

GENERAL INFORMATION

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General Information

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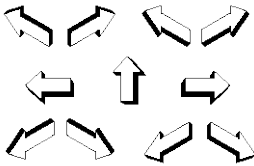
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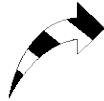
General Repair Instruction

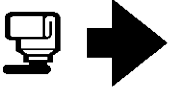
- If a floor jack is used, the following precautions are recommended.
Park vehicle on level ground, "block" front or rear wheels, set jack against the recommended lifting points (see "Lifting Instructions" in this section), raise vehicle and support with chassis stands and then perform the service operations.
- Before performing service operations, disconnect ground cable from the battery to reduce the chance of cable damage and burning due to short circuiting.
- Use a cover on body, seats and floor to protect them against damage and contamination.
- Brake fluid and anti-freeze solution must be handled with reasonable care, as they can cause paint damage.
- The use of proper tools and recommended essential and available tools, where specified, is important for efficient and reliable performance of service repairs.
- Use genuine Isuzu parts.
- Used cotter pins, plastic clips, gaskets, O-rings, oil seals, lock washers and self-locking nuts should be discarded and new ones should be installed, as normal function of the parts cannot be maintained if these parts are reused.
- To facilitate proper and smooth reassembly operation, keep disassembled parts neatly in groups. Keeping fixing bolts and nuts separate is very important, as they vary in hardness and design depending on position of installation.
- Clean the parts before inspection or reassembly. Also clean oil ports, etc. using compressed air, and make certain they are free from restrictions.
- Lubricate rotating and sliding faces of the parts with oil or grease before installation.
- When necessary, use a sealer on gaskets to prevent leakage.
- Carefully observe all specifications for bolt and nut torques.
- When removing or replacing parts that require refrigerant to be discharged from the air conditioning system, be sure to use the Vehicle Refrigerant Recovery and Recycling Equipment (VRRRE) to recover and recycle Refrigerant-134a.
- When a service operation is completed, make a final check to be sure the service has been done properly and the problem has been corrected.
- SUPPLEMENTAL RESTRAINT SYSTEM**
The vehicle is equipped with a Supplemental Restraint System (SRS) – Air Bags. This system is not to be serviced without consulting the appropriate service information. Consult Section 9J "SRS System" if work is to be done on the front of the vehicle such as bumper, sheet metal, seats, wiring, steering wheel or column. Also review SRS system information if any arc welding is to be done on the vehicle. The SRS system equipped vehicle can be identified by:
 - "AIR BAG" warning light on the instrument cluster.
 - A Code "K" or "M" for fifth digit of Vehicle Identification Number.

Illustration Arrows

Arrows are designed for specific purposes to aid your understanding of technical illustrations.

Arrow Type	Application
	Front of vehicle
	Up Side
	Task Related
	View Detail
	View Angle
	Dimension (1:2)

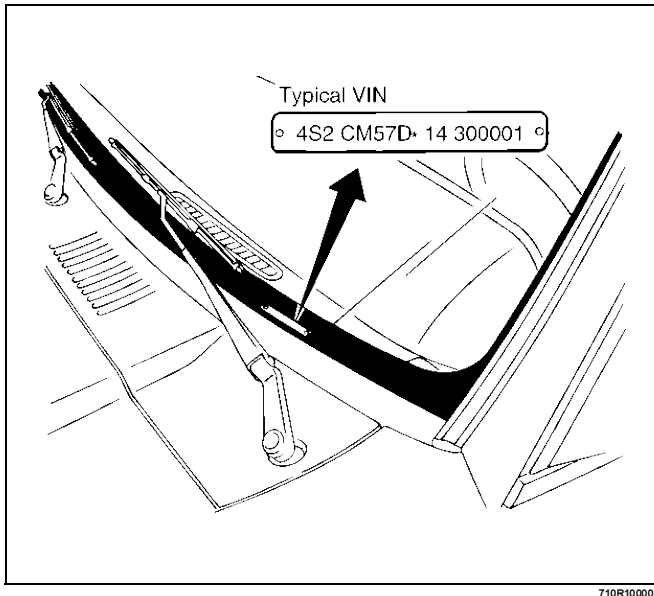
Arrow Type	Application
	Sectioning (1:3)
	- Ambient/Clean air flow - Cool air flow
	- Gas other than ambient air - Hot air flow
	- Ambient air mixed with another gas - Can indicate temperature change
	Motion or direction
	Lubrication point oil or fluid

Arrow Type	Application
	Lubrication point grease
	Lubrication point jelly

Identification

Vehicle Identification Number (VIN)

This is the legal identification of the vehicle. It is located on the left bottom of the windshield. It can be easily seen through the windshield from outside the vehicle.

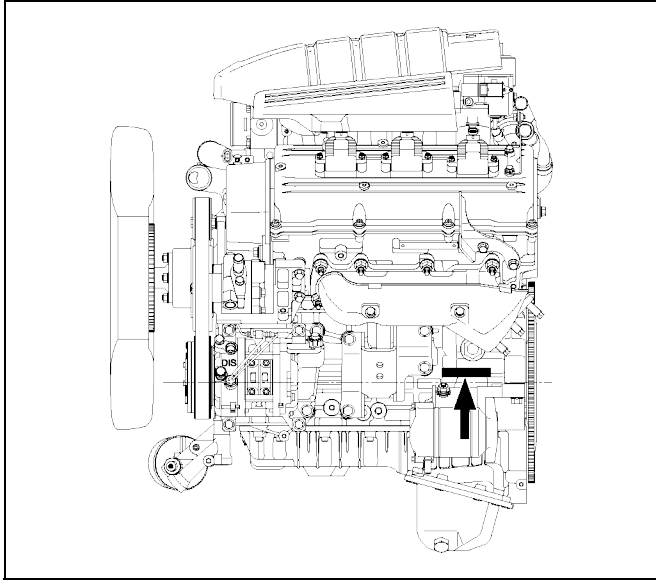


4S2	C	M	5	8	D	*	2	4	300001	
										Sequential Number
										Assembly Plant
										Model Year (2 = 2002)
										Check Digit
										Engine Type (D = 2.2L L4 DOHC ; Y22SE) (W = 3.2L V6 DOHC ; 6VD1)
										Body Type (8 = 4 Door Cab ; Long Wheel Base)
										Series (5 = 5 - seate plus 1/4 ton (nominal))
										Vehicle Line (K = 4 x 2 Active belts W/dr. & ps. inflatable restraint) (M = 4 x 4 Active belts W/dr. & ps. inflatable restraint)
										GVWR Range (C = 4001 ~ 5000 LBS) (D = 5001 ~ 6000 LBS)
										World Manufacturer Identifier (4S2 SIA Built ISUZU Multipurpose Passenger Vehicle)

Engine Serial Number

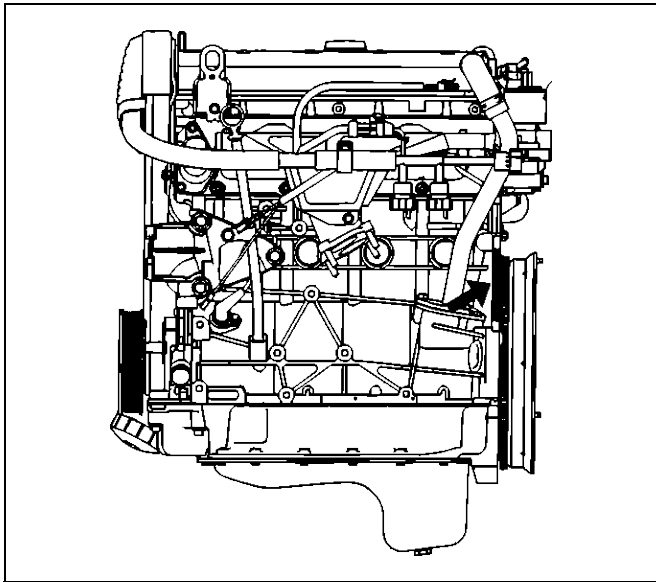
- **6VD1 Engine**

The gasoline engine serial number is stamped on the left rear lower area of the cylinder block above the starter.



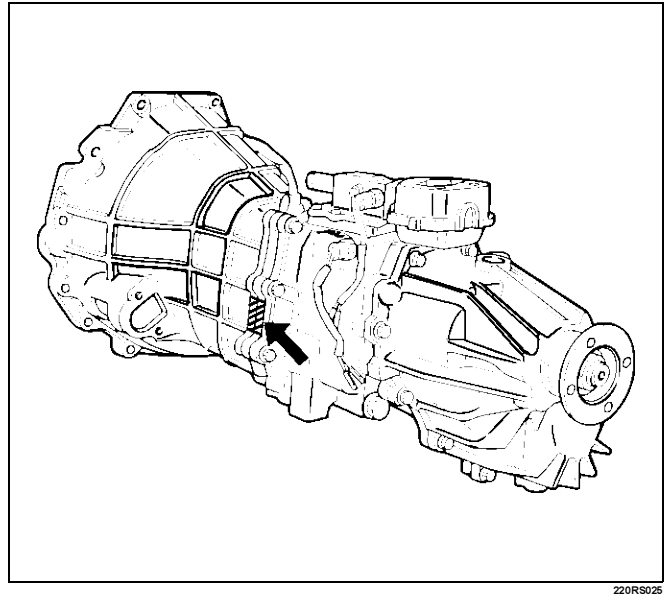
- **Y22SE Engine**

The gasoline engine serial number is stamped on the rear end raised area of the cylinder block left side.



