Service Manual

LASER TALON & Eclipse

Volume-2
Electrical

FOREWORD

This Service Manual has been prepared with the latest service information available at the time of publication. It is subdivided into various group categories and each section contains diagnosis, disassembly, repair, and installation procedures along with complete specifications and tightening references. Use of this manual will aid in properly performing any servicing necessary to maintain or restore the high levels of performance and reliability designed into these outstanding vehicles.

GROUP/SECTION INDEX N00AA--

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NOTE: For Engine, Chassis & Body, refer to Volume-I "Engine, Chassis & Body".

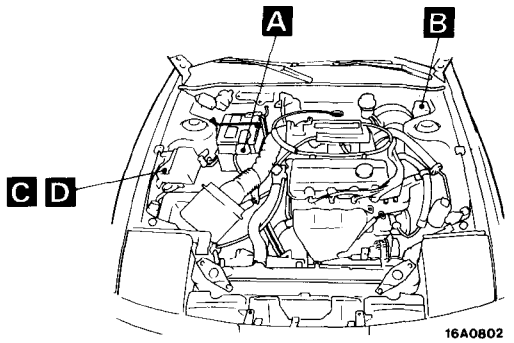
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FUSIBLE LINK AND FUSE LOCATION

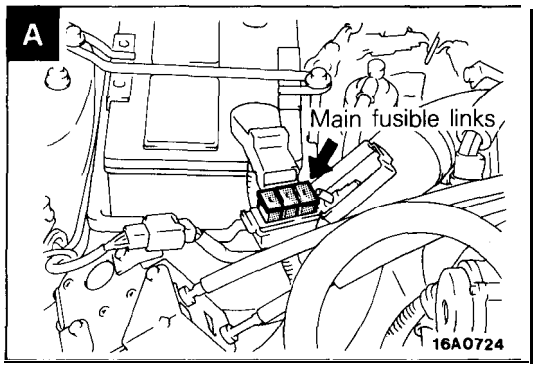
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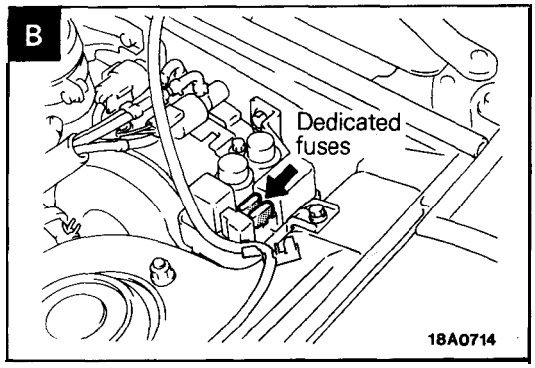
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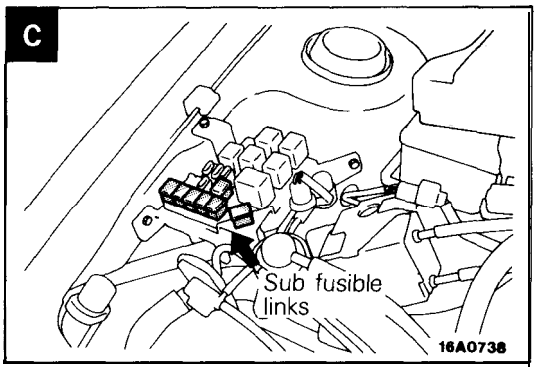


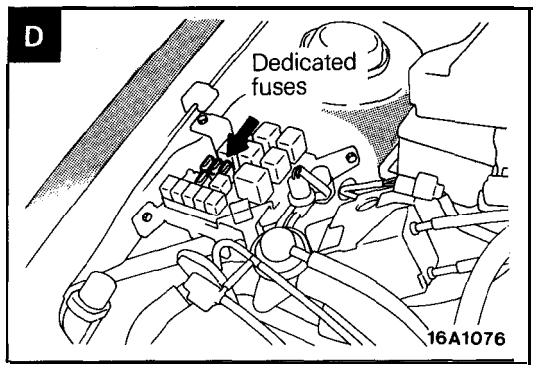
Name	Symbol
Dedicated fuses	B*, D
Main fusible links	A
Multi-purpose fuse block	E
Sub fusible links	C

NOTE
(1) • : Air conditioner equipped models.
(2) For details of fusible link and fuse, refer to P.8–8,9 and 10.
(3) The "Name" column is arranged in alphabetical order.

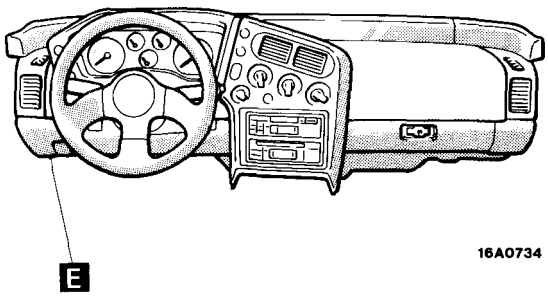


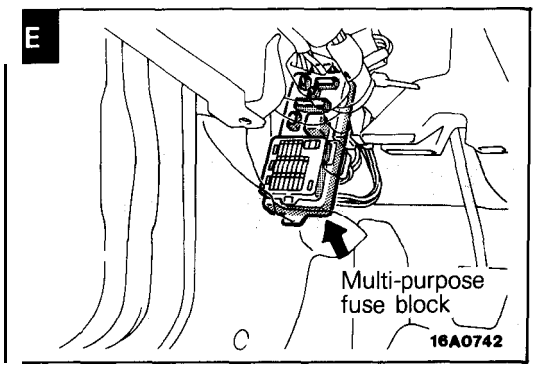






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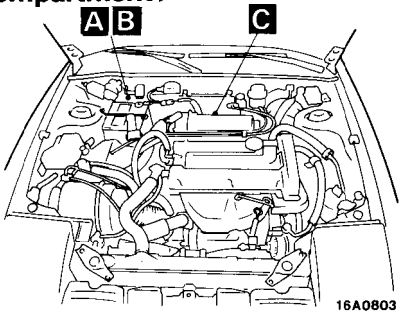


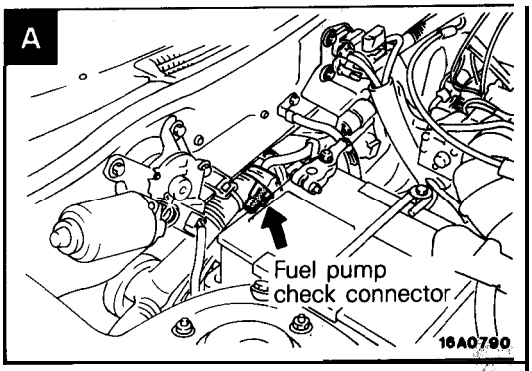
INSPECTION TERMINAL LOCATION

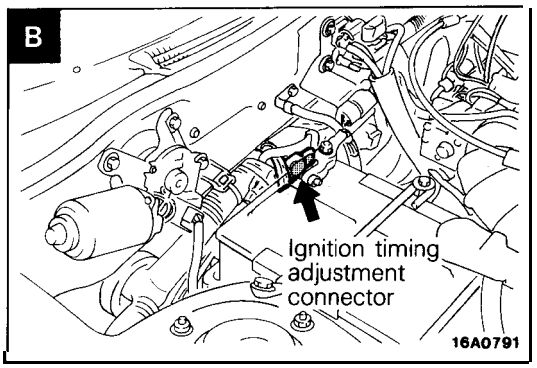
Name	Symbol	Name	Symbol
Fuel pump check connector	A	Self-diagnosis connector.	E
Ignition timing adjustment connector	B	Terminal for detecting the engine revolution speed <2.0L DOHC Engine>	C
Oxygen sensor check connector <2.0L DOHC Engine>	D		

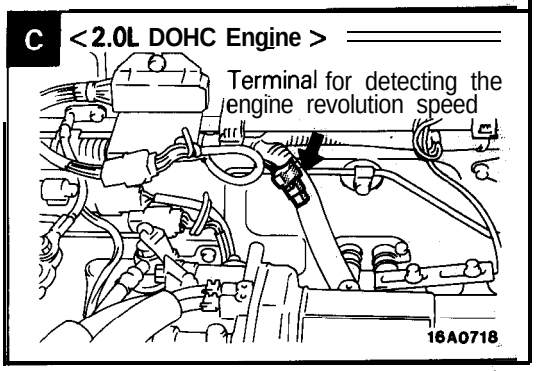
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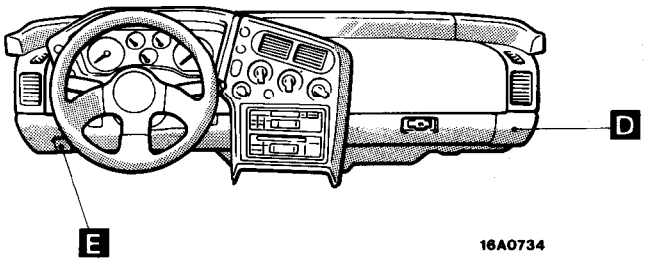


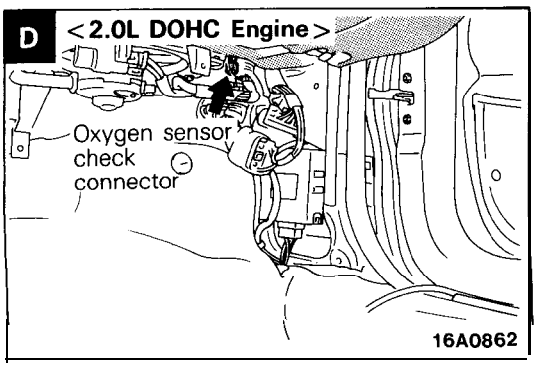


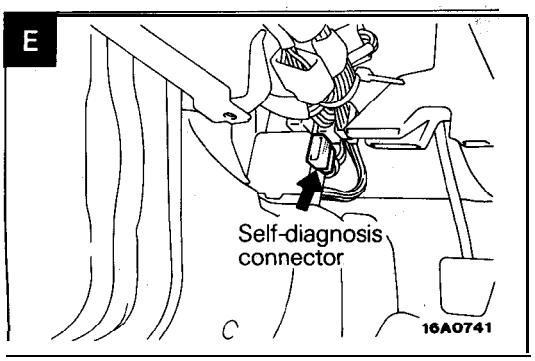




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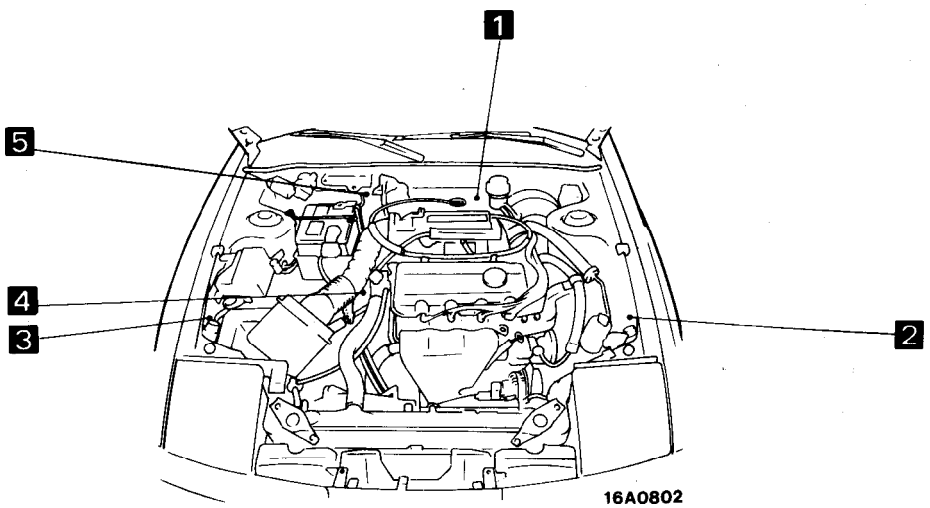


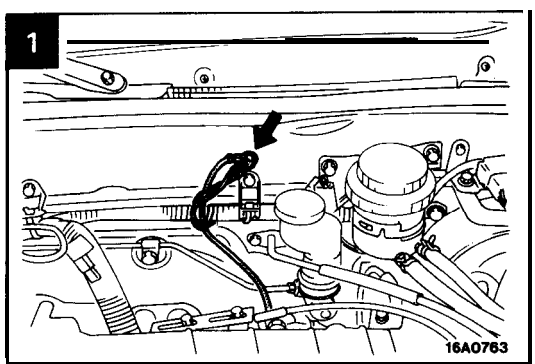


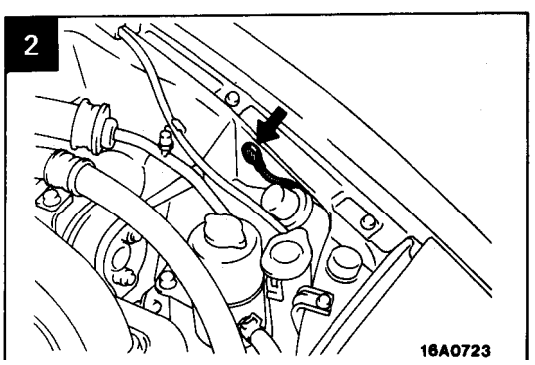


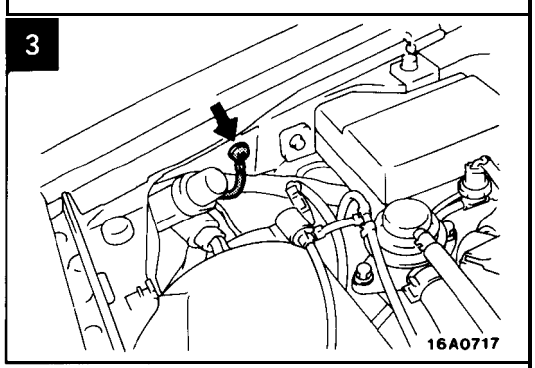
GROUNDING LOCATION

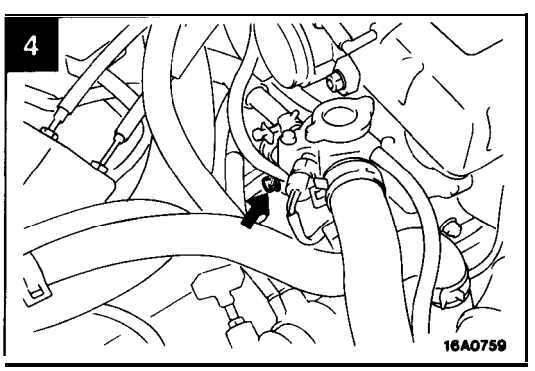
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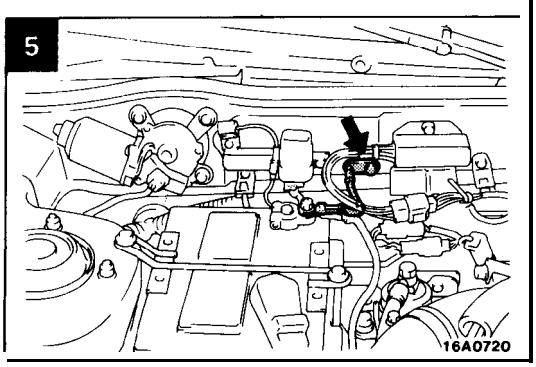




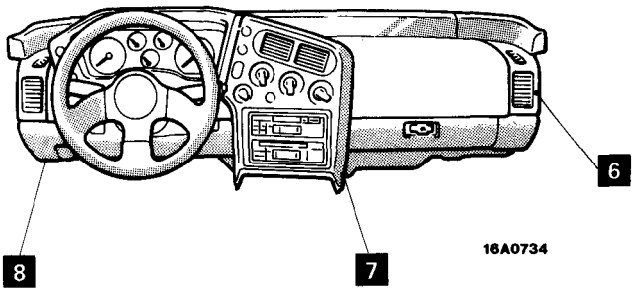


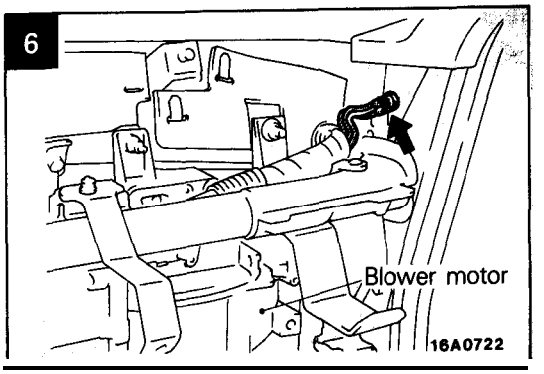


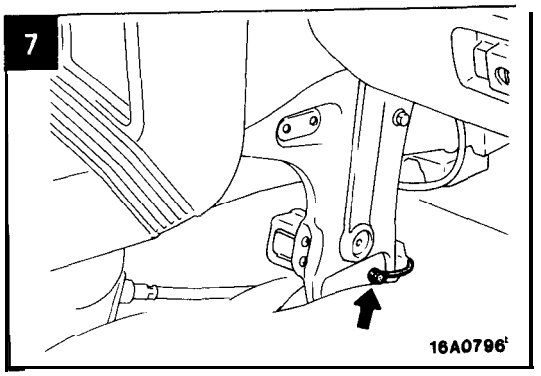


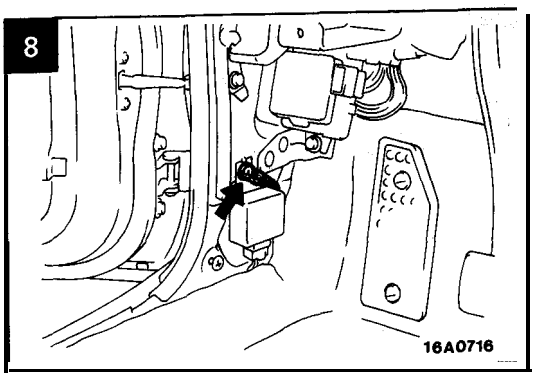


< Interior–Front section >

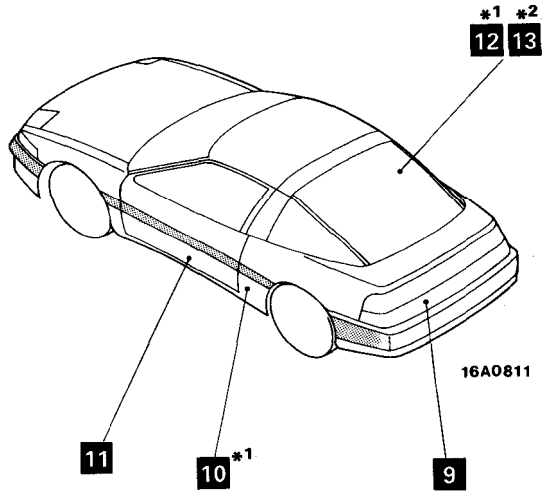


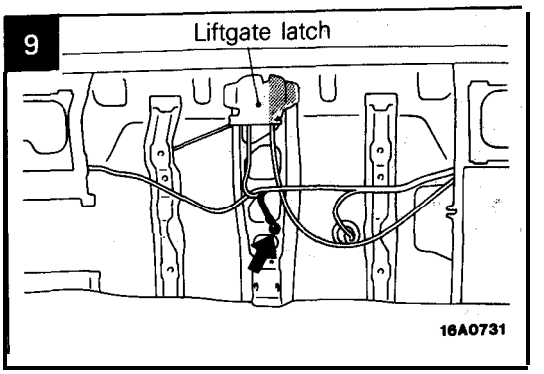


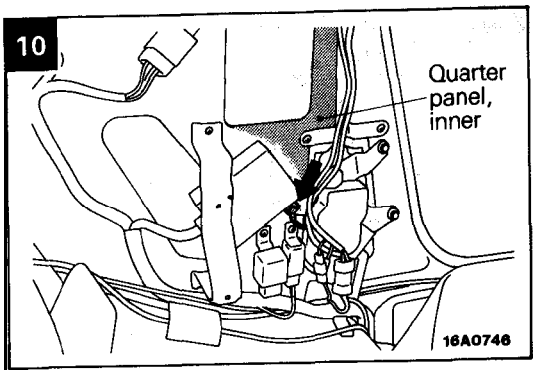




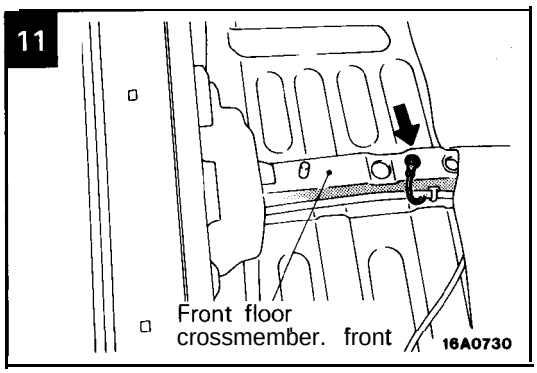
< Interior–Rear section and luggage compartment >

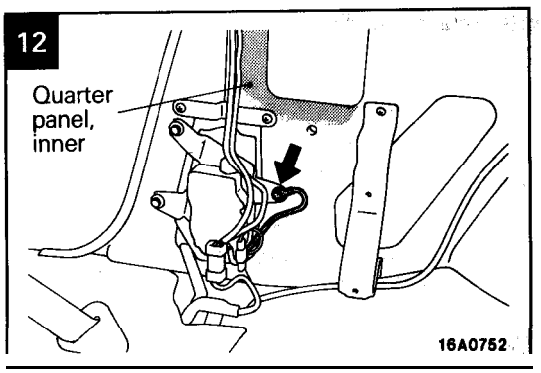


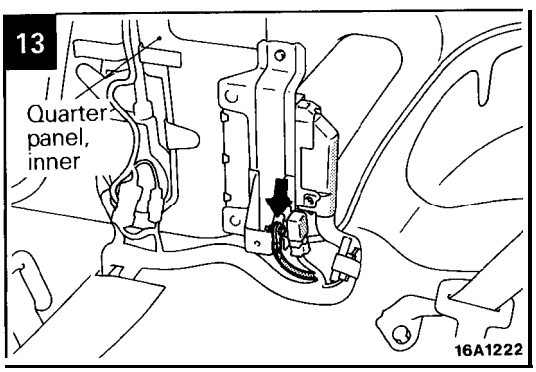




NOTE
(1) *1: Vehicles with automatic seat belt
(2) *2: Vehicles with ABS

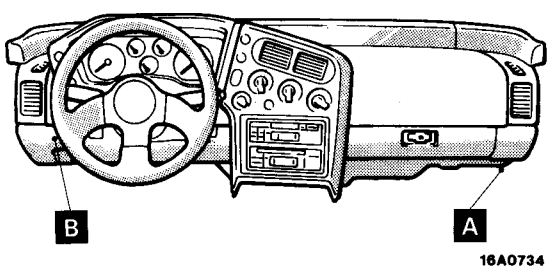






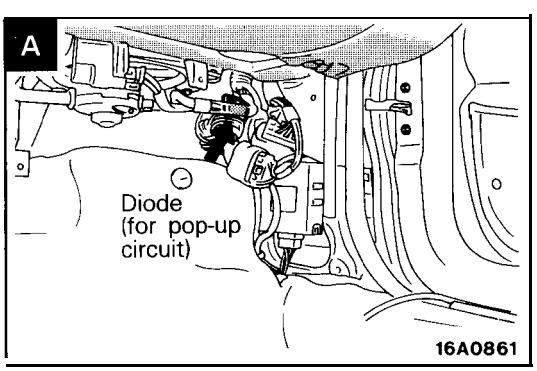
DIODE LOCATION

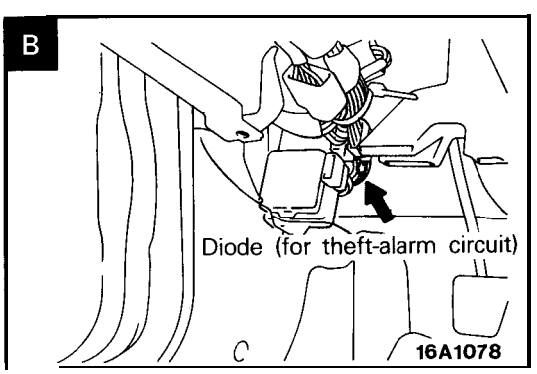
< Interior–Front section >



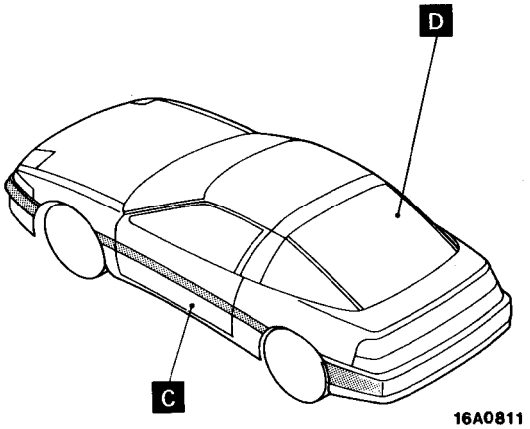
Name	Symbol
Diode (for ABS circuit)	D
Diode (for door ajar-warning circuit)	C
Diode (for pop-up circuit)	A
Diode (for theft-alarm circuit)	B

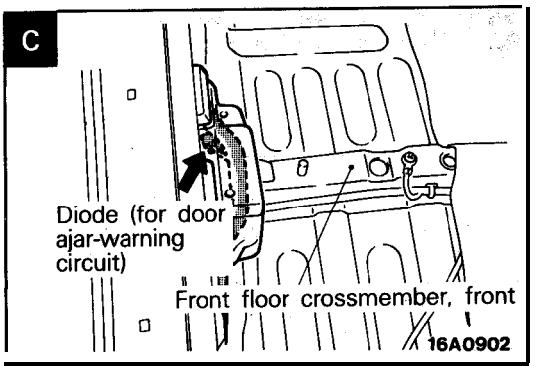
NOTE
The “Name” column is arranged in alphabetical order.

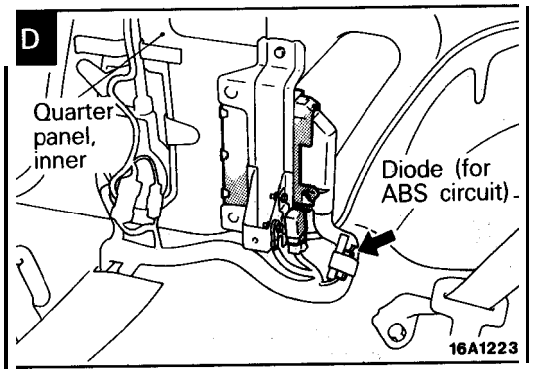




< Interior–Rear section >

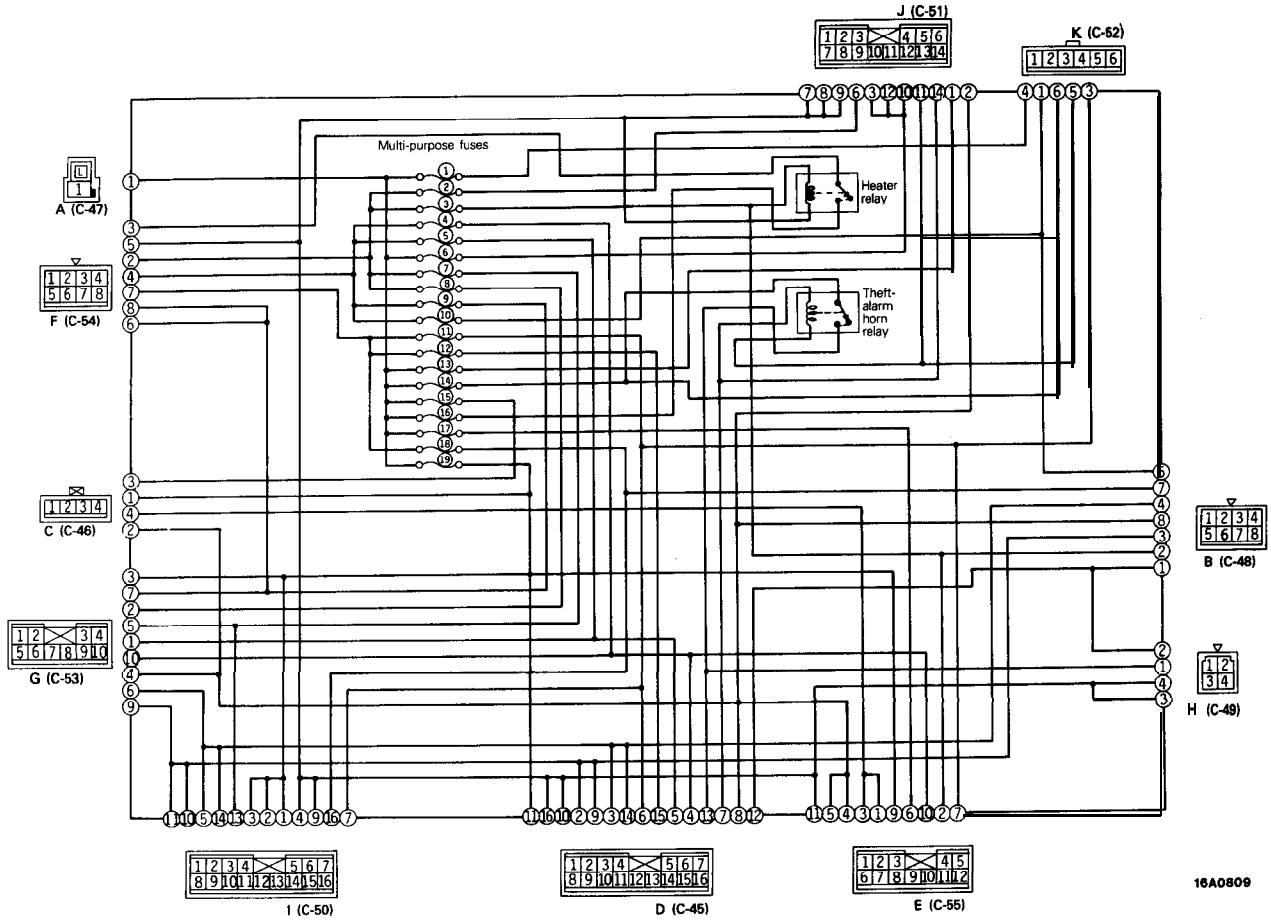


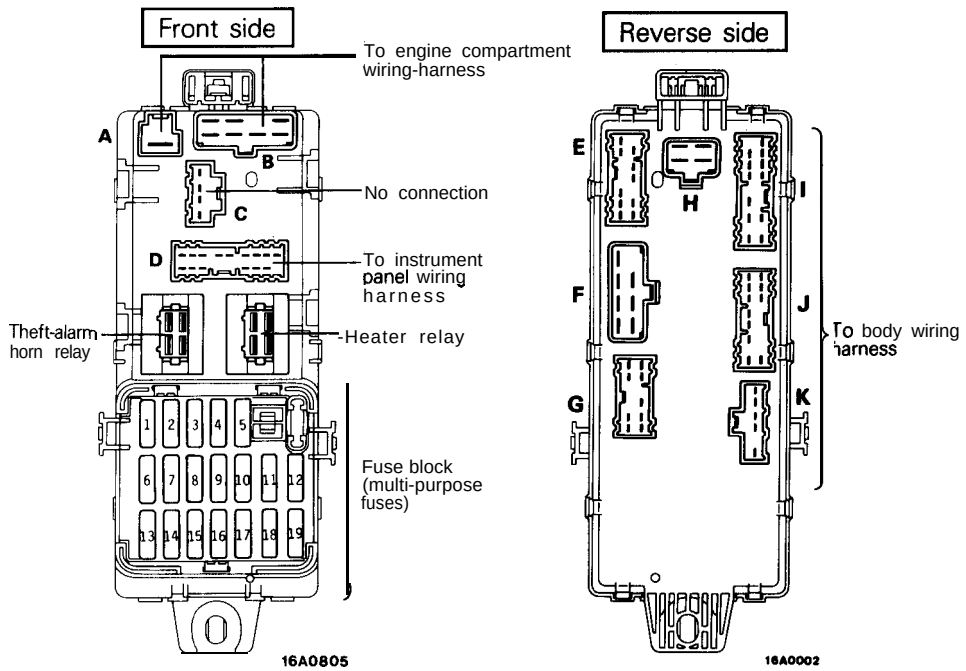




JUNCTION BLOCK

N08BC--





Remarks
(1) Same alphabets in the diagram indicate the counterparts of connectors.
(2) Terminals of the harness side connector are indicated in parentheses ( ).

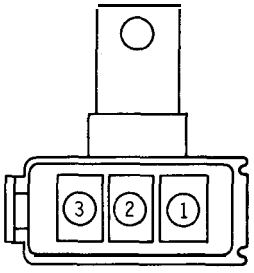
CENTRALIZED JUNCTION

N08BB--

MAIN FUSIBLE LINK (direct connection to battery's positive ⊕ terminal)

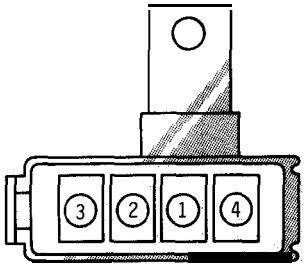
No.	Circuit	Housing color	Rated capacity (A)
1	MPI circuit	Blue	20
2	Radiator fan motor circuit	Pink	30
3	Ignition switch circuit	Pink	30
4	ABS circuit	Yellow	60

<Vehicles without ABS>



16A0893

<Vehicles with ABS>

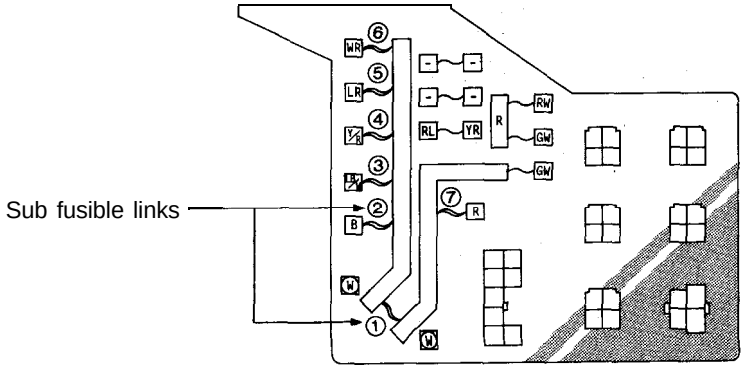


16A1197

SUB FUSIBLE LINK (relay box inside engine compartment)

No.	Circuit	Housing color	Rated capacity (A)
1	Alternator circuit, sub fusible link ②, ③, ④, ⑤, ⑥	Black, Blue*	80, 100"
2	Defogger circuit	Green	40
3	Automatic seatbelt circuit, dedicated fuse ⑤ circuit	Pink	30
4	Pop-up circuit, Alternator circuit	Pink	30
5	Power window circuit	Pink	30
6	Multi-purpose fuse ①, ⑥, ⑬, ⑭, ⑮, ⑯, ⑰, ⑲, dedicated fuse ④ circuit	Green	40
7	Headlight circuit, dedicated fuse ①, ③, ⑥ circuit	Green	40

NOTE
* : <Vehicles for Canada>

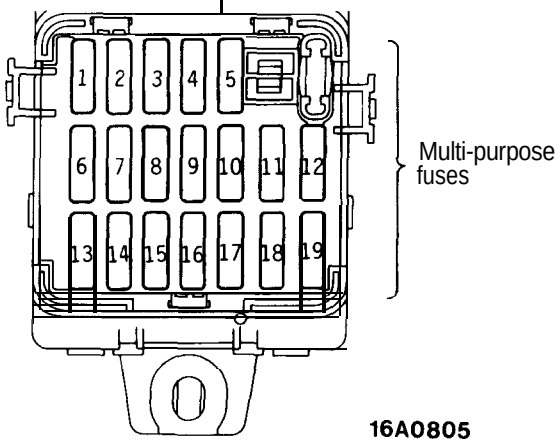


16A0897

MULTI-PURPOSE FUSE (inside junction block)

Power supply circuit		No.	Rated capacity (A)	Load circuit
Battery		1	10	Automatic seatbelt control unit, key reminder switch, passing control relay, seatbelt warning buzzer, taillight relay, theft-alarm starter relay
Ignition switch	IG2	2	–	–
		3	10	Air conditioner control unit, air conditioner switch, defogger timer, heater relay, power window relay, transistor relay*, daytime running light relay 2*, ABS relay
	ACC	4	10	Radio
		5	15	Cigarette lighter, remote controlled mirror
Battery		6	15	Door lock relay, door lock control unit
Ignition switch	IG2	7	10	4-speed automatic transaxle control unit, auto-cruise control unit <A/T>, combination meter
		8	–	–
	ACC	9	15	Intermittent wiper relay, wiper motor, washer motor
		10	10	Headlight relay, horn, theft-alarm control unit, daytime running light relay 1 .
	IG1	11	10	Auto-cruise control unit, auto-cruise control actuator automatic seatbelt control unit, combination meter, theft-alarm control unit, seatbelt timer*
		12	10	Turn-signal and hazard flasher unit
Battery		13	–	–
		14	10	Theft-alarm horn relay
		15	–	–
		16	30	Blower motor
		17	15	Stop light
Ignition switch	IG1	18	10	Back-up light <M/T>, dome light relay
Battery		19	10	4-speed automatic transaxle control unit, dome light, door-ajar warning light, foot light, ignition key illumination light, luggage compartment light, MPI control unit, radio, security light, ABS relay

NOTE
* : <Vehicles for Canada >

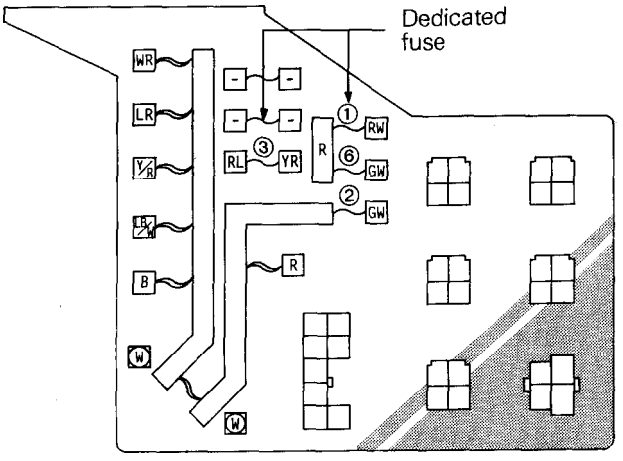


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DEDICATED FUSE

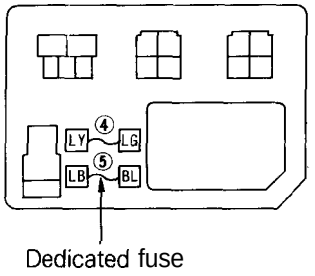
Power supply circuit	No.	Rated capacity (A)	Housing color	Circuit
Sub fusible link ⑦	1	10	Red	Taillight circuit
Battery	2	10	Red	Hazard warning light circuit
Headlight relay	3	10	Red	Upper beam circuit
Sub fusible link ⑥	4	10	Red	Air conditioner magnetic clutch circuit
Sub fusible link ③	5	20	Yellow	Condenser fan motor circuit
Sub fusible link ⑦	6	15	Blue	Foglight circuit

<Engine compartment R.H. side relay box>



16A0897

<Engine compartment L.H. side relay box (air conditioner equipped models)>



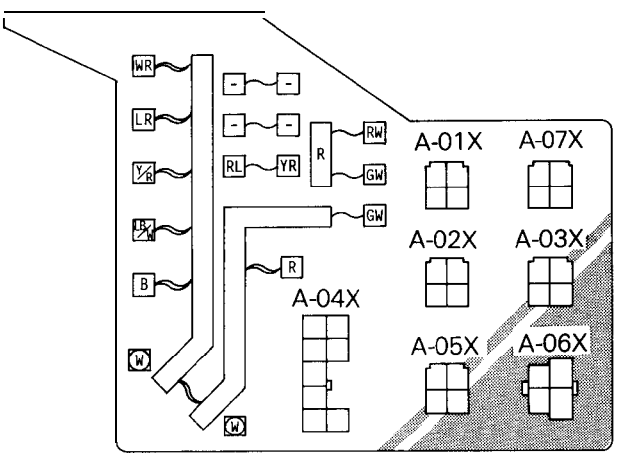
16A0896

CENTRALIZED RELAY

Classification		Name	Classification		Name
Engine compartment R.H. side relay box	A-01X	Taillight relay	Engine compartment L.H. side relay box	A-17X	Condenser fan motor high-low changeover relay
	A-02X	Headlight relay		A-18X	Condenser fan motor relay
	A-03X	Radiator fan motor relay		A-19X	Magnetic clutch relay
	A-04X	Pop-up motor relay	Interior relay box	C-34X	Door lock relay
	A-05X	Power window relay		C-35X	Starter relay <M/T> Theft-alarm starter relay <A/T>
	A-06X	Alternator relay		C-36X	Defogger timer
	A-07X	Foglight relay		C-37X	Seatbelt timer*
				C-38X	Daytime running light relay 1*
				C-39X	Daytime running light relay 2*

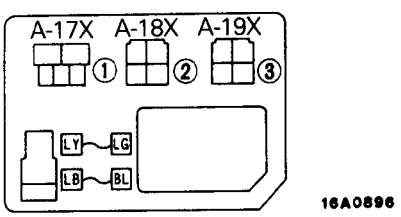
NOTE
*: <Vehicles for Canada>

<Engine compartment R.H. side relay box>



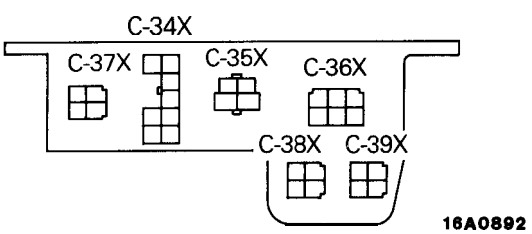
16A0897

<Engine compartment L.H. side relay box (air conditioner equipped models)>

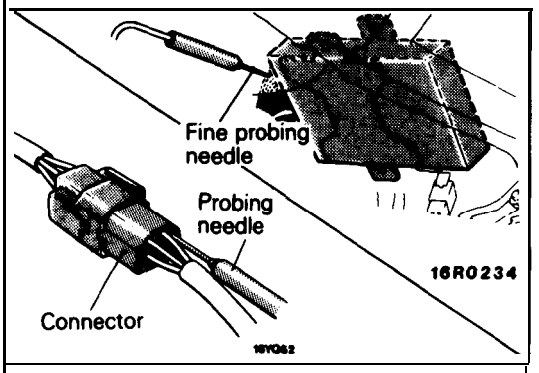


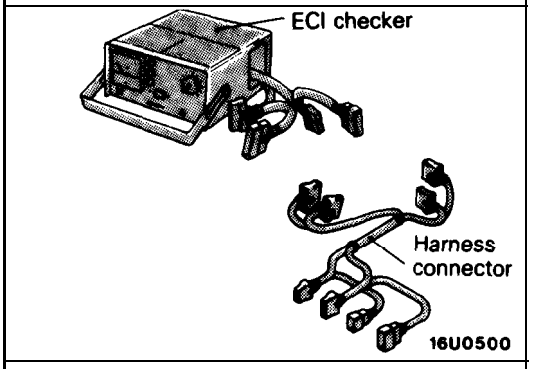
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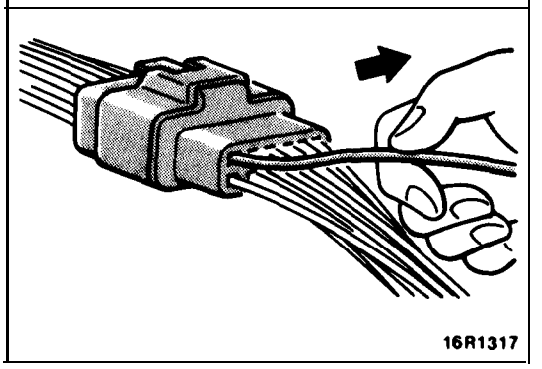
<Interior relay box>



16A0892







INSPECTION OF HARNESS CONNECTOR

N08CAAA

CONTINUITY AND VOLTAGE TEST FOR CONNECTOR

Following procedures shall be followed for testing continuity and voltage at connector in order to prevent improper contact and deterioration of waterproof in connector.

CONVENTIONAL (NON-WATERPROOF) CONNECTOR

Check shall be done by inserting a probing needle from harness side.

WATER PROOF CONNECTOR

Caution

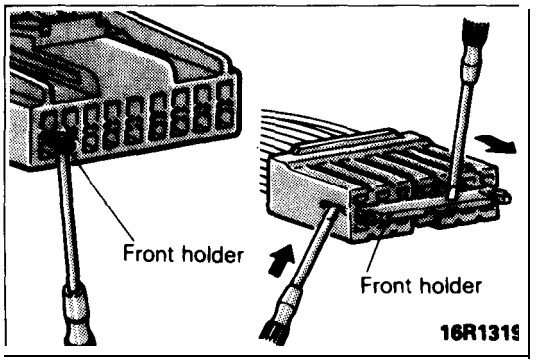
Do not insert probing needle from harness side as it will deteriorates waterproof and cause for rusting. To inspect the energized circuit, use the ECI checker.

CHECK FOR IMPROPER ENGAGEMENT OF TERMINAL

When terminal stopper of connector is out of order, engagement of male and female terminals becomes improper even when connector itself is engaged perfectly and terminal sometimes slips out to rear side of connector. Ascertain, therefore, that each terminal does not come off connector by pulling each harness wire.

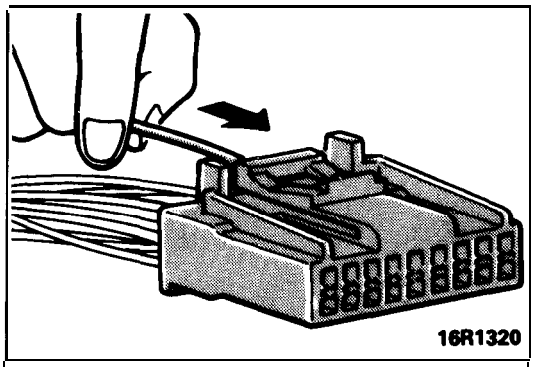
ENGAGING AND DISENGAGING OF CONNECTOR TERMINAL

Connector which gives loose engagement shall be rectified by removing female terminal from connector housing and raise its **lance to establish securer engagement. Removal of** connector housing and raise its lance to establish securer engagement. **Removal of connector terminal used for** ECI and ELC 4 A/T control circuit **shall be done in the following manner.**

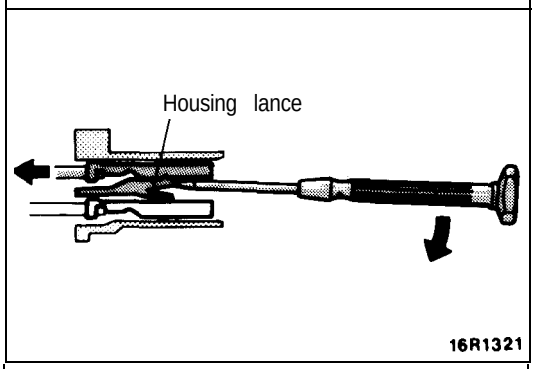


COMPUTER CONNECTOR

(1) Insert screwdriver [1.4 mm (.06 in.) width] as shown in the figure, disengage front holder and remove it.

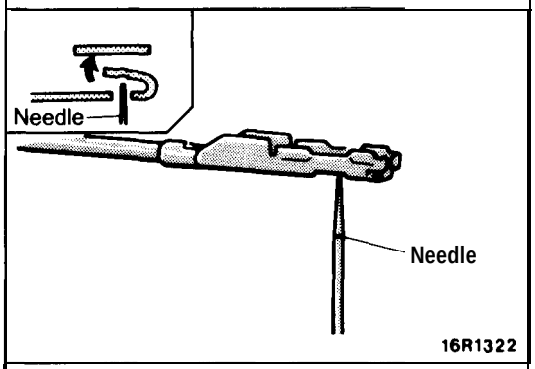


(2) Insert harness of terminal to be rectified deep into connector from harness side and hold it there.

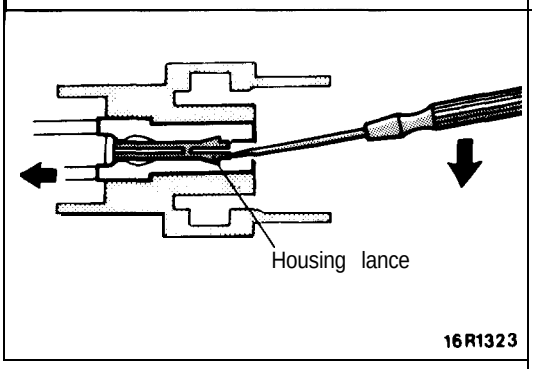


(3) Insert tip of screwdriver [1.4 mm (.06 in.) width] into connector in a manner as shown in the figure, raise housing lance slightly with it and pull out harness.

Caution
Tool No. 753787-1 supplied by AMP can be used instead of screwdriver.

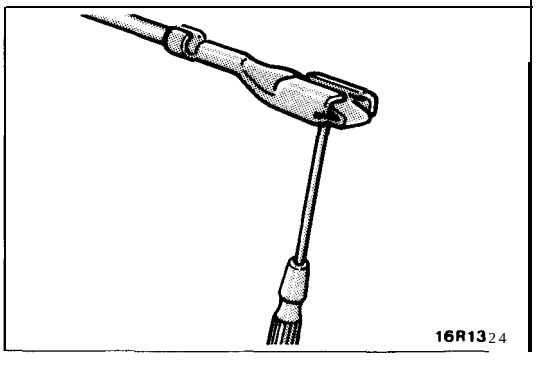


(4) Insert needle through a hole provided on terminal and raise contact point of male terminal.

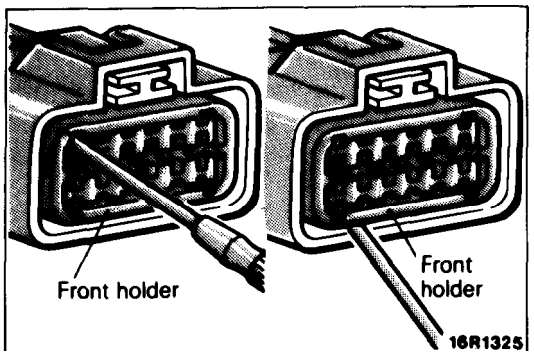


ROUND WATERPROOF CONNECTOR

(1) Remove waterproof cap by using a screwdriver.
(2) Insert tip of screwdriver [1.4 mm (.06 in.) or 2.0 mm (.08 in.) width] into connector in a manner as shown in the figure, raise **housing lance slightly with it and pull out harness.**

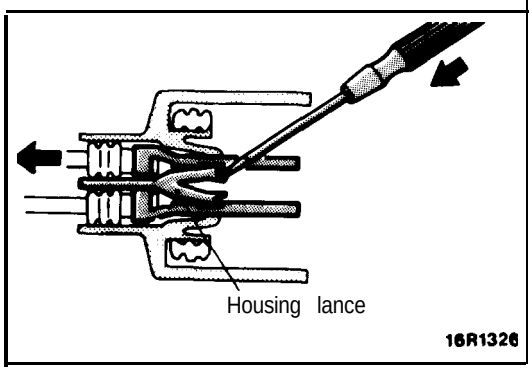


(3) Insert screwdriver through a hole provided on terminal and raise contact point of male terminal.

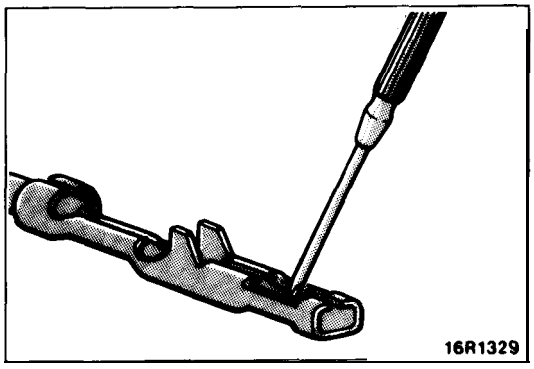


RECTANGULAR WATERPROOF CONNECTOR

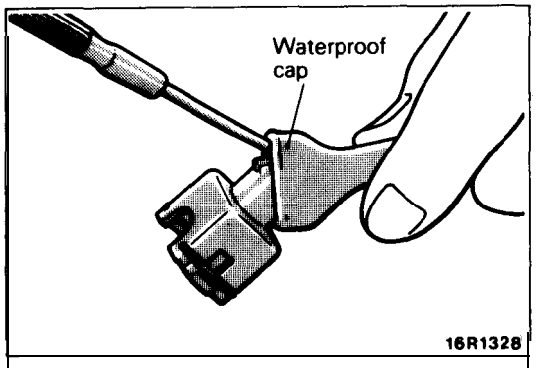
(1) Disengage front holder by using a screwdriver and remove it.



(2) Insert tip of screwdriver ("0.8 mm (.03 in.) width] into connector in a manner as shown in the figure, push it lightly to raise housing lancer and pull out harness.
- If right size screwdriver is not available, convert a conventional driver to suit the size.

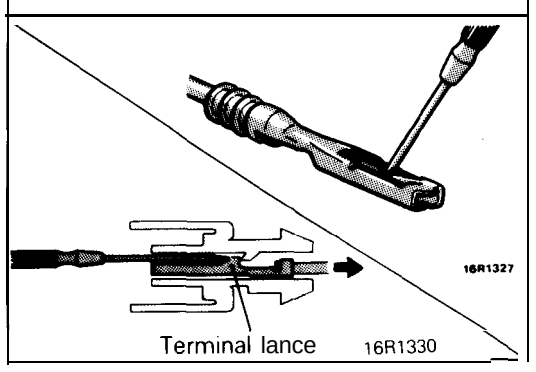


(3) Press contact point of male terminal down by holding a screwdriver [1.4 mm (.06 in.) width] in a manner as shown in the figure.



INJECTOR CONNECTOR

(1) Remove waterproof cap.



(2) Insert tip of screwdriver (1.4 mm (.06 in.) width] into connector in a manner as shown in the figure, press in terminal lance and pull out harness.
(3) Press contact point of male terminal down by holding a screwdriver [1.4 mm (.06 in.) width] in a manner as shown in the figure.

Caution
Correct lancer to be in proper condition before terminal is inserted into connector.

TROUBLESHOOTING

N08DAAC

The most important point in troubleshooting is to determine "Probable Causes". Once the probable causes are determined, parts to be checked can be limited to those associated with such probable causes. Therefore, unnecessary checks can be eliminated. The determination of the probable causes must be based on a theory and be supported by facts and must not be based on intuition only.

TROUBLESHOOTING STEPS

If an attempt is made to solve a problem without going through correct steps for troubleshooting, the problem symptoms could become more complicated, resulting in failure to determine the causes correctly and making incorrect repairs. The four steps below should be followed in troubleshooting.

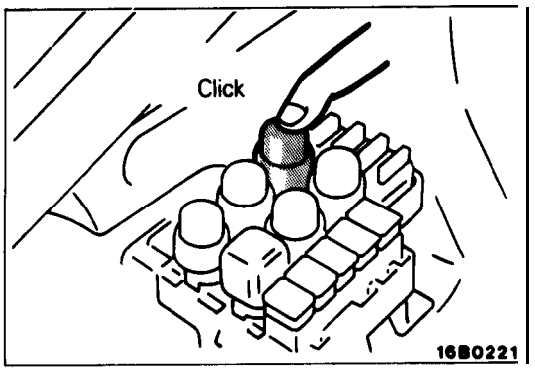
1 Observation of Problem Symptoms	Observe the symptom carefully. Check if there are also other problems.
2 Determination of Probable Causes	In determining the probable causes, it is necessary to check the wiring diagram to understand the circuit as a system. Knowledge of switches, relays and other parts is necessary for accurate determination. The causes of similar problems in the past must be taken into account.
3 Checking of Parts Associated with Probable Causes and Determination of Faulty Parts	Troubleshooting is carried out by making step by step checks until the true cause is found. Always go through the procedures considering what check is to be made where for the best results.
4 Repair and Confirmation	After the problems are corrected, be sure to check that the system operates correctly. Also check that new problems have not been caused by the repair.

INFORMATION FOR DIAGNOSIS

This manual contains the cable diagrams as well as the individual circuit drawings, operational explanations, and troubleshooting hints for each component required to facilitate the task of troubleshooting. The information is compiled in the following manner:

(1) Cable diagrams show the connector positions, etc., on the actual vehicle as well as the harness path.
(2) Circuit drawings show the configuration of the circuit with all switches in their normal positions.
(3) Operational explanations include circuit drawings of voltage flow when the switch is operated and how the component operates in reaction.
(4) Troubleshooting hints include numerous examples of problems which might occur, traced backward in a common-sense manner to the origin of the trouble. Problems whose origins may not be found in this manner are pursued through the various system circuits.

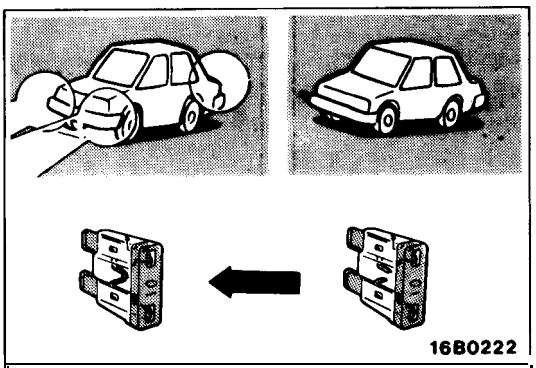
NOTE
Components of ECI, ETACS. ECS, etc. with ECU do not include 3 and 4 above. For this information, refer to a manual which includes details of these components.



INSPECTION

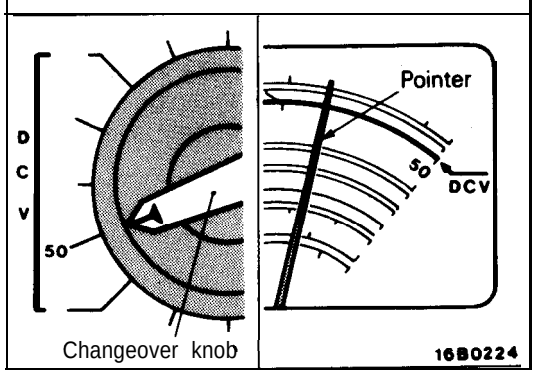
1. Visual and aural checks

Check relay operation, blower motor rotation, light illumination, etc. visually or aurally. The flow of current is invisible but can be checked by the operation of the parts.



2. Simple checks

For example, if a headlight does not come on and a faulty fuse or poor grounding is suspected, replace the fuse with a new one or ground the light to the body by a jumper wire to determine which part is responsible for the problem.



