operations in the reverse order.

REMARK:

Make sure that springs mounted on axle have the same characteristics.

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Brake drum

The two brake drums having the same diameter; the rectifying of one of them, obligatory implies the same operation for the other one.

SPECIAL TOOLS	
Plug extracting pliers	**RO441**
Drum extractor	**PF600**

TIGHTENING MOMENTS (daNm)	
Wheel attachment screw	**7.5**
Steering knuckle nut	**22**



DISMOUNTING

Dismount the wheel.

Extract the plug out of the drum using the extracting pliers **RO441**.

Release the hand brake, loosening the secondary cables.

Pass a screwdriver through the wheel attachment whole of the drum and operate on the geared lever sector loosening its gearing with the hand brake lever.

Dismount:

- the steering knuckle nut and washer;
- the drum by means of the **PF600** extractor.

REMOUNTING

Clean the drum and the brake plate assembly by means of a cleaner (vacuum cleaner) for brake;

Mount:

- the drum
- the steering knuckle washer and nut tightening them to the required moment;
- the drum plug

Adjust:

- the shoes by applying a repeated pressure to the brake pedal;
- hand brake (**see chapter 37-"Controls"**)

Mount the wheel and tighten the screws to the required moment.

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Brake cylinder

SPECIAL TOOLS	
Dismounting pliers for shoes return spring	FR 03
Plug extractor pliers	RO 441

TIGHTENING MOMENTS (daNm)	▽
Wheel attachment screw	7.5
Rear wheel steering knuckle nut	22
Purging screw	1
Brake rigid piping connection screw	1.5
Cylinder attachment screw on plate.	1

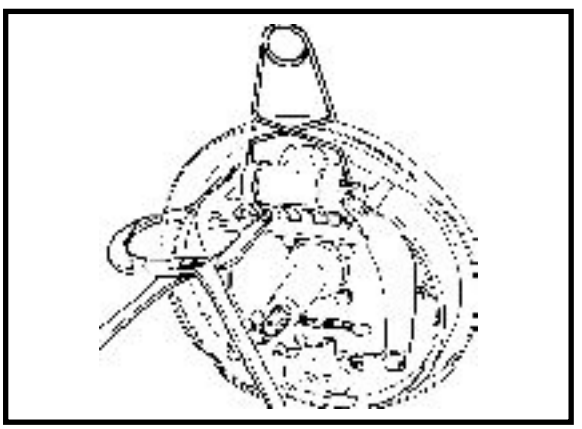
DISMOUNTING

Loosen the rear wheel attachment screws.

With the vehicle placed on an elevator with two columns, dismount:

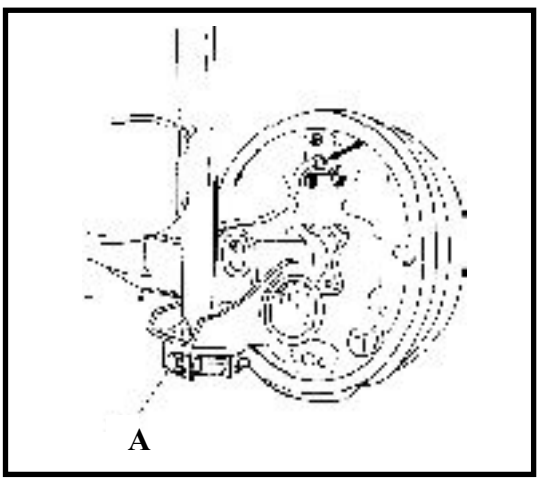
- the wheel;
- the drum plug;
- brake drum;
- upper spring for shoes return, using pliers **FR03.**

Space the brake shoes.



Unscrew:

- the rigid piping connection on the brake cylinder by means of an open-end wrench;
- the two attachment screws of the brake cylinder on the brake plate;
- remove the brake cylinder.



A

Check the condition of the shoes brake lining.

REMOUNTING

Clean the drums and the brake shoes assembly by means of a cleaner (vacuum cleaner) for brake.

Perform in reverse order the dismounting operations:

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Adjust:

- the shoes, by applying a repeated pressure to the brake pedal;
- the rear axle bearing clearanc;
- the handbrake (see chapter **37**).

Mount the wheel.

Lower the vehicle on the ground.

Tighten the wheels screws to the required moment.

Purge the braking system (see chapter 38).

REPAIRING

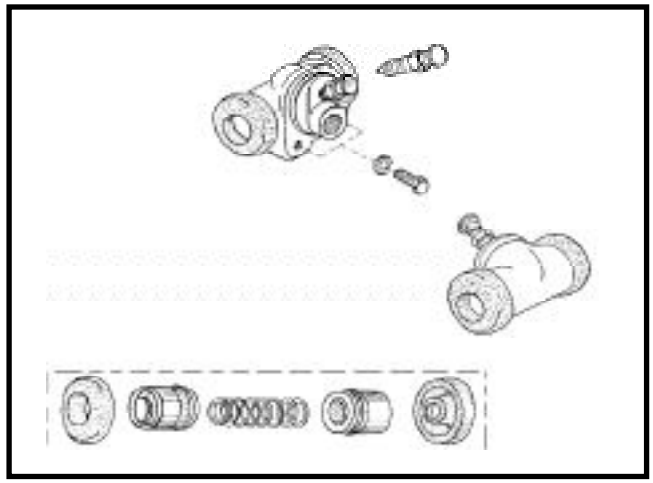
DISMOUNTING

Dismount the brake cylinder off the vehicle;

Dismount:

- the purging screw;
- the protection bellows;
- the Ø22 pistons assembled with the pressure gaskets.

Check the condition of the cylinder boring, any trace of wear, oxidation or scratches implies the replacement of the assembled brake cylinder.



If the cylinder components are in a good condition, lubricate them with brake fluid and mount them in the reverse order of dismounting

Check the easy moving of the assembled pistons in the cylinder boring.

Mount the brake cylinder on the plate;

Mount the wheel brake drum.

Check the adjustment of the hand brake.

Purge the braking system.

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SPECIAL TOOLS	
Plug extracting pliers	RO441
Dismounting pliers for shoes return spring	FR03
Pliers for maintaining brake cylinders pistons	FR05A

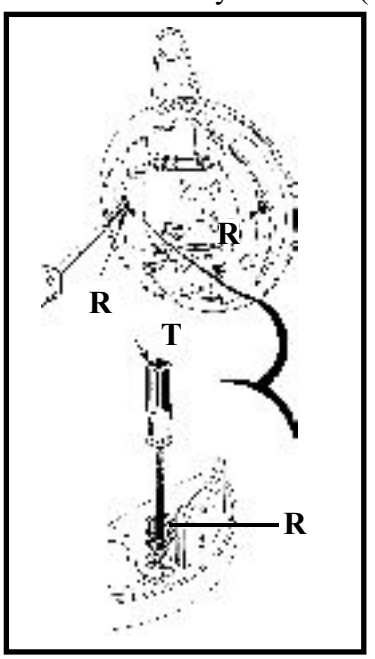
TIGHTENING MOMENTS (daNm)	
Wheel screws	7.5
Rear wheel steering knuckle nut	16

DISMOUNTING

The replacement of brake shoes must be performed in complete set, never mount the brake shoes equipped with brake linings of different brands and qualities.

Dismount:

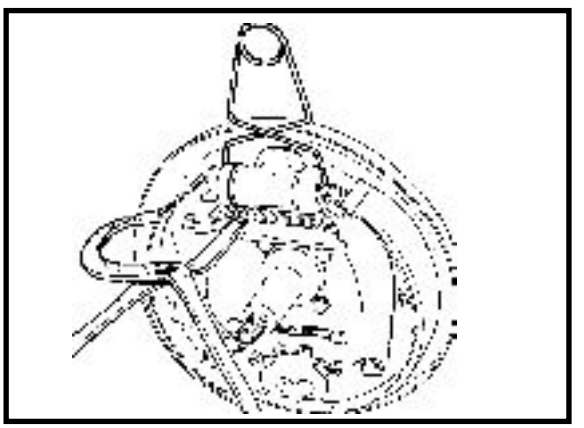
- the brake drum (see the corresponding paragraph);
- the two maintenance springs (**R**) of the shoes with a brake cylinder rod (**T**).



By means of the pliers **FR05A** the brake cylinder pistons are immobilized.

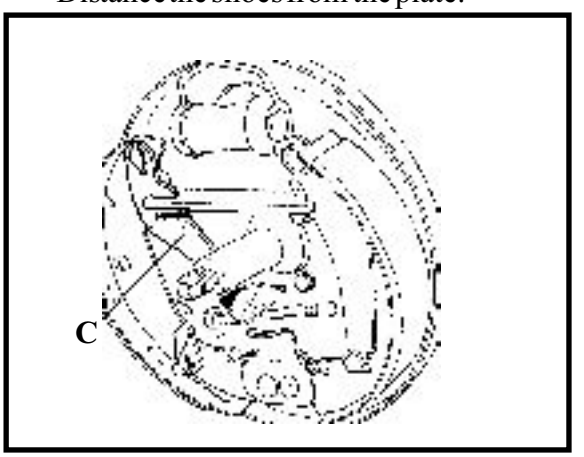
Remove the return upper spring of the shoes using the pliers **FR03**.

Release the end of the hand brake cable from the hand brake lever.



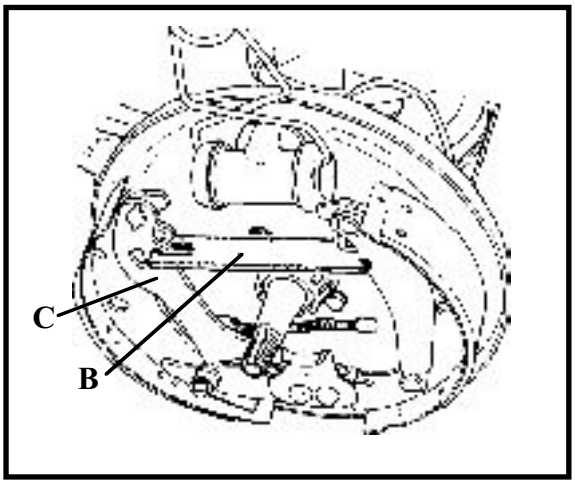
Swing the adjustment lever (**C**) up to the moment it comes into contact with the rear wheel steering knuckle.

Distance the shoes from the plate.



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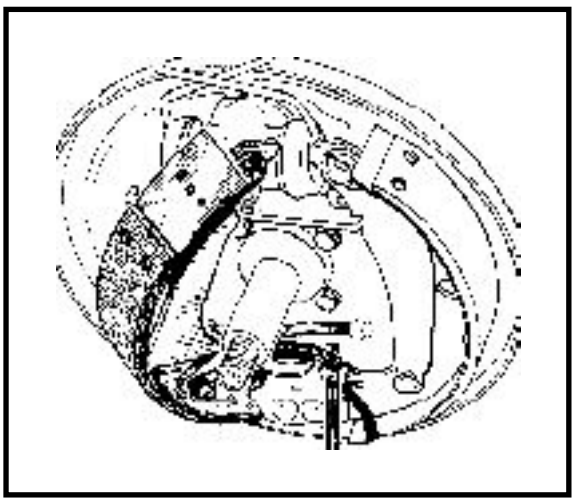
Dismount the auxiliary connecting rod (**B**) connection from the adjustment lever (**C**).



Bring the adjustment lever in the initial position.

Rotate the compression shoe with 90 degrees.

Dismount the lower spring.



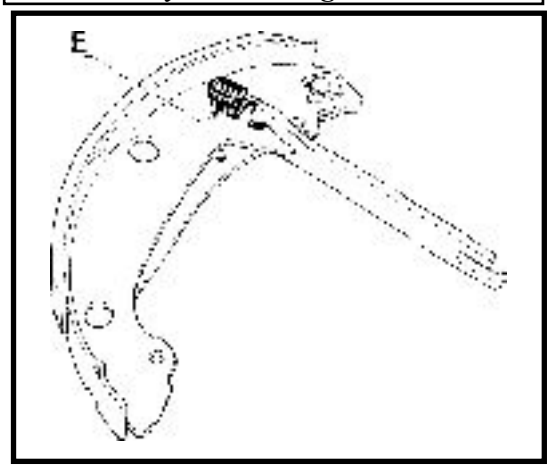
Remove the (front) compression shoe, then the tensioning one.

REMOUNTING

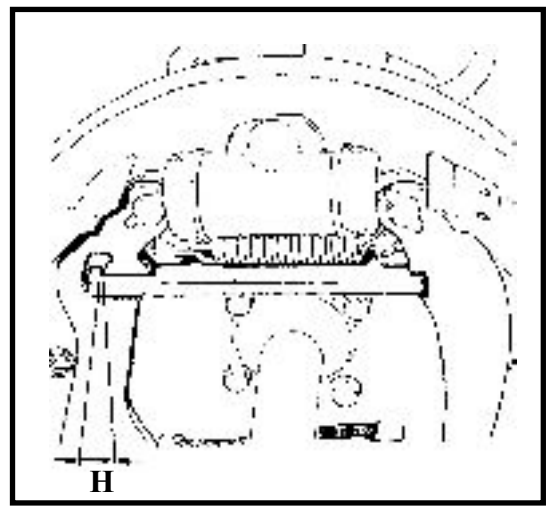
Perform in reverse order the dismounting operations.

REMARK:

The adjustment of the device for the automatic clearance taking over, is depending of the spring tensioning (E), that is caught between the rear shoe and the auxiliary connecting rod.



Measure the value **H=1mm**, between the auxiliary connecting rod and the front shoe. If the value H is not correct, replace the auxiliary connecting rod spring (**E**) and the shoes return springs.



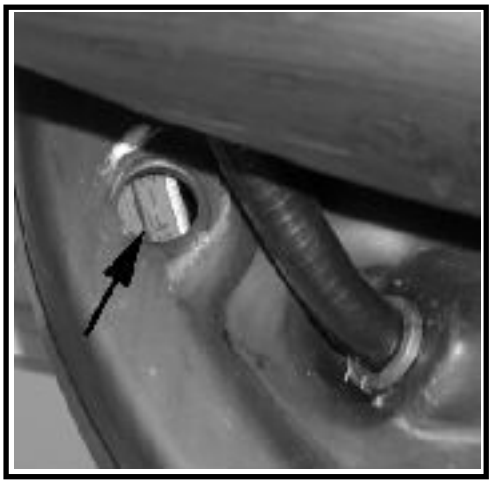
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Brake shoes

Checking of the brake shoes wear may be performed also without dismounting the brake drums.

In this purpose:

- lift the vehicle by means of a two-column elevator;
- dismount the rubber protector of the visiting window from the brake plate;
- check by visual inspection the condition of the brake shoes wear.



If a serious wear is established, perform the brake shoes replacement (see the corresponding paragraph).

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SPECIAL TOOLS	
Plug extracting pliers	RO 441
Drum extractor	PF 600

TIGHTENING MOMENTS (da Nm)	
Rear wheel steering knuckle nut	22
Wheel attachment screws	7.5

CHECKING

Check by means of a comparing device attached on the drum, the axial clearance: **0 – 0.15 mm** max after mounting and tightening to the moment of **22 daNm**.

DISMOUNTING

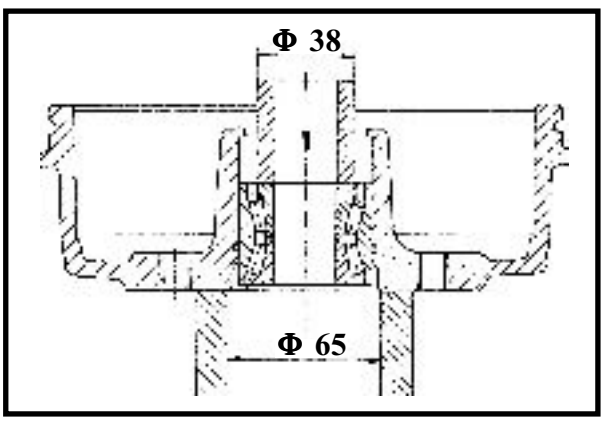
Dismount:

- the drum plug by means of the extracting pliers **RO441;**
- rear wheel steering knuckle nut;
- the drum.

Dismount from the drum:

- the boring lock;
- the bearing by means of a tube **Ø38mm.**

If necessary, use the extractor **CV28** A, in order to extract the bearing inner ring, remained on the steering knuckle.



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REMOUNTING

By means of a tube with the outer diameter **Ö51mm** and a press, mount the bearing up to the contact with the drum support surface (carefully not to damage the sealing ring and to ensure a constant pushing force during this operation).

Remount:

- a new lock;
- the drum on the steering knuckle, previously greased with grease;
- a new nut **M20 x 1.5** and tighten to the required moment;
- the drum plug.

Adjust:

- the shoes by applying a repeated pressure on the brake pedal;
- hand brake (see chapter **37**-"**Mechanical Elements Controls**").

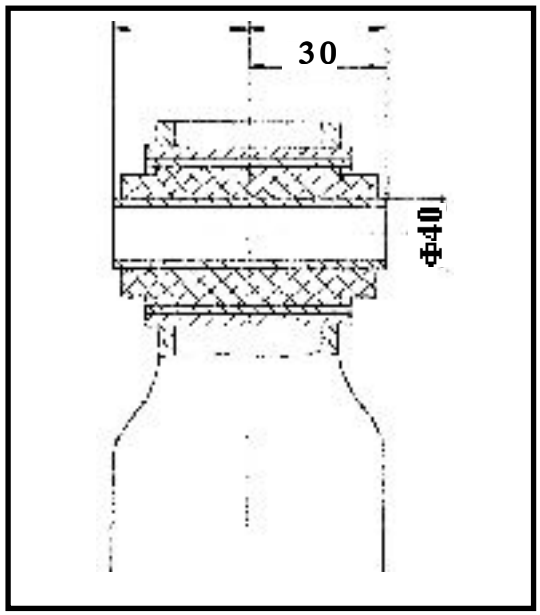
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ELASTIC BUSHING REPLACEMENT

Dismount by means of a press, the worn bushing, using a sleeve with the outer diameter **D=39mm.**

Press the new bushing.

When pressing, observe the value: **A=30mm.**



Remark:

For the elastic bushing mounting, use the PS701 device, and for dismounting the extractor PS700.

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WHEELS

The wheels identification marking is represented in two ways:

- engraved marking for steel rims
- cast marking for aluminum rims

The marking enables acknowledgment of the main wheels dimensions criteria.
This marking may be:

- Complete

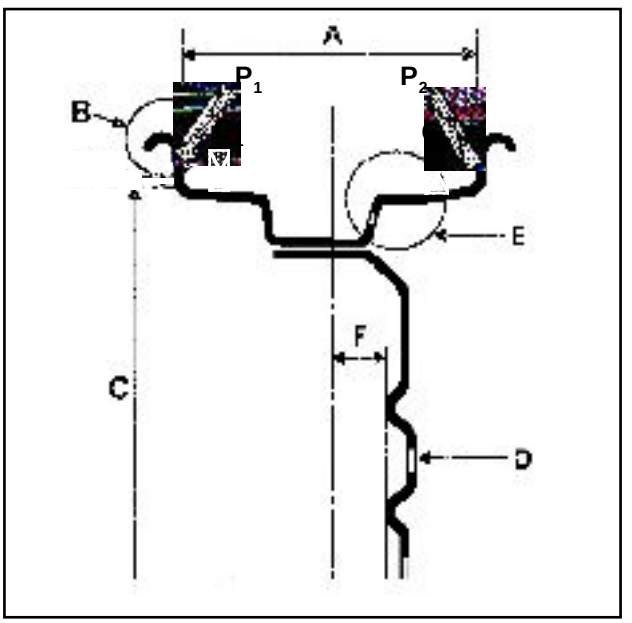
Example : 5.5 J 14 4 CH 43 , or

- Simplified

Example: 5.5 J 14

Rim type	A Rim width (in inches)	B Rim edge profile	C Rim nominal diameter (in inches)	D Number of attachment points	E Tire staffing profile	F Offset (in mm)
5.5 J 14 4CH 43	5.5	J	14	4	CH	43
5.5 B 13 4CH 46	5.5	B	13	4	CH	46

The wheel attachment holes are situated on a diameter of **100 mm**.
Maximum axial runout : to be measured in points P1 and P2.
Maximum radial runout : to be measured in points G1 and G2.



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TIRES

Identification marking examples: 165 / 65 R 14 79 T

165	65	R	4	79	T
(1)	(2)	(4)	(5)	(6)	(3)

(1) - 165 - Tire width in mm (1)

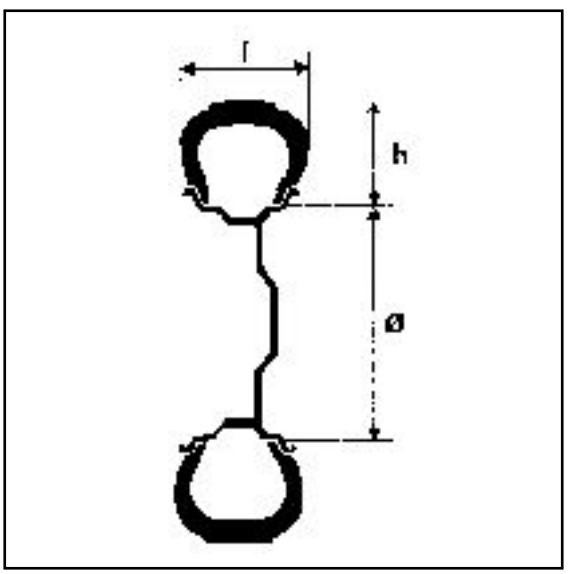
(2) - 65 - h / l height / width ratio, percentage;

(4) - R - Radial structure

(5) - 14 - Inner diameter in inches (→); this is corresponding with the rim diameter

(6) – 79 – Charging index

(3) – T – Speed index max. 190 km/ h



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Some speed symbols:

Max speed	Kmh	Kmh
R		170
S		180
T		190
U		200
H		210
V		240
ZR	**more than**	240

Structure types :
Radial :R

WHEELS -TIRES

Vehicle type	Wheel	Wheel axial/radial runout (mm)	Wheel screws tightening moment (daNm)	Tires	Inflating pressure at cold (bars)	
					Front Unloaded/ Loaded	Rear Unloaded/ Loaded
SOLENZA	5.5J14*	0.2/0.8	7.5	165/65R14	2.0/2.2	2.0/2.1
	5.5B13	0.2/0.8	7.5	165/70R13	2.0/2.2	2.0/2.1

* aluminum rim

The temperature raising during driving, leads to a pressure increase from **0.2 to 0.3 bars**, compared to the prescribed values

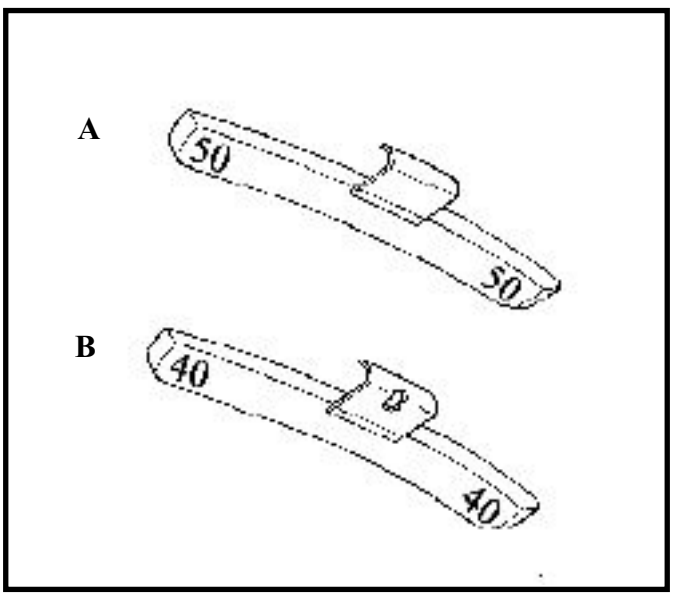
In case temperature checking is performed immediately after vehicle driving, take into account this pressure increase.

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BALANCING WEIGHTS

Use exclusively the weights delivered as spare parts, with attachment by means of mass incorporated clamps.

A = balancing weights for steel rims
B = balancing weights for aluminum alloy rims.



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SPECIAL TOOLS	
DIR. 1306	Device for steering rack locking up in regard to steering box casing.
P.F. 476	Device for ball joints depressing
DIR. 505	Wrench for dismounting/remounting joint body on rack

TIGHTENING MOMENTS (daNm)	▽
Wheels screws	7.5
Steering ball joint nut	4
Joint body in rack	5

Disconnect the battery.

Lift the vehicle by means of a two-column elevator.

DISMOUNTING

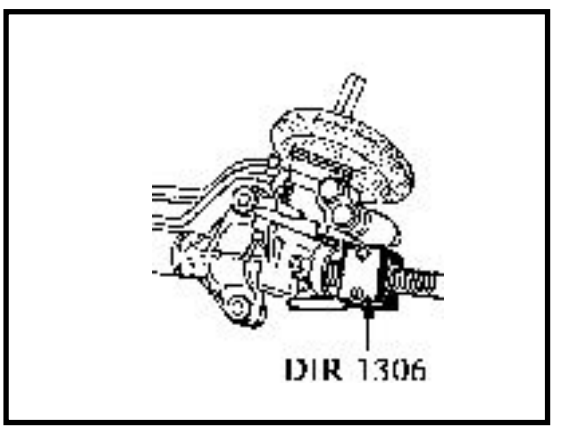
Depress the rod funnel ball joint from the steering knuckle arm by means of the PF 476 device.

Dismount the bellows maintaining clip from the steering box casing.

Turn the wheels hard over to the right, so that rack is moving towards left.

On the left side

Using the DIR 1306 device, lock up the rack in regard to the steering box casing.



In this position, dismount the joint body from the rack.

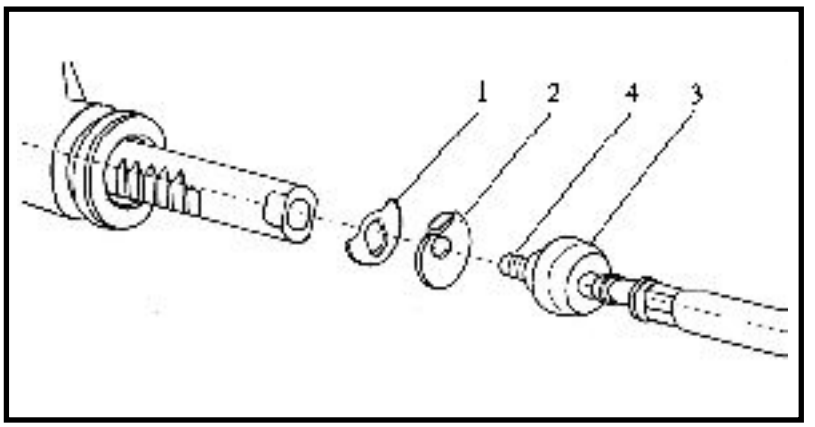
Remove the left steering rod.

On the right side, proceed in the same way.

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REMOUNTING

At each dismounting, it is **OBLIGATORY** the replacement of the limiter washer (**1**) as well as of the safety washer (**2**).



Mount in the rack : joint body (**3**), not before positioning the safety washer (**2**), the limiter washer (**1**) and oiling the threaded part (**4**) of the joint body with FIXAMED R 58-C.S.1/82 (not excessively).

After tightening to the required moment of the axial ball joint on the rack, bend the safety washer over one of the cuts made on the joint body.

By means of the **DIR 1306**, lock up the rack in regard to the steering box casing.

Tighten to the required moment of **5 daNm**, the joint body in the rack by means of the **DIR 505** wrench.

Mount the funnel ball joint in the steering knuckle arm, then tighten the nut to the required moment of **4 daNm**.

Position the steering at the middle point (wheels being in straight line position) in order to balance the air from bellows.

Mount the bellows in its channel from the steering box casing and secure it using a clip.

CHECKING

Slightly tighten by hand one of the bellows in order to check the other one inflation, in this way, the good air circulation inside the steering box is checked.

Check the steering geometry and adjust the parallelism if necessary.

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SPECIAL TOOLS	
P.F. 476	Device for ball joints depressing

TIGHTENING MOMENTS (daNm)	
Wheels screws	7.5
Steering ball joint nut	4
Steering box attachment screws on crossbeam	5
Cardan joint connection screws with column lower shaft	2.1

Disconnect the battery.
Loosen the front wheels screws.
Lift the vehicle by means of a two-column elevator.
Dismount the front wheels.

DISMOUNTING

In the engine compartment:
Cut the rubber bellows maintaining clip and push it towards cowl panel.
By means of the **PF476** device, depress the ball joints of the steering rods funnel from the steering knuckle.
Dismount:
- connection screw between the cardan joint of the steering column lower shaft and the steering rack gear shaft;
- steering box attachment screws on the crossbeam.

Detach the steering box assembled with the steering rods.

REMOUNTING

Perform the dismounting operations in the reverse order, observing the required tightening moments.
In case a new steering box is mounted, the parallelism is obligatory to be adjusted, observing the parallelism adjusting procedure described in **chapter 31.**

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ADJUSTMENT

When a noise is found in the area of the steering box pusher, it is obligatory to perform its correct adjustment.

1. Noise identification (clattering).

Hold by hand the rack in pusher's side and check the transversal clearance (up-down). A noise in the pusher's area might occur while driving, caused by a clearance followed by a noise (clattering).

If the clearance at the pusher is bigger than 0.31 mm, adjust the clearance and/or dismount the steering box and eliminate the cause.

2. Checking and adjustment of the pusher's clearance.

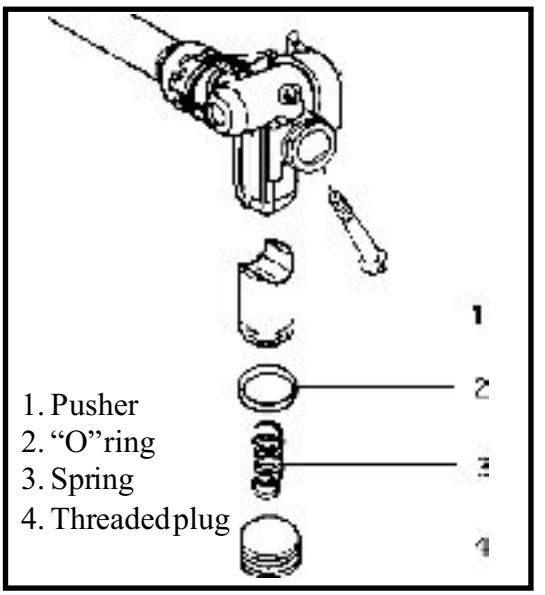
The pusher adjustment is to be performed taking into consideration both the rack wear and the pusher's wear:

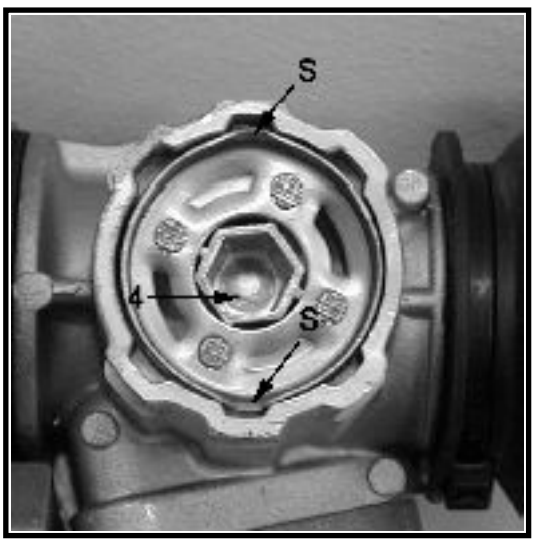
- bring the rack in the minimum radial runout position;
- position the feeler of a comparative gauge on the cylindrical part of the rack (opposite to the threaded part) in the area of rack exit from casing(gear side);
- rotate the gear on the whole rack length and establish the minimal runout point, where the value read on the gauge is minimal;
- adjust the comparing gauge to zero;
- by means of a 17 mm fixed wrench, rotate the rack from the opposite end until the pusher is in contact with the threaded plug(a higher wrench effort may be noticed for a reduced movement red on the comparing gauge);
- read the value shown by the comparing gauge which must be smaller than 0.31 mm.

The pusher clearance adjustment is performed in the minimal runout point by rotating the threaded plug (**4**) to a moment of **1± 0.2 daNm** and unscrewing ˘ rotations, then secure it by beading (caulking) in **"S"** area.

When mounting, put 23 ± 5 cm^3 grease **UM 185 Li2M** for : rack, gear, sealing ring and pusher's spring, inner surface of the threaded plug.

Check the operation and check also during driving if the steering wheel is returning at the straight line driving position (steering central point).





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Noise absorbant bushing

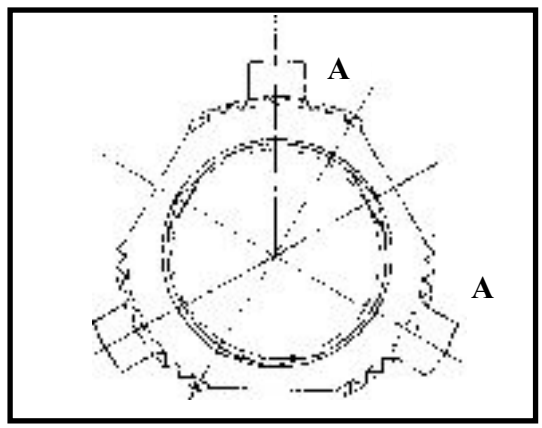
DISMOUNTING

Loosen the screws of the right front wheel.
Lift the vehicle by means of a two-column elevator.
Dismount the right front wheel.
Dismount :
-steering box casing protection bellows-left steering rod end;
-the right steering connected rod.
Rotate the steering wheel to the right (complete turn), the rack is withdrawing towards left.
Remove, by means of a screwdriver the used noise absorber bearing.

REMOUNTING

Carefully clean the rack and the noise absorber bearing seat and grease with special grease containing **MoS2** and then mount the new noise absorber bearing.
Position the pins **(A)** in their casing seats.
Rotate the steering wheel to the left until the rack stands out the bearing.
Remount on the rack:
- the steering connecting rod (safety washer and limiter washer are to be obligatory positioned on the threaded side of the joint body);
- protection bellows.

Check and adjust the parallelism, if necessary.



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Bellows

REMARK :
A damaged bellows is to be obligatory replaced with a new one.

BELLOWS MOUNTING

Bellows mounting is performed by means of a con-shaped device that is positioned on the connecting rod joint body (axial ball joint) for bellows easy sliding and avoid damaging

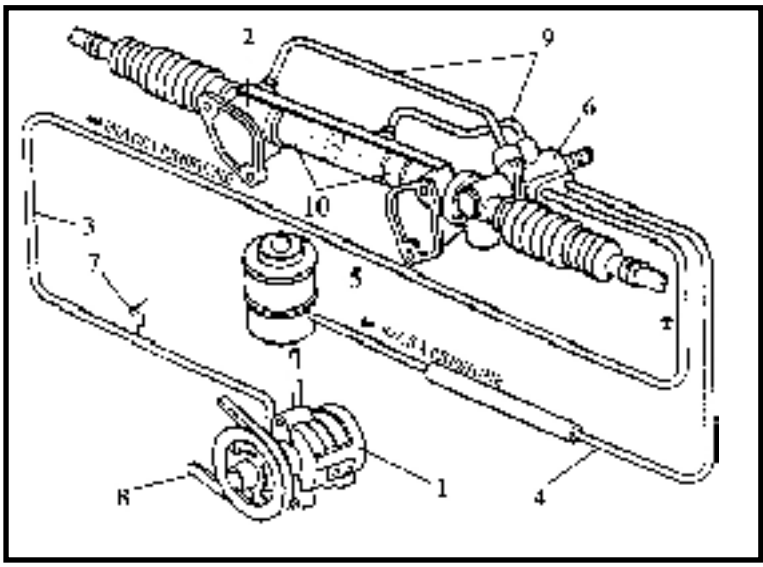
Put some **UM185 Li2M** grease on the bellows part in contact with the joint body (axial ball joint), to easy the bellows sliding.

Mount a new collar for bellows maintaining on the steering box casing.

REMARK :
It is OBLIGATORY to bring the steering in the straight line driving position of the front axle wheels (steering central point) in order to ensure the air balance inside the steering box.

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CONSTANT POWER STEERING (CPS)



1. Power steering pump
2. Power steering box
3. High pressure piping
4. Low pressure piping
5. Oil reservoir
6. Rotary valve
7. Pressure controller
8. Accessories belt
9. Rigid ducts
10. Steering box working chambers

The working principle of the **Constant Power Steering (CPS)** system, consists in steering hydraulic assistance by hydraulic fluid (oil) passing through a drawer (the two chambers **(10)** from steering box) with double effect and through a rotary valve (**6**) that is distributing the fluid through two pipes (**9**) towards the steering box (**2**) subject to the full turning direction of the directing wheels.

The hydraulic assistance is ensured by a pressure controller (**7**) attached on the high pressure pipe **(3)** and connected to the injection computer.

The injection computer is receiving information, during power steering operation, about the pressure value in "high pressure circuit" (which may be seen by means of the CLIP tester). The pressure value in "high pressure circuit" is depending of the pomp conducted pressure as well as of the used oil fluidity.

The more pressure is high, the power steering pump is absorbing more additional energy.

The power steering pump (**1**) is continuously providing in the circuit a constant hydraulic fluid (oil) flow, regardless the engine RPM, based on the fact that pump is driven by the accessories belt (**8**). In this case, the system has the generic denomination of " **Open Center System "**

REMARK:

The steering is not to be fully locked at maximum more than 45 seconds at an engine RPM of 2500 rot/min (risk of power steering pump damaging).

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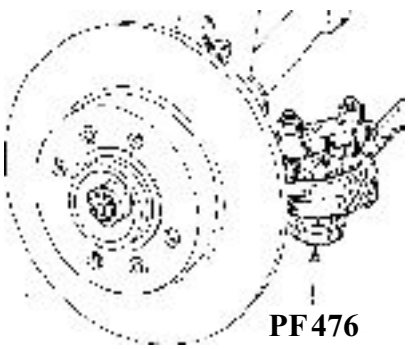
SPECIAL TOOLS	
MOT 453	Flexible piping pliers
P.F. 476	Device for ball joint depressing

TIGHTENING MOMENTS (daNm)	
DA-CA supply pipe attachment screw on power train	0.4
Attachment screw of steering box high pressure pipe-pump	2.1
Wheels screws	9
Steering ball joint nut	4
Steering box attachment screws on cross-member	5
Screws for pipes clamps attachment on power train	0.77
Screws for clamps attachment on steering box supports	3
Connection screws of the steering column lower shaft joint	1.4

DISMOUNTING

Dismount the battery.

Lift the vehicle by means of a two-column elevator.



PF 476

Dismount:

- engine shield;
- steering rods funnels ball joints by means of the **PF 476** device;
- connection screw between the steering column lower shaft joint and the steering box gear shaft, marking the joint position.



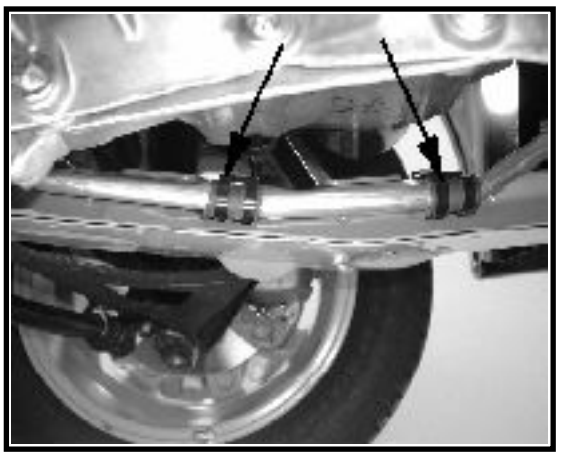
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Clamp the two flexible pipes(supply and low pressure) by means of the **MOT 453** device.



Dismount :

- clamps attachment for maintaining the low pressure pipe;



- connections of the high and low pressure from the steering box;



- low pressure piping (maintaining clip being previously dismounted);

Disconnect the oxygen sensor, in case of vehicles equipped according to **EURO III** norms.

- exhaust central collar; (under vehicle);
- anti-rocking steering rod from the cross member support and from the gearbox:



Push the descending tube towards vehicle front.

Dismount the four steering box attachment screws on the cross member.

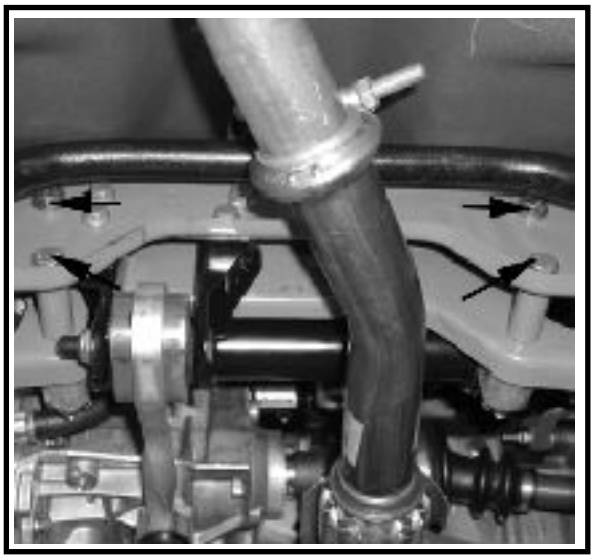
Remove the steering box through the right side (distribution side).

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REMARK :

It is forbidden to dismount from the power steering box the pipes between the rotary valve and the steering box.

When dismounting, the high and low pressure pipes are to be positioned with the connection screws downward oriented, in order to avoid contaminants penetration.



REMOUNTING

Mount:

- steering box
- steering rods ball joints in the steering knuckle arms;
- exhaust
- anti-rocking steering rod;
- cardan joint in the position marked at dismounting;
- high and low pressure pipes (remove **MOT 453** pliers), observing the required tightening moments;
- piping attachment collars;
- wheels;
- battery.

Refill the circuit with oil (full reservoir).

With stopped engine, easy act upon the steering wheel in both directions, so that rack is performing a complete double stroke.

Repeat the operation with started engine (oil pump operating), then fill up to the MAXI mark, the oil level in the reservoir.

Check and eventually adjust the parallelism.

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When an excessive rack clearance, followed by clattering in the steering box is occurring, before replacing the steering box, the pusher with rack is to be adjusted.

1. Noise (clattering) identification.

Lift the vehicle by means of a two-column elevator;

On the pusher side:

- dismount the bellows attachment clip on the steering box casing;
- push the bellow towards the steering rod;
- hold by hand the rack rod and check the transversal clearance (up- down).

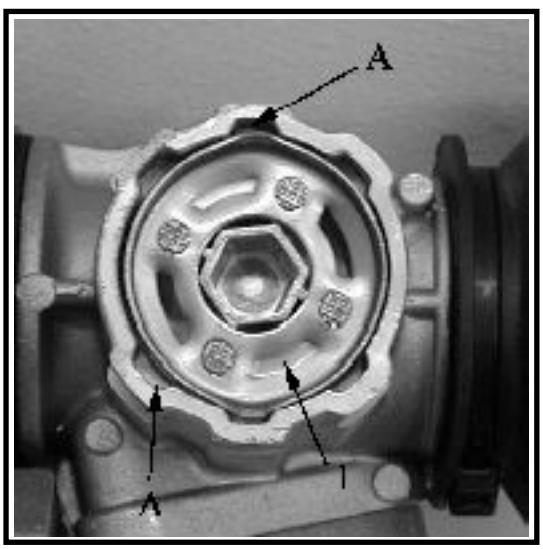
A clearance followed by a noise (clattering) is leading to a pusher noise, during driving.

2. Adjustment

Straighten the caulking (**A**) of the adjustment nut bead (**1**).

By means of a 10 mm hexagonal wrench, tighten the adjustment nut until there is no more clearance.

ATTENTION !
Do not tighten the nut more than 3 teeth.



Check if the rack is freely moving all the length.

Bend the adjustment nut bead in the two opposite slots of the steering box casing, ensuring in this way its unscrewing.

Position the bellows on the steering box casing and mount a new attachment clip.

Lower the vehicle from the elevator with wheels on the ground.

Check, during driving if the steering wheel is coming back to the steering center point.

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Power steering pump

SPECIAL TOOLS	
MOT 453	Flexible piping pliers
DIR 1083-01	Device for PDA pulley remounting
PS 1094	Bearing extractor

TIGHTENING MOMENTS (daNm)	
Screws for D.A. pump attachment	5
Screws for D.A. pump pulley attachment	0.8

Place the vehicle on a two-column elevator.

DISMOUNTING

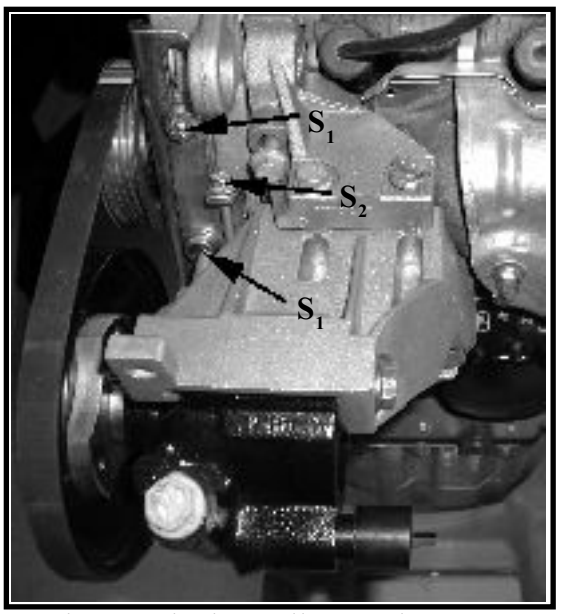
Disconnect the battery.

Drain the oil from DA circuit

Loosen the attachment screws (S_1) of the tightening clamp.

Dismount the adjustment screw (S_2) allowing the tightening clamp lowering.

Dismount the accessories belt.

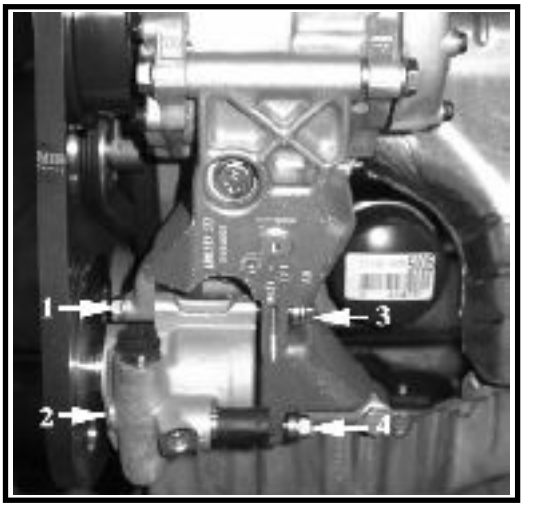


Dismount the three pulley attachment screws to the hub and extract the pulley.

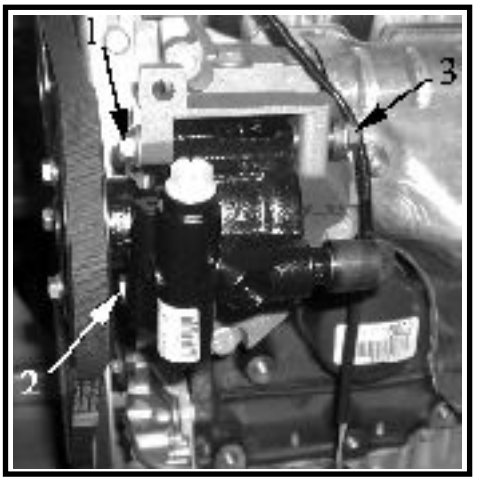
Disconnect from the power steering pump the supply piping and the high pressure piping.

Dismount the power steering pump attachments screws to the support:

- four screws in case of the DA/CA pump.



- Three screws in case of the DA pump without CA



REMOUNTING

Perform the dismounting operations in the reverse order, observing the following:

- the screws tightening sequence, i.e.:

- **1-2-3-4** - in case of the DA/CA pump;

- **1-2-3** - in case of the DA pump without CA, as well as the tightening moments.

Mount a new accessories belt.

Adjust the belt tension (see the method described in chapter **07 – Tensioning, belts, accessories**).

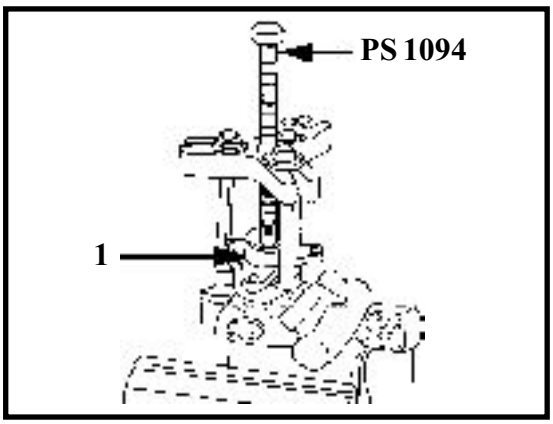
Perform the filling of the DA unit, then perform the unit purging (method described in chapter **05**).

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REMARK :
The replacement of the PDA hub is to be performed at working bench, by means of the Special tools previously described.

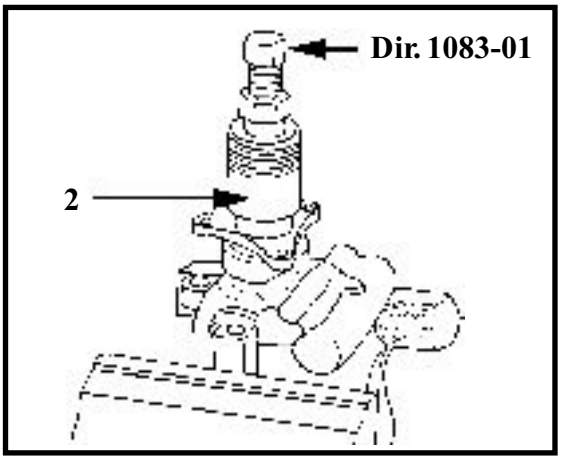
PULLEY HUB REPLACEMENT

Catch the pump in the working bench vice.
Attach the arms of the PS 1094 device on the hub.
Depress the hub.

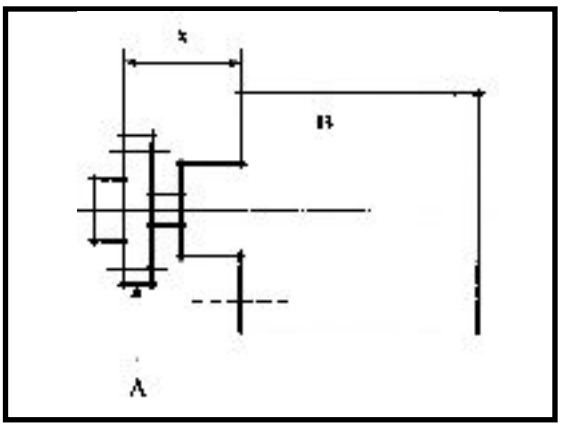


REMARK :
Insert a screw (1) between the pump shaft and the pushing rod of the depressing device.

Place the new hub on the pump shaft and press it by means of the **DIR 1083-01** device. Grease previously the shaft with a thin layer of **UM 185 Li2 M** type grease to facilitate the remounting.



REMARK :
Insert between DIR 1083-01 device and the hub, one spacer (2) of about 25 mm. **length.**



A – Hub
B – Power steering pump

Press the hub on the pump shaft, observing the value **X = 49.67 ± 0.2 mm**.

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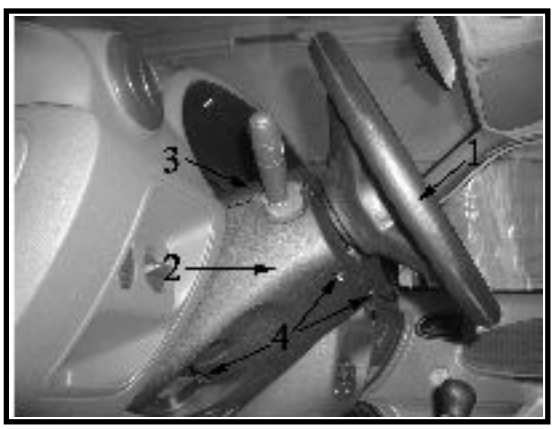
TIGHTENING MOMENTS (daNm)	
Steering wheel attachment screw	4.4
Steering column attachment screw on driving post	2.1
Connection screw steering column lower shaft - steering box gear shaft	2.1

DISMOUNTING

Disconnect the battery.

Dismount:

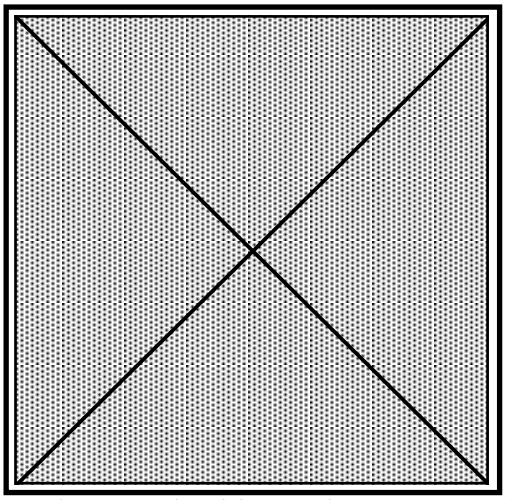
- steering wheel cover, clips attached;
- steering wheel attachment screw on the steering column upper shaft, by means of a Torx wrench **(T50);**
- steering wheel (**1**) not before ensuring that that front wheels are straight line disposed (steering at center point);
- half-cases (**2**) and (**3**) attached to the steering column by means of three screws (**4**).



Disconnect the contacts:

- lights, windscreen wiper;
- anti-theft mechanism.

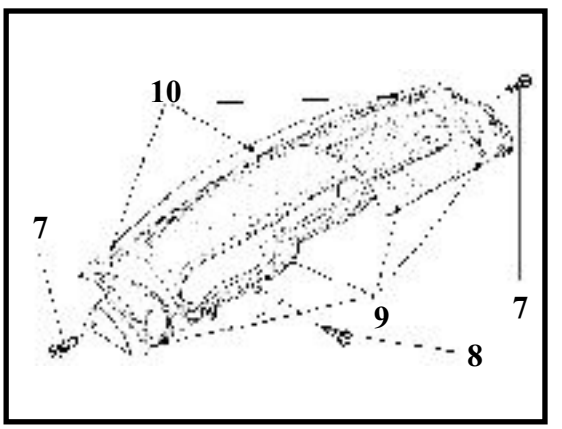
Loosen the screw (**5**) and dismount the control under steering wheel (**6**) from the steering column upper shaft.



Dismount the side attachment screws (**7**) of the upper part dashboard, by means of a **Torx** wrench (**T20**), "L" shaped.

Dismount the attachment screws (**8**) of the upper part dashboard from the lower part dashboard.

Detach from clips in points (**9**) the upper part dashboard.



Detach from clips the 3 attachment points (**10**) of the upper part dashboard from the windscreen lower cross-beam.

Swing over the upper part dashboard towards windscreen.

For the vehicles equipped with radio:

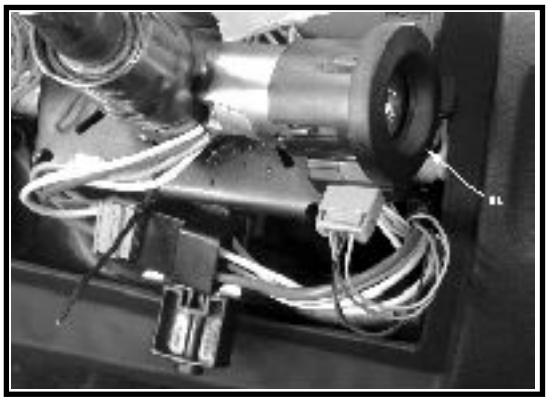
- dismount the radio from its support and disconnect the connectors.

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For vehicles equipped with central locking:

- disconnect the central locking connector.

Dismount the anti-starting bushing (**11**).



Dismount the instrument panel attachment screws.

Disconnect the four connectors of the instrument panel.



Dismount the instrument panel.

Dismount the aerating tube from the left side aerator as well as from the central climate maintenance unit.

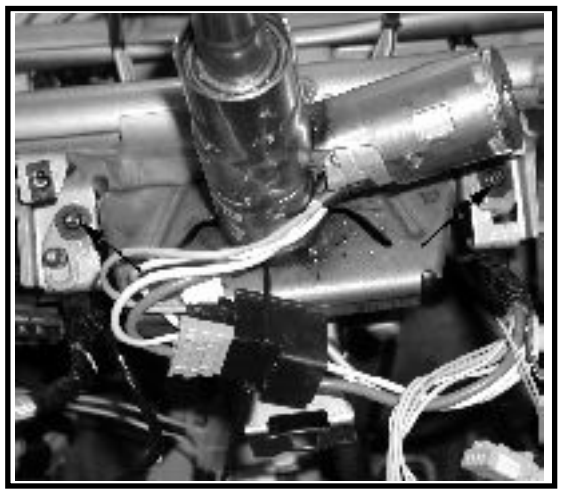
In the engine compartment:

Dismount the expansion vessel attachemnt nuts, move in such way the vessel so that you may access at the connection screw between the steering box gear shaft and the cardan end of the steering column lower shaft.

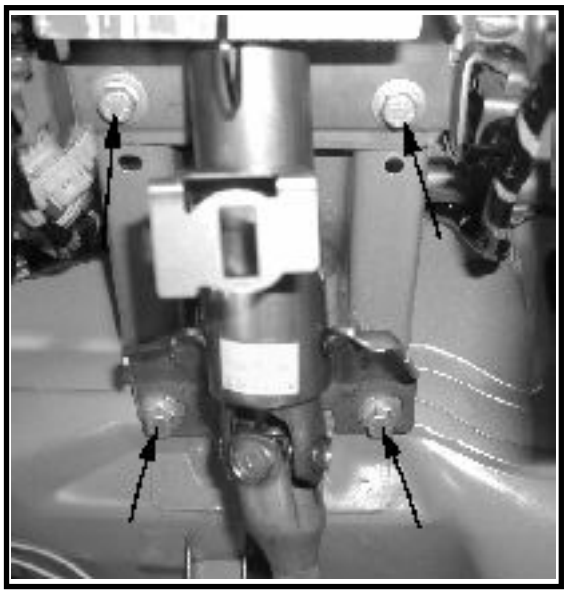
Dismount the connection screw, marking the joint position

In the passenger compartment:

Dismount the 2 screws attaching the steering column to the driving post upper part.



Dismount the 4 screws attaching the steering column to the driving post lower part.



Remove the steering column by pulling previously the sealing bellows from the cowl panel.

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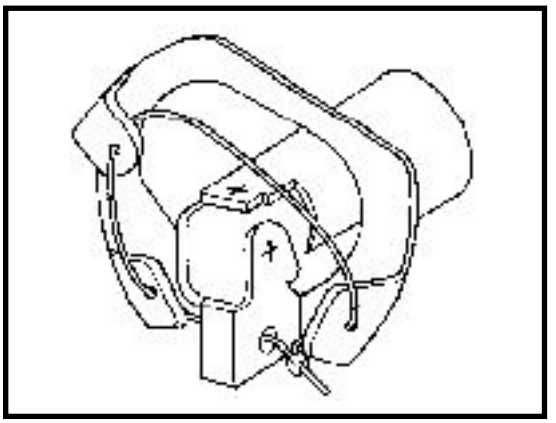
REMOUNTING

1. Manual steering column

Pass the cardan joint of the lower shaft through the cowl panel whole.

2. Power steering column

Pass the cardan joint of the lower shaft as well as the protection bellows through the cowl panel whole, having previously bound with a piece of cord, both the cardan joint end and the bellows eyes.



Cut the piece of cord, position the bellows on the cowl panel.

In both situations, continue with:

In the engine compartment:

Position the cardan joint end of the steering column lower shaft on the steering box gear shaft.

Fix in the position marked when dismounting, the connection screw between the steering column lower shaft and the steering box gear shaft, without tightening to the required moment.

In the passengers compartment :

Fix and tighten to the required moment the six screws attaching the steering column to the driving post.

Return in the engine compartment for tightening to the required moment, the connection screw between the steering column lower shaft and the steering box gear shaft.

For the other parts, remounting is done by performing the dismounting operations in the reverse order.

Take care when mounting the instrument panel, to correctly connect the electrical connectors.

Characteristics of the steering column mounting.

The straight in line driving position is ensured by unique positioning of the steering wheel on the column shaft.

Replace the steering wheel attachment screw after each dismounting.

Observe the required tightening moment for the steering wheel attachment screw (**4.4 daNm).**

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Steering connecting rods ..... 36 - 1
Manual steering box ..... 36 - 3
Steering box pusher ..... 36 - 4
Noise absorbant bushing ..... 36 - 5
Bellows ..... 36 - 6
General ..... 36 - 7
Power steering box ..... 36 - 8
Power steering box pusher ..... 36 - 11
Power steering pump ..... 36 - 12
Steering column ..... 36 - 14

36 36 - 1 STEERING ASSEMBLY Steering connecting rods
36 36 - 2 STEERING ASSEMBLY Steering connecting rods
36 36 - 3 STEERING ASSEMBLY Manual steering box
36 36 - 4 STEERING ASSEMBLY Steering box pusher
36 36 - 5 STEERING ASSEMBLY Noise absorbant bushing
36 36 - 6 STEERING ASSEMBLY Bellows
36 36 - 7 STEERING ASSEMBLY General
36 36 - 8 STEERING ASSEMBLY Power steering box
36 36 - 10 STEERING ASSEMBLY Power steering box
36 36 - 11 STEERING ASSEMBLY Power steering box pusher
36 36 - 12 STEERING ASSEMBLY Power steering pump
36 36 - 13 STEERING ASSEMBLY Power steering pump
36 36 - 14 STEERING ASSEMBLY Steering column
36 36 - 16 STEERING ASSEMBLY Steering column

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Brake pump

TIGHTENING MOMENTS (daNm)	
Rigid pipe connection	1.5
Brake pump attachment nut on servobrake	1.7
I.C.P. transducer (pressure drop indicator)	1
Purging screw	0.6

DISMOUNTING

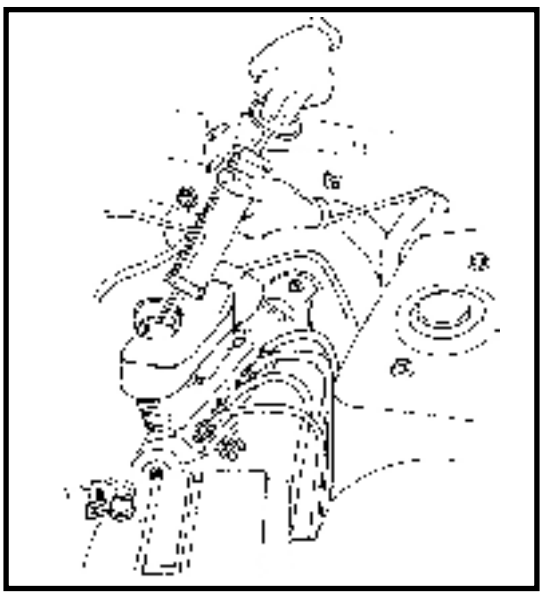
Disconnect the battery.

Drain the brake fluid reservoir.

Dismount the brake fluid reservoir off the brake pump (avoiding fluid leakage).

Dismount :

- the rigid pipe screws from the brake pump and mark their position;
- the two attachment nuts of the brake pump on the servobrake.



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Brake pump

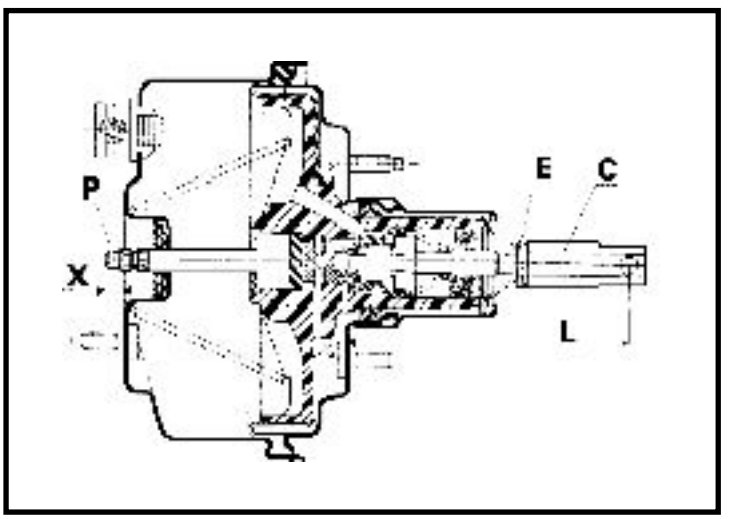
REMOUNTING

Perform the dismounting operations in reverse order.

Check the length of servobrake the pushing rod, value **X=9** $^{\blacksquare}_{-0,2}$ **mm** and correct it if necessary.

After assembling the brake pump with the fluid reservoir and filling with brake fluid, no leakage must occur in the surface of separation between the two elements.

IMPORTANT :
The I.C.P. transducer is mounted after the braking system purging.
ICP sub-assembly is not reparable



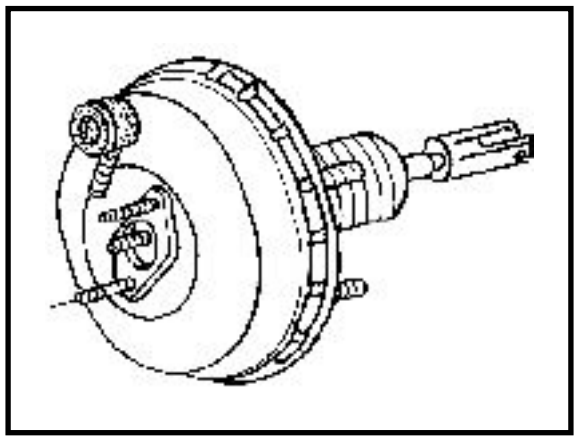
REMARK :
In case of failure of one of the braking system elements, proceed as follows:
- ***dismount ICP transducer;***
- ***repair the failure;***
- ***purge the braking circuit;***
- ***mount the ICP transducer.***

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TIGHTENING MOMENTS (daNm)	▽
Brake pump attachment nut on servobrake	1.7
Servobrake attachment nut on cowl panel	1.7

MASTER VAC 7 " SERVO MECHANISM

The " Master-Vac **7"** servobrake is a brake booster destined to reduce the driver's effort on the brake pedal.



OBSERVATION :

In case one circuit is damaged, the pedal stroke shall be longer, the braking being done only by the circuit still working.

ATTENTION !

The servobrake cannot be repaired.

The only items of the servobrake which are to be replaced are the air filter and the retainer valve.

DISMOUNTING

Disconnect the battery.
Drain the brake fluid reservoir.

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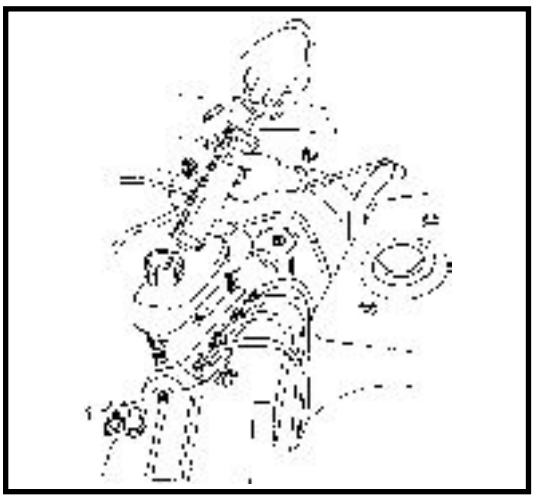
Servobrake

Detach the connection screws of the rigid brake ducts from the main brake pump.

Disconnect the electrical contact from ICP transducer.

Dismount the main pump from the servobrake.

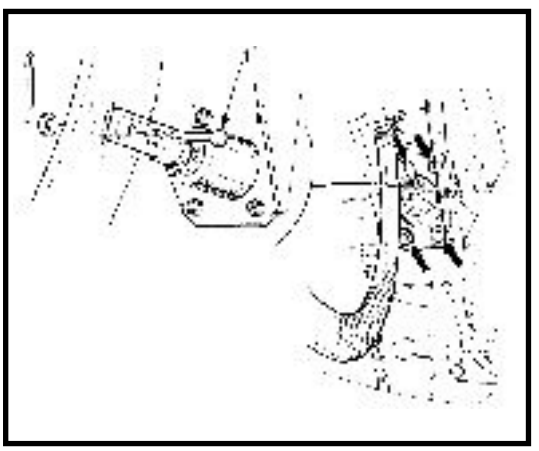
Disconnect the suction hose off the servobrake.



Dismount :

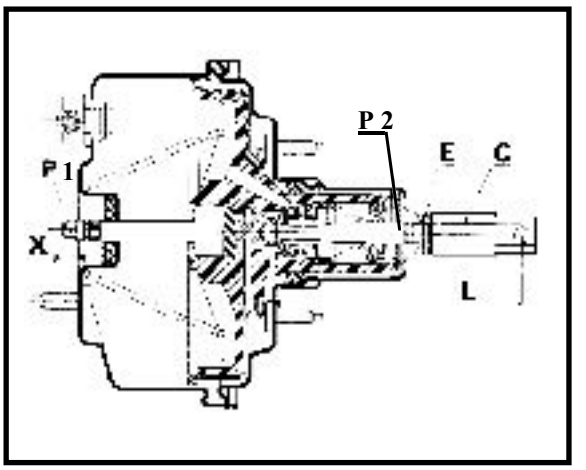
- the connecting shaft (**1**) between the coupling fork and the pedal ;
- the attachment nuts of the servobrake on cowl panel.

Dismount the servobrake .



REMOUNTING

Before remounting, check: and if necessary, perform the following adjustments:



1. The adjustment of the exit rod (**P1**) (brake pump side) which is obtained by acting on the nut which is one with the pushing rod, in order to obtain value $\mathbf{X = 9^{\ }_{-0.2}}$ **mm**.
This value is measured between the pushing rod end and the rest surface of the main cylinder on servobrake.

2. The adjustment of the pushing rod (P2) (brake pedal side) in order to obtain the value $\mathbf{L = 107.7^{\ }_{-0.5}}$ **mm**, which is obtained as follows:
   - unscrew the lock nut **E** and by;
   - act on the coupling fork (**C**) until obtaining the value $\mathbf{L = 107.7^{\ }_{-0.5}}$ **mm**;
   - lock the lock nut (**E**).

The L value, is to be measured between the axle of the coupling fork whole and the servobrake rest surface on cowl panel.

For remounting, perform the dismounting operations in the reverse order.

Dismount the ICP transducer from the brake pump.

Purge the brake circuit.

Mount the I.C.P. transducer

Mount the electric connector the I.C.P. transducer.

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SPECIAL TOOLS	
MOT 453	**Obturator**

TIGHTNESS CHECKING

ATTENTION!

The tightness of the servobrake is checked on the vehicle, with the hydraulic circuit under operation

Connect the vacuum meter between the servobrake and the inlet manifold by means of a " T " type connector.

The connecting hose of the vacuum meter shall be as long as possible.

Start the engine and let it idle run for **1min.**

Block the air suction hose by means of the **MOT 453** device.

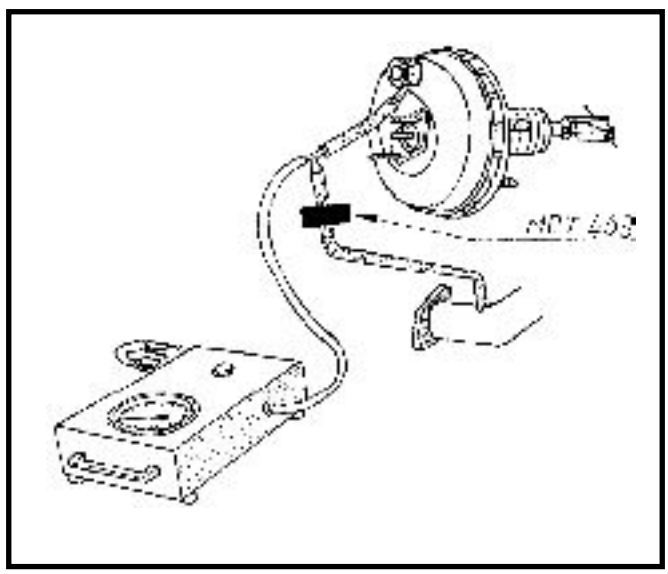
Stop the engine.

If air suction lowers with more than **33 mbar (25 mm Hg)** in a 15 seconds period, it means there is a loss at the retainer valve (replace the valve) or at the servobrake membrane (replace the servobrake).

Dismount the **MOT 453** device.

Dismount the vacuum hose.

Reinstate the connection between the servobrake and the inlet manifold by means of the vacuum hose.



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DISK FILTER REPLACEMENT

DISMOUNTING

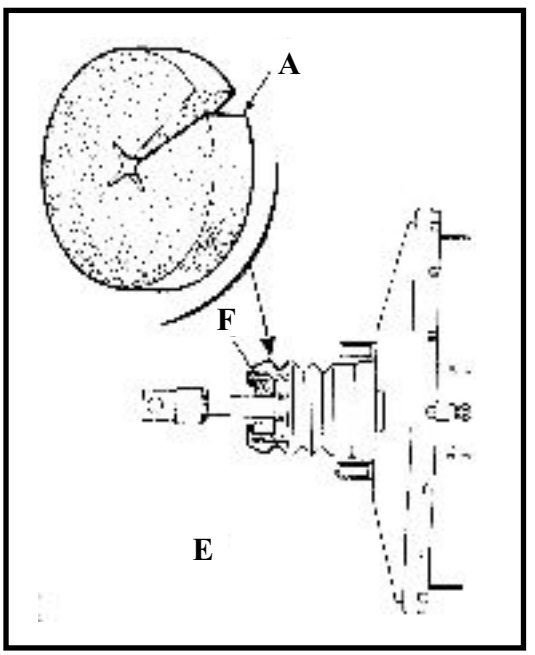
Dismount the servobrake off the vehicle.
Loosen the lock nut (**E**) and dismount:
- the coupling fork
- the lock nut.

Remove the disk filter (**F**).

REMOUNTING

Mount:
- the new disk filter
- the lock nut;
- the coupling fork.

Adjust the value **L = 107.7** $^{\blacksquare}_{-0.5}$ **mm.**
Tighten the lock nut E on the coupling fork.
Mount the servobrake on the vehicle.
Purge the braking circuit.



RETAINER VALVE REPLACEMENT

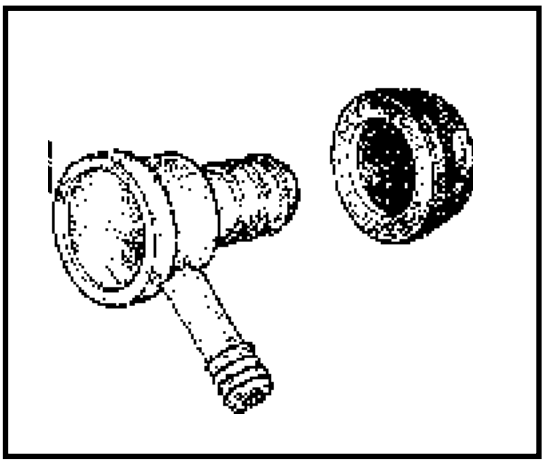
The operation is performed without dismounting the servobrake off the vehicle.

DISMOUNTING

Disconnect the connection of the air suction hose with the servobrake retainer valve.

Dismount the valve by rotating and then pulling it.

Dismount the retainer valve gasket.



REMOUNTING

Check the state of the retainer valve gasket and replace it if necessary.

Mount the new retainer valve gasket.

Attach and mount the new retainer valve.

Connect the air suction hose.

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Handbrake - adjustment

The adjustment of the handbrake shall be performed with the vehicle lift on a two-column elevator.

Note :

The adjustment is obligatory performed anytime the brake shoes or secondary cables have been replaced.

Release the control lever of the hand brake (release position)

Tighten the nut (**1**) until the shoes lining come lightly into contact with the brake drum.

The adjustment shall be performed so that is insuring a hand brake lever stroke of min. 12 teeth until the blocking of the wheels.

Lower the vehicle from the elevator.



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Handbrake control lever

TIGHTENING MOMENTS (daNm)	
Attachment screws of the handbrake lever on central floor	1.2

DISMOUNTING

Disconnect the battery.

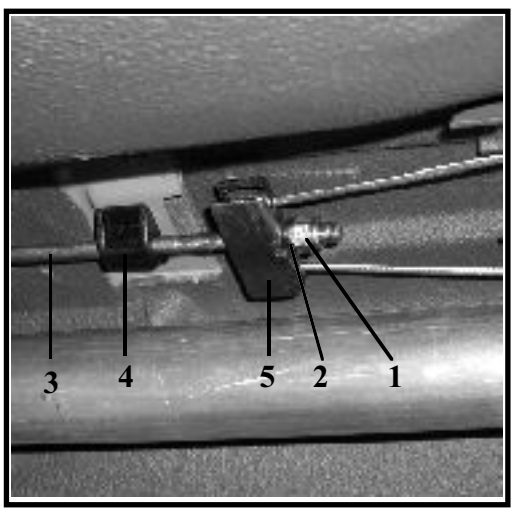
Release the hand brake control lever (released position).

Lift the vehicle by means of a two columns elevator;

Detach the rudder bar fork (**5**) from the end rod (**3**) by unscrewing the lock nut (**1**) and remove the ball-ended washer (**2**).

Remove the secondary cables ends from rudder bar seats.

Detach from clips the rod (**3**) from rudder bar (**4**)



Lower the vehicle from the elevator and inside the vehicle dismount:

- seat;
- carpet attachment clips in the rear side area
- inner attachment of the left/right middle pillars coverings.

Move the front seats backwards and dismount the attachment screw **(6)** of the handbrake control on the central floor.

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Handbrake control lever



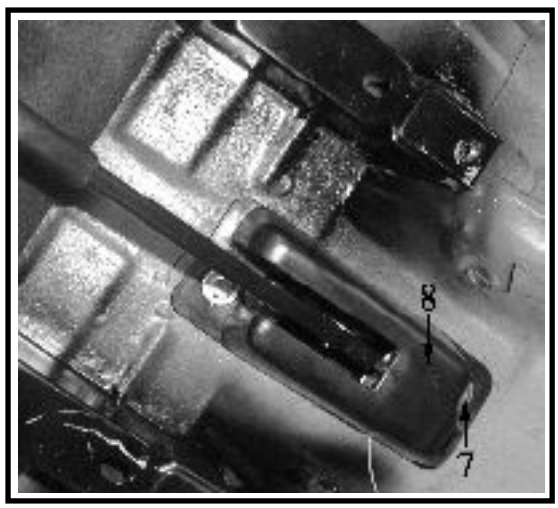
Move the seats ahead and dismount:

- safety belts lower attachment screws;
- attachment screws of the front safety belts locks and remove them.

Clear the cockpit carpet towards front seats.

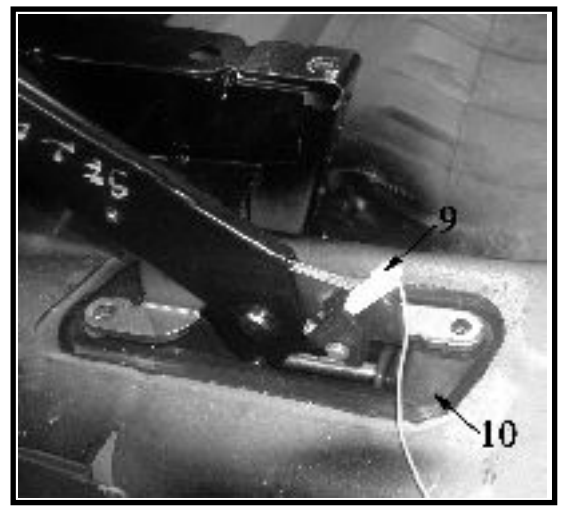
Dismount the handbrake control attachment screw (**7**) on the central floor.

Remove the upper casing of the handbrake (**8**).



Disconnect handbrake contact (9).

Take off the assembly handbrake.



REMOUNTING

Grease the shafts with **UM 185 Li 2M** grease.

Perform the dismounting operations in the reverse order, taking care to apply a sealant material layer on the outline of lower casing of the handbrake lever assembly

Readjust the handbrake.

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SECONDARY CABLE - REPLACEMENT

SPECIAL TOOLS	
Ro 441	Wheel drum cover tongs
Fr.600	Hub extractor

TIGHTENING MOMENTS (daNm)	
Wheel attachment screw	7.5
Steering knuckle nut	16.5

DISMOUNTING

Disconnect the battery.

Loosen the rear wheels attachment screws.

Release the hand brake control lever (release position).

Lift the vehicle by means of a two-column elevator.

Detach the rudder bar fork from the end rod by unscrewing the lock nut **(M12 x 1.25)** and remove the ball-ended washer.

Remove the secondary cables ends from rudder bar seats.



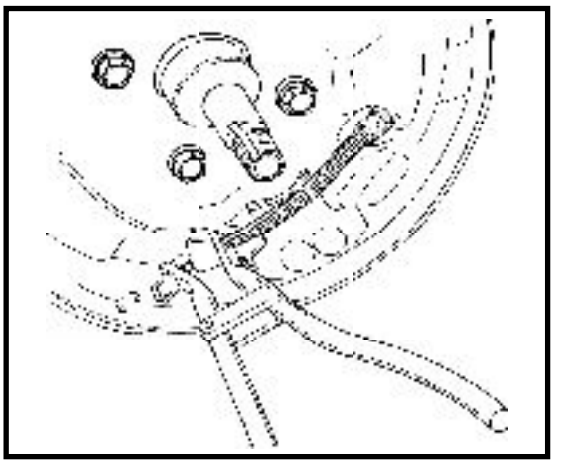
Dismount the two rear wheels.

Dismount the brake drums (see chapter **33 – Rear axles elements**).

Remove the secondary cables stops from the central floor.

Dismount the sheathe stops from the brake plates.

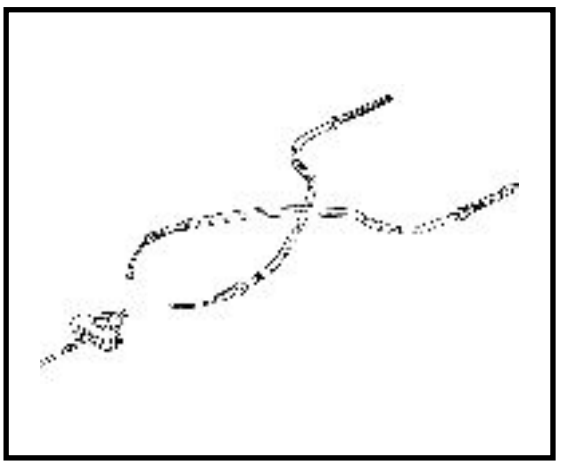
Remove the secondary cables.



REMOUNTING

Grease the cable with **UM 185 Li 2M** grease

Perform the dismounting operations in the reverse order.

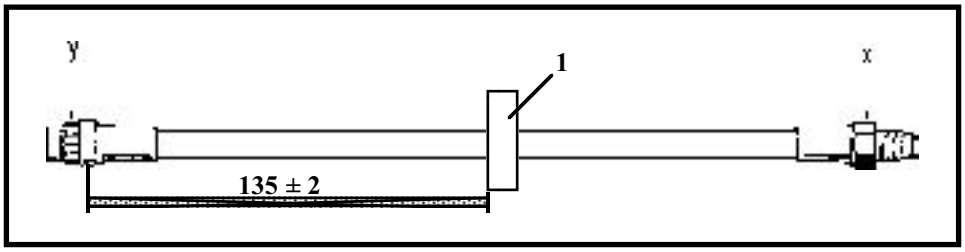


Adjust the drum clearance (see chapter **33- Rear axles elements**").

Adjust the handbrake control lever stroke.

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TIGHTENING MOMENTS (daNm)	
X (flexible on caliper)	2.0
Y (attachment screw of the rigid pipe on the flexible	1.5

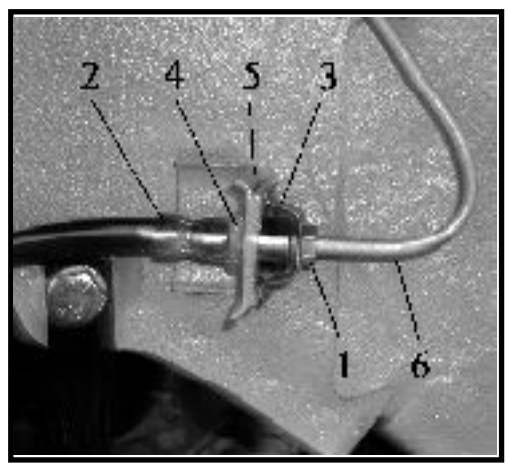


IMPOSED PRECAUTIONS TO BE RESPECTED WHEN DISMOUNTING–REMOUNTING A RECEIVER OR A BRAKE FLEXIBLE HOSE

Due to security reasons, in order to avoid brake flexible hose twisting and the risk to get in contact with the suspension elements, it is necessary to observe the following operations sequence, as well as the flexible attachment on the wing lining by means of a stopper, positioned at **135 ± 2 mm**, value to be measured from the connection screw of the rigid pipe with the flexible hose.

DISMOUNTING

Dismount the connection (**1**) of the rigid pipe (**6**) from the flexible hose (**2**) till the moment when the spring (**3**) is relaxed, having releasing the splinted area (**4**) of the sustaining support (**5**).



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Unscrew the flexible from the caliper and after that from the connection with the rigid pipe.

REMOUNTING

Assemble the caliper with the caliper fork.

Mount the caliper wedges and then tighten to the required moment the flexible on the caliper.

The flexible hoses must be tighten to the required moment with the rigid pipes, when the front axle is in the position:

- symmetric wheels (mounted suspension);
- front axle in straight line.

REMARK :

Position the hexagonal area (4) of the flexible in the sustaining support (5) so that it is not mounted twisted.

Mount the spring (3) and the connection of the rigid pipe on the flexible hose, observing the required tightening moment.

Purge the brake circuit.

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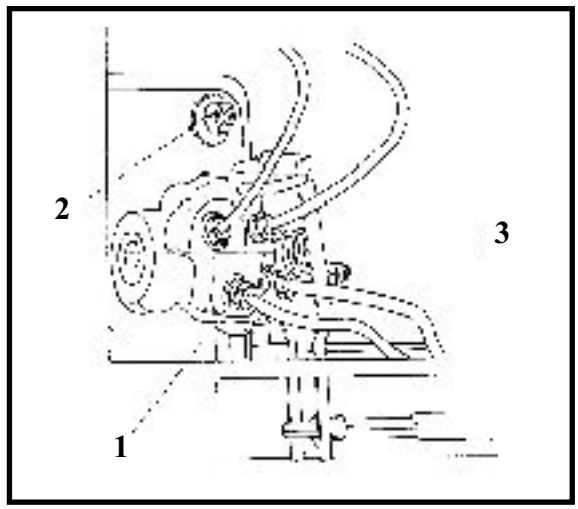
Brake pressure controller

REMARK :
Brake pressure controller is not to be repaired.

TIGHTENING MOMENTS (daNm)	
Attachment nut of the pressure controller assembly on the carriage body	**1**
Connection screws of the rigid pipe on the pressure controller	**1.5**

DISMOUNTING

Drain of fluid, the braking circuit.
Lift the vehicle by means of a two-column elevator.
Dismount the connection screws (**1**) of the rigid piping on the pressure controller.
Dismount the attachment nuts (**2**) of the pressure controller support on the carriage body.
Remove the support together with the pressure controller from the carriage body.
Dismount the pressure controller off the support.



REMOUNTING

Remount:
- pressure controller attachment screws on the support;
- attachment nuts of the pressure controller assembly on the carriage body;
- connection screws of the rigid piping on the pressure controller, observing the required tightening moments.

Purge the braking circuit.
Adjust the pressure controller.

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ADJUSTMENT OF THE BRAKE PRESSURE CONTROLLER FOR THE PARALLEL BRAKING SYSTEM

SPECIAL TOOLS	
FR 501	Purging device

TIGHTENING MOMENTS (daNm)	
Adjustment nut	0.15

Imposed conditions:

- the vehicle on wheels
- empty trunk
- one person on board

ADJUSTMENT METHOD

Mount the flexible connection of the **FR501** device at the purging screw of one rear wheel cylinder.

Purge the manometer.

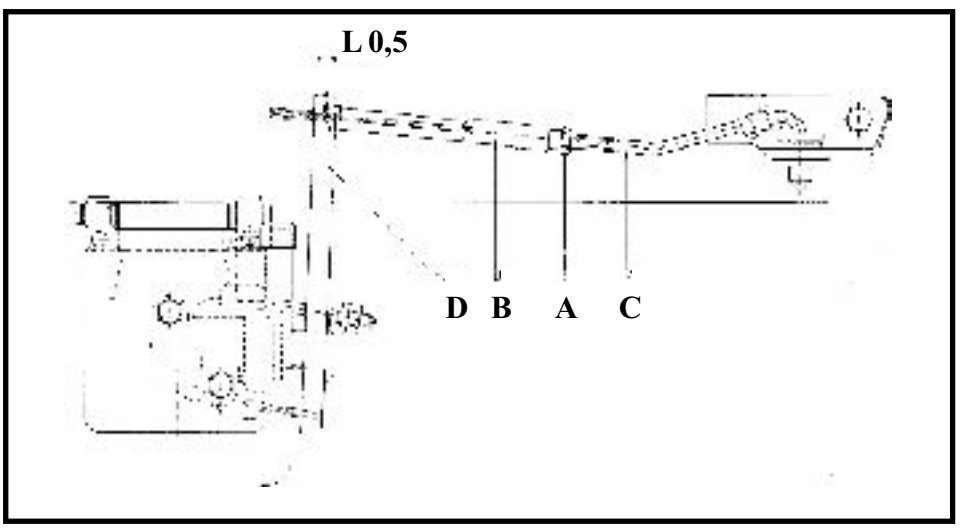
Push the brake pedal to enable reading several times the limiting pressure obtained on the rear wheels cylinders.

Unscrew the adjustment nut (**A**) to distance it from the pushing rod end (**B**).

Act upon the rod end (**B**):

- by unscrewing it towards the pushing rod (**C**) in order to increase the pressure in the rear circuit;
- by screwing it towards the pushing rod (**C**) in order to decrease the pressure in the rear circuit.

Tighten to the required moment (**0.15damn**) the adjustment nut (**A**) locked with the pushing rod end (**B**) so that between the lever end and the lever (**D**) a clearance of **L = 0.5 mm** to be ensured.



Check several times the limiting pressure obtained on the rear wheels cylinders, which must be between **28-30 bars**.

Dismount the manometer and purge the braking circuit.

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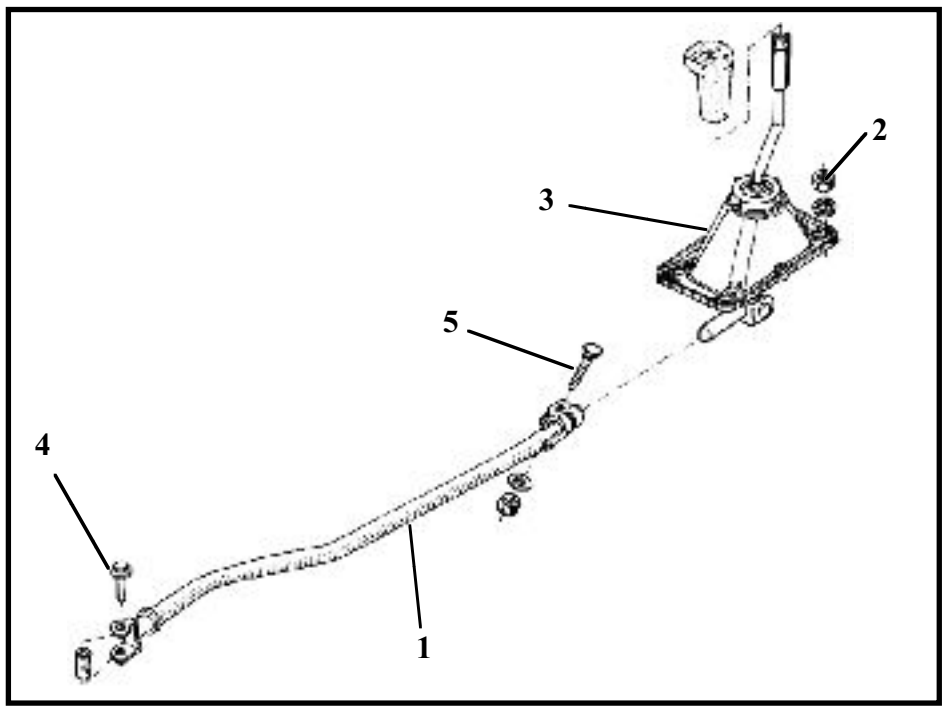
DISMOUNTING

The dismounting of the gears changing lever shall be performed after dismounting the central console (see chapter **58 – " Inside accessories"**).

Dismount under the vehicle the control lever (**1**).

Dismount inside the vehicle the four attachment nuts (**2**) of the control case.

Dismount the assembly composed of control case (**3**) and gears control lever.



REMOUNTING

Perform the dismounting operations in the reverse order.

Tighten to the required moment:

- the control case attachment nuts (**2**)---------- **1.2 daNm**
- the control bar connection screw (**4**) with the GB connecting rod ----- **2.7 daNm**
- the connection screw (**5**) of the control bar with the control lever ---- **1.2 daNm**

Grease the parts of the joint composed of control bar and GB connecting rod with **MOLYKOTE 33M** grease.

Introduce in the protection bellows aprox. **10 ml** of grease.

ATTENTION!

The tightening of the connection screw (5) between the control bar and the control lever shall be performed after adjustment of the gearbox control.

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SPECIAL TOOLS	
CV 550	**Linkage adjusting device**

GEARS CONTROL ADJUSTMENT

This is to be performed after mounting the engine-gearbox assembly and the assembly lever-control case every time when :

- dismounting of the engine-gearbox assembly the control bar or the assembly lever-control case;
- establishing of failures such as: gear change impossibility or unexpected gear uncoupling, gears blocking.

For the gear control adjustment the **CV 550** device is to be used.

Mount the **CV 550** device on the assembly lever- control case.

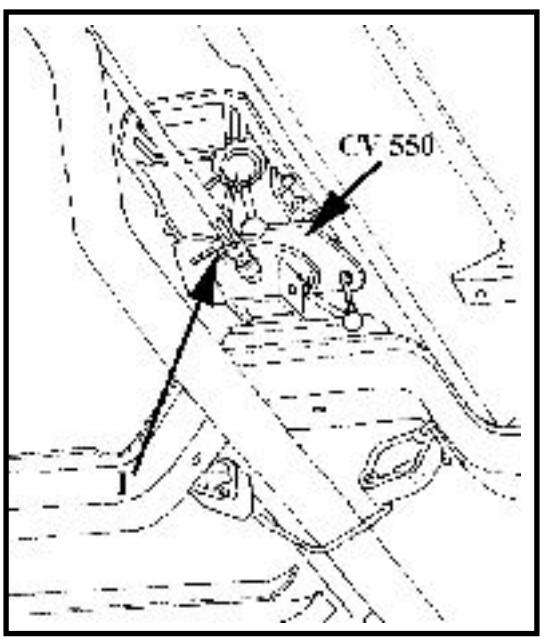
Attach the control bar to the control lever end.

Place the gear lever in the device seat and fix it in this position by means of the device handle.

Tighten the attachment screw **1** of the bar to the lever at the required moment of **1.2 daNm**.

Dismount the **CV 550** device from the control box.

Check the gears coupling

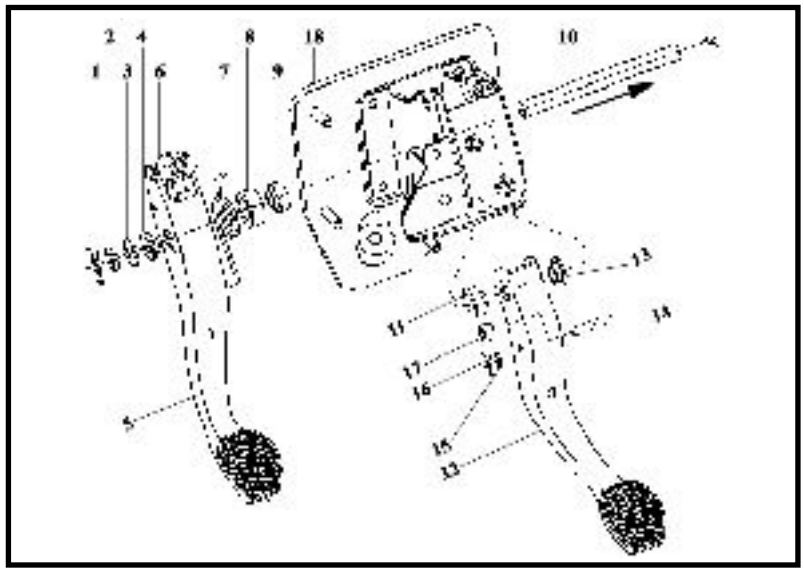


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CLUTCH PEDAL

DISMOUNTING

Release the clutch cable from the pedal cam (**6**) (after releasing it from clutch control fork).



Dismount the safety lock (**1**) together with the washers (**2**) and (**3**).
Push the pedals shaft (**10**) in the arrow direction.
Release the clutch pedal (**5**) together with the bushing (**4**).

BRAKE PEDAL

Dismount:

- actuating spring (**7**) (which is attached with one end on the clutch pedal, and the other one on the pedals support (**18**));
- bushings (**8**), (**9**) and (**11**);
- pin (**16**) together with the washer (**15**);
- shaft (**14**) connecting the brake pedal with the servobrake connection fork.
- pedals shaft (**10**);
- brake pedal (**12**) together with bushing (**13**) and (**11**).

REMOUNTING

Remounting of the brake and clutch pedals is done by performing the dismounting operations in the reverse order.

Adjust the clutch control (see chapter **37 – " Clutch control adjustment").**

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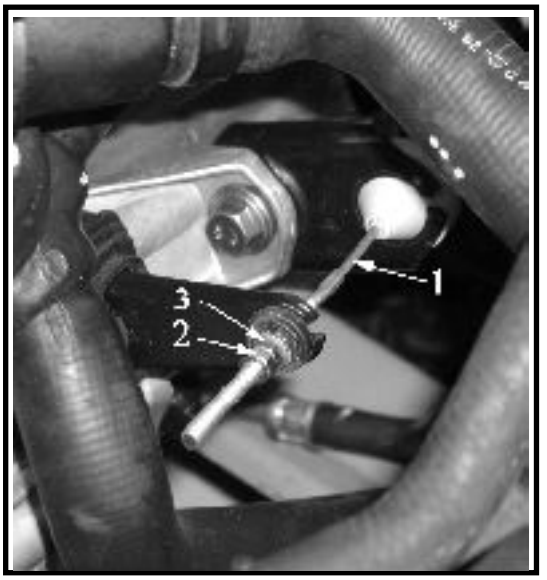
Clutch cable

TIGHTENING MOMENTS (Nm)	
Clutch cable counter nut	8

DISMOUNTING

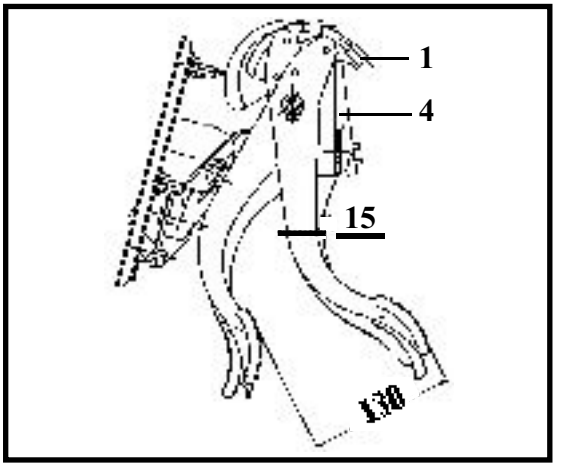
In the engine compartment:

- release the clutch cable (**1**) from the clutch control fork.
- detach from carriage body clips the clutch cable.



In the cockpit:

- release the clutch cable (**1**) from the clutch pedal cam and depress it from the pedals support.



REMOUNTING

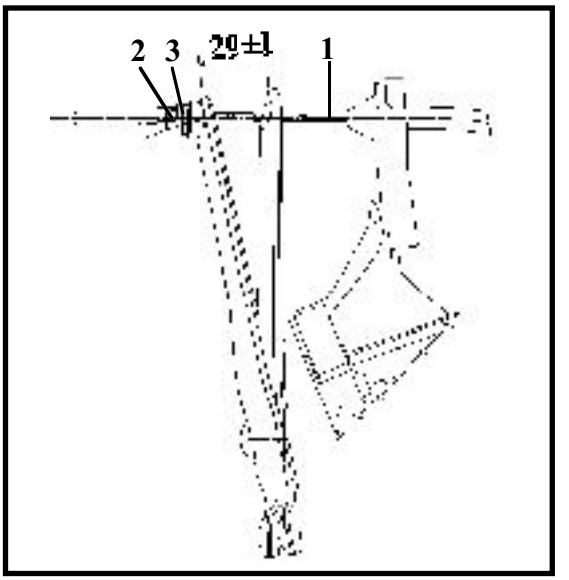
Perform the dismounting operations in the reverse order.

Adjust the clutch control

CLUTCH CONTROL ADJUSTMENT

In order to adjust the clutch pedal stroke, proceed as follows:

- place a gauge to ensure the 15 mm clearance between the pedal and the pedals support (**4**);
- tighten the nut (**3**) on the clutch cable end, until obtaining a stroke of **29 ± 1 mm** at the clutch disengaging fork by acting upon the clutch pedal;



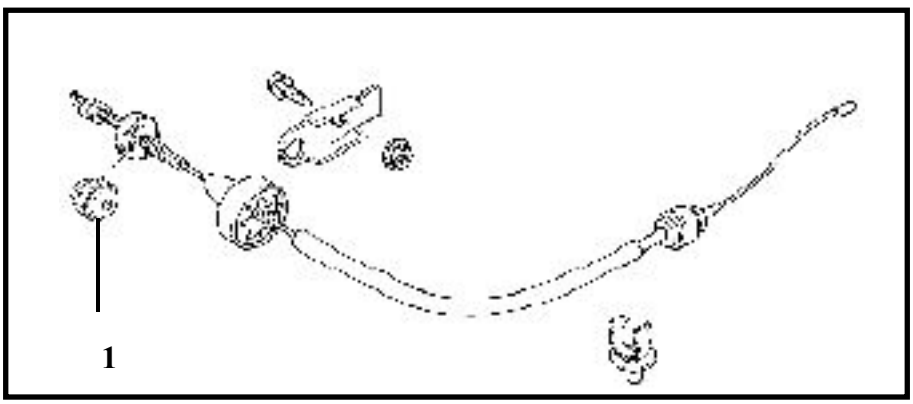
- tighten the counter nut (**2**) to the required moment of **8 Nm.**

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REPLACEMENT OF CLUTCH CABLE BUFFER

DISMOUNTING

Dismount the nut and the lock nut from the clutch cable end.
Mount the buffer (**1**).



REMOUNTING

Remounting is done by performing the dismounting operations in the reverse order.
Adjust the clutch control (see chapter **37 – " Clutch control adjustment").**

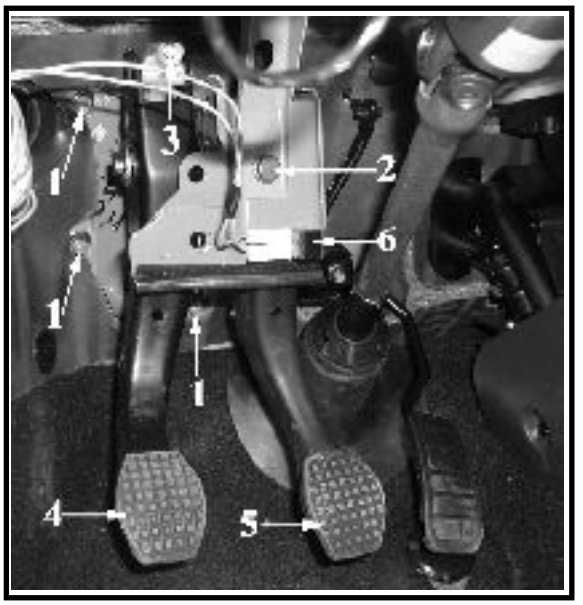
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Pedals support

DISMOUNTING

Disconnect:
- battery;
- stop contact connectors.

Dismount:
- clutch cable (**3**) from the pedal cam (after it has been released from the clutch control fork);
- servobrake (**see page 37 – 5**);
- pedals support attachment nuts (**1**) on the cowl panel;



- attachment screw (**2**) of the pedals support to the welded support of the driving post cross-beam;
- clutch pedal (**4**);
- brake pedal (**5**);
- stop contact (**6**).

Release the pedals support.

REMOUNTING

Perform the dismounting operations in the reverse order.

Adjust the clutch control (see chapter **37 – Clutch control adjustment**).

Check the operation of the stop contact.

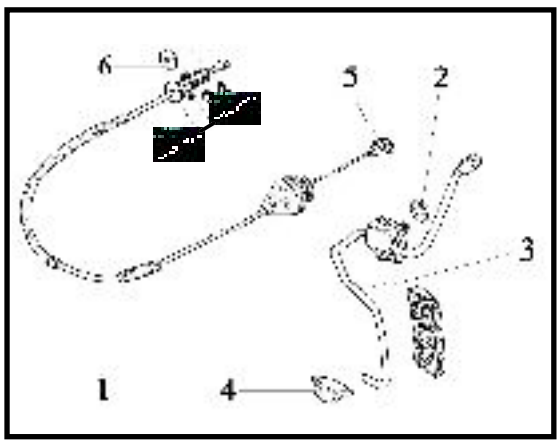
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ACCELERATIONPEDAL

TIGHTENING MOMENTS (daNm)	▽
Pedal bearing attachment nut	0.8

DISMOUNTING

Detach from clips the cable from the acceleration pedal (**3**) by harpoon (**5**) compressing.



Dismount the bearing attachment nut (**2**) and release the pedal.

REMOUNTING

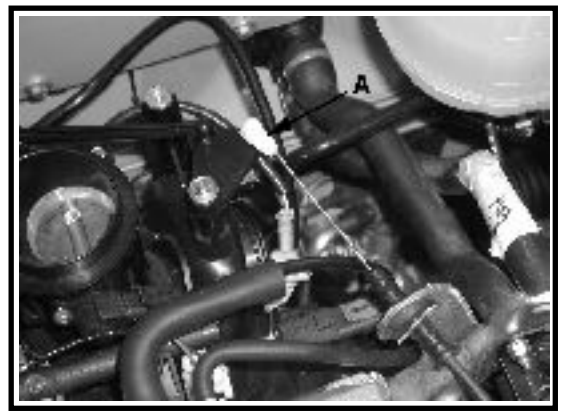
Perform the dismounting operations in the reverse order, taking into consideration the following:

- before bearing (**6**) closing, grease the contact parts with the pedal and check if the pedal rotation in the bearing is done without noises or locks;
- adjust the pedal stroke at the "maximum" position of the valve, which is obtained by pushing the pedal until pressing on the limiting part (**4**).
- the tightening moment of the pedal bearing attachment nut is of **0.8 daNm**.

ACCELERATIONCABLE

Detach from clips the cable from the acceleration pedal (**3**) by harpoon (**5**) compressing.

Release the acceleration cable (**1**) from the valve lever (**A**).



Detach from clips the acceleration cable and release it.

REMOUNTING

First attach the acceleration cable to the valve lever (**A**), and then attach by clips the other end on the acceleration pedal arm.

Push the acceleration pedal until pressing on the limiting part (**4**) (**2-3 pushing**). In this position, the length adjustment is done.

In case of the buffer replacement (**6**), the clip from the cable is to be placed at a **34 mm** position and after that, the a.m. adjustment is to be performed.

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REPAIR MANUAL

DACIA SOLENZA

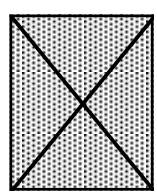
RM 525-2 BODY
ENGINE: E7J
GERBOX: JH3
TAPV: B41A, B41B, B41C

The reparation methods prescribed by the manufacturer in the present document are established subject to technical specifications in force at the document issuing date.

These are subject to modifications brought by the manufacturer at the fabrication of different assemblies, subassemblies or accessories of its vehicles.

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4 Body

40 GENERAL

Lower structure composing elements..... 40-1
Upper structure composing elements..... 40-2
Carriage body removable elements..... 40-3
Openings clearance..... 40-4
Repairing general conditions 40-9
Welding types and parameters 40-10
Collision diagnosis..... 40-12
Carriage body checking..... 40-16

41 LOWER STRUCTURE

Front longitudinal girder..... 41-1
Front anti-shock cross member..... 41-3
Rear longitudinal girder..... 41-4

42 FRONT UPPER STRUCTURE

Front wing..... 42-1
Front wing lining..... 42-2
Radiator upper cross member..... 42-3
Headlamp support..... 42-4
Windscreen lower cross member..... 42-5
Driving post cross member..... 42-6

43 SIDE UPPER STRUCTURE

Front pillar..... 43-1
Middle pillar 43-2

44 REAR UPPER STRUCTURE

Rear lower panel 44-1
Rear lamp support 44-2
Inner wheel passage..... 44-3
Side panel 44-4

45 TOP OF BODY

Roof 45-1
Windscreen frame 45-2

46 BODY PROTECTION

Engine shield..... 46-1

47 LATERAL OPENINGS

Rear door / Front door..... 47-1

48 NON – LATERAL OPPENINGS

Front bonnet..... 48-1
Hatchback 48-2

5 Mechanisms and accesoires

51 MECHANISMS OF LATERAL OPENINGS

Front door-opening mechanism withelectric control 51-1
Front door-opening mechanism withmanual control 51-2
Rear door-opening mechanism with electric control..... 51-3
Rear door-opening mechanism with manual control 51-4
Front door electric window regulator..... 51-5
Front door manual window regulator..... 51-6
Rear door window regulator 51-7
Lock 51-8

52 MECHANISMS OF NON LATERAL OPENINGS

Front bonnet lock..... 52-1
Hatchback lock 52-2
Pneumatic balancing device 52-3

54 GLASSES

Windscreen glass 54-1
Hatchback glass..... 54-3
Front door glasses..... 54-4
Rear door glasses 54-5

55 OUTSIDE PROTECTIONS

Front bumper..... 55-1
Rear bumper..... 55-2
Hatchback handle ornament..... 55-3

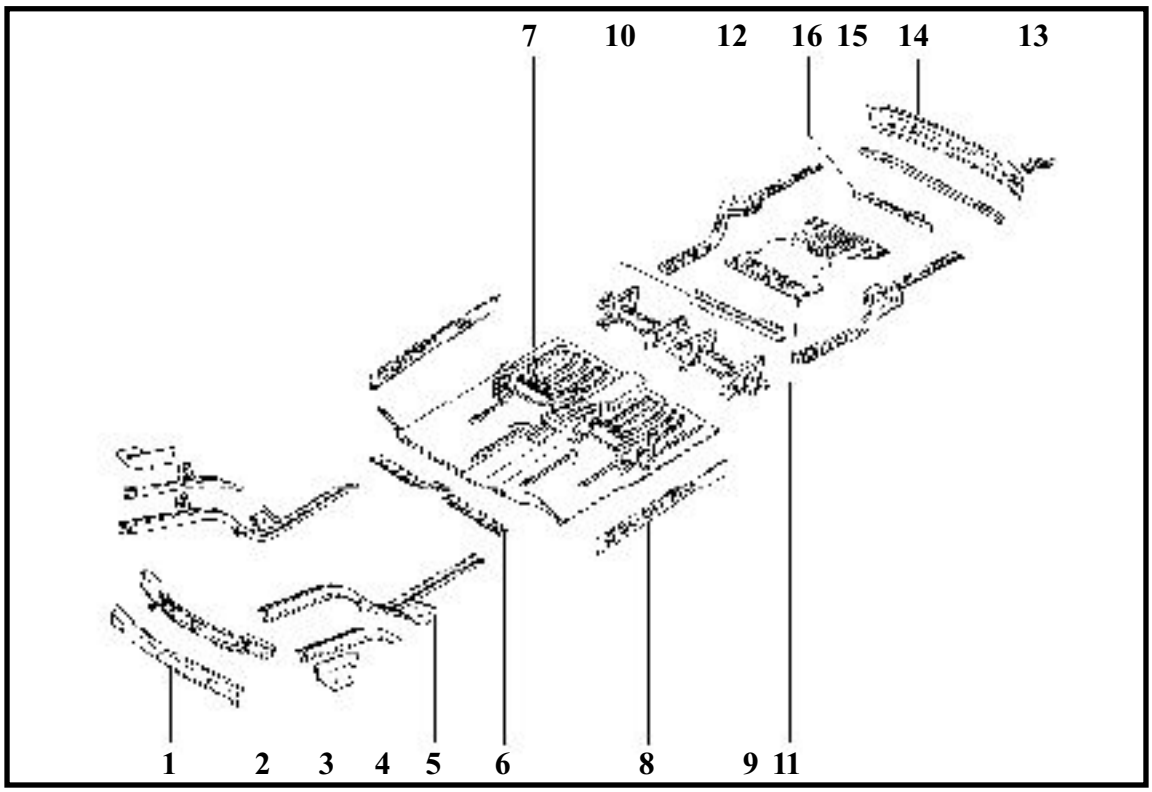
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Front grill..... 55-4
Aileron..... 55-5
Side ornaments..... 55-6

56 OUTSIDE ACCESSORIES

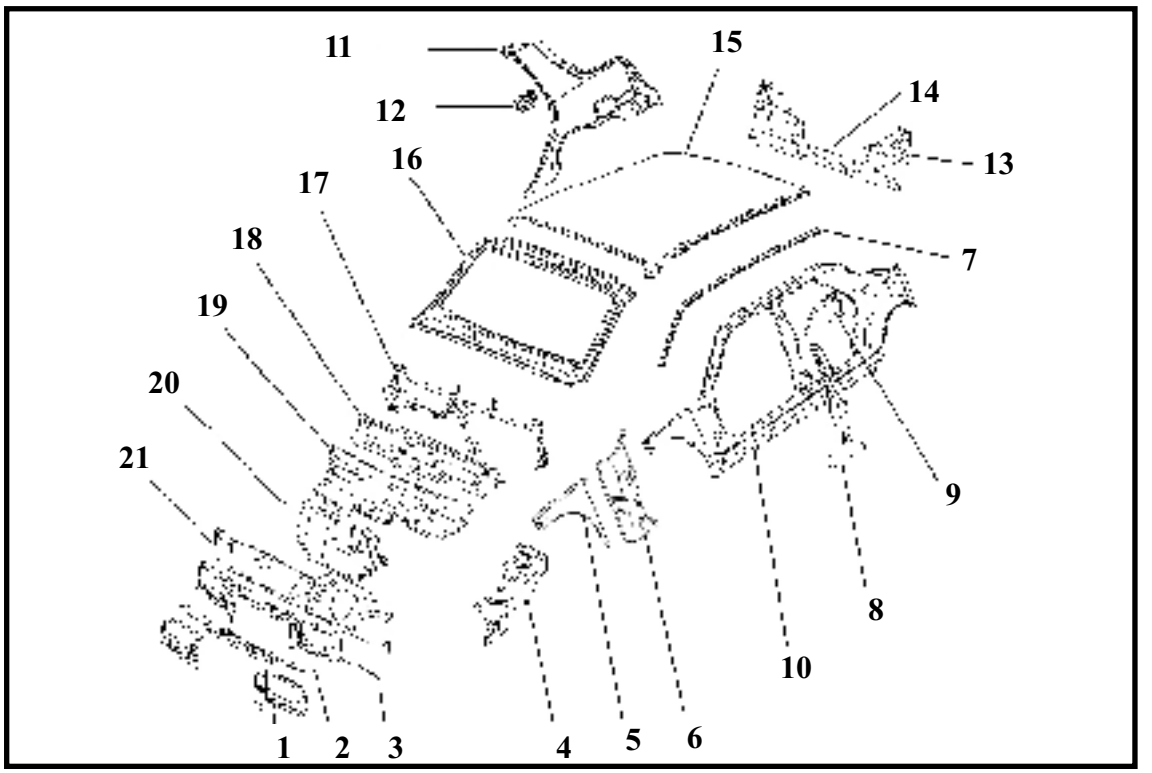
External rear view mirror 56-1
Spare wheel support 56-2
Front wheels fairing 56-3
Rear wheels fairing 56-4
Air extractor 56-5

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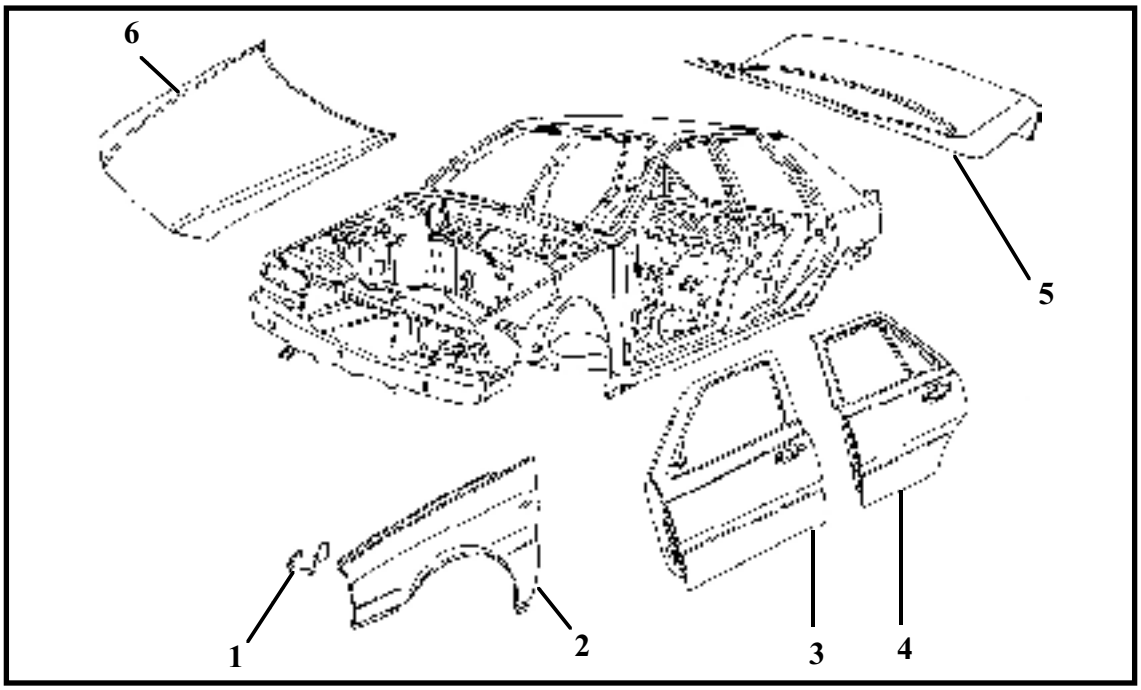
1. Front anti-shock cross member
2. Front cross beam
3. Longitudinal girder closing plate
4. Upper front longitudinal girder
5. Front longitudinal girder
6. Central cross member
7. Front floor
8. Threshold closing plate
9. Seat attachment structure
10. Tank front cross member
11. Rear floor
12. Rear longitudinal girder
13. Tank towing hook
14. Rear anti-shock cross member
15. Rear extreme cross member
16. Tank rear cross member

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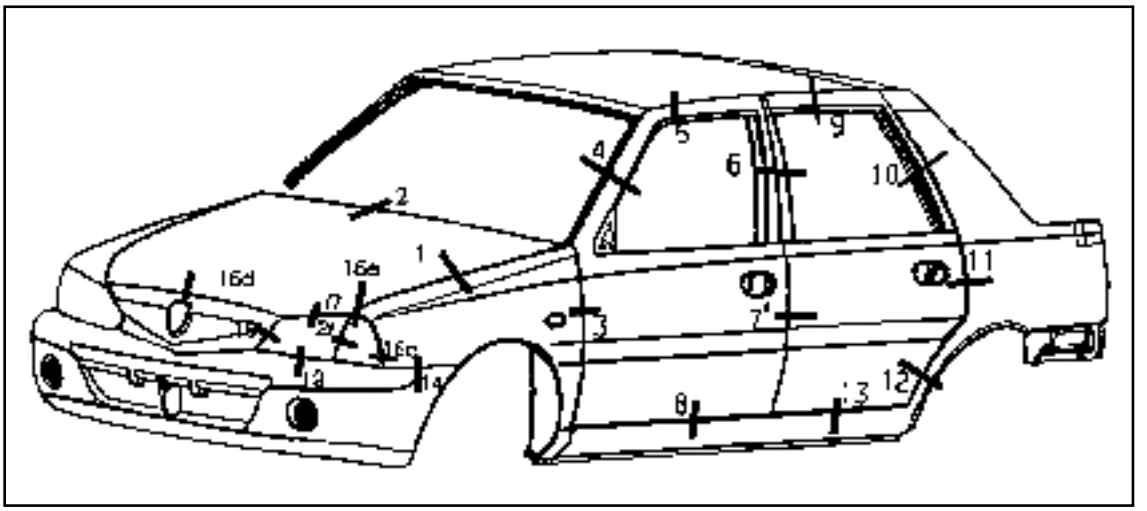
1. Headlamp support
2. Upper radiator cross bar
3. Front grill
4. Front wing lining
5. Front pillar lining
6. Front pillar
7. Roof belt
8. Middle pillar
9. Inner wheel passage
10. Side frame lining
11. Side panel
12. Filling cap door assembly
13. Rear lamp support
14. Rear plate assembly
15. Roof
16. Windscreen frame
17. Driving post cross beam
18. Windscreen lower cross bar
19. Climate control box
20. Climate control box central part
21. Cowl panel

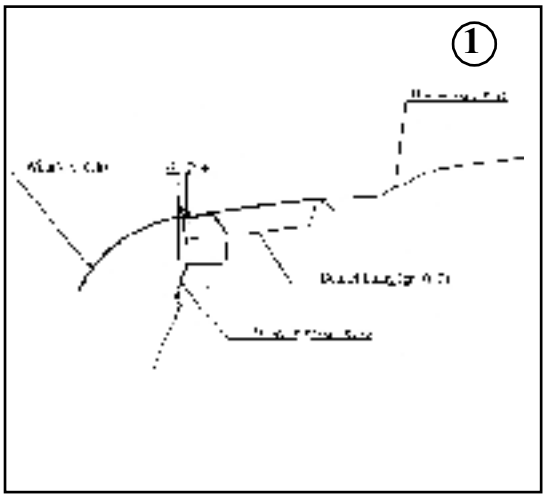
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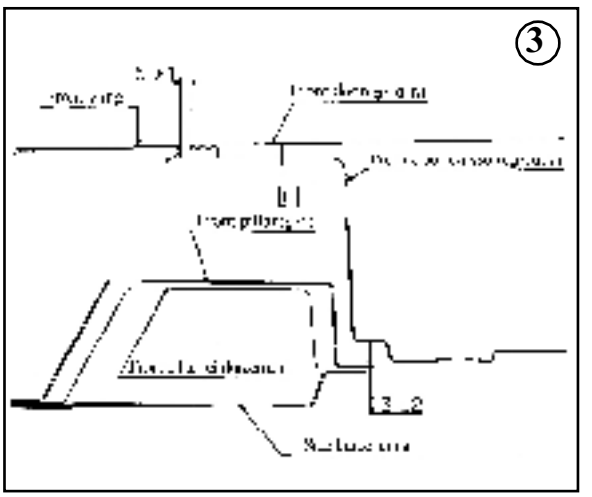


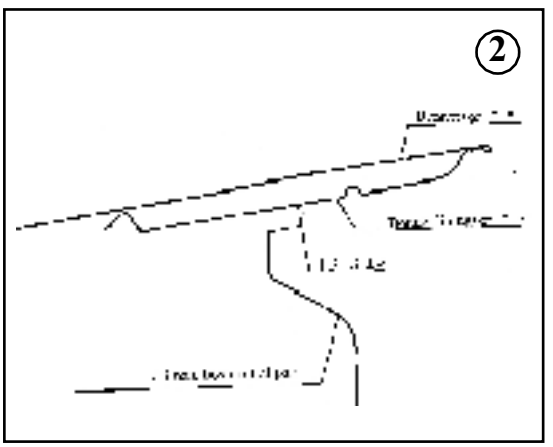
1. Side support
2. Front wing
3. Front door
4. Rear door
5. Hatchback
6. Front bonnet

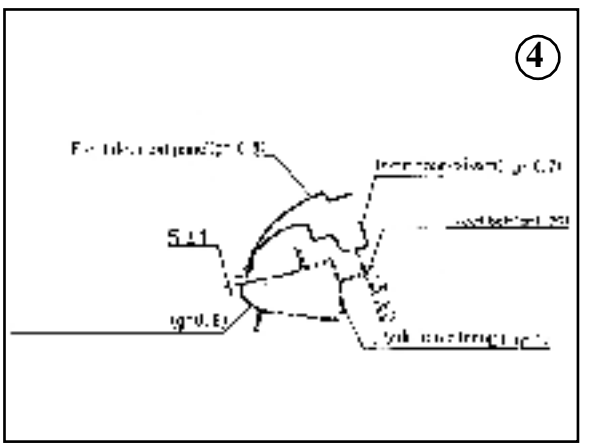
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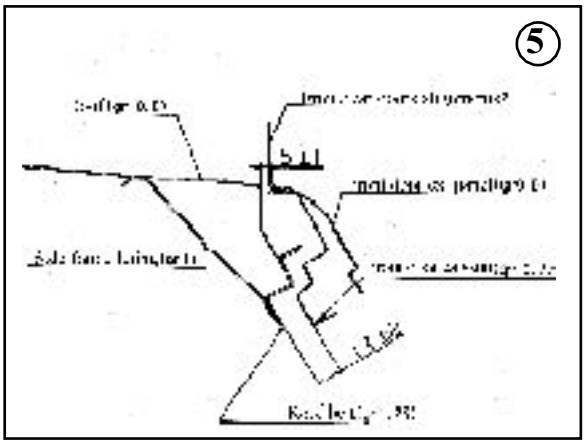


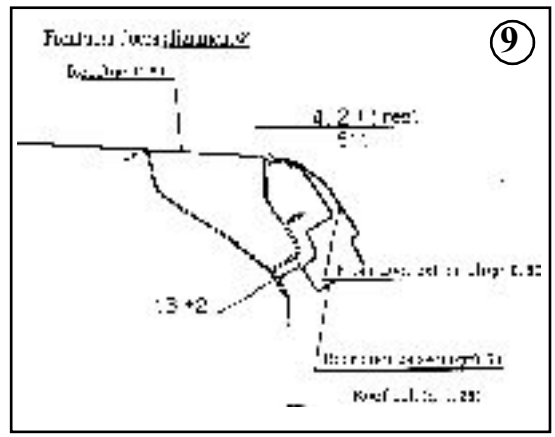


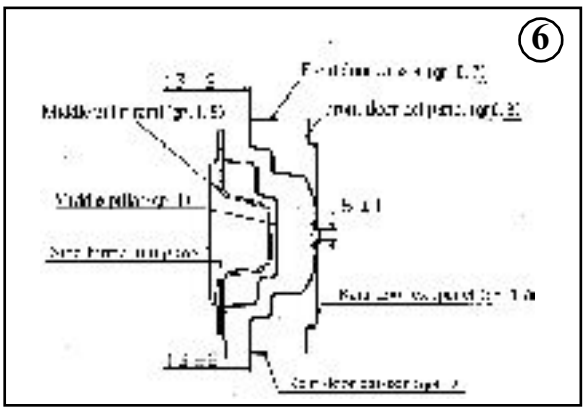


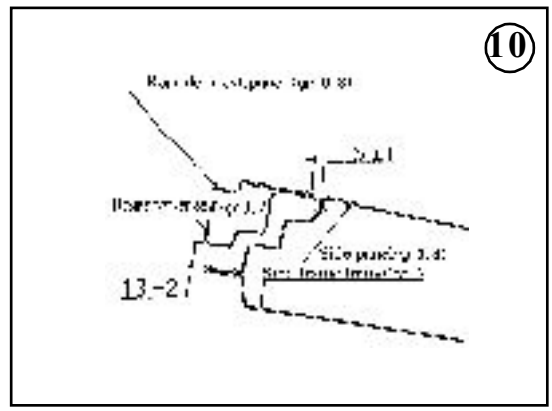


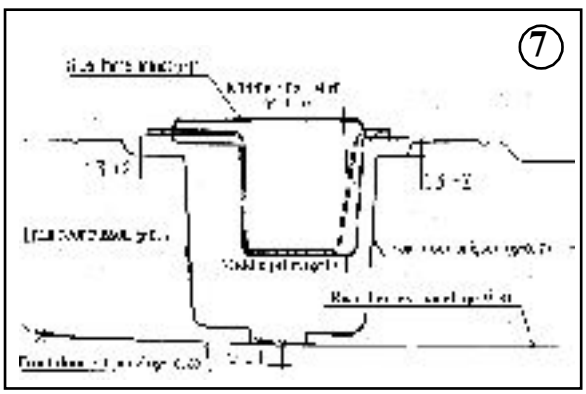
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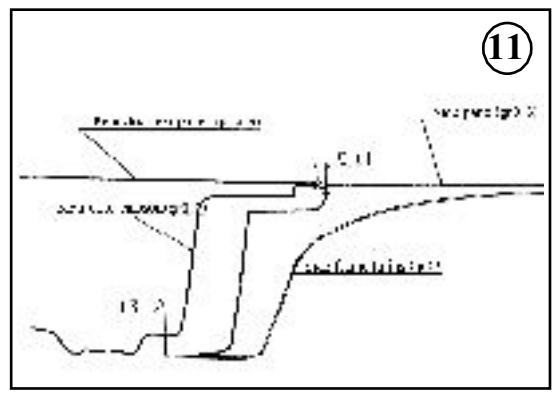


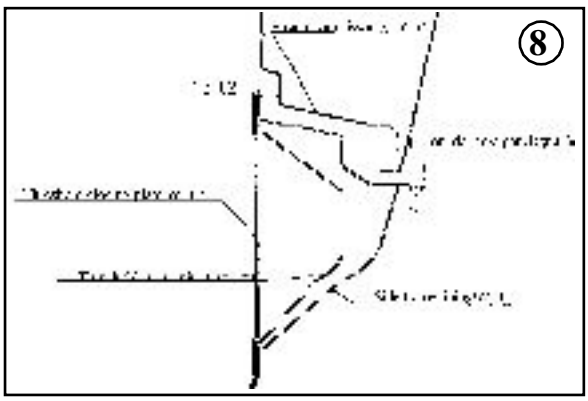


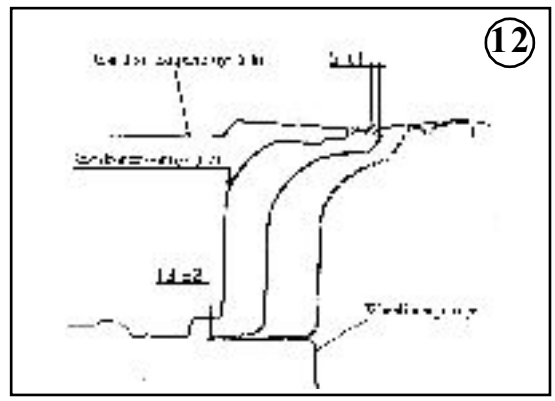






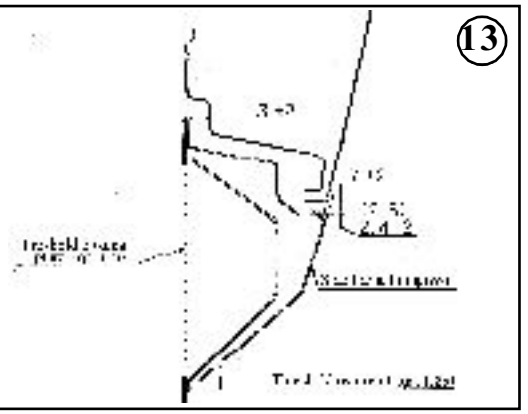




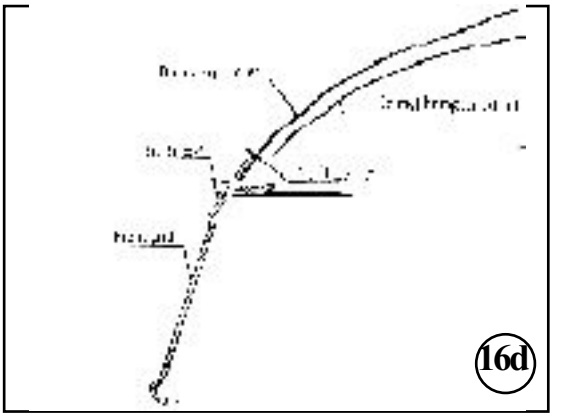


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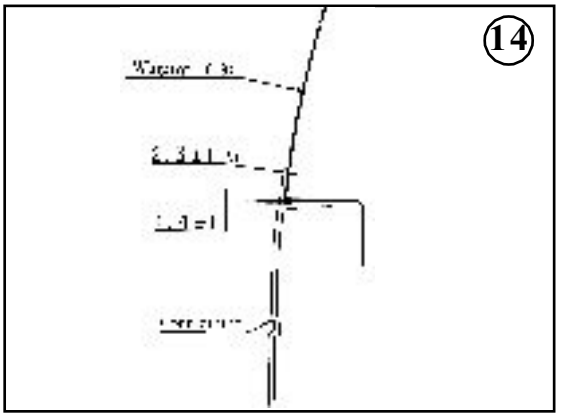
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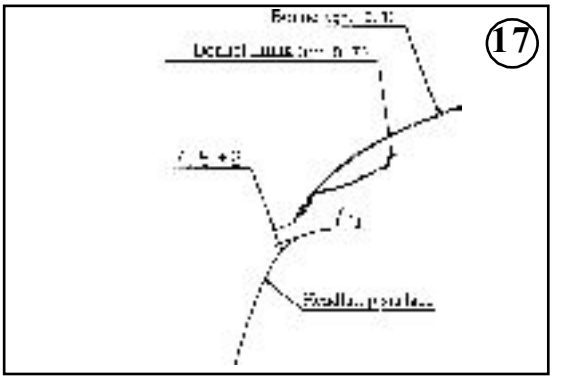
16d



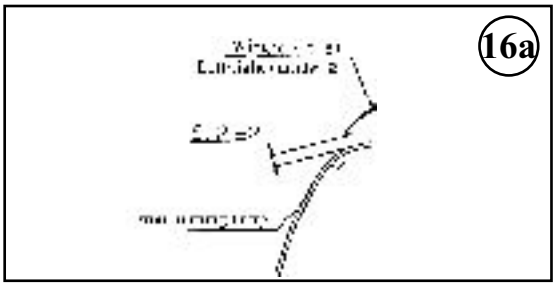
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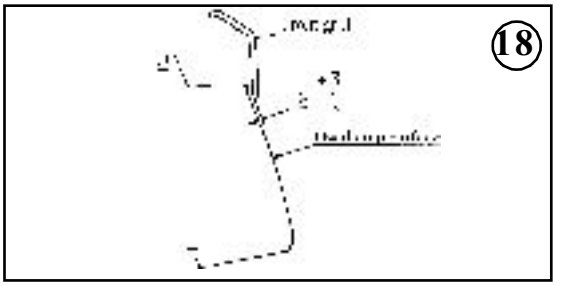
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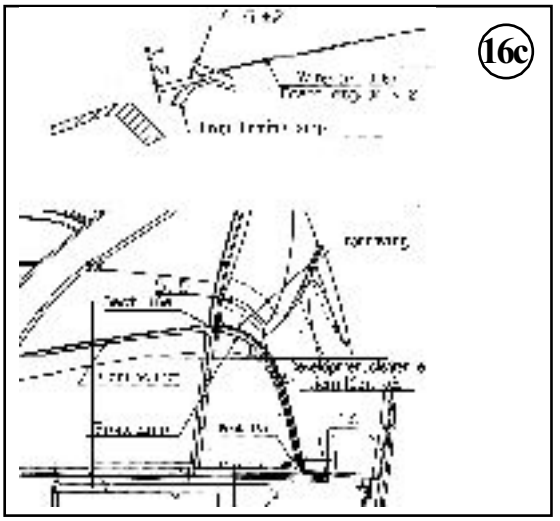
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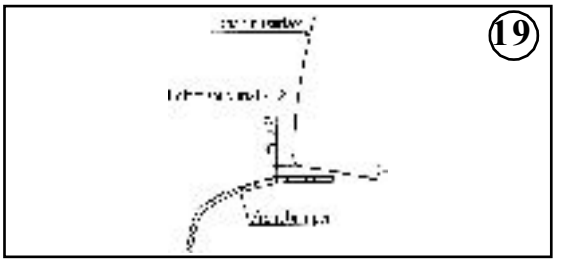
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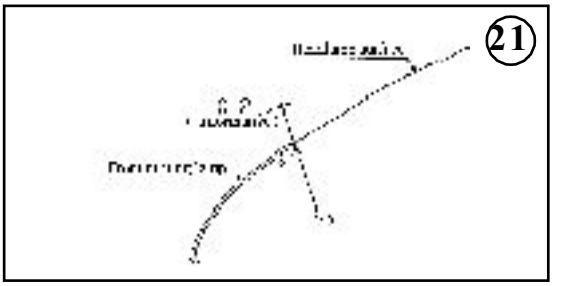
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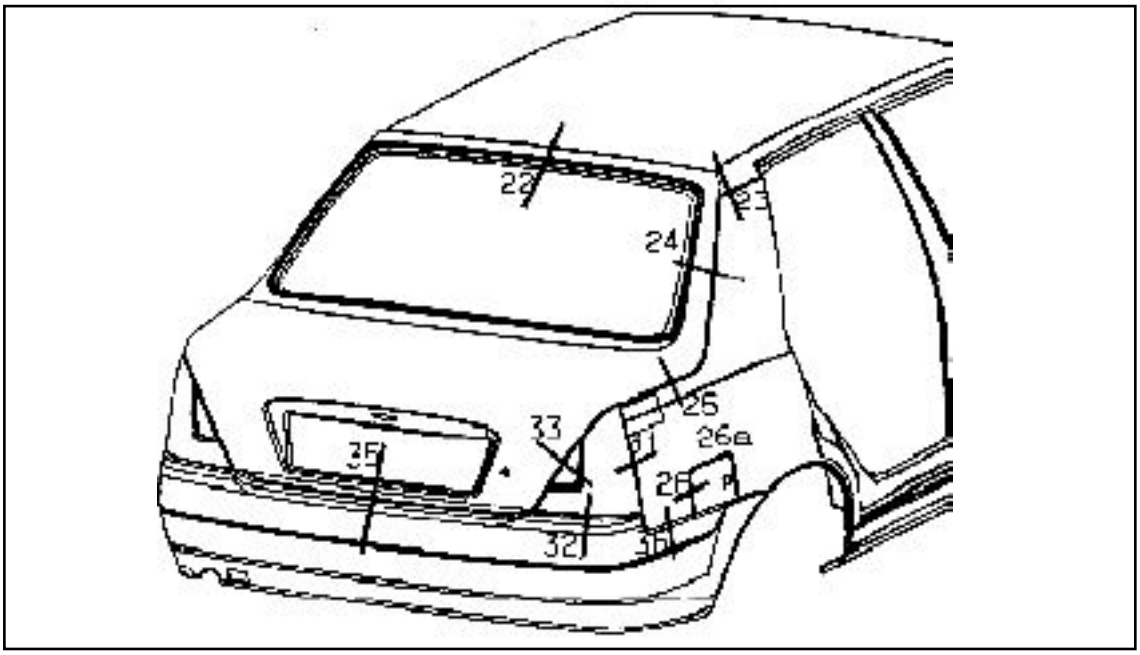
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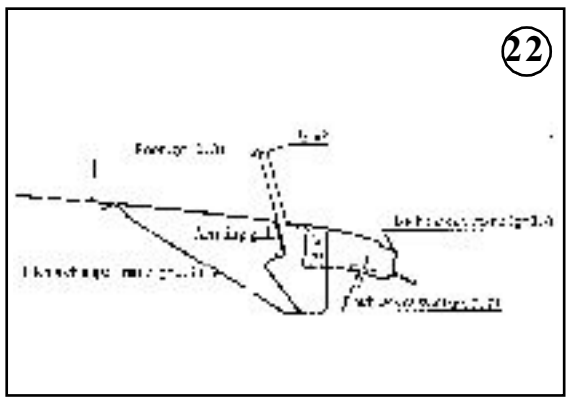


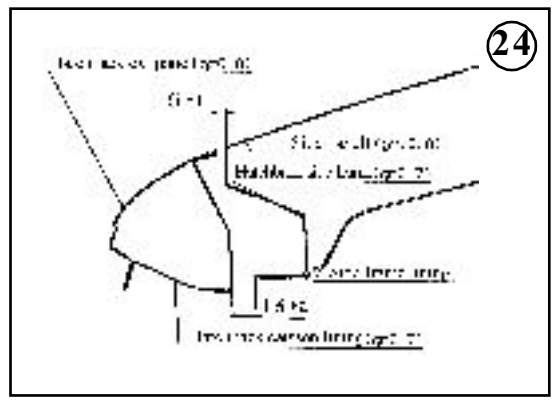
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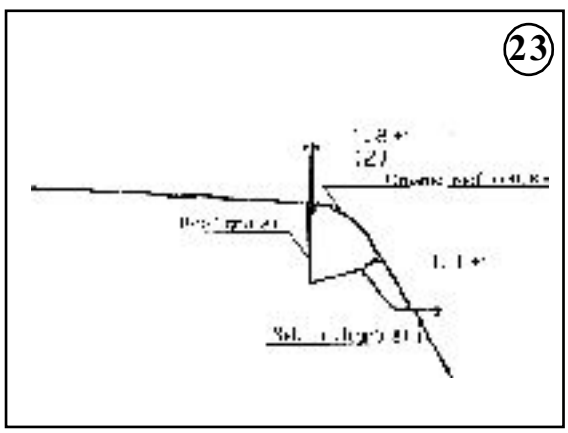


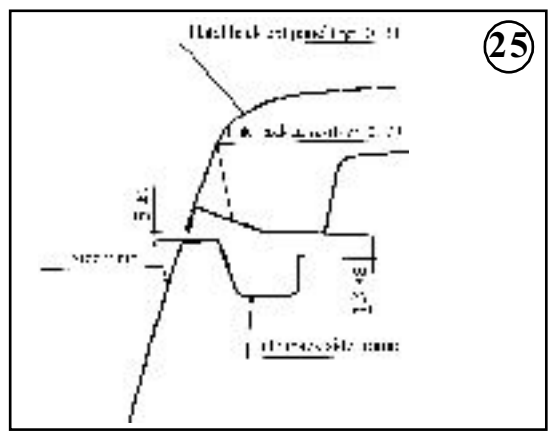
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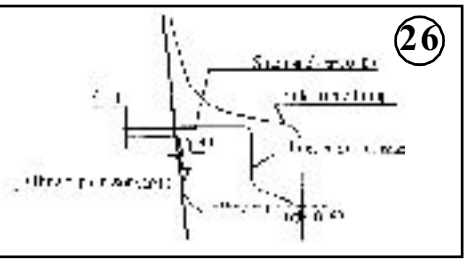




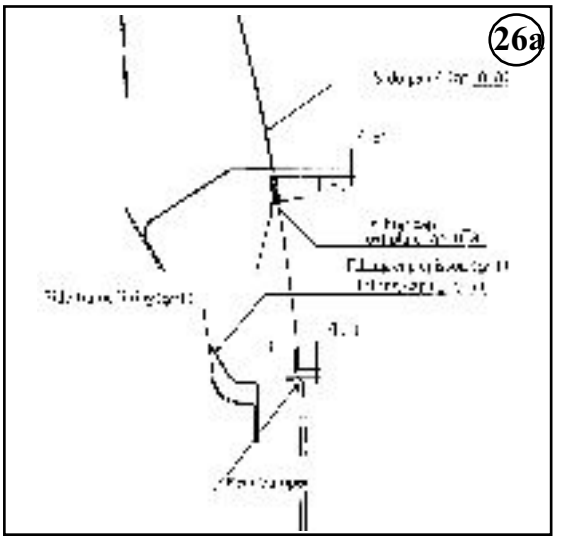


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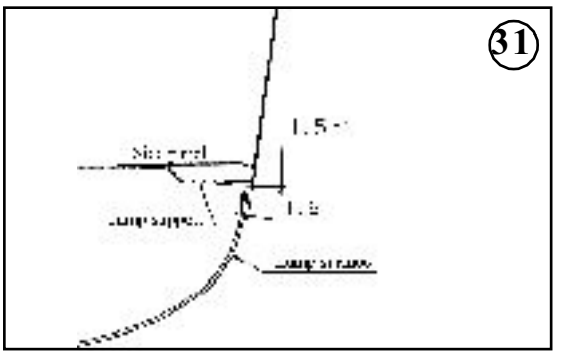
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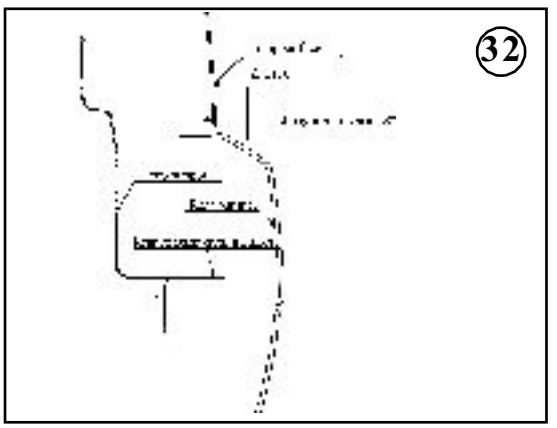
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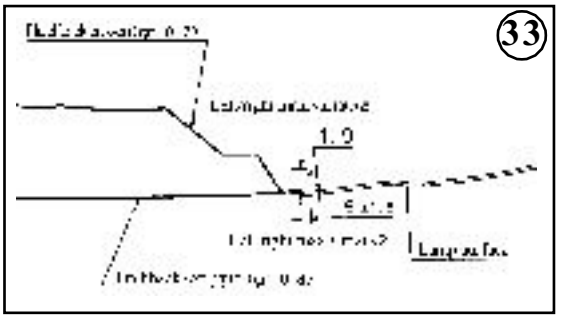
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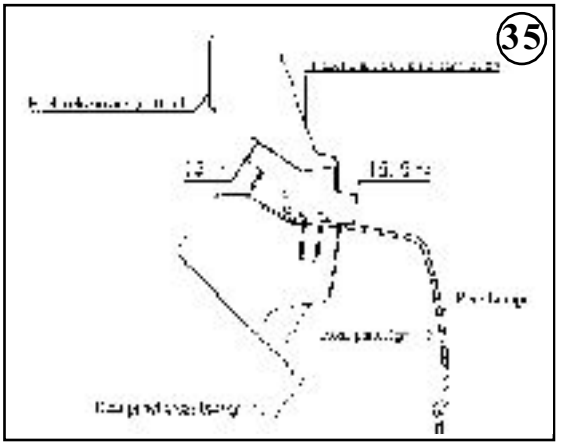
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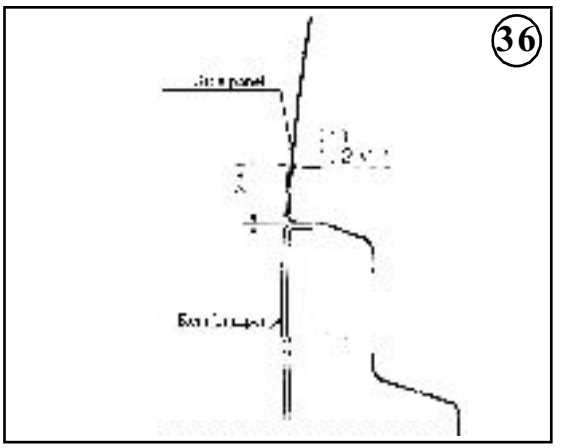
33



35



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The replacement(reparation) operations of the weldable elements described in this chapter are specified subject to: cutting out of the parts to be replaced, access to the welded elements, tools and checking devices accessibility, etc.