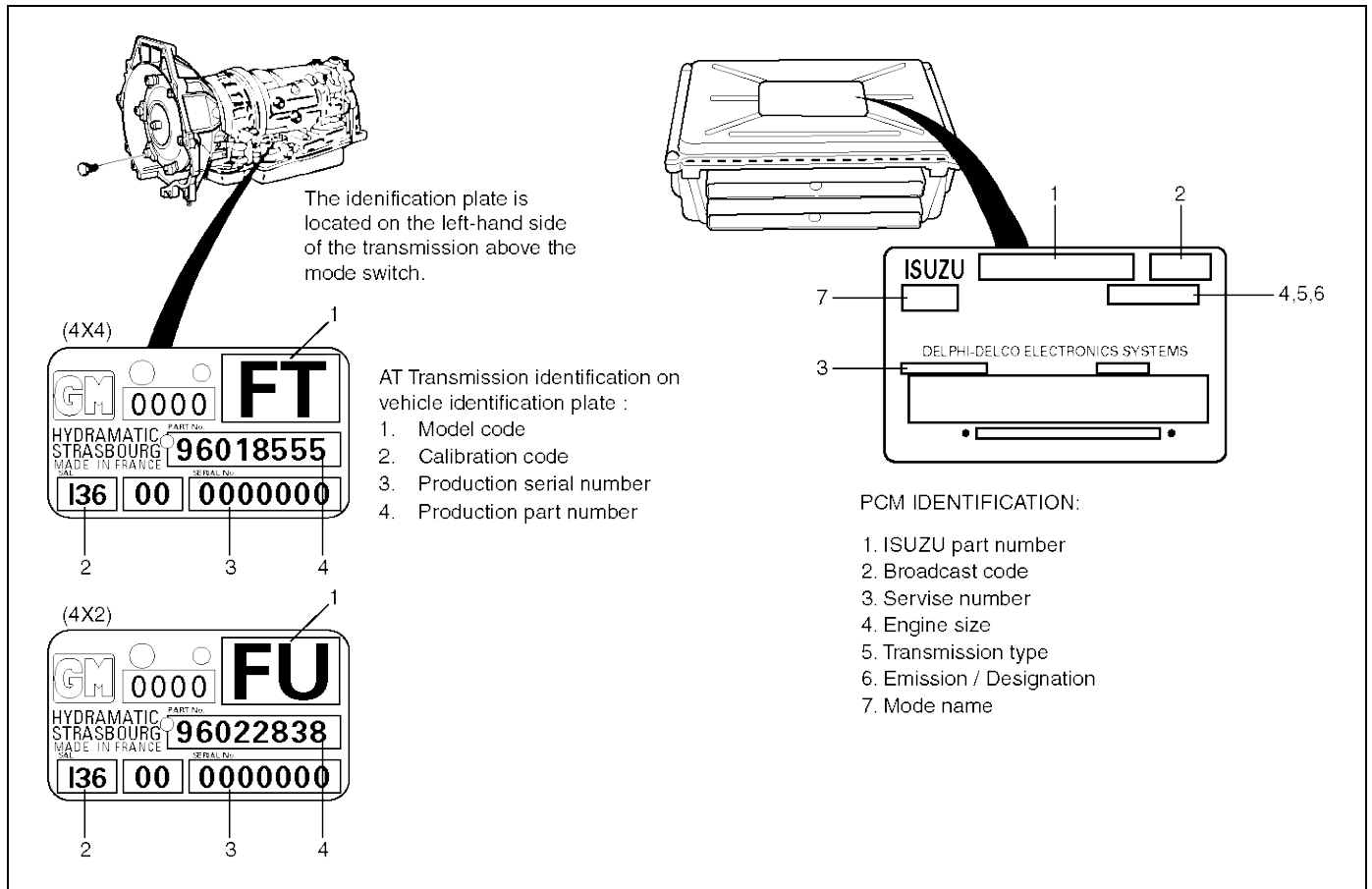
Transmission Serial Number

Manual : Stamped on the left side of the transmission intermediate plate.



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Automatic : Stamped on the identification plate, located on the left side of the transmission above the mode switch.

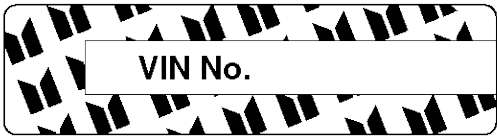
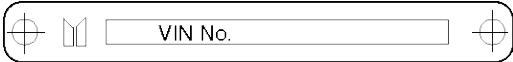


Theft Prevention Standard

The 11 major components listed below will be marked with 17 digit VIN at the stage of production. In addition its service parts will be marked with manufacturer's trade mark, "R" mark and "DOT" mark.

Reference Figure No.	COMPONENT		INDICATION	
			PRODUCTION	SERVICE PARTS
0A-10	ENGINE	1- 6VD1 - Y22SE	VIN plate	"R M DOT" Mark stamping
0A-11	TRANSMISSION	2- Manual transmission - Automatic transmission	VIN plate	"R M DOT" Mark stamping
0A-11	BODY	3- Engine hood 4- Front door 5- Rear door 6- Fender 7- Rear Quarter panel 8- Front bumper 9- Back door left side 10- Back door right side 11- Rear bumper	VIN label	"R M DOT" Mark label

Anti Theft Stamping/Plate/Label

	STAMPING/PLATE	LABEL
PRODUCTION		
SERVICE PARTS	R M DOT	

0A-8 GENERAL INFORMATION

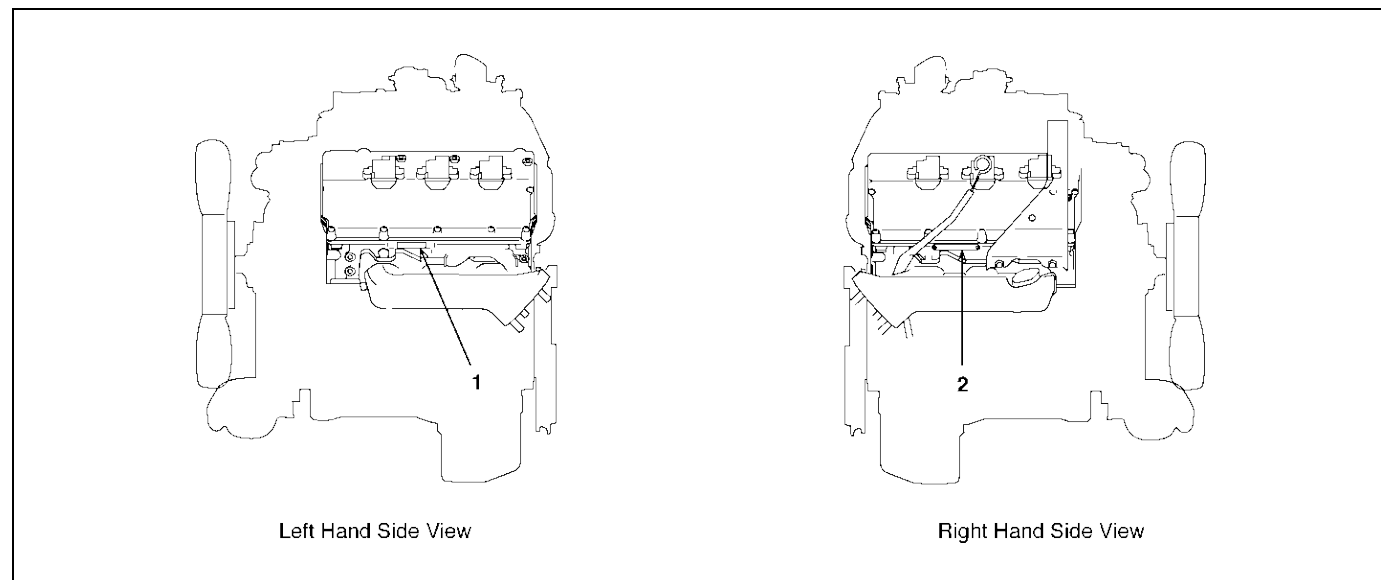
Anti Theft Stamping/Label/Plate Location

The stamping, label and plate locations are indicated by arrows in the illustration below.

NOTE:

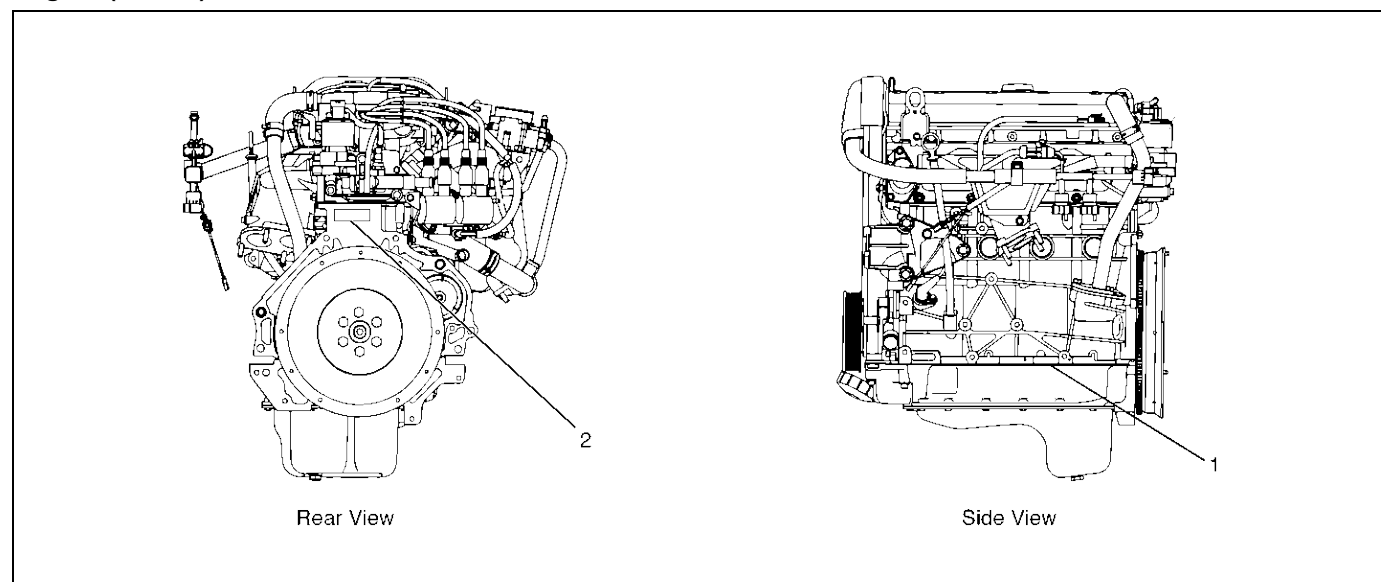
1. VIN plate locations for production.
2. Stamping locations for service parts.

Engine (6VD1)



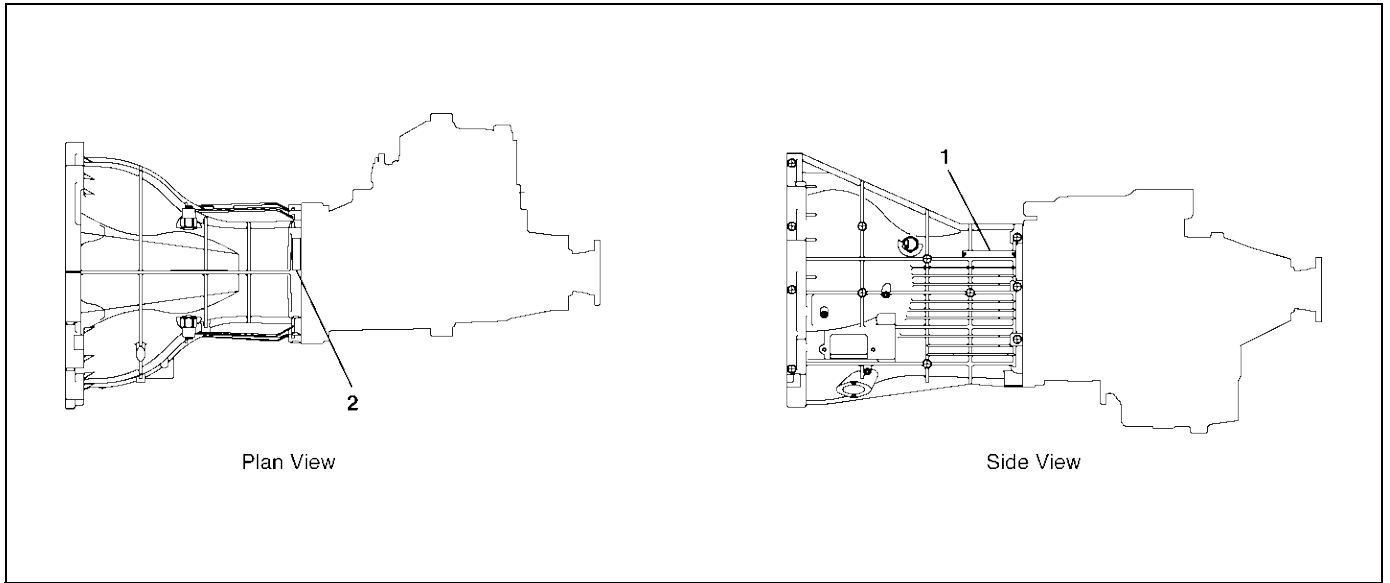
901RW080

Engine (Y22SE)