3. Checking with instruments

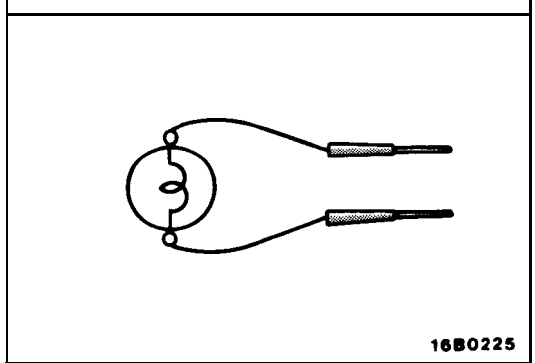
Use an appropriate instrument in an adequate range and read the indication correctly. You must have sufficient knowledge and experience to handle instruments correctly.

INSPECTION INSTRUMENTS

In inspection, make use of the following instruments.

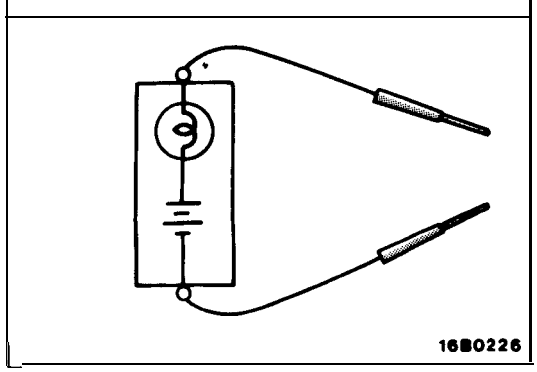
1. Test lights

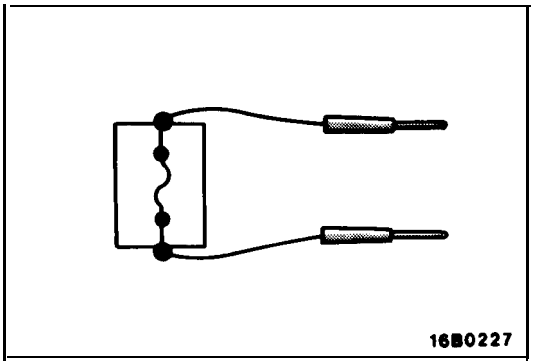
A test light consists of a 12V bulb and lead wires. It is used to check voltages or shortcircuits.



2. Self-power test light

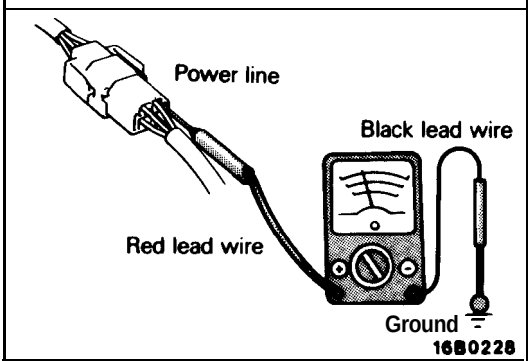
A self-power test light consists of a bulb, battery and lead wires connected in series. It is used to check continuity or grounding.




16B0227

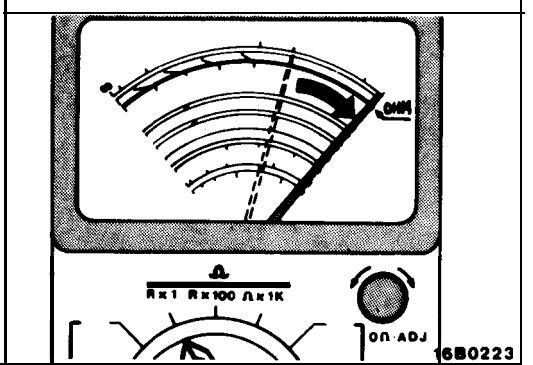
3. Jumper wire

A jumper wire is used to close an open circuit. Never use one to connect a power supply directly to a load.



4. Voltmeter

A voltmeter is used to measure the circuit voltage. Normally, the positive (red lead) probe is applied to the point of voltage measurement and the negative (black lead) probe to the body ground.



5. Ohmmeter

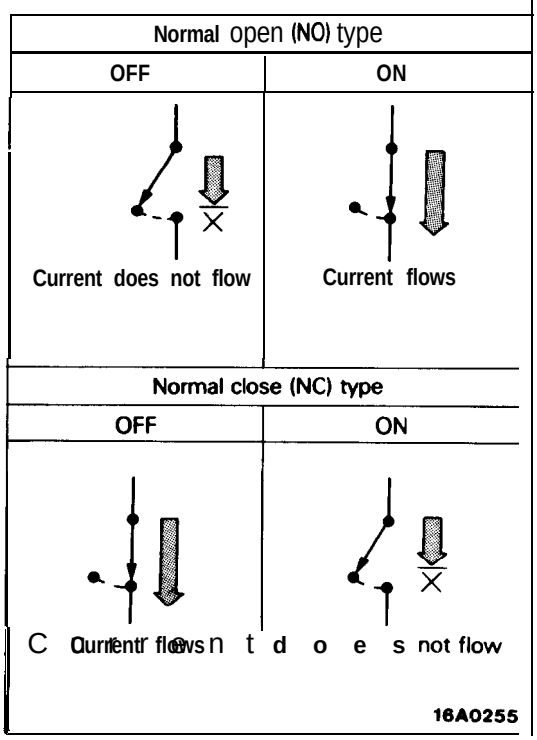
An ohmmeter is used to check continuity or measure resistance of a switch or coil. If the measuring range has been changed, the zero point must be adjusted before measurement.

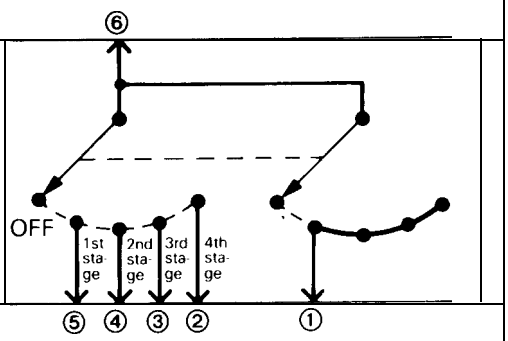
CHECKING SWITCHES

In a circuit diagram, a switch is represented by a symbol and in the idle state.

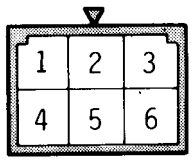
1. Normal open or normal close switch

Switches are classified into those which make the circuit open and those which make the circuit closed when off.





16A0253



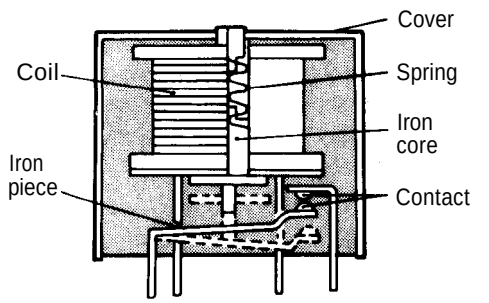
16W898

2. SWITCH CONNECTION

This figure illustrates a complex switch. The continuity between terminals at each position is as indicated in the table below.

Position \ Terminal No.	1	2	3	4	5	6
OFF						
1st stage	O				O	O
2nd stage	O			O		O
3rd stage	O		O			O
4th stage	O	O				O

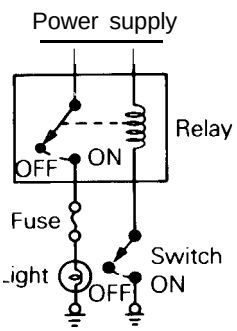
NOTE
O—O **denotes continuity between terminals.**



16B0231

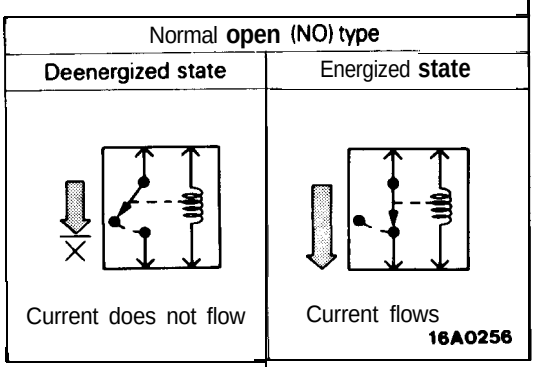
CHECKING RELAYS

1. When current flows through the coil of a relay, its core is magnetized to attract the iron piece, closing (ON) the contact at the **tip** of **the iron piece. When** the coil current is turned off, the iron piece is made to return to its original position by a spring, opening the contact (OFF).



16A0254

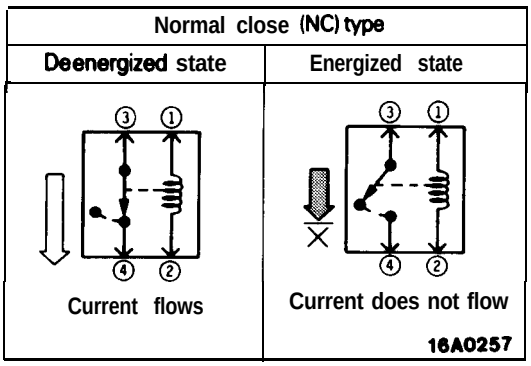
2. By using a relay, a heavy current can be turned on and off by a switch of small capacity. For example, in the circuit shown here, when the switch is turned on (closed), current flows to the coil of the relay. Then, its contact is turned on (closed) and the light comes on. The current flowing at this time to the switch is the relay coil current only and is very small.



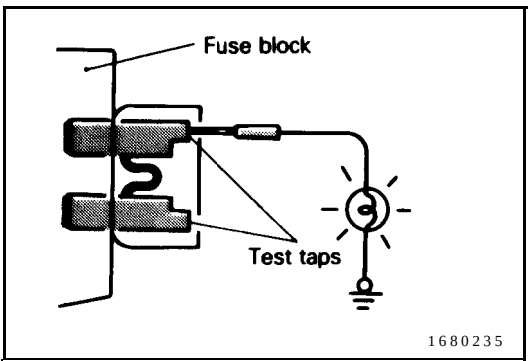
16A0256

3. The relays may be classified into the normal open type and the normal close type by their contact construction.

NOTE
The deenergized state means that no current is flowing through the coil and **the** energized state means that current is **flowing through the coil.**

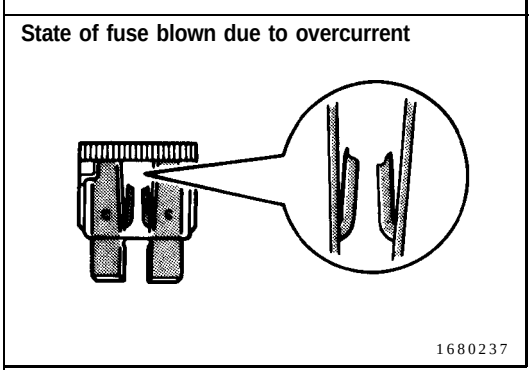


When a normal close type relay as illustrated here is checked, there should be continuity between terminals (1) and (2) and between terminals 3 and 4 when the relay is deenergized, and the continuity should be lost between terminals 3 and 4 when the battery voltage is applied to the terminals 1 and 2. A relay can be checked in this manner and it cannot be determine if a relay is okay or faulty by checking its state only when it is deenergized (or energized).



CHECKING FUSES

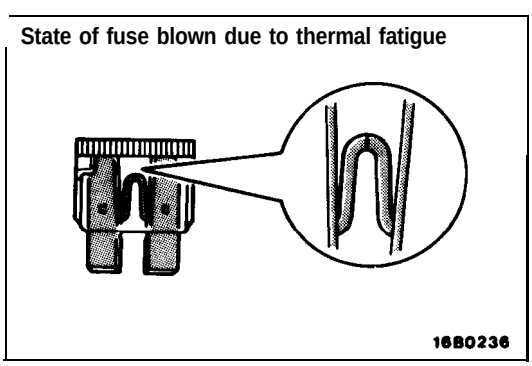
A blade type fuse has test taps provided to allow checking of the fuse itself without removing it from the fuse block. The fuse is okay if the test light comes on when its one lead is connected to the test taps (one at a time) and the other lead is grounded. (Change the ignition switch position adequately so that the fuse circuit becomes live.)



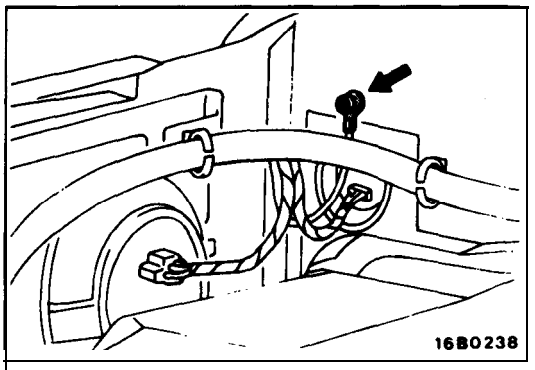
CAUTIONS IN EVENT OF BLOWN FUSE

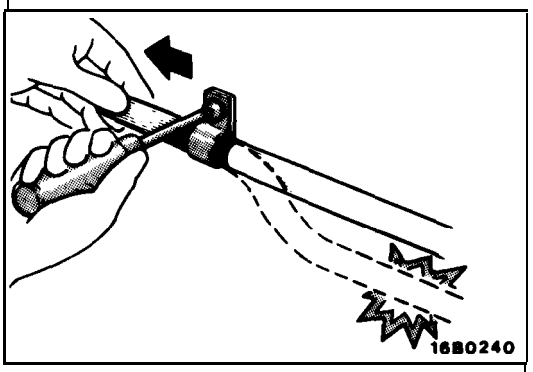
When a fuse is blown, there are two probable causes as follows : One is that it is blown due to flow of current exceeding its rating. The other is that it is blown due to repeated on/off current flowing through it. Which of the two causes is responsible can be easily determined by visual check as described below.

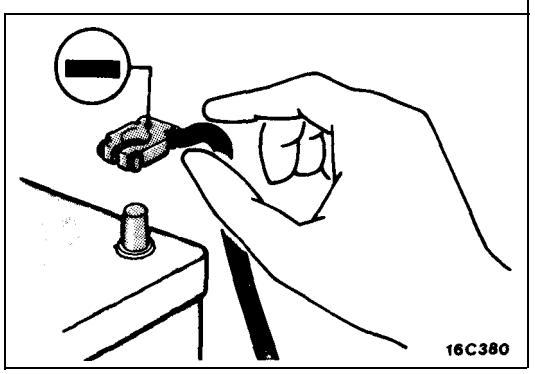
(1) Fuse blown due to current exceeding rating
The illustration shows the state of a fuse blown due to this cause. In this case, do not replace the fuse with a new one hastily since a current heavy enough to blow the fuse has flowed through it. First, check the circuit for shorting and check for abnormal electric parts. Only after the correction of such shorting or parts, fuse of the same capacity should be used as a replacement. Never use a fuse of lager capacity than the one that has blown. If such a fuse is used, electric parts or wirings could be damaged before the fuse blows in the event **an overcurrent occurs again.**



(2) Fuse blown due to repeated current on/off
The illustration shows the state of a fuse blown due to **repeated** current on/off. Normally, this type of problem occurs after fairly long period of use and hence is less frequent than the above type. In this case, you may simply replace with a new fuse of the same capacity.







CHECKING CABLES AND WIRES

1. Check connections for looseness, rust and stains.
2. Check terminals and wires for corrosion by battery electrolyte, etc.
3. Check terminals and wires for open circuit or impending open circuit.
4. Check wire insulation and coating for damage, cracks and de grading.
5. Check conductive parts of terminals for contact with other metallic parts (vehicle body and other parts).
6. Check grounding parts to verify that there is complete continuity between attaching bolt(s) and vehicle body.
7. Check for incorrect wiring.
8. Check that wirings are so clamped as to prevent contact with sharp corners of the vehicle body, etc. or hot parts (exhaust manifold, pipe, etc.).
9. Check that wirings are clamped firmly to secure enough clearance from the fan pulley, fan belt and other rotating or moving parts.
10. Check that the wirings between the fixed parts such as the vehicle body and the vibrating parts such as the engine are made with adequate allowance for vibrations.

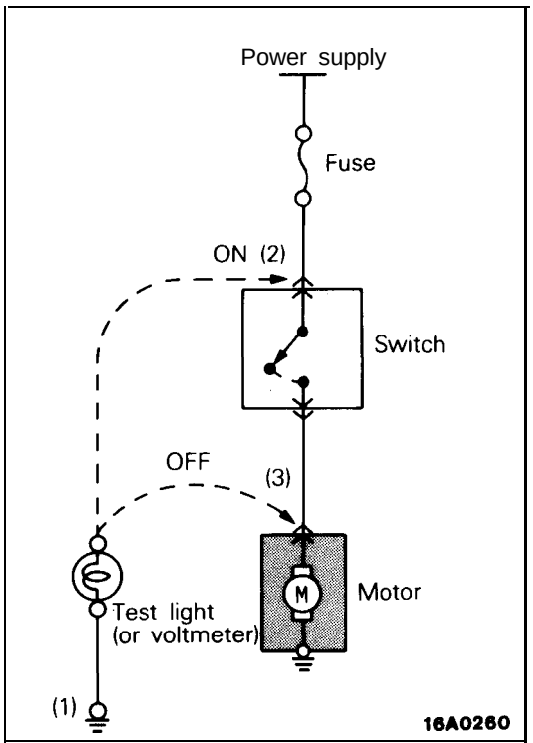
HANDLING ON-VEHICLE BATTERY

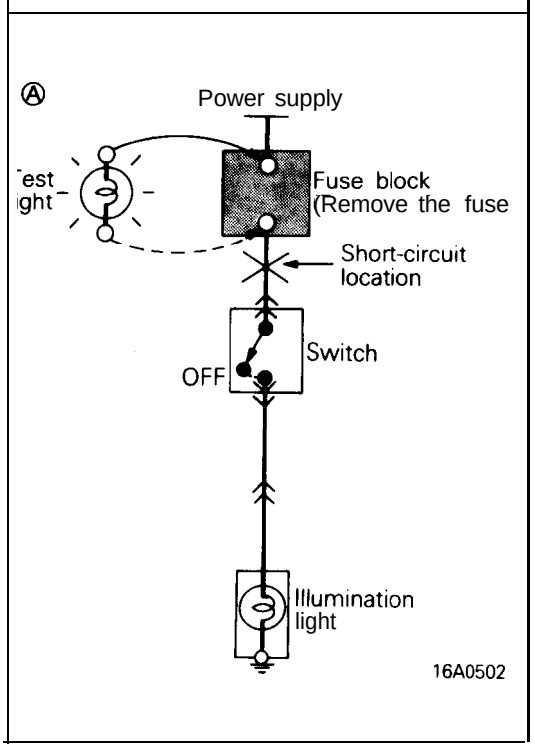
When checking or servicing does not require power from the on-vehicle battery, be sure to disconnect the cable from the battery (−) terminal. This is to prevent problems that could be caused by shorting of the circuit. Disconnect the (−) terminal first and reconnect it last.

Caution

1. ***Before connecting or disconnecting the negative cable, be sure to turn off the ignition switch and the lighting switch. (If this is not done, there is the possibility of semiconductor parts being damaged.)***
2. **For MPI-equipped models, after completion of the work steps [when the battery's negative (−) terminal is connected], warm up the engine and allow it to idle for approximately five minutes under the conditions described below, in order to stabilize engine control conditions, and then check to be sure that the idling is satisfactory.**

   Engine coolant temperature: 85–95°C (185–203°F)
   Lights, electric fans, accessories: OFF
   Transaxle: neutral position
   (A/T models: "N" or "P")
   Steering wheel: neutral (center) position





TROUBLESHOOTING

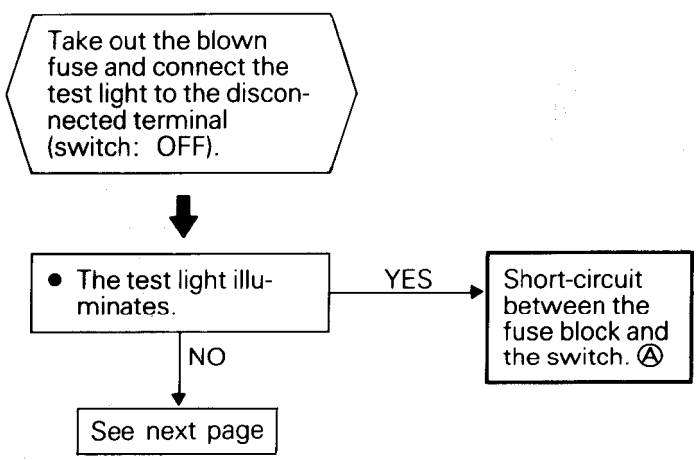
A circuit consists of the power supply, switch, relay, load, ground, etc. There are various methods to check a circuit including an overall check, voltage check, shortcircuit check and continuity check. Each of these methods is briefly described in the following.

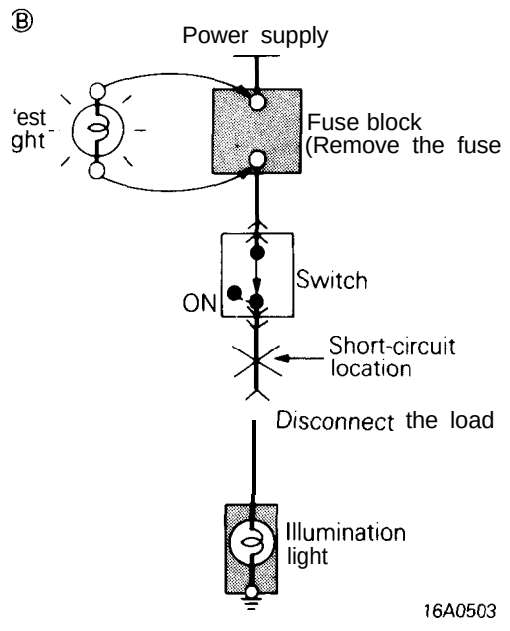
1. VOLTAGE CHECK

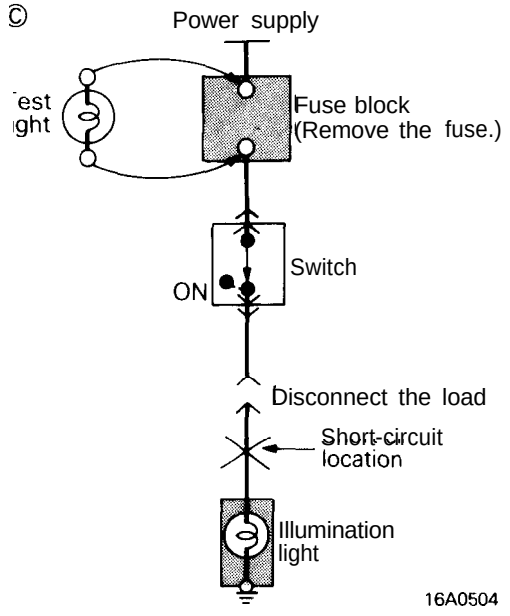
(1) Ground one lead wire of the test light. If a voltmeter is used instead of the test light, ground the grounding side lead wire.
(2) Connect the other lead wire of the test light to the power side terminal of the switch connector. The test light should come on or the voltmeter should indicate a voltage.
(3) Then, connect the test light or voltmeter to the motor connector. The test light should not come on, or the voltmeter should indicate no voltage. When the switch is turned on in this state, the test light should come on, or the voltmeter should indicate a voltage, with motor starting to run.
(4) The circuit illustrated here is normal but if there is any problem such as the motor failing to run, check voltages beginning at the connector nearest to the motor until the faulty part is identified.

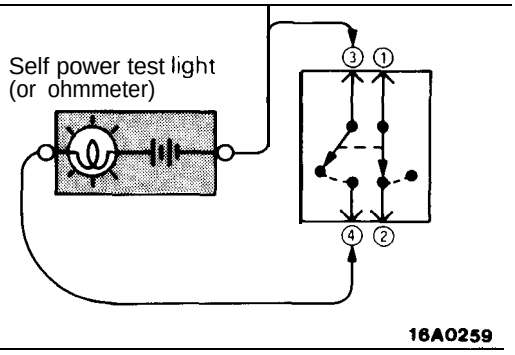
2. CHECKING FOR A SHORT-CIRCUIT

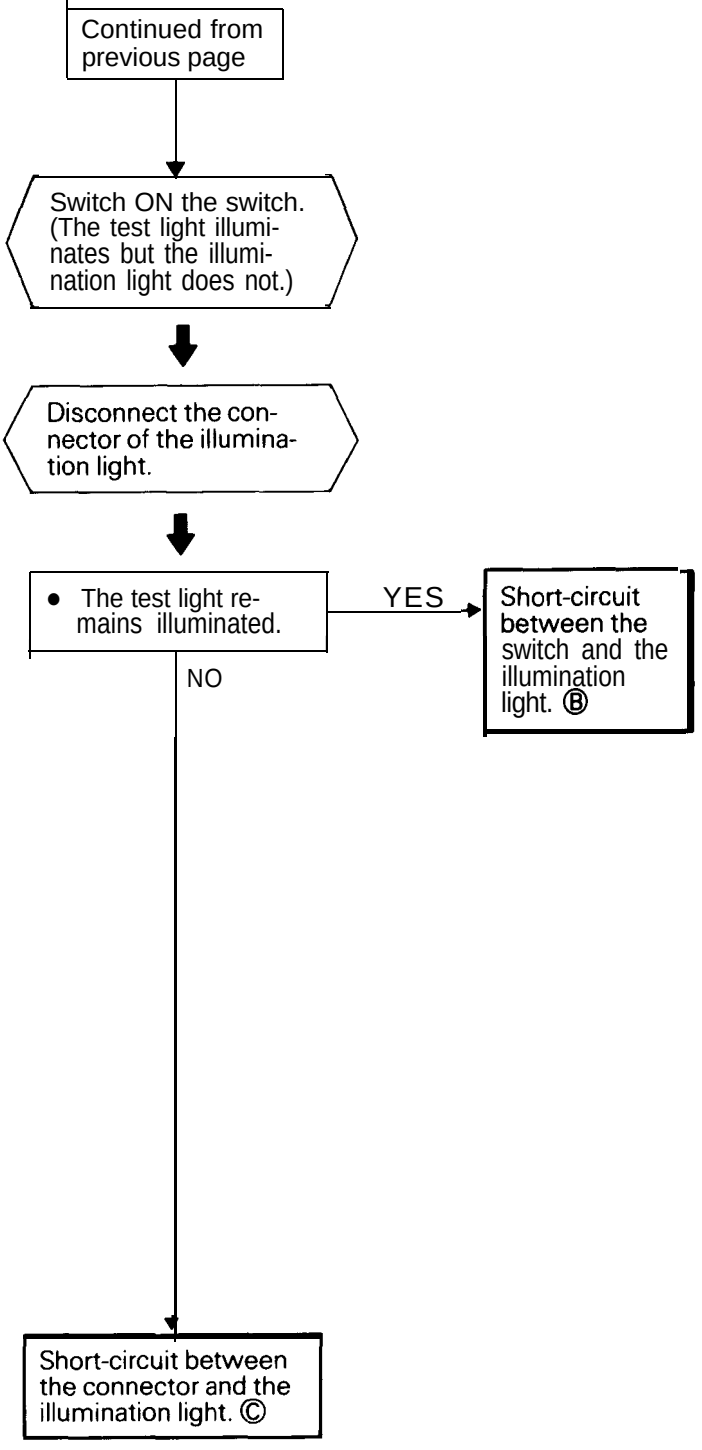
Because the fuse has blown, it is probable that there is a short-circuited circuit. Follow the procedures below to narrow down the short-circuit location.











3. CHECKING CONTINUITY

(1) When the switch is in the OFF position, the self power test light should come on or the ohmmeter should read 0 ohm only when the terminals 1 and 2 are interconnected.

(2) When the switch is the ON position, the self power test light should come on or the ohmmeter should read 0 ohm only when the terminals 3 and 4 are interconnected.

NOTES

CONFIGURATION DIAGRAMS

CONTENTS

N08VA --

Dash Panel 36

Engine and Transaxle <1.8L Engine> 34

Engine and Transaxle <2.0L DOHC Engine> 35

Engine Compartment <1.8L Engine> 28

Engine Compartment <2.0L DOHC Engine (Non-Turbo)> 30

Engine Compartment <2.0L DOHC Engine (Turbo)> 32

How to Read Configuration Diagrams 27

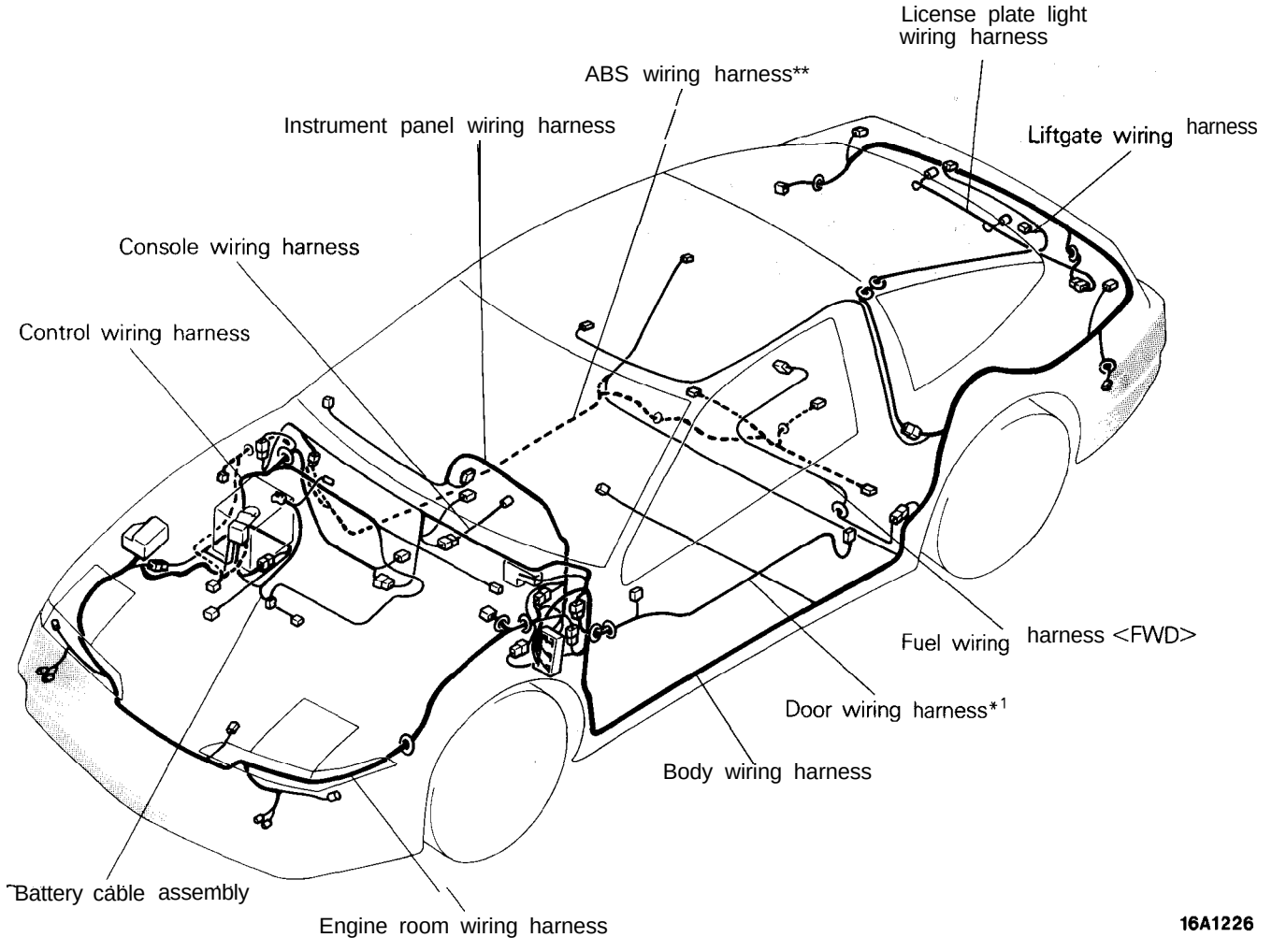
Instrument Panel and Floor Console 39

Interior 40

Overall Configuration Diagram 26

OVERALL CONFIGURATION DIAGRAM

N08VB--



NOTE
(1) This illustration shows only the major wiring harness.
(2) *1 indicates also equipped at the right side.
(3) *2 indicates vehicles with ABS.

HOW TO READ CONFIGURATION DIAGRAMS

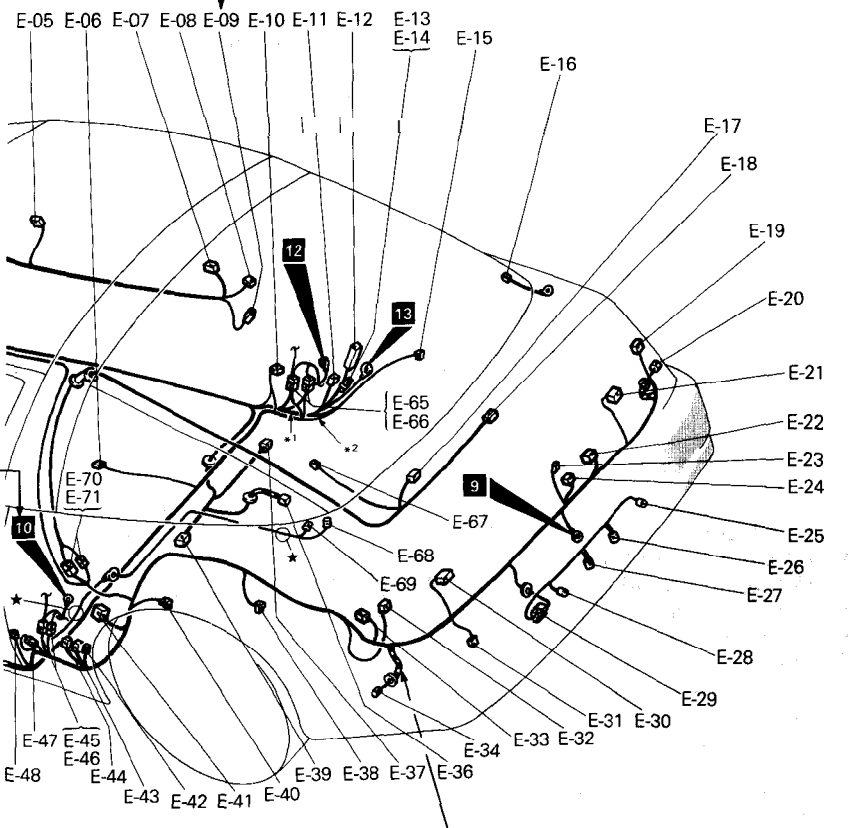
N08VCAH

The wiring diagrams are prepared in such a way that the arrangement of connectors for each vehicle, and the routing of each harness, can be easily understood for each individual wiring section.

Indicates the connector number.
The connector number used is the same number as that used for circuit diagrams; these numbers facilitate the location of the connector positions.
The alphabet letter used as the prefix represents the wiring section in which that connector is used; subsequent numerals make up the number that indicates particular characteristics of that individual connector. As a general rule, numbers are assigned clockwise around the wiring diagram.
Note that, if there is a concentration of connectors with the same form (same number of pins), the connnectors' colors are noted in order to facilitate identification,

Example: A-1 2 (Black)

- Connector color
- Number indicating the connector's characteristics (series number)
- Symbol indicating wiring section location of the connector
  - A: Engine compartment
  - B: Engine and transaxle
  - C: Dash panel
  - D: Instrument panel and floor console
  - E: Interior

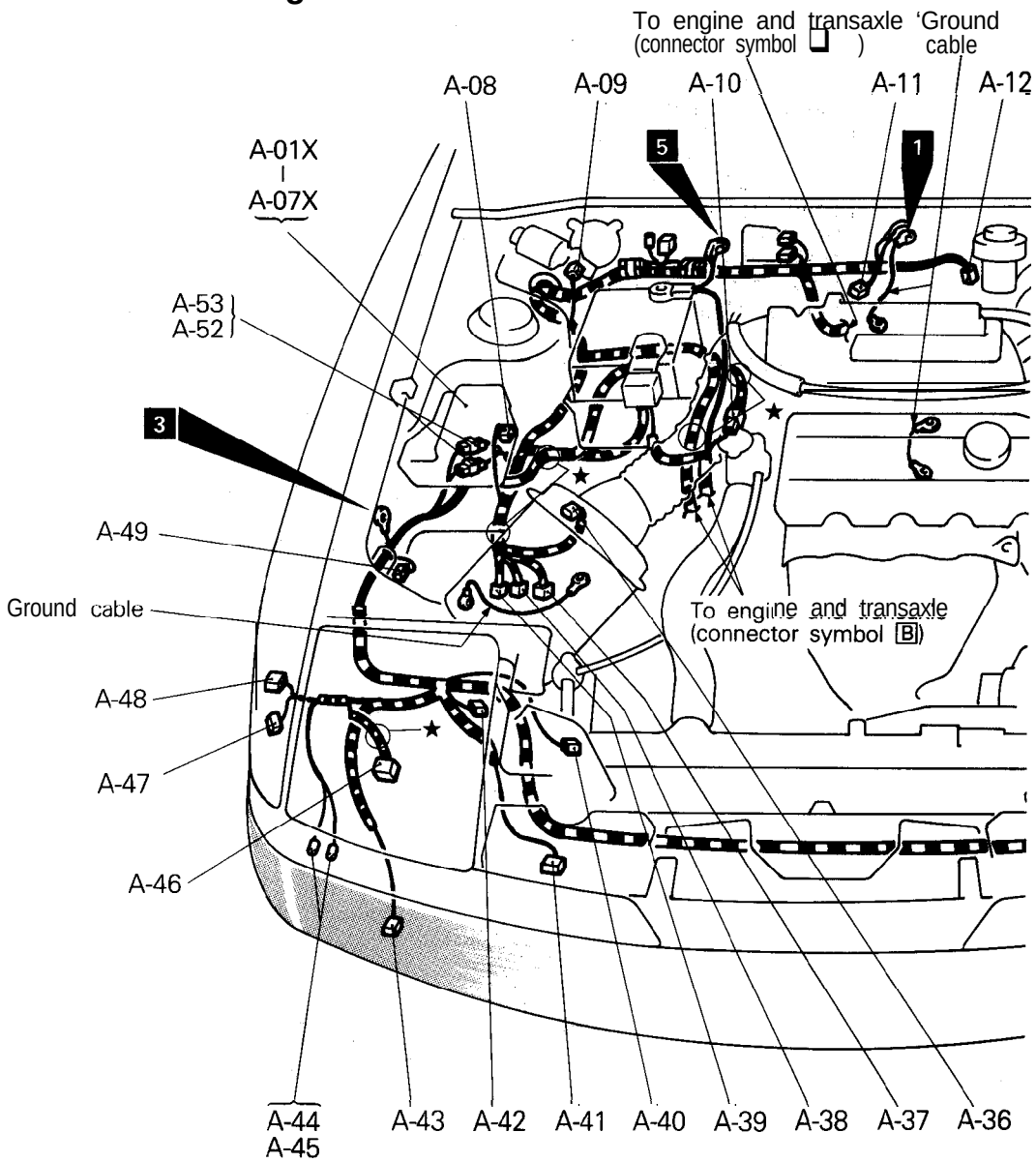


Indicates ground point.
The ground number used is the same number as that used for circuit diagrams; these numbers facilitate the location of the ground points,
For detailed information concerning ground points, refer to P.8–4.

Represents the part concealed by corrugated tubing.

ENGINE COMPARTMENT <1.8L Engine>

Connector symbol **A**

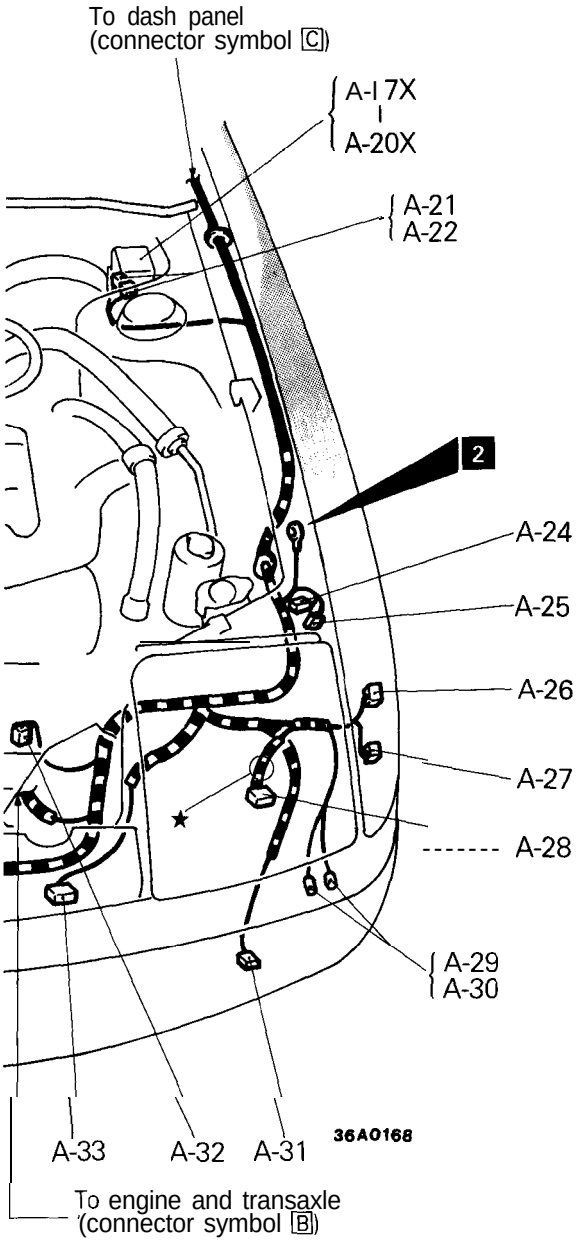


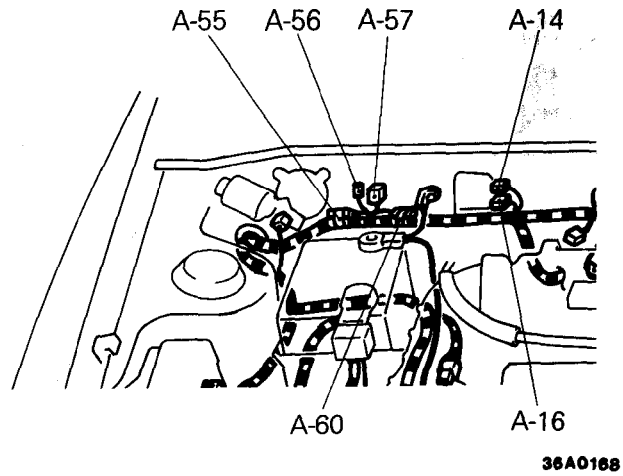
A-01X Taillight relay
A-02X Headlight relay
A-03X Radiator fan motor relay
A-04X Pop-up motor relay
A-05X Power window relay
A-06X Alternator relay
A-07X Fog light relay
(Refer to CENTRALIZED JUNCTION)

A-08 Dual pressure switch (for air conditioner circuit)
A-09 Wiper motor
A-10 Control wiring harness and battery cable assembly combination
A-11 Auto-cruise control vacuum pump
A-12 Brake fluid level sensor
A-13 –
A-14 Purge control solenoid valve
A-15 –
A-16 EGR control solenoid valve (Vehicles for California)

A-17X Condenser fan motor high-low changeover relay
A-18X Condenser fan motor relay
A-19X Magnetic clutch relay
(Refer to CENTRALIZED JUNCTION (for air conditioner circuit))

A-20X Condenser
A-21, A-22 Air conditioner relay box
A-23 –
A-24 Washer motor
A-25 Pop-up motor (Left side)
A-26, A-27 Front combination light (Left side)
A-28 Headlight (Left side)
A-29, A-30 Horn (Left side)
A-31 Fog light (Left side)
A-32 Condenser fan motor (for air conditioner circuit)
A-33 Front turn-signal light (Left side)



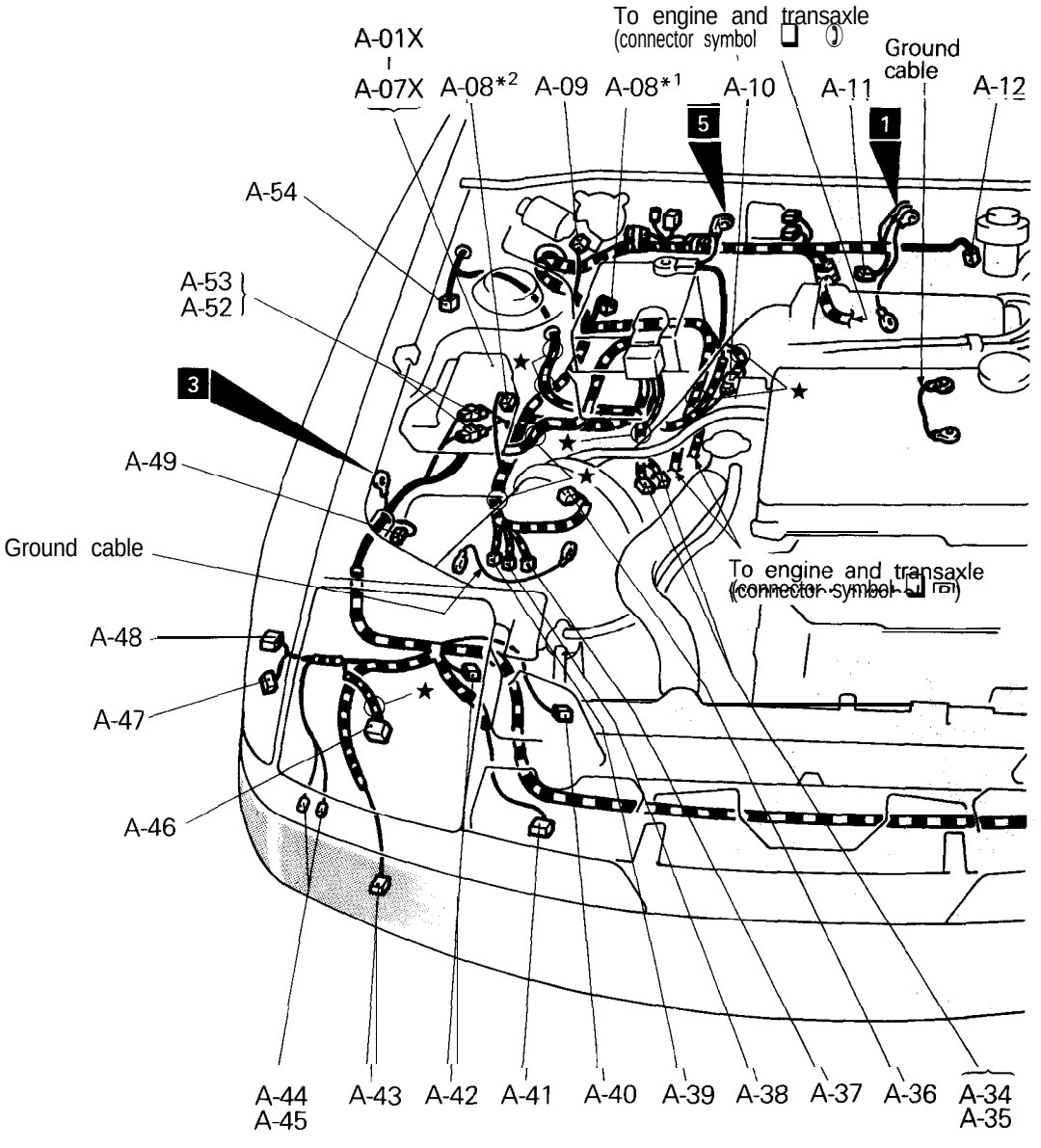


A-34
A-35 –
A-36 Air flow sensor
A-37 Automatic transaxle fluid temperature sensor
A-38 Kickdown servo switch <A/T>
A-39 Pulse generator <A/T>
A-40 Radiator fan assembly
A-41 Front turn-signal light (Right side)
A-42 Radiator water level switch
A-43 Fog light (Right side)
A-44, A-45 Horn (Right side)
A-46 Headlight (Right side)
A-47, A-48 Front combination light (Right side)
A-49 Pop-up motor (Right side)
A-50 –
A-51 –
A-52, A-53 Control wiring harness and engine compartment wiring harness combination
A-54
A-55 Fuel pump check connector
A-56 Noise condenser
A-57 Defogger relay
A-58 –
A-59 –
A-60 Ignition timing adjustment connector

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point '(example: 1), refer to P.8-4.
(3) "–" means that the connector with code-number is not used.

ENGINE COMPARTMENT <2.0L DOHC Engine (Non-Turbo)>

Connector symbol **A**

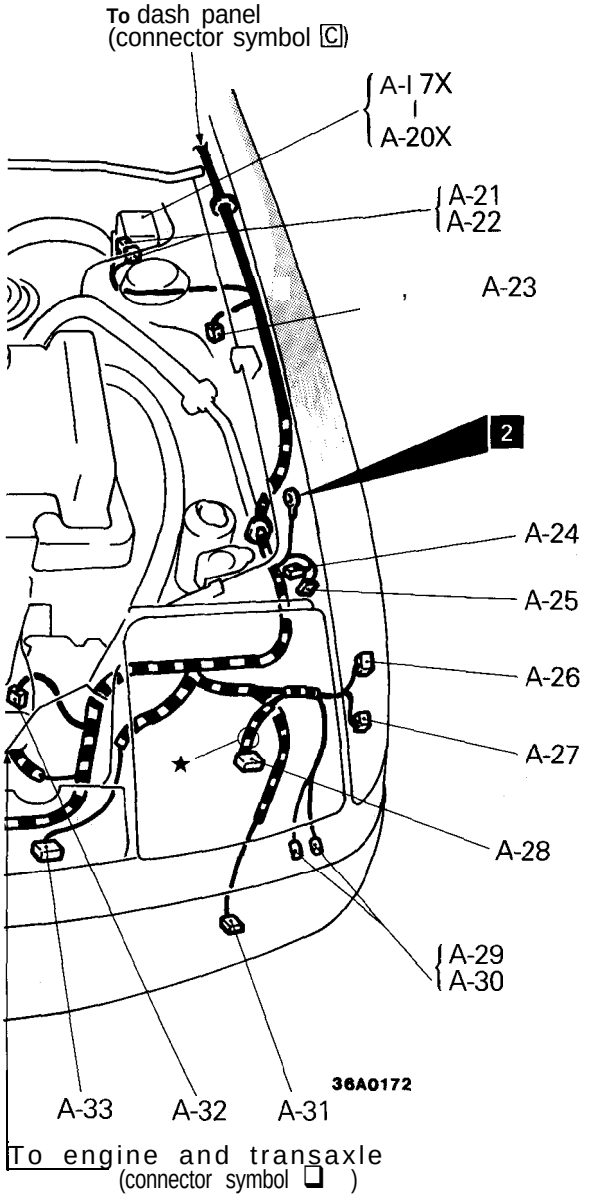


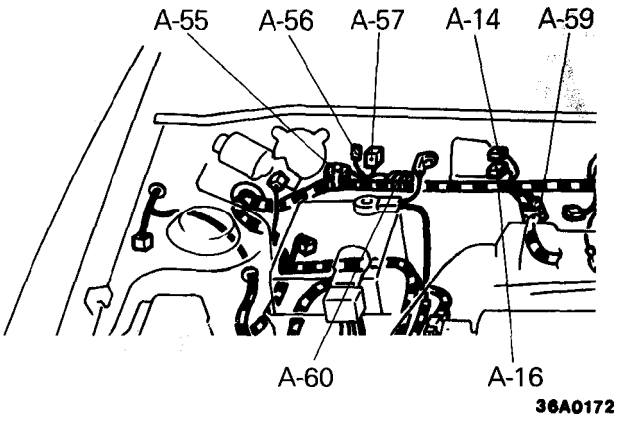
A-01X Taillight relay
A-02X Headlight relay
A-03X Radiator fan motor relay
A-04X Pop-up motor relay
A-05X Power window relay
A-06X Alternator relay
A-07X Fog light relay
} Refer to CENTRALIZED JUNCTION

A-08 Dual pressure switch (for air conditioner circuit)
A-09 Wiper motor
A-10 Control wiring harness and battery cable assembly combination
A-11 Auto-cruise control vacuum pump
A-12 Brake fluid level sensor
A-13 –
A-14 Purge control solenoid valve
A-15 –
A-16 EGR control solenoid valve (Vehicles for California)

A-17X Condenser fan motor high-low changeover relay
A-18X Condenser fan motor relay
A-19X Magnetic clutch relay
A-20X Condenser
} Refer to CENTRALIZED JUNCTION (for air conditioner circuit)

A-21, A-22 Air conditioner relay box
A-23 ABS front speed sensor (Left side)
A-24 Washer motor
A-25 Pop-up motor (Left side)
A-26, A-27 Front combination light (Left side)
A-28 Headlight (Left side)
A-29, A-30 Horn (Left side)
A-31 Fog light (Left side)
A-32 Condenser fan motor (for air conditioner circuit)
A-33 Front turn-signal light (Left side)



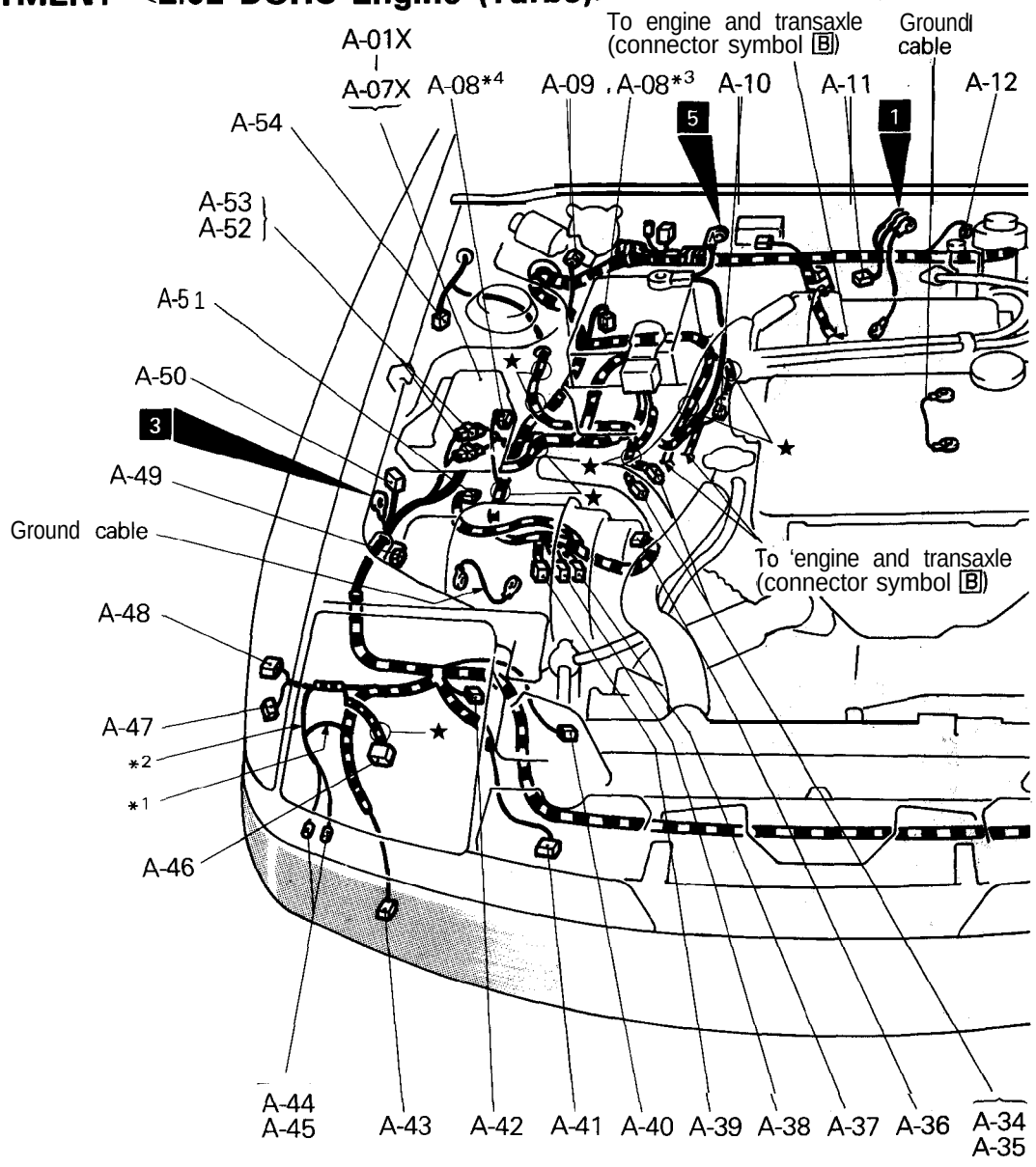


A-34, A-35 } Hydraulic unit
A-36 Air flow sensor
A-37 Automatic transaxle fluid temperature sensor
A-38 Kickdown servo switch <A/T>
A-39 Pulse generator <A/T>
A-40 Radiator fan assembly
A-41 Front turn-signal light (Right side)
A-42 Radiator water level switch
A-43 Fog light (Right side)
A-44, A-45 } Horn (Right side)
A-46 Headlight (Right side)
A-47, A-48 } Front combination light (Right side)
A-49 Pop-up motor (Right side)
A-50 —
A-51 —
A-52, A-53 } Control wiring harness and engine compartment wiring harness combination
A-54 ABS front speed sensor (Right side)
A-55 Fuel pump check connector
A-56 Noise condenser
A-57 Defogger relay
A-58 —
A-59 Engine speed adjustment connector
A-60 Ignition timing adjustment connector

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: 1), refer to P.8-4.
(3) "—" means **that the connector with code-number is not** used.
(4) The wiring indicated by the *1 symbol is applicable to **vehicles with ABS and the wiring indicated by the *2** symbol is applicable to vehicles without ABS.