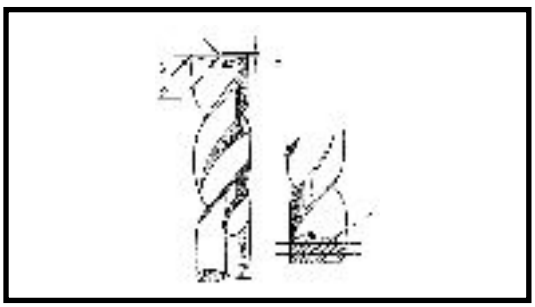
In case the vehicle body has suffered important deformations it is recommended the straightening of the damaged body elements, by means of some hydraulic presses.

For this range of vehicles, the elements resistance structure which are affecting the vehicle security, are not to be partially replaced(not to be cut), but entirely.

After welding detaching, the body elements must remain straight, without breakage or cracks, the possible holes being covered out with filling material or by tinning. The body elements surfaces are to be pickled(to eliminate possible oxidation marks), dried and initially applied a paint layer.

The electric welding detaching of the body elements, may be performed as follows:

- with a well sharpen chisel, this method may lead to parts deformation or even parts breaking.
- by using some extractors equipped with steel cutter type Brendeo or Pickvant (max. 6 mm) having the cutting head shaped as shown in pict.1.



1. Centering point
2. Sharpen slope
3. Drill acting edges
4. Gap for catching the welding material

P = aprox. 0.4 mm

Whatever method is used, the remaining element must be in good order and to allow performing of a good quality welding point.

The plate cutting it is recommended to be performed (subject of importance and thickness) using manual scissors or pneumatic portable tools for plate cutting.

During cutting or welding of the body elements it is necessary to protect the electric wiring from the interior of the body structure.

The cutting, welding, or strengthening operation done on body welded elements, are to be performed on body checking/straightening benches recommended by the producer.

IMPORTANT !

When removing or straightening the body resistance elements, it is forbidden the total or partial heating, in order to avoid the mechanical resistance and metal elasticity decreasing.

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At the reparation of the welded body elements, three welding categories may be used: protection gas welding (CO_2), electric spot-welding and filling materials (built-up) welding (oxyacetylene). At the built-up welding, it is recommended that flame must be slightly inclined so that arch can be seen and the flame extremity to be maintained at aprox. 5 mm from the part to be welded

1. Spot welding resistive parameters for steel plates with carbon content C < 0,15 %.

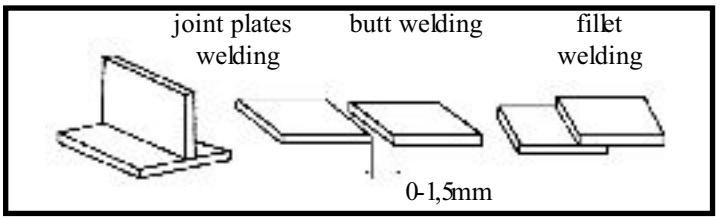
REMARK :

1 period = 1/50 part of a second.

Plate thickness (mm)	Welding current (KA)	Welding time (per)	Tightening force (daNm)
0,5	**6,5**	**5**	**130**
0,8	**8,0**	**8**	**200**
1,0	**9,5**	**10**	**250**
1,25	**10,5**	**10**	**295**
1,5	**10,0**	**14**	**310**
2,0	**12,0**	**16**	**350**

2. Welding parameters for the welding in protection gas for carbon steel plates or low-alloyed steel.

Horizontal welding position (pict.1)



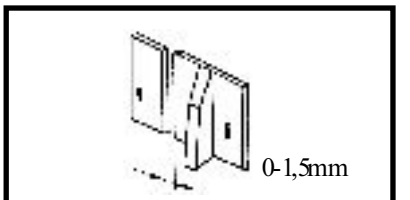


Plate thickness (mm)	0,6	1,0	1,5	2,0
Electrode diameter (mm)	0,6 0,8	0,8 1,0	0,8 1,0	0,8 1,0
Welding wire speed (m/min)	2,5 1,9	3,2 2,4	4,4 3,8	5,7 4,4
Welding wire speed (A)	35 35	55 80	80 120	100 130
Welding speed (m/min)	0,25 0,25	0,35 0,33	0,33 0,50	0,45 0,45
Welding voltage (V)	17 17	18 18	19 19	20 20
Protection gas flow (1/min)		12 - 17		
Electrode free length (mm)		6 - 12		

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REMARK :
In case of using the Ar + CO2 mixture, the welding voltage will decrease with 2 V.

Vertical welding position (obligatory from top to bottom)- pict. 2

Platethickness	0,6		12		2,0	
Electrode diameter(mm)	0,6	0,8	0,8	1,0	0,8	1,0
Weldingwire speed(m/min)	2,5	1,9	3,3	3,2	5,7	4,4
Welding current (A)	35	35	70	100	100	130
Welding speed (m/min)	0,25	0,25	0,38	0,48	0,50	0,50
Weldingvoltage (V)	17	17	18	18	20	20
Protectiongas flow (1/min)	12 - 17					
Electrode free length (mm)	6 - 12					

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During the vehicle exploitation, the carriage body may suffer different distortions, that lead many times to the wheels setting angles modification, body elements breakage, vibrations or even mechanical parts wear.

In these conditions, before performing the vehicle body reparation, some checking is necessary:

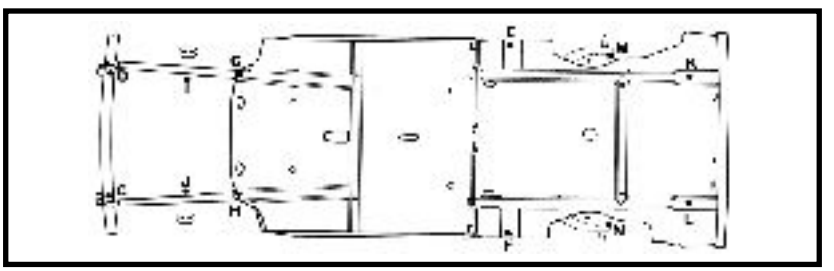
Visual checking - consisting in the examination of the mechanical elements attachments and of the distortions occurring in the vehicle damaged areas.

Checking with the bar (control gauge) – consisting in comparing the measurements done in symmetric points.

The geometry checking of the rolling transmissions– this checking is the only one enabling to find out if the body damage was not affecting the vehicle road behavior.

IMPORTANT :

This checking must be not ignored, except some border-line cases, the checking of the rolling transmissions leading to the identification of the distortions occurred further to an accident.

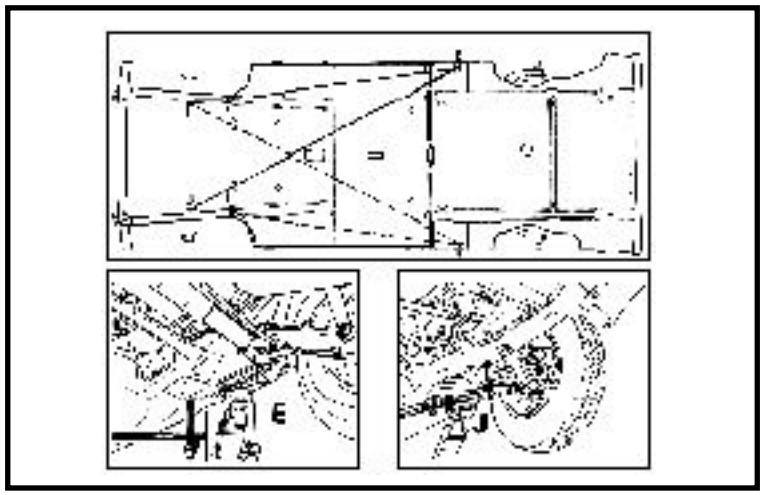


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CENTRAL PART CHECKING

The central part checking is performed in the purpose to establish if one of the distortions is not affecting this part of the floor, from where the checking starts.

Compare the followings lengths: **EI = FJ ; EJ = FI .**

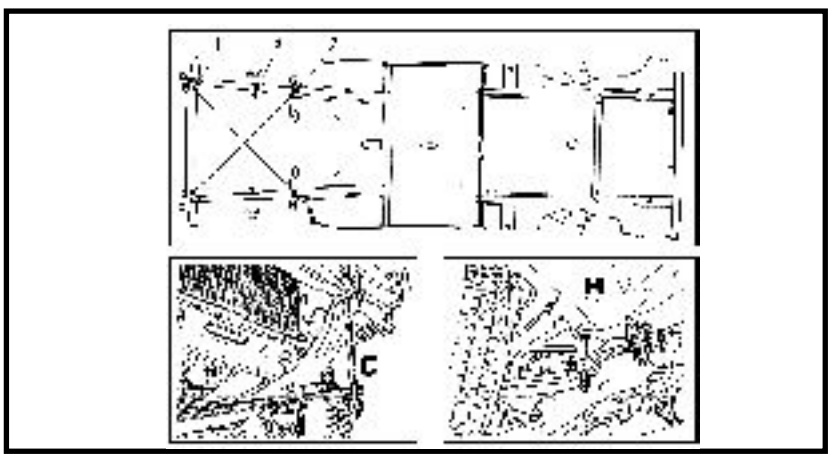


FRONT LONGITUDINAL GIRDERS CHECKING

Compare the followingslengths: **CG= DH; CH = DG**.

If the lengths (**CH - DG**) and the diagonals (**CG – DH**) are not identical, check again the point (**3**).

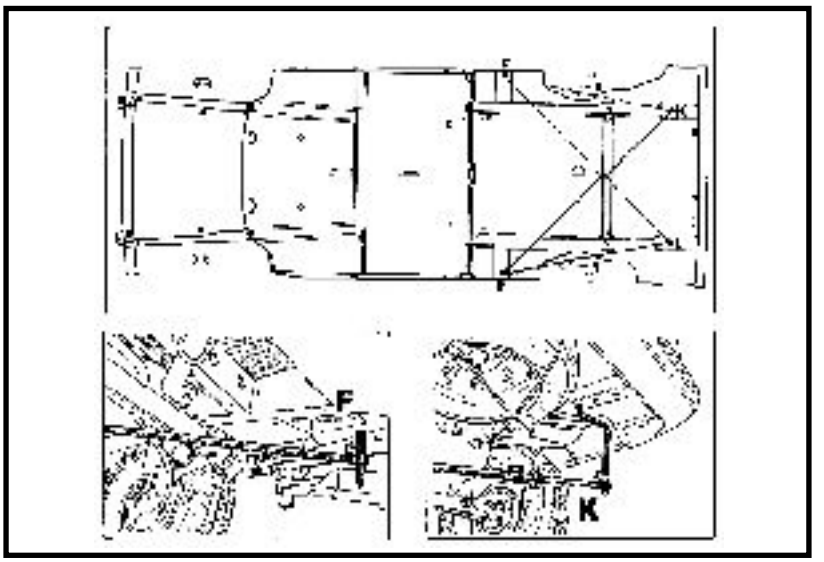
If points (**1**) and (**2**) are good, the front axle angles may be checked.



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REAR LONGITUDINAL GIRDERS CHECKING

Compare the following lengths: **EK = FL ; EL = FK.**

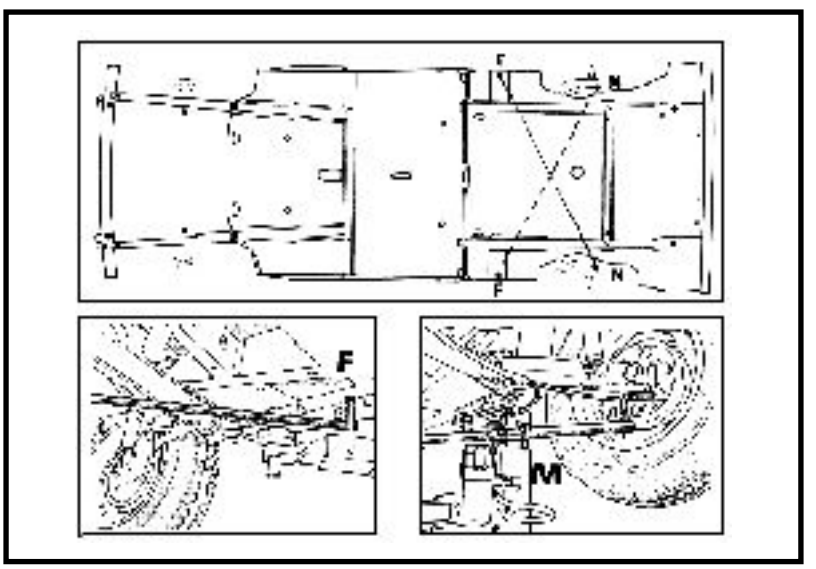


REAR ARM CHECKING

Compare the following lengths: **FM = EN**.

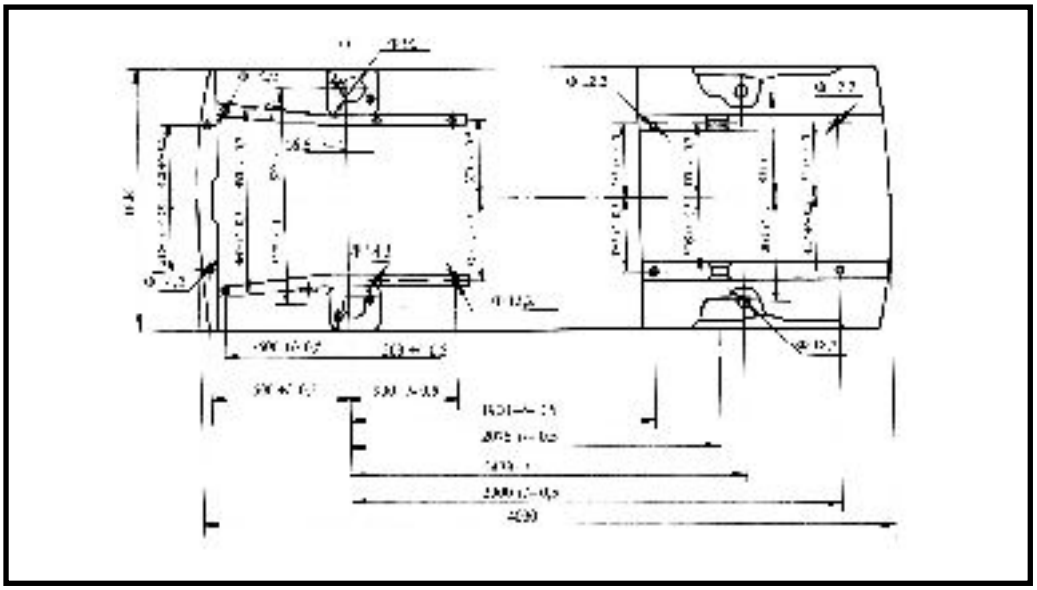
If a difference is noticed when measuring the lengths (**FM – EN**), the rear arms are to be replaced.

The checking operation of the rear arms is followed by a checking performed with the gauge fixed on the arm and on the central longitudinal girder.

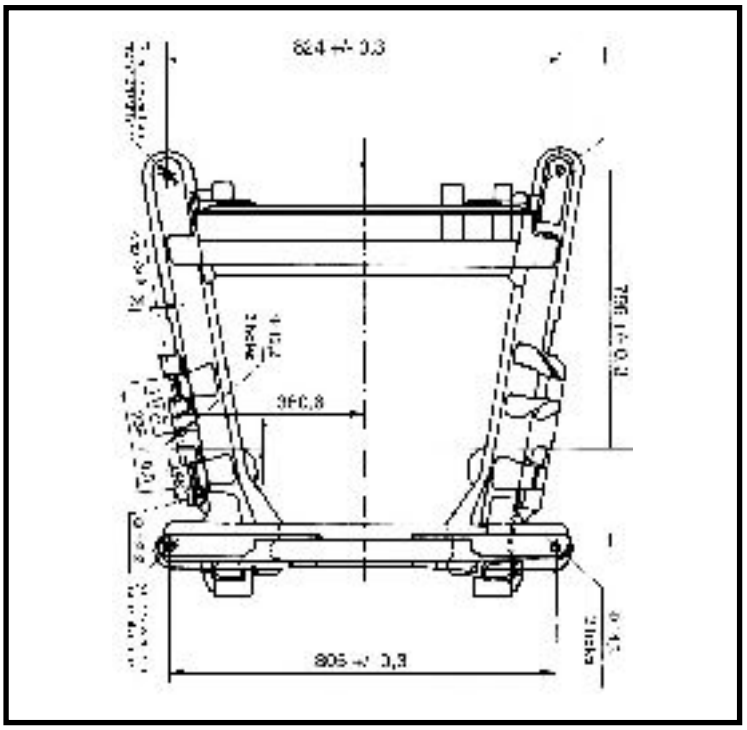


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FLOOR FRAME CHECKING



POWER-TRAIN SUPPORT ASSEMBLY CHECKING



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The checking / straightening bench type CELETTE (service code CAR 500) is composed of :

- CAR 501 (1 mobile bench with four wheels, four parts for vehicle anchoring, one traction arm of 10 t, type CAIMAN).
- CAR 502 – set modular cross bars;
- CAR 503 – set of 22 towers MZ;
- CAR 504 - set accessories for traction ;
- CAR 505 - set of specific supports for DACIA Berline, Break.
- CAR 506 - set of specific supports for DACIA 1304, 1307
- CAR 507 - set of specific supports for DACIA Nova/SupeRNova /SOLENZA.

1. CAR 501

The mobile bench **(1)** is provided with four anchoring parts **(2)** - (**fig 1**), which can be used when a carriage body straightening operation is performed.

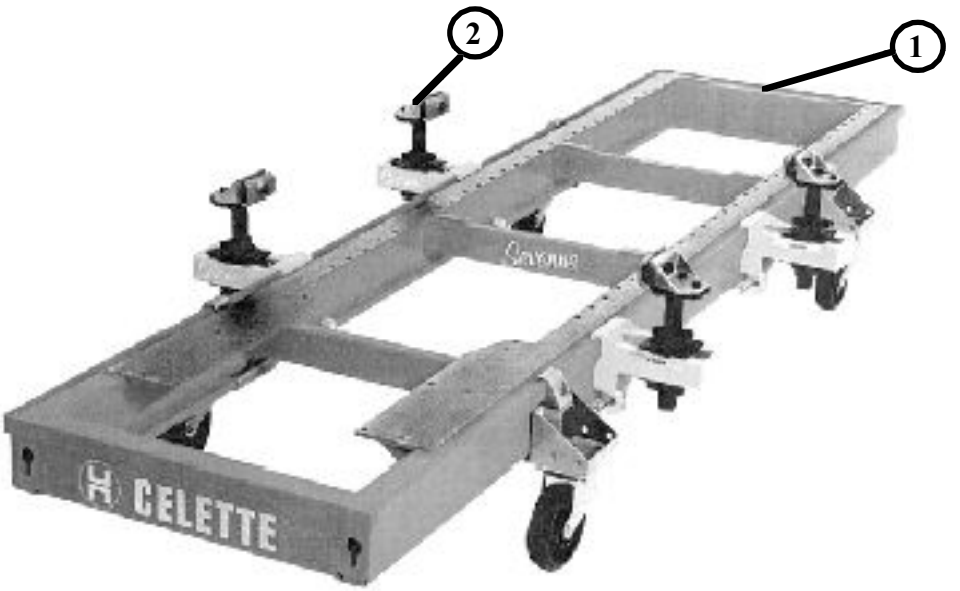
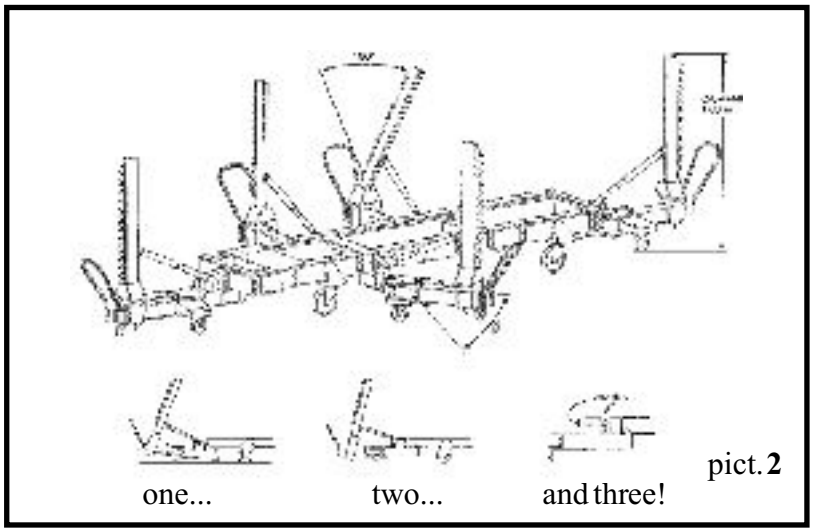


fig**1**

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To straighten the vehicle body, CELETTE bench is provided with a traction arm of 10 tons, Caiman type, 250-mm stroke of the hydraulic cylinder, with rapid anchorage on any side of the mobile bench (pict. 2).



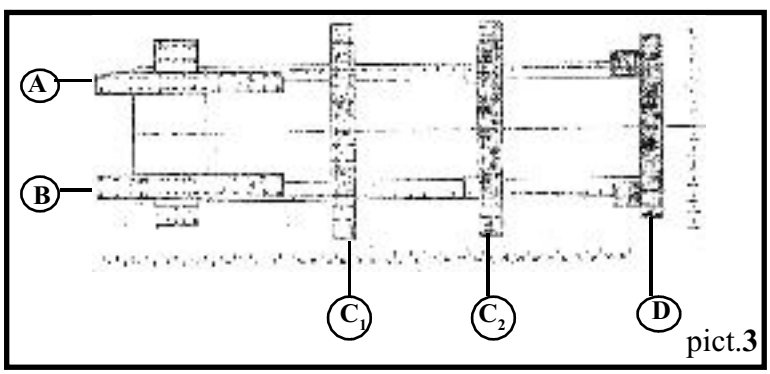
pict. **2**

2. CROSS BARS MODULAR SET (CAR 502)

CELETTE bench has in its composition, five modular cross bars (pict.**3**), as follows:

- two front cross bars A and B (T shaped) which are always in the same position (towards front of bench) – **fig 4** .
- two straight cross bars C1 and C2 and one D cross bar (U-shaped) which may be placed in different positions subject to the vehicle type.

The marked figures (14…36) are engraved on the mobile bench, every mounting being supplied with a drawing indicating the exact position of the modular cross bars subject to the vehicle type.



pict.**3**

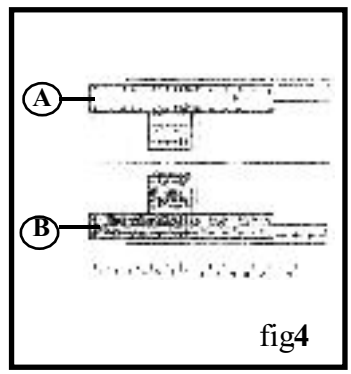
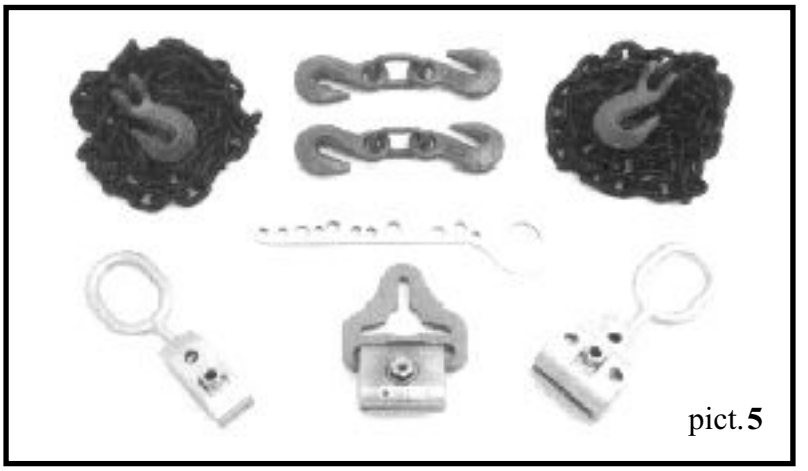


fig**4**

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3. TRACTION ACCESSORIES SET (CAR 504)

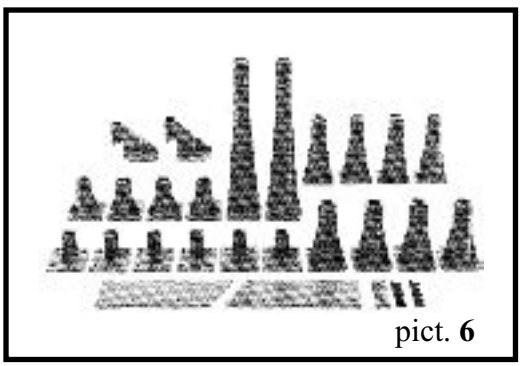
CELETTE bench is equipped with a traction accessories set CAR 504, which allows the operator to achieve different anchoring when a body strengthening is performed (pict. **5**).



pict. **5**

4. SET OF MZ TOWERS AND SPECIFIC SUPPORTS (CAR 503 + CAR 507)

This kit represents a MZ system and consists of two elements:
- kit of 22 MZ towers, universal CAR 503 – (see pict. **6**);
- kit of specific supports CAR 507.



pict. **6**

Each MZ tower has an arrow, which settles its orientation on the cross bar and a MZ reference (fig 7)

Example – MZ 080, where:
MZ - measurement on OZ axle of the vehicle,
080 – MZ tower height (in mm).

In the same way as for COMPACT assembly the arrow (1) marked on the specific support must be oriented towards the bench front part, as follows:

→ - attachment on the right part of the mobile bench;

L → - attachment on the left part of the mobile bench.

REMARK :
The MZ towers may be used also for the checking/ straightening of the carriage bodies of other vehicles types, being then necessary the purchasing of the specific supports for each type of vehicle.

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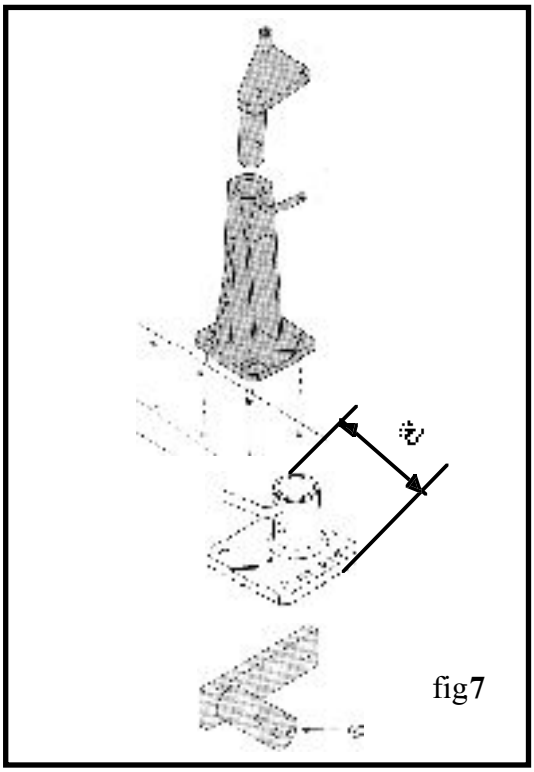


fig7

Each specific support is identified by a number (**2**) marked at the lower part and has one or two attachments holes (**3**) in the MZ tower (in this case you should take into consideration the specific diagram from the assembly drawing supplied together with the kit.

Symbols:

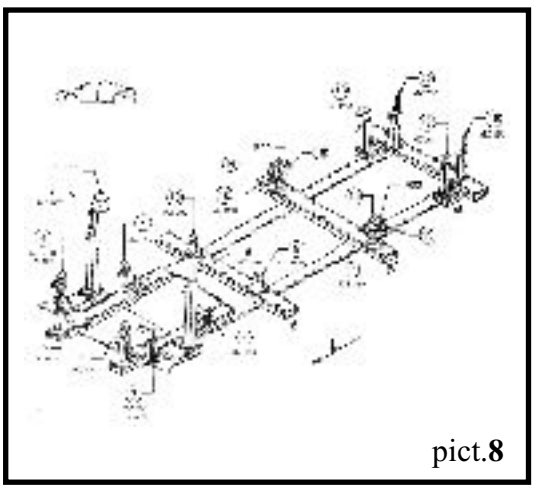
1 – with or without dismounted mechanical elements.

4 – with dismounted mechanical elements.

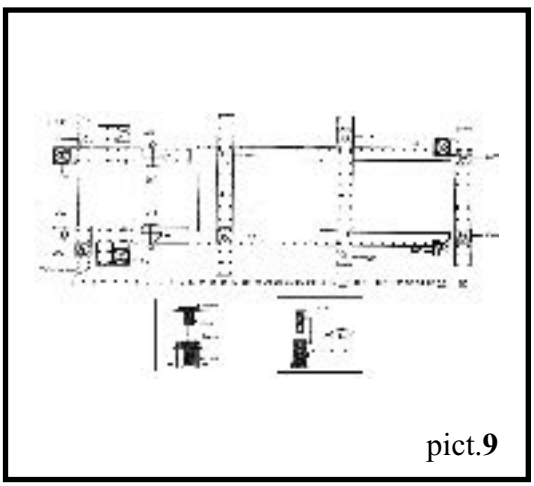
REMARK :

Identification and mounting of the towers on different modular cross bars and of the specific supports in the MZ towers (1…20), when repairing a carriage body, is to be performed as per mounting drawing (pict.8 and pict.9) which is supplied together with this kit.

REFERENCE POINTS ON VEHICLE



pict.**8**

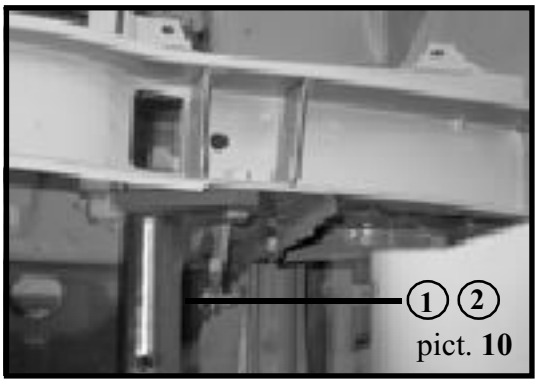


pict.**9**

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Power train frame attachment on the lower cross member

The specific supports (**1**) and (**2**) are used in front straightening, front mechanic elements being dismounted, enabling the positioning of the lower cross member, consequently the front attachment of the power train frame (pict. **10**).



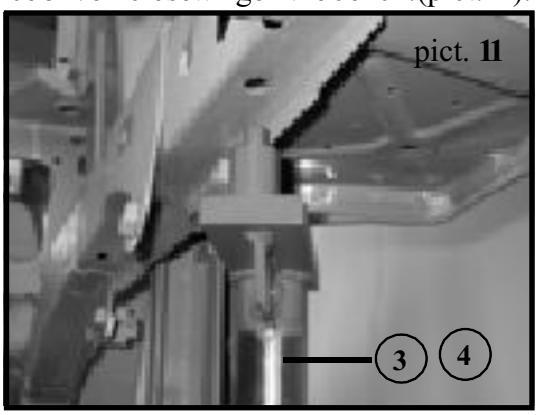
pict. **10**

REMARK :

These holes are destined as main reference for the vehicle front part.

Centering under front longitudinal girder

The specific supports (**3**) and (**4**) are used for positioning, centering, and alignment of the front longitudinal girders. They are to be used for all reparation cases because they are a main reference of vehicle setting on the bench. (pict. **11**).



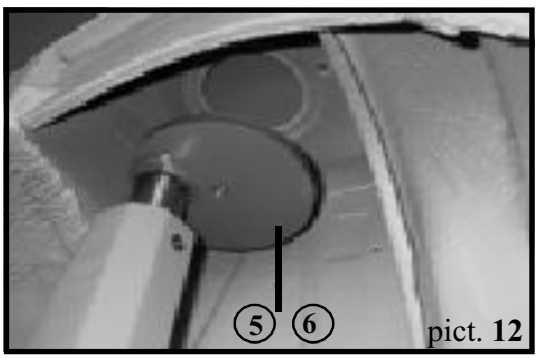
pict. **11**

Upper attachment on front shock absorber (shock absorber column)

Specific supports (**5**) and (**6**) are used in front strengthening, mechanical elements dismounted, enabling the positioning of the shock absorbers ends, consequently the front linings positioning (pict. **12**).

Their centering in the shock absorbers ends is performed by means of the centering washers (**1**)- (fig **13**).

The centering washers are used when straightening a carriage body and also when



pict. **12**

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replacing the front wing lining.

Power train frame rear attachment on front longitudinal girder.

The specific supports (**7**) and (**8**) are used in the front straightening, enabling the positioning of the front longitudinal girder and consequently the rear attachment of the power train frame.

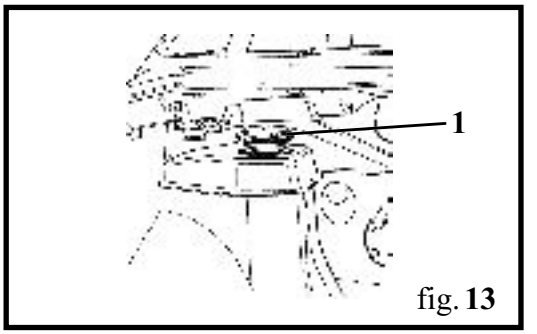


fig. **13**

In case of the rear straightening, these are enabling the front alignment of the vehicle on the bench (fig **14**).

Centering under the central floor

The specific supports (**9**) and (**10**) have the purpose of positioning, centering and alignment of the front longitudinal girders. These are to be used in all cases, because they are a setting reference of the vehicle on the bench. (pict.**15**).

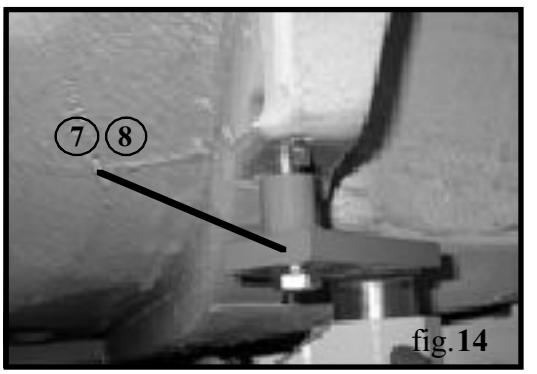
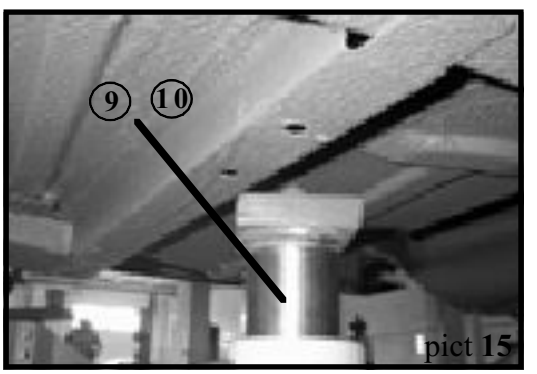


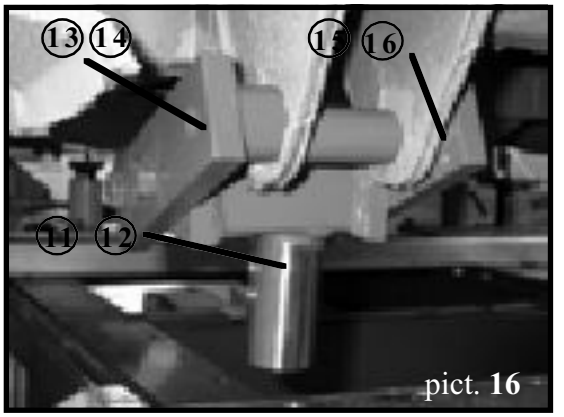
fig. **14**



pict **15**

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Rear axle arm attachment



pict. **16**

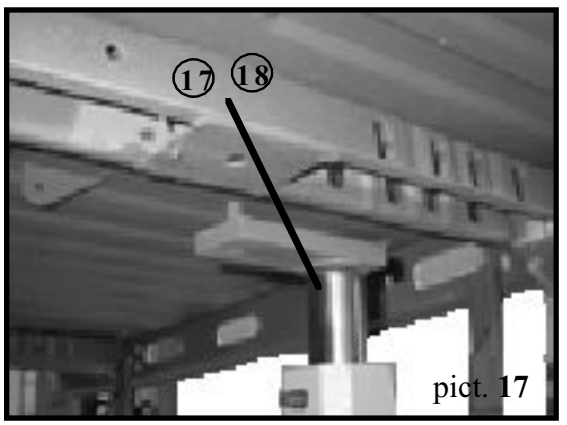
The specific supports (**11**), (**12**), (**13**), (**14**), (**15**) and (**16**) are enabling the positioning, centering and rear alignment of the vehicle on the bench in case of a straightening.

These are to be used in all cases, being a main reference for vehicle setting on the bench (pict.**16**).

pe bancă în cazul unei restructurări.

Centering under rear longitudinal girder

Acesteavor fi utilizateîn toatecazurile fiind o referinţă principală de aşezare a vehiculului pe



pict. **17**

bancă (fig.**16**).

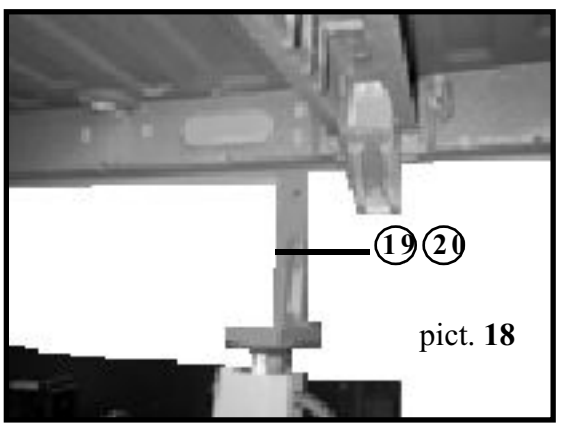
The specific supports (**17**) and (**18**) are enabling the positioning, centering and alignment of the respective girder (pict.**17**).

Centrare sub longeron spate

Cu ajutorul suporţilor (**17**) şi (**18**) (fig.**17**) se realizează poziţionarea, centrarea şi alinierea longeroanelor spate.

Rear plate attachment

The specific supports (**19**) and (**20**) used in the rear straightening, for rear plate positioning is used in the same time for the vehicle alignment in the front straightening.(pict.**18**).



pict. **18**

Upper structure composing elements
Carriage body removable elements
Openings clearance
Repairing general conditions

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Front longitudinal girder

REPLACEMENT

This operation shall be performed only on the checking/repair bench. For the specific supports mounting on the bench, please see the 40 sub-chapter.

DISMOUNTING

Dismount the damaged elements, which are in contact with the front longitudinal girder.

Proceed to a straightening on the body checking/ straightening, until bringing it, as closed as possible to the initial shape.

For spot welding punching, a special steel cutter with a diameter of 6 mm is to be used.

Detach the welding points of the front longitudinal girder (**1**) which are in connection with:

- front cross member in the area **(2);**
- front wing lining in the area **(3);**
- central floor in the area (**4**) ;
- central cross member in the area **(5);**
- upper longitudinal girder closing plate in the area (**6**).

Detach the welding points of the cross member with the threshold closing plate and the central floor in the area (**7**);

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting

REMOUNTING

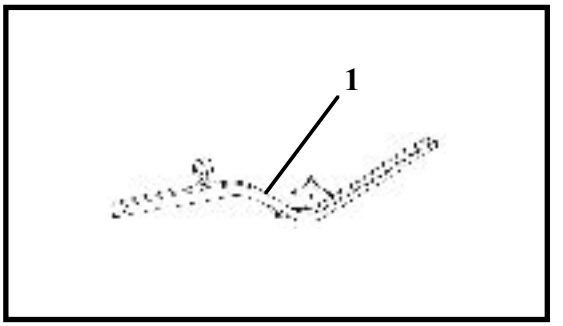
Position the new element on the reparation bench.

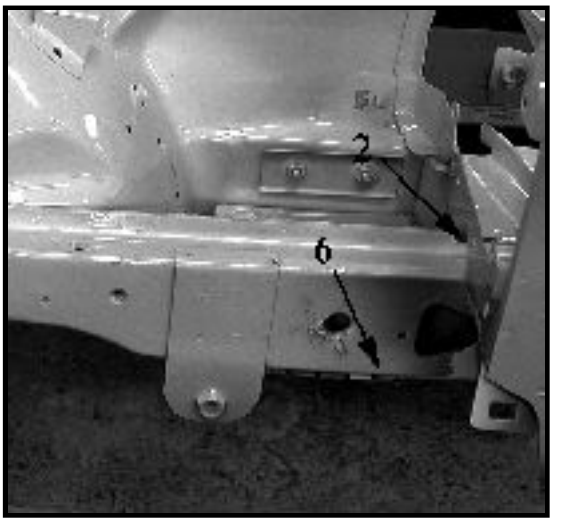
Perform an electric welding by spots and under gas protection on the assembling outlines **(2), (3), (4), (5), (6) and (7).**

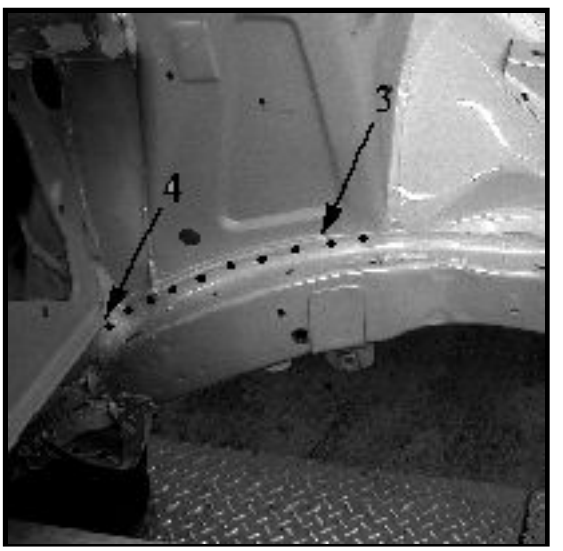
Grind the performed welding

Protect the performed welding with an anticorrosive product.

Protect the new element with a noise absorbent product.

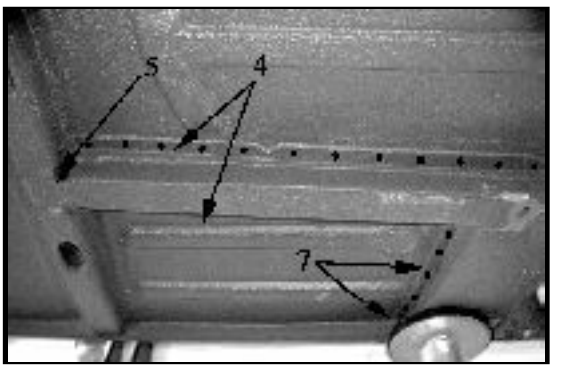






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Mount the connection elements by performing the dismounting operations in the reverse order.



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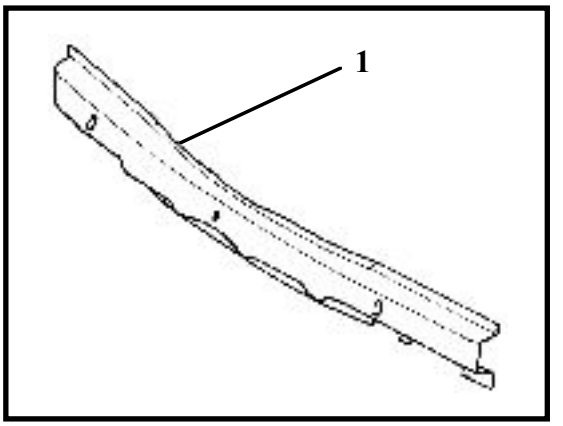
DISMOUNTING

Dismount the elements in contact with the front anti-shock cross member.

Detach the welding point of the front anti-shock cross member (**1**) in contact with the front cross member in the area (**2**)- upper border and area (**3**) – lower border.

Straighten the areas resulted from dismounting.

Grind the areas resulted after dismounting.



REMOUNTING

Position and center the new element on the front cross member.

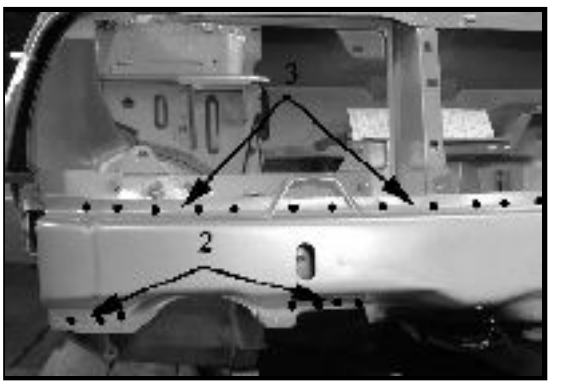
Check the correct positioning of the front anti-shock cross member.

Perform a spot welding with SE Co_2 addition (layers of 10 mm with 30 mm pitch) between the front anti-shock cross member and the front cross member on the outlines (**2**) and (**3**).

Grind the performed welding

Protect the performed welding with an anticorrosive product.

Paint the affected area and mount the connection elements by performing the dismounting operations in the reverse order.



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REPLACEMENT

This operation shall be performed only on the repair/checking bench.. For the specific supports mounting on the bench, please see the 40 chapter.

DISMOUNTING

Dismount the damaged elements, which are in contact with the rear longitudinal girder.

Proceed to a straightening on the body checking/straightening until bringing the vehicle as closed as possible to the initial shape.

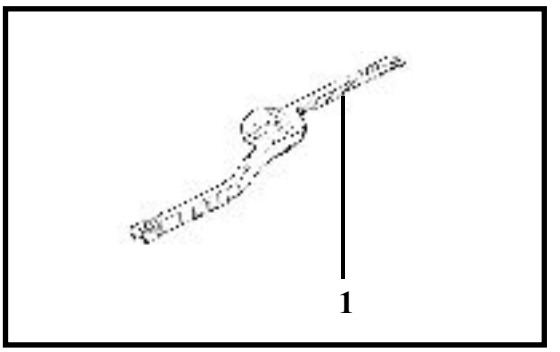
Detach the welding points of the rear longitudinal girder **(1),** which are in contact with:

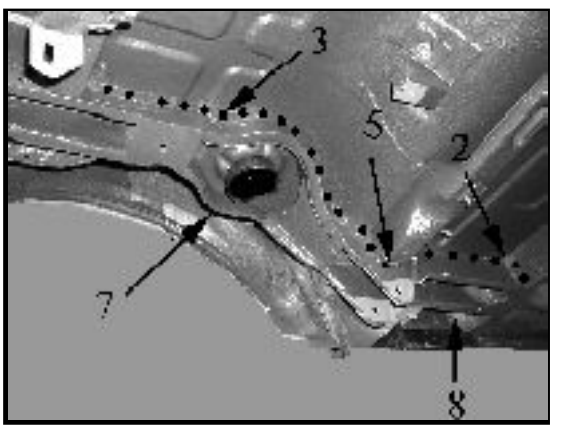
- central floor in the area (**2**);
- rear floor in the area (**3**);
- rear extreme cross member in the area (**4**);
- tank front cross member in the area (**5**);
- tank rear cross member in the area (**6**);
- inner wheel passage in the area (**7**);
- rear towing hock in the area (**9**).

Detach the welding points between the rear side cross member, rear floor and threshold closing plate in the area (**8**).

Straighten the areas resulted after dismounting.

Grind the areas resulted after dismounting.





REMOUNTING

Position and center the new element by means of the repairing bench.

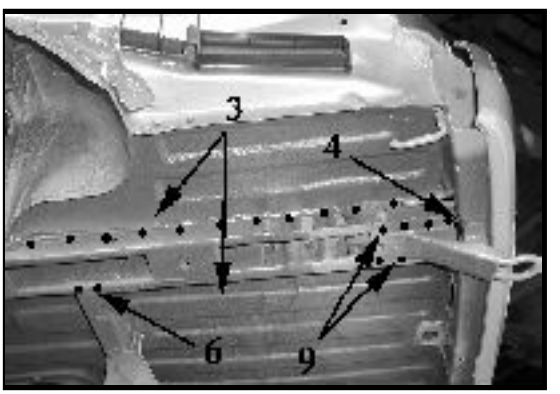
Weld the rear longitudinal girder following the assembling outlines **2,3,4,5,6,7, 8 and 9** (spots and under gas protection welding)

Grind the performed welding

Protect the performed welding with an anticorrosive product.

Protect the replaced element with a noise absorbent product.

Mount the connection elements by performing the dismounting operations in the reverse order.



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DISMOUNTING

Dismount the two attachment screws of the bonnet lower half-hinge on the front pillar lining.

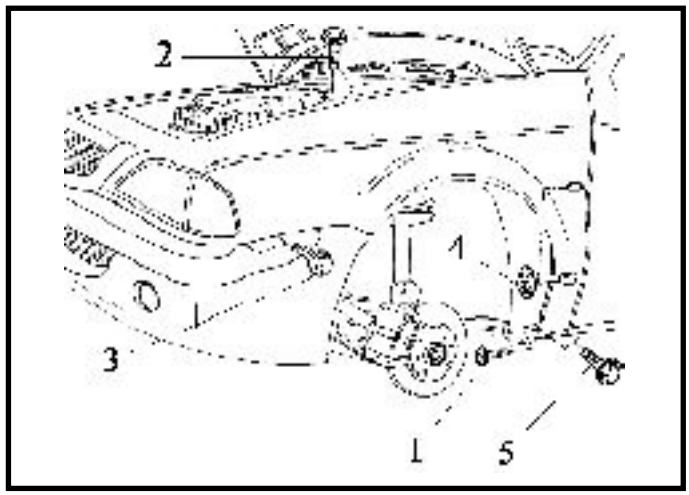
Dismount partially the front bumper.

Dismount the attachment screws (**1**) of the wheel passage fairing.

Dismount the side-signaling lamp from the front wing.

Dismount the attachment screws **(2)**, **(3)**, **(4)** and **(5)** of the wing on the front wing lining, front pillar lining, front bumper attachment side support, front pillars support and side frame lining (front lower area).

Dismount the front wing.



REMOUNTING

Perform the dismounting operations in the reverse order, ensuring the sealing by applying a sealant material layer in the connection area of the wing with the front wing lining, front pillar and side frame lining.

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REPLACEMENT

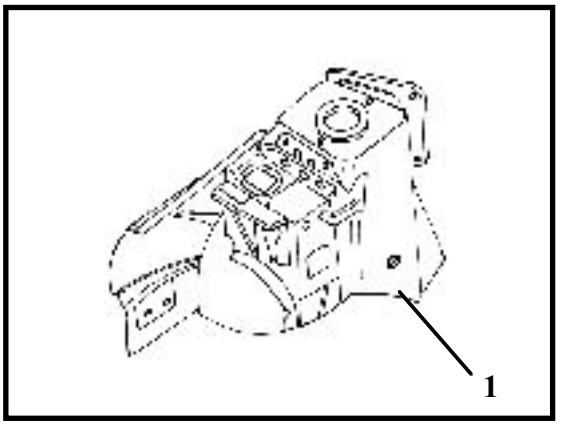
This operation shall be performed only on the checking/repair bench. For the specific supports mounting on the bench, please see the 40 sub-chapter.

DISMOUNTING

Dismount the damaged elements, which are in contact with the front wing lining.

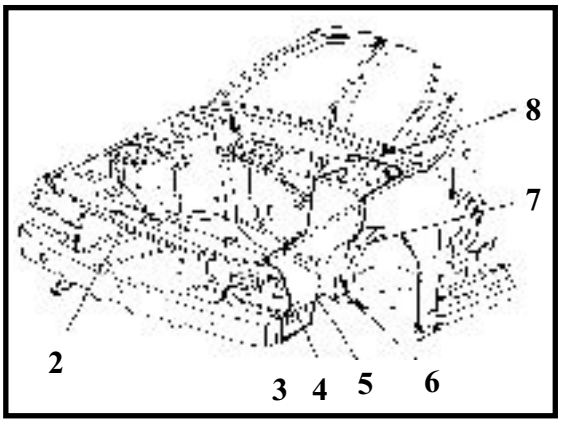
Detach the welding points of the front wing lining **(1),** which are in contact with:

- upper longitudinal girder in **(2)** area;
- front cross member in the area **(3)**;
- headlamp support in the area **(4)**;
- closing plate in the area **(5)** ;
- front floor in the area **(6)**;
- cowl panel in the area **(7)**;
- climate control box in the area **(8)**



Straighten the area resulted from dismounting.

Grind the area resulted from dismounting.



REMOUNTING

Position and center the new element by means of the repairing bench.

Weld the front wing lining **(1)** following the assembling outlines **2, 3, 4, 5, 6, 7 and 8.**

Protect the performed welding with a corrosion-preventing product.

Protect the front wing lining with a noise absorbent product and paint the affected area in the carriage body color.

Mount the connection elements by performing the dismounting operations in the reverse order.

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Radiator upper cross member

DISMOUNTING

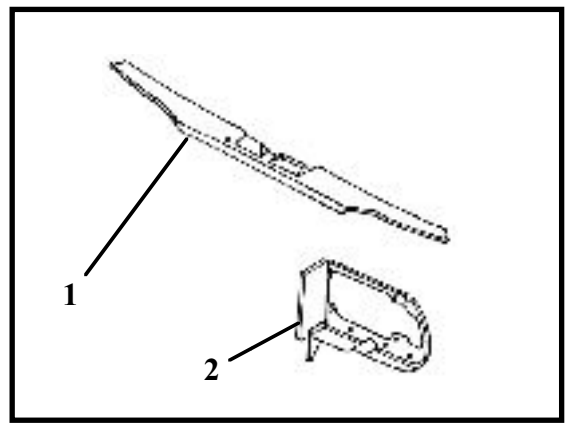
Dismount the elements, which are in contact with the radiator upper cross member.

Detach the welding points of the radiator upper cross member (**1**), which are in connection with:

- front wing lining in the area (**3**);
- headlamp support in the area **(4);**
- side wall in the area (**5**);

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting



REMOUNTING

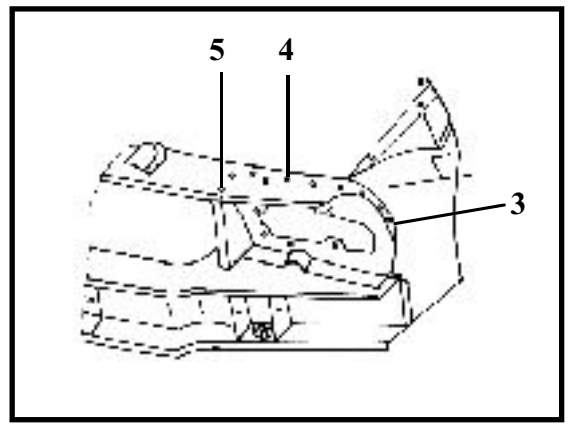
Position and center the new element.

Check the correct positioning of the radiator upper cross member.

Weld the radiator upper cross member **(1)** following the welding outlines **(3), (4) and (5).**

Protect the welds with a corrosion-preventing product.

Mount the elements, which are in connection with the radiator upper cross member, by performing the dismounting operations in the reverse order.



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Headlamp support

DISMOUNTING

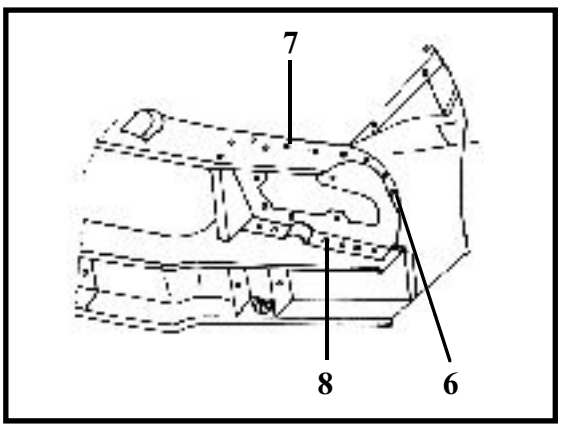
Dismount the elements, which are in contact with the headlamp support.

Detach the welding points of the headlamp support (**2**), which are in connection with:

- front wing lining in the area (**6**)
- radiator upper cross member in the area (**7**);
- front cross member in the area (**8**).

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting



REMOUNTING

Position and center the new element.

Check the correct positioning of the headlamp support.

Weld the headlamp support **(2)** following the welding outlines **(6), (7) and (8).**

Protect the welding with a corrosion-preventing product.

Mount the elements, which are in connection with the headlamp support, by performing the dismounting operations in the reverse order.

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Windscreen lower cross member

DISMOUNTING

Dismount the elements, which are in contact with the windscreen lower cross member (front bonnet, windscreen, dashboard, driving post cross member).

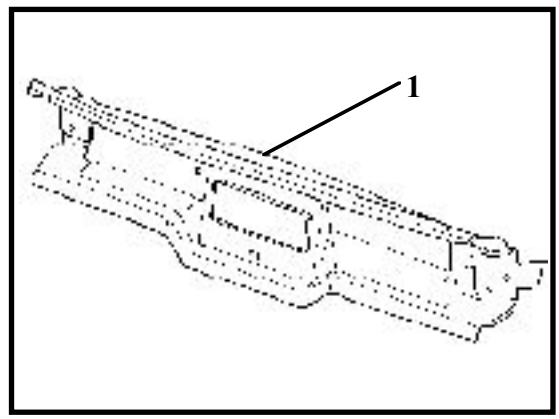
Detach the welding points of the windscreen lower cross member **(1)**, which are in contact with:

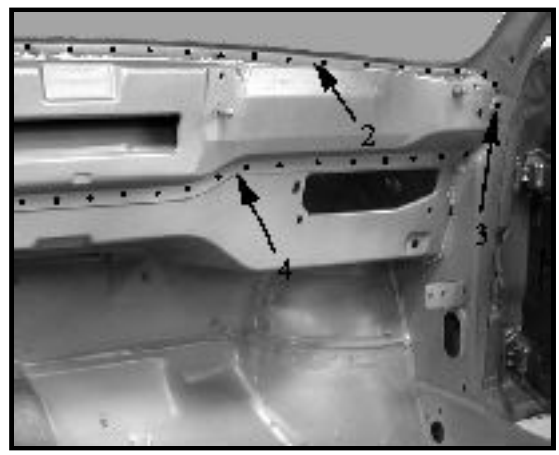
- windscreen frame in the area **(2)**;
- side frame lining (left/right) in the area **(3)**;
- climate control box in the area **(4)**;

Detach the welding points between the column support assembly and the climate control box in the area **(5)**.

Restore and straighten the outlines resulted from dismounting.

Grind the outlines resulted from dismounting.





REMOUNTING

Position and attach the new element.

Perform a spot welding and under protection gas (SE CO_2), in the connection areas of the windscreen lower cross member with:

- windscreen frame in the area **(2)**;
- right/left side frame lining in the area **(3)**;
- climate control box in the area **(4)**.

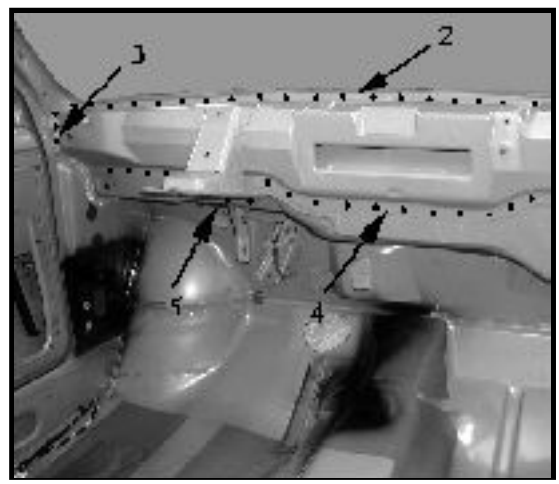
Weld the column support assembly on the climate control box in the area **(5)**.

Check and straighten the windscreen frame.

Grind the performed welding

Apply a sealant material layer in the connection area of the windscreen lower cross member with the right/left side frame lining and the climate control box.

Mount the connection elements by performing the dismounting operations in the reverse order.



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DISMOUNTING

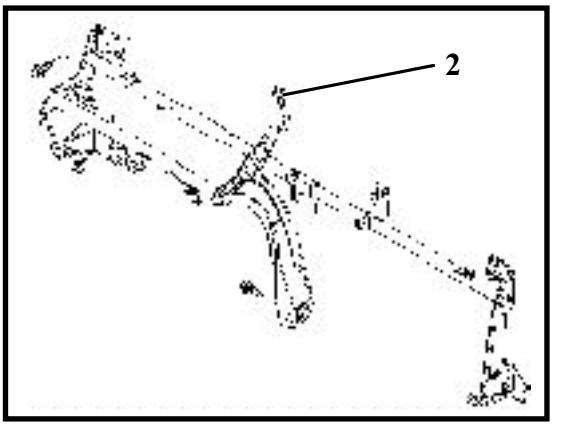
The dismounting operation of the driving post cross member is usually an additional operation in case of replacing such carriage body elements as:

- windscreen lower cross member;
- cow panel;
- climate control box.

This operation is requiring the previous dismounting of the dashboard.

Dismount the 8 Embase attachment screws **(2)** M8 –20 of the driving post cross member (1) on the carriage body.

Dismount the driving post cross member.





REMOUNTING

Mount by performing the dismounting operations in the reverse order.

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Front pillar

DISMOUNTING

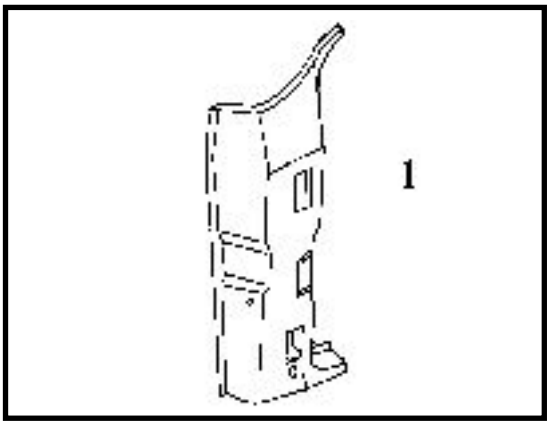
Dismount the elements that are in contact with the front pillar (front door, front bonnet, front wing).

Detach the welding points of the front pillar **(1),** which are in connection with:

- side frame lining in the area **(3) ;**
- windscreen frame in the area **(3)**
- front pillar lining in the area **(4)**.

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting



REMOUNTING

Position and center the new element on the side frame lining.

Clench in 2-3 points by means of sliding tongs.

Joint the front pillar border with side border of the windscreen frame.

Weld the front pillar, following the assembling outlines **(2)**, **(3)** and **(4)**.

Perform an additional welding SE CO_2, in the front pillar connection area with:

- side frame lining (6 weld x 15 mm);
- windscreen frame (4 weld x 15 mm);
- front pillar lining (6 weld x 15 mm).

Mount temporarily the front door, observing the openings clearance.

Weld the hinges on the front pillar (continuos weld on all hinges sides).

Grind the performed welds.

Protect the performed weld with a corrosion-preventing product.

Mount the connection elements by performing the dismounting operations in the reverse order.



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DISMOUNTING

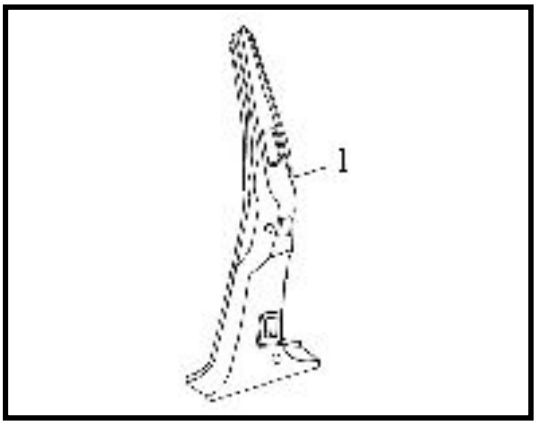
Dismount the elements, which are in contact with the middle pillar.

Detach the welding points of the middle pillar **(1)** which are in connection with:

- side frame lining in the areas **(3)** and **(4)**;
- middle pillar reinforcement in the area **(4)**;
- roof belt in the area **(2);**
- threshold closing plate in the area **(5)**.

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting



REMOUNTING

Fit temporary the middle pillar **(1)** on the side frame lining and clench it in 203 points.

Check the correct pillar positioning using the door as geometric gauge.

Weld the middle pillar following the welding outlines **(2), (3) (4) and (5).**

Perform a hardening gas protection welding (SE CO_2) in the areas **(2) and (3)** (2 + 2 weld x 10 mm**).**

Attach the rear door observing the openings clearance.

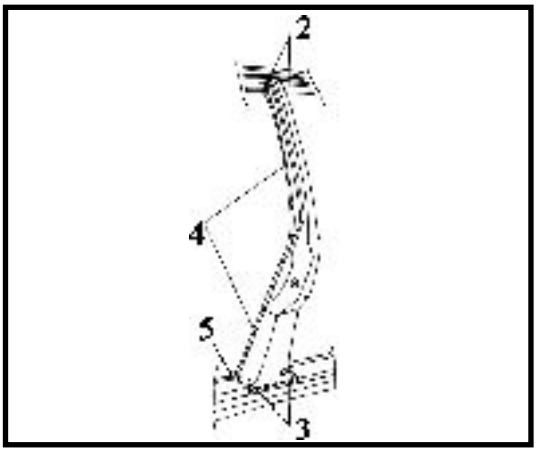
Weld the door hinges on the middle pillar (electric weld under protection gas, with continuos weld on all hinges sides).

Grind the performed welding

Protect the performed welding with a corrosion-protection product.

Paint the affected area in the carriage body color.

Mount the connection elements by performing the dismounting operations in the reverse order.



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Rear lower panel

DISMOUNTING

Dismount the elements that are in contact with the rear lower panel.

Detach the welding points of the rear lower panel **(1)** which are in connection with:

- lamp support (left/right) in the area **(2);**
- side panel (left/right) in the area **(3);**
- rear extreme cross member and rear lamp support in the area **(4).**

Straighten the areas resulted from dismounting

Grind the areas resulted from dismounting.

REMOUNTING

Position and center the new element.

Check the correct positioning of the rear lower panel.

Perform a spot weld with additional SE CO_2 (weld of 10 mm with 30 mm pitch) between the rear lower panel and :

- left/right rear lamp support in the area **(2)**;
- left/right rear lower panel in the area **(3)**;
- rear extreme cross member and rear lamp support in the area **(4)**.

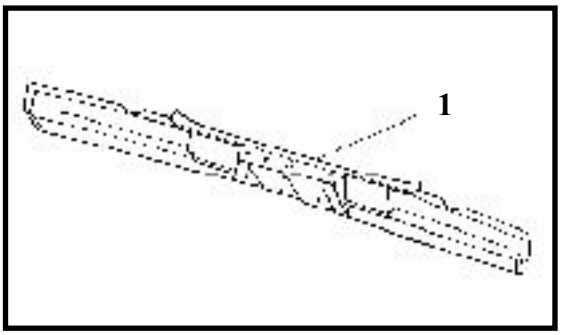
Grind the performed welding

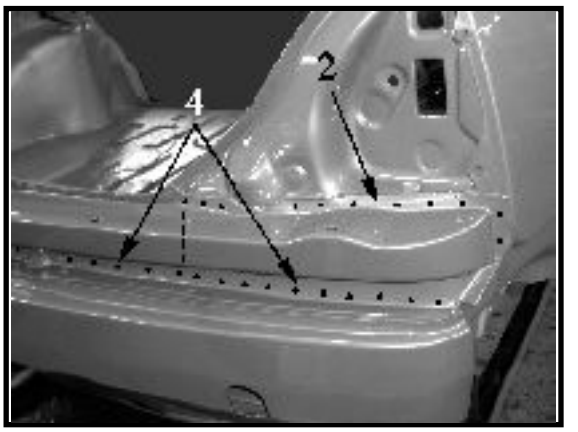
Protect the welding with a corrosion preventive product.

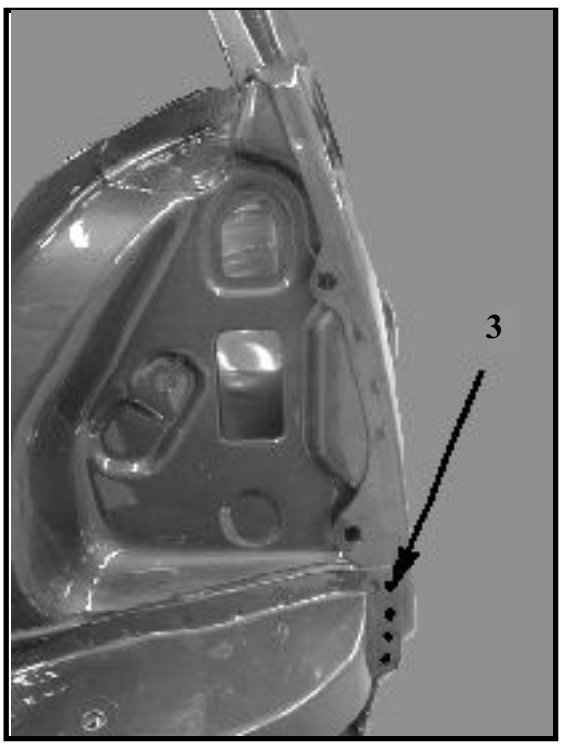
Apply a sealant material layer on the joining area between the rear lower panel and the rear extreme cross member.

Paint the affected area.

Mount the connection elements by performing the dismounting operations in the reverse order.







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REAR UPPER STRUCTURE

Rear lamp support

DISMOUNTING

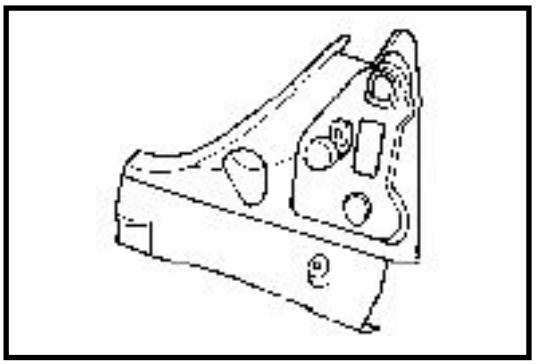
Dismount the elements in connection with the rear lamp support (rear bumper, rear lamp, equipping elements).

Detach from welding points of the rear lamp support in connection with:

- side panel in the area **(2)**;
- rear lower panel in the area **(3)**;
- rear lower panel and rear extreme cross member in the area **(4)**.

Straighten the areas resulted from dismounting

Grind the areas resulted from dismounting.



REMOUNTING

Position and center the new element.

Check the correct positioning of the rear lamp support.

Weld the rear lamp support following the welding outlines **(2)**, **(3)** and **(4)**.

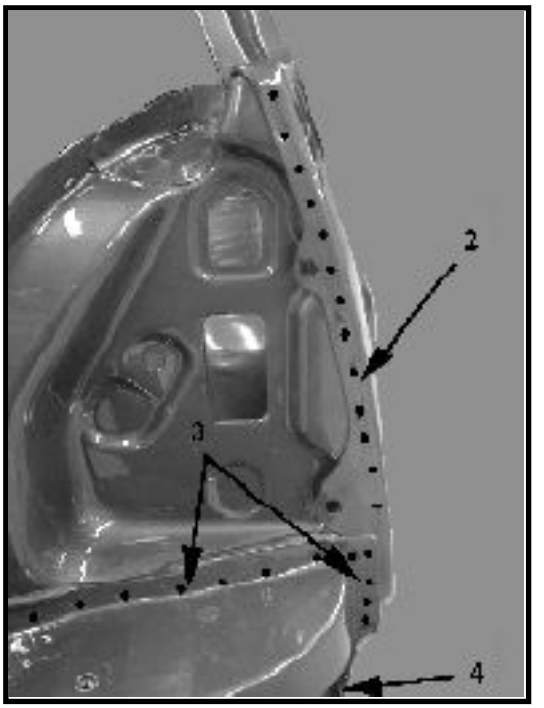
Grind the performed welding

Protect the performed welding with an anticorrosive product.

Apply a sealant material layer in the joining area of the rear lamp support with the rear lower panel and the rear extreme cross member.

Paint the affected area in the carriage body color.

Mount the connection elements by performing the dismounting operations in the reverse order.



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Inner wheel passage

DISMOUNTING

Dismount the elements, which are in contact with the inner wheel passage (**1**).

Detach the SE CO_2 welding points between the rear wheel passage and :

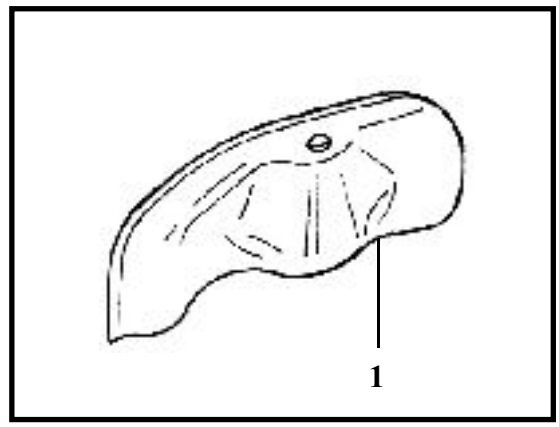
- backrest lock support in the area **(2);**
- connection bracket knee in the area **(3);**

Detach the welding points of the inner wheel passage in contact with :

- side frame lining, side panel and threshold obturator in the area **(4);**
- rear floor in the area **(5)**;
- rear longitudinal girder in the area **(6)**.

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting



REMOUNTING

Position and center the new element.

Check the correct positioning of the inner wheel passage.

Weld the inner wheel passage **(1)** following the assembling outlines **4**, **5** and **6.**

Perform SE CO_2 weld between inner wheel passage and :

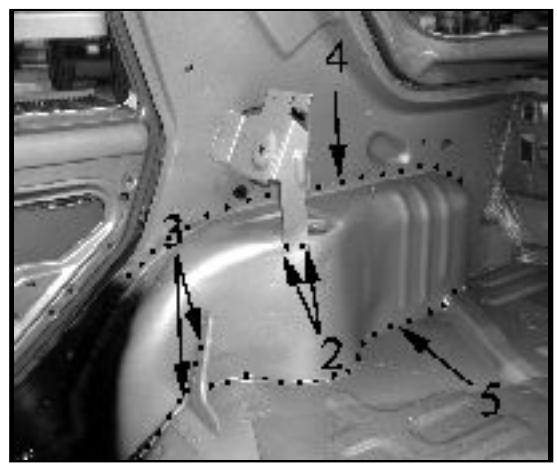
- backrest lock support in the area **(2)** (2 weld x 10 mm);
- connection bracket knee in the area **(3)** (2 weld x 10 mm).

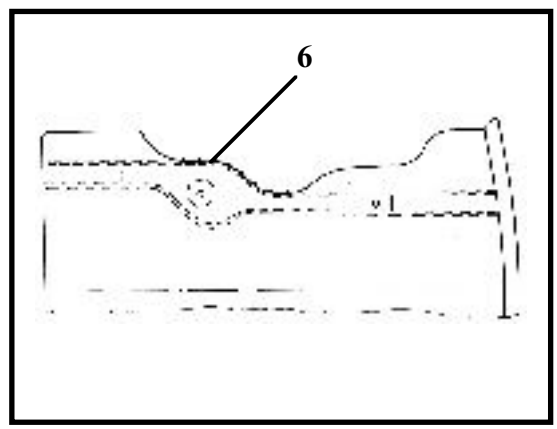
Protect the welding with a corrosion-preventing product.

Apply a layer of sealant material, in the contact area **(5)** of the inner wheel passage with the rear floor.

Paint the affected area.

Mounting the connection elements by performing the dismounting operations in the reverse order.





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DISMOUNTING

Dismount the elements, which are in contact with the side panel (**1**).

Detach the welding points of the side panel, which are in connection with:

- side frame lining in the area **(2);**
- roof in the area (**3**);
- rear lower panel in the area (**4**)
- rear extreme cross member in the area (**5**).

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting

REMOUNTING

Apply a layer of 5322 size material on the joint areas of the side panel with the side frame lining and the rear lower panel.

Position and center the new element.

Check the correct positioning of the side panel.

Weld the side panel **(1)** following the welding outlines **2**, **3**, **4, and 5.**

Retouch possible deformations.

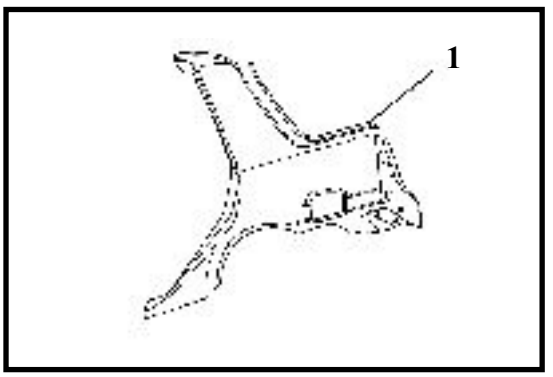
Grind the performed welding

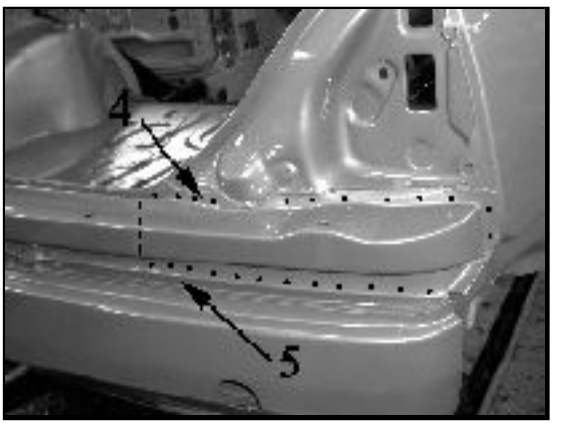
Protect the welding with a corrosion-preventive product.

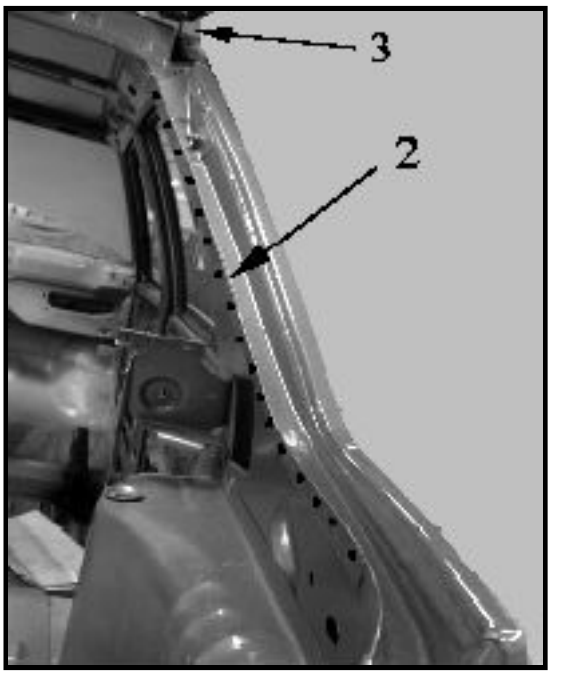
Apply a layer of sealant material in the joint areas of the side panel with the rear extreme cross member and the rear lower panel.

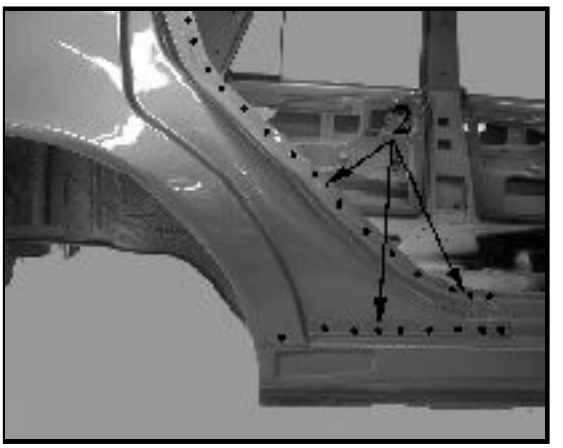
Paint the affected area in the carriage body color.

Mount the connection elements by performing the dismounting operations in the reverse order.









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DISMOUNTING

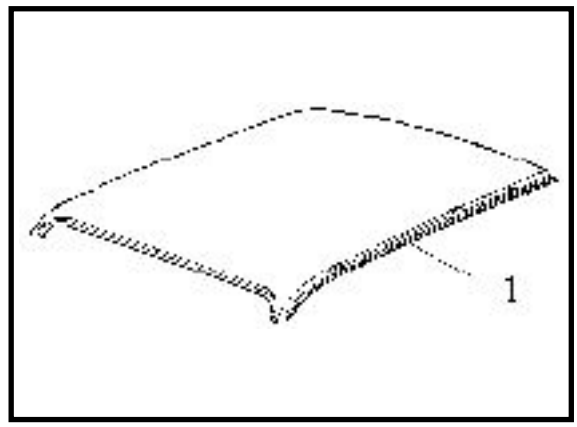
Dismount the elements, which are in contact with the roof (front/rear doors, windscreen, hatchback, roof and rear quarter panel lining).).

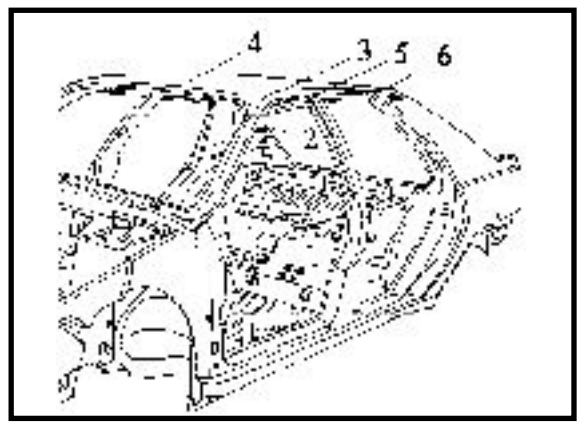
Detach the welding points of roof **(1),** which are in connection with:

- roof belt in the area **(2)** (left/right);
- side frame lining in the area (**3**). (left/right)
- windscreen frame in the area (**4**);
- middle pillar in the area (**5**);
- side panel (left/right) in the area (**6**).

Straighten the areas resulted by dismounting.

Grind the areas resulted by dismounting





REMOUNTING

Position and center the new element.

Check the correct positioning of the roof.

Weld the roof following the welding outlines **(2), (3) (4), (5), and (6).**

Grind the performed welding

Protect the performed welding with an anticorrosive product.

Paint the affected area.

Mount the elements in connection with the roof by performing the dismounting operations in the reverse order.

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Windscreen frame

DISMOUNTING

Dismount the elements in connection with the windscreen frame (front bonnet, windscreen, left/right front wing, left/right front door).

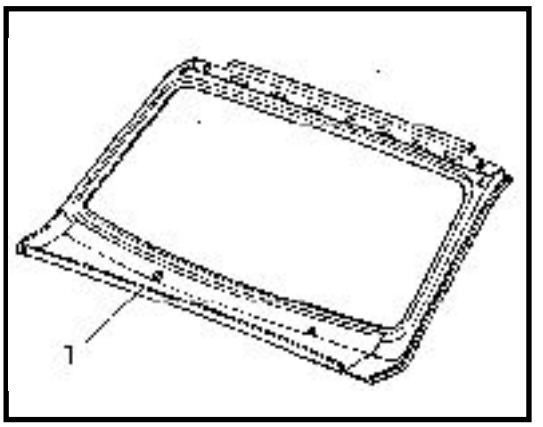
Detach the welding points of the windscreen frame **(1)**, which are in contact with:

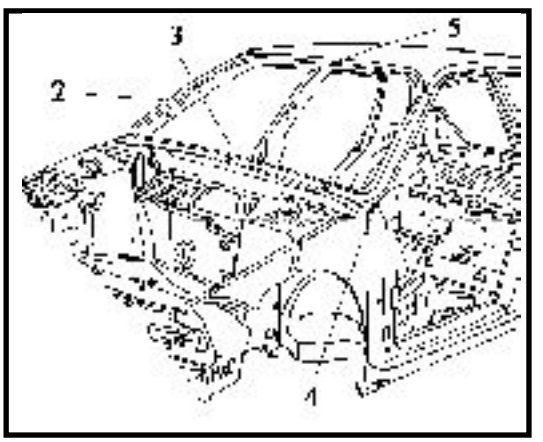
- side frame lining and roof belt in the area **(2)** left/right;
- windscreen lower cross member in the area **(3)**;
- front pillar and front pillar lining in the area **(4)** left/right
- roof in the area **(5)**.

Detaching is to be performed by means of a special shap drill Ø 6 for plate elements.

Straighten the areas resulted from dismounting

Grind the area resulted from dismounting.





REMOUNTING

Position and center the new element on the side frame lining (left/right).

Clench in 2-3 points by means of sliding tongs.

Joint the front pillar border with windscreen frame side border (left/right).

Perform a spot welding of the windscreen frame on the outlines **(2)**, **(3)**, **(4)** and **(5)**.

Perform an additional SE CO_2 welding in the connection area of the front pillar upper border with the windscreen frame side border (left/right) (4 weld x 15 mm).

Check and restore the windscreen frame.

Grind the performed welding

Protect the performed welding with an anti-corrosion product.

Paint the affected area.

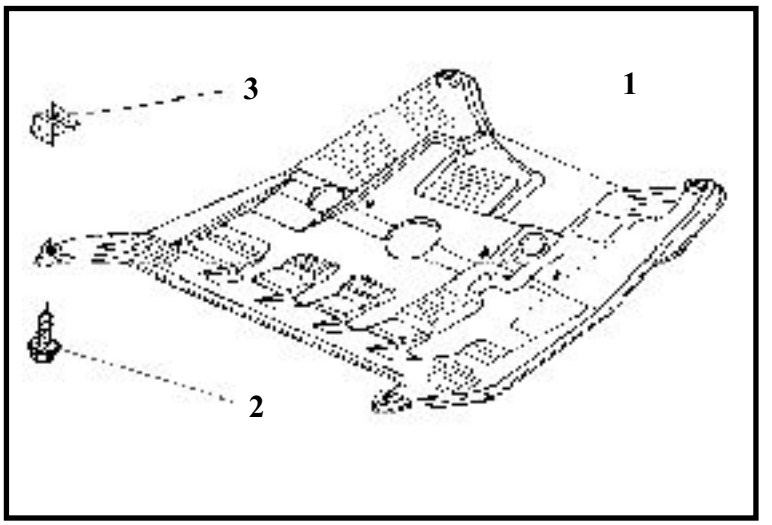
Mount the elements in connection with the windscreen frame by performing the dismounting operations in the reverse order.

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DISMOUNTING

Dismount four M 6x1 – 20 Embase screws attached in four **(3)** M6x1 safety nuts on the power train support.

Release the engine shield **(1)**.



REMOUNTING

Perform the dismounting operations in the reverse order.

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DISMOUNTING

Dismount the elements, which are in connection with the front/rear door.

Dismount the door panel.

Dismount the door wiring protected by sleeve (**1**) and remove it through the existent door caisson hole.

Dismount the attachment screw (**2**) of the limiting mechanism of the front/rear door.

Dismount the upper hinge axle (**3**) and lower hinge axle (**4**).



REMOUNTING

Perform the dismounting operations in the reverse order.

Grease the hinges with white grease (Teroson).

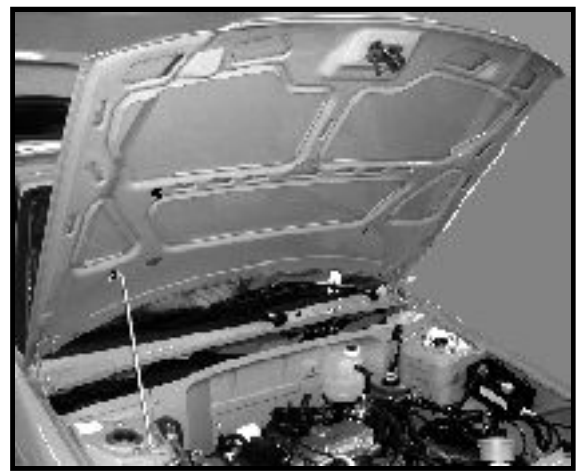
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Front bonnet

DISMOUNTING

Dismount:

- attachment screws **(1)** and **(2)** of the upper half-hinges on the front bonnet lining,
- front bonnet.



REMOUNTING

Pre-attach the screw **(1)** from the windscreen frame on the front bonnet lining (left/right).

Place the front bonnet in the upper half-hinge (through the channel made in it) and adjust the clearances.

Mount the other two attachment screws of the upper half-hinges on the front bonnet lining and tighten all the four screws to the required moment of 22,44 Nm.

Grease the hinges with white grease (Teroson).



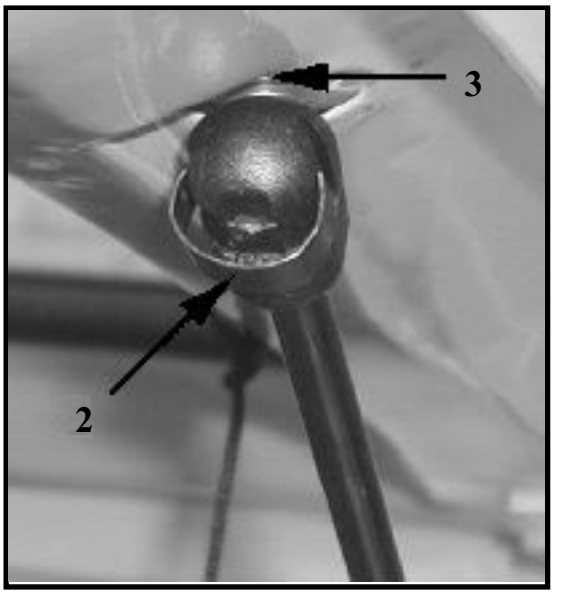
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DISMOUNTING

Dismount the hatchback wiring **(1)** and remove it through the existent hole in the hatchback lining.

Dismount :

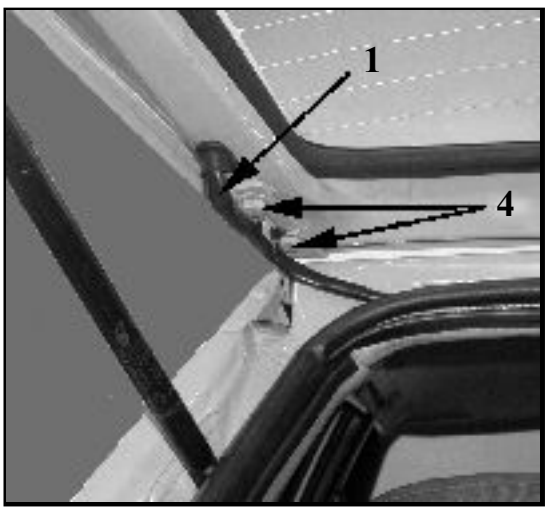
- safety locks **(2)** of the balancing shock absorbers on the hatchback
- attachment screws **(3)** of the balancing shock-absorbers on the hatchback;
- attachment screws **(4)** of the hinges on the hatchback;
- hatchback.



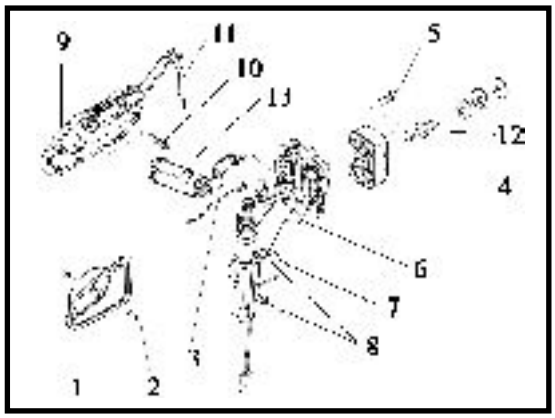
REMOUNTING

Perform the dismounting operations in the reverse order.

Grease the hinges with white grease (Teroson).



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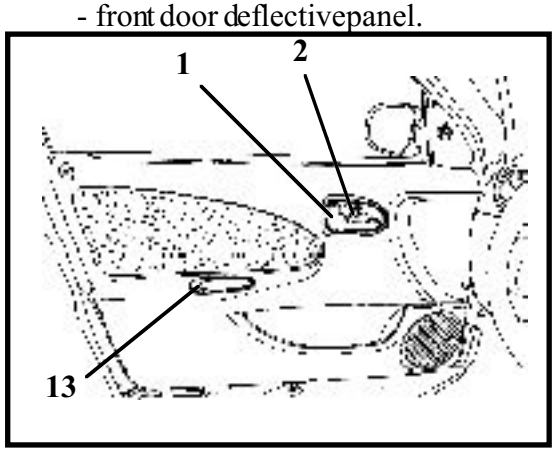
TIGHTENING MOMENTS (daNm)	
Attachment screw of assembled box	1.1
Mechanism bolt	5
Attachment screw of outside opening mechanism	0.5

DISMOUNTING

Disconnect the battery (for vehicles equipped with central locking mechanism)

Dismount:

- window lifting crank, by detaching it from the crank axle (for vehicles without electric windows regulator).
- attachment screw (**2**) of the inside opening mechanism (**1**);
- closing handle (**13**);
- front door panel (**see chapter 72**);
- front door deflective panel.



Dismount the lock fork (**13**) from the electric control latch.

Disconnect the actuator connector **(7)**.

Remove the opening control rod of the front door (**3**).

Dismount the attachment screws **(5)** of the assembled box **(4)** from the front door caisson.

Remove the electric contrd latch (**6**) through the technological opening from the front door caisson.

Dismount:

- attachment screws (**10**) of the outside opening mechanism (**9**) on the door external panel;
- mechanism bolt (**12**);
- screws (**8**) attaching the actuator (**7**) to the electric control latch (**6**).

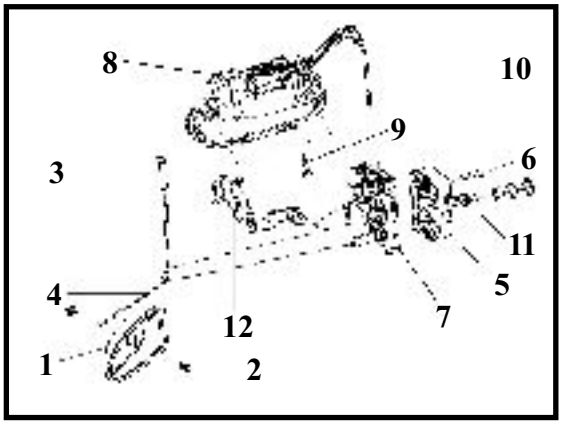
REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendation:

- actuator attachment on the latch is to be performed so that its acting stroke is of minim 18 mm;
- for the front door latch mounting, the connecting fork **(11)** of the outside opening mechanism will be fixed on the existing ball joint on the lock;
- all springs, rivets and elements that are in movement are to be lubricated with **UM 185 Li2** grease;
- for the latch attachment screws to the electric control, product **Fixamed M28** is to be used;
- front door deflective panel is to be fixed on the caisson by means of a sealing material **Romtix 1502 P**;
- adjustment of the front door closing is to be performed by means of the mechanism bolt (**12**), that is to be tighten to the required moment of **5 daNm**.

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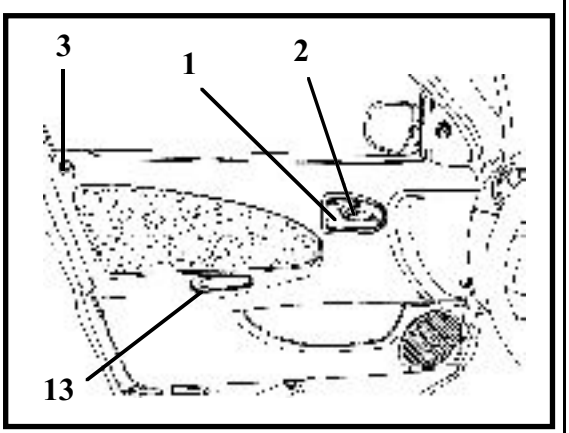
Front door-opening mechanism with manual control



TIGHTENING MOMENTS (daNm)	
Attachment screw of assembled box	1.1
Mechanism bolt	5
Attachment screw of outside opening mechanism	0.5

DISMOUNTING

- window lifting crank, by detaching it from the crank axle.
- attachment screw (**2**) of the inside opening mechanism (**1**);
- closing handle (**13**);



- front door panel (see chapter 72);
- front door deflective panel.

Detach:

- lock fork (**12**) from the latch.
- opening control rod of the door (**4**);

Detach from clips the blocking rod.

Dismount the attachment screws **(6)** of the assembled box **(5)** from the front door caisson.

Remove the manual control latch (**7**) through the technological opening from the front door caisson.

Dismount:

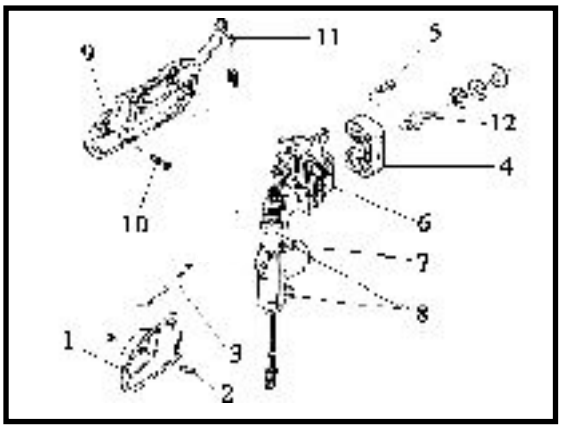
- attachment screws (**9**) of the outside opening mechanism (**8**) on the door external panel;
- mechanism bolt (**11**);

REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendation:

- for blocking control mounting, the blocking rod **(3)** will be placed in the position where the latch is blocked.
- for the latch mounting, the connecting fork **(11)** of the outside opening mechanism will be fixed on the existing ball joint on the lock;
- all springs, rivets and elements that are in movement are to be lubricated with **UM 185 Li2** grease;
- for the latch attachment screws , product **Fixamed M28** is to be used;
- front door deflective panel is to be fixed on the caisson by means of a sealing material **Romtix 1502 P**;
- adjustment of the front door closing is to be performed by means of the mechanism bolt (**11**), that is to be tighten to the required moment of **5 daNm**.

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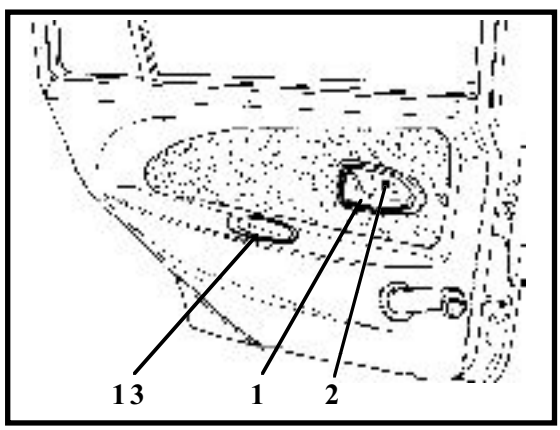
TIGHTENING MOMENTS (daNm)	
Attachment screw of assembled box	1.1
Mechanism bolt	5
Attachment screw of outside opening mechanism	0.5

DISMOUNTING

Disconnect the battery (for the vehicles equipped with central locking mechanism)

Dismount:

- window lifting crank, by clips-detaching it from the crank axle
- attachment screw (**2**) of the inside opening mechanism (**1**);
- closing handle (**13**);
- front door panel **(see chapter 72)**;
- rear door deflective panel.



Disconnect the actuator connector. **(8)**

Remove the opening control rod of the door (**3**);

Dismount the attachment screws **(5)** of the assembled box **(4)** from the rear door caisson.

Remove the electric control latch (**6**) through the technological opening from the rear door caisson.

Dismount:

- attachment screws (**10**) of the outside opening mechanism (**9**) on the door external panel;
- mechanism bolt (**12**);
- screws (**8**) attaching the actuator (**7**) to the electric control latch (**6**).

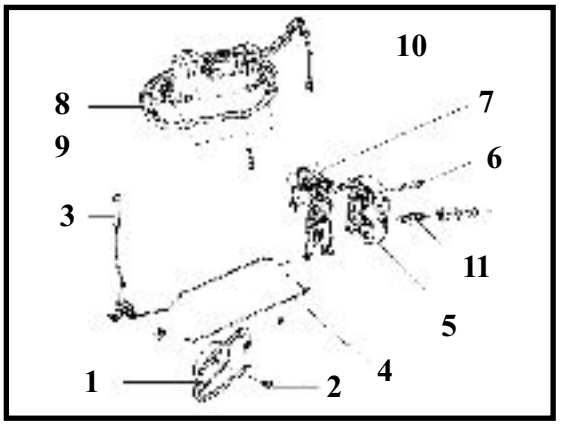
REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendation:

- actuator attachment on the latch is to be performed so that its acting stroke is of minim 18 mm;
- for the rear door latch mounting, the connecting fork **(11)** of the outside opening mechanism will be fixed on the existing ball joint on the lock;
- all springs, rivets and elements that are in movement are to be lubricated with **UM 185 Li2** grease;
- for the latch attachment screws to the electric control, product **Fixamed M28** is to be used;
- rear door deflective panel is to be fixed on the caisson by means of a sealing material **Romtix 1502 P**;
- adjustment of the doors closing is to be performed by means of the mechanism bolt **(12),** that is to be tighten to the required moment of **5 daNm**.

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Rear door-opening mechanism with manual control

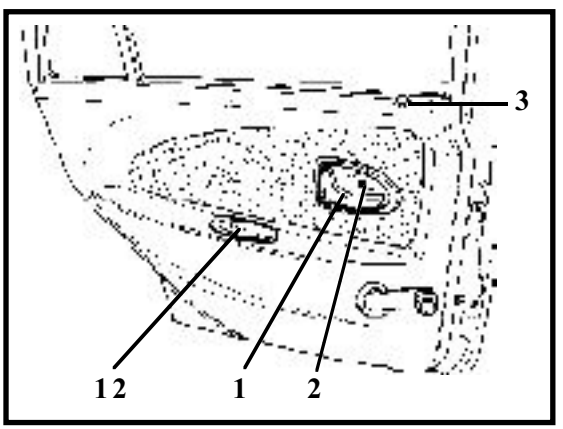


TIGHTENING MOMENTS (daNm)	
Attachment screw of assembled box	1.1
Mechanism bolt	5
Attachment screw of outside opening mechanism	0.5

DISMOUNTING

Dismount:

- window lifting crark, by clips-detaching it from the crank axle
- attachment screw (**2**) of the inside opening mechanism (**1**);
- closing handle (**12**);



- front door panel (**see chapter 72**);
- rear door deflective panel.

Detach from clips the blocking control rod of the rear door (**3**);

Dismount the fork (**10**) of the outside opening mechanism from the rear door latch.

Dismount:

- rear door blocking control rod from the latch;
- ear door inside opening rod **(4)** from the latch;
- attachment screws **(6)** of the assembled box **(5)** from the door .

Remove the rear door manual control latch (**7**) through the technological opening from the door caisson.

Dismount:

- attachment screws (**9**) of the outside opening mechanism (**8**) on the rear door external panel;
- mechanism bolt (**11**);

REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendation:

- for mounting the blocking control. the blocking rod will be placed in the position where the latch is blocked.
- mount the assembly in such way that free arm is to be introduced on the control rod, then the blocking rod will be introduce through the technological opening of the door caisson;
- all springs, rivets and elements that are in movement are to be lubricated with **UM 185 Li2** grease;
- for the latch attachment screws to the electric control, product **Fixamed M28** is to be used;
- rear door deflective panel is to be fixed on the caisson by means of a sealing material **Romtix 1502 P**;
- adjustment of the doors closing is to be performed by means of the mechanism bolt **(12),** that is to be tighten to the required moment of **5 daNm**.

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TIGHTENING MOMENTS (daNm)
Crank attachment screws and nuts 0.7

DISMOUNTING

Disconnect the battery.

Bring the glass at the position P = 85 mm.

Dismount:

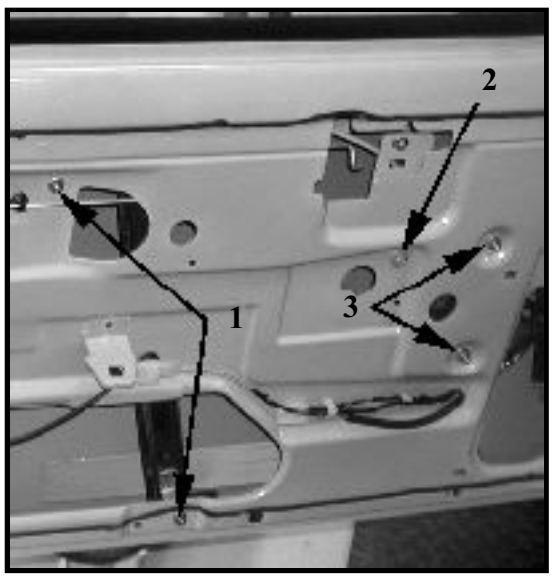
- front door panel (**see chapter 72**);
- front door deflective panel.

Remove the glass outside wiper.

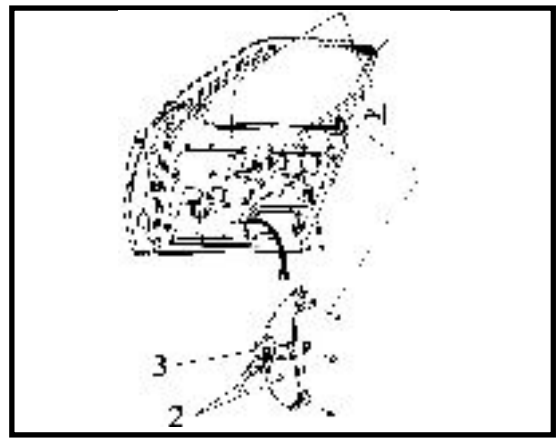
Disconnect the windows regulator supply connector.

Dismount:

- screws attaching glass bottom on the crank glider and then remove the glass (together with the glass bottom);



- crank attachment nuts (**1**) to the lower and upper part on the door caisson;
- attachment screw (**2**) and nuts (**3**) of the crank regulator on the door caisson.



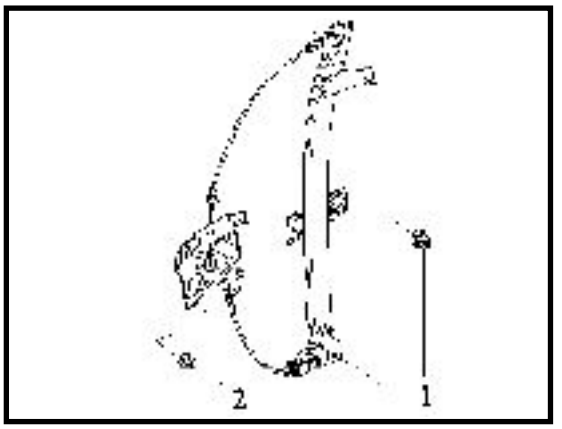
REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendations:

- crank is to be introduced in the caisson through the technological opening and is to be attached in the window regulator area on the caisson;
- attach the crank at the lower and upper part;
- introduce the glass, previously mounted with the glass bottom and attach it to the glider;
- check the crank operation by lifting and lowering the glass, after having connected the crank connector and the battery;
- mount the front door deflective and the door panel, after the sealant material layer integrity has been checked.

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TIGHTENING MOMENTS (daNm)	
Crank attachment nuts	0.7



DISMOUNTING

Bring the glass at the position P = 85 mm.

Dismount:

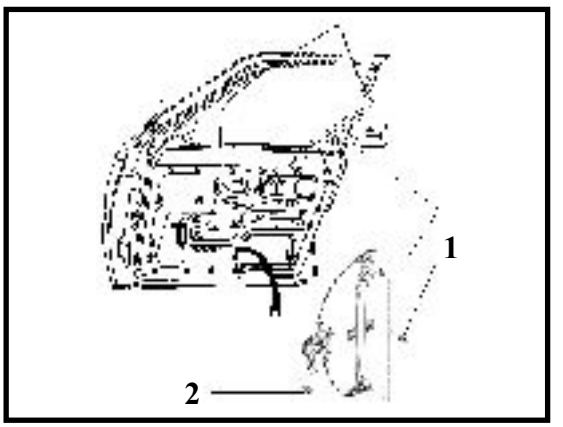
- front door panel (**see chapter 72**);
- front door deflective panel.

Remove the glass outside wiper.

Dismount:

- screws attaching glass bottom on the crank glider and then remove the glass (together with the glass bottom);
- crank attachment nuts (**1**) to the lower and upper part.
- attachment nuts (**3**) of the crank regulator.

Release the front door window regulator.



REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendations:

- crank is to be introduced in the caisson through the technological opening and is to be attached in the window regulator area;
- attach the crank at the lower and upper part;
- introduce the glass, previously mounted with the glass bottom and attach it to the glider;
- check the crank operation by lifting and lowering the glass;
- mount the deflective panel by sticking to the sealant material continuos layer;
- mount the inside window wiper, front door panel, crank handle, inside opening mechanism.

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TIGHTENING MOMENTS (daNm)	▽
Crank attachment screws and nuts and nuts	0.7

DISMOUNTING

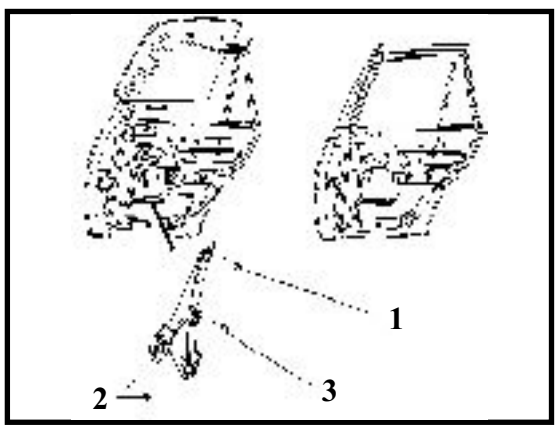
Dismount:

- front door panel (**see chapter 72**);
- front door deflective panel;
- glass outside wiper;



- screws attaching glass bottom on the crank glider and then remove the glass (together with the glass bottom);
- crank attachment nut (**1**) to the upper part on the door caisson;
- attachment nuts (**2**) and screw (**3**) of the crank regulator.

Release the rear door window regulator.

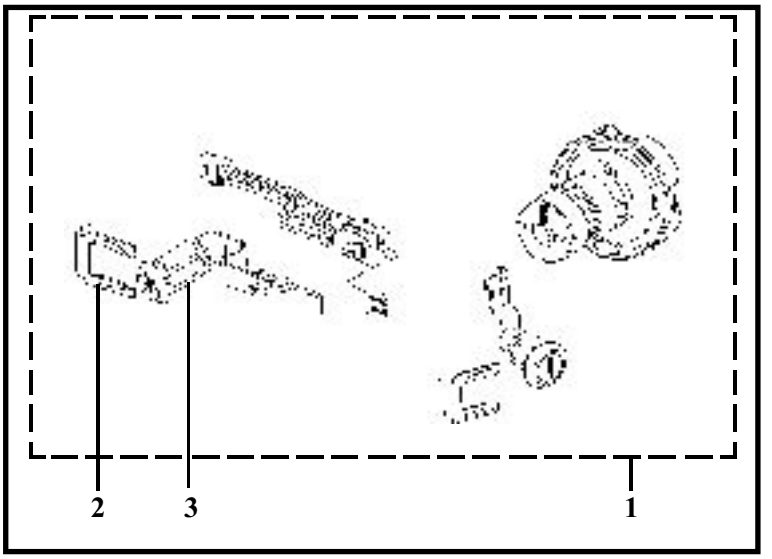


REMOUNTING

Perform the dismounting operations in the reverse order, taking into account the following recommendations:

- crank is to be introduced in the caisson through the technological opening.
- attach the crank in the regulator area and at upper part;
- introduce the glass (previously mounted with the glass bottom) and attach it by means of screws, to the glider
- check the crank positioning by lifting and lowering the glass;
- mount the deflective panel by sticking to the sealant material continuos layer;
- mount the inside window wiper, door panel, crank handle, inside opening mechanism.

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1 . metallicinsert lockskit
2. fork
3. cylinderlock

FRONT DOOR LOCK

DISMOUNTING

Dismount:

- crank handle by clips-detaching from the crank axle;
- inside opening mechanism;
- closing handle;
- front door panel;
- front door deflective panel.

After performing a.m. operations, dismount the attaching fork (**2**) of the cylinder lock (**3**) on the door.

REMOUNTING

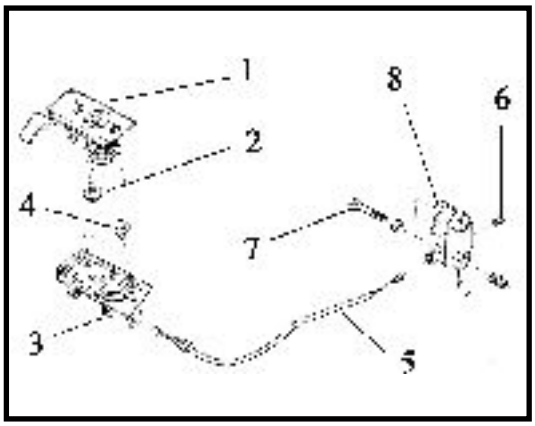
Perform the dismounting operations in the reverse order, taking into consideration the followings:

- checking the integrity of the deflective panel and of the continue sealant material layer **Romtix 1502P** on the front door caisson;
- checking the operation of the inside opening mechanism and of the cylinder lock.

For the replacement of the others locks, please see the following chapters:

- anti-theft mechanism – chapter 84;
- filling cap – chapter 19;
- hatchback cylinder lock – chapter 52.

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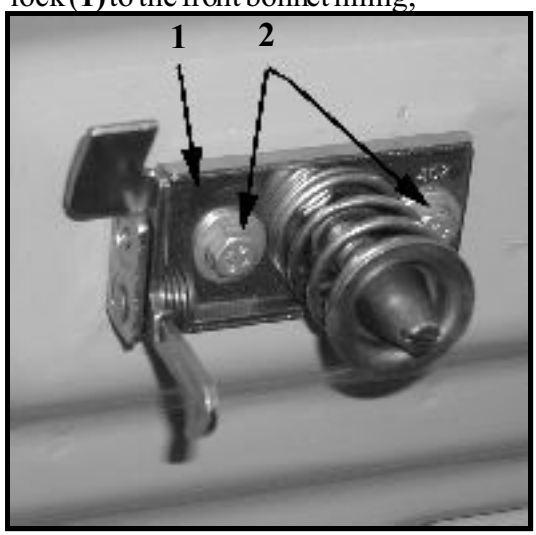


TIGHTENING MOMENTS (daNm)	
Attachment screws of the bonnet lock hock and lock	0.7

DISMOUNTING

Dismount :

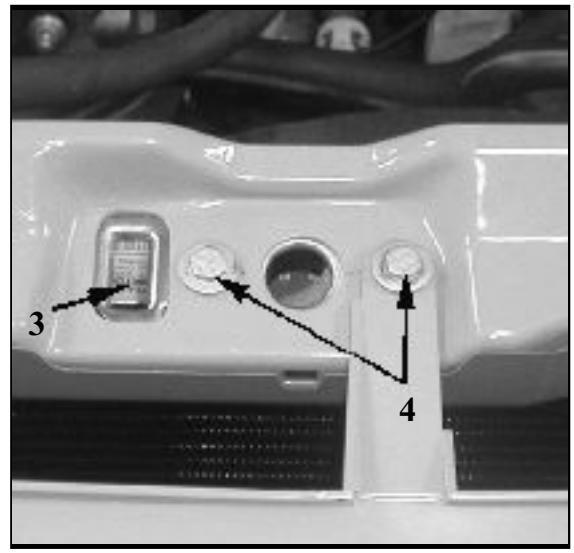
- attachment screws (**2**) of the bonnet lock (**1**) to the front bonnet lining;



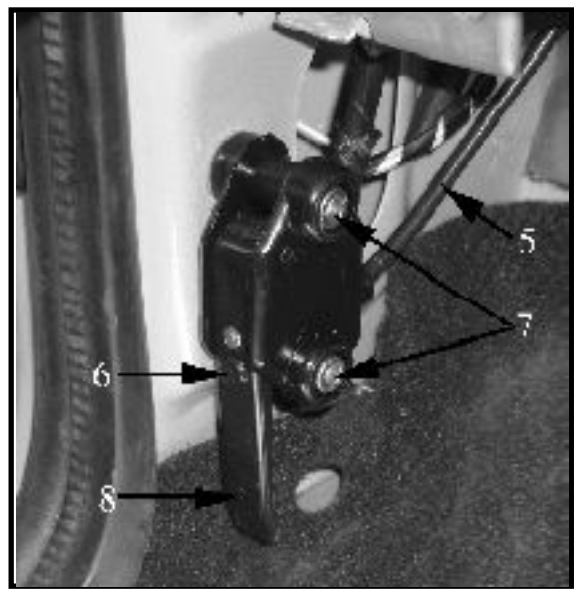
- attachment screws **(4)** of the bonnet lock on the radiator upper cross beam.

Release the opening control cable **(5)** from the lock.

Remove the obturator (**6**) and release the cable from the opening handle **(8).**



Dismount the attachment screws **(7)** of the handle **(8)** on the side frame lining.



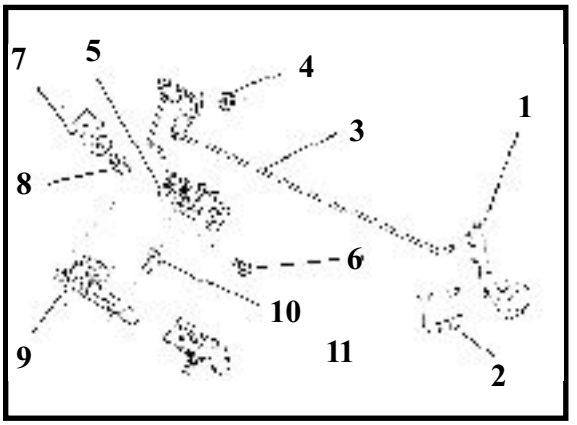
REMOUNTING

Perform the dismounting operations in the reverse order.

Required tightening moment for attachments screws of the lock hook and lock is of **0,7 daNm.**

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Hatchback lock

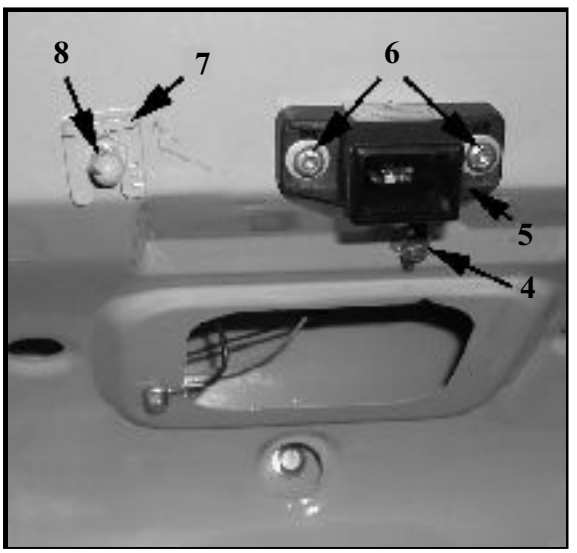


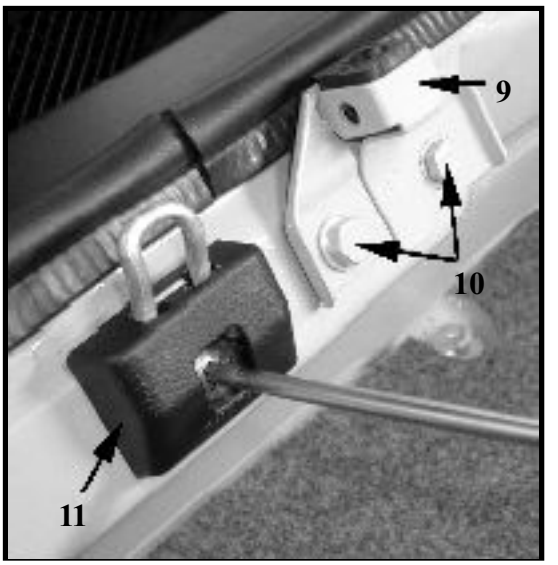
TIGHTENING MOMENTS (daNm)	
Hatchback latch attachment screw	2.1
Guiding support attachment screw	0.7
Hatchback lock attachment screw	0.6
Changer attachment nut	0.5

DISMOUNTING

Dismount:

- hatchback lock cylinder (**1**) by removing the fork (**2**) and detaching from clips the changer rod from its arm;
- attachment nut (**4**) of the hatchback opening control changer (**3**) on the hatchback lining;
- attachment screws (**6**) of the hatchback lock on the hatchback lining;
- guiding element (**8**) and adjustment washer (**7**) of the guiding element;
- attachment screws (**10**) of the guiding support (**9**) on the hatchback frame.
- special screw attaching hatchback latch (**11**) on the hatchback frame.





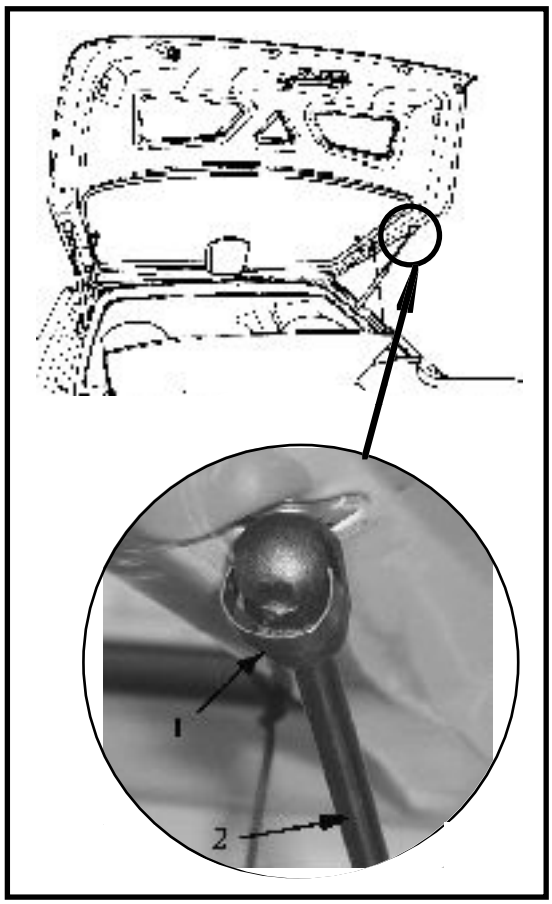
REMOUNTING

Perform the dismounting operations in the reverse order.

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DISMOUNTING

Dismount is performed by successive acting upon the safety locks (**1**) from the pneumatic balancing device end (**2**).



REMOUNTING

Perform the dismounting operations in the reverse order.

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DISMOUNTING OF A BROKEN GLASS

If the glass or part of it did not fall, the dismounting and the cleaning of the window gaskets by the pieces of the broken glass will be easier to be made by sticking a sheet of paper on each surface.

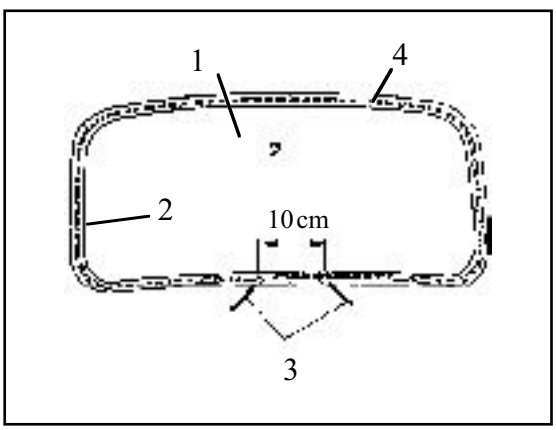
MOUNTING PREPARATION

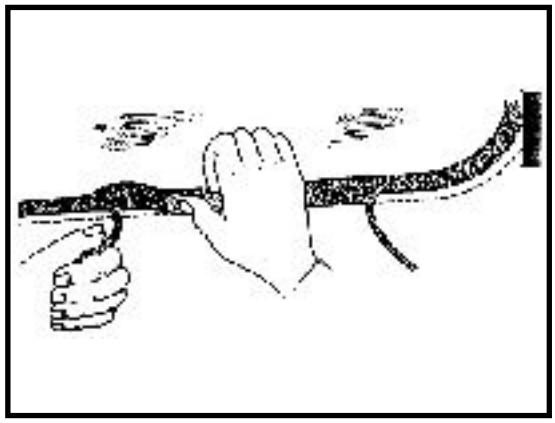
Position the gasket **(2)** around the glass **(1)** the assembly being placed on a protection plate. Apply in the gasket channel in the contact area with carriage body a cord of sealing material **Romtix 1502P** 3mm diameter.

Place in the gasket channel all around the gasket frame; a cotton cord **(4)** of 3 – 4 mm diameter, leaving at its free ends **(3)** about 20 cm of cord, and between the ends, the distance shall not be more than 10 cm.

MOUNTING OF THE WINDSCREEN

Mount on the carriage body, the windscreen – cord - glass gasket assembly, so that the cord ends are placed towards the inside of carriage body.





From the inside of the vehicle, successively draw each end of the cord, the drawing direction being parallel with the glass surface, towards the surface inner part, perpendicularly on the frame, beginning with the lower part, this operation enabling the gasket edge lifting and then its lowering on the frame.

At the outside, the gasket is seated by slightly and successively pressing it on glass, so that the tightening is uniform on the whole windscreen contour and frame.

The cord must be always removed through the upper part of the windscreen.

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GLASSES
Windscreen glass

Each time a windscreen is mounted, ensure the uniform setting of the whole assembly on the carriage body by tapping several times with a rubber hammer, on the edge of the glass frame.

REMARK:
Do not tap the glass on corners and on the two vertical sides. Take care that both spacers are correctly positioned.

After the windscreen mounting check out carefully the uniformity of the whole assembly and then its waterproofing by splashing with a jet of water.

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WINDSCREEN AND HATCHBACK GLASS REPLACEMENT

The replacement of these glasses is performed in case they are broken, when they are not according to the required overall dimensions or when they have manufacturing defects (image distortions, cracks, etc).

REPLACEMENT HATCHBACK GLASS

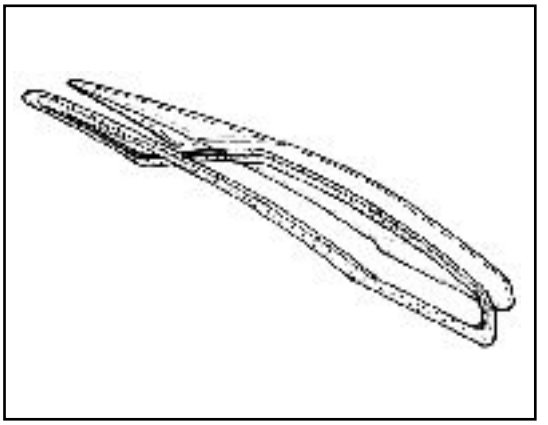
Disconnect:

- battery
- supply and mass connectors of the hatchback defrosting.

Remove the glass together with the gasket, by pushing it from the inside of the vehicle.

Clean the gasket and place the glass in its new gasket.

The mounting of the hatchback glass – gasket assembly is performed in the same way with the windscreen mounting.



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DISMOUNTING

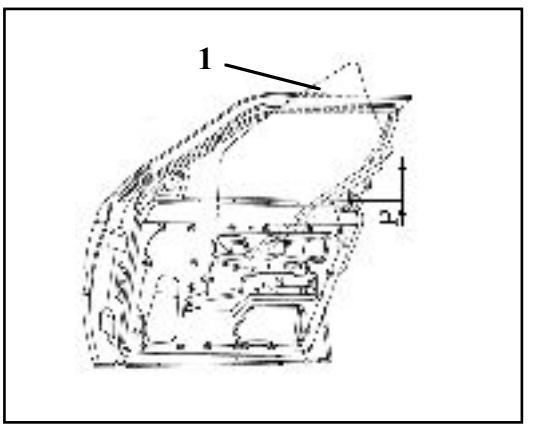
Dismount:

- front door panel (see chapter 72);
- front door deflector panel;
- inner and outside wiper;

Bring the glass up to the P=85 mm position.

Dismount the attachment screws of the glass support on the regulator glider and then remove the glass (1) together with the glass support.

Release the glass from its support.



REMOUNTING

Perform in the reverse order the dismounting operations, observing the followings:

- place the glass, previously fitted in the glass support, and attach it on the glider.
- check the regulator operation by lifting and lowering the glass.
- check the continuity of the **Romtix 1502 P** sealant material layer, on which the front door deflector panel is stacked.

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DISMOUNTING

Dismount:

- rear door panel (see chapter 72);
- rear door deflector panel;
- glass outside wiper by means of a screwdriver.

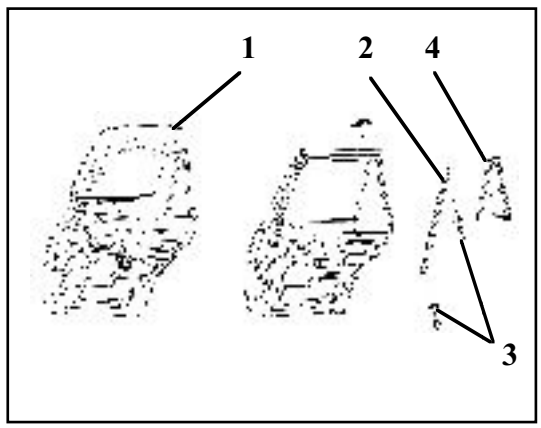
Lower the glass in the minimal position, so that through the technological opening, the screws attaching the glass support on the regulator glider, to be dismounted.

Remove the glass **(1)** together with the glass support.

Release the glass from its support.

Dismount:

- screws **(3)** attaching the glider to the glass.
- the fix glass.



REMOUNTING

Perform the dismounting operations in the reverse order, observing the followings:

- position in the glass support, the fix glass, on which the glass gasket has been previously mounted.
- place the glass in the frame (on which the glass support has been previously mounted) and fix it on the glider by means of the screws;
- check the regulator operation by glass lifting and lowering.
- check the positioning and then the waterproofing in the fix glass area.
- in case water penetration is occurring in the fix glass area, pierce the water draining holes and put sealing material on the fix glass gasket, using Terodicht Scwartz sealant material.

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DISMOUNTING

Dismount the front grill.

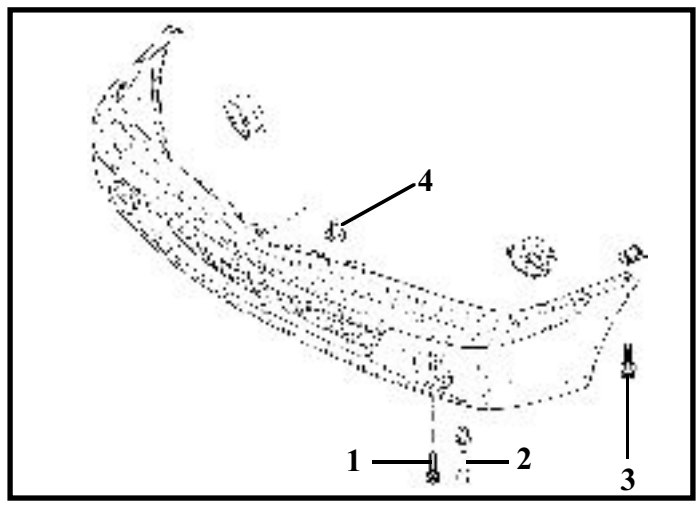
Lift the vehicle by means of a two-column elevator.

Disconnect the projector lamps connectors.

Dismount:

- bumper attachment screws (**1**) on power train frame;
- bumper attachment screws (**2**) on the front anti-shock cross member;
- bumper attachment screws (**3**) on the front wing attachment side supports.

Release the bumper from its sustaining clips (**4**)



REMOUNTING

Perform the dismounting operations in the reverse order.

Front bumper attachment screws are to be tighten to the required moment of **4 Nm**, and the fairing attachment screws to the required moment of **1.4 Nm.**

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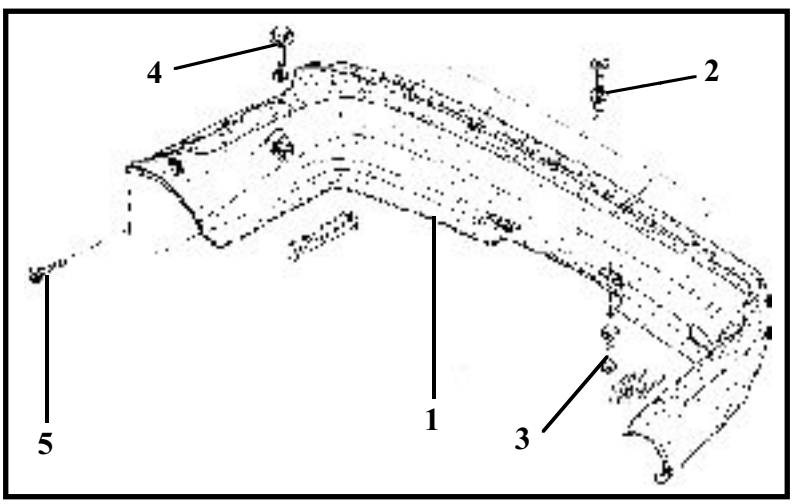
DISMOUNTING

Disconnect the rear lamps connectors.