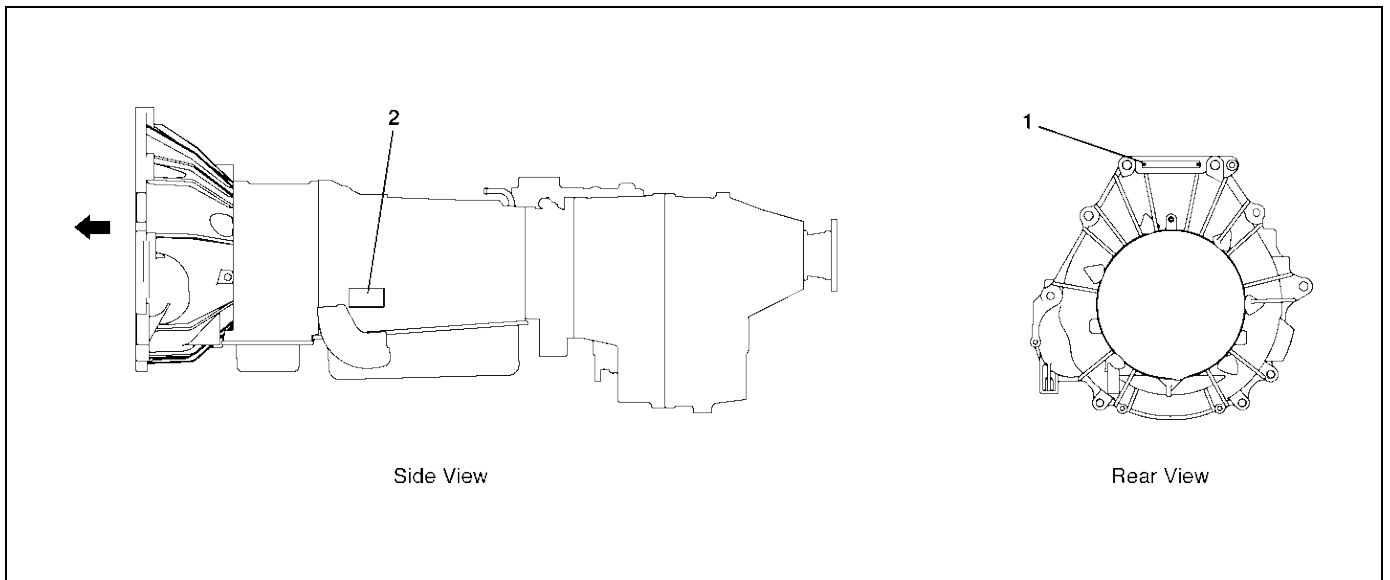
035RW025

Manual Transmission (MUA)



901RW081

Automatic Transmission (THM)



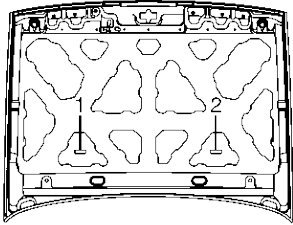
901RW082-1

0A-10 GENERAL INFORMATION

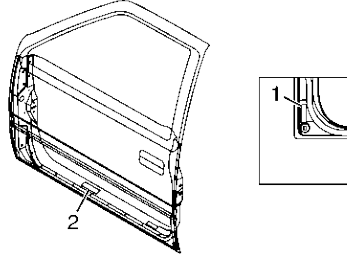
Body

BODY

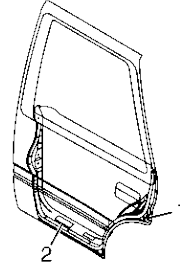
ENGINE HOOD



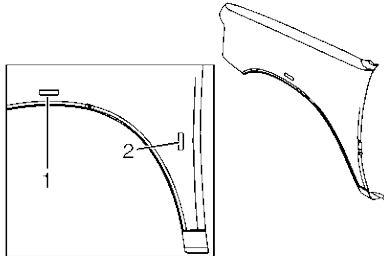
FRONT DOOR



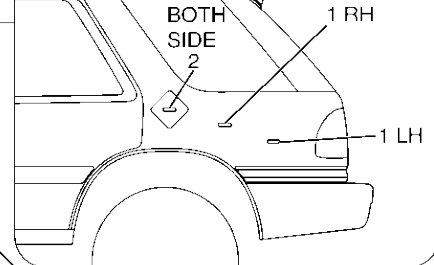
REAR DOOR



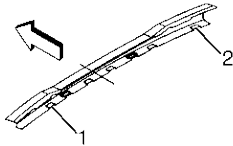
FENDER



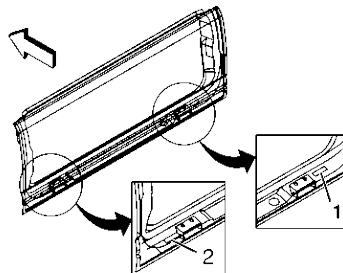
REAR QUARTER PANEL



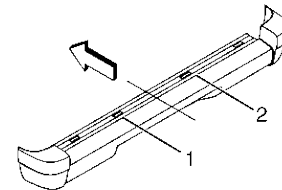
FRONT BUMPER



TAIL GATE



REAR BUMPER

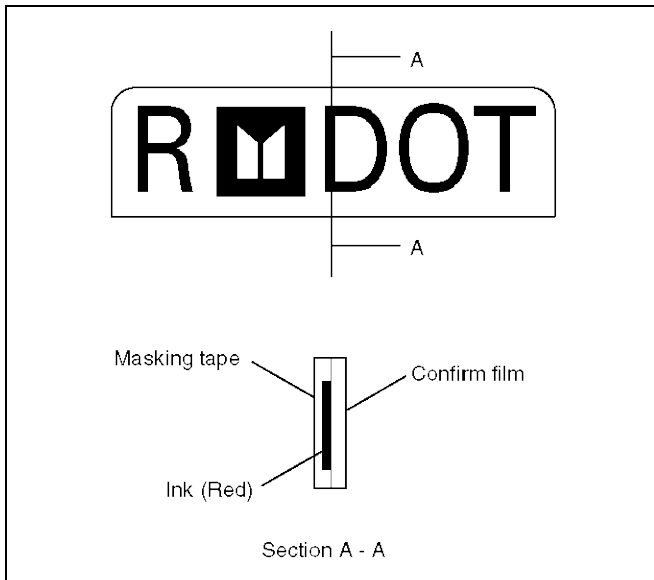


Body Label Instructions

Do not peel off the masking tape until completion of paint work when replacing these parts, as the tape is affixed on the label attached to service parts for body of the anti-theft component.

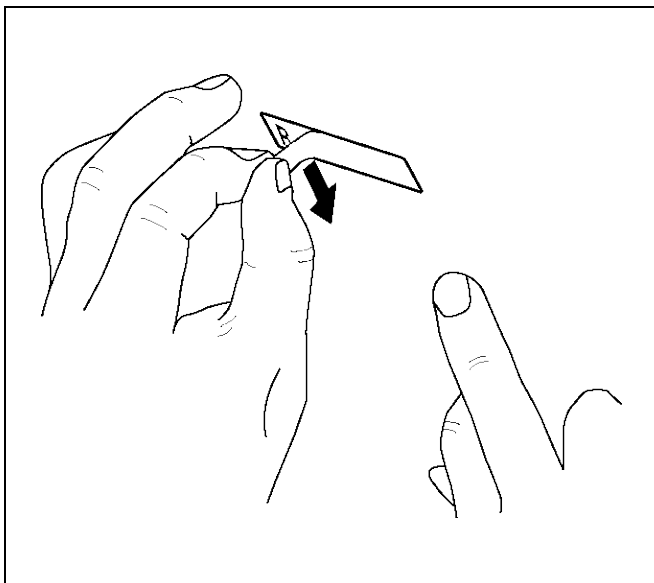
NOTE: Be sure to pull off the masking tape after paint work has been completed.

Do not attempt to remove this label for any reason.



Precautions in pulling off the masking tape

1. Use only your finger nail or a similar blunt instrument to peel off the masking tape. Use of a sharp object will damage the underlying anti-theft label.
2. Be careful not to damage the paint around the label.

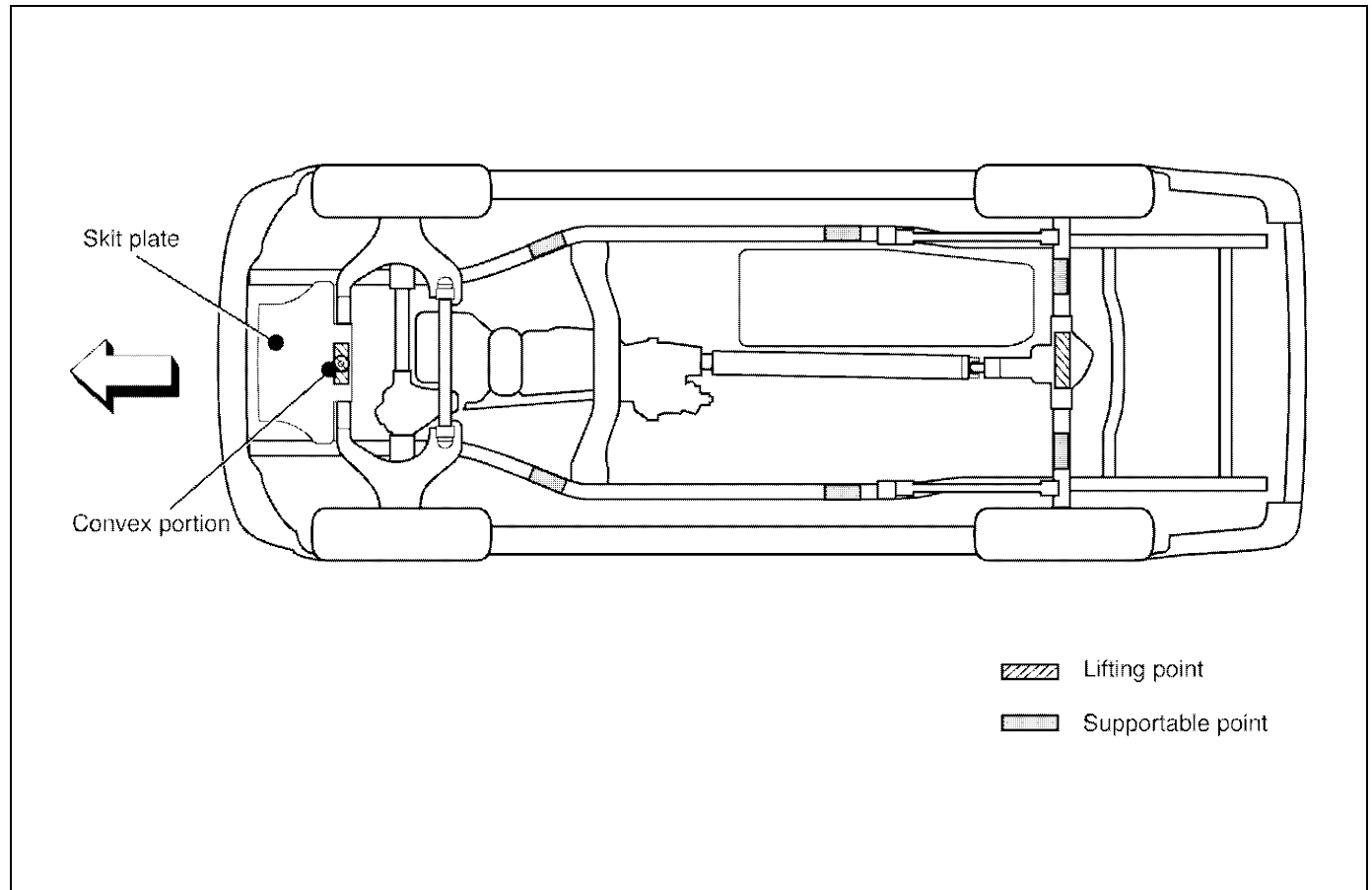


Lifting Instructions

CAUTION:

- If a lifting device other than the original jack is used, it is most important that the device be applied only to the correct lifting points. Raising the vehicle from any other point may result in serious damage.
- When jacking or lifting a vehicle at the frame side rail or other prescribed lift points, be certain that lift pads do not contact the catalytic converter, brake pipes or cables, or fuel lines. Such contact may result in damage or unsatisfactory vehicle performance.