ENGINE COMPARTMENT <2.0L DOHC Engine (Turbo)>

Connector symbol **A**

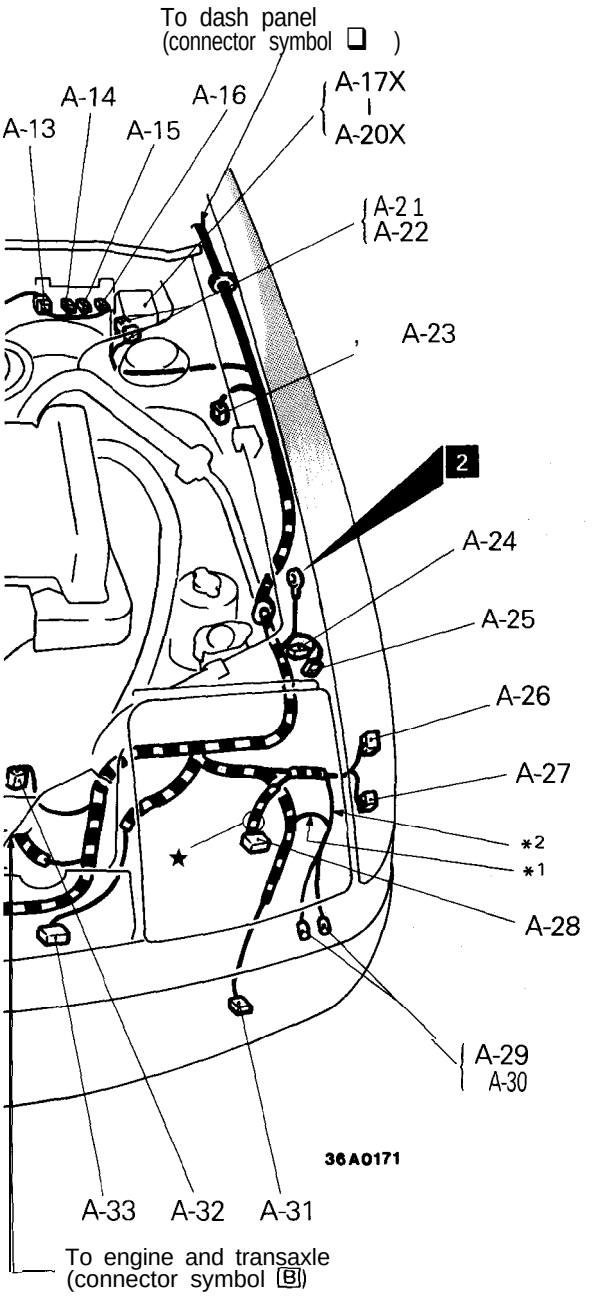


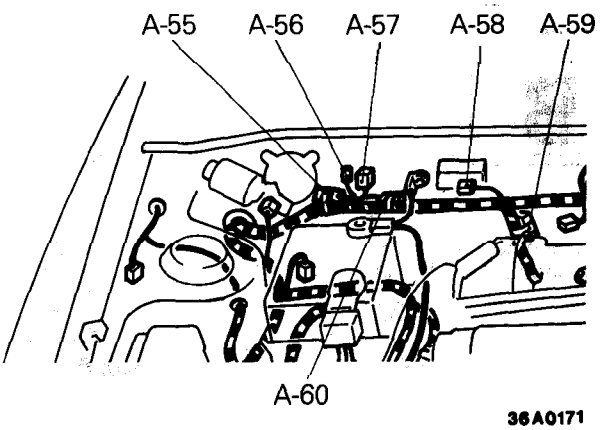
A-01X Taillight relay
A-02X Headlight relay
A-03X Radiator fan motor relay
A-04X Pop-up motor relay
A-05X Power window relay
A-06X Alternator relay
A-07X Fog light relay
(Refer to CENTRALIZED JUNCTION)

A-08 Dual pressure switch (for air conditioner circuit)
A-09 Wiper motor
A-10 Control wiring harness and battery cable assembly combination
A-11 Auto-cruise control vacuum pump
A-12 Brake fluid level sensor
A-13 Control wiring harness and solenoid valve harness assembly combination
A-14 Purge control solenoid valve
A-15 Fuel pressure solenoid valve
A-16 EGR control solenoid valve (Vehicles for California)

A-17X Condenser fan motor high-low changeover relay
A-18X Condenser fan motor relay
A-19X Magnetic clutch relay
A-20X Condenser
(Refer to CENTRALIZED JUNCTION (for air conditioner circuit))

A-21, A-22 Air conditioner relay box
A-23 ABS front speed sensor (Left side)
A-24 Washer motor
A-25 Pop-up motor (Left side)
A-26, A-27 Front combination light (Left side)
A-28 Headlight (Left side)
A-29, A-30 Horn (Left side)
A-31 Fog light (Left side)
A-32 Condenser fan motor (for air conditioner circuit)
A-33 Front turn-signal light (Left side)



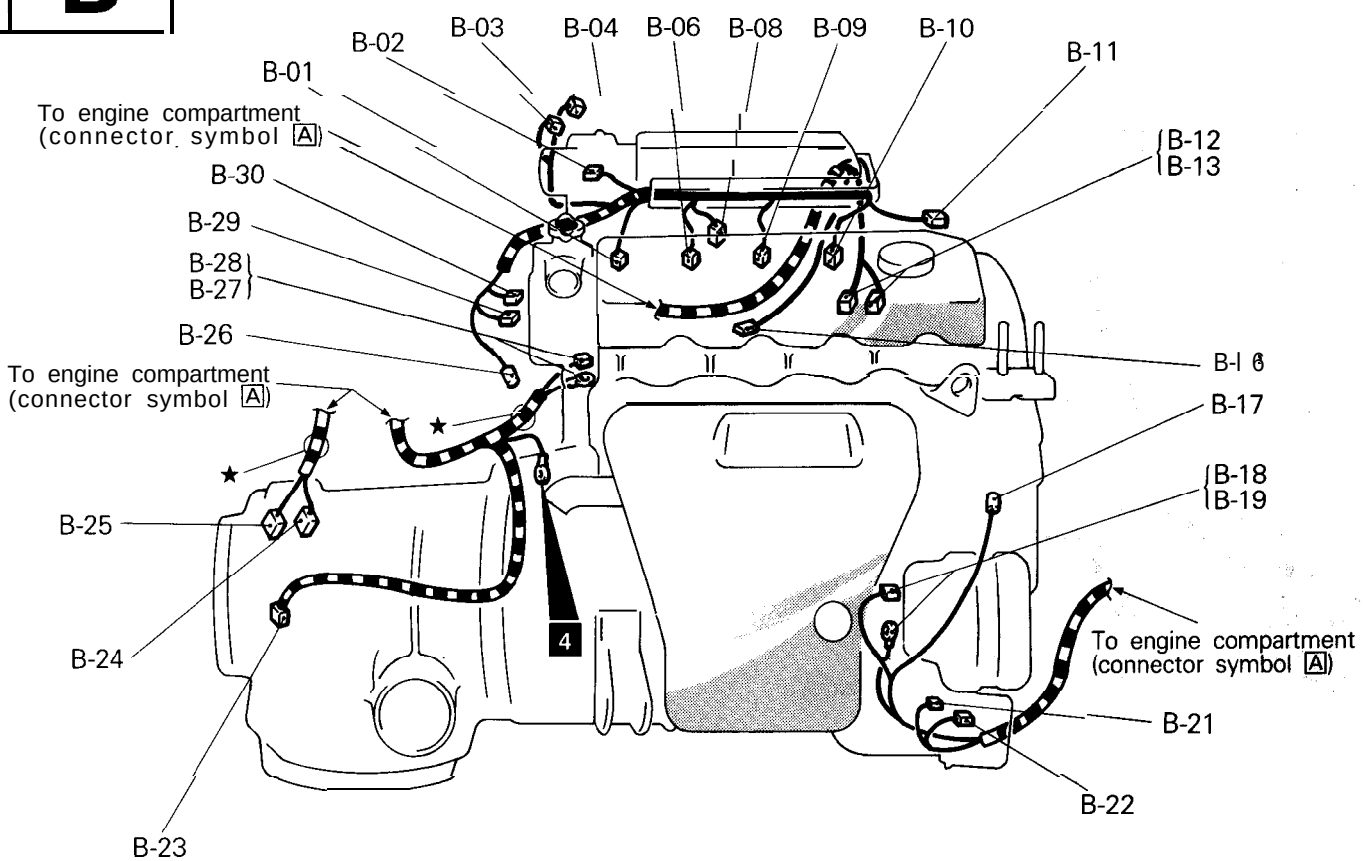


A-34, A-35 } Hydraulic unit
A-36 Air flow sensor
A-37 Automatic transaxle fluid temperature sensor
A-38 Kickdown servo switch <A/T>
A-39 Pulse generator <A/T>
A-40 Radiator fan assembly
A-41 Front turn-signal light (Right side)
A-42 Radiator water level switch
A-43 Fog light (Right side)
A-44, A-45 } Horn (Right side)
A-46 Headlight (Right side)
A-47, A-48 } Front combination light (Right side)
A-49 Pop-up motor (Right side)
A-50 Hood switch
A-51 Waste gate solenoid valve
A-52, A-53 } Control wiring harness and engine compartment wiring harness combination
A-54 ABS front speed sensor (Right side)
A-55 Fuel pump check connector
A-56 Noise condenser
A-57 Defogger relay
A-58 Resistor
A-59 Engine speed adjustment connector
A-60 Ignition timing adjustment connector

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: 1), refer to P.8-4.
(3) The wiring indicated by the *1 symbol is applicable to vehicles with the theft-alarm system and the wiring indicated by the *2 symbol is applicable to vehicles without the theft-alarm system.
(4) The wiring indicated by the *3 symbol is applicable to vehicles with ABS and the wiring indicated by the *4 symbol is applicable to vehicles without ABS.

ENGINE AND TRANSAXLE <1.8L Engine>

Connector symbol **B**

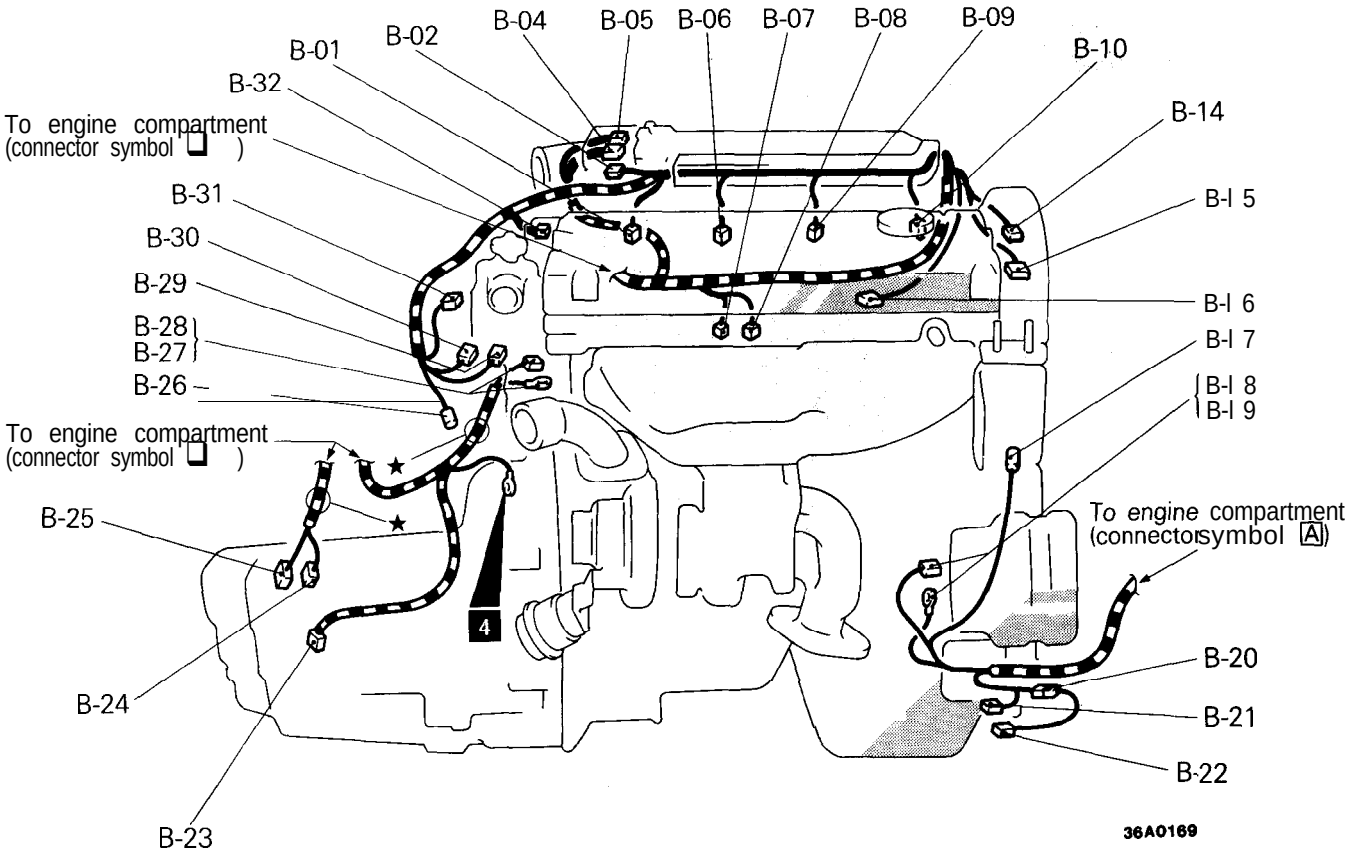


B-01 Injector No. 4
B-02 Throttle position sensor
B-03 Motor position sensor
B-04 Idle speed control actuator
B-05 –
B-06 Injector No. 3
B-07 –
B-08 EGR temperature sensor (Vehicles for California)
B-09 Injector No. 2
B-I 0 Injector No. 1
B-I 1 CRC filter
B-I 2, B-I 3 Distributor assembly
B-14 –
B-15 –
B-16 Magnetic clutch (for air conditioner circuit)
B-I 7 Power steering oil pressure switch
B-I 8, B-I 9 Alternator
B-20 –
B-21 Oil pressure switch
B-22 Oil pressure gauge unit
B-23 Back-up light switch <M/T>
B-24 4-speed automatic transaxle control solenoid valve
B-25 Inhibitor switch
B-26 Oxygen sensor
B-27, B-28 Starter motor
B-29 Engine coolant temperature gauge unit
B-30 Engine coolant temperature sensor
B-31 –
B-32 –

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: ❑), refer to P.8-4.
(3) "–" means that the connector with code-number is not used.

ENGINE AND TRANSAXLE <2.0L DOHC Engine>

Connector symbol **B**

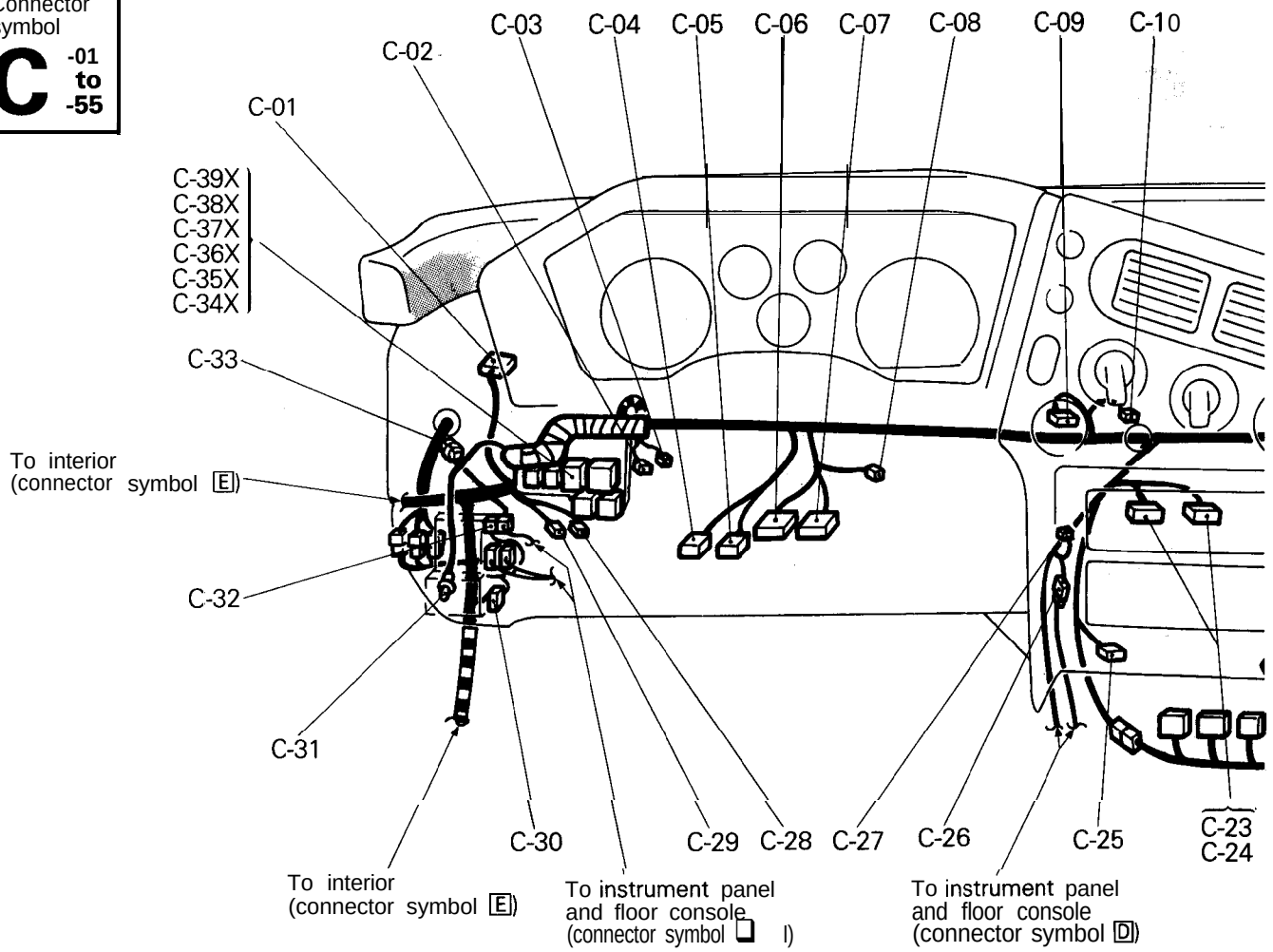


B-01 Injector No. 4
B-02 Throttle position sensor
B-03 –
B-04 Idle speed control actuator
B-05 Idle switch
B-06 Injector No. 3
B-07 Detonation sensor <2.0L DOHC turbo>
B-08 EGR temperature sensor (Vehicles for California)
B-09 Injector No. 2
B-I 0 Injector No. 1
B-11, B-12, B-13 –
B-I 4 Ignition coil
B-15 Power transistor
B-I 6 Magnetic clutch (for air conditioner circuit)
B-I 7 Power steering oil pressure switch
B-18, B-I 9 Alternator
B-20 Engine compartment wiring harness and engine wiring harness combination
B-21 Oil pressure switch
B-22 Oil pressure gauge unit
B-23 Back-up light switch <M/T>
B-24 4-speed automatic transaxle control solenoid valve
B-25 Inhibitor switch
B-26 Oxygen sensor
B-27, B-28 Starter motor
B-29 Engine coolant temperature gauge unit
B-30 Engine coolant temperature sensor
B-31 Engine coolant temperature switch (for air conditioner circuit)
B-32 Crank angle and top dead center sensor

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: ❑), refer to P.8-4.
(3) "–" means that the connector with code-number is not used.

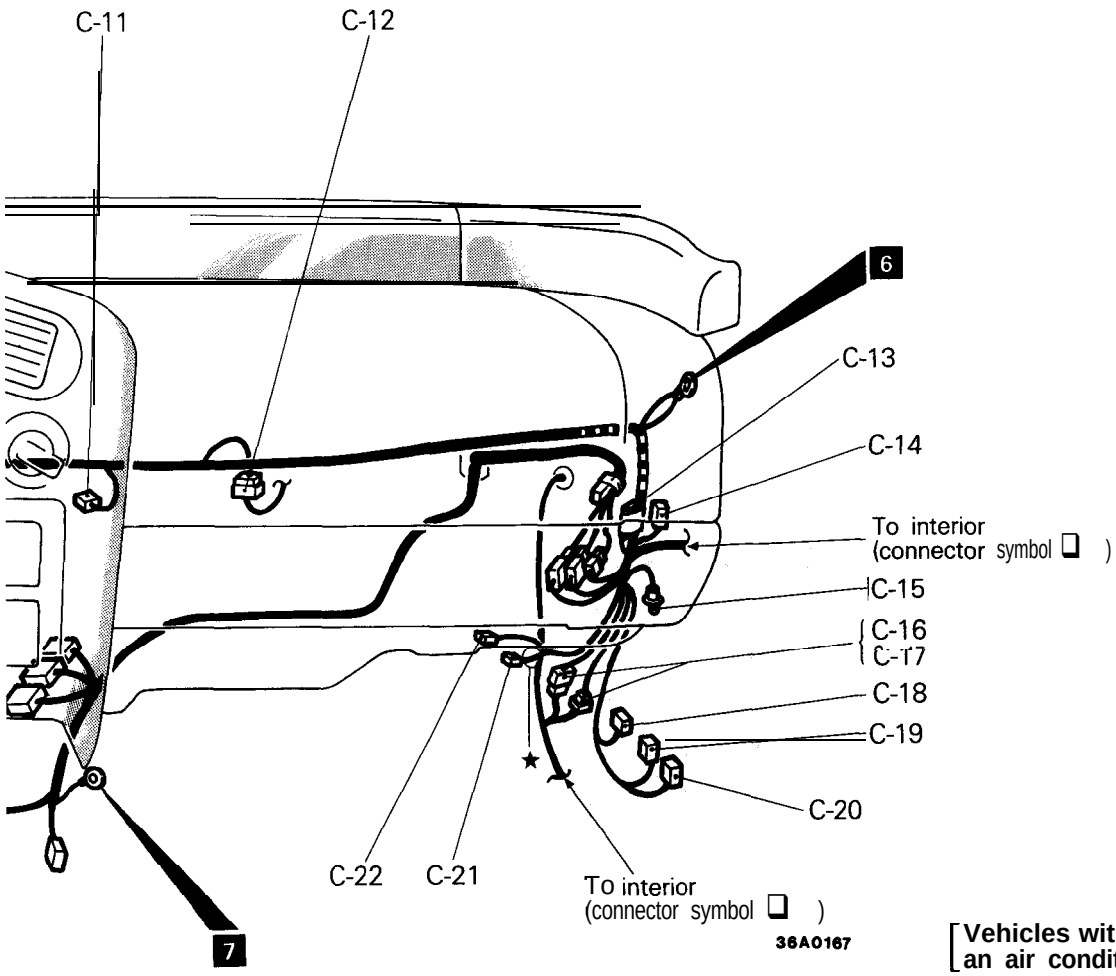
DASH PANEL

Connector symbol **C -01 to -55**



C-01 Auto-cruise control unit or jumper connector
C-02, C-03 Stop light switch
C-04 Ignition switch
C-05 Key reminder switch
C-06, C-07 Column switch
C-08 Accelerator pedal switch <A/T>
C-09 Blower switch
C-10 Air conditioner switch
C-11 Blower resistor
C-12 Air conditioner wiring harness and bodywiring harness combination
C-13 Diode (for pop-up circuit)
C-14 Transistor relay (for daytime running light circuit)
C-15 Foot light (Right side)
C-16, C-17 Body wiring harness and ABS wiring harness combination
C-18 Door lock control unit
C-19, C-20 Theft-alarm control unit
C-21 Blower motor high relay (vehicles with an air conditioner) or jumper connector
C-22 Blower motor
C-23, C-24 Radio
C-25 Theft-alarm starter relay <M/T>
C-26 Floor console wiring harness and body wiring harness combination
C-27 Buzzer
C-28 Clutch pedal switch (for starter circuit) <M/T>
C-29 Clutch pedal switch (for auto-cruise circuit) <M/T>
C-30 Self-diagnosis connector
C-31 Foot light (Left side)
C-32 Turn-signal and hazard flasher unit
C-33 Diode (for theft-alarm system or daytime running light circuit)
C-34X Door lock relay
C-35X Starter relay <M/T> or theft-alarm starter relay <A/T>
C-36X Defogger timer
C-37X Seatbelt timer (without automatic seatbelt)
C-38X Daytime running light relay 1
C-39X Daytime running light relay 2
C-40 Air conditioner control unit
C-41 Air inlet sensor

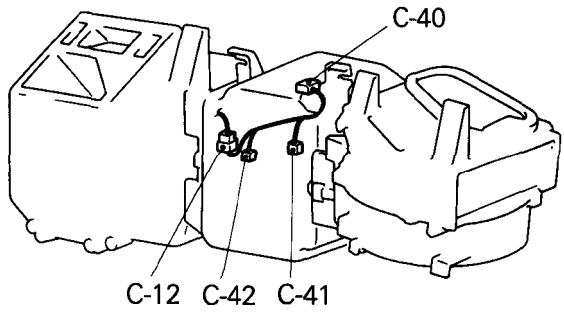
Refer to CENTRALIZED JUNCTION



36A0167

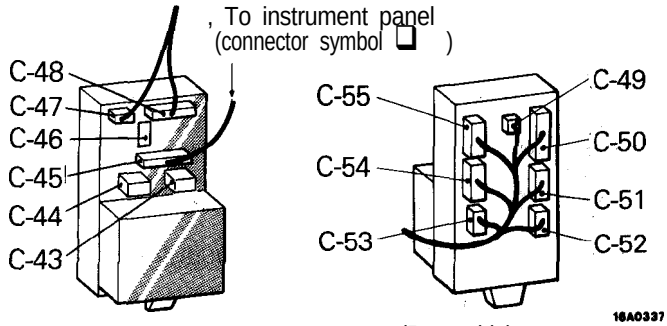
C-42 Air thermo sensor
C-43 Heater relay
C-44 Theft-alarm horn relay
C-45 Instrument panel wiring harness and junction block combination
C-46 No connection
C-47, C-48, C-49, C-50 Engine compartment wiring harness and junction block combination
C-51, C-52, C-53, C-54, C-55 Body wiring harness and junction block combination

[Vehicles with an air conditioner]



36A0051

[Junction block]



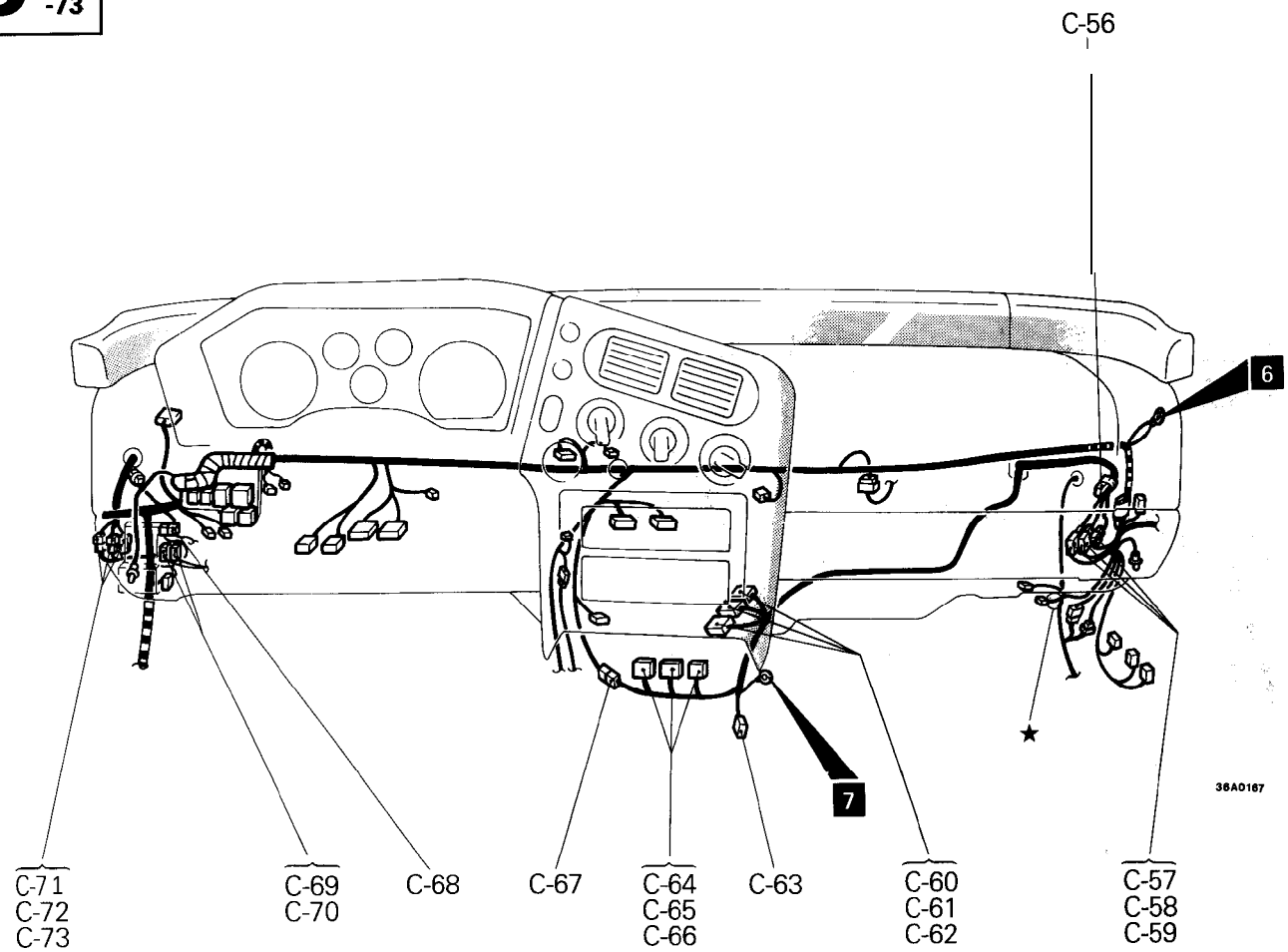
(Front side) 16A0903

(Rear side) 16A0337

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: ❑), refer to P.8-4.

DASH PANEL

Connector symbol
C -56 to -73



C-56 Oxygen sensor check connector <2.0L DOHC engine >

C-57, C-58, C-59 } Control wiring harness and body wiring harness combination

C-60, C-61, C-62 } 4-speed automatic transaxle control unit

C-63 MPI control relay

C-64, C-65, C-66 } MPI control unit

C-67 Control wiring harness and body wiring harness combination

C-68 Instrument panel wiring harness and engine compartment wiring harness combination

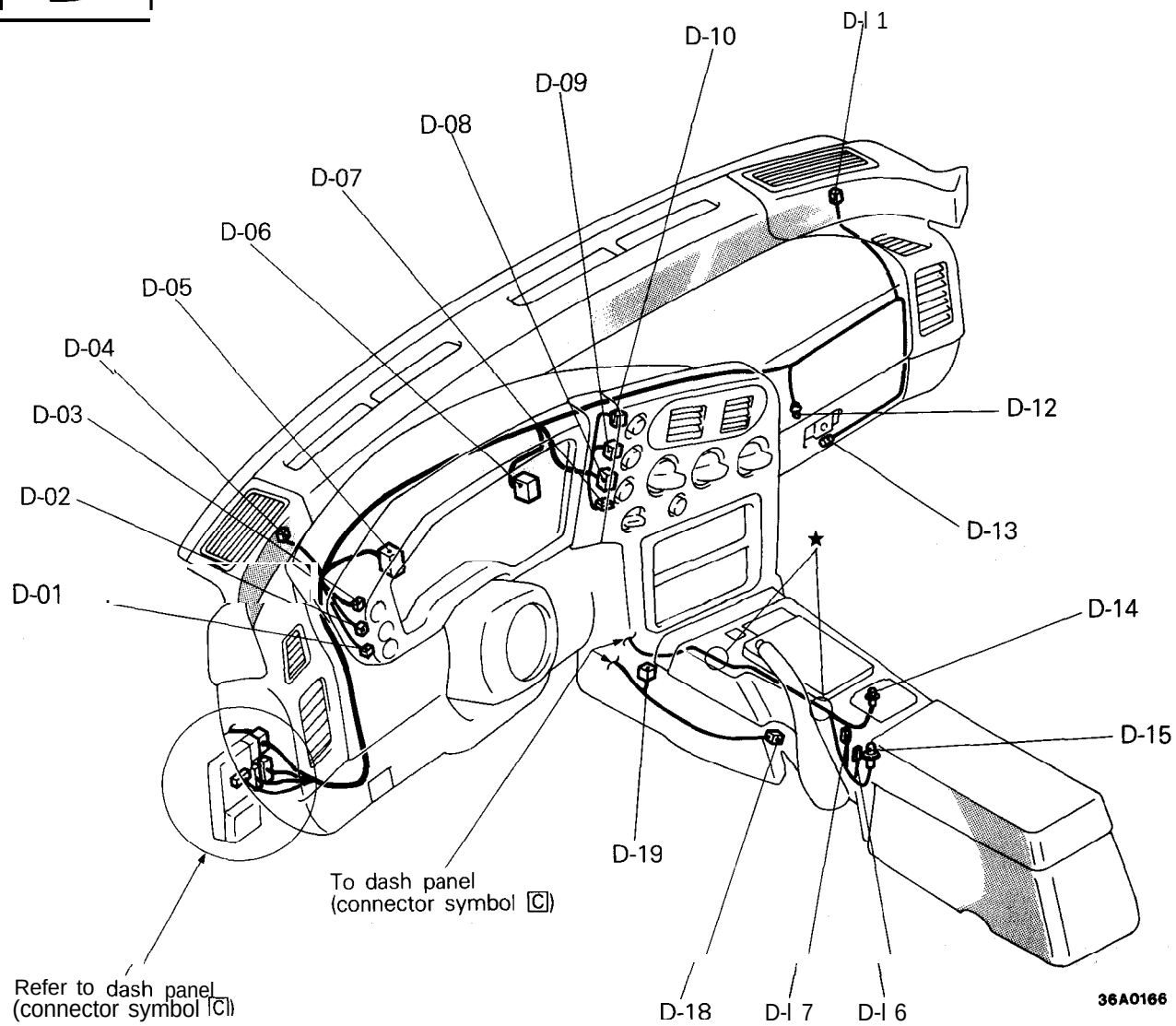
C-69, C-70 } Instrument panel wiring harness and body wiring harness combination

C-71, C-72, C-73 } Engine compartment wiring harness and body wiring harness combination

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: 6), refer to P.8-4.

INSTRUMENT PANEL AND FLOOR CONSOLE

Connector symbol **D**

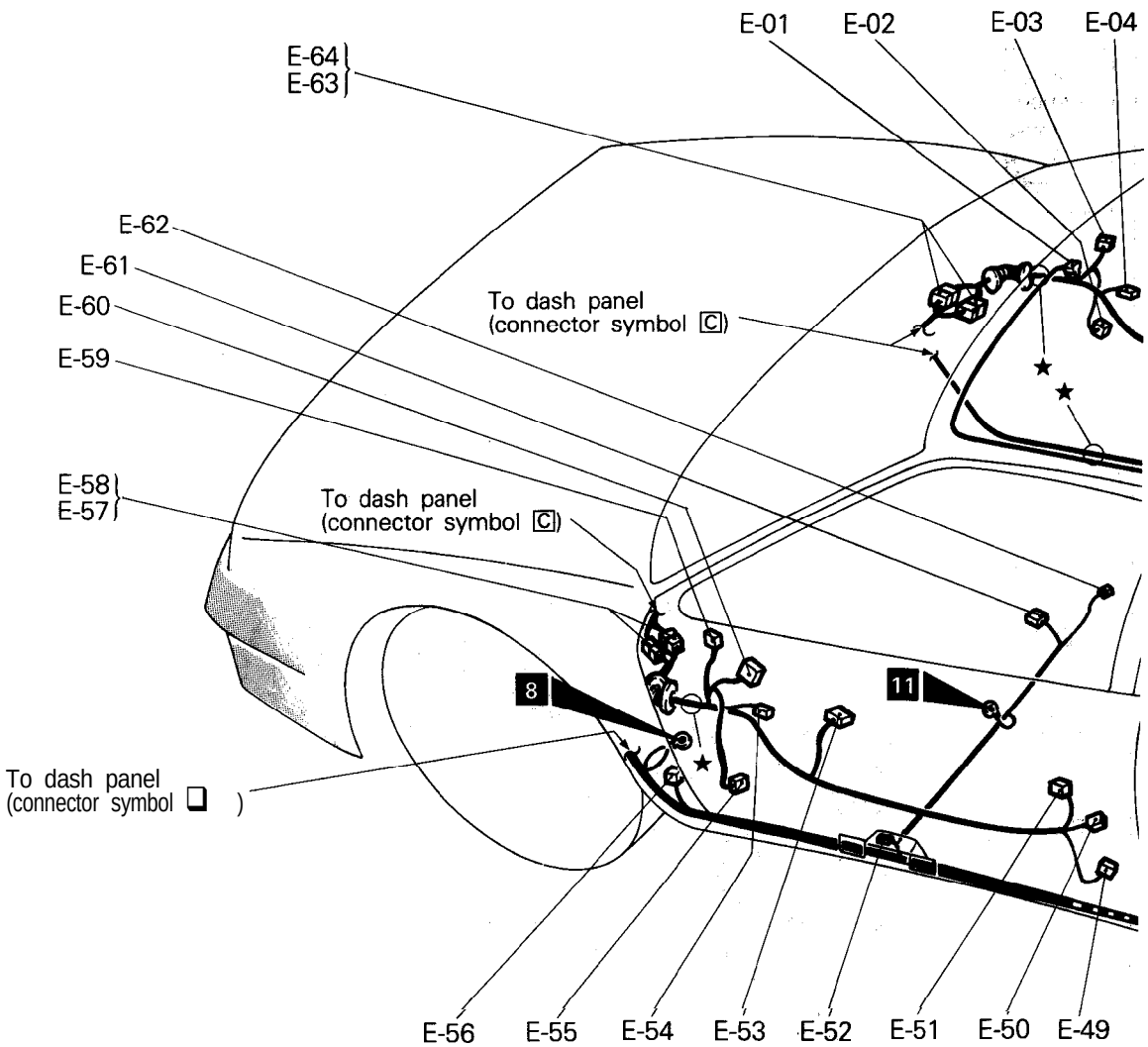


D-0 1	Rheostat
D-02	Fog light switch
D-03	Pop-up switch
D-04	Front speaker (Left side)
D-05, D-06	Combination meter
D-07	Heater control panel illumination light
D-08	Rear wiper and washer switch
D-09	Defogger switch
D-10	Hazard switch
D-I 1	Front speaker (Right side)
D-I 2	Glove compartment light
D-I 3	Glove compartment light switch
D-I 4	Ashtray illumination light
D-I 5	Cigarette lighter illumination light
D-16	Cigarette lighter (+)
D-17	Cigarette lighter (−)
D-I 8	Overdrive switch and automatic transaxle selector lever position illumination light <A/T>
D-I 9	Power/Economy changeover switch <A/T>

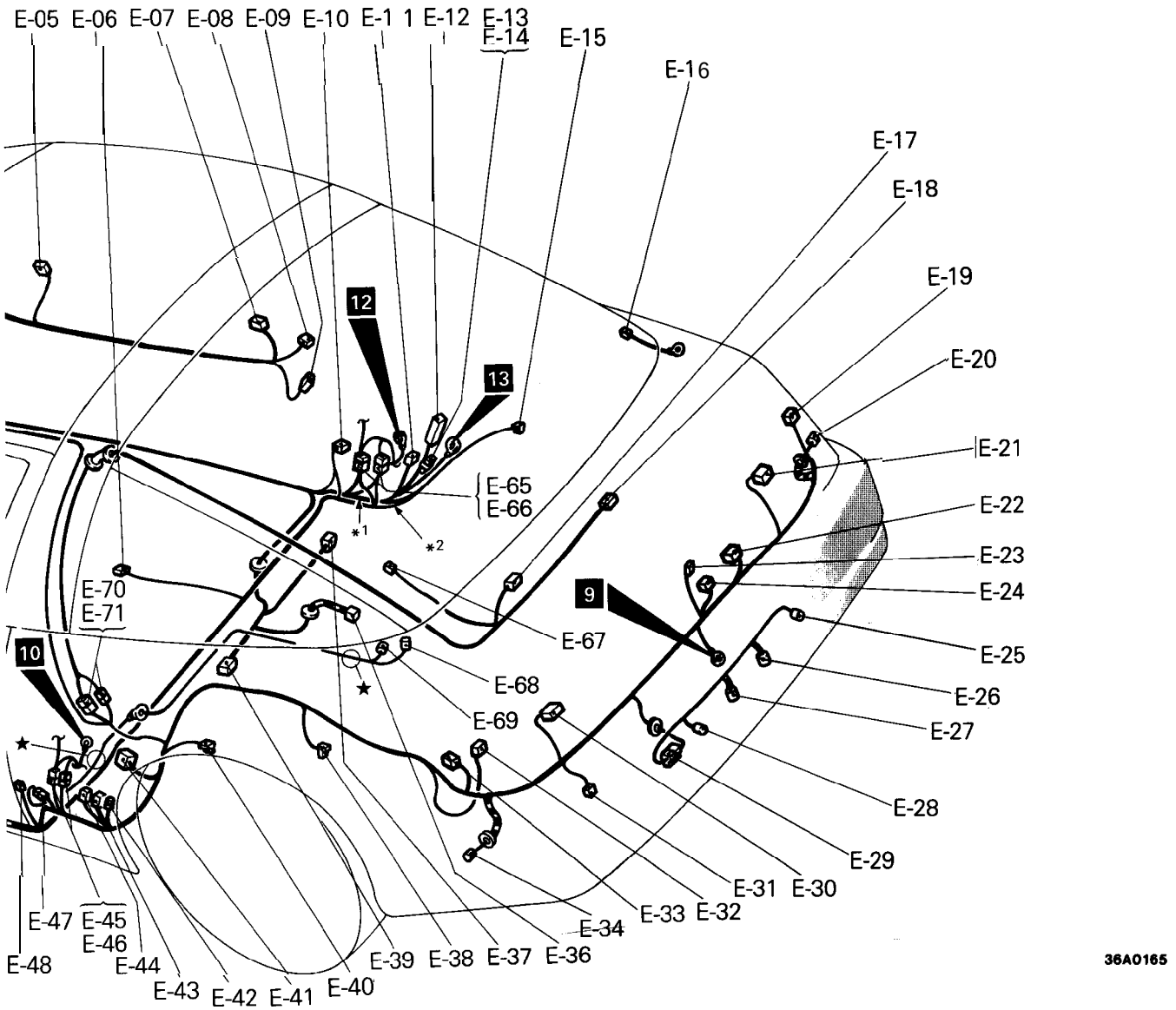
Remark
The mark ★ shows the standard mounting position of wiring harness.

INTERIOR

Connector symbol **E**



E-01 Dome light
E-02 Door speaker (Right side)
E-03 Door mirror (Right side)
E-04 Power window motor (Right side)
E-05 Power window sub-switch
E-06 Outer switch (for automatic seat belt)
E-07 Door latch switch (Right side) (for automatic seat belt)
E-08 Door key cylinder unlock switch (Right side) (for theft-alarm system)
E-09 Door lock actuator (Right side)
E-10 Door switch (Right side)
E-11 ABS power relay
E-12 ABS control unit
E-13 Diode (for ABS circuit)
E-14 Resistor (for ABS circuit)
E-15 Rear speaker (Right side)
E-16 Defogger (–)
E-17 Rear wiper motor
E-18 High-mounted stop light
E-19 Rear combination light (Right side)
E-20 Rear side marker light (Right side)
E-21 Rear combination light (Right side)
E-22 Liftgate unlock switch (for theft-alarm system)
E-23 Liftgate latch switch
E-24 Liftgate switch (for theft-alarm system)
E-25 Back-up light (Right side)
E-26, E-27 License plate lights
E-28 Back-up light (Left side)
E-29 License plate light wiring harness and body wiring harness combination
E-30 Rear combination light (Left side)
E-31 Rear washer motor
E-32 Rear combination light (Left side)
E-33 Fuel pump and gauge assembly <AWD>
E-34 Rear side marker light (Left side)
E-35 –
E-36 G sensor (for ABS circuit)
E-37 ABS rear speed **sensor (Right side)**
E-38 Luggage compartment light
E-39 ABS rear speed sensor (Left side)
E-40 Rear speaker (Left side)
E-41 Automatic seat belt control unit



E-42 Noise condenser
E-43 **Intermittent wiper relay (Rear wiper)**
E-44 Dome light relay
E-45, E-46 Automatic seat belt motor relay (Left side)
E-47 Fuel wiring harness and body wiring harness combination <FWD>
E-48 Door switch (Left side)
E-49 Door lock actuator (Left side)
E-50 Door key cylinder unlock switch (Left side) (for theft-alarm system)
E-51 Door latch switch (Left side) (for automatic seat belt)
E-52 Diode (for door-ajar warning light or buzzer circuit*)
E-53 Power window main switch
E-54 Power window motor (Left side)
E-55 Door speaker (Left side)
E-56 Passing control relay
E-57, E-58 Door wiring harness and body wiring harness combination (Left side)
E-59 Door mirror (Left side)
E-60 Remote controlled mirror switch
E-61 Seat belt buckle switch or seat belt switch*
E-62 Parking brake switch
E-63, E-64 Door wiring harness and body wiring harness combination (Right side)
E-65, E-66 Automatic seat belt motor relay (Right side)
E-67 Defogger (+)
E-68 Fuel gauge unit <FWD>
E-69 Fuel pump <FWD>
E-70, E-71 Liftgate wiring harness and body wiring harness combination

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: ❑), refer to P.8-4.
(3) "–" means that the connector with code-number is not used.
(4) * indicates vehicles without automatic seat belt.
(5) **The wiring indicated by the *1 symbol is applicable to vehicles with ABS and the wiring indicated by the *2 symbol is applicable to vehicles without ABS.**

NOTES

CIRCUIT DIAGRAMS

CONTENTS

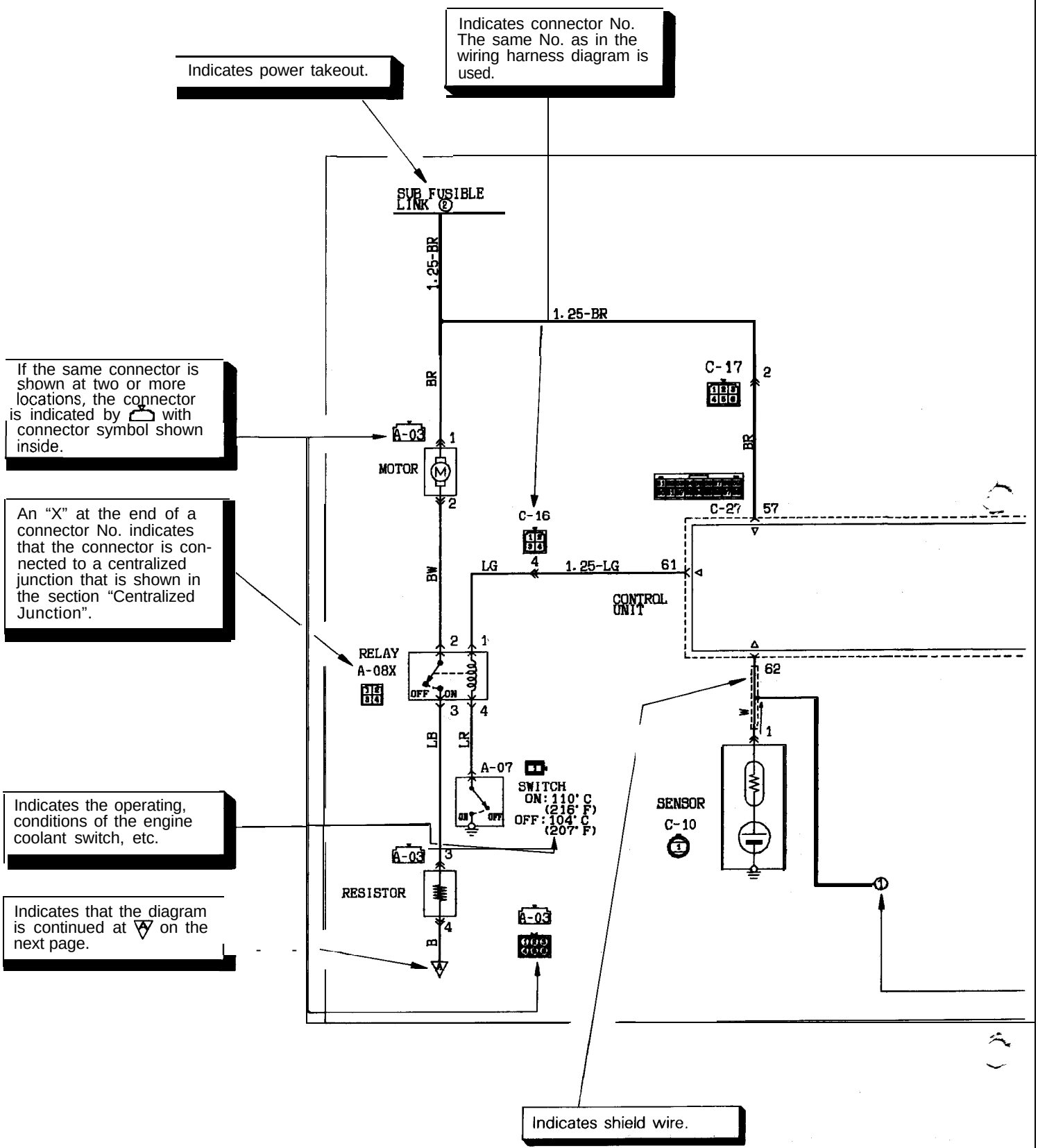
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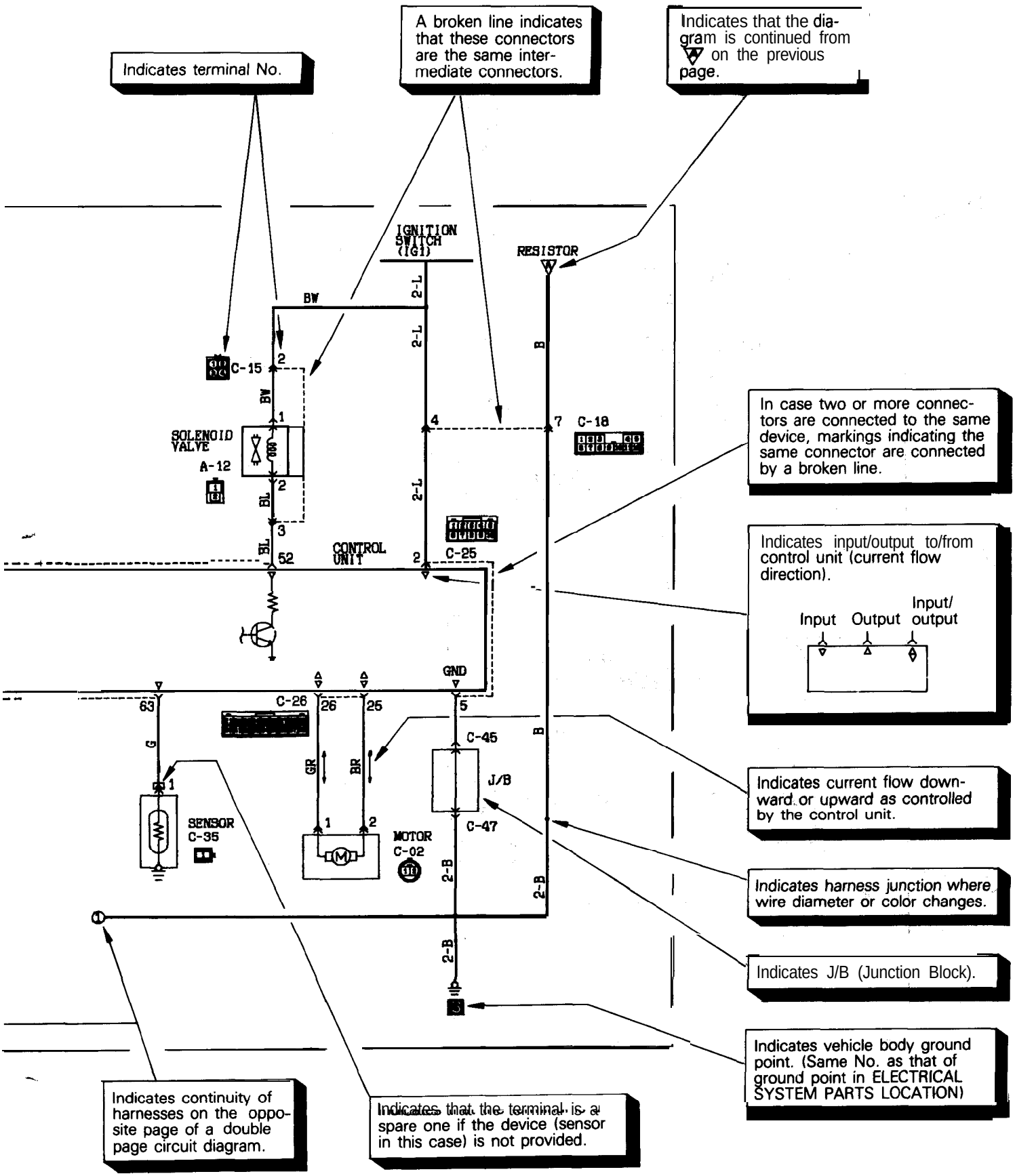
Air Conditioner Circuit 99
Anti-Lock Braking System Circuit 111
Audio Circuit 270
Auto-Cruise Control Circuit 121
Automatic Seat Belt Circuit 105
Back-Up Light Circuit 230
Buzzer Circuit 109
Central Door Locking Circuit 95
Charging Circuit 143
Cigarette Lighter Circuit 267
Cooling Circuit 84
Defogger Circuit 297
Dome Light, Ignition Key Illumination Light, Foot Light, Glove Compartment Light and Luggage Compartment Light Circuit 228
ELC 4-Speed Automatic Transaxle Circuit 89
Fog Light Circuit 222
Headlight Circuit 213
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Power Distribution Circuit 49
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Taillight, Position Light, Side Marker Light and License Plate Light Circuit 227
Theft-alarm Circuit 130
Turn Signal Light and Hazard Light Circuit 231
Warning Light Circuit 198
Windshield Wiper and Washer Circuit 253

HOW TO READ CIRCUIT DIAGRAMS

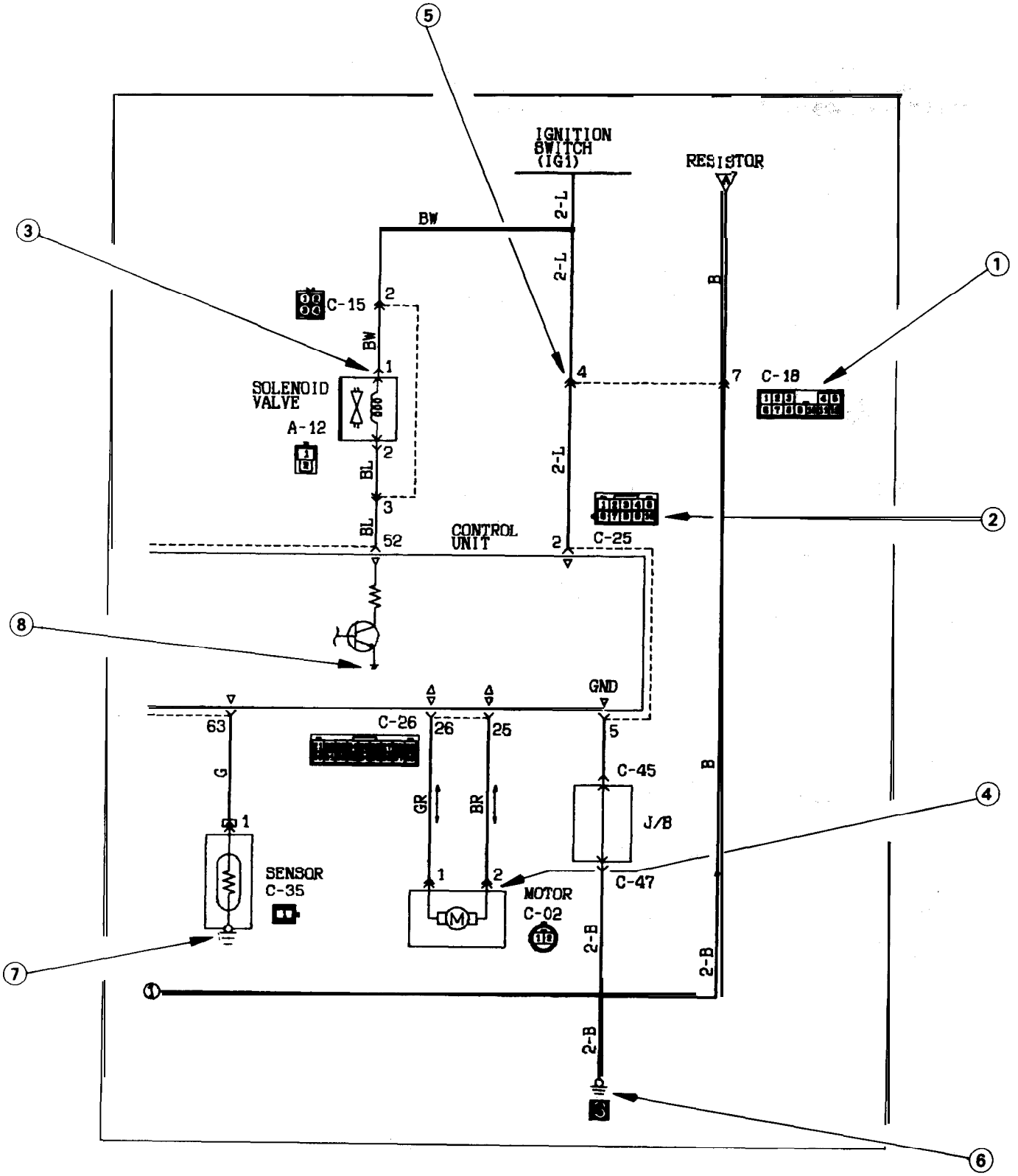
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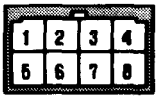
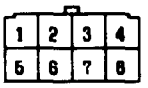
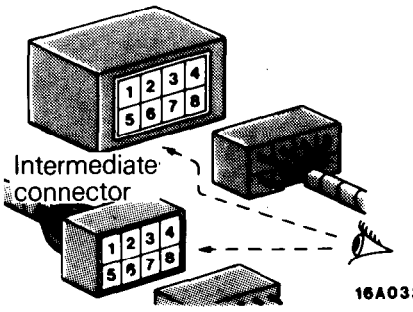
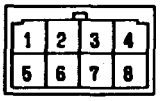
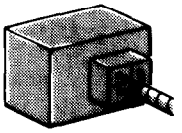
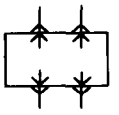
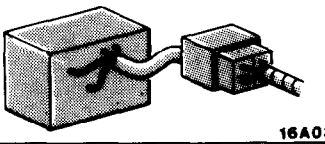
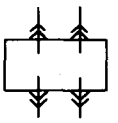
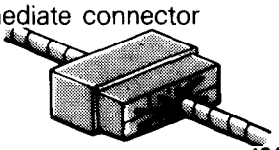
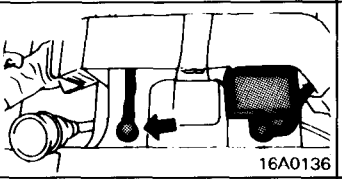
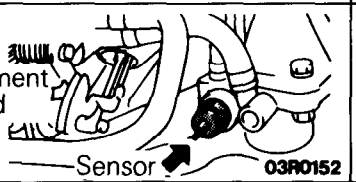
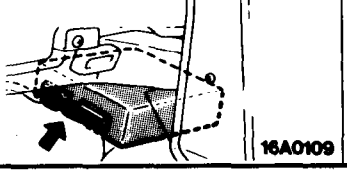
The circuit of each system from the fuse (or fusible link) to ground is shown. The power supply is shown at the top and the ground at the bottom to facilitate understanding of how the current flows.