Dismount:

- rear lamps;
- attachment screws **(2)** of the rear bumper **(1)** on the rear lower plate;
- attachment screws **(5)** of the rear bumper on the rear wheels passage;
- attachment screws **(3)** of the rear bumper (lower part) on the rear extreme cross member;
- attachment screws **(4)** of the rear bumper on the side panels.

Detach the rear bumper.



REMOUNTING

Perform the dismounting operations in the reverse order.

Required tightening moment of the rear bumper attachment screws on passage is of **1,4 Nm**.

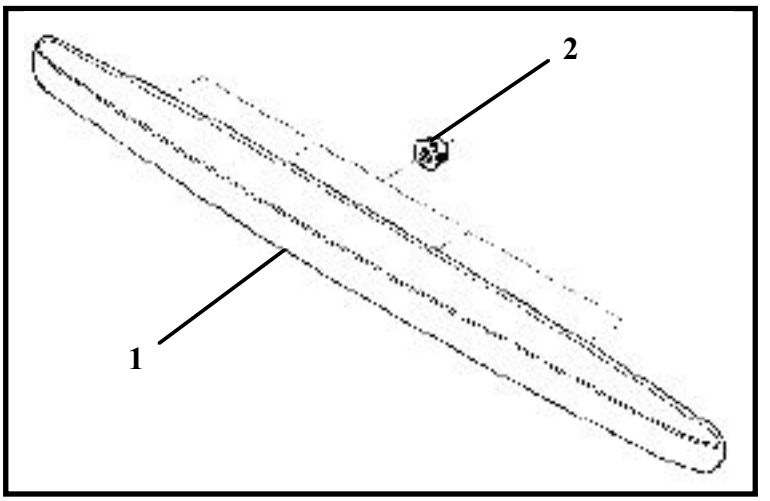
The other rear bumper attachment screws are to be tighten to the required moment of **6 Nm**.

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DISMOUNTING

Dismount the attachment nuts **(2)** of the hatchback handle ornament **(1)** on the outside hatchback panel.

Release the hatchback handle ornament.



REMOUNTING

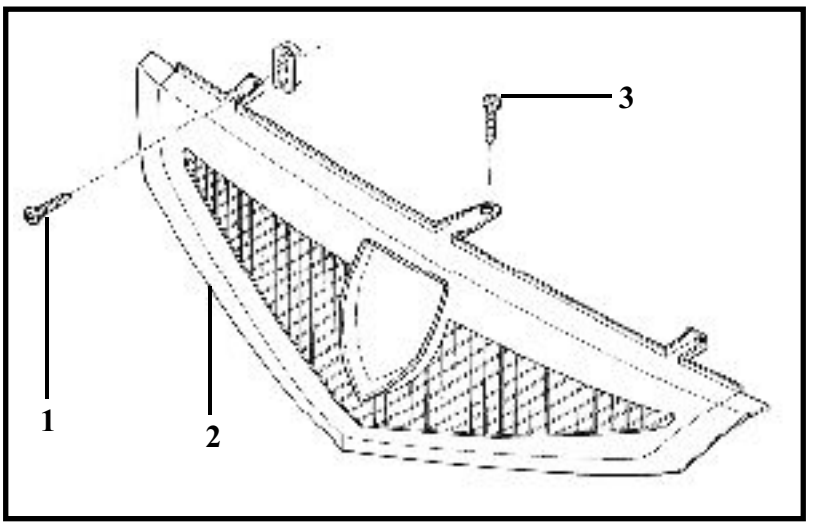
Perform the dismounting operations in the reverse order.

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DISMOUNTING

Dismount :

- front grill **(2)** attachment screws **(1)** on the radiator upper cross beam;
- Front grill attachment screw **(3)** on the radiator upper cross beam.



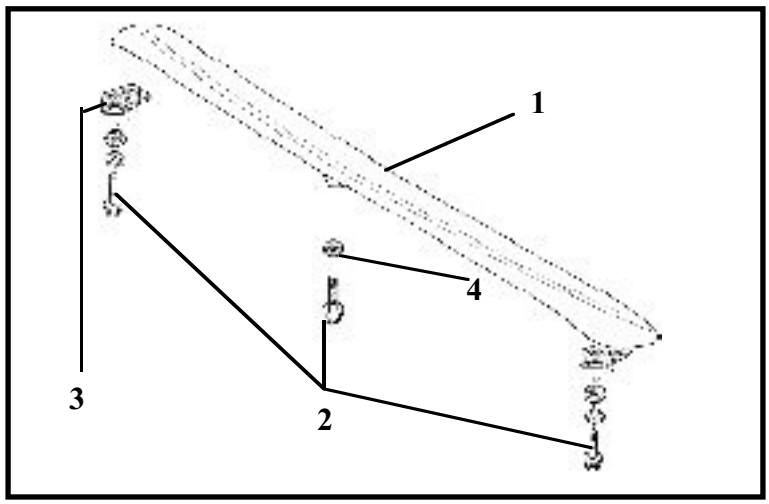
REMOUNTING

Perform the dismounting operations in the reverse order.

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DISMOUNTING

Dismount the attachment screws **(2)** of the aileron **(1)** on the hatchback outside panel.
Release the aileron.



REMOUNTING

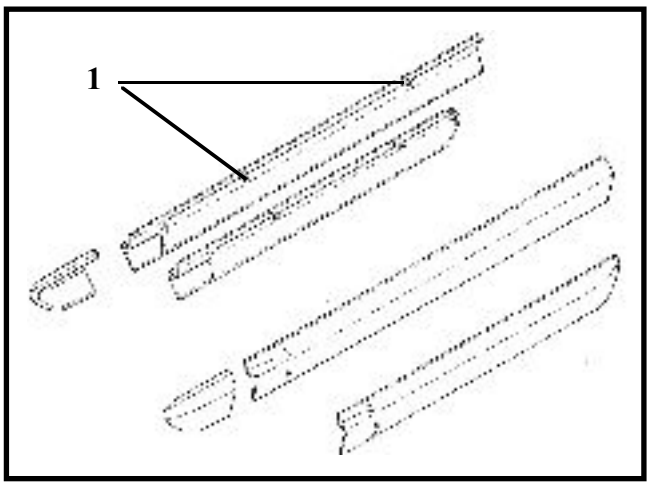
Perform the dismounting operations in the reverse order.
Check the integrity of the gaskets (**3**) and (**4**), if damaged, replace them.
The attachment screws (**2**) are to be tighten to the required moment of **5 Nm.**

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DISMOUNTING

Side ornaments of the front panels, doors and wings, are to dismounted by unstuck.

Carefully clean the place from where ornaments have been detached, with an adequate solvent and wipe with soft and dry cloth.



REMOUNTING

Position the centering spurs **(1)** of the side ornaments in the wholes provided in the doors panels and attach them by sticking.

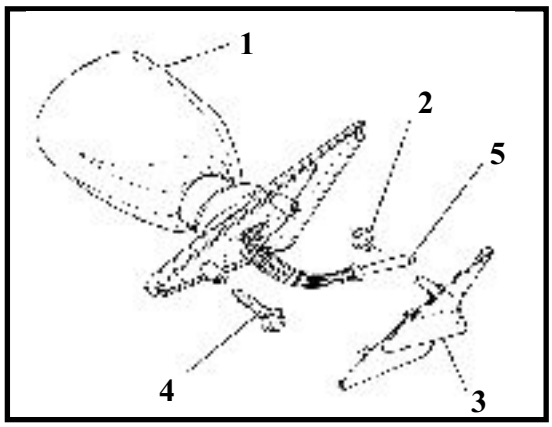
The side ornaments for wings are to be aligned with the side ornaments of the panels and are to be attached by easy and uniform pressing.

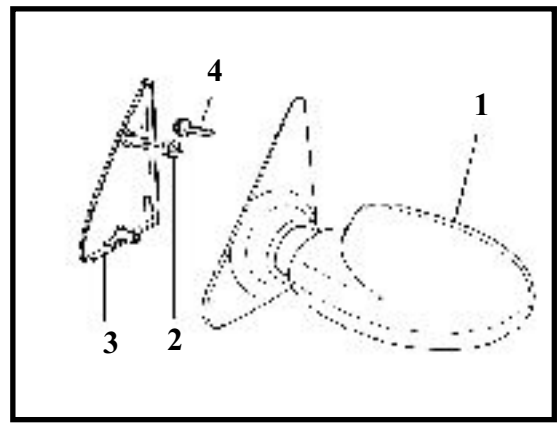
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DISMOUNTING

Extract the interior ornament **(3)** by gliding the two pins in the existing bushings **(2)** in the front door caisson. For the external rear view mirror, controlled by cables, loosen the attachment screw of the external rear view mirror control on the inside ornament, releasing so, the rear view control **(5)**.

Dismount the three plastic self-tapping screws **(4)**, attaching the outside rear view mirror, releasing it together with the gasket.





REMOUNTING

Perform the dismounting operations in the reverse order.

After fixing the outside rear view mirror, line up the two pins of the control cables attachment extremity and insert them in the channel provided in the interior ornament, attaching it by tightening the its screw (only for outside rear view mirror, cables controlled).

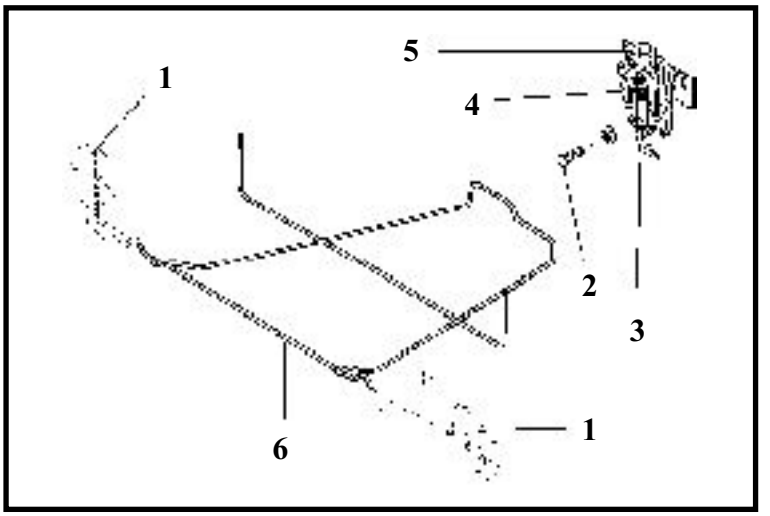
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DISMOUNTING

Remove the safety (**3**) from the threaded driving axle (**5**).

Dismount the driving axle from the nut welded on the support (**4**) attached by means of the screws (**2**) to the rear extreme cross member.

Release the spare wheel support (**6**) from the welded supports (**1**).



REMOUNTING

Perform the dismounting operations in the reverse order.

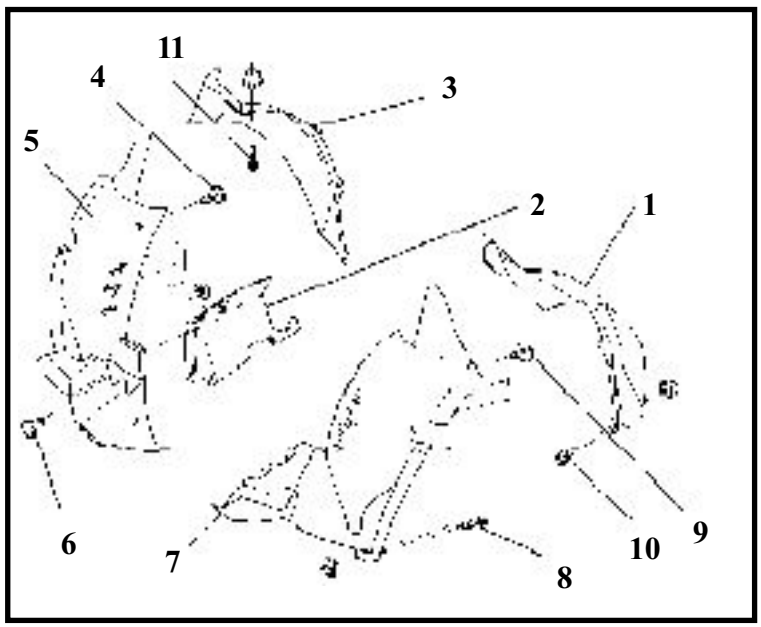
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DISMOUNTING

Lift the vehicle by means of a two-column elevator.

Dismount:

- front wheels;
- right front wheel fairing (**2**), (**5**) and left front wheel fairing (**7**), from attachment clips (**6**) and (**8**), consequently from screws (**4**) and (**9**) of the front wheels passages;
- protectors (**1**) and (**3**) from attachments screws (**10**) consequently (**11**).



REMOUNTING

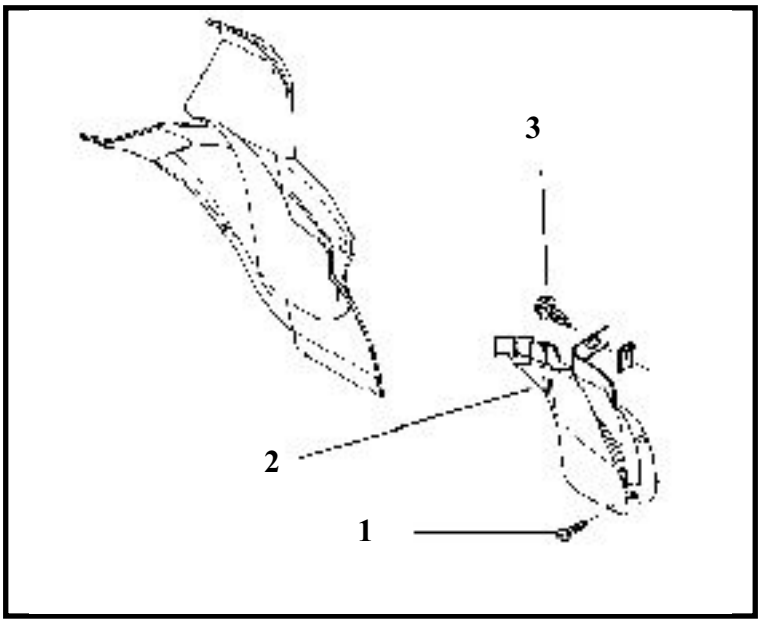
Perform the dismounting operations in the reverse order.

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OUTSIDE ACCESSORIES
Rear wheels fairing

DISMOUNTING

Dismount the attachment screw **(1)** of the rear wheel fairing **(2)** on rear bumper, consequently the attachment screw **(3)** of the rear wheel fairing on the rear bumper side support.



REMOUNTING

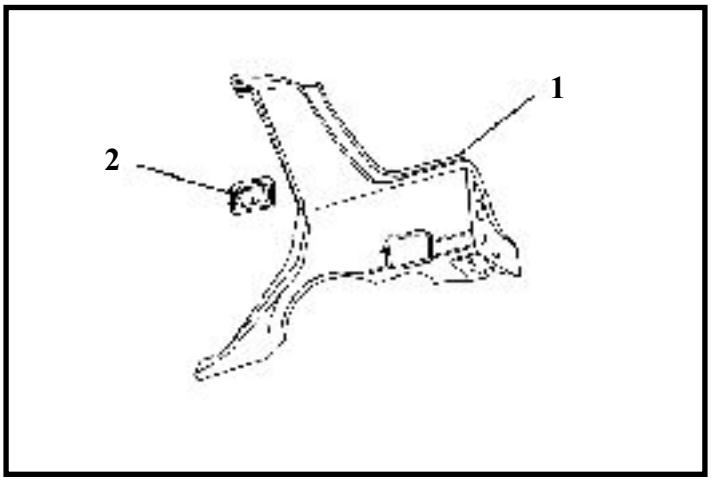
Perform the dismounting operations in the reverse order.

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DISMOUNTING

For the air extractor dismounting it is not necessary to dismount the rear bumper.

Detach from clips the air extractor **(2)** from the left rear side panel **(1)** through the opening of the rear panel lining and push it from inside to outside.



REMOUNTING

Perform the dismounting operations in the reverse order (with the rubber part towards exterior

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REPAIR MANUAL

DACIA SOLENZA

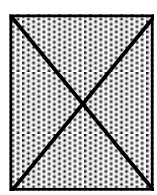
RM 525-3 SEALING, ELECTRICITY
ENGINE: E7J
GEARBOX: JH3
TAPV: B41A, B41B, B41C

The reparation methods prescribed by the manufacturer in the present document are established subject to technical specifications in force at the document issuing date.

These are subject to modifications brought by the manufacturer at the fabrication of different assemblies, subassemblies or accessories of its vehicles.

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Ref: 6001999067 **MARCH 2004** **English version**

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5 Mechanisms and accesoires

57 INSIDE ACCESSORIES

Dashboard 57-1
Inside rear view mirror 57-8
Sun visors 57-9
Central console 57-10
Handbrake case 57-11
Turning handle 57-12

59 SECURITY ELEMENTS

Front safety belts ..... 59 - 1
Rear safety belts ..... 59 - 2

6 Climatisation

61 HEATING

General 61-1
Operating principle 61-2
Climate control unit 61-4
Ventilation-climate control air distributor (RACV) 61-5
Heating radiator 61-6
Control panel 61-7
Control cables 61-9
Motor fan control resistance..... 61-10
Diagnose 61-11

62 AIR CONDITIONING

General 62-1
Draining – filling the refrigerant circuit 62-3
Air conditioning unit operating diagram 62-4
Operating principle 62-5
Particles filter 62-7
Cold air blowing device (DSAF) 62-8
Evaporator 62-10
Control panel 62-11
Compressor 62-12
Condenser 62-13
Pressure controller 62-14
Filter reservoir 62-15
Unit piping 62-16
Thermostatic expansion valve 62-19
Climate control blower 62-20
Blower control resistance 62-21
Recycling flap motor fan 62-22
Diagnose 62-23

64 CARRIAGE BODY SEALING

Carriage body sealing ..... 64 - 1

65 OPENINGS SEALING

Opennings sealing ..... 65 - 1

66 GLASSES SEALING

Glasses gaskets ..... 66 - 1
Inside wipers ..... 66 - 2
Outside wipers ..... 66 - 3
Front door glass channel ..... 66 - 4
Rear door glass run channel ..... 66 - 5

7 Garnishing and tack room

71 CARRIAGE BODY INSIDE TRIMS

Carriage body inside trims 71-1
Upper front pillar trim 71-2
Middle pillar trim 71-3
Rear quarter panel trim 71-4
Roof lining 71-5
Trunk carpet 71-6
Cowl panel noise absorbent 71-7
Cockpit carpet 71-8

72 LATERAL OPENINGS TRIMS

Front door panel 72-1
Rear door panel 72-2

74 REAR TABLE

Lateral table 74-1

75 FRONT SEATS SLIDES GUIDES

Front seat 75-1
Front seats slides guides 75-2

76 SEATS / REAR BENCH

Rear bench 76-1

8 Echuipment electrique

80 BATTERY - FRONT HEADLIGHTS

Battery 80-1
Headlamp assembly 80-4
Fog projectors 80-5
Bulbs 80-6
Headlamps adjustment 80-9
Replacement of the headlamps mechanic adjustment control 80-11

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81 INSIDE AND REAR LIGHTING

Inside and rear lighting 81-1
Ceiling lamp 81-4
Bulbs 81-5
Lamps failures diagnostic 81-6
Cockpit fuse box 81-8
UCE decoder protection 81-10

82 ACCOUSTIC WARNING - ANTI STARTING

General 82-1
One key head replacement 82-5
Dismounting - remounting E.C.U. decoder 82-6
Anti starting bushing replacement 82-7
R.F. remote control for blocking/unlocking the doors 82-8
Electric control unit injection replacement 82-9
Acoustic warning 82-10
Procedures 82-12
Diagnostic 82-18
Diagnostic – General 82-39
Diagnostic – Failures interpretation 82-53
Diagnostic – Conformity checking 82-55
Diagnostic – States interpretation 82-57
Diagnostic - Damage location algorithm 82-63

83 INSTRUMENT PANEL

Instrument panel without RPM meter ..... 83 -1
Instrument panel with RPM meter ..... 83 -2
connectors disposal ..... 83 -3
Perform functional instrument panel ..... 83 -4
Speed transducer ..... 83 -5
Fuel level transmitter ..... 83 -6
Water temperature sensor ..... 83 -7
Diagnostic – damages interpretation ..... 83 -8

84 STEERING - CONNECTOR

Anti-theft mechanism 84-1
Under steering wheel control 84-2
Rear windows defrosting switch 84-6
Central locking switch 84-7
Passenger electric window switch 84-8
Driver electric window switch 84-9
Hazard switch 84-10
Electric lighter 84-11

85 WINDSCREEN WIPER

Drive mechanism 85-1
Diagnostic 85-3

86 AUTO RADIO

General 86-1
Tapes player 86-6
CD Player 86-7
Connectors 86-8
Roof antenna 86-9

87 ELECTRICAL ASSISANCE EQUIPEMENT

Windscreen washing 87-1
Relays and UCE decoder assembly from cockpit 87-2
Cockpit Central Unit 87-4
Diagnostic – general 87-6
Diagnostic – Failures interpretation 87-11
Diagnostic - Conformity checking 87-14
Diagnostic – States interpretation 87-18
Diagnostic – Damage location algorithm 87-26

88 WIRING

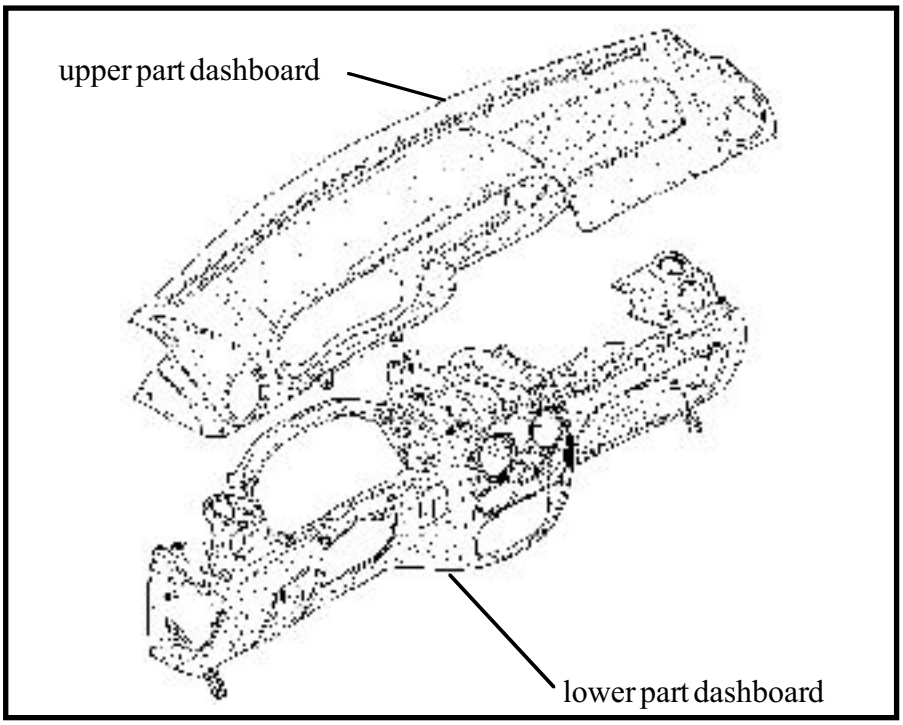
Airbag - general 88-1
Airbag – Electronic control unit 88-2
Driver's airbag 88-6
Airbag – Special devices 88-9
The airbag destroying procedure 88-10
Airbag diagnostic – General 88-12
Diagnostic – Failure interpretation 88-14
Diagnostic – Conformity checking 88-20
Diagnostic – Help 88-22
Diagnostic – Failure locating tree 88-23
Front door wiring protector 88-24
Rear door wiring protector 88-25

89 ELECTRIC DIAGRAMS

General ..... 89 - 1
Functional diagrams list ..... 89 - 6
Functional diagrams list index ..... 89 - 8
Connections lists - Mass list ..... 89 - 9
Electric components location on vehicle ..... 89 - 10
Mass attachments on vehicle ..... 89 - 10
Electric components location on the vehicle ..... 89 - 11
Cockpit fuse box ..... 89 - 14
Fuse box fromengine compartment ..... 89 - 16
Wires functions index in connectors and couplings ..... 89 - 18
Wires functions in connectors and couplings ..... 89 - 21

Wires functions explanation ..... 89 - 95

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TIGHTENING MOMENTS (daNm)	
Steering wheel attachment screw	4.4
Attachment screw steering wheel airbag	0.65

IMPORTANT !

All interventions at the airbag system must be performed only by qualified staff.

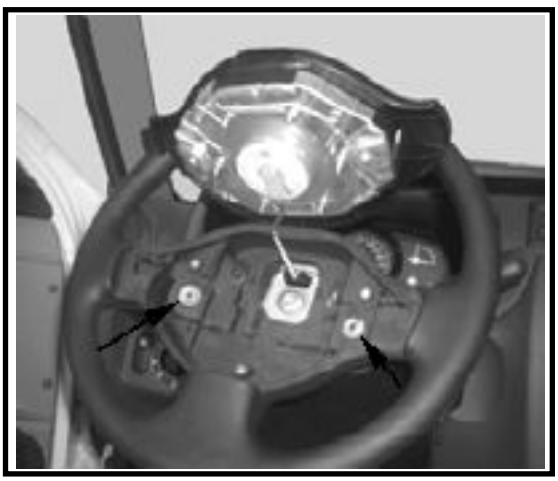
DISMOUNTING

IMPORTANT !

Before dismounting the airbag, block the UCE airbag by means of the CLIP tester (see chapter 88 " UCE airbag blocking"). The airbag indicator from the instrument panel is on.

Disconnect the battery.

Dismount the two attachment screws of the steering wheel airbag on the steering wheel by means of a **T20 (TORX)** head screwdriver.



Disconnect the steering wheel airbag connector.

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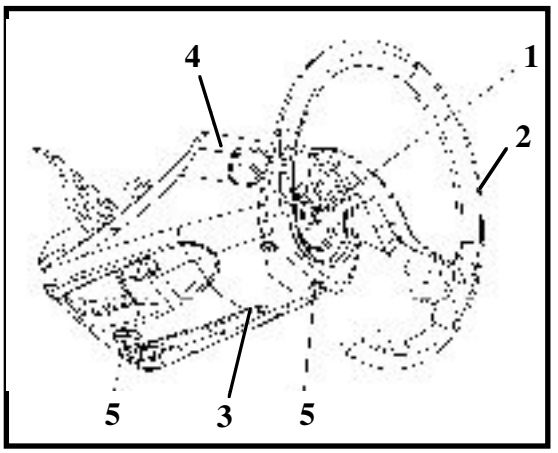
DISMOUNTING

Dismount :

- steering attachment screw (**1**) on the steering column, by means of a screwdriver provided with **TORX T50** head;

- steering wheel **(2)** not before bringing the steering to the middle point (wheels are in a direct line);

- half-cases **(3)** and **(4)** connected between them by three screws **(5)** to the steering column.



Disconnect the connectors of :

- lights, windscreen wiper;
- anti-theft mechanism;
- rotating contact.

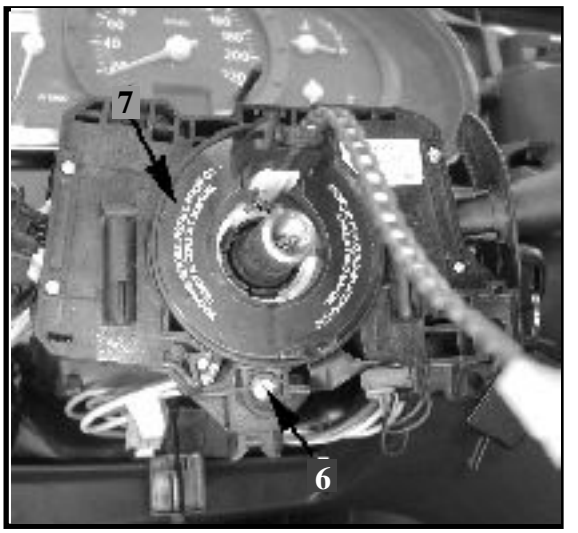
ATTENTION !

It is forbidden the handling of the pyrotechnic system near heating sources or open fire, because there is the risk of undesirable starting of the system.

IMPORTANT !

Anytime when dismounting the steering wheel, it is necessary to dismount the airbag connector (1). The airbag is provided with a connector who is short-circuited after disconnecting the wiring connector, avoiding in this way all undesirable starting.

In order to dismount the under steering wheel control from the upper shaft of the steering wheel, loosen the screw **(6)** and extract the under steering wheel control **(7)**.



ATTENTION !

It is forbidden the change of the rotation contact position after dismounting the under-steering wheel control assembly, because there is the risk of its damaging.

The under steering wheel control it is provided with a pre-cut self-adhesive tape stacked on the rotating contact and on the under steering wheel control body that is not allowing the undesirable rotation of the rotating contact until its mounting on the attachment cone of the steering column.

In case the position of the rotating contact is changed, then this one, is to be rotated clockwise 2.5 complete rotations (or until it gets blocked), then is to be rotated anti-clockwise 2.5 complete rotations.

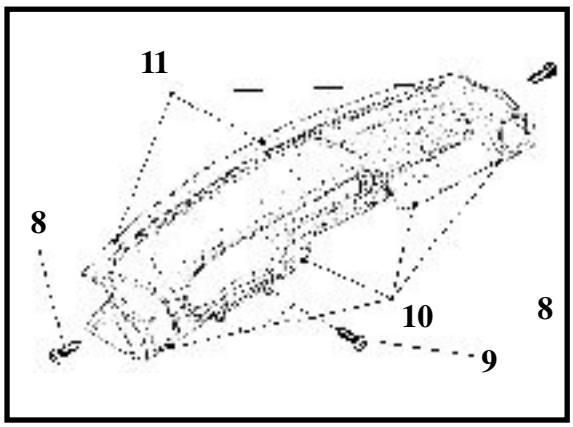
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Dismount:

- two side attachment screws **(8)** of the upper part dashboard by means of a wrench T 20 ("L" shape);

- screws **(9)** attaching the upper part dashboard with the lower part on the driving post cross member, by means of a screwdriver with T20 head.

Detach from clips placed in points **(10)** the



upper part dashboard.

Swing over the windscreen the upper part dashboard and detach from clips points **(11)** of the windscreen lower cross beam.

Detach from clips the radio from its support.

Disconnect the connectors and the radio antenna (for the vehicle provided with radio-cassettes player).

Disconnect the central locking connector (for the vehicle provided with central locking).

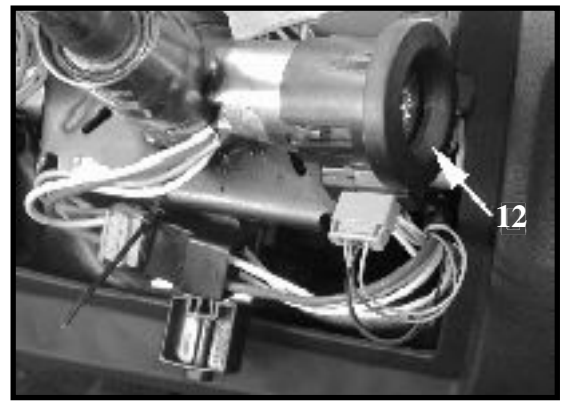
Take out the upper part dashboard from the cockpit.

REMARK :

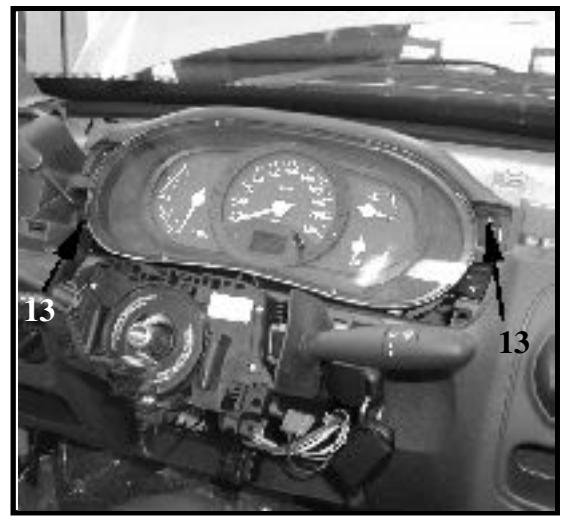
Dismounting of the upper part dashboard, does not imply steering wheel dismounting.

Disconnect the anti-starting bushing connector.

Detach from clips the anti-starting bushing **(12).**



Dismount the attachment screws **(13)** of the instrument panel and disconnect the four connectors.



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Remove the access cover of the fuse box.

Dismount the three attachment screws **(14)** of the fuse box.



Remove the access cover to the fuse box.

Swing over the little caps from the dashboard lower part and dismount the attachment screws **(15)** on the driving post cross member.

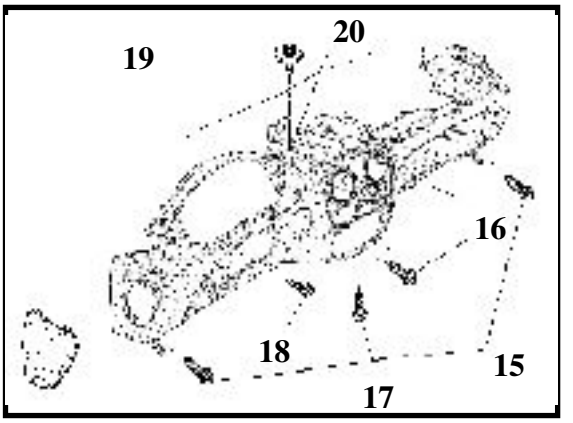
Dismount :

- attachment screws **(16)** of the climate maintenance panel on the lower part dashboard;
- attachment screw **(17)** of the lower part dashboard on the vent-AC distributor (RACV);
- attachment screws **(18)** of the lower part dashboard on the driving post cross member;
- upper attachment screws **(19)** of the lower part dashboard on the driving post cross member.

Extract :

- headlamps adjustment knob;
- cigarette lighter.

Detach from clips the connectors:



- hazard;
- rear window defrosting.

Disconnect the connectors:

- cigarette lighter;
- rear window defrosting.

Dismount the attachment nut **(21)** of the headlamps adjustment control.

Disconnect the connectors:

- hazard;
- climate maintenance control.

Detach from clips the left and right side aeration ducts.

Take out the dashboard from cockpit.



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REMOUNTING

Perform the dismounting operations in the reverse order, taking into consideration the following recommendations:

- ensure that steering is at middle point (wheels are in a direct line);
- mounting of the lower part dashboard is to be performed by guiding it on a centering part



placed on the driving post cross beam;

- steering wheel must freely enter in grooves;
- check the operation of the dashboard instruments and switches.

ATTENTION :

After each steering wheel dismounting, its attachment screw is to be replaced, observing the required tightening moment of 4.4 daNm.

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Airbag

Important!

Before reconnecting the driver's airbag connector, it is necessary to apply a checking procedure of the system:

- Check if airbag indicator from the instrument panel is on, when the contact is set on.

- Connect the igniter to the airbag connector (to the wiring) and check if the airbag indicator is off.

- Set the contact off, connect the airbag connector instead of the inert igniter and attach the airbag on the steering wheel (requiret tightening moment is 0.65 daNm).

After remounting, perform the system checking by means of the CLIP tester.

If everything is correct, unblock the UCE airbag (see chapter 88 "Unblocking UCE airbag").

If is not correct, see chapter "Diagnostic".

- Check if the airbag indicator from the instrument panel is on for 3 seconds from setting the contact on, then it is off and is remaining off.

ATTENTION!

Non-observing of prevision prescriptions may cause un abnormal operation of the system, leading to the airbag undesirable starting.

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DISMOUNTING

Upper attachment:

By means of a screwdriver, detach from clips the limiting wire for documents compartment door's opening from lower part dashboard.



Lower attachment:

Push the plastic pin to the right side of driving post (in the arrow direction) and release the documents compartment door from the lower part dashboard.



REMOUNTING

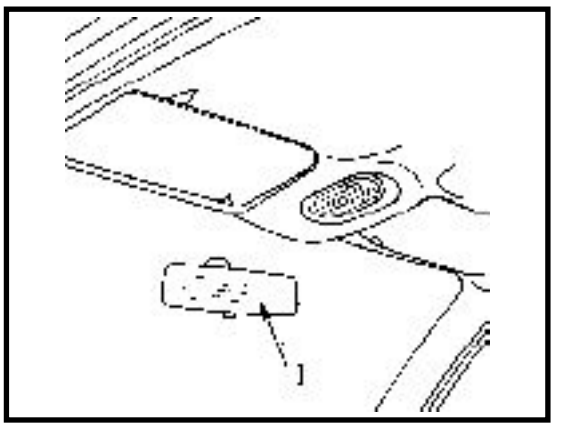
Perform the dismounting operations in the reverse order.

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DISMOUNTING

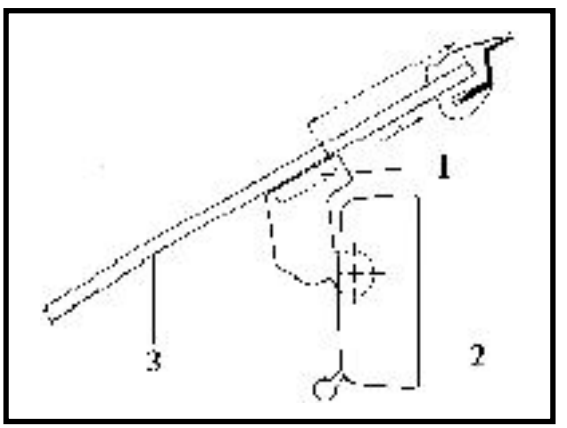
Dismounting of the interior rear view mirror (**1**) is to be performed by its depressing from the support (**2**) in the direction of the arrow shown in the drawing.

The rear view mirror support (**2**) is stacked on windshield **(3).**



REMOUNTING

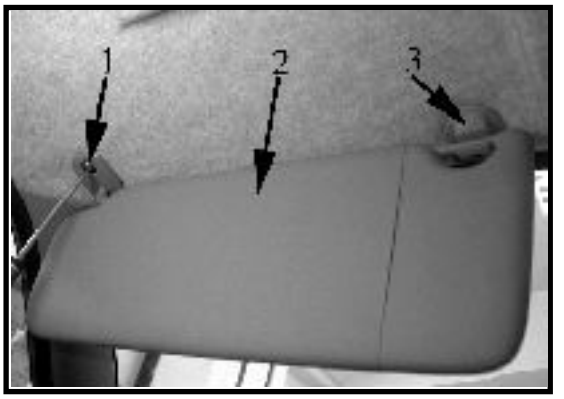
Perform the dismounting operations in the reverse order.



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DISMOUNTING

Dismount the sun visor (**2**) attachment screw (**1**).
Extract the sun visor from the hook (**3**).



REMOUNTING

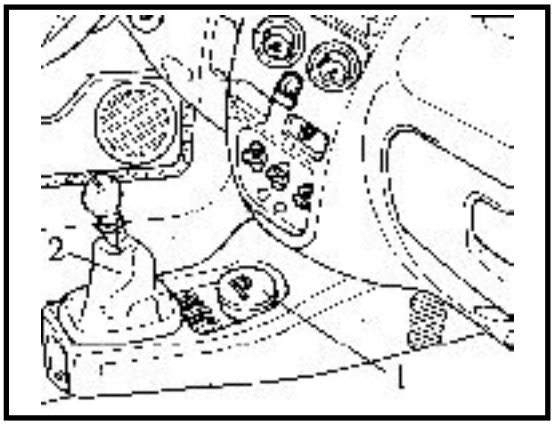
Perform the dismounting operations in the reverse order.

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DISMOUNTING

Disconnect the battery.

Extract the ashtray (**1**) from its place.



Remove the gearbox lever covering (**2**) from the central console.



Dismount:

- attachment screw (**3**) of the central console on the tunnel;
- attachment screw (**4**) of the central console on the gearbox lever support.

Detach the central console from the climate maintenance- ventilating distributor clips (RACV) from points (**5**).

Swing over the diagnostic socket cap and push inside the console.

Disconnect the window lifting switch connector (for vehicles equipped with electric windows).

Detach from clips the window-lifting switch and release the central console.

REMOUNTING

Perform the dismounting operations in the reverse order.

Check the correct operation of the switches of the front electric windows.

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DISMOUNTING

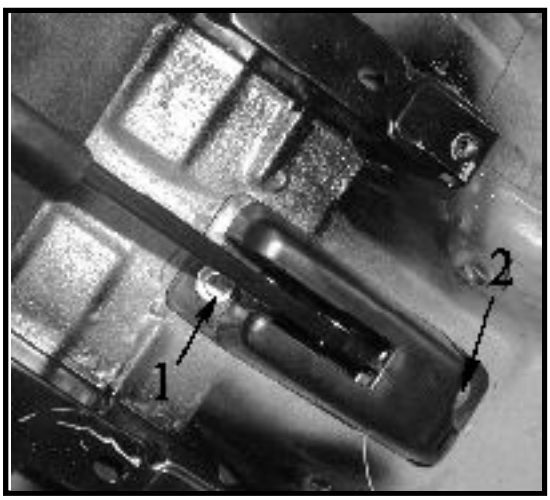
Through the cutting out existent in the cockpit carpet in the handbrake lever, dismount the attachment screw (**1**) of the handbrake case in front part, on the tunnel.



Move towards front the seats.

Dismount:

- bench seat (**see chapter 75**);



- attachment screws of the front safety belts at lower part;
- attachment screws of the locks on the tunnel;

Detach from clips the carpet and roll it towards front part.

Dismount the attachment screw (**2**) of the handbrake case on the tunnel, in the rear part.

Release the handbrake case.

REMOUNTING

Perform the dismounting operations in the reverse order.

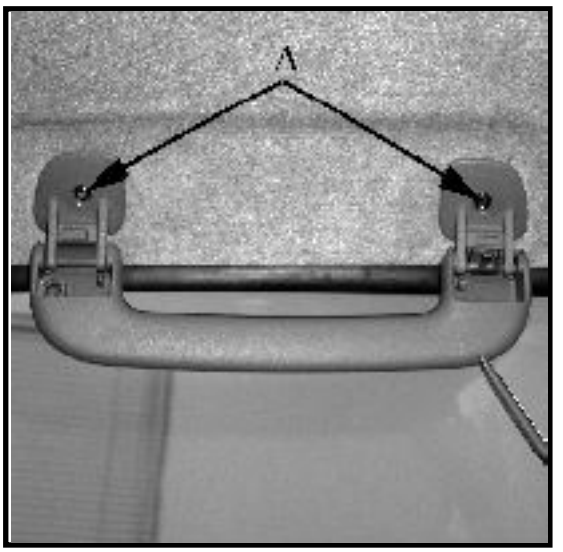
The safety belts screws are to be tighten to the required moment of **2,7 daNm**.

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Turning handle

DISMOUNTING

Dismount the screws from points A attaching the turning handle on the body roof.
Release the turning handle.

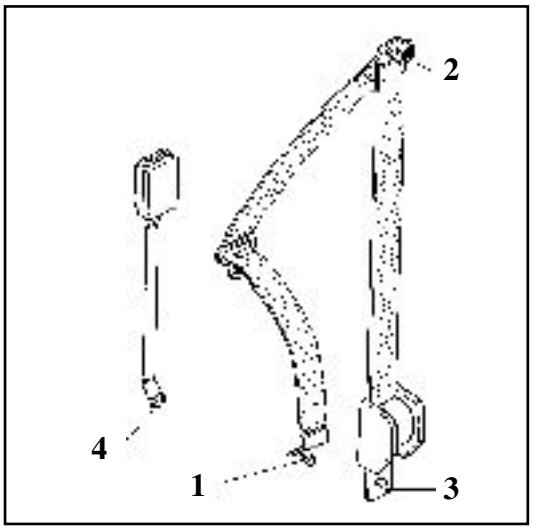


REMOUNTING

Perform the dismounting operations in the reverse order.

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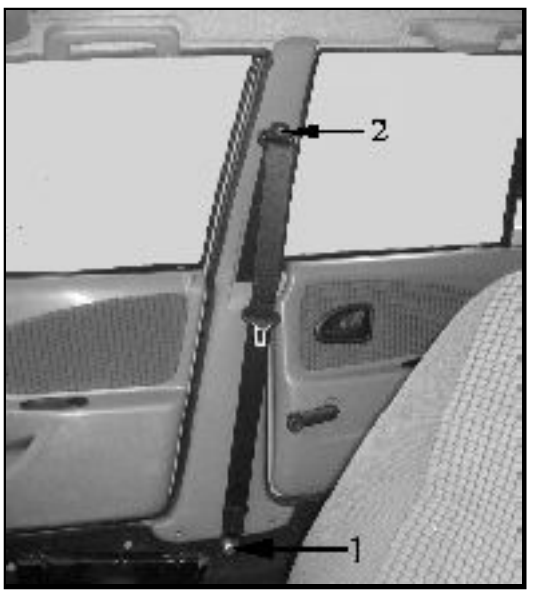
TIGHTENING MOMENTS (daNm)	
Front safety belt attachment screw	2.7



DISMOUNTING

Dismount:

- front/rear door gasket (in the contact area with the middle pillar covering);
- attachment screws **(1)** and **(2)** of the front safety belt to the upper part, consequently, to the lower part, on the middle pillar lining;



- middle pillar covering **(see chapter 71)**;
- attachment screw **(3)** of the safety belt retriever on the middle pillar lining.

Dismount the attachment screw **(4)** of the safety belt lock on the tunnel.



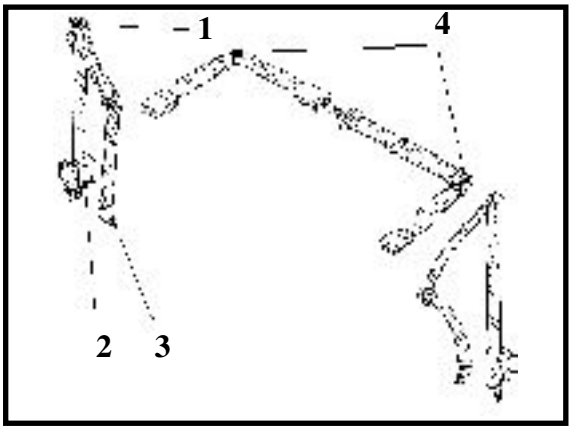
REMOUNTING

Perform the dismounting operations in the reverse order, taking into consideration the following:

- retriever guiding on the centering part welded on the pillar.
- the required tightening moment of front the safety belts attachment screws is of **2,7 daNm**.

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TIGHTENING MOMENTS(daNm)	
Rear safety belt attachment screw	2.7



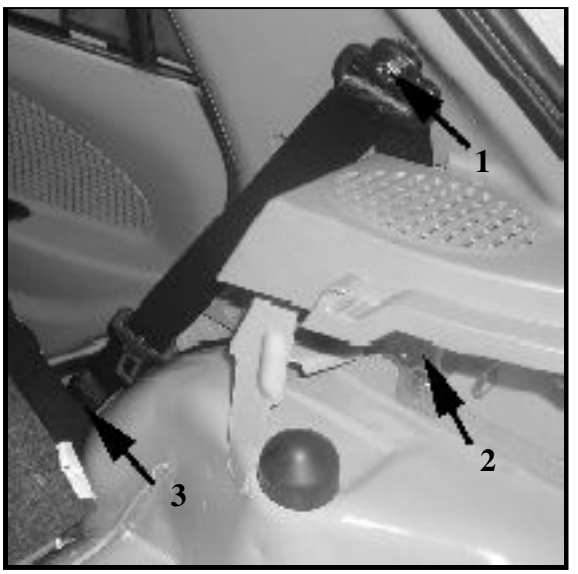
DISMOUNTING

Dismount the two attachment screws of the bench backrest.

Swing over the bench backrest.

Dismount:

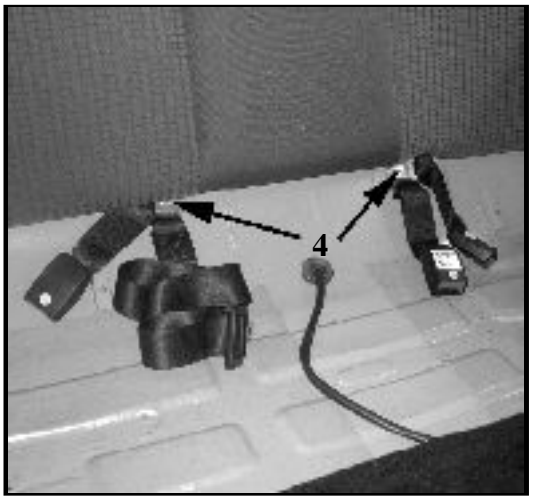
- rear plate and its supports (**see chapter 74**);
- belt attachment screws (**2**) and (**3**) on the side frame lining.



Place back the bench backrest in normal position.

Swing over its supports the bench seat.

Dismount the rear belt attachment screws (**4**) on the central floor.

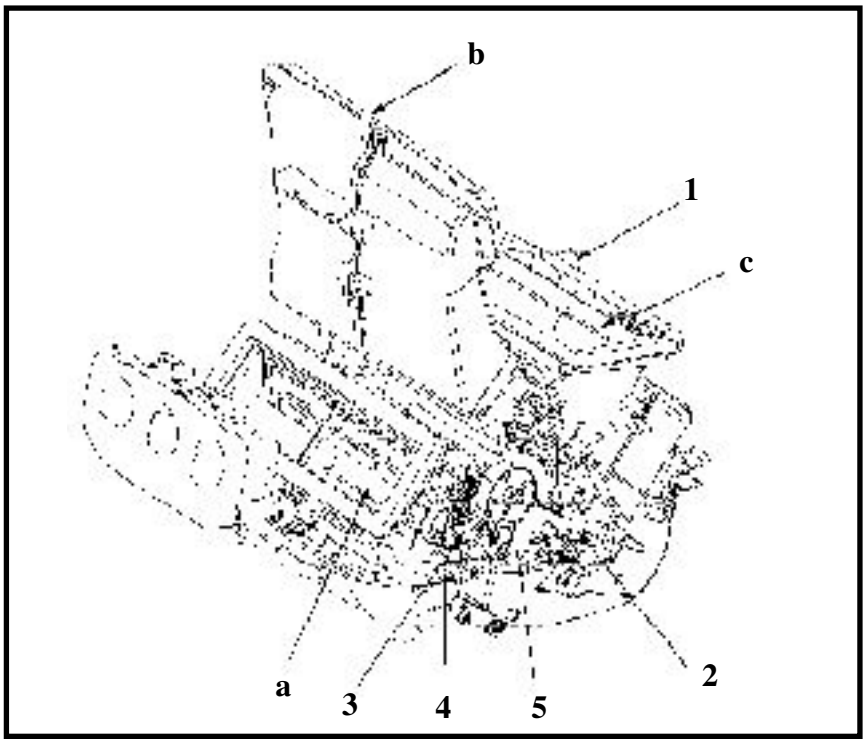


REMOUNTING

Perform the dismounting operations in the reverse order.

The required tightening moment of the rear belt attachment screws is of **2,7 daNm.**

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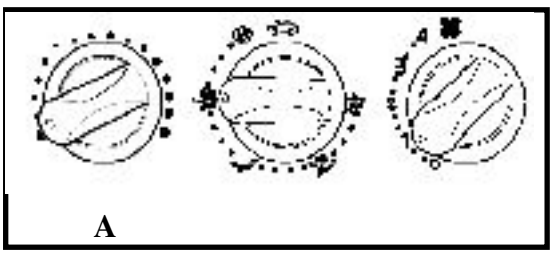
1 – heating radiator
2 – cold/warm air flaps control
3 – air repartition flaps control
4 – air repartition control cable
5 – air-mixing control cable
a – air inlet
b – windscreen defogging exit
c – dashboard air vents exit

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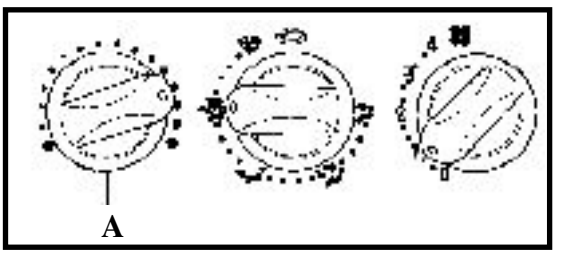
AIR TEMPERATURE CONTROL

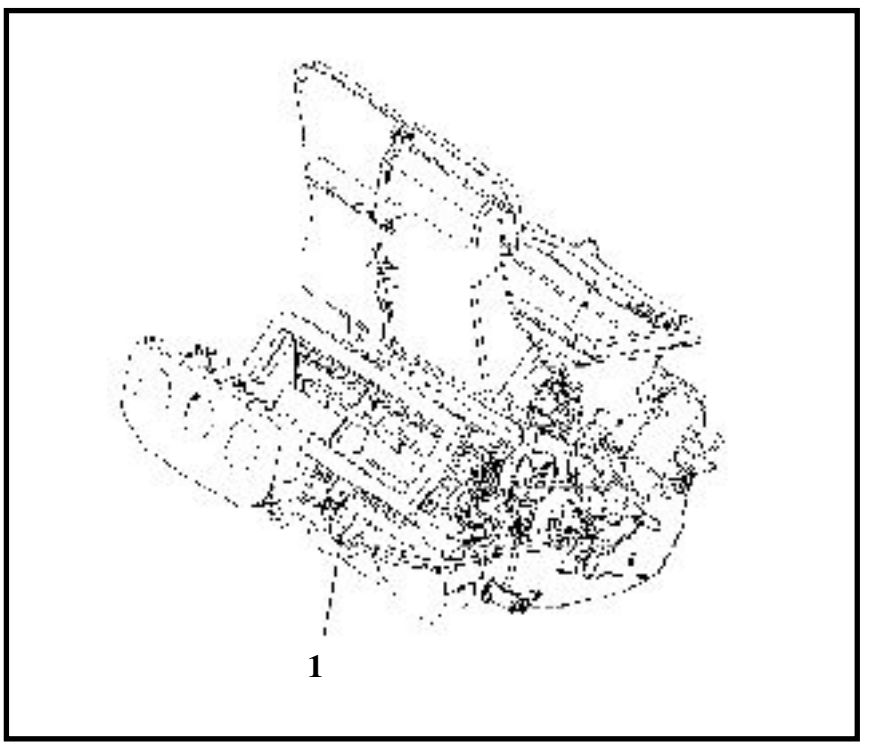
The knob (**A**) is controlling the flaps for cold/warm air.
By rotating to the right the (**A**) knob, the air temperature is increasing.

Cold air



Warm air



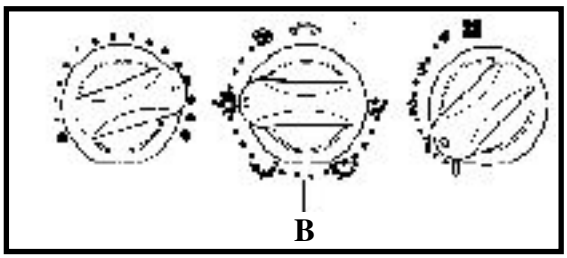


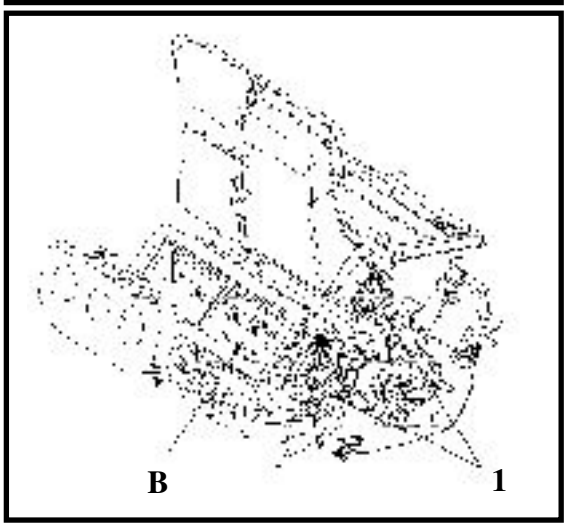
The heating radiator is not having any valve and is permanently supplied. The flap controlled by the cable (**1**) is ensuring the operation of the cold air re-heating system.

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AIR REPARTITION CONTROL

The knob **(B)** is controlling air repartition flaps **(1)**.





Position 

Airflow is directed towards the dashboard side air vents.

Each air vent has three adjustments:

- open or closed;
- upward or downward directed
- left or right directed

Position 

Airflow is directed towards all dashboard air vents and towards passengers legs.

Position 

Airflow is directed towards passengers legs.

Position 

Airflow is distributed between all air vents, defogging air vents of front side windows, windscreen defogging air vent and passengers legs.

Position 

For a better efficiency, the dashboard air vents are to be closed.

The whole airflow is directed towards defogging strip and air vents of the front side windows.

Position 

Entire cockpit is outside isolated and outside air penetration is not allowed, climate control blower operation being stopped.

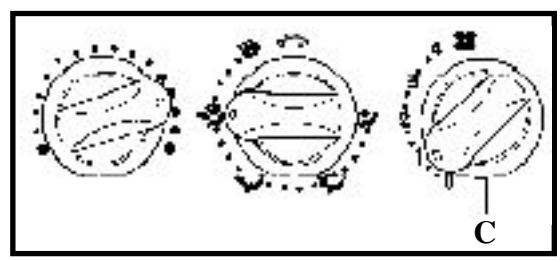
AIR QUANTITY CONTROL

The airflow rate cycled in the cockpit is settled by the **(C)** knob position, corresponding to the four speeds of the climate control blower. The more speed step is bigger the more airflow is bigger.

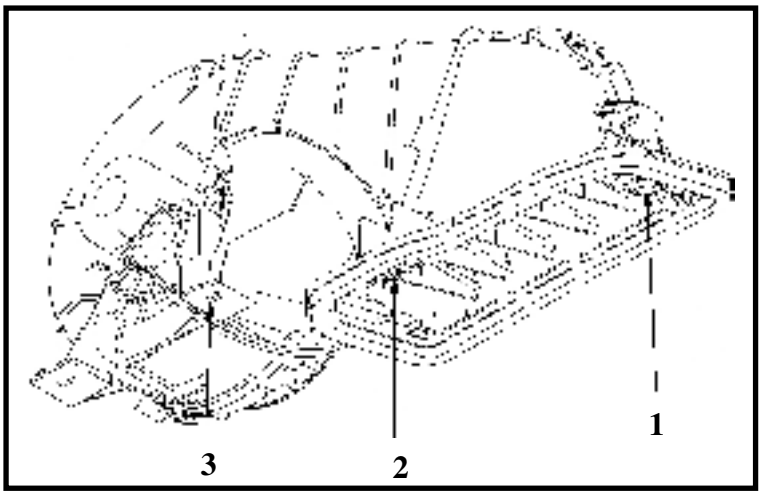
REMARK

For a better efficiency of the windscreen defrosting or defogging, the (C) knob must be placed on the last position.

In order to stop the climate control blower operation, rotate the knob on "**0**" position.



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DISMOUNTING

Disconnect the battery.

Dismount :

- climate control box protector;
- climate control box gasket
- gas purge vessel;
- engine air filter.

Detach from clips the front wiring from the central part of the climate control box.

Dismount, then:

- attachment screws of the climate control unit on the climate control box.
- attachment screws of the central part of the climate control box.

Disconnect and release the climate control unit from the climate control box.

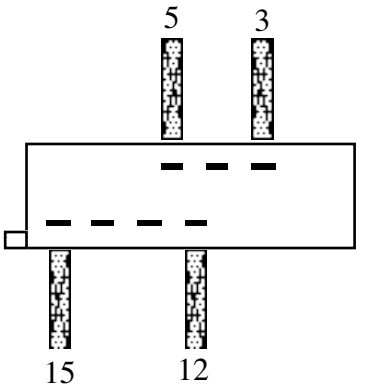
REMOUNTING

Perform the dismounting operations in the reverse order.

Tighten the attachment screws of the climate control unit on the climate control box, in the sequence shown in drawing (1,2,3).

The required tightening moment of the attachment screws of climate control unit on the climate control box is of **0,6 daNm**.

Connector



Pin	Denomination
3	Blower control speed 1
4	Blower control speed 2
5	Blower control speed 3
12	Blower control speed 4
13	Blower control speed 4
14	Mass
15	Mass

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DISMOUNTING

Disconnect the battery.

Dismount :

- dashboard **(see chapter 57 "dashboard")**;
- central console;
- electric windows control connectors;
- front pillars coverings;
- driving post cross beam;
- climate control box protector;
- gas purge vessel;
- climate control box gasket;
- engine air filter;
- climate control box central part from the eight attachment screws;
- attachment screws of the climate control unit and release the climate control blower after disconnecting it.
- RACV attachment screws **(1)** on the climate control box.

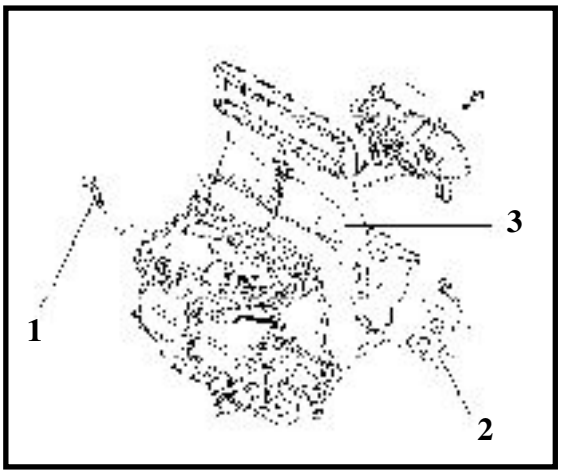
Clamp the two hoses from the heating radiator by means of the **MOT 453** device.

Disconnect then the fast couplings from the RACV heating radiator, recovering the cooling fluid.

Dismount then:

- acoustic plate **(2);**
- mixing and distribution flaps control cables attached on RACV.

Release RACV **(3).**



REMOUNTING

Perform the dismounting operations in the reverse order.

Fill up the cooling fluid and perform the cooling circuit purging (see chapter **19 " Filling – Purging cooling circuit").**

Check :

- good operation of the flaps cables;
- good attachment of the air ducts.

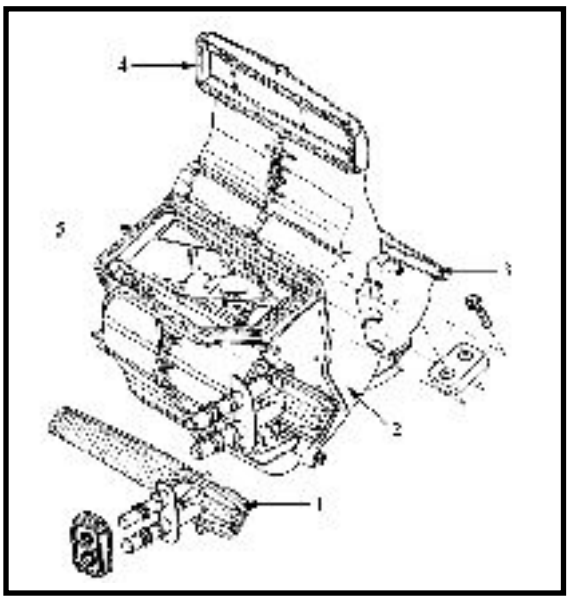
The required tightening moment of the RACV attachment screws **(1)** on the climate control box is of **0,6 daNm.**

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Disconnect the battery.

Dismount the distributor of ventilation air conditioning (RACV) position (**2**) by recovering the cooling fluid (see R.A.C.V. Dismounting - Remounting).

Dismount the attachment screw of the heating radiator (**1**) and after detaching from clips release it.



REMOUNTING

Perform the dismounting operations in the reverse order

Fill up the recovered fluid and restore the fluid level after purging.

REMARK :
The self-adhesive gaskets (3), (4) and (5) are to be obligatory replaced with new ones.

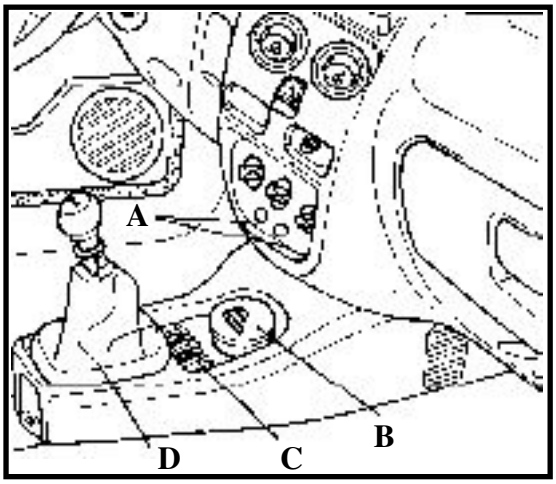
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DISMOUNTING

Disconnect the battery.

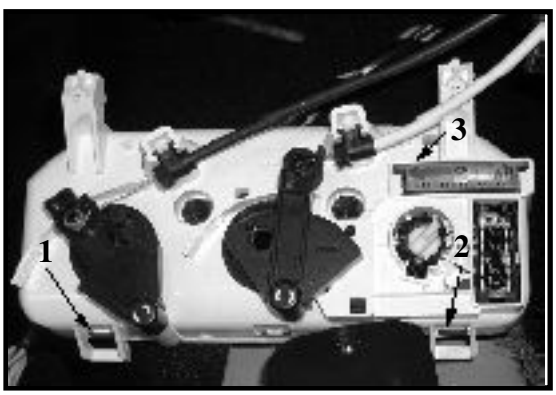
Dismount :

- ashtray (**B**);
- front doors electric windows switches (**C**).
- gearbox lever cover (**D**);



Dismount the two screws (**A**) located in the lower part of the control panel on the lower dashboard.

Climate control panel is pushed towards vehicle front part and swing over until it is released from supports (**1**) and (**2**).



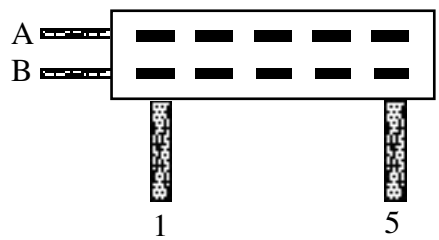
Dismount the two control cables (distribution and mixing).

Connectors

Connector (**6**)

Pin	Denomination
A1	Control + blower speed 4
A2	Control + blower speed 4
A4	Supply + after contact
A5	Supply + after contact
B1	Control + blower speed 3
B4	Control + blower speed 2
B5	Control + blower speed 1

Disconnect the connector (**6**).



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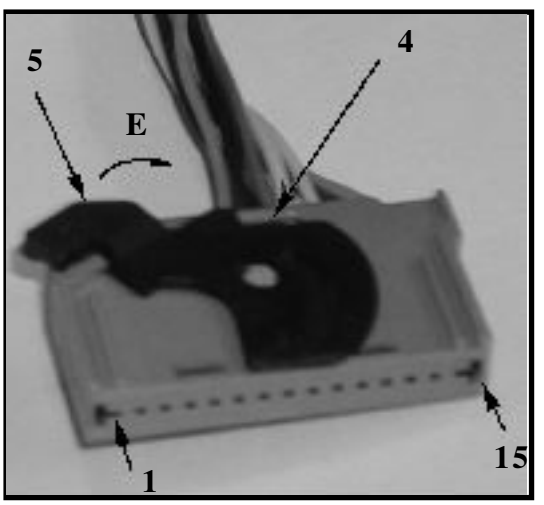
Connector (**3**)

Pin	Denomination
1	Free
2	Free
3	Free
4	Free
5	Free
6	Free
7	+ parking lights
8	Free
9	Mass
10	Free
11	Free
12	Free
13	Free
14	Free
15	Free

Disconnect the connector (**3**), carefully push the lever (**4**) and rotate the lever (**5**) in the direction of (**E**) arrow.

REMOUNTING

Perform the dismounting operations in the reverse order.
Check the operation of the control panel.



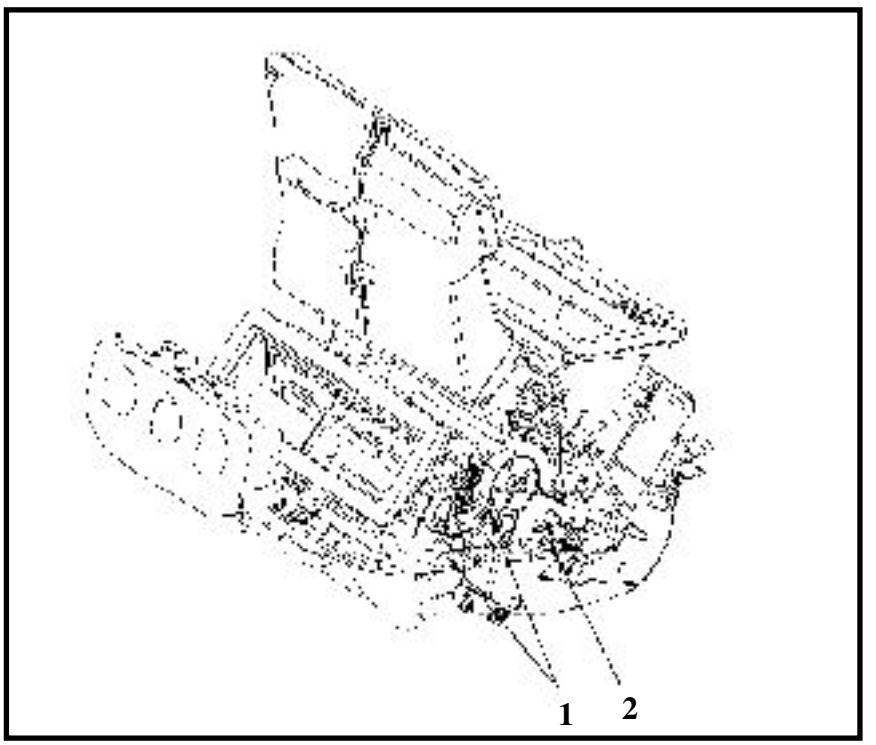
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DISMOUNTING

Dismounting of the control cables (**1**) may be performed without dashboard dismounting
Dismount:

- ashtray;
- switches of the front doors electric windows;
- control panel as well as cables (**1**) attached to this one by screws.

Dismount the maintaining clips **(2)** in the cockpit lower part.
Release the cables.



REMOUNTING

Perform the dismounting operations in the reverse order.
Check the good operation of the controls.
Remount the control panel on the dashboard and central console.

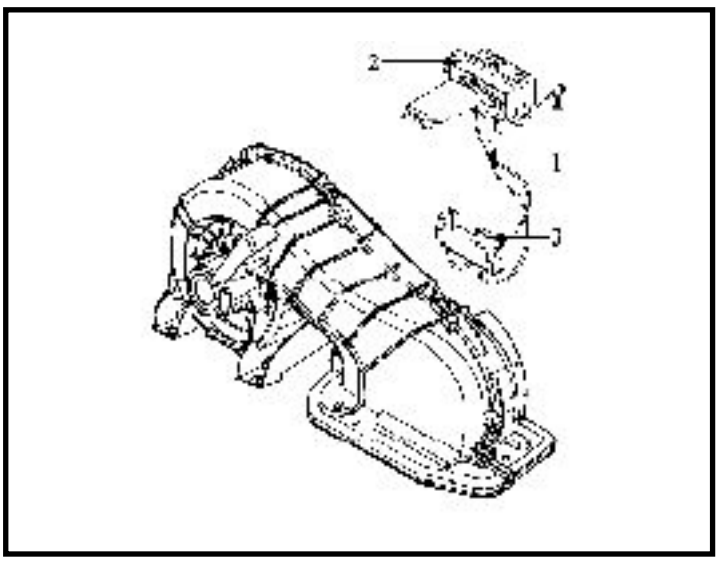
continuity and resistance against vehicle's mass,
front wiring between:

- cockpit fuse F 14 exit pin 7 climate control panel
- pin 9 climate control panel vehicle mass.

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DISMOUNTING (Climate control unit being already dismounted)

Dismount the resistance attachment screw (**1**).
Extract the resistance **(2).**
Disconnect the connector (**3**).

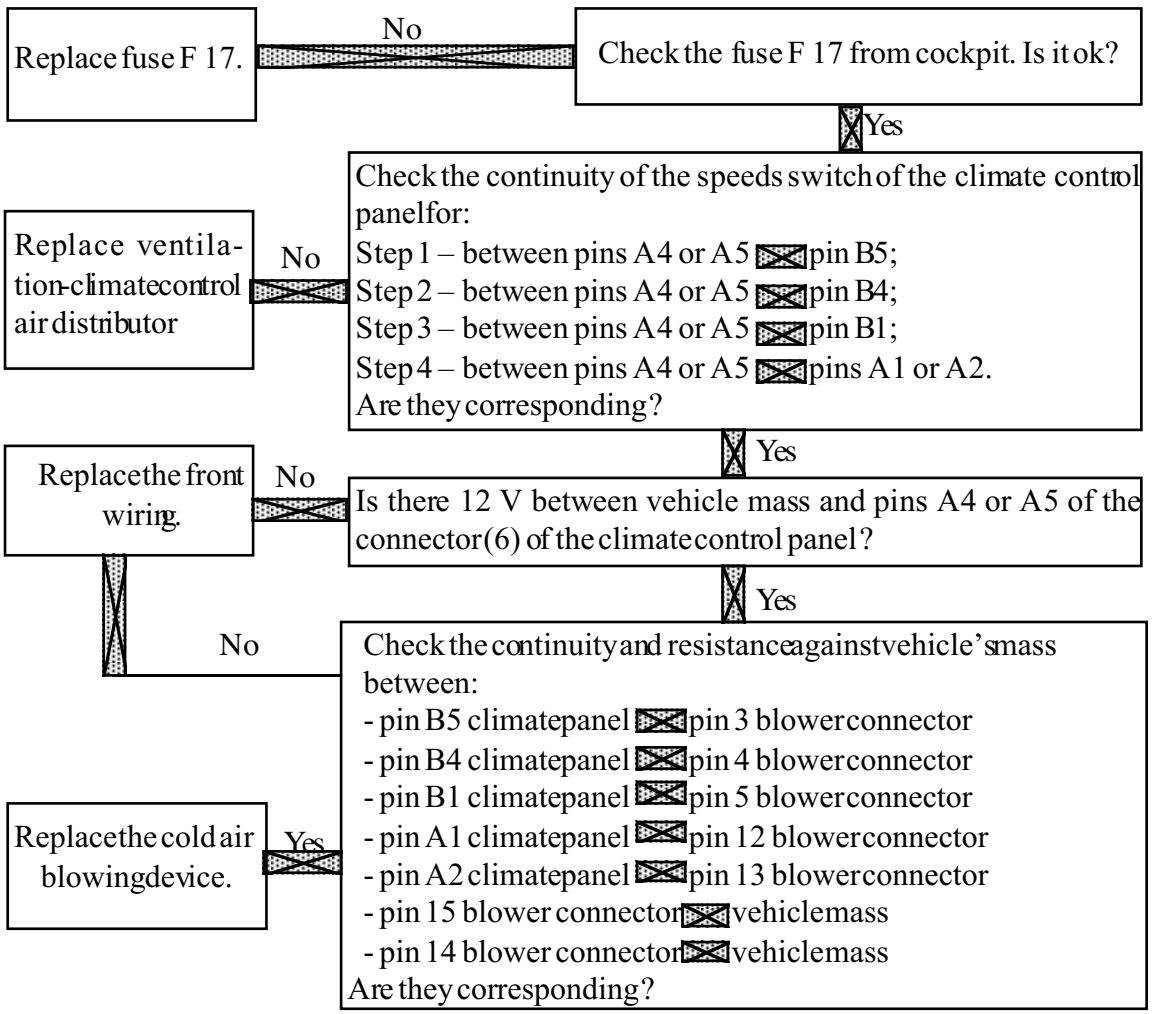


REMOUNTING

Perform the dismounting operations in the reverse order.

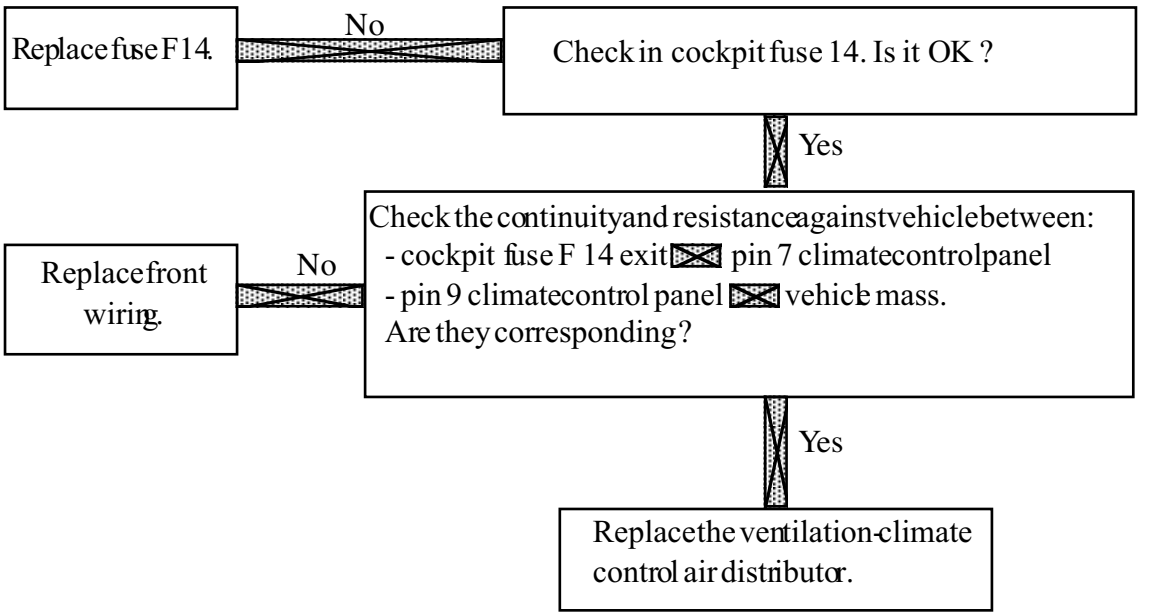
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CLIMATE CONTROL BLOWER NOT WORKING



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CLIMATE CONTROL PANEL LIGHTING NOT WORKING



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The purpose of the air conditioning unit is to produce a decrease of the temperature in the passengers compartment and to obtain a lower value temperature compared to the external environment one, reducing in the same time the air moisture.

MAINTENANCE

For a vehicle equipped with air conditioning, during the year it is recommended:

- the checking of the refrigerant fluid filling;
- the cleaning and the air-blowing of the condenser and the cooling radiator fins;
- the checking of the condensation removal pipe on order not to be clogged.

For important leakage repair, for any components replacement (compressor, condenser, etc) and if moisture was noticed in the air conditioning circuit, replace the dryer filter tank and drain the unit; the same is valid also in case the conditioning circuit remains open without protection covers more than 10 minutes.

IMPORTANT !

During winter, it is recommended the frequent start of the system, in order to prolong the lifetime of the compressor and of the whole system.

The vehicle equipped with an air conditioning system shall be not exposed for more than 20 minutes in painting cabin where there are temperatures higher than 80 °C.

It is obligatory the use of the refrigerating agent and compressor oil type prescribed by the manufacturer.

It is absolutely forbidden to perform welding works on the elements of the air condition circuits.

The filling of the air conditioning system can be performed only by means of charging units and observing the instructions of the manufacturer. For mechanical or body operations it is recommended piping protection in order to avoid their disconnection by accident.

Avoid the drip of the oil compressor on the painted vehicle carriage body.

For component replacement implying the circuit draining, it is absolutely necessary the use of new parts and of a special oil for compressor.

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AIR CONDITIONING UNIT

GENERAL METHOD OF ONE ELEMENT REPLACEMENT OF THE AIR CONDITONING UNIT

DISMOUNTING

Make the unit functioning for at least 10 minutes (if the unit permits)
Drain the circuit in the charging equipment.
Measure the quantity of recovered refrigerated fluid.
Release the access to the component that is needed to be changed.
Disconnect the connections.
In order to avoid the moisture infiltration, protect with protection covers.
Dismount the component.

REMOUNTING

Apply special compressor oil on the new elements thread and on the gaskets.

ATTENTION !
The new components must be obligatory provided with protection covers.
Remove the protection covers, connect the new component on the free connection, and tighten it by hand.
Place the component correctly.
Tighten it to the required moment.
Refill with refrigerant fluid and oil recommended by the manufacturer.

The filling up with oil for different repairs is to be performed as follows: add in the charging equipment container, the recovered oil quantity, plus an oil quantity, as it follows:

- sudden damaged of one of the unit's element or leakage..... 100 ml
- condenser replacement ..... 30 ml
- evaporator replacement..... 30 ml
- dryer filter replacement..... 15 ml
- pipe replacement..... 10 ml

For compressor dismounting/remounting without replacement add 120 ml.
If there are signs of moisture in the air conditioning circuit, replace the dryer filter tank.

Compressor oil **: PAG SP 10** **135 cmc**
Refrigerant fluid **: HFC134a** **0.6 Kg**

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DRAINING

Connect the charging equipment piping to the filling-draining valves.

Perform the vacuuming of the air condition unit with the recovering of the oil and the refrigerant fluid.

Close the hoses valves.

Disconnect the charging equipment piping and stop the equipment.

FILLING

Attach the draining – filling hoses of the equipment to the air conditioning unit valves.

Put compressor specific oil type **SP 10** in the charging equipment vessel.

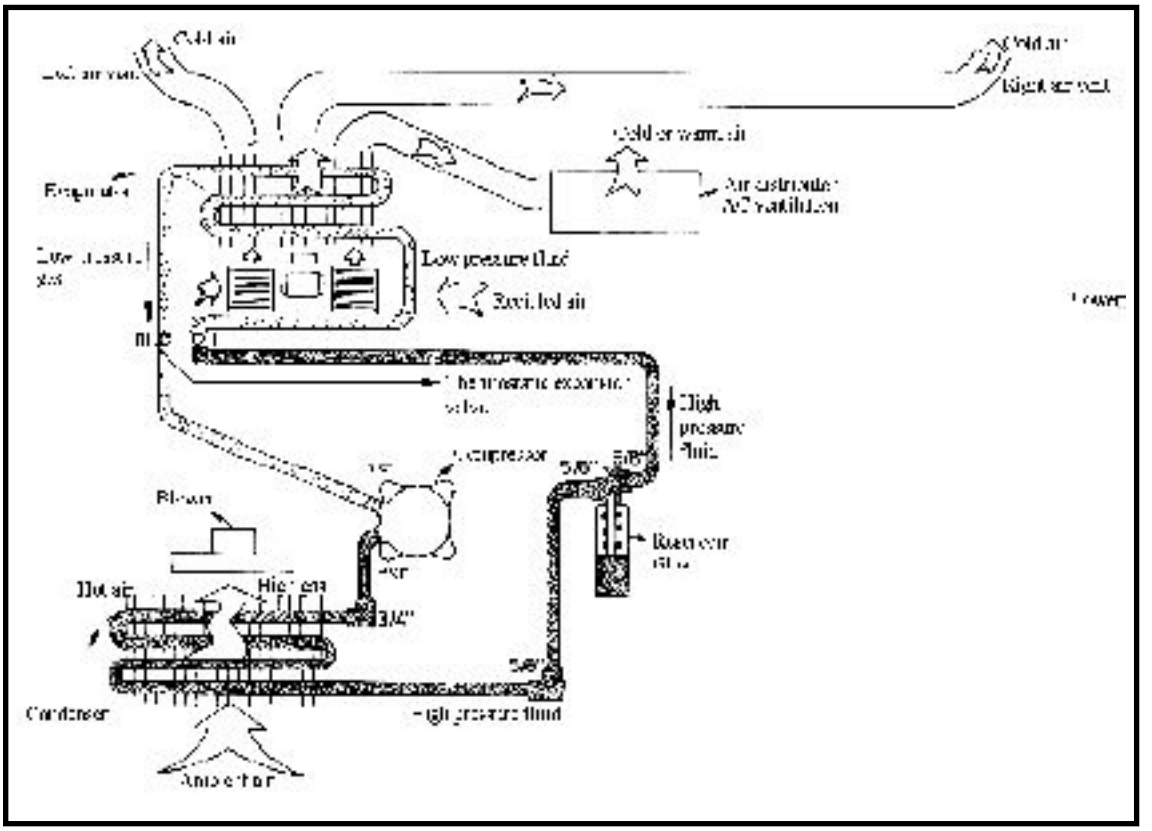
Set the quantity of the refrigerant fluid that must be charged **(0,6 Kg).**

Observe the filling instructions prescribed by the equipment producer.

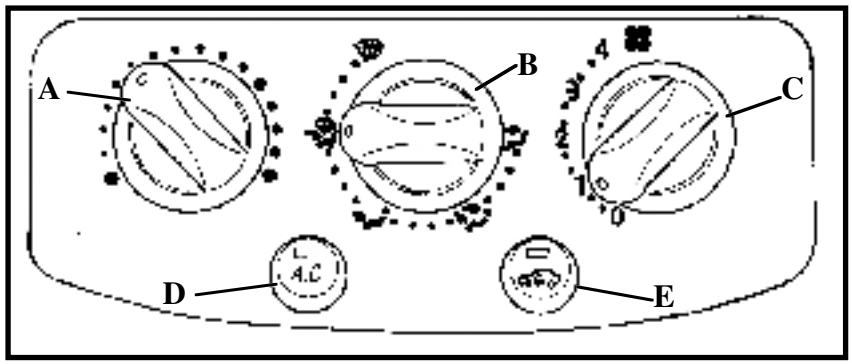
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AIR CONDITIONING

Air conditioning unit operating diagram



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The climate control assembly is enabling outside air penetration in the vehicle climate control unit.

Climate controls:

A – air temperature adjustment

B – air distribution in the cockpit

C – air quantity adjustment in cockpit

Air temperature adjustment

Control knob **(A)** is enabling the obtaining of the desired temperature in the cockpit. By turning to the right the knob **(A)**, the air temperature is increasing.

Air distribution in the cockpit

Air distribution in the cockpit is obtained by means of rotating the knob **(B)** in the desired position.

Position 

Airflow is directed towards the dashboard air vents.

Position 

Airflow is directed towards all dashboard air vents and passengers legs.

Position 

Airflow is directed towards passengers legs.

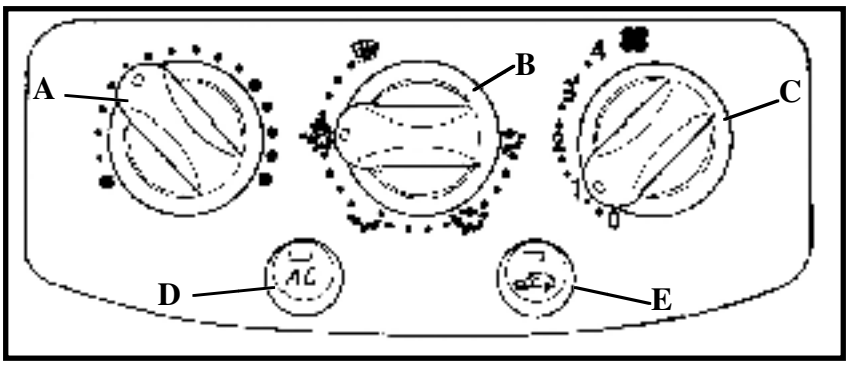
Position 

Airflow is directed between all air vents, front side windows defrosting vents, windscreen defrosting vent and passenger legs.

Position 

Entire airflow is directed towards windscreen and side windows defrosting air vents. For a more substantial efficiency, close the dashboard air vents.

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Air quantity adjustment in cockpit

The flow of circulating air in cockpit is adjusted by rotating the **(C)** knob in the corresponding positions for the four speed steps of the blower. The more speed step is bigger the more airflow is bigger.

For a better efficiency of the windscreen defrosting or defogging, the **(C)** knob must be placed on the last position.

In order to complete closing of the cold air penetration, rotate the knob on "**0**" position.

Air conditioning AC A/C

When pushing the (**D**) button, the starting / stopping of the air conditioning is ensured. If (**D**) button is not pushed, the air conditioning is not working, ventilation being identical to the one of a vehicle without air conditioning.

The use of air conditioning is enabling:

- lowering the air temperature in cockpit when the vehicle is driven in sunny places or when the vehicle is stopped in the sunshine;
- reducing the humidity in cockpit (event facilitated by defogging).

Air conditioning cannot be used at low outside temperatures. During air conditioning operation, for a better efficiency, all windows must be closed.

Recycled air

When pushing the (**E**) button, the climate maintenance unit is working with cockpit recycled air, without outside air penetration.

Air recycling is enabling:

- isolation from outside atmosphere;
- faster reaching the desired temperature in cockpit.

Prolonged use of this function may lead to glasses fogging. Normal operation returning, with outside air, is then imposed, by pushing the **(E)** button stopping the cockpit air recycling

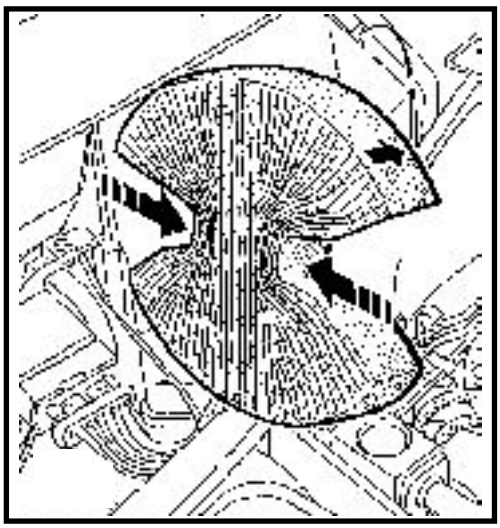
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DISMOUNTING

Dismount the protector of the climate control box.

Remove from clips the wiring towards blower casing from the D.S.A.F.

Dismount then the particles filter protection cap from the attachment screw by sliding it towards front of the vehicle.

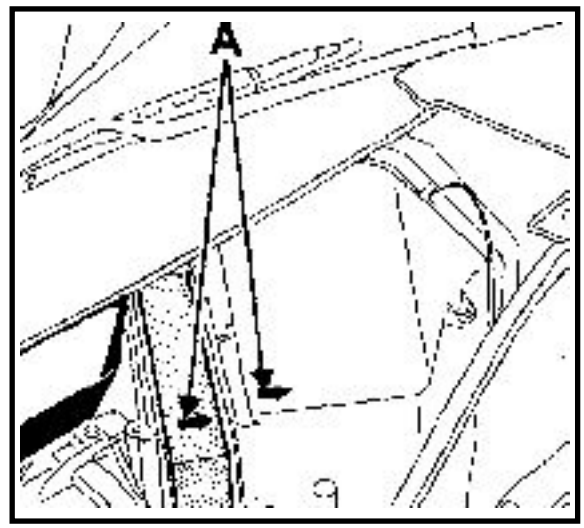


Extract the particles filter, by easy folding it.

REMOUNTING

Remount in its place the particles filter performing the same dismounting operations.

REMARK :
Pay attention at the mounting direction of the filter the two arrows (A) must be lined up.



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TIGHTENING MOMENTS (daNm)	
Attachments screws of the expansion vale on the evaporator	0,6
Pipes attachment nut on evaporator	0,57
Tightening screw of the pipe attachment clamp on compressor	1,2
Pipes attachment nut on filter reservoir	1,4 – 2
Pipe attachment nut on condenser ∫ “	1,8-2,2
Pipe attachment nut on condenser 5/8 “	1 – 1,4
Pressure controller	0,9 ± 0,1

DSAF is the heat-extracting component from cockpit and is mounted in the climate maintenance box.

In order to cool the cockpit, the warm air must be absorbed and redistributed the “cooled“ air. The warm air is going over the evaporator to, which is transmitting part of the temperature, this one being gradually reduced.

In the same time, the refrigerant fluid which is passing through the evaporator piping is absorbing the heat from the air going over the evaporator and at the same pressure, is transformed from fluid to vapors. When coming out from evaporator, the refrigerant fluid is in vapor condition.

DISMOUNTING

Drain the AC unit.

Disconnect the battery.

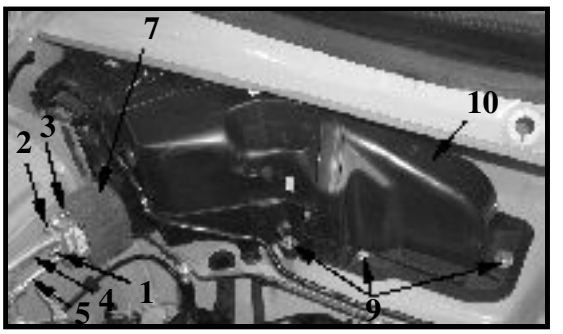
Dismount:

- climate control protector;
- climate control box gasket;
- expansion vessel;
- engine air filter

Detach the front wiring from attachment clips on the climate maintenance box closing plate.

Dismount the climate maintenance box closing plate.

Dismount the nut **(1)** of the pipes attachment clamp **(2)** on thermostatic expansion valves **(3)**.



Mount protectors at the dismounted pipes.

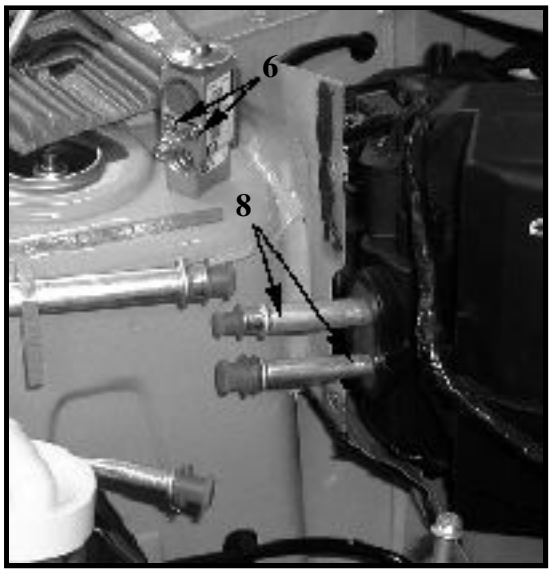
Dismount the attachments screws **(6)** of the thermostatic expansion valve.

Release the thermostatic expansion valve and mount protectors.

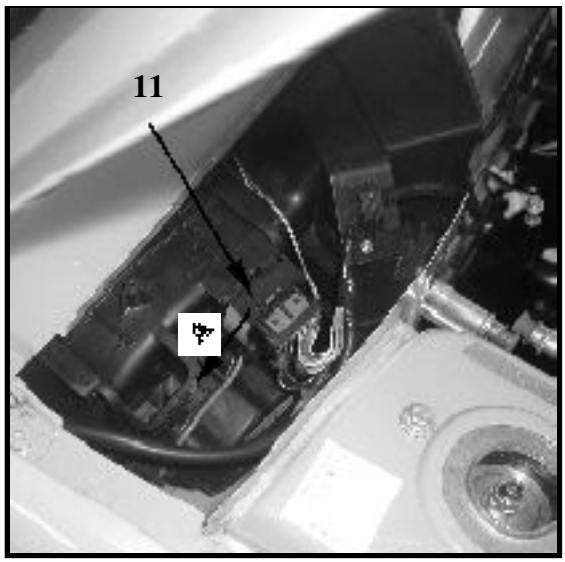
Extract the sealing gasket **(7)**.

Mount protectors at the evaporator’s pipes **(8)**.

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Disconnect the climate maintenance blower connector (**11**) (pull the red part towards arrow **A**).



Dismount the attachment screws of the steering wheel half-case and release from clips detaching.

Dismount the upper part dashboard and release it from clips.

Dismount the radio-cassettes player.

Disconnect the central locking switch connector (if the vehicle is provided with central locking).

Dismount the right air vent.

Dismount the DSAF attachment screws on cowl panel and attachment screws on climate maintenance box and release it.

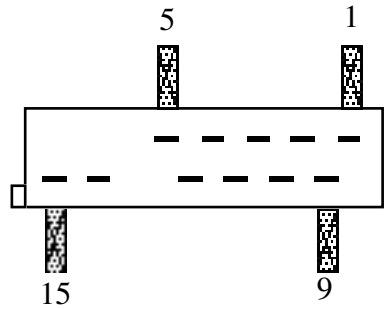
Dismount the attachment screws (**9**) of the connection pipe (**10**) on the distributor of RACV AC-ventilation air and release it.

REMOUNTING

Perform the dismounting operations in the reverse order, taking into consideration that filter reservoir is to be mounted the last.

Fill the air conditioning unit with refrigerant fluid **HFC 134a** (0,600 Kg).

Connector



Pin	Denomination
1	Control + air recycling
2	Control + air recycling
3	Blower control speed 1
4	Blower control speed 2
5	Blower control speed 3
9	Climate control blower speed signal
10	Supply + after contact
11	Supply + after contact
12	Blower control speed 4
14	Mass
15	Mass

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DISMOUNTING

Disconnect the battery.

Drain the air condiotioning unit to the station by recovering the refrigerant fluid

Dismount it from screws (**6**) and release the cold air-blowing device (**2**) from the climate control box (see D.S.A.F. dismounting-remounting)

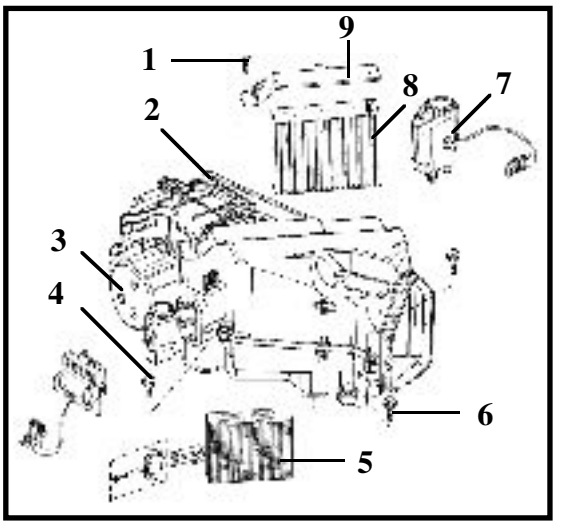
Disconnect and release the two attachment screws (**3**) of the air blower.

Dismount the resistance's assembly (**7**)

Supply the gear motor in order to bring the recycling control flap in vertical position

Dismount the attachment screw (**1**) of the air filter protection cap (**9**) and release the filter (**8**).

Dismount the attachment screws (**4**) of the D.S.A.F. cases and release the evaporator (**5**).



REMOUNTING

Perform the dismounting operations in the reverse order.

Vacuum then charge the air conditioning circuit with refrigerant fluid **HFc 134a** by means of the charging station.

Check the good operation of the air conditioning system.

NOTÃ:
Garniturile autoadezive ale D.S.A.F. vor fi înlocuite cu altele noi.

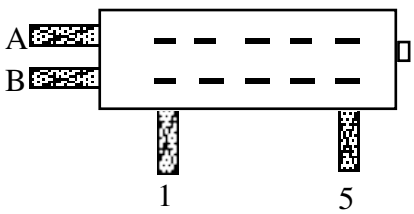
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The dismounting – remounting operation has been described in chapter **61 " Climate control".**

Connector (**3**)

Pin	Denomination
1	Free
2	Free
3	Free
4	Free
5	Free
6	Free
7	+ parking lights
8	Mass
9	Mass
10	Supply + after contact
11	Supply + after contact
12	Air conditioning control
13	Climate control blower speed signal
14	Control + air recycling
15	Control - air recycling

Connector (**6**)



Pin	Denomination
A1	Control + blower speed 4
A4	Supply + after contact
A5	Supply + after contact
B1	Control + blower speed 3
B4	Control + blower speed 2
B5	Control + blower speed 1

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FUNCTION

The compressor is suction the vapors coming from evaporator at low temperature and pressure, compress them and transmit the gas at high temperature and pressure towards condenser.

The refrigerant fluid in entering in condenser in vapors condition, at high temperature and pressure, where, by condensing, is transmitting in the external environment the abstracted heat.

At condenser exit, the refrigerant fluid is in liquid condition, at high pressure and temperature.

DISMOUNTING

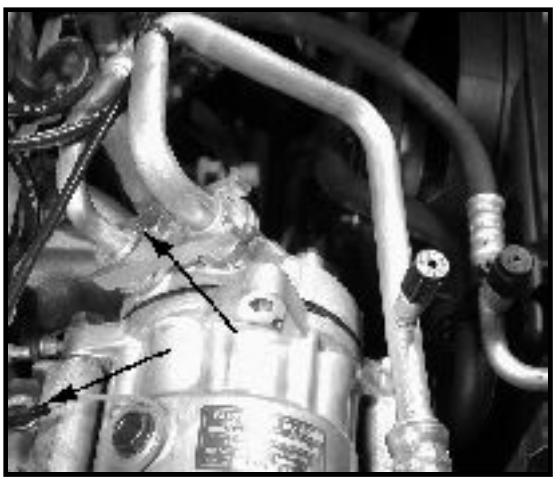
Drain the refrigerant circuit to a charging station.

Disconnect the battery.

Disconnect the supply wiring connector of the compressor clutch.

Dismount the screw of attachment clamp of the refrigerant pipes on compressor.

Cover the open piping with protectors.



Dismount the compressor-driving belt.

Dismount the four compressor attachment screws.

Extract the compressor.

REMOUNTING

In case compressor is replaced, this one is delivered filled with oil.

Position the compressor with the filling cap upwards.

Mount the compressor attachment screws.

Tighten the compressor attachment screws to the required moment of **2,1 daNm**.

Remount the two refrigerant pipes and tighten the attachment clamp screw to the required moment of **1,2 daNm**.

Mount the compressor-driving belt and tension it by acting upon the screw (**1**) according to the method described in chapter **07 " Accessories belts tensioning**".



The tensioning values are :

150 - 155 Hz - compressor belt;

214 – 230 Hz – DA pump/compressor belt.

Connect the supply wire connector of the compressor clutch.

Vacuum and fill the circuit with refrigerant fluid **HFC 134a**, by means of the charging station (**see chapter 62 "Draining– Filling unit refrigerant circuit"**).

REMARK :

Before mounting check the condition of the gaskets and lubricate them with compressor oil PAG SP 10.

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SPECIAL TOOLS	
MOT 453	Hoses clamp
MOT 1202-01	Elastic clips pliers

The condenser is placed on the cooling radiator, ensuring the exhaust of the refrigerant heat accumulated at compression.

DISMOUNTING

Disconnect the battery.

Drain the AC unit and recover the oil and the refrigerant fluid at the charging station.

Dismount the front grill.

Dismount the air filter inlet pipe.

Dismount the engine fan off the radiator.

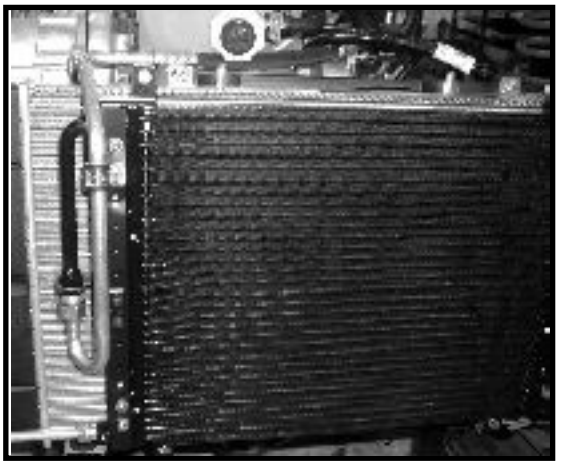
Disconnect the pipes from the condenser and immediately close the disconnected pipes ends and the condenser connections with protection caps in order to avoid humidity and impurities penetration in circuit.

Clamp the hoses from the radiator by means of the **MOT 453** device.

Dismount the hoses from the radiator by means of the elastic clips pliers **MOT 1202-01**, recovering the cooling fluid.

Dismount the radiator side attachment supports on the radiator upper crossbeam and release the radiator together with the condenser.

Release the condenser from the four attachments screws on the radiator.



REMOUNTING

Perform the dismounting operations in the reverse order.

Tighten to the required moment the pipes nuts.

- thread 3/4 " 1,8 – 2,2 daNm
- thread 5/8 " 1,0 – 1,4 daNm

Fill the AC unit with refrigerant fluid **HFC 134a** (0,600 Kg) by means of the charging unit.

Check for refrigerant fluid leaks.

Fill and purge the cooling circuit.

Check the good operation of the AC unit.

REMARK :

When mounting, line up the marks of the hoses and mating parts.

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LOCATION

Pressure controller **(1)** is located on the high-pressure pipe, near the dryer reservoir.



FUNCTION

The pressure controller is permanently informing UCE (electronic control unit) about the circuit pressure.

Subject to pressure value in the high-pressure circuit, UCE is commanding:

- circuit break (by uncoupling the compressor clutch) when the pressure in the circuit is decreasing under **1,96** + /-0,2 bar and clutch coupling when the pressure is over **2,16** +/- 0,2 bar;
- circuit break when the pressure in the circuit is over **31,4** +/- 2 bar and compressor clutch coupling when the pressure is decreasing under **25,5** +/- 2 bar;
- engine fan starting on second speed, when the pressure is over **17,7** +/- 1 bar and engine fan stopping when the pressure is decreasing under **13.7** +/- 1 bar.

REPLACEMENT

The pressure controller replacement does not imply the draining of the refrigerant circuit.

Disconnect the pressure controller connector.

Replace the pressure controller.

When mounting, lubricate the pressure controller sealing gasket with oil **PAG SP10**.

Tighten the pressure controller to the required moment of **0,9 +/- 0,1 daNm.**

Check for refrigerant fluid leaks.

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Filter reservoir **(1)** is attached by means of a support collar on the right longitudinal girder.

Its function in the AC unit operation is :

- filtering the refrigerant fluid;
- retaining the humidity from the unit;
- forming of a buffer stock of refrigerant fluid.

The particles interception is necessary because it might block the thermostatic expansion vale operation or produce compressor mobile parts wear or gripping.

The filter reservoir is not to be repaired.

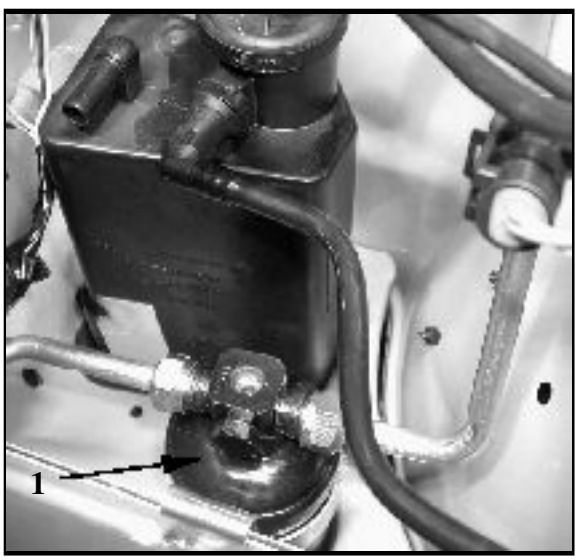
DISMOUNTING

Disconnect the battery.

Drain the AC unit.

Dismount the piping and protect with protection caps in order to avoid humidity penetration.

Dismount the filter reservoir off the support collar and release it.



REMOUNTING

Perform the dismounting operations in the reverse order.

Fill the AC unit with refrigerant fluid **HFC 134a** (0,600 Kg) by means of the charging station.

Check for refrigerant fluid leaks.

When replacing the filter reservoir, fill in the circuit with **15 ml** of oil **PAG SP 10**.

REMARK

The tightening required moment of the pipes nuts at the filter reservoir is of 1,4 –2 daNm.

The required tightening moment of the attachment screw of the filter reservoir support is of 0,7 daNm.

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TIGHTENING MOMENTS (daNm)	▽
Pipe attachment nut 3/4'' on condenser	1,8-2
Pipe attachment nut 5/8'' on condenser	1-1,4
Pipes attachment screw on compressor	1,2
Pipes attachment nut on evaporator	0,57

The AC unit piping is ensuring the refrigerant fluid circulation between the unit components. When piping is replaced, check the existence of the protective caps, the lubrication of the connections and gaskets with compressor oil.

The unit filling and draining valves are placed on the compressor piping and they different diameters, so that they can not be reversed.

COMPRESSOR – EVAPORATOR LOW PRESSURE PIPE

DISMOUNTING

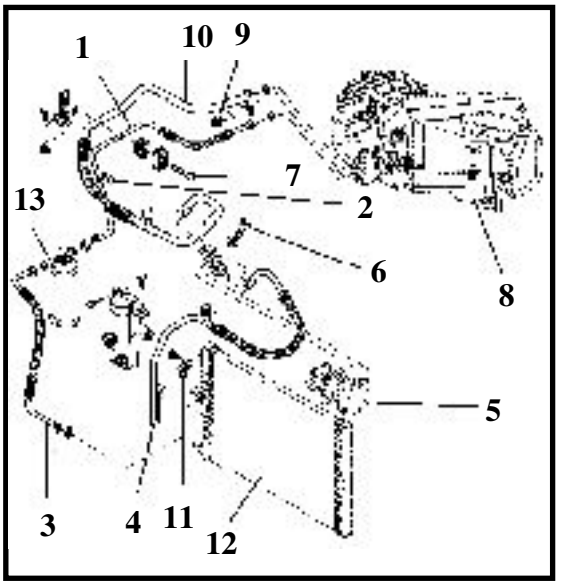
Disconnect the battery.

Drain the AC circuit by means of the charging unit.

Dismount:

- attachment nut (**9**) of the pipes tightening clamp on evaporator (**8**) (located in DSAF);
- attachment screw (**6**) of the pipes tightening clamp on compressor (**5**);
- attachment screw (**7**) of pipes clamp.

Release the pipe (**10**) and mount protection caps at its extremities, at evaporator and compressor.



REMOUNTING

Perform the dismounting operations in the reverse order.

Replace the gaskets from pipe's extremities.

Before mounting, the gaskets are to be lubricated with oil **PAG SP10.**

In case pipe (**10**) is replaced, add **10 ml** of oil **PAG SP 10**, and in case of its breaking, **100 ml.**

COMPRESSOR – CONDENSER HIGH PRESSURE PIPE

DISMOUNTING

Disconnect the battery.

Drain the AC circuit by means of the charging unit.

Dismount:

- front grill;
- attachment screw **(6)** of the high pressure pipe (**4**) on compressor (**5**);
- pipe attachment nut on condenser (**12**);
- pipe attachment clamp (**11**) on condenser.

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Release the pipe and mount protection caps at its extremities, at compressor and condenser.

REMOUNTING

Perform the dismounting operations in the reverse order.

Replace the gaskets and lubricate them with oil **PAG SP 10.**

When a pipe is replaced, add 10 ml of oil **PAG SP 10** and in case of its breaking **100 ml.**

ATTENTION !
After mounting the AC unit piping, check for refrigerant fluid leaks.

FILTER RESERVOIR – EVAPORATOR HIGH PRESSURE PIPE (DSAF)

DISMOUNTING

Disconnect the battery.

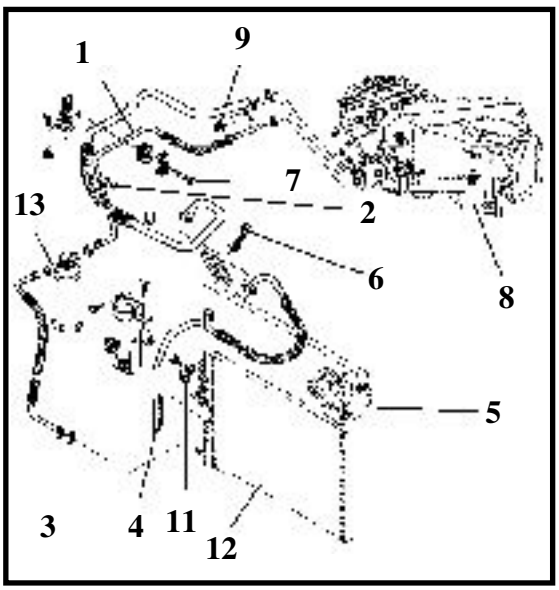
Drain the AC circuit.

Disconnect the pressure controller connector (**2**).

Dismount :

- attachment nut (**9**) of the pipes tightening clamp on evaporator (**8**);
- attachment nut of the high pressure pipe (**1**) on filter reservoir;
- attachment screw (**7**) of pipes clamp.

Release the pipe (**1**) and mount protection caps at its extremities, at evaporator and reservoir filter (**13**).



REMOUNTING

Perform the dismounting operations in the reverse order.

Check the condition of the gasket and lubricate them with oil **PAG SP 10**.

When replacing a pipe, add **10 ml** of oil **PAG SP 10** and in case of its breaking, **100 ml**. The "**0**" rings from the pipe extremities are to be replaced with new ones.

FILTER RESERVOIR – CONDENSER HIGH PRESSURE PIPE

DISMOUNTING

Disconnect the battery.

Drain the AC circuit.

Dismount the attachment nuts of the high-pressure pipe (**3**) on filter reservoir and condenser.

Release the pipe and mount protection caps at pipe's extremities (**3**), at condenser and at filter reservoir.

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REMOUNTING

Perform the dismounting operations in the reverse order.

The "**0**" rings from the pipe's extremities are to be replaced with new ones. Before mounting, these are to be lubricated with oil **PAG SP 10**.

When replacing a pipe, add **10 ml** of oil **PAG SP 10** and in case of its breaking – **100 ml.**

ATTENTION !
After mounting the AC unit piping, check for refrigerant fluid leaks.

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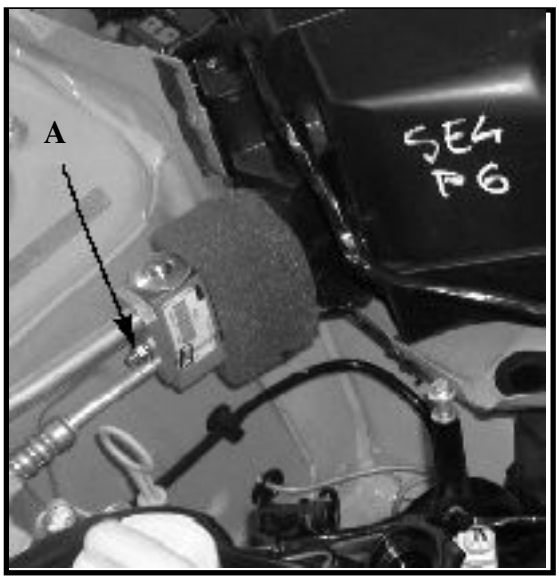
Its function is to reduce the refrigerant fluid pressure at the evaporator entrance, to a default value. In this way, the fluid passing through the evaporator may be suction by the compressor in a complete gaseous condition.

DISMOUNTING

Drain the refrigerant circuit by means of the charging station

Dismount :

- attachment nut (**A**) of the connection pipes;
- two attachment screws (**B**) of the expansion valve (**C**) on evaporator.



REMOUNTING

When remounting, replace the pipes sealing gaskets.

The required tightening moment for **B** screws is of **0,8 daNm**.

The required tightening moment for **A** pipes attachment nut is of **0,57 daNm**

Vacuum the unit then perform its filling with refrigerant fluid by means of the charging station.



REMARK:

Adjustments of the expansion valve spring are to be performed only by the manufacturer.

The expansion valve is not to be repaired and not adjustable.

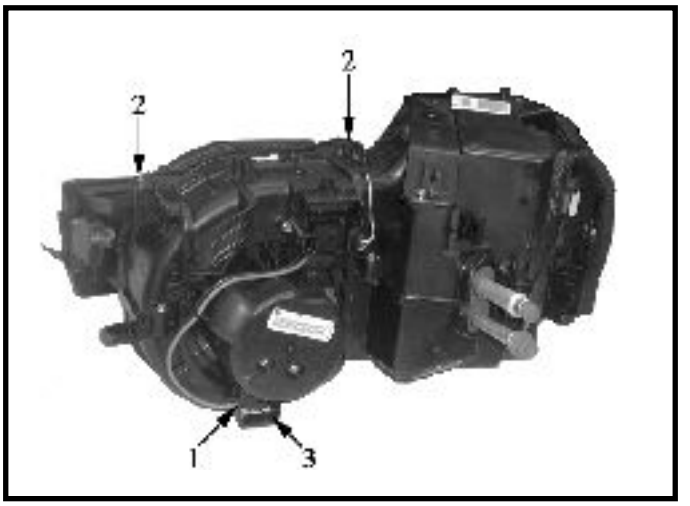
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DISMOUNTING (D.S.A.F being already dismounted)

Disconnect the connector (**1**).

Dismount the two attachment screws (**2**) of the climate control blower.

Swing over and extract carefully the blower from its seat (**3**).



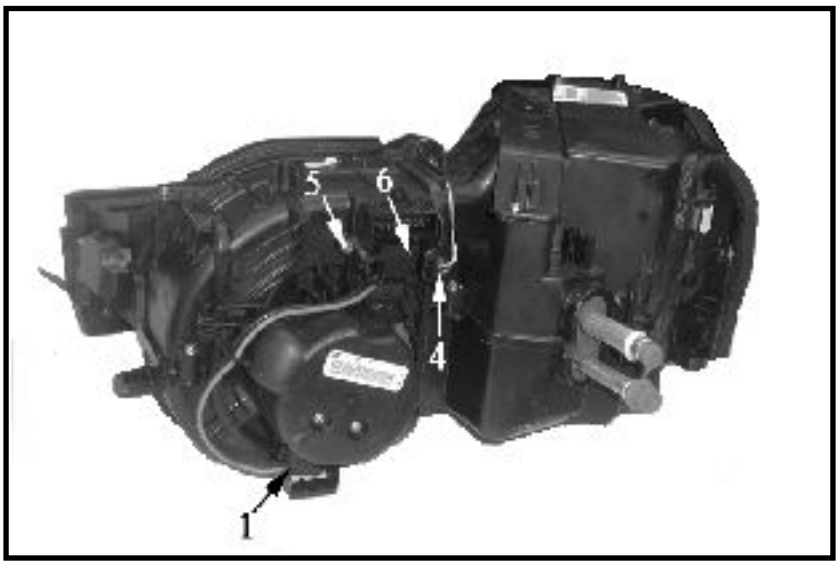
REMOUNTING

Perform the dismounting operations in the reverse order.

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DISMOUNTING (D.S.A.F being already dismounted)

Disconnect the connectors (**1**) and (**4**).
Dismount the resistance attachment screw (**5**).
Extract the resistance (**6**).



REMOUNTING

Perform the dismounting operations in the reverse order.

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DISMOUNTNG (D.S.A.Fbeing already dismounted)

The accessto the recycling flapgearmotoris it possibleonly afterdismounting the air blowing device(D.S.A.F.)

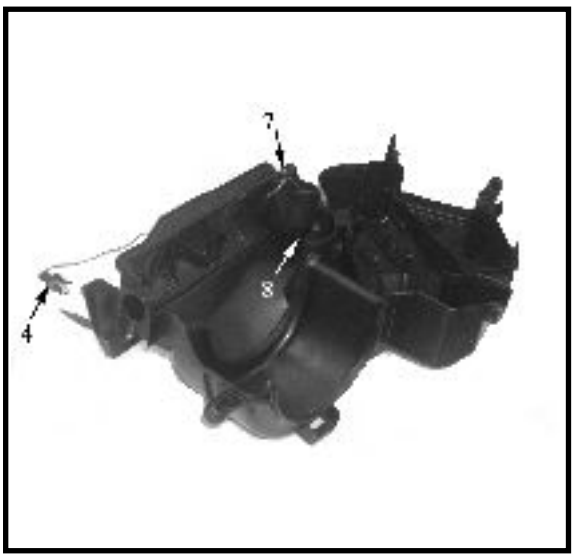
Disconnectthe connector(**4**)

Dismount the gear motor attachmentscrew(**7**).

If necessary, supply the gear motor with 12 V cc so that recycling flap is enablingthe dismounting of the gear motor attachmentscrew(**8**).

Dismount the gear motor attachmentscrew.

Extract from itsplace,carefully, the gear motor





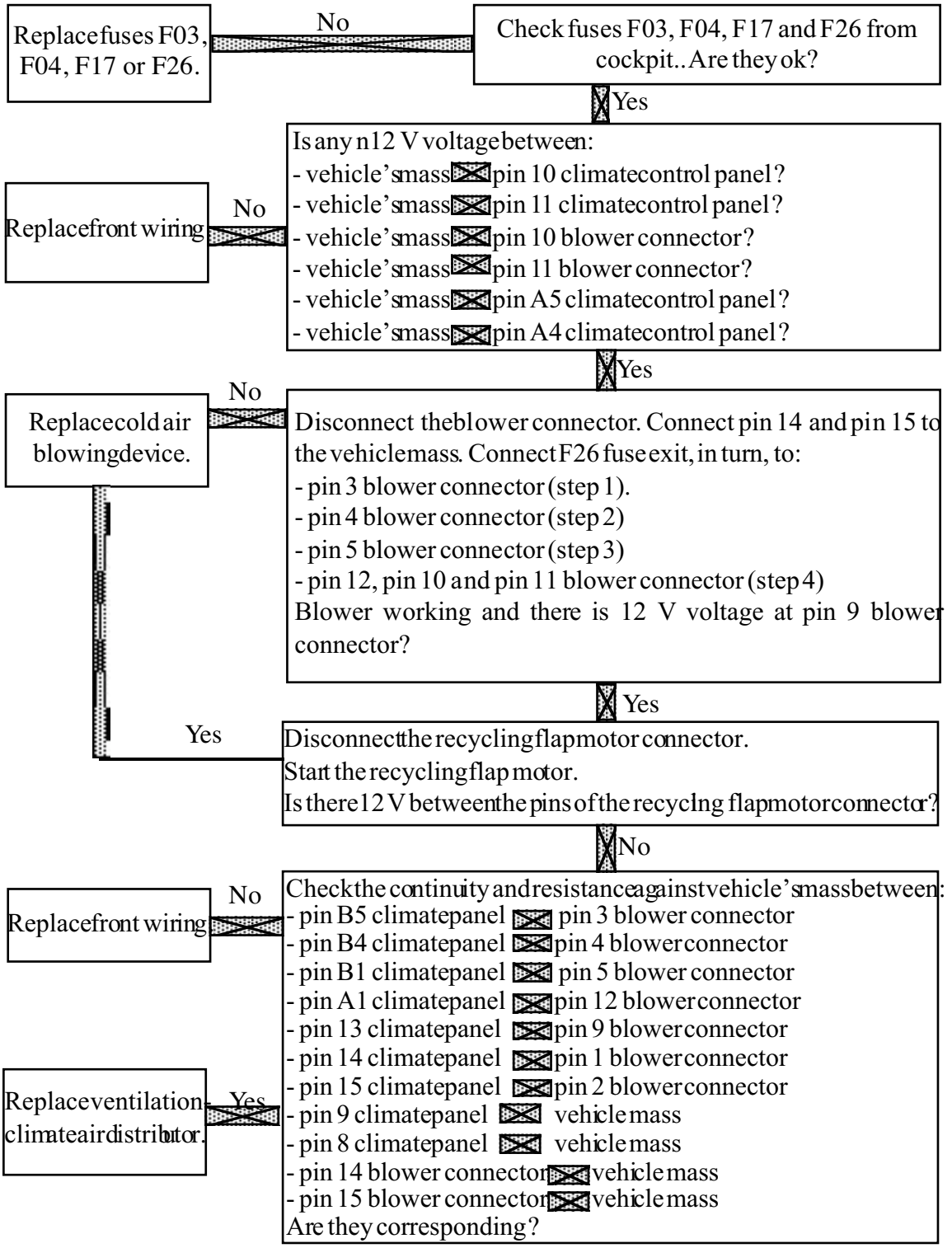
REMOUNTING

Perform the dismountingoperationsin the reverse order

The new gear motorsare deliveredin the recyclingflap partially-open positionareno special cautionsare needed.

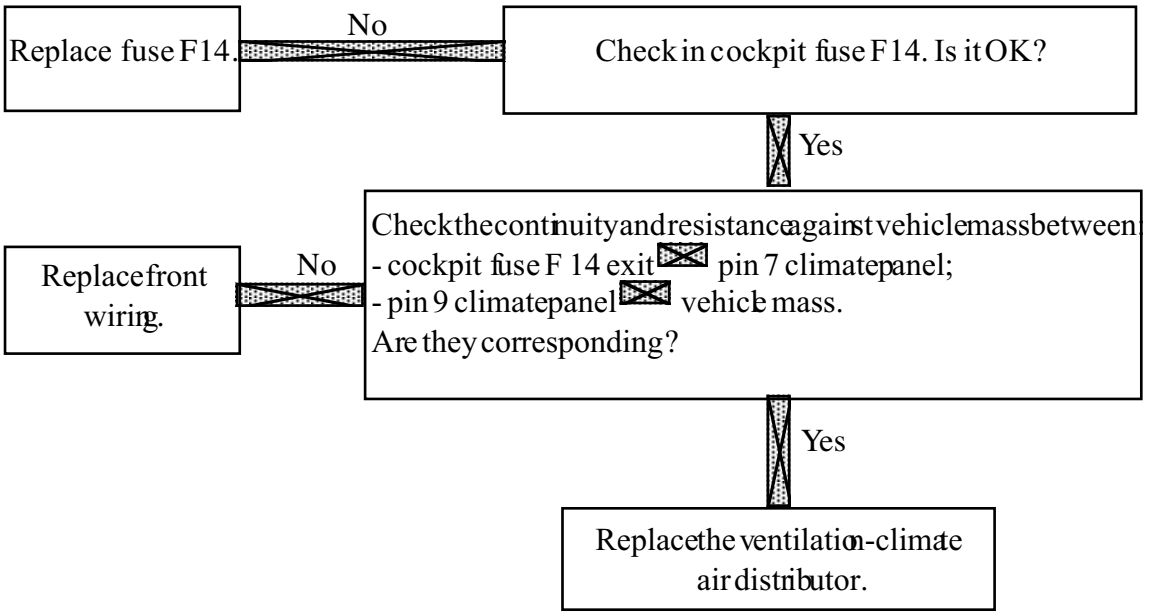
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CLIMATE BLOWER FAN OR RECYCLING FLAP NOT WORKING



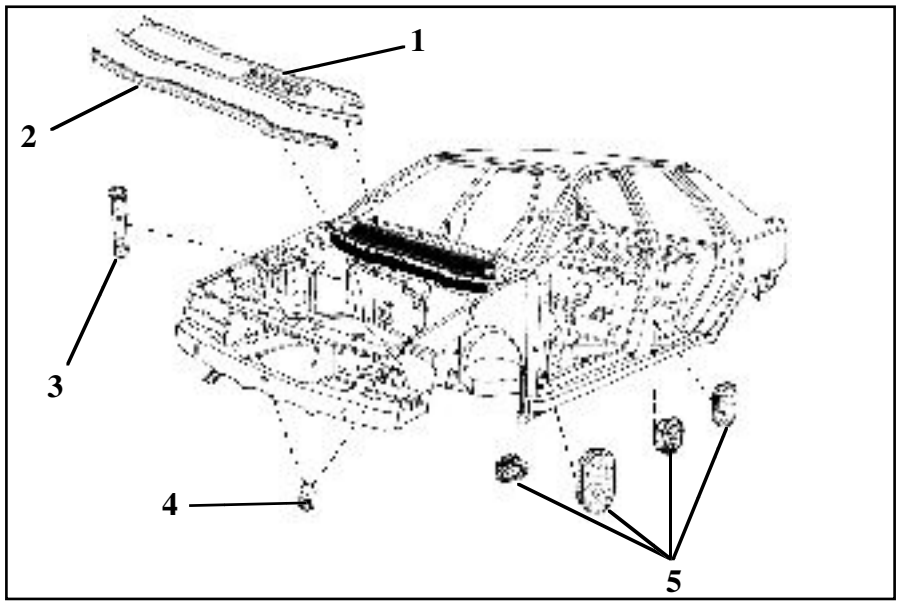
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CLIMATE CONTROL PANEL LIGHTING NOT WORKING



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Carriage body sealing



1 - climate control protector
2 - climate control box gasket
3 - water evacuation hose
4 - bonnet support
5 - obturators

CLIMATE CONTROL PROTECTOR

DISMOUNTING

Dismount the climate control box gasket.

Swing over windscreen the climate control protector and detach it from clips from the climate control box.

REMOUNTING

Perform the dismounting operations in the reverse order.

Take into consideration that climate control box gasket is sealing both on the border of the climate control protector and on the central part of the climate control box.

WATER EVACUATION HOSE

DISMOUNTING

Dismount

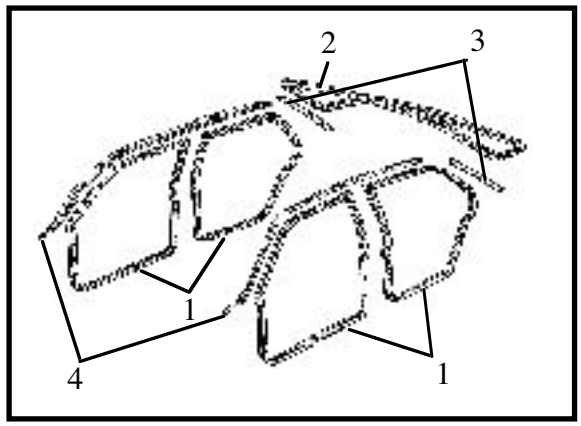
- climate control box gasket;
- climate control protector.

Remove the water evacuation hoses from the climate control box.

REMOUNTING

Perform the dismounting operations in the reverse order.

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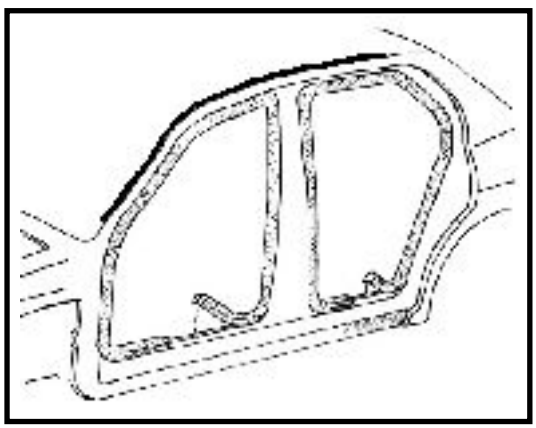


1 – doors sealing gaskets
2 – trunk sealing gasket
3 – rear quarter panel ornament
4 – gutter sealing gasket

DOOR FRAMES GASKETS

DISMOUNTING

Dismount the front/rear doors frames gaskets following the their outliners, by drawing towards outside of one of their ends.



REMOUNTING

Introduce for all the contour of truk sealing gasket a sealing material Terodicht Scwartz.

The mounting of the gaskets is performed by their tapping with a rubber hammer.

Attention!

Ensure a good positioning of the sealing gasket at the openings level.

GUTTER SEALING GASKETS

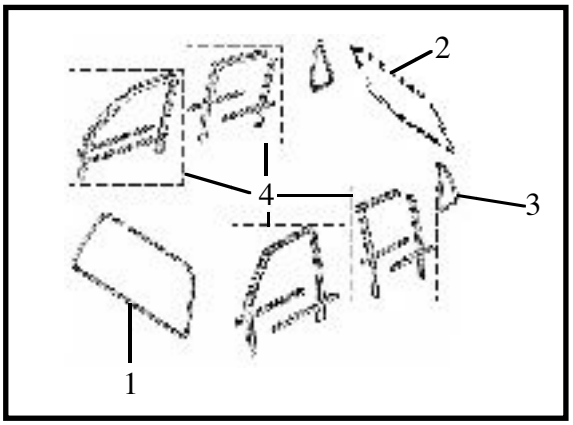
DISMOUNTING

Their dismounting is performed by pulling of one gasket extremity towards the exterior of the setting outliner.

REMOUNTING

Mounting is performed by placing one gasket extremity on the gutter end by easy and successive tapping by means of a rubber hammer.

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1. Windscreen gasket
2. Hatchback gasket
3. Fix window gasket
4. Doors glasses gaskets kit.

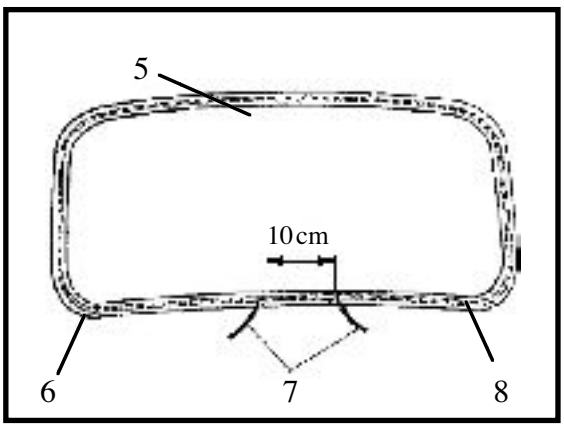
DISMOUNTING

Dismount the windscreen and hatchback glass, together with the gasket by pushing from the inside of the vehicle.

If reused, the glass gasket shall be cleaned or replaced with a new one.

REMOUNTING

Place the gasket **(6)** all around the glass **(5).** Apply in the gasket channel in the contact area with carriage body a cord of sealaling material **Romtix 1502 P** 3 mm diameter. Introduce a cotton cord **(8)** of 3 – 4 mm diameter has been previously introduced, leaving at the ends **(7)** about 20 mm of cord, and between the ends, the distance shall be not more than 10 mm.



ATTENTION:

Check if the gasket draining holes are pierced.

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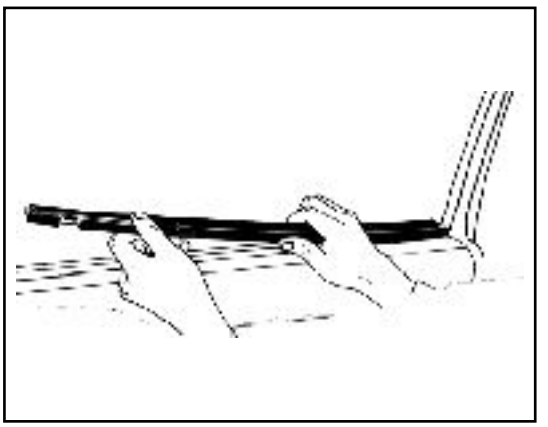
INSIDE WIPERS

DISMOUNTING

Dismount:

- opening handle;
- window regulator crank;
- inside door opening mechanism;
- panel attachment screws.

Remove the inside wiper.



REMOUNTING

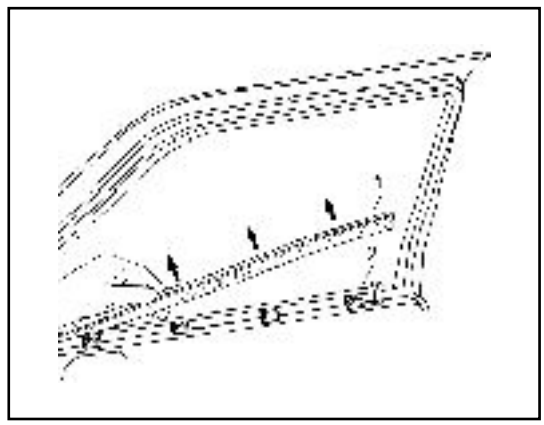
Perform the dismounting operations in the reverse order.

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DISMOUNTING

Lower the window in the minimum position.

Dismount the outside wiper **(1),** by detaching it from the clips **(2).**



REMOUNTING

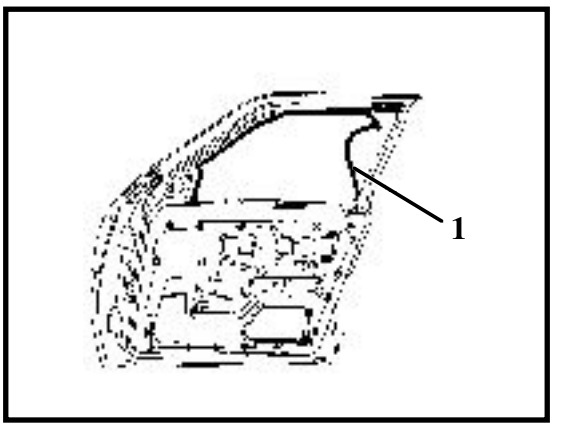
Perform in the reverse order the dismounting operation.

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Front door glass channel

DISMOUNTING

- front door panel (**see chapter 72**);
- front door deflective panel;
- inner and outside wiper;
- front glass (**see chapter 54**);
- front door glass run channel;
- exterior mirror (**see chapter 56**).



REMOUNTING

Perform the dismounting operation in the reverse order.

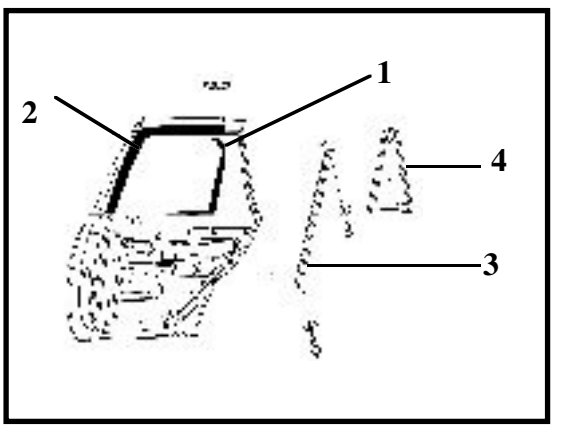
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DISMOUNTING

Dismount:

- rear door panel (**see chapter 72**);
- read door deflective panel;
- rear glass (**see chapter 54**);
- guide run channel (**1**);
- rear door glass run channel (**2**);
- glass guide (**3**);
- fix glass together with gasket.

Release the fix glass gasket (**4**).

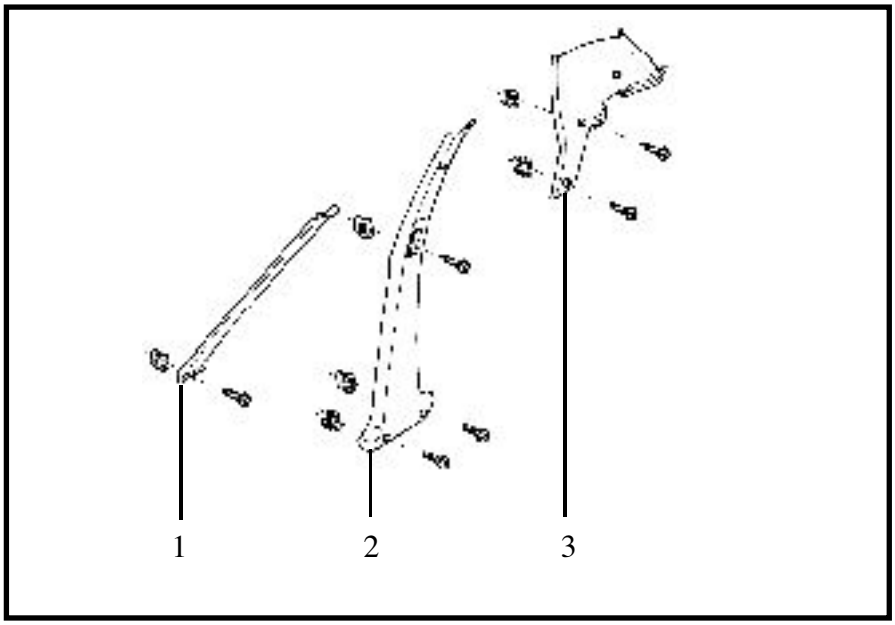


REMOUNTING

Perform the dismounting operations in the reverse order.

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Carriage body inside trims



1 - Upper front pillar trim
2 - Middle pillar trim
3 - Rear quarter panel trim

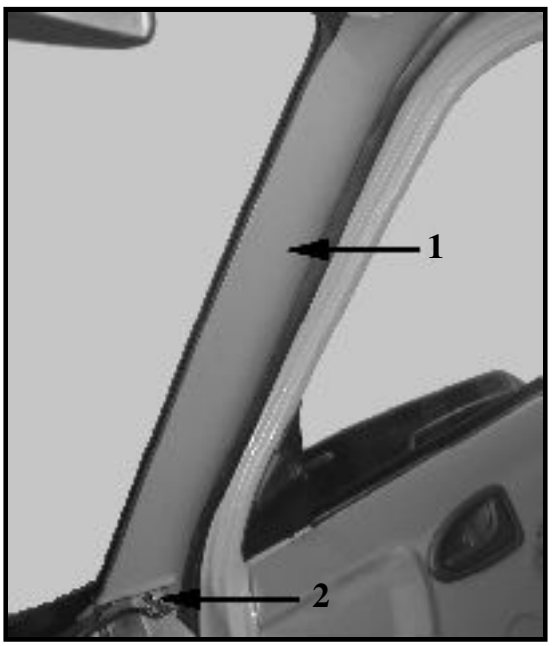
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Upper front pillar trim

DISMOUNTING

Dismount :

- dashboard upper part (**see chapter 57**);
- front door sealing gasket in the contact area with the front pillar trim;
- trim attachment screw **(2)** on the side frame lining.