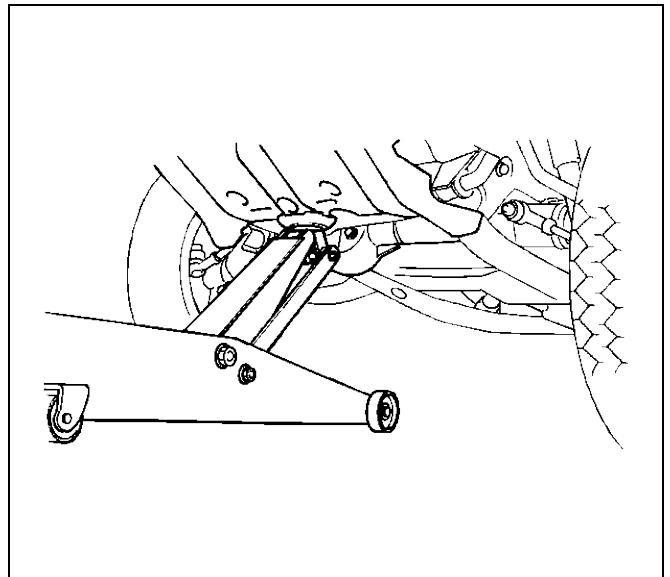
Lifting Points and Supportable Point Locations



C00RX002

Lifting Point: Front

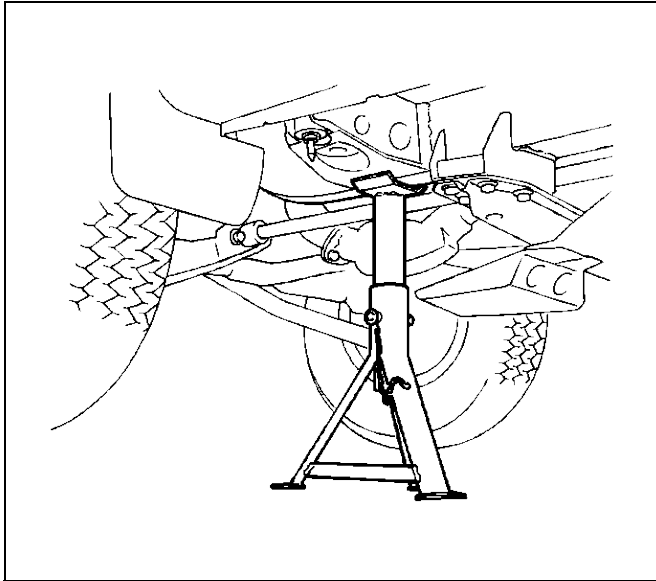
- When using a floor jack, lift on the Convex portion of the skid plate.



545RS001

Supportable Point: Front

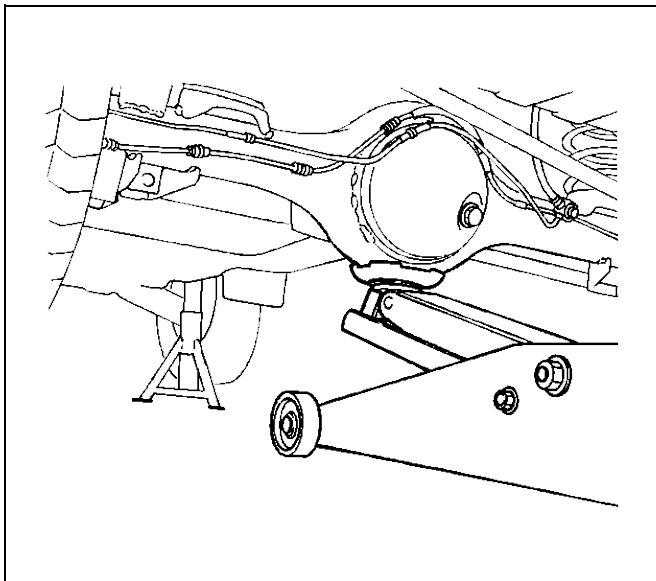
- Position the chassis stands at the bottom of the frame sidemember, behind the front wheel.



501RS003

Lifting Point: Rear

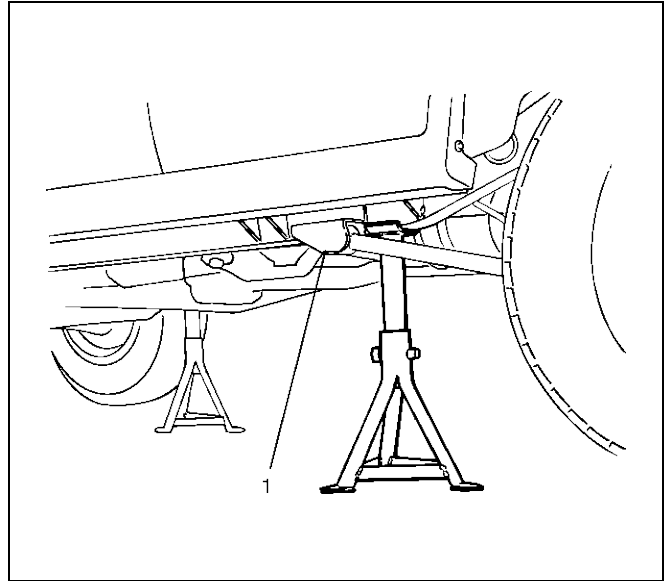
- Position the floor jack at the center of the rear axle case when lifting the vehicle.



420RS002

Supportable Point: Rear

- Position the chassis stands at the bottom of the frame sidemember, just behind the trailing link bracket.



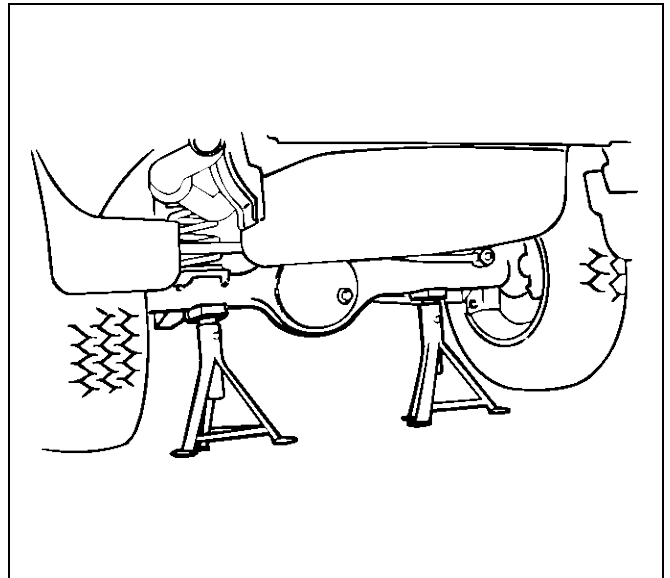
501RW002

Legend

- (1) Trailing Link Bracket

Supportable Point: Rear

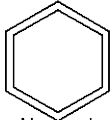
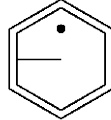
- Position the chassis stands at the bottom of the rear axle case.



420RS001

Standard Bolts Torque Specifications

The torque values given in the following table should be applied where a particular torque is not specified.

Strength Class	4.8	8.8		9.8
		Refined	Non-Refined	
Bolt Identification				
	 No Mark			
Bolt Diameter × Pitch (mm)				
M 6X1.0	4 – 8 N·m (3 – 6 lb ft)	5 – 10 N·m (4 – 7 lb ft)	–	–
M 8X1.25	8 – 18 N·m (6 – 13 lb ft)	12 – 23 N·m (9 – 17 lb ft)	17 – 30 N·m (12 – 22 lb ft)	17 – 30 N·m (12 – 22 lb ft)
M 10X1.25	21 – 34 N·m (15 – 25 lb ft)	28 – 46 N·m (20 – 34 lb ft)	37 – 63 N·m (27 – 46 lb ft)	37 – 63 N·m (27 – 46 lb ft)
* M10X1.5	20 – 33 N·m (14 – 25 lb ft)	28 – 45 N·m (20 – 33 lb ft)	36 – 60 N·m (27 – 44 lb ft)	36 – 60 N·m (27 – 44 lb ft)
M12X1.25	49 – 74 N·m (36 – 54 lb ft)	61 – 91 N·m (45 – 67 lb ft)	76 – 114 N·m (56 – 84 lb ft)	76 – 114 N·m (56 – 84 lb ft)
* M12X1.75	45 – 69 N·m (33 – 51 lb ft)	57 – 84 N·m (42 – 62 lb ft)	72 – 107 N·m (53 – 79 lb ft)	72 – 107 N·m (53 – 79 lb ft)
M14X1.5	77 – 115 N·m (56 – 85 lb ft)	93 – 139 N·m (69 – 103 lb ft)	114 – 171 N·m (84 – 126 lb ft)	114 – 171 N·m (84 – 126 lb ft)
* M14X2.0	72 – 107 N·m (53 – 79 lb ft)	88 – 131 N·m (65 – 97 lb ft)	107 – 160 N·m (79 – 118 lb ft)	107 – 160 N·m (79 – 118 lb ft)
M16X1.5	104 – 157 N·m (77 – 116 lb ft)	135 – 204 N·m (100 – 150 lb ft)	160 – 240 N·m (118 – 177 lb ft)	160 – 240 N·m (118 – 177 lb ft)
* M16X2.0	100 – 149 N·m (74 – 110 lb ft)	130 – 194 N·m (95 – 143 lb ft)	153 – 230 N·m (113 – 169 lb ft)	153 – 230 N·m (113 – 169 lb ft)
M18X1.5	151 – 226 N·m (111 – 166 lb ft)	195 – 293 N·m (144 – 216 lb ft)	230 – 345 N·m (169 – 255 lb ft)	230 – 345 N·m (169 – 255 lb ft)
M20X1.5	206 – 310 N·m (152 – 229 lb ft)	270 – 405 N·m (199 – 299 lb ft)	317 – 476 N·m (234 – 351 lb ft)	317 – 476 N·m (234 – 351 lb ft)
M22X1.5	251 – 414 N·m (185 – 305 lb ft)	363 – 544 N·m (268 – 401 lb ft)	425 – 637 N·m (313 – 469 lb ft)	425 – 637 N·m (313 – 469 lb ft)
M24X2.0	359 – 539 N·m (265 – 398 lb ft)	431 – 711 N·m (318 – 524 lb ft)	554 – 831 N·m (409 – 613 lb ft)	554 – 831 N·m (409 – 613 lb ft)

The asterisk * indicates that the bolts are used for female-threaded parts that are made of soft materials such as casting, etc.