Indicates terminal No.
A broken line indicates that these connectors are the same intermediate connectors.
Indicates that the diagram is continued from ▽A on the previous page.
IGNITION SWITCH (IG1)
RESISTOR
BW
2-L
B
C-15
SOLENOID VALVE
A-12
C-18
BL
CONTROL UNIT
52
C-25
GND
63
G
C-26
26
25
GR
BR
C-45
J/B
C-47
SENSOR C-35
MOTOR C-02
2-B
In case two or more connectors are connected to the same device, markings indicating the same connector are connected by a broken line.
Indicates input/output to/from control unit (current flow direction).
Input
Output
Input/ output
Indicates current flow downward or upward as controlled by the control unit.
Indicates harness junction where wire diameter or color changes.
Indicates J/B (Junction Block).
Indicates vehicle body ground point. (Same No. as that of ground point in ELECTRICAL SYSTEM PARTS LOCATION)
Indicates continuity of harnesses on the opposite page of a double page circuit diagram.
Indicates that the terminal is a spare one if the device (sensor in this case) is not provided.

CONNECTOR/GROUND INDICATIONS



	No.	Layout indications	Symbol	Description
Connector indications	①	Male 		Male and female terminals are distinguished one from the other as shown in the illustration: *connectors framed by a double line are male terminals, and those framed by a single line are female terminals.*
	–	Female 		
Connector symbol indications	②	Equipment  Intermediate connector 16A0333		*Symbols are shown as facing in the direction indicated in the illustration. For connections to* **the equipment is shown; for intermediate connectors, the symbol for the connector at the male side is shown.**
Connector connection indications	③	Direct-connect type 		There are two types of connection between the equipment and the connector at the harness: the type by which there is direct plug-in to the equipment (the direct-connect type), and the type by which connection is with the harness connector at the equipment (the type with harness); these are individually identified as shown in the illustration.
	④	Type with harness  16A0334		
	⑤	Intermediate connector  16A0339		
Ground indications	⑥	Chassis ground  16A0136		There are three types of grounds: the chassis ground, the equipment ground, and the ground within the control unit; these are individually identified as shown in the illustration.
	⑦	Equipment ground  Sensor 03R0152		
	⑧	Ground within control unit  16A0109		

SYMBOLS

Devices appearing in circuit diagrams are indicated by the following symbols.

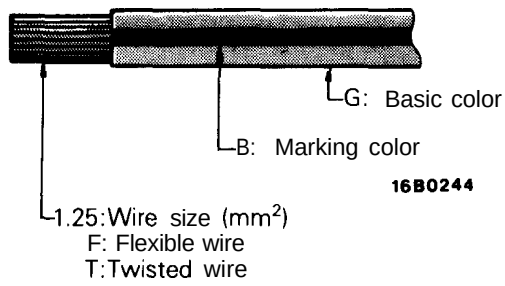
Battery	Body ground	Single bulb	Resistor	Diode	Capacitor
Fuse	Equipment ground	Dual bulb	Variable resistor	Zener diode	Crossing of wires without connection
Fusible link	ECU interior ground	Speaker	Coil	Transistor with	Crossing of wires connection
Connector (Female side / Male side)	Motor	Horn	Pulse generator	Buzzer	Chime
Thyristor	Piezoelectric device	Thermistor	Light emitting diode	Photo diode	Photo transistor

16A0252

WIRE COLOR CODES

Wire colors are identified by the following color codes.

Example: 1.25F–GB

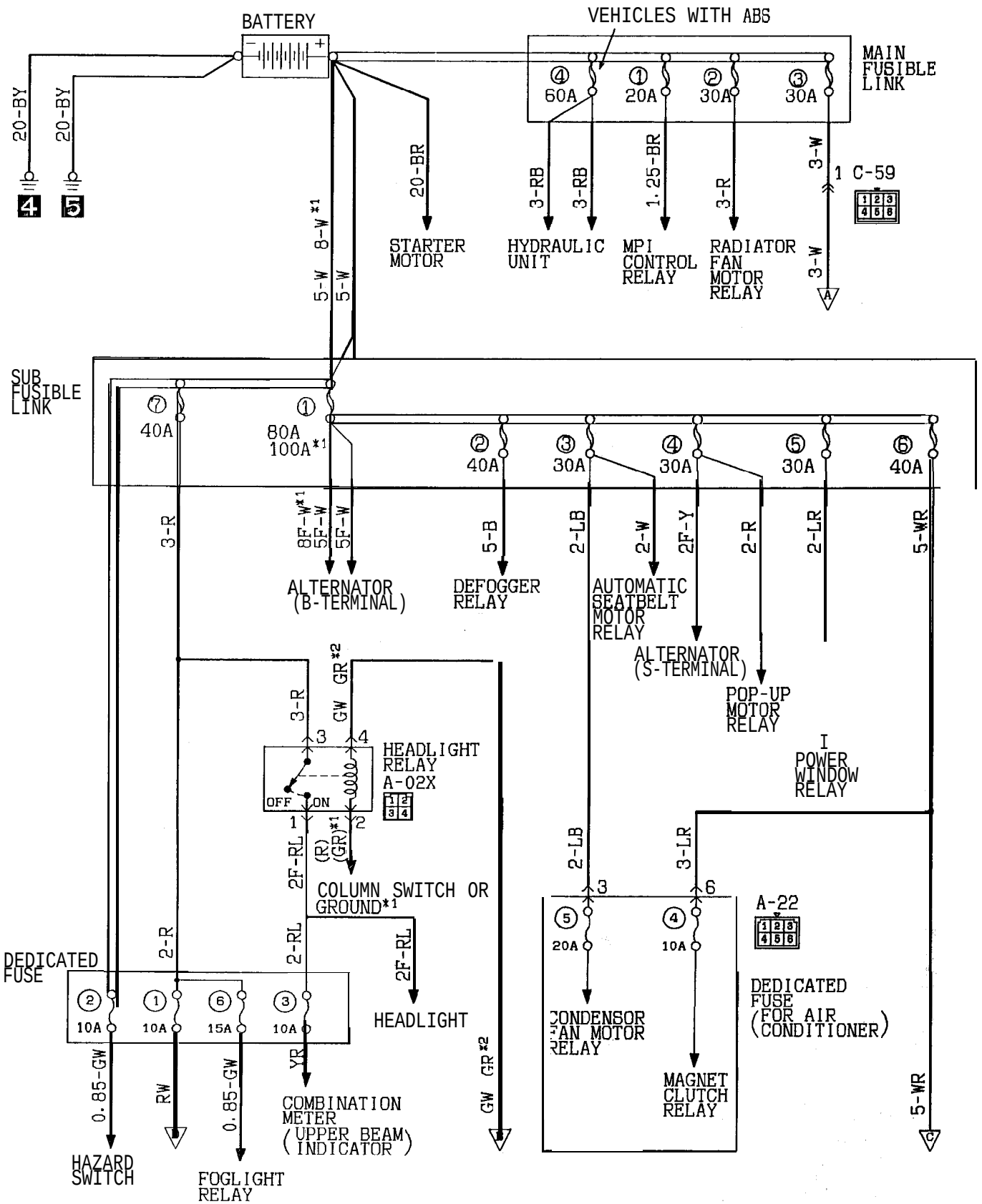


(1) No code indicates 0.5 mm² (.0008 in.²).
(2) Cable color code in parentheses indicates 0.3 mm² (.0005 in.²).

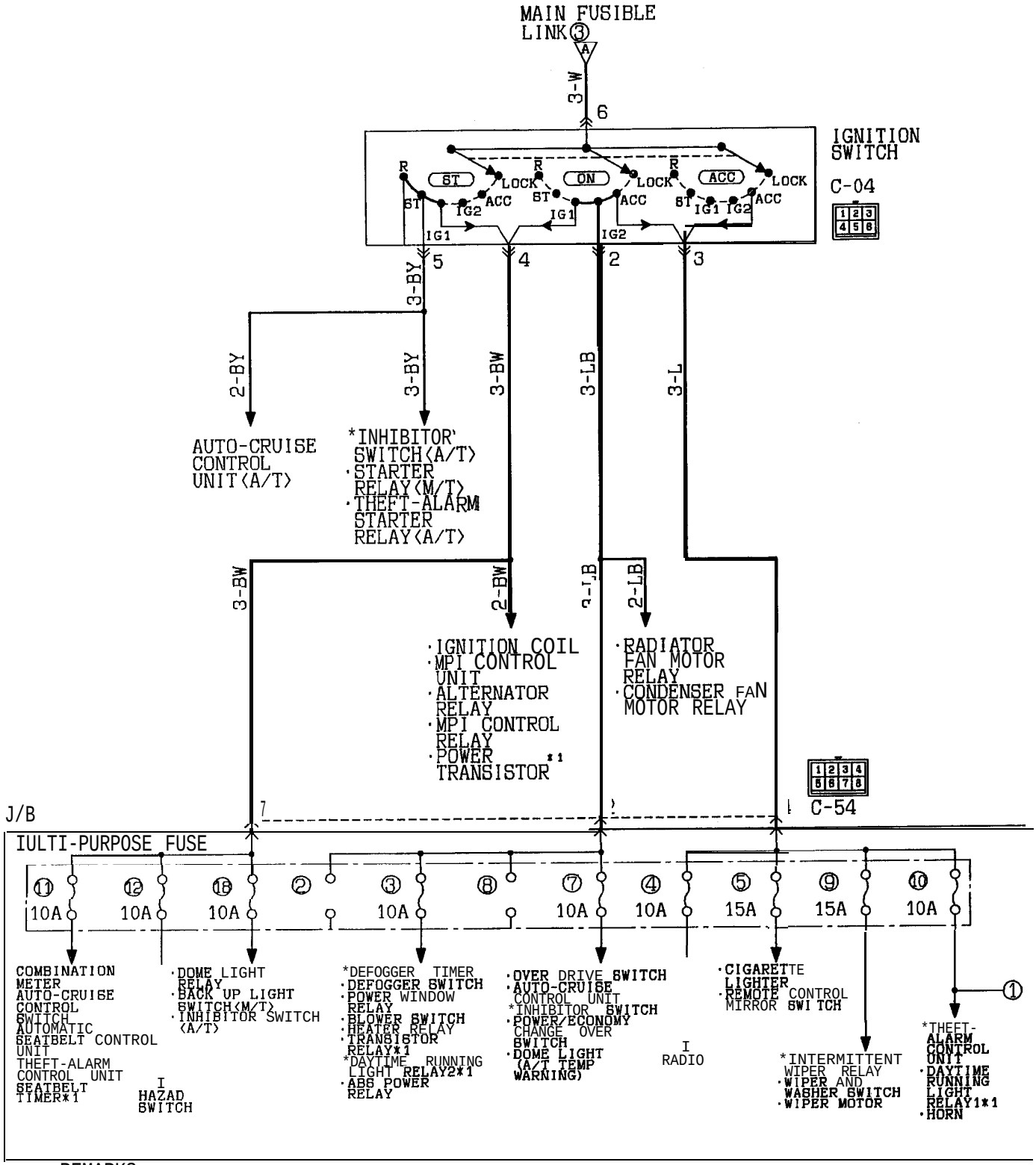
Code	Wire color	Code	Wire color
B	Black	V	Violet
Br	Brown	O	Orange
G	Green	P	Pink
Gr	Gray	R	Red
L	Blue	Y	Yellow
Lg	Light green	W	White
Sb	Sky blue		

NOTE
If a cable has two colors, the first of the two color code characters indicates the basic color (color of the cable coating) and the second indicates the marking color.

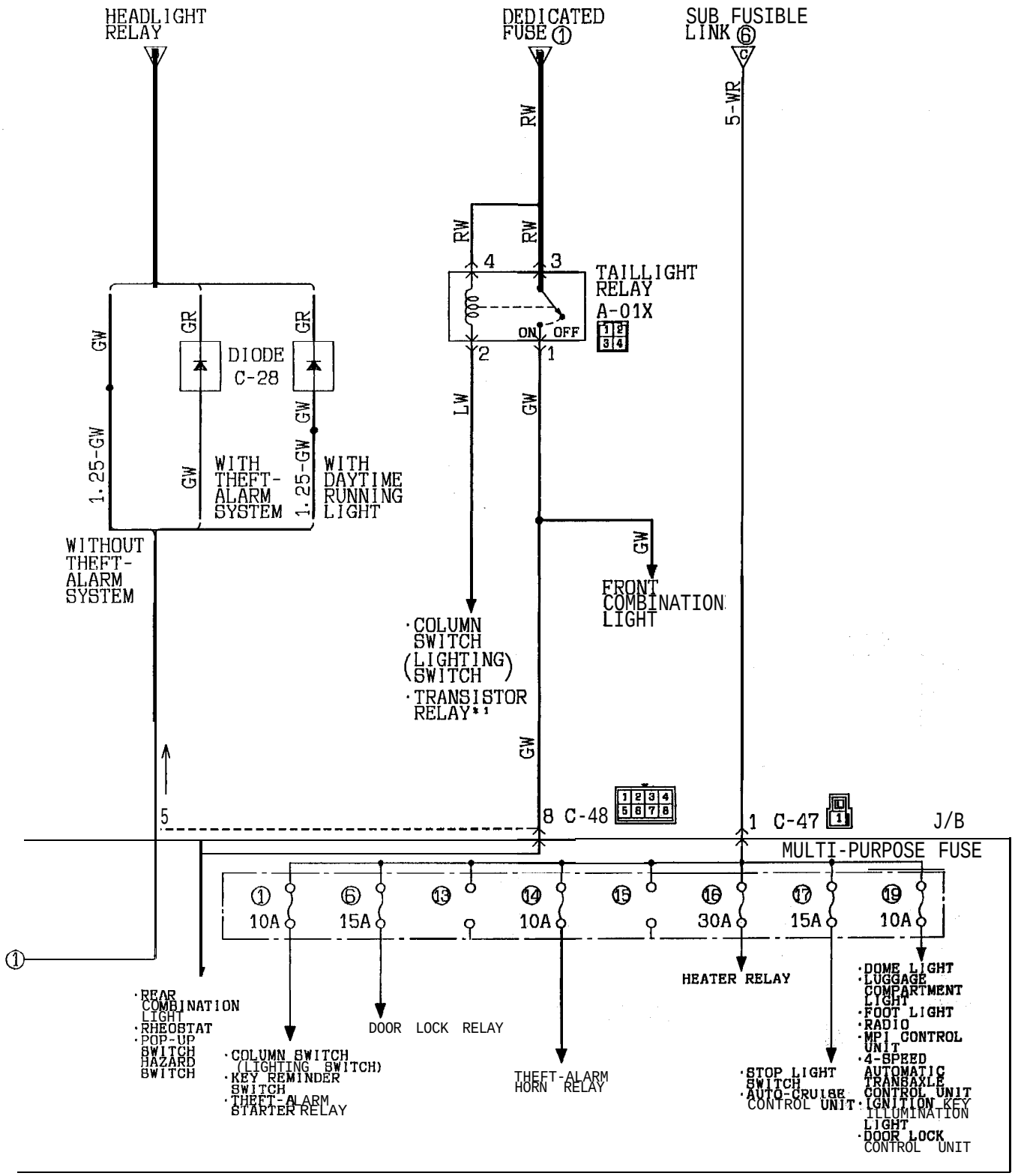
POWER DISTRIBUTION CIRCUIT



K35-AC-U0104-NC



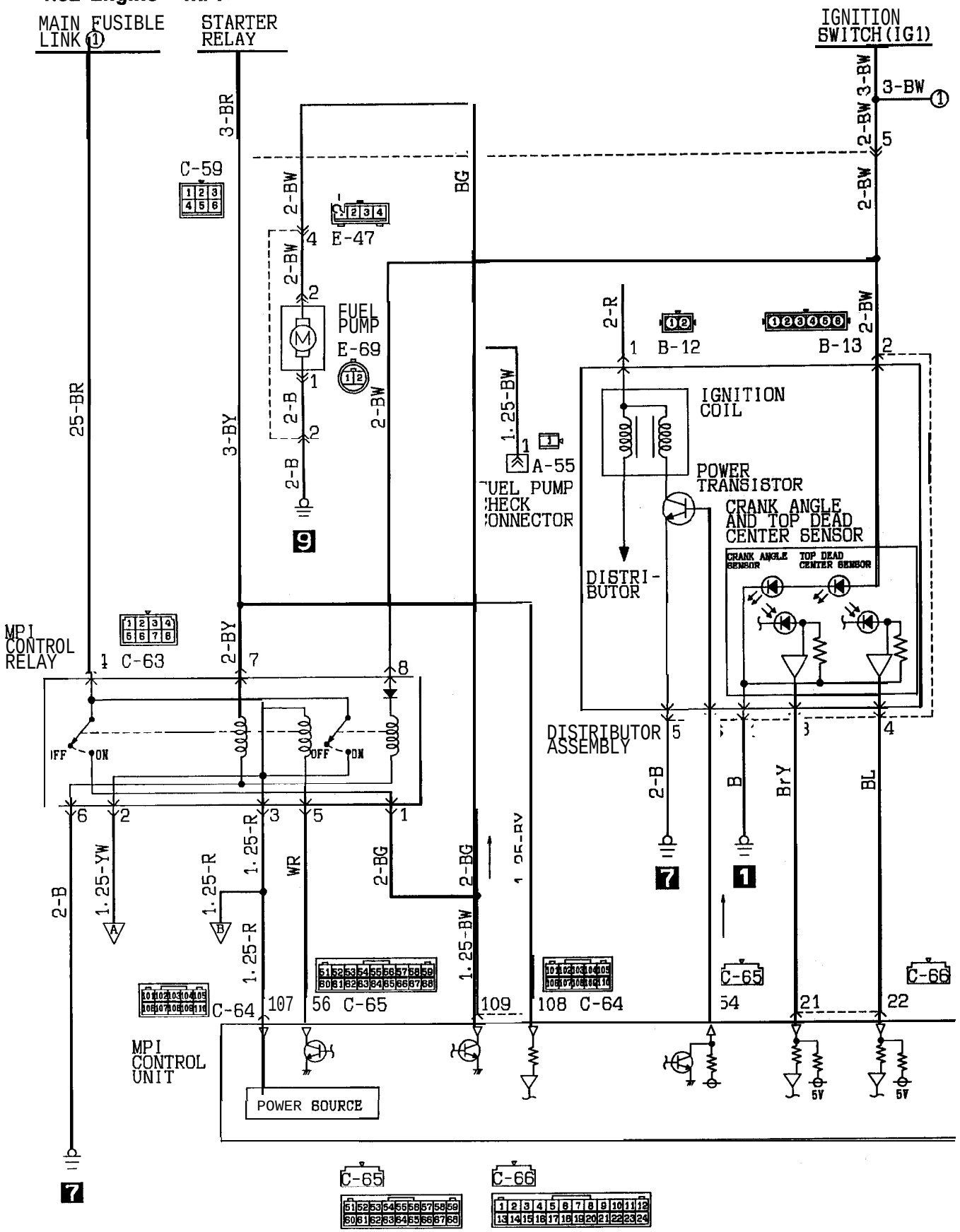
REMARKS
(1) THE ABOVE CIRCUIT DIAGRAM SHOWS THE CURRENT FLOW AT THE IGNITION KEY POSITIONS "ACC", "ON" AND "ST" COMBINED.
(2) BE SURE TRACE THE APPROPRIATE CIRCUIT DEPENDING ON THE IGNITION KEY POSITION.
(3) *1:VEHICLES FOR CANADA.
(4) *2:VEHICLES WITH THEFT-ALARM SYSTEM.



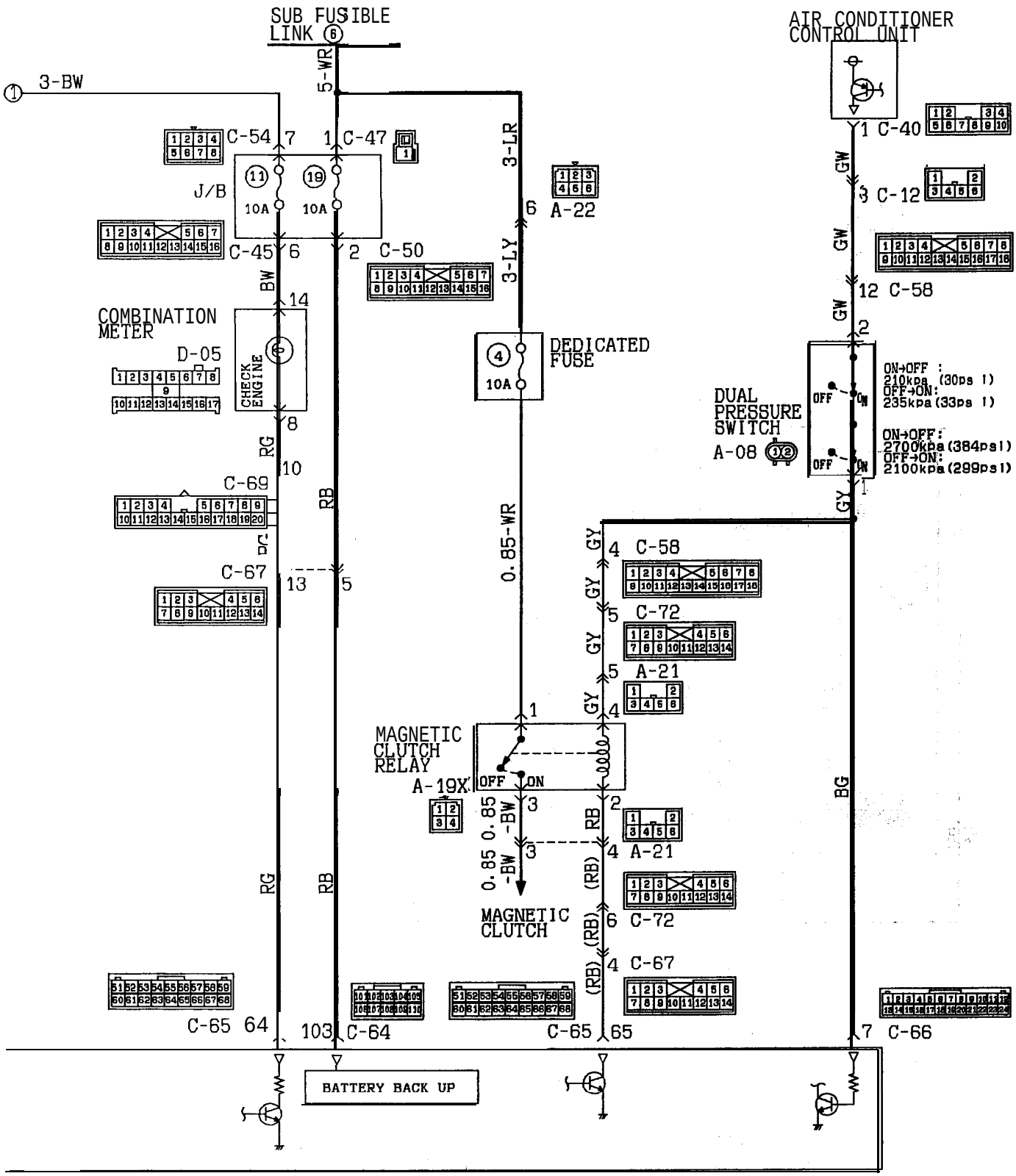
REMARK
·*1:VEHICLES FOR CANADA.

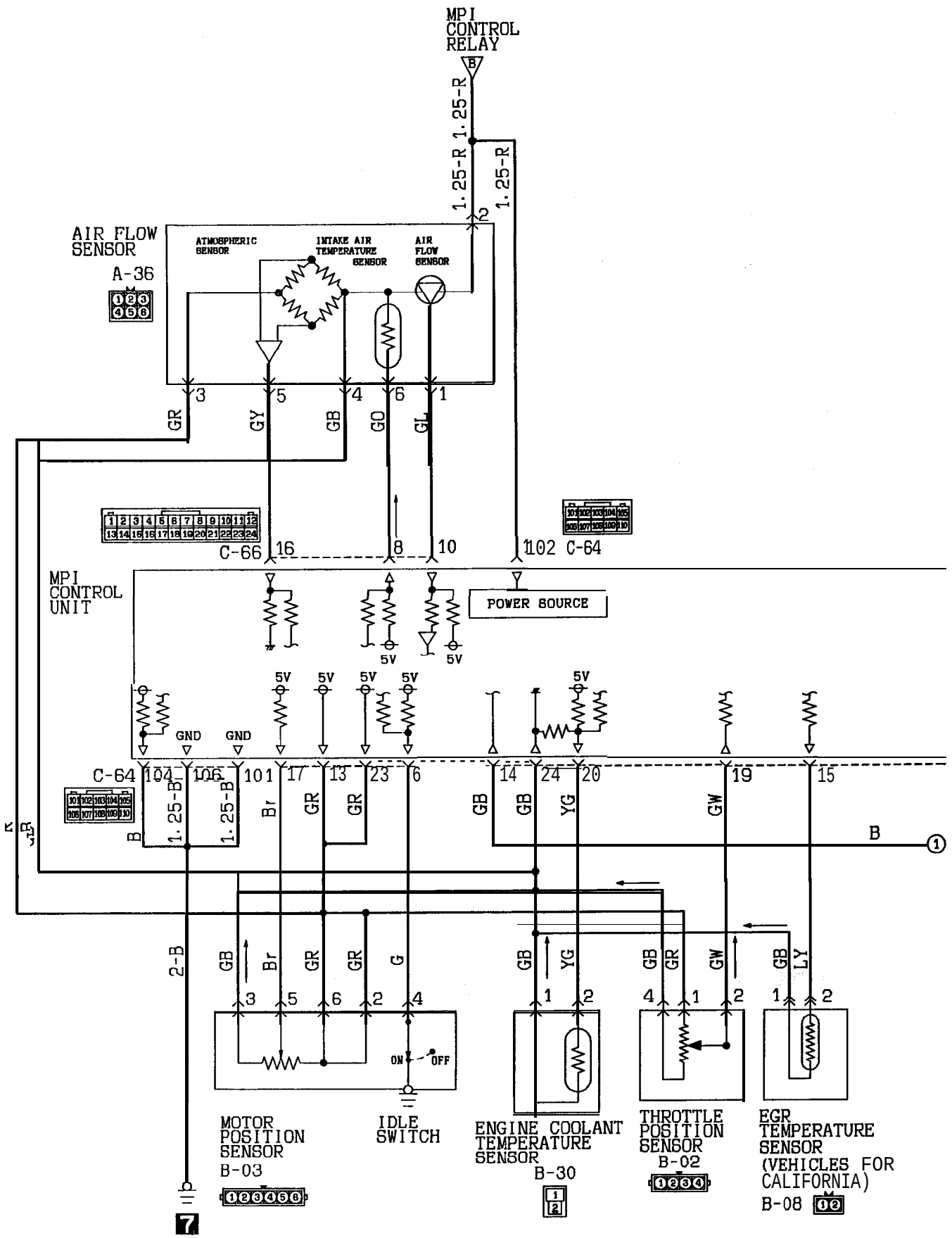
MPI CIRCUIT

1.8L Engine <M/T>

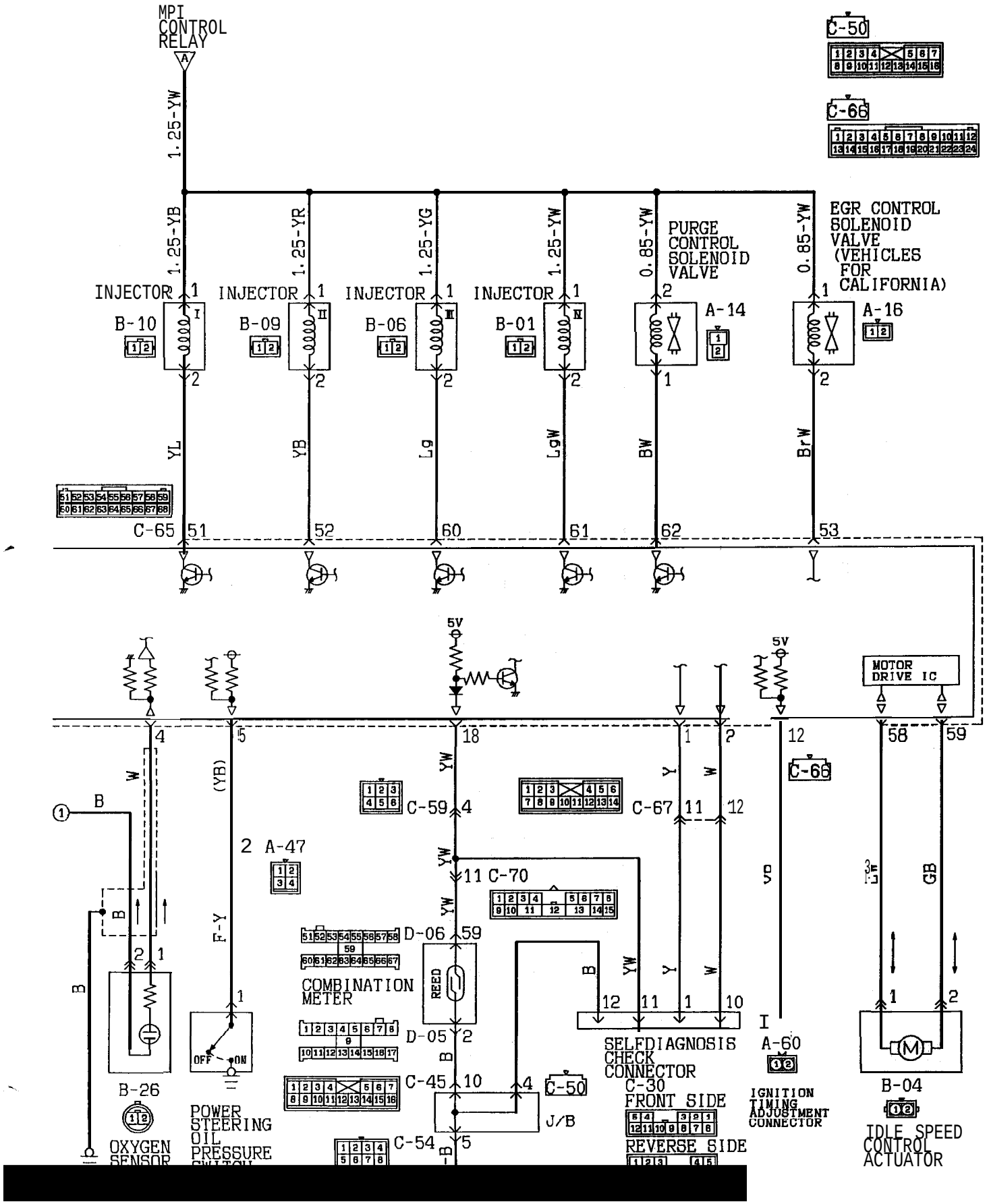


X35-AC-U0514-NC

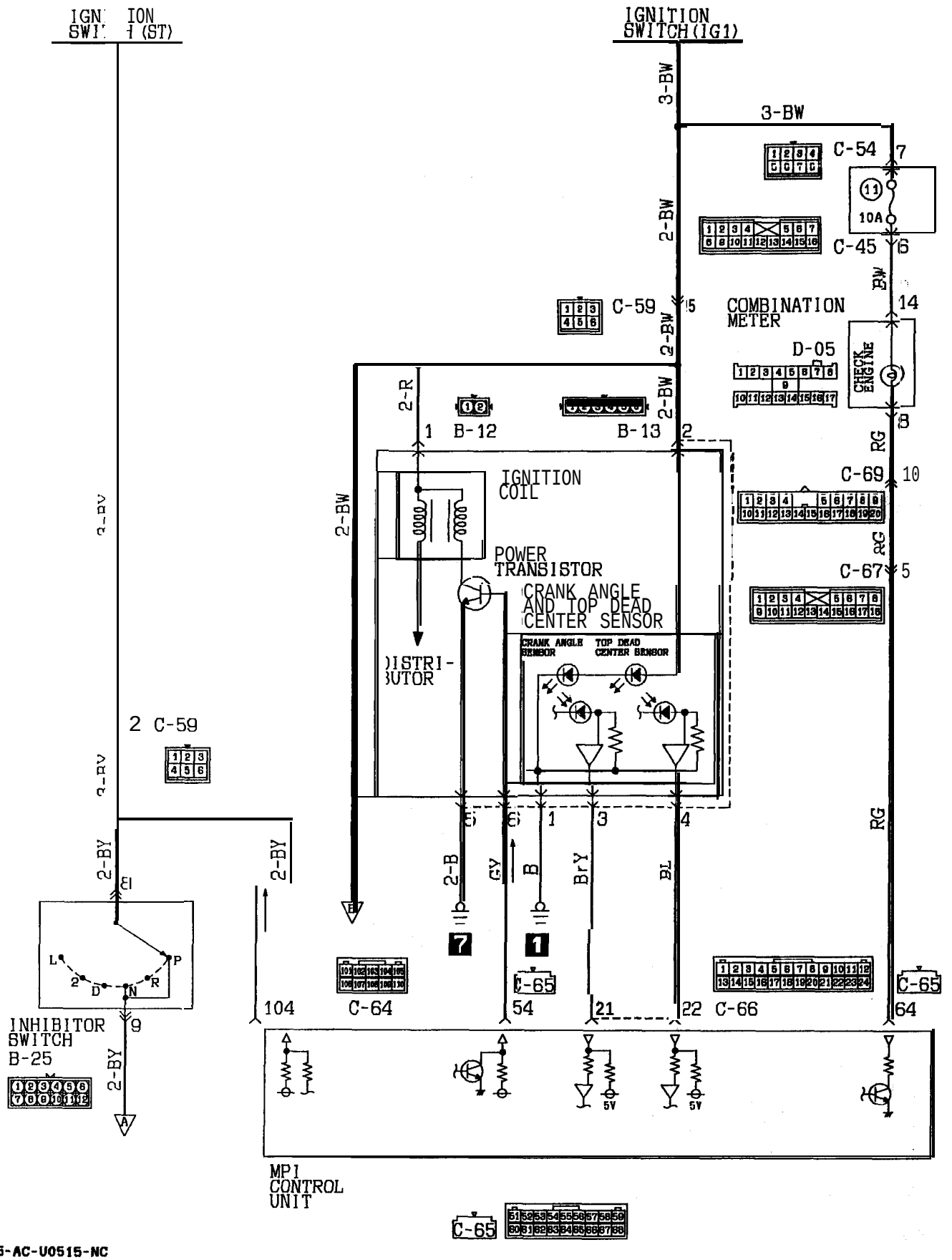

SUB FUSIBLE LINK (6)
AIR CONDITIONER CONTROL UNIT
(1) 3-BW
5-WR
C-54
C-47
J/B
10A
10A
C-45
C-50
3-LR
3-LY
A-22
C-40
GW
C-12
C-58
COMBINATION METER
D-05
CHECK ENGINE
BW
RG
RB
C-69
C-67
DEDICATED FUSE
10A
0.85-WR
DUAL PRESSURE SWITCH
A-08
ON→OFF : 210kpa (30psi)
OFF→ON: 235kpa (33psi)
ON→OFF: 2700kpa (384psi)
OFF→ON: 2100kpa (299psi)
GY
C-72
A-21
MAGNETIC CLUTCH RELAY
A-19X
OFF
ON
0.85-BW
(RB)
MAGNETIC CLUTCH
BG
C-65
64
103
C-64
65
C-66
7
BATTERY BACK UP



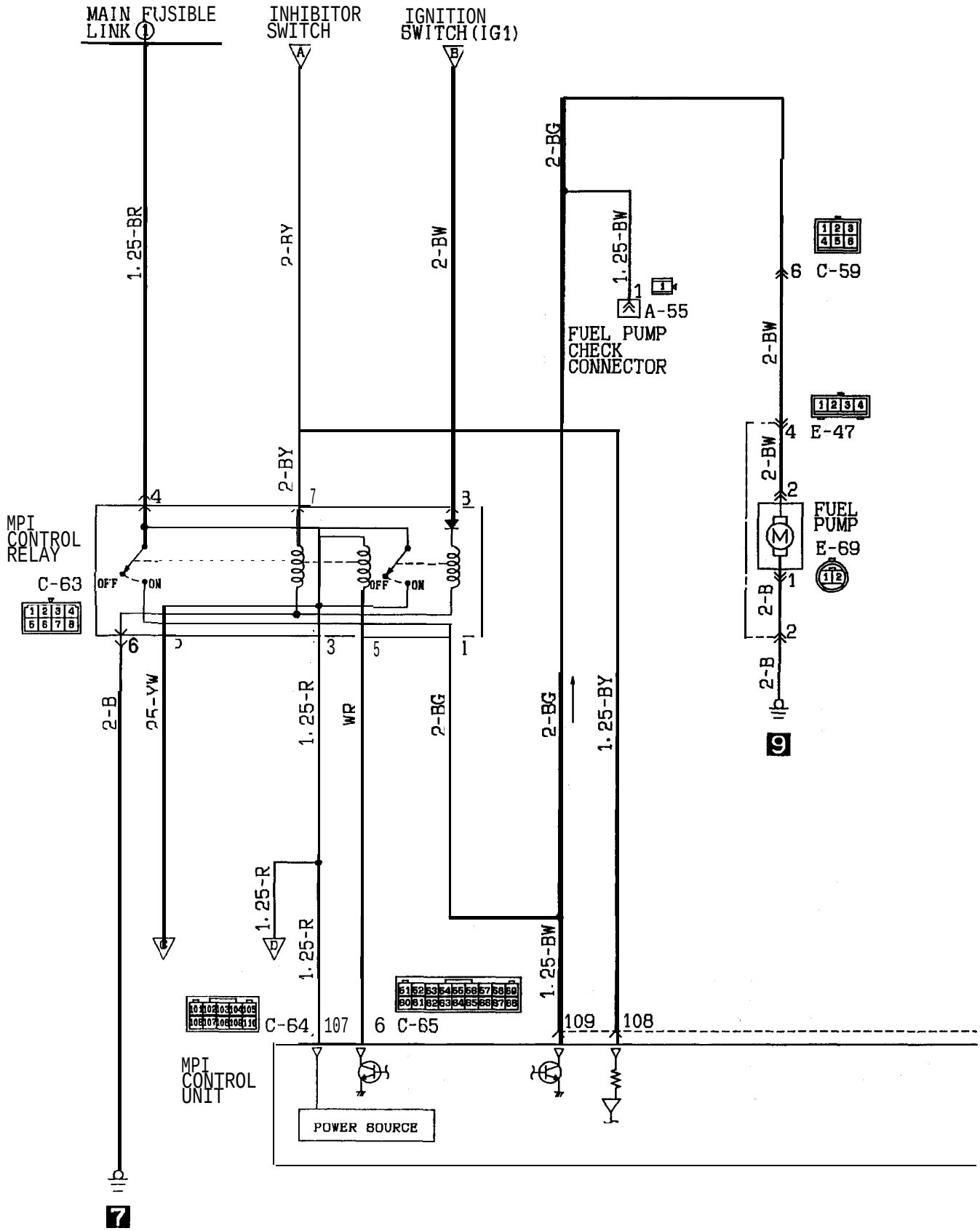
KX35-AC-U0514A-NC


MPI CONTROL RELAY
C-50
C-66
1.25-YW
1.25-YB
1.25-YR
1.25-YG
1.25-YW
0.85-YW
0.85-YW
PURGE CONTROL SOLENOID VALVE
EGR CONTROL SOLENOID VALVE (VEHICLES FOR CALIFORNIA)
INJECTOR
B-10
B-09
B-06
B-01
A-14
A-16
YL
YB
Lg
LgW
BW
BrW
C-65
51
52
60
61
62
53
5V
MOTOR DRIVE IC
C-59
C-67
A-47
C-70
D-06
D-05
REED
COMBINATION METER
C-45
C-54
J/B
C-50
SELFDIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
A-60
IGNITION TIMING ADJUSTMENT CONNECTOR
B-26
OXYGEN SENSOR
POWER STEERING OIL PRESSURE SWITCH
OFF
ON
B-04
IDLE SPEED CONTROL ACTUATOR
W
(YB)
F-Y
YW
Y
B
GB
LW
VB

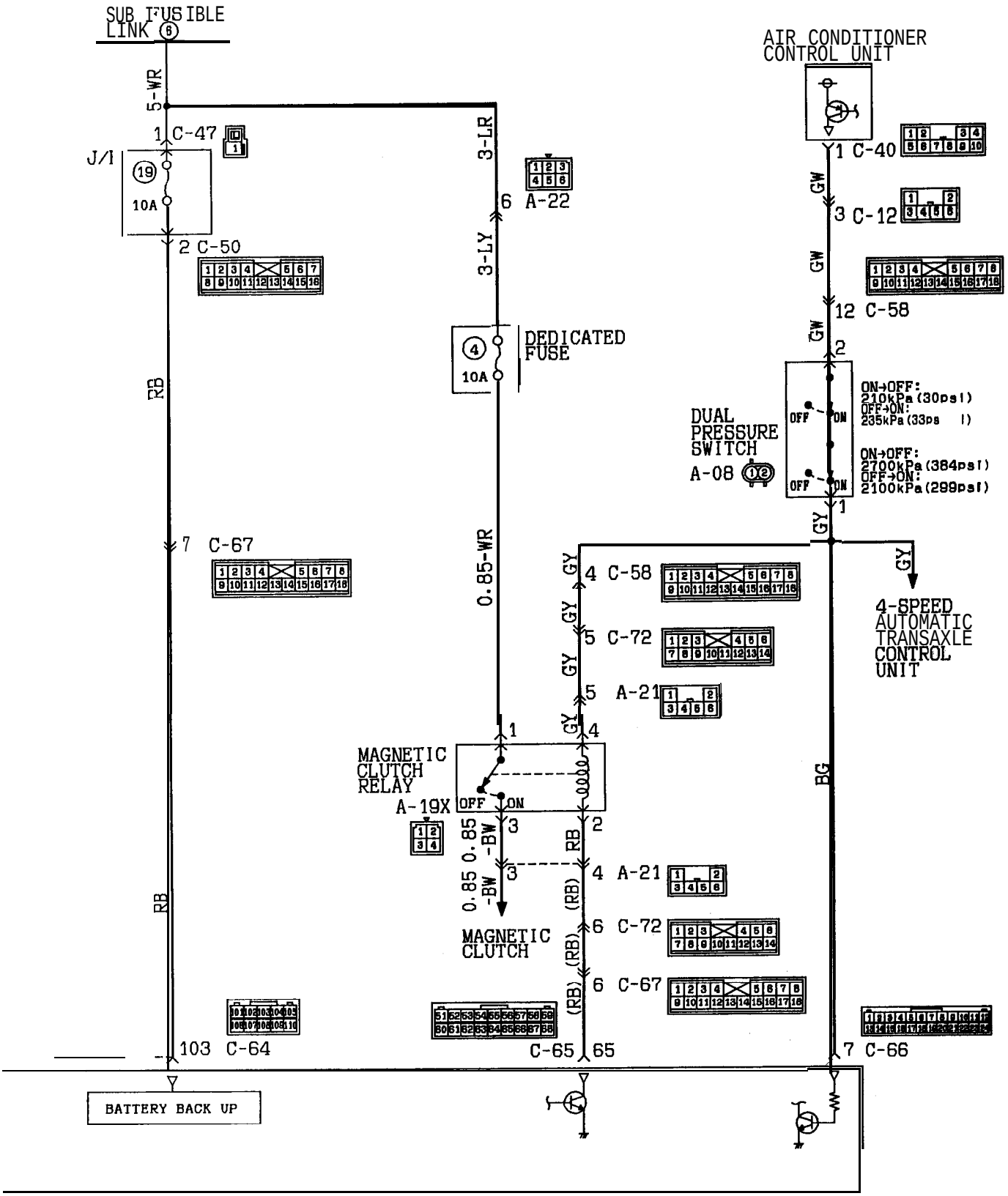
1.8L Engine <A/T>

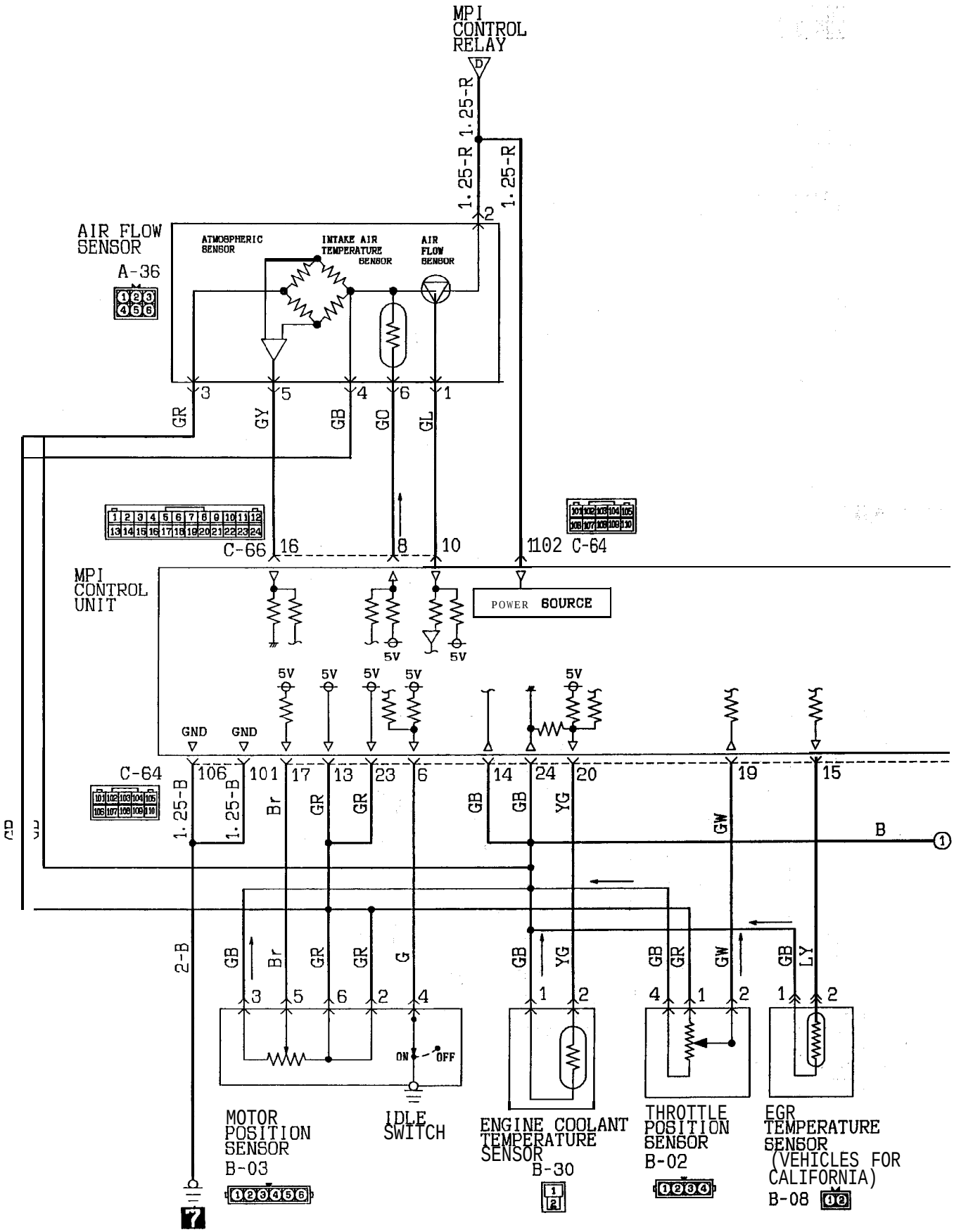


EX35-AC-U0515-NC

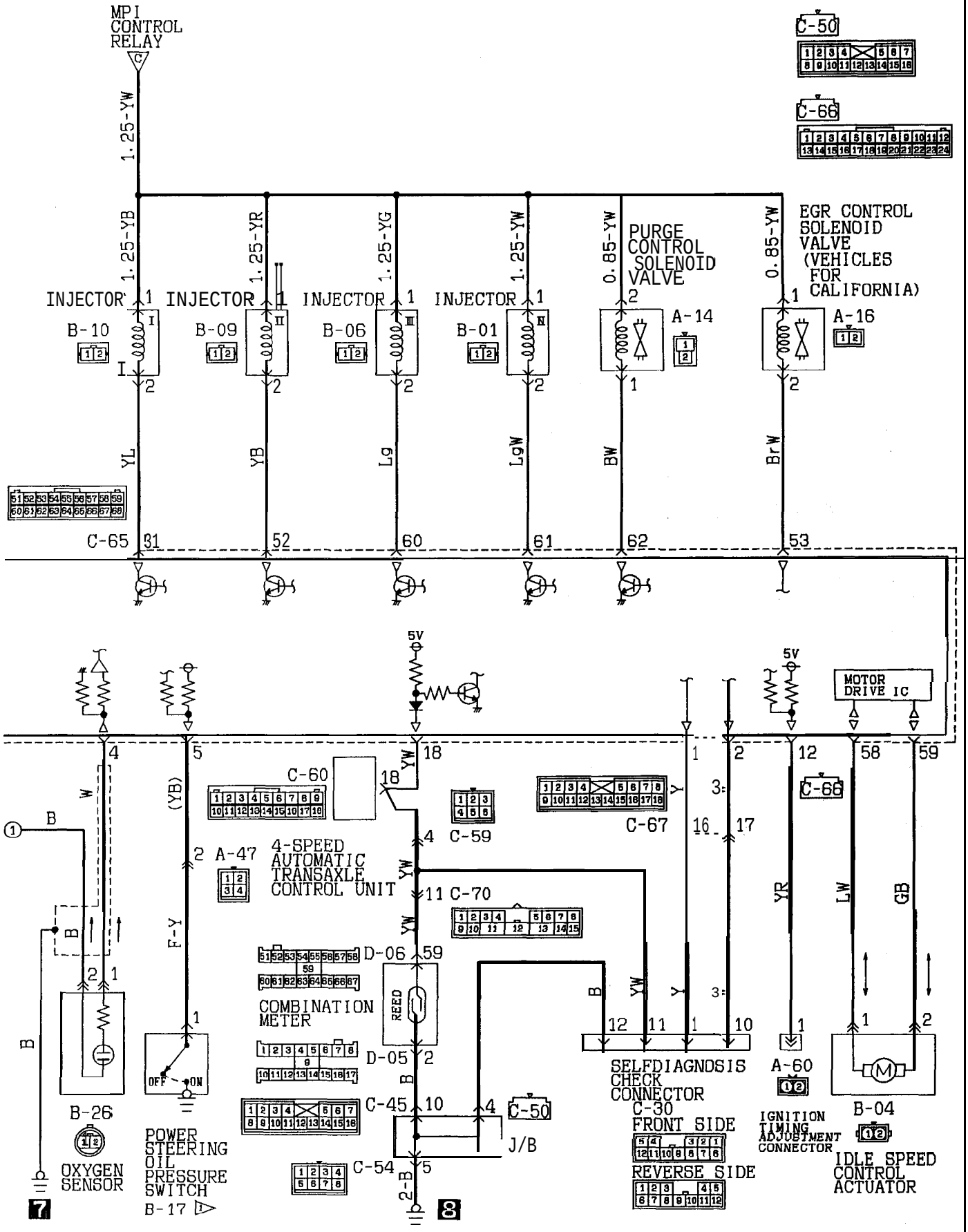


KX35-AC-U0515A-NC


SUB FUSIBLE LINK 6
5-WR
1 C-47
J/I
19
10A
2 C-50
RB
7 C-67
RB
103 C-64
BATTERY BACK UP
3-LR
6 A-22
3-LY
DEDICATED FUSE
4
10A
0.85-WR
MAGNETIC CLUTCH RELAY
A-19X
OFF ON
0.85 -BW
0.85 -BW
MAGNETIC CLUTCH
C-65 65
AIR CONDITIONER CONTROL UNIT
1 C-40
GW
3 C-12
GW
12 C-58
GW
2
DUAL PRESSURE SWITCH
A-08
ON→OFF: 210kPa (30psi)
OFF→ON: 235kPa (33psi)
ON→OFF: 2700kPa (384psi)
OFF→ON: 2100kPa (299psi)
1
GY
GY
4 C-58
GY
5 C-72
GY
5 A-21
GY
4
RB
4 A-21
(RB)
6 C-72
(RB)
6 C-67
(RB)
BG
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
7 C-66

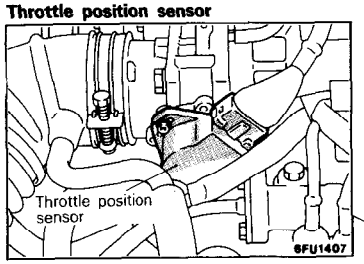


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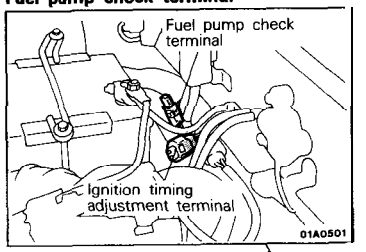

MPI CONTROL RELAY
1.25-YW
1.25-YB
1.25-YR
1.25-YG
1.25-YW
0.85-YW
0.85-YW
PURGE CONTROL SOLENOID VALVE
EGR CONTROL SOLENOID VALVE (VEHICLES FOR CALIFORNIA)
INJECTOR I
INJECTOR II
INJECTOR III
INJECTOR IV
B-10
B-09
B-06
B-01
A-14
A-16
C-50
C-66
C-65
YL
YB
Lg
LgW
BW
BrW
5V
MOTOR DRIVE IC
C-60
C-59
C-67
C-68
A-47
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-70
D-06
D-05
REED
COMBINATION METER
C-45
C-54
J/B
C-50
B-26
OXYGEN SENSOR
POWER STEERING OIL PRESSURE SWITCH
B-17
SELFDIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
A-60
IGNITION TIMING ADJUSTMENT CONNECTOR
B-04
IDLE SPEED CONTROL ACTUATOR
OFF
ON
7
8

COMPONENTS LOCATION < 1.8L ENGINE>

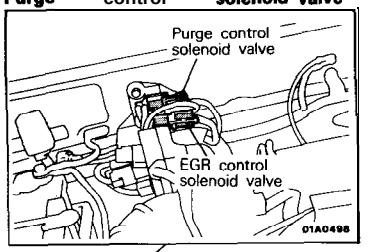
Throttle position sensor



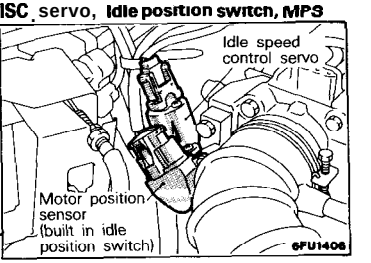
Ignition timing adjustment terminal
Fuel pump check terminal



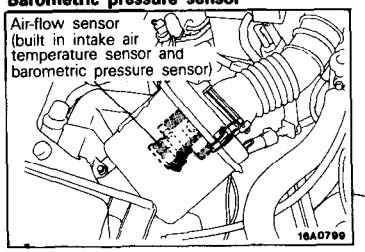
EGR control solenoid valve [Calif. only]
Purge control solenoid valve



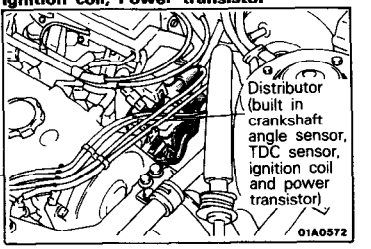
ISC servo, Idle position switch, MPS

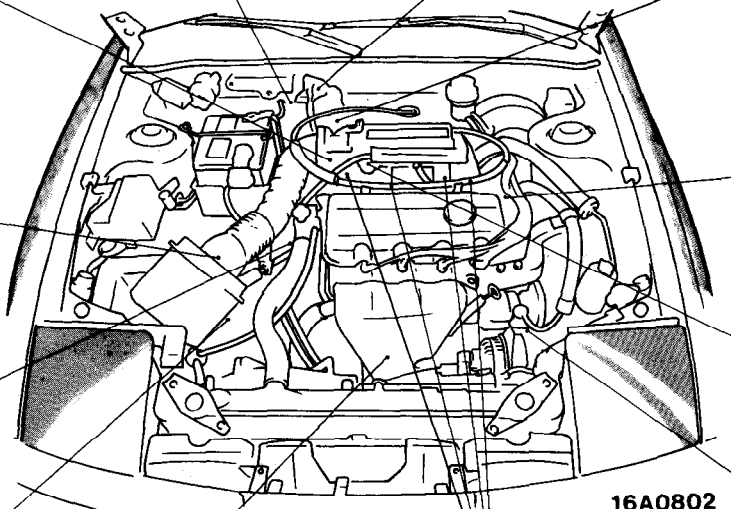


Ah-flow **sensor**
Intake air temperature sensor
Barometric pressure sensor

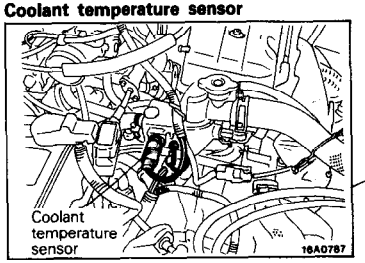


Crankshaft **angle** sensor, **TDC sensor**
Ignition coil, Power transistor

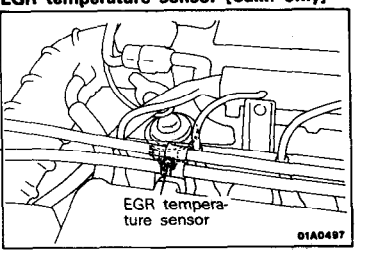




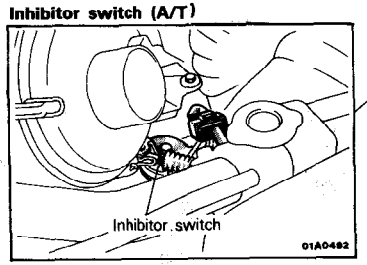
Coolant temperature sensor



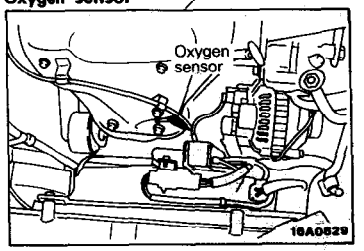
EGR temperature sensor [Calif. only]