Detach from clips the upper front pillar trim **(1)** and release it.

REMOUNTING

Perform the dismounting operations in the reverse order.

The screw tightening moment is of **0,12 daNm**.

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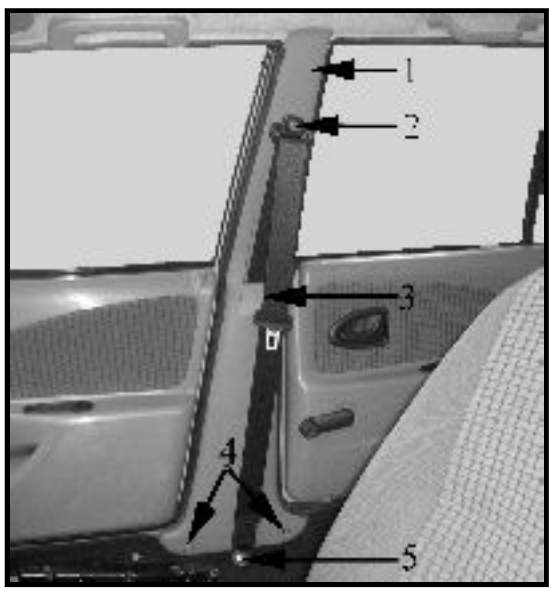
Middle pillar trim

DISMOUNTING

Move the front seat to enable operator access to the front pillar.

Dismount:

- partially the front/rear door gaskets (in the contact areas with middle pillar trim);
- attachment screws **(2)** and **(5)** of the front belt on the middle pillar at upper part, consequently, at lower part;
- attachment screws **(3)** and **(4)** of the middle pillar trim on the side frame lining.



Release the middle pillar trim **(1)**.

REMOUNTING

Perform the dismounting operations in the reverse order.

The tightening moment of the belt attachment screws is of **2,7 daNm**, and the one of the attachment screws of the middle pillar trim is of **0,12 daNm**.

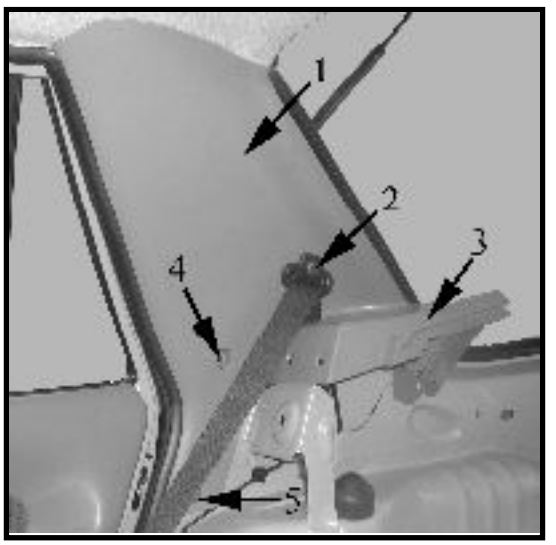
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Rear quarter panel trim

DISMOUNTING

Dismount:

- rear quarter panel ornament;
- partially the rear door sealing gasket in the contact area with the rear quarter panel trim;
- rear table;
- table support (**see chapter 74**);
- attachment screw **(2)** of the rear belt on the upper part;
- attachment screws **(4)** and **(5)** of the rear quarter panel trim to the side frame lining.



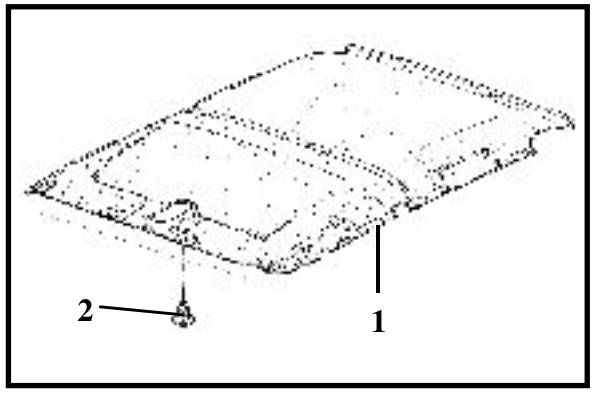
Detach from clips the rear quarter panel trim **(1).**

REMOUNTING

Perform the dismounting operations in the reverse order.

The tightening moment of the belt attachment screw is of **2,7 daNm**.

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1 – roof lining
2 - clips

DISMOUNTING

Detach from clips the ceiling lamp and disconnect it (**see chapter 81**);
Dismount:
- turn handles (**see chapter 58**);
- sun visors (**see chapter 58**);
- upper front pillar trims;
- volumetric sensors (for vehicles provided with alarm);
- middle pillar trims;
- rear quarter panel trims.

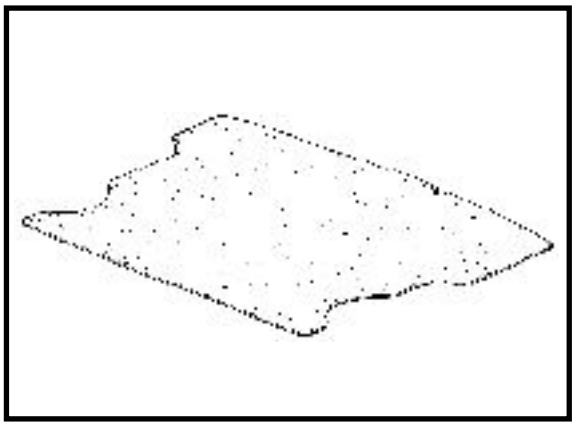
Detach from clips the roof lining **(1)**.

REMOUNTING

Perform the dismounting operations in the reverse order.

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Trunk carpet



DISMOUNTING

Unstuck the trunk carpet from the self-adhesive tapes placed on the rear floor.

REMOUNTING

Perform the dismounting operations in the reverse order.

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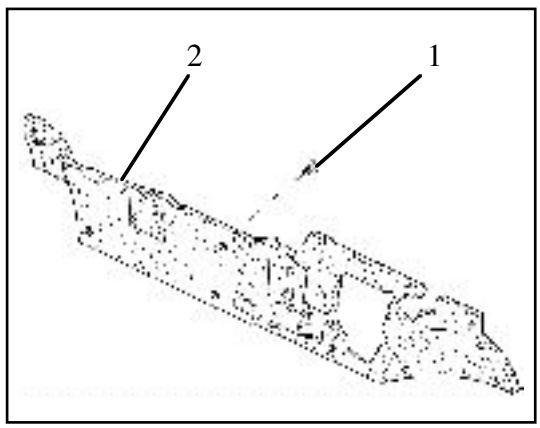
Cowl panel noise absorbent

DISMOUNTING

Dismount :

- dashboard (**see chapter 57**);
- driving post cross beam (**see chapter 42**);
- central console (**see chapter 58**);
- distributor of the air ventilation climate maintenance RACV (**see chapter 61**);
- attaching screw of the steering column support on the driving post cross-beam;
- pedals support (**see chapter 37**);
- partially the floor carpet (in the noise absorbent covering area).

Detach the noise absorbent **(2)** from the cowl panel clips **(1)**.



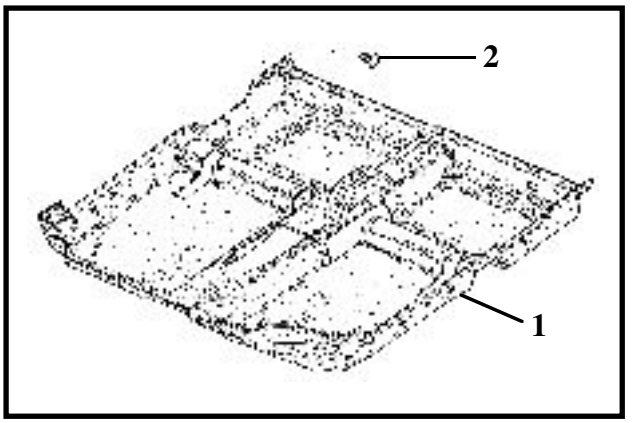
REMOUNTING

Perform in the reverse order the dismounting operations.

A maximum **3 daN** clips attaching effort is necessary for the noise absorbent attachment clips.

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Cockpit carpet



1 – cockpit carpet
2 – clip

DISMOUNTING

Dismount :

- front seats (**see chapter 78**);
- rear bench seat (**see chapter 78**);
- front seat belts lockers (**see chapter 59**)
- central console (**see chapter 58**);
- distributor of the air ventilation/climate maintenance RACV (**see chapter 61**);
- front safety belts at lower part;
- acceleration pedal limiter.

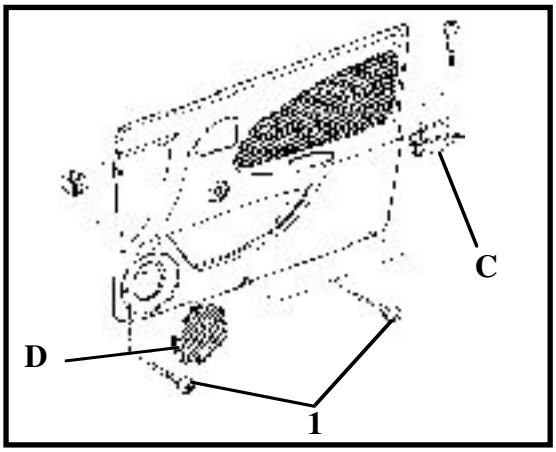
Detach from clips the cockpit carpet (**1**).

REMOUNTING

Perform the dismounting operations in the reverse order.

The clips attaching is to be performed with a maximum force of **3 daN**.

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DISMOUNTING

Disconnect the battery.

Dismount:

- window regulator crank **(A)** for glass lifting, that is mounted by clips attachment on the window regulator axle (in case of the vehicles provided with glass hand-drive lifting);

- attachment screw of the opening mechanism from inside **(B)**, consequently the mechanism.

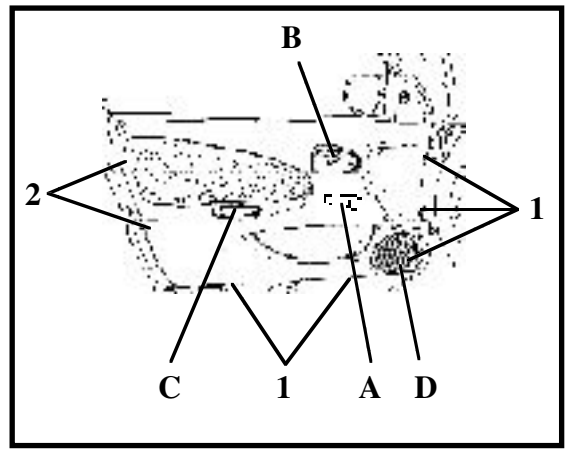
- locking handle **(C)** attached by screw.

Rotate the speaker grill **(D)** counter clock-wise direction and extract it from the front door panel.

Dismount the four attachment screws of the speaker on the door panel.

Disconnect the front door speaker connector.

Dismount the attachment screws **(1)** of the door panel on the caisson.



Detach from clips the door panel in points **(2)** .

REMOUNTING

Perform in the reverse order the dismounting operations taking into account the following recommendations:

- check the integrity of the deflective panel and of the continuos layer of **Romtix 1502 P** sealing material on the front door caisson;

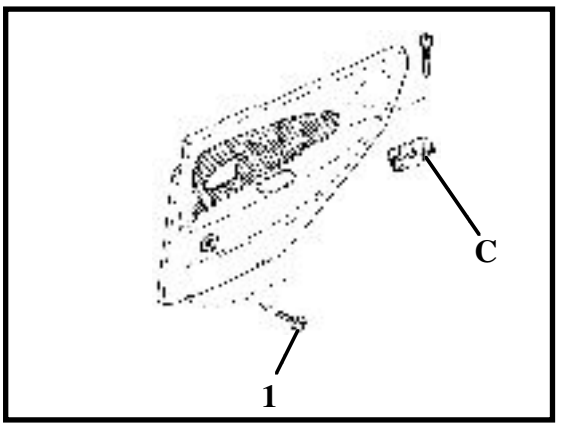
- for the mounting of the inside opening mechanism, the opening control rod will be placed in the position where the assembled plate with electric control is blocked;

- after mounting, check the operation of the inside opening mechanism and its alignment with the front door panel;

- check the operation of the front door speaker.

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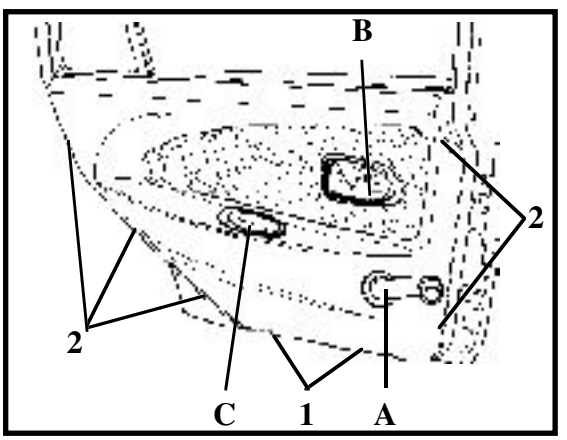
Rear door panel



DISMOUNTING

Dismount :

- window regulator crank **(A)** for glass lifting that is mounted by clips attachment on the window regulator axle.
- attachment screw of the inside opening mechanism **(B),** consequently, the mechanism;
- locking handle **(C)** attached by screw;
- attachment screws **(1)** of the rear door panel on the caisson;



Detach from clips the rear door panel from points **(2)**.

REMOUNTING

Perform the dismounting operations in the reverse order, taking into consideration the followings recommendations:

- check the integrity of the deflective panel and of the continuos sealant material layer **Romtix 1502 P** on the door caisson outliner;
- for the mounting of the inside opening mechanism, the opening control rod will be placed in the position where the assembled plate with electric control is unblocked.
- after mounting, check the operation of the inside opening mechanism and its alignment with the rear door panel.

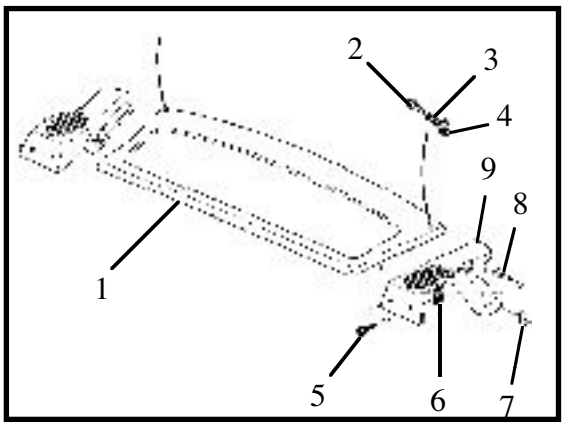
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DISMOUNTING

Release the table cord from button **(3)** that is attached on the hatchback by means of the screw **(2)** and the nut **(4).**

Extract the panel **(1).**

Release the rear table **(1)** from the lateral supports channel.



Disconnect the battery.

Disconnect the rear speaker connector.

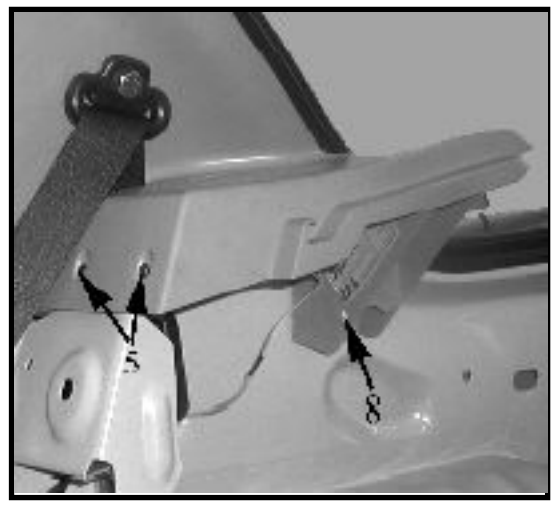
Dismount the attachment screws of the rear bench on its supports.

Recline the bench backrest.

Dismount:

- screw **(8)** from the maintaining clip **(7)** attaching the table lateral support on the lateral frame lining;
- screws **(5)** from maintaining clips **(6)** attaching the table lateral support on the bench support.

Detach from clips, the table lateral support (**9**), from rear quarter panel trim.



Dismount the speaker from the table lateral support.

REMOUNTING

Perform the dismounting operations in the reverse order.

Attention !

The speaker is to be mounted with the connector towards vehicle's front part.

Check the operation of the rear speaker.

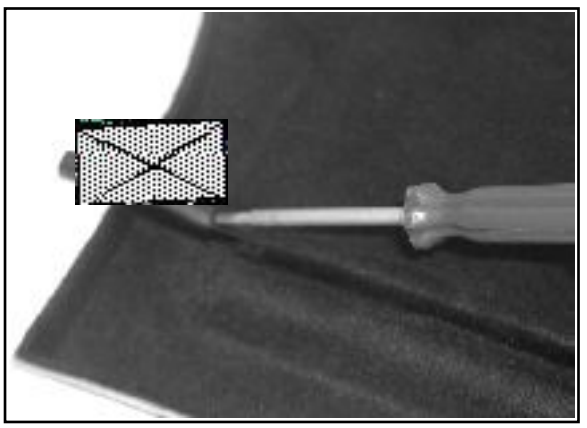
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PIVOT

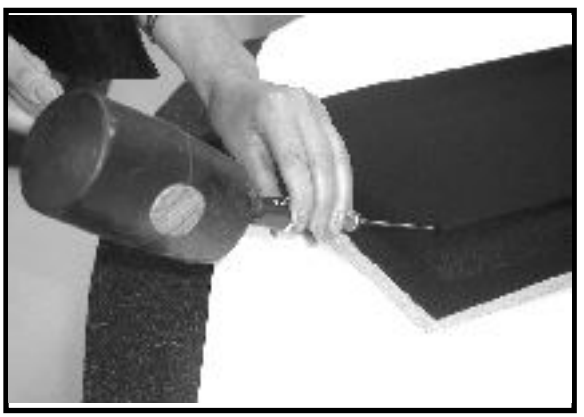
DISMOUNTING

Dismount the rear plate.

Dismount by measn of a screwdriver, in the arrow direction, the table pivot.

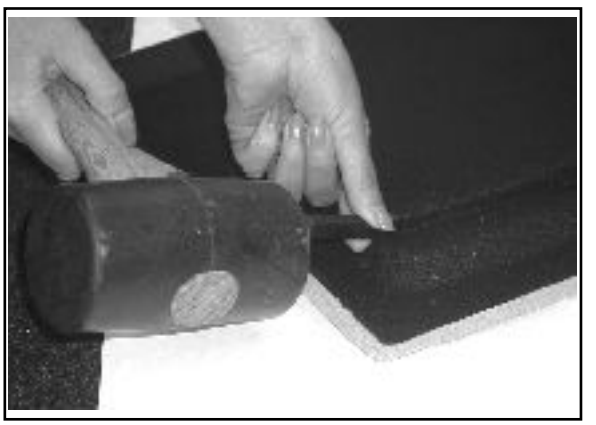


In case head of the pivot, its remaining is inserted inside the metallic rod of the table by means of a screwdriver and a hammer, as per bellow presented drawing.



REMOUNTING

Perform the dismounting operations in the reverse order.



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REAR PLATE BUFFER

DSIMOUNTING

Push the rear plate buffer by means of a screwdriver according to the bellow presented drawing



REMOUNTING

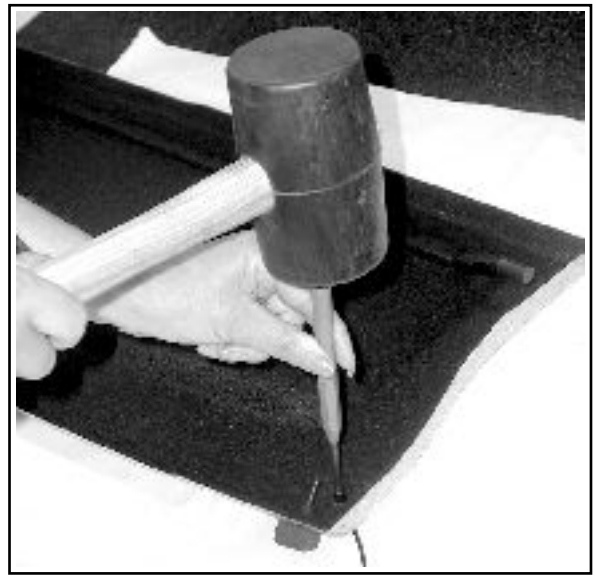
Perform the dismounting operations in the reverse order.

REAR PLATE CORD

DISMOUNTING

Dismount

- rear table,
- the agraffe of the rear plate cord together with its cord as per bellow presented drawing.



REMOUNTING

Perform the dismounting operations in the reverse order.

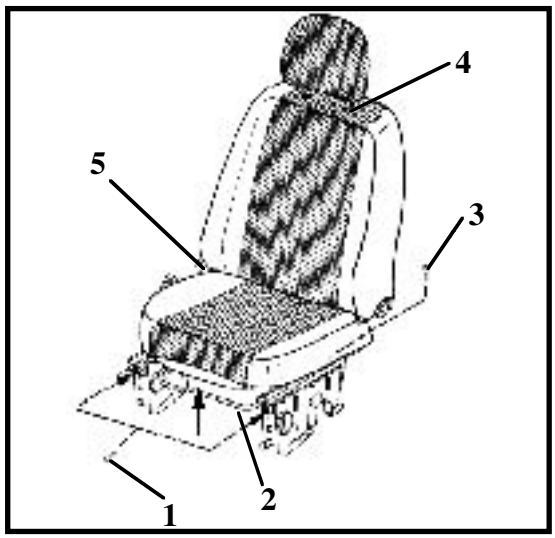
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TIGHTENING MOMENTS (daNm)	
Front seat attachment screws	2,1

DISMOUNTING

Dismount the attachment screws **(1)** of the front seat on the side and central cross member in the front part.

By acting upon the lever **(2)** in the arrow direction, bring the seat in front position and dismount the attachment screws **(3)** of the front seat on the side and rear cross-beam in the rear part.



Release the front chair.

Remove the headrests by simultaneously pushing of the buttons **(4)** attached on the headrests sleeves

REMOUNTING

Perform the dismounting operations in the reverse order.

The front seat attachment screws are to be tighten to the required moment of **2,1 daNm**.

ADJUSTMENTS

The front seats, have two possibilities of adjustment:

- front or rear longitudinal movement, which can be performed by lever's operation **(2);**
- seatback reclining up to the horizontal position, by rotating the round button **(5).**

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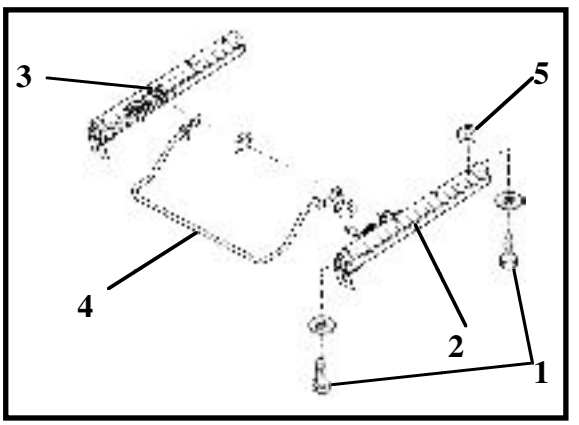
Front seats slides guides

DISMOUNTING

Dismount the front seat (**see chapter 78 " Seats"**).

In order to dismount the attachment screws **(1)** of the slides guides **(2)** and **(3)** on the front seat, it is necessary the backward and forward slides guides moving, by acting upon the lever **(4)**.

Release the slides guides from the front seat.



REMOUNTING

Perform the dismounting operations in the reverse order.

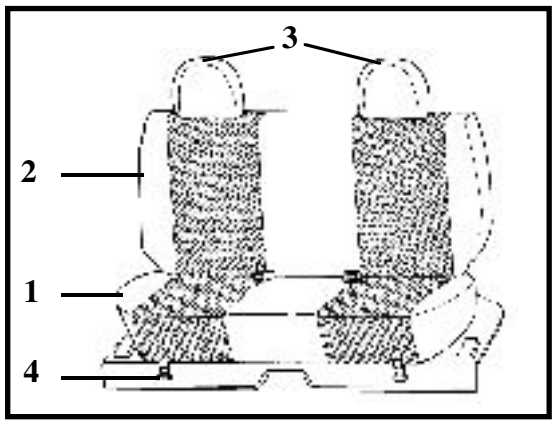
When remounting, observe the positioning of the four spacers **(5)**.

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TIGHTENING MOMENTS (daNm)	
Lower part back rest attachment screws	2.1
Back rest attachment screws on support	0.15

DISMOUNTING

Dismount the seat **(1)** , by swinging and by removing them from the welded supports **(4)** on the carriage body.

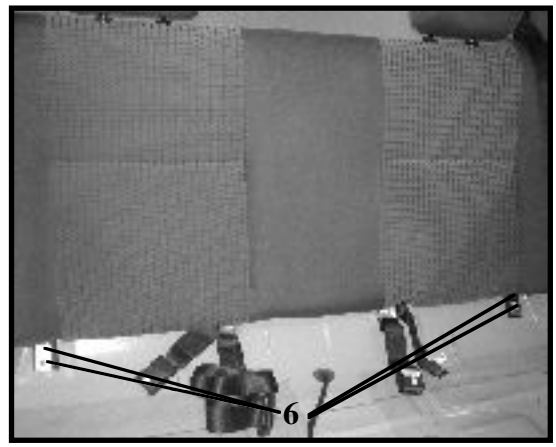


For the backrest **(2)** dismounting perform the following operations:

- dismount the back rest attachment screws (5) on its supports;



- dismount the backrest attachment screws **(6)** to the lower part (fixing plate) on rear floor;



- push the buttons attached on the head-rests sleeve and remove the headrests **(3).**

REMOUNTING

Perform the dismounting operations in the reverse order.

The tightening moment of back rest attach-ment screws to the lower part is of **2,1 daNm**, and the one of the back rest attachment screws on its support is of **0,15 daNm**.

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CHECKING

It is recommended to check the following:

- cracks or breaches of the battery box (case)
- battery upper part cleanness
- plugs condition

It is required to strictly check the following:

- lack of plugs sulfate composite
- proceed, is necessary to their cleaning and then greasing with neutral grease;
- correct wiring plugs tightening at the battery plugs. The existence of an imperfect contact may generate incidents at engine starting or at battery charging, sparks producing risk being possible to occur, which may cause the battery explosion;
- check the electrolyte level;
- check that aeration holes of the access plugs are not closed.

For the batteries provided with access plugs, which may be dismounted, proceed as follows:

- remove the plugs;
- check the electrolyte level in each element;
- if necessary, refill the level, using only distilled water, till maximum 1.5 cm above the plates;
- check that aeration holes of the access plugs are not closed

ATTENTION !
Never fill up with electrolyte, but only with distilled water.

PRECAUTIONS

It is important to know that:

- the battery contains sulfuric acid which is a dangerous substance
- during battery charging, oxygen and hydrogen are produced, so check that aeration holes of the access plugs are not closed The mixture of these two gases is forming a detonate gas, which may lead to the explosion risk.

1. DANGER = ACID

The sulfuric acid solution is a very aggressive, toxic and corrosive product. This is attacking the skin, the clothes and may lead to the corrosion of most of the metals.

Also, it is very important, that, when you handle a battery, to consider the following precautions:

- protect the eyes by using protective glasses;
- wear anti-acid gloves and clothes.

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Battery

ATTENTION!
In case of acid splashes on body, abundantly wash with water all affected parts.
If eyes have been touched, urgently call for a doctor.

1. DANGER = EXPLOSION RISK

During battery charging, connected to a charger-rectifier, oxygen and hydrogen emissions are occurring. These gases emission is stronger when the battery has reached the complete charge condition and the produced gas quantity is in direct connection with the charging current.

The oxygen and hydrogen are associating in the free spaces, at the plates surface, forming a detonate mixture, which is very explosive. The littlest spark is sufficient to generate an explosion, followed by the battery case brooking and acid splashing in the proximate environment. The persons, who are around, are in danger to be hurt by the exploded case chips or by the acid, which may come in contact with the eyes, hands, or face.

ATTENTION!
Strictly observe the following recommendations:
- before connecting or reconnecting a battery, ensure that all consumers are shouted off.
- during battery charging in a room, using a charger-rectifier, turn it off before connecting or reconnecting the battery to this one;
- do not place metallic objects on the battery for not producing a short-circuit between its plugs;
- never bring closer to a battery, an open flame, a welding lamp or another fire source.

THE ELECTRIC EQUIPMENT PROTECTION

In case of an intervention on the vehicle, some measures must be taken, for the electric equipment protection against damages or for avoiding a short-circuit that may lead to vehicle firing. The battery is to be all with disconnected by first disconnecting the negative plug and then the positive one. Connection is to be done by performing the disconnecting operations in the reverse order.

Before starter acting, check if the battery is correctly connected (the negative plug connected to the mass), and if the plugs are clean and well tightened. Never disconnect the battery when the engine is running, in order not to damage the voltage regulator, the alternator or some components of the vehicle checking electronic systems. The alternator, voltage regulator disconnecting, and the interventions at their connections, are to be performed only when the engine is stopped (the alternator is not turning) and the contact is taken off.

In case the battery is connected to a charger-rectifier, for charging (without dismounting the battery off the vehicle), it is obligatory to disconnect the wiring from the battery plugs.

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DISMOUNTING

After identification and elimination of the real cause of the battery discharging, proceed as follows:

Remove the plastic protector from the plus plug of the battery.

Dismount the attachment nut of the mass wiring from the minus plug of the battery.

Dismount the attachment nut of the wiring from the plus plug of the battery.

Dismount the battery attachment clamp screw.

Carefully take off the battery.

REMOUNTING

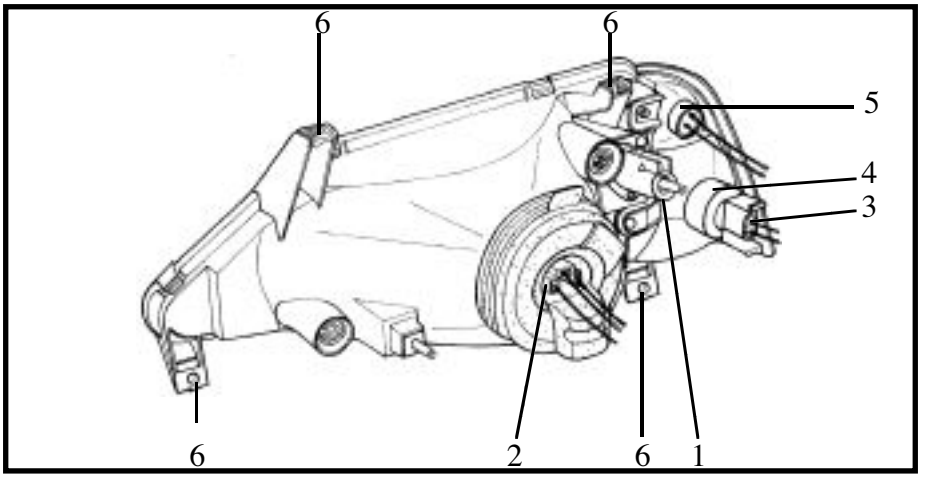
Perform the dismounting operations in the reverse order. After that, reset the radio by introducing the radio code (if the vehicle is equipped with radio) and adjust the dashboard clock.

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BATTERY - FRONT HEADLIGHTS

Headlamp assembly

NOTE :
After headlamps dismounting, their adjustment must be performed.



DISMOUNTING

Disconnect the battery (-) plug.

Pull backwards the gasket of the headlamp adjustment correction control (**1**).

Dismount the headlamp adjustment correction control from the headlamp adjustment device (see replacement of the headlamps mechanic adjustment control).

Disconnect the connector (**2**) of the headlamp bulb.

Disconnect the connector (**3**) of the turning light bulb.

Rotate and remove the holder (**5**) of the parking lamp bulb.

Dismount the front grill.

Dismount the 4 attachment screws **TORX 20 (6)** of the headlamp-turning lamp assembly

Carefully remove the headlamp assembly from its place.

REMOUNTING

In point (**6**) placed at headlamp lower part, the closest to the turning bulb, introduce a **TORX 20** screw.

Carefully introduce the headlamp assembly in its place, taking care that screw is not falling down.

Mount this screw, by means of a **TORX 20** screwdriver.

Mount the other three screws (**6**).

Mount the front grill.

Position the holder (**5**) in its place and rotate it, ensuring its good attachment.

Position the holder (**4**) in its place and rotate it, ensuring its good attachment.

Reconnect the turning bulb connector (**3**)

Reconnect the headlamp bulb connector (**2**).

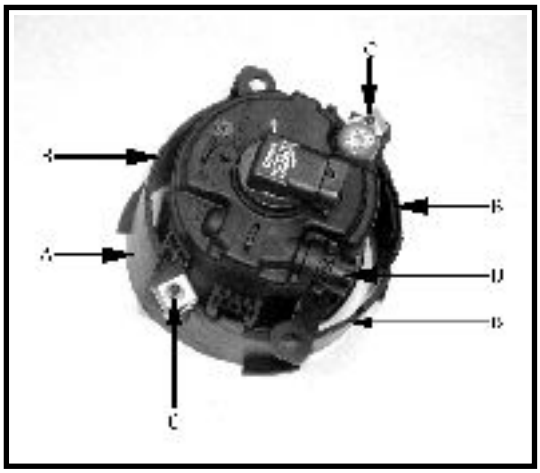
Mount the headlamp adjustment control at the headlamp adjusting connector (see replacement of the headlamps mechanic adjustment control).

Reconnect the battery (-) plug.

Check the operation of the bulbs of the headlamp-turning lamp assembly

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Fog projectors





DISMOUNTING

Lift the vehicle by means of an elevator.

Disconnect the fog projector connector from the vehicle wiring (pull the two clips of the connector).

Detach carefully from the 3 clips of points (**B**), the fog projector support (**A**) from the bumper, using a straight screwdriver.

Dismount the two screws TORX 20 (**C**). Mark the mounting position of the fog projector on the support.

Extract the fog projector from its support.

REMOUNTING

Position the new fog projector in the support (**A**)

Mount the two screws **TORX20**, observing the mounting position before dismounting

Position and push forward the fog projector assembly in the bumper until all 3 clips (**B**) ensuring the correct positioning of the fog projector assembly, are attached.

Reconnect the fog projector connector

Lower the vehicle from the elevator.

Check the operation of the fog projectors.

REMARK:

In order to dismount – remount the left fog projector the dismounting/remounting of the acoustic warning is necessary to be performed.

REMARK:

After remounting the fog projectors, it is obligatory to perform their adjustment, by means of a screwdriver positioned through the bumper slot, acting upon the adjustment screw (D).

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FOG PROJECTOR BULB REPLACEMENT

DISMOUNTING

Suspend the vehicle on an elevator.

Disconnect the fog projector connector

Rotate the bulb holder (**F**) and extract it from its place.

REMOUNTING

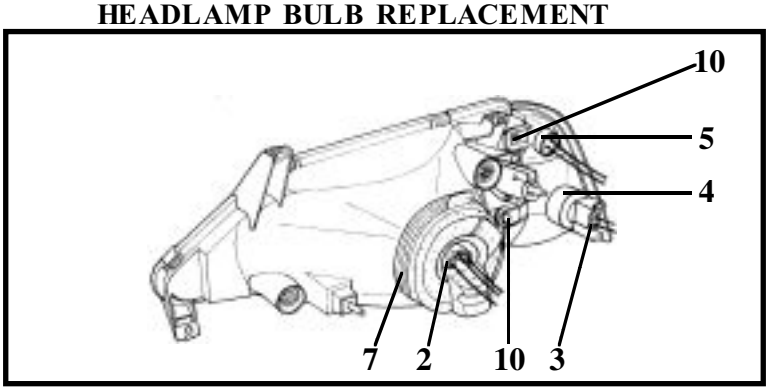
Perform the dismounting operations in the reverse order, correctly positioning the bulb holder in its place.

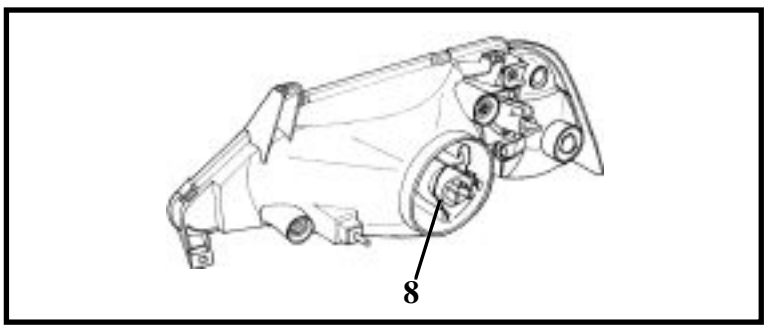
Perform fog projector adjustment

NOTE:

Because the fog projector is equipped with a halogen bulb, do not touch the bulb glass balloon directly by hand.

HEADLAMP BULB REPLACEMENT





DISMOUNTING

Disconnect the connector (**2**).

Remove the rubber protector (**7**). Mark its mounting position.

Release the attachment clamp (**8**) and remove the headlamp bulb

REMOUNTING

Perform the dismounting operations in the reverse order. Position correctly the rubber protector (**7**) observing the mounting position before dismounting. Perform headlamp adjustment.

NOTE:

Because the headlamp is equipped with a halogen bulb, do not touch the bulb glass balloon directly by hand.

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FRONT TURNING BULB REPLACEMENT

DISMOUNTING

Disconnect the connector (**3**).
Rotate the holder (**4**) and remove it.
Remove the worn bulb from the holder

REMOUNTING

Perform the dismounting operations in the reverse order, with the checking of the correct holder (**4**) positioning to avoid dust and humidity penetration in the headlamp assembly

The turning lamps are using orange color bulb; when replacing the bulb, use the same bulb type.

FRONT PARKING BULB REPLACEMENT

DISMOUNTING

Rotate the holder (**5**) and remove it.
Extract the worn bulb from the holder.

REMOUNTING

Perform the dismounting operations in the reverse order, with the checking of the correct holder (**5**) positioning to avoid dust and humidity penetration in the headlamp assembly

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HEADLAMP-FRONT LAMP ASSEMBLY SEALING
(getting fogged, it has condensation water or water penetration)

Check the front part of the assembly: direct a water jet towards the headlamp glass. Is the water penetrating inside the headlamp?
- Yes → Replace the headlamp.
- No ↓

Is water penetrating inside the parking-turning lamp?
- Yes → Replace the parking-turning lamp.
- No ↓

Visually check the headlamp rear part; rubber protector of the headlamp bulb is correctly mounted?
- No → Mount correctly the rubber protector of the headlamp bulb. If this is not good, replace it.
- Yes ↓

The headlamp adjustment corrector is well mounted?
- No → Mount correctly the headlamp adjustment corrector and its rubber protector. If protector is not good, replace it.
- Yes ↓

The headlamp bulb is correctly mounted?
- No → Mount correctly the headlamp bulb.
- Yes ↓

The aeration holes are clogged?
- Yes → If possible, eliminate the clogging cause. If not possible, replace the headlamp.
- No ↓

The headlamp is steamed out or it has condensation water inside?
- Yes → Explain the client that this fact is a natural one, not a damage and there is no headlamp corrosion risk. The condensation water will disappear when the headlamp will be lighted; the disappearing time of the condensation water is subject to the environmental humidity
- No ↓

Visually check the rear part of the parking-turning lamp; the parking bulb holder is correctly mounted?
- No → Mount correctly the parking bulb holder. If its gasket is not good, replace it.
- Yes ↓

The turning bulb holder is correctly mounted?
- No → Mount correctly the turning bulb holder. If its gasket is not good, replace it.

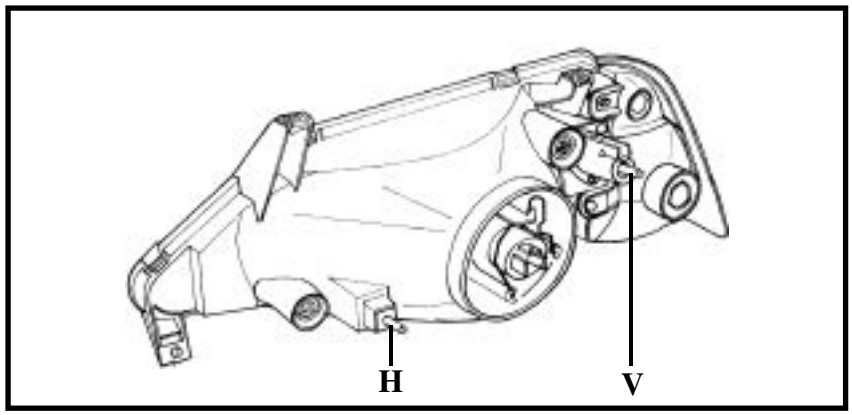
The condensation water is not affecting the lighting quality.

REMARK : If the client is insisting, proceed to headlamp drying:

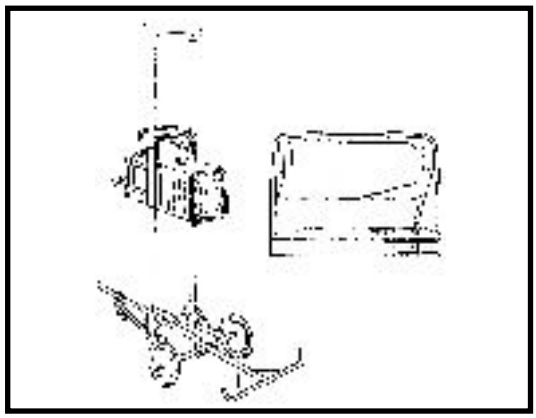
- blow with dry air, if possible;

- naturally dry the headlamp by turning on the headlamps for couple of minutes till condensation water elimination or headlamp defogging.

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MEETING LIGHTS ADJUSTMENT (LOW BEAM)



This is performed by acting upon the V screw (vertically plane adjustment) or H (horizontally plane adjustment). By screwing, the lighting beam is "lowering" and by unscrewing is "ascending".

Check if the lighted area is centered on the vertical axis and if the optical separation at 15° coincide with the headlamp lighting. An error of 1 cm is admissible.

A lighting beam displaced towards left has the aspect shown in (**picture a)** and a lighting beam displaced towards right has the aspect shown in (**picture b**)

figura a



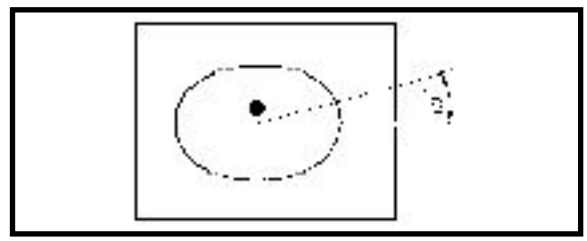
figura b



ROAD LIGHTS ADJUSTMENT (LONG BEAM)

Check the position to coincide with the adjustment performed for low beam and with the lighting beam distributed between the two vertical lines on the panel

When checking the long beam, the lighting center of the ellipse, must be located on the cross marking the screen center.



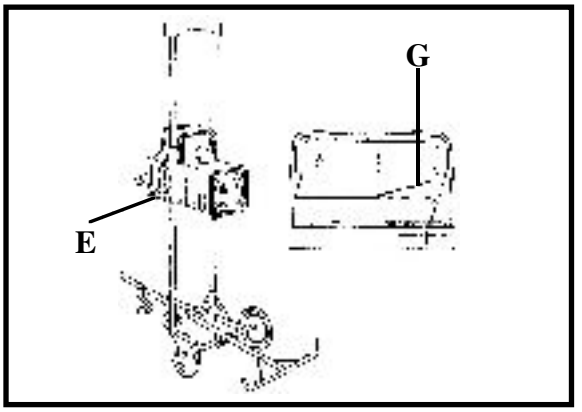
If a major deviation compared with the low beam is noticed, it is recommended the bulb replacement, this one being in most of the cases, responsible for such defect.

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FOG PROJECTORS ADJUSTMENT

The fog projectors adjustment is to be performed in the following conditions:

- the vehicle to be placed on a horizontal surface;
- the vehicle has not passengers inside the cockpit or weights in the trunk;
- the tires are pressurized at the manufacturer prescribed pressure.





Further on, proceed as follows:

Bring the vehicle at the working place.

Position the adjustment device (headlamp adjustment device – **E**) in front of an optical center of a fog lamp.

Switch on the fog projectors. Rotate the adjustment screw of the fog lamp (**D**), by means of a screwdriver (**A**), so that an adjustment of 2 % is obtained and the separation between the lighted area and the dark one from the adjustment device is located under the marked line (**G**)

This adjustment is to be performed in the same way as for the meeting lights adjustment.

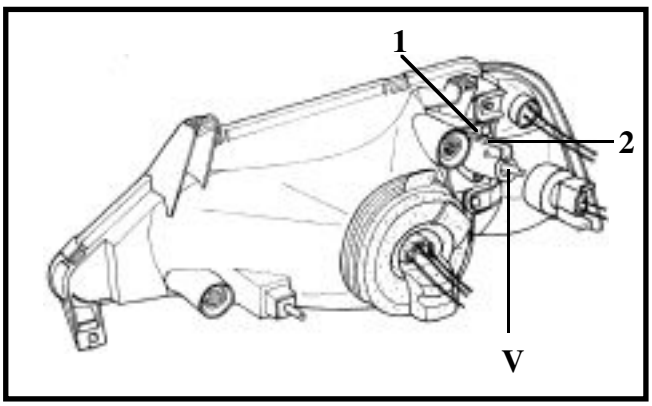
Bring the adjustment device in front of the optical center of the second fog lamp;

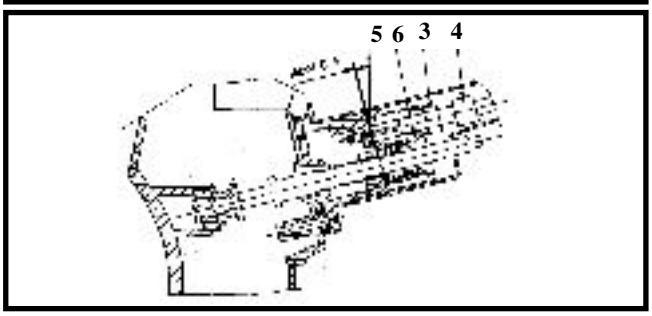
Perform the fog projector adjustment;

Switch off the fog projectors.

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DISMOUNTING





Disconnect the (-) plug of the battery;

Dismount the headlamp adjusting control from the turning lamp-headlamp assembly:

- pull backward the gasket of the headlamp adjustment corrector (**1**);
- detach from clips the protector (**2**) of the headlamp adjustment mechanism;
- loosen the locking nut (**3**);
- detach from clips the headlamp adjustment control cable (**4**) from the headlamp adjustment corrector and then from the fork (**5**);

Dismount the headlamp adjusting control from the other turning lamp-headlamp assembly

Detach from clips the headlamp adjustment control cables and cut the attachment collars.

Dismount the headlamps adjustment control button.

Dismount the attachment nut of the headlamp adjustment control on the dashboard.

Dismount the bonnet opening control cable from the opening handle (see chapter **52**).

Detach from clips, by means of a straight screwdriver, the cables passing bushing from the cowl panel.

Remove the headlamps adjusting control cables from the cowl-passing hole. Mark the mounting position of the headlamps adjustment control cables.

REMOUNTING

Insert the headlamps adjusting control cables through the cowl-passing hole, observing the existent position prior to dismounting.

Insert the bonnet opening control cable through the cables passing bushing.

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Attach on the cowl panel, by means of clips, the cables passing bushing, ensuring the cockpit compartment sealing against possible water drain along the cables passing bushing.

Mount the bonnet opening control cable in the opening handle (see chapter **52**). Position the headlamps adjustment control on the dashboard.

Mount the attachment nut of the headlamps adjustment control on the dashboard.

Mount the headlamps adjustment control button and turn it in the position "3".

Mount the headlamp adjustment control to a turning lamp-headlamp assembly :

- attach in clips by means of a straight screwdriver, the headlamp adjustment control cable in fork (**5**) and then in the headlamp adjustment corrector;
- tighten initially the cable by hand till the fork (**5**) is in contact with support (**6**) so that fork is remaining at **max. 0.5 mm** against the support;
- block the headlamp adjustment cable by means of the nut (**3**);
- attach in clips the protector (**2**) of the headlamp adjustment mechanism;
- position correctly the gasket of the headlamp adjustment corrector – the vertical adjustment screw (**V**) must come out through the gasket.

Mount the headlamp adjustment control of the other turning lamp-headlamp assembly.

Attach in the attachment points, by means of clips, the headlamps adjusting control cables, replace and mount the attachment collars, observing the mounting position prior to the dismounting.

Keep a distance of approximate **40 mm ± 10 mm** between the right cable and the cylinder no.1 spark plug cable, in order to avoid the loses due to electric-magnetic induction.

Reconnect the battery (**-**) terminal.

Switch on the headlamps and check the operation of the headlamps mechanic adjusting control. The adjustment of the luminous spot dip of the headlamps in the downward sense of the vehicle loading condition is to be performed by bringing the headlamps adjusting button in the "**0**" position and then in the desired condition.

REMARK : The required tightening moment of the attachment nut of the headlamps adjustment control on the dashboard: 2 Nm.

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REAR LAMPS
REAR LAMP REPLACEMENT

DISMOUNTING

Disconnect the battery (-) plug.

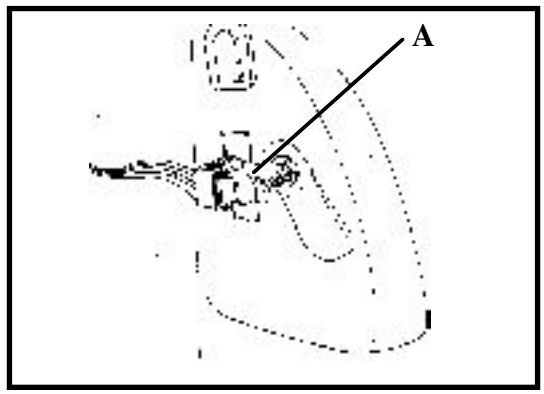
Disconnect the rear lamp connector.

Inside trunk, dismount the screw with triangle head (**A**).

Extract the rear lamp towards outside.

REMOUNTING

Perform the dismounting operations in the reverse order, positioning correctly the rear lamp in its seat. Check the bulbs connections and operation.



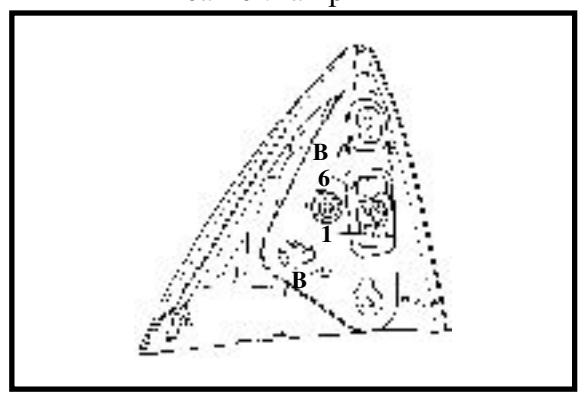
Rear right lamp



Rear right lamp connector

Pin	Denomination
1	+ Right stop lamp
2	+ Right parking lamp
3	Free
4	Mass
5	Right turning lamp supply
6	Revered driving lamp supply

Rear left lamp



Rear left lamp connector

Pin	Denomination
1	Fog parking lamp supply
2	Left turning lamp supply
3	Free
4	Mass
5	+ Left stop lamp
6	+ Left parking lamp

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REPLACEMENT OF REAR TURNING, PARKING, FOG, REVERSE DRIVING, STOP BULB

DISMOUNTING

Disconnect the battery (-) terminal.

Disconnect the rear lamp connector

Dismount the screw with triangle head

Extract the rear lamp towards outside

Dismount the two attachment screws (B) of the bulbs support on the lamp glass.

Dismount the worn bulb.

REMOUNTING

Perform the dismounting operations in the reverse order, checking the condition of the sealing gasket between the lamp glass and the bulbs support: if this one is not good, replace it. Check the bulbs operation and connections.

REPLACEMENT OF LICENSE PLATE LAMP BULB

DISMOUNTING

Disconnect the battery (-) terminal.

Disconnect the license plate lamp connector.

Extract the license plate lamp holder.

Remove the worn bulb and replace it.

REMOUNTING

Perform the dismounting operations in the reverse order. Check the bulb operation.

REPLACEMENT OF ADDITIONAL STOP LAMP BULB

DISMOUNTING

Disconnect the battery (-) terminal.

Dismount the **TORX 20** attachment screw of the additional stop lamp. Mark the mounting position of the lamp mass wire connector.

Disconnect the additional stop lamp connector.

Detach the two side clips and extract the reflector-glass assembly from the lamp body.

Detach carefully from clips the lamp glass, by means of a straight screwdriver.

Replace the worn bulb.

REMOUNTING

Perform the dismounting operations in the reverse order. Check the bulb connections and operation.

REPLACEMENT OF LICENSE PLATE LAMP

DISMOUNTING

Disconnect the battery (-) terminal.

Disconnect the license plate lamp connector.

Detach from clips the license plate lamp.

REMOUNTING

Perform the dismounting operations in the reverse order. Check the bulb operation.

REPLACEMENT OF ADDITIONAL STOP LAMP

DISMOUNTING

Disconnect the battery (-) terminal.

Dismount the attachment screw **TORX 20** of the additional stop lamp. Mark the mounting position of the lamp mass wire connector.

Disconnect the additional stop lamp connector.

REMOUNTING

Perform the dismounting operations in the reverse order.

Check the bulb connections and operation.

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REPLACEMENT OF THE SIDE REAR LAMP

DISMOUNTING

Dismount the attachment screws of the wing protector.
Dismount the wing protector
Disconnect the connector
Detach from clips the side rear lamp.

REMOUNTING

Perform the dismounting operations in the reverse order.

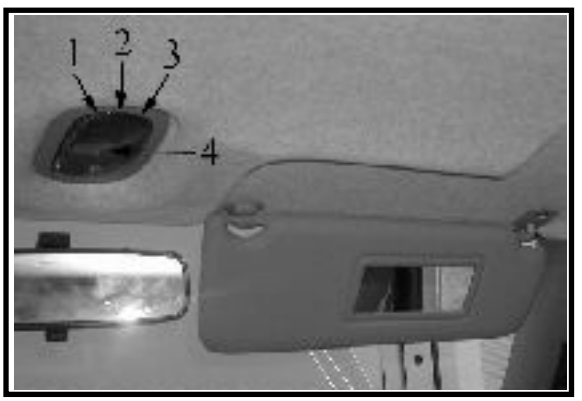
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Ceiling lamp

The ceiling lamp is central located, between the two sun visors.

The ceiling lamp has 3 operating positions subject to ceiling lamp glass position (**4**):

- position 1 : ceiling lamp off
- position 2 delayed ceiling lighting; this will light for **15 seconds** after driver's front door closing or after the command of unlocking the doors with the RF remote control. This delay turns out in the moment of setting the contact.
- position 3 : ceiling lamp permanently lighting.



DISMOUNTING

Disconnect the battery (-) terminal.

Detach from clips the assembly from the lamp support by means of a little screwdriver acting in front of the slot (**A**).

Disconnect the connector

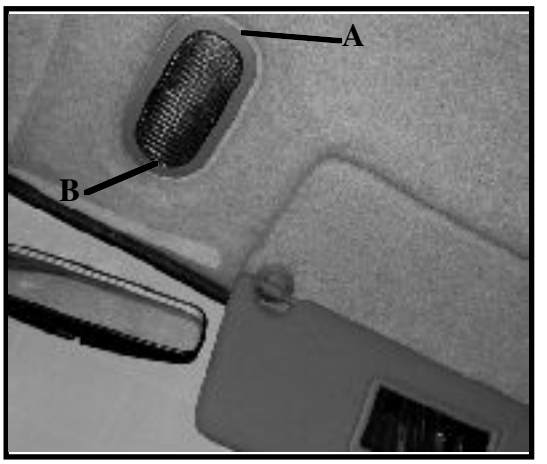
Remove the roof lining around ceiling lamp support.

Detach from clips the ceiling lamp support.

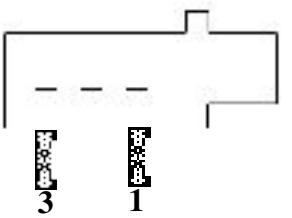
REMOUNTING

Perform the dismounting operations in the reverse order.

Check the ceiling lamp operation.



Ceiling lamp connector



Pin	Denomination
1	Mass
2	+ protected battery – exit fuse F02
3	Ceiling lamp control

REPLACEMENT OF CEILING LAMP BULB

DISMOUNTING

Disconnect the battery (-) terminal;

Detach carefully the lamp glass using a small screwdriver acting in point (**B**).

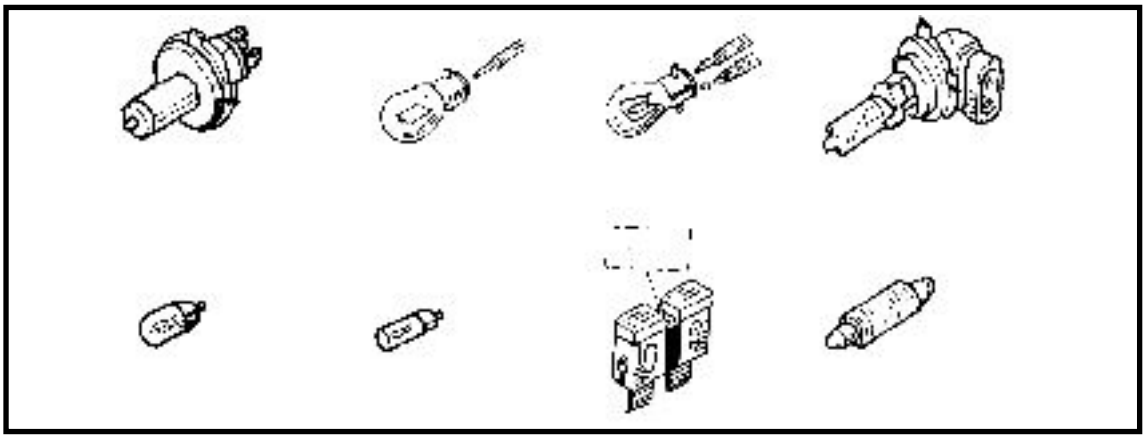
Remove the worn bulb and replace it.

REMOUNTING

Perform the dismounting operations in the reverse order, using for lamp glass clips attachment, a small screwdriver positioned in point (**B**).

Check the ceiling lamp operation.

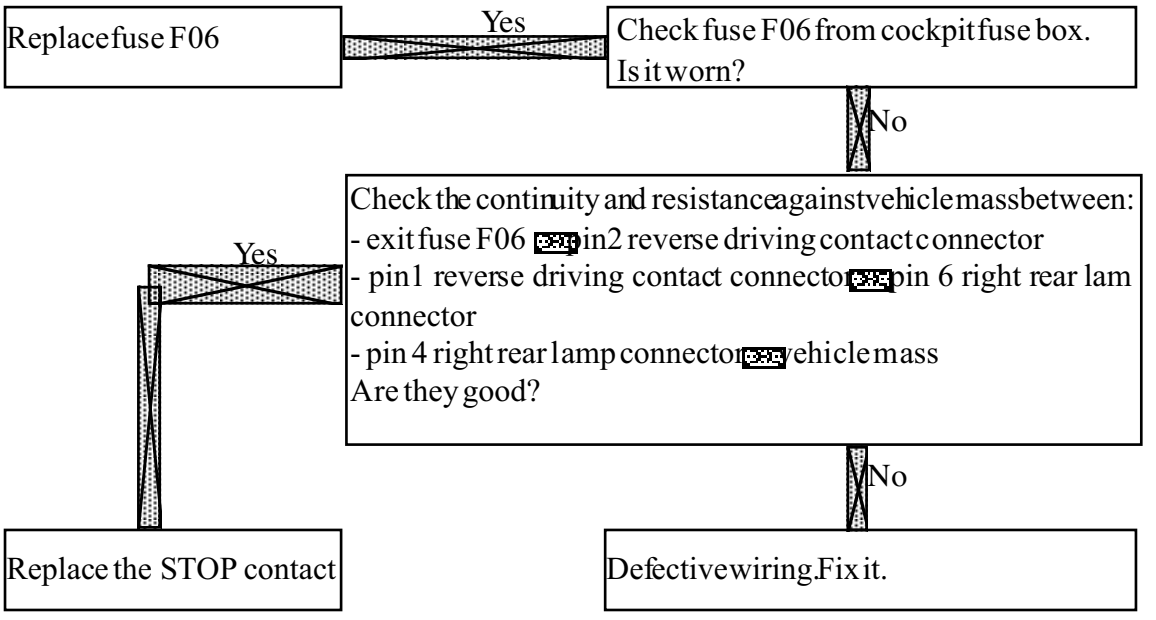
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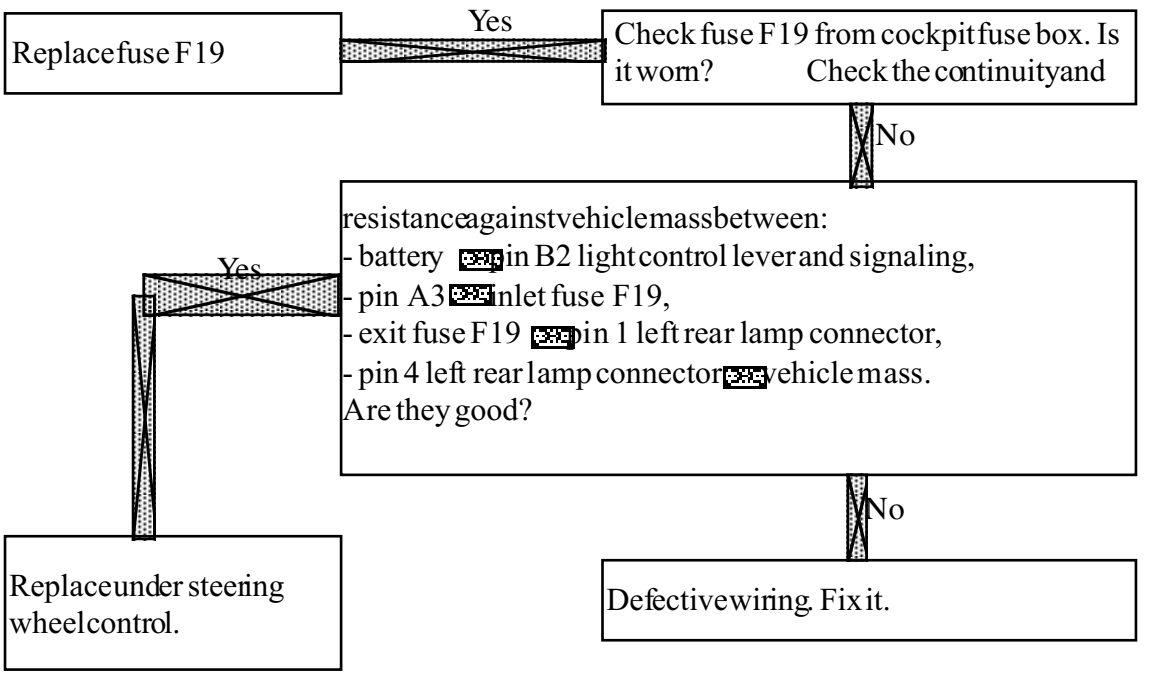
BULBS		
Headlamps	High/bw beam lights	Bulb H4, 12V-60/55W
	Parking lights	Bulb W5W, 12 V-5W
	Front turning lamp	Bulb PY21W, 12V-21W (colored)
Fog projectors		Halogen bulb H11, 12V-55W
Rear lamps	Parking, stop lights	Bulb AB1, 12V-21/5W
	Turning lights	Bulb PY21W, 12V-21W
	Rear fog lamp and reverse driving	Bulb P21W 12V/21W
Rear side signaling lamps		Bulb WY5W 12V-5W
Ceiling lamp		Bulb C5W, 12V-5W
License plate lamp		Bulb W5W, 12V-5W
Additional STOP lamp		Bulb C21W, 12V/21W Sv8,5
Instrument panel		Bulb 12V, 2W (brown holder) Bulb 12V, 1,2W (black holder)
Climate control panel		Bulb 12V, 1,2 W (black holder

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REAR DRIVING LAMP NOT WORKING

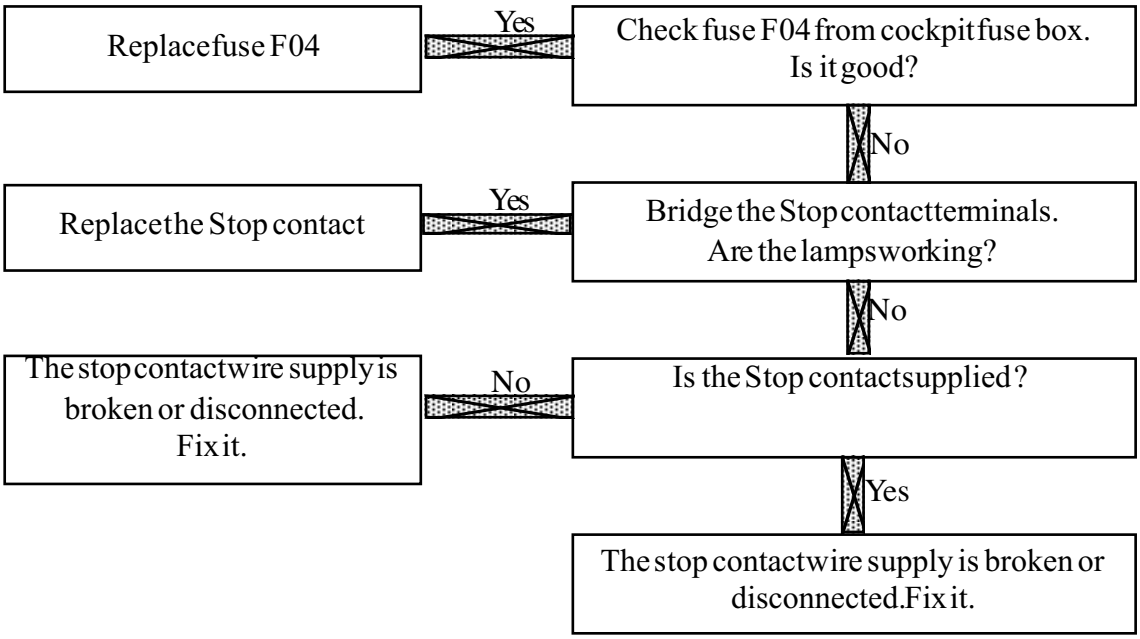


FOG LAMP NOT WORKING



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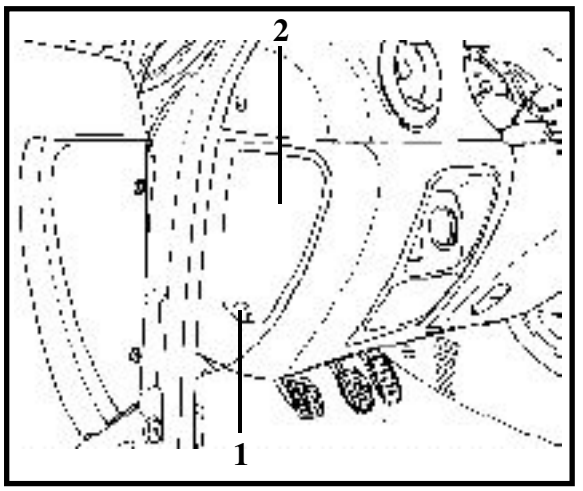
STOP LAMPS NOT WORKING

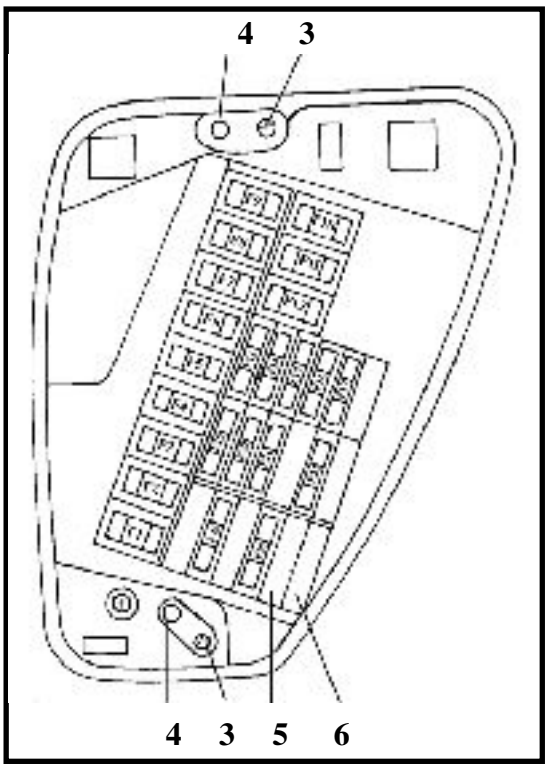


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Cockpit fuse box

DISMOUNTING





Disconnect the (-) plug of the battery.

Pull the seat (**1**) of the access flap (**2**) to the fuse box located in the cockpit, at the left end of the dashboard. Carefully remove flap (**2**).

Dismount the attaching screws (**3**) of the fuse box on the driving post crossbeam and detach it from clips (**4**)

REMOUNTING

Attach in clips (**4**) the fuse box on the driving post crossbeam and mount the screws (**3**).

Carefully mount, the access flap (**2**) to the fuse box.

Connect the battery (-) terminal.

Perform functional tests, noticing the correct operation of all consumers supplied by means of the cockpit fuse box.

OBSERVATION:

For vehicle equipped with programmable radio-tape player and electronic clock, after battery reconnecting, the radio code must be introduced and the clock re-programmed.

If COBRA 3800 or COBRA 3900 alarms have been mounted on the vehicle, in the fuse box, may be found fuses F29 with value 15 A (mounted in seat (5)) and F 30 with value 5A (mounted in seat (6)).

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The fuses are protecting the following electric circuits:

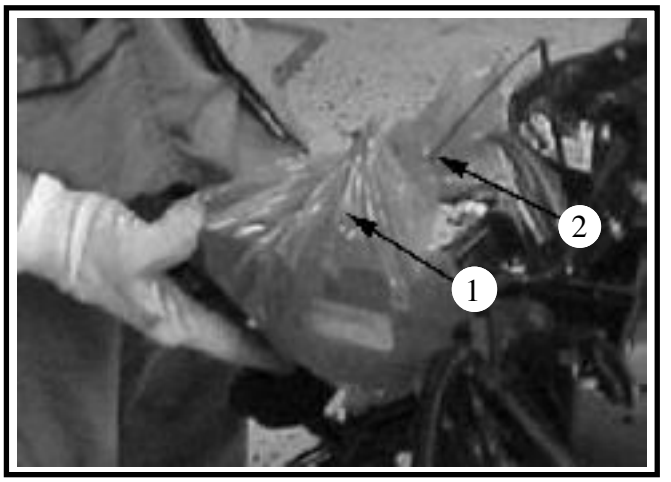
Fuse number	Symbol	Fuse type	Protected circuit
F01		Free	
F02	PLAF	15 A	Instrument panel, cockpit UCE (ceiling lamp operation, radio
F03		20 A	Cockpit UCE, air conditioning climate control panel *
F04		15 A	Cockpit UCE, diagnostic socket, airbag UCE, anti-starting bushing
F05	UCE INJECTION	10 A	UCE injection, petrol pump relay/ignition coil, instrument panel
F06		10 A	Windscreen wiper-washer switch (windscreen washing pump operation), reverse driving switch, STOP switch, air conditioning climate control panel*
F07		20 A	Windscreen wiper-washers switch, UCE cockpit (windscreen wiper time operation), windscreen wiper motor (stopping at fix point).
F08		7,5 A	Left meeting lights, instrument panel (indicator)
F09		7,5 A	Right meeting lights
F10		7,5 A	Left road lights, instrument panel (indicator)
F11		7,5 A	Right road lights
F12		15 A	Acoustic warning
F13		25 A	UCE cockpit (turning lights and hazard), diagnostic socket.
F14		7,5 A	Front/rear left parking lights, lighting: switches, climate control panel, instrument panel, lighter, radio.
F15		7,5 A	Front/rear right parking lights
F16		15 A	Lighter, radio
F17		30 A	Climate control blower
F19		7,5 A	Fog lamp, instrument panel (indicator)
F20		25 A	Rear window defrosting
F21	UCE INJECTION	5 A	UCE injection
F23		30 A	Right/left electric window regulator switch
F26		30 A	Air conditioning climate control blower*
F28		20 A	Fog projectors

* for vehicles equipped with air conditioning

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DESCRIPTION OF THE OPERATION

Dismount the battery (-) terminal;
Dismount the access flap to the cockpit fuse box;
Dismount the attachment screw of the UCE decoder and relays assembly.
Lift from its attachment place and remove UCE decoder and relays assembly.



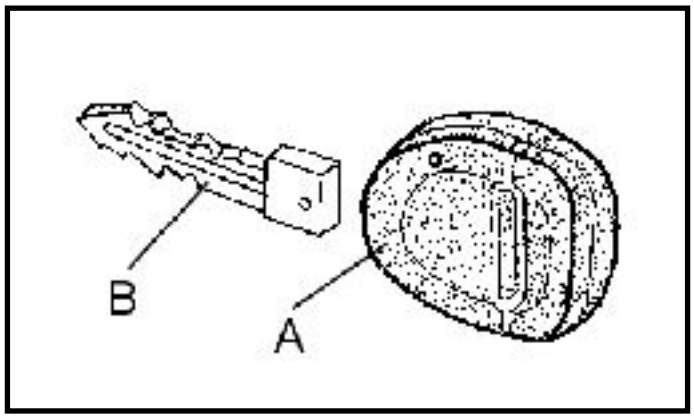
Carefully insert UCE decoder-relays assembly in the protector (**1**) so that protector is not damaged.
Attach the protector to the front wiring by means of an attachment clip (**2**).
Mount the UCE decoder – relays assembly in the attachment place.
Mount the attachment screw of the UCE decoder and relays assembly.
Mount the access flap of the cockpit fuse box.
Connect the battery (-) terminal.

ATTENTION!
At any intervention implying dismounting of the UCE decoder-relays assembly, the protector and the attachment clip are to be replaced.

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General

This type of anti starting system is based on the key recognition, which has a special construction. It may be separated in two elements which can be identified in the following way: the key head (position A.) made of plastic, which can be dismounted and the metal insertion (position B), which is fixed and ensured by clipping in the key head.



In the key head, there is a coded independent electronic circuit, which is functioning without battery. When setting the contact on, the anti starting bushing, placed around the starting contact, is enquiring and catching the coded signal emitted by the key head, then sends it to the Electronic Control Unit (E.C.U.) decoder. This one is attached on the front left pillar, under the lower casing of the dashboard and has the function of receiving the code sent from the bushing. If the decoder recognises the key code then it will send a coded signal to the injection computer, which compares it with the previous memorised code and will authorise or not the engine starting

In case of the system with radio frequency remote control (RF) of the doors blocking / unlocking, the key head has a different construction, having an activation button of the remote control and a red LED, which is lighted in the moment of blocking/unlocking the doors, by pushing the key button. Inside the key head there is the coded electronic circuit for the anti starting system and a printed electronic circuit, supplied by a battery, for the RF remote control operation of blocking/unlocking the vehicle doors.

The anti starting system is activated after approximate 10 seconds from the breaking of the contact and is visualised by the blinking of the anti starting indicator placed on the instrument panel.

ATTENTION !

If the battery is low charged, the tension drop on the starter, at starting, may cause the activation of the anti starting system and the engine starting is impossible.

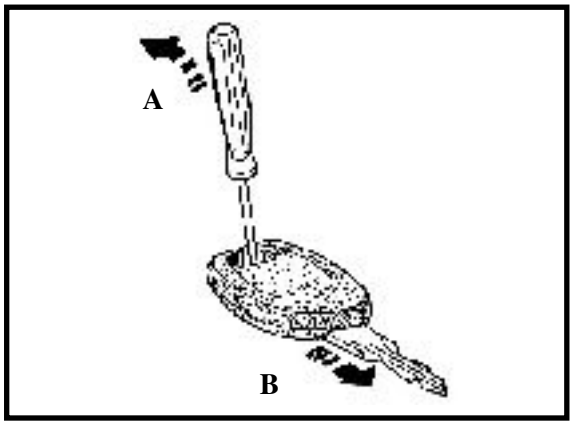
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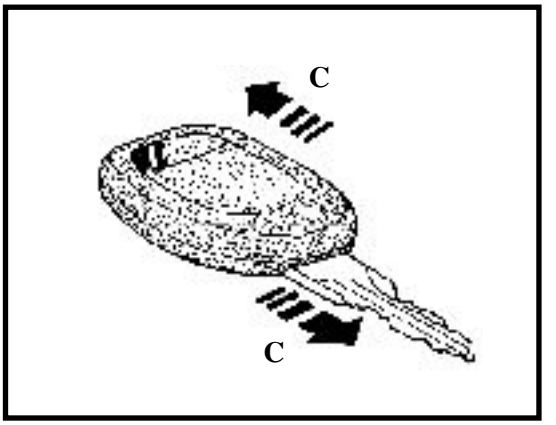
THE KEY HEADS

The key head has marked inside, a number of identification, formed by 8 alphanumeric characters (letters and figures) and this one is mentioned on the vehicle's purchasing invoice.

In case the reading of the code marked in the key head is necessary, this can be opened in the following way:

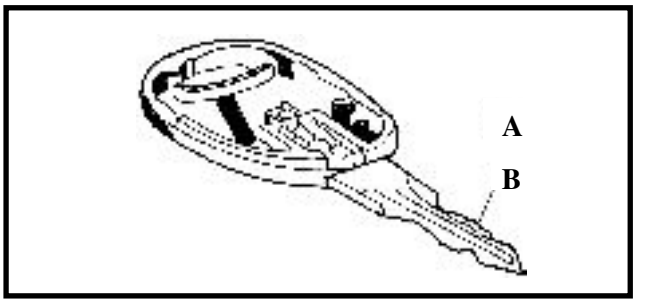
- keep the key in horizontal position, the half with the metal insertion being downwards ;
- using a little screwdriver, act upon the key head in the direction indicated by the arrows (A and B), in order to begin the dismounting;
- move carefully the upper side of the key in the direction indicated by the arrow (C) and then the two parts of the key will separate.





If the replacement of the metal insertion (the mechanical part) of the key is needed, proceed as follows :

- open the key head according to the a.m. procedure;
- unlock carefully the maintaining claw (**A**) of the metal insertion (**B**);
- remove the metal insertion, by sliding, from the key head;
- introduce by sliding the new metal insertion until a « click » is heard, confirming its attachment on the key head;
- close the two half of the key head.



ATTENTION !

After dismounting the key head, it is forbidden to touch the electric circuit located inside of it, as this can cause the further non-operation of the anti starting system and impose a replacement of the key head.

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REMARK :

In case both keys were lost, the code of the key head (8 characters) and the code of the metal insertion (4 characters) can be red from the vehicle-purchasing invoice. If also the invoice was lost, the two mentioned codes can be found out based on the chassis series of that vehicle, accessing the database of the DACIA manufacturer, calling the "Client Voice" department (phone 0248 500 000).

ANTI STARTING BUSHING



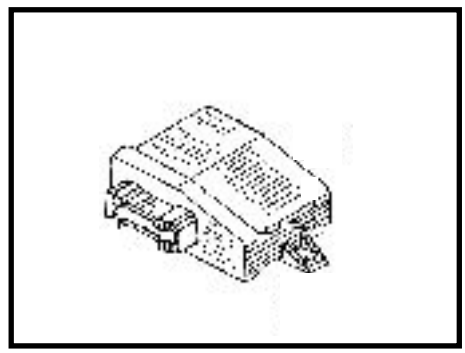
The anti starting bushing is located around the starting contact and is accessible after the dismounting the steering wheel's half-cases. It catches the signal from the key head and then sends a coded signal to the E.C.U. decoder.

The vehicles equipped with RF remote control keys for blocking/ unlocking the doors are provided with another anti starting bushing which transmits to the E.C.U. decoder also the signal received from the RF remote control.

The recognition of the two types of decoding bushings is performed by means of codes labelled on their body, as follows :

- code 042264J - for vehicles without RF remote control;
- code 8200044257 - for vehicles with RF remote control.

E.C.U. DECODER



The E.C.U. decoder has the following functions :

- decoding the signal received from the anti starting bushing;
- sending a code to the injection computer in order to authorise the engine starting;
- controlling the anti starting indicator of the instrument panel;

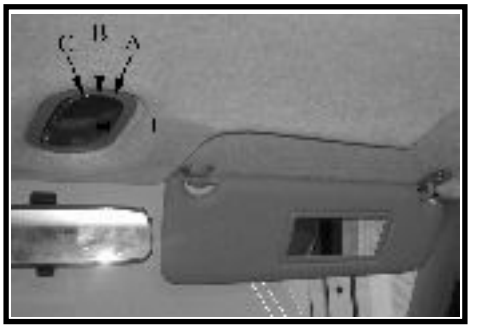
receiving the coded signal from the anti starting bearings, for the vehicles equipped with RF remote control;

- commanding the blocking/unlocking of the doors, if the vehicle is provided with RF remote control keys;
- commanding the ceiling delayed light, for vehicles equipped with this system.

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The ceiling delayed lighting is activated subject to the position of the light glass (**1**):

- position A the ceiling is lighting permanently;
- position B delayed ceiling lighting; this will light for 15 seconds after driver's front door closing or after the command of unlocking the doors with the RF remote control. This delay turns out in the moment of setting the contact;
- position C ceiling light off.



REMARK :

The vehicles equipped with this anti starting system, have a type of decoder, and those provided also with RF remote control for locking/ unlocking doors have another type of decoder.

The identification of the two types of E.C.U. decoder is realised by the inscriptions on the labels as follows:

- code P8200032783H and the inscription TRANS-PLAF for the vehicles without RF remote control;

- code P8200032776H and the inscription TRF-TRANS-CAR for the vehicles with RF remote control.

ANTI STARTING INDICATOR

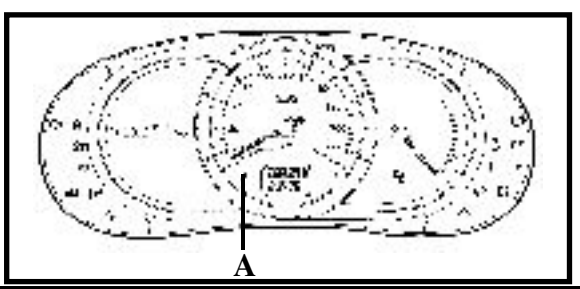
It is located on the instrument panel (position **A**) and has the following functions:

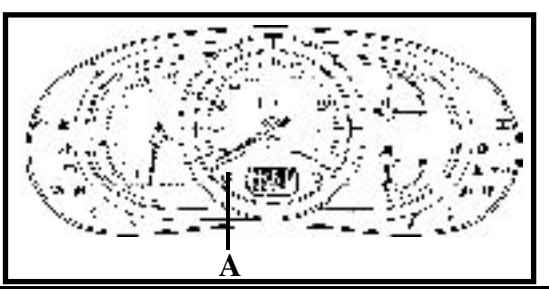
- signalising the activation of the anti starting system;
- signalising the case of non identifying the key head;
- signalling the entrance in the operation mode "resynchronisation" of the remote controls, RF with E.C.U. decoder, for the vehicles which use the RF remote control.

When the contact is off and the anti starting system is activated, without any existing failure, the anti starting indicator must blink slowly (a blink per second).

After setting the contact on, the anti starting indicator must light for 3 seconds and then turn off.

If after setting the contact on, the anti starting system doesn't work properly, then the anti starting indicator will blink rapidly (two blinks per second).





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One key head replacement

After ordering a new key head based on the alphanumeric code mentioned on the invoice, dismount the old key head and remove the metal insertion (mechanical part), then introduce the old metal insertion in the new key head according to the previously mentioned procedure. In case the key head is provided with RF remote control for blocking/ unlocking the doors, after its replacement, perform the synchronising procedure of the RF remote control with the decoder, subject to the following cases:

- after the replacement of the RF key, perform the “Specific synchronised procedure” in order to bring into phase the RF remote control with the decoder.
- if both keys are replaced, perform the “Simple synchronised procedure” for the first RF key and the “Specific synchronised procedure” for the second one RF key.

If a key was lost, a new key head and a metal insertion are to be ordered.

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All new decoders, are not coded. After mounting on the vehicle, it is necessary the memorisation of the key head code by the decoder in order to be operational. If only the decoder is replaced, no intervention is necessary to the injection computer, which will keep the old anti starting code. When the vehicle is provided with RF remote control for blocking/unlocking the doors, the performing of the resynchronisation of the keys with the decoder is imposed, after its mounting. If further to the diagnostic of the anti starting system, using the CLIP tester, the replacement of the decoder is imposed, proceed as follows:

DISMOUNTING

- disconnect the (-) terminal of the battery;
- dismount the ECU decoder-relays assembly;
- rotate the ECU decoder assembly, in order to have access at its rear connectors;
- disconnect the front wiring connector from the E.C.U. decoder;
- detach ECU decoder from clips of the relays-ECU decoder support.

REMOUNTING

- attach in clips the new E.C.U. decoder in the support, connect the front wiring connector to the ECU decoder, then attach the assembly on the driving post cross member in its place and mount its attachment screw;
- remount carefully the access flap of the fuse box;
- reconnect the (-) terminal of the battery.

Proceed then to the insertion of the anti starting code using the contact key, then to its memorising (validation) in the E.C.U. decoder, using the CLIP tester. For this purpose, perform the "E.C.U. decoder replacement procedure and anti starting code memorising". Check then the correct operation of the anti starting system with both keys.

ATTENTION!

Once the decoder has memorised the key codes, this code cannot be erased or replaced with another one.

If it is necessary the replacement of the kit (E.C.U. decoder and two key heads), then the " Kit replacement procedure" must be performed.

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Anti starting bushing replacement

If, further to the diagnostic by means of the CLIP tester, it is established the necessity of the replacement of the anti starting bushing, proceed as follows:

- disconnect the (-) terminal of the battery;
- dismount the attachment screws of the steering wheel half-casings ;
- detach from clips the steering wheel half-casings;
- remove the steering wheel half-casings;
- disconnect the anti starting bushing connector from the front wiring;
- remove the bushing;
- mount the new bushing outside the starting contact (anti theft mechanism);
- connect the bushing connector to the front wiring;
- attach in clips the steering wheel half-casings and mount the attachment screws;
- check the operation of the indicator and the anti starting system when the contact is off, then with the contact on and then with the engine started.

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R.F. remote control for blocking/unlocking the doors

The RF remote control has only the function of blocking/ unlocking the doors. The RF remote control with evolutionary code can use only two keys as the decoder may manage only two different evolutionary codes.

The key heads have an identification number formed by eight alphanumeric characters (letters and figures), beginning with letter E. In case of loosing one key, a key head and a metal insertion will be ordered, then the resynchronisation procedure of the RF remote control of the key with the decoder from the vehicle must be performed.

If the vehicle is provided with RF remote control key and this one has been replaced, then perform the " Simple synchronised procedure ". When the vehicle has both keys with RF remote control, then perform the "Specific synchronised procedure " after the replacement of the second key.

REMARK:

If only one key head is replaced, usually there is no need for resynchronisation of the other RF remote control.

If both RF remote controls are desynchronised, one procedure of resynchronisation will be performed with each remote control: perform the "Simple synchronisation procedure for the first RF remote control" and the "Specific synchronisation procedure" for the second RF remote control.

Check then, the operation of doors blocking/ unlocking with both RF remote controls.

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If further to the diagnostic by means of the CLIP tester, it is necessary the replacement of the E.C.U. (computer) injection, for its dismounting, proceed as follows:

- disconnect the battery (the contact being off);
- dismount the screw from the battery attachment clip;
- remove the battery;
- dismount the two attachment nuts of the injection computer and of the ECU protector;
- remove the injection ECU protector;
- disconnect the injection computer from the engine wiring;
- dismount the ECU injection

For mounting, perform the dismounting operations in the reverse order.

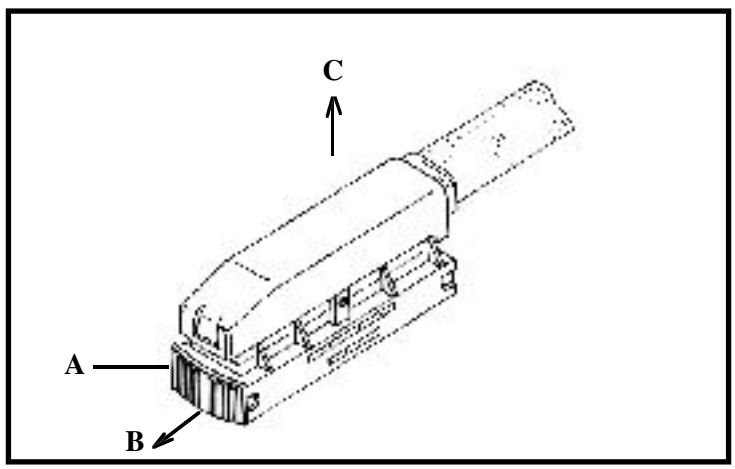
The injection computer is ddelivered not coded. It is necessary the memorising of an anti starting code in the computer, after this has been mounted.

Proceed as follows:

1. Set the contact on, without starting the engine, for 5 seconds.
2. Take off the contact; after 10 seconds, the anti starting function is activated, and the anti starting indicator will blink rarely (one blink per second).
3. Set the contact on. The anti starting indicator must turn off after 3 seconds and the engine can be started.

In order to disconnect the injection computer (E.C.U. injection) act upon the blocking lever (A) of the connector in the direction of the B arrow, then the connector will be lifted in the direction of the C arrow.

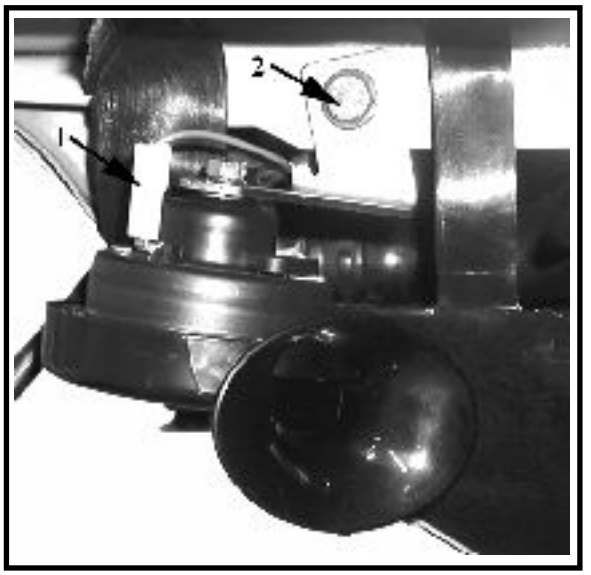
In case the vehicle is blocked on the road further to serious damages of the anti starting system, the " Procedure for repairing code introduction" may be used, which allows the moving of the vehicle to the nearest DACIA service centre for complete repairing. In order to perform this procedure it is necessary the CLIP tester and the specific repairing code of that vehicle.



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(For auto made before 03.07.2003)

The acoustic warning is attached on the closing plate of the upper longitudinal girder.



DISMOUNTING

Lift the vehicle by means of an elevator.

Disconnect the acoustic warning connector (**1**).

Dismount the attachment screw (**2**) of the acoustic warning on the closing plate of the left upper longitudinal girder.

REMOUNTING

Perform the dismounting operations in the reverse order. The acoustic warning must not be in contact with the left wheel fairing.

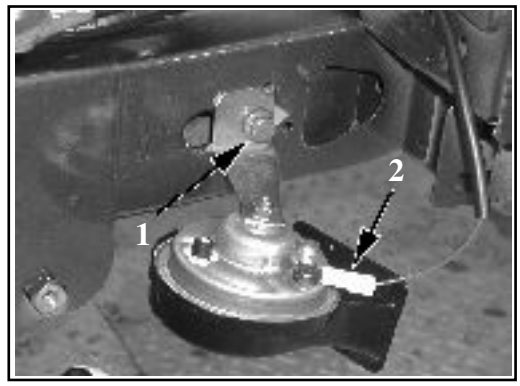
The required tightening moment of the screw: **17 Nm ±15%.**

Check the operation of the acoustic warning.

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REPLACEMENT OF THE ACCOUSTIC WARNING
(for auto made after 03.07.2003)

The new acoustic warning is attached in the engine compartment, on the left upper front longitudinal girder.



DISMOUNTING

Disconnect the battery (-) terminal.

Remove by hand the battery screen from the acoustic warning attaching area so that dismounting of the screw (**1**) is permitted.

Dismount the screw (**1**) attaching the acoustic warning on the left upper front longitudinal girder.

Disconnect the acoustic warning connector (**2**).

Carefully remove the acoustic warning

REMOUNTING

Perform the dismounting operations in the reverse order.

Check the operation of the acoustic warning.

REMARK !

***Each time when dismounting the acoustic warning, replace the fan-type the attachment screw* (1) .**

The required tightening moment of the attachment screw is of 21 Nm + 10%.

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A. E.C.U. DECODER REPLACEMENT PROCEDURE AND ANTI STARTING CODE MEMORISING

The new E.C.U. decoder is always not coded. After its mounting on the vehicle it is necessary that this one is memorising the anti starting code in order to be operational.

REMARK:

If only the E.C.U. decoder is replaced, there is no need of an intervention to the E.C.U. injection (injection computer), which will keep the old anti starting code.

ATTENTION!

After the E.C.U. decoder memorised the anti starting code, this code cannot be erased or replaced with another one.

In order to perform this procedure, one of the keys of the vehicle and the CLIP tester are needed.

Proceed as follows:

1. Connect the CLIP tester to the diagnostic socket and to the battery (or the lighter socket) of the vehicle.
2. Read the configuration of the old E.C.U. decoder in the following way, before dismounting it from the vehicle:
   - select the type "B41"
   - enter the menu " COMPUTER TEST" then select "ANTI STARTING"
   - access "COMMAND MODE" then "CONFIGURATIONS READING"
   - note the configurations found : petrol, programming with 1 or 2 keys, ceiling delayed light, the type of the doors' blocking switch (CPE), etc.;
3. Return to the menu "COMPUTER TEST"
4. Remove the old E.C.U. decoder and replace it with a new one, the contact being off.
5. Enter the menu "ANTI STARTING", then select " STATE LIST". If the E.C.U. decoder is new, you must find the following states:

   18G FIRST CYCLE MEMORISING……..…… PASSIVE
   19G NOT PERFORMED KEY PROGRAMMING ……..…….. ACTIVE
   19D UNBLOCKED KEY PROGRAMMING …….……ACTIVE

OBSERVATION:

If the states 19G and 19D are not "ACTIVE" this means the E.C.U. decoder has been already used, so it isn't new and cannot memorise another anti starting code.

6. Access the menu "COMMAND MODE" and then "CONFIGURATION", where you will configure the new E.C.U. decoder in the same way as the old one: petrol, 1 key, ceiling delayed light, impulsion doors blocking switch, etc. selecting one by one these configurations, which you'll validate with "CLICK" on the blue button on right top of the screen.

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1. Return to "COMPUTER TEST"
2. Set the contact on for 2 seconds in "M" position, without starting the engine. The anti starting indicator will begin to blink rapidly.
3. Access the menu " STATE LIST", where the following states must exist:
   9D RECEIVED KEY CODE ..... ACTIVE
   19G NOT PERFORMED KEY PROGRAMMING ..... PASSIVE
10. Take the contact off. In the menu "COMMAND MODE" select "ACTUATORS", then validate " FINISHED CALIBRATION" launching the command on the blue rectangle situated on the right top of the screen. The message "COMMAND IN PROGRESS" will appear, followed by " FINISHED COMMAND".
11. The anti starting indicator will blink rarely.
12. Return to the "STATE LIST", which now, must be like that:
    18G FIRST CYCLE MEMORISING..... ACTIVE
    19G NOT PERFORMED KEY PROGRAMMING..... PASSIVE
    19D UNBLOCKED KEY PROGRAMMING ..... PASSIVE
13. Set the contact in "M" position for 2-3 seconds in order to send the code to the E.C.U. injection. The anti starting indicator must light for 3 seconds, then turn off.
14. Take off the contact. After 10 seconds, the anti starting indicator will blink rarely.
15. Check the engine starting with both keys, and then take the contact off.
16. Check in the menu " STATE LIST " if the state 10G "ANTI STARTING" is " ACTIVE". Perform the synchronisation of the TRF remote control with the decoder (with 1 or 2 keys).

OBSERVATION:

With the CLIP tester, a starting interdiction may be simulated, proceeding as follows:

- take the contact off; wait for 10 seconds, then the anti starting indicator will blink;
- in the menu, "COMMAND MODE" access " ACTUATORS" then validate " FORCED PROTECTION MODE" launching the command from the blue button situated on the right top side of the screen. "COMMAND IN PROGRESS" will be displayed and then "FINISHED COMMAND";
- in the menu "STATE LIST" search for the state 10G "ANTI STARTING", which must be " ACTIVE";
- set the contact on "M" position; the anti starting indicator will blink rapidly, and the engine starting is impossible;
- remove the key from the contact and check then the engine starting with both keys, so the procedure is finished.

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REMARK:

For the RF remote control synchronisation, after the replacement of an E.C.U. decoder, the synchronisation procedure must be performed taking into account the following situations:

- for one RF remote control, perform the " SIMPLE SYNCHRONISED PROCEDURE";

- for the second RF remote control perform the "SPECIFIC SYNCHRONISED PROCEDURE".

B. KIT REPLACEMENT PROCEDURE

(E.C.U. decoder plus 2 key heads)

In case of one kit replacement perform the following steps:

- memorising the anti starting code by the E.C.U. decoder;
- memorising of the new anti starting code by the injection computer; it is necessary the repairing code (found out based on the old key heads code) and the CLIP tester.

Perform the actions in the following sequence:

1. Mount the metal insertions of the old keys to the new key heads.
2. Inform by phone at "Client Voice" (phone no 0248 500 000), the vehicle chassis series and the key heads code, written on the vehicle invoice, in order to get the repairing code.
3. Connect the CLIP tester to the diagnostic socket and to the battery (or to the lighter socket) of the vehicle. Read the configuration of the old E.C.U. decoder before dismounting it off the vehicle, as follows:
   - select vehicle type "B41";
   - enter the menu " COMPUTER TEST" then select "ANTI STARTING";
   - access "COMMAND MODE" then "READ CONFIGURATIONS";
   - note the configurations: petrol/diesel, programming with 1 or 2 keys, ceiling delayed light, the type of the doors' blocking switch (CPE), etc.
4. Return to the menu "ANTI STARTING".
5. Dismount the old E.C.U. decoder and replace it with a new one, the contact being off.
6. Check the configuration of the new E.C.U. decoder selecting " STATE LIST"; here you must find the following states:

18G FIRST KEY MEMORISING……..……..... PASSIVE
19G NOT PERFORMED KEY PROGRAMMING ……..... ACTIVE
19D UNBLOCKED KEY PROGRAMMING ……..... ACTIVE

REMARK:

If the state 19G and 19D are not "ACTIVE" this means the E.C.U. decoder isn't a new one and cannot memorise another anti starting code.

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7. Set the contact in "M" position with one of the keys (without starting the engine), for about 2 seconds and then check the following states, which must be:

9D RECEIVED KEY CODE ..... ACTIVE
19G NOT PERFORMED KEY PROGRAMMING ..... ACTIVE

8. Set the contact with the second key (without starting the engine) for about 2 seconds. Check then the following states:

- case (a)- the second key belongs to the vehicle;

9D RECEIVED KEY CODE ..... ACTIVE
19G NOT PERFORMED KEY PROGRAMMING ..... PASSIVE

- case (b)- the second key does not belong to the vehicle or the first key was used once again;

9D RECEIVED KEY CODE ..... PASSIVE
19G NOT PERFORMED KEY PROGRAMMING ..... ACTIVE

9. The anti starting indicator blinks rapidly.

10. Take off the contact. In the menu "COMMAND MODE" select "ACTUATORS" and validate " FINISHED CALIBRATION" launching the command on the blue rectangle situated on the right top of the screen. The message "COMMAND IN PROGRESS" will appear, followed by " FINISHED COMMAND".

11. The anti starting indicator will blink rarely.

12. Return to the "STATE LIST", which now must be as follows:

18G FIRST KEY MEMORISING ..... ACTIVE
19G NOT PERFORMED KEY PROGRAMMING ..... PASSIVE
19D UNBLOCKED KEY PROGRAMMING ..... PASSIVE

13. In the menu "COMMAND MODE" select " ACTUATORS". Select the command " FORCED PROTECTION MODE" launching the command from the blue button situated don the right top side of the screen. The display will show "COMMAND IN PROGRESS" and then "FINISHED COMMAND".

Return to the "STATE LIST " and check the state:

9G FORCED PROTECTION MODE ..... ACTIVE

14. Set the contact on "M" position. The anti starting indicator will start to blink rapidly. Check in the " STATE LIST" if the state "ANTI STARTING" is "ACTIVE".

15. In the menu "COMMAND MODE" access "ACTUATORS", then select the command " MANUAL CODE INTRODUCTION". Type the four figures of the repairing code, then validate with the key "ENTER". On the screen the message "COMMAND IN PROGRESS" will appear and then "FINISHED COMMAND".

16. Set the contact off and then set again the contact on, without starting the engine, in order to send the new anti starting code to the injection computer. The anti starting indicator will light for 3 seconds, and then it will turn off.

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17. The procedure is finished. Check the engine starting with both keys.

REMARK:

For the RF remote control synchronisation, after the replacement of a kit, take into account the following situations:

- for the first RF remote control, perform the " SIMPLE SYNCHRONISED PROCEDURE";
- for the second RF remote control perform the "SPECIFIC SYNCHRONISED PROCEDURE".

C. CODE REPAIRING INTRODUCTION PROCEDURE

The repairing code may be introduced only by means of the CLIP tester. This is possible only if when setting the contact on, the anti starting indicator blinks rapidly, this being confirmed by the state:

10G ANTI STARTING ……..…….ACTIVE

After getting from DACIA database the repairing code (based on the vehicle chassis series and on the code from the vehicle's key head), perform the following operations.

1. Connect the CLIP tester to the diagnostic socket and to the battery (or to the lighter socket) of the vehicle.
2. The anti start up indicator must blink slowly, the contact being taken off.
3. Set the contact in "M" position. The indicator must blink rapidly.
4. Select vehicle type "B41";
5. Select the menu " COMPUTER TEST" then select " ANTI STARTING".
6. In the menu "STATE LIST" find the state 10G "ANTI STARTING" which must be "ACTIVE".
7. Access "COMMAND MODE" then select "ACTUATORS".
8. Select the command " MANUAL CODE INTRODUCTION" where you will write the repairing code (formed of 4 figures), then validate it with the key "ENTER". The message "COMMAND IN PROGRESS" will be displayed followed by the message "FINISHED COMMAND".
9. Now the procedure is finished and you may start the vehicle engine.

ATTENTION!

You may perform three attempts of introducing the repairing code; if after the third essay the code is not yet valid, wait for 15 minutes, take off the contact and then set it again, then other three attempts may be performed.

REMARK:

This procedure does not decode the injection computer, but is only allowing the start of the vehicle's engine. After 10 minutes have passed from the first introduction of the repairing code or after the disconnection of the battery, the vehicle's engine cannot be started unless a new repairing code is introduced.

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D. SIMPLE SYNCHRONISED PROCEDURE

This procedure allows the synchronisation of a RF remote control with E.C.U. decoder and is to be applied in the following situations:

- the RF remote control code is no longer in the range of the E.C.U. decoder reception, because of blind consecutive pushing over a 1000 time on the RF remote control button.;
- the replacement of the E.C.U. decoder with a new one;
- the replacement of the RF remote control if the E.C.U. decoder is new (E.C.U. decoder replacement plus a RF key.);

The following operations will be performed:

- take off the contact;
- push and maintain like that for about 5 seconds, the doors locking switch located on the dashboard ; the doors actuators are performing a closing/opening course;
- during the next 10 seconds, confirmed by the permanent lightening of the anti starting system indicator, push twice the RF remote control button; the doors actuators are performing a closing/opening course;
- the procedure of synchronisation is finished; check the doors blocking/unlocking by pushing the RF remote control.

OBSERVATION:

During those 10 seconds you can visualise by means of the CLIP tester the state 17G "PROGRAMMING OR TIR/TRF RESYNCHRONISATION" which must be ACTIVE.

E. SPECIFIC SYNCHRONISED PROCEDURE

This procedure is used for the synchronisation of the second RF key with E.C.U. decoder and will be performed as follows:

- connect the CLIP tester to the diagnostic socket and the battery (or the lighter socket) of the vehicle;
- select the vehicle type "B41";
- select the menu " COMPUTERS TEST" then " ANTI STARTING";
- enter the menu "COMMAND MODE" and select "CONFIGURATION";
- validate the command " PROGRAMMING THE SECOND TIR / TRF KEY" launching the command from the blue button situated on the right top of the screen; the doors actuators are performing a closing/opening course.
- during the next 10 seconds, confirmed by the permanent lightening of the anti starting system, push twice the RF remote control button; the doors will block and then unlock and the anti starting indicator will turn off. The second remote control is now synchronised. Check the blocking/ unlocking by pushing the RF remote control.

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FAILURES AND STATES INTERPRETATION

1. FAILURE OF COMMUNICATION CLIP TESTER/ E.C.U. DECODER

RECOMMENDATION	Check if the lines K and L are not disturbed by another computer of the vehicle.

Check the condition of fuse F 03 from the cockpit fuse box.
Replace the fuse if necessary.

Check if the CLIP tester is not the cause of the failure; check if the tester is communicating with another computer of the same vehicle (injection computer).
Measure the tension of the vehicle's battery (U> 12,3V). If necessary, charge the battery.

Check if the E.C.U. decoder is correctly connected to the vehicle's wiring.
Check the right supply of the E.C.U. decoder:
-presence of the mass at pin A8 of the E.C.U. decoder
- supply + I.C. at pin A9 of the E.C.U. decoder

Be sure that the diagnostic socket is proper supplied, according to the circuit diagram.
Check the continuity and the isolation of the electric wiring on the corresponding pins layout.
E.C.U. decoder { A3 → 7 ; A4 → 15 } diagnostic socket

If the connection tester CLIP – E.C.U. decoder can't be established, then replace the decoder.

AFTER REPAIRING	After establishing the communication with the tester, fix the possible failures. Perform a conformity checking

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2. 4D STATE: + 12 V (+DC) SUPPLY, EXISTENT

RECOMMENDATION	Observation: - 4D state= ACTIVE when the contact is on "M" position; - 4D state= PASSIVE when the contact is not on "M "position.

Check the F03 fuse condition. Replace the fuse if necessary.
Place the contact on "M" position and check the presence of +12V at the pin A7 of the E.C.U. decoder. Is there +12V?

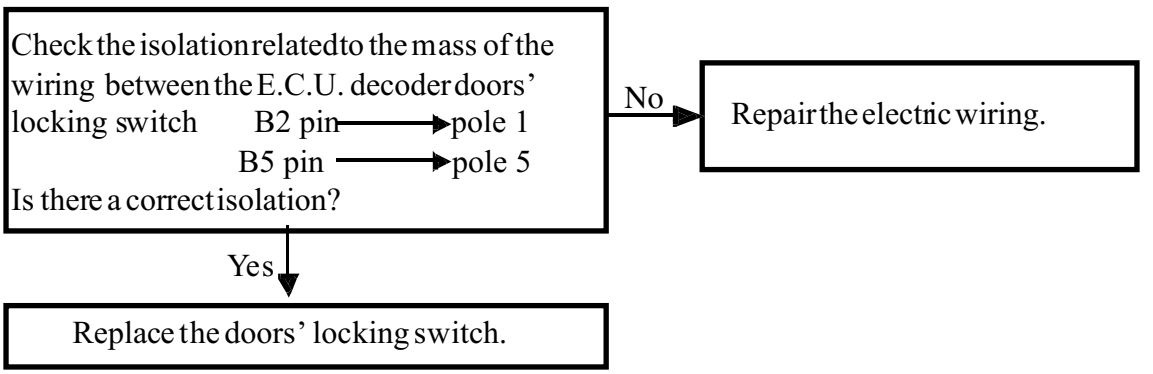
YES	Replace the E.C.U. decoder if its communication with the tester can not be realised.
NO	Repair the electric wiring on the supply layout to the pin A7 of E.C.U. decoder.

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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3. FAILURE : DOORS BLOCKING SWITCH

RECOMMENDATION	Check if the switch does not remain permanently pressed due to a mechanical blocking.



AFTER REPAIRING	Remove the memorised failure by means of the CLIP tester. Perform a conformity checking Check the operation of the anti starting system.

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4.FAILURE: MISSING SIGNAL ON THE CODED LINE E.C.U. DECODER-COMPUTER INJECTION

RECOMMENDATION	-

Check the continuity and the isolation related to the mass and + 12 V of the wiring between the E.C.U. decoder Pin A6 → pin 58 injection computer. Fix it if necessary..
Set the contact on and perform the detection test using the CLIP tester at pin A 6 of the ECU decoder. Are there any impulses?

YES	Replace the ECU injection.
NO	Replace the E.C.U. decoder.

AFTER REPAIRING	Remove the memorised failures by means of the CLIP tester. Perform a conformity test. Check the operation of the anti starting system.

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5. FAILURE : DEFECTIVE COMMUNICATION ANTI STARTING SYSTEM - E.C.U. DECODER

RECOMMENDATION	-

Check the continuity and the isolation related to the mass and + 12 V voltage of the wiring between the anti starting system pin 4 ⟶ pin A2 E.C.U. decoder Fix it if necessary.
Check the anti starting bushing supply : + 12V to the pin 3 and the mass to pin 2.
Disconnect the E.C.U. decoder and measure the presence of +12 V at the pin A2 of the decoder, the contact being taken off. If there it isn't +12 V, check the fuse condition F03 from the cockpit fuse box. If the problem persists, replace the anti starting bushing.
Set the contact on and perform the impulse detection test at the pin A2 of the E.C.U. decoder. Is there an impulse ?

YES	Replace the anti starting bushing
NO	Replace the E.C.U. decoder.

AFTER REPAIRING	Remove the memorised failures by means of the CLIP tester. Perform a conformity checking Check the operation of the anti starting system.

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6. STATE 11G: ACTIVATE THE RF REMOTE CONTROL/ RECEIVED RF SIGNAL INDICATION

RECOMMENDATION	If the 17D state is PASSIVE, do not apply the next diagnostic because the E.C.U. decoder is unused (new). Perform first the remote control synchronisation. Do not access the next diagnostic if the state 11G remains PASSIVE when activating the RF remote control at the blocking and unlocking of the doors.

Check the blocking and unlocking of the doors using the second RF remote control. If this is one is operating, then the battery of the first RF remote control must be replaced.

Check the presence of +12 V(+DC) at the pin 1 of the anti starting bushing.
Is there +12V ?

YES

Perform using the CLIP tester, the impulse detection test at the pin 1 of the anti starting bushing when using the RF remote control.
Are any impulses when using the remote control ?

YES	Replace the E.C.U. decoder.
NO	Replace the anti starting bushing.

NO

Check the isolation related to the mass of the electric wiring between:

E.C.U. decoder	Pin B1	pole 1	anti starting bushing
	Pin B2	pole 1	door locking switch
	Pin B5	pole 5	

Isolation against mass is good?

YES	Fix the electric wiring.
NO	Replace the E.C.U. decoder.

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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7. 11D STATE: OPERATE THE RF REMOTE CONTROL/ GOOD RF SIGNAL INDICATION

RECOMMENDATION	Do not access the following diagnostic unless the state 11D becomes ACTIVE when operating the RF remote control. Check if the keys belong to the vehicle in question.

There is a desynchronising between the code of the RF remote control and the E.C.U. decoder if at the activation of the remote control, the 111D state remains PASSIVE and the state 11G becomes ACTIVE for 3 seconds, then becomes PASSIVE. The blocking/ unlocking of the doors is not possible in this case.
Apply the corresponding procedure of resynchronisation (for one or 2 keys).

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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8. 14G STATE : DOORS BLOCKING/UNLOCKING

RECOMMENDATION	The state 10G (anti starting) must be ACTIVE.

Check the continuity and the isolation related to the +12 V and to the mass of the electric wiring on the line E.C.U. decoder

Pin B2	→ pole 1	door locking switch.
Pin B5	→ pole 5	

Fix the electric wiring if necessary or replace the switch.

If the incident persists, replace the E.C.U. decoder.

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FAILURES LOCATING BASED ON CLIENT CLAIM
(algorithm for damage locating)

ALP1. MISSING COMMUNICATION CLIP TESTER / E.C.U DECODER

RECOMMENDATION	Check if the lines K and L are not perturbed by another computer of the vehicle.

Check the condition of the F03, F04 fuses from cockpit fuse box.

↓

Be sure the CLIP tester is not the cause of the failure, by trying the communication with another computer of the vehicle.
Check the tension of the battery (U>12,3V). If it is necessary, charge the battery.

↓

Check the correct connection of the E.C.U. decoder to the wiring.
Check the supply of the E.C.U. decoder : - mass at pin A8;
- supply (+IC) at pin A9.

↓

Be sure that the diagnostic socket is correctly supplied.
Check the continuity and the isolation of the electric wiring on the pins' line corresponding to:

E.C.U. decoder	A3	→ 7	diagnostic socket
	A4	→ 15	

↓

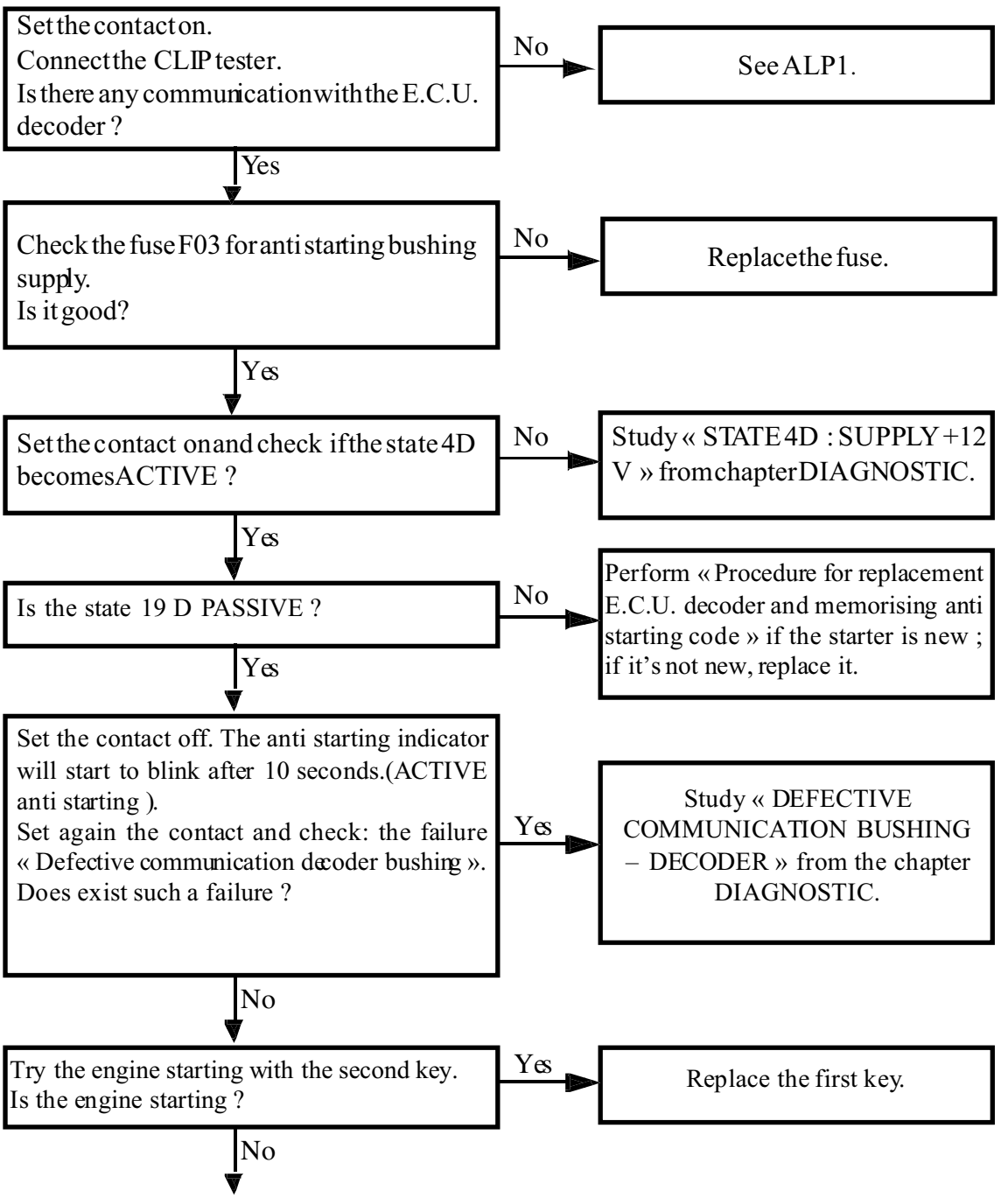
If the dialogue CLIP tester – E.C.U. decoder cannot be established, then replace the decoder.

AFTER REPAIRING	When the communication with the tester is established, solve the failures displayed by CLIP. Perform a conformity checking

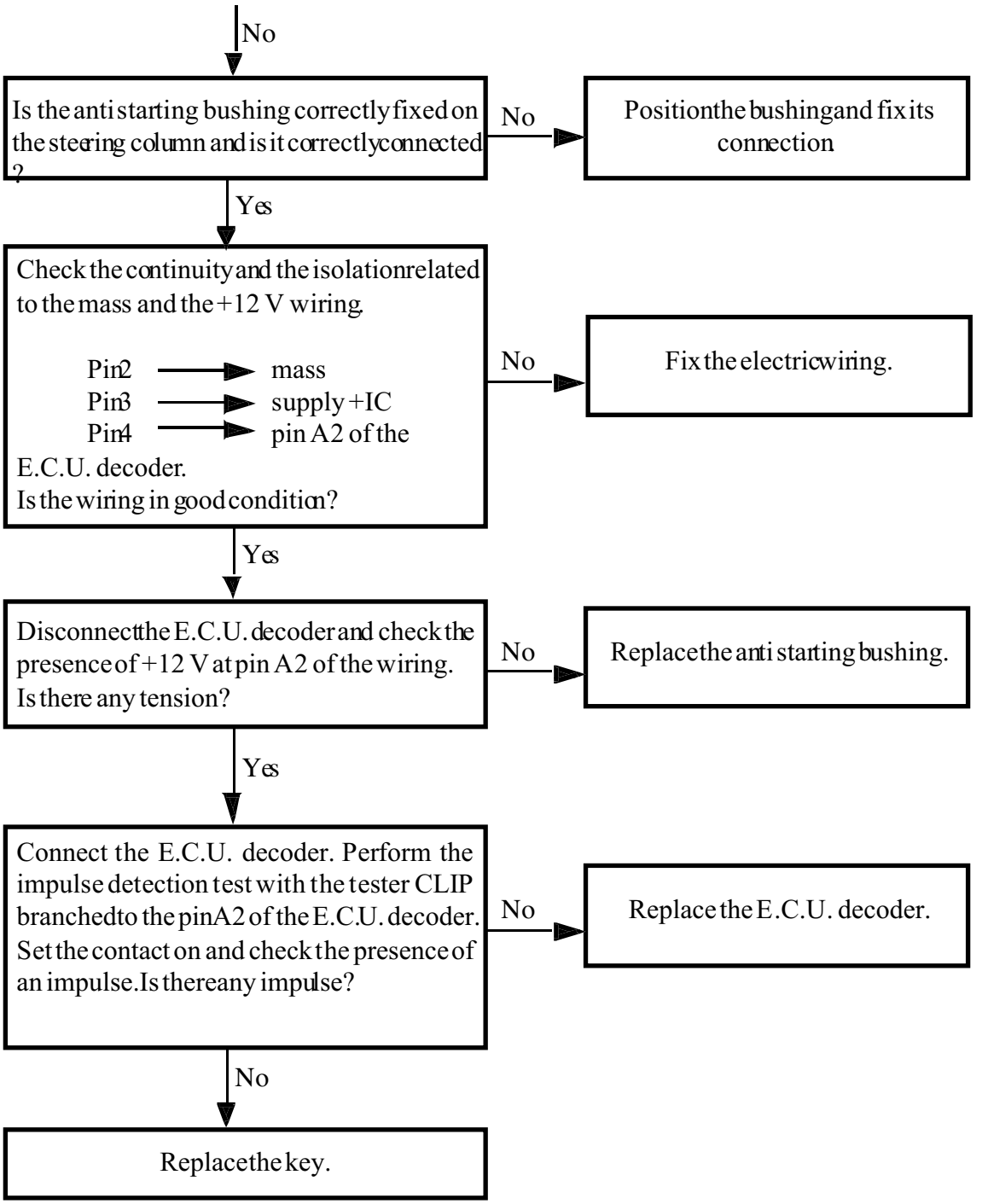
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ALP2. CONTACT SET ON THE ANTI STARTING INDICATOR BLINKS (THE ENGINE IS NOT STARTING)

RECOMMENDATION	-



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No
Is the anti starting bushing correctly fixed on the steering column and is it correctly connected ?
No
Position the bushing and fix its connection
Yes
Check the continuity and the isolation related to the mass and the +12 V wiring.
Pin 2 → mass
Pin 3 → supply +IC
Pin 4 → pin A2 of the E.C.U. decoder.
Is the wiring in good condition?
No
Fix the electric wiring.
Yes
Disconnect the E.C.U. decoder and check the presence of +12 V at pin A2 of the wiring.
Is there any tension?
No
Replace the anti starting bushing.
Yes
Connect the E.C.U. decoder. Perform the impulse detection test with the tester CLIP branched to the pin A2 of the E.C.U. decoder. Set the contact on and check the presence of an impulse. Is there any impulse?
No
Replace the E.C.U. decoder.
No
Replace the key.

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ALP3. THE ANTI STARTING INDICATOR REMAINS PERMANENTLY LIGHTED (even when the contact is taken off) OR IT REMAINS PERMANENTLY SWITCHED OFF

RECOMMENDATION	Check if the "Procedure E.C.U. decoder replacement" was correctly performed

Check the fuse F03 condition from the cockpit fuse box.
Is the fuse good?

No → Replace the fuse.

Yes ↓

Is there the failure "DOORS BLOCKING CONTACT".

Yes → Analyse this failure and replace.

No ↓

Check the continuity and the isolation related to the mass, between the pin A 5 of the E.C.U. decoder and the dashboard. (pin 6 from black connector)
Is the wiring good?

No → Fix the wiring.

Yes ↓

Perform the following tests in order to find the damaged element:
- if the anti starting indicator is permanently lighted, disconnect the connector of the E.C.U. decoder and check if the indicator switches off;
- if the anti starting system is turned off, connect the pin A5 of the wiring connector from the E.C.U. decoder to an electric mass and check if the indicator turns on.
Are the answers affirmatives?

No → Replace the instrument panel.

Yes ↓

Replace the E.C.U. decoder.

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system. Remove by means of the CLIP tester the possible memorised failures.

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ALP4. CONTACT ON THE ANTI STARTING INDICATOR BLINKS QUICKLY (engine is not starting)

RECOMMENDATION	-

Set the contact on.
Connect the CLIP tester.
Is there any communication between the tester and E.C.U. decoder ?

No → See ALP1.

Yes ↓

Is the state 19D, ACTIVE?

Yes → Check the correct memorisation of the anti starting code by the E.C.U. decoder ; if not, replace the decoder.

No ↓

Check the continuity and the isolation related to the mass and to the + 12V of the wiring between A6 decoder pin and injection computer pin 58.
Is the wiring good?

No → Fix the electric wiring.

Yes ↓

Perform the impulse detection test by means of the CLIP tester connected to the E.C.U. decoder A6 pin.
Set the contact on and check impulses presence.
Are there any impulses?

Yes → Replace the injection computer.

No ↓

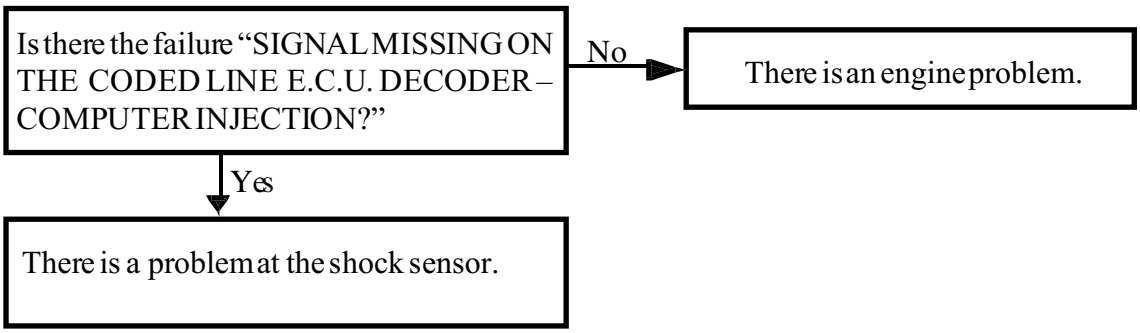
Replace E.C.U. decoder or see the " Kit replacement procedure ".

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system. Remove by means of the CLIP tester the possible memorised failures.

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ALP5. THE VEHICLE IS NOT STARTING

RECOMMENDATION	-



AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system. Remove by means of the CLIP tester the possible memorised failures.

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ALP6. BLOCKING/UNLOCKING DOORS NOT OPERATING

RECOMMENDATION	Check with the CLIP tester the absence of the failures. If there are memorised failures, these must be removed.

Are the doors blocking mechanisms correctly operating?

No → Repair the damaged mechanisms.

Yes ↓

Check the continuity and the isolation related to the mass of the wiring between:

E.C.U. decoder | pin B8 → | actuators
Pin B9 → | doors

Is the wiring in good condition?

No → Fix the wiring.

Yes ↓

Disconnect the **E.C.U.** decoder, then supply the wiring connector with +12 V at pin B9 and the mass at the pin B8, than versa (+ 12 V at pin B8 and the mass at pin B9).
Are the actuators blocking/unlocking the doors?

No ↓

Damaged actuators.
Replace them.

Yes ↓

Check the continuity and the isolation related to the mass of the wiring between
E.C.U. decoder pin B2 → 1 switch
Pin B5 → 5 blocking doors
Is the wiring in good condition?

Yes ←

No ↓

Repair.

Replace the E.C.U. decoder, then perform the "E.C.U. decoder replacement procedure".

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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ALP7. UNLOCKING DOORS NOT OPERATING BY RF REMOTE CONTROL

RECOMMENDATION	Check the absence of failures with the CLIP tester. If there are memorised failures, these must be repaired.

Are the states 11G and 11D becoming ACTIVE when the RF remote control is activated?

No → See the treatment of the states 11G and 11D cf. chapter "Diagnostic".

Yes ↓

Check the fuse F03 condition from the cockpit fuse box.
Is it good?

No → Replace the fuse.

Yes ↓

Activate the doors' locking switch from the dashboard.
Are the doors blocking/ unlocking?

No → See the treatment of the failure "Doors blocking contact" and the state 14 G cf. chapter "Diagnostic".

Yes ↓

See ALP6.

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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ALP 8. TURNING LIGHTS DO NOT SWITCH ON AT THE BLOCKING / UNLOCKING OF THE DOORS

RECOMMENDATION	Check the absence of the failures with the CLIP tester. If there are failures, fix them first.

Check if the synchronisation of the RF remote control and the E.C.U. decoder has been performed.
Are the turning lights functioning normally at the activation of the signalling switch?

No → Repair the signalling system.
Check the fuse F03 and F04.

Yes ↓

Check the continuity and the isolation related to the mass and the +12 V of the electric layout:
E.C.U. decoder Pin B3 → FLASH relay pole 2
Is it correct?

No → Fix the electric layout.

Yes ↓

Check the fuse F02 condition from the cockpit fuse box.
Is it good?

No → Replace the fuse.

Yes ↓

Disconnect the FLASH relay. Supply with +12, the pole 4 of the relay. Are the left turning lights turning on? Supply with +12 V the pole 5 of the signal relay. Are the right/left turning lights turning on?

No → Repair the electric layout from poles 4 and 5 of the FLASH relay.

Yes ↓

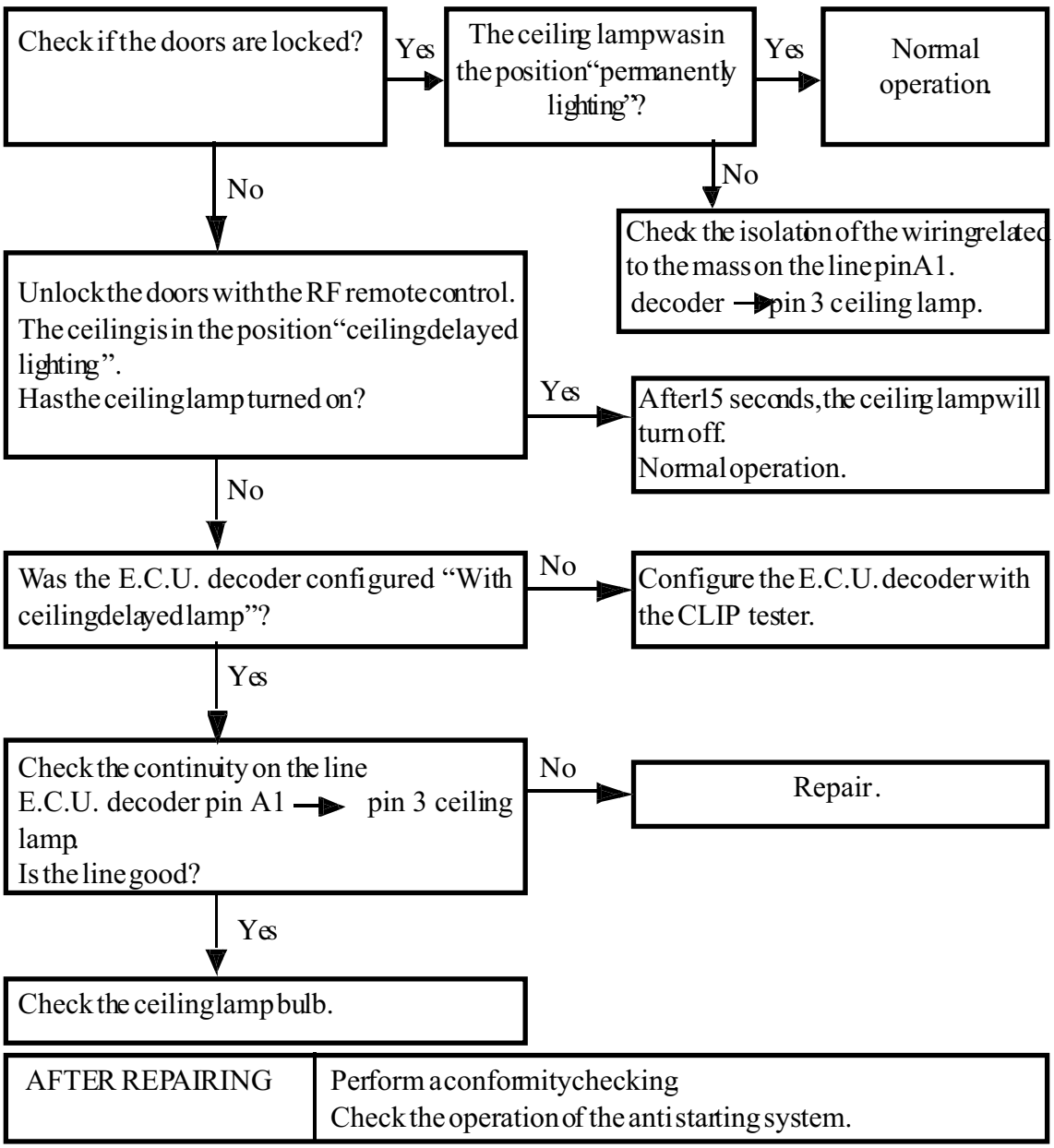
Replace the FLASH relay.

AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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ALP9. THE CEILING LAMP DOES NOT SWITCH ON AT THE BLOCKING / UNLOCKING OF THE DOORS OR IT REMAINS PERMANENTLY TURNED ON

RECOMMENDATION	Check the absence of failures with the CLIP tester. If there are memorised failures, fix them first.



AFTER REPAIRING	Perform a conformity checking Check the operation of the anti starting system.

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THE CONFORMITY CHECKING

Next, the checking of different states and configurations of the anti starting system is to be performed.

RECOMMENDATION	In case of finding some failures at the diagnostic by means of the CLIP tester, analyse them based on the diagnostic (ALP) corresponding to the respective failure.

Crt. Nr.	Function	State/ configuration	Observations
1.	Conformity E.C.U decoder.	Computer identification	Display of the E.C.U. decoder item.
2.	Remote control type	2G = remote control configuration	IR = infrared RF = radio frequency
3.	Ceiling delayed lamp	Without ceiling delayed lamp or with ceiling delayed lamp	Validation on the blue button on CLIP screen.
4.	Key programming	3G = configuration key programming	With one or 2 keys.
5.	Configuration petrol/ diesel	3D = configuration coded diesel electric valve.	Without = for petrol engine or diesel without electric valve.
6.	Forced starting protection	9D = forced protecting mode	ACTIVE = only after validation on the blue button.
7.	Anti starting state	10G = anti starting	ACTIVE = with the contact taken off or after 10 seconds from the contact taken off.
8.	Key presence	8D = key present	ACTIVE at the setting on the contact if there is a coded key. REMARK: the states 8D, 9D, 10 D must be ACTIVE at a correct operation.
9.	Code key receiving	9D = received key code	ACTIVE at the setting on the contact if the key is coded in a good format.
10.	Correct key code	10D = right key code	ACTIVE at the setting on the contact if the key is coded in a good format and has the correct code. REMARK: after the analyse of the states 8D, 9D, 10 D the contact will be set on when the LED indicator blinks (ACTIVE anti starting).

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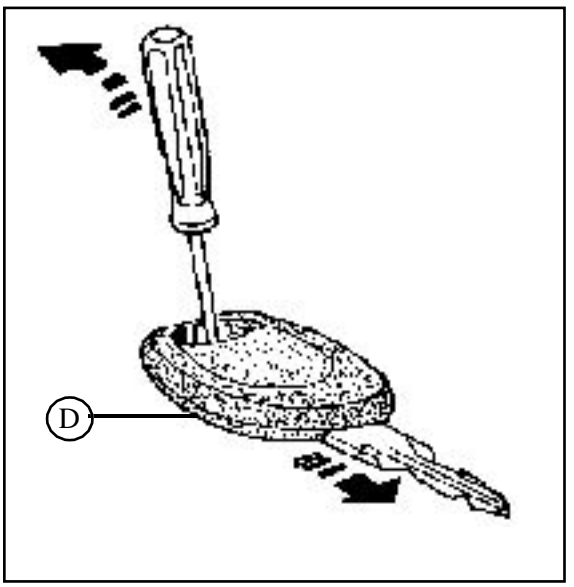
11.	Remote control signal reception.	11G = activate the RF remote control. Received signal indication	ACTIVE for 3 seconds if the decoder receives the remote control signal.
12.	Remote control signal validation	11D = activate the RF remote control. Good signal indication	ACTIVE for 3 sec. if the signal received at the decoder is good.
13.	Communication doors locking switch - E.C.U. decoder.	14G = blocking/unlocking	ACTIVE when the E.C.U. decoder receives control from the doors' locking switch.
14.	Communication E.C.U .decoder - doors actuators	14D =activation of the doors actuators	ACTIVE when the E.C.U. decoder sends the command blocking/unlocking to the actuators of the doors.
15.	The condition of the doors contact	16G = doors contact	ACTIVE when the front doors are opened.
16.	Remote controls synchronisation in process	17G = programming or resynchronisation TIR/ TRF	ACTIVE when the remote control resynchronisation procedure is in process.
17.	RF remote controls synchronisation not performed	17D = not performed TIR programming	ACTIVE when the remote control synchronisation is not performed.
18.	Not performed key code programming	19G = unperformed key programming	ACTIVE when the key programming is not performed.
19.	Validated key code programming	19D = unblocked key programming	ACTIVE when the validation of the key programming is not performed.
20.	The programming of the first key.	18G = the memorising of the first key	ACTIVE when the programming of the first key is in process.

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DISMOUNTING ONE KEY-HEAD (WITHOUT REMOTE CONTROL).

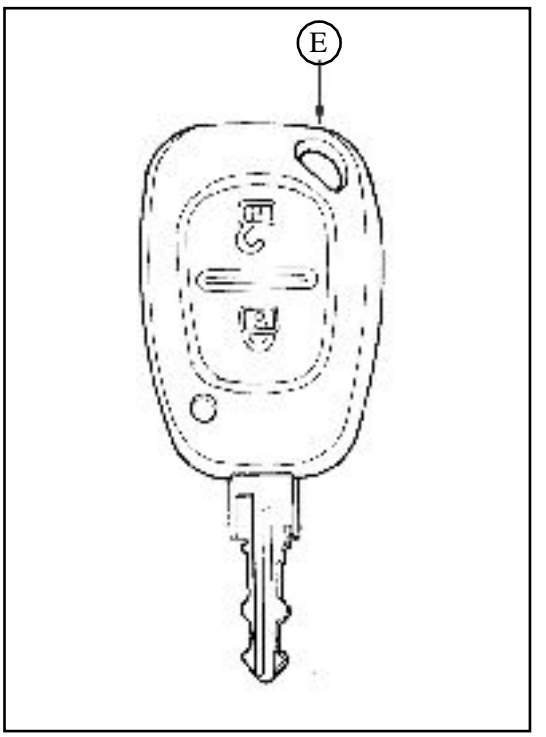
Place the key-head on a table, the half with the metal insertion being downwards.

By means of a little screwdriver, act in such way so that screwdriver point is supported on the lower part (D) of the key-head. This will enable the upper part gliding vis a vis of the lower part.



DISMOUNTING ONE KEY-HEAD (WITH REMOTE CONTROL)

By means of a little screwdriver, that is inserted in the slot (E), act by carefully detaching from clips the two parts of the key-head.



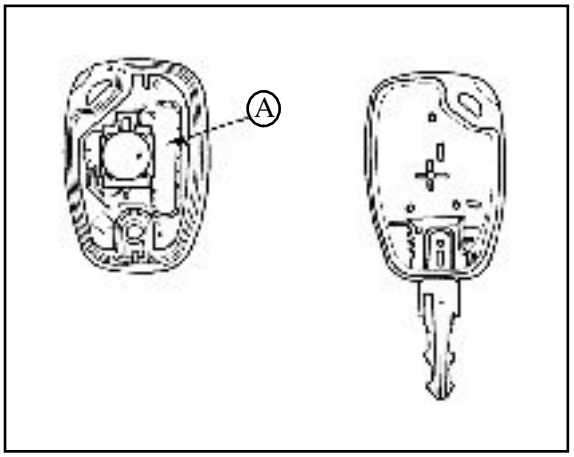
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DESCRIPTION OF THE SYSTEM

By means of this system, the anti-starting is activated few seconds after the contact has been taken off (signalized by the blinking of the anti-starting red indicator).

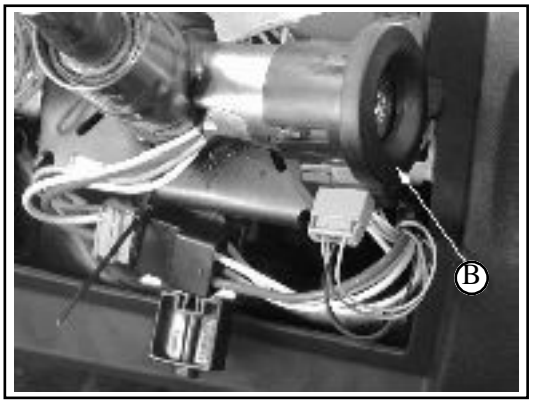
Its components are :

〈 key-head, equipped with a coded electronic circuit (A).