Abbreviations Charts

List of automotive abbreviations which may be used in this manual

A — Ampere(s)	ECM — Engine Control Module
ABS — Antilock Brake System	ECT — Engine Coolant Temperature
AC — Alternating Current	EEPROM — Electronically Erasable Programmable Read Only Memory
A/C — Air Conditioning	EGR — Exhaust Gas Recirculation
ACCEL — Accelerator	EI — Electronic Ignition
ACC — Accessory	ETC — Electronic Throttle Control
ACL — Air Cleaner	ETR — Electronically Tuned Receiver
Adj — Adjust	EVAP — Evaporation Emission
A/F — Air Fuel Ratio	Exh — Exhaust
AIR — Secondary Air Injection System	° F — Degrees Fahrenheit
Alt — Altitude	Fed — Federal (All States Except Calif.)
AMP — Ampere(s)	FF — Front Drive Front Engine
ANT — Antenna	FL — Fusible Link
ASM — Assembly	FLW — Fusible Link Wire
A/T — Automatic Transmission/Transaxle	FP — Fuel Pump
ATDC — After Top Dead Center	FRT — Front
ATF — Automatic Transmission Fluid	ft — Foot
Auth — Authority	FWD — Front Wheel Drive
Auto — Automatic	4WD — Four Wheel Drive
BARO — Barometric Pressure	4 x 4 — Four Wheel Drive
Bat — Battery	4 A/T — Four Speed Automatic Transmission/Transaxle
B+ — Battery Positive Voltage	Gal — Gallon
Bbl — Barrel	GEN — Generator
BHP — Brake Horsepower	GND — Ground
BJ — Birfield Universal Joint	Gov — Governor
BOJ — Double Offset Universal Joint	g — Gram
BPT — Backpressure Transducer	Harn — Harness
BTDC — Before Top Dead Center	HC — Hydrocarbons
° C — Degrees Celsius	HD — Heavy Duty
CAC — Charge Air Cooler	Hg — Hydrargyrum (Mercury)
Calif — California	HiAlt — High Altitude
cc — Cubic Centimeter	HO2S — Heated Oxygen Sensor
CID — Cubic Inch Displacement	HVAC — Heater-Vent-Air-Conditioning
CKP — Crankshaft Position	IAC — Idle Air Control
CL — Closed Loop	IAT — Intake Air Temperature
CLCC — Closed Loop Carburetor Control	IC — Integrated Circuit / Ignition Control
CMP — Camshaft Position	ID — Identification / Inside Diameter
CO — Carbon Monoxide	IGN — Ignition
Coax — Coaxial	INJ — Injection
Conn — Connector	IP — Instrument Panel
Conv — Converter	IPC — Instrument Panel Cluster
Crank — Crankshaft	Int — Intake
Cu. In. — Cubic Inch	ISC — Idle Speed Control
CV — Constant Velocity	J/B — Junction Block
Cyl — Cylinder(s)	kg — Kilograms
DI — Distributor Ignition	km — Kilometers
Diff — Differential	km/h — Kilometer per Hour
Dist — Distributor	kPa — Kilopascals
DLC — Data Link Connector	kV — Kilovolts (thousands of volts)
DOHC — Double Overhead Camshaft	kW — Kilowatts
DTC — Diagnostic Trouble Code	KS — Knock Sensor
DTM — Diagnostic Test Mode	L — Liter
DTT — Diagnostic Test Terminal	lb ft — Foot Pounds
DVM — Digital Voltmeter (10 meg.)	lb in — Inch Pounds
DVOM — Digital Volt Ohmmeter	LF — Left Front
EBCM — Electronic Brake Control Module	LH — Left Hand
	LR — Left Rear
	LS — Left Side
	LWB — Long Wheel Base

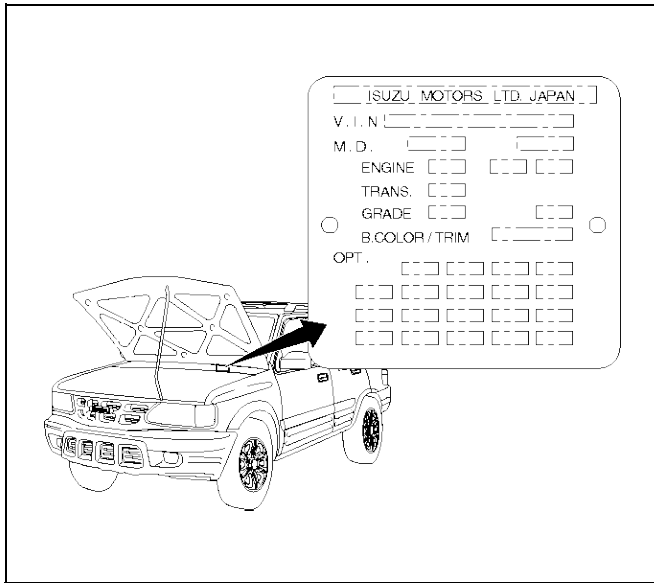
0A-16 GENERAL INFORMATION

L-4 — In-Line Four Cylinder Engine	Sol — Solenoid
MAF — Mass Air Flow	SPEC — Specification
MAN — Manual	Speedo — Speedometer
MAP — Manifold Absolute Pressure	SRS — Supplemental Restraint System
Max — Maximum	ST — Start / Scan Tool
MC — Mixture Control	Sw — Switch
MFI — Multiport Fuel Injection	SWB — Short Wheel Base
MIL — Malfunction Indicator Lamp	SYN — Synchronize
Min — Minimum	Tach — Tachometer
mm — Millimeter	TB — Throttle Body
MPG — Miles Per Gallon	TBI — Throttle Body Fuel Injection
MPH — Miles Per Hour	TCC — Torque Converter Clutch
M/T — Manual Transmission/Transaxle	TCM — Transmission Control Module
MV — Millivolt	TDC — Top Dead Center
N — Newtons	Term — Terminal
NA — Natural Aspirated	TEMP — Temperature
NC — Normally Closed	TFT — Transmission Fluid Temperature
N·M — Newton Meters	TOD — Torque On Demand
NO — Normally Open	TP — Throttle Position
NOX — Nitrogen, Oxides of	TRANS — Transmission/Transaxle
OBD — On-Board Diagnostic	TURBO — Turbocharger
OD — Outside Diameter	TVRS — Television & Radio Suppression
O/D — Over Drive	TVV — Thermal Vacuum Valve
OHC — Overhead Camshaft	TWC — Three Way Catalytic Converter
OL — Open Loop	3 A/T — Three Speed Automatic Transmission/Transaxle
O ₂ — Oxygen	2WD — Two Wheel Drive
O ₂ S — Oxygen Sensor	4 x 2 — Two Wheel Drive
PAIR — Pulsed Secondary Air Injection System	U-joint — Universal Joint
P/B — Power Brakes	V — Volt(s)
PCM — Powertrain Control Module	VAC — Vacuum
PCV — Positive Crankcase Ventilation	VIN — Vehicle Identification Number
PRESS — Pressure	VRRRE — Vehicle Refrigerant Recovery and Recycling Equipment
PROM — Programmable Read Only Memory	V-ref — ECM Reference Voltage
PNP — Park/Neutral Position	VSS — Vehicle Speed Sensor
P/S — Power Steering	VSV — Vacuum Switch Valve
PSI — Pounds per Square Inch	V-6 — Six Cylinder "V" Engine
PSP — Power Steering Pressure	V-8 — Eight Cylinder "V" Engine
Pt. — Pint	W — Watt(s)
Pri — Primary	w/ — With
PWM — Pulse Width Modulate	w/b — Wheel Base
Qt. — Quart	w/o — Without
REF — Reference	WOT — Wide Open Throttle
RF — Right Front	
RFI — Radio Frequency Interference	
RH — Right Hand	
RPL — Reduced Power Lamp	
RPM — Revolutions Per Minute	
RPM Sensor — Engine Speed Sensor	
RPO — Regular Production Option	
RR — Right Rear	
RS — Right Side	
RTV — Room Temperature Vulcanizing	
RWAL — Rear Wheel Antilock Brake	
RWD — Rear Wheel Drive	
SAE — Society of Automotive Engineers	
Sec — Secondary	
SFI — Sequential Multiport Fuel Injection	
SI — System International	
SIR — Supplemental Inflatable Restraint System	
SOHC — Single Overhead Camshaft	

Service Parts Identification Plate

The Vehicle Information Plate (Service Parts ID plate) is provided on all vehicle models.

It is located on the center dash wall inside the engine compartment. The plate lists the VIN (Vehicle Identification Number), paint information and all production options and special equipment on the vehicle when it was shipped from the factory.



905RY00010

RODEO

GENERAL INFORMATION

Maintenance and Lubrication

CONTENTS

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Explanation of Complete Vehicle Maintenance Schedule	0B-5	Recommended Liquid Gasket	0B-11
Recommended Fluids and Lubricants	0B-8	Recommended Thread Locking Agents	0B-11
		Maintenance Service Data	0B-12

Maintenance Schedule List

Normal Vehicle Use

The maintenance instructions in this Maintenance Schedule are based on the assumption that the vehicle will be used as designed:

- to carry passengers and cargo within the limitations specified on the tire placard located on the inside of the glove compartment door;
- to be driven on reasonable road surfaces within legal operating limits;
- to be driven on a daily basis, as a general rule, for at least several miles/kilometers;
- to be driven on unleaded fuel

Unusual or severe operating conditions will require more frequent vehicle maintenance, as specified in the following sections.

Severe Driving Conditions

If the vehicle is usually operated under any of the severe driving conditions listed below, it is recommended that the applicable maintenance services be performed at the specified interval shown in the chart below.

Severe driving conditions:

- Towing a trailer, using a camper or car top carrier.
- Repeated short trips of less than 8 Km (5 miles) with outside temperature remaining below freezing.
- Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use.
- Operating on dusty, rough, muddy or salt spread roads.

ITEMS	INTERVAL
REPLACE AIR CLEANER FILTER	See explanation of service, page 0B-5
CHANGE ENGINE OIL AND OIL FILTER	Every 3,000 miles (4,800 km) or 3 months
CHANGE AUTOMATIC TRANSMISSION FLUID	Every 20,000 miles (32,000 km)
CHANGE REAR AXLE OIL	Every 15,000 miles (24,000 km)
REPLACE TIMING BELT (V6-3.2L engine)	Every 100,000 miles (160,000 km)
REPLACE TIMING BELT (L4-2.2L engine)	Every 75,000 miles (120,000 km)
REPLACE AIR CLEANER FILTER	See explanation of service, page 0B-5
CHANGE POWER STEERING FLUID	Every 30,000 miles (48,000 km)

Mileage Only Items

MILEAGE ONLY ITEMS

MILEAGE ONLY ITEMS		IN THOUSANDS OF MILES (USE ODOMETER READING)															(x 1000 miles)	
		7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5		120
1	CHANGE FRONT AND REAR AXLE OIL																	
2	CHANGE MANUAL TRANSMISSION (M/T model) AND TRANSFER CASE OIL(4WD model)																	
3	* CHECK AND ADJUST OR CHANGE AUTOMATIC TRANSMISSION FLUID (IF NECESSARY) (V6-3.2L engine)																	
4	* CHECK AND ADJUST OR CHANGE AUTOMATIC TRANSMISSION FLUID (IF NECESSARY) (I4-2.2L engine)																	
5	CHECK AUTOMATIC TRANSMISSION FLUID LEAKAGE																	
6	CHECK AND ADJUST VALVE CLEARANCE(V6-3.2L engine)																	
7	REPLACE AIR CLEANER ELEMENT																	
8	REPLACE SPARK PLUGS																	
9	CHANGE ENGINE COOLANT																	
10	* REPLACE TIMING BELT (V6-3.2L engine)																	
11	* (1) REPLACE TIMING BELT (I4-2.2L engine)																	
12	ROTATE TIRES																	
13	CHECK FRONT WHEEL BARINGS AXIAL RATTLE																	
14	CLEAN RADIATOR CORE AND A/C CONDENSER																	
15	CHECK SPARK PLUG WIRES (I4- 2.2L engine)																	

* : Under sever driving conditions, additional maintenance is required.
Refer to "Severe driving conditions".