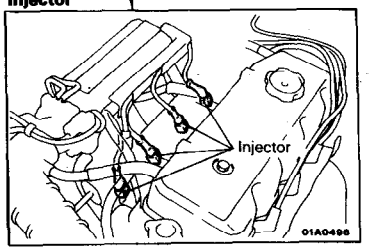
Inhibitor switch (A/T)



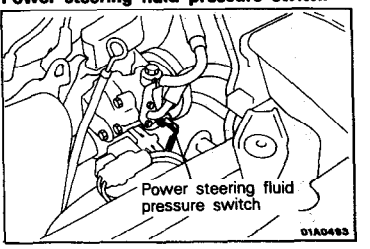
Oxygen sensor



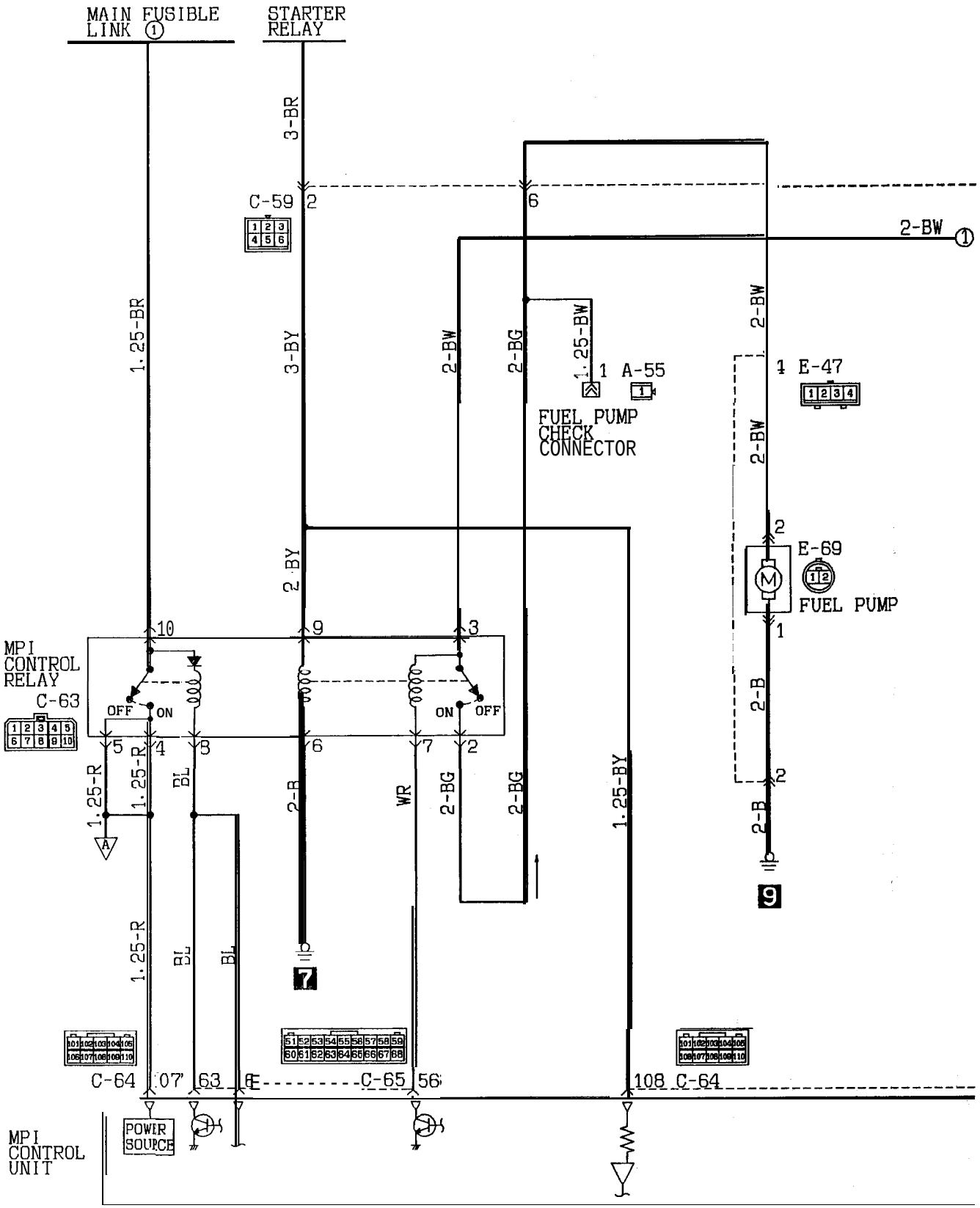
Injector

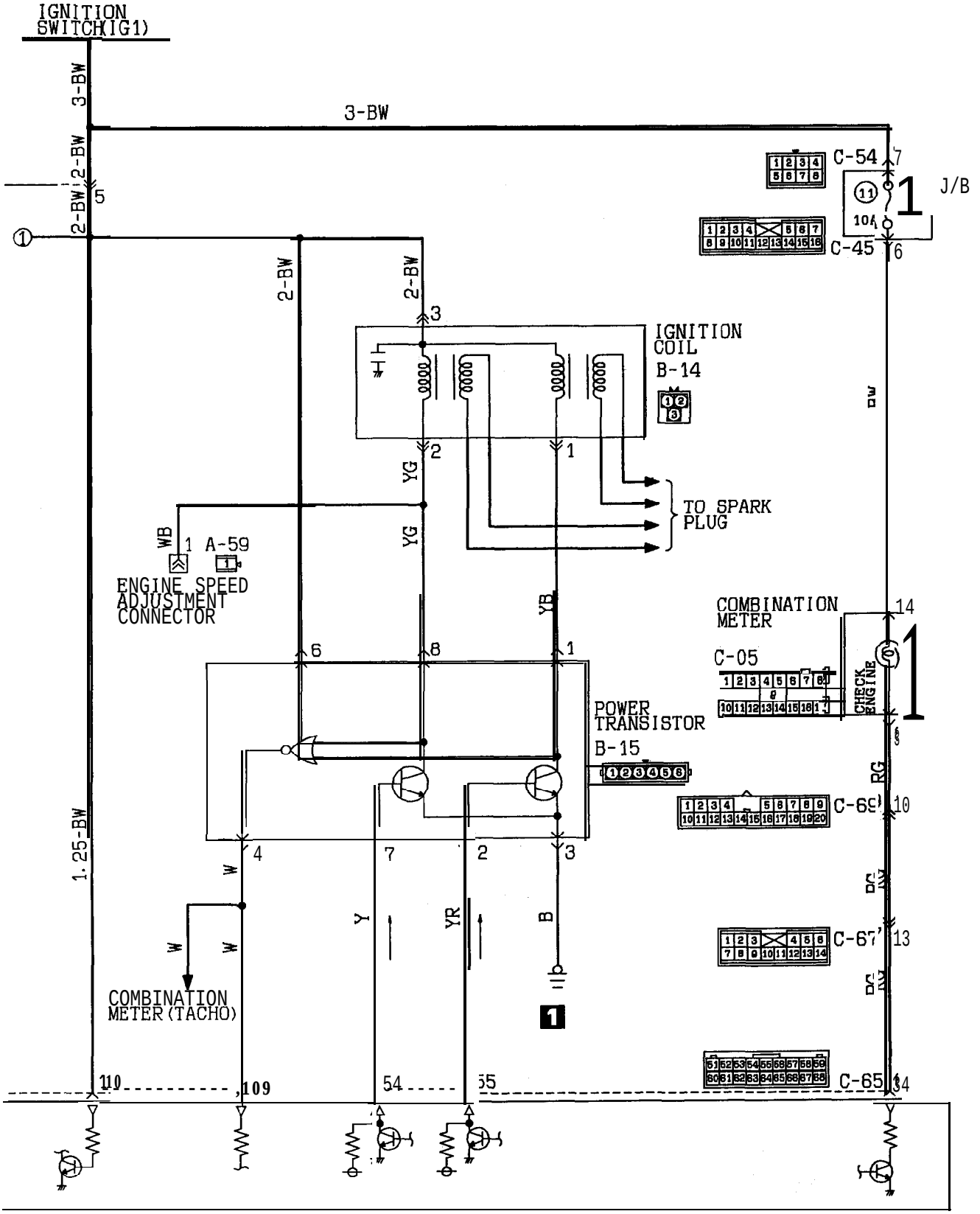


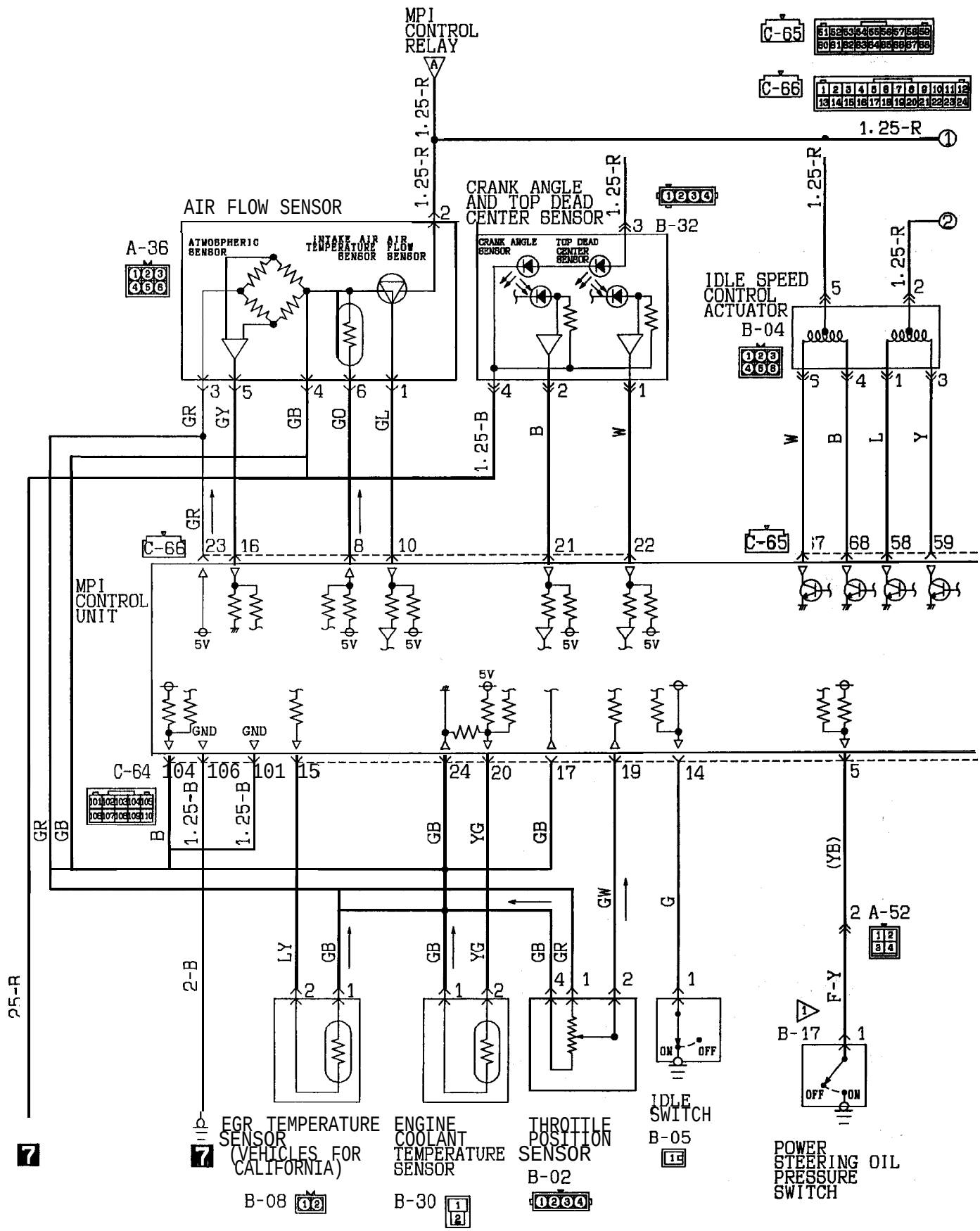
Power steering fluid pressure switch



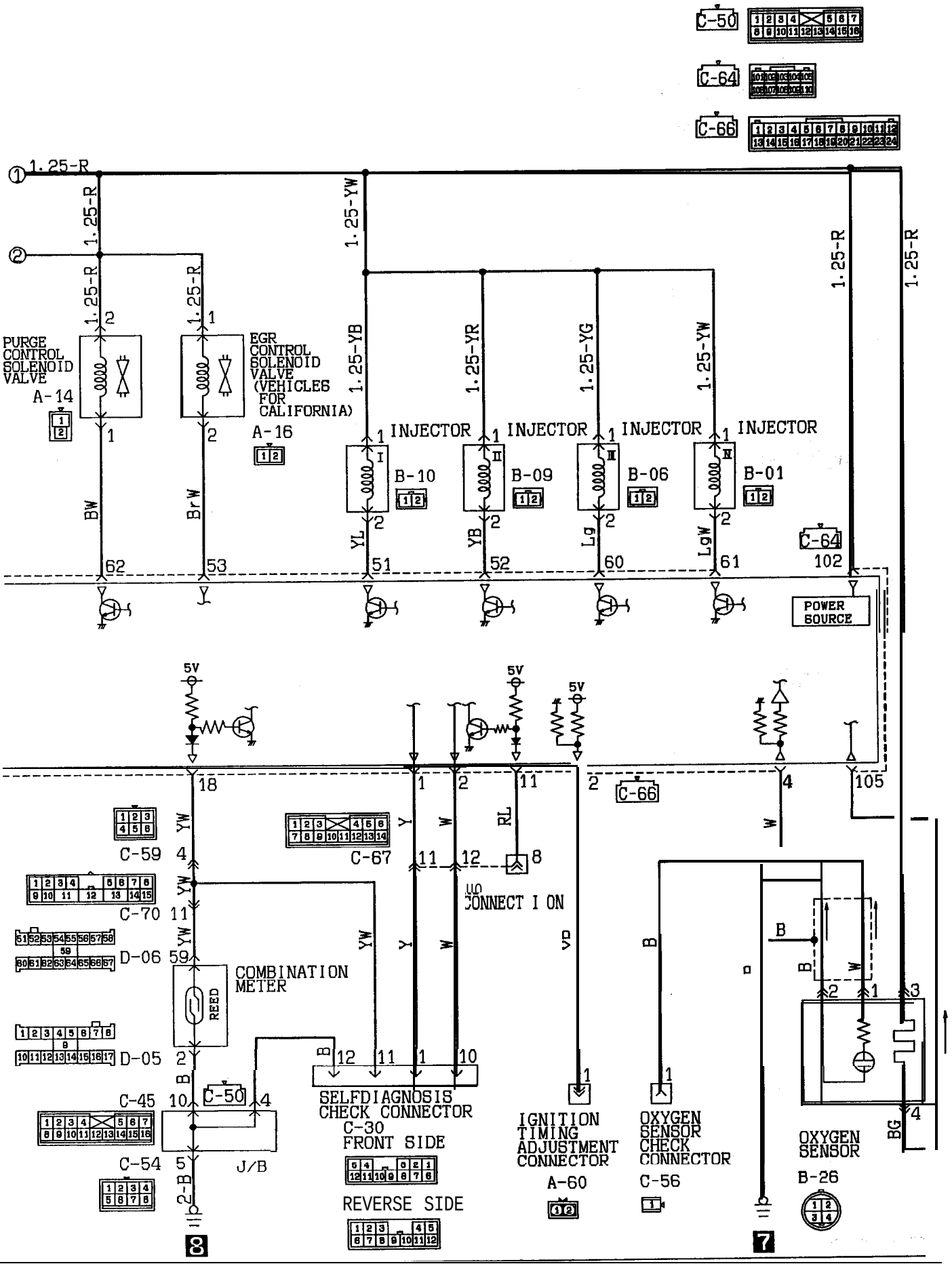
2.0L DOHC Engine (Non-Turbo) <M/T>

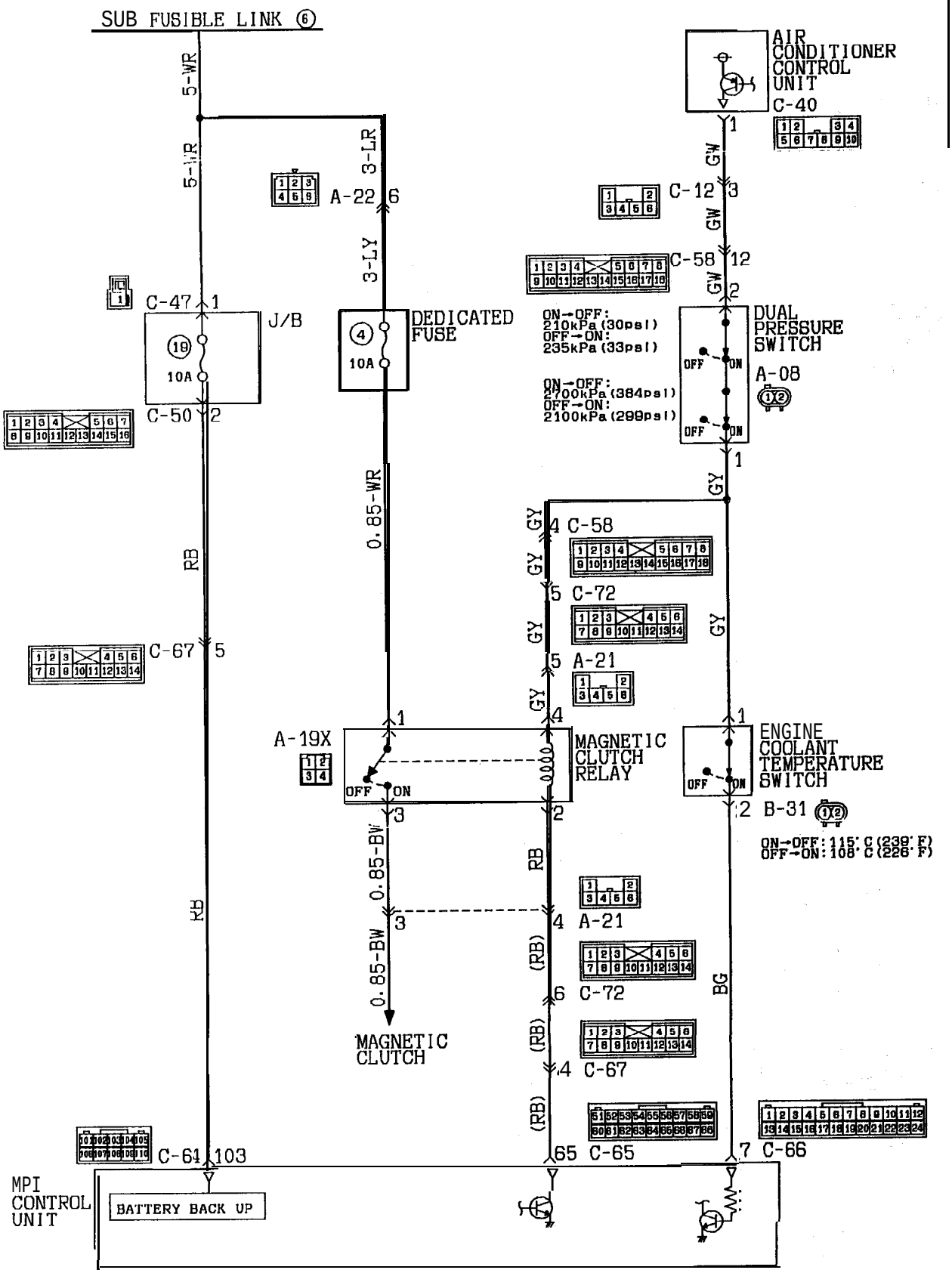



IGNITION SWITCH(IG1)
3-BW
2-BW
1.25-BW
C-54
J/B
C-45
IGNITION COIL
B-14
TO SPARK PLUG
WB
A-59
ENGINE SPEED ADJUSTMENT CONNECTOR
YG
YB
COMBINATION METER
C-05
CHECK ENGINE
POWER TRANSISTOR
B-15
C-69
C-67
C-65
RG
W
Y
YR
B
COMBINATION METER (TACHO)
110
109
54
55

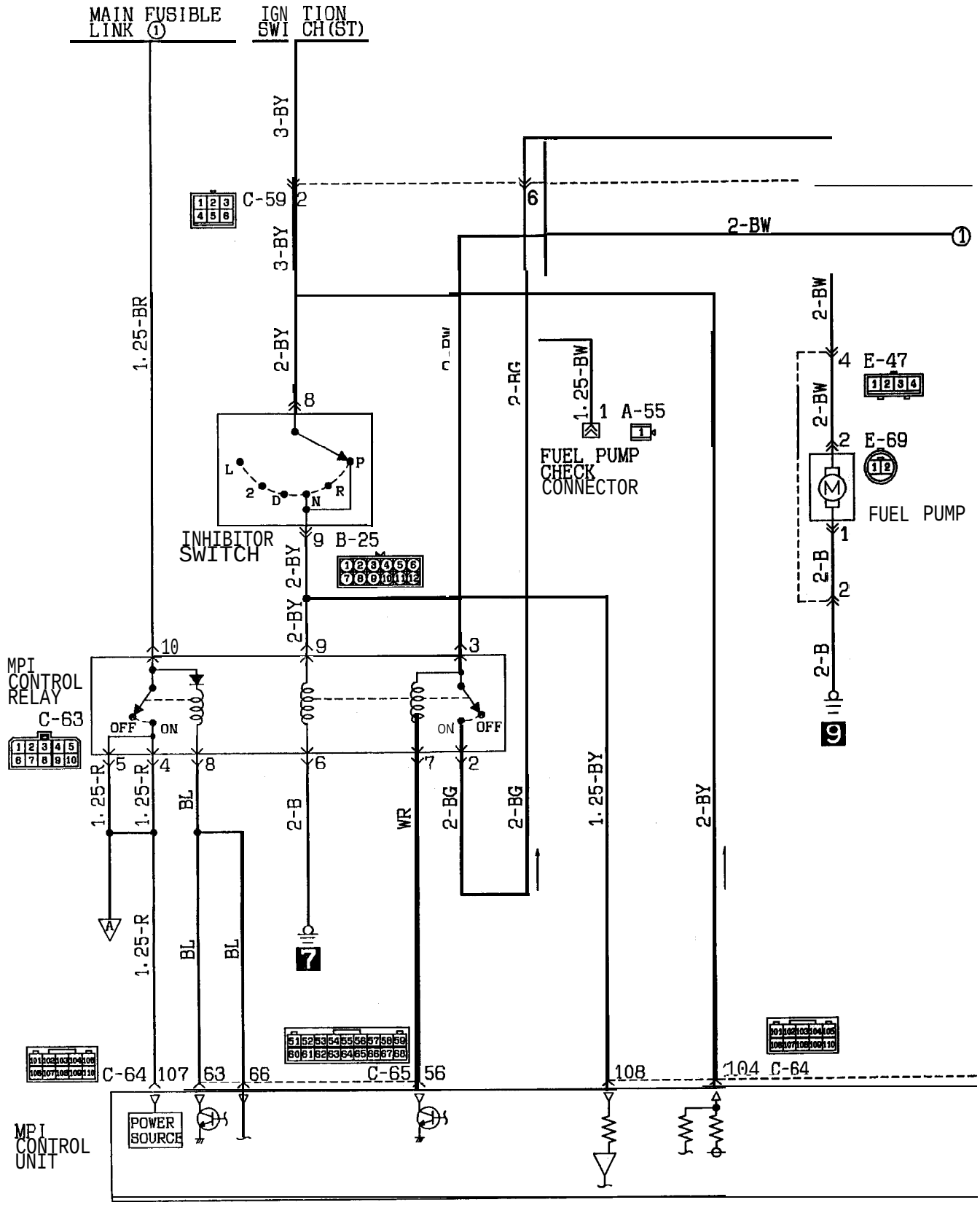


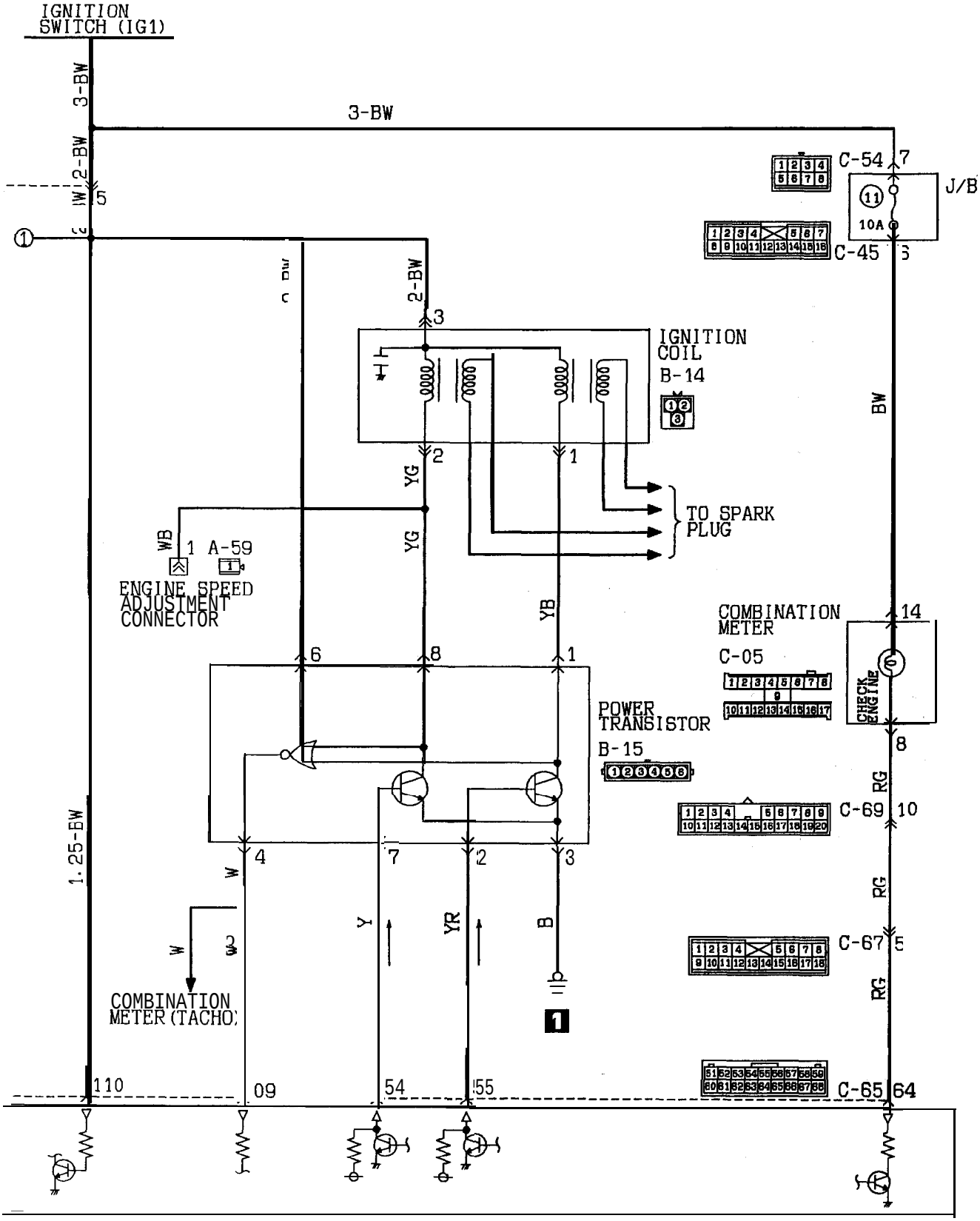
KX35-AC-U0516A-NC

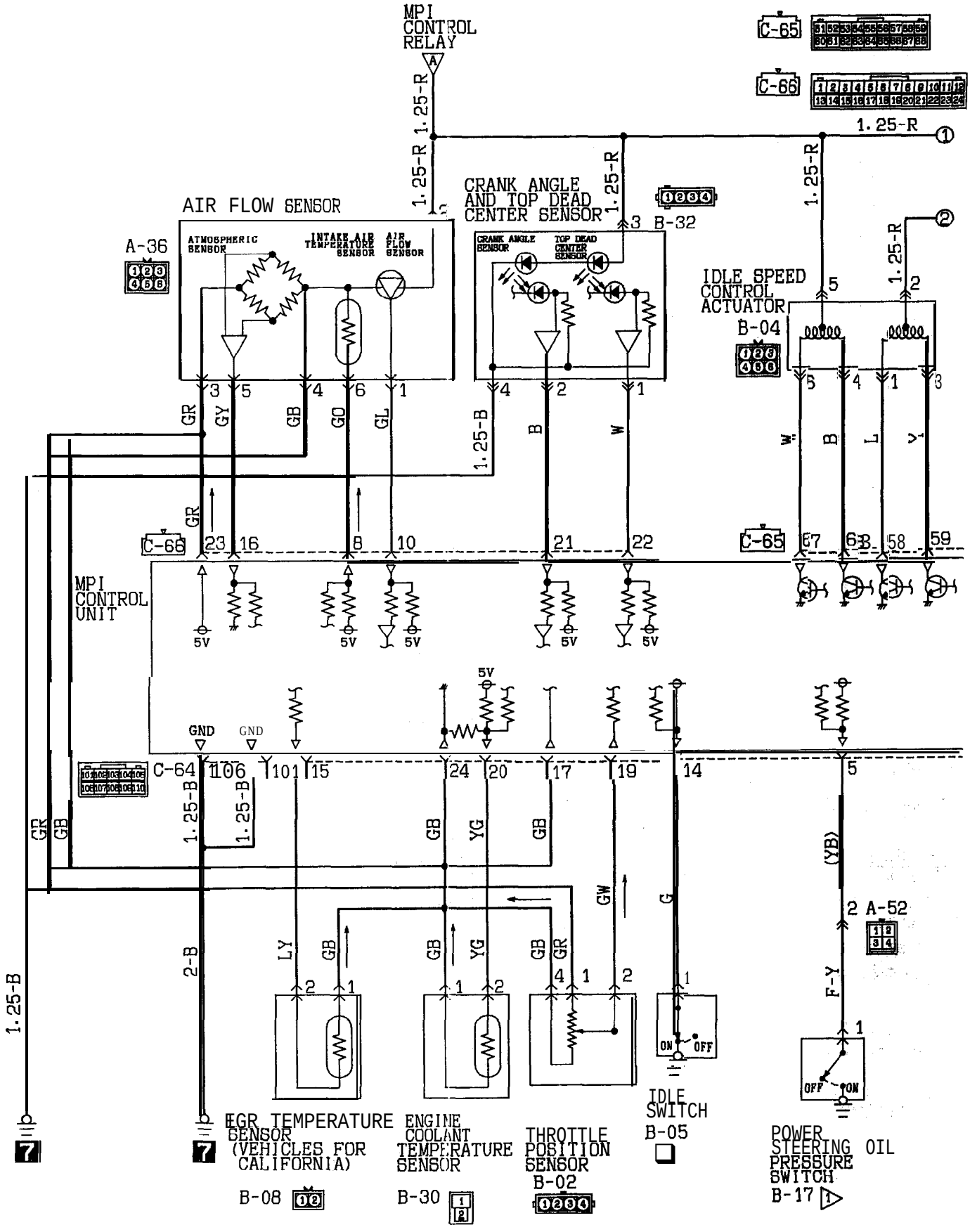

C-50
C-64
C-66
1.25-R
1.25-YW
1.25-YB
1.25-YR
1.25-YG
PURGE CONTROL SOLENOID VALVE
A-14
EGR CONTROL SOLENOID VALVE (VEHICLES FOR CALIFORNIA)
A-16
INJECTOR
B-10
B-09
B-06
B-01
BW
BrW
YL
YB
Lg
LgW
62
53
51
52
60
61
102
POWER SOURCE
5V
18
105
C-59
C-67
C-70
D-06
D-05
C-45
C-54
YW
RL
COMBINATION METER
REED
C-50
J/B
SELFDIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
IGNITION TIMING ADJUSTMENT CONNECTOR
A-60
OXYGEN SENSOR CHECK CONNECTOR
C-56
OXYGEN SENSOR
B-26
BG
8
7


SUB FUSIBLE LINK ⑥
5-WR
5-LR
3-LR
3-LY
A-22
6
C-47
1
J/B
19
10A
C-50
2
RB
C-67
5
0.85-WR
DEDICATED FUSE
4
10A
A-19X
1
2
3
OFF
ON
0.85-BW
0.85-BW
3
MAGNETIC CLUTCH
MAGNETIC CLUTCH RELAY
AIR CONDITIONER CONTROL UNIT
C-40
1
GW
C-12
3
GW
C-58
12
GW
2
ON→OFF: 210kPa (30psi)
OFF→ON: 235kPa (33psi)
ON→OFF: 2700kPa (384psi)
OFF→ON: 2100kPa (299psi)
DUAL PRESSURE SWITCH
A-08
OFF
ON
OFF
ON
1
GY
GY
4
C-58
GY
5
C-72
GY
5
A-21
GY
4
1
ENGINE COOLANT TEMPERATURE SWITCH
OFF
ON
2
B-31
ON→OFF: 115°C (239°F)
OFF→ON: 108°C (226°F)
RB
1
2
3
4
A-21
(RB)
6
C-72
BG
(RB)
4
C-67
(RB)
65
C-65
7
C-66
C-61
103
MPI CONTROL UNIT
BATTERY BACK UP

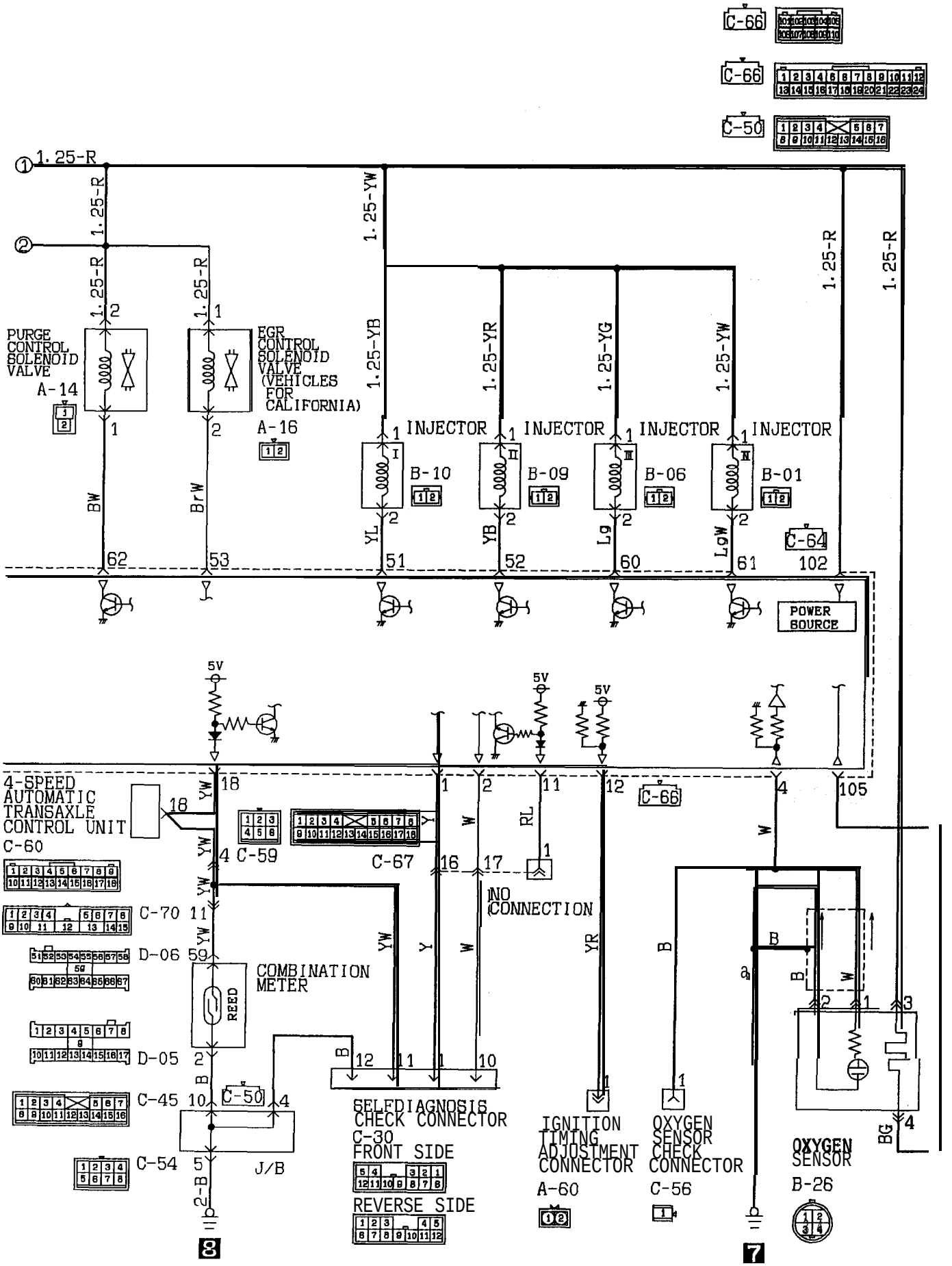
2.0L DOHC Engine (Non-Turbo) <A/T>

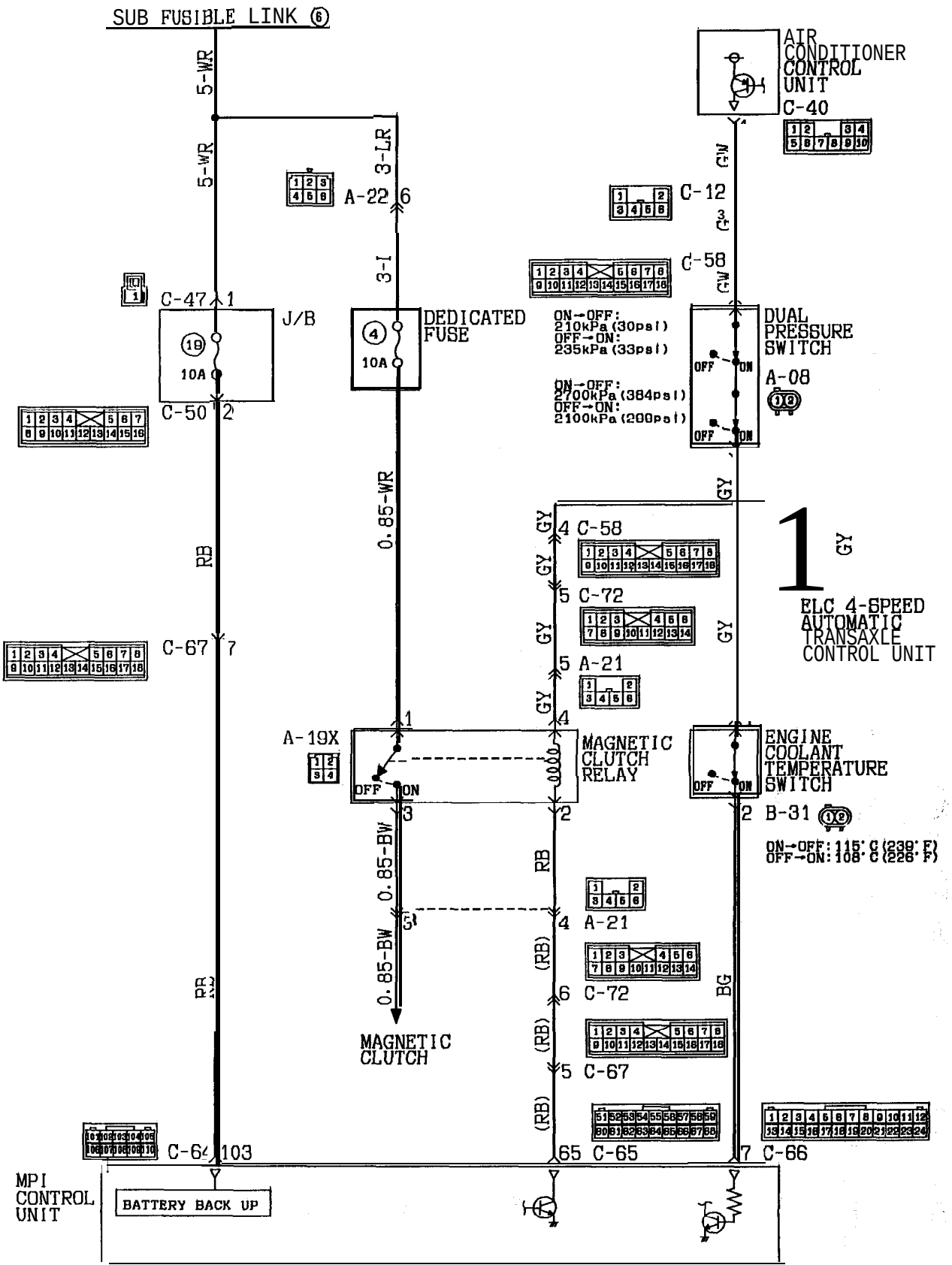



IGNITION SWITCH (IG1)
3-BW
2-BW
1.25-BW
C-54
J/B
10A
C-45
IGNITION COIL
B-14
TO SPARK PLUG
YG
YB
BW
WB
A-59
ENGINE SPEED ADJUSTMENT CONNECTOR
COMBINATION METER
C-05
CHECK ENGINE
POWER TRANSISTOR
B-15
C-69
C-67
C-65
RG
W
Y
YR
B
COMBINATION METER (TACHO)
110
09
54
55
64



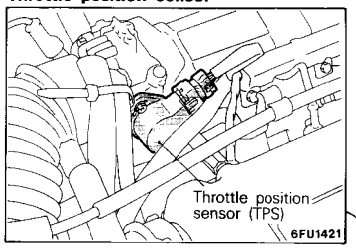
KX35-AC-U0517A-NC


C-66
C-66
C-50
1.25-R
1.25-YW
1.25-YB
1.25-YR
1.25-YG
PURGE CONTROL SOLENOID VALVE
A-14
EGR CONTROL SOLENOID VALVE (VEHICLES FOR CALIFORNIA)
A-16
INJECTOR
B-10
B-09
B-06
B-01
BW
BrW
YL
YB
Lg
LgW
62
53
51
52
60
61
C-64
102
POWER SOURCE
5V
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-60
C-59
C-67
C-70
D-06
D-05
C-45
C-54
C-50
J/B
COMBINATION METER
REED
NO CONNECTION
SELFDIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
IGNITION TIMING ADJUSTMENT CONNECTOR
A-60
OXYGEN SENSOR CHECK CONNECTOR
C-56
OXYGEN SENSOR
B-26
C-66
105
8
7

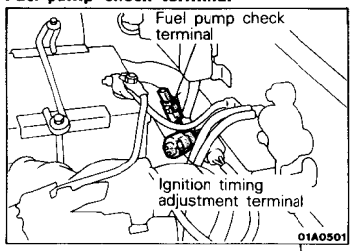

SUB FUSIBLE LINK ⑥
5-WR
5-WR
3-LR
A-22 6
3-I
C-47 1
J/B
⑲
10A
C-50 2
DEDICATED FUSE
④
10A
0.85-WR
RB
C-67 7
A-19X
1
OFF ON
3
0.85-BW
0.85-BW
5
RR
MAGNETIC CLUTCH
MAGNETIC CLUTCH RELAY
AIR CONDITIONER CONTROL UNIT
C-40
GW
C-12
GW
C-58
ON→OFF: 210kPa (30psi)
OFF→ON: 235kPa (33psi)
ON→OFF: 2700kPa (384psi)
OFF→ON: 2100kPa (299psi)
DUAL PRESSURE SWITCH
OFF ON
A-08
GY
1
GY
ELC 4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
4 C-58
GY
5 C-72
GY
5 A-21
GY
4
2
RB
4 A-21
(RB)
6 C-72
(RB)
5 C-67
(RB)
65 C-65
ENGINE COOLANT TEMPERATURE SWITCH
OFF ON
2 B-31
ON→OFF: 115°C (239°F)
OFF→ON: 108°C (226°F)
BG
7 C-66
C-64 103
MPI CONTROL UNIT
BATTERY BACK UP

COMPONENTS LOCATION <2.0L DOHC Engine (Non-Turbo)>

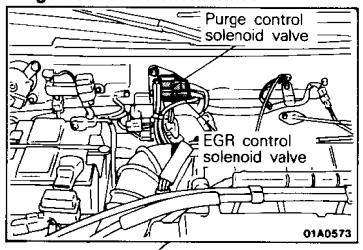
Throttle position sensor



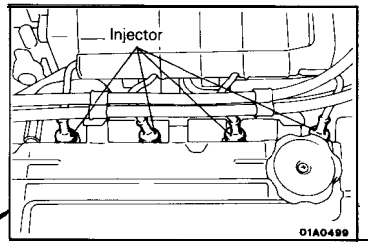
Ignition timing adjustment terminal
Fuel pump check terminal



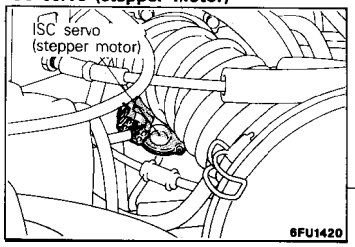
EGR control solenoid valve [Calif. only]
Purge control solenoid valve

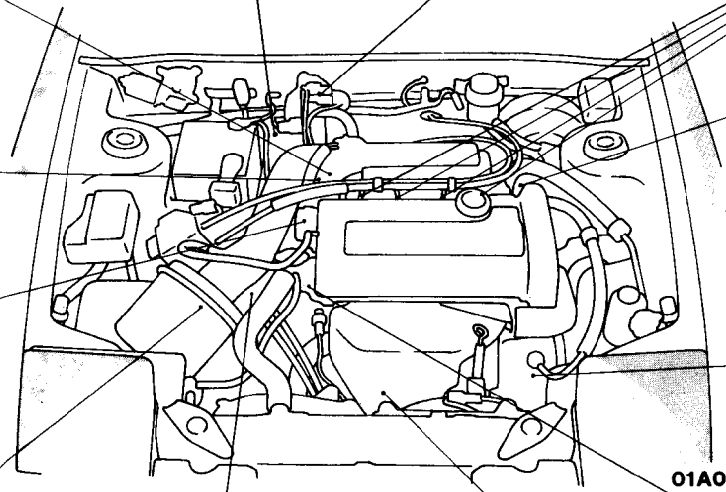


Injector

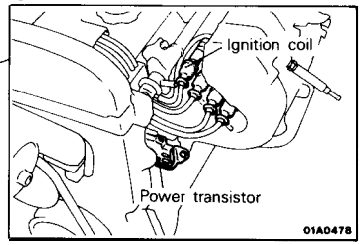


ISC servo (stepper motor)

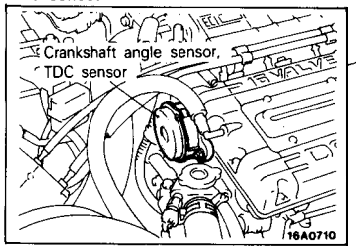




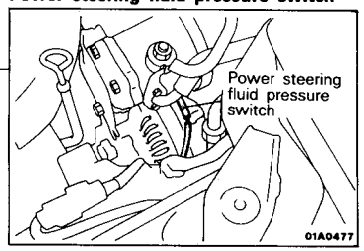
Ignition coil, Power transistor



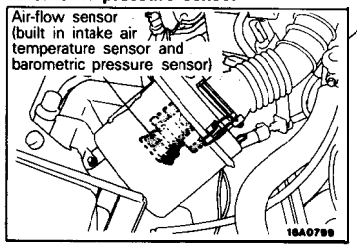
Crankshaft angle sensor
TDC sensor



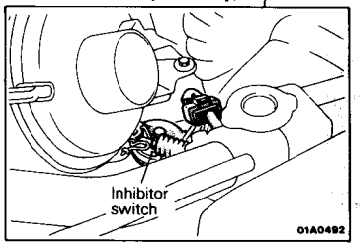
Power steering fluid pressure switch



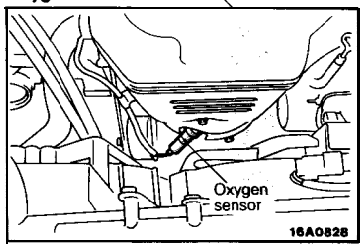
Air-flow sensor
Intake air temperature sensor
Barometric pressure sensor



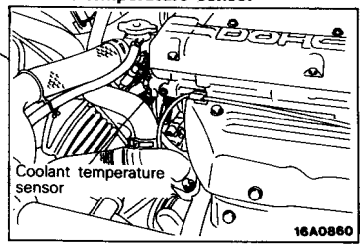
Inhibitor switch (A/T only)