OBSERVATION : the anti-starting electronic is integrated in the remote control printed circuit.

〈 anti-starting bushing (B), placed around the ignition-starting contact, equipped with an electronic circuit having the purpose of key code transmitting to the Cockpit Central Unit (UCH).

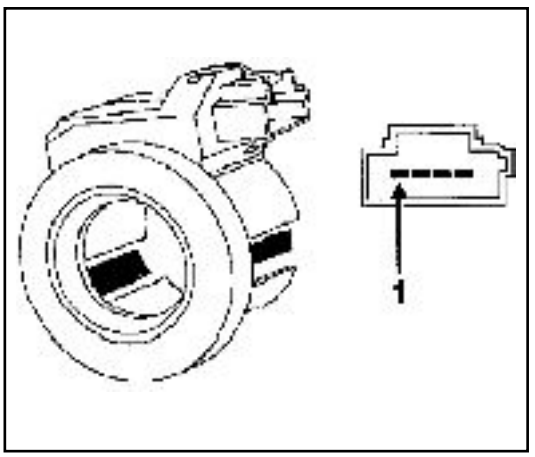


REMARK : the decoder bushing is not coded

DISMOUNTING – REMOUNTING

Dismount the half-cases under the steering wheel, extract the bushing from the starting contact and disconnect its connector.

CONNECTING



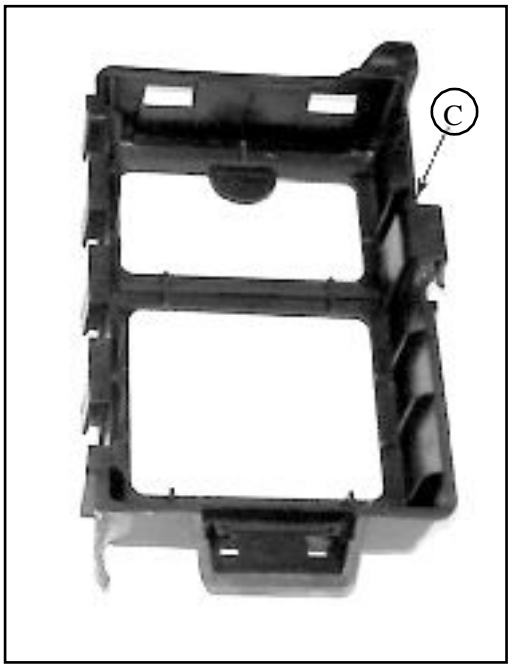
Pin	Denomination
1	Not in use
2	Mass
3	+ After contact
4	Outlet signal

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• Cockpit Central Unit

For anti-starting function, the Cockpit Central Unit is ensuring the following functions:
- key signal decoding
- dialoguing with the injection computer.
- Conducting the anti-starting indicator placed on instrument panel.
- Dialoguing with the diagnostic tester.

Cockpit Central Unit (C) is placed on the driving post left part, being attached on the dashboard lateral side, in a protection box.



For dismounting please see Chapter 87.

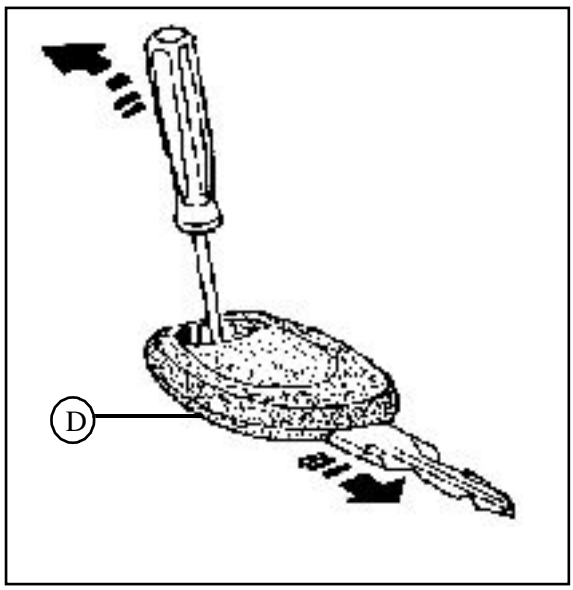
• Anti-starting indicator, placed on instrument panel, it is used to signal:
- anti-starting system activation
- key non-recognition
- a system failure
- key programming

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DISMOUNTING ONE KEY-HEAD (WITHOUT REMOTE CONTROL).

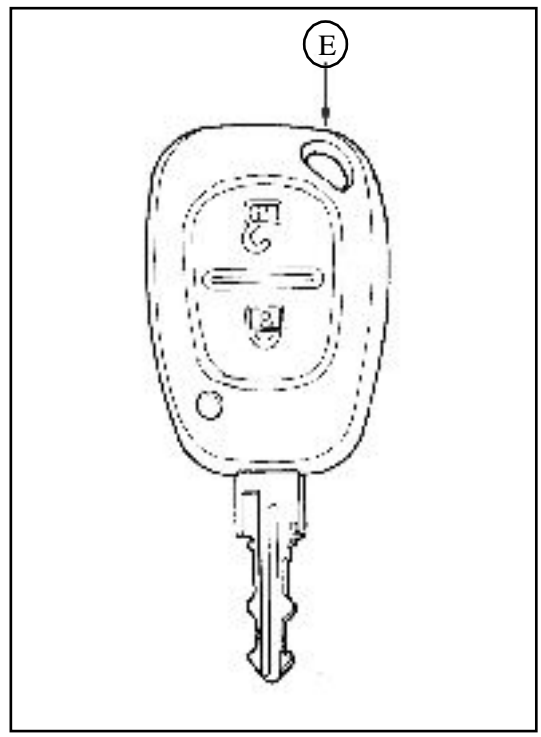
Place the key-head on a table, the half with the metal insertion being downwards.

By means of a little screwdriver, act in such way so that screwdriver point is supported on the lower part (D) of the key-head. This will enable the upper part gliding vis a vis of the lower part.



DISMOUNTING ONE KEY-HEAD (WITH REMOTE CONTROL)

By means of a little screwdriver, that is inserted in the slot (E), act by carefully detaching from clips the two parts of the key-head.



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This document is presenting the diagnostic generally valid for all computers, for anti-starting function.

In order to perform the diagnostic of this system, it is then all-important to dispose of the following elements:

- workshop manual of the corresponding vehicle
- electric diagram of the function, for the corresponding vehicle
- special tools specified in the column "Necessary Special tools".

GENERAL METHOD OF DIAGNOSTIC

- CLIP tester setting on, in order to identify the system that is equipping the vehicle (identification of the computer family, program number, V. diagnostic..).
- Analysis of the "diagnostic" documents corresponding to the identified system.
- Acknowledgement of the information supplied in chapters "General".

Reading of the memorised failure in the computer memory and taking advantage of the chapter "Failures interpretation".

Attention : each failure is interpreted for a specific type of memorisation : present failure, memorised failure, present or memorised failure). The specified checking for handling each failure are not to be applied on the vehicle unless the declared failure is interpreted in the document for its specific memorising type. The memorising type must be taken into consideration when the tester is set on, after setting off and on of the contact.

If a failure is interpreted in the moment when it is declared "memorised", the diagnostic application conditions are present in "Recommendations". If the conditions are not fulfilled, you must take the ideas from the diagnostic of damaged element circuit checking, because the failure is not anymore present on the vehicle. Apply the same method when a failure is declared as been memorised by the diagnostic tester, but it is interpreted in the documentation only as "present" failure state.

- Performing the conformity checking (accentuation of the possible failures, non-declared yet by the system self-diagnostic) and application of the adequate diagnostic according to the results.
- Reparation validation (elimination of "client's effect")
- Diagnostic exploitation by "Client's effect" if the problem still on.

NECESSARY SPECIAL TOOLS FOR INTERVENTION

- CLIP diagnostic tester
- ELE 1622 electric multi-socket
- All-purpose meter

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OPERATION

When anti-starting system is on, the red LED is blinking (rare signal: one blink/sec).

After setting the contact on, the key code is transmitted to the Cockpit Central Unit.

If the code is recognized by the Cockpit Central Unit, this one is sending coded signals to the injection computer and the anti-starting LED is off.

If signals issued by the Cockpit Central Unit and by the injection computer are matching, the Cockpit Central Unit is authorizing the engine starting and the injection is unlocked.

SPECIAL SITUATIONS

Injection computer does not have any reference code in memory: the code sent by UCH is written in the memory.

If there is no matching of the key codes / Cockpit Central Unit, the system is remaining blocked and anti-starting LED is blinking (quick signal). The vehicle starting is not authorized.

ATTENTION: when the battery is low charged, the voltage drop further to starter action may reactivate the anti-starting. If voltage is too low, starting is impossible.

Key recognition in normal operation

	Anti-starting indicator
Protected vehicle (without + after contact)	Indicator slow blinking
Recognized key, non protected injection	Indicator lighted for 3 seconds, then set off.
Non-recognized key	Indicator is quickly blinking (at 4 Hertz)

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GENERAL

Cockpit Central Unit (UCH) is replacing the UCE decoder.

Cockpit Central Unit is located under dashboard, left side.

IMPORTANT

When replacing the Cockpit central Unit it will be necessary to set the function corresponding to the vehicle equipment level, by means of the CLIP tester.

ATTENTION

Starting is impossible unless the anti-starting programming procedure is performed.

When replacing a Cockpit Central Unit, it is necessary to perform the programming and setting corresponding to the vehicle equipment level.

When adding a key it is necessary that keys re-assignation procedure be performed.

System's characteristics.

- This system may work with maximum 4 remote controls (Cockpit central unit can manage only 4 different codes).
- Radio-frequency signal receiver is integrated in Cockpit Central Unit
- Doors central locking button is not activated when doors have been closed by means of the remote control.
- Doors locking and unlocking using the remote control may be visualized by hazard lights signals (if all doors are properly closed);
- locking : 2 signals
- unlocking: 1 signal
- If doors are unlocked and none of them is not opened in the next 30 seconds, the system is automatically re-locking the vehicle doors (without hazard lights blinking).
- Cockpit central Unit is controlling the vehicle inside lightening. In case a ceiling lamp still lighted, Cockpit Central Unit is cutting the supplying after approximately 30 minutes.
- The model "Full equipment" is controlling the ceiling lamp progressive turning off, after doors blocking by means of the remote control.
- Cockpit Central Unit may set on the hazard lights in case of "shock connection" information coming from UCE airbag.
- Spare parts keys are delivered not coded, so they have no code.
- It is possible in case of key's loss, theft or by client's request, that one vehicle key is decommissioned. This one may be re-assigned on the same vehicle, if necessary.

ATTENTION:

〈 By this system, it is impossible the replacement of Cockpit Central Unit and keys in the same time. These parts are sold not coded.

〈The code memorized by the system's elements can not be erased (Cockpit Central Unit and injection computer). The memorized code can not be erased.

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REPLACEMENT AND SETTING

New parts are not coded. Once mounted on vehicle, in order to become under operation, the memorization of a code it is necessary.

In order to perform this procedure, it is absolutely necessary that some vehicle parts are already coded (with the vehicle code).

Refer to the assignations table:

ATTENTION : if a part is memorizing the code this one is assigned to this specifc vehicle and it is impossible that subsequently this code is erased or a second code is memorized. The first time memorized code can not be anymore erased.

ASSIGNATION TABLE

AFTER SALE INTERVENTION	ELEMENTS CONDITION			REPARATION CODE NECESSITY
	Cockpit Central Unit	Key	Injection computer	
Cockpit Central Unit programming	new	coded	coded	YES
Key' assignation or deletion	coded	new*	-	YES
Injection computer programming	coded	coded	new	NO

〈 The key assigned to a vehicle must be new and already programmed on that vehicle.

REMARK : this may be programmed n vehicle but it is not effective (not assigned).

ATTENTION : only the keys presented when performing this operation are to be under operation

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Cockpit central Unit is not coded. Once mounted on vehicle, in order to become under operation, the memorization of a code it is necessary.
In order to perform this procedure, it is obligatory to have at least one of the vehicle old keys, to know the reparation code and the injection computer must be correctly coded (please refer to the assignation table).

ATTENTION: if Cockpit Central Unit is memorizing a code, this one is assigned only to that vehicle. It is impossible the code erasing or memorizing another code.

IMPORTANT: only the keys presented when performing this procedure are becoming under operation, with the condition:
- they have been already coded on this vehicle.
- they are new (not coded).

REMARK: if only Cockpit Central Unit is to be replaced, it is not necessary to perform any intervention to the injection computer: this one will keep the same anti starting code.

PROGRAMMING PROCEDURE OF THE COCKPIT CENTRAL UNIT

By means of the CLIP tester:

Enter in dialogue with system **"Anti-starting".**

In menu **"Control module"**, **"Specific control"**, validate line **"SC027: Cockpit Central Unit programming"**

The tester is displaying **" Take off the key from anti-theft contact"**

The tester is displaying **"Introduce the after-sale code"**. With the contact off, insert the after-sale secret code (12 hexadecimal characters), the validate it.

If the code format is correct, the tester is displaying **"Insert an already coded key on the vehicle, set the contact on and then validate"** and the programming procedure is under way.

The tester is displaying **" UCH programmed. Start the keys programming procedure"** and the Cockpit Central Unit is coded. In this moment, it is necessary to enter in the key programming mode, in order assign the others keys (maximum four). More seconds may pass before this message is displayed.

ATTENTION: the maximum interval between each operation is of 5 minutes if not the procedure is canceled.

SPECIAL SITUATIONS

If the screen displays:

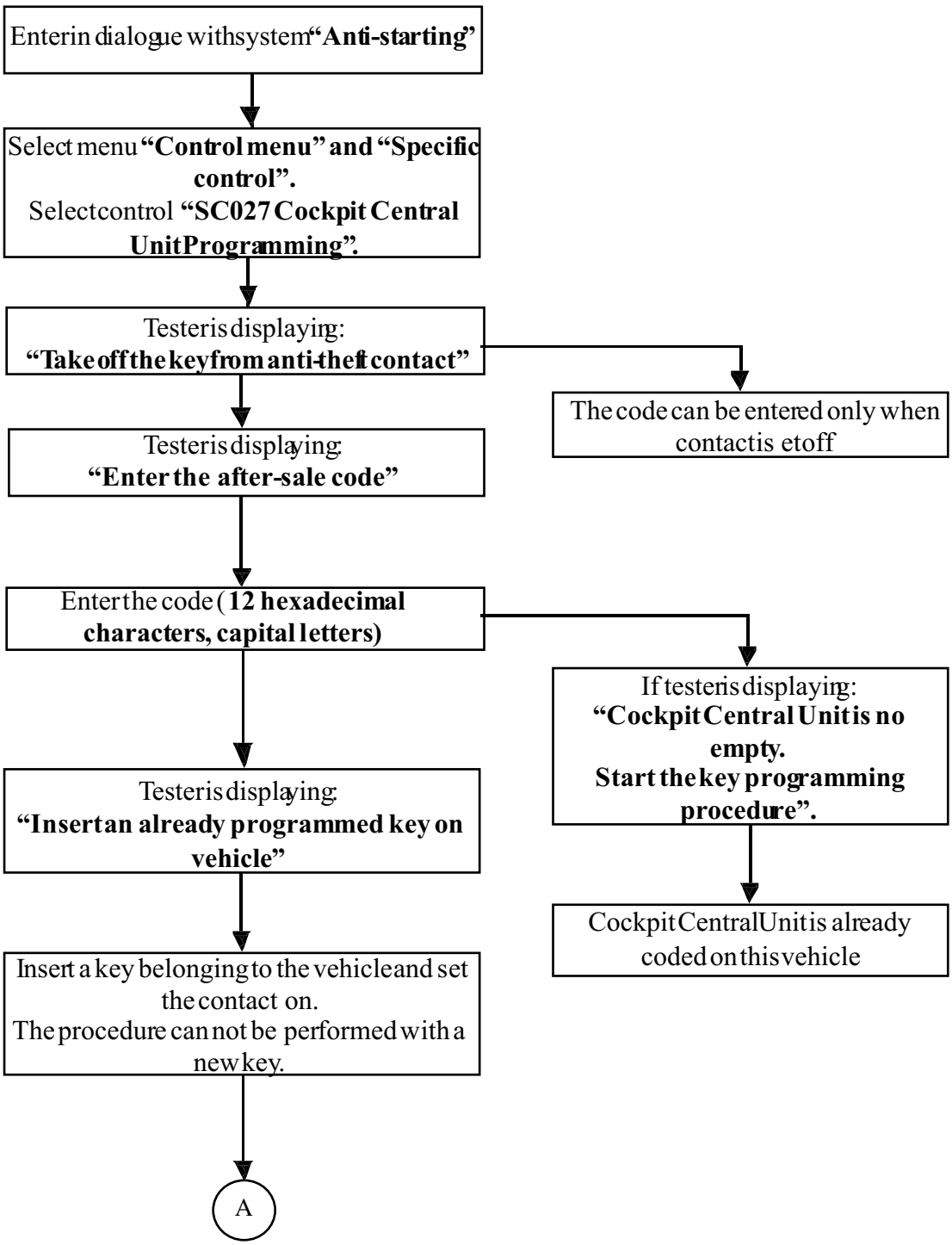
" Inserted after-sale code does not correspond to the presented key. Check if the code was correctly entered and if a vehicle key was presented": the code is not corresponding to the vehicle or a new key has been used.

"Cockpit Central Unit is not empty. Start the keys programming procedure". Cockpit Central Unit is already coded on this vehicle.

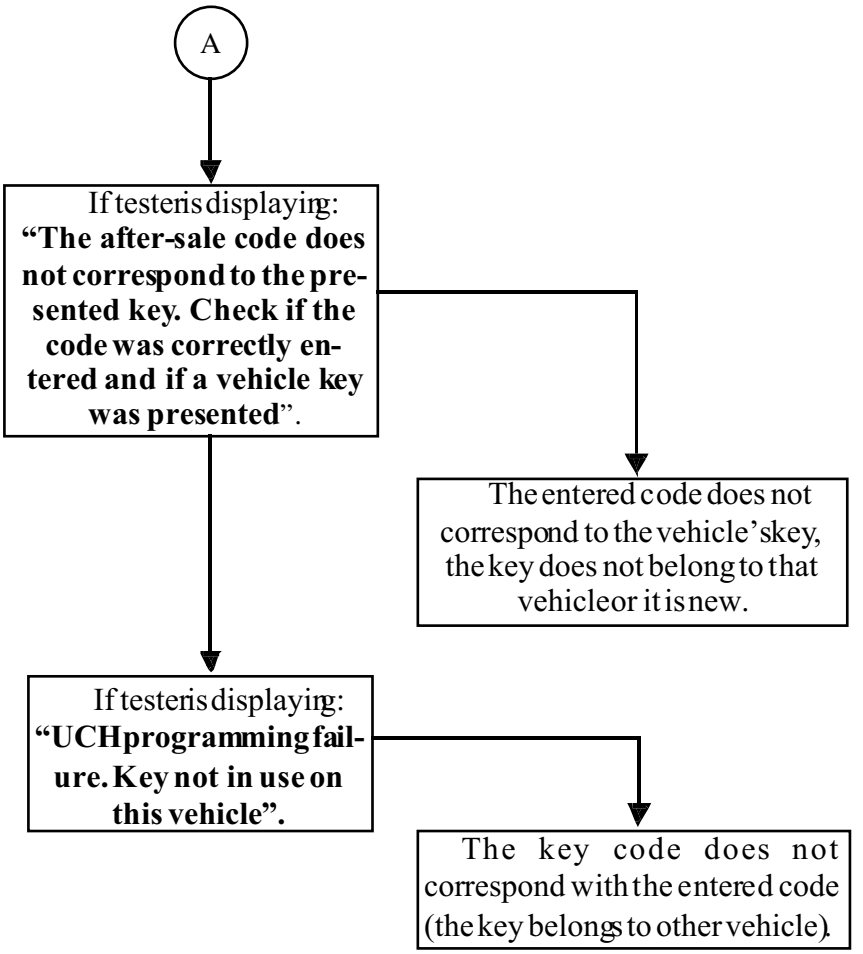
"Cockpit Central unit programming failure, key not possible to be used on this vehicle"; the key code does not correspond to the entered code (the key is belonging to a vehicle of another type).

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THE PROCEDURE OF COCKPIT CENTRAL UNIT PROGRAMMING



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A
If tester is displaying: **"The after-sale code does not correspond to the presented key. Check if the code was correctly entered and if a vehicle key was presented"**.
The entered code does not correspond to the vehicle's key, the key does not belong to that vehicle or it is new.
If tester is displaying: **"UCH programming failure. Key not in use on this vehicle".**
The key code does not correspond with the entered code (the key belongs to other vehicle).

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THE PROCEDURE OF KEYS ASSIGNATION

IMPORTANT : if not all keys are available it will be necessary to subsequently perform the assignation procedure with all the keys.

Enter in dialogue with system **"Anti-starting"**.

In menu **"Control menu"**, **"Specific control"**, validate line **"SC028: Key programming".**

Tester is displaying: **"Take off the key from anti-theft contact".**

Tester is displaying **"Enter the after-sale code"**.

With contact set off, enter the after-sale secret code (12 hexadecimal characters) and validate it.

Tester is displaying **"Attention. Not presented keys will be not active. Re-launch the procedure in order to re-assign them"**: the programming is under way.

Tester is displaying: **"Insert key in anti-theft contact and set the contact on, then validate"**: set the contact on using a vehicle key or a new key.

Tester is displaying: **"No of programmed keys 1" and " take off the key from anti-theft contact, then validate"**.

Tester is proposing: **"Do you wish to program a new key ?".**

In order to assign additional keys, set the contact on few seconds using the vehicle's others keys that must be assigned (maximum four), then validate.

Tester is displaying: **"2, 3, 4 programmed keys" and " take off the key from anti-theft contact".**

ATTENTION: these ones must be the vehicle's old keys or new not coded keys.

Tester is displaying: " Data entry in memory", Cockpit Central Unit is coded and the keys are assigned.

This message will be displayed for few seconds, then you may come out from the re-assignation procedure

ATTENTION: the maximum admissible interval between each operation is of 5 minutes otherwise the procedure is canceled.

Tester is displaying in this situation the message: **"Performing conditions not accomplished"**. This message is also displayed in case of dialogue loss with the Cockpit Central Unit or in case of battery supplying cutting off.

SPECIAL SITUATIONS

If tester is displaying:

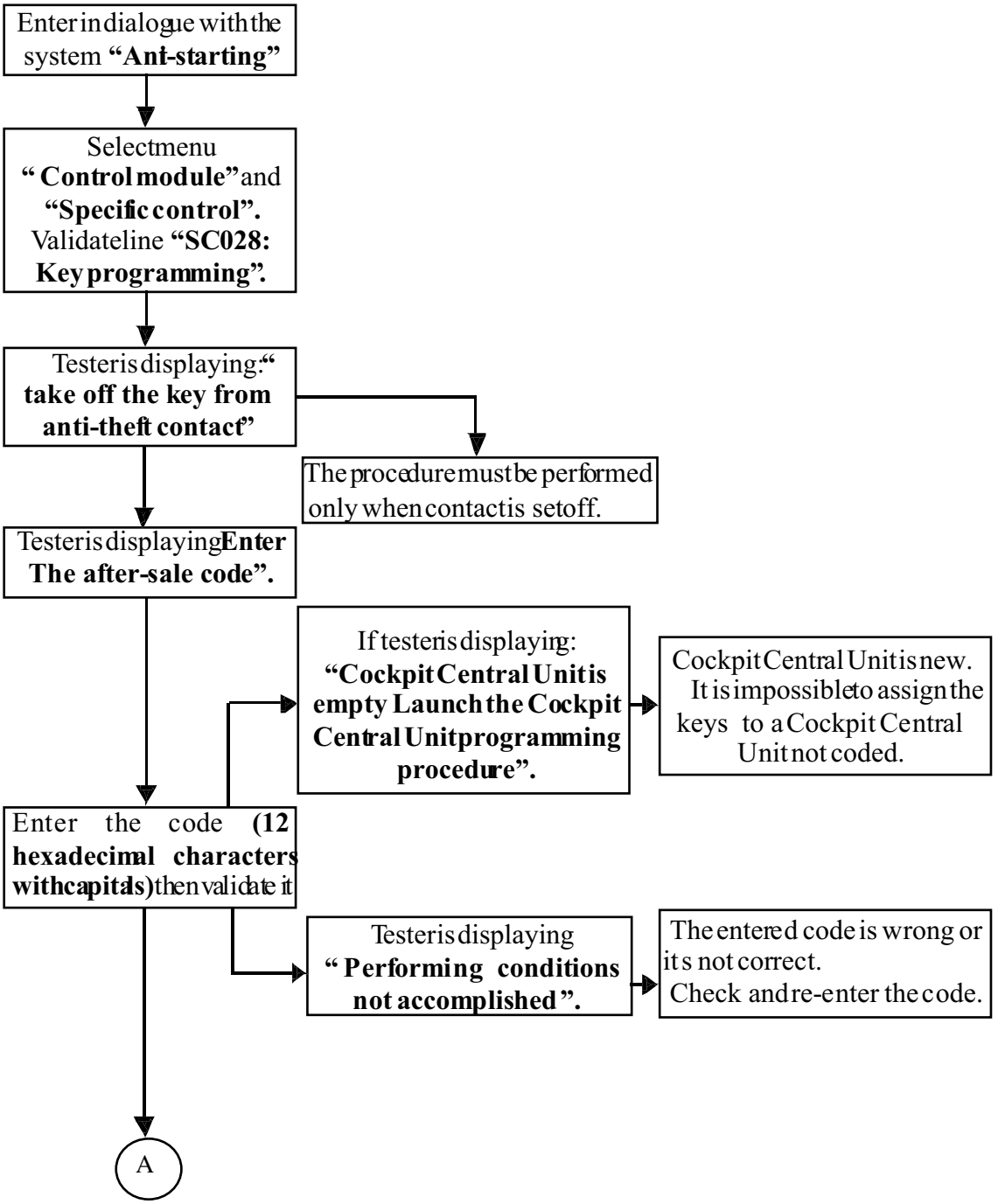
"Cockpit Central Unit is empty. Launch the Cockpit Central Unit programming procedure", then the Cockpit Central Unit is not used. It is impossible to assign keys to a not coded Cockpit Central Unit.

"Performing conditions not accomplished", the entered code is not correct; check and then start again the code entering procedure.

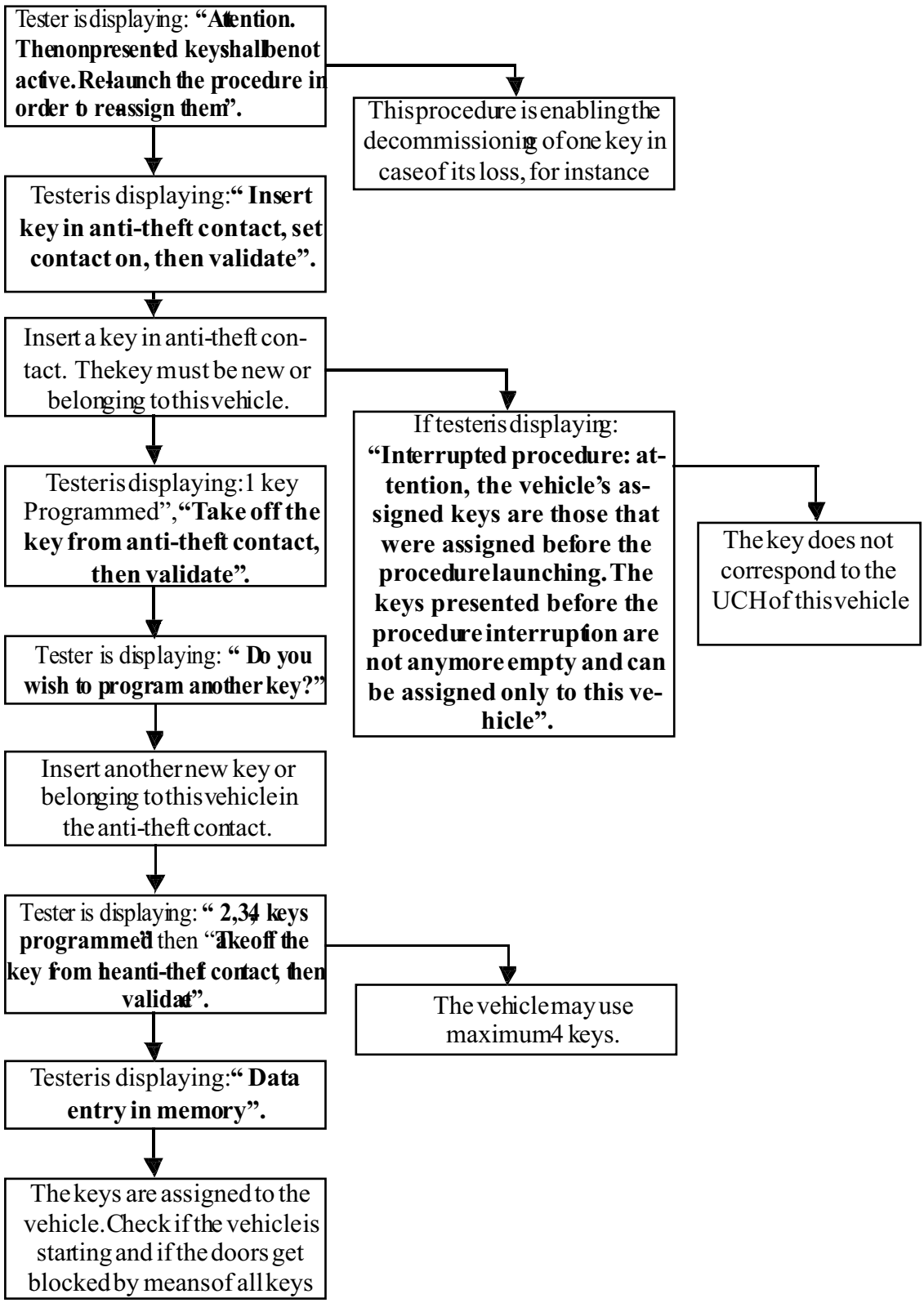
If the key does correspond to the Cockpit Central Unit of that vehicle, the tester is displaying **"Interrupted procedure: attention, the keys assigned to the vehicle are the ones that have been assigned before procedure starting. The presented keys before procedure interruption are not anymore empty and can be only assigned to this vehicle"** assigned.

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THE PROCEDURE OF KEYS' ASSIGNATION



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Tester is displaying: "Attention. The non presented keys shall be not active. Re-launch the procedure in order to reassign them".
This procedure is enabling the decommissioning of one key in case of its loss, for instance
Tester is displaying: "Insert key in anti-theft contact, set contact on, then validate".
Insert a key in anti-theft contact. The key must be new or belonging to this vehicle.
If tester is displaying: "Interrupted procedure: attention, the vehicle's assigned keys are those that were assigned before the procedure launching. The keys presented before the procedure interruption are not anymore empty and can be assigned only to this vehicle".
The key does not correspond to the UCH of this vehicle
Tester is displaying: 1 key Programmed", "Take off the key from anti-theft contact, then validate".
Tester is displaying: " Do you wish to program another key?"
Insert another new key or belonging to this vehicle in the anti-theft contact.
Tester is displaying: " 2, 3 or 4 keys programmed" then "Take off the key from the anti-theft contact, then validate".
The vehicle may use maximum 4 keys.
Tester is displaying: "Data entry in memory".
The keys are assigned to the vehicle. Check if the vehicle is starting and if the doors get blocked by means of all keys

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THE CODING OF THE INJECTION COMPUTER.

The injection computer is delivered not coded. Therefore, the anti-starting system code memorizing will be necessary, when its mounting, in order to authorize the vehicle starting.

It is sufficient to set the contact on for few seconds, without starting the engine. Set the contact off and the anti-starting function will be ensured after few seconds (anti-starting red LED is blinking)

ATTENTION:
By means of this anti-starting system, the vehicle is keeping its own anti-starting code on all its lifetime. Furthermore, this system does not have a breakdown code. Therefore, it is forbidden to perform tests with injection computers borrowed from warehouse that must be after that returned. The code memorized by the injection computer can not be anymore erased.

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DF055 PRESENT OR MEMORIZED	CODED LINE CIRCUIT

RECOMMENDATIONS	**Applying conditions of the diagnostic to the memorized failure:** - failure declared present when setting the contact on (+After contact)

Check the connection and condition of the connector with 40 pins EH1 of the Cockpit Central Unit. If necessary, repair the connector.
Check the continuity and insulation of the connection: Connector EIII with 40 pins Cockpit central Unit **pin B36** ⟶ injection computer (see the corresponding engine electric diagram) If necessary, fix it.

AFTER REPAIRING	Remedia□ice le la□e eventuale defec□iuni. [a]terge□i defectele memorate.

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DF069 PRESENT OR MEMORIZED	UCH CONNECTION → ANTI-STARTING BUSHING CC.O: short-circuit at mass CC.1: short-circuit at 12 V

RECOMMENDATIONS	**Applying conditions of the diagnostic to the memorized failure:** - failure declared present when setting the contact on (+After contact).

CC.0	Check the condition and connection f the anti-starting bushing If necessary, repair the connector.
	Check the connection and condition of the **connector with 40 pins** EH1 of the Cockpit Central Unit Repair the connector if necessary.
	Disconnect the bushing connector and check the correct supply of **+12V at pin 3** bushing connector Fix it if necessary.
	Check the continuity and insulation of the connection between: Cockpit fuse box F04 (**15A**) → **pin 3** bushing Fix it if necessary.

CC.1	Check the connection and condition of the bushing connector. Fix the connector condition if necessary.
	Check the connection and condition of connector 40 pins EH1 of Cockpit Central Unit. Fix the connector if necessary.
	Check **the continuity** of the connections between: **mass** → **pin 2** bushing Connector 40 pins EH1 of UCH **pin A16** → **pin 4** bushing Fix if necessary.

AFTER REPAIRING	Apply the recommendation Fix all others failures Erase the memorized failures.

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RECOMMENDATIONS	Do not perform this checking but only after a complete check-up by means of the diagnostic tester. The values showed in this conformity checking are mentioned only for your information. Execution condition: **stopped engine, contact set on.**

No.	Function	Parameter or state Checking or action	Visualization and remarks	Diagnostic
1	Supply	**ET154**: present **+12V After contact**	**YES**	**If problems occurring:** See the diagnostic of state **ET154**
2	Anti-starting	**PR065**: no of programmed keys	**2 keys** at new vehicle; up to **4 keys** programming after-sale	**Nothing to notice**
		ET002: received key code	State **YES** when contact set on	**If problems occurring:** See the diagnostic of the state **ET002**
		ET003: valid key code	State **YES** when contact set on	**If problems occurring:** See the diagnostic of the state **ET003**
		ET017: active anti-starting	**NO**	**If problems occurring:** See the diagnostic of the state **ET017**
		ET130: anti-starting LED	**OFF**	**If problems occurring:** See the diagnostic of the state **ET130**
3	Programming	**ET110**: empty Cockpit central Unit	**NO**	If state" Empty Cockpit central Unit" is **YES, see the programming procedure.**

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STATESTEST

ET154: Presence + 12V after contact
ET002: Received key code
ET003: Valid key code.
ET017: active anti-starting.

It is possible that when checking some states, a failure to be identified, due to different information supplied.

If	ET154 active state ET002 state at YES ET003 state at YES ET017 state at NO	- check the injection by means of the tester and check if the injection computer is not blocked
If	ET154 active state ET002 state at YES ET003 state at NO ET017 state at YES	- coded key does not belong to the vehicle - if key belongs to the vehicle, it is necessary to perform a re-assignation of the keys. - if key is not working anyway, replace it.
If	ET154 active stat ETO02 state at NO ET003 state at NO ET017 state at YES	- key is out of work or does not belong to the vehicle range.

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ET017	ACTIVEANTI-STARTING

RECOMMENDATIONS	The activeanti-starting statemust become**inactive** at + After contact. The anti-starting must be activewhenthe key is not incontact

ET017 ACTIVE although there is a key in the ignition contact and + After contact

Check if there is not a failure before handling this state.
Check that state **ET154 "+12 Volts after contact"** is **ACTIVE** with the contact on. Handle state **ET154** if it is **"INACTIVE "** with the contact on.
Check state **ET002 "received keycode"** and state **ET003 "valid keycode"** with the contact on. If states **ET002** and **ET 003** are **"YES"**, perform the injection computer diagnostic If state **ET002** is **"NO"**, handle with priority this state. If state **ET002** is **"YES"** and state **ET003** is **"NO"**, handle with priority **ET003.**

AFTER REPAIRING	Perform again a system diagnostic Fix all others failures Erase the memorized failures.

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ET154	PRESENCE + 12 V AFTER CONTACT

RECOMMENDATIONS	Nothing to notice

ET154 INACTIVE with contact on.

Perform the checking of **F13 fuse 925A**) n the cockpit fuse box.
Check by means of a multiple meter presence of **+12 V** with the contact on, at the level of fuse socket.
Fix if necessary.

Check by means of a multiple meter presence of **+12V** with contact on at **pin A3** of the P1 connector of the cockpit Central Unit
If voltage is present, replace the Cockpit Central Unit

If there is no voltage, ensure the continuity and insulation at mass between **pin a3 of the P1 connector of UCH and fuse F13 (25A) from cockpit fuse box.**
Fix if necessary.

ET154 ACTIVE with contact off.

Check by means of a multiple meter absence of **+12 V** with contact off at the level of **F 13** fuse socket from cockpit fuse box.
Fix if necessary.

If there is no voltage, replace the Cockpit Central Unit

AFTER REPAIRING	Perform again a system diagnostic Fix all others failures Erase the memorized failures.

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ET002	RECEIVED KEY CODE

RECOMMENDATIONS	Check that no failure is present or memorized. The state will be declared "YES" when contact set on (+After contact) with a valid key. If state remains at "NO", before any other intervention, try with another key belonging to the vehicle

ET002 is NO : when the contact is set on with a key belonging to the vehicle.

Check that state **ET154** "presence **+12 volts after contact**", is active with the contact on.
Remove any metallic object being on the key-ring and try again.
Set the contact on using some other vehicle's key, changing the key metallic insert: If state "**RECEIVED KEY CODE**" is passing to "**YES**", replace the vehicle key. If state "**RECEIVED KEY CODE**" remains at "**NO**", check the connection between the decoding bushing and the Cockpit Central Unit
Replace the decoding bushing

AFTER REPAIRING	Perform again a system diagnostic Fix all others failures Erase the memorized failures.

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ET003	VALID KEY CODE

RECOMMENDATIONS	The state will be declared "YES" when contact set on (+After contact) with a key belonging to the vehicle. If state remains at "NO", before any other intervention, try with another key belonging to the vehicle

ET003 is NO although the contact is set on with a key belonging to the vehicle and although the key code is received.

Check that state **ET154** "presence **+12 volts after contact**", is active with the contact on.

Perform a re-assignation of the keys, using the after-sale code.
If the problem is persisting, replace the vehicle damaged key.

AFTER REPAIRING	Perform again a system diagnostic Fix all others failures Erase the memorized failures.

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ET167	ANTI – STARTING INDICATOR

RECOMMENDATIONS	The state<<activeanti-starting>>mustpassat**NO** aftersetting the contact on. The state<< activeanti-starting>> mustbecome**"YES"** after 10 secondsfrom contactsetting off.

Check the connection and condition of the instrument panel connector. Fix it if necessary.
Check the connection and condition of the **connectorwith40 pinsEH1** of Cockpit Central Unit. Fix it if necessary.
Check the continuity and insulation of the connection: **Pin A32** connector EH1 with 40 pins of UCH ⟶ **pin6** black connector instrument panel. Fix, if necessary.

AFTER REPAIRING	Perform again a systemdiagnostic Fix all others failures Erase the memorizedfailures.

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RECOMMENDATIONS	Do not consult these information but after a complete checking by means of the CLIP tester.

THERE IS NO COMMUNICATION WITH THE COMPUTER _____ALP1

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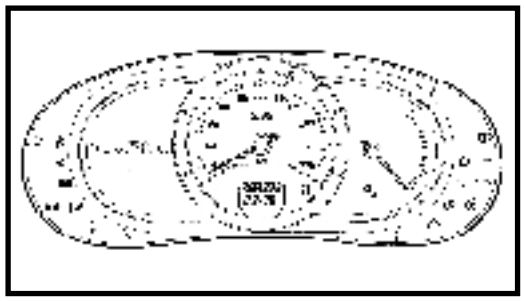
ALP1	There is no communication with the computer

RECOMMENDATIONS	Nothing to notice

Check the communication of CLIP tester with a computer from another vehicle.
Check: - connection between CLIP tester and the diagnostic socket (check the cable condition). Cockpit and engine compartment fuses.
Check presence +12 **volts before contact at pin 16, + 12 volts after contact** at **pin 1** and **mass** at **pins 4 and 5** of the diagnostic socket Fix it if necessary.
Connect the multi-socket and check the insulation, continuity and absence of parasite resistance at connections: **Pin A3** of UCH connector P1 with 15 pins → fuse box **Pin 22 o**f UCH connector EH1 with 40 pins → + after contact **Pin A1** of UCH connector P1 with 15 pins → mass **Pin 34** of UCH connector EH1 with 40 pins → pin 7 diagnostic socket (line K). Fix it if necessary.

AFTER REPAIRING	Check the system operation

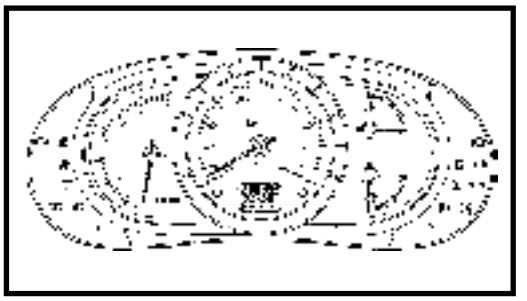
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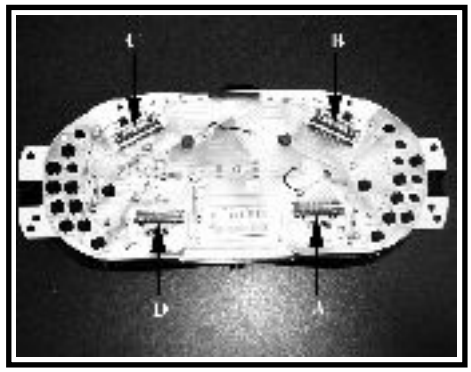
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INSTRUMENT PANEL

Instrument panel with RPM meter



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Connector A (white)

Pin	Denomination
1.	Left turning indicator
2.	Meeting lights indicator
3.	Road lights indicator
4.	Rear windscreen defrosting indicator
5.	Free
6.	Free
7.	Free
8.	+ Parking lights
9.	Water temperature indicator
10.	Free

Connector B (brown)

Pin	Denomination
1.	Vehicle speed signal
2.	Engine RPM signal
3.	Free
4.	Free
5.	+ After contact
6.	Driver safety belt indicator
7.	OBD indicator
8.	Free
9.	Free
10.	+ After contact

Connector C (black)

Pin	Denomination
1.	Free
2.	Free
3.	Free
4.	Handbrake indicator / ICP braking system
5.	Free
6.	Anti-starting indicator
7.	– Fuel level transmitter
8.	Fuel level signal
9.	Free
10.	+ Battery

Connector D (gray)

Pin	Denomination
1.	Mass
2.	Free
3.	Free
4.	Free
5.	Water temperature alert
6.	Oil pressure alert
7.	Battery charging indicator
8.	Fog lamp indicator
9.	Fog projectors indicator
10.	Right turning indicator

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DISMOUNTING

Disconnect the battery (-) terminal.

Dismount the 3 attachment screws of the steering wheel half-casing, by means of a TORX 20 screwdriver.

Detach from clips the steering wheel half-casings and remove them.

By means of a TORX 20 wrench ("L" shaped), dismount the side attachments screws of the upper dashboard.

By means of a TORX 20 screwdriver dismount the two front attachment screws of the upper dashboard.

Detach from the three clips of the windscreen lower crossbeam, the upper dashboard.

Dismount the radio-tape player from the upper dashboard (if the vehicle is equipped with radio): press its side clips and extract it from the upper dashboard. Disconnect the antenna's connector and the radio-tape two connectors.

Disconnect the central locking switch connector (if the vehicle is provided with central locking).

Remove the upper dashboard towards vehicle right part.

By means of a TORX 20 screwdriver, dismount the attachment screws of the instrument panel on the lower dashboard.

Disconnect the four connectors of the instrument panel. Mark the identification mounting position of the connectors.

REMOUNTING

Perform the dismounting operations in the reverse order.

Perform functional tests of the instrument panel.

OBSERVATION: After battery reconnecting, re-program the clock and for the vehicles equipped with programmable radio, reinsert the radio code.

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Speed transducer

The instrument panel (speedometer, mileage) and the speed limit alert * are receiving the information regarding vehicle speed from an electronic transducer.

This information is also used by the UCE injection.



Connector

Pin	Denomination
A	Supply after contact (+DC)
B1	Vehicle speed signal
B2	Mass

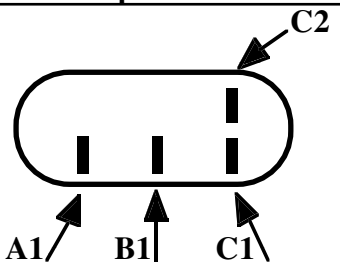
* For vehicles with speed limit alert.

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SPECIAL TOOL	
MOT 1397	Dismounting wrench of the fuel level transmitter assembly

The fuel level transmitter assembly is mounted on the fuel tank. Its dismounting is not implying dismounting of the fuel tank.

IMPORTANT:
During all interventions at the fuel level transmitter, observe the following precautions:
- do not smoke;
- do not come closer with open fire or with a flammable object in the working area.



Connector

Pin	Denomination
A1	- Fuel level transmitter
B1	Fuel level signal
C1	Supply + fuel pump
C2	Fuel pump mass

Electric tests-fuel level transmitter

POSITION OF THE FUEL LEVEL INDICATOR ON INSTRUMENT PANEL	Measured resistance between pins A1 and B1 (Ù)
4/4	0-10
3/4	Approximate 55
1	110 ± 10
2	Approximate 190
0	280 ± 20
Minim level alert	260 ± 10

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OPERATION

The water temperature sensor (1) is sending to the injection computer the water temperature information, and another information is sent to the indicator device from the instrument panel, that will show the water temperature.

Electric tests – water temperature tests

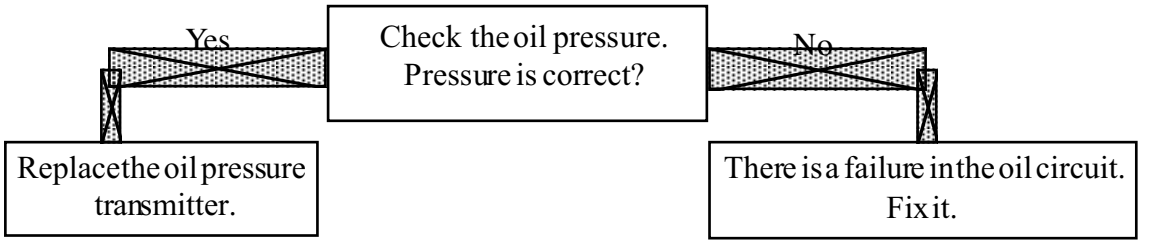
POSITION OF THE WATER TEMPERATURE INDICATOR	Measured resistance between pin A and vehicle mass (Ù)
60°C	483±30
95 °C	150±15
110 °C	97±15

REMARK:
The a.m. values have been registered at water temperature increasing.

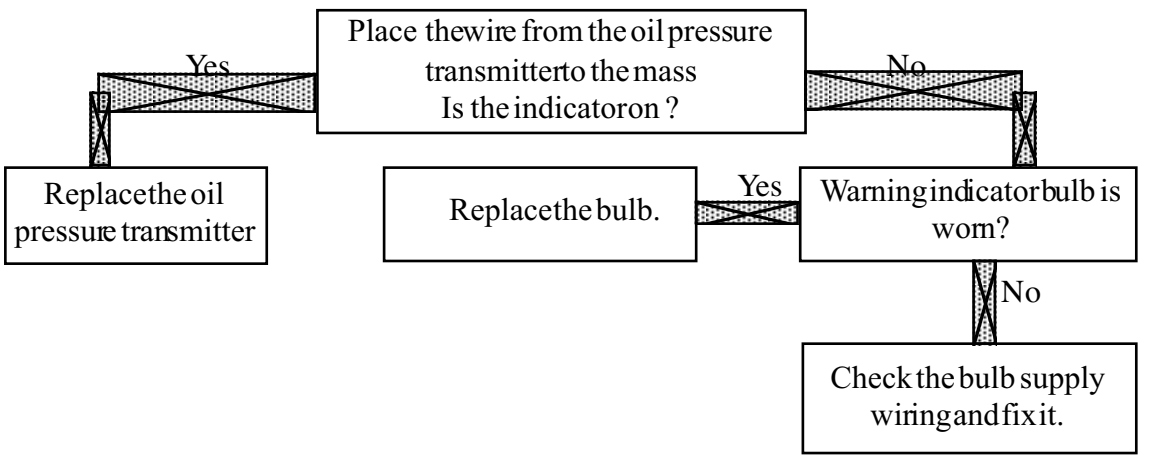


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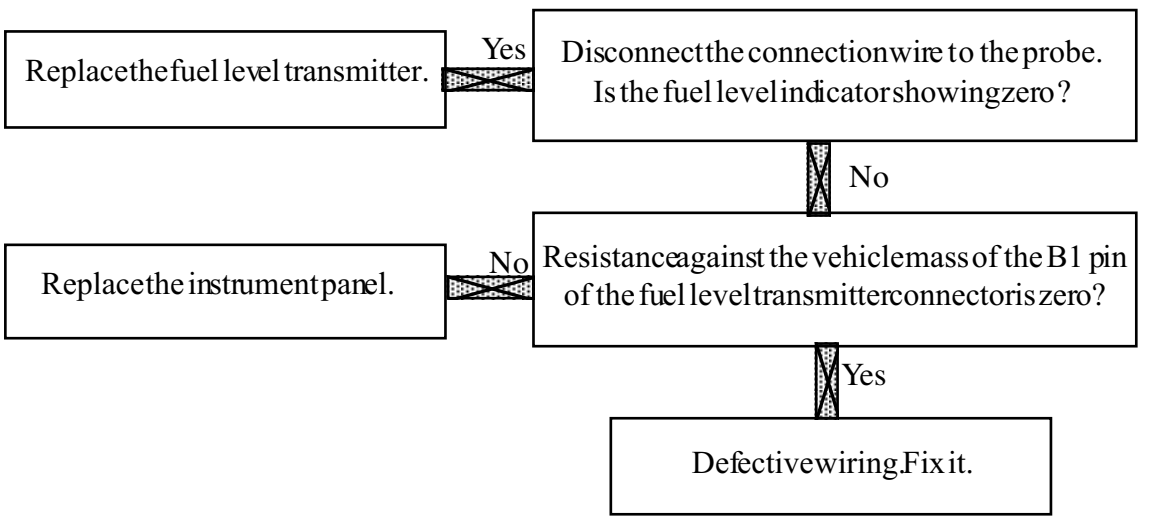
OIL PRESSURE INDICATOR STILL ON AFTER ENGINE STARTING



OIL PRESSURE INDICATOR IS NOT ON WHEN CONTACT SET ON

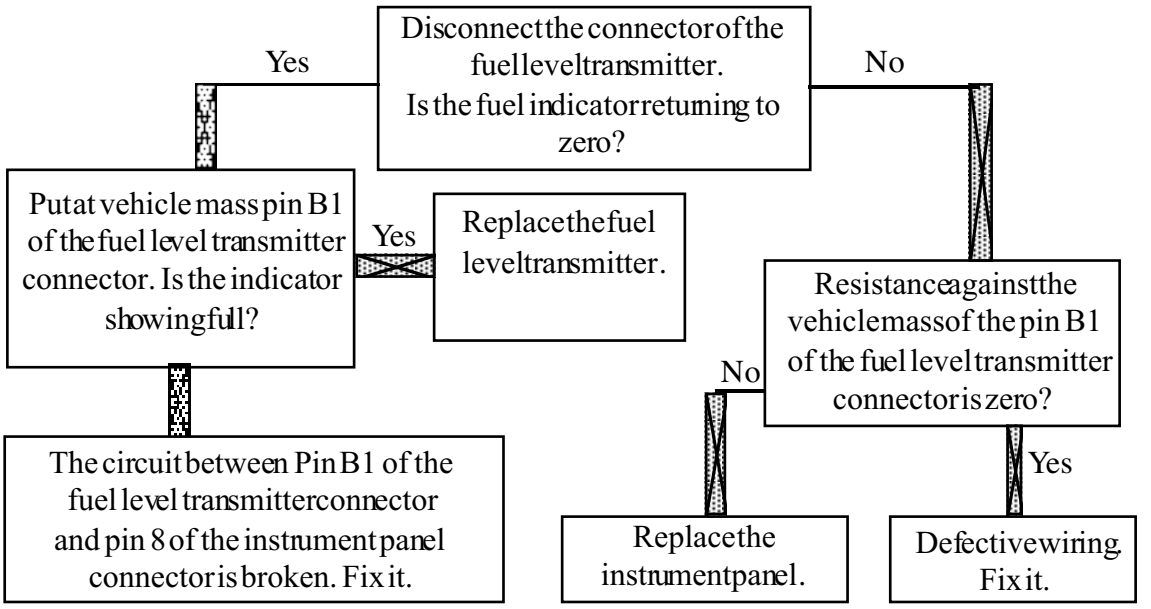


FUEL LEVEL INDICATOR SHOWING ALWAYS FULL



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FUEL LEVEL INDICATOR NOT SHOWING CORRECTLY



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ANTI-THEFT MECHANISM (IGNITION-STARTING SWITCH)

The anti theft mechanism is placed on the right part of the steering column and has the purpose to starter control, electric system connecting and disconnecting, being provided in the same time also with a steering locking device, with anti theft lock.

DISMOUNTING

Disconnect the battery (-) terminal

Dismount the 3 **TORX20** attachment screws of the steering wheel half-casings.

Detach from clips the steering wheel casings and remove them.

Disconnect the anti-starting bushing connector

Remove the anti-starting bushing (**1**) located around the anti-theft mechanism.

Disconnect the connectors (**2**) of the anti-theft mechanism.

Dismount the attachment screw (**3**) of the anti-theft mechanism by means of a screwdriver.

Bring the key on the position and push the mobile retaining pin (**4**) and releasing of the anti-theft mechanism.

Extract the mechanism towards backwards.

REMOUNTING

Position the contact key in the bellow position and push the mobile pin (**4**).

Mount the mechanism in its place, attaching it by means of the mobile pin and of the screw (**3**).

Connect (**2**) the anti-theft mechanism connectors.

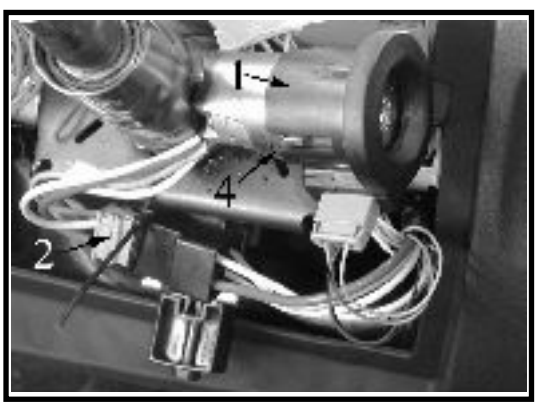
Position and mount the anti-starting bushing (**1**) around the anti-theft mechanism.

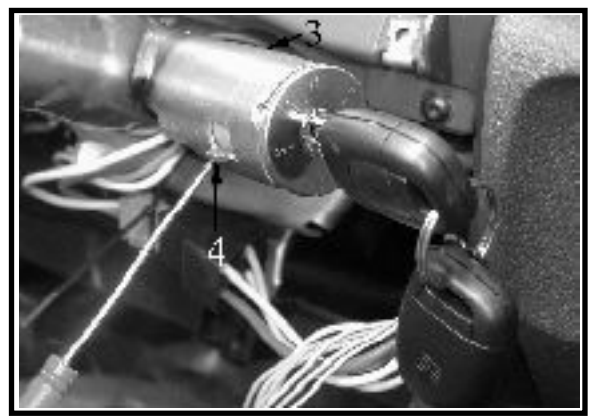
Connect the anti starting bushing connector.

Mount the steering wheel half-casings.

Connect the battery (-) terminal.

Check the operation of the anti-theft mechanism.





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Under steering wheel control

The under steering wheel control assembly and the rotating contact included in this one, can not be separated.

DISMOUNTING

Disconnect the battery (-) terminal.

Place the steering at the middle point (straight line driving position of the vehicle).

Detach from clips the steering wheel central ornament (cover).

Dismount the steering wheel attachment screw.

Carefully dismount the steering wheel in order not to damage “the tape connector” of the rotating contact; ensure that wheels are in the straight line driving position of the vehicle.

Dismount the **TORX 20** three attachment screws of the steering wheel half-casing.

Detach from clips the steering wheel half-casings and remove them.

Disconnect the windscreen wiper switch connector and the connector of the turning and lighting control switch.

Loosen the screw (**1**), unblocking the under steering wheel control assembly from the attachment cone of the steering column.

Extract the under steering wheel control assembly from the attachment cone of the steering column.

REMOUNTING

Ensure that wheels are in the straight line driving position of the vehicle.

Position the under steering wheel control assembly so that after mounting the two steering wheel half-casings, the assembly handles are lined up with the instrument panel and the dashboard.

Reconnect the windscreen wiper connector and the connector of the turning and lighting control switch.

Attach in clips the steering wheel half-casings. Mount their attachment screws.

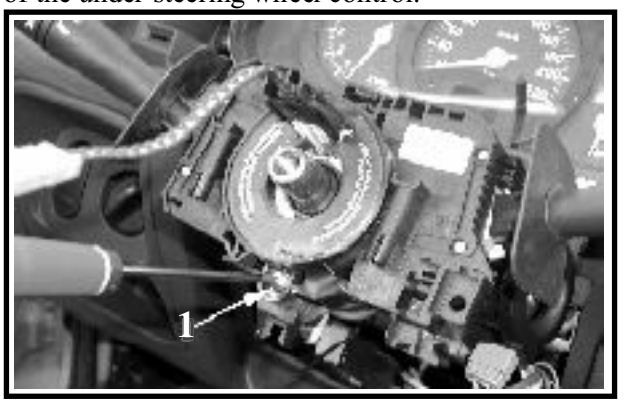
Tighten the screw (**1**) in order to block the under steering wheel control assembly on the steering column. This operation is facilitated by a cutout in the lower half-casing, enabling access to the screw (**1**).

Carefully mount the steering wheel in order not to damage “the tape conector” of the rotating contact; the steering wheel has an area without grooves on the steering column. Steering wheel must easy enter in grooves.

Replace the steering wheel attachment screw (**TORX 50**) after each dismounting (pre-glued screw) and tighten it (required tightening moment **4.4 daNm**). Attach in clips the steering wheel central cover.

Reconnect the battery (-) terminal.

Check the operation of the under steering wheel control.



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Under steering wheel control

The under steering control assembly and the rotating contact included in this one are not to be separated. The rotating contact is ensuring the electric connection between the steering column and the steering wheel. This contact is connected with the from wiring by means of wires stacked as tape-shaped having the necessary length provided to ensure 5 steering wheel rotations (limited by the wheels camber plus one more for safety).

DISMOUNTING

ATTENTION !

It is forbidden the handling of the pyrotechnic system (airbag) near heating sources or open fire, because there is a risk of undesirable starting of the system.

IMPORTANT !

Anytime when dismounting the steering wheel, it is necessary to dismount the airbag connector (1). The airbag is provided with a connector who is short-circuited after disconnecting the wiring connector, avoiding in this way all undesirable starting.

Block the UCE airbag by means of the CLIP tester (see chapter **88 "UCE airbag blocking"**). The airbag indicator from the instrument panel is on.

Disconnect the battery (-) terminal.

Set the steering on the middle point (straight on driving position of the vehicle).

Dismount the two attachment screws TORX 20 of the airbag to the steering wheel.

Dismount the airbag connector (**1**).

Dismount the steering wheel attachment screw.

Carefully dismount the steering wheel for not damaging the "tape" connector of the rotating contact; ensure that wheels are in straight-on vehicle driving position.

Dismount the three attachment screws TORX 20 of the steering wheel half-cases.

Detach from clips the steering wheel half-cases and remove them.

Disconnect the windscreen wiper connector, the lights and turning control connector and the rotating contact connector.

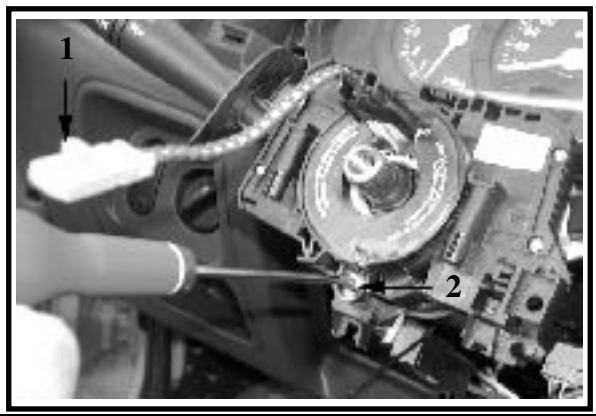
Loosen the screw (**2**) unblocking in this way the under steering wheel control assembly from the attachment cone of the steering column.

Extract the under steering wheel contrd assembly off the attachment cone of the steering column.

ATTENTION !

It is forbidden the changing of the rotating contact position after dismounting the under steering wheel control assembly because there is the risk of its damaging.

The under steering wheel control – new item number- is provided with a pre-cut self-adhesive tape, stacked on the rotating contact and on the under steering wheel control body that is not allowing the undesirable rotation of the rotating contact until its mounting on the attachment cone of the steering column.



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REMOUNTING

Ensure that steering is on middle point (wheels are in the straight-on driving position of the vehicle).

Position the under-steering wheel control assembly so that after remounting the two steering wheel half-cases, the assembly handles are lined up with the instrument panel and the dashboard.

Reconnect the windscreen wiper connector, the lights and turning connector and the rotating contact connector.

Attach in clips the steering wheel half-cases

Tighten the screw (**2**) so that is blocking the under-steering wheel control on the steering column. This operation is facilitated by a cutting-out in the lower half-case allowing the access to the screw (**2**).

Carefully mount the steering wheel in order not to damage the "tape" connector of the rotating contact, the steering wheel is having an area with no grooves, that must be corresponding to the no-grooves area from the steering column. The steering wheel must easy enter in the grooves.

Replace the steering wheel attachment screw (**TORX50**) after each dismounting and tighten it to the required moment (**4.4 daNm**).

Reconnect the airbag connector (10.

Mount the two attachment screws **TORX 20** of the airbag (required tightening moment is 0.65 daNm)

Reconnect the battery (-) terminal.

Check the operation of the under steering weel control.

IMPORTANT !

Before reconnecting the driver's airbag connector, it is necessary to apply a checking procedure of the system:

- check if the airbag indicator from the instrument panel is on, when the contact is set on;

- connect the inert igniter to the airbag connector (to the wiring) and check if the airbag indicator is off;

- set the contact off, connect the airbag connector instead of the inert igniter and attach the airbag on the steering wheel (required tightening moment is 0.65 daNm).

ATTENTION !

Any doubts regarding a good centering of the rotating contact involves the applying of its centering method: carefully rotate clockwise the upper part of the rotating contact 2.5 complete rotations (or until it gets blocked), then rotate anti-clockwise 2.5 complete rotations.

In case of a steering dismounting operation, of the engine or of the transmission elements implying the steering rack or steering column uncoupling, the steering wheel must be immobilized.

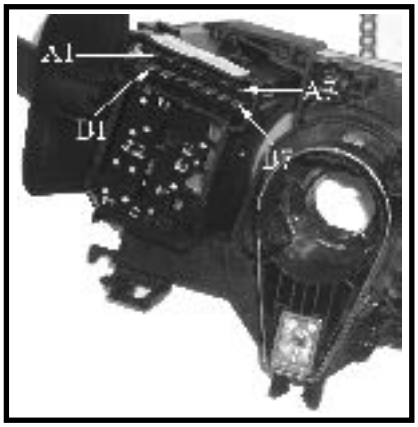
After everything has been remounted, perform an airbag system checking by means of the CLIP tester. If everything is correct, unblock the UCE airbag and check if the airbag indicator from the instrument panel is on for 3 seconds from setting the contact on, then it is off and is remaining off. If the airbag indicator is not operating as a.m., see chapter "Diagnostic" and check the system by means of the "CLIP" tester.

ATTENTION !

All non-observing of these prescriptions may cause an abnormal operation of the system, even an undesirable starting of it.

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WINDSCREEN WIPER SWITCH CONNECTOR



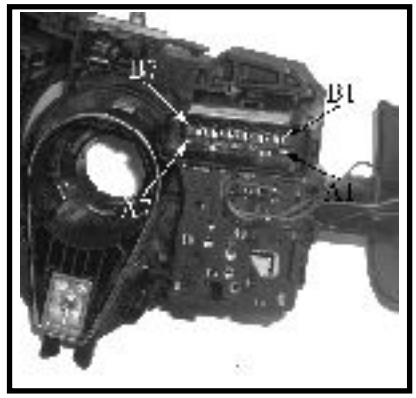
Pin	Denomination
A1	Windscreen wiper
A2	High speed control
A3	Low speed control
A4	Windscreen washer pump control
A5	Free
A6	Timer low speed control
A7	Supply + after contact
B1	Free
B2	Free
B3	Free
B4	Supply + after contact
B5	Free
B6	Free
B7	Free

REMARK :

The correct operation of the windscreen wiper switch may be checked using an ohmmeter.

Control	Pins (closed circuit)
Windscreen washer pump	A4/B4
Low speed windscreen wiper	A3/A7
High speed windscreen wiper	A2/A7
Timer windscreen wiper	A1/A7
Timer windscreen wiper	A3/A6

TURNING AND LIGHTING CONTROL CONNECTOR



Pin	Denomination
A1	Front fog projectors
A2	Free
A3	Rear fog lamp
A4	Acoustic warning
A5	Right turning
A6	Signaling relay control
A7	Left turning
B1	Parking lights
B2	Supply +
B3	Supply +
B4	Free
B5	Meeting lights
B6	Supply +
B7	Road lights

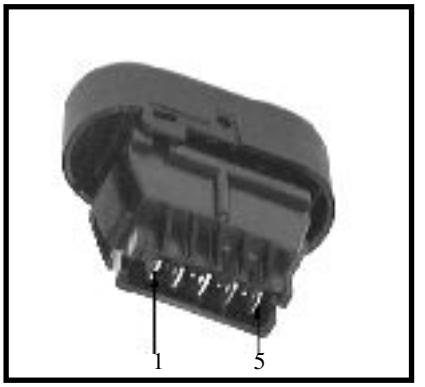
REMARK :

The correct operation of the turning and lighting control switch may be checked using a ohmmeter.

Control	Pins (closed circuit)
Left turning	A6/A7
Right turning	A5/A6
Parking light	B1/B2
Meeting lights	B3/B5
Road lights	B6/B7
Front fog projectors	A1/B2
Rear fog lamps	A3/B2
Acoustic	A4/B6

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Rear windows defrosting switch



Connector

Pin	Denomination
1	Rear window defrosting indicator
2	Defrosting control
3	Supply + after contact
4	Mass
5	Supply + parking

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Central locking switch



Connector

Pin	Denomination
1	Doors blocking control
2	Supply + parking
3	Mass
4	Mass
5	Doors unlocking control

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Passenger electric window switch



Connector

Pin	Denomination
1	Passenger window lowering
2	Mass
3	Supply + after contact
4	Supply + parking
5	Passenger window lifting

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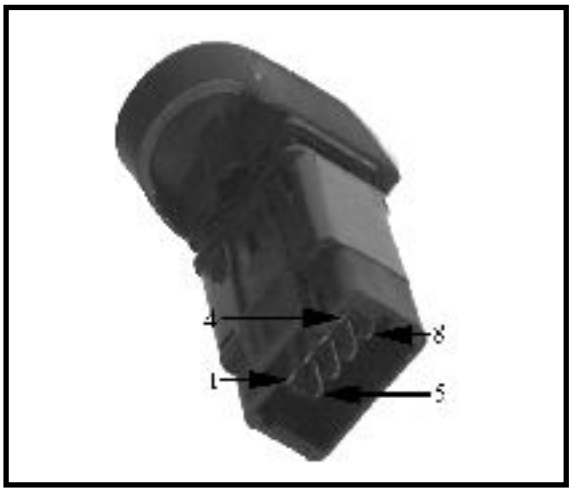
Driver electric window switch



Connector

Pin	Denomination
1	Driver window lowering
2	Mass
3	Supply + after contact
4	Supply + parking
5	Driver window lifting

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Connector

Pin	Denomination
1	Supply + parking
2	Control + signaling relay
3	Left turning lights control
4	Right turning lights control
5	Mass
6	+ Battery
7	+ Accessories
8	Control + signaling

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Electric lighter

DISMOUNTING

Disconnect the battery (-) terminal.

Dismount the upper part dashboard.

Disconnect connectors (**1**), (**2**) and (**3**). Mark identification of their mounting position.



Holding with one hand the fix part (**4**) dismount the lighter attachment clamp (**5**) on the lower part dashboard.

Extract the lighter fix body (part).

REMOUNTING

Position the lighter fix body in the dashboard lower part. Holding with one hand the fix body, mount the lighter attachment clamp. The required tightening moment is **1.5 Nm** applied to the fix body (**4**).

Connect the lighter connectors, observing their mounting position existent prior to dismounting.

Mount the upper part dashboard.

Reconnect the battery (-) terminal.

Check the operation of the electric lighter.

REMARK:

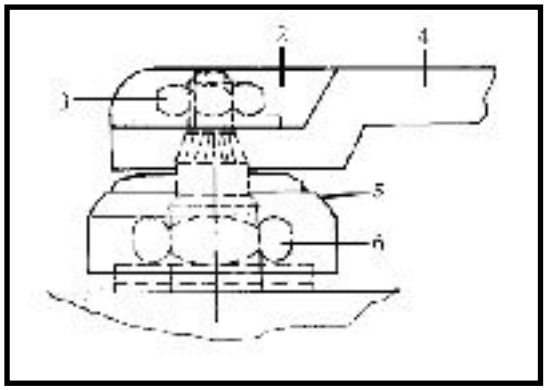
In order to replace the bulb, dismount the lighter, dismount the bulb holder (6) from the clamp (5) and replace the bulb.

Connectors

Connector	Denomination
1	Mass
2	Supply + after contact
3	Supply + parking

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The drive mechanism is mounted in the climate control box.



DISMOUNTING

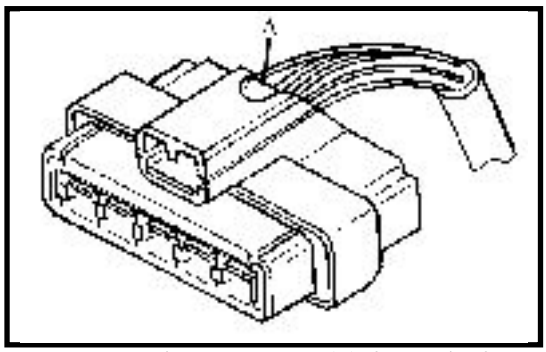
Ensure that assembly is stopped in the position " stopped at fix point".

Disconnect the battery (-) terminal.

Dismount the climate control gasket.

Dismount the climate control protector

Dismount the wiring connector (**1**) from the windscreen wiper electric motor (push on the connector A point and detach from clips).



Remove the protectors (**2**) from shafts.

Dismount the attachment nuts (**3**) of the windscreen wiper blade-arm assemblies

Dismount the windscreen wiper blade-arm assemblies (**4**). Mark the identification of their mounting position and of the two windscreen wiper blade-arm assemblies (left-right).

Remove the covers (**5**).

Dismount the shafts attachment nuts (**6**) on the windscreen lower frame; recover the washers and gaskets.



Detach from clips the washing hose.

Dismount the mechanism attachment screw (**7**) on the windscreen lower crossbeam.

Extract the mechanism from the climate control box, by rotating it.

REMOUNTING

Perform the dismounting operations in the reverse order.

REMARK:

When mounting the drive mechanism, the wiper electric motor must be in the position "stopped at fix point".

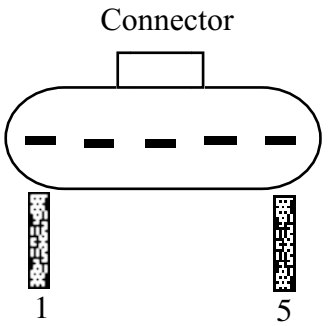
The required tightening moment of the mechanism attachment screw (**7**) on the windscreen lower crossbeam: **6-8 Nm.**

The required tightening moment of the shafts attachment nuts (**6**) on the windscreen lower crossbeam: **8± 15 % Nm.**

The required tightening moment of the attachment nuts (**3**) of the windscreen wiper blades and arms : **12 ± 15% Nm**.

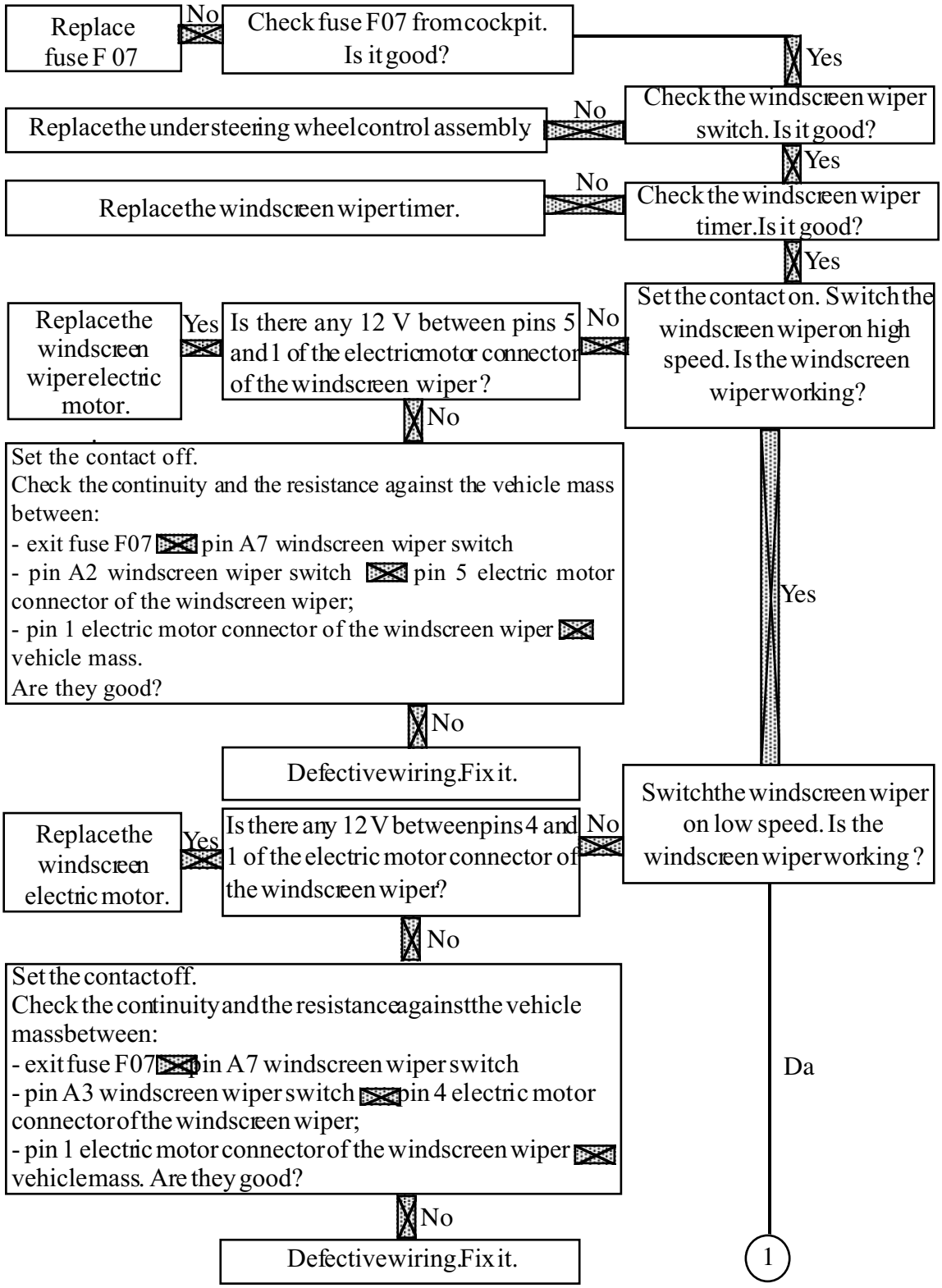
The required tightening moment of the attachment screw (**7**) of the windscreen washing assembly : **2 Nm.**

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Pin	Denomination
1	Mass
2	Stopping at fix point
3	+ Battery
4	Low speed control
5	High speed control

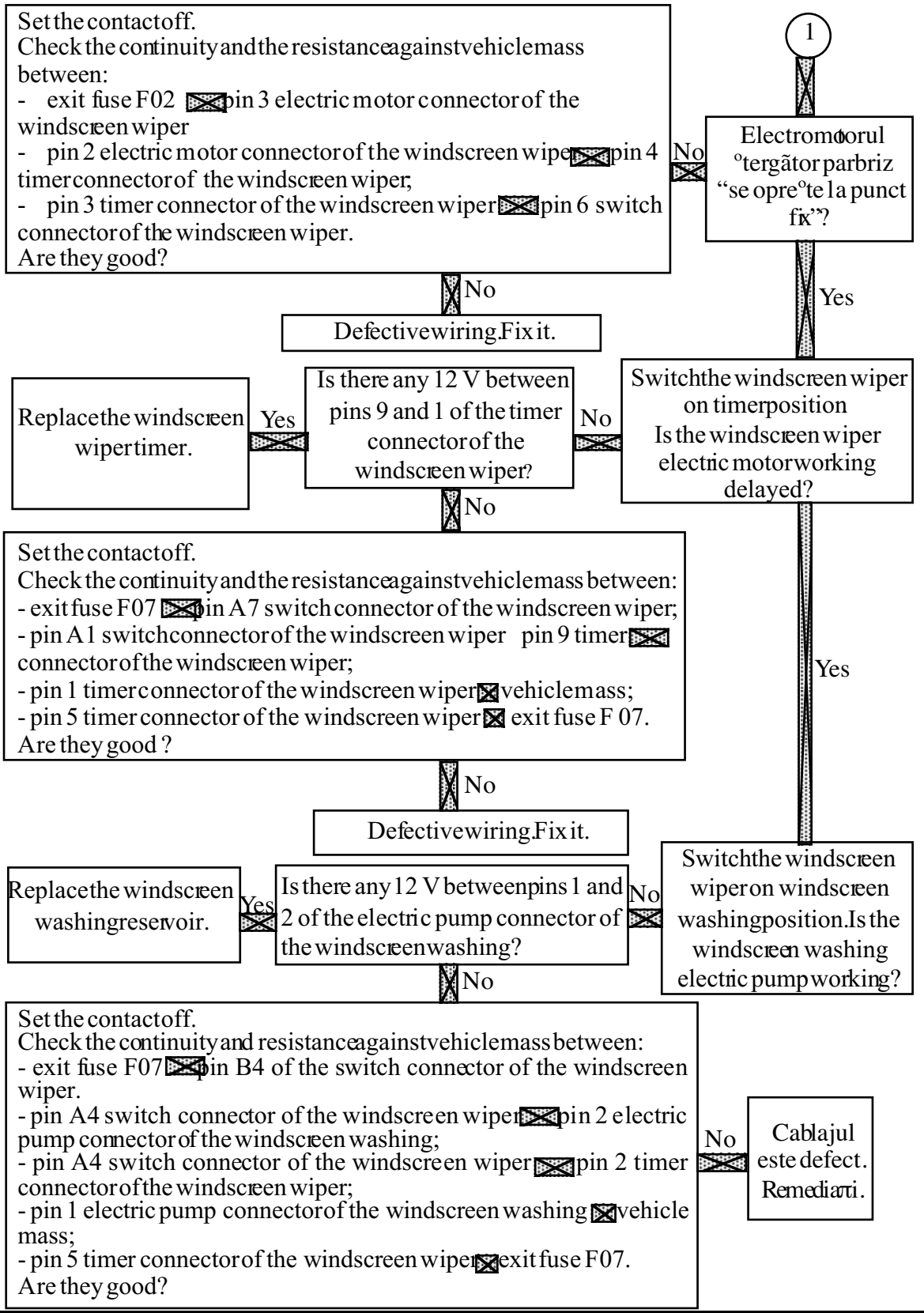
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Replace fuse F 07
No
Check fuse F07 from cockpit. Is it good?
Yes
Check the windscreen wiper switch. Is it good?
No
Replace the under steering wheel control assembly
Yes
Check the windscreen wiper timer.Is it good?
No
Replace the windscreen wiper timer.
Yes
Set the contact on. Switch the windscreen wiper on high speed. Is the windscreen wiper working?
No
Is there any 12 V between pins 5 and 1 of the electric motor connector of the windscreen wiper?
Yes
Replace the windscreen wiper electric motor.
No
Set the contact off.
Check the continuity and the resistance against the vehicle mass between:
- exit fuse F07 pin A7 windscreen wiper switch
- pin A2 windscreen wiper switch pin 5 electric motor connector of the windscreen wiper;
- pin 1 electric motor connector of the windscreen wiper vehicle mass.
Are they good?
Yes
No
Defective wiring. Fix it.
Switch the windscreen wiper on low speed. Is the windscreen wiper working ?
No
Is there any 12 V between pins 4 and 1 of the electric motor connector of the windscreen wiper?
Yes
Replace the windscreen electric motor.
No
Set the contact off.
Check the continuity and the resistance against the vehicle mass between:
- exit fuse F07 pin A7 windscreen wiper switch
- pin A3 windscreen wiper switch pin 4 electric motor connector of the windscreen wiper;
- pin 1 electric motor connector of the windscreen wiper vehicle mass. Are they good?
Da
No
Defective wiring. Fix it.
1

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WINDSCREEN WIPER

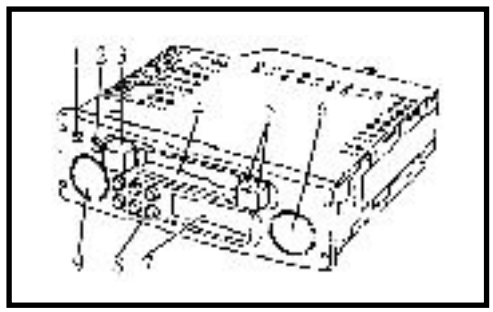
Diagnostic



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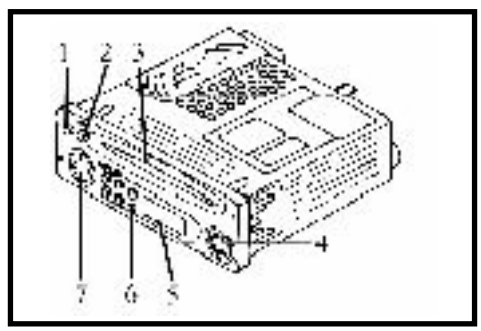
The auto radio may be fitted in the versions: radio-tapes player and radio with CD player.

RADIO-TAPESPLAYER PRESENTATION



1. On/off key
2. Key for tape fast-forwards up to next song
3. Tape eject key
4. Tape inserting door
5. Keys for tape forwards/backwards
6. Multi-purpose key (audiosource selection,sound adjustment,radio frequency selection,and traffic information
7. Display
8. Keys for radio programs memorizing(key 1 is used alsofor DOLBY function in tape listening)
9. Multi-purpose key (after selecting one function, the adjustments in the areas +, - or > , < are performed)

CD PLAYER PRESENTATION



1. On/off key
2. CD eject key
3. CD insert door
4. Multi-purpose key (audiosource selection,sound adjustment,radio frequency selection,and traffic information
5. Display
6. Key for radio programs memorizing (key 1 is also used for CD listening)
7. Multi-purpose key (after selecting one function, the adjustments in the areas +, - or > , < are performed)

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MAIN FUNCTIONS

Function "ON / OFF Logic"

The radio may operate also when engine is stopped, when contact key is on "S" position. In this situation, after 20 minutes of operation, an acoustic signal will be heard and the radio will automatically stop. If you wish that radio is not stopping, after you heard the acoustic signal, push the red starting key (1) that is enabling the radio operation for another 20 minutes.

If the contact key is brought on position "M" or "A" and the radio is started by pushing the key (**1**), after the contact is set off, the radio will automatically stop. At next setting of the contact on the position "M" or "A", the radio will automatically start on the program set before starting.

Adjustment of the acoustic volume

By pushing the keys + or -, the acoustic volume may be adjusted, reaching its increasing or decreasing The acoustic volume level will be displayed in the moment of its adjustment and may be from 0 (minim) to 30 9maxim).

Sound correction

This function is enabling the boosting or decreasing of the high / low frequencies, as well as the balancing of the right/left and rear/front acoustic level.

RADIO

The radio device is of multiple frequencies range, complex and is allowing the programs selection in frequency range long waves (UL), medium waves (UM or ultra-short (FM).

RDS system (Radio data System)

This system is enabling mute data transmitting in the same time with a FM radio station signal. The radio may use this system that is bringing the following advantages:

- emitter name displaying;
- information regarding others radio emitters;
- emergency messages;
- automatic reactivation

Radio frequency selection

In order to perform this, push the key "SRC" many times so that the desired radio frequency is selected.

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Radio tuning on a transmitter

The radio receiver is using three selection modes that may be seen on the screen and approached on the radio front side:

- manually (TUNERMANU)
- by pre-selection (TUNERPRESEL)
- in alphabetical order (LIST)

Program memorizing

After the desired waves range has been selected (UL, UM or FM) and the transmitter reception is established, its memorizing may be performed, by pushing on of the yes from 1 to 6, for at least two seconds, when an acoustic signal confirming the memorizing is to be heard.

Thermal protection

If the radio temperature is too high for an optimal operation, the volume is automatically reduced (without modification of the volume on the display).

Code protection

The radio is protected by means of a four-digit code. This code is introduced by the radio keys at each battery disconnection.

Code introduction by means of the radio keys : in order to valid one digit introduction, push the next key (see the Operation technical book).

In case of a wrong code, the radio is getting blocked (one minute for the first error, two minutes for the second error, four minutes for the third…)

After first code introduction, some configurations must be programmed (see chapter" configuration"). These are remaining programmed till battery disconnection.

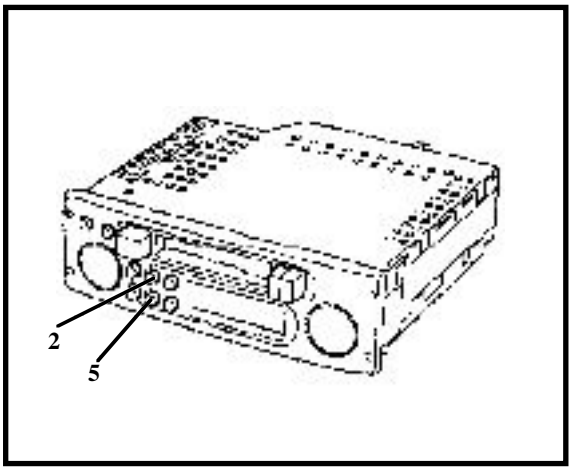
REMARK: the return to the "wave jammer" mode is possible by simultaneously pushing of the keys 2 and 5 putting the radio under tension. Wait then for two minutes.

Programming

OBSERVATION:

In order to select the operation area of the radio receiver, simultaneously push keys 2 and 5, putting so the radio under tension. Wait then for about two minutes. Introduce the four digits code, then :

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- selectthe adequate area
  - America
  - Japan
  - Asia
  - Arabia
  - Others (Europe, Africa,others)
- Selectthe sound tonality curves:
  - 0 : inactiveadjustment
  - 1 : Twingo
  - 2 : Clio
  - 3 : Megane
  - 4 : Laguna
  - 5 : Top range
- speakers number configuration– with or without rear speakers (**REAR OFF**).

REMARK : it is not necessary to perform the configuration after radio code introduction further to a supply failure.

" Expert " operation mode.

In order to pass in configuration **(Expert** mode), perform a long pushing (4 seconds) on "source" key until a beep is heard. This is allowing the following functions adjustment:

- **AF** mode activation (automatic resetting)
- Volume modification subject to the vehicle speed (**5** for maximal modification, **0** for modification canceling)
- **Loudness** mode activation
- **Assisted radio receiver** mode activation
- Number of **speakers** activation (2 or 4)
- Manual or dynamic list selection

REMARK: during configuration one impulse on "source" key is canceling the modifications.

Volume

The volume may be settled subject to vehicle speed. For the activation of this function, select the desired volume modification curve, by means of the "**Expert**" mode (push longer on the **" source**" key, until a beep is heard): **5** for maximal modification **0** for modification canceling.

REMARK : In order this function becomes operational check that radio is correctly connected.

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OBSERVATION: the auto radio is provided with a sound tonality modification subject to vehicle type. To modify that, see chapter " configuration".

Self-diagnostic

This mode is allowing some main functions controlling

-speakers testing

by simultaneously pushing of **2** and **4** keys, the speakers are supplied one by one. The display is enabling their location.

- reception level testing (after frequency displaying)

by simultaneously pushing of **1** and **6** keys, the display is showing the radio reception criteria:

- 9 or letter = good reception
- 3 = defective signal
- 2 = stereo sound loosing

Keys testing

The introduction of this mode is performed by simultaneously pushing of **3** and **on/off** keys. Each key pushing may be seen on display. The exit from this checking mode is automatic, after all keys have been pushed.

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TAPESPLAYER

This function is completely automatic, immediately after the tape is being inserted in the device through the door provided for this purpose, the tape being oriented with the opening towards right.

Tape fast forwards

For this purpose, the "sau" key must be pressed. During tape rewinding, the radio may be heard and on the display the name of the radio station or its frequency will be displayed. The stopping of the fast forwards is to be performed by pushing on the key next to the one initially pushed. If during a tape listening, you wish the listening of the other side, push simultaneously the key "si". This tapes player is an auto-reverse type, so when finishing listening one side of a tape, automatically the sense will change and the listening of the other side will continue.

The MSS system is to be activated by pushing key "MSS", enabling the fast forwards of the tape till the next song, does not matter the playing sense in use. Deactivation of this function is to be performed by pushing again key <<MSS>>.

Noise reduction – Dolby B function

If you are using recorded tapes with noise reduction type Dolby B, push key <<1>> for an optimal sound playing, on the display, Dolby symbol will appear.

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CD PLAYER

CD (compact disc) playing.

Insert the CD, with the recorded face downward, in the door located on the device front part. The CD lecture is beginning with track number 1.

If the CD has been previously inserted, then you switch on listening to a radio station, in case you wish to listen again to the CD, push key SRC and select CD. The CD playing will continue from its last stop.

After listening the last CD track, the playing is continuing beginning with track no. 1.

Observations:

- The CD playing may be interrupted by the receipted information if radio has been previously programmed to operate "Emergency messages reception".
- If you after inserting the CD, you hear an acoustic signal (bip), check if the CD is not dirty or damaged.

Track selection

In order to select the desired track, push consequently > or < till you reach the searched track. The CD lecture will continue from the selected track.

Fast forwards/backwards

Push key > or < and maintain it pushed, performing in this way, the forwards and consequently backwards of the track listen in that moment.

CD tracks random playing

In order to activate this function, push key (**1**). After finishing random playing of all CD tracks, the lecture will continue until its stop controlling. If key > is pushed, passing to the next track, random selected, will be performed. If key < is pushed, playing again of the existent track will be performed. In order to return to the normal track playing (successive playing), key (**1**) is to be pushed and to be maintained for few seconds.

CD eject.

After CD playing, if CD ejection is desired, push key **(2) EJECT**, placed on the left side of the device front panel.

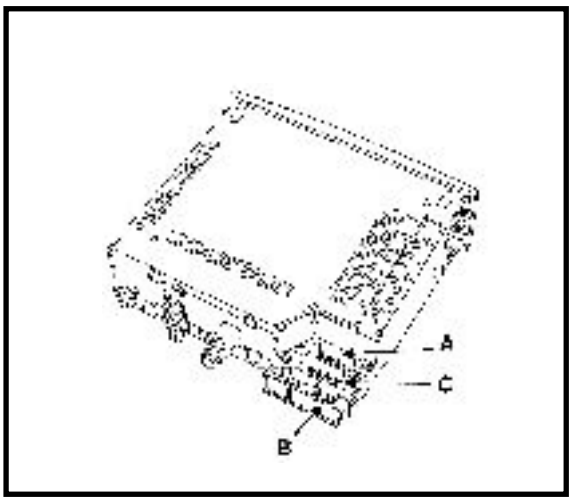
OBSERVATIONS:

This CD player is reading only CD audio parts. If on CD there are also non-audio parts, they can not be red and on the display the track number followed by the message NO AUDIO will be displayed

If a CD without any audio track, is inserted in CD player, this one will be refused and the message NO AUDIO will be displayed on the screen.

This CD player is operating only with 12-cm diameter CD.

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Connectors

Black connector (A)

Pin	Denomination
1	Free
2	Free
3	Free
4	Battery supply
5	Free
6	Supply + parking
7	Supply + after contact
8	Mass

White connector (C)

Pin	Denomination
1	+ Right rear speaker
2	- Right rear speaker
3	+ Right front speaker
4	– Right front speaker
5	+ Left front speaker
6	– Left front speaker
7	+ Left rear speaker
8	– Left rear speaker

OBSERVATION:
The speakers are connected in parallel on each exit.

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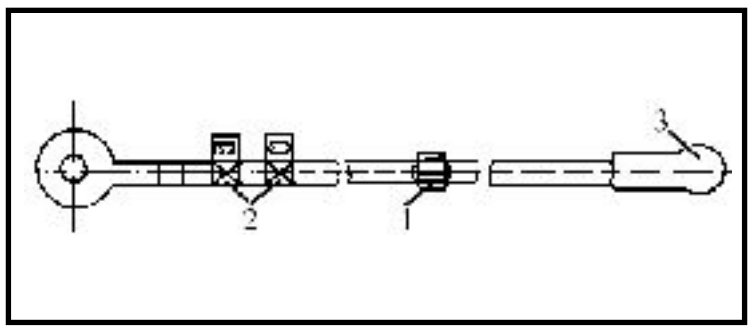
ROOF ANTENNA HOLDER

DISMOUNTING

Disconnect the battery (-) terminal.
Detach from clips the ceiling lamp using a straight head screwdriver (see chapter 80).
Disconnect the ceiling lamp connector
Dismount the attachment screw of the antenna holder on the roof.
Remove the antenna holder.

REMOUNTING

Correctly position the antenna holder on the roof.
Mount the attachment nut of the antenna holder on the roof.
Connect the ceiling lamp connector
Attach in clips the ceiling lamp in its support.
Connect the battery (-) terminal.
Check the ceiling lamp and radio operation.



ROOF ANTENNA CABLE

DISMOUNTING

Dismount the upper part dashboard (see chapter 57).

Cut the attachment clip (1) of the roof antenna cable on the driving post cross member (mark the clip mounting position).

Dismount the covering of the right front upper pillar and detach from clips the roof antenna cable from covering.

Dismount the sun visors (see chapter 71).

Unstuck the two Aplix pills (2) from the roof.

Carefully remove the antenna cable (pull the end that was connected to the antenna holder). Mark the mounting position of the antenna cable.

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REMOUNTING

Mount the antenna cable (insert the antenna connector (**3**) through the space between the roof and the ceiling attachment support, observing the mounting position existent prior to the dismounting.

Mount the antenna holder on the roof.

Unstuck the Aplix pills protection and these are to stacked on the roof, attaching the antenna cable.

Mount the sun visors (see chapter 71).

Attach in clips the roof antenna cable on the covering of the right front upper pillar.

Mount the covering of the right front upper pillar.

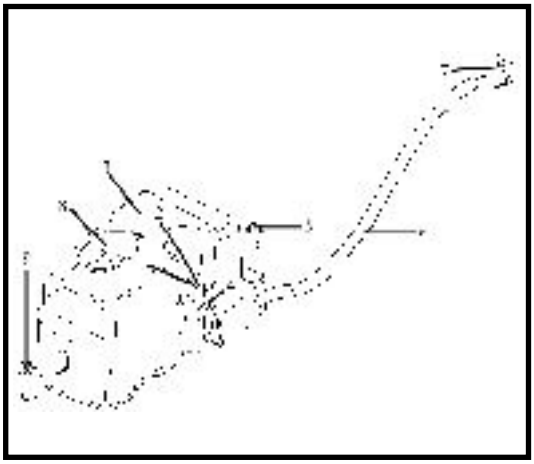
Replace and mount the attachment clip of the roof antenna cable on the driving post cross member, observing its mounting position existent prior to the dismounting.

Mount the upper dashboard (see chapter 57).

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It is located on the left side of the climate control box, being attached by means of a screw. It has the windscreen washing electric pump attached on the washer reservoir.

In the drawing, the following elements may be identified:



1,2 Pins of the electric pump.
3 Windscreen washing reservoir
4 Electric pump
5 Attachment screw
6 Washing hose
7 Adjustable nozzle
8 Washing reservoir cap
9 Washing bushing

DISMOUNTING

Disconnect the battery (-) terminal.

Dismount the climate control gasket.

Dismount the climate control protector.

Dismount the attachment screw of the washing reservoir.

Carefully remove the front wiring branch (in order not to damage the splice), from its location in the wall between the engine compartment and the climate control box.

Extract the washing reservoir from the washing bushing (**9**).

Disconnect the washing hose connected to the electric pump.

Carefully remove the washing reservoir from the climate control compartment and tilt it in such way that windscreen washing fluid is not flowing out.

REMOUNTING

Perform the dismounting operations in the reverse order.

Check the operation of the assembly and eventually adjust by means of a "needle" the nozzle in order to correctly wash the windscreen.

ATTENTION!

Do not close front bonnet after dismounting the windscreen washing assembly, because it may be possible the front wiring damaging.

REMARK:

The washing fluid level must be between the minim and maxim levels marks on the washing reservoir (0.8 l).

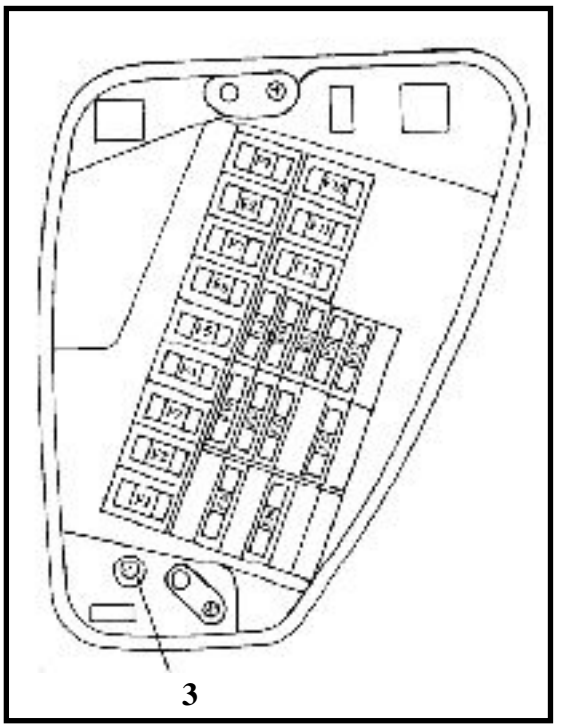
The required tightening moment of the attachment screw of the windscreen washing assembly: 2 Nm.

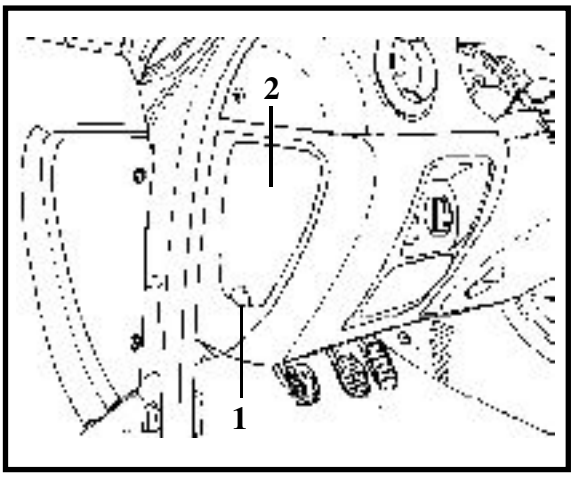
Connector

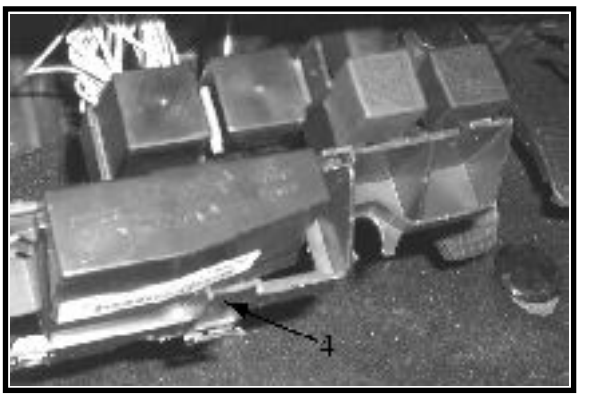
Pin	Denomination
1	Windscreen washing pump control
2	Mass

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Relays and UCE decoder assembly from cockpit







DISMOUNTING

Disconnect the battery (-) terminal.

Pull the seat (**1**) of the access flap (**2**) to the fuse box located in the cockpit, at the left end of the dashboard. Carefully remove flap (**2**).

Dismount the attaching screw (**3**) of the fuse box on the driving post cross-beam, lift it from seat (**4**) and carefully remove it.

REMOUNTING

Attach the assembly on the driving post crossbeam in its seat (**4**) and mount the screw (**3**).

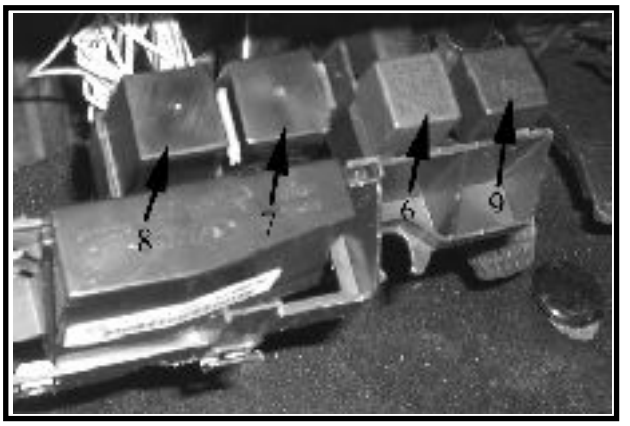
Carefully mount back, the access flap (**2**) to the fuse box.

Reconnect the battery (-) terminal.

Perform functional tests, noticing the correct operation of all consumers supplied by means of the cockpit relays assembly and UCE decoder.

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REPLACEMENT OF COCKPIT INTERMEDIARY RELAY



DISMOUNTING

Disconnect the battery (-) terminal.

Dismount the relays assembly and UCE decoder.

Remove the relay: flash (**6**), timer (**7**), signaling (**8**) or speed limit warning (**9**) from their connectors. Mark the identification of the relays mounting position.

REMOUNTING

Reconnect the relays observing the mounting position prior to dismounting.

Remount the assembly relays and UCE decoder.

Reconnect the battery (-) terminal.

Perform functional tests, noticing the correct operation of all consumers supplied by means of the cockpit relays assembly and UCE decoder.

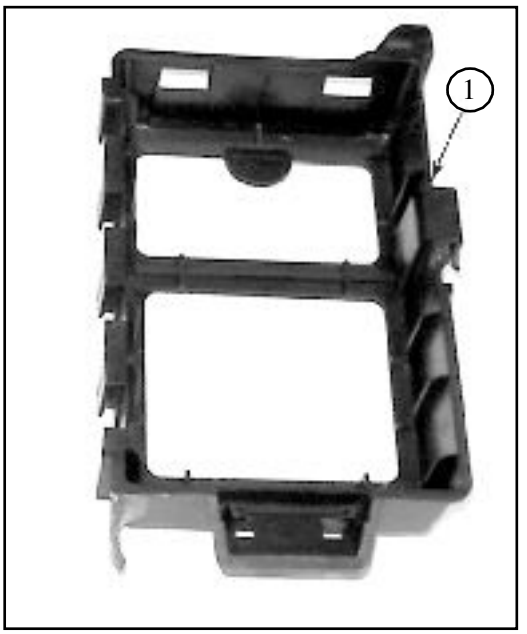
OBSERVATION:

After battery reconnecting, re-program the clock, and for vehicles equipped with programmable radio tape player, re-introduce the radio code.

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DESCRIPTION

Cockpit central Unit is placed under the dashboard, on the left side (in a protection box (1).



Subject to vehicle's equipment level, two types of Cockpit Central Box may be mounted:

- one type named **"basic range" (N2),**
- one type named **"high range" (N4).**

OBSERVATION :

Cockpit Central Unit type "high range" may be mounted instead of Cockpit Central Unit "basic range"

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DISMOUNTING

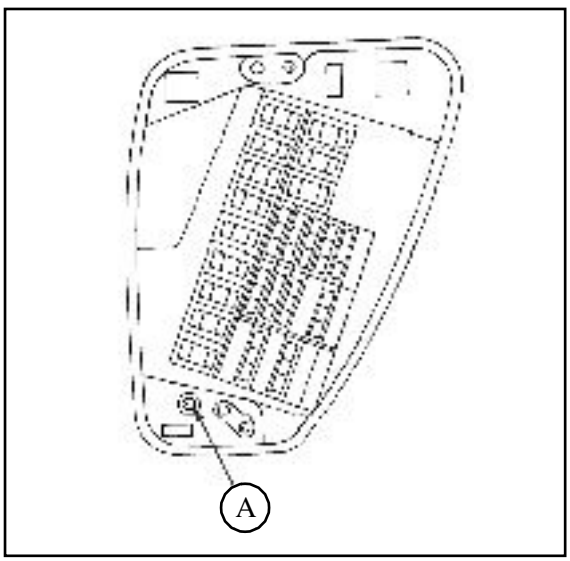
REMARK:

- No handling or intervention at the protection box is allowed; in case of damage, replace the Cockpit Central Unit.
- Before dismounting, it is necessary the reading of the Cockpit central Unit configuration. Different UCH configurations may be performed by means of the diagnostic tester.

Disconnect the battery (-) terminal.

Dismount:

- cockpit fuse box cover
- attachment screw (A) of the Cockpit Central Unit support.

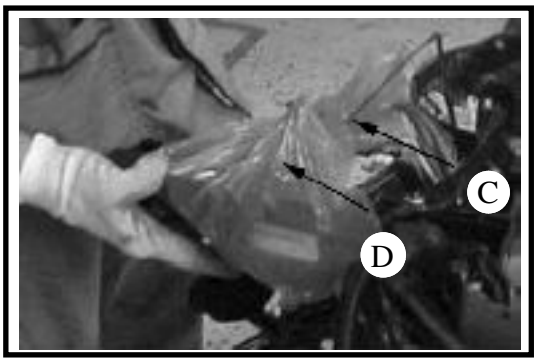


Lift from attaching seat and take out the assembly support-Cockpit Central Unit.

Carefully cut the attachment clip (C) of the protector (D).

Extract the assembly support – Cockpit central Unit from protector.

Disconnect the UCH connectors.



Dismount Cockpit Central unit from support (E).



REMOUNTING

Perform the dismounting operations in the reverse order; the protector and attachment clip is to be replaced.

ATTENTION!

At any intervention involving dismounting of the assembly support-Cockpit Central Unit, the protector and attachment clip is to be replaced.

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This document is presenting the diagnostic generally valid for all computers, for Cockpit Central Unit function, at SOLENZA vehicles all types of engine

In order to perform the diagnostic of this system, it is then all-important to dispose of the following elements:

- workshop manual of the corresponding vehicle
- electric diagram of the function, for the corresponding vehicle

special tools specified in the column "Necessary Special tools".

GENERAL STEPS OF THE DIAGNOSTIC

- CLIP tester setting on, in order to identify the system that is equipping the vehicle (identification of the computer family, program number, V. diagnostic..).
- Analysis of the "diagnostic" documents corresponding to the identified system.
- Acknowledgement of the information supplied in chapters "General".
- Reading of the memorised failure in the computer memory and taking advantage of the chapter "Failures interpretation".

ATTENTION : each failure is interpreted for a specific type of memorisation: present failure memorised failure present or memorised failure). The specified checking for handling each failure are not to be applied on the vehicle unless the declared failure is interpreted in the document for its specific memorising type. The memorising type must be taken into consideration when the tester is set on after setting off and on of the contact.

If a failure is interpreted in the moment when it is declared "memorised", the diagnostic application conditions are present in "Recommendations". If the conditions are not fulfilled, you must take the ideas from the diagnostic of damaged element circuit checking, because the failure is not anymore present on the vehicle. Apply the same method when a failure is declared as been memorised by the diagnostic tester, but it is interpreted in the documentation only as <<present failure > state.

- Performing the conformity checking (accentuation of the possible failures, non-declared yet by the system self-diagnostic) and application of the adequate diagnostic according to the results.
- Reparation validation (elimination of "client's effect")
- Diagnostic exploitation by "Client's effect" if the problem still on.

NECESSARY SPECIAL TOOLS FOR INTERVENTION

- CLIP diagnostic tester
- All-purpose meter

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Subject to equipment level, two types of Cockpit Central Unit may be mounted:

Cockpit Central Unit	Basic range N2	High range N4
Diagnostic connection	X	X
Coded anti-starting (V2)	X	X
Turning lights and indicator management	X	X
Acoustic warning (turning lights on forgetfulness)	X	X
Windscreen wiper: fix point stopping management	X	X
Cockpit lighting management	X	X
Cockpit timing lighting		X
Doors electric blocking by radio-frequency		X
Alarm connection		X

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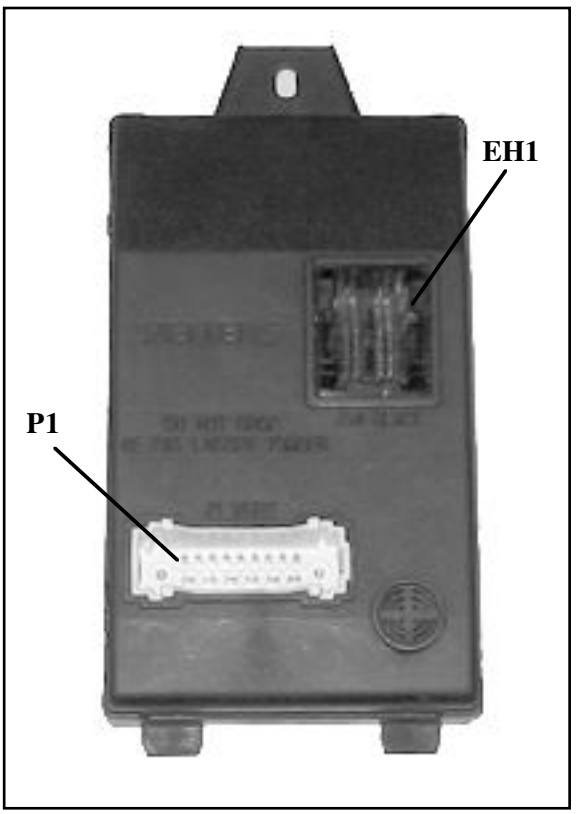
CONNECTION (the most complete)

Black connector EH1 (40 pins)

PIN	DENOMINATION
1	Not used
2	Not used
3	Not used
4	Not used
5	Not used
6	Not used
7	Not used
8	Doors locking switch inlet (doors unlocking control)
9	Not used
10	Not used
11	Not used
12	Not used
13	Not used
14	Not used
15	Parking lights inlet
16	Decoding bushing inlet
17	Doors locking switch inlet (doors locking control)
18	Not used
19	Not used
20	Not used
21	Not used
22	+ After contact
23	Not used
24	Windscreen wiper timer inlet
25	Not used
26	Left turning inlet
27	Not used
28	Right turning inlet
29	Not used
30	Not used
31	Not used
32	Anti-starting indicator inlet
33	Hazard lights inlet
34	Diagnostic line K
35	Not used
36	Engine anti-starting outlet
37	Not used
38	Not used
39	Not used
40	Driver's door contact inlet

White connector P1 (15 pins)

PIN	DENOMINATION
A1	Mass
A2	Ceiling lamp outlet
A3	+ Before contact
A4	Windscreen wiper control
A5	Windscreen wiper supply (+ after contact)
A6	Windscreen wiper fix point stopping
A7	Not used
A8	Right turning outlet
A9	Left turning outlet
B1	Not used
B2	Doors locking outlet
B3	Doors locking/unlocking supply
B4	Doors unlocking outlet
B5	Ceiling amp timer outlet
B6	Ceiling lamp supply



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DISMOUNTING – REMOUNTING

Cockpit central Unit is attached by clips in its support.

IMPORTANT: the support of Cockpit Central Unit must be not dismounted because there is the risk of damage it. Dismounting implies therefore its replacement.



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GENERAL CONFIGURATIONS OF THE COCKPIT CENTRAL UNIT

There are the following possible configurations of the cockpit Central Unit:

Denomination and symbol on CLIP tester	Configuration	Type of Cockpit Central Unit
Ceiling lamp timing **(LC021)**	automatic	Only at N4
Radio-frequency function **(LC089)**	automatic	Only at N4

INTERFACE BOX CONFIGURATION

This is performed by means of the CLIP tester, as follows:

〈 With the contact set on, enter in dialogue with the vehicle.
〈 Select and validate menu **" Interface box"**
〈 In menu **"Control module"**, validate line **"Configuration".**
〈 Select control : **"CF716 : type N2"** or
"CF010 : type N4"
〈 the following message shall be displayed: **"Do you wish to continue?"**
〈 Select **"yes"**, then perform the automatic configuration.

- For Cockpit central Unit **"base range"** or **"N2"**
  Configuration **ceiling lamp with timer** → **without**
  Configuration **radio frequency function** → **without**

- For Cockpit central Unit **"high range"** or **"N4"**
  Configuration **ceiling lamp with timer** → **with**
  Configuration **radio frequency function** → **with**

〈 Check then the configurations in menu " Configuration reading"

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DF119 **MEMORIZED**	WINDSCREEN WIPER FIX POINT STOPPING

RECOMMENDATIONS	Diagnostic application conditions to the memorized failure: - failure declared present further to wiper control REMARK: wipers random operation in timing position (timing non-respected)

Check that fix point stopping state ET 005 is active each time when wipers blades reach the pause position and then pass to inactive.
Check the branching and the state of connectors of the Cockpit Central Unit. Replace the connector, if necessary.
Check the insulation, continuity and absence of parasite resistance of lines: **Pin A6** of UCH connector P1 → **pin 2** windscreen wiper motor **Mass** → **pin 1** windscreen wiper motor Fix if necessary.
Check connection and condition of the connector of the windscreen wiper motor Check the windscreen wiper motor Check the windscreen wiper mounting Replace, eventually, the wiper motor.

AFTER REPAIRING	Apply the recommendation Fix all others failures Erase the memorized failures.

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DF121 **PRESENT**	UCH INTERN ELECTRONIC ABNORMALITY

RECOMMENDATIONS	Failure declared present when setting contact off **Particularity**: in case of a memorized failure, check not to be other present failures and perform the failures erasing.

Replace the Cockpit Central Unit

AFTER REPAIRING	Fix all others failures Erase the memorized failures.

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DF131 **PRESENT**	DOORS BLOCKING SWITCH CIRCUIT (CPE) CC.0: short circuit at mass

RECOMMENDATIONS	Failure declared present when activating the doors blocking switch

Check connection and condition of connector with 40 pins EH1 of UCH
Replace connector if necessary

Check **insulation and continuity** on communication lines:

Pin 8A of UCH connector EH1 with 40 pins → **pin 5** switch CPE
Pin 17 A of UCH connector EH1 with 40 pins → **pin 1** switch CPE
Mass → **pin 3** switch CPE
Mass → **pin 4** switch CPE

Fix, if necessary.

AFTER REPARATION	Apply the recommendation Repair the other possible failures Erase the memorized failures.

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RECOMMENDATIONS	Do not perform this conformity checking but after a compete checking by means of diagnostic tester. The values displayed in this conformity checking are only informative. The execution condition: **stopped engine, contact set on.**

No.	Function	Parameter or state Checking or action	Visualization and observations	Diagnostic
1	Supply	**PR002**: Battery voltage	**12V < X < 12,5V**	**If problems occurring:** Perform a diagnostic of the charging circuit
		ET002: **+12 V** after contact	**Present**	**If problems occurring:** See state diagnostic **ET002**
2	Lighting	**ET309**: Right turning information	It is **ACTIVE** when controlling right turning	**If is INACTIVE**, see state diagnostic **ET309**
		ET310: Left turning information	It is **ACTIVE** when controlling left turning	**If it is INACTIVE**, see state diagnostic **ET310**
		ET291: Hazard lights information	It is **ACTIVE** when controlling hazard lights	**If it is INACTIVE**, see state diagnostic **ET291**

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RECOMMENDATIONS	Do not perform this conformity checking but after a compete checking by means of diagnostic tester. The values displayed in this conformity checking are only informative. The execution condition: **stopped engine, contact set on.**

No.	Function	Parameter or state Checking or action	Visualization and observations	Diagnostic
3	Wiper	**ET213:** Windscreen wiper timing	**ACTIVE**, when windscreen wiper control in on timer position	If it **INACTIVE**, see state diagnostic **ET213**.
		ET005: Windscreen wiper fix point stopping	**ACTIVE** when controlling the wiper on timer position, at each wiper stopping.	**If problems occurring, apply the specific diagnostic** for windscreen wiper fix point stopping failure **DF119**
4	Opening	**ET192**: : Front doors	State **OPEN** when opening the driver's doors	If problems occurring: see state diagnostic **ET192**

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RECOMMENDATIONS	Do not perform this conformity checking but after a compete checking by means of diagnostic tester. The values displayed in this conformity checking are only informative. The execution condition: **stopped engine, contact set on.**

No.	Function	Parameter or state Checking or action	Visualization and observations	Diagnostic
1	Opening (ctd)	**ET010**: Key RF valid	State **YES** when doors locking or unlocking is done using a remote control assigned to that UCH	**If problems occurring:** see state diagnostic **ET010**
		ET193: RF information received	State **YES** when doors blocking/ unlocking is done using the remote control	**If problems occurring:** see state diagnostic **ET193**
		ET012: source of last received control	**TRF** when doors locking/unlocking is done using the remote control, **CPE** when locking/unlocking is done using the doors central locking switch	Nothing to notice
		ET105: Last received control	**UNLOCKING LOCKING**	Nothing to notice

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At "N4" Cockpit Central Unit, some states and parameters are only displayed on the screen **"Function test".** There are two function tests:

"Radio-Frequency"

"ET002: +12 volts after contact"
"ET193: RF received infomation"
"ET010: RF valid key"

"Doors management"

"ET192: front doors"
"ET105: last received control"
"ET012: source of last received control"
"ET216: CPE key"

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ET002	+12 VOLTS AFTER CONTACT

ET002 INACTIVE with contact set on.

Perform a checking of **F04** fuse from cockpit Check using a multiple-meter presence of **+12 volts** with contact set on, at the level of fuse support. Fix if necessary Check using a multiple-meter presence of **+12 volts** with contact set on at **Pin B22** of UCH connector EH1
If there is no voltage, ensure **continuity and insulation** at mass between **Pin B22 of UCH connector EH1 and fuse F04 (15A) from cockpit fuse box.** Fix if necessary

ET002 ACTIVE with contact set off

Check using a multiple-meter presence of +12 volts with contact set off, at the level of **F04** fuse support from cockpit Fix if necessary

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET010	RF VALID KEY

RECOMMENDATIONS	**ONLY for "N4" Cockpit Central Unit** Check that no failure is present. State is declared YES when pushing the remote control button. If state is declared NO, set on then set off + After contact Try again then with another key of the vehicle.

ET010 remains at NO: ACTIVE with contact set off

Proceed to a key's re-synchronizing by setting on the contact (+ After contact)
If problem is persisting and if <<**ET193 RF RECEIVED INFORMATION**>> is in state **YES**, replace the keys. If problem is persisting, replace Cockpit Central Unit

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET291	HAZARD LIGHTS INFORMATION

RECOMMENDATIONS	No failure must be present or memorized. Act upon the hazard lights switch. State must be **ACTIVE**

ET291 INACTIVE	Check supply fuse **F13 (25A)** for turning / Cockpit Central Unit. Replace it if necessary.
	Check connection and condition of the hazard lights contact connector Repair the connector if necessary.
	Check **continuity** of the connection: Hazard lights contact **pins 5 and 6** ⟶ mass Fix if necessary.
	Check **insulation, continuity and absence of parasite resistance** of the connection: Hazard lights contact **pin 8** ⟶ pin **B33** EH1 connector with 40 pins Fix if necessary.
	Check operation of hazard lights control

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET309 **ET310**	RIGHT TURNING INFORMATION LEFT TURNING INFORMATION

RECOMMENDATIONS	No failure must be present or memorized. Set on the contact Act upon the left or right turning control State must be **ACTIVE**

ET309 **ar** **ET310** **INACTIVE**	Check the supply fuse **F13 (25A)** for turning lights/Cockpit Central Unit. Replace it if necessary.
	Check connection and condition of the turning switch connector. Fix is necessary.
	Ensure **continuity** of the connection: Turning switch **pin 6** → mass Fix if necessary
	Disconnect **connector EH1 40 pins** of UCH Ensure **continuity and insulation** of the connections: Right turning switch **pin 5** → **pin B28** connector EH1 40 pins UCH Left turning switch **pin 7** → **pin B26** connector EH1 40 pins UCH Fix is necessary.

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET213	WINDSCREEN WIPER TIMER

RECOMMENDATIONS	No failure must be present or memorized. Set on the contact Act upon the left or right turning control State must be **ACTIVE**

ET213 INACTIVE	Check the windscreen wiper fuse **F07 (20A).** Replace it if necessary.
	Check the connection and condition of windscreen wiper switch connector Fix the connector if necessary.
	Ensure **continuity and insulation** of the connections: connector EH1 of UCH **pin B24** → wiper switch pin **A1** **+ after contact** → wiper switch pin **A7** Fix if necessary.

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET192	FRONT DOORS

RECOMMENDATIONS	Check that no failure is be present or memorized. Open the drivers' door

Check that for open door the corresponding state is active or for closed door, the corresponding state is inactive
Check **continuity and insulation** of the wiring between: Driver's doors contact and **pin 40B** of UCH connector EH1 **Fix if necessary** (see electric diagram of that vehicle)
Open the door. Check continuity between mass and **pin 40B** of UCH Close the door and check that no continuity is between mass and **pin 40B** of UCH In case of a failure, replace the driver's door contact.

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET193	RECEIVED INFORMATION

RECOMMENDATIONS	**Only for "N4" Cockpit Central Unit.** Check that no failure is present State is declared **YES** when pushing the remote control If state is declared **NO**, **set on then set off the contact.** Try again with another key of the vehicle.

ET193 remains at NO : when pushing the remote control

Push the remote control button of some other vehicle of same type or with a new key:
Check that state is becoming **YES**, when pushing the remote control.
If **state is YES**, replace the remote control of the breakdown vehicle.
If **state is NO**, replace the **Cockpit Central Unit**

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ET257	PARKING LIGHTS INFORMATION

RECOMMENDATIONS	Check that no failure is present or memorized. Act upon the parking lights control. State must be **ACTIVE**, and the parking lights on **Check the bulbs.**

ET257 **INACTIV**	Check parking lights fuse **F14 (7.5 A)** Replace it if necessary
	Check connection and condition of UCH **connector EH1 40 pins**. Replace the connector if necessary
	Ensure **continuity and insulation** of the connection: **pin A15** connector EH1 40 pin → s fuse box, parking lights fuse **(7.5A)** Fix if necessary.

AFTER REPARATION	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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RECOMMENDATIONS	**Do not consult these information but after a complete checking by means of CLIP tester**

THERE IS NO COMMUNICATION WITH THE COMPUTER **ALP1**

LIGHTING

TURNING LIGHTS ARE NOT WORKING **ALP2**

PARKING LIGHTS ARE NOT WORKING **ALP3**

WINDSCREEN WIPING

WINDSCREEN WIPER LOW SPEED NOT WORKING **ALP4**

WINDSCREEN WIPER HIGH SPEED NOT WORKING **ALP5**

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ALP 1	**There is no communication with the computer**

RECOMMENDATIONS	**Nothing to notice**

Check the tester operation on another vehicle
Check: - Connection between CLIP tester and the diagnostic socket (cable in good condition). - Cockpit and engine compartment fuses.
Check presence **+12 volts before contact at pin 16**, **+ 12 volts after contact** at **pin 1** and **mass** at **pins 4 and 5** of the diagnostic socket Fix if necessary
Check the computer connection.
Connect the multi-socket and check **the insulation, continuity and absence of parasite resistance at connections:** **UCH connector P1 pin A1 → mass** **UCH connector P1 pin A3 → fuse box + 12 volts before contact** **UCH connector EH1 pin B34 → pin 7 diagnostic socket (line K)** Fix if necessary.

AFTER REPAIRING	Check the system operation

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ALP 2	**Turning lights not working**

RECOMMENDATIONS	**Do not consult these information but before a complete checking by means of the CLIP tester.** **Check the bulbs**

Check the condition of fuse **F13 (25A)** and replace it if necessary.
Push the hazard switch and check that state **<<ET291 hazard lights information>>** is **ACTIVE**; if not, refer to chapter dealing with this state. Act upon the right or left turning lights and check that state right turning information **ET309** and state left turning information **ET310** are **ACTIVE**, if not, refer to the corresponding chapter of these states.
Check the condition of connector **P1 with 15 pins** of Cockpit Central Unit Replace it if necessary.
Ensure **continuity** of connections: UCH connector P1 **pin A9** ⟶ left turning lamp UCH connector P1 **pin A8** ⟶ right turning lamp Fix if necessary.

AFTER REPAIRING	Check the system operation

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ALP 3	**Parking lights not working**

RECOMMENDATIONS	**Do not consult these information but before a complete checking by means of the CLIP tester.** **Check the bulbs**

Check the condition of parking lights fuse F14 (7.5A) Replace it if necessary.
Act upon the parking lights control and check that state parking **lights information ET257** is **ACTIVE**, if not, refer to the corresponding chapter of these state.
Check **the continuity** of the connection: Parking lights fuse **F14 (7.5A)** ⟶ **rear and front parking lights** Fix if necessary.

AFTER REPAIRING	Check the system operation

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ALP 4	**Windscreen wiper low speed not working**

RECOMMENDATIONS	No failure must present or memorized

Check the condition of windscreen wiper fuse **F07 (20A)**
Replace the fuse if necessary.

Check supply **+12 volts** after contact at **pin A7** windscreen wiper switch
Fix if necessary

Ensure the **continuity and insulation** of the connections:

Wiper switch pin A3 → **pin 4** windscreen wiper motor

Mass → **pin 1** windscreen wiper motor

Fix if necessary.
Check the motor operation

Check that windscreen wiper motor or mechanism is free of gripping from mechanical point of view.
Fix if necessary.

AFTER REPAIRING	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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ALP 5	**Windscreen wiper high speed not working**

RECOMMENDATION	No failure must present or memorized

Check the condition of windscreen wiper fuse **F07 (20A)** Replace the fuse if necessary.
Check supply **+12 volts** after contact at **pin A7** windscreen wiper switch Fix if necessary
Ensure the continuity and insulation of the connections: **Wiper switch pin A2** → **pin 5** windscreen wiper motor **mass** → **pin 1** windscreen wiper motor Fix if necessary. Check the motor operation
Check that windscreen wiper motor or mechanism are free of gripping from mechanical point of view. Fix if necessary.

AFTER REPAIRING	Perform again a system diagnostic Repair the other possible failures Erase the memorized failures.

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Airbag - General

IMPORTANT!

All intervention on the airbag system may be performed only by qualified staff.

The Dacia SOLENZA vehicles are equipped with a passive security system composed of:

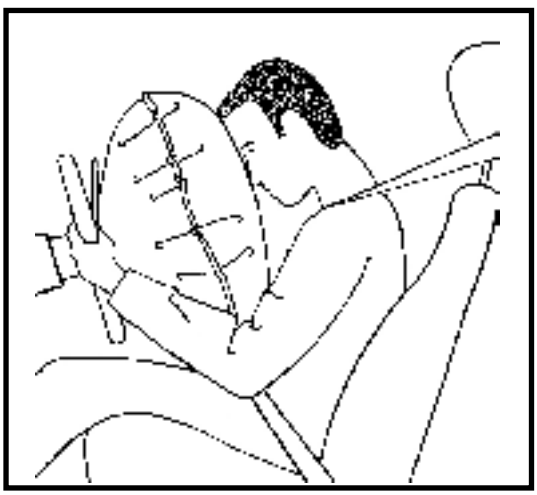
- a driver frontal airbag with an inflatable bag,
- UCE airbag mounted in the central console tunnel.

In case of a front impact strong enough, the UCE airbag is releasing the airbag, which is inflating in the steering wheel central part, protecting in this way the driver's face.

The airbag is not reacting at decelerations in the driving direction. A side impact or a rollover may not lead to the airbag releasing.

The vehicle projection energy is transformed into distortion energy of the vehicle front part. The higher deceleration is, the smaller vehicle distortion is, and the airbag is quicker releasing.

The minimal speed at which the airbag is releasing is increasing, as the impact angle between the vehicles is higher.



If in case of a frontal impact there are no distortions in front of the front pedals support or engine-frame impact, non-releasing of the airbag is not to be considered an operation incident, the releasing speed not being reached.

By experience, the speedometer is not showing correctly the impact speed, this being, generally, smaller than the cruising speed had before the impact.

A vehicle equipped with driver airbag is to be identified by the marking "Airbag" from the steering wheel pillow and a sticker placed on the windscreen left side.

ATTENTION !

Because the UCE airbag, steering wheel airbag and the shock sensor are containing sensitive components, these are to be shock-proofed during their handling.

At every windscreen replacement, the sticker mentioning that vehicle is equipped with airbag is to be placed on the windscreen.

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AIRBAG OPERATION

When setting the contact on, the airbag system control indicator from the instrument panel is lighted for 3 seconds then it is off.

UCE airbag is entering in a lookout state and is considering the vehicle decelerations due to a signal measured by an integrated electronic decelerometer.

In case of a stronger frontal impact, the security electromechanical captor is tripping the igniter of the pyrotechnic gas generator, which is inflating the driver's airbag.

The airbag system is not releasing in case of a side impact or a rear impact.

When started, the pyrotechnic gas generator is generating a detonation and some smoke.

IMPORTANT!

This system must be checked by means of the CLIP tester, immediately when:

- an accident did not caused the movement,
- the vehicle was stolen or a stiling tentative has been produced.
- before selling a second hand vehicle.

AIRBAG INDICATOR FROM INSTRUMENT PANEL

This indicator is showing the operation state of the driver's airbag.

It is lighted for 3 seconds from contact setting on, and then it is getting off and it staying like this.

If it is not on when setting the contact on or it is on during vehicle driving, this is indicating a failure in the system (see chapter "Diagnostic")

After driver's airbag releasing, the airbag indicator from the instrument panel is on and UCE airbag is automatically blocking the driver's airbag releasing line, memorizing the releasing.

That is why, after an impact generating the airbag releasing, it is necessary the UCE airbag unblocking, then the computer blocking in order to block all releasing.

The erasing of the memorized failures it is possible only after data reading from **"Impact context"**, then the shock sensor contact is restored and the control **"Computer unblocking"** may be performed.

UCE AIRBAG DISMOUNTING–REMOUNTING

UCE airbag is mounted on the tunnel in front of the gearbox lever.

UCE air bag is provided with:

- a security electromechanical captor,
- a decelerometer for airbag
- an ignition circuit of the pyrotechnic system
- an electric energy reserve,
- a diagnostic and memorizing circuit of the detected failures,
- a control circuit of the alert indicator from instrument panel.
- A K-L communication interface with the diagnostic socket.

UCE AIRBAG BLOCKING

Connect the CLIP tester to the vehicle, the contact being set off.

Set the contact on.

Block the UCE airbag:

- select the menu "**Diagnostic**"
- select and validate the vehicle type.
- select and validate the diagnostic system "**Airbag/ Pre-tensioning systems**".

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- select mode "**Control".**

-select function "**Actuators**", then validate "**Computer blocking**"

- select menu "**State list**" and ensure that UCE airbag has been blocked.

The state **"Blocked computer"** is becoming ACTIVE.

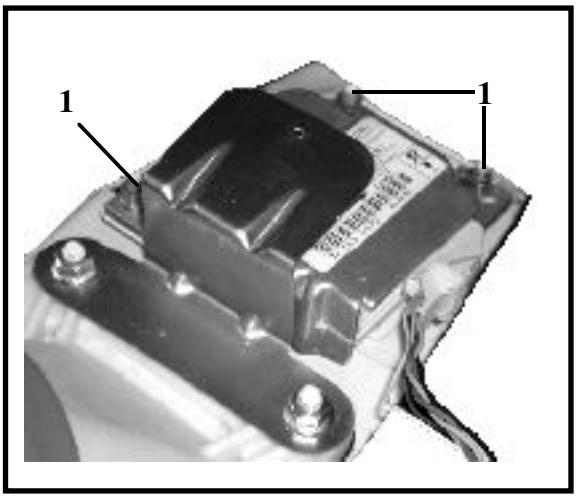
When this function is activated, all releasing lines are inhibited, the airbag indicator from instrument panel is lighted (new UCE airbag are delivered with blocked releasing lines).

Wait 2 seconds until releasing UCE airbag lines are inhibited.

ATTENTION!

In case of an intervention on the vehicle (on exhaust, carriage body, etc), block the UCE airbag by means of the CLIP tester, wait for 2 seconds after setting the contact off (necessary time for automatic discharge of the UCE airbag), then you may use hammers or shock generating device on central floor.

After sale, any electric accessory (speakers, anti-theft system or any device which may be generating magnetic field, is not to be mounted near UCE airbag.



UCE AIRBAG DISMOUNTING

Set the contact off. Disconnect the battery (-) terminal.

Dismount the central console.

Dismount the UCE airbag connector.

Dismount the UCE airbag attachment screws (**1**).

UCE AIRBAG REMOUNTING

Attach UCE airbag on the vehicle, the arrow from the UCE airbag being oriented towards the vehicle front (required tightening moment **0.8 ± 0.2 daNm**).

Reconnect the UCE airbag connector.

Mount the central console. Connect the battery (-) terminal.

Set the contact on.

Check the system operation by means of the CLIP tester and set the system according to the vehicle equipping level **"With driver's airbag"**. If everything is correct, unblock UCE airbag. If

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it is not correct, see chapter "**Diagnostic".**

AIRBAG SYSTEM CONFIGURATION

Because the vehicle is equipped only the driver's airbag, it is necessary the UCE airbag configuration only "**with driver's airbag**".

In case UCE airbag configuration does not match with the vehicle equipping, the airbag indicator will remain lighted.

- Select menu " **Diagnostic"**
- Select and validate vehicle type.
- Select and validate diagnostic system "**Airbag/ Pre-tensioning systems**"
- Select mode "**Control"**.
- Select function "**Programming**" then configure the computer only "**With driver's airbag**".
- Set the contact off then reset the contact on for in order to validate the configuration.

In the case of the UCE airbag configuration, the airbag indicator from the instrument panel is remaining lighted because new UCE airbag are delivered in blocked state.

- Select mode "**Control**", select mode " **Configurations reading**" or select menu "**States list"** and ensure that modification has been taken into consideration.

ATTENTION!

Non-observing of these prescriptions may generate an abnormal operation of the system, even undesirable releasing of the airbag.

UCE airbag may accept up to maximum 4 airbag releasing (certain elements are loosing their nominal characteristics). It is not necessary the systematic replacement after each airbag releasing.

UCE AIRBAG UNBLOCKING

After replacing UCE airbag it is necessary the releasing lines unblocking. The same method as for the UCE airbag blocking is to be used, by validation control "**Computer unblocking"**. The airbag indicator from the instrument panel is getting off.

REMARK:

The 30 pins connector of the UCE airbag has a shunt circuit that is short-circuiting the different transmitting lines of the releasing signal when this one is disconnected, avoiding the undesirable releasing of this system (by antenna effect, for instance)

REMARK:

UCE airbag supply and the pyrotechnic gas generator is performed by means of the vehicle battery. UCE airbag is disposing of a reserve electric energy enabling nevertheless the airbag releasing even if, at the beginning of a shock, the vehicle battery is not anymore supplying the UCE airbag.

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REMARK : By means of the CLIP tester it is possible the visualization of the releasing of the driver's airbag.

If the airbag has been tripped:

- replace the releasing elements and the defective ones;
- check the failures absence by means of the CLIP tester;
- check the necessity of UCE airbag replacement.

When everything is correct, unblock the UCE airbag and the system is again operational (the airbag indicator is getting off).

If the CLIP tester is stipulating the replacement of UCE airbag, that means:

- UCE airbag has released 4 times the airbag.
- An internal failure of UCE airbag.

UCE AIRBAG CONNECTOR

Pin	Denomination
1	Free
2	Free
3	Free
4	Free
5	+ after contact
6	Mass
7	Airbag indicator
8	Free
9	"K" diagnostic line
10	+ driver airbag signal
11	– driver airbag signal
12	Free
13	Free
14	Free
15	Free
16 ,17	Shunt
18 ,19	Shunt
20	Mass
21 ,22	Shunt
23	"L" diagnostic line
24	Free
25 ,26	Shunt
27	Free
28 ,29	Shunt
30	Free

REMARK:

UCE airbag connector has as particularity the shortcircuit setting of different releasing lines when this one is disconnected. The shunts placed in front of each releasing line are avoiding the undesirable releasing of these systems (by antenna effect, for instance).

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CHECKING OF THE AIRBAG SYSTEM CIRCUITS.

The transmitting wiring of the airbag-releasing signal is integrated in the front wiring.

In case of an abnormality noticed on the transmitting wiring of the airbag-starting signal, this is to be replaced and not repaired.

The security device can not tolerate any classical reparation intervention of this wiring or of the connectors.

ATTENTION !

When repositioning the new wiring, ensure that this one is not in contact with sharpen edges which may destroy it.

REMARK:

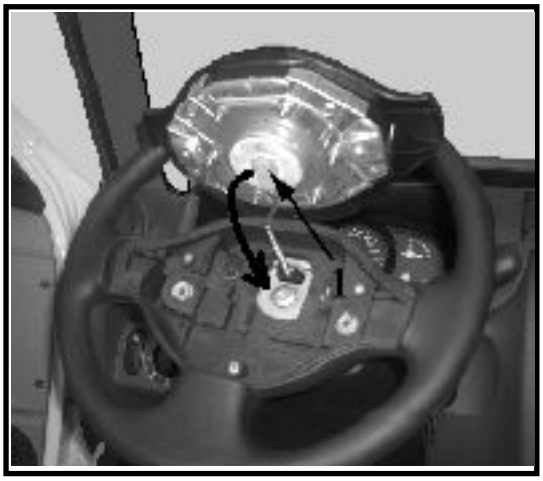
The airbag electric wires test is to be performed as follows:

- Set the contact off
- Connect the CLIP tester to the vehicle
- Set the contact on
- Block UCE airbag
- Set the contact off
- Disconnect the battery (-) terminal
- Dismount the central console
- Dismount the airbag attachment screws.
- Disconnect the airbag connector
- Connect the inert igniter.
- Disconnect the UCE airbag connector and connect the 30 pins adapter connector instead of UCE airbag and the 30 pins adapter exit cables are to be connected, one by one to the CLIP

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tester.

The driver's airbag is located in the steering



wheel pillow.

The driver's airbag is composed of:

- an inflatable pillow
- a pyrotechnic gas generator with an igniter

These elements can not be separated.

REMARK:

When the airbag is released, the steering wheel cover is broken.

The airbag indicator from the instrument panel is controlling the good operation of the driver's airbag.

REMARK:

The system is operational only after setting the contact on.