(1) : Replacement of the timing belt is
recommended at every 75,000 miles (120,000 km)

SHADED AREA INDICATES SERVICE TO BE PERFORMED.

Mileage/Months

MILEAGE/MONTHS

MILEAGE/MONTHS whichever comes first		IN THOUSANDS OF MILES (USE ODOMETER READING)																	(x 1000 miles)	
		Max Miles Months	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	DESCRIPTION	
1	CHECK ENGINE COOLANT LEVEL	12																		
2	CHECK BRAKE FLUID LEVEL	12																		
3	(2) CHECK CLUTCH FLUID LEVEL	12																		
4	CHECK FLUID LEAKS	12																		
5	* CHANGE ENGINE OIL	12																		
6	* REPLACE ENGINE OIL FILTER	12																		
7	CHECK COOLING AND HEATER HOSES	12																		
8	(1) CHECK EXHAUST SYSTEM	12																		
9	(1) CHECK FUEL LINE AND FUEL TANK/CAP	12																		
10	CHECK ENGINE DRIVE BELTS	24																		
11	CHECK TIRES AND WHEELS	12																		
12	CHECK STEERING OPERATION	12																		
13	CHECK BRAKE LINES AND HOSES	12																		
14	CHECK DRUM AND DISC BRAKES	12																		
15	CHECK PARKING BRAKE	12																		
16	CHECK BRAKE PEDAL PLAY	12																		

SHADED AREA INDICATES SERVICE TO BE PERFORMED.

* : Under severe driving conditions, additional maintenance is required.
Refer to "Severe driving conditions".

(1) : This service is recommended for vehicles sold in California, and it is required for vehicles sold in other areas.

(2) : Manual Transmission model

MILEAGE/MONTHS

MILEAGE/MONTHS whichever comes first		IN THOUSANDS OF MILES (USE ODOMETER READING)																(x 1000 miles)		
		Max Miles	Max Months	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	DESCRIPTION
16	ADJUST BRAKE PEDAL PLAY	12																		
17	LUBE ACCELERATOR LINKAGE	6																		
18	LUBE BODY AND CHASSIS	6																		
19	CHECK FRONT AND REAR PROPELLER SHAFT	6																		
20	(1) CHECK CLUTCH LINES AND HOSE	12																		
21	(1) LUBE CLUTCH PEDAL SPRING, BUSHING AND CLEVIS PIN	6																		
22	(1) CHECK CLUTCH PEDAL FREE PLAY	12																		
23	CHECK PROPELLER SHAFT FLANGE TORQUE	12																		
24	CHECK STARTER SAFETY SWITCH	12																		
25	(3) CHECK THROTTLE LINKAGE	12																		
26	CHECK SUSPENSION&STEERING	12																		
27	(3) CHECK AUTO CRUISE CONTROL LINKAGE AND HOSE	12																		
28	LUBE KEY LOCK CYLINDER	12																		
29	(2) CHECK SHIFT ON THE FLY SYSTEM GEAR FLUID	12																		
30	* CHECK POWER STEERING FLUID LEVEL	6																		

* : Under severe driving conditions, additional maintenance is required.
Refer to "Severe driving conditions".
(1) : Manual Transmission model
(2) : 4 Wheel Drive model
(3) : 14-2.2L Engine model

SHADED AREA INDICATES SERVICE TO BE PERFORMED.

Explanation of Complete Vehicle Maintenance Schedule

Brief explanations of the services listed in the preceding Maintenance Schedule are presented below.

Replace all questionable parts and note any necessary repairs as you perform these maintenance procedures.

Front and Rear Axle Lubricant Replacement

Check the lubricant level after every 7,500 miles (12,000 km) of operation and add lubricant to level of filler hole if necessary.

Replace the front and rear axle lubricant at 15,000 miles (24,000 km) and 30,000 miles (48,000 km) and after every 30,000 miles (48,000 km) of operation thereafter.

Manual Transmission Lubricant Replacement

Check the lubricant level after every 7,500 miles (12,000 km) of operation and add lubricant to level of filler hole if necessary.

Replace the transmission lubricant at 15,000 miles (24,000 km) and 30,000 miles (48,000 km) and after every 30,000 miles (48,000 km) of operation thereafter.

Transfer Case Lubricant Replacement

Check the lubricant level after every 7,500 miles (12,000 km) of operation and add lubricant to level of filler hole if necessary.

Replace the transfer case lubricant at 15,000 miles (24,000 km) and 30,000 miles (48,000 km) and after every 30,000 miles (48,000 km) of operation thereafter.

Air Cleaner Element Replacement

Replace the air cleaner under normal operating conditions every 30,000 miles (48,000 km).

Operation of the vehicle in dusty areas will necessitate more frequent replacement.

Spark Plug Replacement

Replace the plugs at 100,000 miles (160,000 km) intervals with the type specified at the end of this section.

Cooling System Service

Drain, flush and refill system with new engine coolant. Refer to "Recommended Fluids and Lubricants" in this section, or ENGINE COOLING (SEC.6B).

Timing Belt Replacement

V6-3.2L engine:

Replace the timing belt at every 100,000 miles (160,000 km).

L4-2.2L engine:

Replacement of the timing belt is recommended at every 75,000 miles (120,000 km).

Failure to replace the timing belt may result in serious damage to the engine.

Valve Clearance Adjustment (V6, 3.2L ENG)

Incorrect valve clearance will result in increased engine noise and reduced engine output.

Retorque the camshaft bracket bolts before checking and adjusting the valve clearance.

Check and adjust the valve clearance whenever excessive engine noise occurs.

Tire Rotation

Rotate tires every 7,500 miles (12,000 km).

Spark Plug Wire Inspection

Check the spark plug wires at 60,000 mile (96,000 km) intervals.

Front Wheel Bearings Lubricant Replacement

Clean and repack the front wheel bearings axial rattle at 60,000 miles (100,000 km) intervals.

Refer to DRIVE SHAFT SYSTEM (SEC. 4C).

Radiator Core and Air Conditioning Condenser Cleaning

Clean the front of the radiator core and air conditioning condenser, at 60,000 miles (96,000 km) intervals.

Fluid Level Check

A fluid loss in any system (except windshield washer) may indicate a problem. Repair the system at once.

Engine oil level

Check level and add if necessary. The best time to check the engine oil level is when the oil is warm. After stopping the engine with the vehicle on a level surface, wait a few minutes for the oil to drain back to the oil pan. Pull out the oil level indicator (dipstick). Wipe it clean and push the oil level indicator back down all the way. Pull out the oil level indicator, keeping the tip down, and look at the oil level on it.

Add oil, if needed, to keep the oil level above the "ADD" mark and between the "ADD" and "FULL" marks in the operating range area. Avoid overfilling the engine since this may cause engine damage. Push the oil level indicator back down all the way after taking the reading. If you check the oil level when the oil is cold, do not run the engine first. The cold oil will not drain back to the pan fast enough to give a true oil level.

Engine coolant level and condition

Check engine coolant level in the coolant reservoir and add engine coolant if necessary. Inspect the engine coolant and replace it if dirty or rusty.

Windshield washer fluid level

Check washer fluid level in the reservoir and add if necessary.

Power steering system reservoir level

Check and keep at the proper level.

Brake master cylinder reservoir level

Check fluid. Keep fluid at proper level. A low fluid level can indicate worn disc brake pads which may need to be serviced.

Hydraulic clutch system

Check fluid level in the reservoir. Add fluid as required.

Battery fluid level

Check fluid level in the battery.

Fluid Leak Check

Check for fuel, water, oil or other fluid leaks by looking at the surface beneath the vehicle after it has been parked for a while. Water dripping from the air conditioning system after use is normal. If you notice gasoline fumes or fluid at any time, locate the source and correct it at once.

Engine Oil and Oil Filter Replacement

Always use API SE, SF, SG, SH or ILSAC GF-1, GF-2 quality oils of the proper viscosity.

When choosing an oil, consider the range of temperatures the car will be operated in before the next oil change. Then, select the recommended oil viscosity from the chart.

Always change the oil and the oil filter as soon as possible after driving in a dust storm.

Engine Cooling System Inspection

Inspect the coolant/anti-freeze. If the coolant is dirty or rusty, drain, flush and refill with new coolant. Keep coolant at the proper mixture for proper freeze protection, corrosion inhibitor level and best engine operating temperature. Inspect hoses and replace if cracked, swollen or deteriorated. Tighten the hose clamps if equipped with screw-type clamps. Clean outside of radiator and air conditioning condenser. Wash filler cap and neck. To help ensure proper operation, a pressure test of both the cooling system and the cap is also recommended.

Exhaust System Inspection

Visually inspect the exhaust pipes, muffler, heat shields and hangers for cracks, deterioration, or damage.

Be alert to any changes in the sound of the exhaust system or any smell of fumes. These are signs the system may be leaking or overheating. Repair the system at once, if these conditions exist. (See also "Engine Exhaust Gas Safety" and "Three Way Catalytic Converter" in the Owner's manual.)

Fuel Cap, Fuel Lines, and Fuel Tank Inspection

Inspect the fuel tank, the fuel cap and the fuel lines every 60,000 miles (96,000 km) for damage which could cause leakage.

Inspect the fuel cap and the gasket for correct sealing and physical damage. Replace any damaged parts.

Drive Belt Inspection

Check the serpentine belt driving for cracks, fraying, wear, and correct tension every 30,000 miles (48,000 km). Replace as necessary.

Wheel Alignment, Balance and Tires Operation

Uneven or abnormal tire wear, or a pull right or left on a straight and level road may show the need for a wheel alignment. A vibration of the steering wheel or seat at normal highway speeds means a wheel balancing is needed. Check tire pressure when the tires are "cold" (include the spare).

Maintain pressure as shown in the tire placard, which is located on the driver's door lock pillar.

Steering System Operation

Be alert for any changes in steering action. An inspection or service is needed when the steering wheel is harder to turn or has too much free play, or if there are unusual sounds when turning or parking.

Brake Systems Operation

Watch for the "BRAKE" light coming on. Other signs of possible brake trouble are such things as repeated pulling to one side when braking, unusual sounds when braking or between brake applications, or increased brake pedal travel. If you note one of these conditions, repair the system at once.

For convenience, the following should be done when wheels are removed for rotation: Inspect lines and hoses for proper hookup, bindings, leaks, crack, chafing etc. Inspect disc brake pads for wear and rotors for surface condition.

Inspect other brake parts, including parking brake drums, linings etc., at the same time. Check parking brake adjustment.

Inspect the brakes more often if habit or conditions result in frequent braking.

Parking Brake and Transmission Park Mechanism Operation

Park on a fairly steep hill and hold the vehicle with the parking brake only. This checks holding ability. On automatic transmission vehicles, shifting from "P" position to the other positions cannot be made unless the brake pedal is depressed when the key switch is in the "ON" position or the engine is running.

WARNING: Before checking the starter safety switch operation below, be sure to have enough room around the vehicle. Then firmly apply both the parking brake and the regular brake. Do not use the accelerator pedal. If the engine starts, be ready to turn off the key promptly. Take these precautions because the vehicle could move without warning and possibly cause personal injury or property damage.

Starter Safety Switch Operation (Automatic Transmission)

Check by trying to start the engine in each gear while setting the parking brake and the foot brake. The starter should crank only in "P" (Park) or "N" (Neutral).

Starter Safety Switch Operation (Manual Transmission)

To check, place the shift lever in "Neutral", push the clutch pedal halfway and try to start. The starter should not crank. The starter should crank only when the clutch pedal is fully depressed.