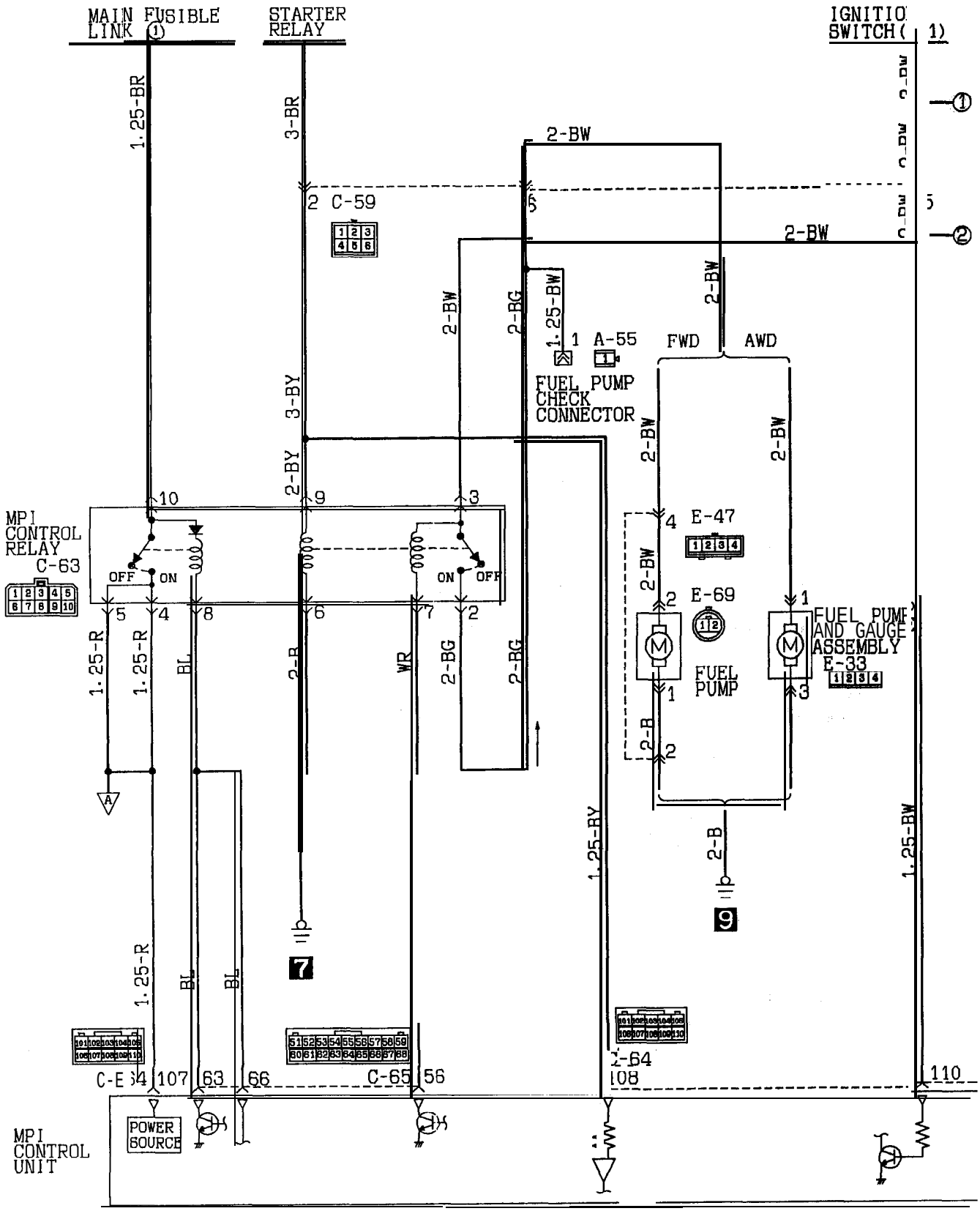
Oxygen sensor



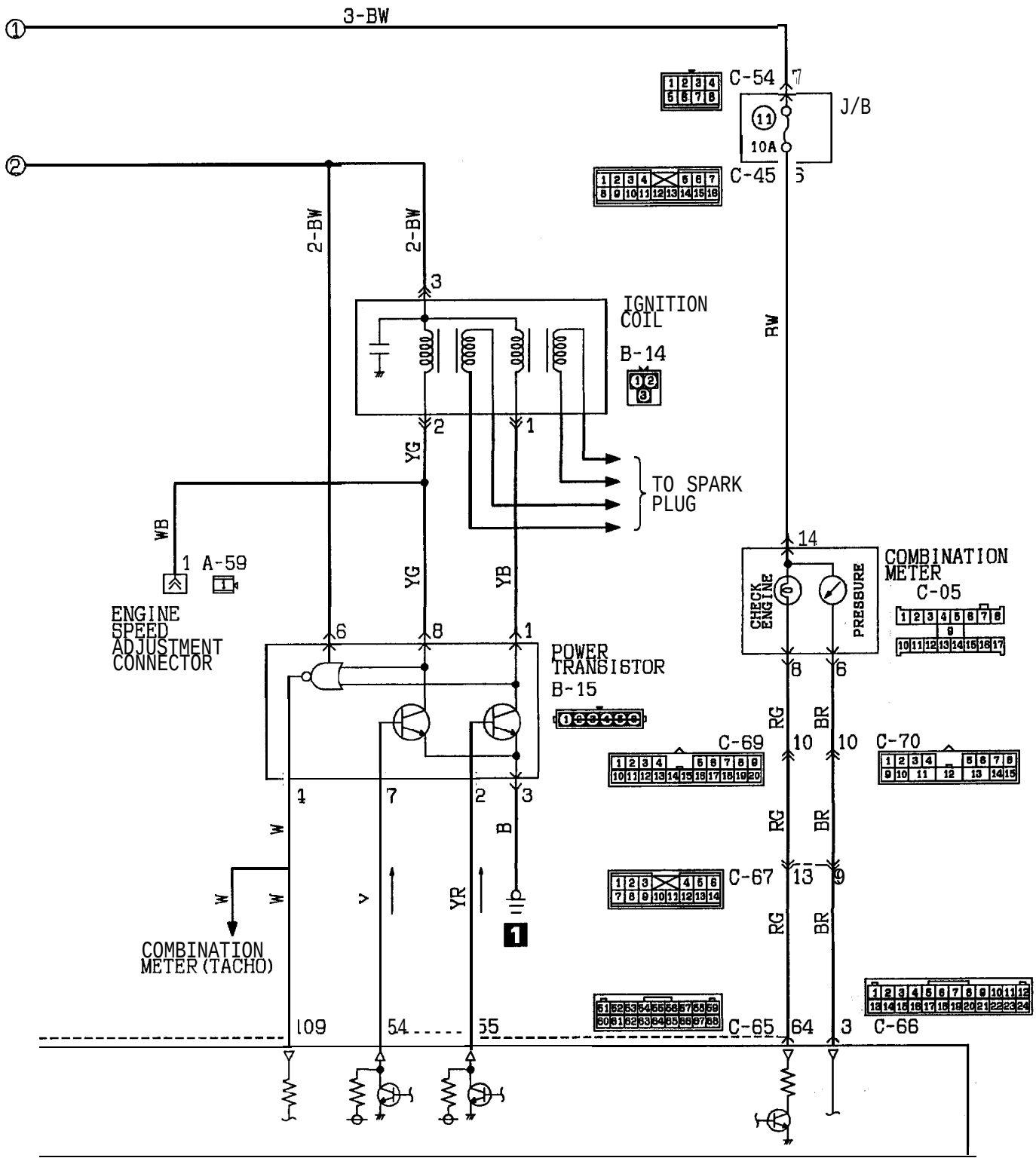
Coolant temperature sensor

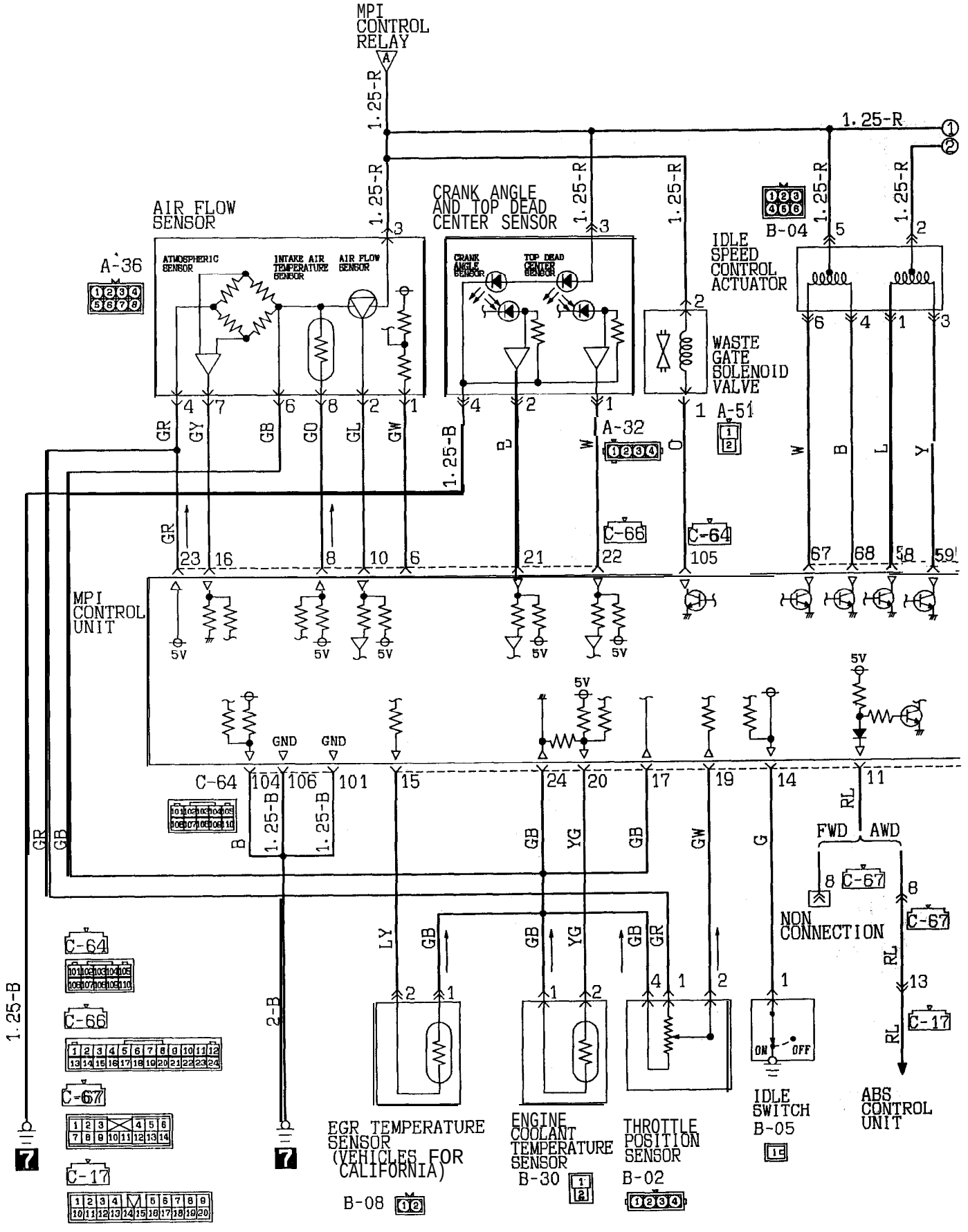


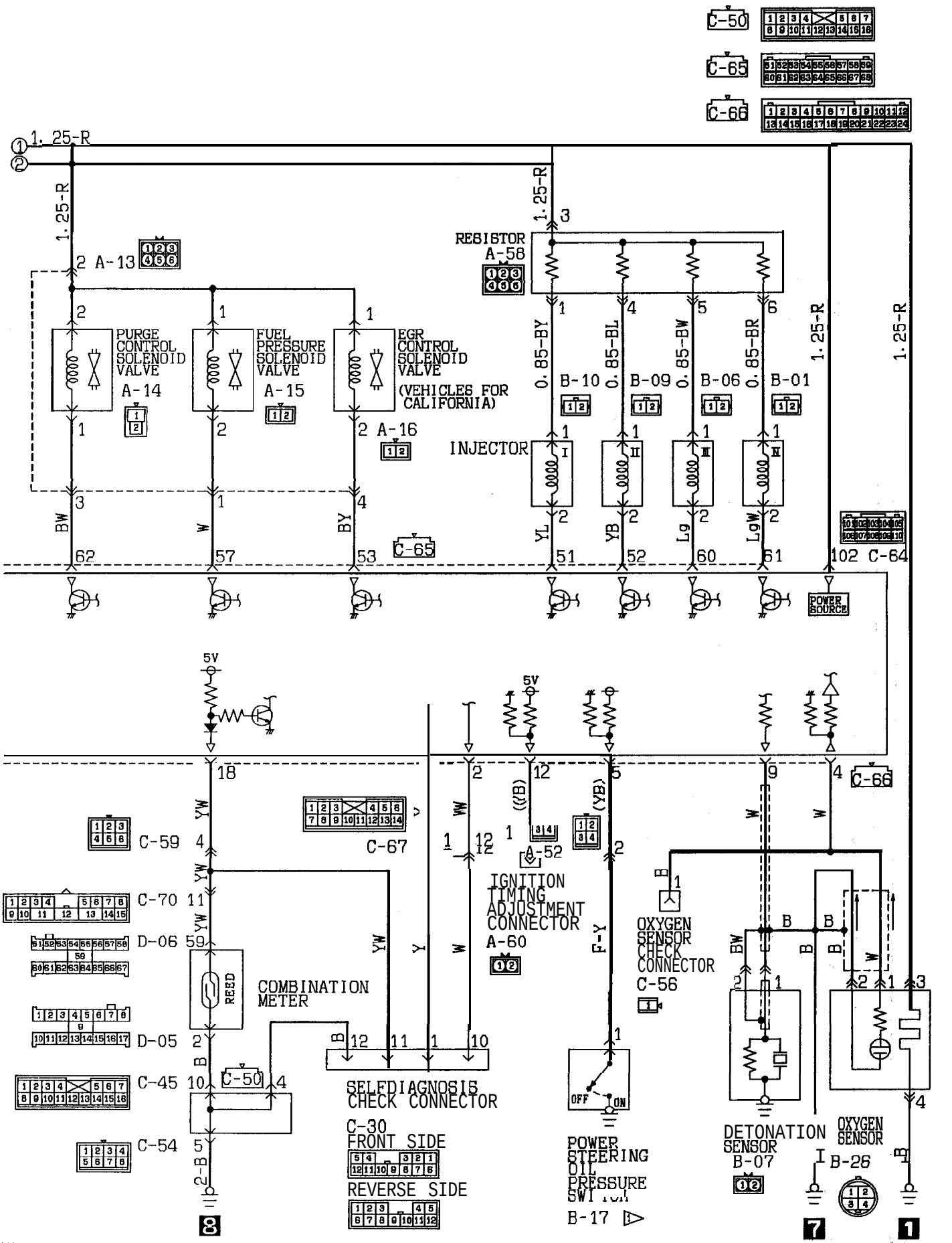
2.0L DOHC Engine (Turbo) <M/T>

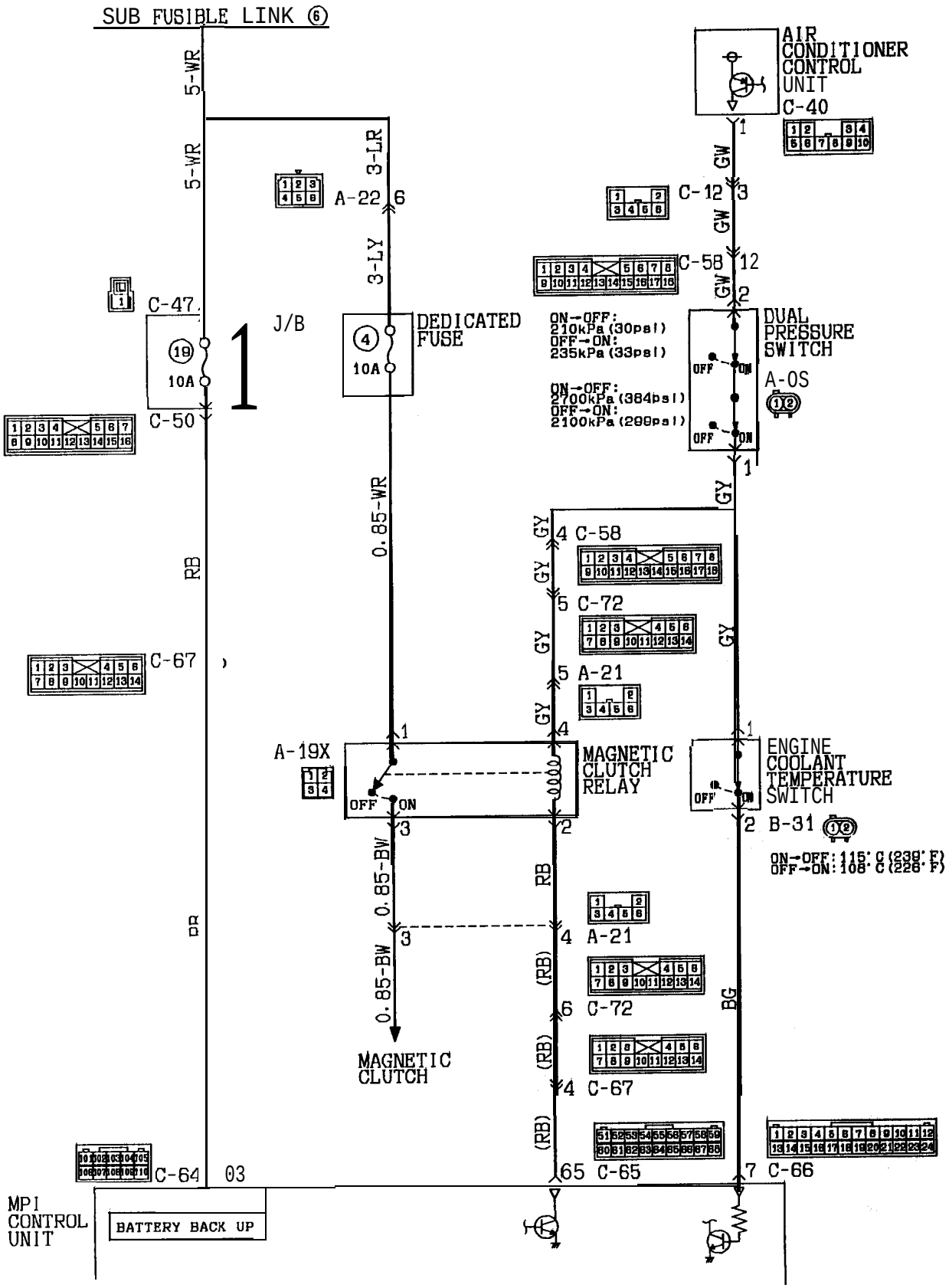


X35-AC-U0516-NC


3-BW
C-54
J/B
10A
C-45
2-BW
2-BW
IGNITION COIL
B-14
RW
YG
TO SPARK PLUG
WB
1 A-59
ENGINE SPEED ADJUSTMENT CONNECTOR
YG
YB
COMBINATION METER
C-05
CHECK ENGINE
PRESSURE
POWER TRANSISTOR
B-15
RG
BR
C-69
C-70
C-67
W
B
V
YR
COMBINATION METER (TACHO)
C-65
C-66

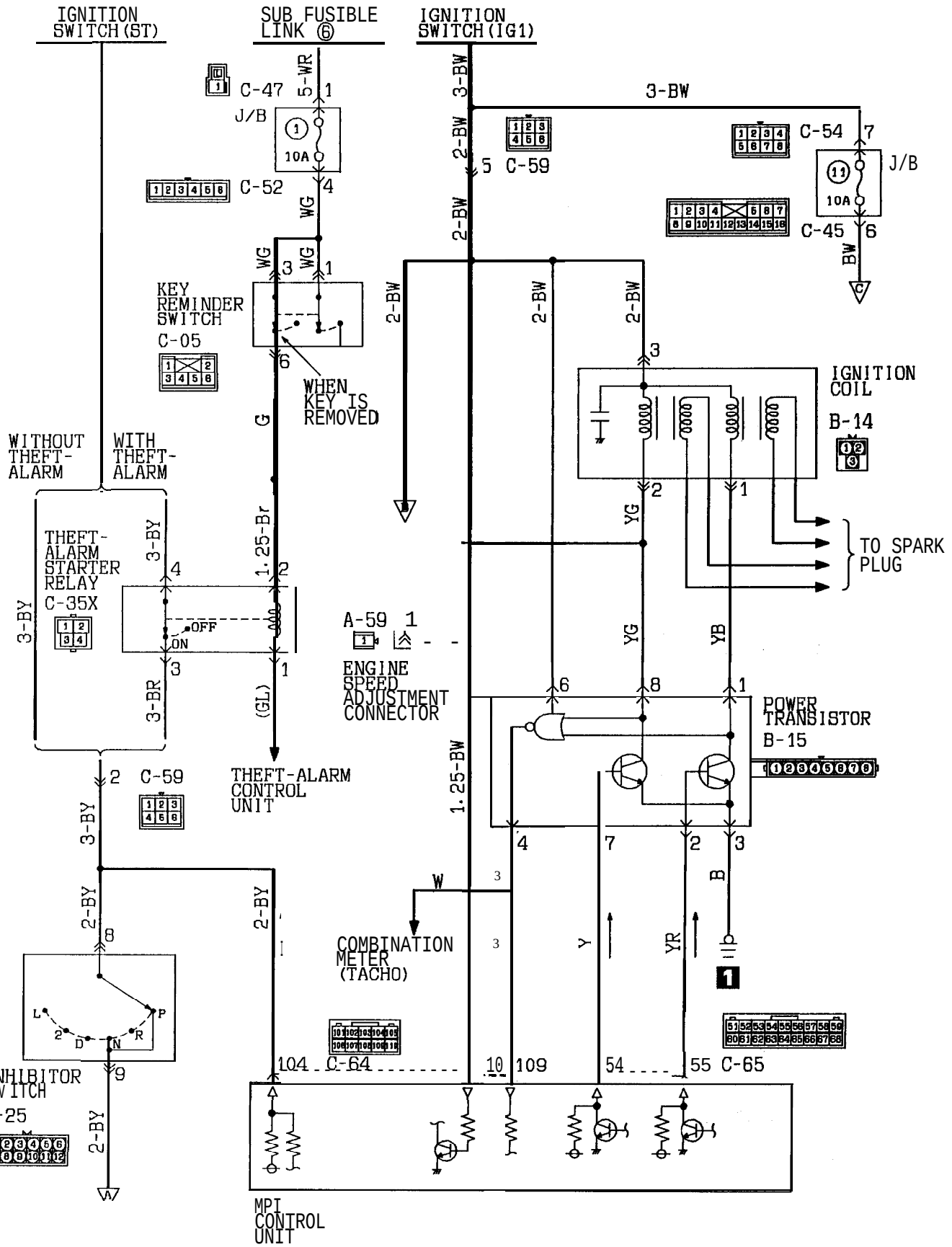

MPI CONTROL RELAY
AIR FLOW SENSOR
ATMOSPHERIC SENSOR
INTAKE AIR TEMPERATURE SENSOR
AIR FLOW SENSOR
A-36
CRANK ANGLE AND TOP DEAD CENTER SENSOR
CRANK ANGLE SENSOR
TOP DEAD CENTER SENSOR
IDLE SPEED CONTROL ACTUATOR
B-04
WASTE GATE SOLENOID VALVE
A-51
A-32
MPI CONTROL UNIT
C-66
C-64
C-67
C-17
5V
GND
1.25-R
1.25-B
2-B
GR
GY
GB
GO
GL
GW
LY
YG
G
RL
FWD
AWD
NON CONNECTION
IDLE SWITCH
B-05
ON
OFF
ABS CONTROL UNIT
EGR TEMPERATURE SENSOR (VEHICLES FOR CALIFORNIA)
B-08
ENGINE COOLANT TEMPERATURE SENSOR
B-30
THROTTLE POSITION SENSOR
B-02


C-50
C-65
C-66
1. 25-R
1.25-R
2 A-13
RESISTOR
A-58
PURGE CONTROL SOLENOID VALVE
A-14
FUEL PRESSURE SOLENOID VALVE
A-15
EGR CONTROL SOLENOID VALVE
(VEHICLES FOR CALIFORNIA)
2 A-16
INJECTOR
0.85-BY
0.85-BL
0.85-BW
0.85-BR
B-10
B-09
B-06
B-01
BW
W
BY
YL
YB
Lg
LgW
62
57
53
51
52
60
61
102 C-64
C-65
POWER SOURCE
5V
18
YW
C-59
C-67
C-70
D-06
D-05
C-45
C-54
C-50
REED
COMBINATION METER
SELFDIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
IGNITION TIMING ADJUSTMENT CONNECTOR
A-60
A-52
OXYGEN SENSOR CHECK CONNECTOR
C-56
POWER STEERING OIL PRESSURE SWITCH
B-17
OFF
ON
DETONATION SENSOR
B-07
OXYGEN SENSOR
B-26
C-66
8
7
1

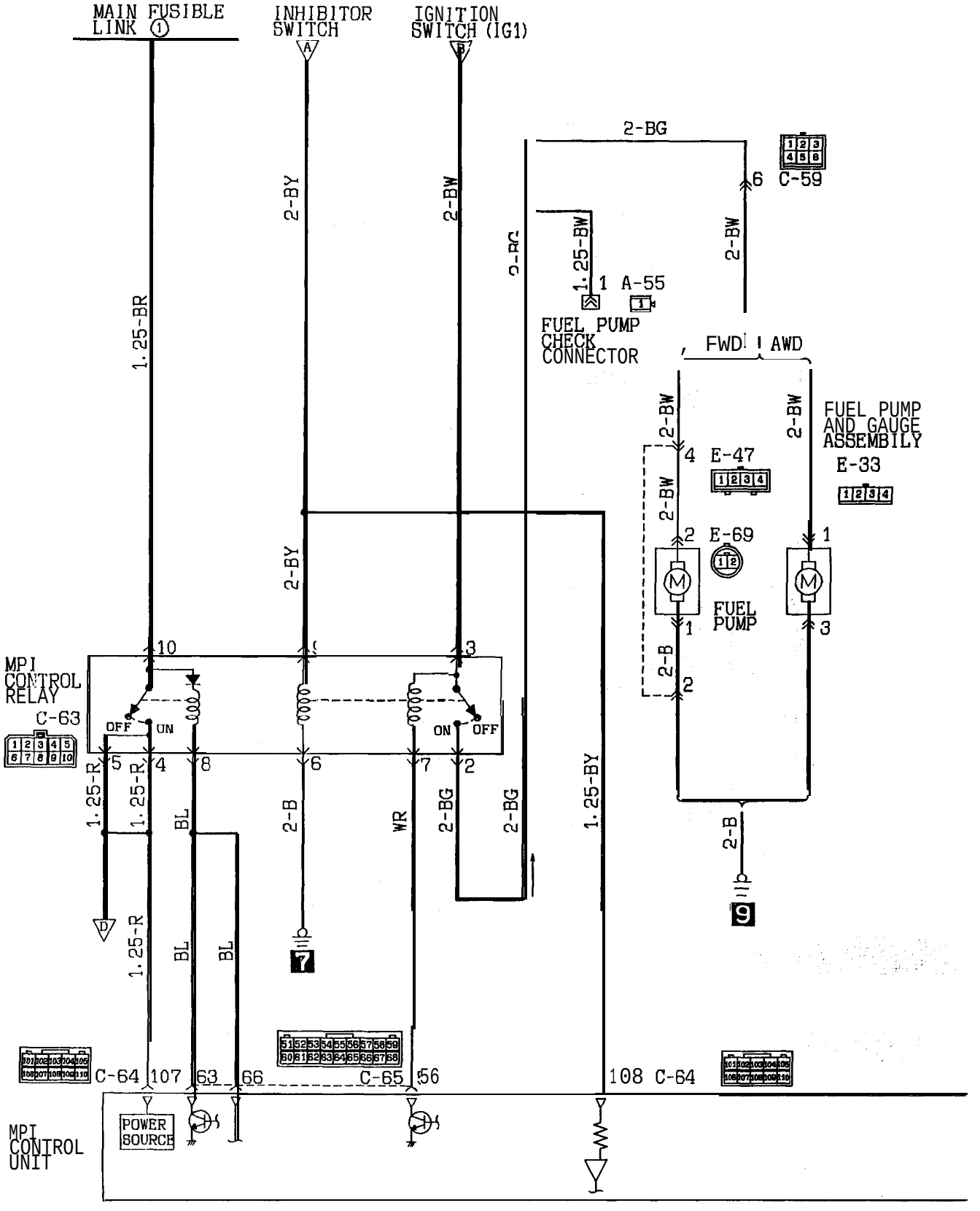


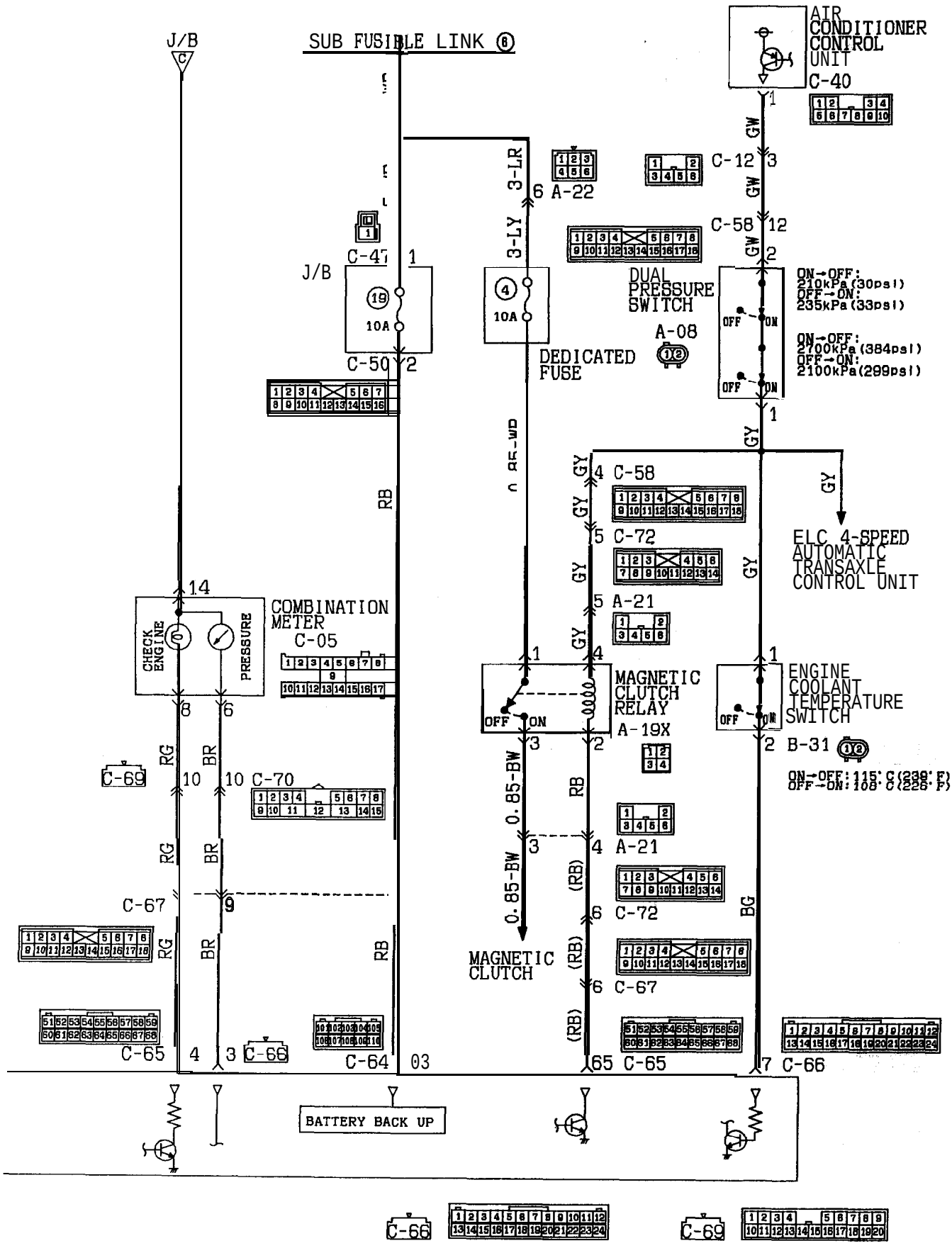
KX35-AC-U0518B-NC

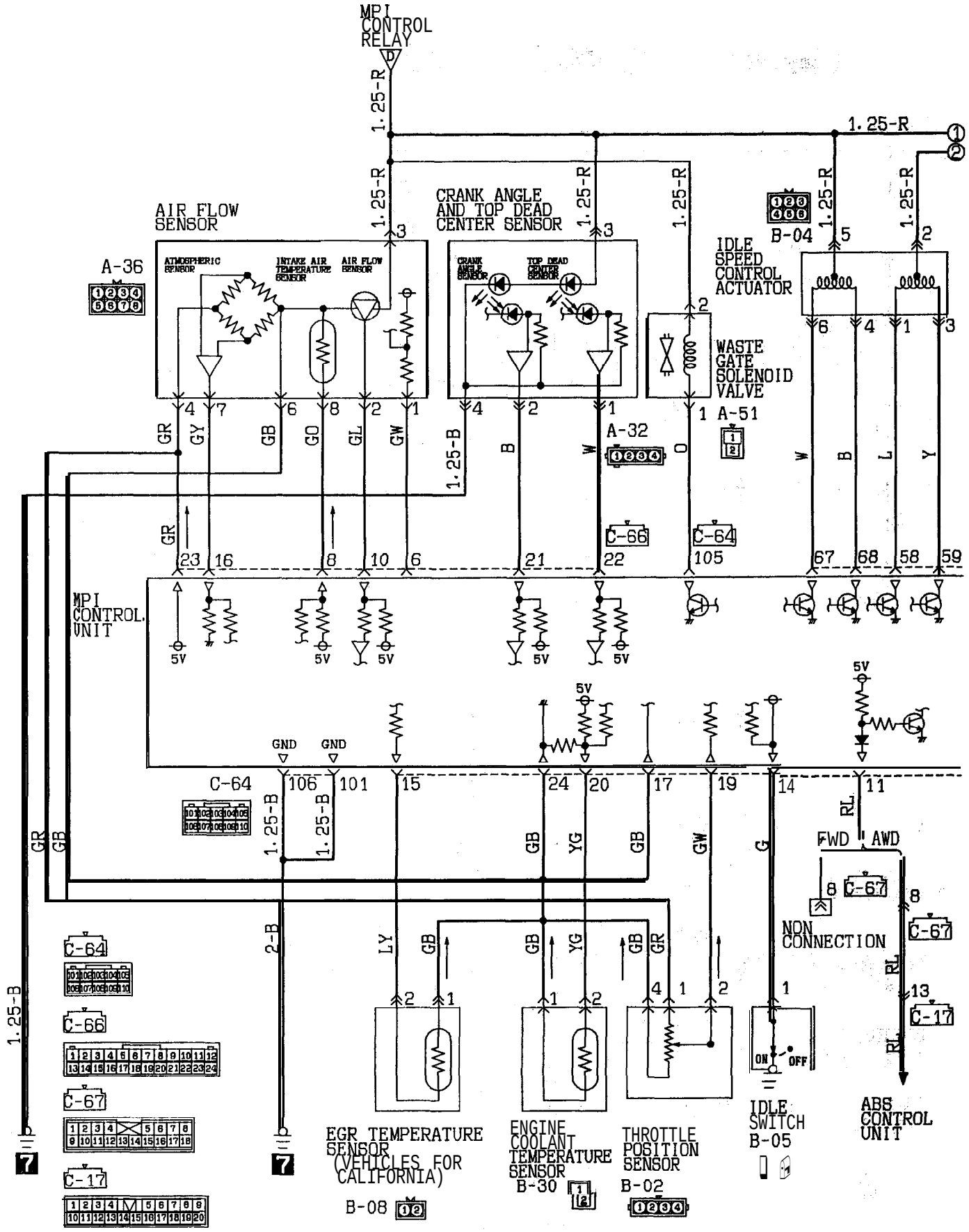
2.0L DOHC Engine (Turbo) <A/T>



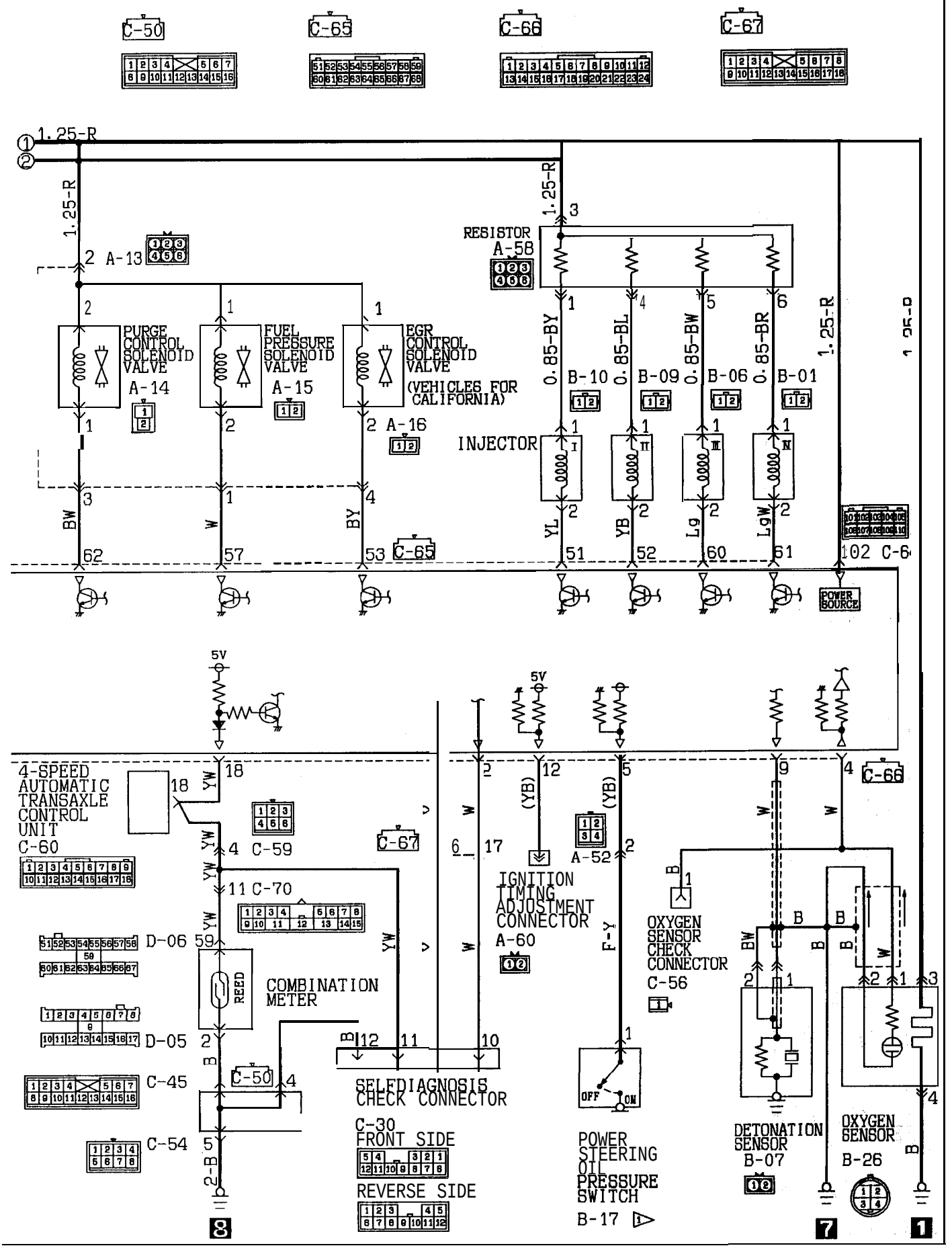
X35-AC-U0519-NC


MAIN FUSIBLE LINK ①
INHIBITOR SWITCH
IGNITION SWITCH (IG1)
2-BG
C-59
2-BY
2-BW
1.25-BW
1 A-55
FUEL PUMP CHECK CONNECTOR
FWD
AWD
FUEL PUMP AND GAUGE ASSEMBLY
E-33
E-47
E-69
FUEL PUMP
1.25-BR
1.25-BY
2-B
2-BG
MPI CONTROL RELAY
C-63
OFF
ON
1.25-R
BL
WR
C-64
C-65
107
63
66
56
108
POWER SOURCE
MPI CONTROL UNIT


J/B
SUB FUSIBLE LINK ⑥
AIR CONDITIONER CONTROL UNIT
C-40
C-12
C-58
C-47
J/B
10A
C-50
10A
DEDICATED FUSE
DUAL PRESSURE SWITCH
A-08
ON→OFF: 210kPa (30psi)
OFF→ON: 235kPa (33psi)
ON→OFF: 2700kPa (384psi)
OFF→ON: 2100kPa (299psi)
C-58
C-72
A-21
ELC 4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
COMBINATION METER
C-05
CHECK ENGINE
PRESSURE
MAGNETIC CLUTCH RELAY
A-19X
ENGINE COOLANT TEMPERATURE SWITCH
B-31
ON→OFF: 115°C (239°F)
OFF→ON: 108°C (226°F)
C-69
C-70
C-67
C-65
C-66
C-64
MAGNETIC CLUTCH
BATTERY BACK UP
3-LR
3-LY
RB
GW
GY
RG
BR
BG
0.85-BW
(RB)

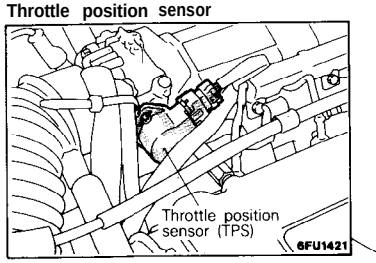


KX35-AC-U0519B-NC

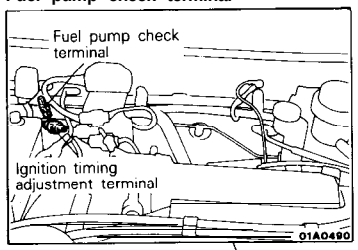

C-50
C-65
C-66
C-67
1.25-R
RESISTOR
A-58
PURGE CONTROL SOLENOID VALVE
A-14
FUEL PRESSURE SOLENOID VALVE
A-15
EGR CONTROL SOLENOID VALVE
(VEHICLES FOR CALIFORNIA)
A-16
INJECTOR
0.85-BY
0.85-BL
0.85-BW
0.85-BR
B-10
B-09
B-06
B-01
BW
W
BY
YL
YB
Lg
LgW
POWER SOURCE
5V
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-60
YW
C-59
C-70
D-06
D-05
C-45
C-54
REED
COMBINATION METER
C-50
SELFDIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
IGNITION TIMING ADJUSTMENT CONNECTOR
A-60
A-52
F-Y
POWER STEERING OIL PRESSURE SWITCH
B-17
OFF
ON
OXYGEN SENSOR CHECK CONNECTOR
C-56
DETONATION SENSOR
B-07
OXYGEN SENSOR
B-26
2-B
8
7
1

COMPONENTS LOCATION < 2.0L DOHC Engine (Turbo)>

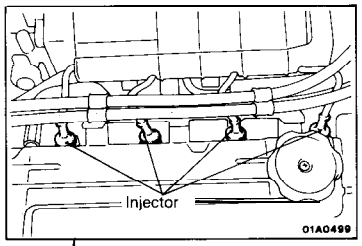
Throttle position sensor



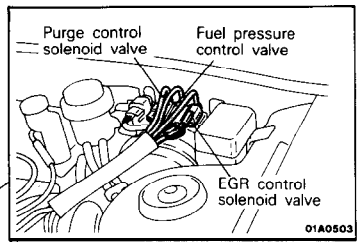
Ignition timing adjustment terminal
Fuel pump check terminal



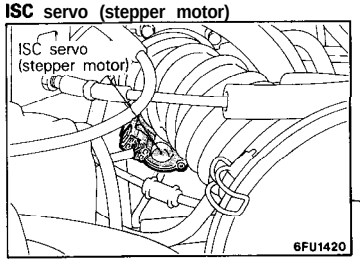
Injector



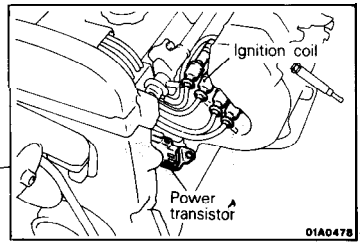
EGR control solenoid valve [Calif. only]
Purge control solenoid valve
Fuel pressure control valve [Turbo only]

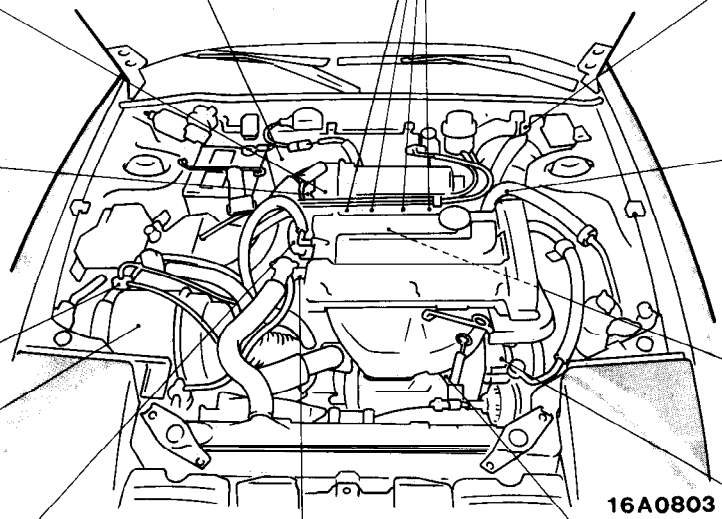


ISC servo (stepper motor)

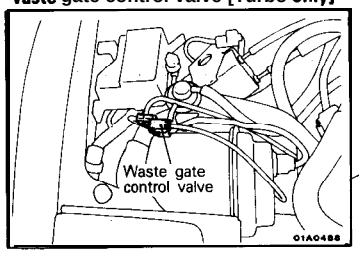


Ignition coil, Power transistor

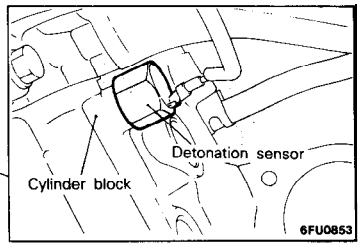




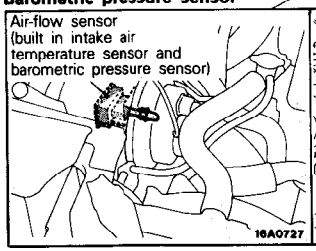
Waste gate control valve [Turbo only]



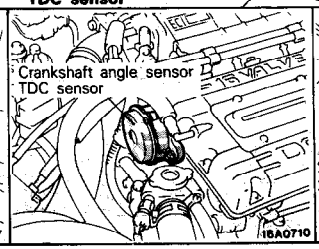
Detonation sensor



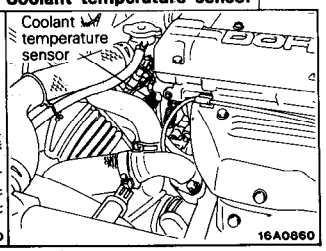
Air-flow sensor
Intake air temperature sensor
Barometric pressure sensor



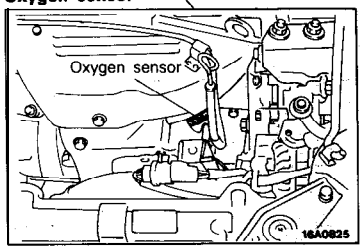
Crankshaft angle sensor
TDC sensor



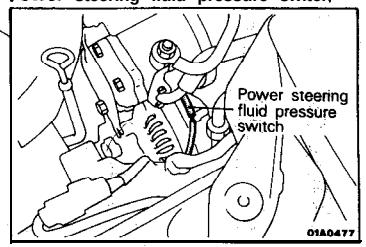
Coolant temperature sensor



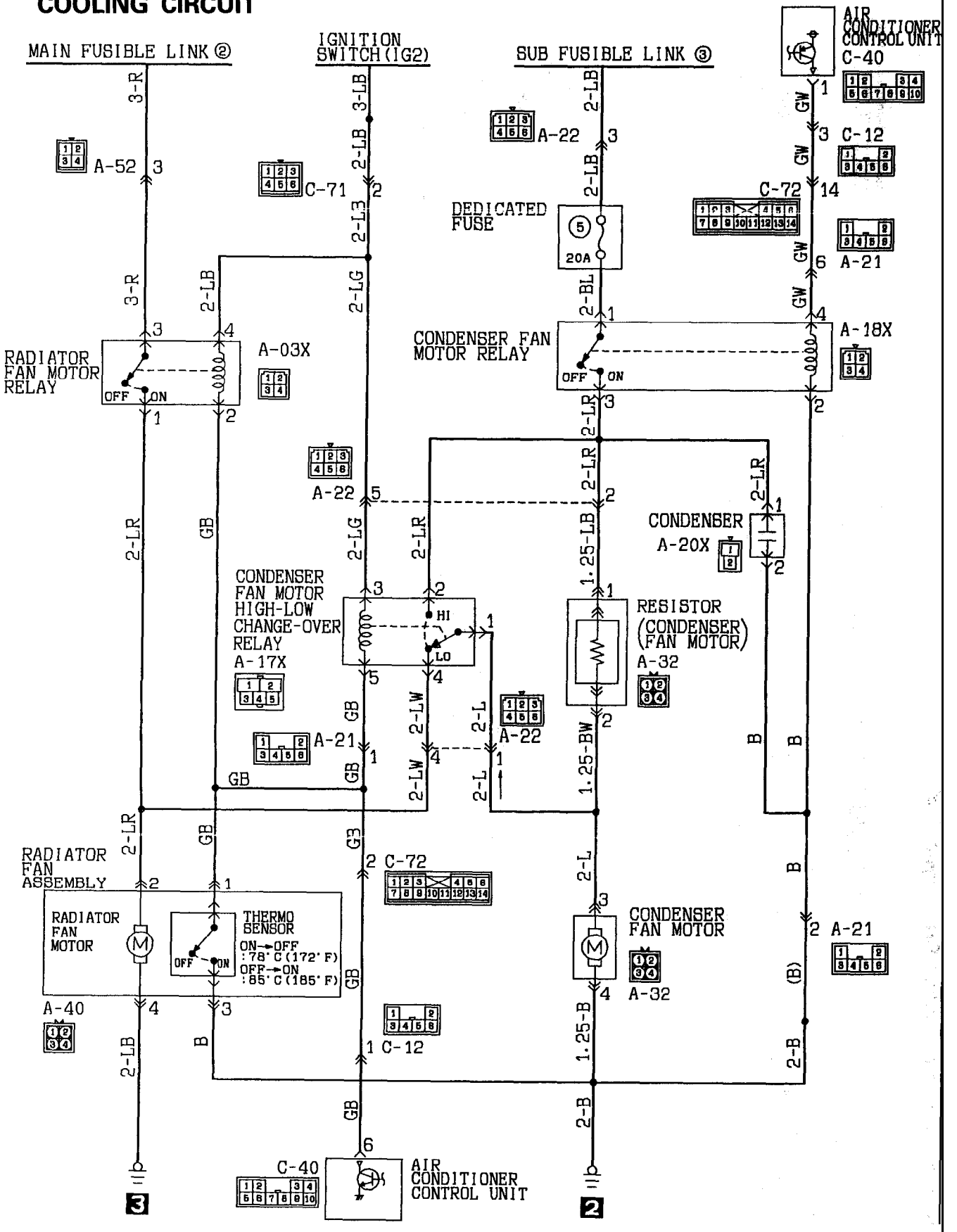
Oxygen sensor



Power steering fluid pressure switch



COOLING CIRCUIT

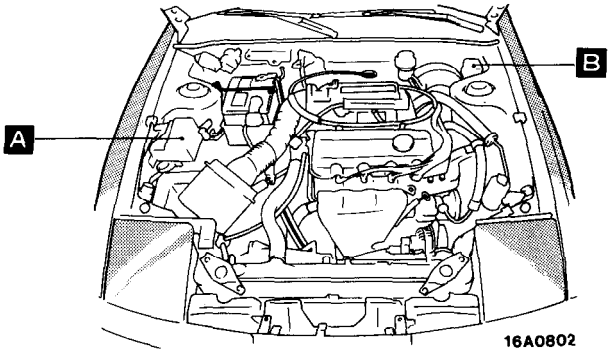


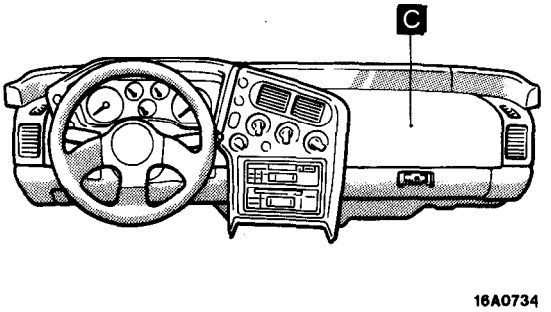
KX35-AC-U0602-NC

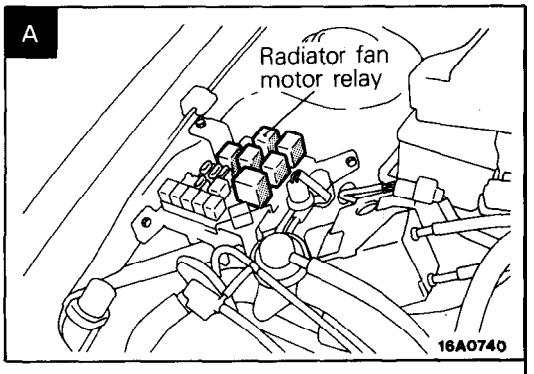
COMPONENTS LOCATION

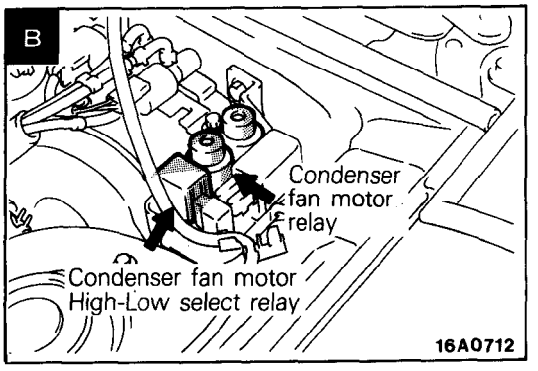
Name	Symbol	Name	Symbol
Air conditioner control unit	C	Condenser fan motor relay	B
Condenser fan motor High-Low select relay	B	Radiator fan motor relay	A

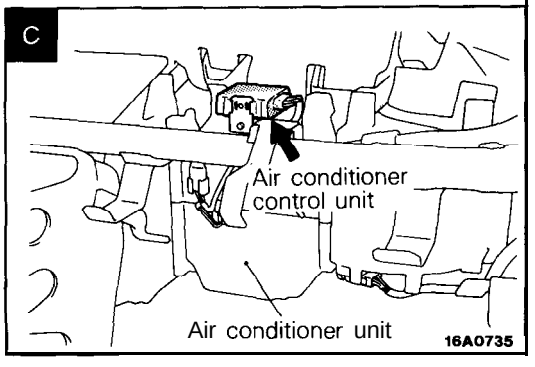
NOTE
The "Name" column is arranged in alphabetical order.



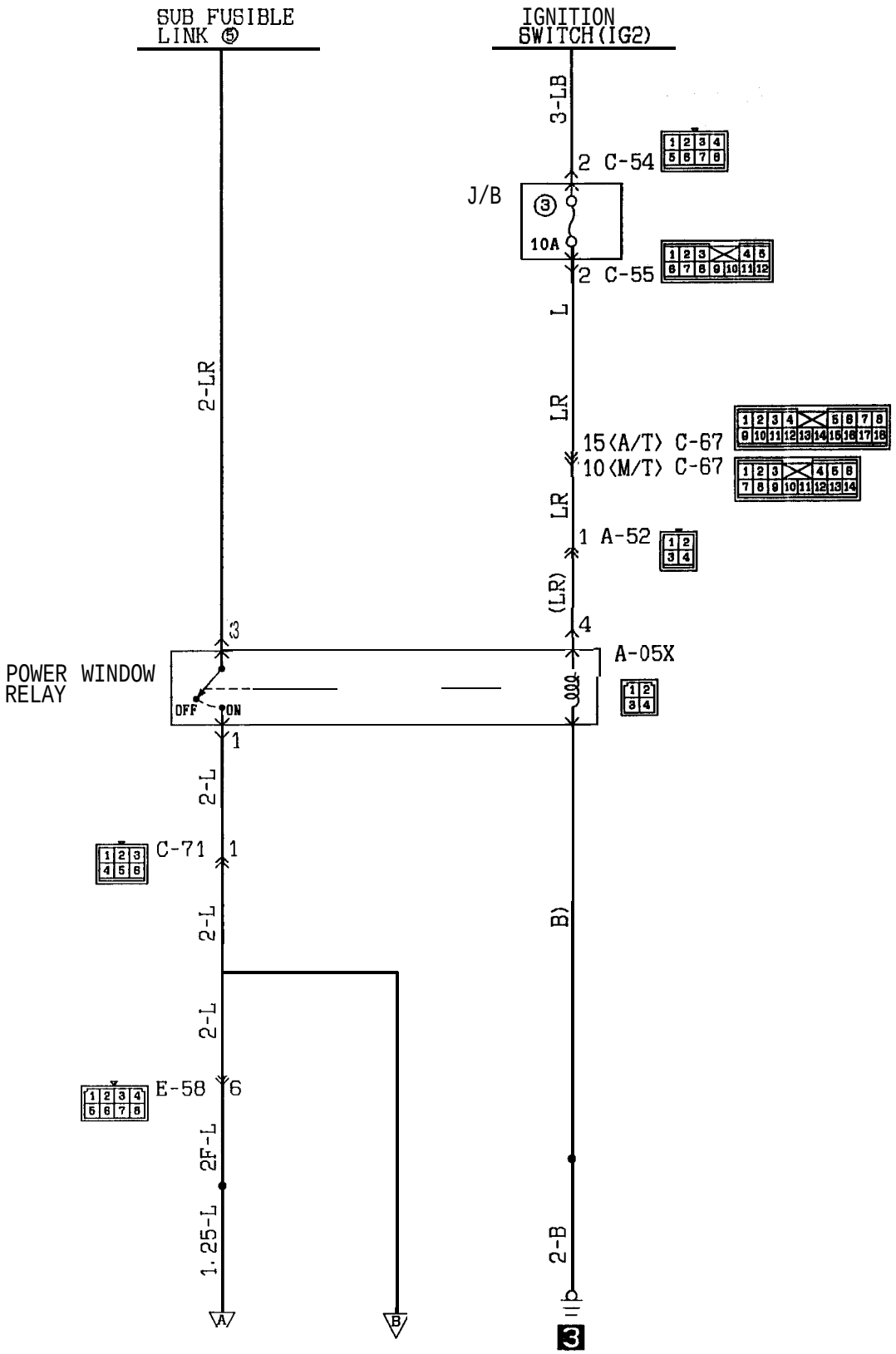




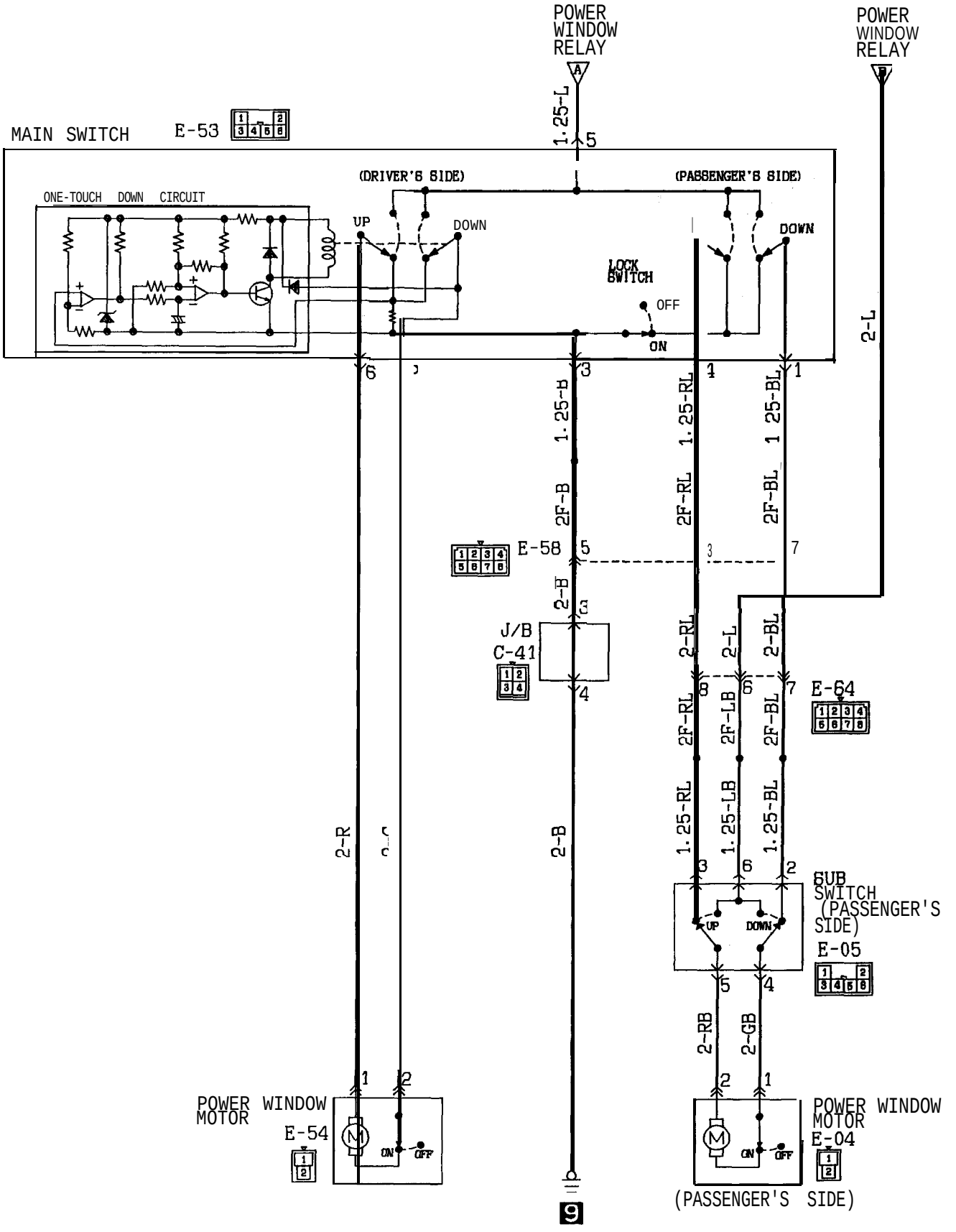




POWER WINDOW CIRCUIT

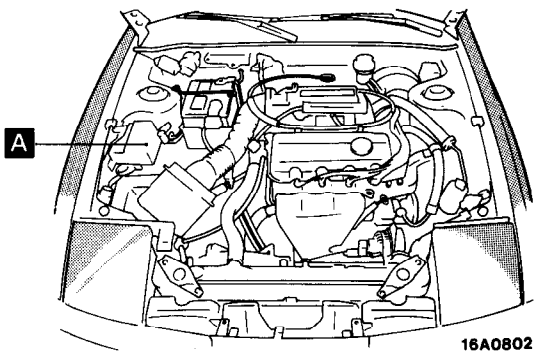


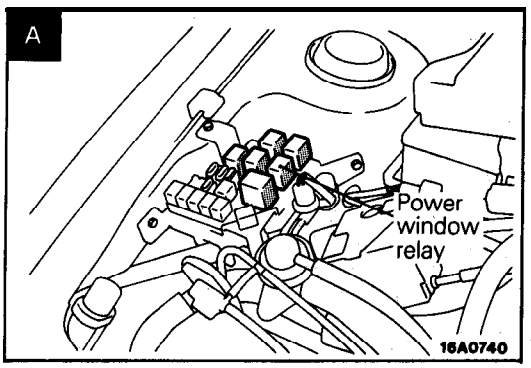
X35-AC-U1107-NC


POWER WINDOW RELAY
POWER WINDOW RELAY
MAIN SWITCH
E-53
ONE-TOUCH DOWN CIRCUIT
(DRIVER'S SIDE)
(PASSENGER'S SIDE)
UP
DOWN
DOWN
LOCK SWITCH
OFF
ON
1.25-L
5
2-L
6
3
4
1
1.25-B
1.25-RL
1 25-BL
2F-B
2F-RL
2F-BL
E-58
5
3
7
2-B
J/B C-41
2-RL
2-L
2-BL
8
6
7
E-64
2F-RL
2F-LB
2F-BL
1.25-RL
1.25-LB
1.25-BL
3
6
2
SUB SWITCH (PASSENGER'S SIDE)
UP
DOWN
E-05
5
4
2-R
2-B
2-RB
2-GB
1
2
2
1
POWER WINDOW MOTOR
E-54
ON
OFF
POWER WINDOW MOTOR
E-04
ON
OFF
(PASSENGER'S SIDE)
9