A vehicle equipped with driver's airbag is to be identified by the inscription "Airbag" from the steering wheel central pillow.

DISMOUNTING

ATTENTION!

It is forbidden the pyrotechnic system handling near heating sources or open fire because of risk of the system undesirable releasing.

OBSERVATION

Before dismounting the airbag pillow, bloc the UCE airbag by means of the CLIP tester (see "Blocking UCE airbag". When this function is active, all transmitting lines of the releasing signal are inhibited. The airbag indicator from the instrument panel is on.

IMPORTANT:

Before dismounting the steering wheel, it is necessary the disconnecting of the airbag connector (1).

OBSERVATION

The driver's airbag pillow is provided with a connector that is short-circuiting after disconnecting the wiring connector, avoiding in this way all undesirable releasing.

REMARK:

After releasing, UCE airbag is automatically blocking all releasing lines.

DISMOUNTING OF THE DRIVER'S AIRBAG

Set the contact off

Dismount the two attachment screws located under steering wheel, attaching the airbag pillow.

Disconnect the airbag connector.

IMPORTANT:

After airbag pillow replacement considered discard but not tripped, its destroying procedure is to be imposed (see chapter "Destroying procedure").

REMOUNTING

Check if the airbag indicator from the instrument panel is on with the contact set on.

Connect the inert igniter to the airbag connector (to wiring) and check if the airbag indicator is off.

Set the contact off, connect the airbag connector instead of the inert igniter (check the correct connection of the connector).

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Mount the two attachment screws (required tightening moment: **0.65 daNm**) located under the steering wheel, attaching the airbag pillow.

IMPORTANT

After remounting, check the system operation, by means of the CLIP tester. If everything is correct, unblock UCE airbag (see "Unblocking UCE airbag"). If it is not correct, see chapter "Diagnostic. Check if the airbag indicator is lighted when setting contact on, it is remaining lighted for 3 seconds, then it is turning off and is remaining off.

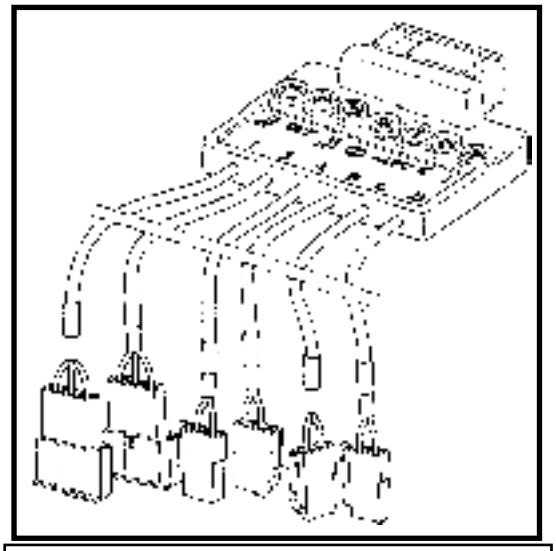
OBSERVATION:

UCE airbag may accept up to 4 airbag releasing (some elements are loosing their nominal characteristics). It is not necessary the systematic replacement after each airbag releasing.

REMARK :

The driver airbag – new item number- is provided with a self-adhesive protective foil stacked over the airbag connector. Unstacking of the protection foil is to be done ONLY in the moment of mounting.

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30 PINS ADAPTER – B40

ATTENTION!

In case of an intervention at the airbag system, it is obligatory the UCE airbag blocking by means of the CLIP tester in order to avoid undesirable releasing (all releasing lines are inhibited). This operation mode is signaled by the airbag indicator lighting from the instrument panel.

The adapter B40 is to be connected on line instead of UCE airbag.

This is allowing, by means of the CLIP tester, the control of all system lines, the measurement of the UCE airbag supply voltage and the compulsion of the airbag indicator lighting from the instrument panel.

The terminals are allowing in the same time, the performing of the checking of the diagnostic lines continuity, of the airbag indicator from the instrument panel and of the UCE airbag supplying (see chapter "**Diagnostic**").

ATTENTION!

It is forbidden the airbag system measurement by means of an ohmmeter or any other electric measurement devices because there is the risk of releasing due to some device working current. (see chapter "Diagnostic"). The airbag releasing lines are to measured only by means of the CLIP tester.

IDENTIFICATION OF THE EXIT CABLES OF THE B40 ADAPTER

1: Indicator and UCE airbag supply.
2 : Blank
A : Driver's airbag lines
B : Passenger's airbag lines
C: Passenger pre-tensioning lines
D: Driver's pre-tensioning lines.

MEASUREMENT CABLES

- cables XRBAG type B32, B35.
- necessary cable for destroying the airbag.

INERT IGNITER 931066

It has the same electrical characteristics as a real igniter and it has the purpose to replace the airbag during the diagnostic

ATTENTION!

Before using the inert igniter, check that its resistance value is between 1.8 and 2.5 ¿ .

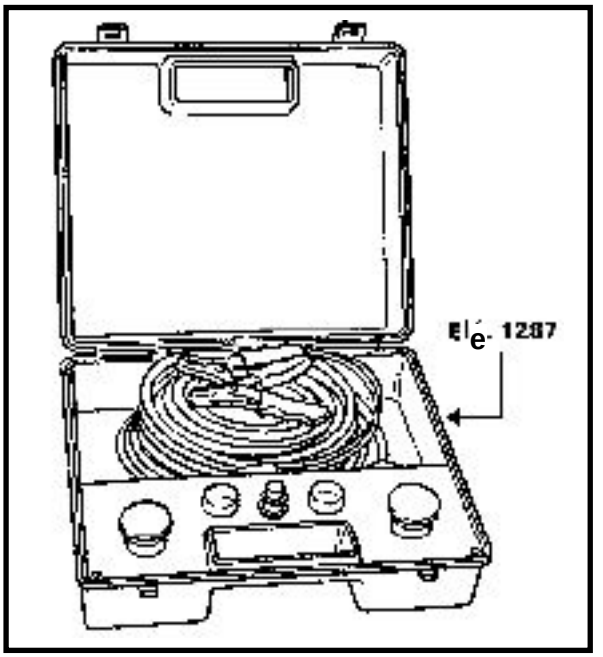
It is necessary to set the contact off then set the contact on, for airbag indicator turning off immediately after failure memory has been erased.

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THE DESTROYING DEVICE

In order to avoid all accident risks the airbag pyrotechnic gas generator must be started before changing the airbag or before definitely call in the vehicle.

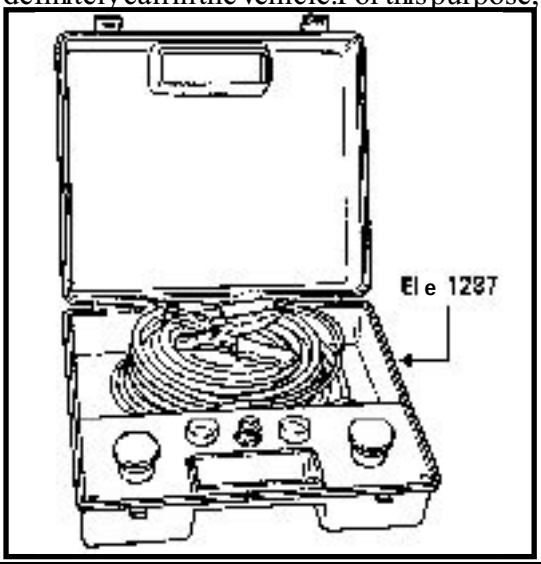
In this purpose, the device **Ele.1287** is to be used.



For details, please see chapter **" The airbag destroying procedure"**

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In order to avoid all accident risks the airbag pyrotechnic gas generator must be started before changing the airbag or before definitely call in the vehicle. For this purpose,



the device **Ele1287** is to be used.

ATTENTION !

It is forbidden the airbag system measurement by means of an ohmmeter or any other electric measurement devices because there is the risk of releasing due to some device working current. (see chapter "Diagnostic").

THE AIRBAG DESTROYING

ATTENTION!

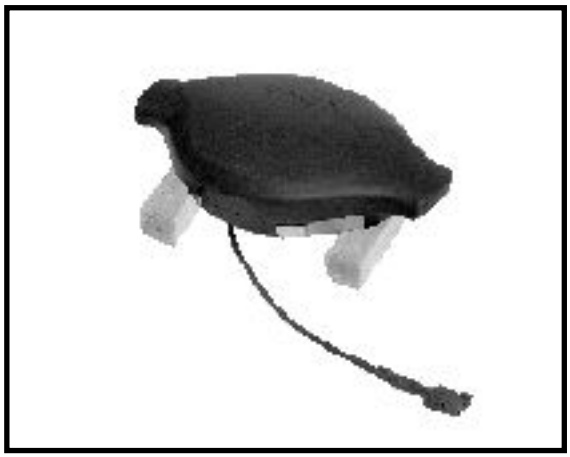
It is forbidden the pyrotechnic system handling near heating sources or open fire because of risk of the system undesirable releasing.

Dismount the airbag off the vehicle.

The operation of the airbag destroying is to be performed outside the workshop.

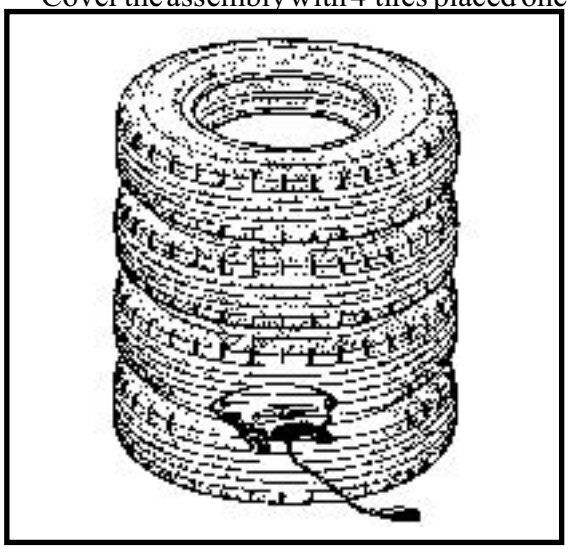
Connect the wiring necessary for pyrotechnic gas generator tripping.

Place the airbag pillow on two wood spacers in order to avoid the connector



damaging with the ground.

Cover the assembly with 4 tires placed one



above the other.

Unreel all wiring used for releasing, for a sufficient distance from airbag pillow (about 10 meters).

Connect the two connectors of the instrument to a battery.

After checking that no person is near airbag pillow, proceed to airbag destroying by simultaneously pushing the two buttons of the **Ele 1287** device.

REMARK:

In case the releasing is impossible (the igniter of the pyrotechnic gas generator is damaged), return the airbag pillow in a new

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wrapper.

APPLICATION CONDITIONS OF THE CHECKING DEFINED AT DIAGNOSTIC

Each failure is interpreted for a specific memorizing type (present failure, memorized failure, memorized or present failure).

The defined checking for each failure tracing is not to be applied unless the failure is interpreted for the failure type declared by the CLIP tester.

If a failure is not interpreted in diagnostic or it is declared "present", the diagnostic application when the failure is only "memorized" will not allow the location of the memorizing origin of that failure.

In this case, only a wiring and respective element connector checking must be performed (it is recommended the wiring movement in order to try the passing visualization from state "memorized failure" to state "present failure").

If a failure is interpreted when it is declared "memorized", the confirmation conditions of the failure real presence (and the necessity of diagnostic application) are to be found at "Recommendations" or at the beginning of the failure interpretation.

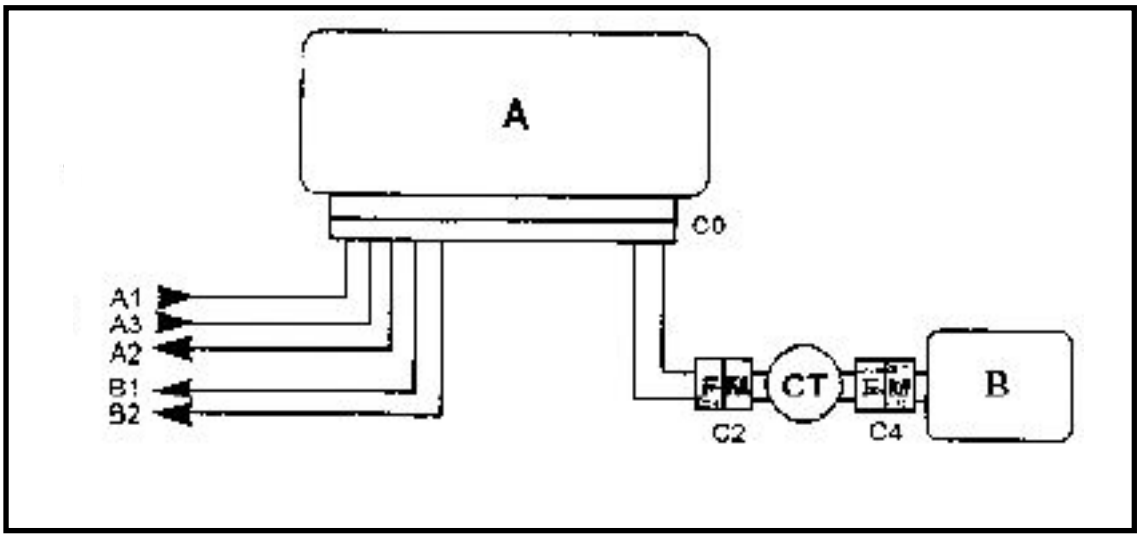
REMARK:
Before releasing diagnostic, the contact must be off.

ATTENTION!
Before any intervention at the airbag system, it is obligatory the UCE airbag blocking by means of the CLIP tester, using the control "Computer blocking". The confirmation of this control performing will be visualized by permanent lighting of the airbag indicator from instrument panel and the releasing line will be blocked, avoiding in this way the undesirable releasing of the airbag during the intervention.

ATTENTION !
⟨ If the intervention is taking place after the vehicle has suffered a collision followed by the driver's airbag releasing, UCE airbag blocking is possible only after performing its unblocking control performing.
⟨ Further to a shock causing the airbag releasing, the erasing of the memorized failures it is possible only after data reading from "Impact context", followed by "Computer unblocking" control.
⟨ The electrical measurements on the airbag releasing line are to be performed only by using the function "Airbag beam tests" of the CLIP tester. It is strictly forbidden the use in this purpose of the ohmmeter type measurement devices.
⟨ Before using the inert igniter, check that its resistance is between 1.8 – 2.5 ¿.
⟨ Ensure that during intervention, the computer supply voltage is not less than 10 V.

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SYSTEM CONFIGURATION



A UCE airbag
B Driver's airbag igniter
CT Rotating contact
A1 Supply +12 V
A3 Mass
A2 Airbag indicator
B1,B2 Diagnostic lines

The measured resistance value in measurement points C0, C2 and C4 is between 2.1 ¿ and 7 ¿.

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DF001 PRESENT OR MEMORIZED	UCE AIRBAG
RECOMMENDATIONS	**Characteristics:** nothing to notice.
Replace UCE airbag (see chapter <<help>> for this intervention).	
AFTER INTERVENTION	Nothing to notice

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DF002 PRESENT	UCE AIRBAG SUPPLY VOLTAGE 1. DEF : micro- disconnection 2. DEF : Supply voltage too small. 3. DEF : Supply voltage too high.

RECOMMENDATIONS	Use **30 pins adapter B40** for the intervention at the level of UCE airbag connector

1. DEF	**RECOMMENDATIONS**	Nothing to notice

For a micro-disconnection failure, check the supplying lines of UCE airbag:
- check the wiring connector condition at the level of UCE airbag
- check the electric mass routing condition of UCE airbag.
- check the condition of the fuse designated for UCE airbag.

2. DEF – 3. DEF	***RECOMMENDATIONS***	- check the condition and the correct tightening of the battery plugs. Nothing to notice

Perform the necessary interventions in order to obtain a correct supply voltage of UCE airbag:
10.5 volts ± 0.1 < supply voltage < 15 volts ± 0.1
- check the battery charging condition
- check the charging circuit.
- check the tightening and condition of the battery plugs.
- check the electric mass presence at UCE airbag.

AFTER INTERVENTION	Erase by means of the CLIP tester the failures memorized by UCE airbag.

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DF003 PRESENT	**DRIVER'S AIRBAG CIRCUIT** **CC : short circuit** **CO : open circuit** **CC.1 : short circuit at + 12 volts** **CC.0 : short circuit at mass**
RECOMMENDATIONS	**Characteristics**: the measurement of the airbag releasing line is to be performed only by means of the CLIP tester. Use **30 pins adapter B40** for the intervention at the level of the computer connector.
CO - CC	***RECOMMENDATIONS*** Nothing to notice

Set the contact on, then block the computer by means of the CLIP tester (see "Blocking UCE airbag")
Set the contact off and dismount the two attachment screws of the airbag on the steering wheel.
Check the correct connection of the airbag.
Disconnect the airbag then connect the inert igniter instead of it.
Set the contact on and perform a checking by means of the CLIP tester.
Replace the airbag if the state "present failure" is becoming "memorized failure"
Turn the contact off; conect then reconnect the connector of the rotating contact of under steering wheel control.
Only CLIP tester is to be used for measuring the resistance in **point C2** of the airbag circuit.
If the resulted value is not correct, replace the control under steering wheel.
Reconnect the rotating contact of the control under steering wheel, disconnect the computer connector and connect in its place the **30 pins adapter B40.**
Only CLIP tester is to be used for measuring the resistance of the driver's airbag releasing line, using **cable A** of the 30 pins adapter.
If the resulted value is not correct, check the correct connection of the 30 pins adapter (pins 10 and 11) and replace the front wiring if necessary.

If after performing these checking no failure has been noticed, check the presence of the **5 pegs** for shunt unblocking, at the **30 pins connector** of UCE airbag. Check the condition of the 30 ways connector of the airbag wiring (the connector blocking system ...)

AFTER INTERVENTION	Connect UCE airbag and driver's airbag then set the contact on. Erase by means of the CLIP tester the failures memorized by UCE airbag, then turn the contact off. Perform again a checking by means of the CLIP tester ; in case of failure absence, unblock the computer. Destroy the airbag pillow, if you are replacing it (see "Destroying procedure")

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DF003 PRESENT **CONTINUATION**	

CC.1 – CC.0	***RECOMMENDATIONS***	Nothing to notice

Block the computer by means of the CLIP tester (see "Blocking UCE airbag") Set the contact off and dismount the two attachment screws of the airbag on the steering wheel. ~~Check the condition of the airbag releasing lines.~~	
Only CLIP tester is to be used for measuring the isolation in **point C2** of the airbag circuit (using **cable A** of the 30 pins adapter). ~~If value resulted is not correct, replace the control under steering wheel.~~	
Reconnect the rotating contact of the control under steering wheel, disconnect the computer connector and connect in its place the **30 pins adapter B40.** Only CLIP tester is to be used for measuring the resistance of the driver's airbag releasing line, using **cable A** of the 30 pins adapter. If value resulted is not correct, check the 30 pins connector (pins 10 and 11) and replace the front wiring if necessary.	
AFTER INTERVENTION	Connect UCE airbag and driver's airbag then set the contact on. Erase by means of the CLIP tester the failures memorized by UCE airbag, then turn the contact off. Perform again a checking by means of the CLIP tester, in case of failure absence, unblock the computer. Destroy the airbag pillow, if you are replacing it (see "Destroying procedure")

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DF010 PRESENT	**AIRBAG DEFECTIVE INDICATOR CIRCUIT** **CC.1** : short-circuit at + 12 volts **CC.0** : open circuit or short-circuit at mass
RECOMMENDATIONS	**Characteristics**: the measurement of the airbag releasing lines is to be performed only by means of the CLIP tester. Use **30 pins adapter B40** for the intervention at the level of the computer connector (the gray connector of the 30 pins adapter).

CC.1 ***RECOMMENDATIONS*** Nothing to notice

Block the computer by means of the CLIP tester (see "**Blocking UCE airbag**")
Check the condition the airbag indicator from instrument panel.
Check insulation against **12 volts** between: airbag indicator **pin 7 of the 30 pins connector**

C0.0 ***RECOMMENDATIONS*** Nothing to notice

Indicator off after setting the contact on

Block the airbag computer by means of the CLIP tester (see "**Blocking UCE airbag**")
Check the condition the airbag indicator from instrument panel.
Check continuity between: airbag indicator **pin 7 of the 30 pins connector**
Check the supply with 12 volts of the airbag indicator.

If the performed checking did not evidence any failure, disconnect UCE airbag and connect instead of it the 30 pins adapter. Check only by means of the CLIP tester the operation of the airbag indicator from instrument panel, using the gray connector of the adapter B40.
If the airbag indicator lighting is possible by means of the CLIP tester, replace UCE airbag (see chapter <<Help>> for this intervention).
If airbag indicator lighting is not possible, perform again the checking previously described.

Indicator on after setting the contact on

Block the airbag computer by means of the CLIP tester (see "**Blocking UCE airbag**")
Disconnect UCE airbag connector and check the presence of the 5 pegs that are ensuring shunt unblocking of the **30 pins connector** of UCE airbag.
Ensure insulation against mass of the route: airbag indicator **pin 7 of 30 pins connector**

AFTER INTERVENTION	Erase the failures memorized by UCE airbag, then turn the contact off. Perform again a checking by means of the CLIP tester, in case of failure

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DF016 PRESENT	absence, unblock the computer. **COMPUTER CONFIGURATION**

RECOMMENDATIONS	**Characteristics:** nothing to notice.

The presence of this failure is corresponding to an incoherence between the computer configuration and the vehicle equipping, detected by the CLIP tester.

AFTER INTERVENTION	Modify the UCE airbag configuration by means of the CLIP tester, using the control "System elements configuration". Erase the failures memorized by UCE airbag then turn the contact off. Perform again a checking by means of the CLIP tester, and in case of

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	failure absence, unblock the computer.
DF034	BLOCKED COMPUTER
PRESENT	1. DEF : blocked further to a shock 2. DEF : blocked by means of CLIP tester.

RECOMMENDATIONS **Characteristics**: nothing to notice

This failure is allowing visualization of the blocking state of the airbag computer.
When present, all releasing lines are inhibited, driver's airbag releasing being not possible.

1. DEF ***RECOMMENDATIONS*** Nothing to notice

This failure is present after airbag releasing.
It is obligatory UCE airbag replacement and of the airbag pillow after shock producing

2. DEF ***RECOMMENDATIONS*** Nothing to notice

This failure is present in the following situations:
- UCE airbag is new (this one is delivered blocked)
- In case of an intervention on the vehicle, the computer blocking control is used, by means of CLIP tester.

Unblocking : Perform again a checking by means of CLIP tester ; in case of failure absence, unblock the computer.
Erase the memorized failure then turn the contact off.

AFTER INTERVENTION	Erase the failures memorized by UCE airbag, then turn the contact off. Perform again a checking by means of the CLIP tester, in case of failure absence, unblock the computer.

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RECOMMENDATIONS	Perform the conformity checking only after complete checking by means of CLIP tester.

Sequence	Function	Parameter or state Checking or action	Visualization and observations	Diagnostic
1	Computer conformity	Parameter PR002: <<Vehicle type>>	Solenza : **50**	Without
2	Computer configuration	Use of the control <<Configuration reading>>	Ensure if the computer configuration defined in the column <<Actual>> is corresponding to the vehicle equipping	Without
3	Operation of airbag indicator Checking of computer initialization	Contact setting	The airbag indicator is on for **3 seconds**, when contact setting on.	Without

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UCE AIRBAG REPLACEMENT

New airbag computer are delivered in blocked condition in order to avoid all risks of undesirable releasing (all releasing lines are inhibited).

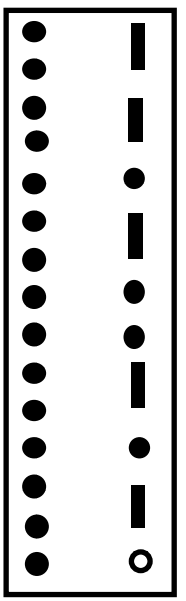
This "blocked" mode is noticed by the airbag indicator lighting from the instrument panel when setting the contact on.

In order to replace the UCE airbag, proceed as follows:

- set the contact off,
- dismount the central console tunnel,
- disconnect the UCE airbag connector,
- dismount the UCE airbag attachment screws,
- mount the new UCE airbag, the arrow from UCE airbag being oriented towards front of the vehicle,
- reconnect UCE airbag connector,
- check the system by means of the CLIP tester,
- modify if necessary the airbag computer configuration using the control "Configuration",
- unblock the computer only in case of a failure absence, declared by the CLIP tester.

DESIGNATION OF THE 30 WAYS UCE AIRBAG PLUGS

1. **Free**
2. **Free**
3. **Free**
4. **Free**
5. **Supply + after contact**
6. **Mass**
7. **Airbag failure indicator**
8. **Free**
9. **K diagnostic line**
10. **Driver's frontal airbag (+)**
11. **Driver's frontal airbag (-).**
12. **Free**
13. **Free**
14. **Free**
15. **Free**



16. **Free**
17. **Free**
18. **Free**
19. **Free**
20. **Mass**
21. **Free**
22. **Free**
23. **L diagnostic line.**
24. **Free**
25. **Free**
26. **Free**
27. **Free**
28. **Free**
29. **Free**
30. **Not in use**

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ALP1	**Missing dialog with the airbag computer.**

RECOMMENDATIONS	**Characteristics**: nothing to notice

Ensure that not CLIP tester is the failure cause – try its communication with some other vehicle UCE airbag. If CLIP tester is not the failure cause and the dialogue is not established with no other computer of the same vehicle, it is possible that another damaged computer is perturbing the diagnostic lines **L and K.**
Proceed by consecutive disconnection for damaged computer locating.
Check the battery voltage and perform the necessary interventions in order to obtain an adequate voltage, with the value between **10.5 volts and 15 volts.**

Check the presence and condition of the supply fuse of UCE airbag.
Check the correct connection of the computer connector and the cables condition.
Check the computer correct supplying:
- Disconnect UCE airbag then connect the 30 pins adapter B40.
- Check and ensure voltage presence between plugs marked **mass** and +**DC** (+ after contact)

Check the correct supplying of the diagnostic socket:
- **supply + permanent at pin 16**
- **mass at pin 5**

Check the continuity and insulation of the connection lines diagnostic socket/ UCE airbag:
- plug 23 of UCE airbag → pin 15 diagnostic socket (line L)
- plug 9 of UCE airbag → pin 7 diagnostic socket (line K)

If dialogue is not established after these checking, replace UCE airbag (see chapter "UCE airbag replacement)

AFTER INTERVENTION	After communication establishing, treat the possible declared failures.

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Front door wiring protector

DISMOUNTING

Dismount the battery (-) terminal.

Dismount the front door panel (see chapter **72 "Front door panel"**)

Disconnect the speaker connector (**1**)

Dismount the front door deflective panel.

Disconnect and detach from clips actuator's connector (**2**)

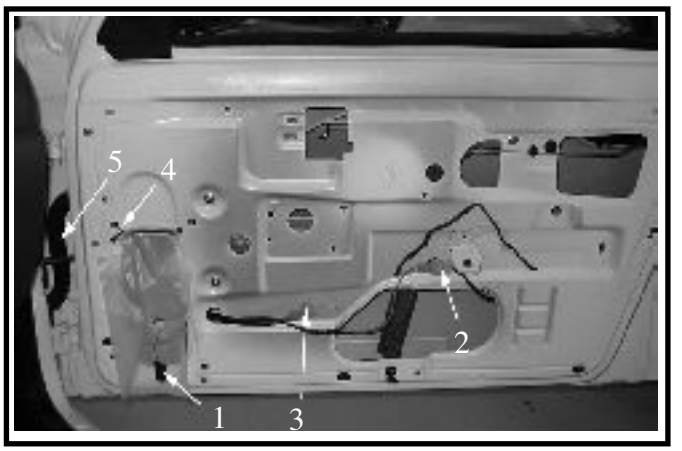
Disconnect window electric regulator connector (**3**) (for Solenza Dacia vehicles)

Cut attachment clip (**4**) of the front door wiring. Mark the mounting position of the attachment clip.

Remove the wiring protector (**5**) from the front door and front pillar. Mark the mounting position of the protector.

Remove the front wiring from the door. Mark the mounting position of the fron wiring.

Carefully, remove protector off the wiring



REMOUNTING

Perform the dismounting operations in the reverse order, observing the mounting position previously existent.

Replace the attachment clip (**4**).

Check the actuator's operation, the windows and speaker operation.

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Rear door wiring protector

DISMOUNTING

Disconnect the battery (-) terminal.

Detach from clips the crane handle.

Dismount the rear door panel (see chapter **72 " Rear door panel"**).

Dismount the rear door deflective panel.

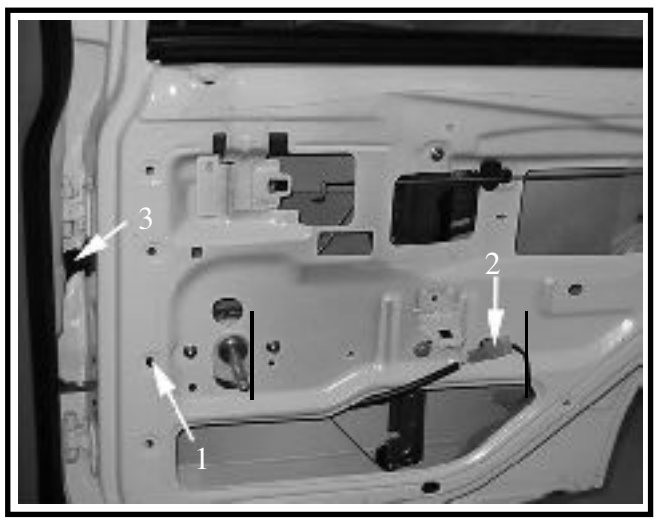
Dismount the attachment clip (**1**) of the rear wiring.

Disconnect and detach from clips actuator's connector (**2**).

Remove the wiring protector (**3**) from the rear door and middle pillar. Mark the mounting position of the protector.

Remove the rear wiring from the door. Mark the mounting position of the rear wiring.

Carefully remove protector off the wiring



REMOUNTING

Perform the dismounting operations in the reverse order, observing the mounting position previously existent.

Replace the attachment clip (**1**).

Check the actuator's operation and windows' operation.

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GENERAL PRESENTATION

From electric point of view, the vehicle electric diagrams have been structured as Applied Principle Schemes (APS), presented according to each system function. These APS diagrams also contain details concerning the internal function of some simple electric components (contacts, relays), thus contributing to a better understanding of the system functioning and of the incident good diagnosis.

● Chapter 2 includes the list of the vehicle functional diagrams (APS). They are divided in electric's supply diagrams, mass connection diagrams and system functional diagrams.

● Chapter 7 includes the electric functional diagrams (APS), identified as follows:

- electric components marked by 3-4 figures; their identification on the electric diagrams can be achieved by means of "Index of components" – see Chapter 3;
- connections between the electric wiring, marked by an "R" followed by figures; they are indicated in the Chapter 4 list;
- mass connections, marked by an M followed by figures or letters; they are indicated in Chapter 4.

● Every wire of the electric diagrams is defined by an alphanumeric code representing its function, followed by a group of letters, representing the color of that wire.

● Chapter 11 includes the connectors and connections between wiring, drawn from the later inlet towards the connector/connection. The wires entering each connector socket are identified by means of the above-mentioned drawings. The Chapter 11 also includes detailed tables about each wire entering the connector: wire location in the connector socket, wire section, wire function code and its destination.

● Chapter 11 includes the index of all wire functions in connectors and connections, namely the list of all the connectors and connections, which helps to their easy identification in Chapter 11.

● Chapter 5 includes the mass and connection positions on vehicle and helps to identify the electric mass fixing points on it, as well as location of the connections between its wiring.

● Chapter 6 includes the electric component position on vehicle. The location of the various components with electric functions on the vehicle can be identified by means of the component list.

● The cockpit fuse box is presented in Chapter 8 and contains information about its positioning and the functional purpose of the fuse.

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● The fusebox from the engine compartment is presented in Chapter 9, that contains information about its location on the vehicle and the functional purpose of the relays and fuse placed on it.

● The functional codes of the wires are detailed explained in Chapter 12.

FUNCTIONAL DIAGRAMS INTERPRETATION

The functional diagram information included in Chapter 7 are to be interpreted taking into consideration the explanation referring to the following example:

1 = vehicle class
2 = manufacturing year
3 = functional electric diagram denomination
4 = equipment differentiation criteria for identifying the functional electric diagram˙
5 = electric connector colour˝
6 = connector graphical representation
7 = electric component index number
8 = number of the fuse box on which the relay or safety fuse is mounted
9 = safety fuse identification on fuse box
10 = safety fuse value
11 = identification of wiring joints
12 = electric mass identification
13 = electric connection colour between wiring˝
14 = electric connection identification
15 = electric connection graphical representation
16 = symbol, pages containing functional diagrams
17 = wire function code
18 = wire colour˝
19 = functional diagram number

OBSERVATION:

1. The area (4) specifies the differentiating elements serving to the various functional diagrams identification, considering the following symbols:

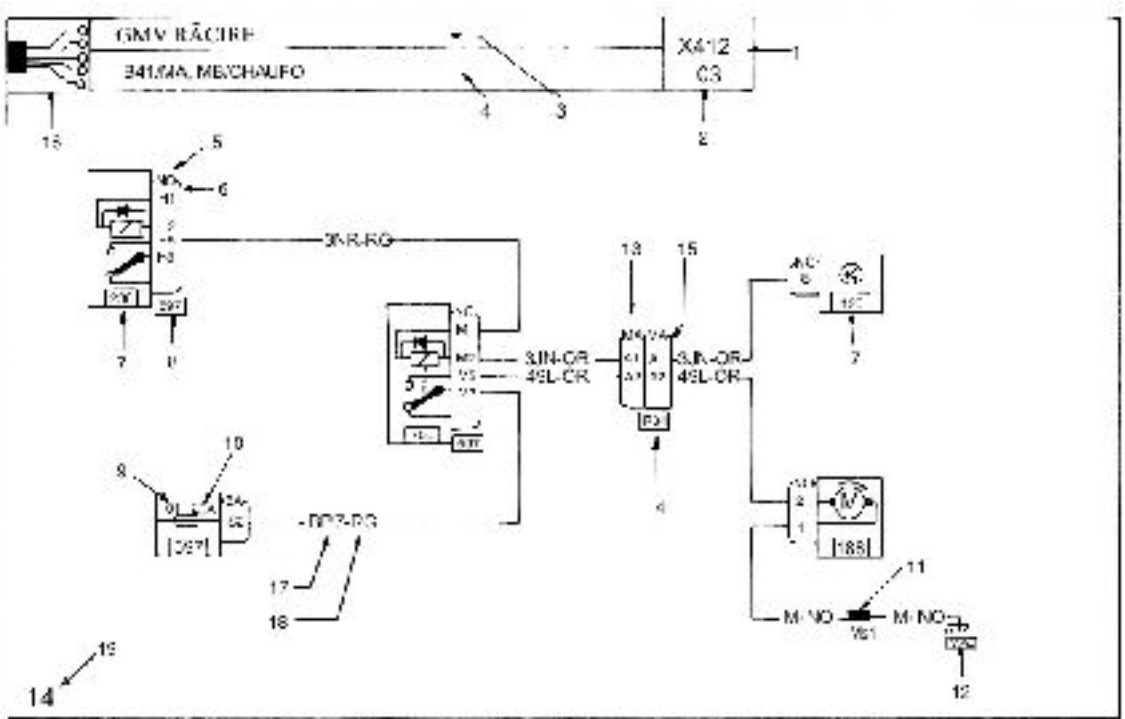
ABCO01 = driver's airbag
CA = climate maintenance with air conditioning
CHAUFO = climate maintenance without air conditioning
CPE = Electric locking/unlocking doors control
DA = assisted power steering
E0, E1, E2 = levels of equipment
LVE = front windows electric control

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MA = motorization in agreement with the EURO 96 (EURO II) de-pollution norm
MB = motorization according to the EURO 2000 (EURO III) de-pollution norm
PROJAB = fog projectors
RAD01 = Front loud speaker radio-cassette player
RAD02 = Rear loud speaker radio-cassette player
RAD03 = Front and rear loud speaker radio-CD player
TLAIF1 = Countries group definition (SASO norms)

2. The electric connectors (**5**), couplings (**13**) and wires (**18**) are symbolised by the following colours:

BA = white	JA = yellow	SA = pink- salmon
BE = blue	MA = brown	VE = green
BJ = beige	NO = black	VI = violet
CY = white-crystal	OR = orange	
GR = grey	RG = red	



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INTERPRETATION OF CONNECTORS WIRES FUNCTION INDEX

The information concerning the function of the wires in connectors and connections included in chapter 11, are to be interpreted taking into account the explanations based upon the following example:

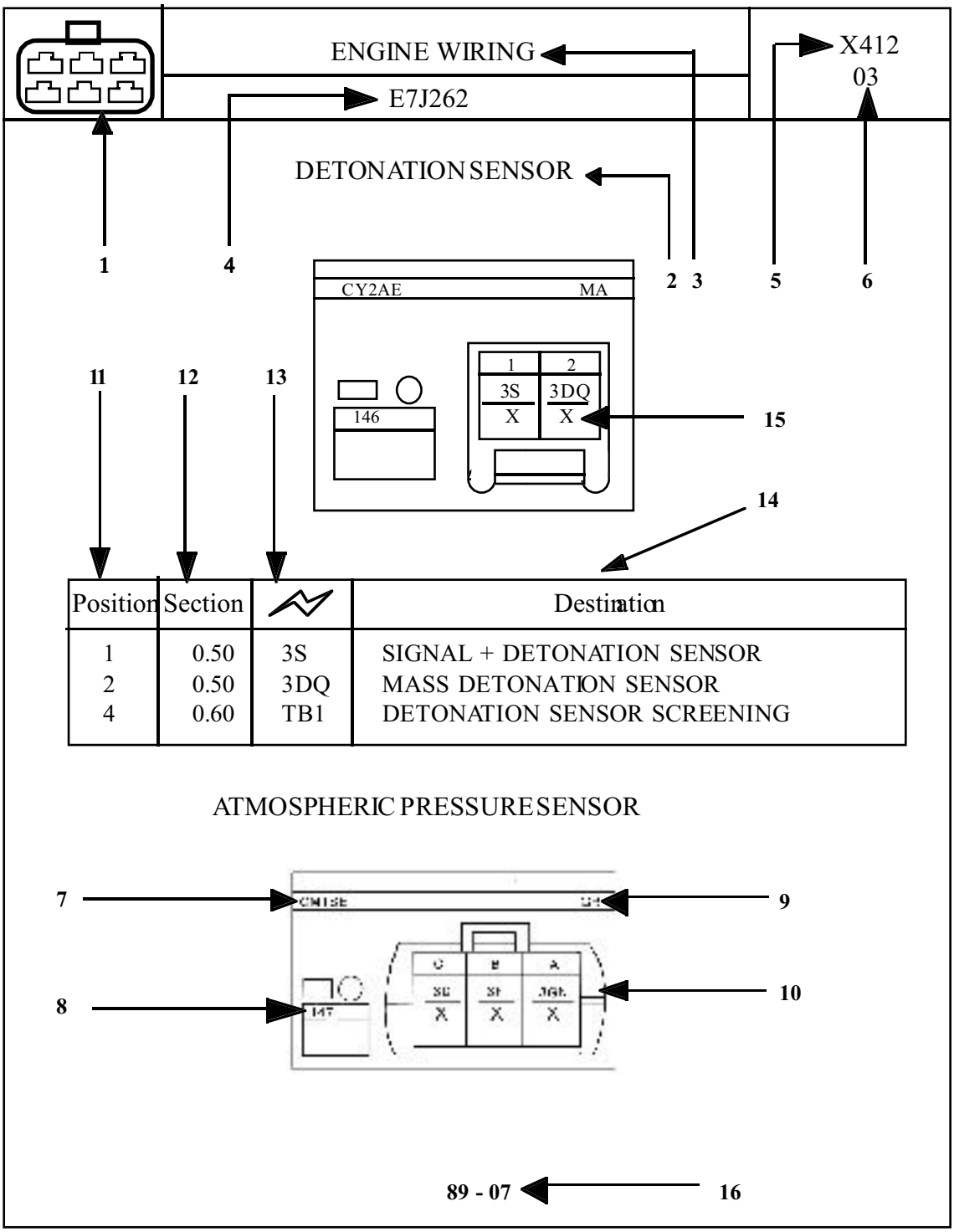
1 = symbol (sign) of the page containing connectors and electric connections
2 = connector destination
3 = name of the wiring on which the respective connector is placed
4 = general criteria of page separation
5 = vehicle class
6 = manufacturing year
7 = connector code
8 = component identification to whom the described connector is to be connected
9 = connector colour
10 = connector symbol
11 = indication of the connector socket
12 = wire sectioning (mm″)
13 = wire functional code
14 = wire destination
15 = wire colour *
16 = chapter number and connector page number

REMARK:
Concerning position 15, please note that one X is marked, for one wire and two Xs for two wires. The colour of the wire is to be symbolised only in case the electric routing of the wire represents one of the fundamental statuses: + permanent (+ IC), + after contact (+ DC), mass (-) or controls.

The symbols used for the wire colours are the followings:

A = white	AS = blue	GR = grey
N = black	G = yellow	V = green
M = brown	VI = violet	R = red

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Position	Section		Destination
1	0.50	3S	SIGNAL + DETONATION SENSOR
2	0.50	3DQ	MASS DETONATION SENSOR
4	0.60	TB1	DETONATION SENSOR SCREENING

ATMOSPHERIC PRESSURE SENSOR

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ELECTRIC DIAGRAMS DENOMINATION	DIAGRAM NUMBER
DOORS CENTRAL LOCKING	1
ANTI-STARTING	2
SPEED LIMIT INDICATOR	3
ELECTRIC LIGHTER	4
CLIMATE CONTROL	5
CLIMATE CONTROL AND AIR CONDITION	6
CEILING LAMP	7
FRONT WINDOWS ELECTRIC CONTROL	8
RADIO	9-10
STARTING CIRCUIT	11
ENGINE COOLING FAN	12-13
ELECTRONIC INJECTION	14-15-16-17-18-19-20-21
CHARGING CIRCUIT	22
REAR WIRING MASS	23-24
FRONT WIRING/ DASHBOARD MASS	25-26-27-28-29-30-31-32-33-34-35-36
BATTERY/CARRIAGE BODY MASS	37
FOG PROJECTORS WIRING MASS	38
HATCHBACK WIRING MASS	39
ENGINE WIRING MASS	40-41-42-43
COCKPIT FUSE BOX	44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59
ENGINE FUSE BOX AND RELAY	60-61-62-63
HANDBRAKE INDICATOR / BRAKING SYSTEM FAILURE	64
FUEL LEVER INDICATOR	65-66
OIL PRESSURE INDICATOR	67
DIAGNOSTIC SOCKET	68-69
DASHBOARD	70-71-72-73-74
ALERT TEMPERATURE INDICATOR FOR COOLING FLUID	75
WATER TEMPERATURE COOLING FLUID INDICATOR	76
SPEED INDICATOR	77-78
DRIVER'S AIRBAG	79
DRIVER SAFETY BELTS INDICATOR	80
ACOUSTIC WARNING	81
REAR WINDOW DEFROSTING	82

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ELECTRIC DIAGRAMS DENOMINATION	DIAGRAM NUMBER
WINDSCREEN WIPER-WASHING	83
FOG PROJECTORS	84
REAR FOG LAMPS	85
MEETING LIGHTS	86
REVERSE DRIVING LIGHTS	87
PARKING LIGHTS	88
ROAD LIGHTS	89
STOP LIGHTS	90
TURNING AND HAZARD LIGHTS	91-92

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ELECTRIC DIAGRAMS

Functional diagrams list index

Code	Component denomination	Code	Component denomination
101	Electric lighter	209	Lights, turning lights and horn switch
103	Alternator	212	Motor windscreen wiper
104	Anti-theft system	213	Ceiling lamp
105	Acoustic warning	221	Windscreen washing pump
107	Battery	222	Valve potentiometer
113	Windscreen wiper timer	224	Power steering pressure controller
120	Injection computer (ECE)	225	Diagnostic socket
123	Doors closing switch	226	Right headlamp
124	Climate control panel	227	Left headlamp
125	Hazard switch	231	Fog projectors control relay
128	Rear window defrosting switch	234	Cooling motor fan control relay
132	Left electric window switch	236	Fuel pump control relay
133	Right electric window switch	238	Actuators relay
137	Turning signalling relay	242	Downstream oxygen sensor
138	Right rear door actuator	244	Injection water temperature sensor
139	Left rear door actuator	247	DASHBOARD
140	Left front door actuator	255	Right front turning lamp
141	Right front door actuator	256	Left front turning lamp
145	Windscreen wiper-washer switch	261	Radio
146	Detonation sensor	262	Cooling motor fan and AC
147	Atmospheric pressure sensor	267	Right side signalising lamp
149	RPM sensor	268	Left side signalising lamp
155	Reverse driving contact	272	Injection air temperature sensor
156	Handbrake contact	319	AC control panel
160	Stop contact	320	Cooling motor fan (for AC)
163	Starter	321	Motor fan resistance (for AC)
171	AC compressor clutch	326	Speed limit indicator
172	Right rear lamp	333	Driver safety belt contact
173	Left rear lamp	371	Canister purging valve
176	Right fog headlight	462	License plate lamp
177	Left fog headlight	503	UCE decoder
180	Left front door contact	584	AC compressor clutch control relay
184	Right front parking lamp	597	Safety fuse box and engine compartment relays
185	Left front parking lamp	639	STOP-S3 lamp
188	Cooling motor fan	649	Step by step engine
189	Right rear loud speaker	654	Anti-starting bushing
190	Left rear loud speaker	700	Cooling blower low speed control relay
191	Right front door loud speaker	756	UCE airbag
192	Left front door loud speaker	778	Ignition coil
193	Injector 1	857	FLASH relay
194	Injector 2	887	Upstream oxygen sensor
195	Injector 3	899	Driver's airbag
196	Injector 4	927	Chock sensor
199	Fuel lever transmitter and electric pump	1016	Cockpit fuse box
200	Rear window defrosting	1091	I.C.P. braking system
203	Electric left window actuator	1140	Vehicle speed transducer
204	Electric right window actuator	1156	Cooling motor fan
205	Oil pressure contact	1202	AC pressure sensor (pressure controller)

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CONNECTIONS LIST

R157 = REAR/HATCHBACK WIRING CONNECTIONS (A)
R212 = FRONT WIRING CONNECTIONS – DASHBOARD/ENGINE (B)
R265 = FRONT WIRING CONNECTIONS – DASHBOARD/REAR(C)
R316 = FRONT WIRING CONNECTIONS – FOG PROJECTORS/ DASHBOARD (D)

MASS LIST

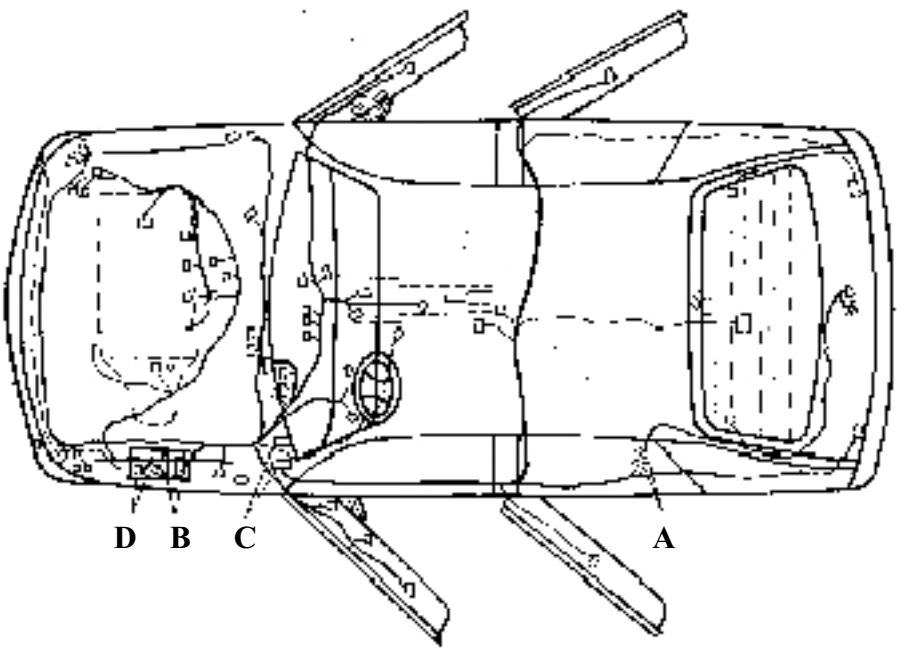
M20 = REAR WINDOW DEFROSTING MASS
MB* = LEFT FRONT BODY ELECTRIC MASS
MC = GEAR BOX ELECTRIC MASS
MD = ELECTRIC MASS REAR LEFT TABLE
MH* = ENGINE ELECTRIC MASS
MK = ELECTRIC MASS LEFT FRONT COCKPIT
ME = ELECTRIC MASS LEFT FRONT LONGITUDINAL GIRDER
MYH= ELECTRIC MASS LEFT HATCHBACK
NAP = NAP = TUNNEL ELECTRONIC MASS

REMARK :
In the MB, MD and MH mass points there are also the following mass points :

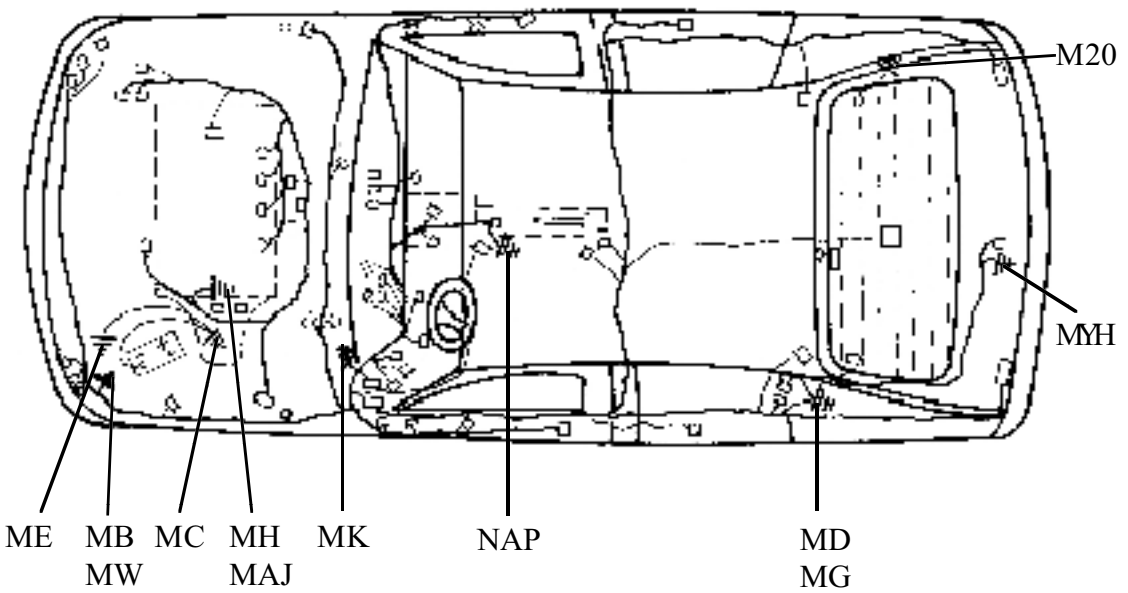
MB → MW – mass for fog projectors wiring
MD → MG – mass for hatchback wiring
MH → MAJ – mass for cooling motor fan

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ELECTRIC COMPONENTS LOCATIONON VEHICLE



MASS ATTACHMENT ON THE VEHICLE

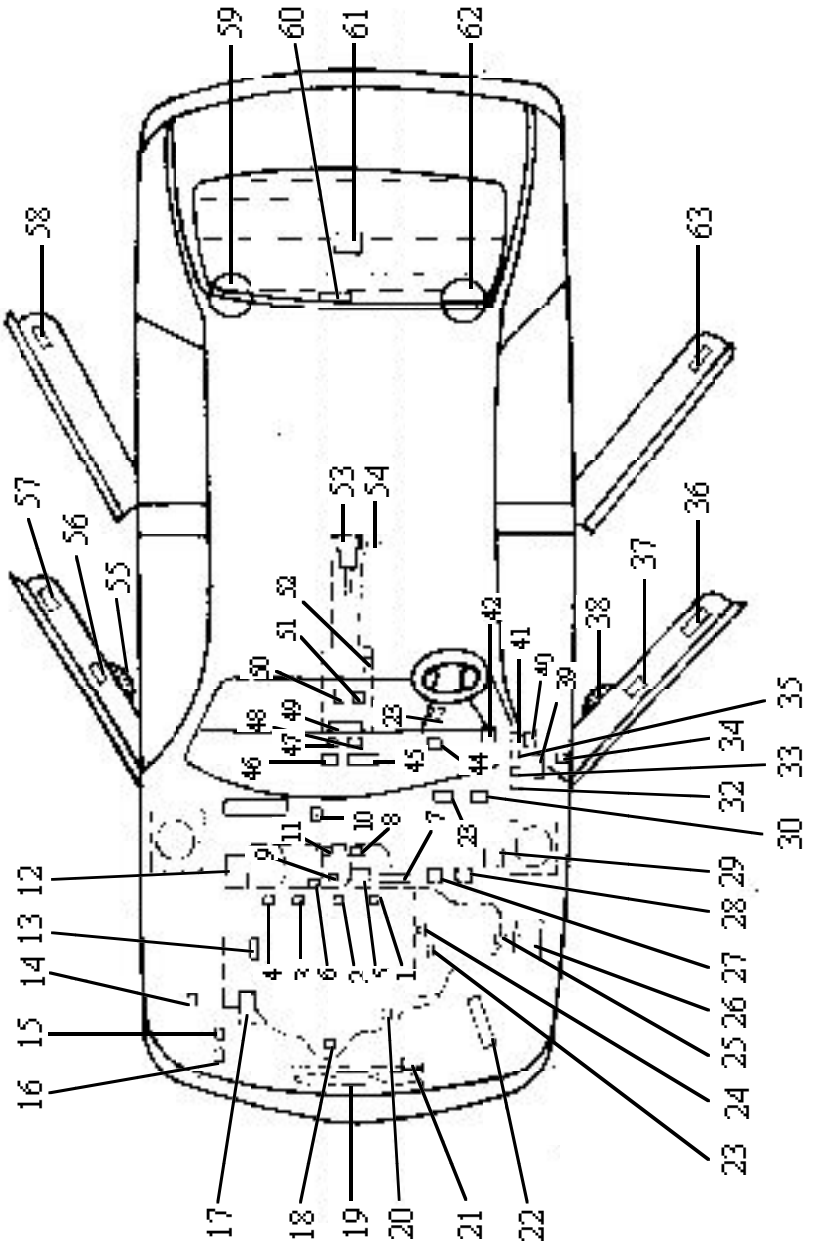


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Electric components location on the vehicle

No.	Denomination	No.	Denomination
1	Injector 1	33	Turning lights relay
2	Injector 2	34	Front door contact
3	Injector 3	35	Windscreen wiper timer
4	Injector 4	36	Left front door actuator
5	Atmospheric pressure sensor	37	Left electric window actuator
6	Detonation sensor	38	Left front door loud speaker
7	Starter	39	Cockpit fuse box
8	Injection air temperature sensor	40	UCE decoder
9	Valve potentiometer	41	FLASH relay
10	Upstream oxygen sensor	42	Rear window defrosting switch
11	Step-by step engine	43	Anti-starting bushing
12	Alternator	44	STOP contact
13	Ignition coil	45	Radio
14	Canister purging valve	46	Doors locking switch
15	AC pressure sensor(pressure controller)	47	Lighter
16	Pressure controller DA	48	Hazard switch
17	AC compressor clutch	49	Climate control panel
18	Upstream oxygen sensor	50	Electric rightwindow switch
19	Cooling motor fan and AC	51	Electric left window switch
20	Cooling engine fan resistance for AC	52	UCE airbag
21	Oil pressure contact	53	Diagnostic socket
22	Injection computer	54	Handbrake contact
23	RPM sensor	55	Safety belt contact
24	Injection water temperature sensor	56	Driver's airbag
25	Reverse driving contact	57	Right front door loud speaker
26	Fuse box and engine relays	58	Electric right window actuator
27	Vehicle speed transducer	59	Right front door actuator
28	ICP brake system	60	Right rear door actuator
29	Chock sensor	61	Right rear loud speaker
30	Windscreen wiper motor	62	STOP-S3 lamp
31	Windscreen washing motor	63	Fuel level transmitter and electric pump
32	Speed limit indcator	64	Left rear door loud speaker
		65	Left rear door actuator

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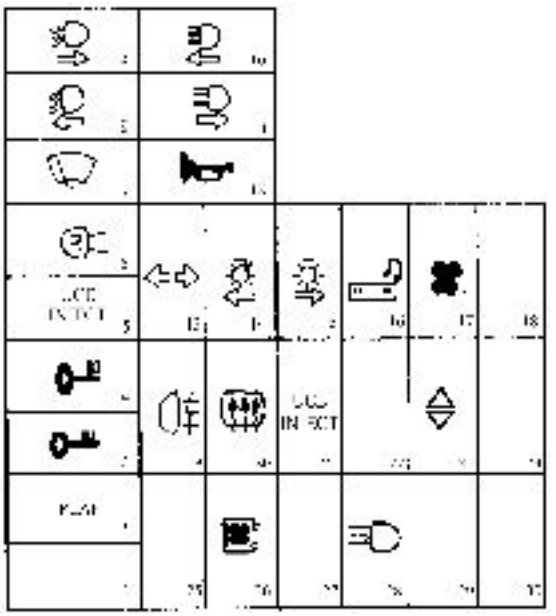
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FUNCTIONAL ELECTRIC DIAGRAMS

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Cockpit fuse box

The cockpit fuse box is placed in driving post left side, being attached on the dashboard lateral side.



The fuses are protecting the following electric components and circuits:

FUSE NUMBER	FUSE TYPE	PROTECTED CIRCUIT
F02	10A	Diagnostic socket, ceiling light, windscreen wiper motor (fix point stopping), FLASH relay (+C)
F03	25A	UCE decoder, anti-starting bushing, radio, instrument panel, climate control panel (+C)
F04	15A	U.C.E. decoder, diagnostic socket, instrument panel, climate control panel, speed limit indicator, contact STOP (+DC)
F05	15A	U.C.E. injection, U.C.E. airbag fuel pump relay/ ignition coil (+DC)
F06	5A	Reverse driving contact(+DC)
F07	10A	Windscreen wiper switch, windscreen wiper timer.
F08	10A	Left meeting lights, instrument panel (indicator)
F09	10A	Right meeting lights

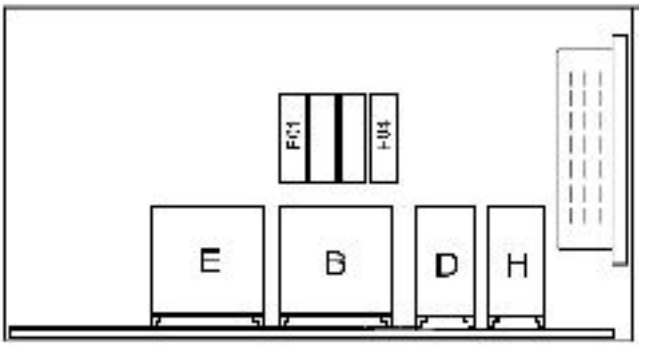
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F10	**10A**	Left road lights, instrument panel (indicator)
F11	**10A**	Right road lights
F12	**10A**	Acoustic warning
F13	**7.5A**	Signaling direction lights and hazard
F14	**10A**	Front/rear parking lights, lighting: switches, climate control, instrument panel, lighter, radio.
F15	**10A**	Front/rear parking lights
F16	**15A**	Lighter, radio
F17	**30A**	Cooling motor fan
F19	**5A**	Fog lamps, instrument panel (indicator)
F20	**25A**	Rear window defrosting
F21	**5A**	U.C.E. injection
F23	**30A**	Electric left/right window switch
F26	**30A**	Cooling blower
F28	**25A**	Fog projectors

REMARK:
The fusible F26 is used only for vehicles equipped with air conditioning.

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A. Vehicles without AC equipment



The fuse box placed in the engine compartment is attached in front of the left shock absorber column and contains relays and fusible protecting the following electric circuits:

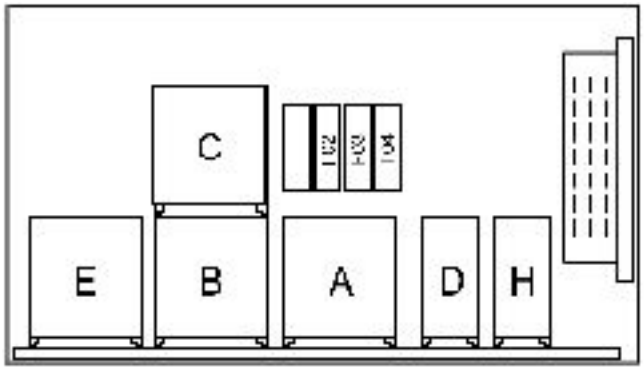
FUSE NUMBER	FUSE TYPE	PROTECTED CIRCUIT
F01	25A	Engine cooling fan
F04	30A	Injectors, oxygen sensor heating resistance, canister purging valve, injection computer, fuel pump, ignition coil., vehicle speed transducer.

RELAY	B	D	H	E*
RELAY TYPE	30A	30A	30A	30A
CONTROLLED CIRCUIT	Engine cooling fan	Injectors, canister purging valve, oxygen sensor heating resistance, injection computer, and vehicle speed transducer	Fuel pump, ignition coil	Fog projectors

*- for vehicles equipped with fog projectors

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B. For vehicles with air conditioning



The fuse box placed in the engine compartment is attached in front of the left shock absorber column and contains relays and fusible protecting the following electric circuits:

FUSE NUMBER	FUSE TYPE	PROTECTED CIRCUIT
F02	**40A**	Engine cooling fan
F03	**7.5A**	AC compressor
F04	**30A**	Injectors, oxygen sensor heating resistance, canister purging valve, injection computer, fuel pump, ignition coil, vehicle speed transducer.

RELAY	A	B	C	D	H	E*
RELAY TYPE	**30A**	**30A**	**40A**	**30A**	**30A**	**30A**
CONTROLLED CIRCUIT	AC compressor	Engine cooling fan - 1/st speed	Engine cooling fan - 2/nd speed	Injectors, canister purging valve, oxygen sensor heating resistance, injection computer, and vehicle speed transducer	Fuel pomp, ignition coil	Fog projectors

*- for vehicles equipped with fog projectors

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Index in connectors and couplings

No.con.	Denomination	Page
101	ELECTRIC LIGHTER	89-139
103 HA	ALTERNATOR	89-113
103 HB	ALTERNATOR EXCITATION	89-113
104	ANTI-THEFT MECHANISM	89-139
105	ACOUSTIC WARNING	89-140
107	(+)BATTERY (engine wiring)	89-114
107AA	(+)BATTERY (front wiring-dashboard)	89-140
113	WINDSCREEN WIPER TIMER	89-141
120	UCE INJECTION(for vehicles without AC)	89-115
120	UCE INJECTION(for vehicles with AC)	89-117
123	LOCKING DOORS SWITCH	89-141
124	CLIMATE CONTROL PANEL	89-142
125	HAZARD SWITCH	89-143
128	REAR WINDOW DEFROSTING SWITCH	89-143
132	ELECTRIC RIGHT WINDOW SWITCH	89-144
133	ELECTRIC LEFT WINDOW SWITCH	89-144
137	TURNING LIGHTS RELAY	89-145
138	RIGHT REAR DOOR ACTUATOR	89-172
139	LEFT FRONT DOOR ACTUATOR	89-172
140	LEFT FRONT DOOR ACTUATOR	89-146
141	RIGHT FRONT DOOR ACTUATOR	89-146
145	WINDSCREEN WIPER-WASHING SWITCH	89-147
146	DETONATION SENSOR	89-120
147	ATMOSPHERIC PRESSURE SENSOR	89-120
149	RPM SENSOR	89-121
155	REVERSE DRIVING CONTACT	89-121
156	HANDBRAKE CONTACT	89-173
160	STOP CONTACT	89-147
163 GA	STARTER	89-122
163 AB	STARTER EXCITATION	89-122
171	AC COMPRESSOR CLUTCH	89-123
172	RIGHT REAR LAMP	89-173
173	LEFT REAR LAMP	89-174
176	RIGHT FOG PROJECTOR	89-177
177	LEFT FOG PROJECTOR	89-177
180	LEFT FRONT DOOR CONTACT	89-148
184	RIGHT FRONT PARKING LAMP	89-148
185	LEFT FRONT PARKING LAMP	89-148
188	ENGINE COOLING FAN (for vehicles without AC)	89-123
189	RIGHT REAR LOUD SPEAKER	89-174
190	LEFT REAR LOUD SPEAKER	89-175
191	RIGHT FRONT DOOR LOUD SPEAKER	89-149
192	LEFT FRONT DOOR LOUD SPEAKER	89-149
193	INJECTOR 1	89-124
194	INJECTOR 2	89-124
195	INJECTOR 3	89-125

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196	INJECTOR 4	89-125
199	FUEL LEVEL TRANSMITTER AND ELECTRIC PUMP	89-175
200	REAR WINDOW DEFROSTING	89-179
203	ELECTRIC RIGHT WINDOW ACTUATOR	89-150
204	ELECTRIC LEFT WINDOW ACTUATOR	89-150
205	OIL PRESSURE CONTACT	89-126
209	LIGHTS, TURNING LIGHTS, HORN SWITCH	89-151
212	WINDSCREEN WIPER MOTOR	89-152
213	CEILING LIGHT	89-152
221	WINDSCREEN WASHING PUMP	89-153
222	VALVE POTENTIOMETER	89-126
224	POWER STEERING PRESSURE CONTROLLER	89-127
225	DIAGNOSTIC SOCKET	89-153
226	RIGHT HEADLAMP	89-154
227	LEFT HEADLAMP	89-154
231	FOG PROJECTORS CONTROL RELAY	89-178
242	DOWNSTREAM OXYGEN SENSOR	89-127
244	WATER TEMPERATURE SENSOR	89-128
247	INSTRUMENT PANEL	89-155
255	RIGHT FRONT TURNING LAMP	89-157
256	LEFT FRONT TURNING LAMP	89-157
261	RADIO	89-158
262	ENGINE COOLING FAN (for vehicles with AC)	89-128
267	RIGHT FRONT SIDE SIGNALING LAMP	89-159
268	LEFT FRONT SIDE SIGNALING LAMP	89-159
272	INJECTION AIR TEMPERATURE SENSOR	89-129
319	CLIMATE CONTROL PANEL WITH AC	89-160
320	CLIMATE CONTROL BLOWER (for AC vehicle equipment)	89-161
321	CLIMATE CONTROL FAN RESISTANCE (for vehicles with AC)	89-129
326	SPEED LIMIT INDICATOR	89-162
333	DRIVER SAFETY BELT CONTACT	89-176
371	CANISTER PURGING VALVE	87-130
462	LICENSE PLATE LAMP	89-179
503	UCE DECODER	89-163
597	FUSE BOX AND ENGINE RELAYS (for vehicles without AC)	89-131
597	FUSE BOX AND ENGINE RELAYS (for vehicles with AC)	89-133
639	STOP -S3 LAMP (in aileron)	89-179
649	STEP-BY-STEP ENGINE	89-135
654	ANTI-STARTING BUSHING	89-164
756	U.C.E. AIRBAG	89-164
778	IGNITION COIL	89-135
857	FLASH RELAY	89-165
887	UPSTREAM OXYGEN SENSOR	89-136
899	DRIVER'S AIRBAG	89-165
927	CHOCK SENSOR	89-136
1016	COCKPIT FUSE BOX	89-166

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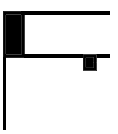
1091	ICP BRAKING SYSTEM	89-169
1140	VEHICLE SPEED TRANSDUCER	89-137
1156	CLIMATE CONTROL BLOWER (without AC)	89-169
1202	AC PRESSURE SENSOR (PRESSURE CONTROLLER)	89-137
MAJ	CLIMATE BLOWER ELECTRIC MASS	89-138
MB	FRONT LEFT BODY ELECTRIC MASS	89-170
MD	REAR LEFT PLATE ELECTRIC MASS	89-176
MG	HATCHBACK WIRING ELECTRIC MASS	89-180
MH	ENGINE ELECTRIC MASS	89-138
MK	FRONT LEFT BODY ELECTRIC MASS	89-171
MW	FOG PROJECTORS WIRING ELECTRIC MASS	89-178
MYH	LEFT HATCHBACK ELECTRIC MASS	89-180
NAP	TUNNEL ELECTRONIC MASS	89-171
R157	REAR WIRING/ HATCHBACK COUPLING	89-181
R212	FRONT WIRING/ DASHBOARD /ENGINE COUPLING	89-182
R265	FRONT WIRING-DASHBOARD REAR COUPLING	89-184
R316	FRONT WIRING-DASHBOARD/FOG PROJECTORS COUPLING	89-186

REMARKS:

- Connectors and couplings are represented backwards (from wires forward).
- Some electric components are not connected to the vehicle wiring by means of multiple-way connectors, but by means of protected individual plugs. For illustrating the type of the respective plug, the following symbols are to be used:



Plug mother 6 mm



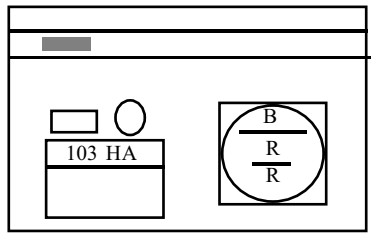
Plug mother flag 6.3 mm

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	ENGINE WIRING	X412 03
	E7J262	

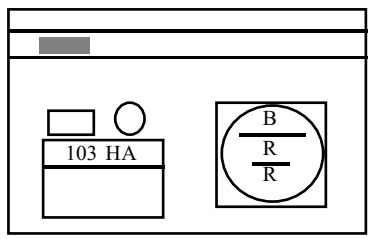
ALTERNATOR (for vehicles without AC)

Position	Section		Destination
1	2.0	B	+BATTERY> INLET FUSE F01
1	16.0	B	+ BATTERY> STARTER



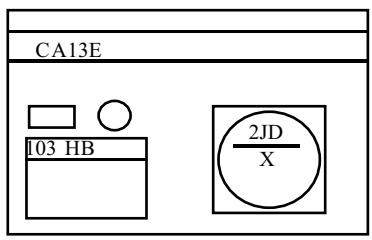
ALTERNATOR (for vehicles with AC)

Position	Section		Destination
1	5.0	B	+ BATTERY> INLET FUSE F02
1	16.0	B	+ BATTERY> STARTER

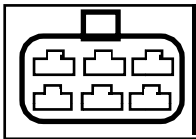


EXCITATION ALTERNATOR

Position	Section		Destination
1	2	2JD	+ALTERNATOR EXCITATION > DASHBOARD

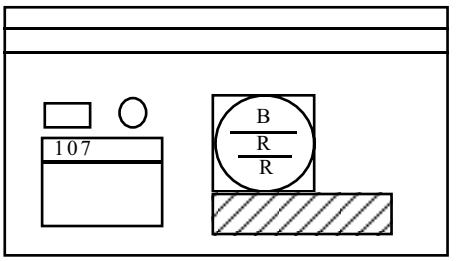


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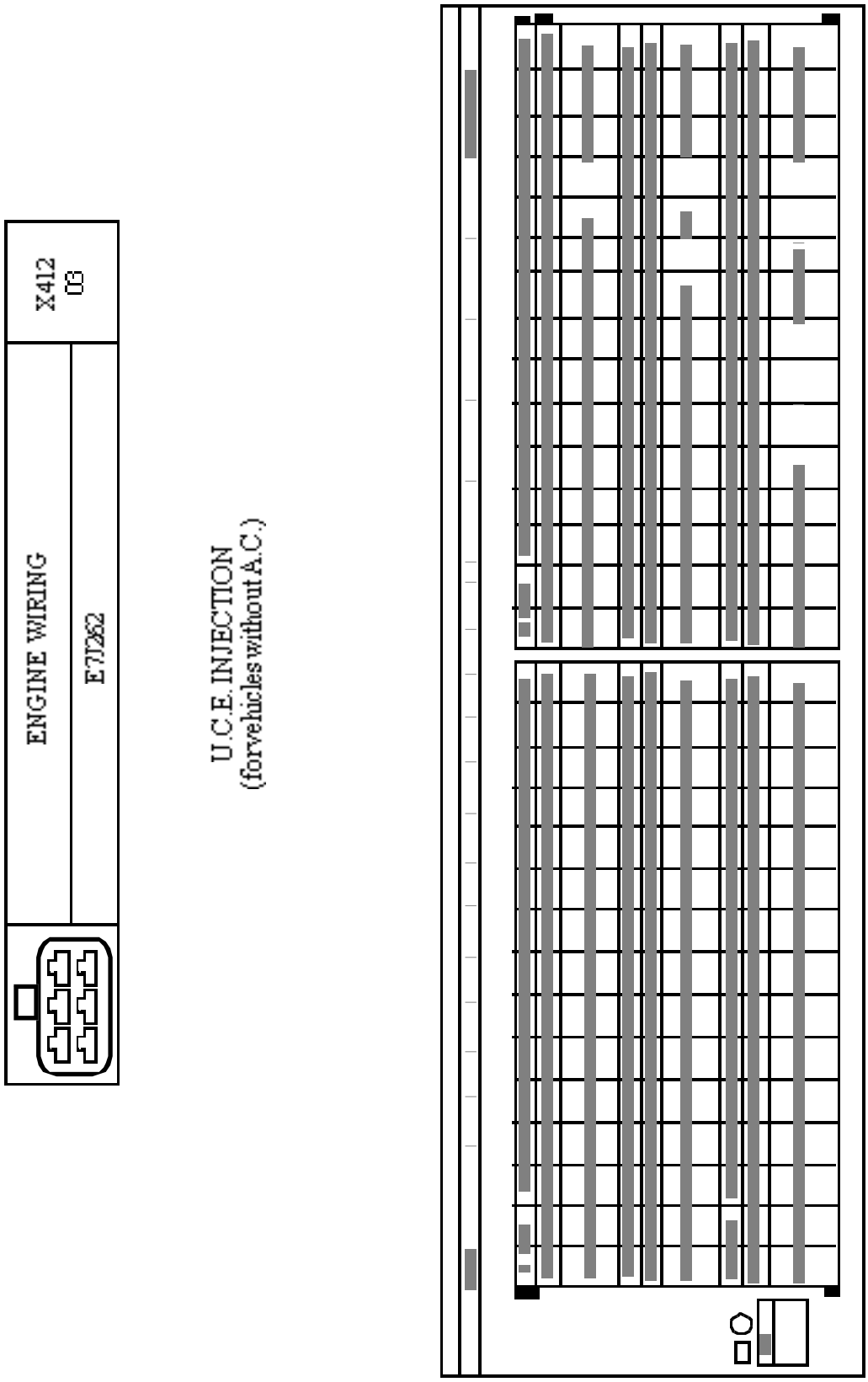
	ENGINE WIRING E7J262	X412 03

BATTERY PLUS TERMINAL

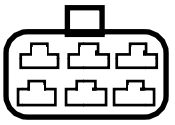
Position	Section		Destination
1	16.0	B	+ BATTERY> + STARTER
1	7.0	B	+ BATTERY> INLET FUSE F04



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X412
03
ENGINE WIRING
E7J262
U.C.E. INJECTION
(for vehicles without A.C.)

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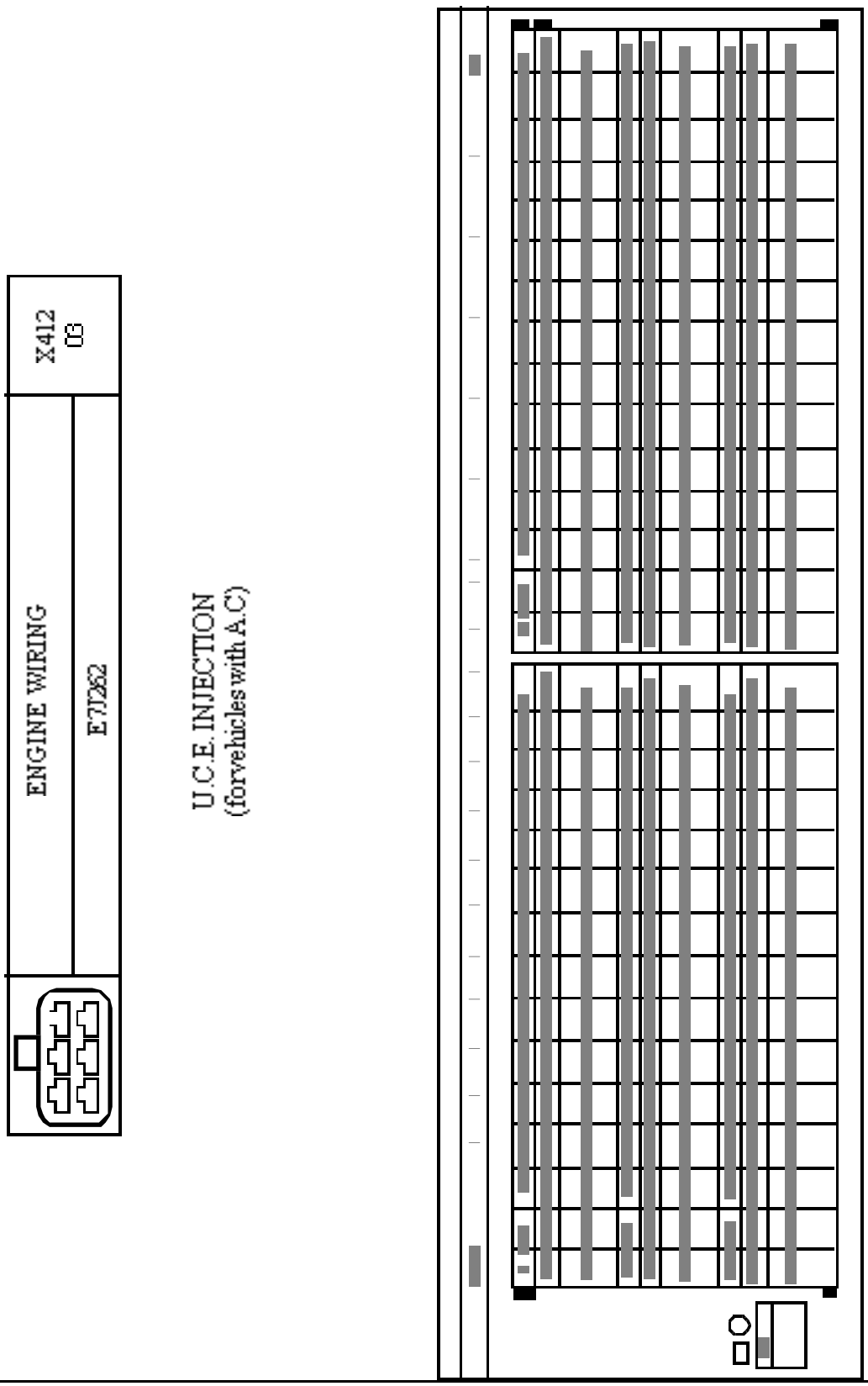
ENGINE WIRING

E7J262

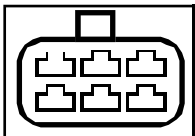
X412
03

Position	Section		Destination
1	2.0	3CW	CONTROL-IGNITION COIL CYLINDERS 2-3
3	2.0	MH	MASS
4	0.6	3BB	CANISTER PURGE VALVE CONTROL
8	0.6	3JN	CONTROL-COOLING FAN RELAY
9	0.35	31A	CONTROL -WATER TEMPERATURE INDICATOR
12	0.6	3BV	CONTROL 2 IDLING REGULATOR
13	0.6	3C	SIGNAL+ WATER TEMPERATURE SENSOR
15	0.35	3GN	ATMOSPHERIC PRESSURE SENSOR MASS
16	0.35	3F	ATMOSPHERIC PRESSURE SENSOR SIGNAL
19	0.5	TB1	DETONATION SENSORS SCREENING
20	0.5	3S	SIGNAL+ DETONATION SENSOR
24	0.6	3BL	SIGNAL –RPM ENGINE > RPM SENSOR
26	0.35	HL	DIAGNOSIS SIGNAL LINE L
28	2.0	MH	MASS
29	0.35	AP29	+AFTER CONTACT PROTECTED>OUTLET FUSE F05 COCKPIT
30	0.6	BP37	+ BATTERY PROTECTED>OUTLET FUSE F2 COCKPIT
32	2.0	3CV	CONTROL-IGNITION COIL CYLINDERS 1-4
33	2.0	MH	MASS
34	0.35	3FH	CONTROL- ANTI-POLLUTION FAILURE INDICATOR
39	0.6	3GT	CONTROL ACTUATORS RELAY
41	0.6	3BU	IDLING REGULATOR 1 CONTROL
42	0.6	3BW	IDLING REGULATOR 3 CONTROL
43	0.6	3AJ	SIGNAL+ VALVE POTENTIOMETER POSITION
44	0.6	3GL	SIGNAL DOWNSTREAM OXYGEN SENSOR
45	0.6	3GK	SIGNAL UPSTREAM OXYGEN SENSOR
49	0.6	3B	SIGNAL+AIR TEMPERATURE SENSOR
53	0.35	47F	SIGNAL SPEED VEHICLE
54	0.6	3BG	SIGNAL RPM ENGINE>RPM SENSOR
56	0.35	HK	SIGNAL DIAGNOSIS-LINE K
58	0.35	H17	CODED SIGNAL INJECTION >ANTI-STARTING
59	1.0	3CR	CONTROL-INJECTOR 1
60	1.0	3CT	CONTROL-INJECTOR 3
63	1.0	3GF	CONTROL-HEATING UPSTREAM OXYGEN SENSOR
65	1.0	3GG	CONTROL-HEATING DOWNSTREAM OXYGEN SENSOR
66	1.0	3NR	+INJECTORS>OUTLET ACTUATORS RELAY
68	0.6	3AC	CONTROL-FUEL PUMP RELAY
70	0.35	H7	SIGNAL RPM> INJECTION COMPUTER
72	0.6	3BX	CONTROL 4 IDLING REGULATOR
73	0.6	3JK	-WATER TEMPERATURE
74	0.6	3AQ	SIGNAL+POTENTIOMETER VALVE
75	0.6	3JL	- VALVE POTENTIOMETER
76	0.6	3GJ	DOWNSTREAM OXYGEN SENSOR MASS
77	0.6	3JQ	-AIR TEMPERATURE SENSOR
78	0.35	3D	AIR PRESSURE SENSOR > SUPPLY+
79	0.5	3DQ	- DETONATION SENSOR
80	0.6	3GH	UPSTREAM OXYGEN SENSOR MASS
85	0.6	3BA	SIGNAL-PRESSURE CONTROLLER POWER STEERING
89	1.0	3CU	CONTROL-INJECTOR 4
90	1.0	3CS	CONTROL-INJECTOR 2

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X412
08
ENGINE WIRING
E7J262
U.C.E. INJECTION
(for vehicles with A.C)

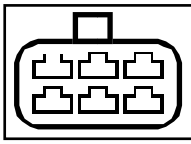
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ENGINE WIRING	X412 03
E7J262	

Position	Section		Destination
1	2.0	3CW	CONTROL-IGNITION COIL CYLINDER 2-3
3	2.0	MH	MASS
4	0.6	3BB	CANISTER PURGE VALVE CONTROL
8	0.6	3JN	CONTROL– ENGINE COOLING FAN 1 SPEED
9	0.35	31A	CONTROL -WATER TEMPERATURE INDICATOR
10	0.5	38K	AIR CONDITION STOPPING CONTROL>COMPRESSOR RELAY
12	0.6	3BV	CONTROL 2 IDLING REGULATOR
13	0.6	3C	SIGNAL+ WATER TEMPERATURE SENSOR
15	0.35	3GN	AIR PRESSURE SENSOR MASS
16	0.35	3F	SIGNAL AIR PRESSURE SENSOR
18	0.6	38X	FREON PRESSURE SENSOR SIGNAL
19	0.5	TB1	DETONATION SENSOR SCREENING
20	0.5	3S	SIGNAL+ DETONATION SENSOR
24	0.6	3BL	SIGNAL– ENGINE RPM>RPM SENSOR
26	0.35	HL	SIGNAL DIAGNOSIS LINE L
28	2.0	MH	MASS
29	0.35	AP29	+AFTER CONTACT PROTECTED>OUTLET FUSE F05 COCKPIT
30	0.6	BP37	+ BATTERY PROTECTED>OUTLET FUSE F21 COCKPIT
32	2.0	3CV	CONTROL-IGNITION COIL CYLINDER 1-4
33	2.0	MH	MASS
34	0.35	3FH	CONTROL-ANTI-POLLUTION FAILURE INDICATOR
38	0.6	3JP	CONTROL- COOLING FAN MOTOR RELAY 2ND SPEED
39	0.6	3GT	ACTUATORS RELAY CONTROL
41	0.6	3BU	IDLING REGULATOR CONTROL 1
42	0.6	3BW	IDLING REGULATOR CONTROL 3
43	0.6	3AJ	SIGNAL–POTENTIOMETER POSITION VALVE
44	0.6	3GL	DOWNSTREAM OXYGEN SENSOR SIGNAL
45	0.6	3GK	UPSTREAM OXYGEN SENSOR SIGNAL
46	0.5	38AS	SIGNAL AIR CONDITIONING COMPRESSOR COUPLING
49	0.6	3B	SIGNAL+AIR TEMPERATURE SENSOR
53	0.35	47F	VEHICLE SPEED SIGNAL
54	0.6	3BG	RPM ENGINE SIGNAL>RPM SENSOR
56	0.35	HK	DIAGNOSIS SIGNAL- LINE K
58	0.35	H17	CODED INJECTION SIGNAL>ANTI-STARTING
59	1.0	3CR	CONTROL-INJECTOR 1
60	1.0	3CT	CONTROL-INJECTOR 3
63	1.0	3GF	CONTROL- HEATING UPSTREAM OXYGEN SENSOR
65	1.0	3GG	CONTROL- HEATING DOWNSTREAM OXYGEN SENSOR
66	1.0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
68	0.6	3AC	CONTROL- FUEL PUMP RELAY
70	0.35	H7	SIGNAL RPM> INJECTION COMPUTER
72	0.6	3BX	CONTROL 4 IDLING REGULATOR
73	0.6	3JK	-WATER TEMPERATURE
74	0.6	3AQ	SIGNAL+POTENTIOMETER VALVE
75	0.6	3JL	-POTENTIOMETER VALVE
76	0.6	3GJ	DOWNSTREAM OXYGEN SENSOR MASS
77	0.6	3JQ	-AIR TEMPERATURE SENSOR

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ENGINE WIRING	X412
E7J262	03

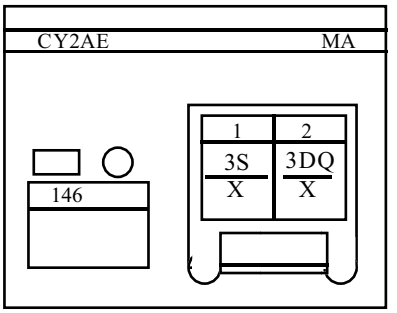
Position	Section		Destination
78	0.35	3D	AIR PRESSURE SENSOR > SUPPLY
79	0.5	3DQ	- DETONATION SENSOR
80	0.6	3GH	UPSTREAM OXYGEN SENSOR MASS
82	0.6	38U	- FREON PRESSURE SENSOR
83	0.6	38Y	+ FREON PRESSURE SENSOR
85	0.6	3BA	SIGNAL - PRESSURE CONTROLLER POWER STEERING
89	1.0	3CU	CONTROL - INJECTOR 4
90	1.0	3CS	CONTROL - INJECTOR 2

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	ENGINE WIRING	X412
	E7J262	03

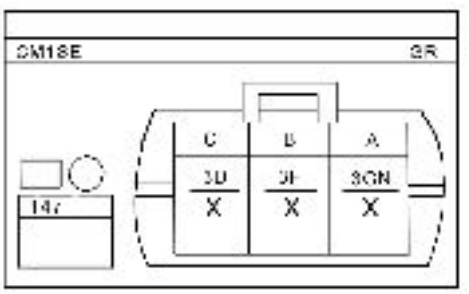
DETONATION SENSOR

Position	Section		Destination
1	0.50	3S	SIGNAL+ DETONATION SENSOR
2	0.50	3DQ	DETONATION SENSOR MASS
4	0.60	TB1	DETONATION SENSOR SCREENING



ATMOSPHERIC PRESSURE SENSOR

Position	Section		Destination
A	0.5	3GN	MASS AIR PRESSURE SENSOR
B	0.5	3F	SIGNAL AIR PRESSURE SENSOR
C	0.6	3D	AIR PRESSURE SENSOR > SUPPLY +

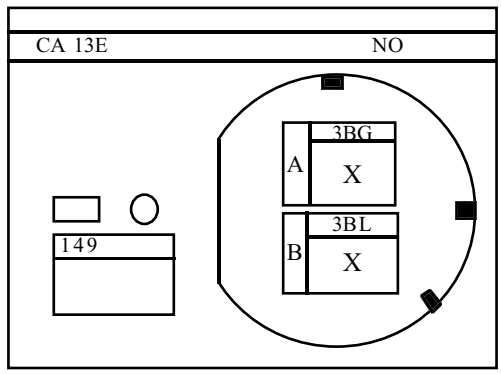


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	ENGINE WIRING	X412 03
	E7J262	

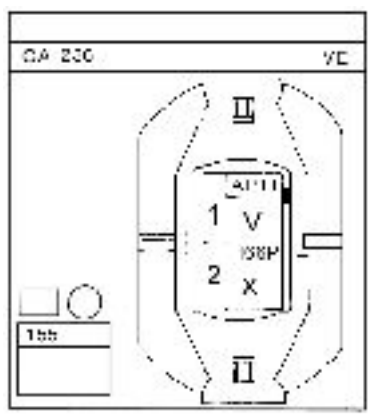
RPM SENSOR

Position	Section		Destination
A	0.60	3BG	SIGNAL -RPM ENGINE> UCE INJECTION
B	0.60	3BL	SIGNAL -RPM ENGINE> UCE INJECTION

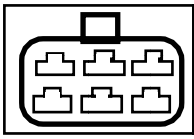


REVERSE DRIVING CONTACT

Position	Section		Destination
1	0.60	AP11	+AFTER CONTACT PROTECTED REVERSE DRIVING LIGHTS> OUTLET COCKPIT FUSE F06
2	0.60	H66P	CONTROL+REVERSE DRIVING LIGHTS

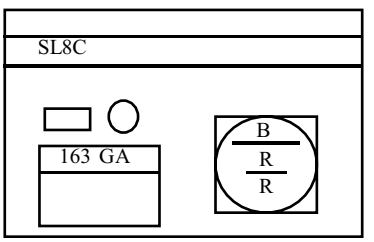


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	ENGINE WIRING E7J262	X412 03

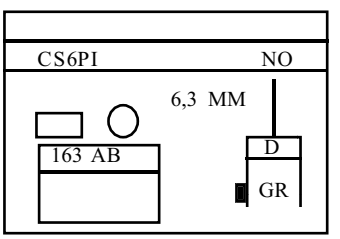
STARTER

Position	Section		Destination
1	160	B	+BATTERY
1	160	B	+ BATTERY > +ALTERNATOR

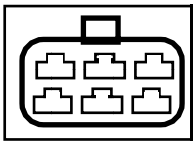


STARTER EXCITATION

Position	Section		Destination
1	3.0	D	+ STARTER CONTROL



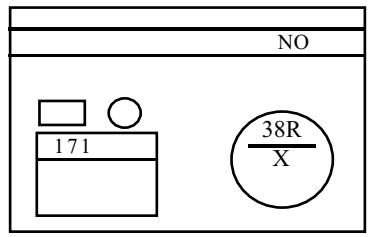
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ENGINE WIRING	X412
E7J262	03

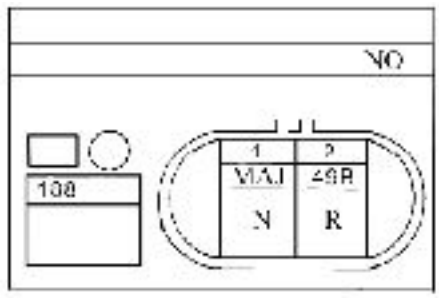
AIR CONDITIONING COMPRESSOR CLUTCH

Position	Section		Destination
1	1.0	38R	CONTROL+AIRCONDITIONINGCOMPRESSOR CLUTCH

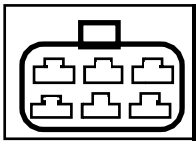


ENGINE COOLING FAN
(for vehicleswithoutaircondition)

Position	Section		Destination
1	2.0	MAJ	MASS
2	2.0	49B	CONTROL+ENGINECOOLINGFAN

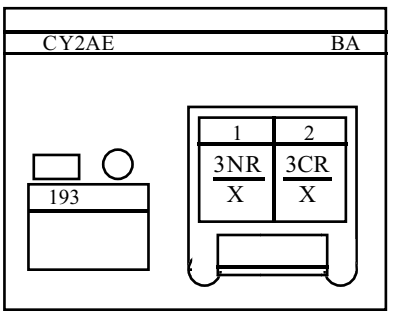


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	ENGINE WIRING E7J262	X412 03

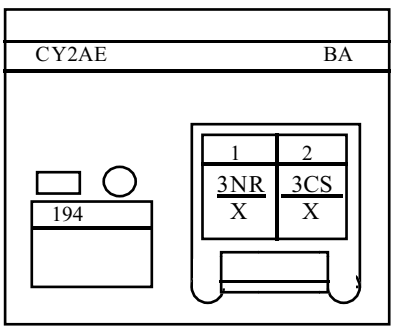
INJECTOR 1

Position	Section		Destination
1 2	1.0 1.0	3NR 3CR	+ INJECTORS > OUTLET ACTUATORS RELAY CONTROL-INJECTOR1



INJECTOR 2

Position	Section		Destination
1 2	1.0 1.0	3NR 3CS	+ INJECTORS > OUTLET ACTUATORS RELAY CONTROL-INJECTOR2

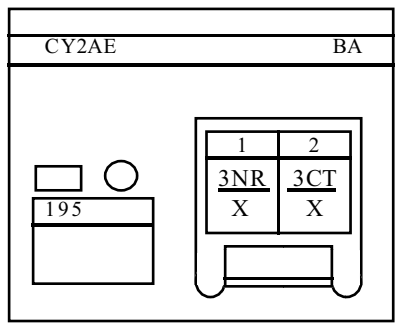


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	ENGINE WIRING	X412 03
	E7J262	

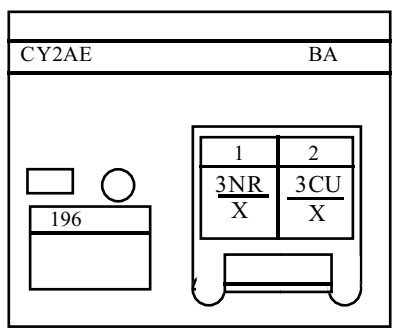
INJECTOR 3

Position	Section		Destination
1	1.0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
2	1.0	3CT	CONTROL-INJECTOR3

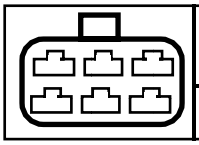


INJECTOR 4

Position	Section		Destination
1	1.0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
2	1.0	3CU	CONTROL-INJECTOR4

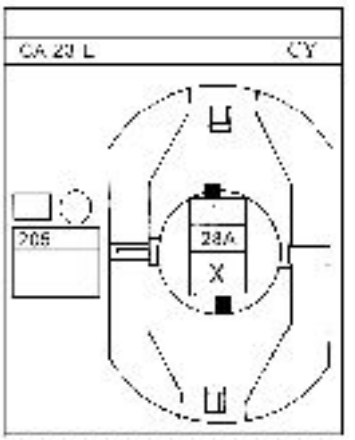


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	ENGINE WIRING E7J262	X412 03

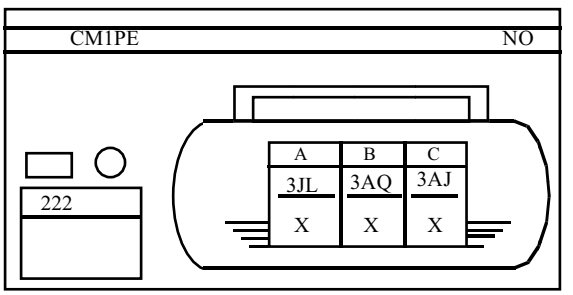
OIL PRESSURE TRANSMITTER

Position	Section		Destination
1	0.60	28A	CONTROL-OILPRESSURE INDICATOR



POTENTIOMETER VALVE

Position	Section		Destination
A	0.60	3JL	MASSPOTENTIOMETER VALVE
B	0.60	3AQ	SIGNAL+POTENTIOMETERVALVE
C	0.60	3AJ	SIGNAL+ POTENTIOMETER POSITIONVALVE

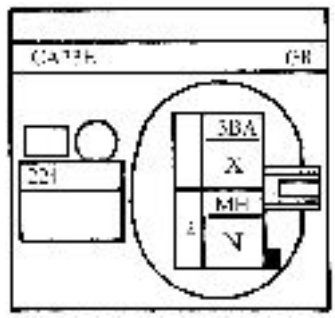


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	ENGINE WIRING	X412
	E7J262	03

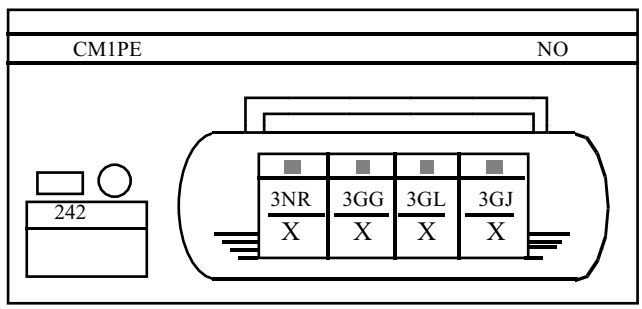
POWER STEERING PRESSURE CONTROLLER
(for vehicles with power steering)

Position	Section		Destination
1	0.6	3BA	SIGNAL-PRESSURE CONTROLLER POWER STEERING
2	0.6	MH	MASS



DOWNSTREAM OXYGEN SENSOR

Position	Section		Destination
A	1.0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B	1.0	3GG	CONTROL-HEATING DOWNSTREAM OXYGEN SENSO
C	0.60	3GL	SIGNAL DOWNSTREAM OXYGEN SENSOR
D	0.60	3GJ	MASS DOWNSTREAM OXYGEN SENSOR

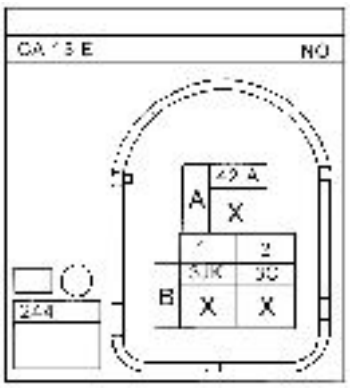


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	ENGINE WIRING	X412 03
	E7J262	

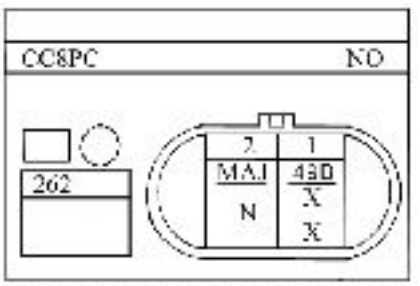
WATER TEMPERATURE INJECTION SENSOR

Position	Section	~	Destination
A	0.35	42A	SIGNAL+ WATER TEMPERATURE
B1	0.60	3JK	- WATER TEMPERATURE
B2	0.60	3C	SIGNAL+ WATER TEMPERATURE SENSOR



COOLING MOTOR FAN AND AIR CONDITION
(for vehicle with air conditioning)

Position	Section	~	Destination
1	3.0	49B	CONTROL + ENGINE COOLING FAN > COOLING FAN RESISTANCE
1	5.0	49B	CONTROL+ COOLING FAN
2	5.0	MAJ	MASS

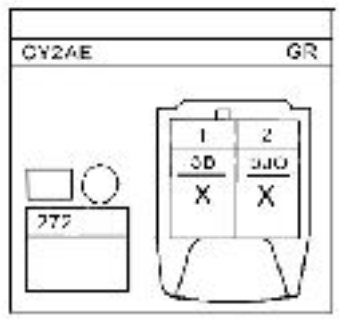


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	ENGINE WIRING	X412
	E7J262	03

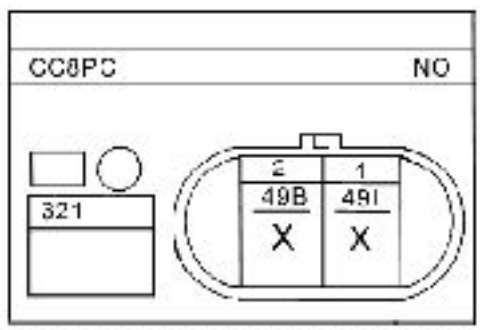
AIR TEMPERATURE INJECTION SENSOR

Position	Section		Destination
1	0.60	3B	SIGNAL+AIR TEMPERATURE SENSOR
2	0.60	3JQ	MASSAIR TEMPERATURE SENSOR

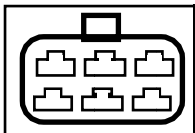


ENGINE COOLING FAN RESISTANCE
(for vehicleswithair conditioning)

Position	Section		Destination
1	3.0	49L	CONTROL+ LOWSPEED COOLING FANRESISTANCE
2	3.0	49B	CONTROL+ COOLINGFAN

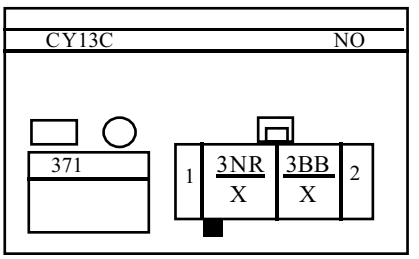


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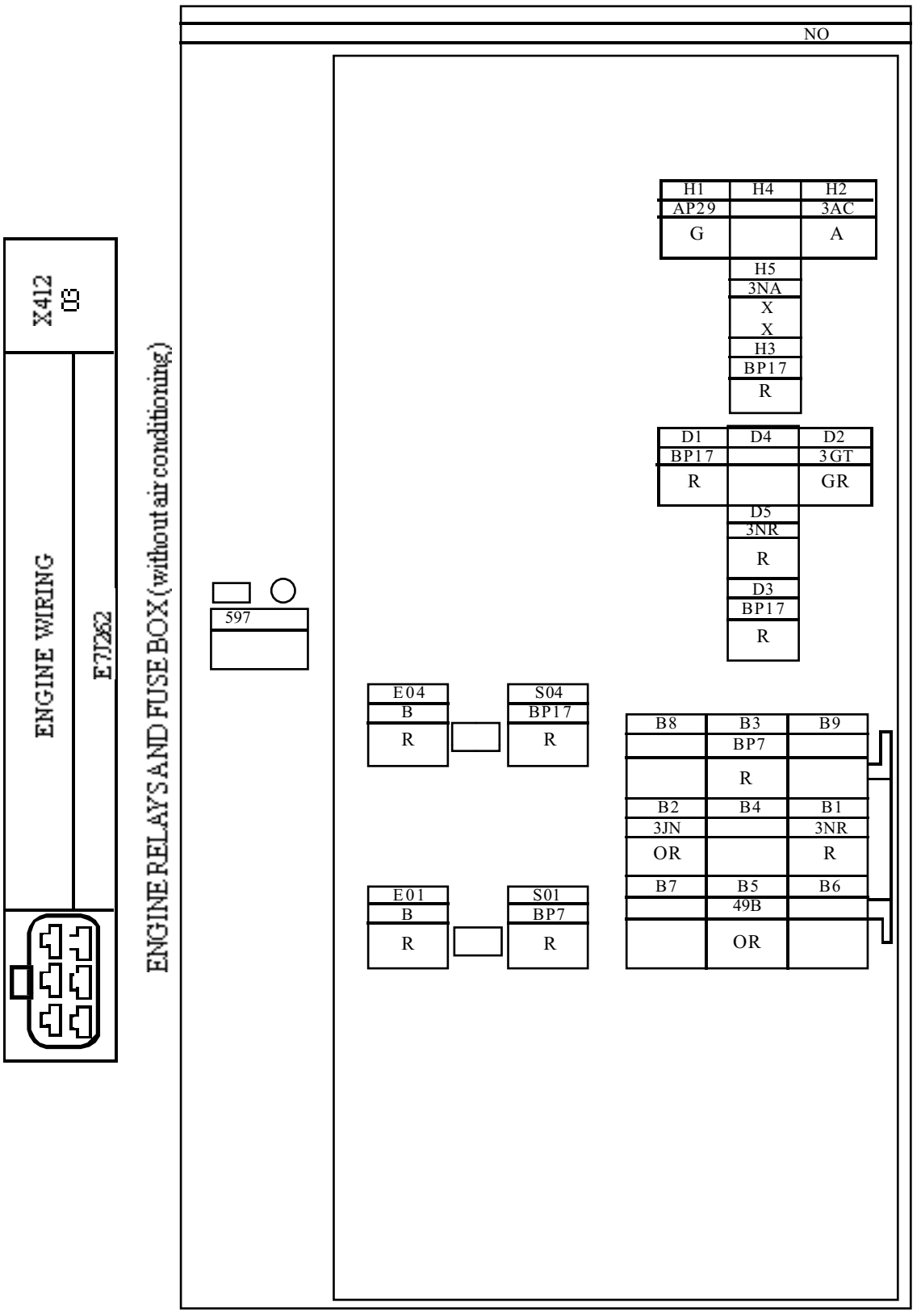
	ENGINE WIRING E7J262	B41 02

CANISTER PURGING VALVE

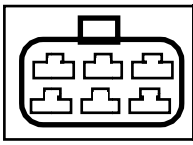
Position	Section		Destination
1	0.60	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
2	0.60	3BB	CONTROL CANISTER PURGE VALVE



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NO
X412
08
ENGINE WIRING
E7J262
ENGINE RELAYS AND FUSE BOX (without air conditioning)
597
H1
AP29
G
H4
H2
3AC
A
H5
3NA
X
X
H3
BP17
R
D1
BP17
R
D4
D2
3GT
GR
D5
3NR
R
D3
BP17
R
E04
B
R
S04
BP17
R
E01
B
R
S01
BP7
R
B8
B3
BP7
R
B9
B2
3JN
OR
B4
B1
3NR
R
B7
B5
49B
OR
B6

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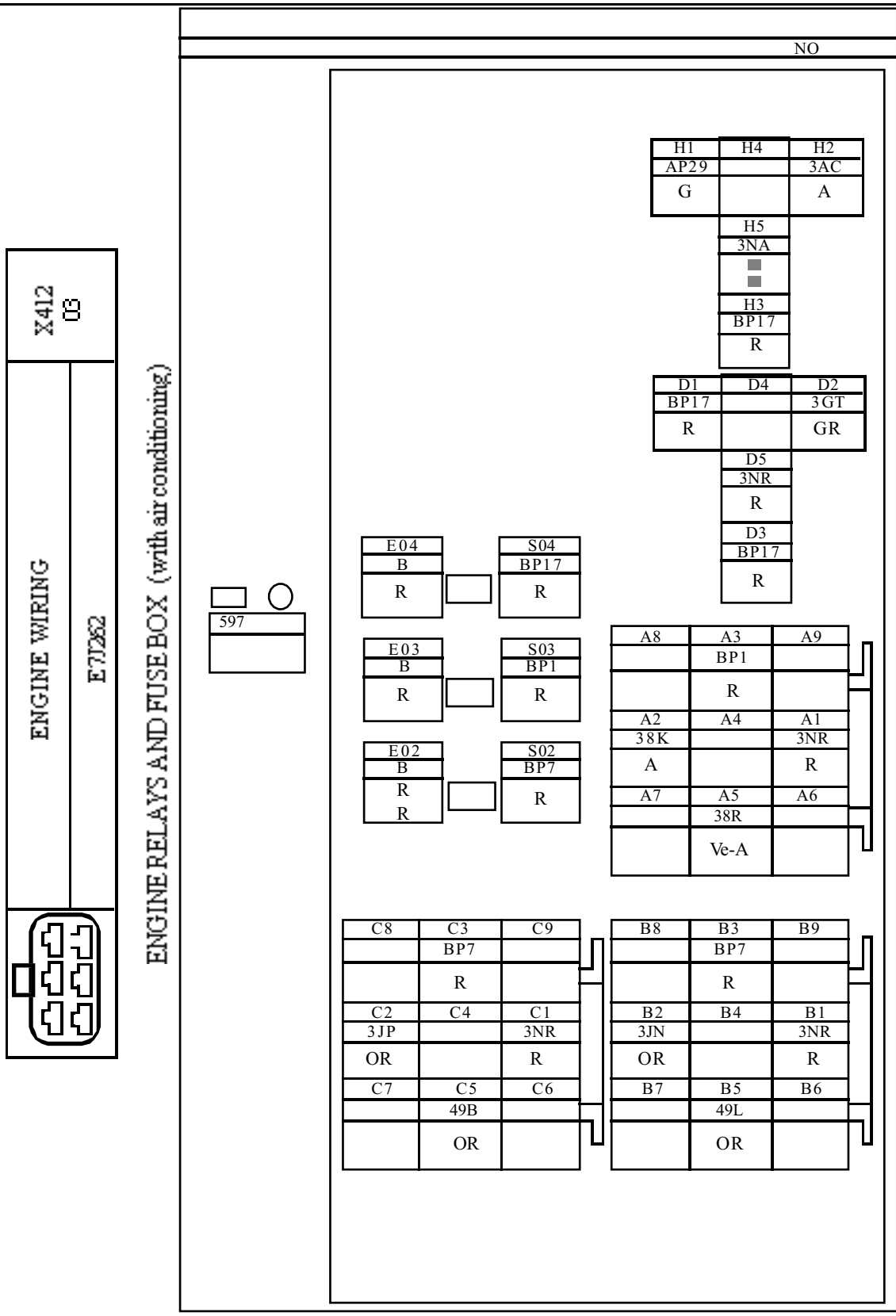


ENGINE WIRING	X412 03
E7J262	

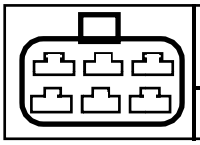
Position	Section		Destination
B1	0.6	3NR	+ INJECTORS >ACTUATORS OUTLETRELAY
B2	0.6	3JN	CONTROL- MOTORFAN1ST SPEEDRELAY
B3	2.0	BP7	+PROTECTEDBATTERY>OUTLETFUSEF01ENGINE
B5	2.0	49B	CONTROL+ENGINECOOLINGFAN
D1	0.6	BP17	+PROTECTEDBATTERY>OUTLETFUSEF04ENGINE
D2	0.6	3GT	CONTROLACTUATORS RELAY>U.C.E. INJECTION
D3	5.0	BP17	+PROTECTEDBATTERY>OUTLETFUSEF04ENGINE
D5	5.0	3NR	+ INJECTORS > OUTLETACTUATORS RELAY
H1	0.6	AP29	+AFTER PROTECTED CONTACT>OUTLETFUSES F05COCKPIT
H2	0.6	3AC	CONTROL- FUELPUMPRELAY
H3	5.0	BP17	+ PROTECTEDBATTERY > OUTLETFUSE F04 ENGINE
H5	2.0	3NA	+ IGNITION COIL,CHOCK SENSOR >IGNITION COIL
H5*	1.4	3NA	+ IGNITIONCOIL, CHOCK SENSOR > FUELPUMP
H5**	1.4	3NA	+IGNITIONCOIL,CHOCK SENSOR> CHOCK SENSOR
E01	1.4	B	+BATTERY
S 01	1.0	BP7	+PROTECTEDBATTERY>ENGINECOOLINGFANRELAY
E04	1.4	B	+BATTERY
S 04	1.0	BP17	+ PROTECTED BATTERY>ACTUATORS RELAY

* for EURO 96
** for EURO 2000

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NO
X412
08
ENGINE WIRING
E7J262
ENGINE RELAYS AND FUSE BOX (with air conditioning)
597
H1
AP29
G
H4
H2
3AC
A
H5
3NA
H3
BP17
R
D1
BP17
R
D4
D2
3GT
GR
D5
3NR
R
D3
BP17
R
E04
B
R
S04
BP17
R
E03
B
R
S03
BP1
R
E02
B
R
R
S02
BP7
R
A8
A3
A9
BP1
R
A2
A4
A1
38K
3NR
A
R
A7
A5
A6
38R
Ve-A
C8
C3
C9
BP7
R
C2
C4
C1
3JP
3NR
OR
R
C7
C5
C6
49B
OR
B8
B3
B9
BP7
R
B2
B4
B1
3JN
3NR
OR
R
B7
B5
B6
49L
OR

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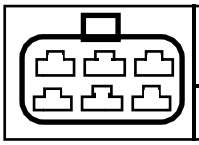


ENGINE WIRING	X412 03
E7J262	

Position	Section		Destination
A1	0.6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
A2	0.6	38K	CONTROL AIR CONDITIONING STOPPING > U.C.E. INJECTION
A3	1.0	BP1	+ PROTECTED BATTERY > OUTLET FUSE F03
A5	1.0	38R	CONTROL - AIR CONDITON COMPRESSOR CLUTCH
B1	0.6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B2	0.6	3JN	CONTROL - 1 SPEED COOLING FAN RELAY
B3	3.0	BP7	+PROTECTED BATTERY > OUTLET FUSE F02 ENGINE
B5	3.0	49L	CONTROL + COOLING FAN > COOLING FAN RESISTANCE
C1	0.6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
C2	0.6	3JP	CONTROL – ENGINE COOLING FAN RELAY 2 SPEED
C3	5.0	BP7	+PROTECTED BATTERY > OUTLET FUSE F02 ENGINE
C5	5.0	49B	CONTROL + ENGINE COOLING FAN
D1	0.6	BP17	+PROTECTED BATTERY > OUTLET FUSE F02 ENGINE
D2	0.6	3GT	CONTROL ACTUATORS RELAY > U.C.E. INJECTION
D3	5.0	BP17	+ PROTECTED BATTERY > OUTLET FUSE F04 ENGINE
D5	5.0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
H1	0.6	AP29	+AFTER PROTECTED CONTACT > OUTLET FUSE F05 COCKPIT
H2	0.6	3AC	CONTROL - FUEL PUMP RELAY
H3	5.0	BP17	+ PROTECTED BATTERY > OUTLET FUSE F04 ENGINE
H5	2.0	3NA	+IGNITION COIL, CHOCK SENSOR > IGNITION COIL
H5*	1.4	3NA	+IGNITION COIL, CHOCK SENSOR > FUEL PUMP
H5**	1.4	3NA	+IGNITION COIL, CHOCK SENSOR > CHOCK SENSOR
E02	5.0	B	+ BATTERY > ALTERNATOR
E02	1.0	B	+ BATTERY > SHUNT E03
S 02	5.0	BP7	+PROTECTED BATTERY > ENGINE COOLING FAN RELAY
E03	1.0	B	+BATTERY
S 03	1.0	BP1	+ PROTECTED BATTERY > A.C. COMPRESSOR RELAY
E04	1.4	B	+BATTERY
S 04	1.0	BP17	+ PROTECTED BATTERY > ACTUATORS RELAY

* for EURO 96
** for EURO 2000

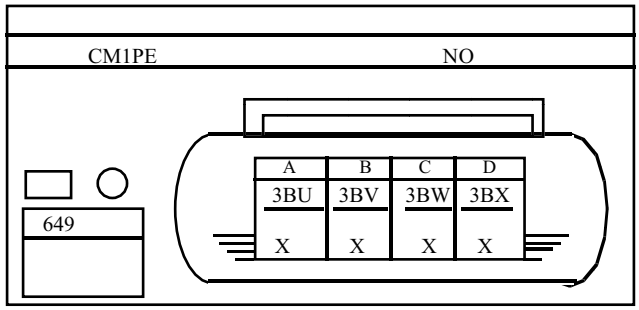
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ENGINE WIRING	X412
E7J262	03

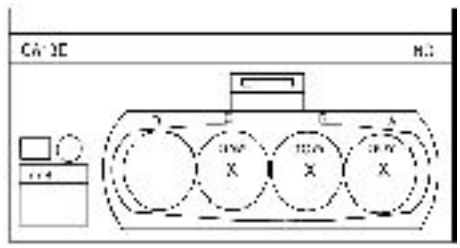
STEP BY STEP ENGINE

Position	Section		Destination
A	0.60	3BU	CONTROL1 IDLING REGULATOR
B	0.60	3BV	CONTROL2 IDLING REGULATOR
C	0.60	3BW	CONTROL3 IDLING REGULATOR
D	0.60	3BX	CONTROL4 IDLING REGULATOR



IGNITION COIL

Position	Section		Destination
A	2.0	3CV	CONTROL-IGNITION COIL CYLINDER 1-4
B	2.0	3CW	CONTROL-IGNITION COIL CYLINDER 2-3
C	2.0	3NA	+IGNITION COIL, CHOCK SENSOR> RELAY FUEL PUMP

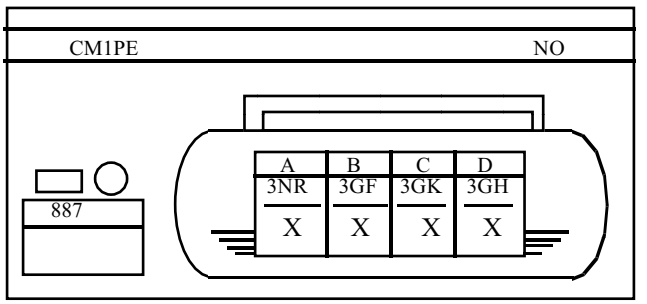


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	ENGINE WIRING	X412
	E7J262	03

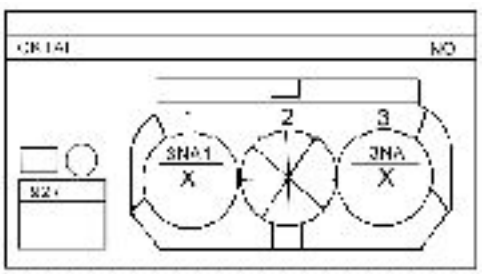
UPSTREAM OXYGEN SENSOR

Position	Section		Destination
A	1.0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B	1.0	3GF	CONTROL - HEATING UPSTREAM OXYGEN SENSOR
C	0.60	3GK	SIGNAL UPSTREAM OXYGEN SENSOR
D	0.60	3GH	UPSTREAM OXYGEN SENSOR MASS



CHOCK SENSOR (for EURO 2000)

Position	Section		Destination
1	1.40	3NA1	+ FUEL PUMP > CHOCK SENSOR
3	1.40	3NA	+ IGNITION COIL, CHOCK SENSOR > FUEL PUMP RELAY

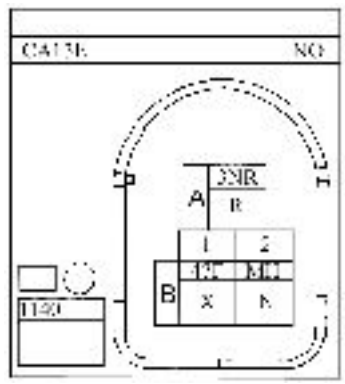


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	ENGINE WIRING	X412
	E7J262	03

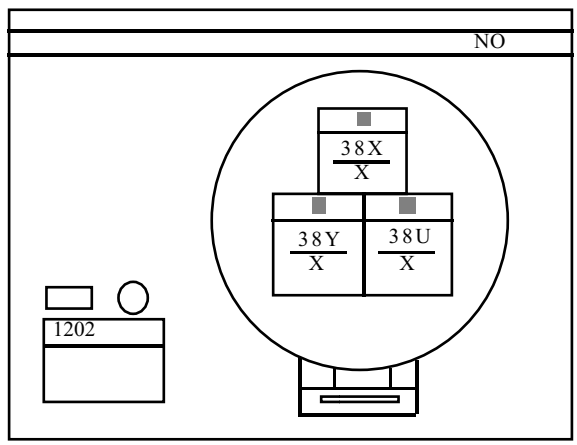
VEHICLE SPEED TRANSDUCER

Position	Section		Destination
A	0.6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B1	0.35	47F	SIGNAL VEHICLE SPEED
B2	0.35	MH	MASS

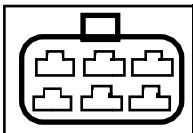


AIR CONDITION PRESSURE SENSOR (pressure controller)

Position	Section		Destination
A	0.60	38U	FREON PRESSURE SENSOR MASS
B	0.60	38Y	+FREON PRESSURE SENSOR
C	0.60	38X	SIGNAL FREON PRESSURE SENSOR

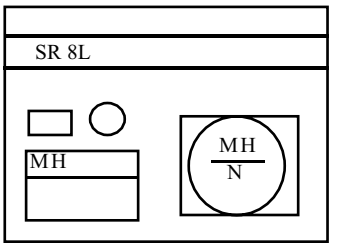


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	ENGINE WIRING E7J262	X412 03

ENGINE ELECTRIC MASS

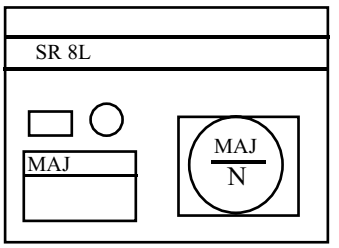
Position	Section		Destination
1	5.0	MH	MASS > U.C.E. INJECTION (PINS 3,28 and 33, TRANSDUCER VEHICLE SPEED, POWER STEERING PRESSURE CONTROLLER



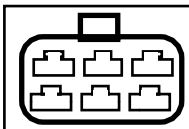
ENGINE COOLING FAN ELECTRIC MASS

Position	Section		Destination
1*	2.0	MAJ	MASS
1**	5.0	MAJ	MASS

* for vehicles without air conditioning
** for vehicles with air conditioning



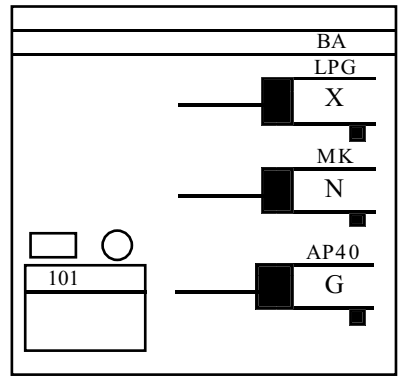
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FRONT WIRING – DASHBOARD	X412 03

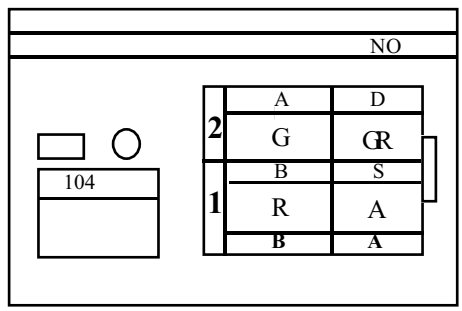
ELECTRIC LIGHTER

Position	Section		Destination
1	0.35	LPG	PARKING LIGHTS > OUTLET FUSE F14
2	1.0	MK	MASS
3	1.0	AP40	+AFTER PROTECTED CONTACT > OUTLET FUSE F06

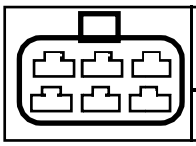


ANTI-THEFT MECHANISM

Position	Section		Destination
A1	3.0	S	+ACCESSORY>INLET FUSE 16, F17 COCKPIT
A2	3.0	D	+ STARTER CONTROL
B1	5.0	B	+BATTERY
B2	3.0	A	SUPPLY +AFTER CONTACT > INLET FUSE 04, 05, 06, 07, 23, 30



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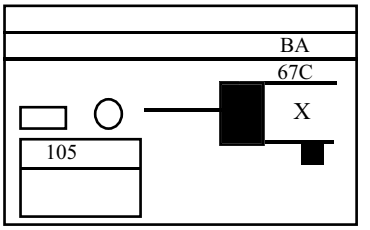


FRONT WIRING – DASHBOARD

X412
03

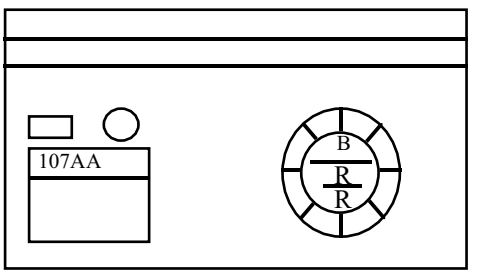
ACOUSTIC WARNING

Position	Section		Destination
1	1.0	67C	CONTROL + ACOUSTIC WARNING > OUTLET FUSE F12



BATTERY PLUS TERMINAL

Position	Section		Destination
1	5.0	B	+BATTERY
1	5.0	B	+BATTERY

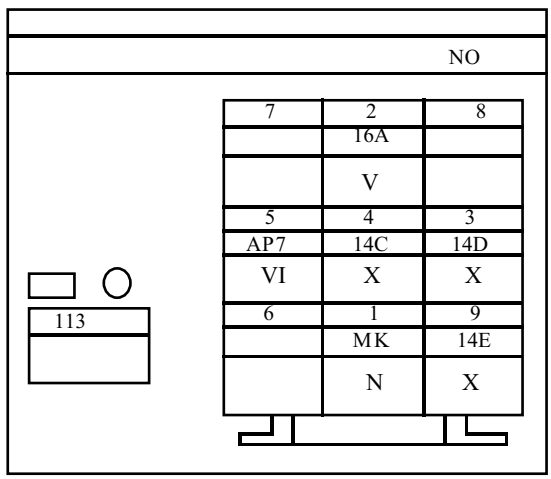


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	FRONT WIRING – DASHBOARD	X412 03

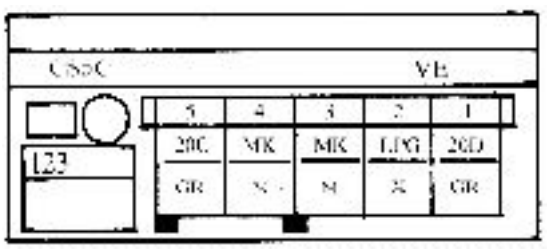
WINDSCREEN WIPER TIMER

Position	Section		Destination
1	0.6	MK	MASS
2	0.35	16A	CONTROL + WINDSCREEN WIPER PUMP
3	0.6	14D	WINDSCREEN WIPER TIMER LOW SPEED CONTROL
4	0.6	14C	CONTROL + WIPER FIX POINT STOPPING
5	1.0	AP7	+AFTER PROTECTED CONTACT WINDSCREEN WIPER
9	0.35	14E	CONTROL + WINDSCREEN WIPER TIMER

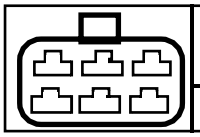


DOORS LOCKING SWITCH

Position	Section		Destination
1	0.35	20D	CONTROL+ELECTRIC LOCKING DOORS>U.C.E. DECODER
2	0.35	LPG	+ PARKING LIGHTS>OUTLET FUSE F14
3	0.5	MK	MASS
4	0.5	MK	MASS
5	0.35	20C	CONTROL+ELECTRIC UNLOCKING DOORS>U.C.E. DECODER



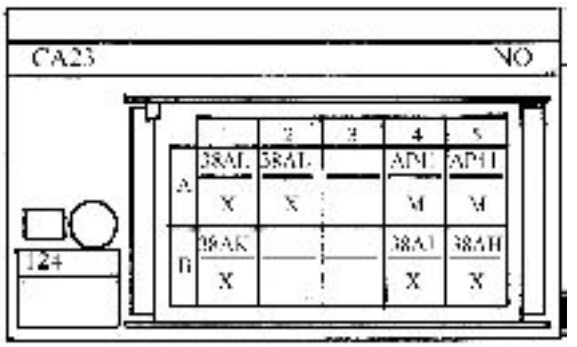
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FRONT WIRING – DASHBOARD	X412 03

CONTROL AIR CONDITIONING BOARD
(for vehicles with air conditioning)

Position	Section		Destination
A1	1.4	38AL	CONTROL + COOLING FAN SPEED 4
A2	1.4	38AL	CONTROL + COOLING FAN SPEED 4
A4	1.4	AP41	+ AFTER PROTECTED CONTACT > OUTLET FUSE F17
A5	1.4	AP41	+ AFTER PROTECTED CONTACT > OUTLET FUSE F17
B1	1.4	38AK	CONTROL + COOLING FAN SPEED 3
B4	1.4	38AJ	CONTROL + COOLING FAN SPEED 2
B5	1.0	38AH	CONTROL + COOLING FAN SPEED 1



Position	Section		Destination
7	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
9	0.6	MK	MASS

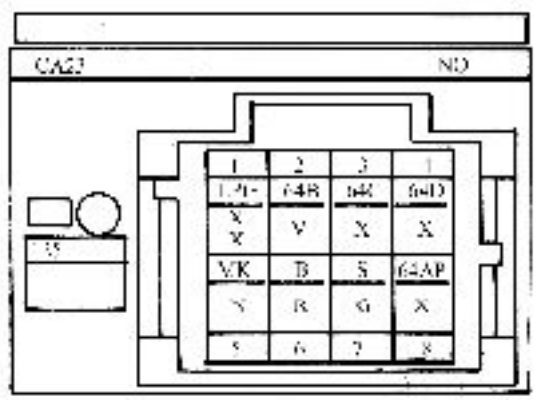


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	FRONT WIRING – DASHBOARD	X412 03

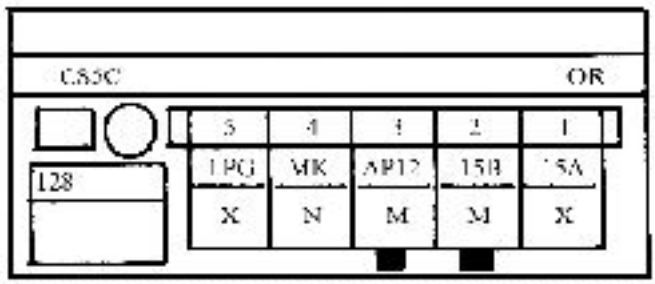
HAZARD SWITCH

Position	Section		Destination
1	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
1	0.6	LPG	+ PARKING LIGHTS > RADIO
2	1.0	64B	CONTROL + TURNING LIGHTS RELAY
3	0.6	64C	CONTROL LEFT TURNING LIGHTS
4	0.6	64D	CONTROL RIGHT TURNING LIGHTS
5	0.35	MK	MASS
6	0.6	B	+ BATTERY
7	0.6	S	+ ACCESSORIES
8	1.0	64AP	+ PROTECTED TURNING LIGHTS > INLET FUSE F13



REAR WINDOW DEFROSTING SWITCH

Position	Section		Destination
1	0.35	15A	REAR WINDOW DEFROSTING INDICATOR CONTROL
2	1.4	15B	CONTROL + REAR WINDOW DEFROSTING
3	1.4	AP12	+ AFTER PROTECTED CONTACT > OUTLET FUSE F20
4	0.35	MK	MASS
5	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14

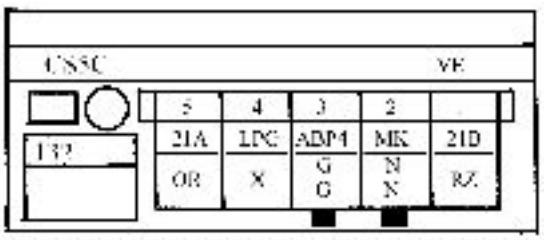


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	FRONT WIRING – DASHBOARD	X412 03

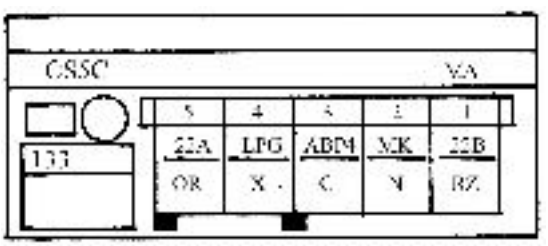
LEFT ELECTRIC WINDOW SWITCH

Position	Section	~	Destination
1	1.0	21B	DRIVER'S WINDOW LOWERING CONTROL
2	1.4	MK	MASS
2	1.0	MK	MASS
3	2.0	ABP4	+AFTER PROTECTED CONTACT > OUTLET FUSE F23
3	1.0	ABP4	+AFTER PROTECTED CONTACT > RIGHT WINDOW SWITCH
4	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
5	1.0	21A	DRIVER'S WINDOW LIFTING CONTROL

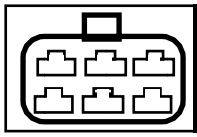


RIGHT ELECTRIC WINDOW SWITCH

Position	Section	~	Destination
1	1.0	22B	PASSENGER WINDOW LOWERING CONTROL
2	1.0	MK	MASS
3	1.0	ABP4	+AFTER PROTECTED CONTACT > LEFT WINDOW SWITCH
4	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
5	1.0	22A	PASSENGER WINDOW LIFTING CONTROL



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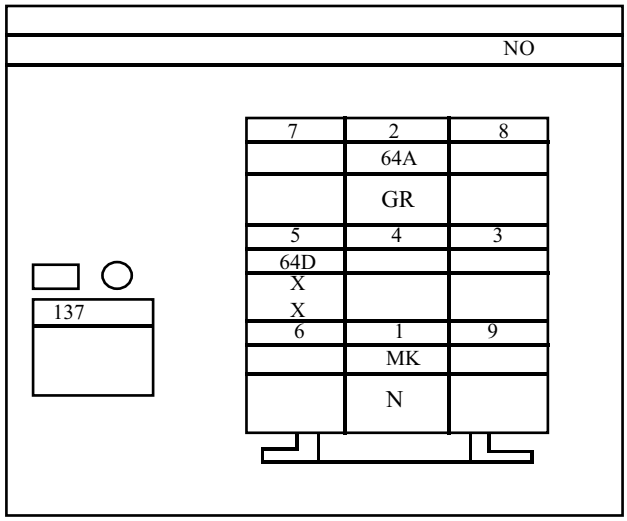


FRONT WIRING – DASHBOARD

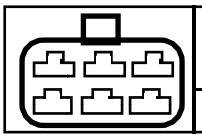
X412
03

TURNING LIGHTS RELAY

Position	Section		Destination
1	0.6	MK	MASS
2	1.0	64A	+ PROTECTED TURNING LIGHTS > OUTLET FUSE F13
5	1.0	64B	CONTROL + TURNING LIGHTS
5	0.6	64B	CONTROL + TURNING LIGHTS



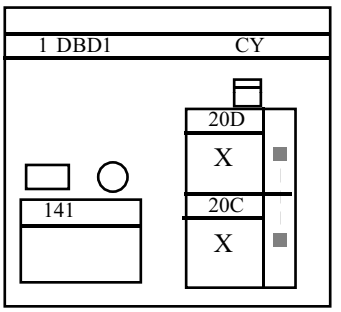
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FRONT WIRING – DASHBOARD	X412 03

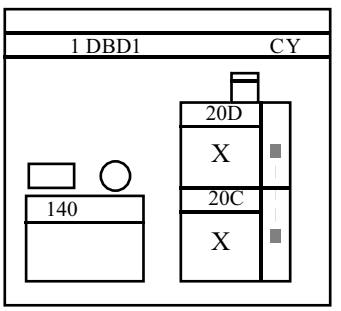
RIGHT FRONT DOOR ACTUATOR

Position	Section		Destination
1	0.6	20D	CONTROL+ELECTRIC LOCKING DOORS> U.C.E DECODER
2	0.6	20C	CONTROL+ELECTRIC UNLOCKING DOORS>U.C.E DECODER

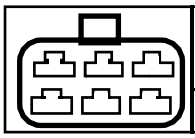


LEFT FRONT DOOR ACTUATOR

Position	Section		Destination
1	0.6	20D	CONTROL+ELECTRIC LOCKING DOORS.> U.C.E DECODER
2	0.6	20C	CONTROL+ELECTRIC UNLOCKING DOORS>U.C.E DECODER



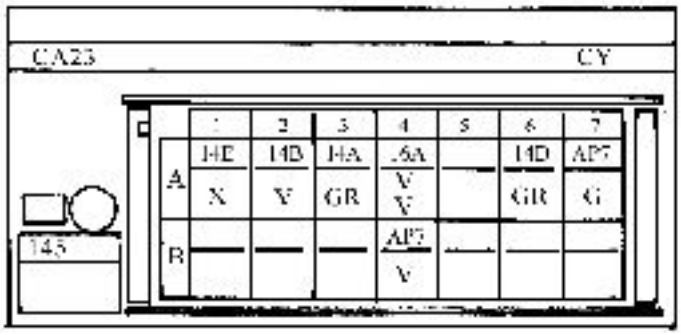
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FRONT WIRING – DASHBOARD	X412 03

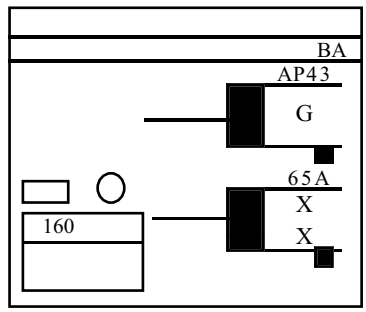
WINDSCREEN WIPER-WASHING SWITCH

Position	Section		Destination
A1	0.35	14E	CONTROL + WINDSCREEN WIPER TIMER
A2	1.0	14B	CONTROL + HIGH SPEED WINDSCREEN WIPER
A3	0.6	14A	CONTROL + LOW SPEED WINDSCREEN WIPER
A4	0.35	16A	CONTROL + WINDSCREEN WASHING PUMP
A4	0.6	16A	CONTROL + WINDSCREEN WASHING PUMP
A6	0.6	14D	CONTROL + LOW SPEED WINDSCREEN WIPER TIMER
A7	1.4	AP7	+AFTER PROTECTED CONTACT WINDSCREEN WIPER
B4	0.6	AP7	+AFTER PROTECTED CONTACT WINDSCREEN WIPER

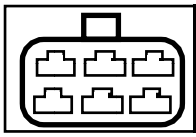


STOP CONTACT

Position	Section		Destination
1	1.0	AP43	+AFTER PROTECTED CONTACT > OUTLET FUSE F04
2	1.0	65A	CONTROL + STOP LIGHTS
2	0.35	65A	CONTROL + STOP LIGHTS > U.C.E. INJECTION



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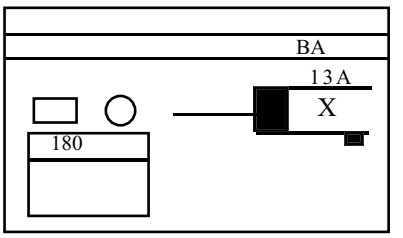


FRONT WIRING – DASHBOARD

X412
03

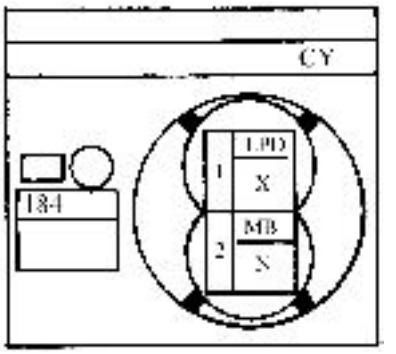
LEFT FRONT DOOR CONTACT

Position	Section		Destination
1	0.6	13A	CONTROL-CEILING LIGHTNING> DOORS CONTACTS



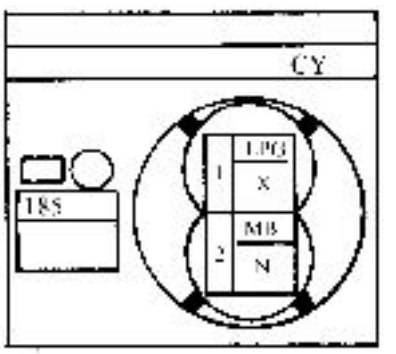
FRONT RIGHT PARKING LIGHT

Position	Section		Destination
1	0.35	LPD	+ PARKING LIGHTS > OUTLET FUSE F15
2	0.6	MB	MASS

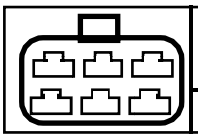


FRONT LEFT PARKING LIGHT

Position	Section		Destination
1	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F15
2	0.6	MB	MASS