Accelerator Linkage Lubrication

Lubricate the accelerator pedal fulcrum pin with chassis grease.

Steering and Suspension Inspection

Inspect the front and rear suspension and steering system for damaged, loose or missing parts or signs of wear. Inspect power steering lines and hoses for proper hookup, binding, leaks, cracks, chafing, etc.

Body and Chassis Lubrication

Lubricate the key lock cylinders, the hood latch, the hood and door hinges, the door check link, the parking cable guides, the underbody contact points, and the linkage.

Propeller Shaft Inspection and Lubrication

Check the propeller shaft flange-to-pinion bolts for proper torque to 63 N•m (46 lb ft) for front and rear propeller shaft.

Automatic Transmission Fluid Replacement

Under harsh operating conditions, such as constant driving in heavy city traffic during hot weather, or in hilly or mountainous terrain, change the transmission fluid and service the sump filter after every 20,000 miles (32,000 km) of operation.

More over, the remaining life percentage of ATF can be estimated by using TECH-II as an auxiliary tool to judge the right time for ATF replacement.

The remaining life percentage is calculated from ATF'S

heat history. When it is close to 0%, ATF replacement is recommended.

Auto Cruise Control Inspection

Check to see if the clearance between cruise link and accelerator link is normal. Also, check that their properly connected.

Brake Pedal Free Play Inspection

Note the brake pedal free play. It should be 6–10 mm (0.23–0.39 in). Adjust brake control when there is little or no free play.

Clutch Lines and Hoses Inspection

Check lines and hoses for proper attachment, binding, leaks, cracks, chafing, deterioration, etc. Any questionable parts should be replaced or repaired at once. When abrasion or wear is evident on lines or hoses, the cause must be corrected.

Clutch Control Lubrication

Lubricate the clutch pedal bushing, the clevis pin, and pedal spring every 15,000 miles (24,000 km) or 6 months.

If a squeaking noise arises from around the bushing or the clevis pin at the clutch pedal arm when the clutch pedal is depressed, lubricate them.

Clutch Pedal Free Play Inspection

Note the clutch pedal free play. It should be 5 – 15 mm (0.2 – 0.6 in). Adjust clutch control when there is little or no free play.

Accelerator Linkage Inspection

Inspect for interference, binding, and damaged or missing parts. Check accelerator pedal for smooth operation and even pedal effort. Replace parts as needed.

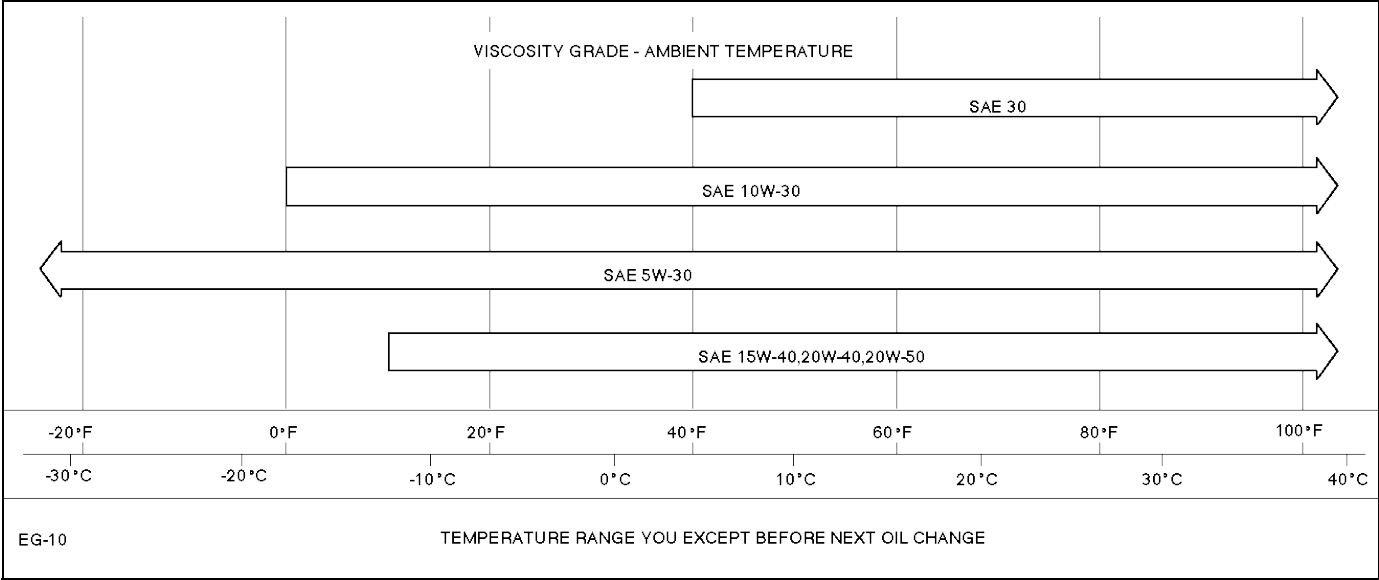
Recommended Fluids and Lubricants

USAGE	FLUID/LUBRICANT
Engine	API SE, SF, SG, SH or ILSAC GF-1, GF-2 Engine oil (See oil chart on the following page for proper viscosity)
Engine coolant	Mixture of water and good quality ethylene glycol base type antifreeze.
Brake system	DOT-3 hydraulic brake fluid.
Power steering system	DEXRON® -III Automatic transmission fluid.
Automatic transmission	DEXRON® -III Automatic transmission fluid.
MUA Type Manual transmission & Transfer case	Engine oil (See oil chart on following page for proper viscosity)
Rear axle and front axle	GL-5 gear lubricant (Standard differential) GL-5 Limited slip differential gear lubricant together with limited slip differential lubricant additive (Part No. 8-01052-358-0) or equivalent (If equipped with optional limited slip differential) (See oil chart in this section for proper viscosity)
Clutch system	
a. Pivot points	Chassis grease
b. Clutch fork joint	Chassis grease
c. Master cylinder	DOT-3 hydraulic brake fluid
Hood latch assembly	
a. Pivots and spring anchor	Engine oil
b. Release pawl	Chassis grease
Hood and door hinges	Engine oil
Chassis lubrication	Chassis grease
Parking brake cables	Chassis grease
Front wheel bearings	Multipurpose grease
Shift on the fly system	GL-5 gear lubricant (SAE 75W-90)
Body door hinge pins and linkage, fuel door hinge, rear compartment lid hinges	Engine oil
Windshield washer solvent	Washer fluid
Key lock cylinder	Synthetic light weight engine oil (SAE 5W-30)
Accelerator linkage	Chassis grease

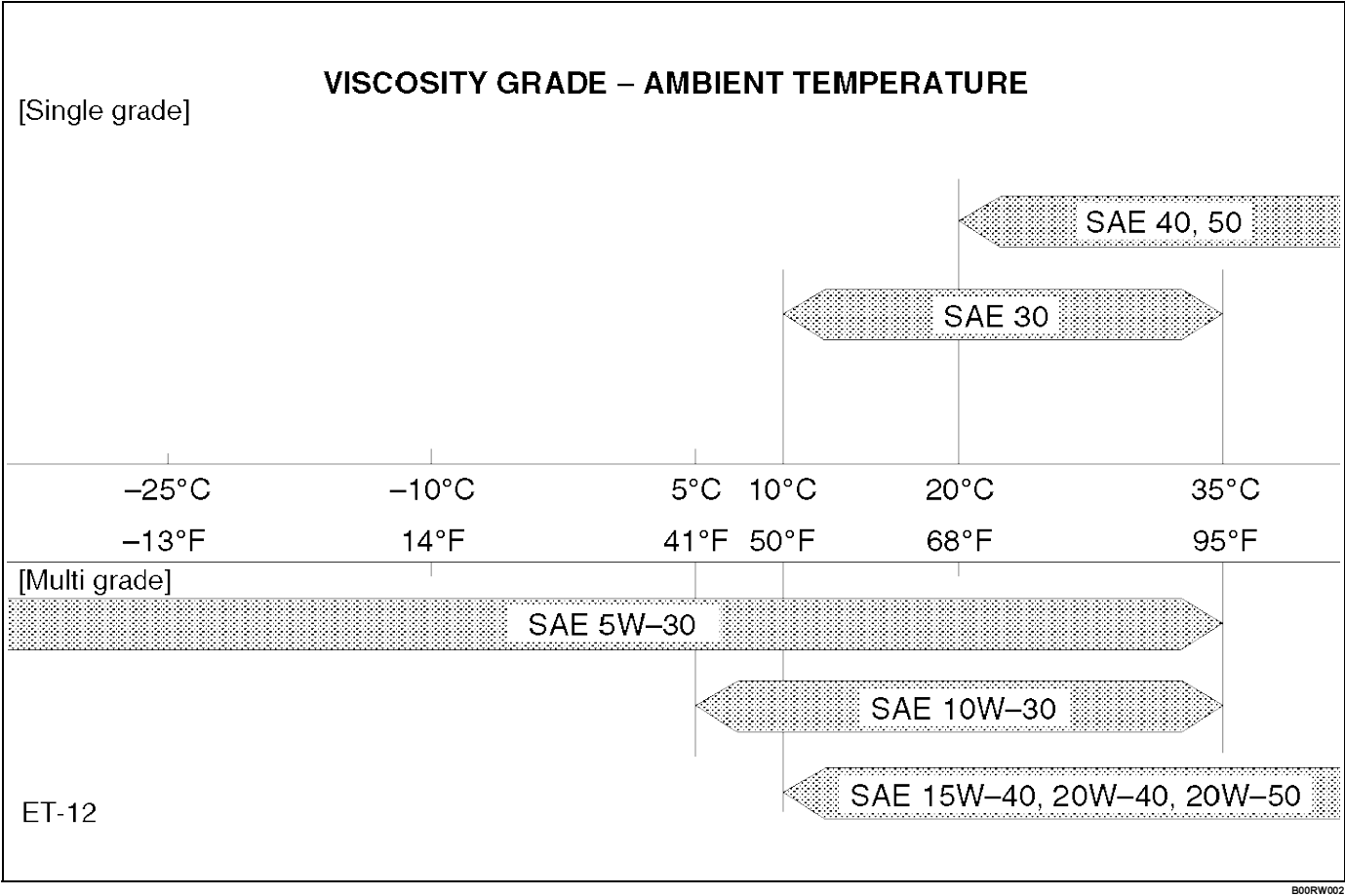
Lubricant Viscosity Chart

Lubricants should be carefully selected according to the lubrication chart. It is also important to select viscosity of lubricants according to the ambient temperature by referring to the following table.