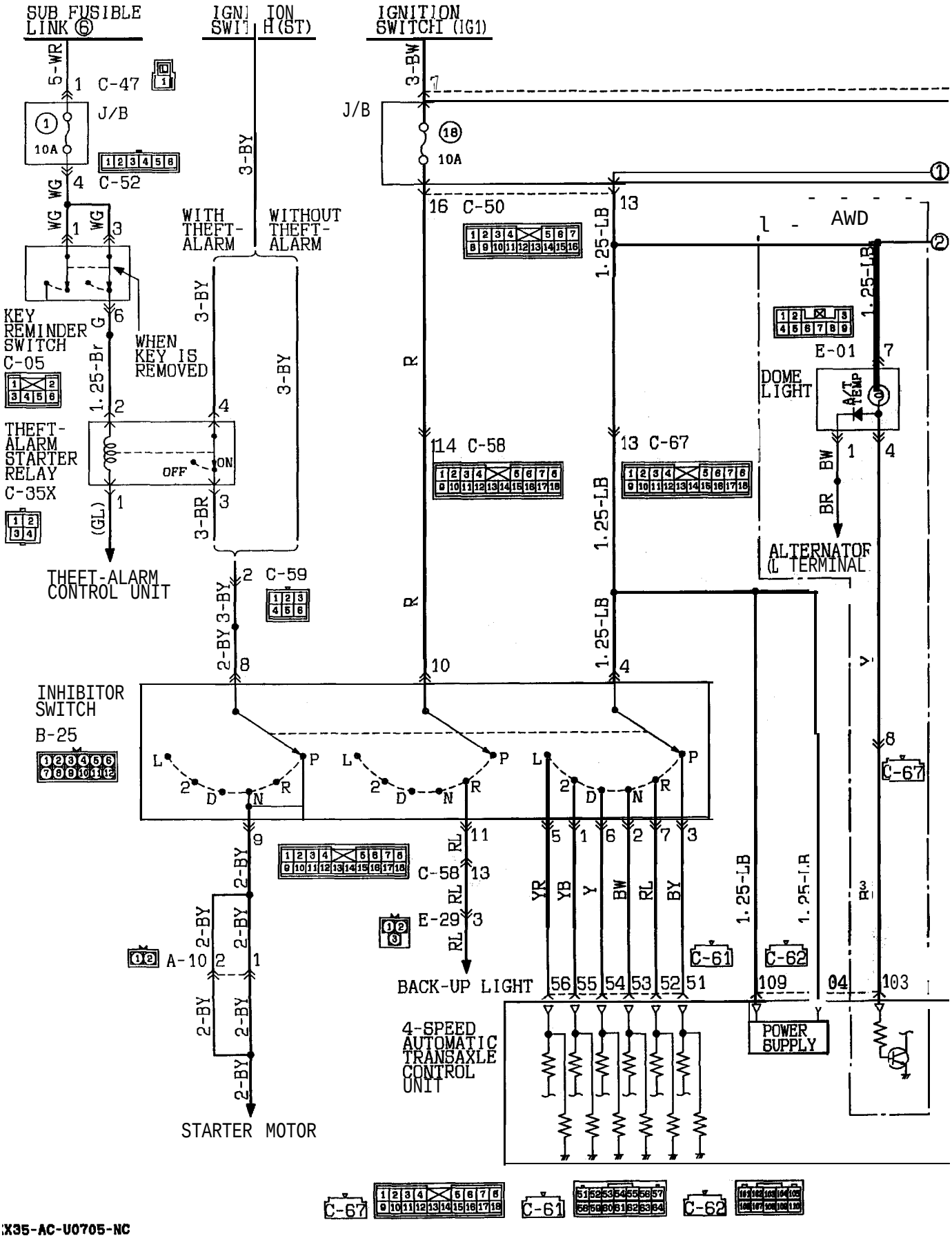
COMPONENTS LOCATION

Name	Symbol
Power window relay	A

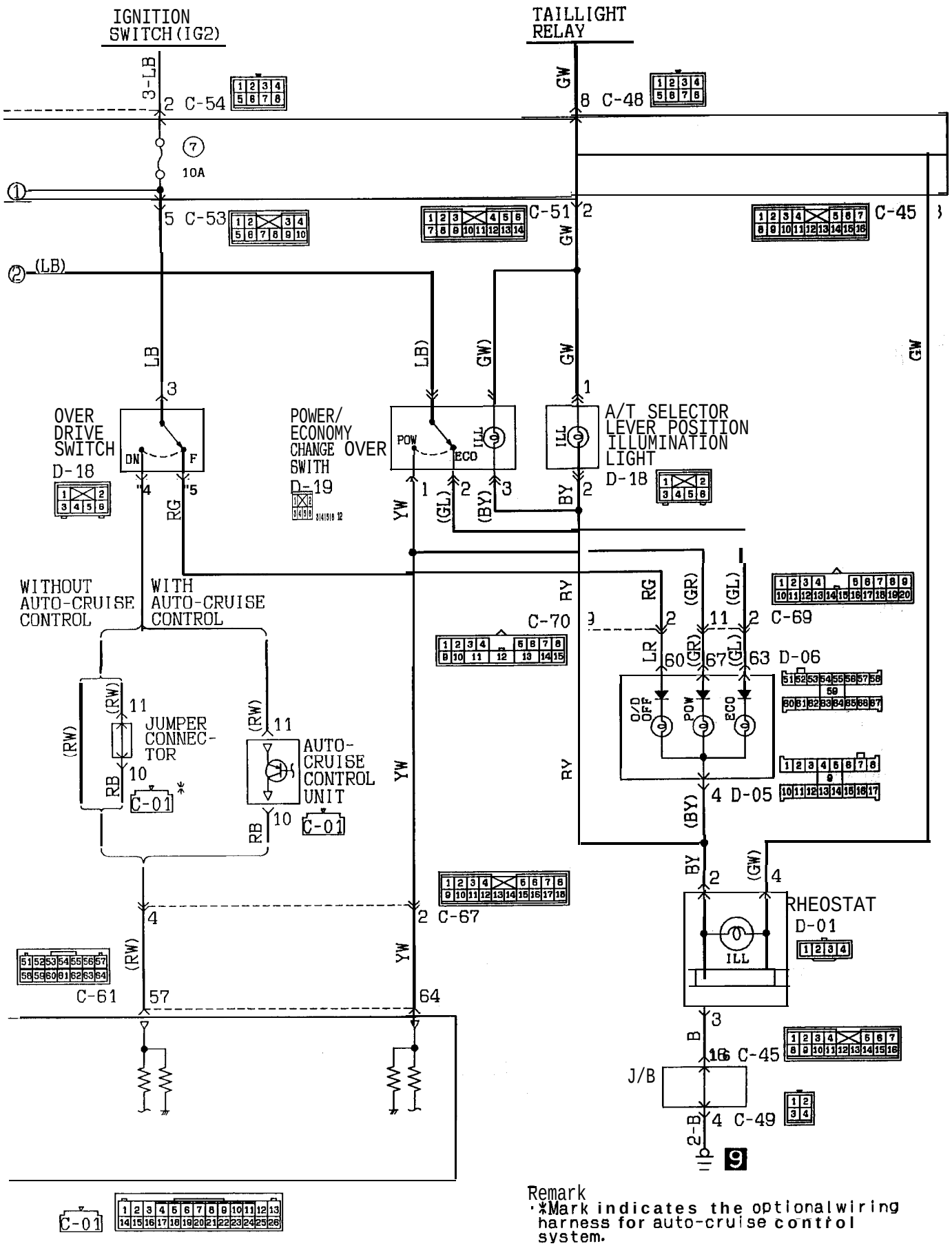




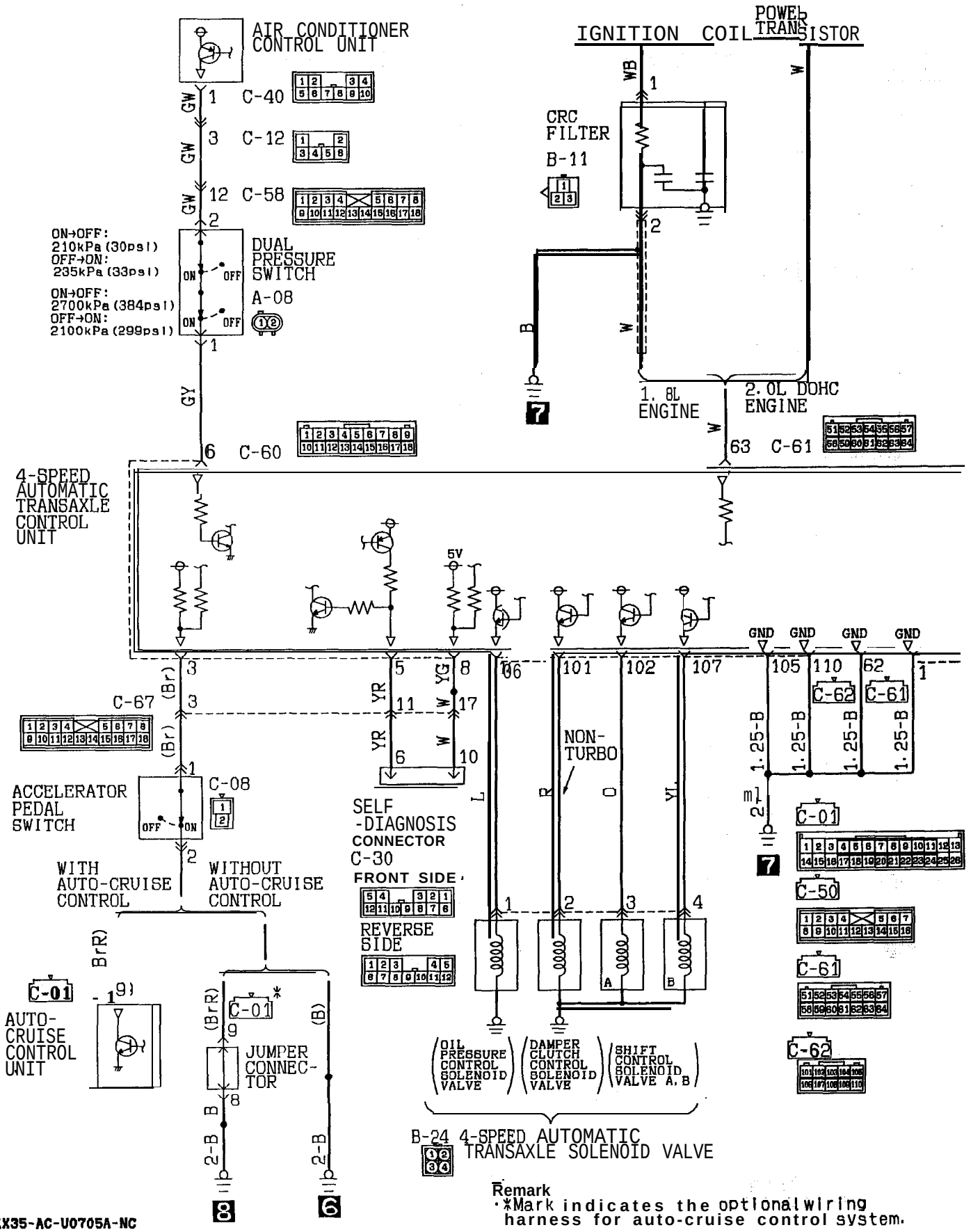
ELC-4-SPEED AUTOMATIC TRANSAXLE CIRCUIT



X35-AC-U0705-NC

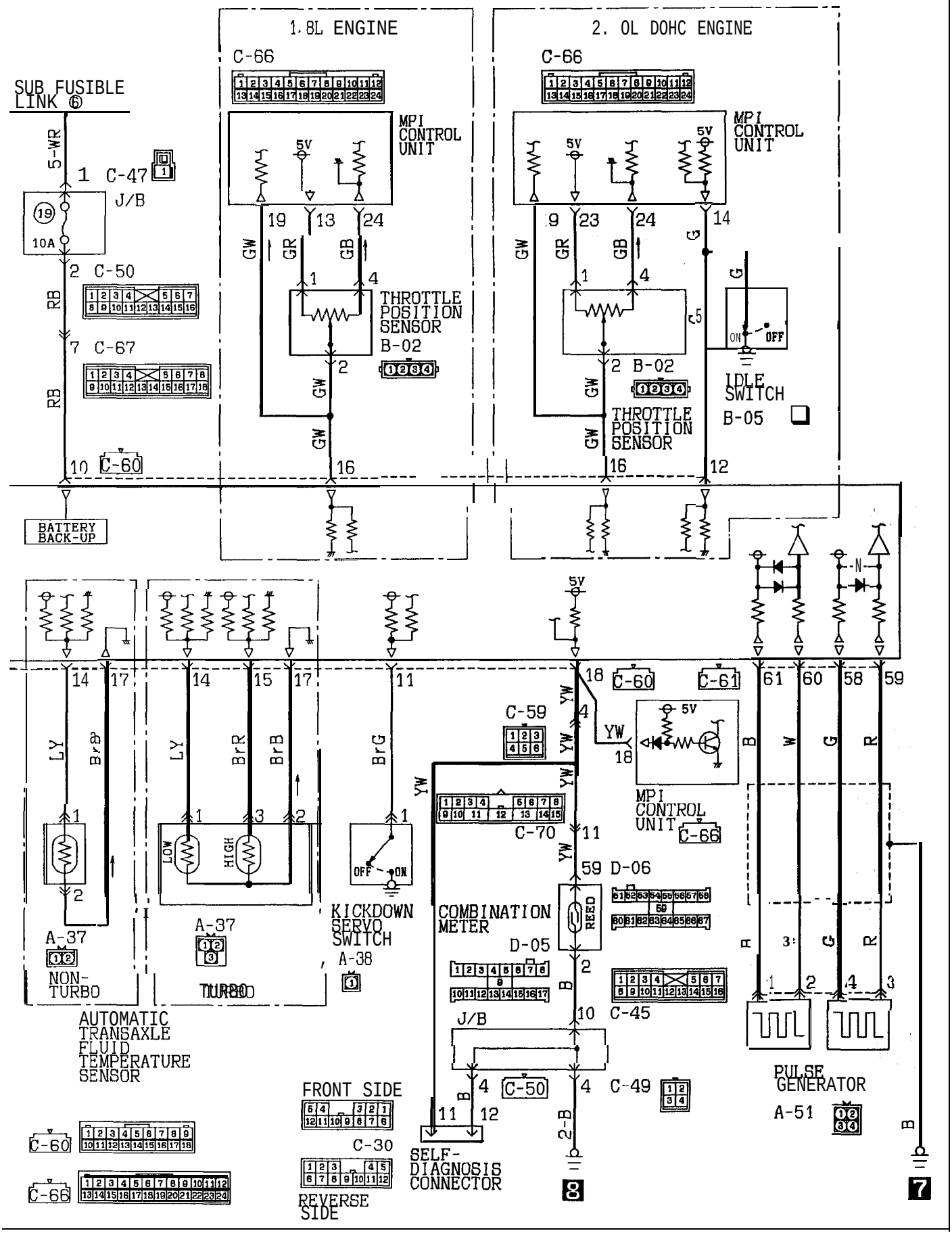


Remark
*Mark indicates the optional wiring harness for auto-cruise control system.



KX35-AC-U0705A-NC

Remark
*Mark indicates the optional wiring harness for auto-cruise control system.

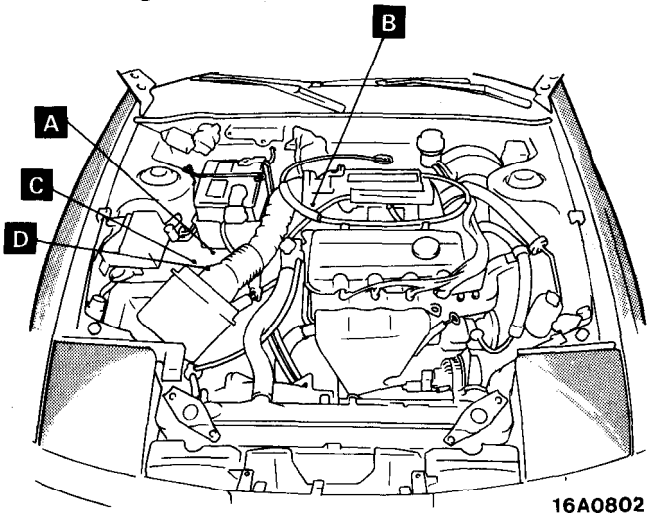

1.8L ENGINE
2.0L DOHC ENGINE
SUB FUSIBLE LINK ⑥
5-WR
1 C-47
J/B
⑲
10A
2 C-50
RB
7 C-67
RB
10 C-60
BATTERY BACK-UP
C-66
MPI CONTROL UNIT
5V
19 13 24
GW GR GB
1 4
THROTTLE POSITION SENSOR B-02
2
GW
16
9 23 24 14
G
5
ON OFF
IDLE SWITCH B-05
12
14 17
LY BrB
14 15 17
LY BrR BrB
11
BrG
LOW HIGH
OFF ON
A-37
NON-TURBO
TURBO
KICKDOWN SERVO SWITCH A-38
AUTOMATIC TRANSAXLE FLUID TEMPERATURE SENSOR
C-59
YW
18 C-60
C-61
61 60 58 59
B W G R
C-70
59 D-06
MPI CONTROL UNIT C-66
COMBINATION METER
REED
D-05
J/B
10 C-45
4 C-50
4 C-49
11 12
2-B
SELF-DIAGNOSIS CONNECTOR
8
PULSE GENERATOR A-51
7
FRONT SIDE
C-30
REVERSE SIDE
C-60
C-66

COMPONENTS LOCATION

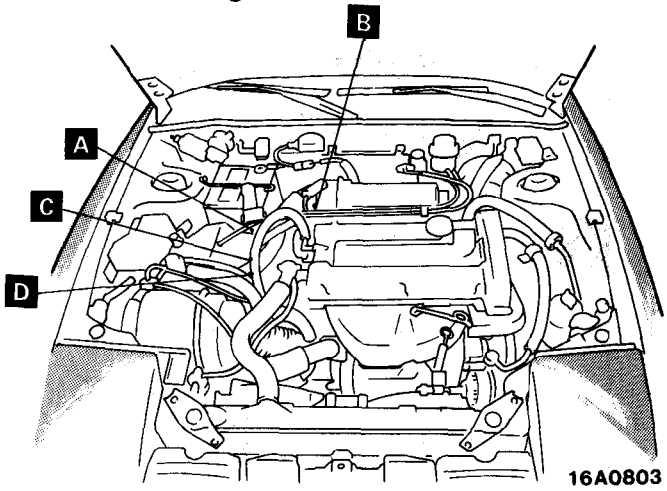
Name	Symbol	Name	Symbol
Diagnosis connector	F	Pulse generator B	A
Engine control unit	I	Solenoid valves	C
Oil temperature sensor	D	Throttle position sensor	B
Power (PWR)/Economy (ECO) select switch	G	Transaxle control unit	H
Pulse generator A	A	Vehicle-speed sensor	E

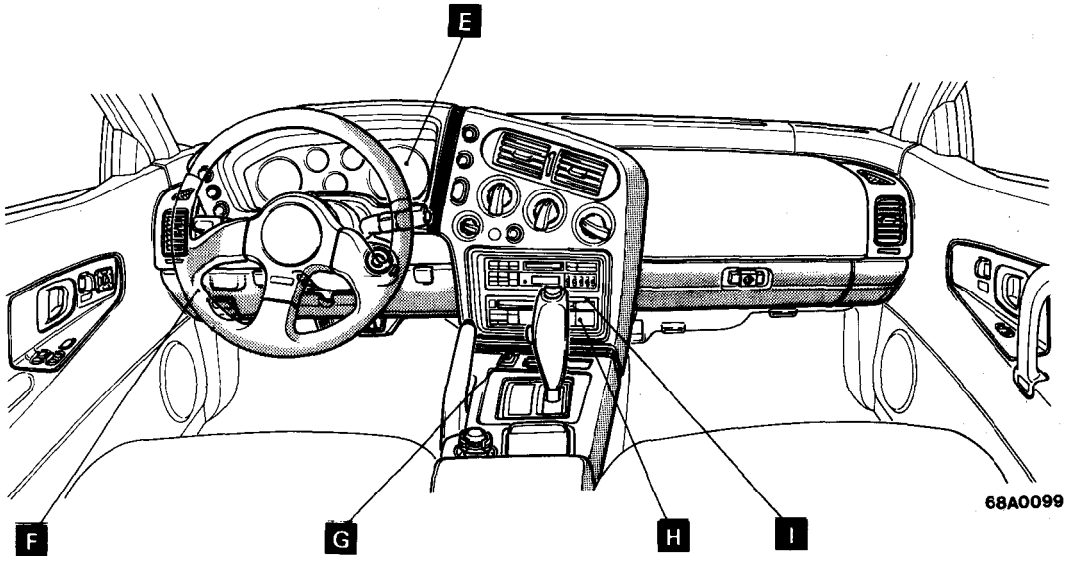
NOTE
1. The "Name" column is arranged in alphabetical order.
2. Refer to GROUP 14–On vehicle inspection of MPI components for installation position of ❑ throttle position sensor.

1.8L Engine

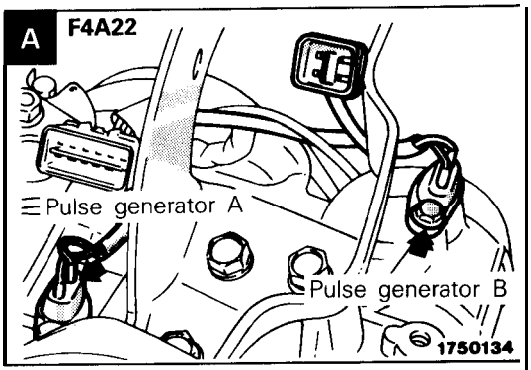


2.0L DOHC Engine

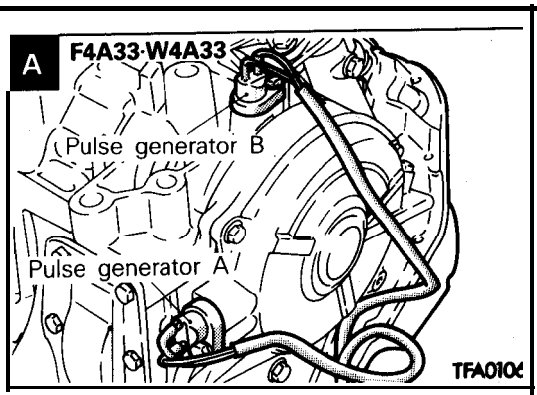




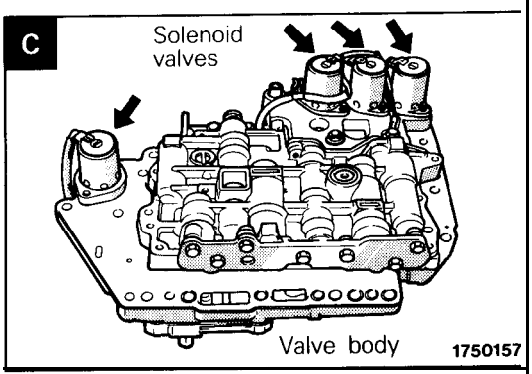
A F4A22



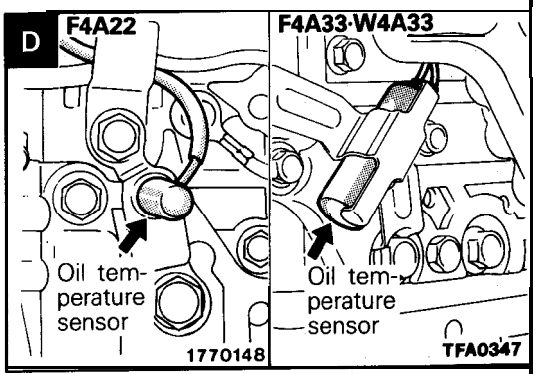
A F4A33·W4A33



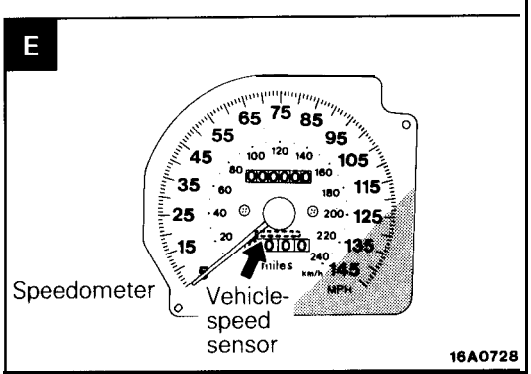
C



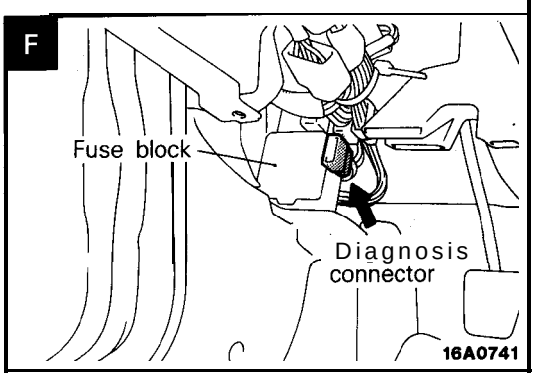
D F4A22 F4A33·W4A33



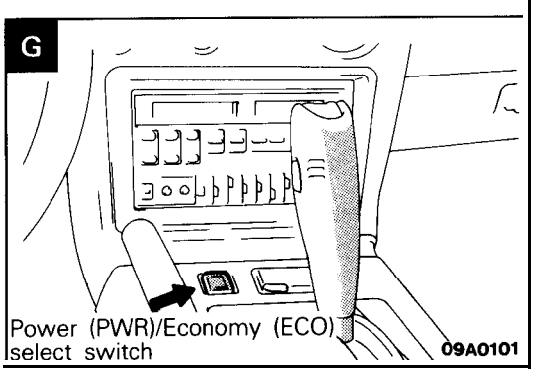
E



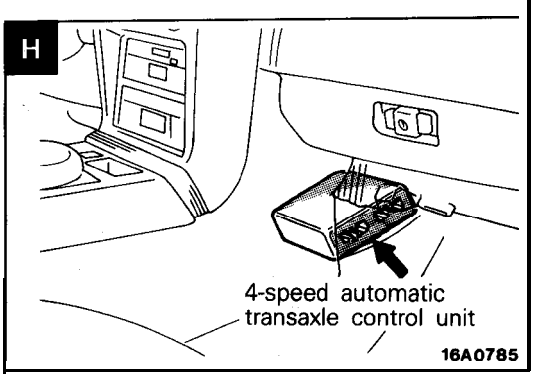
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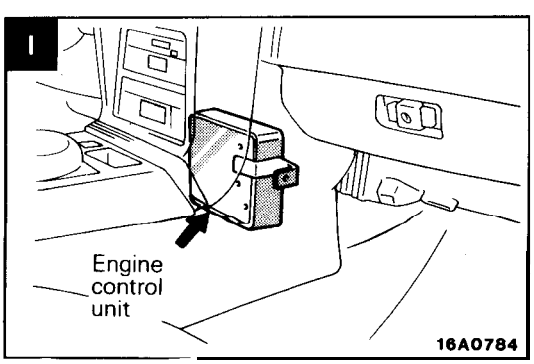
G



H

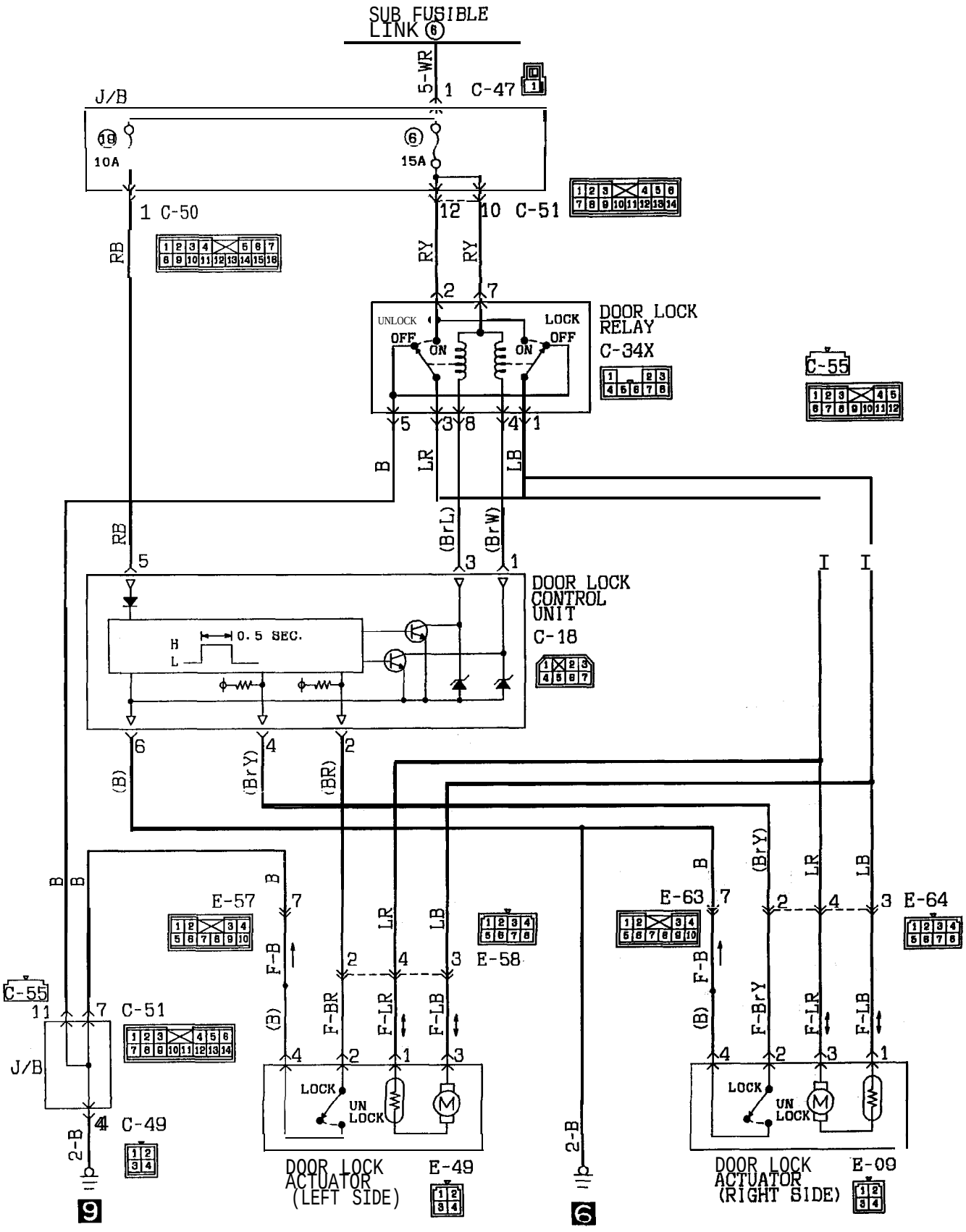


I



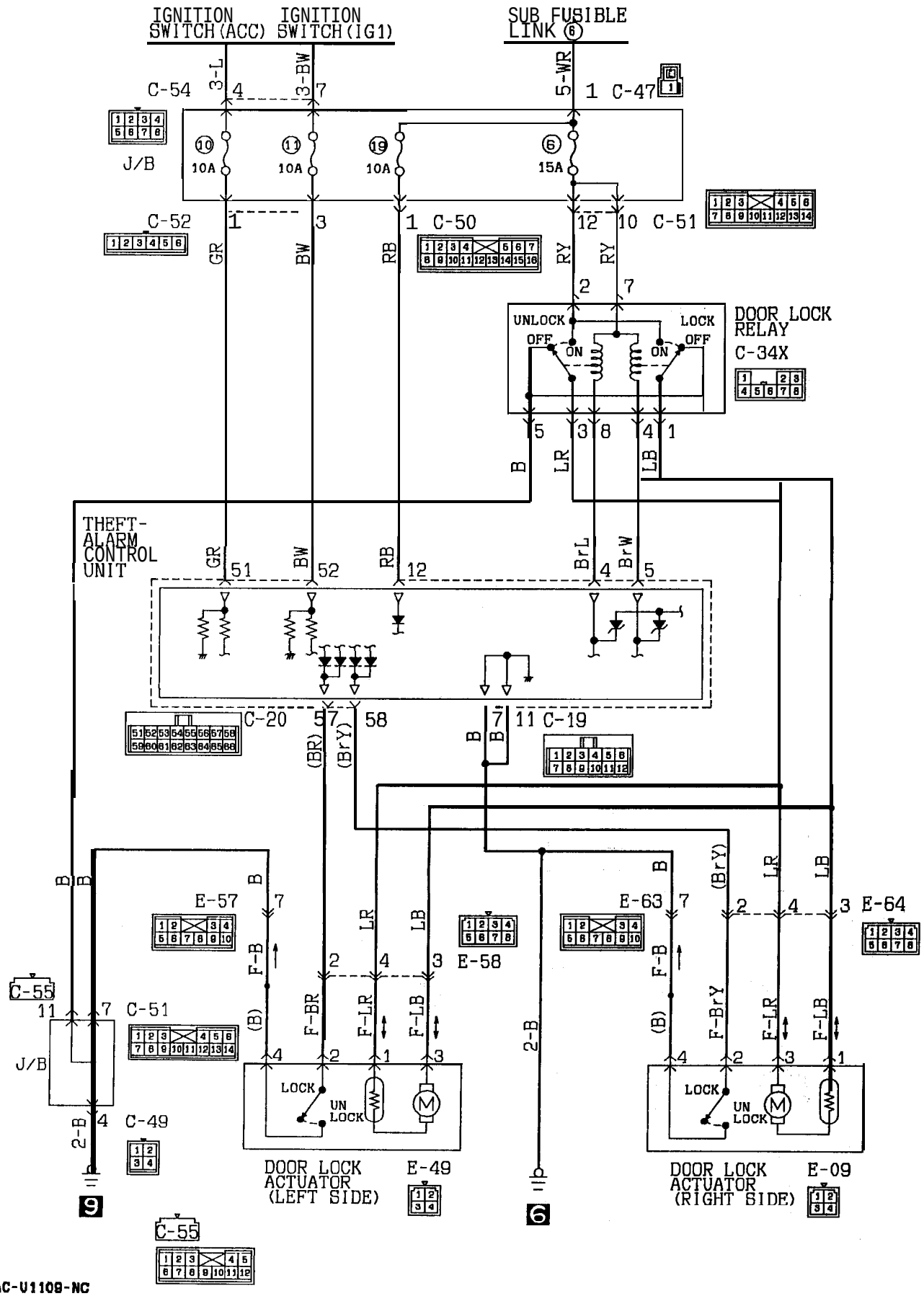
CENTRAL DOOR LOCKING CIRCUIT

Vehicles without theft-alarm system



KX35-AC-U1108-NC

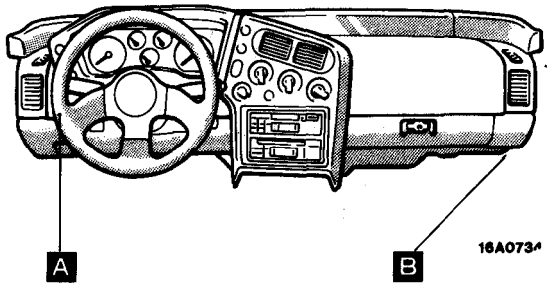
Vehicles with theft-alarm system

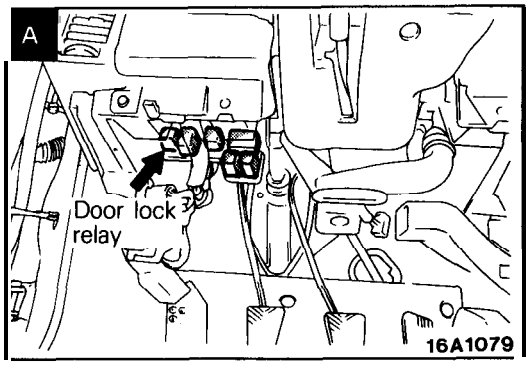


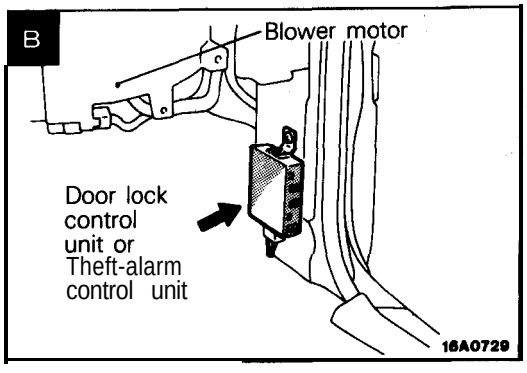
K35-AC-U1109-NC

COMPONENTS LOCATIONS

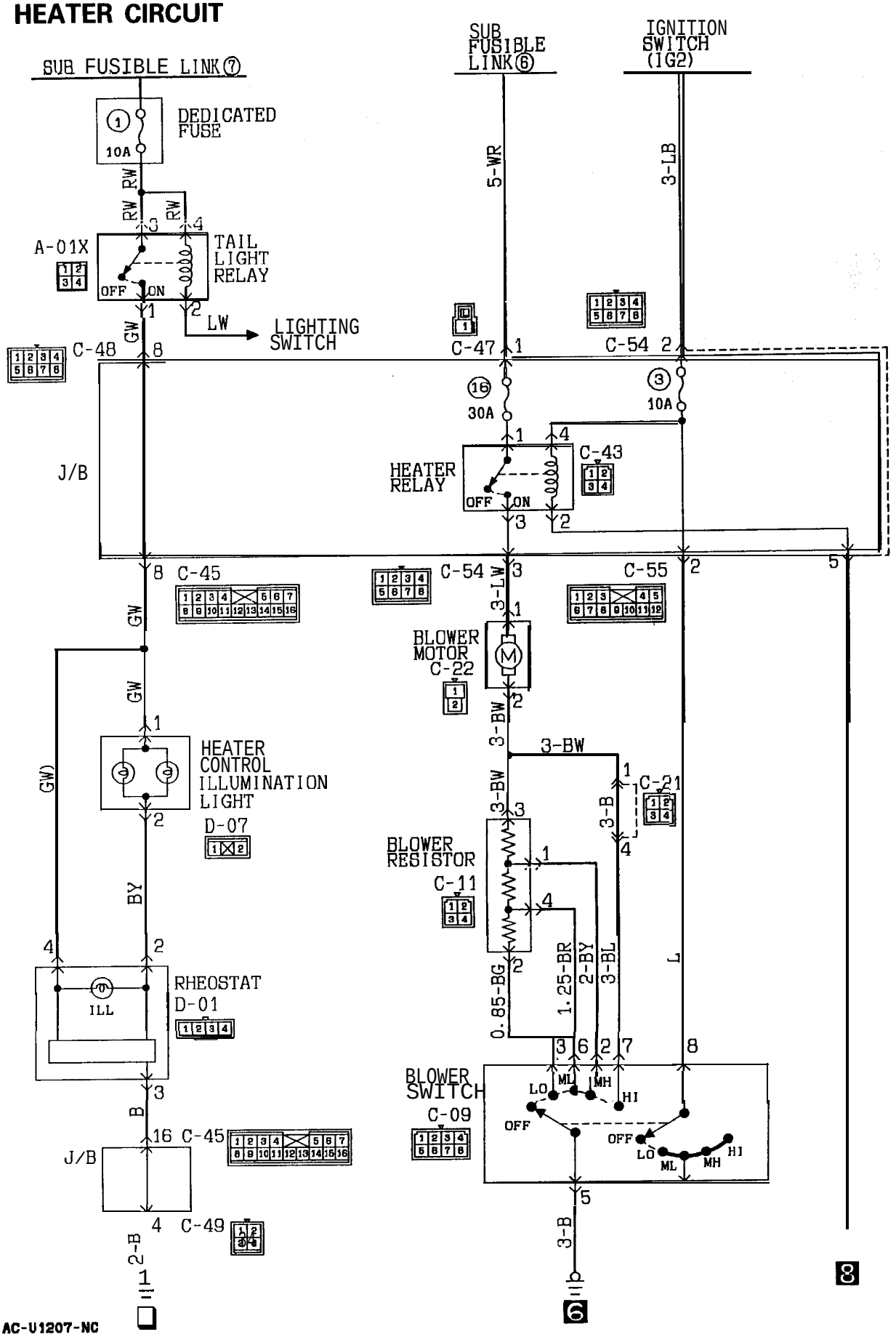
Name	Symbol
Door lock control unit	B
Door lock relay	A
Theft-alarm control unit	B



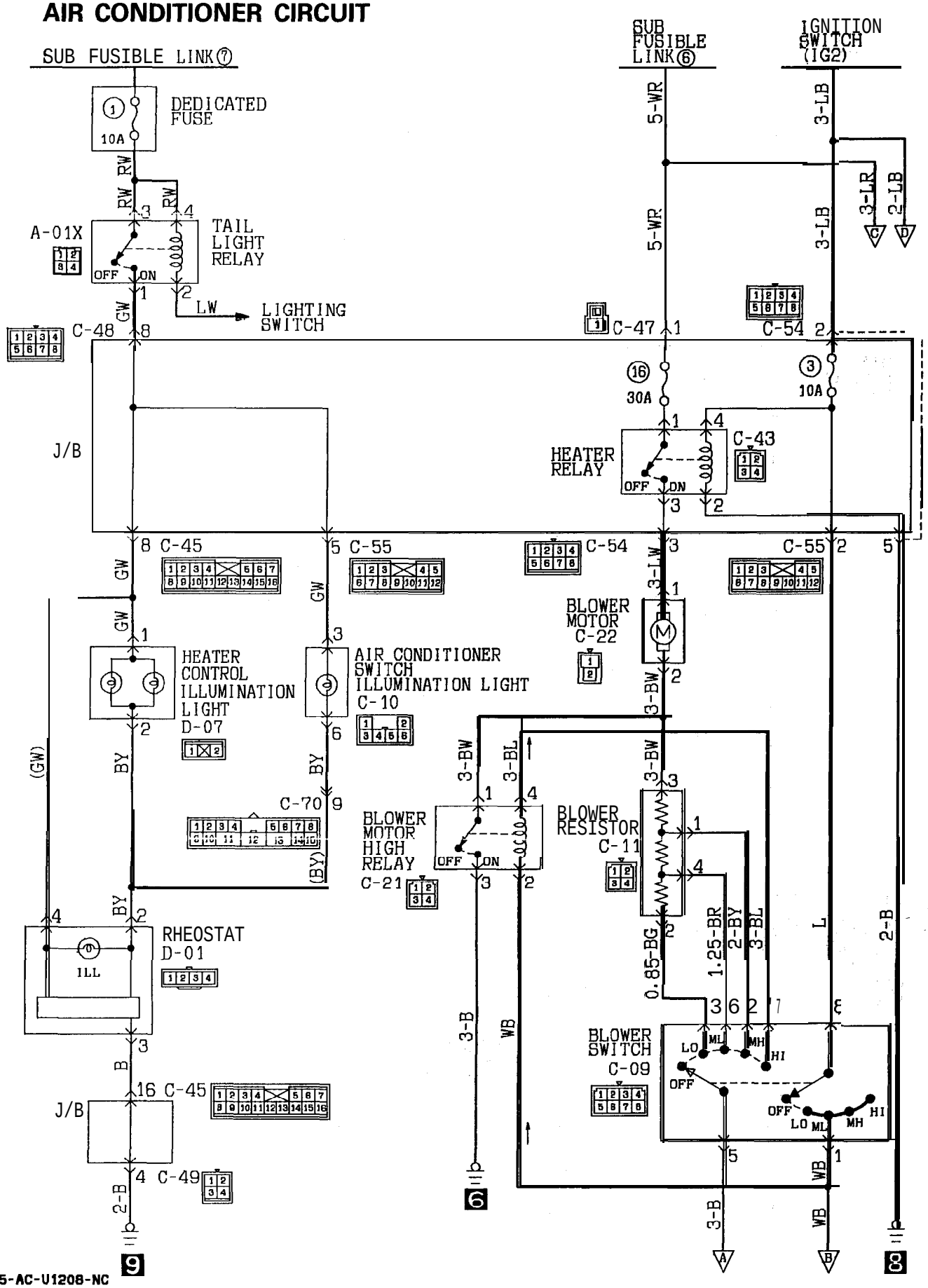


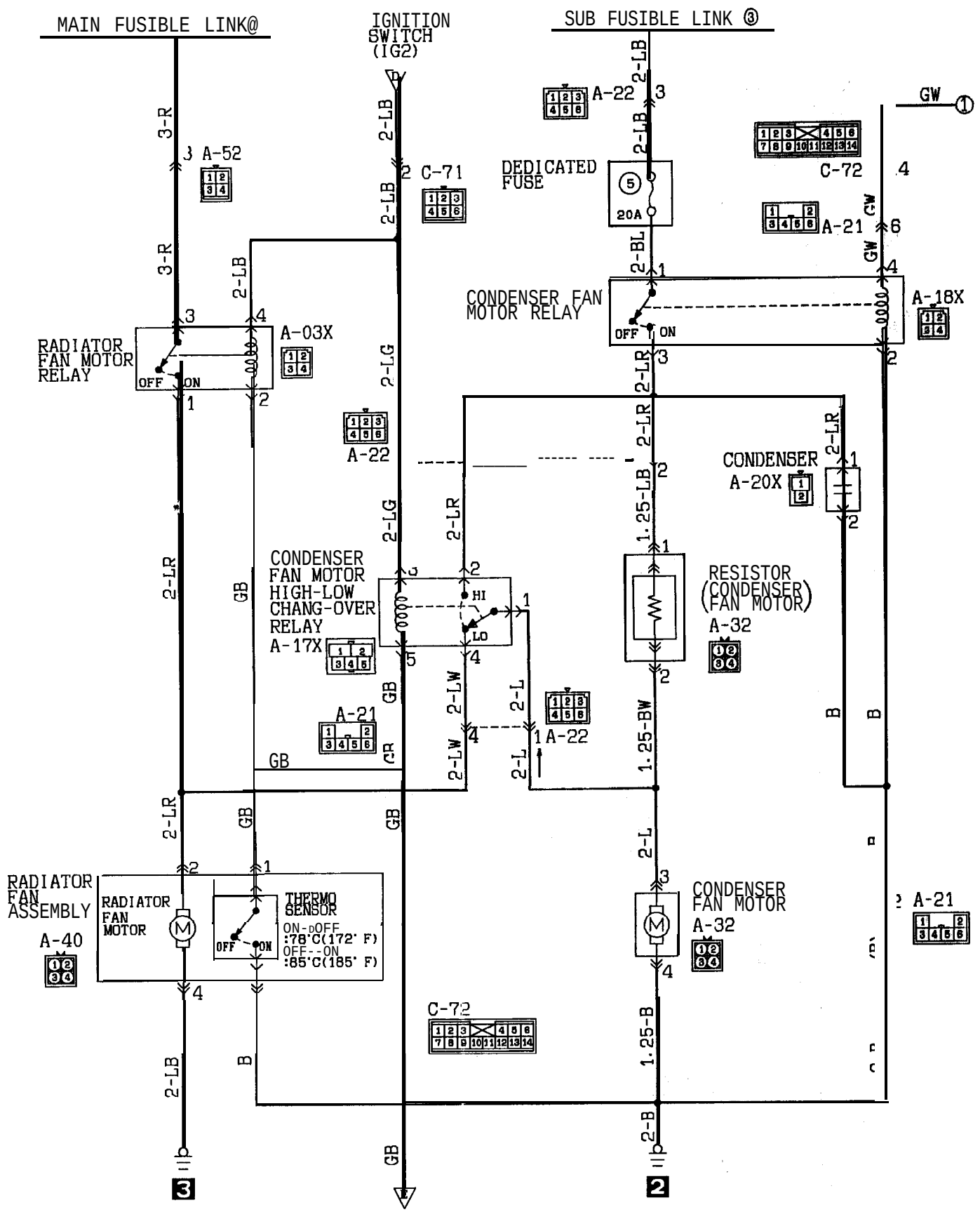


HEATER CIRCUIT

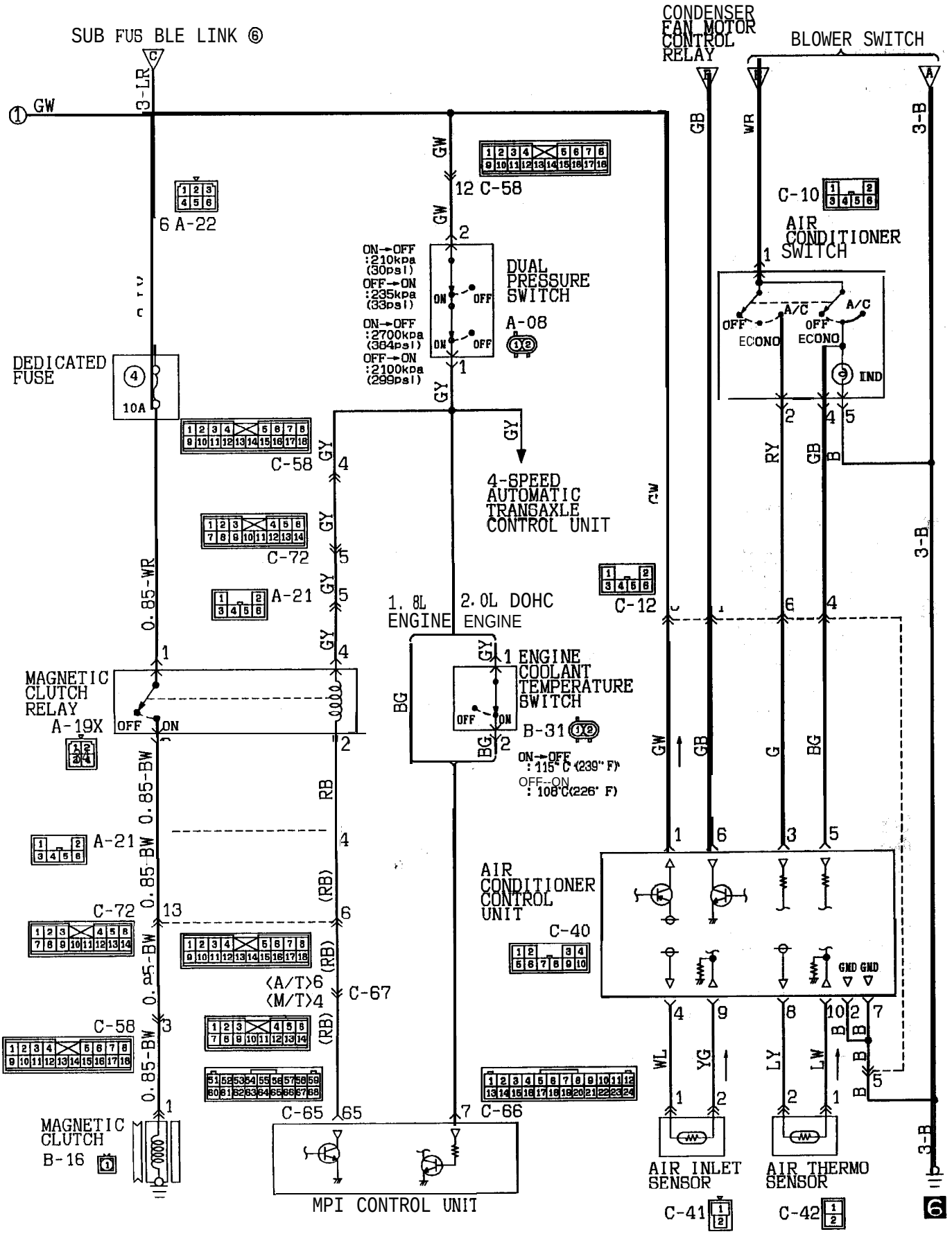


AIR CONDITIONER CIRCUIT





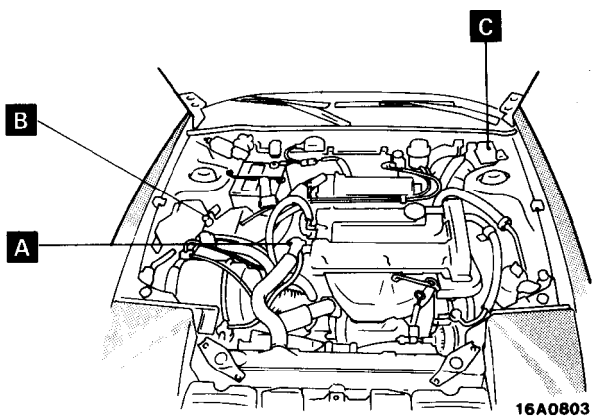
KX35-AC-U1208A-NC

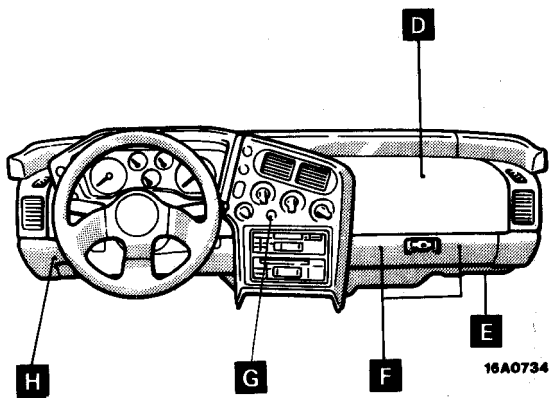

SUB FUSIBLE LINK ⑥
CONDENSER FAN MOTOR CONTROL RELAY
BLOWER SWITCH
GW
3-LR
6 A-22
12 C-58
C-10
AIR CONDITIONER SWITCH
ON→OFF :210kPa (30psi)
OFF→ON :235kPa (33psi)
ON→OFF :2700kPa (384psi)
OFF→ON :2100kPa (299psi)
DUAL PRESSURE SWITCH
A-08
DEDICATED FUSE
10A
C-58
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-72
A-21
1.8L ENGINE
2.0L DOHC ENGINE
C-12
0.85-WR
MAGNETIC CLUTCH RELAY
A-19X
ENGINE COOLANT TEMPERATURE SWITCH
B-31
ON→OFF : 115°C (239°F)
OFF→ON : 108°C (226°F)
0.85-BW
RB
AIR CONDITIONER CONTROL UNIT
C-40
C-72
C-67
(A/T)6
(M/T)4
C-58
C-65
C-66
MAGNETIC CLUTCH
B-16
MPI CONTROL UNIT
AIR INLET SENSOR
C-41
AIR THERMO SENSOR
C-42
3-B
GND GND
6

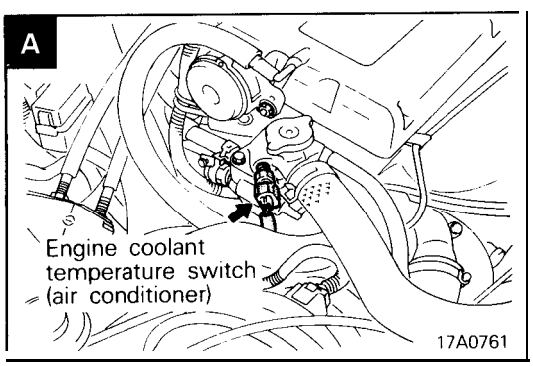
COMPONENTS LOCATION

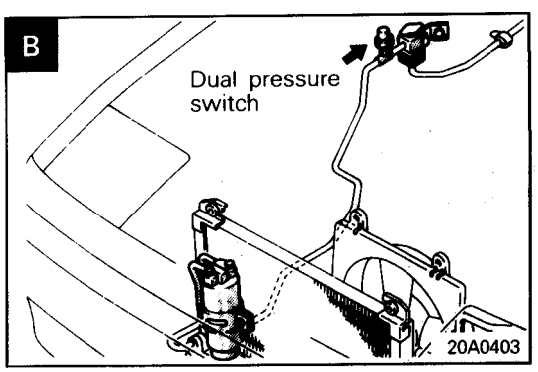
Name	Symbol	Name	Symbol
Air conditioner control unit	D	Condenser fan motor relay	C
Air conditioner switch	G	Dual pressure switch	B
Air inlet sensor	F	Engine coolant temperature switch <2.0L DOHC Engine>	A
Air thermo sensor	F	Heater relay	H
Blower motor High relay	E	Magnet clutch relay	C
Condenser fan motor High-Low selecting relay	C	—	—

NOTE
The “Name” column is arranged in alphabetical order.