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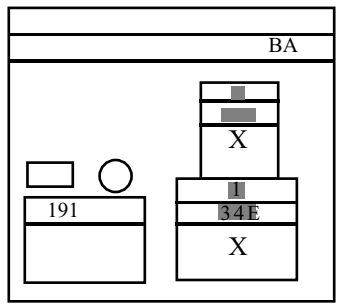


FRONT WIRING – DASHBOARD

X412
03

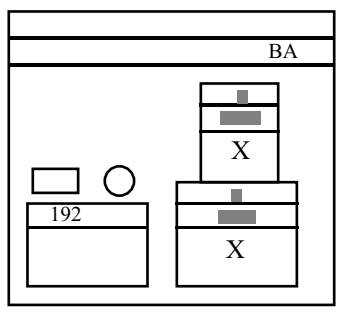
RIGHT FRONT DOOR SPEAKER

Position	Section		Destination
1	0.35	34E	SIGNAL + RIGHT FRONT DOOR SPEAKER (RADIO)
2	0.35	34F	SIGNAL - RIGHT FRONT DOOR SPEAKER (RADIO)

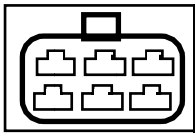


LEFT FRONT DOOR SPEAKER

Position	Section		Destination
1	0.35	34G	SIGNAL + LEFT FRONT SPEAKER (RADIO)
2	0.35	34H	SIGNAL - LEFT FRONT SPEAKER (RADIO)

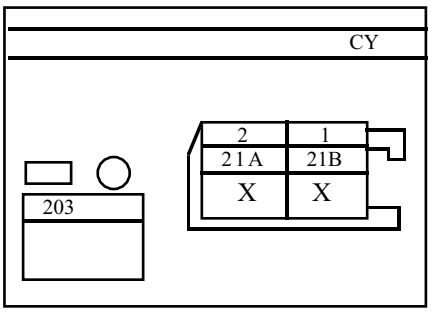


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	FRONT WIRING – DASHBOARD	X412 03

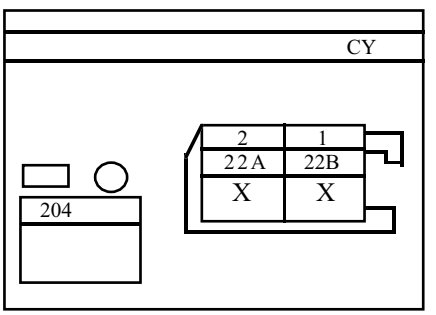
LEFT WINDOW ELECTRIC REGULATOR ACTUATOR

Position	Section		Destination
1	1.0	21B	DRIVER'S WINDOW LIFTING CONTROL
2	1.0	21A	DRIVER'S WINDOW LOWERING CONTROL

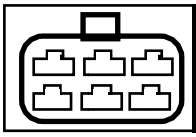


RIGHT WINDOW ELECTRIC REGULATOR ACTUATOR

Position	Section		Destination
1	1.0	22B	PASSENGER WINDOW LIFTING CONTROL
2	1.0	22A	PASSENGER WINDOW LOWERING CONTROL



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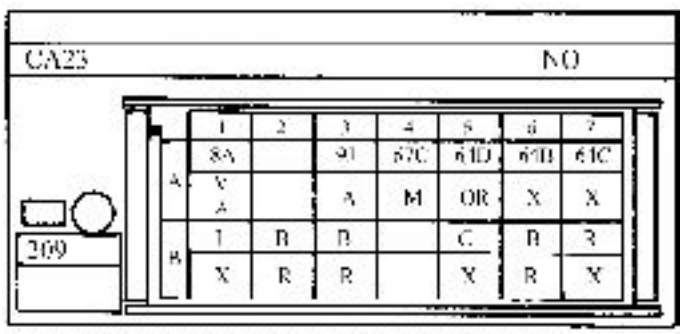


FRONT WIRING – DASHBOARD

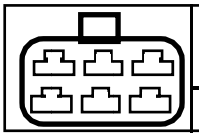
X412
03

LIGHTS, TURNING LIGHTS AND HORN SWITCH

Position	Section		Destination
A1	0.35	8A	CONTROL FOG PROJECTORS RELAY
A1	0.35	8A	CONTROL FOG PROJECTORS RELAY > DASHBOARD
A3	0.6	9J	CONTROL + REAR FOG LAMP > INLET FUSE F19
A4	1.0	67C	CONTROL + ACOUSTIC WARNING > INLET FUSE E12
A5	1.0	64D	CONTROL RIGHT TURNING LIGHTS
A6	1.0	64B	CONTROL + TURNING LIGHTS RELAY
A7	1.0	64C	CONTROL LEFT TURNING LIGHTS
B1	1.0	L	+ PARKING LIGHTS INLET FUSE F14
B2	2.0	B	+ BATTERY
B3	2.0	B	+ BATTERY
B5	1.4	C	+ MEETING LIGHTS > INLET FUSE F08, F09
B6	2.0	B	+ BATTERY
B7	1.4	R	+ ROAD LIGHTS > INLET FUSE F10, F11



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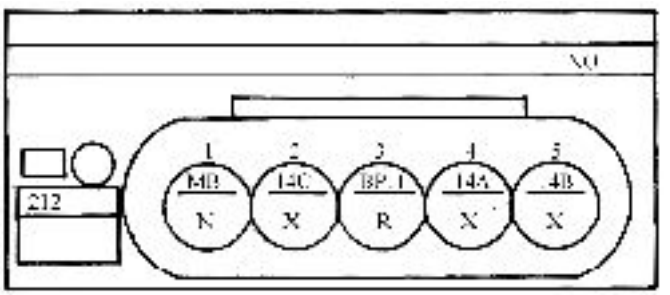


FRONT WIRING – DASHBOARD

X412
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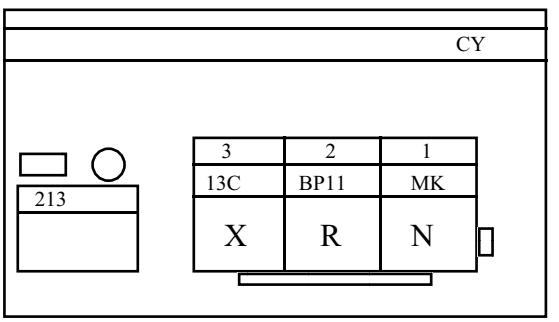
WINDSCREEN WIPER MOTOR

Position	Section		Destination
1	1.0	MB	MASS
2	0.6	14C	CONTROL + FIX POINT STOPPING
3	1.0	BP11	+ PROTECTED BATTERY > OUTLET FUSE F02
4	0.6	14A	CONTROL + LOW SPEED WINDSCREEN WIPER
5	1.0	14B	CONTROL + HIGH SPEED WINDSCREEN WIPER

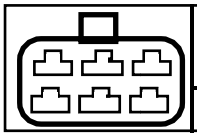


CEILING LIGHT

Position	Section		Destination
1	0.35	MK	MASS
2	0.35	BP11	+ PROTECTED BATTERY CEILING LIGHT > OUTLET FUSE F02
3	0.6	13C	CONTROL - CEILING LIGHT



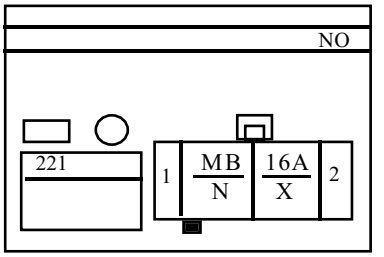
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FRONT WIRING – DASHBOARD	X412 03

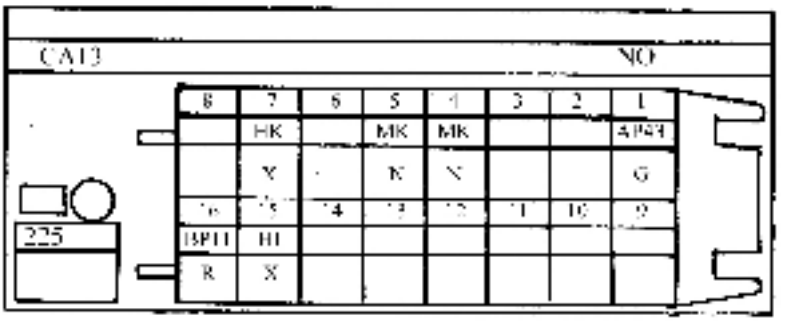
WINDSCREEN WASHING PUMP

Position	Section		Destination
1	0.6	MB	MASS
2	0.6	16A	CONTROL+ WINDSCREEN WASHING PUMP

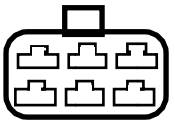


DIAGNOSIS SOCKET

Position	Section		Destination
1	0.6	AP43	+AFTER PROTECTED CONTACT > OUTLET FUSE F04
4	0.6	MK	MASS
5	0.6	MK	MASS
7	0.35	HK	DIAGNOSIS SIGNAL LINE K
15	0.35	HL	DIAGNOSIS SIGNAL -LINE L
16	0.35	BP11	+ PROTECTED BATTERY > OUTLET FUSE F02



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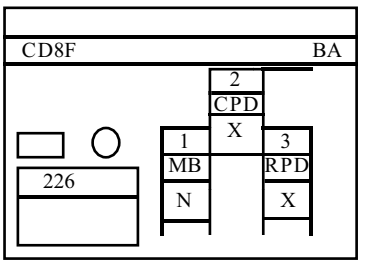


FRONT WIRING – DASHBOARD

X412
03

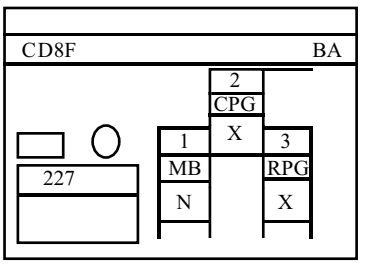
RIGHT HEADLAMP

Position	Section		Destination
1	0.6	MB	MASS
2	0.6	CPD	RIGHT MEETING HEADLIGHTS PROTECTED> OUTLET FUSE F09
3	0.6	RPD	RIGHT ROAD LIGHTS PROTECTED> OUTLET FUSE F11



LEFT HEADLAMP

Position	Section		Destination
1	0.6	MB	MASS
2	0.6	CPG	LEFT MEETING HEADLIGHTS PROTECTED> OUTLET FUSE F08
3	0.6	RPG	LEFT ROAD LIGHTS PROTECTED> OUTLET F10

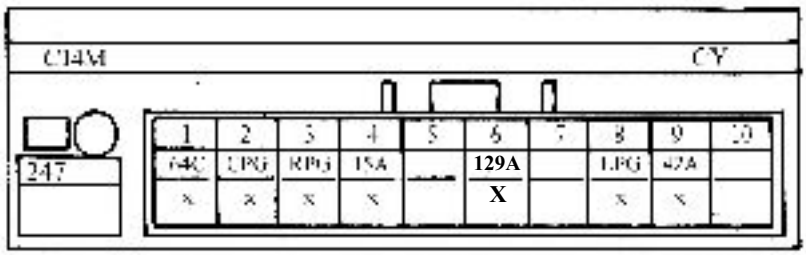


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	FRONT WIRING – DASHBOARD	X412 03

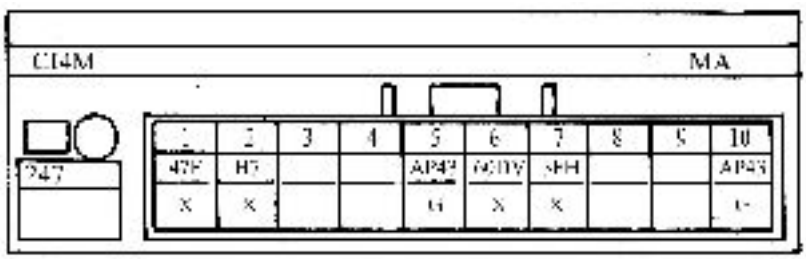
INSTRUMENT PANEL

Position	Section		Destination
1	0.35	64C	CONTROL LEFT TURNING LIGHTS
2	0.35	CPG	PROTECTED LEFT MEETING HEADLIGHTS > INDICATOR
3	0.35	RPG	PROTECTED LEFT ROAD LIGHTS > INDICATOR
4	0.35	15A	CONTROL – REAR WINDOW DEFROSTING INDICATOR
6	0.35	129A	CONTROL-AIRBAG FAILURE INDICATOR
8	0.35	LPG	+ LEFT PARKING LIGHTS > OUTLET FUSE F14
9	0.35	42A	SIGNAL + WATER TEMPERATURE



Position	Section		Destination
1	0.35	47F	VEHICLE SPEED SIGNAL
2	0.35	H7	RPM SIGNAL > INJECTION COMPUTER
5	0.6	AP43	+AFTER PROTECTED CONTACT > OUTLET FUSE F04
6	0.35	60DV	DRIVER SAFETY BELT INDICATOR MASS
7*	0.35	3FH	CONTROL-ANTI-POLLUTION FAILURE INDICATOR
10	0.6	AP43	+AFTER PROTECTED CONTACT > OUTLET FUSE F04

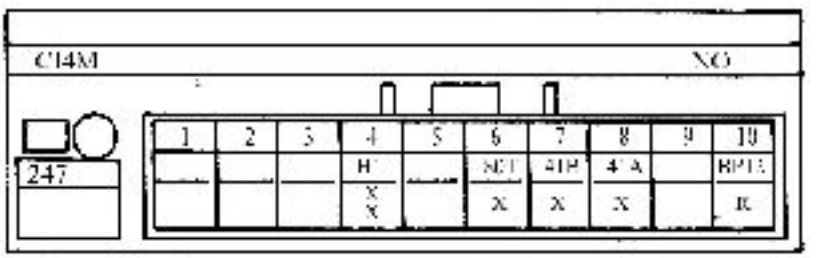
*- for EURO 2000



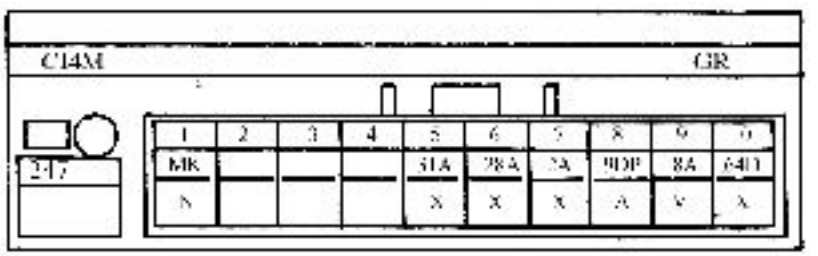
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	FRONT WIRING – DASHBOARD	X412 03

Position	Section		Destination
4	0.35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P
4	0.35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P.
6	0.35	80T	CONTROL-ANTI-STARTING INDICATOR
7	0.35	41B	-FUEL LEVEL
8	0.35	41A	SIGNAL+FUEL LEVER TRANSMITTER
10	0.35	BP12	+ PROTECTED BATTERY> OUTLET FUSE F03



Position	Section		Destination
1	0.6	MK	MASS
5	0.35	31A	CONTROL -WATER TEMPERATURE INDICATOR
6	0.35	28A	CONTROL- OIL PRESSURE INDICATOR
7	0.6	2A	CONTROL-ALTERNATOR LOADING INDICATOR
8	0.35	9DP	+PROTECTED REAR FOG LIGHTS
9	0.35	8A	+FOG PROJECTORS RELAY
10	0.35	64D	RIGHT TURNING LIGHTS CONTROL

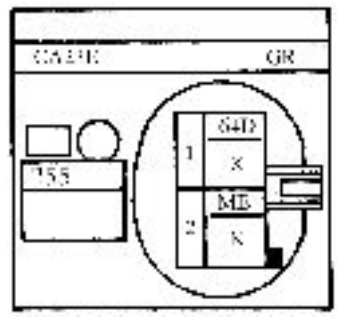


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	FRONT WIRING – DASHBOARD	X412 03

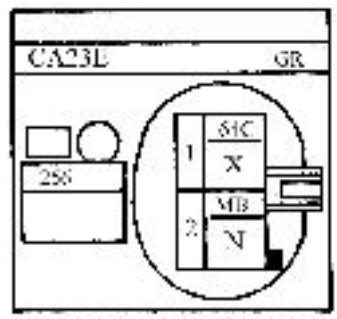
FRONT RIGHT TURNING LAMP

Position	Section		Destination
1	0.6	64D	RIGHT TURN NG LIGHTS CONTROL
2	0.6	MB	MASS



FRONT LEFT TURNING LAMP

Position	Section		Destination
1	0.6	64C	LEFT TURNING LIGHTS CONTROL
2	0.6	MB	MASS

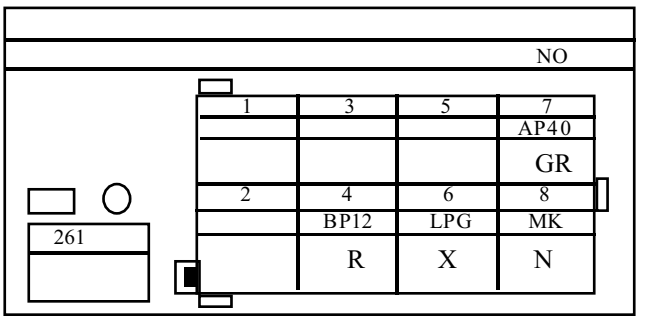


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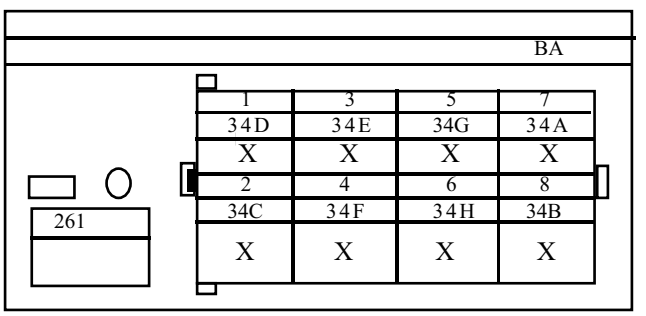
	FRONT WIRING – DASHBOARD	X412 03

RADIO

Position	Section		Destination
4	1.0	BP12	+ PROTECTED BATTERY > OUTLET FUSE F03
6	0.6	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
7	0.6	AP40	+ AFTER PROTECTED CONTACT > OUTLET FUSE F16
8	1.0	MK	MASS



Position	Section		Destination
1	0.35	34D	SIGNAL + REAR RIGHT SPEAKER
2	0.35	34C	SIGNAL - REAR RIGHT SPEAKER
3	0.35	34E	SIGNAL + FRONT RIGHT SPEAKER
4	0.35	34F	SIGNAL - FRONT RIGHT SPEAKER
5	0.35	34G	SIGNAL + FRONT LEFT SPEAKER
6	0.35	34H	SIGNAL - FRONT LEFT SPEAKER
7	0.35	34A	SIGNAL + REAR LEFT SPEAKER
8	0.35	34B	SIGNAL - REAR LEFT SPEAKER

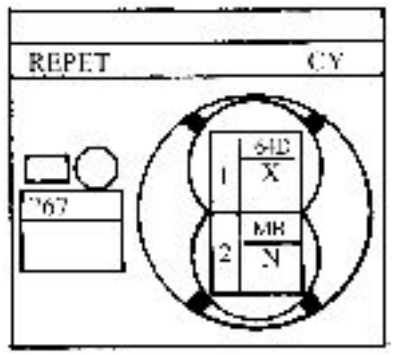


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	FRONT WIRING – DASHBOARD	X412 03

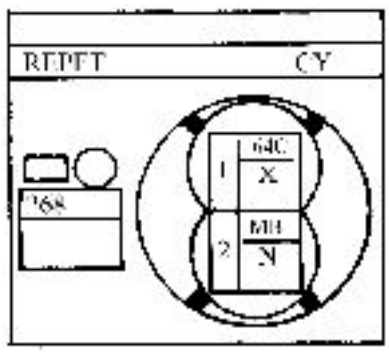
RIGHT SIDE SIGNALING LAMP

Position	Section		Destination
1	0.6	64D	CONTROL RIGHT SIGNALLING LIGHTS
2	0.5	MB	MASS



LEFT SIDE SIGNALING LAMP

Position	Section		Destination
1	0.6	64C	CONTROL LEFT SIGNALLING LIGHTS
2	0.6	MB	MASS

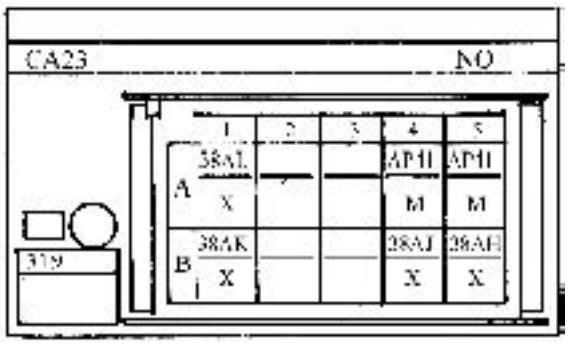


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	FRONT WIRING – DASHBOARD	X412 03

CLIMATE CONTROL PANEL
(for vehicles with air conditioning)

Position	Section		Destination
A1	0.6	38AL	CONTROL+ CLIMATE FAN SPEED 4
A4	1.4	AP41	+AFTER PROTECTED CONTACT > OUTLET FUSE F17
A5	1.4	AP41	+PROTECTED AFTER CONTACT > OUTLET FUSE F17
B1	1.4	38AK	CONTROL+ CLIMATE FAN SPEED 3
B4	1.4	38AJ	CONTROL+ CLIMATE FAN SPEED 2
B5	1.0	38AH	CONTROL+ CLIMATE FAN SPEED 1



Position	Section		Destination
7	0.35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
8	0.6	MK	MASS
9	0.6	MK	MASS
10	0.35	BP12	+ PROTECTED BATTERY > OUTLET FUSE F03
11	0.6	AP43	+AFTER PROTECTED CONTACT > OUTLET FUSE F04
12	0.6	38L	AIR CONDITIONING CONTROL
13	0.35	38AY	CLIMATE FAN SPEED SIGNAL
14	0.6	38EV	CONTROL+ AIR CONDITIONING RECYCLING
15	0.6	38AN	CONTROL- AIR CONDITIONING RECYCLING

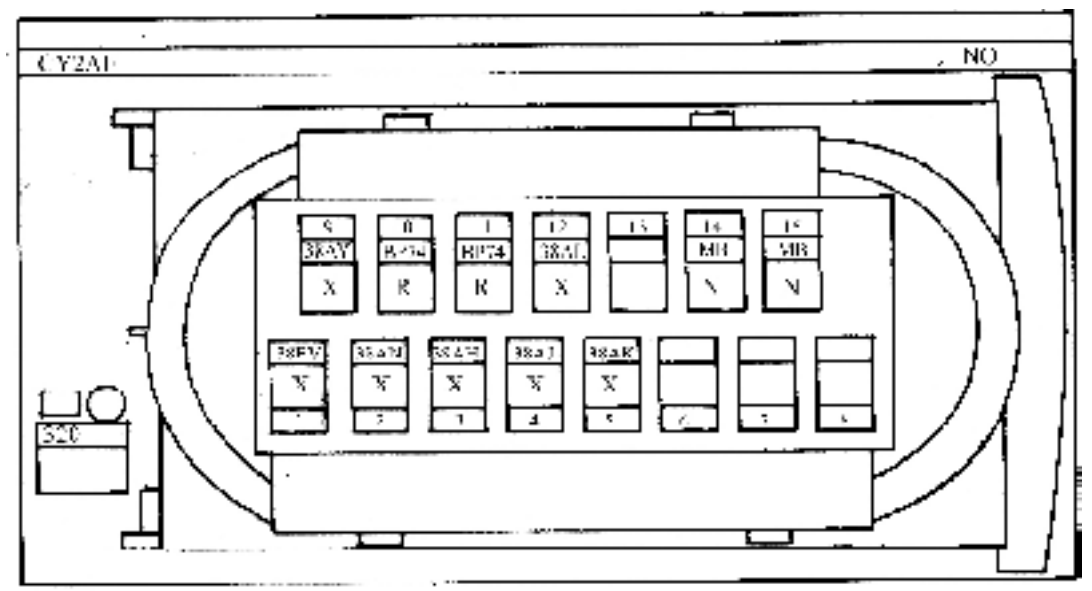


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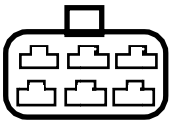
	FRONT WIRING – DASHBOARD	X412 03

CLIMATE CONTROL FAN
(for vehicles with air conditioning)

Position	Section		Destination
1	0.6	38EV	CONTROL+ AIR CONDITIONING RECYCLING
2	0.6	38AN	CONTROL- AIR CONDITIONING RECYCLING
3	1.0	38AH	CONTROL+ CLIMATE FAN SPEED 1
4	1.4	38AJ	CONTROL+ CLIMATE FAN SPEED 2
5	1.4	38AK	CONTROL+ CLIMATE FAN SPEED 3
9	0.35	38AY	SIGNAL CLIMATE FAN SPEED
10	2.0	BP74	+ PROTECTED BATTERY > OUTLET FUSE F26
11	2.0	BP74	+ PROTECTED BATTERY > OUTLET FUSE F26
12	0.4	38AL	CONTROL+ CLIMATE FAN SPEED 4
14	2.0	MB	MASS
15	2.0	MB	MASS

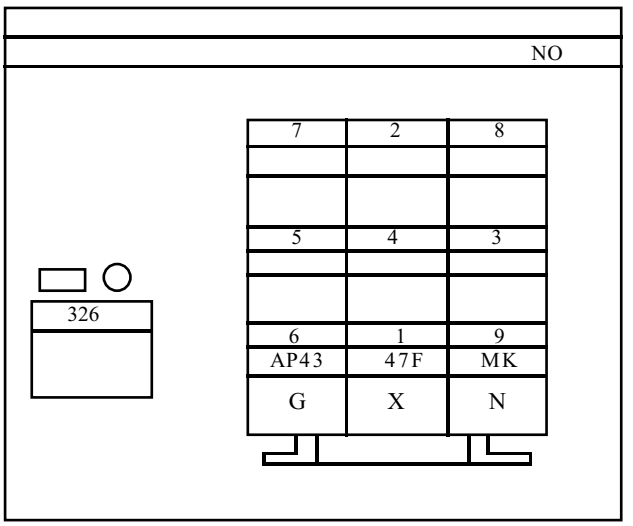


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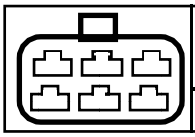
	FRONT WIRING – DASHBOARD	X412 03

SPEED LIMIT INDICATOR

Position	Section		Destination
1	0.6	47F	SIGNAL VEHICLE SPEED
6	0.6	AP43	+AFTER PROTECTED CONTACT > OUTLET FUSE F04
9	0.6	MK	MASS



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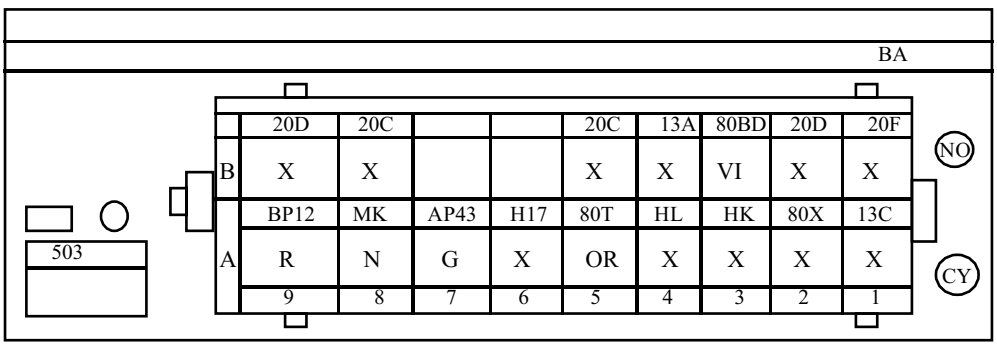


FRONT WIRING – DASHBOARD

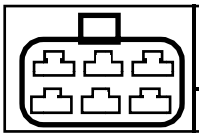
X412
03

U.C.E. DECODER

Position	Section		Destination
A1	0.6	13C	CEILING LIGHT CONTROL
A2	0.35	80X	SIGNAL WAY ANTI-STARTER RECEIVER (TR)
A3	0.35	HK	SIGNAL DIAGNOSIS - LINE K
A4	0.35	HL	SIGNAL DIAGNOSIS - LINE L
A5	0.35	80T	CONTROL - ANTI-STARTING INDICATOR
A6	0.35	H17	INJECTION CODED SIGNAL > ANTI-STARTING
A7	0.6	AP43	+ AFTER PROTECTED CONTROL > OUTLET FUSE F04
A8	0.35	MK	MASS
A9	1.0	BP12	+ PROTECTED BATTERY > OUTLET FUSE F03
B1	0.35	20F	SIGNAL RADIO RECEIVER - FREQUENCY
B2	0.35	20D	CONTROL + DOORS ELECTRIC LOCKING > SWITCH
B3	0.6	80BD	CONTROL FLASH RELAY
B4	0.6	13A	CONTROL - CEILINGS LIGHTING > LEFT DOOR CONTACT
B5	0.35	20C	CONTROL + DOORS ELECTRIC UNLOCKING > SWITCH
B8	0.6	20C	CONTROL + DOORS ELECTRIC UNLOCKING > ACTUATORS
B9	0.6	20D	CONTROL + DOORS ELECTRIC LOCKING > ACTUATORS



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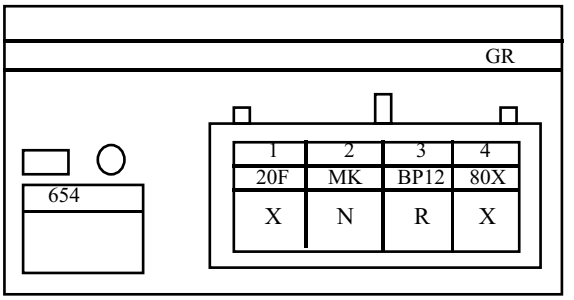


FRONT WIRING – DASHBOARD

X412
03

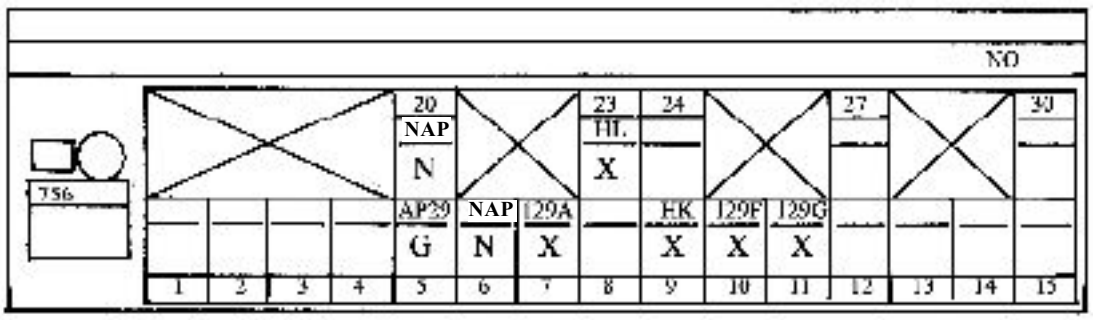
ANTI-STARTING BUSHING

Position	Section		Destination
1	0.35	20F	SIGNAL RADIO RECEIVER - FREQUENCY
2	0.35	MK	MASS
3	0.35	BP12	PROTECTED BATTERY > OUTLET FUSE F03
4	0.35	80X	SIGNAL WAY ANTI-STARTING RECEIVER (TR)



U.C.E. AIRBAG

Position	Section		Destination
5	0.6	AP29	+AFTER PROTECTED CONTACT > EXIT FUSE F05
6	0.6	NAP	MASS
7	0.35	129A	CONTROL-AIRBAG FAILURE INDICATOR
9	0.35	HK	SIGNAL DIAGNOSTIC LINE K
10	0.6	129F	SIGNAL + DRIVER'S AIRBAG
11	0.6	129G	SIGNAL - DRIVER'S AIRBAG
20	0.6	NAP	MASS
23	0.35	HL	SIGNAL DIAGNOSTIC LINE L

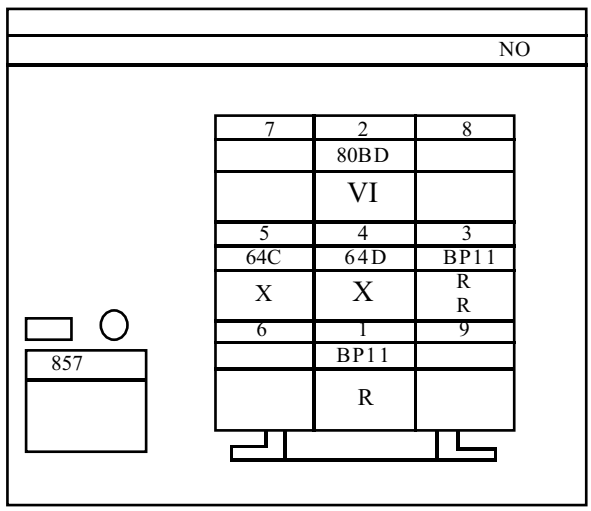


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	FRONT WIRING – DASHBOARD	X412 03

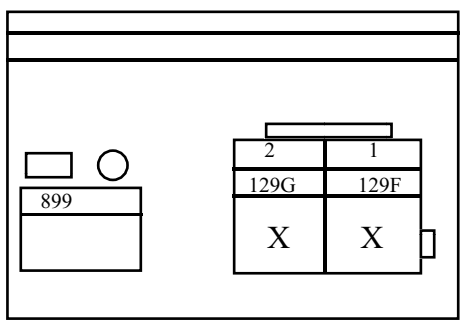
FLASH RELAY

Position	Section		Destination
1	0.6	BP11	+ PROTECTED BATTERY> SHUNT
2	0.6	80BD	FLASH RELAY CONTROL
3	0.6	BP11	+ PROTECTED BATTERY> OUTLET FUSE F02
3	0.6	BP11	+ PROTECTED BATTERY> SHUNT
4	0.6	64D	RIGHT TURNING LIGHTS CONTROL
5	0.6	64C	LEFT TURNING LIGHTS CONTROL

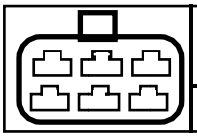


DRIVER'S AIRBAG

Position	Section		Destination
1	0.6	129F	SIGNAL+ DRIVER'S AIRBAG
2	0.6	129G	SIGNAL– DRIVER'S AIRBAG



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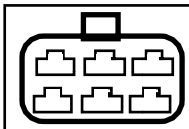
FRONT WIRING – DASHBOARD

X412
03

COCKPIT FUSE BOX

Position	Section		Destination
B01	5.0	B	+BATTERY
A02	0.6	BP11	+PROTECTED BATTERY
A03	1.0	BP12	+PROTECTED BATTERY
B04	3.0	A	+AFTER CONTACT
A04	0.6	AP43	+AFTER PROTECTED CONTACT
A05	1.0	AP29	+AFTER PROTECTED CONTACT
A05	0.6	AP29	+AFTER CONTACT PROTECTED > UCH AIRBAG
A06	0.6	AP11	+AFTER PROTECTED CONTACT > REVERSE DRIVING CONTACT
B07	1.4	A	+AFTER CONTACT
A07	1.0	AP7	+AFTER PROTECTED CONTACT > WINDSCREEN WIPER SWITCH
B08	1.4	C	+ MEETING HEADLIGHTS > LIGHTS SWITCH
A08	0.6	CPG	+LEFT PROTECTED MEETING LIGHTS
A08	0.35	CPG	+ LEFT PROTECTED MEETING LIGHTS > INDICATOR
A09	0.6	CPD	+RIGHT PROTECTED MEETING LIGHTS
B10	1.4	R	+ ROAD LIGHTS > LIGHTS SWITCH
A10	0.6	RPG	+LEFT PROTECTED ROAD LIGHTS
A10	0.35	RPG	+LEFT PROTECTED ROAD LIGHTS > INDICATOR
A11	0.6	RPD	+RIGHT PROTECTED ROAD LIGHTS
B12	1.0	67C	CONTROL + ACOUSTIC WARNING FUSE
A12	1.0	67CP	CONTROL + ACOUSTIC WARNING
B13	1.0	64AP	+ PROTECTED TURNING LIGHTS > HAZARD SWITCH
A13	1.0	64A	SUPPLY + SIGNALIZING > SIGNALIZING RELAY
B14	1.0	L	+ PARKING LIGHTS > LIGHTS SWITCH
B14	1.0	L	+ PARKING LIGHTS > SHUNT
A14	1.0	LPG	+LEFT PROTECTED PARKING LIGHTS
A14	0.35	LPG	+LEFT PROTECTED PARKING LIGHTS
B15	1.0	L	+ PARKING LIGHTS > SHUNT
A15	0.35	LPD	+RIGHT PROTECTED PARKING LIGHTS
A15	0.6	LPD	+RIGHT PROTECTED PARKING LIGHTS
B16	1.0	S	+ACCESSORIES
A16	1.0	AP40	+AFTER PROTECTED CONTACT > LIGHTER
A16	0.6	AP40	+AFTER PROTECTED CONTACT > RADIO
B17	2.0	S	+ACCESSORIES
A17	1.4	AP41	+AFTER PROTECTED CONTACT > CLIMATE CONTROL FAN

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FRONT WIRING – DASHBOARD

X412
03

A17	1.4	AP41	+AFTER PROTECTED CONTACT > CLIMATE CONTROL FAN
B19	0.6	9J	CONTROL + REAR FOG LIGHTS > LIGHTS SWITCH
A19	0.6	9DP	+PROTECTED REAR FOG LIGHTS
A19	0.35	9DP	+ PROTECTED REAR FOG LIGHTS > INDICATOR
B20	2.0	S	+ACCESSORIES
A20	1.4	AP12	+AFTER PROTECTED CONTACT > REAR WINDOW DEFROSTING SWITCH
B21	0.6	B	+BATTERY
A21	0.6	BP17	+ PROTECTED BATTERY > U.C.E. INJECTION
B23	2.0	A	+AFTER CONTACT
A23	2.0	ABP4	+AFTER PROTECTED CONTACT > LEFT ELECTRIC WINDOW SWITCH
B26*	4.0	B	+BATTERY
A26*	2.0	BP74	+ PROTECTED BATTERY > CLIMATE CONTROL (AIR CONDITIONING)
A26*	2.0	BP74	+ PROTECTED BATTERY > CLIMATE CONTROL (AIR CONDITIONING)
B28	1.4	B	+BATTERY
A28	1.4	BPR1	+PROTECTED BATTERY > FOG PROJECTORS RELAY
B29	1.0	B	+BATTERY
B30	1.0	A	+AFTER CONTACT

* Position 26 - for vehicles equipped with air conditioning

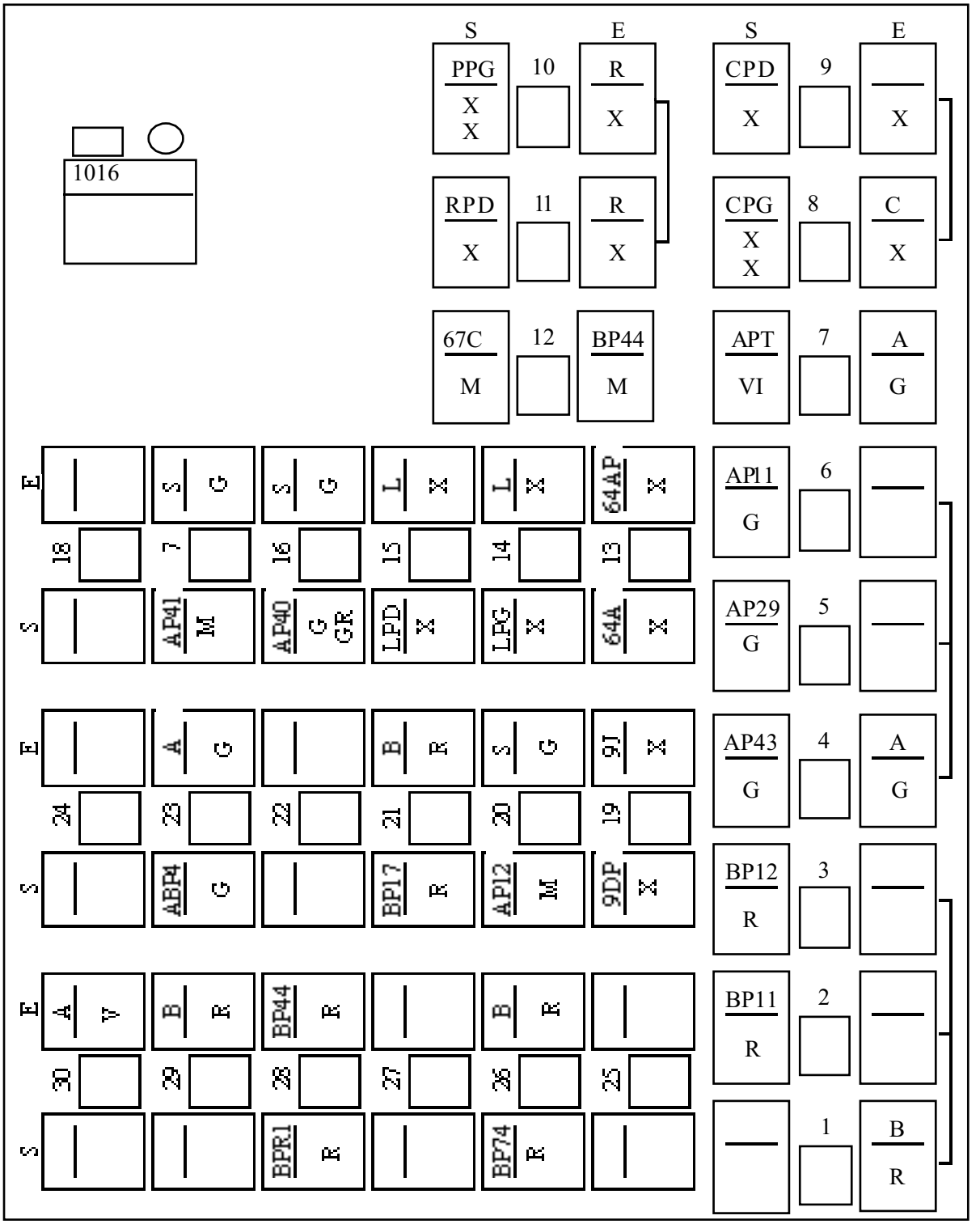
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ELECTRIC DIAGRAMS

Wires functions in connectors and couplings

FRONT WIRING – DASHBOARD

X412
03

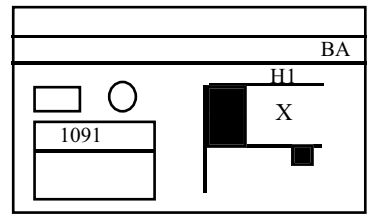


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	FRONT WIRING – DASHBOARD	X412 03

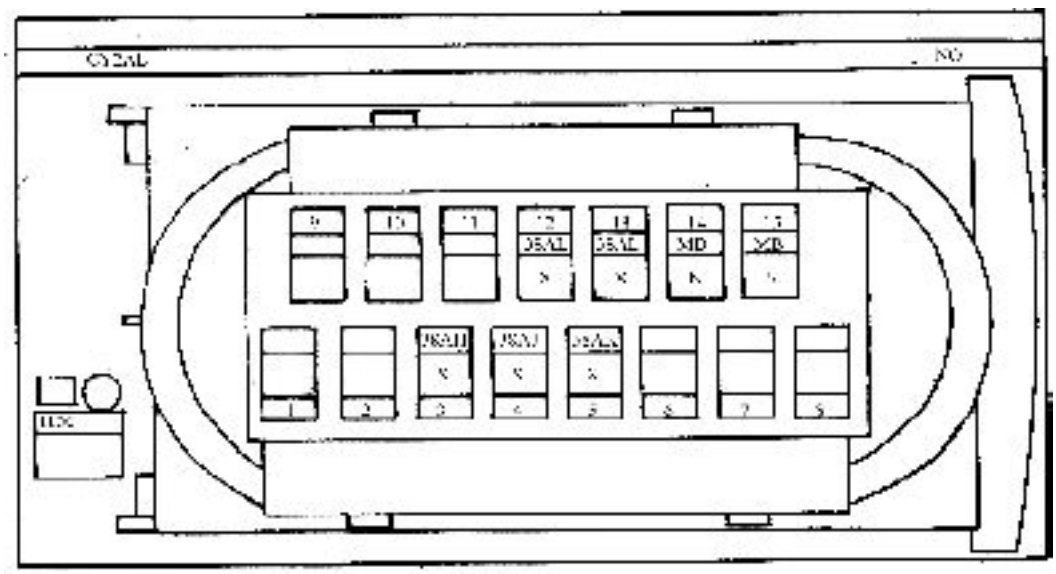
I.C.P. BRAKING SYSTEM

Position	Section		Destination
1	0.35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P



MOTOR FAN AIR CONDITIONING
(for vehicles without air conditioning)

Position	Section		Destination
3	1.0	38AH	CONTROL+ CLIMATE CONTROL FAN SPEED1
4	1.4	38AJ	CONTROL+ CLIMATE CONTROL FAN SPEED2
5	1.4	38AK	CONTROL+ CLIMATE CONTROL FAN SPEED3
12	1.4	38AL	CONTROL+ CLIMATE CONTROL FAN SPEED4
13	1.4	38AL	CONTROL+ CLIMATE CONTROL FAN SPEED4
14	2.0	MB	MASS
15	2.0	MB	MASS

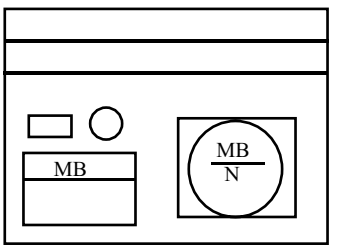


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	FRONT WIRING – DASHBOARD	X412 03

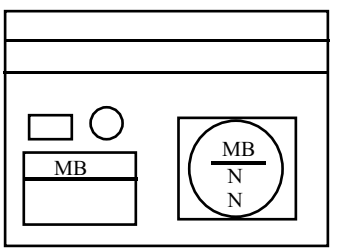
LEFT FRONT BODY ELECTRIC MASS

Position	Section		Destination
1	5.0	MB	MASS > FRONT SIDE SIGNALIZING LAMP LEFT/RIGHT, WINDSCREEN WIPER PUMP, WINDSCREEN WIPER MOTOR , CLIMATE CONTROL FAN (PINS 14 and 5)

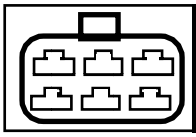


LEFT FRONT BODY ELECTRIC MASS

Position	Section		Destination
1	2.0	MB	MASS > RIGHT HEADLAMP, RIGHT FRONT PARKING LIGHT, FRONT RIGHT TURNING LAMP
1	2.0	MB	MASS > LEFT HEADLAMP, LEFT FRONT PARKING LAMP, FRONT LEFT TURNING LAMP



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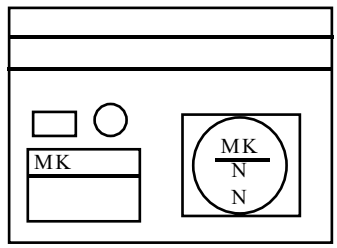


FRONT WIRING – DASHBOARD

X412
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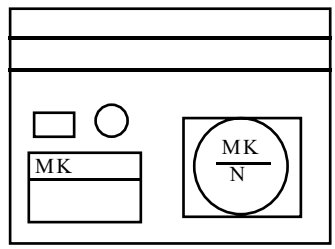
FRONT LEFT COCKPIT ELECTRIC MASS

Position	Section		Destination
1	2.0	MK	MASS > CEILING LIGHT, RADIO, DASHBOARD, REAR WINDOW DEFROSTING SWITCH, TURNING LIGHTS RELAY, WINDSCREEN WIPER TIMER
1	1.4	MK	MASS > LEFT/RIGHT ELECTRIC WINDOW SWITCH, LIGHTER, LOCKING DOORS SWITCH, CLIMATE CONTROL, DIAGNOSIS SOCKET, HAZARD SWITCH



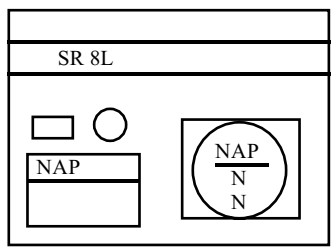
FRONT LEFT COCKPIT ELECTRIC MASS

Position	Section		Destination
1	2.0	MK	MASS > U.C.E. DECODER, SPEED LIMIT INDICATOR, ANTI-STARTING BUSHING, LOCKING DOORS SWITCH, DIAGNOSIS SOCKET, CLIMATE CONTROL



TUNNEL ELECTRONIC MASS

Position	Section		Destination
1	0.6	NAP	MASS> UCE AIRBAG (PIN 20)
1	0.6	NAP	MASS> UCE AIRBAG (PIN 20)

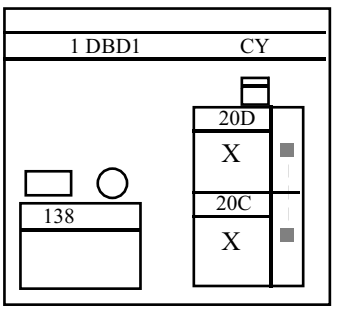


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	REAR WIRING	X412 03

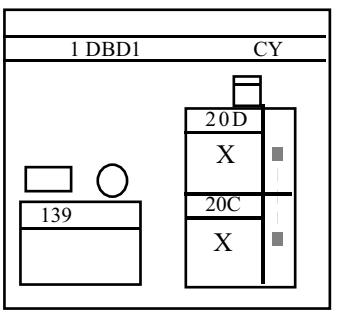
REAR RIGHT DOOR ACTUATOR

Position	Section		Destination
1	0.6	20D	CONTROL+ ELECTRIC DOORS LOCKING > ACTUATORS
2	0.6	20C	CONTROL+ ELECTRIC DOORS UNLOCKING > ACTUATORS

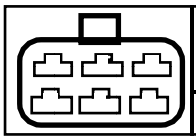


REAR LEFT DOOR ACTUATOR

Position	Section		Destination
1	0.6	20D	CONTROL+ ELECTRIC DOORS LOCKING > ACTUATORS
2	0.6	20C	CONTROL+ ELECTRIC DOORS UNLOCKING > ACTUATOR



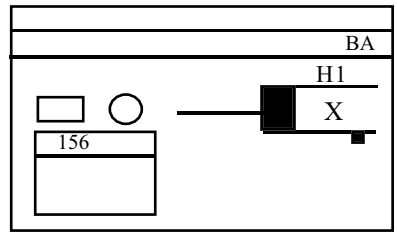
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REAR WIRING	X412 03

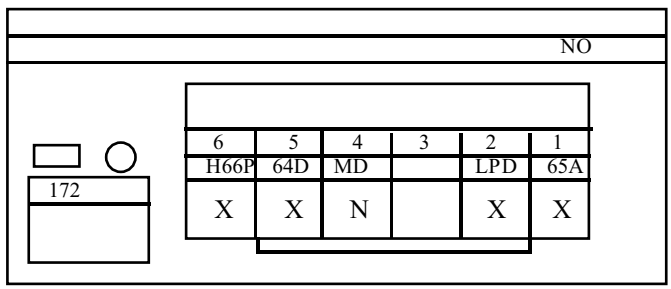
HANDBRAKE CONTACT

Position	Section		Destination
1	0.35	H1	CONTROL - HANDBRAKE INDICATOR, I.C.P



REAR RIGHT LAMP

Position	Section		Destination
1	0.6	65A	CONTROL + STOP LIGHTS
2	0.6	LPD	+ PARKING LIGHTS > OUTLET FUSE F15
4	1.0	MD	MASS
5	0.6	64D	CONTROL RIGHT TURNING LIGHTS
6	0.6	H66P	CONTROL + REVERSED DRIVING LIGHTS > OUTLET FUSE F06

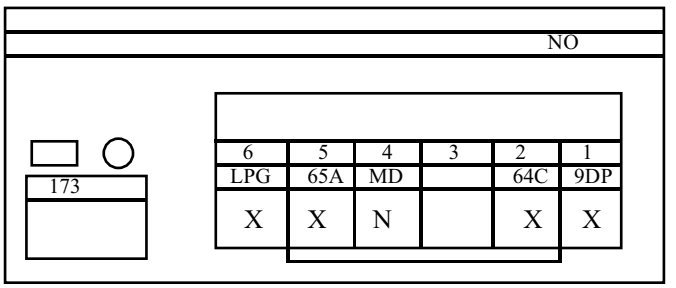


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	REAR WIRING	X412 03

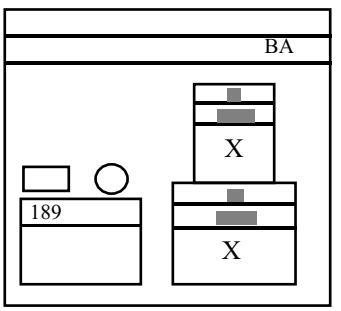
REAR LEFT LAMP

Position	Section		Destination
1	0.6	9DP	+ PROTECTED REAR FOG LIGHTS > OUTLET FUSE F19
2	0.6	64C	CONTROL LEFT TURNING LIGHTS
4	1.0	MD	MASS
5	0.6	65A	CONTROL + STOP LIGHTS
6	0.6	LPG	+ PARKING LIGHTS > OUTLET F14

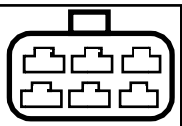


REAR RIGHT SPEAKER

Position	Section		Destination
1	0.35	34D	SIGNAL + REAR RIGHT SPEAKER (RADIO)
2	0.35	34C	SIGNAL - REAR RIGHT SPEAKER (RADIO)



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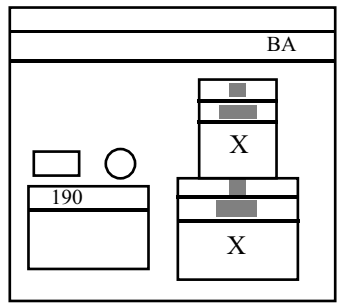


REAR WIRING

X412
03

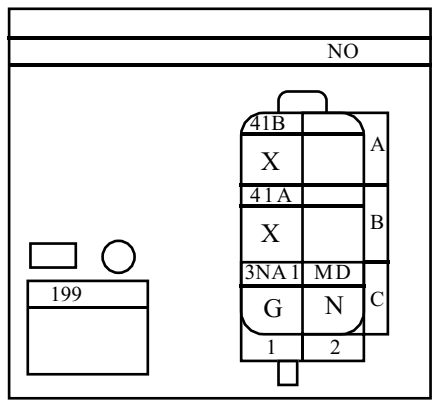
REAR LEFT SPEAKER

Position	Section		Destination
1	0.35	34A	SIGNAL + REAR LEFT SPEAKER (RADIO)
2	0.35	34B	SIGNAL - REAR LEFT SPEAKER (RADIO)

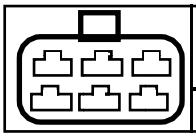


FUEL LEVEL TRANSMITTER AND ELECTRIC PUMP

Position	Section		Destination
A1	0.35	41B	- FUEL LEVEL
B1	0.35	41A	SIGNAL + FUEL LEVEL TRANSMITTER
C1	1.4	3NA1	+ FUEL PUMP
C2	1.4	MD	MASS



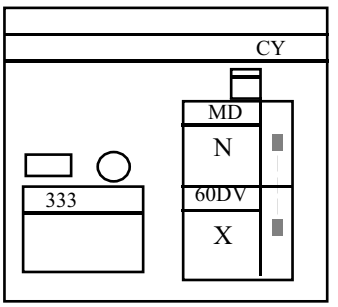
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REAR WIRING	X412 03

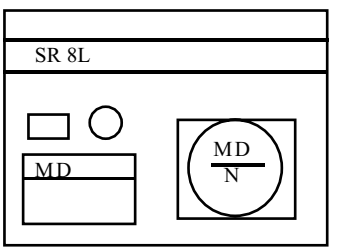
DRIVER'S SAFETY BELT CONTACT

Position	Section		Destination
1	0.35	MD	MASS
2	0.35	60DV	DRIVER'S SAFETY BELT INDICATOR MASS



REAR LEFT TABLE ELECTRIC MASS

Position	Section		Destination
1	2.0	MD	MASS > LEFT/RIGHT REAR LAMP FUEL LEVEL TRANSMITTER AND ELECTRIC PUMP, DRIVER SAFETY BELT CONTACT

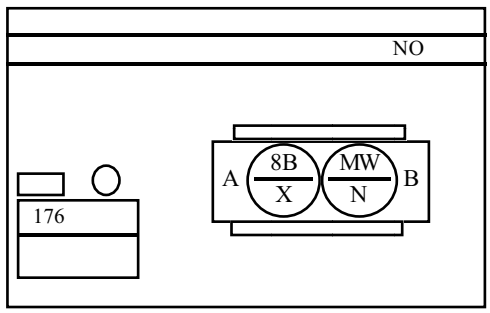


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	FOG PROJECTORS WIRING	X412 03

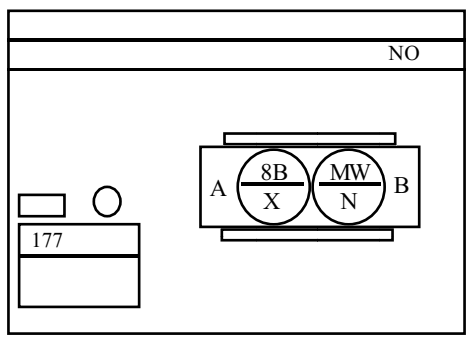
RIGHT FOG PROJECTOR

Position	Section		Destination
A	1.0	8B	+ FOG PROJECTOR > RELAY
B	1.0	MW	MASS



LEFT FOG PROJECTOR

Position	Section		Destination
A	1.0	8B	+ FOG PROJECTORS > RELAY
B	1.0	MW	MASS

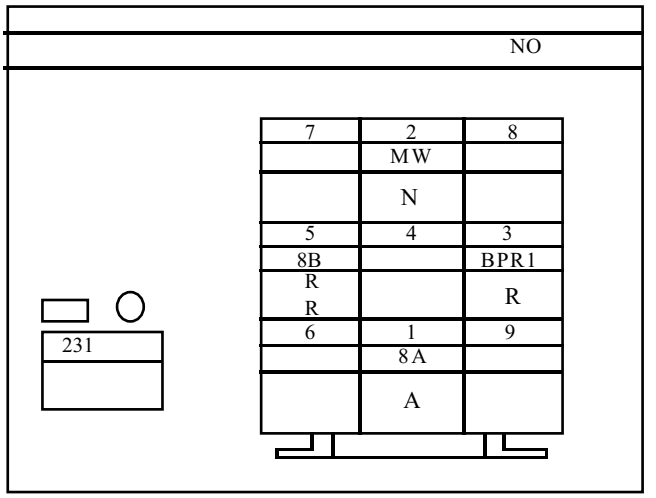


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	FOG PROJECTORS WIRING	X412 03

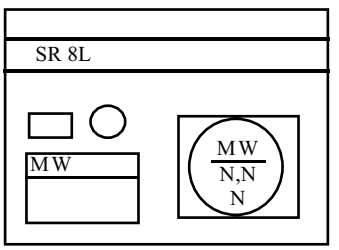
FOG PROJECTORS RELAY

Position	Section		Destination
1	0.35	8A	CONTROL+ FOG PROJECTORS RELAY
2	0.35	MW	MASS
3	1.4	BPR1	+ BATTERY > OUTLET FUSE F28
5	1.0	8B	+FOG PROJECTORS > LEFT FOG PROJECTOR
5	1.0	8B	+FOG PROJECTORS > RIGHT FOG PROJECTOR

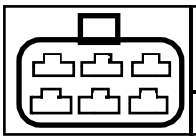


FOG PROJECTORS WIRING ELECTRIC MASS

Position	Section		Destination
1	0.35	MW	MASS > FOG PROJECTORS CONTROL RELAY
1	1.0	MW	MASS > LEFT FOG PROJECTOR
1	1.0	MW	MASS > RIGHT FOG PROJECTOR



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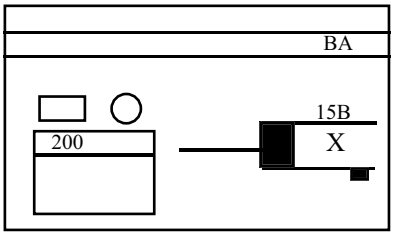


HATCHBACK WIRING

X412
03

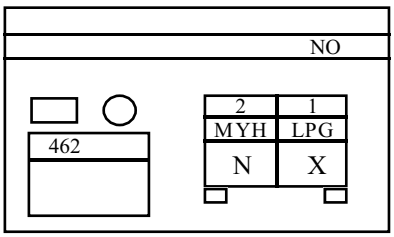
REAR WINDOW DEFROSTING

Position	Section		Destination
1	2.0	15B	CONTROL + REAR WINDOW DEFROSTING



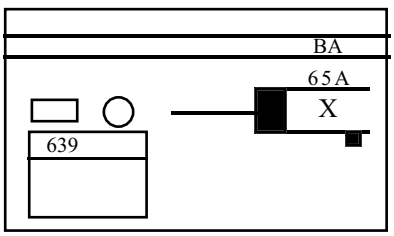
LICENSE PLATE LAMP

Position	Section		Destination
1	0.5	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
2	0.35	MYH	MASS

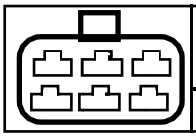


STOP LAMP - S3

Position	Section		Destination
1	0.35	65A	CONTROL + STOP LIGHTS

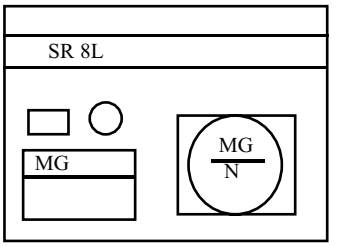


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	HATCHBACK WIRING	X412 03

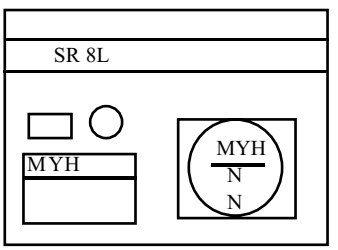
HATCHBACK WIRING ELECTRIC MASS

Position	Section		Destination
1	2.0	MG	MASS > LEFT HATCHBACK ELECTRIC MASS



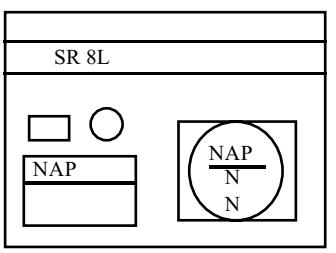
LEFT HATCHBACK ELECTRIC MASS

Position	Section		Destination
1	2.0	MYH	MASS > HATCHBACK WIRING ELECTRIC MASS
2	0.35	MYH	MASS > LICENSE PLATE LAMP



ELECTRONIQUE MASS TUNEL

Position	Section		Destination
1	0.6	NAP	MASS > U.C.E. AIRBAG (PIN 6)
1	0.6	NAP	MASS > U.C.E AIRBAG (PIN 20)



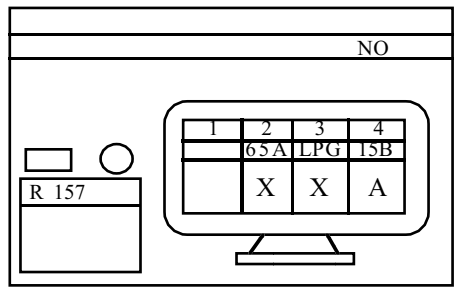
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	COUPLINGS	B41 02

REAR WIRING COUPLINGS / HATCHBACK

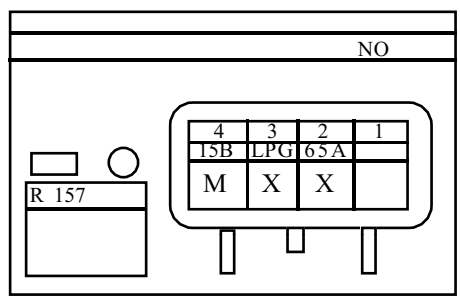
REAR WIRING COUPLING

Position	Section		Destination
2	0.35	65A	CONTROL + STOP LIGHTS
3	0.6	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
4	2.0	15B	CONTROL + REAR WINDOW DEFROSTING



HATCHBACK WIRING COUPLING

Position	Section		Destination
2	0.35	65A	CONTROL + STOP LIGHTS > STOP LAMP S3
3	0.6	LPG	+ PARKING LIGHTS > LICENSE PLATE LAMP
4	2.0	15B	CONTROL + REAR WINDOW DEFROSTING



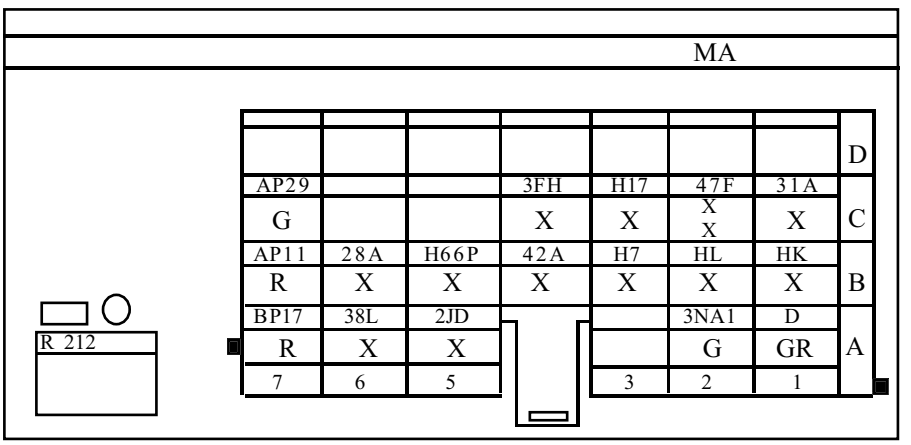
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	COUPLINGS	B41 02

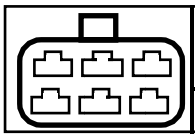
FRONT WIRING COUPLING - DASHBOARD / ENGINE

FRONT WIRING COUPLING

Position	Section		Destination
A1	3.0	D	+ STARTER CONTROL
A2	1.4	3NA1	+ FUEL PUMP
A5	0.6	2JD	+ EXCITATION ALTERNATOR
A6	0.6	38L	SIGNAL AIR CONDITIONING COUPLING
A7	0.6	BP17	+ PROTECTED BATTERY > OUTLET F21
B1	0.35	HK	SIGNAL DIAGNOSIS LINE K
B2	0.35	HL	SIGNAL DIAGNOSIS LINE L
B3	0.35	H7	RPM SIGNAL
B4	0.35	42A	SIGNAL + WATER TEMPERATURE
B5	0.6	H66P	CONTROL + REVERSED DRIVING LIGHTS
B6	0.35	28A	CONTROL + OIL PRESSURE INDICATOR
B7	0.6	AP11	+ AFTER PROTECTED CONTACT > OUTLET FUSE F06
C1	0.35	31A	CONTROL - WATER TEMPERATURE INDICATOR
C2	0.35	47F	VEHICLE SPEED SIGNAL > INDICATOR
C2	0.6	47F	VEHICLE SPEED SIGNAL > SPEED LIMIT INDICATOR
C3	0.35	H17	CODED SIGNAL INJECTION > ANTI-STARTING
C4	0.35	3FH	CONTROL – ANTI-POLLUTION INDICATOR
C7	1.0	AP29	+ AFTER PROTECTED CONTACT > OUTLET FUSE F05



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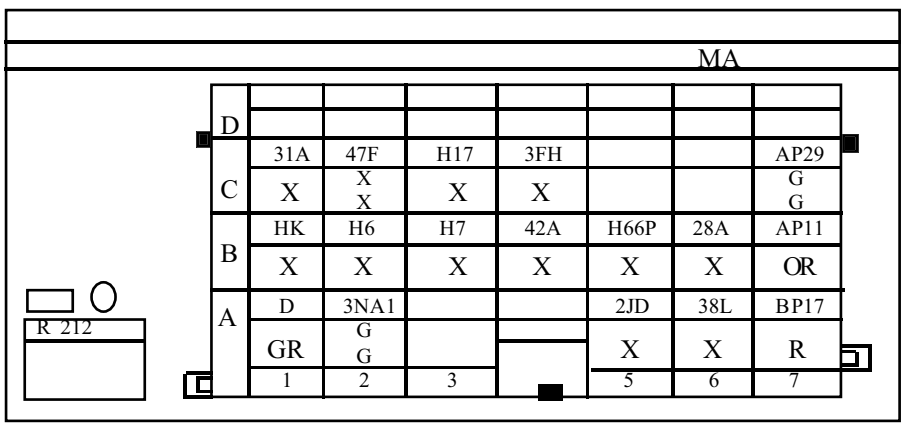


COUPLINGS

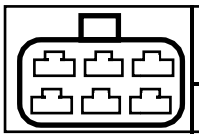
B41
02

ENGINE WIRING COUPLING

Position	Section		Destination
A1	3.0	D	+ CONTROL STARTER
A2	1.4	3NA1	+ FUEL PUMP > CHOCK SENSOR
A2	1.4	3NA1	+ FUEL PUMP
A5	2.0	2JD	+ALTERNATOR EXCITATION
A6	0.6	38L	SIGNAL AIR CONDITIONING COUPLING
A7	0.6	BP17	+ PROTECTED BATTERY > U.C.E. INJECTION
B1	0.35	HK	SIGNAL DIAGNOSIS LINK
B2	0.35	HL	SIGNAL DIAGNOSIS LINL
B3	0.35	H7	RPM SIGNAL
B4	0.35	42A	SIGNAL + WATER TEMPERATURE
B5	0.6	H66P	CONTROL + REVERSED DRIVING LIGHTS
B6	0.6	28A	CONTROL - OIL PRESSURE INDICATOR
B7	0.6	AP11	+AFTER PROTECTED CONTACT > REVERSED DRIVING CONTACT
C1	0.35	31A	CONTROL - WATER TEMPERATURE INDICATOR
C2	0.35	47F	VEHICLE SPEED SIGNAL > U.C.E INJECTION
C2	0.35	47F	VEHICLE SPEED SIGNAL > RPM SENSOR
C3	0.35	H17	CODED INJECTION SIGNAL > UC.E. INJECTION
C4	0.35	3FH	CONTROL - ANTI-POLLUTION INDICATOR > U.C.E. INJECTION
C7	0.6	AP29	+AFTER PROTECTED CONTACT > FUEL PUMP RELAY
C7	0.6	AP29	+AFTER PROTECTED CONTACT > U.C.E. INJECTION



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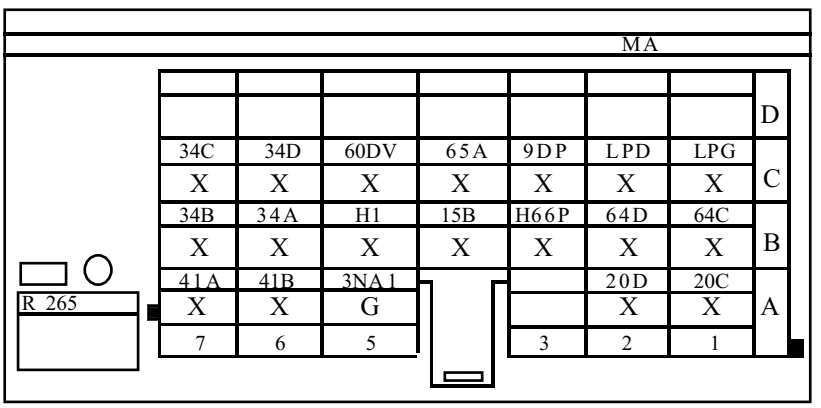
COUPLINGS

B41
02

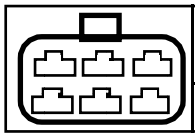
FRONT WIRING COUPLING - DASHBOARD / REAR

FRONT WIRING COUPLING

Position	Section		Destination
A1	0.6	20C	CONTROL + ELECTRIC UNLOCKING DOORS > UCE DECODER
A2	0.6	20D	CONTROL + ELECTRIC LOCKING DOORS > U.C.E. DECODER
A5	1.4	3NA1	+FUEL PUMP > FUEL PUMP RELAY
A6	0.35	41B	- FUEL LEVER > INDICATOR
A7	0.35	41A	SIGNAL + FUEL LEVEL TRANSMITTER
B1	0.6	64C	CONTROL LEFT TURNING LIGHTS
B2	0.6	64D	CONTROL RIGHT TURNING LIGHTS
B3	0.6	H66P	CONTROL + REVERSE DRIVING LIGHTS >REVERSE DRIVING CONTACT
B4	1.4	15B	CONTROL + REAR WINDOW DEFROSTING
B5	0.35	H1	CONTROL - HANDBRAKE INDICATOR, I.C.P.
B6	0.35	34A	SIGNAL + REAR LEFT SPEAKER (RADIO)
B7	0.35	34B	SIGNAL - REAR LEFT SPEAKER (RADIO)
C1	0.6	LPG	+ PROTECTED LEFT PARKING LIGHTS > OUTLET FUSE F14
C2	0.6	LPD	+ PROTECTED RIGHT PARKING LIGHTS > OUTLET FUSE F15
C3	0.6	9DP	+ PROTECTED REAR FOG LIGHTS > OUTLET FUSE 19
C4	1.0	65A	CONTROL + STOP LIGHTS
C5	0.35	60DV	DRIVER SAFETY BELT INDICATOR MASS
C6	0.35	34D	SIGNAL + REAR RIGHT SPEAKER (RADIO)
C7	0.35	34C	SIGNAL - REAR RIGHT SPEAKER (RADIO)



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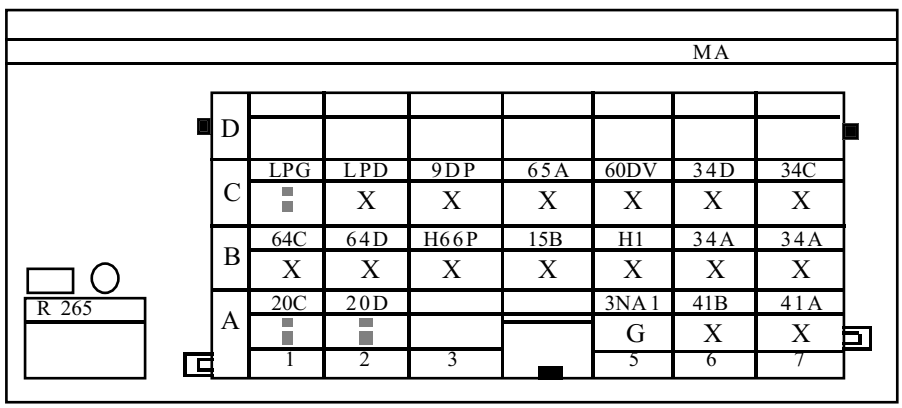


COUPLINGS

B41
02

REAR WIRING COUPLING

Position	Section		Destination
A1	0.6	20C	CONTROL + ELECTRIC UNLOCKING DOORS > ACTUATORS
A1	0.6	20C	CONTROL + ELECTRIC UNLOCKING DOORS > ACTUATORS
A2	0.6	20D	CONTROL + ELECTRIC LOCKING DOORS > ACTUATORS
A2	0.6	20D	CONTROL + ELECTRIC LOCKING DOORS > ACTUATORS
A5	1.4	3NA1	+ FUEL PUMP
A6	0.35	41B	- FUEL LEVEL
A7	0.35	41A	SIGNAL + FUEL TRANSMITTER
B1	0.6	64C	CONTROL LEFT TURNING LIGHTS
B2	0.6	64D	CONTROL RIGHT TURNING LIGHTS
B3	0.6	H66P	CONTROL + REVERSE DRIVING LIGHTS
B4	2.0	15B	CONTROL + REAR WINDOW DEFROSTING
B5	0.35	H1	CONTROL - HANDBRAKE INDICATOR, I.C.P.
B6	0.35	34A	SIGNAL + LEFT REAR SPEAKER
B7	0.35	34B	SIGNAL - LEFT REAR SPEAKER
C1	0.6	LPG	+ PROTECTED LEFT PARKING LIGHTS
C1	0.6	LPG	+ PROTECTED LEFT PARKING LIGHTS
C2	0.6	LPD	+ PROTECTED RIGHT PARKING LIGHTS
C3	0.6	9DP	+ PROTECTED REAR FOG LIGHTS
C4	1.0	65A	CONTROL + STOP LIGHTS
C5	0.35	60DV	DRIVER SAFETY BELT INDICATOR MASS
C6	0.35	34D	SIGNAL + REAR RIGHT SPEAKER
C7	0.35	34C	SIGNAL - REAR RIGHT SPEAKER



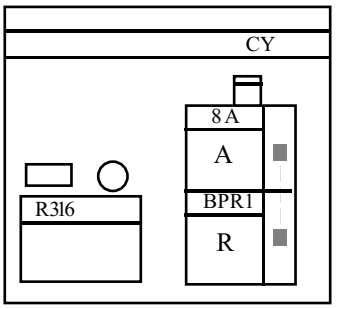
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	COUPLINGS	B41 02

FRONT WIRING COUPLING - DASHBOARD / FOG PROJECTORS

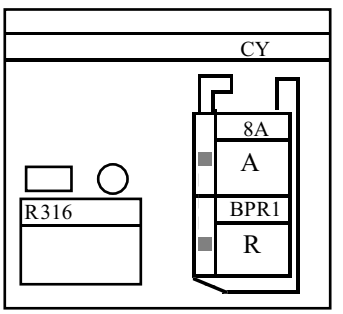
FRONT WIRING COUPLING

Position	Section		Destination
1 2	0.35 1.4	8A BPR1	CONTROL + FOG PROJECTORS RELAY > LIGHTS SWITCH + PROTECTED BATTERY > OUTLET FUSE F28



FOG PROJECTORS WIRING COUPLING

Position	Section		Destination
1 2	0.35 1.4	8A BPR1	CONTROL + FOG PROJECTORS RELAY + PROTECTED BATTERY > FOG PROJECTORS RELAY



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Wires functions explanation

LINK CODE	WIRES FONCTION
A	SUPPLY + AFTER CONTACT
ABP4	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F23
AP11	+ AFTER PROTECTED CONTACT REVERSE DRIVING LIGHTS > COCKPIT OUTLET FUSE F06
AP12	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F20
AP29	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F05
AP40	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F16
AP41	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F17
AP43	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F04
AP7	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F07
B	+ BATTERY
BP1	+ PROTECTED BATTERY > ENGINE OUTLET FUSE F03
BP7	+ PROTECTED BATTERY > ENGINE OUTLET FUSE F01 (F02 for A.C.)
BP11	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F02
BP12	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F03
BP17	+ AFTER PROTECTED CONTACT > ENGINE OUTLET FUSE F04
BP37	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F21
BP74	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F26
BPR1	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F28
C	+ MEETING LIGHTS
CPD	+ RIGHT PROTECTED MEETING LIGHTS
CPG	+ LEFT PROTECTED MEETING LIGHTS
D	+ STARTER CONTROL
H1	CONTROL - HANDBRAKE INDICATOR, I.C.P. BRAKING CIRCUIT
H17	INJECTION CODED SIGNAL > ANTI-STARTING
H66P	CONTROL + REVERSE DRIVING LIGHTS
H7	RPM SIGNAL
HK	DIAGNOSIS SIGNAL LINE K
HL	DIAGNOSIS SIGNAL LINE L
L	+ PARKING LIGHTS
LPD	+ RIGHT PROTECTED PARKING LIGHTS > COCKPIT OUTLET FUSE F15
LPG	+ LEFT PROTECTED PARKING LIGHTS > COCKPIT OUTLET FUSE F14
M20	REAR WINDOW DEFROSTING ELECTRIC MASS
MAJ	COOLING FAN WIRING ELECTRIC MASS
MB	LEFT FRONT BODY ELECTRIC MASS
MC	GEARBOX ELECTRIC MASS
MD	REAR LEFT TABLE ELECTRIC MASS
ME	FRONT LEFT LONGITUDINAL GIRDER ELECTRIC MASS
MG	HATCHBACK WIRING ELECTRIC MASS
MH	ENGINE ELECTRIC MASS
MK	FRONT LEFT COCKPIT ELECTRIC MASS
MW	FOG PROJECTORS WIRING ELECTRIC MASS
MYH	HATCHBACK ELECTRIC MASS
NAP	TUNNEL ELECTRONIC MASS
R	+ ROAD LIGHTS
RPD	+ RIGHT PROTECTED ROAD LIGHTS
RPG	+ LEFT PROTECTED ROAD LIGHTS
S	+ ACCESSORIES
TB1	DETONATION SENSOR SCREENING
2A	CONTROL - ALTERNATOR CHARGING INDICATOR
2JD	+ ALTERNATOR EXCITATION
3AC	CONTROL - FUEL PUMP RELAY
3AJ	SIGNAL + POTENTIOMETER POSITION VALVE
3AQ	SIGNAL + POTENTIOMETER VALVE

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3B	SIGNAL + AIR TEMPERATURE SENSOR
3BA	SIGNAL - PRESSURE CONTROLLER POWER STEERING
3BB	CONTROL CANISTER PURGING VALVE
3BG	RPM ENGINE SIGNAL > RPM SENSOR
3BL	SIGNAL - RPM ENGINE > RPM SENSOR
3BU	CONTROL 1 IDLING REGULATOR
3BV	CONTROL 2 IDLING REGULATOR
3BW	CONTROL 3 IDLING REGULATOR
3BX	CONTROL 4 IDLING REGULATOR
3C	SIGNAL + WATER TEMPERATURE SENSOR
3CR	CONTROL + INJECTOR 1
3CS	CONTROL + INJECTOR 2
3CT	CONTROL + INJECTOR 3
3CU	CONTROL + INJECTOR 4
3CV	CONTROL - IGNITION COIL CYLINDER 1-4
3CW	CONTROL - IGNITION COIL CYLINDER 2-3
3D	ATMOSPHERIC PRESSURE SENSOR + SUPPLY +
3DQ	- DETONATION SENSOR
3F	ATMOSPHERIC PRESSURE SENSOR SIGNAL
3FH	CONTROL - ANTI-POLLUTION DEFAULT INDICATOR
3GF	CONTROL - UPSTREAM OXYGEN SENSOR HEATING
3GG	CONTROL - DOWNSTREAM OXYGEN SENSOR HEATING
3GH	UPSTREAM OXYGEN SENSOR MASS
3GJ	DOWNSTREAM OXYGEN SENSOR MASS
3GK	UPSTREAM OXYGEN SENSOR SIGNAL
3GL	DOWNSTREAM OXYGEN SENSOR SIGNAL
3GN	ATMOSPHERIC PRESSURE SENSOR MASS
3GT	ACTUATORS RELAY CONTROL
3JK	- WATER TEMPERATURE
3JL	- POTENTIOMETER VALVE
3JN	CONTROL – CLIMATE CONTROL FAN RELAY SPEED 1
3JP	CONTROL – CLIMATE CONTROL FAN RELAY SPEED 2
3JQ	- AIR TEMPERATURE SENSOR
3NA	+ IGNITION COIL, CHOCK SENSOR > FUEL PUMP RELAY
3NA1	+ FUEL PUMP
3NR	+ INJECTORS >OUTLET ACTUATORS RELAY
3S	SIGNAL + DETONATION SENSOR
8A	+ FOG PROJECTORS RELAY
8B	+ FOG PROJECTORS > RELAY
9J	CONTROL + FOG LAMP
9DP	+ PROTECTED REAR FOG LIGHTS
13A	CONTROL - CEILING LIGHTING > DOORS CONTACTS
13C	CONTROL - CEILING LIGHT
14A	CONTROL + LOW SPEED WINDSCREEN WIPER
14B	CONTROL + HIGH SPEED WINDSCREEN WIPER
14C	CONTROL + WINDSCREEN WIPER FIX POINT STOPPING
14D	CONTROL LOW SPEED WINDSCREEN WIPER TIMER
14E	CONTROL + WINDSCREEN WIPER TIMER
15B	CONTROL + REAR WINDOW DEFROSTING
16A	CONTROL + WINDSCREEN WASHER PUMP
20C	CONTROL + ELECTRIC DOORS UNLOCKING
20D	CONTROL + ELECTRIC DOORS LOCKING
20F	RADIO-FREQUENCY RECEPTION SIGNAL
21A	DRIVER ELECTRIC WINDOW LIFTING CONTROL
21B	DRIVER ELECTRIC WINDOW LOWERING CONTROL

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22A	PASSENGER ELECTRIC WINDOW LIFTING CONTROL
22B	PASSENGER ELECTRIC WINDOW LOWERING CONTROL
28A	CONTROL - OIL PRESSURE INDICATOR
31A	CONTROL - WATER TEMPERATURE INDICATOR
34A	SIGNAL + REAR LEFT SPEAKER
34B	SIGNAL - REAR LEFT SPEAKER
34C	SIGNAL - REAR RIGHT SPEAKER
34D	SIGNAL - REAR RIGHT SPEAKER
34E	SIGNAL - FRONT RIGHT SPEAKER
34F	SIGNAL - FRONT RIGHT SPEAKER
34G	SIGNAL - FRONT LEFT SPEAKER
34H	SIGNAL - FRONT LEFT SPEAKER
38AH	CONTROL + CLIMATE CONTROL FAN SPEED 1
38AJ	CONTROL + CLIMATE CONTROL FAN SPEED 2
38AK	CONTROL + CLIMATE CONTROL FAN SPEED 3
38AL	CONTROL + CLIMATE CONTROL FAN SPEED 4
38AN	CONTROL + AIR CONDITIONING RECYCLING
38AS	SIGNAL AIR CONDITIONING COMPRESSOR COUPLING
38AY	SIGNAL CLIMATE CONTROL FAN SPEED
38EV	CONTROL + AIR CONDITIONING RECYCLING
38K	AIR CONDITIONING RELAY CONTROL > U.C.E. INJECTION
38L	AIR CONDITIONING CONTROL
38R	CONTROL + AIR CONDITIONING COMPRESSOR CLUTCH
38U	FREON PRESSURE SENSOR
38X	FREON PRESSURE SENSOR SIGNAL
38Y	+ FREON PRESSURE SENSOR
41B	- FUEL LEVEL
41A	SIGNAL + FUEL LEVEL TRANSMITTER
42A	SIGNAL + WATER TEMPERATURE
47F	VEHICLE SPEED SIGNAL
49B	CONTROL + ENGINE COOLING FAN
49L	CONTROL + LOW SPEED ENGINE COOLING FAN RESISTANCE
60DV	DRIVER SAFETY BELT INDICATOR MASS
64A	SUPPLY + TURNING LIGHTS
64AP	+ PROTECTED TURNING LIGHTS
64B	CONTROL + TURNING LIGHTS RELAY
64C	LEFT TURNING LIGHTS CONTROL
64D	RIGHT TURNING LIGHTS CONTROL
65A	CONTROL + STOP LIGHTS
67C	CONTROL + ACOUSTIC WARNING FUSE
67CP	CONTROL + ACOUSTIC WARNING
80BD	FLASH RELAY CONTROL
80T	CONTROL + ANTI-STARTING INDICATOR
80X	ANTI-STARTING RECEPTOR SIGNAL WAY
129A	CONTROL-AIRBAG FAILURE INDICATOR
129C	SIGNAL - DRIVER'S AIRBAG
129F	SIGNAL + DRIVER'S AIRBAG

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GENERAL PRESENTATION

The vehicle electric diagrams have been structured as Applied Principle Schemes (APS), presented according to each system function of the vehicle, from electric point of view. These diagrams also contain details concerning the internal function of some simple electric components (contacts, relays), thus contributing to a better understanding of the system functioning and of the incident good diagnosis.

- The list of the vehicle functional diagrams is presented in chapter 2, where vehicles' APS may be found. They are divided as: electric'ssupply diagrams, mass connection diagrams and system functional diagrams.
- The electric functional diagrams (APS)- are presented in chapter 7 and on them, may be identified as follows:

  - electric components marked by 3-4 figures; their identification on the electric diagrams can be achieved by means of "Index of components" of chapter 3;

  - connections between the electric wiring, marked by an "R" followed by figures; they are indicated in the chapter 4 list;

  - mass connections, marked by an "M" followed by figures or letters are indicated in chapter 4;
- Each wire is marked in the electric diagrams by an alphanumeric code representing the wire function, followed by a group of letters representing the wire color.
- The connectors and connections between wiring are presented in chapter 11, here the connectors and connections between wiring being drawn as seen from wires inlet in connector or connection and the wires entering in each connector socket may be identified. This chapter also includes detailed tables about each wire entering in connector: wire location in the connector socket, wire section, wire function code and its destination.
- The index of wire functions in connectors and connections -presented in chapter 10, namely the list of all the connectors and connections, which helps to their easy identification in Chapter 11.
- The mass and connection positions on vehicle is presented in chapter 5 and helps to identify the electric mass fixing points on it, as well as location of the connections between its wiring.
- The electric component locating on vehicle is presented in chapter 6. Starting from the components' list, the location of the various components with electric functions on the vehicle can be identified.
- The cockpit fuse box is presented in chapter 8. This chapter contains information about its positioning and the functional purpose of the fuse.

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● The fuse box from the engine compartment is presented in chapter 9, that contains information about its location on the vehicle and the functional purpose of the relays and fuse placed on it.
● The functional codes of the wires are detailed explained in chapter 12.

FUNCTIONAL DIAGRAMS INTERPRETATION

The functional diagram information included in chapter 7 is to be interpreted taking into consideration the explanation referring to the following example:

1 = vehicle class
2 = manufacturing year
3 = functional electric diagram denomination
4 = equipment differentiation criteria for identifying the functional electric diagram
5 = electric connector colour
6 = connector graphical representation
7 = electric component index number
8 = number of the fuse box on which the relay or safety fuse is mounted
9 = safety fuse identification on fuse box
10 = safety fuse value
11 = identification of wiring joints
12 = electric mass identification
13 = electric connection colour between wiring
14 = electric connection identification
15 = electric connection graphical representation
16 = symbol (logo), pages containing functional diagrams
17 = wire function code
18 = wire colour
19 = functional diagram number

OBSERVATION

1. The area (4) specifies the differentiating elements serving to the various functional diagrams identification, considering the following symbols:

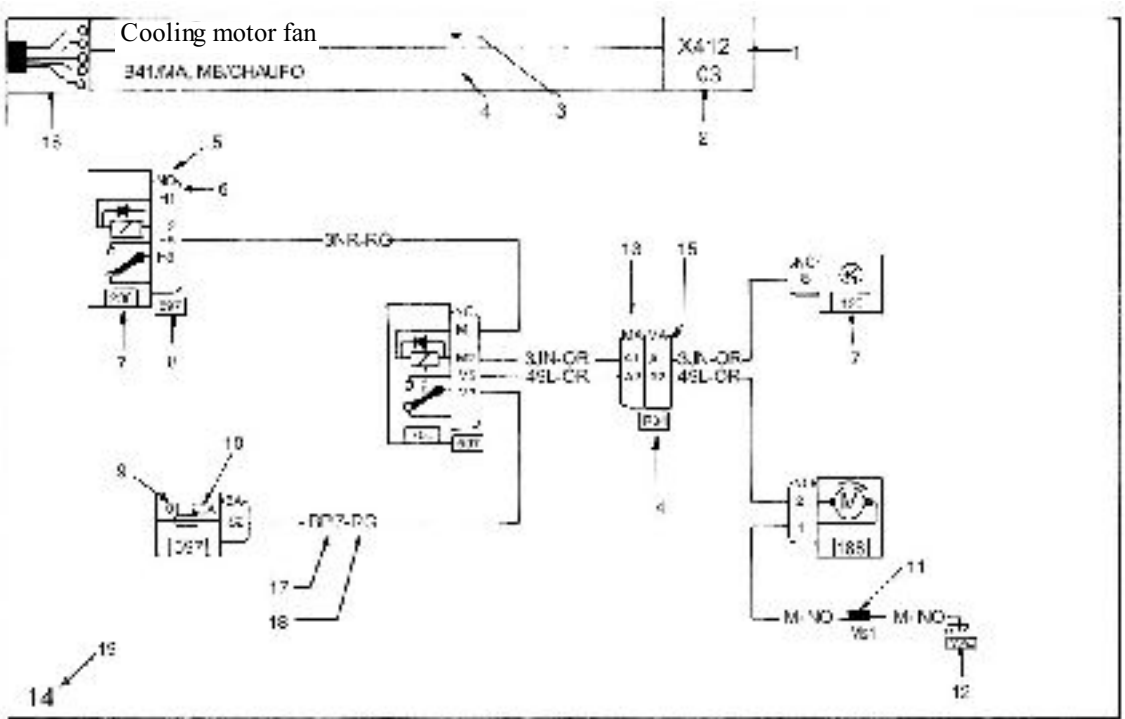
ABCO01 = driver's airbag
CA = climate maintenance with air conditioning
CHAUFO = climate maintenance without air conditioning
CPE = Electric locking/unlocking doors control
DA = assisted power steering
E0, E1, E2 = levels of equipment
LVE = front windows electric control

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MA = motorization observing the de-pollution norm EURO96 (EUROII)
MB = motorization observing the de-pollution norm EURO 2000(EUROIII)
PROJAB = fog projectors
RAD01 = Front speaker radio-cassette player
RAD02 = Rear and front speaker radio-cassette player
RAD03 = Front and rear speaker radio-CD player

2. The electric connectors (**5**), couplings (**13**) and wires (**18**) are symbolised by the following colours:

BA = white	JA = yellow	SA = pink- salmon
BE = blue	MA = brown	VE = green
BJ = beige	NO = black	VI = violet
CY = white-crystal	OR = orange	
GR = grey	RG = red	



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INTERPRETATION OF CONNECTORS WIRES FUNCTION INDEX

The information concerning the function of the wires in connectors and connections presented in chapter 11, are to be interpreted taking into account the explanations based upon the following example:

1 = symbol (sign) of the page containing connectors and electric connections
2 = connector destination
3 = name of the wiring on which the respective connector is placed
4 = general criteria of page separation
5 = vehicle class
6 = manufacturing year
7 = connector code
8 = component identification to whom the described connector is to be connected
9 = connector colour
10 = connector symbol
11 = indication of the connector socket
12 = wire sectioning (mm″)
13 = wire functional code
14 = wire destination
15 = wire colour *
16 = chapter number and connector page number

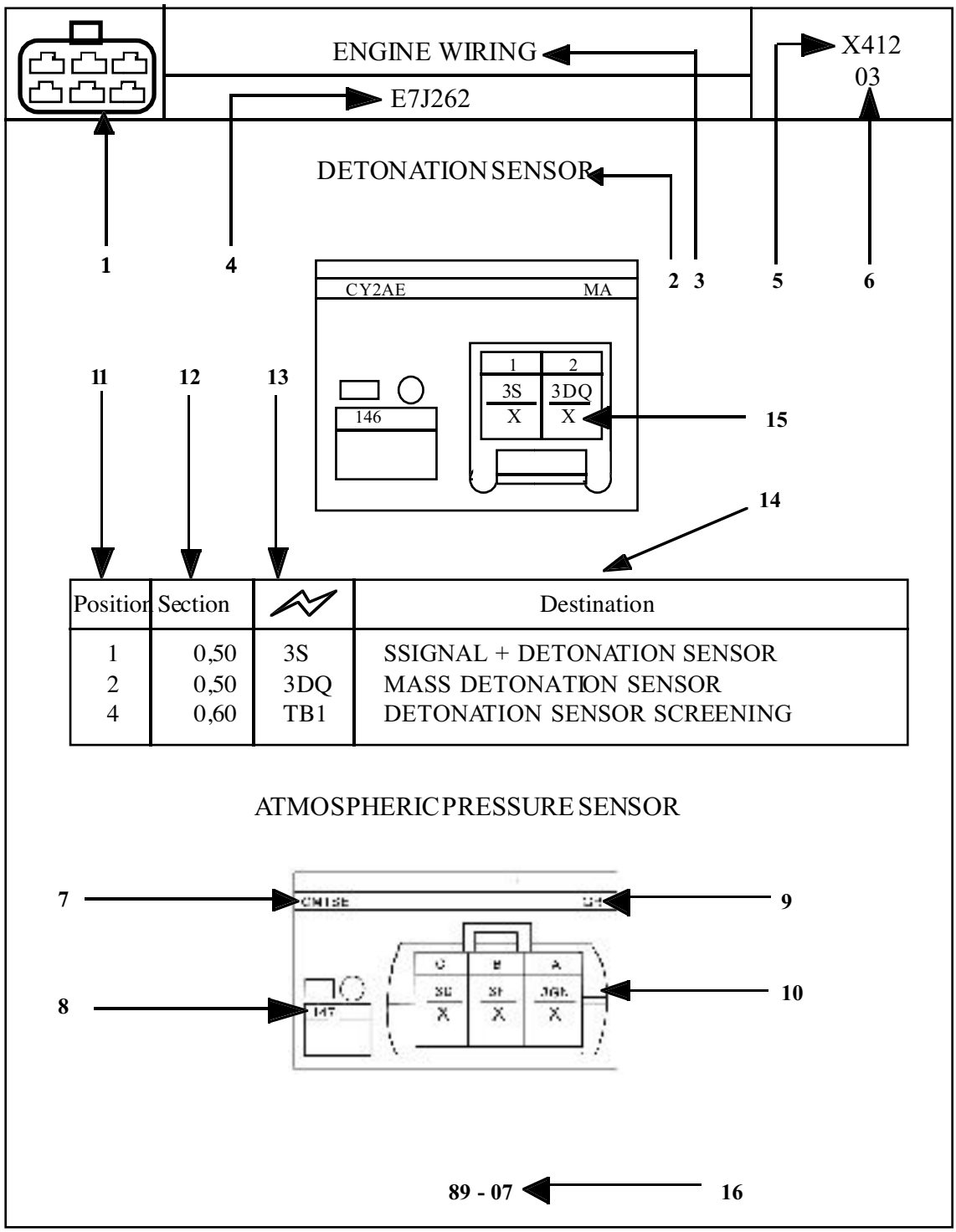
REMARK:

Concerning position 15, please note that one X is marked, for one wire and two Xs for two wires. The colour of the wire is to be symbolised only in case the electric routing of the wire represents one of the fundamental statuses: + permanent (+ IC), + after contact (+ DC), mass (-) or controls.

The symbols used for the wire colours are the followings:

A = white	AS = blue	GR = grey
N = black	G = yellow	V = green
M = brown	VI = violet	R = red

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Position	Section		Destination
1	0,50	3S	SSIGNAL + DETONATION SENSOR
2	0,50	3DQ	MASS DETONATION SENSOR
4	0,60	TB1	DETONATION SENSOR SCREENING

ATMOSPHERIC PRESSURE SENSOR

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ELECTRIC DIAGRAMS DENOMINATION	DIAGRAM NUMBER
DOORS CENTRAL LOCKING	1
ANTI-STARTING	2
ELECTRIC LIGHTER	3
CLIMATE CONTROL	4
CLIMATE CONTROL AND AIR CONDITIONING	5
CEILING LAMP	6-7
FRONT WINDOWS ELECTRIC CONTROL	8
RADIO	9-10
STARTING CIRCUIT	11
ENGINE COOLING FAN	12-13
ELECTRONIC INJECTION	14-15-16-17-18-19-20-21
CHARGING CIRCUIT	22
REAR WIRING MASS	23
FRONT WIRING/ DASHBOARD MASS	24-25-26-27-28-29-30-31
BATTERY/CARRIAGE BODY MASS	32
FOG PROJECTORS WIRING MASS	33
HATCHBACK WIRING MASS	34
ENGINE WIRING MASS	35-36-37-38
COCKPIT FUSE BOX	39-40-41-42-43-44-45-46-47-48-49-50
COCKPIT CENTRAL UNIT (UCH)	51-52
ENGINE FUSE BOX AND RELAY	53-54-55-56
HANDBRAKE INDICATOR / BRAKING SYSTEM FAILURE	57
FUEL LEVER INDICATOR	58-59
OIL PRESSURE INDICATOR	60
DIAGNOSTIC SOCKET	61-62
INSTRUMENT PANEL	63-64-65
COOLING FLUID TEMPERATURE ALERT INDICATOR	66
COOLING FLUID TEMPERATURE INDICATOR	67
SPEED INDICATOR	68
DRIVER AIRBAG	69
ACOUSTIC WARNING	70
REAR WINDOW DEFROSTING	71
WINDSCREEN WASHER-WIPER	72
FOG PROJECTORS	73

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ELECTRIC DIAGRAM DENOMINATION	DIAGRAM NUMBER
REAR FOG LAMPS	74
MEETING LIGHTS	75
REVERSE DRIVING LIGHTS	76
PARKING LIGHTS	77
ROAD LIGHTS	78
STOP LIGHTS	79
TURNING AND HAZARD LIGHTS	80

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ELECTRIC DIAGRAMS

Electric components index

CODE	COMPONENT DENOMINATION	CODE	COMPONENT DENOMINATION
101	Electric lighter	209	Lights, turning lights and horn switch
103	Alternator	212	Windscreen wiper motor
104	Anti-theft system	213	Ceiling lamp
105	Acoustic warning	221	Windscreen washing pump
107	Battery	222	Valve potentiometer
120	Injection computer (ECE)	224	Power steering pressure controller
123	Doors closing switch	225	Diagnostic socket
124	Climate control panel	226	Right headlamp
125	Hazard switch	227	Left headlamp
128	Rear window defrosting switch	231	Fog projectors control relay
132	Left electric window switch	234	Cooling motor fan control relay
133	Right electric window switch	236	Fuel pump control relay
138	Right rear door actuator	238	Actuators relay
139	Left rear door actuator	242	Downstream oxygen sensor
140	Left front door actuator	244	Injection water temperature sensor
141	Right front door actuator	247	Instrument panel
145	Windscreen wiper-washer switch	255	Right front turning lamp
146	Detonation sensor	256	Left front turning lamp
147	Atmospheric pressure sensor	261	Radio
149	RPM sensor	262	Cooling motor fan and air conditioning
155	Reverse driving contact	267	Right side signalising lamp
156	Handbrake contact	268	Left side signalising lamp
160	Stop contact	272	Injection air temperature sensor
163	Starter	319	Climate control with AC panel
171	AC compressor clutch	320	Cooling motor fan (for AC)
172	Right rear lamp	321	Motor fan resistance (for AC)
173	Left rear lamp	371	Canister purging valve
176	Right fog projector	462	License plate lamp
177	Left fog projector	584	AC compressor clutch control relay
180	Left front door contact	597	Safety fuse box and engine compartment relays
184	Right front parking lamp	639	STOP-S3 lamp
185	Left front parking lamp	645	Cockpit UCE
188	Cooling motor fan	649	Step by step engine
189	Right rear speaker	700	Cooling blower low speed control relay
190	Left rear speaker	756	UCE airbag
191	Right front door speaker	778	Ignition coil
192	Left front door speaker	833	Fuel level transmitter and electric pump
193	Injector 1	887	Upstream oxygen sensor
194	Injector 2	899	Driver airbag
195	Injector 3	927	Chock sensor
196	Injector 4	957	Anti-starting bushing
200	Rear window defrosting	1016	Cockpit fuse box
203	Electric left window actuator	1091	I.C.P. braking system
204	Electric right window actuator	1140	Vehicle speed transducer
205	Oil pressure contact	1156	Climate control blower (fan)
		1202	AC pressure sensor (pressure controller)

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CONNECTIONS LIST

R157 = REAR/HATCHBACK WIRING CONNECTIONS (A)
R212 = FRONT WIRING CONNECTIONS – DASHBOARD/ENGINE (B)
R265 = FRONT WIRING CONNECTIONS – DASHBOARD/REAR(C)
R316 = = FRONT WIRING CONNECTIONS – FOG PROJECTORS/ DASHBOARD (D)

MASS LIST

M20 = REAR WINDOW DEFROSTING MASS
MB* = LEFT FRONT BODY ELECTRIC MASS
MC = GEAR BOX ELECTRIC MASS
MD* = ELECTRIC MASS REAR LEFT TABLE
MH* = ENGINE ELECTRIC MASS
MK = ELECTRIC MASS LEFT FRONT COCKPIT
ME = ELECTRIC MASS LEFT FRONT LONGITUDINAL GIRDER
MYH = ELECTRIC MASS LEFT HATCHBACK
NAP = TUNNEL ELECTRONIC MASS

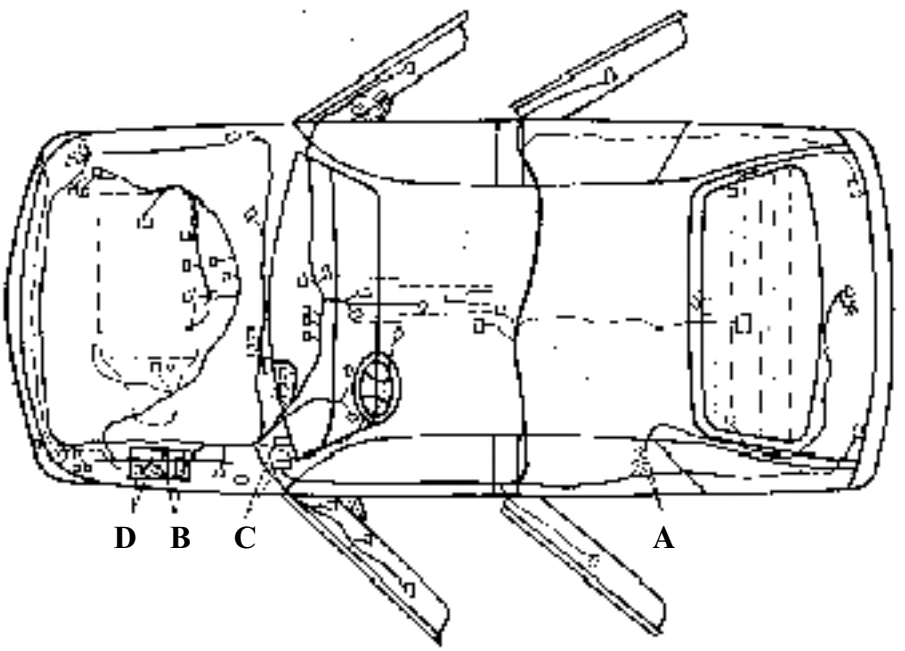
REMARK

In the MB, MD and MH mass points there are also the following mass points :

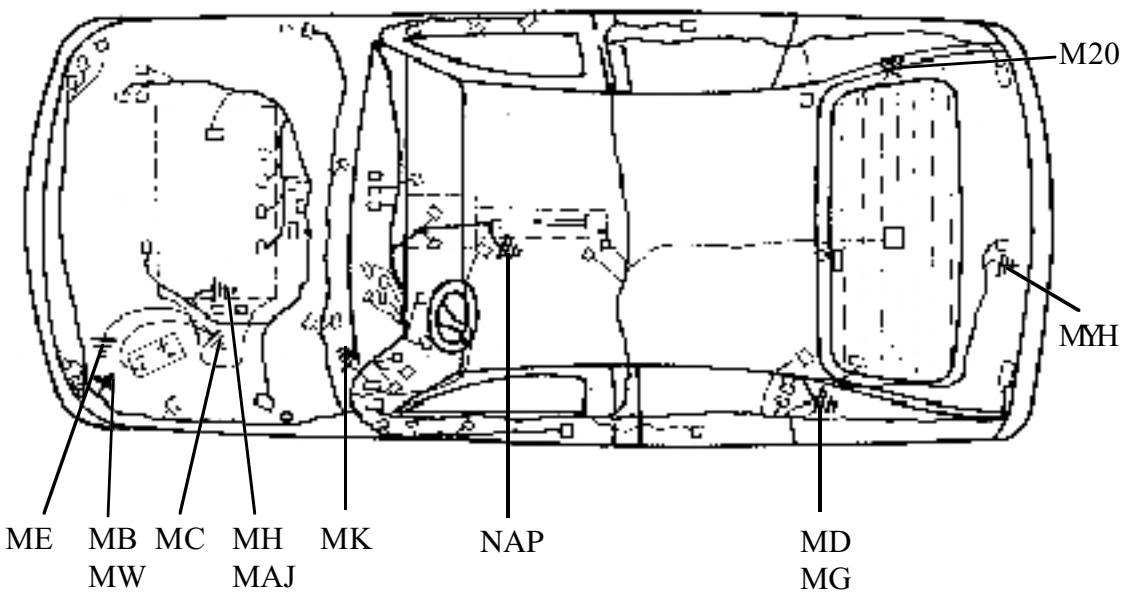
MB → **MW** – mass for fog projectors wiring
MD → **MG** – mass for hatchback wiring
MH → **MAJ** – mass for cooling motor fan

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ELECTRIC COMPONENTS LOCATION ON VEHICLE



MASS ATTACHMENT ON THE VEHICLE

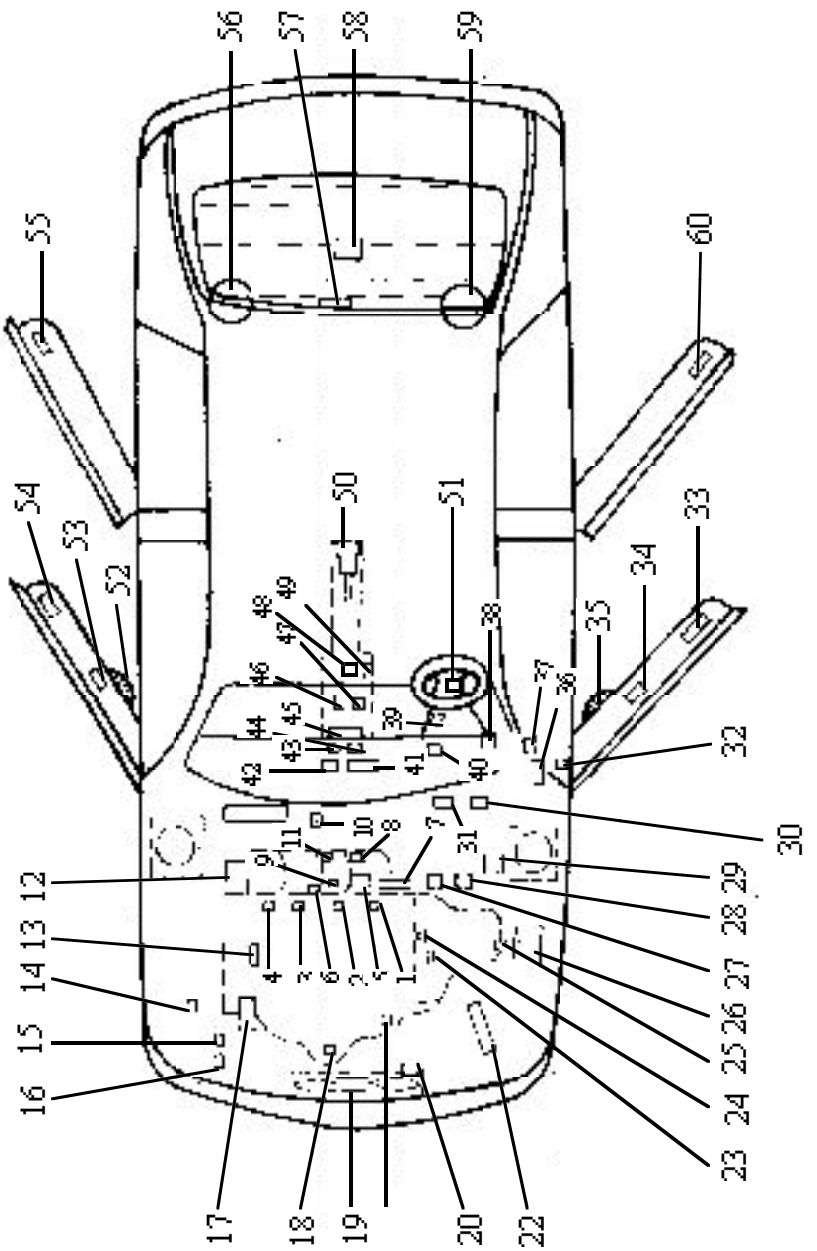


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No.	DENOMINATION	No.	DENOMINATION
1	Injector 1	31	Windscreen washing pump
2	Injector 2	32	Left front door contact
3	Injector 3	33	Left front door actuator
4	Injector 4	34	Left electric window actuator
5	Atmospheric pressure sensor	35	Left front door speaker
6	Detonation sensor	36	Cockpit fuse box
7	Starter	37	UCE cockpit
8	Injection air temperature sensor	38	Rear window defrosting switch
9	Valve potentiometer	39	Anti-starting bushing
10	Upstream oxygen sensor	40	STOP contact
11	Step-by step engine	41	Radio
12	Alternator	42	Doors locking switch
13	Ignition coil	43	Lighter
14	Canister purging valve	44	Hazard switch
15	AC pressuresensor(pressurecontroller)	45	Climate control panel
16	Pressure controller DA	46	Electric right window switch
17	AC compressor clutch	47	Electric left window switch
18	Upstream oxygen sensor	48	UCE airbag
19	Cooling motor fan and AC	49	Diagnostic socket
20	Cooling engine fan resistance for AC	50	Handbrake contact
21	Oil pressure contact	51	Driver airbag
22	Injection computer	52	Right front door speaker
23	RPM sensor	53	Electric right window actuator
24	Injection water temperature sensor	54	Right front door actuator
25	Reverse driving contact	55	Right rear door actuator
26	Fuse box and engine relays	56	Right rear speaker
27	Vehicle speed transducer	57	STOP-S3 lamp
28	ICP brake system	58	Fuel level transmitter and electric pump
29	Chock sensor	59	Left rear door speaker
30	Windscreen wiper motor	60	Left rear door actuator

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Electric components location on the vehicle



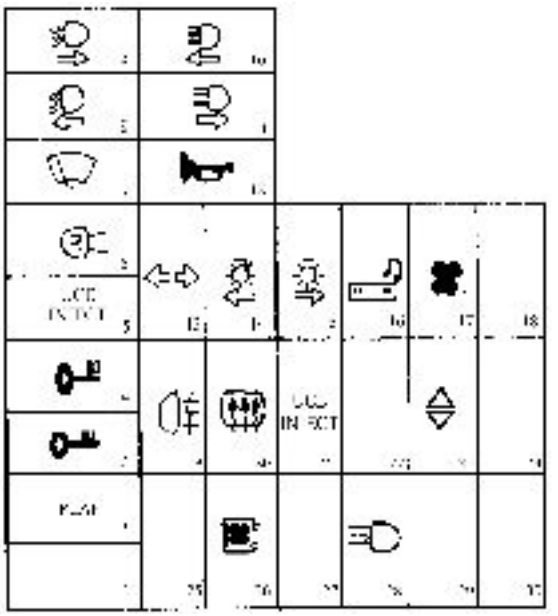
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FUNCTIONAL ELECTRIC DIAGRAMS

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Cockpit fuse box

The cockpit fuse box is placed in driving post left side, being attached on the dashboard lateral side.



The fuses are protecting the following electric components and circuits:

FUSE NUMBER	FUSE TYPE	PROTECTED CIRCUIT
F02	**15A**	Instrument panel, UCE cockpit (ceiling lamp), radio (I.C.)
F03	**20 A**	UCE cockpit, climate control panel AC (I.C.)
F04	**15A**	U.C.E. cockpit, diagnostic socket, UCE airbag, anti-starting bushing (DC)
F05	**10 A**	U.C.E. injection, fuel pump relay/ ignition coil, instrument panel (DC)
F06	**10 A**	Windscreen washer-wiper switch (windscreen washing pump), reverse driving switch, STOP contact (I DC), air conditioning climate control panel.
F07	**20 A**	Windscreen wiper switch, UCE cockpit (wiper timer operation), windscreen wiper motor (stopping at fix point).
F08	**7,5 A**	Left meeting lights, instrument panel (indicator)
F09	**7,5 A**	Right meeting lights

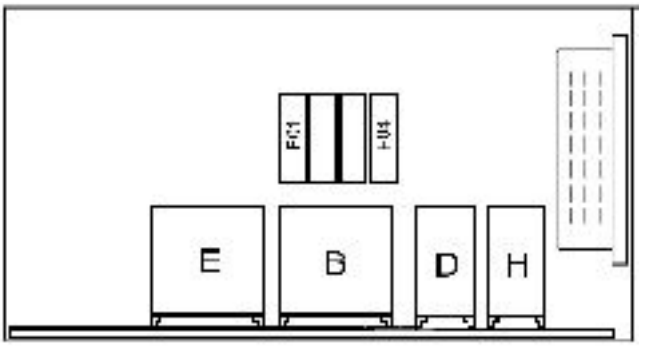
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F10	**7,5 A**	Left road lights, instrument panel (indicator)
F11	**7,5 A**	Right road lights
F12	**15 A**	Acoustic warning
F13	**25 A**	UCE cockpit(turning lights and hazard), diagnostic socket (IIC)
F14	**7,5 A**	Front/rear parking lights, lighting: switches, climate control panel, instrument panel, lighter, radio.
F15	**7,5 A**	Front/rear right parking lights
F16	**15 A**	Lighter, radio
F17	**30 A**	Climate control blower
F19	**7,5 A**	Fog lamp, instrument panel (indicator)
F20	**25 A**	Rear window defrosting
F21	**5 A**	U.C.E. injection
F23	**30 A**	Electric left/right window switch
F26	**30 A**	Climate control blower
F28	**20 A**	Fog projectors

REMARK : ***The fusible F26 is used only for vehicles equipped with air conditioning***

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A. Vehicles without air conditioning



The fuse box placed in the engine compartment is attached in front of the left shock absorber column and contains relays and fusible protecting the following electric circuits:

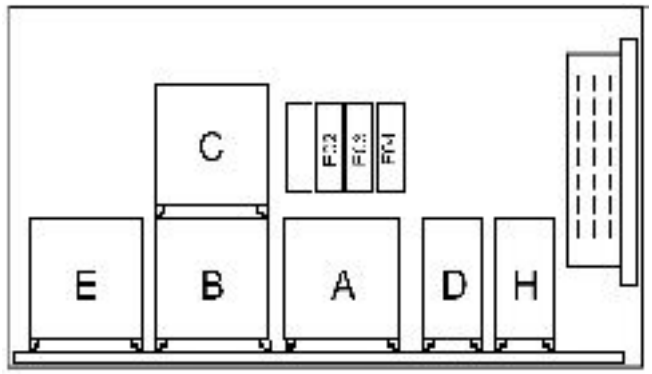
FUSE NUMBER	FUSE TYPE	PROTECTED CIRCUIT
F01	25A	Engine cooling fan
F04	30A	Injectors, oxygen sensor heating resistance, canister purging valve, injection computer, fuel pump, ignition coil., vehicle speed transducer.

RELAY	B	D	H	E*
RELAY TYPE	30A	30A	30A	30A
CONTROLLED CIRCUIT	Engine cooling fan	Injectors, canister purging valve, oxygen sensor heating resistance, injection computer, and vehicle speed transducer.	**Fuel pump** Ignition coil	Fog projectors

*- for vehicles equipped with fog projectors

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B. Vehicles with air conditioning



The fuse box placed in the engine compartment is attached in front of the left shock absorber column and contains relays and fusible protecting the following electric circuits:

FUSE NUMBER	FUSE TYPE	PROTECTED CIRCUIT
F02	**40A**	Engine cooling fan
F03	**7,5A**	AC compressor
F04	**30A**	Injectors, oxygen sensor heating resistance, canister purging valve, injection computer, fuel pump, ignition coil, vehicle speed transducer.

RELAY	A	B	C	D	H	E*
RELAY TYPE	**30A**	**30A**	**40A**	**30A**	**30A**	**30A**
CONTROLLED CIRCUIT	AC compressor	Engine cooling fan - 1/st speed	**Engine cooling fan - 2/nd speed -**	Injectors, canister purging valve, oxygen sensor heating resistance, injection computer, and vehicle speed transducer	Fuel pomp, ignition coil	Fog projectors

*- for vehicles equipped with fog projectors

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No.con.	Denomination	Page
101	ELECTRIC LIGHTER	89 - 127
103 HA	ALTERNATOR	89 - 101
103 HB	ALTERNATOR EXCITATION	89 - 101
104	ANTI-THEFT MECHANISM	89 - 127
105	ACOUSTIC WARNING	89 - 128
107	(+)BATTERY PLUG(engine wiring)	89 - 102
107AA	(+)BATTERY PLUG (front wiring-dashboard)	89 - 128
120	UCE INJECTION(for vehicles without AC)	89 - 103
120	UCE INJECTION(for vehicles with AC)	89 - 105
123	LOCKING DOORS SWITCH	89 - 129
124	CLIMATE CONTROL PANEL	89 - 130
125	HAZARD SWITCH	89 - 131
128	REAR WINDOW DEFROSTING SWITCH	89 - 131
132	ELECTRIC LEFT WINDOW SWITCH	89 - 132
133	ELECTRIC RIGHT WINDOW SWITCH	89 - 132
138	RIGHT REAR DOOR ACTUATOR	89 - 161
139	LEFT FRONT DOOR ACTUATOR	89 - 161
140	LEFT FRONT DOOR ACTUATOR	89 - 133
141	RIGHT FRONT DOOR ACTUATOR	89 - 133
145	WINDSCREEN WIPER-WASHING SWITCH	89 - 134
146	DETONATION SENSOR	89 - 108
147	ATMOSPHERIC PRESSURE SENSOR	89 - 108
149	RPM SENSOR	89 - 109
155	REVERSE DRIVING CONTACT	89 - 109
156	HANDBRAKE CONTACT	89 - 162
160	STOP CONTACT	89 - 134
163 GA	STARTER	89 - 110
163 AB	STARTER EXCITATION	89 - 110
171	AC COMPRESSOR CLUTCH	89 - 111
172	RIGHT REAR LAMP	89 - 162
173	LEFT REAR LAMP	89 - 163
176	RIGHT FOG PROJECTOR	89 - 166
177	LEFT FOG PROJECTOR	89 - 166
180	LEFT FRONT DOOR CONTACT	89 - 135
184	RIGHT FRONT PARKING LAMP	89 - 135
185	LEFT FRONT PARKING LAMP	89 - 135
188	ENGINE COOLING FAN (for vehicles without AC)	89 - 111
189	RIGHT REAR SPEAKER	89 - 163
190	LEFT REAR SPEAKER	89 - 164
191	RIGHT FRONT DOOR SPEAKER	89 - 136
192	LEFT FRONT DOOR SPEAKER	89 - 136
193	INJECTOR 1	89 - 112
194	INJECTOR 2	89 - 112
195	INJECTOR 3	89 - 113

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196	INJECTOR 4	89 - 113
200	REAR WINDOW DEFROSTING	89 - 168
203	ELECTRIC RIGHT WINDOW ACTUATOR	89 - 137
204	ELECTRIC LEFT WINDOW ACTUATOR	89 - 137
205	OIL PRESSURE CONTACT	89 - 114
209	LIGHTS, TURNING LIGHTS, HORN SWITCH	89 - 138
212	WINDSCREEN WIPER MOTOR	89 - 139
213	CEILING LIGHT	89 - 139
221	WINDSCREEN WASHING PUMP	89 - 140
222	VALVE POTENTIOMETER	89 - 114
224	POWER STEERING PRESSURE CONTROLLER	89 - 115
225	DIAGNOSTIC SOCKET	89 - 140
226	RIGHT HEADLAMP	89 - 141
227	LEFT HEADLAMP	89 - 141
231	FOG PROJECTORS CONTROL RELAY	89 - 167
242	DOWNSTREAM OXYGEN SENSOR	89 - 115
244	WATER TEMPERATURE SENSOR	89 - 116
247	INSTRUMENT PANEL	89 - 142
255	RIGHT FRONT TURNING LAMP	89 - 144
256	LEFT FRONT TURNING LAMP	89 - 145
261	RADIO	89 - 145
262	ENGINE COOLING FAN (for vehicles with AC)	89 - 116
267	RIGHT FRONT SIDE SIGNALING LAMP	89 - 146
268	LEFT FRONT SIDE SIGNALING LAMP	89 - 146
272	INJECTION AIR TEMPERATURE SENSOR	89 - 117
319	CLIMATE CONTROL PANEL WITH AC	89 - 147
320	CLIMATE CONTROL BLOWER (for AC vehicle equipment)	89 - 148
321	CLIMATE CONTROL FAN RESISTANCE (for vehicles with AC)	89 - 117
371	CANISTER PURGING VALVE	89 - 118
462	LICENSE PLATE LAMP	89 - 168
597	FUSE BOX AND ENGINE RELAYS (for vehicles without AC)	89 - 119
597	FUSE BOX AND ENGINE RELAYS (for vehicles with AC)	89 - 121
639	STOP -S3 LAMP	89 - 168
645	UCE COCKPIT	89 - 149
649	STEP-BY-STEP ENGINE	89 - 123
756	UCE AIRBAG	89 - 153
778	IGNITION COIL	89 - 123
833	FUEL LEVEL TRANSMITTER AND ELECTRIC PUMP	89 - 164
887	UPSTREAM OXYGEN SENSOR	89 - 124
899	DRIVER AIRBAG	89 - 154
927	CHOCK SENSOR	89 - 124
957	ANTI-STARTING BUSHING	89 - 154
1016	COCKPIT FUSE BOX	89 - 155

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1091	ICP BRAKING SYSTEM	89 - 158
1140	VEHICLE SPEED TRANSDUCER	89 - 125
1156	CLIMATE CONTROL BLOWER (without AC)	89 - 158
1202	AC PRESSURE SENSOR (PRESSURE CONTROLLER)	89 - 125
MAJ	CLIMATE BLOWER ELECTRIC MASS	89 - 126
MB	FRONT LEFT BODY ELECTRIC MASS	89 - 159
MD	REAR LEFT PLATE ELECTRIC MASS	89 - 165
MG	HATCHBACK WIRING ELECTRIC MASS	89 - 169
MH	ENGINE ELECTRIC MASS	89 - 126
MK	FRONT LEFT BODY ELECTRIC MASS	89 - 160
MW	FOG PROJECTORS WIRING ELECTRIC MASS	89 - 167
MYH	LEFT HATCHBACK ELECTRIC MASS	89 - 169
NAP	TUNNEL ELECTRONIC MASS	89 - 160
R157	REAR WIRING/ HATCHBACK COUPLING	89 - 170
R212	FRONT WIRING/ DASHBOARD /ENGINE COUPLING	89 - 171
R265	FRONT WIRING-DASHBOARD REAR COUPLING	89 - 173
R316	FRONT WIRING-DASHBOARD/FOG PROJECTORS COUPLING	89 - 175

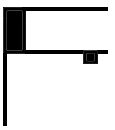
REMARKS:

- connectors and couplings are represented as seen from back plane (from wires forward)

- some electric components are not connected to the vehicle wiring by means of multiple-way connectors, but by means of protected individual plugs. For illustrating the type of the respective plug, the following symbols are to be used:

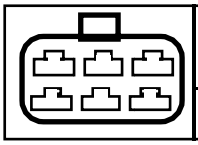


Plug mother 6 mm



Plug mother flag 6,3 mm

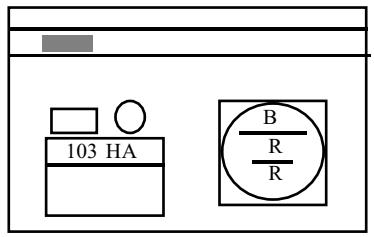
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ENGINE WIRING	X412 04
E7J262	

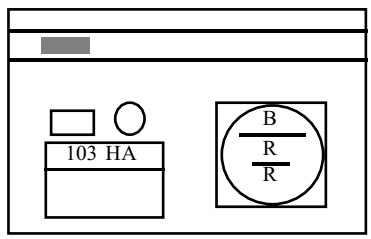
ALTERNATOR (for vehicles without air conditioning)

Position	Section		Destination
1	2,0	B	+ BATTERY > INLET FUSE F01
1	16,0	B	+ BATTERY > STARTER



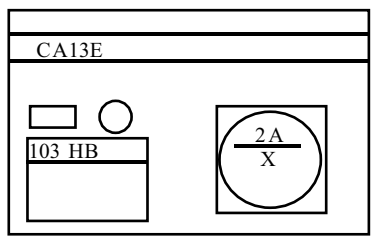
ALTERNATOR (for vehicles with air conditioning)

Position	Section		Destination
1	5,0	B	+ BATTERY > INLET FUSE F02
1	16,0	B	+ BATTERY > STARTER

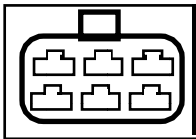


ALTERNATOR EXCITATION

Position	Section		Destination
1	2	2A	CONTROL - CHARGING INDICATOR > INSTRUMENT PANEL

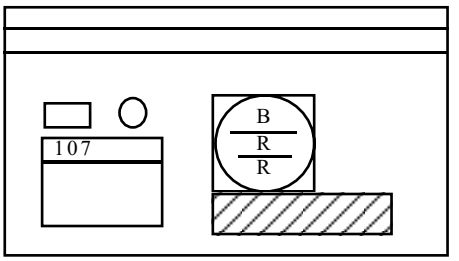


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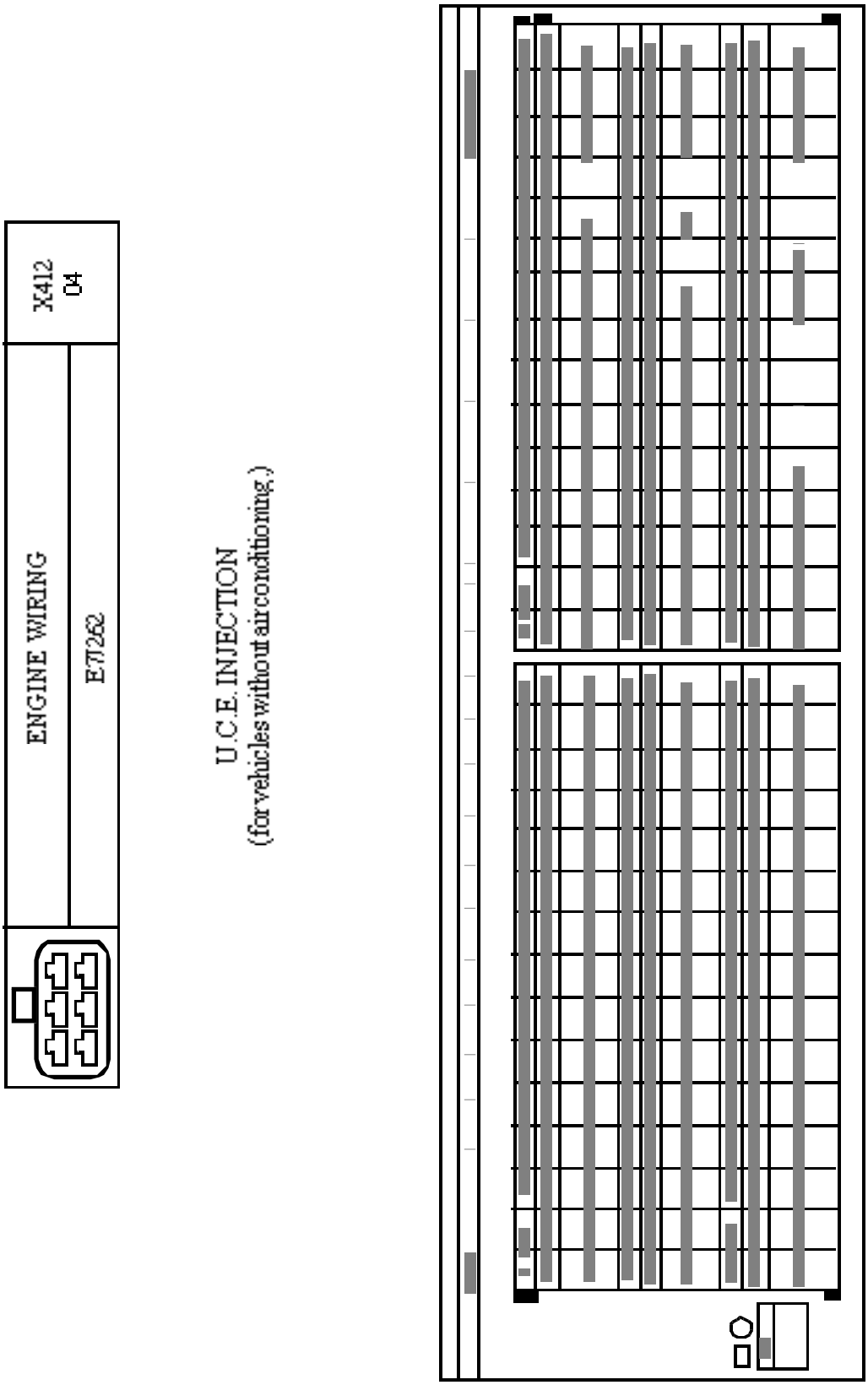
	ENGINE WIRING E7J262	X412 04

BATTERY PLUS TERMINAL

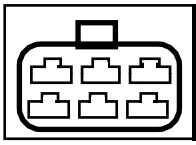
Position	Section		Destination
1	16,0	B	+ BATTERY > + STARTER
1	7,0	B	+ BATTERY > INLET FUSE F04



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X412
04
ENGINE WIRING
E77262
U.C.E. INJECTION
(for vehicles without airconditioning.)