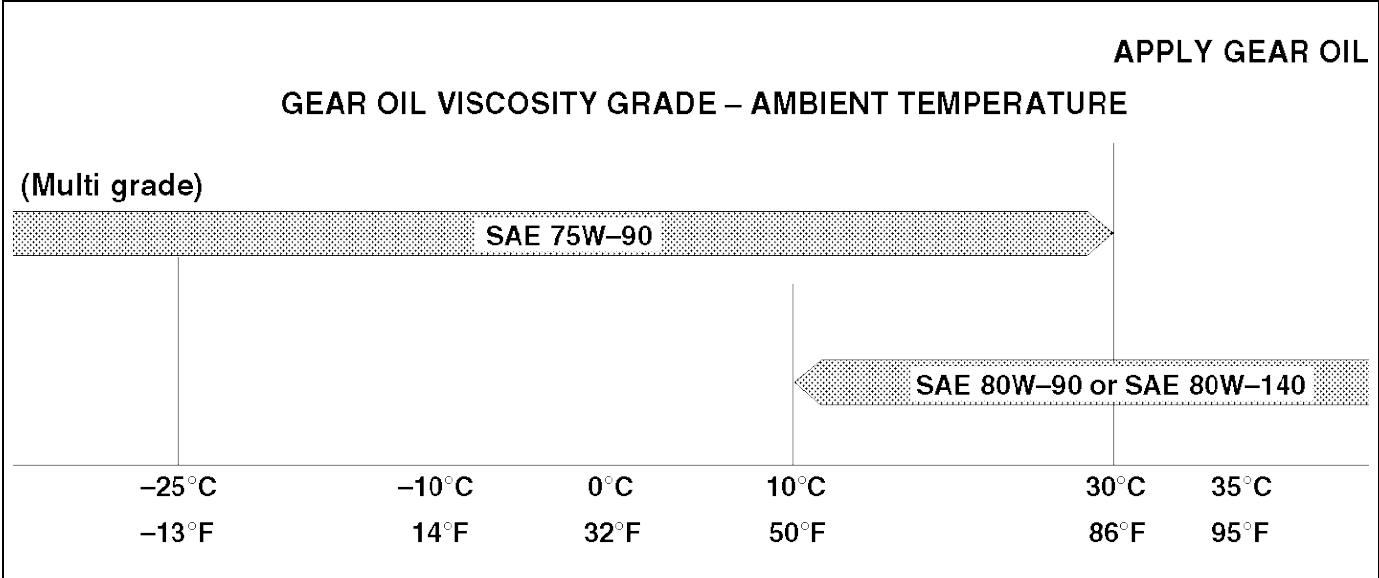
Oil Viscosity Chart for Gasoline Engine



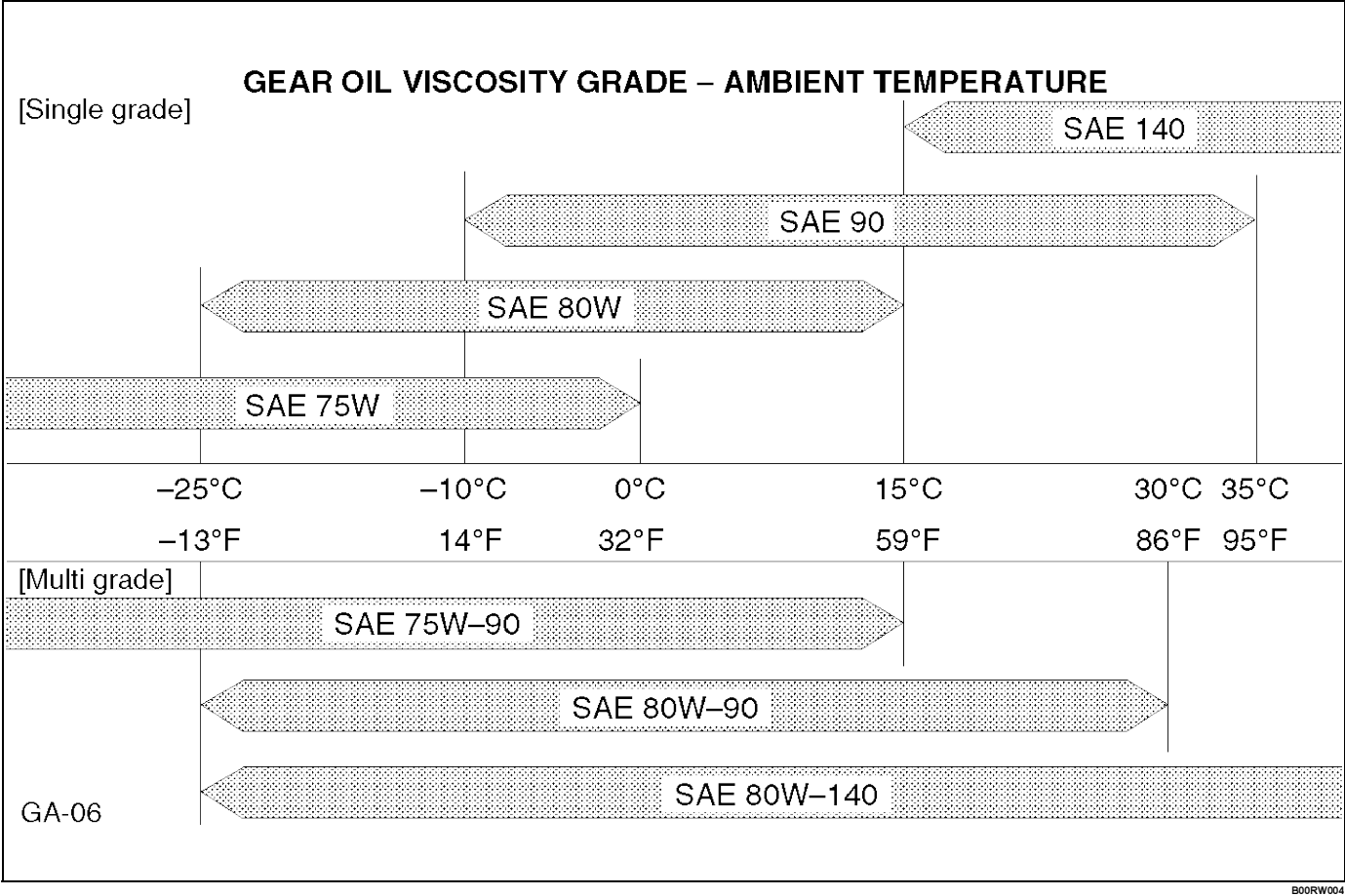
Oil Viscosity Chart for Manual Transmission and Transfer Case



Oil Viscosity Chart for Front Axle



Oil Viscosity Chart for Rear Axle



Recommended Liquid Gasket

Type	Brand Name	Manufacturer	Remarks
RTV* Silicon Base	Three Bond 1207B Three Bond 1207C Three Bond 1215 Three Bond 1280 Three Bond 1281	Three Bond Three Bond Three Bond Three Bond Three Bond	For Engine Repairs For Axle Case Repairs T/M Repairs T/M
Water Base	Three Bond 1141E	Three Bond	For Engine Repairs
Solvent	Three Bond 1104 Belco Bond 4 Belco Bond 401 Belco Bond 402	Three Bond Isuzu Isuzu Isuzu	For Engine Repairs
Anaerobic	LOCTITE 515 LOCTITE 518 LOCTITE 17430	Loctite Loctite Loctite	All

* RTV: Room Temperature Vulcanizer

NOTE:

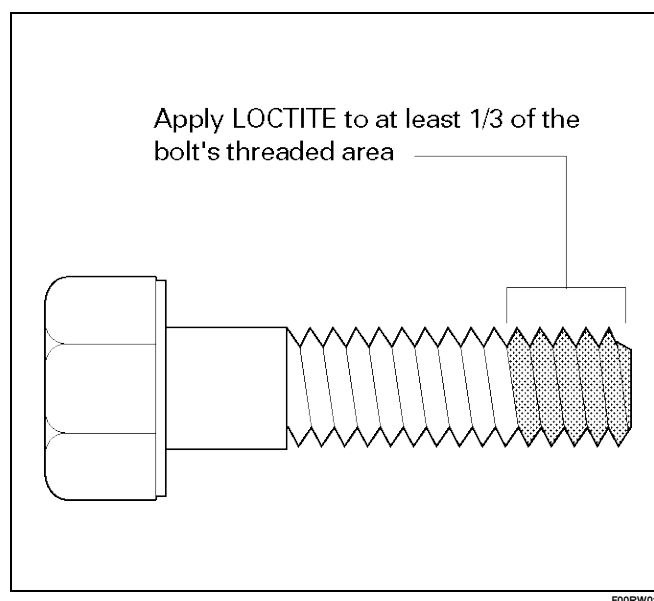
1. It is very important that the liquid gaskets listed above or their exact equivalent be used on the vehicle.
2. Be careful to use the specified amount of liquid gasket.
Follow the manufacturer's instructions at all times.
3. Be absolutely sure to remove all lubricants and moisture from the connecting surfaces before applying the liquid gasket.
The connecting surfaces must be perfectly dry.
4. Do not apply LOCTITE 17430, LOCTITE 515 and LOCTITE 518 between two metal surfaces having a clearance of greater than 0.25 mm (0.01 in). Poor adhesion will result.

Recommended Thread Locking Agents

LOCTITE Type	LOCTITE Color
LOCTITE 242	Blue
LOCTITE 262	Red
LOCTITE 271	Red

Application Steps

1. Completely remove all lubricant and moisture from the bolts and the female-threaded surfaces of the parts to be joined.
The surfaces must be perfectly dry.
2. Apply LOCTITE to the bolts.



3. Tighten the bolts to the specified torque.
After tightening, be sure to keep the bolts free from vibration and torque for at least an hour until LOCTITE hardens.

NOTE: When the application procedures are specified in this manual, follow them.

Maintenance Service Data

Service Data and Specifications

ENGINE	Valve clearance (cold): only V6-3.2L ENG	Intake 0.28±0.05 mm (0.011±0.002 in) Exhaust 0.3±0.05 mm (0.012±0.002 in)		
	Spark plug type	K16PR-P11/PK16PR11/RC10PYP4		
	Spark plug gap	1.05 mm (0.04 in)		
CLUTCH	Clutch pedal free play	5–15 mm (0.20–0.59 in)		
BRAKE	Brake pedal free play	6–10 mm (0.24–0.39 in)		
	Parking brake travel	6–7 notches		
WHEEL ALIGNMENT	Toe-in (Front)	0 to +2 mm (0 to +0.08 in)		
	Toe-in (Rear)	0±5 mm (0±0.2 in)		
	Camber (Front)	0°±30'		
	Camber (Rear)	0°±1°		
	Caster (Front)	2°30'±1.00'		
	Toe-Axis (Rear)	±1°		
PROPELLER SHAFT	Flange torque	63 N·m (46 lbft)		
WHEEL AND TIRES	Size	P225/75R16	P245/70R16	P245/60R18
	Wheel nut torque	118 N·m (87 lbft)		
	Tire inflation pressure (Front)	200 kPa (29 psi)	180 kPa (26 psi)	
	* Tire inflation pressure (Rear)	200 kPa (29 psi)	180 kPa (26 psi)	

* Unless otherwise specified on tire information label on the vehicle.

Approximate Capacities

	Items		Metric Measure	U.S. Measure
Fuel tank			74 L	19.5 Gal.
* Crankcase (V6-3.2L ENGINE)	Oil Change with Filter		4.7 L	5.0 Qt
	Oil Change without Filter		4.0 L	4.2 Qt
* Crankcase (L4-2.2L ENGINE)	Oil Change with Filter		4.5 L	4.8 Qt
	Oil Change without Filter		4.2 L	4.4 Qt
Coolant	M/T (V6-3.2L ENG)		11.0 L	11.6 Qt
	M/T (L4-2.2L ENG)		6.9 L	7.3 Qt
	A/T		11.1 L	11.7 Qt
Transmission	Manual		2.95 L	3.1 Qt
	Automatic		8.6 L	9.1 Qt
Transfer			1.45 L	1.5 Qt
Axle	Rear		1.77 L	1.87 Qt
	Front	V6-3.2L ENG	1.25 L	1.33 Qt
		L4-2.2L ENG	1.05 L	1.10 Qt
Shift on the fly system			0.12 L	0.13 Qt
Power steering			1.0 L	1.1 Qt
Air conditioning (R-134a)			0.79 L	1.54 lb

*Crankcase capacities shown are approximate refill capacities. After refill, recheck oil level.