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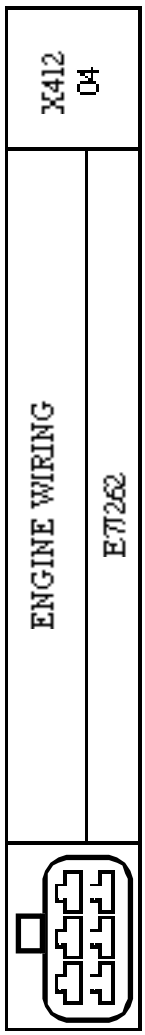
ENGINE WIRING

E7J262

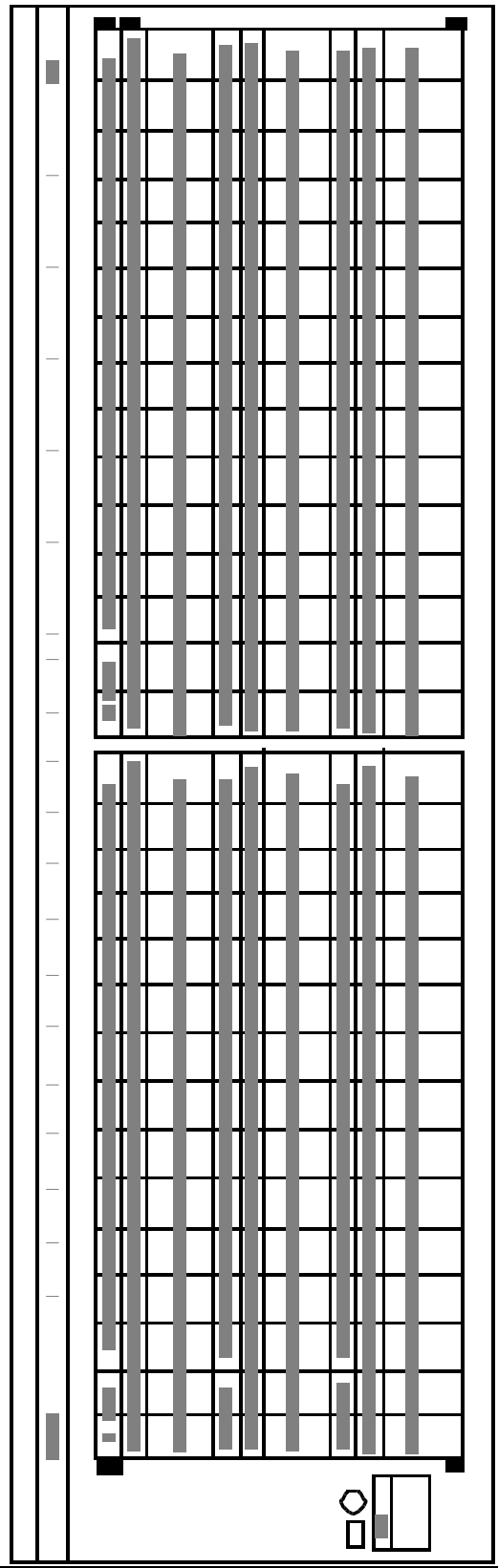
X412
04

Position	Section		Destination
1	2,0	3CW	CONTROL-IGNITION COIL CYLINDERS 2-3
3	2,0	MH	MASS
4	0,6	3BB	CANISTER PURGE VALVE CONTROL
8	0,6	3JN	CONTROL-COOLING FAN RELAY
9	0,35	31A	CONTROL -WATER TEMPERATURE INDICATOR
12	0,6	3BV	CONTROL 2 IDLING REGULATOR
13	0,6	3C	SIGNAL+ WATER TEMPERATURE SENSOR
15	0,35	3GN	ATMOSPHERIC PRESSURE SENSOR MASS
16	0,35	3F	ATMOSPHERIC PRESSURE SENSOR SIGNAL
19	0,5	TB1	DETONATION SENSORS SCREENING
20	0,5	3S	SIGNAL+ DETONATION SENSOR
24	0,6	3BL	SIGNAL –RPM ENGINE > RPM SENSOR
26	0,35	HL	DIAGNOSIS SIGNAL LINE L
28	2,0	MH	MASS
29	0,35	AP29	+AFTER CONTACT PROTECTED>OUTLET FUSE F05 COCKPIT
30	0,6	BP37	+ BATTERY PROTECTED>OUTLET FUSE F21 COCKPIT
32	2,0	3CV	CONTROL-IGNITION COIL CYLINDERS 1-4
33	2,0	MH	MASS
34	0,35	3FH	CONTROL- ANTI-POLLUTION FAILURE INDICATOR
39	0,6	3GT	CONTROL ACTUATORS RELAY
41	0,6	3BU	IDLING REGULATOR 1 CONTROL
42	0,6	3BW	IDLING REGULATOR 3 CONTROL
43	0,6	3AJ	SIGNAL+ VALVE POSITION POTENTIOMETER
44	0,6	3GL	SIGNAL DOWNSTREAM OXYGEN SENSOR
45	0,6	3GK	SIGNAL UPSTREAM OXYGEN SENSOR
49	0,6	3B	SIGNAL+AIR TEMPERATURE SENSOR
53	0,35	47F	SIGNAL SPEED VEHICLE
54	0,6	3BG	SIGNAL RPM ENGINE>RPM SENSOR
56	0,35	HK	SIGNAL DIAGNOSIS-LINE K
58	0,35	H17	CODED SIGNAL INJECTION >ANTI-STARTING
59	1,0	3CR	CONTROL-INJECTOR 1
60	1,0	3CT	CONTROL-INJECTOR 3
63	1,0	3GF	CONTROL-HEATING UPSTREAM OXYGEN SENSOR
65	1,0	3GG	CONTROL-HEATING DOWNSTREAM OXYGEN SENSOR
66	1,0	3NR	+INJECTORS>OUTLET ACTUATORS RELAY
68	0,6	3AC	CONTROL-FUEL PUMP RELAY
70	0,35	H7	SIGNAL RPM> INJECTION COMPUTER
72	0,6	3BX	CONTROL 4 IDLING REGULATOR
73	0,6	3JK	-WATER TEMPERATURE
74	0,6	3AQ	SIGNAL+POTENTIOMETER VALVE
75	0,6	3JL	- VALVE POTENTIOMETER
76	0,6	3GJ	DOWNSTREAM OXYGEN SENSOR MASS
77	0,6	3JQ	-AIR TEMPERATURE SENSOR
78	0,35	3D	AIR PRESSURE SENSOR > SUPPLY+
79	0,5	3DQ	- DETONATION SENSOR
80	0,6	3GH	UPSTREAM OXYGEN SENSOR MASS
85	0,6	3BA	SIGNAL-PRESSURE CONTROLLER POWER STEERING
89	1,0	3CU	CONTROL-INJECTOR 4
90	1,0	3CS	CONTROL-INJECTOR 2

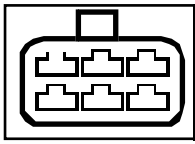
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U.C.E. INJECTION
(for vehicles with air conditioning)



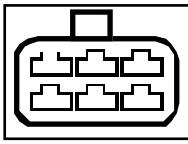
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ENGINE WIRING	X412 04
E7J262	

Position	Section		Destination
1	2,0	3CW	CONTROL-IGNITION COIL CYLINDER 2-3
3	2,0	MH	MASS
4	0,6	3BB	CANISTER PURGE VALVE CONTROL
8	0,6	3JN	CONTROL– ENGINE COOLING FAN 1 SPEED
9	0,35	31A	CONTROL -WATER TEMPERATURE INDICATOR
10	0,5	38K	AIR CONDITION STOPPING CONTROL>COMPRESSOR RELAY
12	0,6	3BV	CONTROL 2 IDLING REGULATOR
13	0,6	3C	SIGNAL+ WATER TEMPERATURE SENSOR
15	0,35	3GN	AIR PRESSURE SENSOR MASS
16	0,35	3F	SIGNAL AIR PRESSURE SENSOR
18	0,6	38X	FREON PRESSURE SENSOR SIGNAL
19	0,5	TB1	DETONATION SENSOR SCREENING
20	0,5	3S	SIGNAL+ DETONATION SENSOR
24	0,6	3BL	SIGNAL– ENGINE RPM>RPM SENSOR
26	0,35	HL	SIGNAL DIAGNOSIS LINE L
28	2,0	MH	MASS
29	0,35	AP29	+AFTER CONTACT PROTECTED>OUTLET FUSE F05 COCKPIT
30	0,6	BP37	+ BATTERY PROTECTED>OUTLET FUSE F21 COCKPIT
32	2,0	3CV	CONTROL-IGNITION COIL CYLINDER 1-4
33	2,0	MH	MASS
34	0,35	3FH	CONTROL-ANTI-POLLUTION FAILURE INDICATOR
38	0,6	3JP	CONTROL- COOLING FAN MOTOR RELAY 2ND SPEED
39	0,6	3GT	ACTUATORS RELAY CONTROL
41	0,6	3BU	IDLING REGULATOR CONTROL 1
42	0,6	3BW	IDLING REGULATOR CONTROL 3
43	0,6	3AJ	SIGNAL–POTENTIOMETER POSITION VALVE
44	0,6	3GL	DOWNSTREAM OXYGEN SENSOR SIGNAL
45	0,6	3GK	UPSTREAM OXYGEN SENSOR SIGNAL
46	0,5	38AS	SIGNAL AIR CONDITIONING COMPRESSOR COUPLING
49	0,6	3B	SIGNAL+AIR TEMPERATURE SENSOR
53	0,35	47F	VEHICLE SPEED SIGNAL
54	0,6	3BG	RPM ENGINE SIGNAL>RPM SENSOR
56	0,35	HK	DIAGNOSIS SIGNAL- LINE K
58	0,35	H17	CODED INJECTION SIGNAL>ANTI-STARTING
59	1,0	3CR	CONTROL-INJECTOR 1
60	1,0	3CT	CONTROL-INJECTOR 3
63	1,0	3GF	CONTROL- HEATING UPSTREAM OXYGEN SENSOR
65	1,0	3GG	CONTROL- HEATING DOWNSTREAM OXYGEN SENSOR
66	1,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
68	0,6	3AC	CONTROL- FUEL PUMP RELAY
70	0,35	H7	SIGNAL RPM> INJECTION COMPUTER
72	0,6	3BX	CONTROL 4 IDLING REGULATOR
73	0,6	3JK	-WATER TEMPERATURE
74	0,6	3AQ	SIGNAL+POTENTIOMETER VALVE
75	0,6	3JL	-POTENTIOMETER VALVE
76	0,6	3GJ	DOWNSTREAM OXYGEN SENSOR MASS
77	0,6	3JQ	-AIR TEMPERATURE SENSOR

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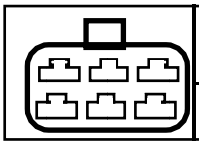
ENGINE WIRING

E7J262

X412
04

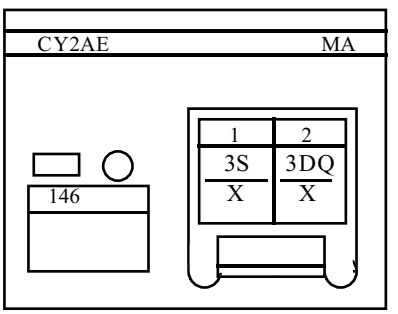
Position	Section		Destination
78	0,35	3D	AIR PRESSURE SENSOR > SUPPLY
79	0,5	3DQ	- DETONATION SENSOR
80	0,6	3GH	UPSTREAM OXYGEN SENSOR MASS
82	0,6	38U	- FREON PRESSURE SENSOR
83	0,6	38Y	+ FREON PRESSURE SENSOR
85	0,6	3BA	SIGNAL - PRESSURE CONTROLLER POWER STEERING
89	1,0	3CU	CONTROL - INJECTOR 4
90	1,0	3CS	CONTROL - INJECTOR 2

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	ENGINE WIRING	X412 04
	E7J262	

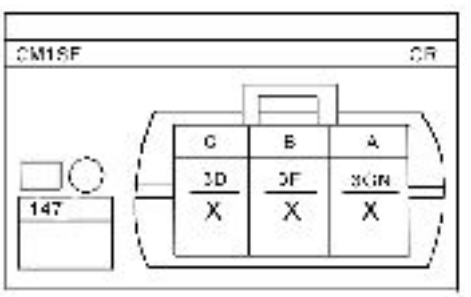
DETONATION SENSOR

Position	Section		Destination
1	0,50	3S	SIGNAL+ DETONATION SENSOR
2	0,50	3DQ	DETONATION SENSOR MASS
4	0,60	TB1	DETONATION SENSORS SCREENING



ATMOSPHERIC PRESSURE SENSOR

Position	Section		Destination
A	0,5	3GN	MASS AIR PRESSURE SENSOR
B	0,5	3F	SIGNAL AIR PRESSURE SENSOR
C	0,6	3D	AIR PRESSURE SENSOR > SUPPLY +

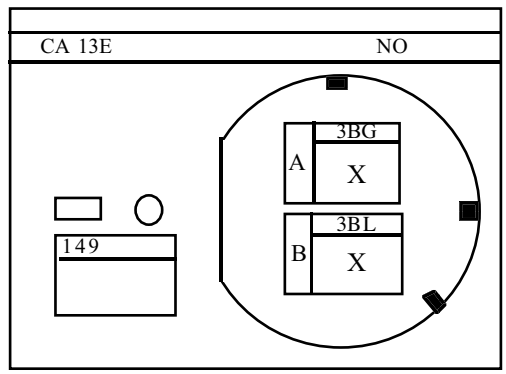


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	ENGINE WIRING	X412 04
	E7J262	

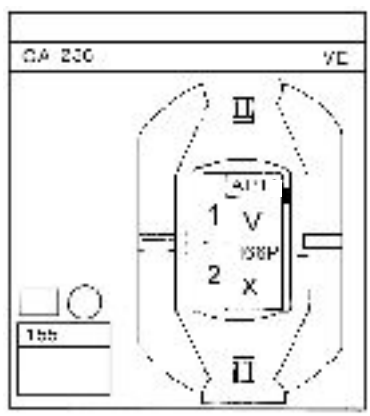
RPM SENSOR

Position	Section		Destination
A	0,60	3BG	SIGNAL -RPM ENGINE> UCE INJECTION
B	0,60	3BL	SIGNAL -RPM ENGINE> UCE INJECTION

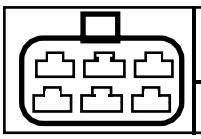


REVERSE DRIVING CONTACT

Position	Section		Destination
1	0,60	AP1	+AFTER CONTACT PROTECTED REVERSE DRIVING LIGHTS> OUTLET_COCKPIT FUSE F06
2	0,60	H66P	CONTROL+REVERSE DRIVING LIGHTS



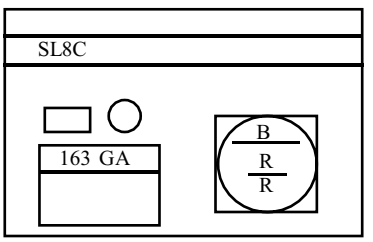
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ENGINE WIRING	X412 04
E7J262	

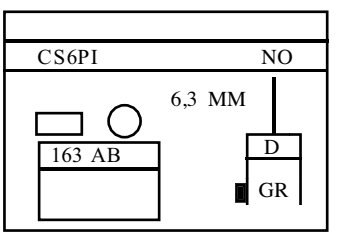
STARTER

Position	Section		Destination
1	16,0	B	+BATTERY
1	16,0	B	+ BATTERY> +ALTERNATOR

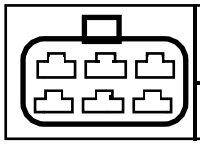


STARTER EXCITATION

Position	Section		Destination
1	3,0	D	+ STARTER CONTROL



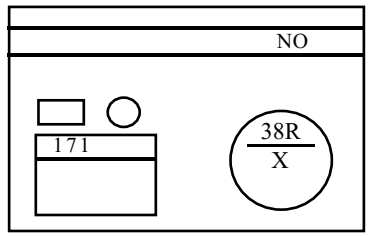
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ENGINE WIRING	X412 04
E7J262	

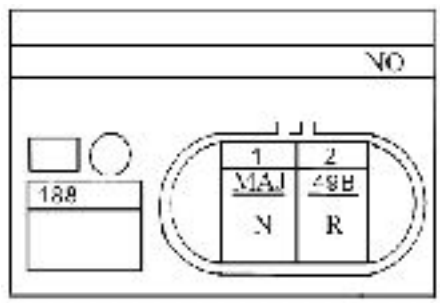
AIR CONDITIONING COMPRESSOR CLUTCH

Position	Section		Destination
1	1,0	38R	CONTROL +AIR CONDITIONING COMPRESSOR CLUTCH

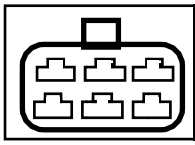


ENGINE COOLING FAN
(for vehicles without air conditioning)

Position	Section		Destination
1	2,0	MAJ	MASS
2	2,0	49B	CONTROL+ENGINE COOLING FAN

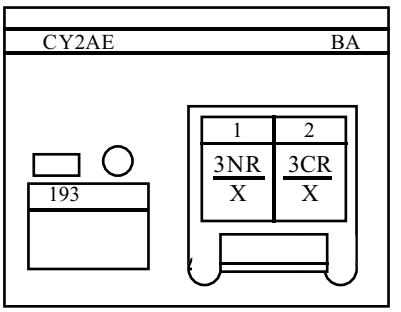


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	ENGINE WIRING E7J262	X412 04

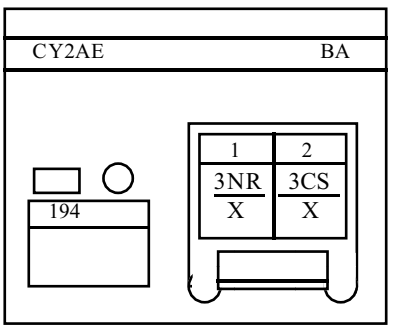
INJECTOR 1

Position	Section		Destination
1 2	1,0 1,0	3NR 3CR	+ INJECTORS > OUTLET ACTUATORS RELAY CONTROL-INJECTOR1



INJECTOR 2

Position	Section		Destination
1 2	1,0 1,0	3NR 3CS	+ INJECTORS > OUTLET ACTUATORS RELAY CONTROL-INJECTOR2

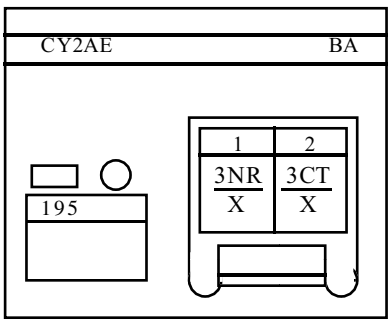


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	ENGINE WIRING	X412 04
	E7J262	

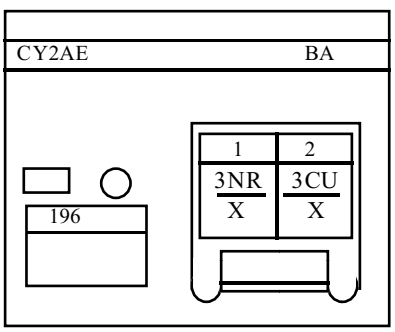
INJECTOR 3

Position	Section		Destination
1	1,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
2	1,0	3CT	CONTROL-INJECTOR3



INJECTOR 4

Position	Section		Destination
1	1,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
2	1,0	3CU	CONTROL-INJECTOR4

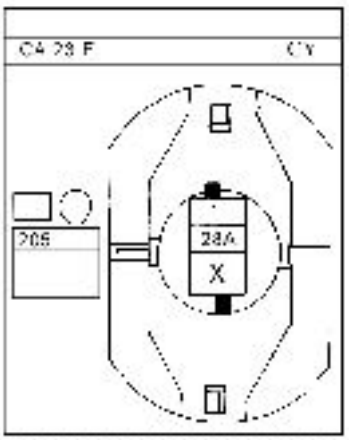


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	ENGINE WIRING	X412 04
	E7J262	

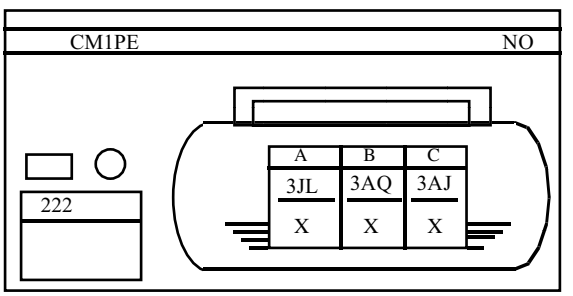
OIL PRESSURE TRANSMITTER

Position	Section		Destination
1	0,60	28A	CONTROL-OILPRESSURE INDICATOR

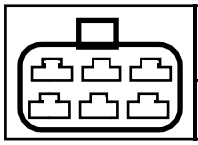


POTENTIOMETER VALVE

Position	Section		Destination
A	0,60	3JL	MASSPOTENTIOMETER VALVE
B	0,60	3AQ	SIGNAL+POTENTIOMETERVALVE
C	0,60	3AJ	SIGNAL+ VALVEPOSITIONPOTENTIOMETER



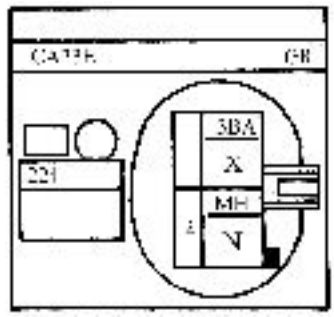
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ENGINE WIRING	X412 04
E7J262	

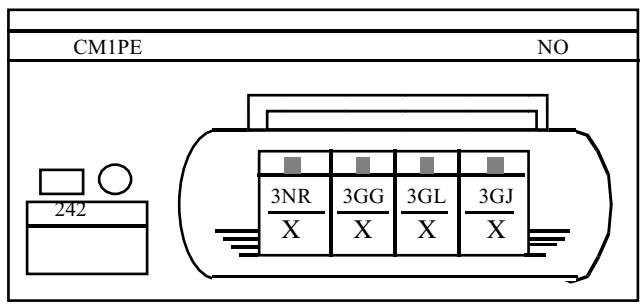
POWER STEERING PRESSURE CONTROLLER
(for vehicles with power steering)

Position	Section		Destination
1	0,6	3BA	SIGNAL-PRESSURE CONTROLLER POWER STEERING
2	0,6	MH	MASS

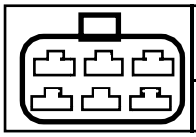


DOWNSTREAM OXYGEN SENSOR

Position	Section		Destination
A	1,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B	1,0	3GG	CONTROL-HEATING DOWNSTREAM OXYGEN SENSOR
C	0,60	3GL	SIGNAL DOWNSTREAM OXYGEN SENSOR
D	0,60	3GJ	MASS DOWNSTREAM OXYGEN SENSOR

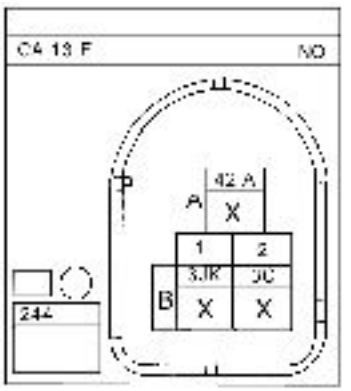


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	ENGINE WIRING E7J262	X412 04

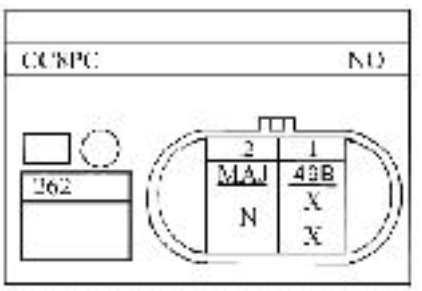
INJECTION WATER TEMPERATURE SENSOR

Position	Section		Destination
A	0,35	42A	SIGNAL+ WATER TEMPERATURE
B1	0,60	3JK	- WATER TEMPERATURE
B2	0,60	3C	SIGNAL+ WATER TEMPERATURE SENSOR



COOLING MOTOR FAN AND AIR CONDITIONING
(for vehicle with air conditioning)

Position	Section		Destination
1	3,0	49B	CONTROL + ENGINE COOLING FAN > COOLING FAN RESISTANCE
1	5,0	49B	CONTROL + ENGINE COOLING FAN
2	5,0	MAJ	MASS

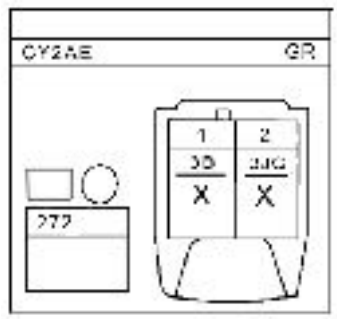


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	ENGINE WIRING	X412
	E7J262	04

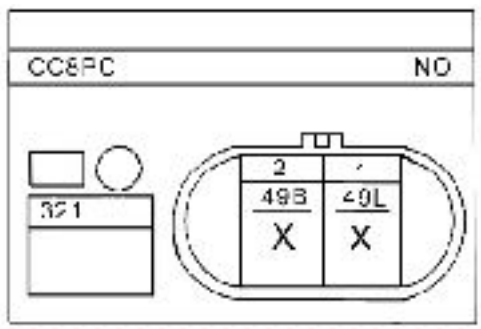
INJECTION AIR TEMPERATURE SENSOR

Position	Section		Destination
1	0,60	3B	SIGNAL+AIR TEMPERATURE SENSOR
2	0,60	3JQ	MASSAIR TEMPERATURE SENSOR

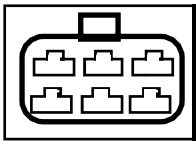


ENGINE COOLING FAN RESISTANCE
(for vehicles with air conditioning)

Position	Section		Destination
1	3,0	49L	CONTROL+ LOW SPEED COOLING FAN RESISTANCE
2	3,0	49B	CONTROL+ ENGINE COOLING FAN

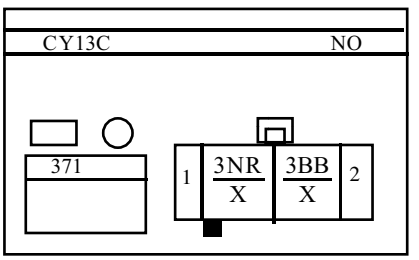


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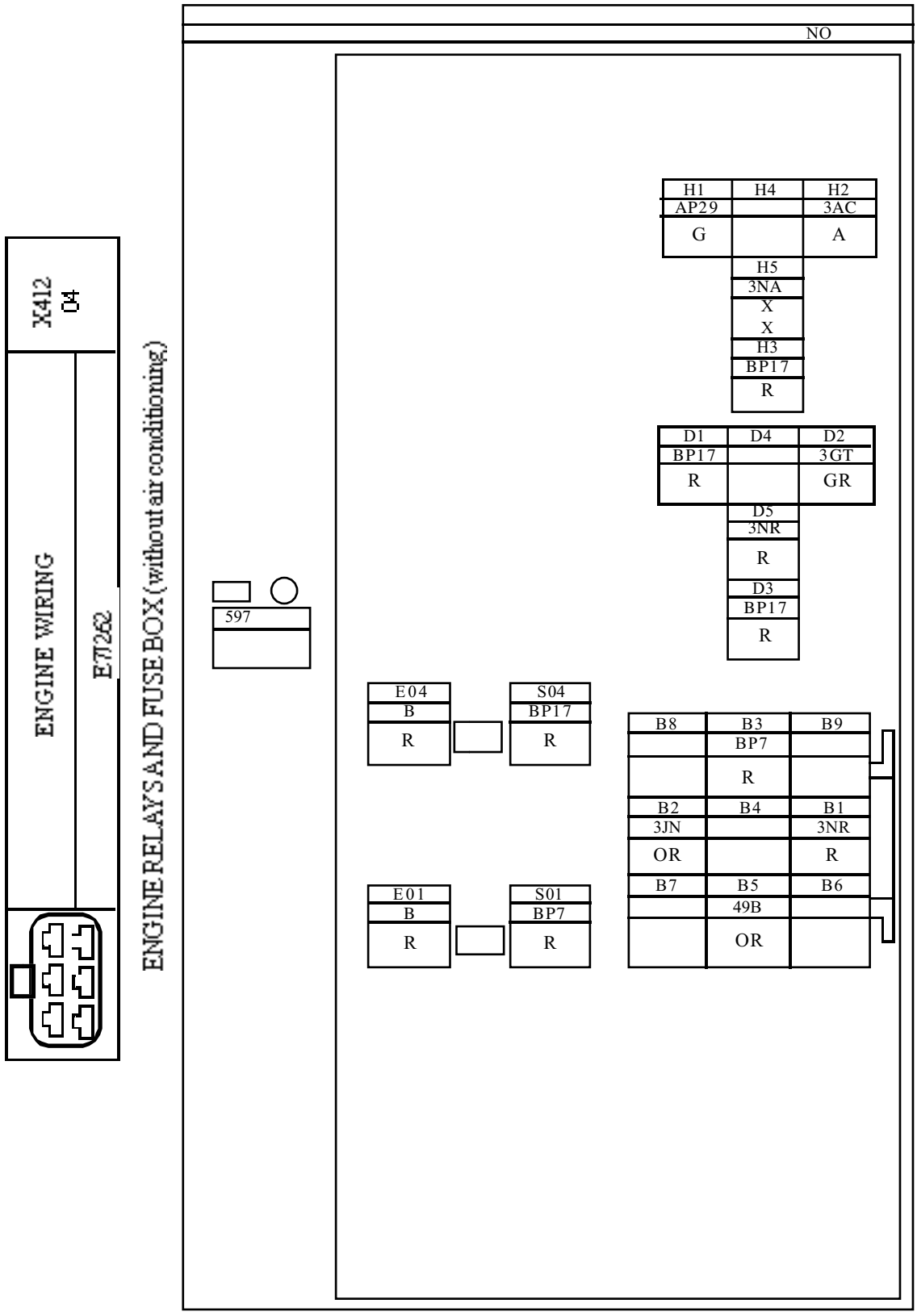
	ENGINE WIRING E7J262	X412 04

CANISTER PURGING VALVE

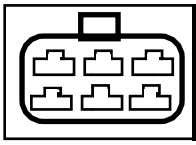
Position	Section		Destination
1	0,60	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
2	0,60	3BB	CONTROL CANISTER PURGE VALVE



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NO
X412
04
ENGINE WIRING
E7262
ENGINE RELAYS AND FUSE BOX (without air conditioning)
597
H1
AP29
G
H4
H2
3AC
A
H5
3NA
X
X
H3
BP17
R
D1
BP17
R
D4
D2
3GT
GR
D5
3NR
R
D3
BP17
R
E04
B
R
S04
BP17
R
E01
B
R
S01
BP7
R
B8
B3
BP7
R
B9
B2
3JN
OR
B4
B1
3NR
R
B7
B5
49B
OR
B6

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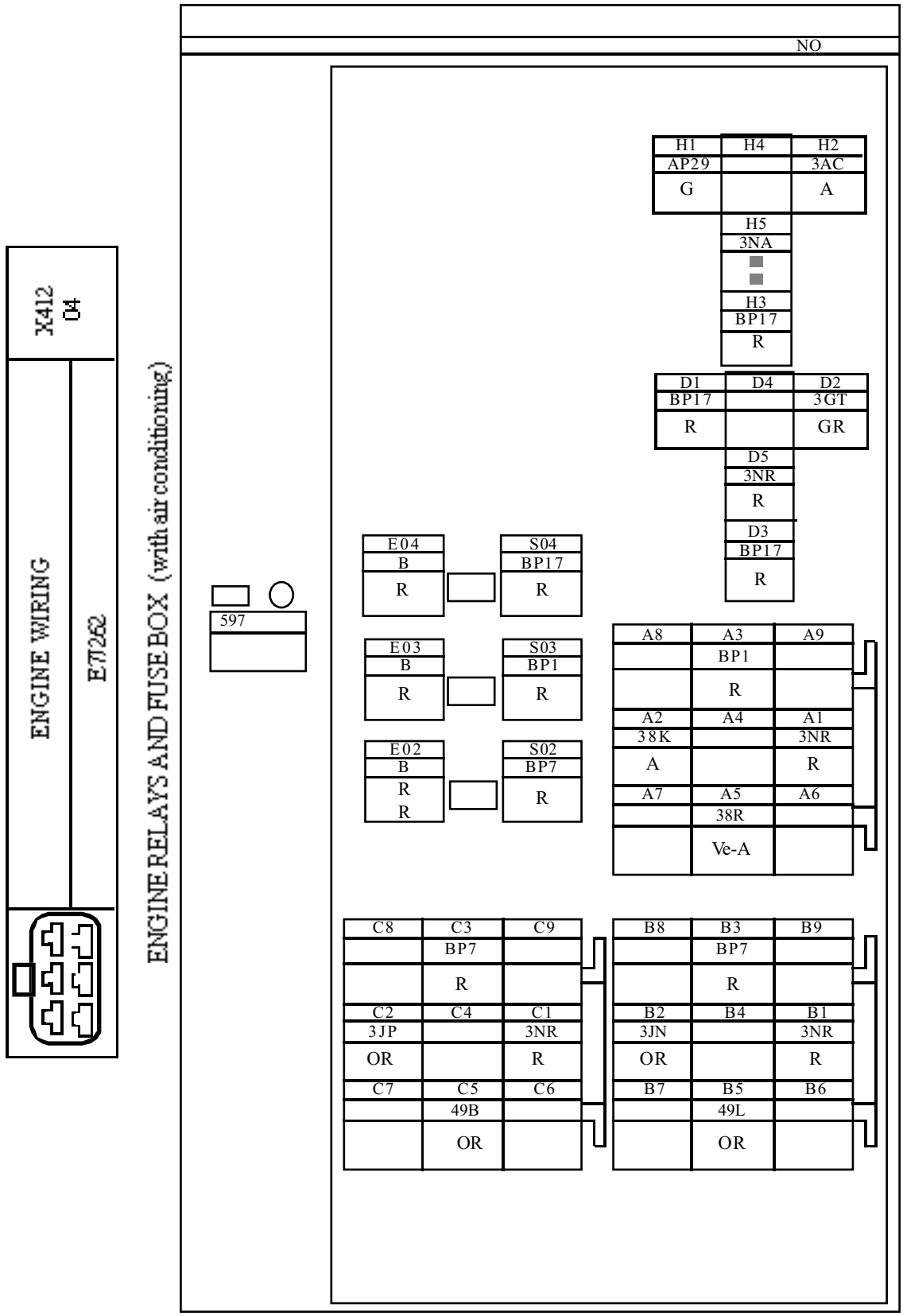


ENGINE WIRING	X412 04
E7J262	

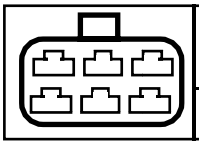
Position	Section		Destination
B1	0,6	3NR	+ INJECTORS >ACTUATORS OUTLET RELAY
B2	0,6	3JN	CONTROL- MOTOR FAN 1ST SPEED RELAY
B3	2,0	BP7	+PROTECTED BATTERY>OUTLET FUSE F01 ENGINE
B5	2,0	49B	CONTROL+ENGINE COOLING FAN
D1	0,6	BP17	+PROTECTED BATTERY>OUTLET FUSE F04 ENGINE
D2	0,6	3GT	CONTROL ACTUATORS RELAY>U.C.E. INJECTION
D3	5,0	BP17	+PROTECTED BATTERY>OUTLET FUSE F04 ENGINE
D5	5,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
H1	0,6	AP29	+AFTER PROTECTED CONTACT>OUTLET FUSES F05 COCKPIT
H2	0,6	3AC	CONTROL- FUEL PUMP RELAY
H3	5,0	BP17	+ PROTECTED BATTERY > OUTLET FUSE F04 ENGINE
H5	2,0	3NA	+ IGNITION COIL, CHOCK SENSOR >IGNITION COIL
H5*	1,4	3NA	+ IGNITION COIL, CHOCK SENSOR > FUEL PUMP
H5**	1,4	3NA	+IGNITION COIL, CHOCK SENSOR> CHOCK SENSOR
E01	1,4	B	+BATTERY
S 01	1,0	BP7	+PROTECTED BATTERY>ENGINE COOLING FAN RELAY
E04	1,4	B	+BATTERY
S 04	1,0	BP17	+ PROTECTED BATTERY>ACTUATORS RELAY

* for EURO 96
** for EURO 2000

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NO
X412
04
ENGINE WIRING
E7262
ENGINE RELAYS AND FUSE BOX (with air conditioning)
597
H1
AP29
G
H4
H2
3AC
A
H5
3NA
H3
BP17
R
D1
BP17
R
D4
D2
3GT
GR
D5
3NR
R
D3
BP17
R
E04
B
R
S04
BP17
R
E03
B
R
S03
BP1
R
E02
B
R
R
S02
BP7
R
A8
A3
A9
BP1
R
A2
38K
A
A4
A1
3NR
R
A7
A5
A6
38R
Ve-A
C8
C3
C9
BP7
R
C2
3JP
OR
C4
C1
3NR
R
C7
C5
C6
49B
OR
B8
B3
B9
BP7
R
B2
3JN
OR
B4
B1
3NR
R
B7
B5
B6
49L
OR

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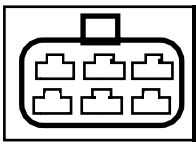


ENGINE WIRING	X412 04
E7J262	

Position	Section		Destination
A1	0,6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
A2	0,6	38K	CONTROL AIR CONDITIONING STOPPING > U.C.E. INJECTION
A3	1,0	BP1	+ PROTECTED BATTERY > OUTLET FUSE F03
A5	1,0	38R	CONTROL - AIR CONDITON COMPRESSOR CLUTCH
B1	0,6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B2	0,6	3JN	CONTROL - 1 SPEED COOLING FAN RELAY
B3	3,0	BP7	+PROTECTED BATTERY > OUTLET FUSE F02 ENGINE
B5	3,0	49L	CONTROL + COOLING FAN > COOLING FAN RESISTANCE
C1	0,6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
C2	0,6	3JP	CONTROL – ENGINE COOLING FAN RELAY 2 SPEED
C3	5,0	BP7	+PROTECTED BATTERY > OUTLET FUSE F02 ENGINE
C5	5,0	49B	CONTROL + ENGINE COOLING FAN
D1	0,6	BP17	+PROTECTED BATTERY > OUTLET FUSE F02 ENGINE
D2	0,6	3GT	CONTROL ACTUATORS RELAY > U.C.E. INJECTION
D3	5,0	BP17	+ PROTECTED BATTERY > OUTLET FUSE F04 ENGINE
D5	5,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
H1	0,6	AP29	+AFTER PROTECTED CONACT > OUTLET FUSE F05 COCKPIT
H2	0,6	3AC	CONTROL - FUEL PUMP RELAY
H3	5,0	BP17	+ PROTECTED BATTERY > OUTLET FUSE F04 ENGINE
H5	2,0	3NA	+IGNITION COIL, CHOCK SENSOR > IGNITION COIL
H5*	1,4	3NA	+IGNITION COIL, CHOCK SENSOR > FUEL PUMP
H5**	1,4	3NA	+IGNITION COIL, CHOCK SENSOR > CHOCK SENSOR
E02	5,0	B	
E02	1,0	B	+ BATTERY > ALTERNATOR
S 02	5,0	BP7	+ BATTERY > SHUNT E03 +PROTECTED BATTERY > ENGINE COOLING FAN RELAY
E03	1,0	B	
S 03	1,0	BP1	+BATTERY + PROTECTED BATERY > AC COMPRESSOR RELAY
E04	1,4	B	+BATTERY
S 04	1,0	BP17	+ PROTECTED BATERY > ACTUATORS RELAY

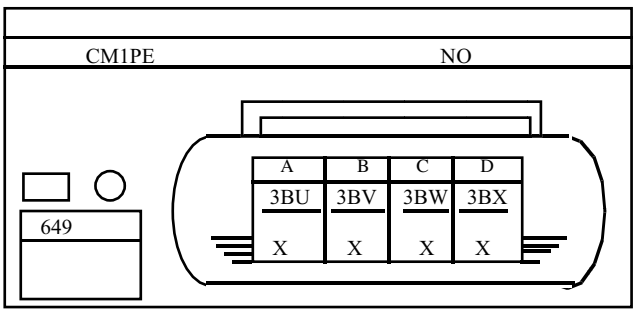
* for EURO 96
** for EURO 2000

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	ENGINE WIRING E7J262	X412 04

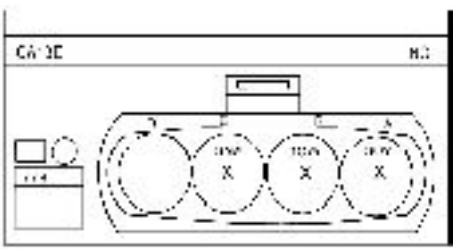
STEP BY STEP ENGINE

Position	Section		Destination
A	0,60	3BU	CONTROL1 IDLING REGULATOR
B	0,60	3BV	CONTROL2 IDLING REGULATOR
C	0,60	3BW	CONTROL3 IDLING REGULATOR
D	0,60	3BX	CONTROL4 IDLING REGULATOR



IGNITION COIL

Position	Section		Destination
A	2,0	3CV	CONTROL-IGNITION COIL CYLINDER 1-4
B	2,0	3CW	CONTROL-IGNITION COIL CYLINDER 2-3
C	2,0	3NA	+IGNITION COIL, CHOCK SENSOR > RELAY FUEL PUMP

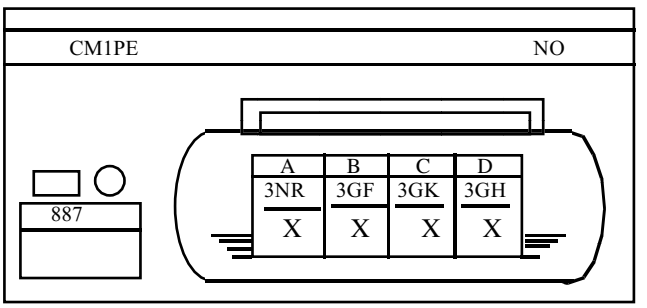


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	ENGINE WIRING	X412
	E7J262	04

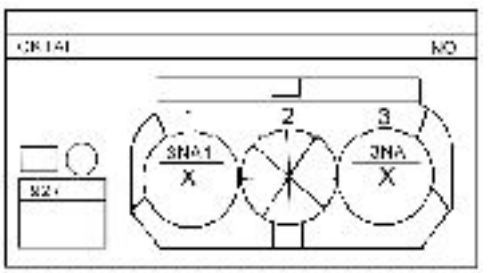
UPSTREAM OXYGEN SENSOR

Position	Section		Destination
A	1,0	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B	1,0	3GF	CONTROL - HEATING UPSTREAM OXYGEN SENSOR
C	0,60	3GK	SIGNAL UPSTREAM OXYGEN SENSOR
D	0,60	3GH	UPSTREAM OXYGEN SENSOR MASS



CHOCK SENSOR (for EURO 2000)

Position	Section		Destination
1	1,40	3NA1	+ FUEL PUMP > CHOCK SENSOR
3	1,40	3NA	+ IGNITION COIL, CHOCK SENSOR > FUEL PUMP RELAY

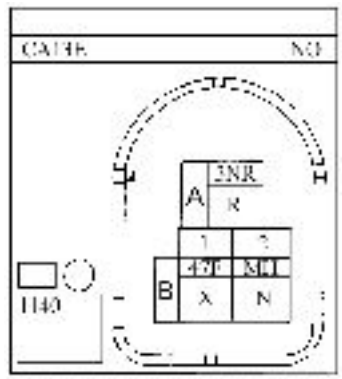


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	ENGINE WIRING	X412 04
	E7J262	

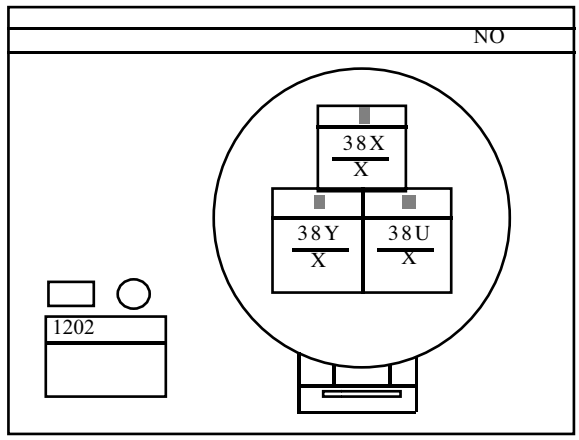
VEHICLE SPEED TRANSDUCER

Position	Section		Destination
A	0,6	3NR	+ INJECTORS > OUTLET ACTUATORS RELAY
B1	0,35	47F	SIGNAL VEHICLE SPEED
B2	0,35	MH	MASS

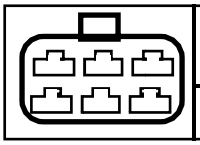


AIR CONDITION PRESSURE SENSOR (pressure controller)

Position	Section		Destination
A	0,60	38U	FREON PRESSURE SENSOR MASS
B	0,60	38Y	+ FREON PRESSURE SENSOR
C	0,60	38X	FREON PRESSURE SENSOR SIGNAL

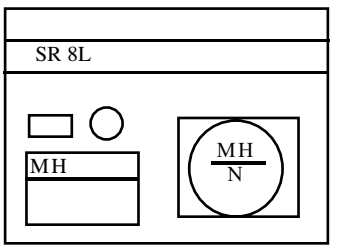


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	ENGINE WIRING E7J262	X412 04

ENGINE ELECTRIC MASS

Position	Section		Destination
1	5,0	MH	MASS > U.C.E.I. INJECTION (PINS 3, 28 and 33, TRANSDUCER VEHICLE SPEED, POWER STEERING PRESSURE CONTROLLER

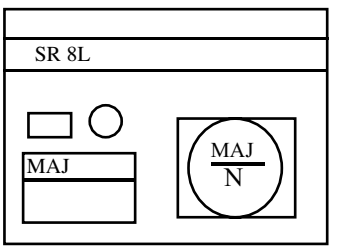


ENGINE COOLING FAN ELECTRIC MASS

Position	Section		Destination
1*	2,0	MAJ	MASS
1**	5,0	MAJ	MASS

* for vehicles without air conditioning

** for vehicles with air conditioning

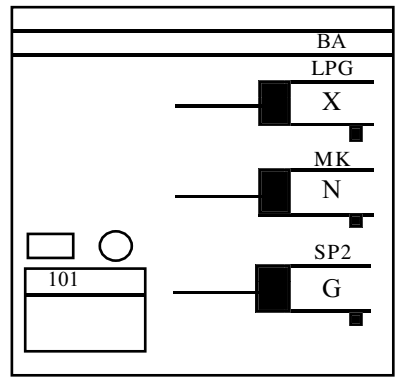


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	FRONT WIRING – DASHBOARD	X412 04

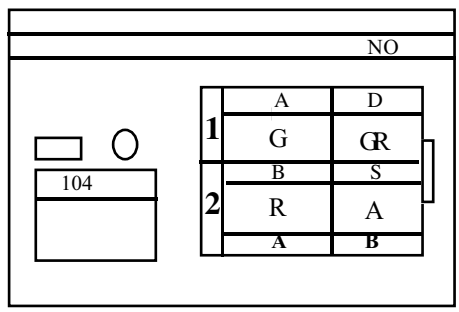
ELECTRICLIGHTER

Position	Section		Destination
1	0,35	LPG	PARKING LIGHTS > OUTLET FUSE F14
2	1,0	MK	MASS
3	1,0	SP2	+AFTER PROTECTED CONTACT > OUTLET FUSE F06

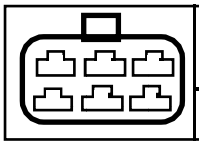


ANTI-THEFT MECHANISM

Position	Section		Destination
A1	3,0	A	SUPPLY +AFTER CONTACT > INLET FUSE 04, 05, 06, 07, 23,30
A2	5,0	B	+BATTERY
B1	3,0	D	+ STARTER CONTROL
B2	3,0	S	+ ACCESSORIES > INLET FUSE F 16, F17, F 20 COCKPIT



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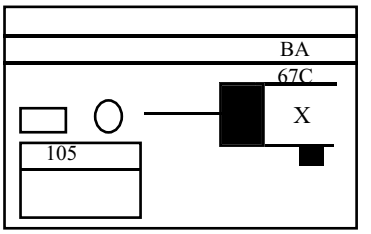


FRONT WIRING – DASHBOARD

X412
04

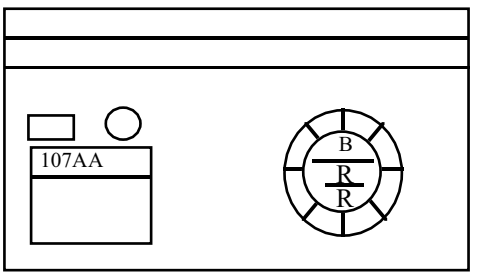
ACOUSTIC WARNING

Position	Section		Destination
1	1,0	67C	CONTROL+ACOUSTIC WARNING> OUTLET FUSE F12

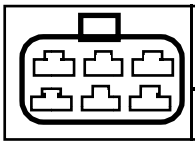


BORNA PLUS BATERIE

Position	Section		Destination
1	7,0	B	+ BATTERY
1	7,0	B	+ BATTERY



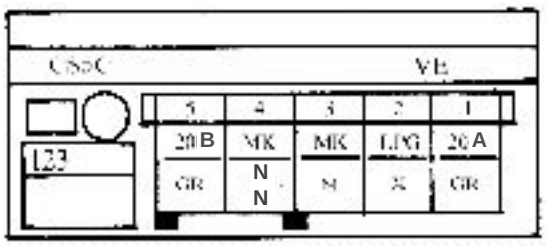
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FRONT WIRING – DASHBOARD	X412 04

DOORS LOCKING SWITCH

Position	Section		Destination
1	0,35	20A	CONTROL–DOORS ELECTRIC LOCKING TIMING
2	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
3	0,35	MK	COCKPIT LEFT FRONT ELECTRIC MASS
4	0,35	MK	COCKPIT LEFT FRONT ELECTRIC MASS
4	0,35	MK	COCKPIT LEFT FRONT ELECTRIC MASS
5	0,35	20B	CONTROL–DOORS ELECTRIC UNLOCKING TIMING

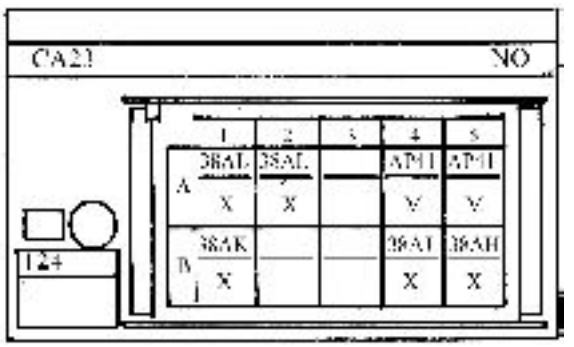


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	FRONT WIRING – DASHBOARD	X412 04

CLIMATE CONTROL PANEL
(for vehicles without airconditioning)

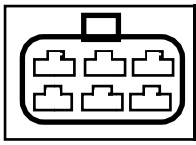
Position	Section		Destination
A1	1,4	38AL	CONTROL+ CLIMATE CONTROL BLOWER SPEED 4
A2	1,4	38AL	CONTROL+ CLIMATE CONTROL BLOWER SPEED 4
A4	1,4	AP41	+AFTER PROTECTED CONTACT > OUTLET FUSE F17
A5	2,0	AP41	+AFTER PROTECTED CONTACT > OUTLET FUSE F17
B1	2,0	38AK	CONTROL+ CLIMATE CONTROL BLOWER SPEED 3
B4	1,4	38AJ	CONTROL+ CLIMATE CONTROL BLOWER SPEED 2
B5	1,0	38AH	CONTROL+ CLIMATE CONTROL BLOWER SPEED 1



Position	Section		Destination
7	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
9	0,6	MK	MASS



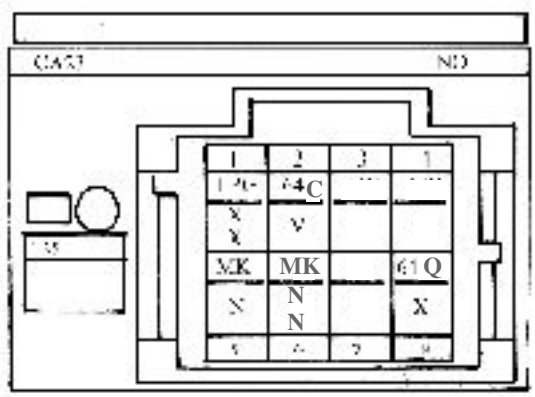
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FRONT WIRING – DASHBOARD	X412 04

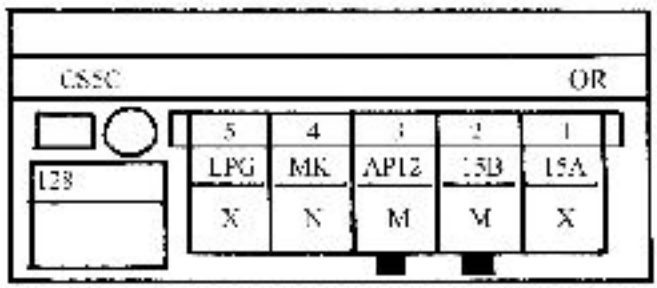
HAZARD SWITCH

Position	Section		Destination
1	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
1	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
2	0,35	64C	CONTROL LEFT TURNING LIGHTS
5	0,35	MK	CONTROL RIGHT TURNING LIGHTS
6	0,35	MK	COCKPIT FRONT LEFT ELECTRIC MASS
6	0,35	MK	COCKPIT FRONT LEFT ELECTRIC MASS
8	0,35	64Q	CONTROL – TURNING LIGHTS TIMING



REAR WINDOW DEFROSTING SWITCH

Position	Section		Destination
1	0,35	15A	REAR WINDOW DEFROSTING INDICATOR CONTROL
2	2,0	15B	CONTROL + REAR WINDOW DEFROSTING
3	2,0	AP12	+ AFTER PROTECTED CONTACT > OUTLET FUSE F20
4	0,35	MK	COCKPIT LEFT FRONT ELECTRIC MASS
5	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14

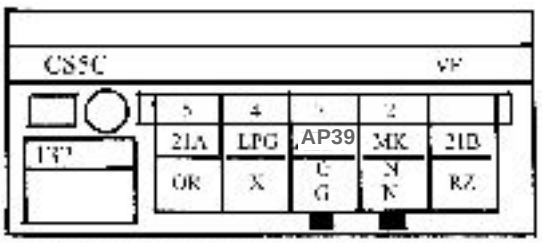


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	FRONT WIRING – DASHBOARD	X412 04

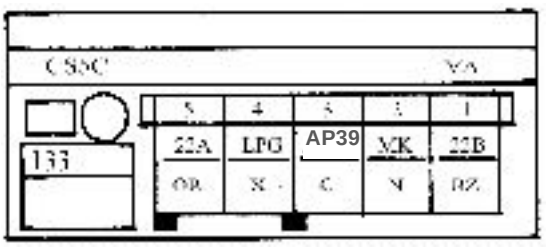
LEFT ELECTRIC WINDOW SWITCH

Position	Section		Destination
1	1,0	21B	DRIVER'S WINDOW LOWERING CONTROL
2	1,4	MK	COCKPIT LEFT FRONT ELECTRIC MASS
2	1,0	MK	COCKPIT LEFT FRONT ELECTRIC MASS
3	1,4	AP39	+AFTER PROTECTED CONTACT > OUTLET FUSE F23
3	1,0	AP39	+AFTER PROTECTED CONTACT > RIGHT WINDOW SWITCH
4	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
5	1,0	21A	DRIVER'S WINDOW LIFTING CONTROL

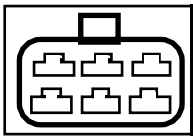


RIGHT ELECTRIC WINDOW SWITCH

Position	Section		Destination
1	1,0	22B	PASSENGER WINDOW LOWERING CONTROL
2	1,0	MK	COCKPIT LEFT FRONT ELECTRIC MASS
3	1,0	AP39	+AFTER PROTECTED CONTACT > LEFT WINDOW SWITCH
4	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
5	1,0	22A	PASSENGER WINDOW LIFTING CONTROL



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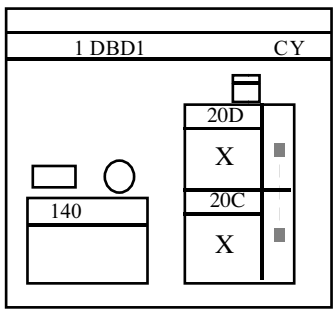


FRONT WIRING – DASHBOARD

X412
04

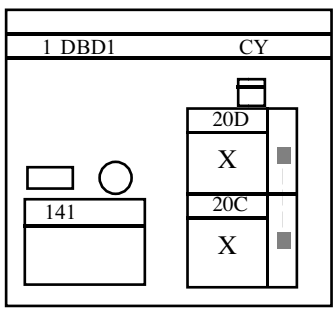
LEFT FRONT DOOR ACTUATOR

Position	Section		Destination
1	0,6	20D	CONTROL+DOORSELECTRICLOCKING .> U.C.EDECODER
2	0,6	20C	CONTROL+DOORSELECTRICUNLOCKING>U.C.E. DECODER



RIGHT FRONT DOOR ACTUATOR

Position	Section		Destination
1	0,6	20D	CONTROL+DOORSELECTRICLOCKING > U.C.EDECODER
2	0,6	20C	CONTROL+DOORSELECTRICUNLOCKING >U.C.E. DECODER

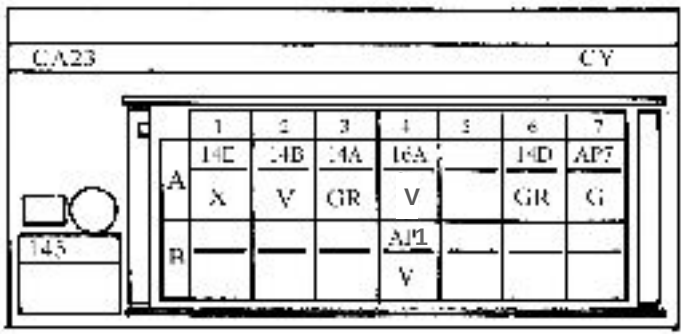


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	FRONT WIRING – DASHBOARD	X412 04

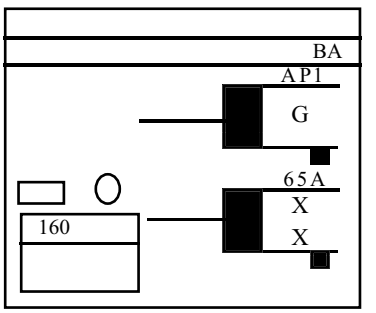
WINDSCREEN WIPER-WASHING SWITCH

Position	Section		Destination
A1	0,35	14E	CONTROL + WINDSCREEN WIPER TIMER
A2	1,0	14B	CONTROL + HIGH SPEED WINDSCREEN WIPER
A3	1,4	14A	CONTROL + LOW SPEED WINDSCREEN WIPER
A4	0,6	16A	CONTROL + WINDSCREEN WASHING PUMP
A6	1,0	14D	CONTROL + LOW SPEED WINDSCREEN WIPER TIMER
A7	1,4	AP7	+ AFTER PROTECTED CONTACT WINDSCREEN WIPER
B4	0,6	AP1	+ AFTER PROTECTED CONTACT WINDSCREEN WIPER

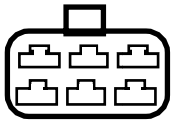


STOP CONTACT

Position	Section		Destination
1	0,6	AP1	+ AFTER PROTECTED CONTACT > OUTLET FUSE F04
2	0,6	65A	CONTROL + STOP LIGHTS
2	0,6	65A	CONTROL + STOP LIGHTS > U.C.E. INJECTION



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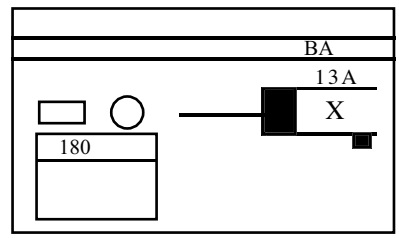


FRONT WIRING – DASHBOARD

X412
04

LEFT FRONT DOOR CONTACT

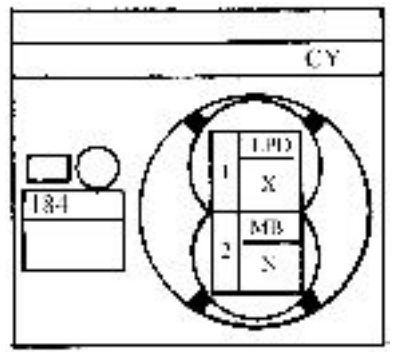
Position	Section		Destination
1	0,35	13A	CONTROL-CEILING LIGHTNING
1*	0,6	13A	CONTROL-CEILING LIGHTNING



* - for vehicles without central locking

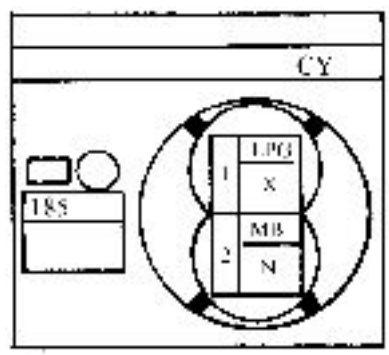
FRONT RIGHT PARKING LIGHT

Position	Section		Destination
1	0,6	LPD	+ PARKING LIGHTS > OUTLET FUSE F15
2	0,6	MB	CARRIAGE BODY FRONT LEFT MASS

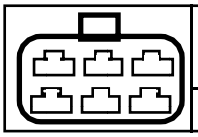


FRONT LEFT PARKING LIGHT

Position	Section		Destination
1	0,6	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
2	0,6	MB	CARRIAGE BODY FRONT LEFT MASS



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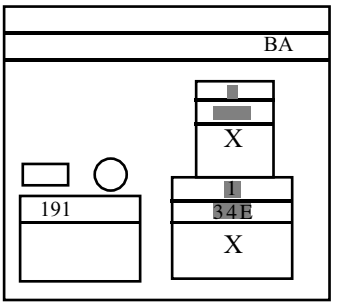


FRONT WIRING – DASHBOARD

X412
04

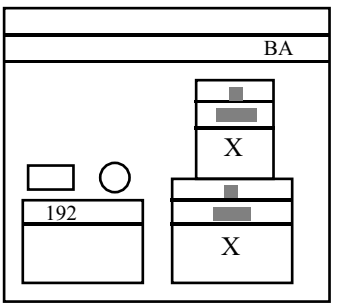
RIGHT FRONT DOOR SPEAKER

Position	Section		Destination
1	0,6	34E	SIGNAL + RIGHT FRONT SPEAKER (RADIO)
2	0,6	34F	SIGNAL - RIGHT FRONT SPEAKER (RADIO)

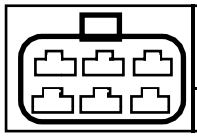


LEFT FRONT DOOR SPEAKER

Position	Section		Destination
1	0,60	34G	SIGNAL + LEFT FRONT SPEAKER (RADIO)
2	0,60	34H	SIGNAL - LEFT FRONT SPEAKER (RADIO)



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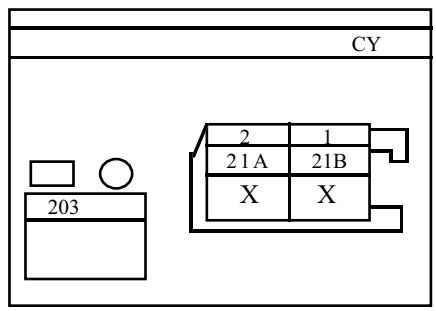


FRONT WIRING – DASHBOARD

X412
04

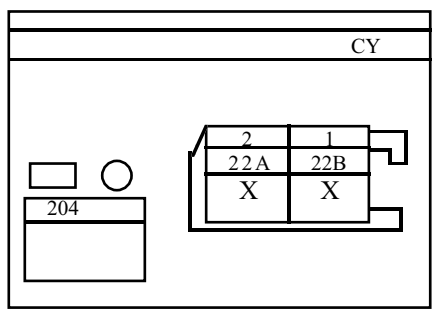
LEFT WINDOW ELECTRIC REGULATOR ACTUATOR

Position	Section		Destination
1	1,0	21B	DRIVER'S WINDOW LIFTING CONTROL
2	1,0	21A	DRIVER'S WINDOW LOWERING CONTROL



RIGHT WINDOW ELECTRIC REGULATOR ACTUATOR

Position	Section		Destination
1	1,0	22B	PASSENGER WINDOW LIFTING CONTROL
2	1,0	22A	PASSENGER WINDOW LOWERING CONTROL

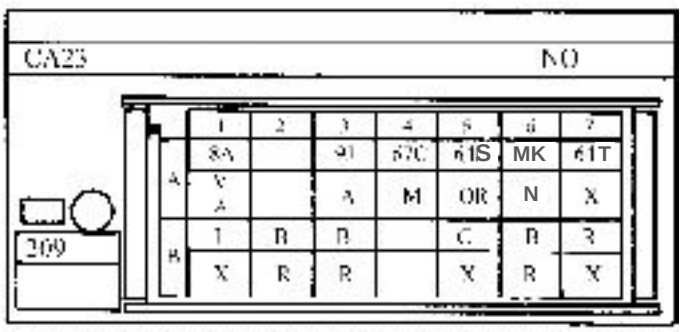


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	FRONT WIRING – DASHBOARD	X412 04

LIGHTS, TURNING LIGHTS AND HORN SWITCH

Position	Section		Destination
A1	0,35	8A	CONTROL FOG PROJECTORS RELAY
A1	0,35	8A	CONTROL FOG PROJECTORS RELAY > INSTRUMENT PANEL
A3	0,6	9J	CONTROL + REAR FOG LAMP > INLET FUSE F19
A4	1,0	67C	CONTROL + ACOUSTIC WARNING > INLET FUSE E12
A5	0,35	64S	CONTROL RIGHT TURNING LIGHTS TIMING
A6	0,35	MK	COCKPIT FRONT LEFT ELECTRIC MASS
A7	0,35	64T	CONTROL LEFT TURNING LIGHTS TIMING
B1	1,0	L	+ PARKING LIGHTS INLET FUSE F14
B2	2,0	B	+ BATTERY
B3	2,0	B	+ BATTERY
B5	3,0	C	+ MEETING LIGHTS > INLET FUSE F08, F09
B6	2,0	B	+ BATTERY
B7	3,0	R	+ ROAD LIGHTS > INLET FUSE F10, F11

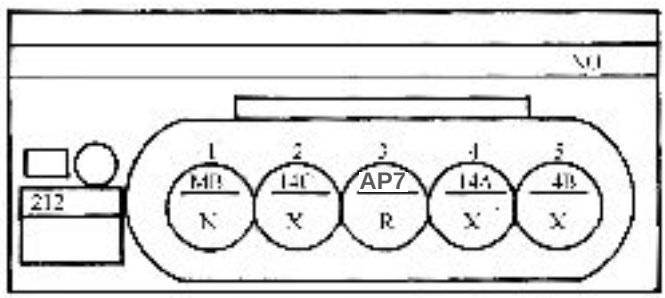


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	FRONT WIRING – DASHBOARD	X412 04

WINDSCREEN WIPER MOTOR

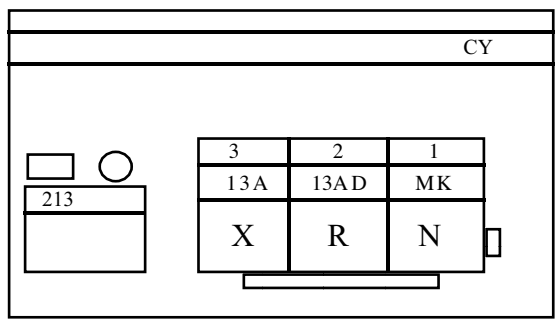
Position	Section		Destination
1	1,4	MB	CARRIAGE BODY LEFT FRONT ELECTRIC MASS
2	1,0	14C	CONTROL + FIX POINT STOPPING
3	1,0	AP7	+ PROTECTED BATTERY > OUTLET FUSE F07
4	1,0	14A	CONTROL + LOW SPEED WINDSCREEN WIPER
5	1,4	14B	CONTROL + HIGH SPEED WINDSCREEN WIPER



CEILING LIGHT

Position	Section		Destination
1	0,6	MK	COCKPIT FRONT LET ELECTRIC MASS
2	0,6	13AD	CONTROL + CEILING LIGHTING
3	0,6	13A*	CONTROL – CEILING LIGHTING

*13E - vehicles equipped with central locking

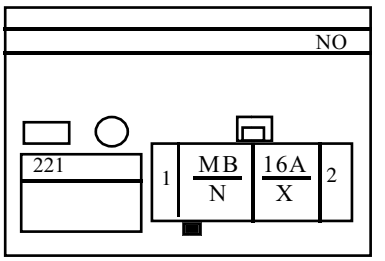


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	FRONT WIRING – DASHBOARD	X412 04

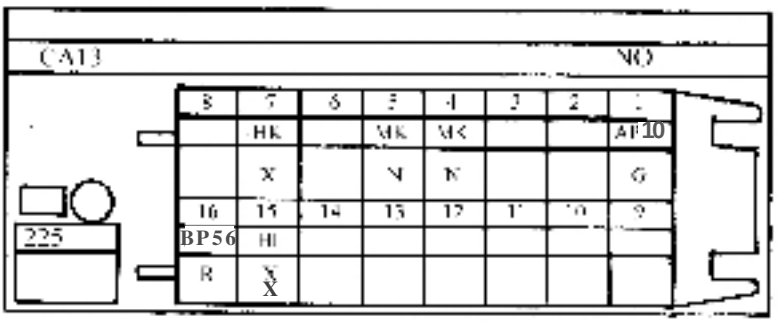
WINDSCREEN WASHING PUMP

Position	Section		Destination
1	0,6	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS
2	0,6	16A	CONTROL + WINDSCREEN WASHING PUMP

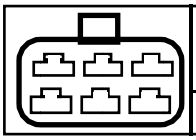


DIAGNOSIS SOCKET

Position	Section		Destination
1	0,35	AP10	+ AFTER PROTECTED CONTACT > OUTLET FUSE F04
4	0,35	MK	COCKPIT FRONT LEFT ELECTRIC MASS
5	0,35	MK	COCKPIT FRONT LEFT ELECTRIC MASS
7	0,35	HK	DIAGNOSIS SIGNAL - LINE K
15	0,35	HL	LINIA DIAGNOSIS SIGNAL - LINE L
15	0,35	HL	LINIA DIAGNOSIS SIGNAL - LINE L
16	0,35	BP56	+ PROTECTED BATTERY > OUTLET FUSE F13



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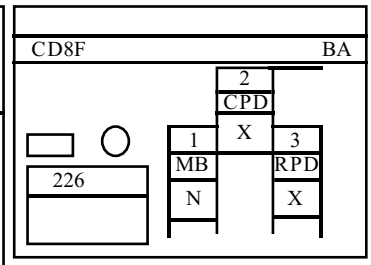


FRONT WIRING – DASHBOARD

X412
04

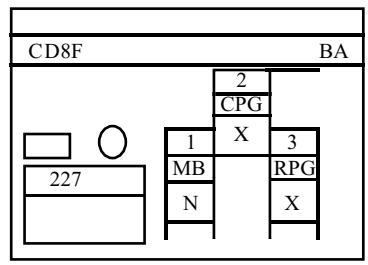
RIGHTHEADLAMP

Position	Section		Destination
1	1,0	MB	CARRIAGEBODYFRONTLEFT ELECTRICMASS
2	0,6	CPD	RIGHTMEETINGLIGHTS PROTECTED > OUTLET FUSE F09
3	1,0	RPD	RIGHTROADLIGHTSPROTECTED> OUTLETFUSEF11



LEFTHEADLAMP

Position	Section		Destination
1	1,0	MB	CARRIAGEBODYFRONTLEFT LECTRIC MASS
2	0,6	CPG	LEFTMEETINGLIGHTS PROTECTED > OUTLET FUSEF08
3	1,6	RPG	LEFTROADLIGHTSPROTECTED> OUTLETF10

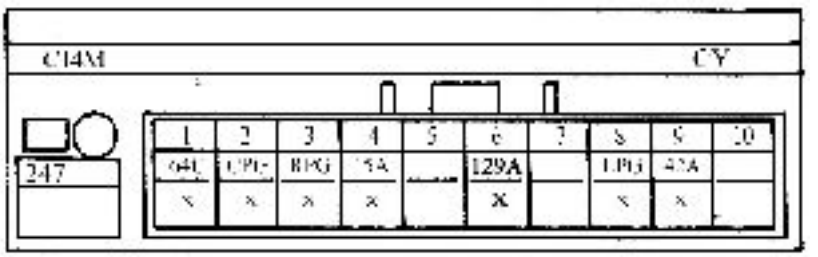


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	FRONT WIRING – DASHBOARD	X412 04

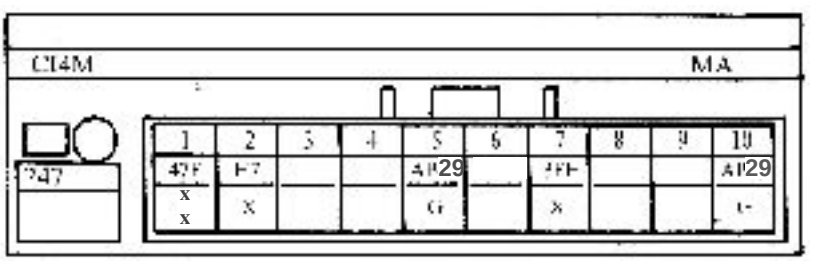
INSTRUMENT PANEL

Position	Section		Destination
1	0.35	64C	CONTROL LEFT TURNING LIGHTS
2	0,35	CPG	PROTECTED LEFT MEETING HEADLIGHTS > INDICATOR
3	0,35	RPG	PROTECTED LIET ROAD LIGHTS > INDICATOR
4	0,35	15A	CONTROL – REAR WINDOW DEFROSTING INDICATOR
6	0,35	129A	CONTROL-AIRBAG FAILURE INDICATOR
8	0,35	LPG	+ LEFT PARKING LIGHTS > OUTLET FUSE F14
9	0,35	42A	SIGNAL + WATER TEMPERATURE

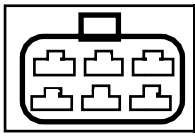


Position	Section		Destination
1	0,35	47F	VEHICLE SPEED SIGNAL
1	0,35	47F	VEHICLE SPEED SIGNAL
2	0,35	H7	RPM SIGNAL > INJECTION COMPUTER
5	0,35	AP29	+ AFTER PROTECTED CONACT > OUTLET FUSE F05
7*	0,35	3FH	CONTROL-ANTI-POLLUTION FAILURE INDICATOR
10	0,35	AP29	+ AFTER PROTECTED CONACT > OUTLET FUSE F05

*-for EURO 2000

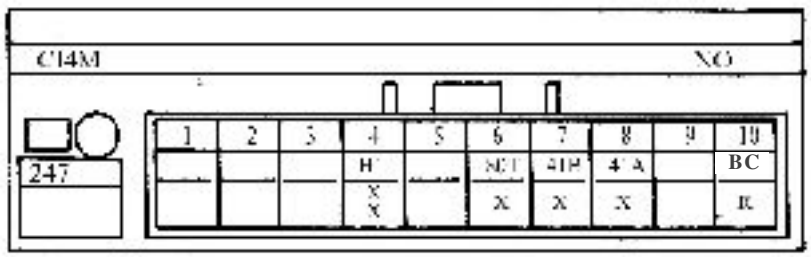


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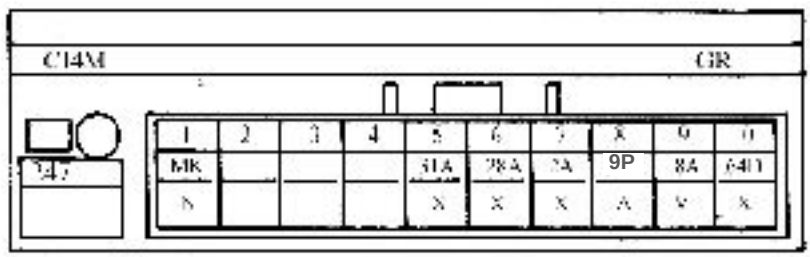


FRONT WIRING – DASHBOARD	X412 04

Position	Section		Destination
4	0,35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P
4	0,35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P
6	0,35	80T	CONTROL-ANTI-STARTING INDICATOR
7	0,35	41B	-FUEL LEVEL
8	0,35	41A	SIGNAL+FUEL LEVER TRANSMITTER
10	0,35	BC	+ PROTECTED BATERY> OUTLET FUSE F02



Position	Section		Destination
1	0,60	MK	COCKPIT FRONT LET ELECTRIC MASS
5	0,35	31A	CONTROL -WATER TEMPERATURE INDICATOR
6	0,35	28A	CONTROL- OIL PRESSURE INDICATOR
7	0,35	2A	CONTROL-ALTERNATOR LOADING INDICATOR
8	0,35	9P	+PROTECTED REAR FOG LIGHTS
9	0,35	8A	+FOG PROJECTORS RELAY
10	0,35	64D	RIGHT TURNING LIGHTS CONTROL

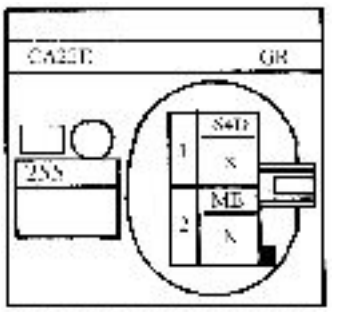


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	FRONT WIRING – DASHBOARD	X412 04

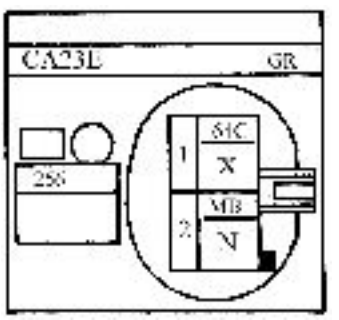
FRONT RIGHT TURNING LAMP

Position	Section		Destination
1	0,6	64D	RIGHT TURNING LIGHTS CONTROL
2	0,6	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS

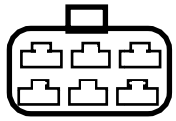


FRONT LEFT TURNING LAMP

Position	Section		Destination
1	0,6	64C	LEFT TURNING LIGHTS CONTROL
2	0,6	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS



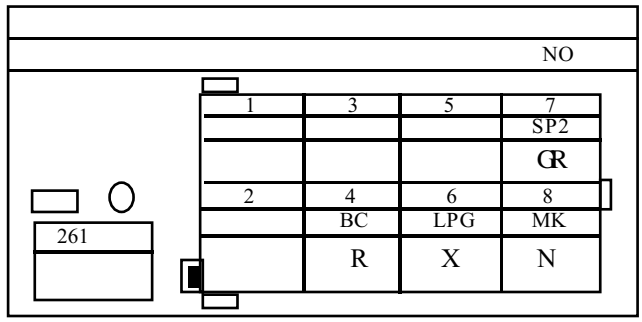
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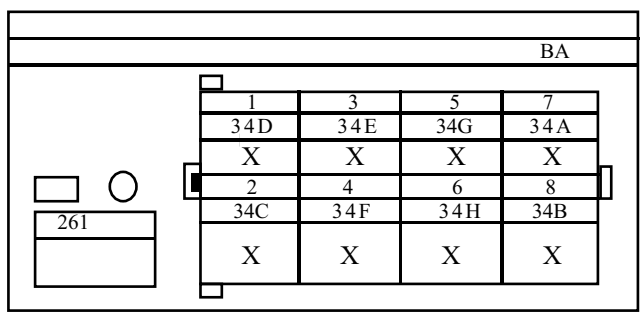
FRONT WIRING – DASHBOARD	X412 04

RADIO

Position	Section		Destination
4	1,0	BC	+ PROTECTED BATTERY > OUTLET FUSE F02
6	0,35	+	PARKING LIGHTS > OUTLET FUSE F14
7	1,0	SP2	PARKING LIGHTS > OUTLET FUSE F16
8	2,0	MK	COCKPIT FRONT LET ELECTRIC MASS



Position	Section		Destination
1	0,60	34D	SIGNAL + REAR RIGHT PEAKER
2	0,60	34C	SIGNAL + REAR RIGHT PEAKER
3	0,60	34E	SIGNAL + FRONT RIGHT PEAKER
4	0,60	34F	SIGNAL + FRONT RIGHT SPEAKER
5	0,60	34G	SIGNAL + FRONT LEFT SPEAKER
6	0,60	34H	SIGNAL + FRONT LEFT SPEAKER
7	0,60	34A	SIGNAL + REAR LEFT SPEAKER
8	0,60	34B	SIGNAL + REAR LEFT SPEAKER

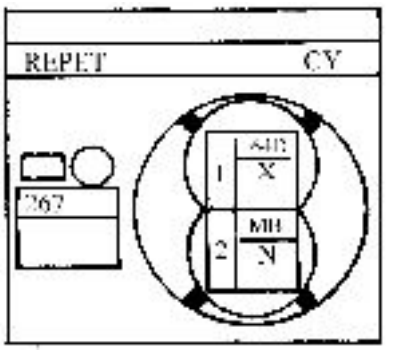


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	FRONT WIRING – DASHBOARD	X412 04

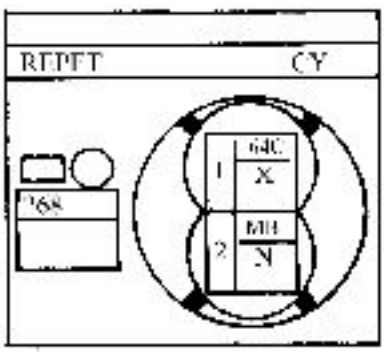
RIGHT SIDE SIGNALING LAMP

Position	Section		Destination
1	0,6	64D	CONTROL RIGHT SIGNALING LIGHTS
2	0,5	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS



LEFT SIDE SIGNALING LAMP

Position	Section		Destination
1	0,6	64C	CONTROL LEFT SIGNALING LIGHTS
2	0,6	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS

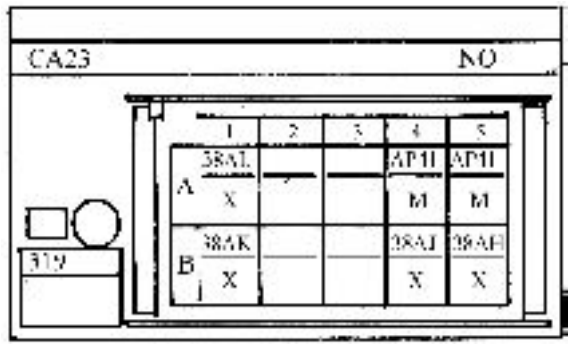


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	FRONT WIRING – DASHBOARD	X412 04

CLIMATE CONTROL PANEL
(for vehicles with air conditioning

Position	Section		Destination
A1	0,6	38AL	CONTROL+ CLIMATE BLOWER SPEED 4
A4	1,4	AP41	+AFTER PROTECTED CONTACT > OUTLET FUSE F17
A5	2,0	AP41	+AFTER PROTECTED CONTACT > OUTLET FUSE F17
B1	2,0	38AK	CONTROL+ CLIMATE BLOWER SPEED 3
B4	1,4	38AJ	CONTROL+ CLIMATE BLOWER SPEED 2
B5	1,0	38AH	CONTROL+ CLIMATE BLOWER SPEED 1



Position	Section		Destination
7	0,35	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
8	0,6	MK	COCKPIT FRONT LET ELECTRIC MASS
9	0,6	MK	COCKPIT FRONT LET ELECTRIC MASS
10	0,35	BP3	+ PROTECTED BATTERY > OUTLET FUSE F03
11	0,6	AP1	+AFTER PROTECTED CONTACT > OUTLET FUSE F06
12	0,6	38L	AIR CONDITIONING CONTROL
13	0,35	38AY	CLIMATE BLOWER SPEED SIGNAL
14	0,6	38EV	CONTROL+ AIR CONDITIONING RECYCLING
15	0,6	38AN	CONTROL- AIR CONDITIONING RECYCLING

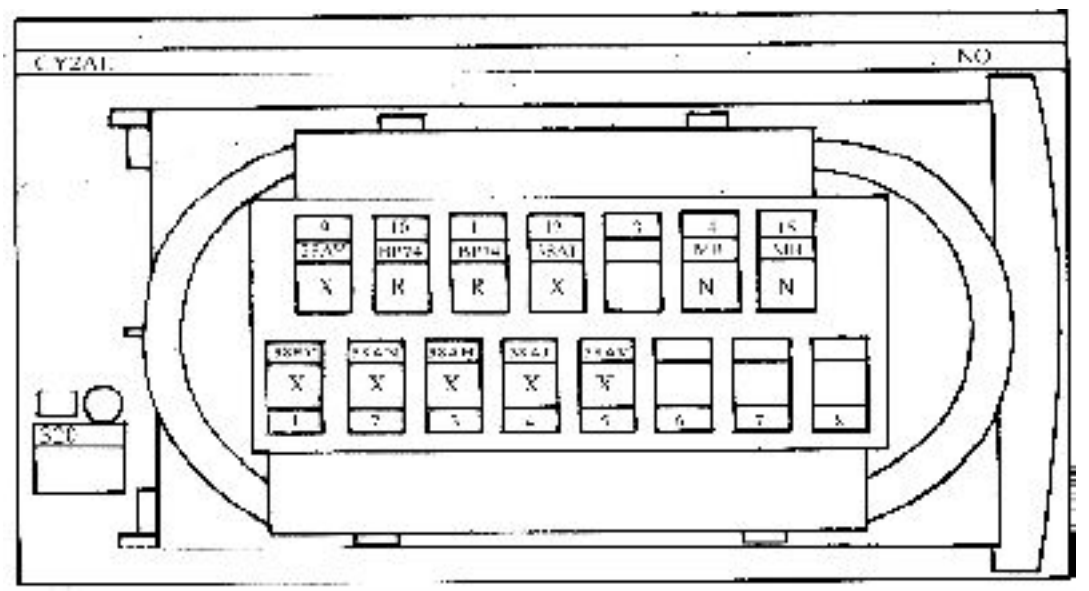


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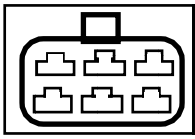
	FRONT WIRING – DASHBOARD	X412 04

CLIMATE CONTROL BLOWER
(for vehicles with air conditioning)

Position	Section		Destination
1	0,6	38EV	CONTROL+ AIR CONDITIONING RECYCLING
2	0,6	38AN	CONTROL- AIR CONDITIONING RECYCLING
3	1,0	38AH	CONTROL+ CLIMATE BLOWER SPEED 1
4	1,4	38AJ	CONTROL+ CLIMATE BLOWER SPEED 2
5	2,0	38AK	CONTROL+ CLIMATE BLOWER SPEED 3
9	0,35	38AY	SIGNAL CLIMATE BLOWER SPEED
10	2,0	BP74	+ PROTECTED BATTERY > OUTLET FUSE F26
11	2,0	BP74	+ PROTECTED BATTERY > OUTLET FUSE F26
12	0,6	38AL	CONTROL+ CLIMATE BLOWER SPEED 4
14	2,0	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS
15	2,0	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS



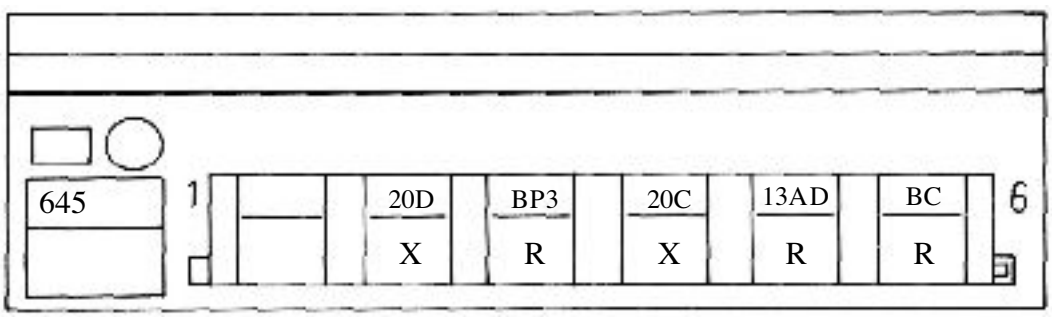
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	FRONT WIRING – DASHBOARD	X412 04

UCE COCKPIT

Position	Section		Destination
2*	1,0	20D	CONTROL+DOORSELECTRICLOCKING
3*	1,4	BP3	+ PROTECTED BATTERY> OUTLETFUSE F03COCKPIT
4*	1,0	20C	CONTROL+DOORSELECTRICUNLOCKING
5	0,6	13AD	CONTROL+CEILINGLIGHTING
6	1,4	BC	+ PROTECTED BATTERY> OUTLETFUSE F02COCKPIT

* - for equipment E1, E2



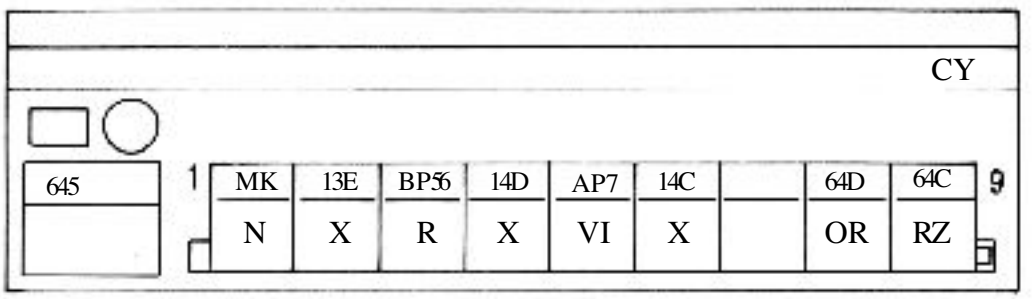
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	FRONT WIRING – DASHBOARD	X412 04

U.C.E. COCKPIT

Position	Section		Destination
1	1,4	MK	COCKPIT FRONT LEFT ELECTRIC MASS
2*	0,6	13E	CONTROL–CEILING LIGHTING
3	1,4	BP56	+ PROTECTED BATTERY> OUTLET FUSE F13 COCKPIT
4	1,0	14D	CONTROL WINDSCREEN WIPER LOW SPEED
5	1,0	AP7	+AFTER PROTECTED CONTACT ?> OUTLET FUSE F07 COCKPIT
6	1,0	14C	CONTROL + WINDSCREEN WIPER FIX POINT STOPPING
8	1,0	64D	CONTROL RIGHT TURNING LIGHTS
9	1,0	64C	CONTROL LEFT TURNING LIGHTS

* - for equipment E1,E2



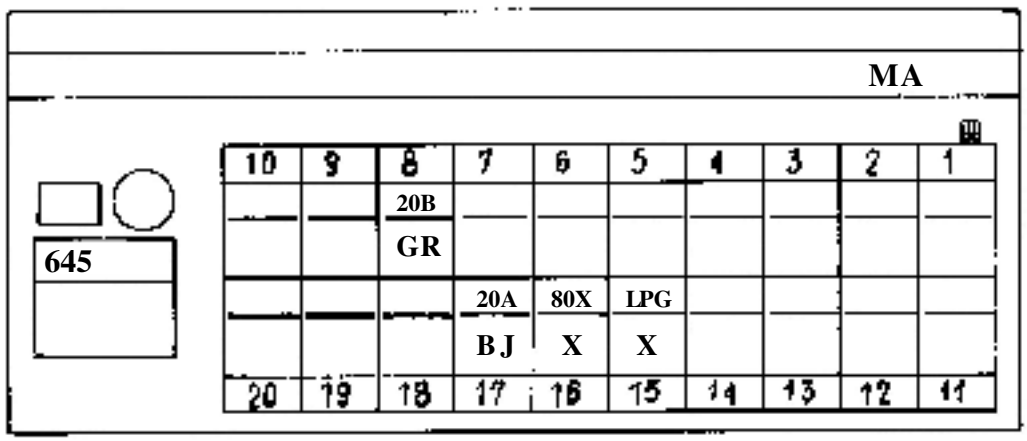
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	FRONT WIRING – DASHBOARD	X412 04

U.C.E. COCKPIT

Position	Section		Destination
8*	0,35	20B	CONTROL+DOORSELECTRICUNLOCKINGTIMING
15	0,35	LPG	+ PROTECTED LEFTPARKING LIGHTS > OUTLETFUSE f14 COCKPIT
16	0,6	80X	ANTI-STARTING RECEIVER SIGNALWAY
17*	0,35	20A	CONTROL+DOORSELECTRICLOCKINGTIMING

* - for equipment E1, E2

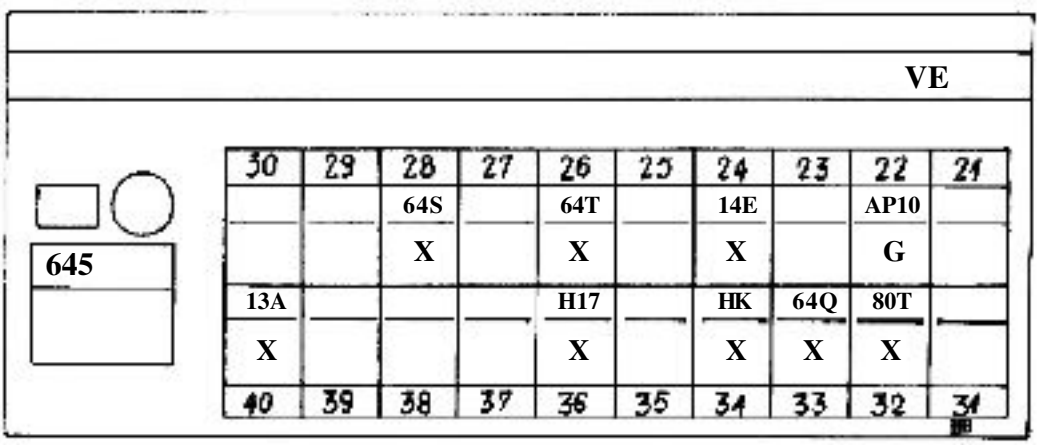


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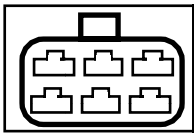
	FRONT WIRING – DASHBOARD	X412 04

U.C.E. COCKPIT

Position	Section		Destination
22	0,35	AP10	AFTER PROTECTED CONTACT> OUTLET FUSE F04 COCKPIT
24	0,6	14E	CONTROL + WINDSCREEN WIPER TIMER
26	0,35	64T	CONTROL LEFT TURNING TIMING
28	0,35	64S	CONTROL RIGHT TURNING TIMING
32	0,35	80T	CONTROL – ANTI-STARTING INDICATOR
33	0,35	64Q	CONTROL – TURNING TIMING
34	0,35	HK	DIAGNOSTIC SIGNAL LINE K
36	0,35	H17	INJECTION CODED SIGNAL>UCE INJECTION
40	0,35	13A	CONTROL – CEILING LIGHTING>DOOR CONTACT

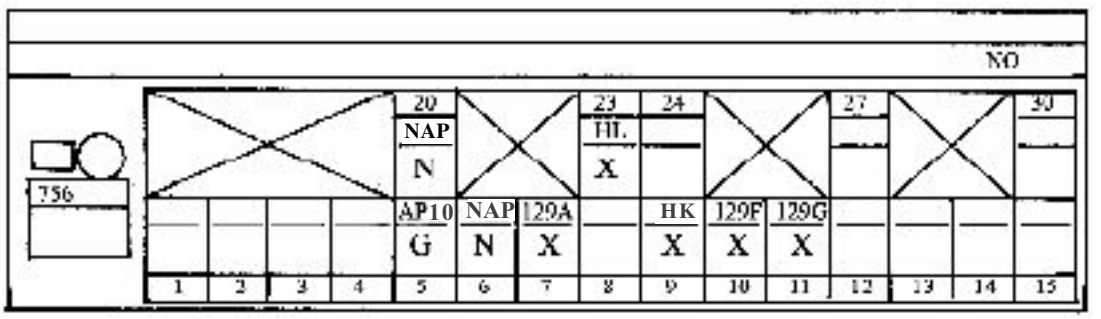


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	FRONT WIRING – DASHBOARD	X412 04

U.C.E. AIRBAG

Position	Section		Destination
5	0,35	AP10	AFTER PROTECTED CONTACT> OUTLET FUSE F04
6	0,6	NAP	TUNNEL ELECTRONIC MASS
7	0,35	129A	CONTROL – AIRBAG FAILURE INDICATOR
9	0,35	HK	DIAGNOSTIC SIGNAL LINE K
10	0,6	129F	SIGNAL + DRIVER AIRBAG
11	0,6	129G	SIGNAL – DRIVER AIRBAG
20	0,6	NAP	TUNNEL ELECTRONIC MASS
23	0,35	HL	DIAGNOSTIC SIGNAL LINE L

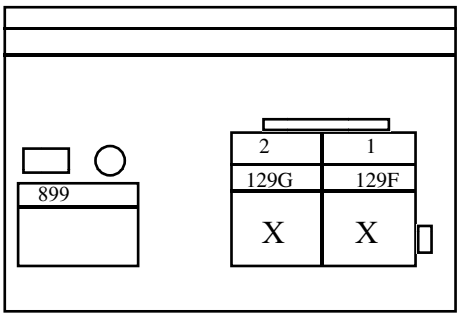


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	FRONT WIRING – DASHBOARD	X412 04

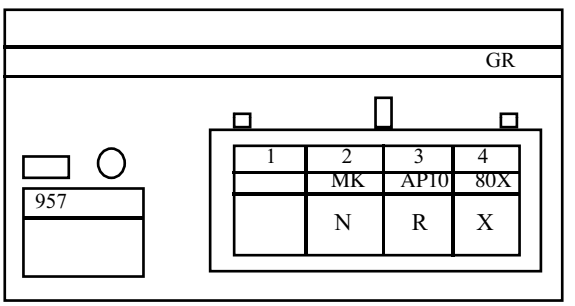
DRIVER AIRBAG

Position	Section		Destination
1	0,6	129F	SIGNAL+ DRIVER AIRBAG
2	0,6	129G	SIGNAL -DRIVER AIRBAG

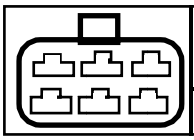


ANTI-STARTING BUSHING

Position	Section		Destination
2	0,60	MK	COCKPIT FRONT LET ELECTRIC MASS
3	0,60	AP10	PROTECTED BATTERY> OUTLET FUSE F04
4	0,60	80X	(TR)ANTI-STARTING RECEIVER SIGNAL WAY



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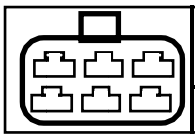
FRONT WIRING – DASHBOARD

X412
04

COCKPIT FUSE BOX

Position	Section		Destination
B01	5,0	B	+BATTERY
A02	2,0	BC	+PROTECTED BATTERY
A03	1,4	BP3	+PROTECTED BATTERY
A03	0,35	BP3	PROTECTED BATTERY
B04	3,0	A	+AFTER CONTACT
A04	1,0	AP10	+AFTER PROTECTED CONTACT
A05	1,0	AP29	+AFTER PROTECTED CONTACT
A06	1,0	AP1	+AFTER PROTECTED CONTACT> REVERSE DRIVING CONTACT
B07	1,4	A	+AFTER CONTACT
A07	1,4	AP7	+AFTER PROTECTED CONTACT> WINDSCREEN WIPERS WITCH
B08	3,0	C	+ MEETING HEADLIGHTS >LIGHTS SWITCH
A08	0,6	CPG	+LEFT PROTECTED MEETING LIGHTS
A08	0,35	CPG	+ LEFT PROTECTED MEETING LIGHTS> INDICATOR
A09	0,6	CPD	+RIGHT PROTECTED MEETING LIGHTS
B10	3,0	R	+ ROAD LIGHTS> LIGHTS SWITCH
A10	1,0	RPG	+LEFT PROTECTED ROAD LIGHTS
A10	0,35	RPG	+LEFT PROTECTED ROAD LIGHTS >INDICATOR
A11	1,0	RPD	+RIGHT PROTECTED ROAD LIGHTS
B12	1,0	67C	CONTROL+ACOUSTIC WARNING FUSE
A12	1,0	67CP	CONTROL+ACOUSTIC WARNING
B13	1,4	B	BATTERY
A13	1,4	BP56	PROTECTED BATTERY> UCE COCKPIT
A13	0,35	BP56	PROTECTED BATTERY> UCE COCKPIT
B14	1,0	L	+ PARKING LIGHTS> LIGHTS SWITCH
B14	1,0	L	+ PARKING LIGHTS> SHUNT
A14	1,0	LPG	+LEFT PROTECTED PARKING LIGHTS
A14	0,6	LPG	+LEFT PROTECTED PARKING LIGHTS
B15	1,0	L	+ PARKING LIGHTS> SHUNT
A15	0,6	LPD	+RIGHT PROTECTED PARKING LIGHTS
A15	0,6	LPD	+RIGHT PROTECTED PARKING LIGHTS
B16	1,4	S	+ACCESSORIES
A16	1,0	SP2	PROTECTED ACCESSORIES
A16	1,0	SP2	PROTECTED ACCESSORIES
B17	3,0	S	ACCESSORIES
A17	1,4	AP41	+AFTER PROTECTED CONTACT>CLIMATE CONTROL BLOWER
A17	2,0	AP41	+AFTER PROTECTED CONTACT>CLIMATE CONTROL BLOWER

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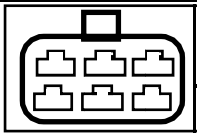
FRONT WIRING – DASHBOARD

X412
04

B19	0,6	9J	CONTROL + REAR FOG LIGHTS > LIGHTS SWITCH
A19	0,6	9P	+PROTECTED REAR FOG LIGHTS
A19	0,35	9P	+ PROTECTED REAR FOG LIGHTS > INDICATOR
B20	2,0	S	+ACCESSORIES
A20	2,0	AP12	+AFTER PROTECTED CONTACT > REAR WINDOW DEFROSTING SWITCH
B21	0,6	B	+BATTERY
A21	0,6	BP37	+ PROTECTED BATTERY > U.C.E. INJECTION
B23	2,0	A	+AFTER CONTACT
A23	1,4	AP39	+AFTER PROTECTED CONTACT > LEFT ELECTRIC WINDOW SWITCH
B26	5,0	B	+BATTERY
A26*	2,0	BP74	+ PROTECTED BATTERY > CLIMATE CONTROL (AIR CONDITIONING)
A26*	2,0	BP74	+ PROTECTED BATTERY > CLIMATE CONTROL (AIR CONDITIONING)
B28	1,4	B	+BATTERY
A28	1,4	BPR1	+PROTECTED BATTERY > FOG PROJECTORS RELAY
B29	1,0	B	+BATTERY
B30	1,0	A	+AFTER CONTACT

* Position 26 - for vehicles equipped with air conditioning

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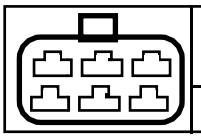
FRONT WIRING – DASHBOARD

X412
04

	A		B			A		B			
PPG	X X	10	R	X		CPD	X	9		X	
RPD	X	11	R	X		CPG	X X	8	C	X	
67CP	M	12	67C	M		AP7	VI	7	A	G	
B		S	G	S	G	L	X	L	X	B	X
18		7		16		15		14		13	
A		AP41	M	SP2	G GR	LPD	X	LPG	X	BP56	X
B		A	G			B	R	S	G	9I	X
24		23		22		21		20		19	
A		AP39	G			BP37	R	AP12	M	9P	X
B	A	V	B	R	B	R		B	R		
30		29		28		27		26		25	
A				BPR1	R			BP74	R		

AP1	G	6									
AP29	G	5									
AP10	G	4	A	G							
BP3	R R	3									
BC	R	2									
		1	B	R							

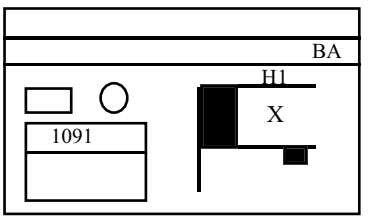
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FRONT WIRING – DASHBOARD	X412 04

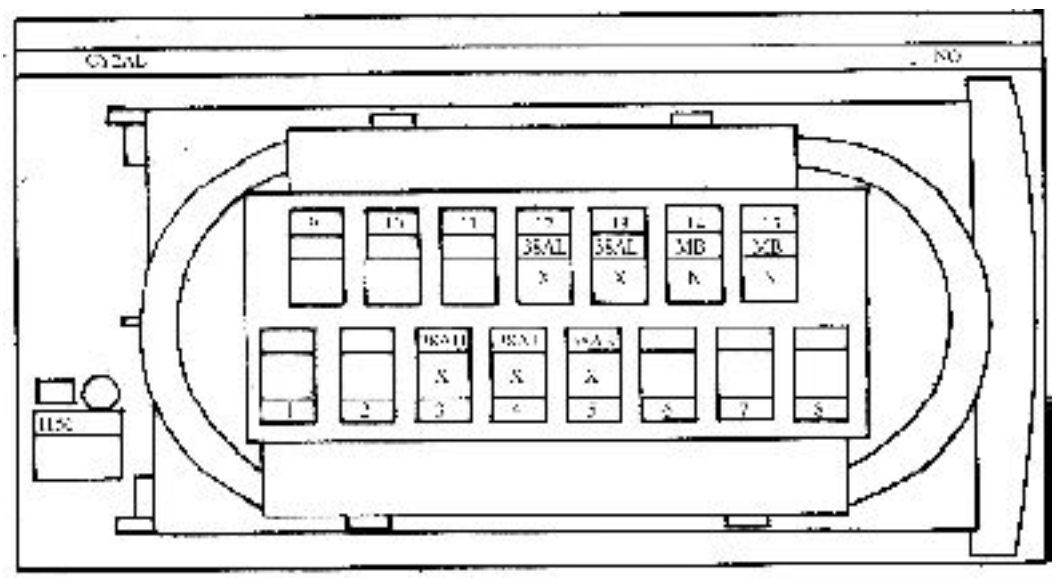
I.C.P. BRAKING SYSTEM

Position	Section		Destination
1	0,35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P

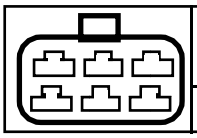


CLIMATE CONTROL BLOWER
(for vehicles without air conditioning)

Position	Section		Destination
3	1,0	38AH	CONTROL+ CLIMATE CONTROL BLOWER SPEED 1
4	1,4	38AJ	CONTROL+ CLIMATE CONTROL BLOWER SPEED 2
5	2,0	38AK	CONTROL+ CLIMATE CONTROL BLOWER SPEED 3
12	1,4	38AL	CONTROL+ CLIMATE CONTROL BLOWER SPEED 4
13	1,4	38AL	CONTROL+ CLIMATE CONTROL BLOWER SPEED 4
14	1,4	MB	CARRIAGE BODY LEFT FRONT ELECTRIC MASS
15	1,4	MB	CARRIAGE BODY FRONT LEFT ELECTRIC MASS



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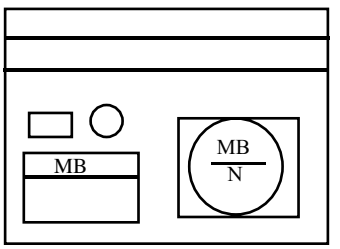


FRONT WIRING – DASHBOARD

X412
04

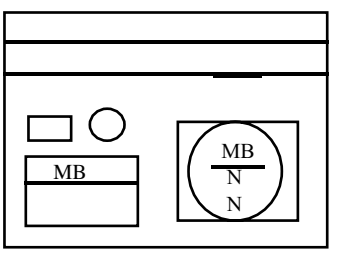
LEFT FRONT BODY ELECTRIC MASS

Position	Section		Destination
1	5,0	MB	MASS > FRONT SIDE SIGNALIZING LAMP LEFT/RIGHT, WINDSCREEN WIPER PUMP, WINDSCREEN WIPER MOTOR , CLIMATE CONTROL BLOWER (PINS 14 and 15)

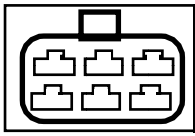


LEFT FRONT BODY ELECTRIC MASS

Position	Section		Destination
1	2,0	MB	MASS > RIGHT HEADLAMP, RIGHT FRONT PARKING LIGHT, FRONT RIGHT TURNING LAMP
1	2,0	MB	MASS > LEFT HEADLAMP, LEFT FRONT PARKING LAMP, FRONT LEFT TURNING LAMP



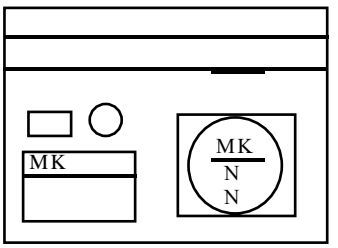
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FRONT WIRING – DASHBOARD	X412 04

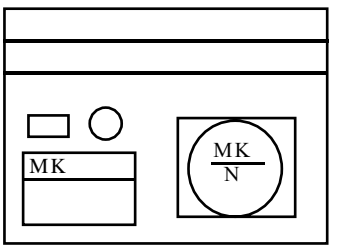
FRONT LEFT COCKPIT ELECTRIC MASS

Position	Section		Destination
1	2,0	MK	MASS > CEILING LIGHT, RADIO, DASHBOARD, REAR WINDOW DEFROSTING SWITCH,
1	1,4	MK	MASS > LEFT/RIGHT ELECTRIC WINDOW SWITCH, LIGHTER, LOCKING DOORS SWITCH, CLIMATE CONTROL, DIAGNOSIS SOCKET, HAZARD SWITCH



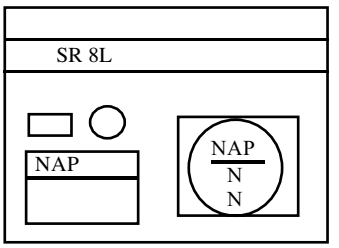
FRONT LEFT COCKPIT ELECTRIC MASS

Position	Section		Destination
1	2,0	MK	MASS > U.C.E. COCKPIT, ANTI-STARTING BUSHING, LOCKING DOORS SWITCH, DIAGNOSIS SOCKET, CLIMATE CONTROL

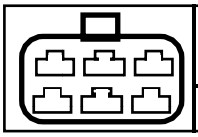


TUNNEL ELECTRONIC MASS

Position	Section		Destination
1	0,6	NAP	MASS > UCE AIRBAG (PIN6)
1	0,6	NAP	MASS > UCE AIRBAG (PIN 20)



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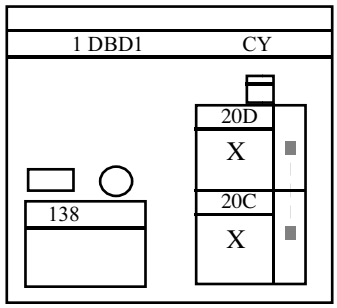


REAR WIRING

X412
03

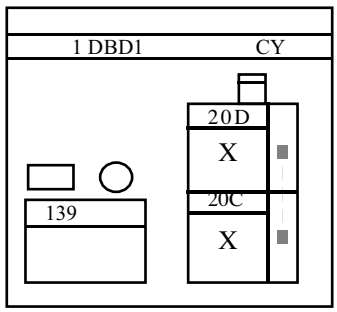
REAR RIGHT DOOR ACTUATOR

Position	Section		Destination
1	0,6	20D	CONTROL+ ELECTRIC DOORS LOCKING >ACTUATORS
2	0,6	20C	CONTROL+ ELECTRIC DOORS UNLOCKING >ACTUATORS

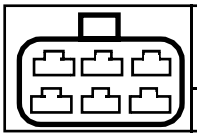


REAR LEFT DOOR ACTUATOR

Position	Section		Destination
1	0,6	20D	CONTROL+ ELECTRIC DOORS LOCKING >ACTUATORS
2	0,6	20C	CONTROL+ ELECTRIC DOORS UNLOCKING >ACTUATORS



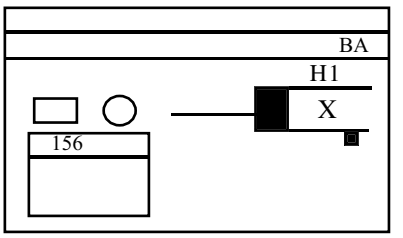
vnx.su



REAR WIRING	X412 04

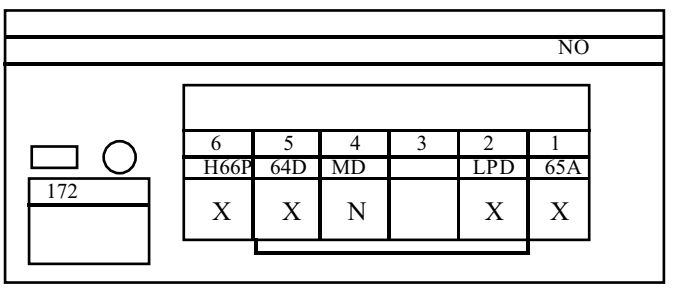
HANDBRAKE CONTACT

Position	Section		Destination
1	0,35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P

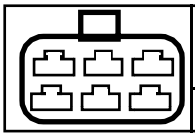


REAR RIGHT LAMP

Position	Section		Destination
1	0,6	65A	CONTROL + STOP LIGHTS
2	0,6	LPD	+ PARKING LIGHTS > OUTLET FUSE F15
4	1,0	MD	REAR LEFT TABLE ELECTRIC MASS
5	0,6	64D	CONTROL RIGHT TURNING LIGHTS
6	0,6	H66P	CONTROL + REVERSED DRIVING LIGHTS > OUTLET FUSE F06



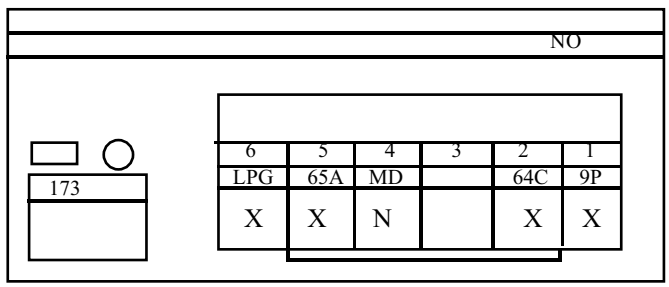
vnx.su



REAR WIRING	X412 04

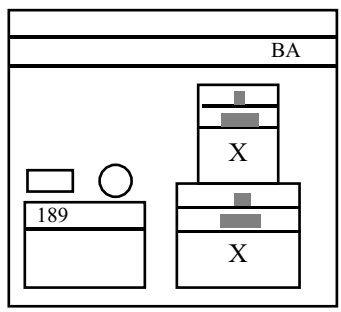
REAR LEFT LAMP

Position	Section		Destination
1	0,6	9P	+ PROTECTED REAR FOG LIGHTS > OUTLET FUSE F19
2	0,6	64C	CONTROL LEFT TURNING LIGHT
4	1,0	MD	REAR LEFT TABLE ELECTRIC MASS
5	0,6	65A	CONTROL + STOP LIGHTS
6	0,6	LPG	+ PARKING LIGHTS > OUTLET F14



REAR RIGHT SPEAKER

Position	Section		Destination
1	0,35	34D	SIGNAL + REAR RIGHT SPEAKER (RADIO)
2	0,35	34C	SIGNAL - REAR RIGHT SPEAKER (RADIO)

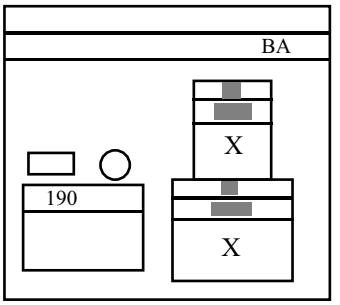


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	REAR WIRING	X412 04

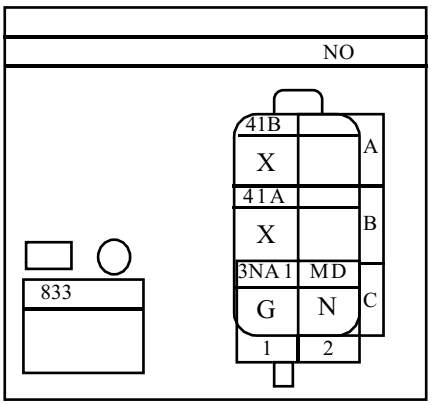
REAR LEFT SPEAKER

Position	Section		Destination
1	0,35	34A	SIGNAL + REAR LEFT SPEAKER (RADIO)
2	0,35	34B	SIGNAL - REAR LEFT SPEAKER (RADIO)

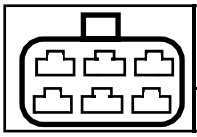


FUEL LEVEL TRANSMITTER AND ELECTRIC PUMP

Position	Section		Destination
A1	0,35	41B	- FUEL LEVEL
B1	0,35	41A	SIGNAL + FUEL LEVEL TRANSMITTER
C1	1,4	3NA1	+ FUEL PUMP
C2	1,4	MD	REAR LEFT TABLE ELECTRIC MASS



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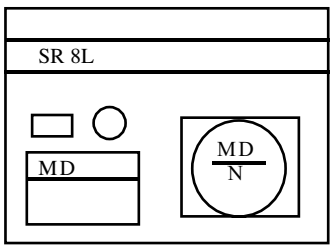


REAR WIRING

X412
04

REAR LEFT TABLE ELECTRIC MASS

Position	Section		Destination
1	2,0	MD	MASS > LEFT RIGHT REAR LAMP FUEL LEVEL TRANSMITTER AND ELECTRIC PUMP

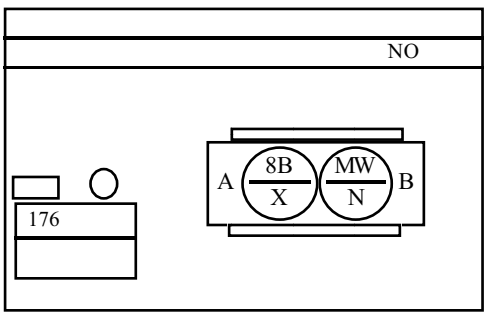


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	FOG PROJECTORS WIRING	X412 04

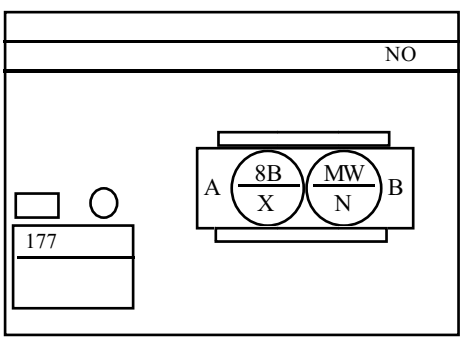
RIGHT FOG PROJECTOR

Position	Section		Destination
A	1,0	8B	+ FOG PROJECTOR > RELAY
B	1,0	MW	FOG PROJECTORS WIRING ELECTRIC MASS

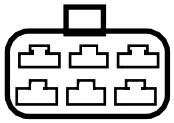


LEFT FOG PROJECTOR

Position	Section		Destination
A	1,0	8B	+ FOG PROJECTORS > RELAY
B	1,0	MW	FOG PROJECTORS WIRING ELECTRIC MASS



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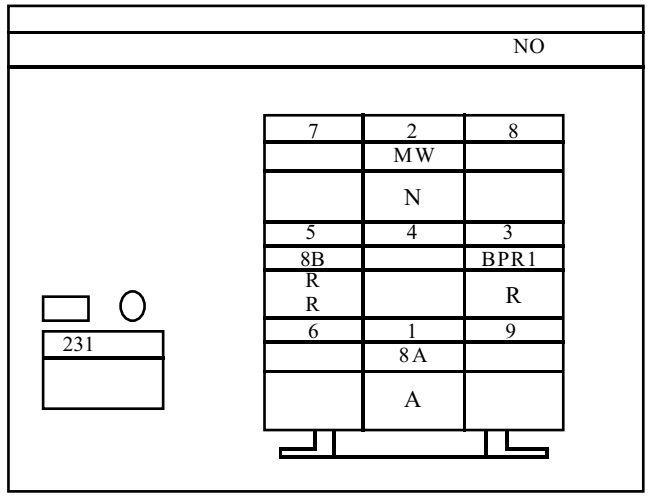


FOG PROJECTORS WIRING

X412
04

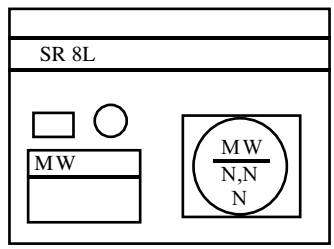
FOG PROJECTORS RELAY

Position	Section		Destination
1	0,35	8A	CONTROL + FOG PROJECTORS RELAY
2	0,35	MW	FOG PROJECTORS WIRING ELECTRIC MASS
3	1,4	BPR1	+ BATTERY > OUTLET FUSE F28
5	1,0	8B	+ FOG PROJECTORS > LEFT FOG PROJECTOR
5	1,0	8B	+ FOG PROJECTORS > RIGHT FOG PROJECTOR

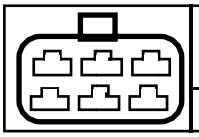


FOG PROJECTORS WIRING ELECTRIC MASS

Position	Section		Destination
1	0,35	MW	MASS > FOG PROJECTORS CONTROL RELAY
1	1,0	MW	MASS > LEFT FOG PROJECTOR
1	1,0	MW	MASS > RIGHT FOG PROJECTOR



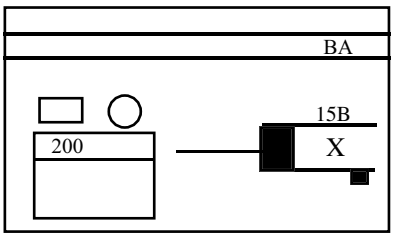
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HATCHBACK WIRING	X412 04

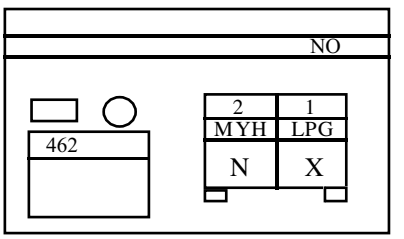
REAR WINDOW DEFROSTING

Position	Section		Destination
1	2,0	15B	CONTROL + REAR WINDOW DEFROSTING



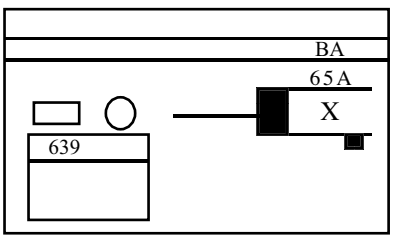
LICENSE PLATE LAMP

Position	Section		Destination
1	0,5	LPG	+ PARKING LIGHTS > OUTLET FUSE F14
2	0,35	MYH	MASS

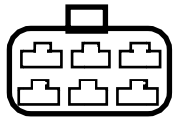


STOP LAMP - S3

Position	Section		Destination
1	0,35	65A	CONTROL + STOP LIGHTS



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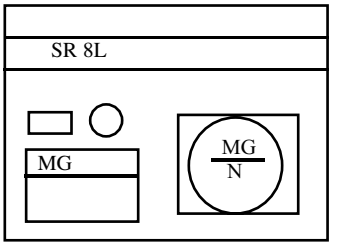


HATCHBACK WIRING

X412
04

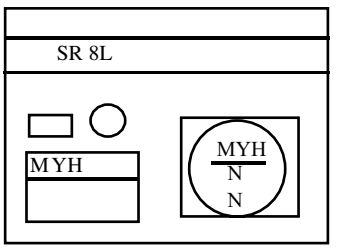
HATCHBACK WIRING ELECTRIC MASS

Position	Section		Destination
1	2,0	MG	MASS > LEFT HATCHBACK ELECTRIC MASS



LEFT HATCHBACK ELECTRIC MASS

Position	Section		Destination
1	2,0	MYH	MASS > HATCHBACK WIRING ELECTRIC MASS
2	0,35	MYH	MASS > LICENSE PLATE LAMP



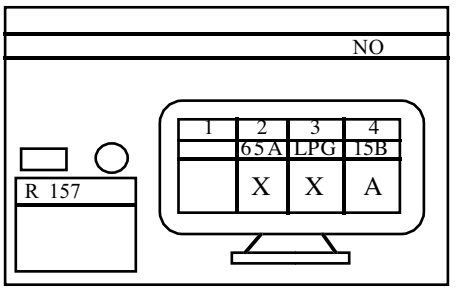
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	COUPLINGS	X412 04

REAR WIRING COUPLINGS / HATCHBACK

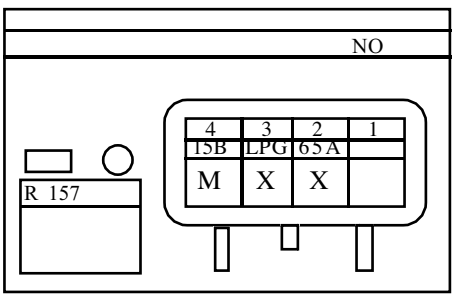
REAR WIRING COUPLING

Position	Section		Destination
2	0,35	65A	CONTROL + STOP LIGHTS
3	0,6	LPG	+ PARKING LIGHTS > OUTLET FUSE F41
4	2,0	15B	CONTROL + REAR WINDOW DEFROSTING



HATCHBACK WIRING COUPLING

Position	Section		Destination
2	0,35	65A	CONTROL + STOP LIGHTS > STOP LAMP S3
3	0,6	LPG	+ PARKING LIGHTS > LICENSE PLATE LAMP
4	2,0	15B	CONTROL + REAR WINDOW DEFROSTING



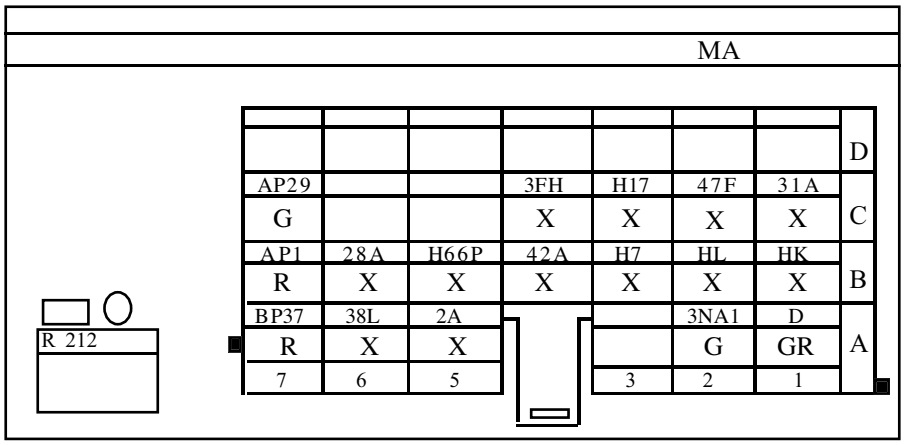
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	COUPLINGS	X412 04

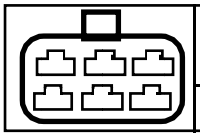
FRONT WIRING COUPLING - DASHBOARD / ENGINE

FRONT WIRING COUPLING

Position	Section		Destination
A1	3,0	D	+ STARTER CONTROL
A2	1,4	3NA1	+ FUEL PUMP
A5	0,35	2A	+ CONTROL – ALTERNATOR CHARGING INDICATOR
A6	0,6	38L	SIGNAL AIR CONDITIONING COUPLING
A7	0,6	BP37	+ PROTECTED BATTERY > OUTLET F21
B1	0,35	HK	SIGNAL DIAGNOSIS LINE K
B2	0,35	HL	SIGNAL DIAGNOSIS LINE L
B3	0,35	H7	RPM SIGNAL
B4	0,35	42A	SIGNAL + WATER TEMPERATURE
B5	0,6	H66P	CONTROL + REVERSE DRIVING LIGHTS
B6	0,35	28A	CONTROL + OIL PRESSURE INDICATOR
B7	0,6	AP1	+ AFTER PROTECTED CONTACT > OUTLET FUSE F06
C1	0,35	31A	CONTROL - WATER TEMPERATURE INDICATOR
C2	0,35	47F	VEHICLE SPEED SIGNAL > INDICATOR
C3	0,35	H17	CODED SIGNAL INJECTION > ANTI-STARTING
C4	0,35	3FH	CONTROL – ANTI-POLLUTION INDICATOR
C7	0,6	AP29	+ AFTER PROTECTED CONTACT > OUTLET FUSE F05



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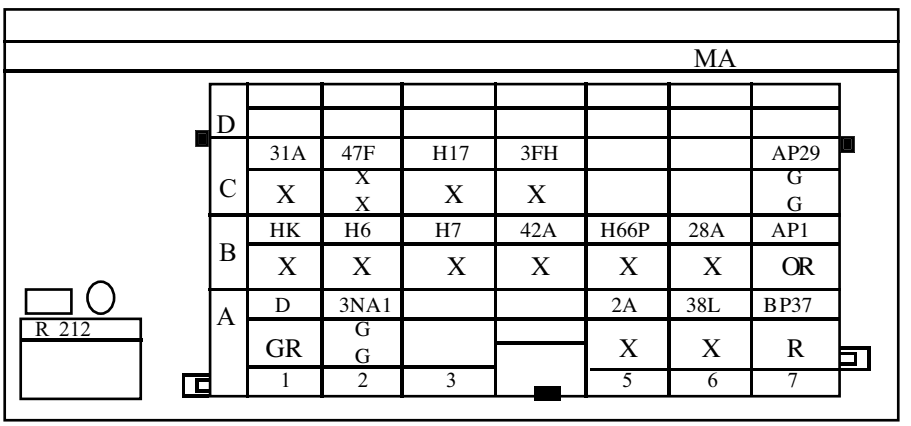


COUPLINGS

X412
04

ENGINE WIRING COUPLING

Position	Section		Destination
A1	3,0	D	+ CONTROL STARTER
A2	1,4	3NA1	+POMPÃ BENZINÃ>SENZOR ªOC+FUEL PUMP>CHOCK SENSOR
A2	1,4	3NA1	+ FUEL PUMP
A5	2,0	2A	+ CONTROL–ALTERNATOR CHARGING INDICATOR
A6	0,6	38L	SIGNAL AIR CONDITIONING COUPLING
A7	0,6	BP37	+ PROTECTED BATTERY>U.C.E. INJECTION
B1	0,35	HK	SIGNAL DIAGNOSIS LINE K
B2	0,35	HL	SIGNAL DIAGNOSIS LINE L
B3	0,35	H7	RPM SIGNAL
B4	0,35	42A	SIGNAL+ WATER TEMPERATURE
B5	0,6	H66P	CONTROL+REVERSED RIVING LIGHTS
B6	0,6	28A	CONTROL- OIL PRESSURE INDICATOR
B7	0,6	AP1	+AFTER PROTECTED CONTACT> REVERSED RIVING CONTACT
C1	0,35	31A	CONTROL -WATER TEMPERATURE INDICATOR
C2	0,35	47F	VEHICLE SPEED SIGNAL> U.C.E INJECTION
C2	0,35	47F	SVEHICLE SPEED SIGNAL>RPM SENSOR
C3	0,35	H17	CODED INJECTION SIGNAL > UC.E. INJECTION
C4	0,35	3FH	CONTROL-ANTI-POLLUTION INDICATOR > U.C.E. INJECTION
C7	0,6	AP29	+AFTER PROTECTED CONATCT > FUEL PUMP RELAY
C7	0,6	AP29	+AFTER PROTECTED CONATCT > U.C.E. INJECTION



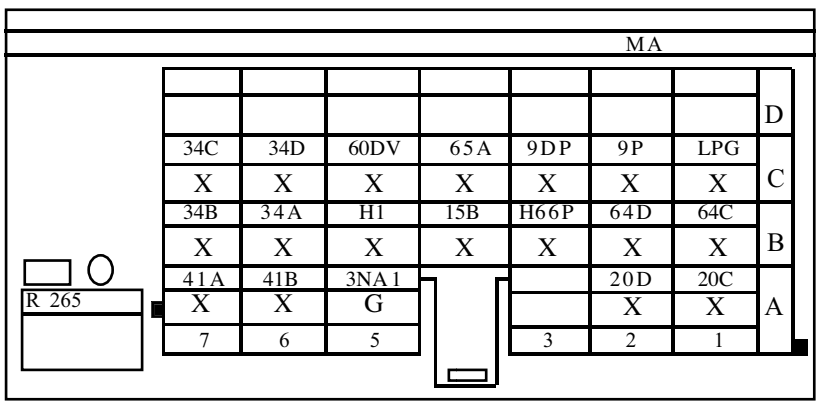
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	COUPLINGS	X412 04

FRONT WIRING COUPLING - DASHBOARD / REAR

FRONT WIRING COUPLING

Position	Section		Destination
A1	0,6	20C	CONTROL + ELECTRIC UNLOCKING DOORS > UCE DECODER
A2	0,6	20D	CONTROL + ELECTRIC LOCKING DOORS > U.C.E DECODER
A5	1,4	3NA1	+ FUEL PUMP > FUEL PUMP RELAY
A6	0,35	41B	- FUEL LEVER > INDICATOR
A7	0,35	41A	SIGNAL + FUEL LEVEL TRANSMITTER
B1	0,6	64C	CONTROL LEFT TURNING LIGHTS
B2	0,6	64D	CONTROL RIGHT TURNING LIGHTS
B3	0,6	H66P	CONTROL + REVERSED DRIVING LIGHTS > REVERSED DRIVING CONTACT
B4	2,0	15B	CONTROL + REAR WINDOW DEFROSTING
B5	0,35	H1	CONTROL - HANDBRAKE INDICATOR, I.C.P
B6	0,6	34A	SIGNAL + REAR LEFT SPEAKER (RADIO)
B7	0,6	34B	SIGNAL - REAR LEFT SPEAKER (RADIO)
C1	0,6	LPG	+ PROTECTED LEFT PARKING LIGHTS > OUTLET FUSE F14
C2	0,6	LPD	+ PROTECTED RIGHT PARKING LIGHTS > OUTLET FUSE F15
C3	0,6	9P	+ PROTECTED REAR FOG LIGHTS > OUTLET FUSE 19
C4	0,6	65A	CONTROL + STOP LIGHTS
C6	0,6	34D	SIGNAL + REAR RIGHT SPEAKER (RADIO)
C7	0,6	34C	SIGNAL - REAR RIGHT SPEAKER (RADIO)

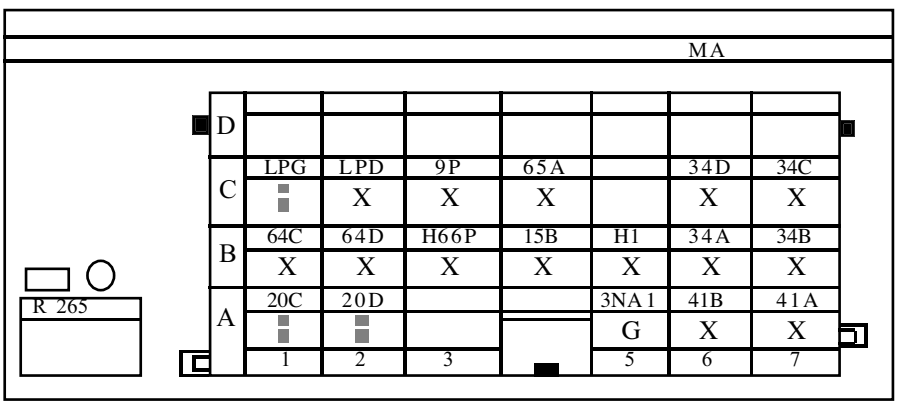


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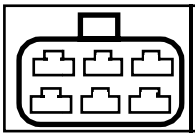
	COUPLINGS	X412 04

REAR WIRING COUPLING

Position	Section		Destination
A1	0,6	20C	CONTROL+ ELECTRIC UNLOCKING DOORS >ACTUATORS
A1	0,6	20C	CONTROL+ ELECTRIC UNLOCKING DOORS >ACTUATORS
A2	0,6	20D	CONTROL+ ELECTRIC LOCKING DOORS >ACTUATORS
A2	0,6	20D	CONTROL+ ELECTRIC LOCKING DOORS >ACTUATORS
A5	1,4	3NA1	+ FUEL PUMP
A6	0,35	41B	-FUEL LEVEL
A7	0,35	41A	SIGNAL + FUEL TRANSMITTER
B1	0,6	64C	CONTROL LEFT TURNING LIGHTS
B2	0,6	64D	CONTROL RIGHT TURNING LIGHTS
B3	0,6	H66P	CONTROL+ REVERSED DRIVING LIGHTS
B4	2,0	15B	CONTROL + REAR WINDOW DEFROSTING
B5	0,35	H1	CONTROL- HANDBRAKE INDICATOR, I.C.P
B6	0,35	34A	SIGNAL +LEFT REAR SPEAKER
B7	0,35	34B	SIGNAL -LEFT REAR SPEAKER
C1	0,6	LPG	+PROTECTED LEFT PARKING LIGHTS
C1	0,6	LPG	+PROTECTED LEFT PARKING LIGHTS
C2	0,6	LPD	+PROTECTED RIGHT PARKING LIGHTS
C3	0,6	9P	+PROTECTED REAR FOG LIGHTS
C4	1,0	65A	CONTROL +STOP LIGHTS
C6	0,35	34D	SSIGNAL+ REAR RIGHT SPEAKER
C7	0,35	34C	SIGNAL- REAR RIGHT SPEAKER



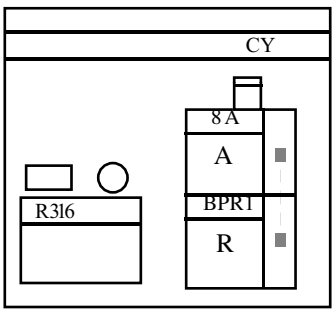
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	COUPLINGS	X412 04

FRONT WIRING COUPLING - DASHBOARD / FOG PROJECTORS

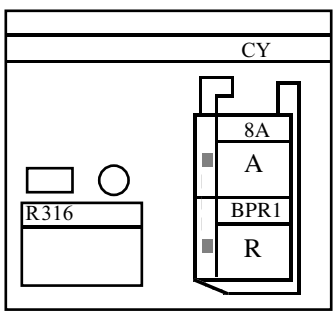
FRONT WIRING COUPLING

Position	Section		Destination
1	0,35	8A	CONTROL + FOG PROJECTORS RELAY > LIGHTS SWITCH
2	1,4	BPR1	+ PROTECTED BATTERY > OUTLET FUSE F28



FOG PROJECTORS WIRING COUPLING

Position	Section		Destination
1	0,35	8A	CONTROL + FOG PROJECTORS RELAY
2	1,4	BPR1	+ PROTECTED BATTERY > FOG PROJECTORS RELAY



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LINK CODE	WIRES FONCTION
A	SUPPLY + AFTER CONTACT
AP1	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F06
AP10	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F04
AP12	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F20
AP29	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F05
AP39	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F23
AP41	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F17
AP7	+ AFTER PROTECTED CONTACT > COCKPIT OUTLET FUSE F07
B	+ BATTERY
BC	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F02
BP1	+ PROTECTED BATTERY > ENGINE OUTLET FUSE F03
BP3	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F03
BP7	+ PROTECTED BATTERY > ENGINE OUTLET FUSE F01 (F02 for A.C.)
BP17	+ AFTER PROTECTED CONTACT > ENGINE OUTLET FUSE F04
BP37	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F21
BP56	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F13
BP74	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F26
BPR1	+ PROTECTED BATTERY > COCKPIT OUTLET FUSE F28
C	+ MEETING LIGHTS
CPD	+ RIGHT PROTECTED MEETING LIGHTS
CPG	+ LEFT PROTECTED MEETING LIGHTS
D	+ STARTER CONTROL
H1	CONTROL - HANDBRAKE INDICATOR, I.C.P. BRAKING CIRCUIT
H17	INJECTION CODED SIGNAL > ANTI-STARTING
H66P	CONTROL + REVERSE DRIVING LIGHTS
H7	RPM SIGNAL
HK	DIAGNOSIS SIGNAL LINE K
HL	DIAGNOSIS SIGNAL LINE L
L	+ PARKING LIGHTS
LPD	+ RIGHT PROTECTED PARKING LIGHTS > COCKPIT OUTLET FUSE F15
LPG	+ LEFT PROTECTED PARKING LIGHTS > COCKPIT OUTLET FUSE F14
M20	REAR WINDOW DEFROSTING ELECTRIC MASS
MAJ	COOLING FAN WIRING ELECTRIC MASS
MB	LEFT FRONT BODY ELECTRIC MASS
MC	GEARBOX ELECTRIC MASS
MD	REAR LEFT TABLE ELECTRIC MASS
ME	FRONT LEFT LONGITUDINAL GIRDER ELECTRIC MASS
MG	HATCHBACK WIRING ELECTRIC MASS
MH	ENGINE ELECTRIC MASS
MK	FRONT LEFT COCKPIT ELECTRIC MASS
MW	FOG PROJECTORS WIRING ELECTRIC MASS
MYH	HATCHBACK ELECTRIC MASS
NAP	TUNNEL ELECTRIC MASS
R	+ ROAD LIGHTS
RPD	+ RIGHT PROTECTED ROAD LIGHTS
RPG	+ LEFT PROTECTED ROAD LIGHTS
S	+ ACCESSORIES
SP2	PROTECTED ACCESSORIES OUTLET FUSE F16 COCKPIT
TB1	DETONATION SENSOR SCREENING
2A	CONTROL - ALTERNATOR CHARGING INDICATOR
3AC	CONTROL - FUEL PUMP RELAY
3AJ	SIGNAL + POTENTIOMETER POSITION VALVE
3AQ	SIGNAL + POTENTIOMETER VALVE

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3B	SIGNAL + AIR TEMPERATURE SENSOR
3BA	SIGNAL - PRESSURE CONTROLLER POWER STEERING
3BB	CONTROL CANISTER PURGING VALVE
3BG	RPM ENGINE SIGNAL > RPM SENSOR
3BL	SIGNAL - RPM ENGINE > RPM SENSOR
3BU	CONTROL 1 IDLING REGULATOR
3BV	CONTROL 2 IDLING REGULATOR
3BW	CONTROL 3 IDLING REGULATOR
3BX	CONTROL 4 IDLING REGULATOR
3C	SIGNAL + WATER TEMPERATURE SENSOR
3CR	CONTROL - INJECTOR 1
3CS	CONTROL - INJECTOR 2
3CT	CONTROL - INJECTOR 3
3CU	CONTROL - INJECTOR 4
3CV	CONTROL - IGNITION COIL CYLINDER 1-4
3CW	CONTROL - IGNITION COIL CYLINDER 2-3
3D	ATMOSPHERIC PRESSURE SENSOR + SUPPLY +
3DQ	- DETONATION SENSOR
3F	ATMOSPHERIC PRESSURE SENSOR SIGNAL
3FH	CONTROL - ANTI-POLLUTION DEFAULT INDICATOR
3GF	CONTROL - UPSTREAM OXYGEN SENSOR HEATING
3GG	CONTROL - DOWNSTREAM OXYGEN SENSOR HEATING
3GH	UPSTREAM OXYGEN SENSOR MASS
3GJ	DOWNSTREAM OXYGEN SENSOR MASS
3GK	UPSTREAM OXYGEN SENSOR SIGNAL
3GL	DOWNSTREAM OXYGEN SENSOR SIGNAL
3GN	ATMOSPHERIC PRESSURE SENSOR MASS
3GT	ACTUATORS RELAY CONTROL
3JK	- WATER TEMPERATURE
3JL	- POTENTIOMETER VALVE
3JN	CONTROL – CLIMATE CONTROL BLOWER RELAY SPEED 1
3JP	CONTROL – CLIMATE CONTROL BLOWER RELAY SPEED 2
3JQ	- AIR TEMPERATURE SENSOR
3NA	+ IGNITION COIL, CHOCK SENSOR > FUEL PUMP RELAY
3NA1	+ FUEL PUMP
3NR	+ INJECTORS >OUTLET ACTUATORS RELAY
3S	SIGNAL + DETONATION SENSOR
8A	+ FOG PROJECTORS RELAY
8B	+ FOG PROJECTORS > RELAY
9P	CONTROL + PROTECTED REAR FOG LAMPS
9J	CONTROL + FOG LAMP
13A	CONTROL - CEILING LIGHTING > DOORS CONTACTS
13AD	CONTROL - CEILING LIGHT
13E	CONTROL + LOW SPEED WINDSCREEN WIPER
14A	CONTROL + HIGH SPEED WINDSCREEN WIPER
14B	CONTROL + WINDSCREEN WIPER FIX POINT STOPPING
14C	CONTROL LOW SPEED WINDSCREEN WIPER TIMER
14D	CONTROL + WINDSCREEN WIPER TIMER
14E	CONTROL REAR WINDOW DEFROSTING INDICATOR
15A	CONTROL + REAR WINDOW DEFROSTING
15B	CONTROL + WINDSCREEN WASHER PUMP
16A	CONTROL + ELECTRIC DOORS LOCKING TIMING
20A	CONTROL + ELECTRIC DOORS UNLOCKING TIMING
20B	CONTROL + ELECTRIC DOORS UNLOCKING

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20C	CONTROL + DOORS ELECTRIC LOCKING
20D	CONTROL DRIVER ELECTRIC WINDOW LIFTING
21A	CONTROL DRIVER ELECTRIC WINDOW LOWERING
21B	PASSENGER ELECTRIC WINDOW LIFTING CONTROL
22A	PASSENGER ELECTRIC WINDOW LOWERING CONTROL
22B	CONTROL - OIL PRESSURE INDICATOR
28A	CONTROL - WATER TEMPERATURE INDICATOR
31A	SIGNAL + REAR LEFT SPEAKER
34A	SIGNAL - REAR LEFT SPEAKER
34B	SIGNAL - REAR RIGHT SPEAKER
34C	SIGNAL - REAR RIGHT SPEAKER
34D	SIGNAL - FRONT RIGHT SPEAKER
34E	SIGNAL - FRONT RIGHT SPEAKER
34F	SIGNAL - FRONT LEFT SPEAKER
34G	SIGNAL - FRONT LEFT SPEAKER
34H	CONTROL + CLIMATE CONTROL BLOWER SPEED 1
38AH	CONTROL + CLIMATE CONTROL BLOWER SPEED 2
38AJ	CONTROL + CLIMATE CONTROL BLOWER SPEED 3
38AK	CONTROL + CLIMATE CONTROL BLOWER SPEED 4
38AL	CONTROL + AIR CONDITIONING RECYCLING
38AN	SIGNAL AIR CONDITIONING COMPRESSOR COUPLING
38AS	CLIMATE CONTROL BLOWER SPEED SIGNAL
38AY	CONTROL + AIR CONDITIONING RECYCLING
38EV	AIR CONDITIONING RELAY CONTROL > U.C.E. INJECTION
38K	AIR CONDITIONING CONTROL
38L	CONTROL + AIR CONDITIONING COMPRESSOR CLUTCH
38R	FREON PRESSURE SENSOR
38U	FREON PRESSURE SENSOR SIGNAL
38X	+ FREON PRESSURE SENSOR
38Y	- FUEL LEVEL
41B	SIGNAL + FUEL LEVEL TRANSMITTER
41A	SIGNAL + WATER TEMPERATURE
42A	VEHICLE SPEED SIGNAL
47F	CONTROL + ENGINE COOLING FAN
49B	CONTROL + LOW SPEED ENGINE COOLING FAN RESISTANCE
49L	LEFT TURNING LIGHTS CONTROL
64C	RIGHT TURNING LIGHTS CONTROL
64D	RIGHT TURNING TIMING CONTROL
64S	LEFT TURNING TIMING CONTROL
64T	TURNING TIMING CONTROL
64Q	CONTROL + STOP LIGHTS
65A	CONTROL + ACOUSTIC WARNING FUSE
67C	CONTROL + ACOUSTIC WARNING
67CP	FLASH RELAY CONTROL
80T	CONTROL + ANTI-STARTING INDICATOR
80X	ANTI-STARTING RECEPTOR SIGNAL WAY
129A	CONTROL – AIRBAG FAILURE INDICATOR
129F	SIGNAL – DRIVER AIRBAG
129G	SIGNAL – DRIVER AIRBAG

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