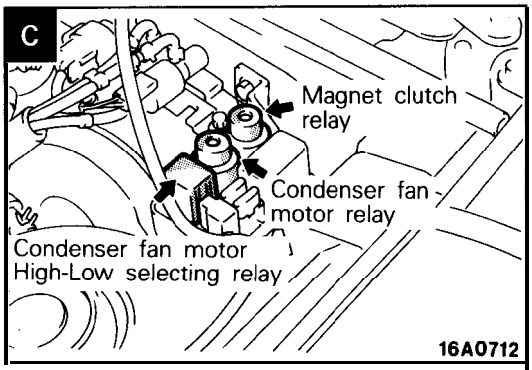




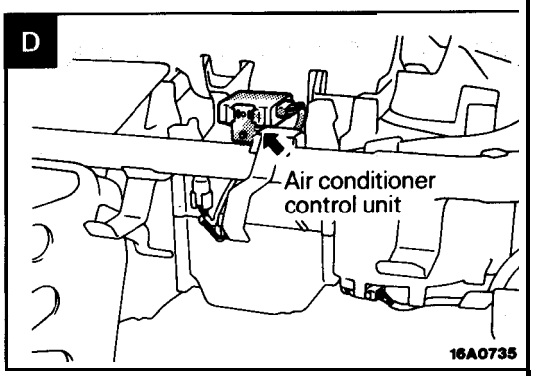




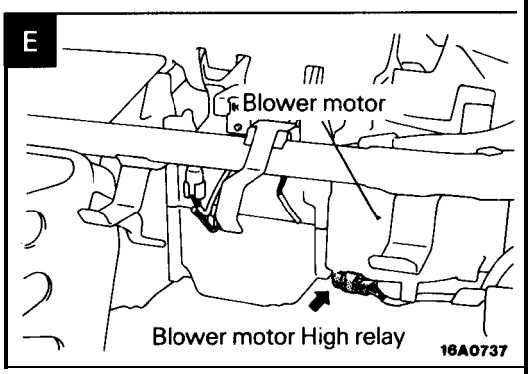
C


Magnet clutch relay
Condenser fan motor relay
Condenser fan motor High-Low selecting relay
16A0712

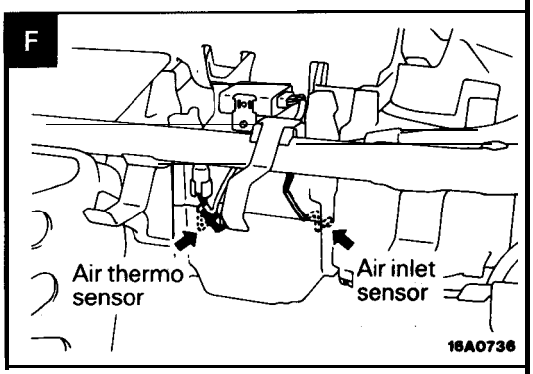
D


Air conditioner control unit
16A0735

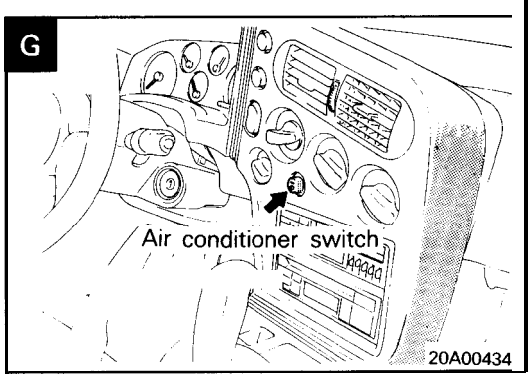
E


Blower motor
Blower motor High relay
16A0737

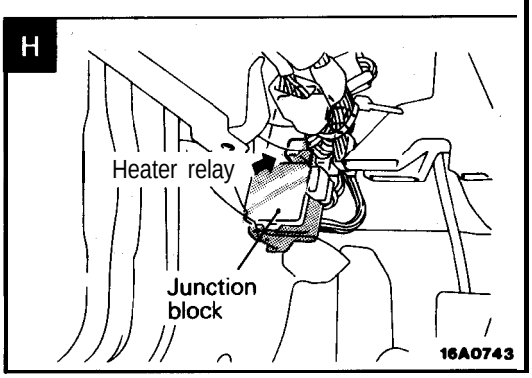
F


Air thermo sensor
Air inlet sensor
16A0736

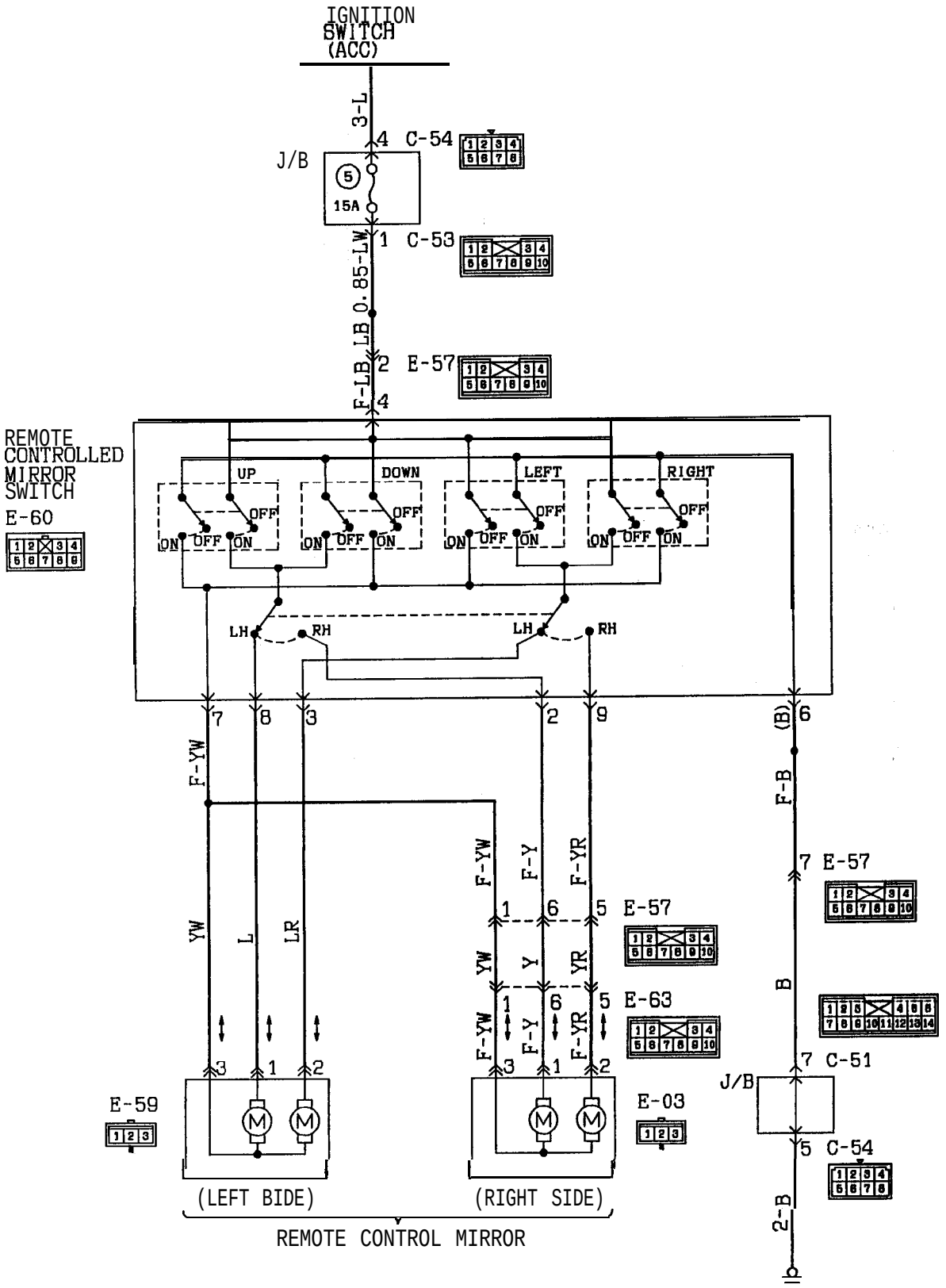
G


Air conditioner switch
20A00434

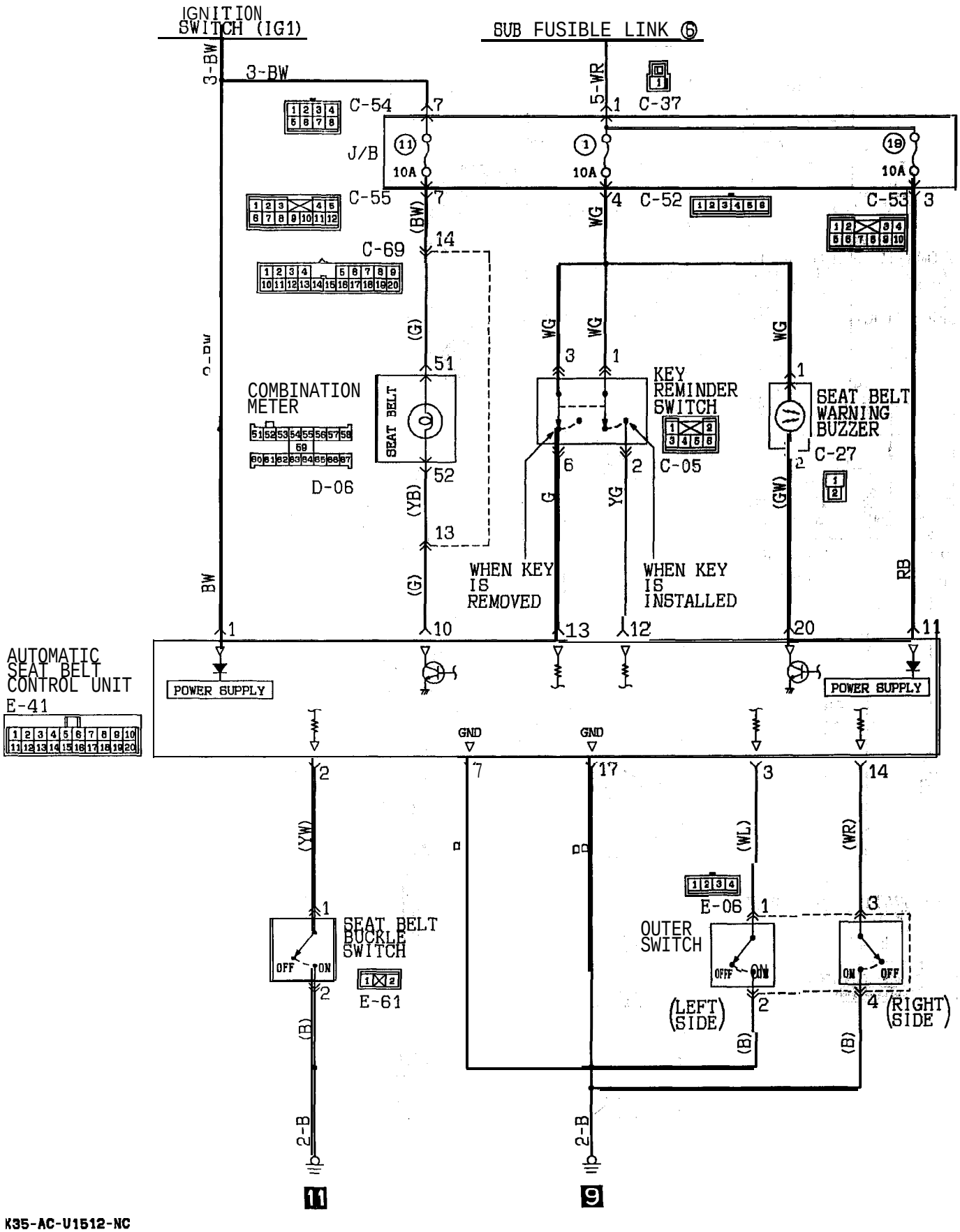
H


Heater relay
Junction block
16A0743

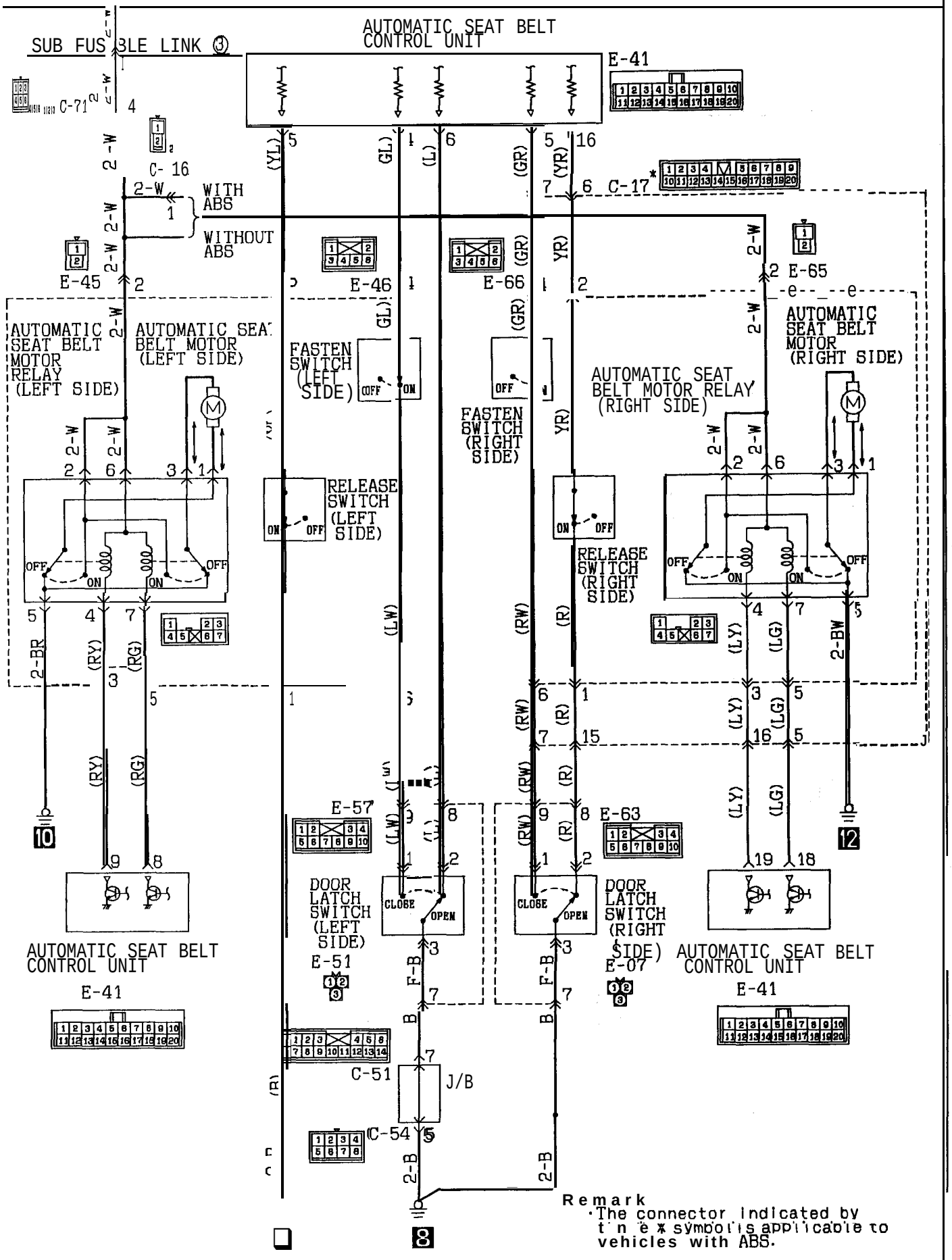
REMOTE CONTROLLED MIRROR CIRCUIT



AUTOMATIC SEAT BELT CIRCUIT



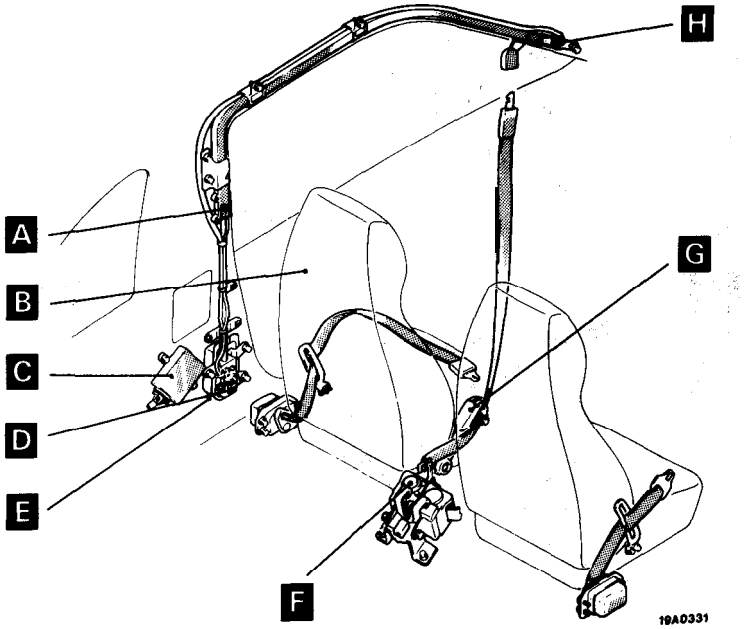
K35-AC-U1512-NC

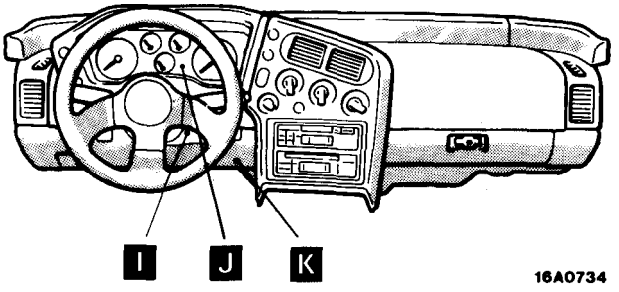


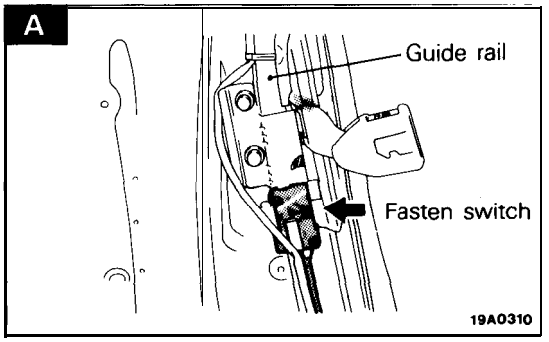
Remark
·The connector indicated by the * symbol is applicable to vehicles with ABS.

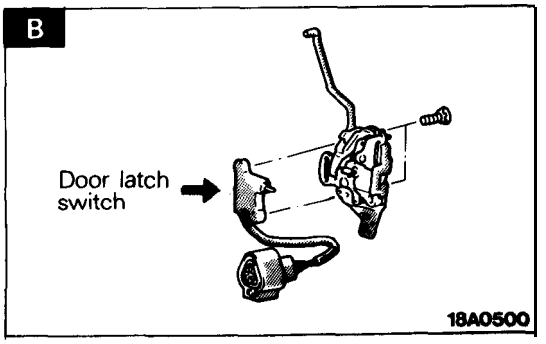
COMPONENTS LOCATION

Name	Symbol	Name	Symbol
Automatic seat belt control unit	C	Fasten switch	A
Automatic seat belt motor	E	Key reminder switch	I
Automatic seat belt motor relay	D	Outer switch	F
Buckle switch	G	Seat belt warning light	J
Buzzer	K	Release switch	H
Door latch switch	B	—	—

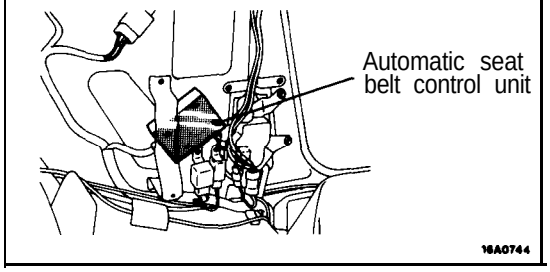




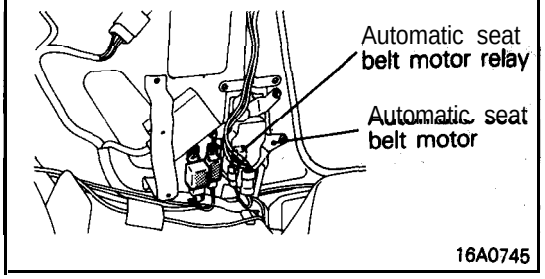




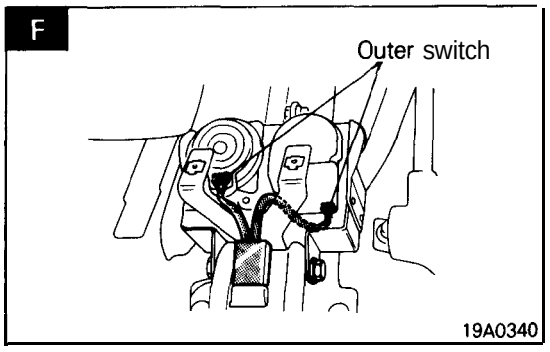
C


Automatic seat
belt control unit
16A0744

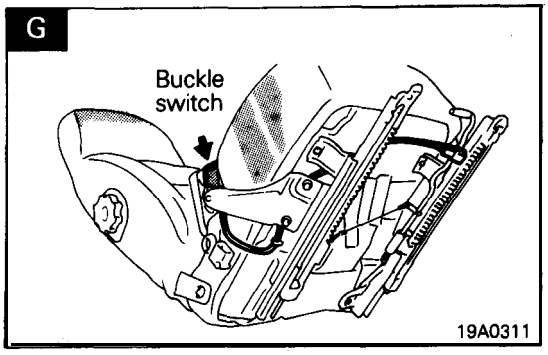
D, E


Automatic seat
belt motor relay
Automatic seat
belt motor
16A0745

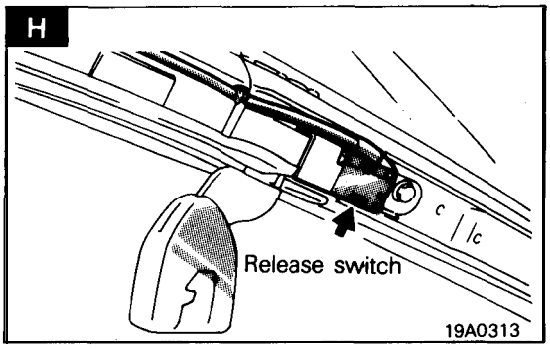
F


Outer switch
19A0340

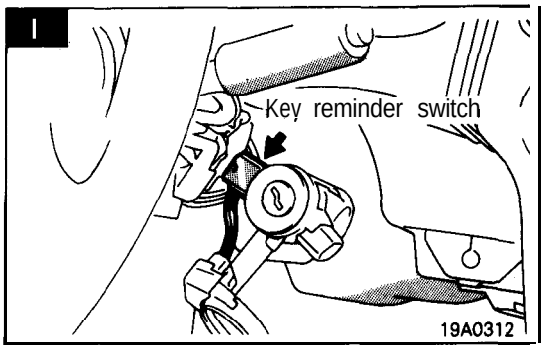
G


Buckle
switch
19A0311

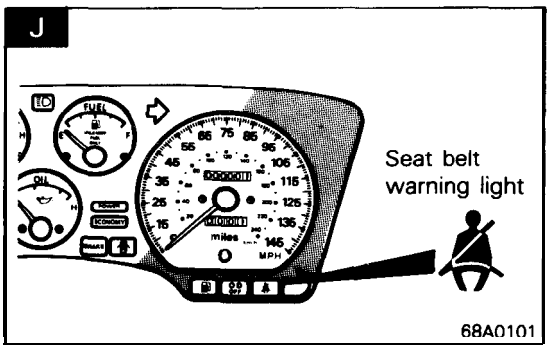
H


Release switch
19A0313

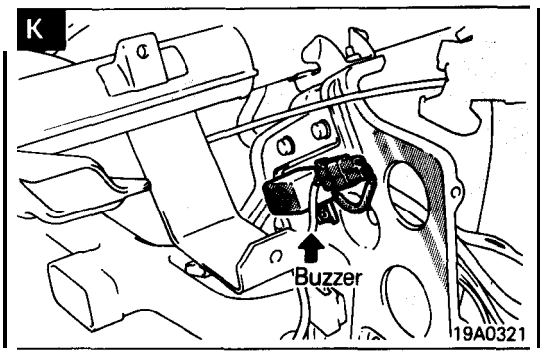
I


Key reminder switch
19A0312

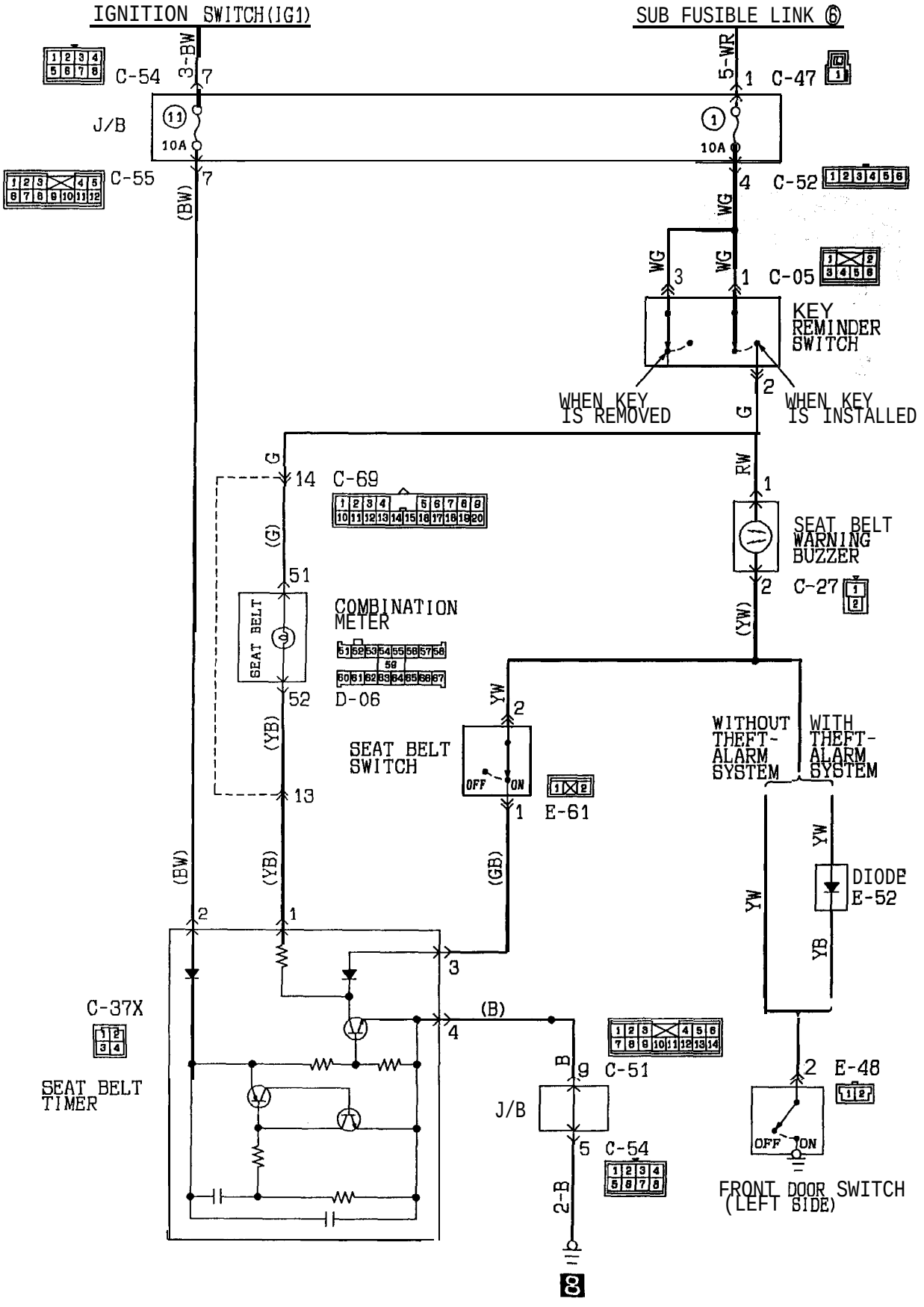
J


Seat belt
warning light
68A0101

K


Buzzer
19A0321

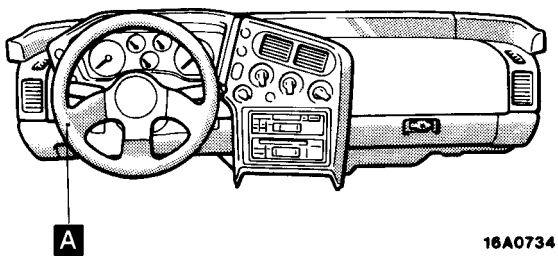
BUZZER CIRCUIT (VEHICLES FOR CANADA)

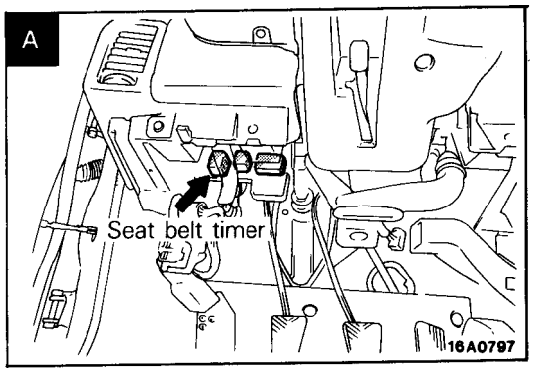


KX35-AC-U1519-NC

COMPONENTS LOCATION

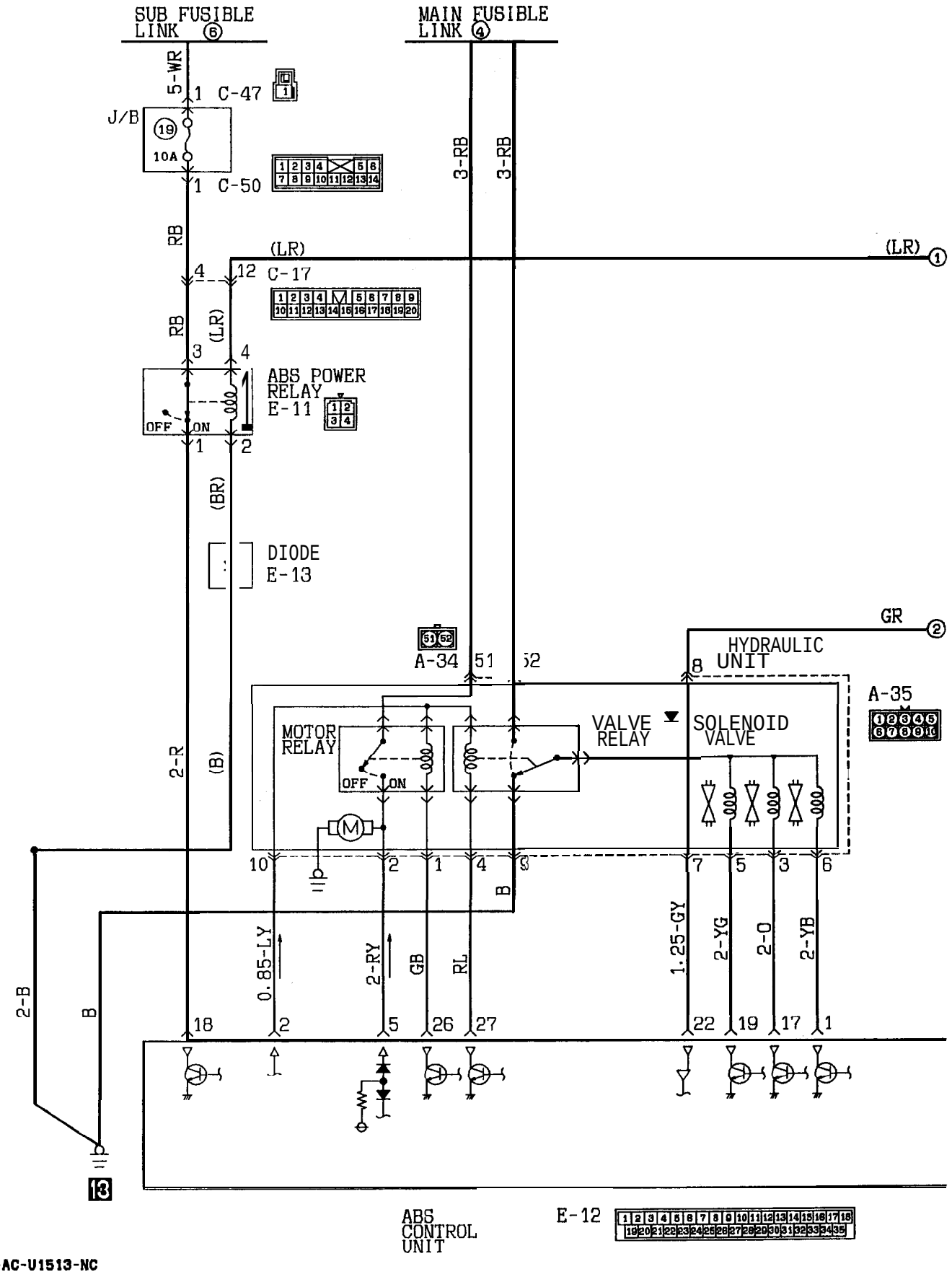
Name	Symbol
Seat belt timer	A



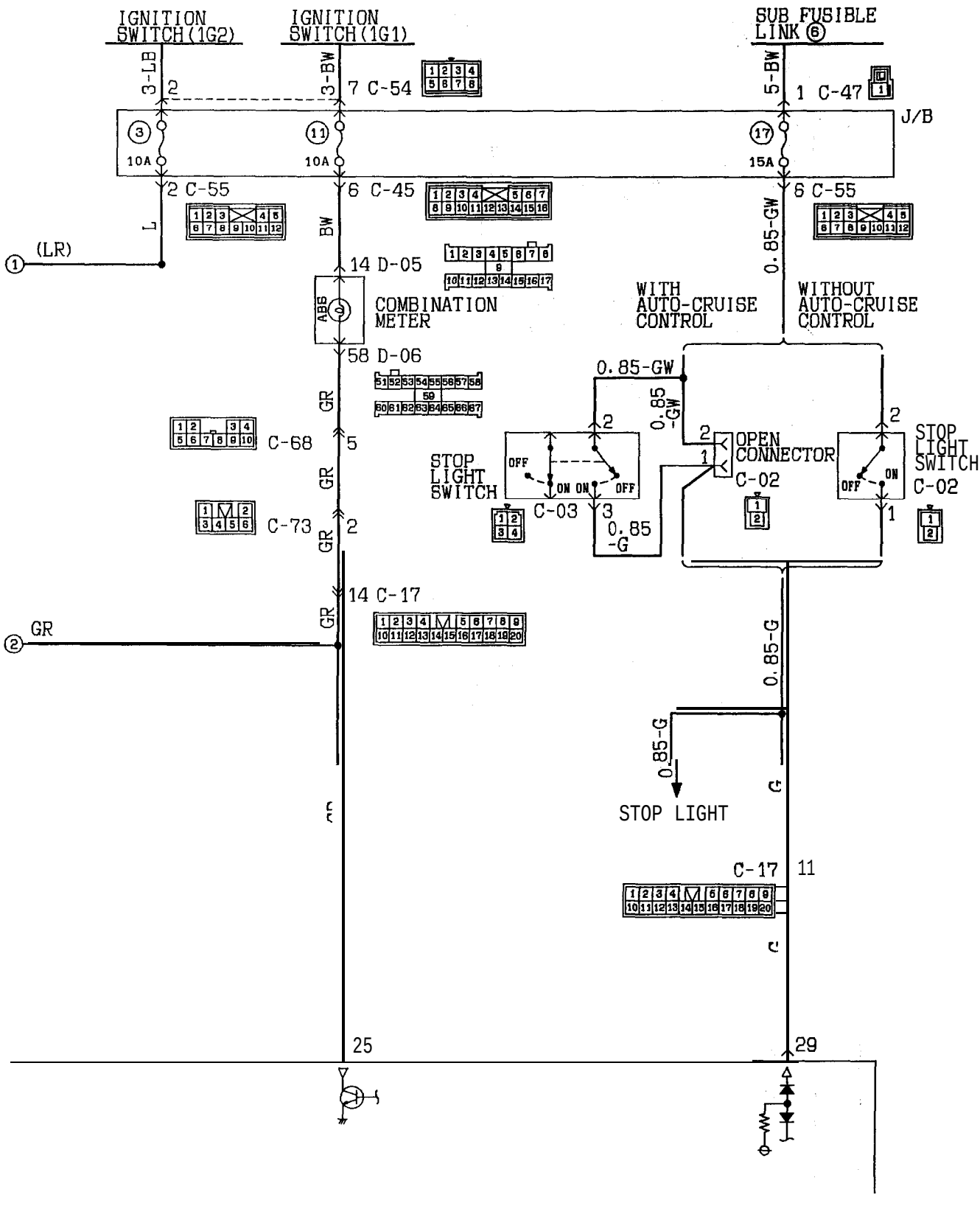


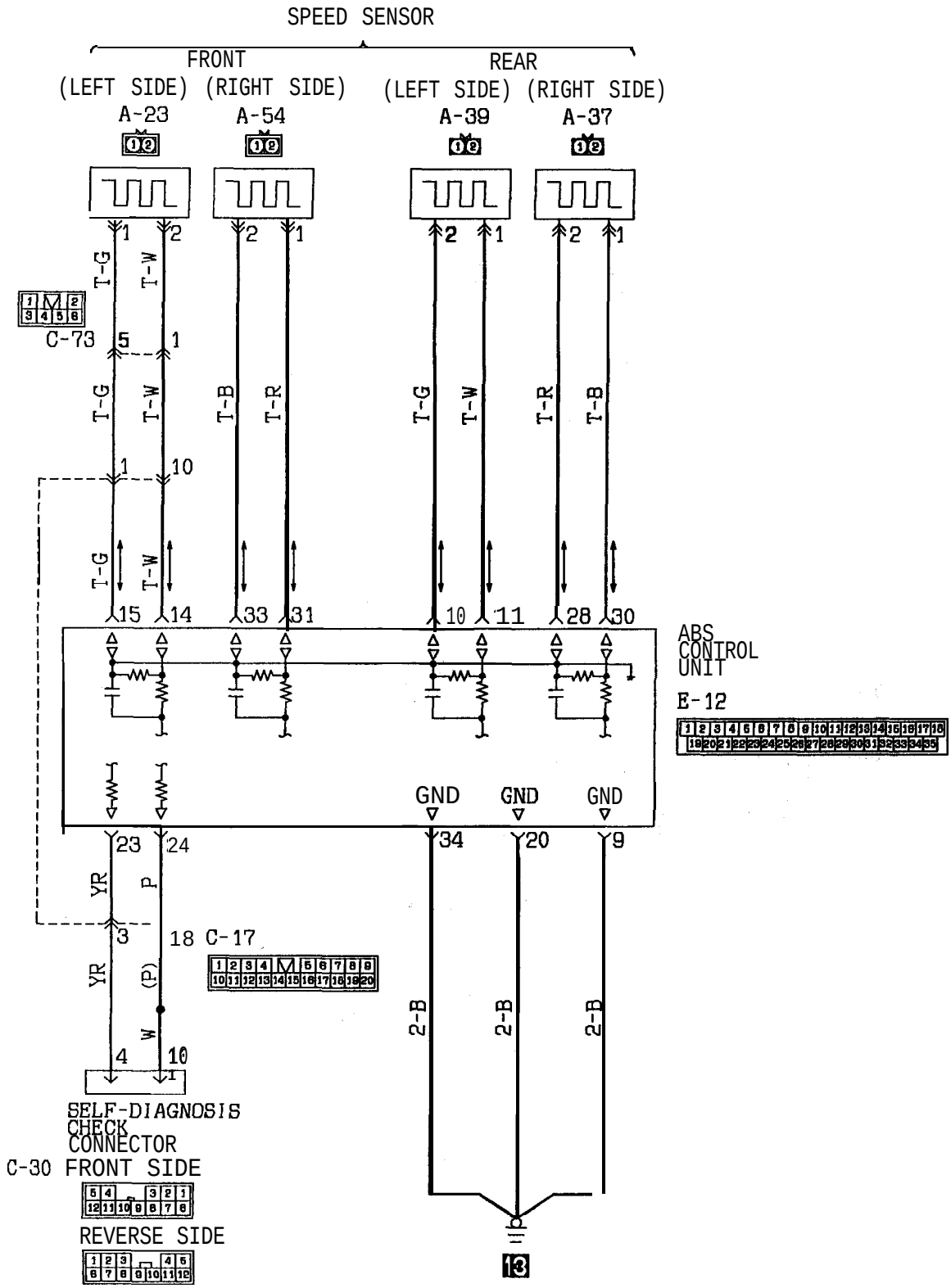
ANTI-LOCK BRAKING SYSTEM (ABS) CIRCUIT

<FWD>

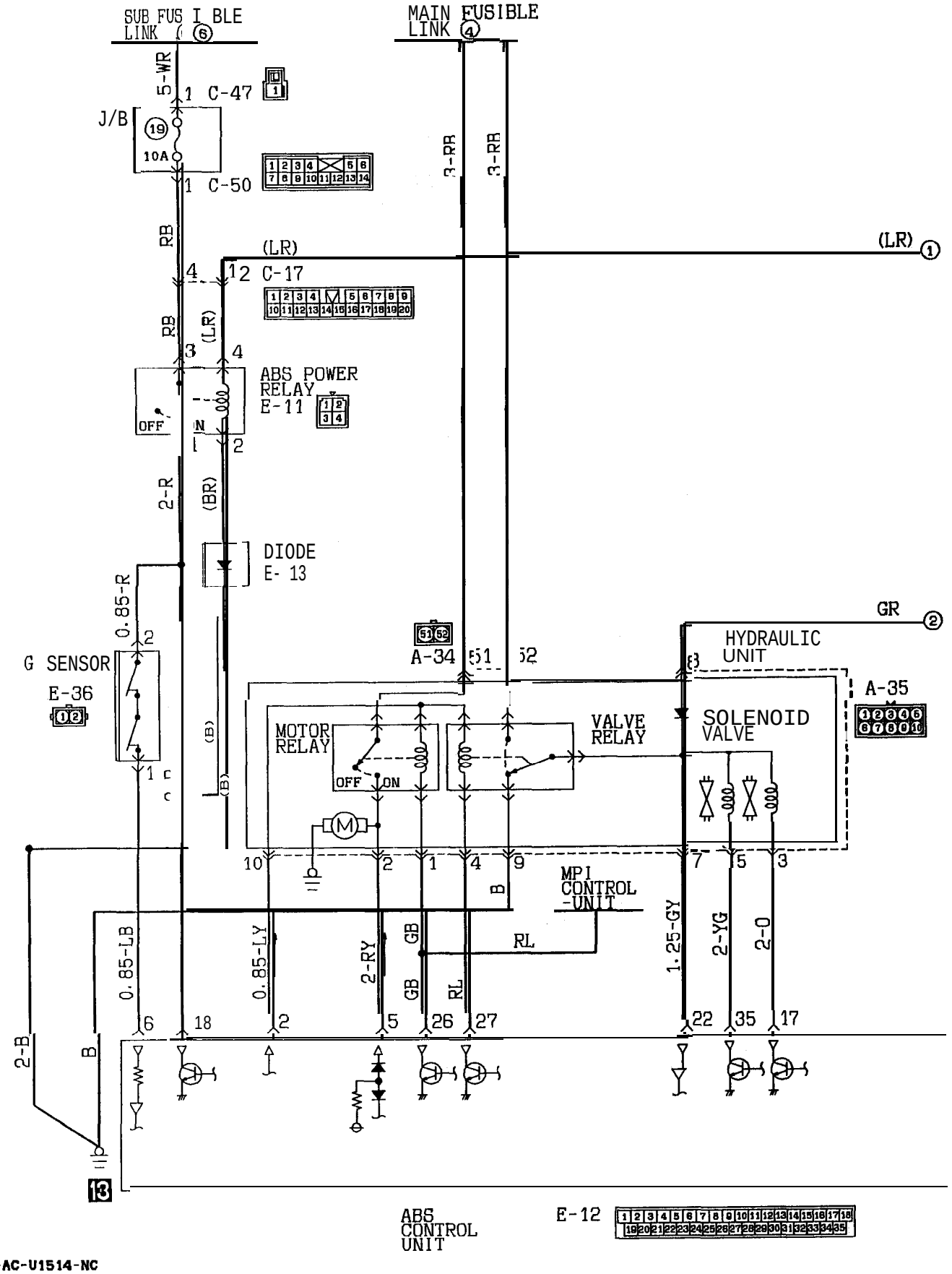


(X35-AC-U1513-NC

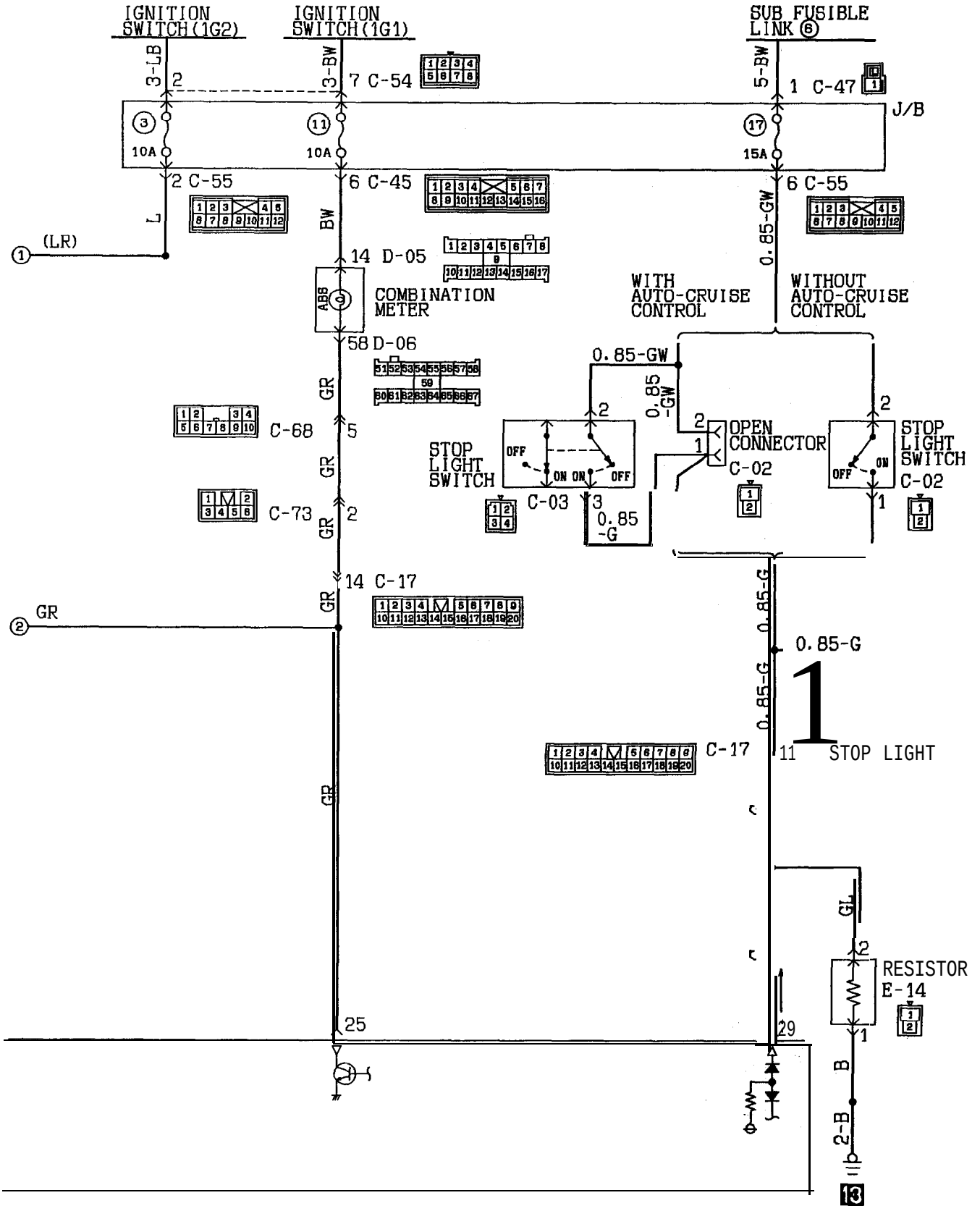

IGNITION SWITCH(1G2)
IGNITION SWITCH(1G1)
SUB FUSIBLE LINK ⑥
3-LB
3-BW
5-BW
7 C-54
1 C-47
J/B
10A
10A
15A
2 C-55
6 C-45
6 C-55
L
BW
0.85-GW
(LR)
14 D-05
COMBINATION METER
WITH AUTO-CRUISE CONTROL
WITHOUT AUTO-CRUISE CONTROL
58 D-06
GR
C-68
C-73
STOP LIGHT SWITCH
C-03
OPEN CONNECTOR
C-02
STOP LIGHT SWITCH
C-02
0.85-G
14 C-17
GR
STOP LIGHT
C-17 11
25
29

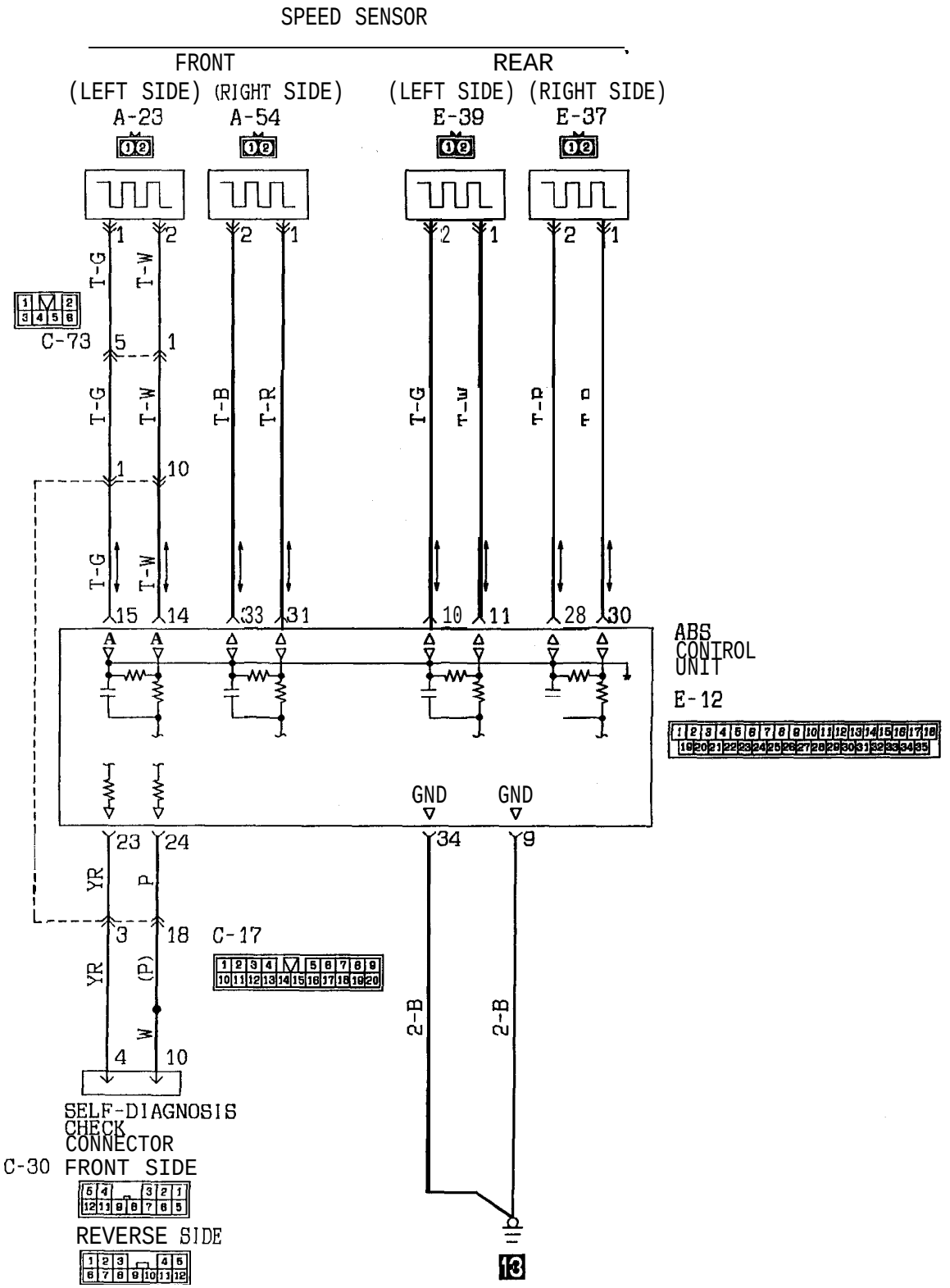

SPEED SENSOR
FRONT
(LEFT SIDE)
(RIGHT SIDE)
REAR
(LEFT SIDE)
(RIGHT SIDE)
A-23
A-54
A-39
A-37
T-G
T-W
T-B
T-R
C-73
ABS CONTROL UNIT
E-12
GND
YR
P
W
(P)
2-B
18 C-17
SELF-DIAGNOSIS CHECK CONNECTOR
C-30 FRONT SIDE
REVERSE SIDE
13

<AWD>



KX35-AC-U1514-NC


IGNITION SWITCH(1G2)
IGNITION SWITCH(1G1)
SUB FUSIBLE LINK ⑥
3-LB
3-BW
5-BW
2
7 C-54
1 C-47
J/B
③
⑪
⑰
10A
10A
15A
2 C-55
6 C-45
6 C-55
L
BW
0.85-GW
(LR)
①
14 D-05
COMBINATION METER
WITH AUTO-CRUISE CONTROL
WITHOUT AUTO-CRUISE CONTROL
58 D-06
GR
C-68
5
C-73
2
0.85-GW
STOP LIGHT SWITCH
OFF
ON
ON
OFF
C-03
3
0.85-G
OPEN CONNECTOR
C-02
STOP LIGHT SWITCH
C-02
14 C-17
GR
②
0.85-G
1
11
STOP LIGHT
C-17
GL
RESISTOR
E-14
25
29
B
2-B
13

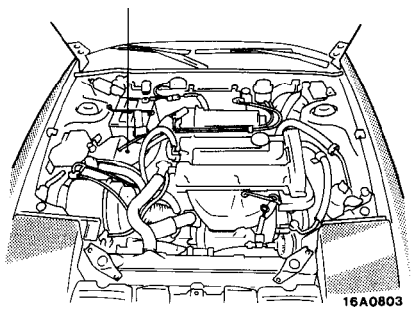

SPEED SENSOR
FRONT
(LEFT SIDE)
A-23
(RIGHT SIDE)
A-54
REAR
(LEFT SIDE)
E-39
(RIGHT SIDE)
E-37
T-G
T-W
T-B
T-R
C-73
ABS CONTROL UNIT
E-12
GND
GND
YR
P
(P)
W
2-B
C-17
SELF-DIAGNOSIS CHECK CONNECTOR
C-30
FRONT SIDE
REVERSE SIDE
13

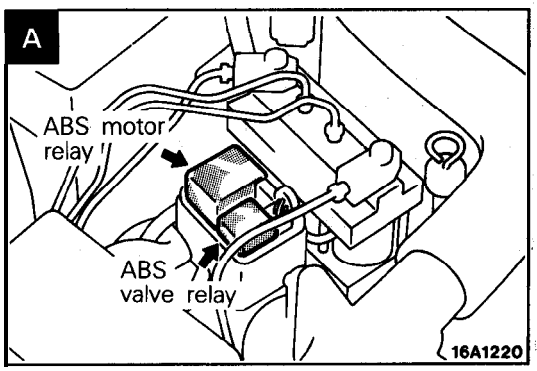
COMPONENTS LOCATION

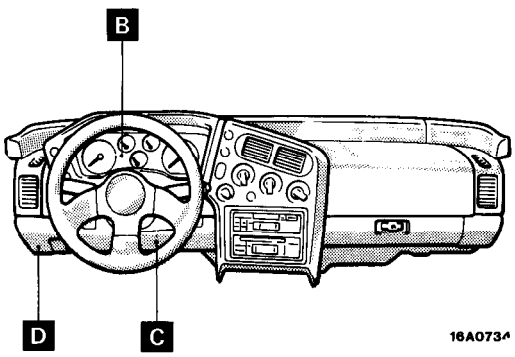
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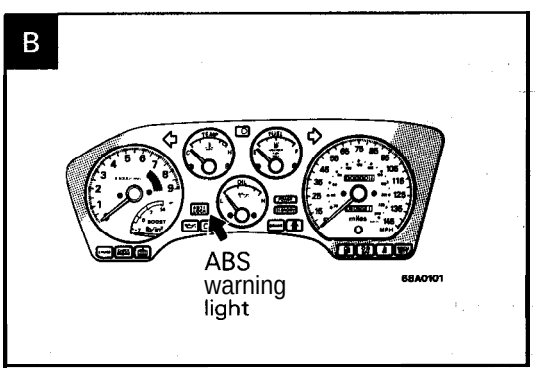
Name	Symbol	Name	Symbol
ABS control unit	F	Diode	F
ABS motor relay	A	Front speed sensor	E
ABS power relay	F	Rear speed sensor	G
ABS valve relay	A	Self-diagnosis connector	D
ABS warning light	B	Stop light switch	C

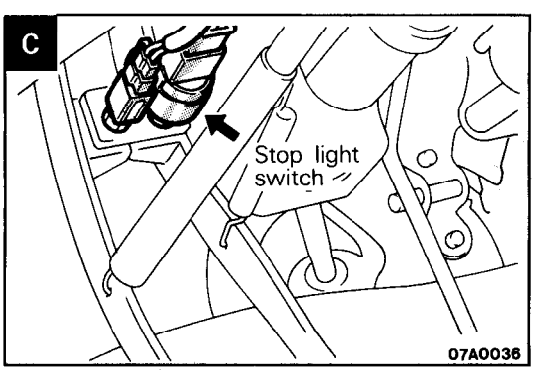
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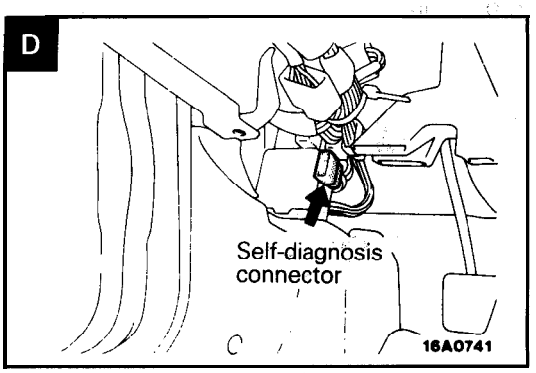


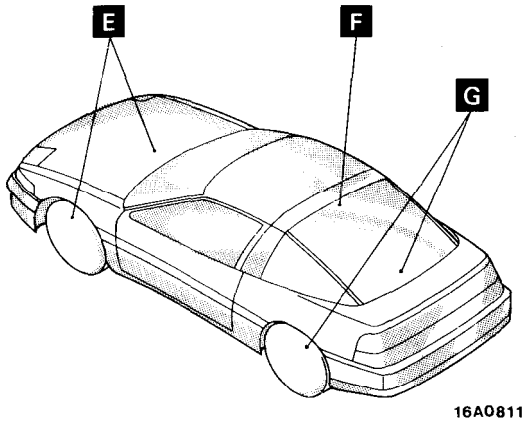


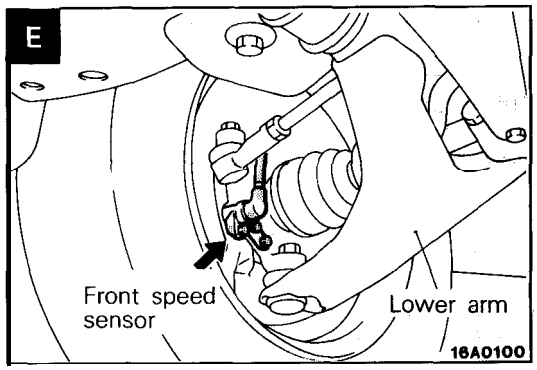


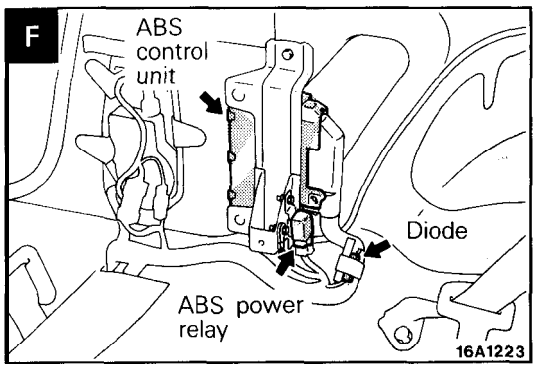


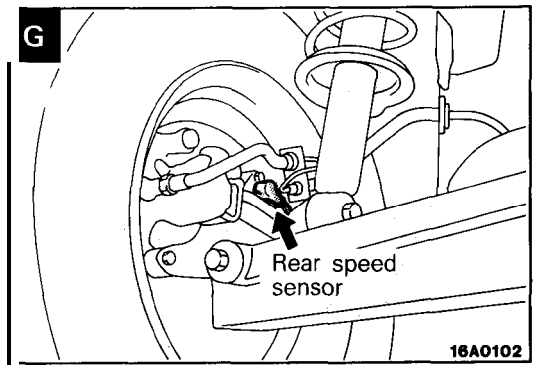








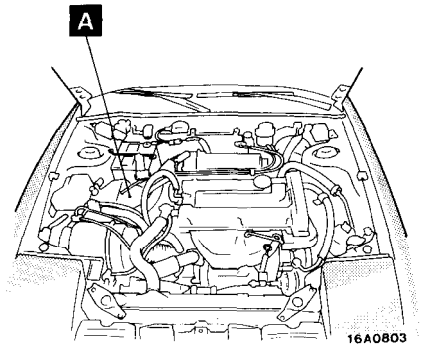


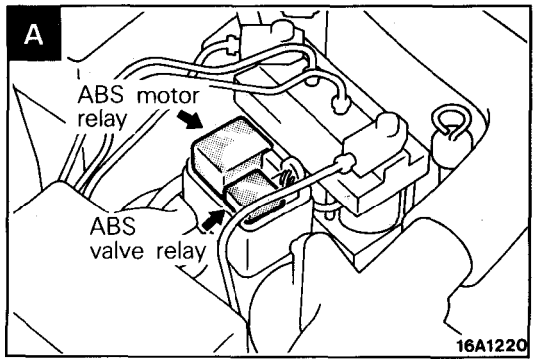


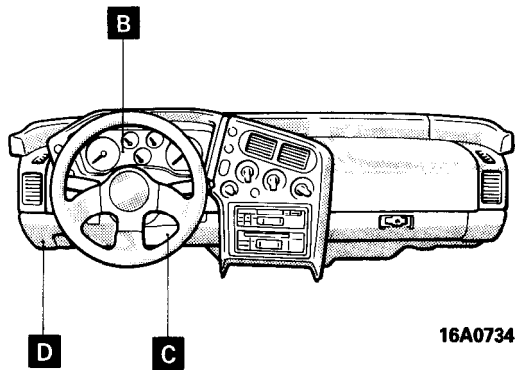
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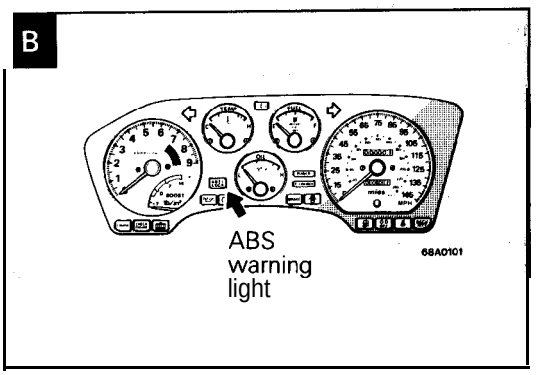
Name	Symbol	Name	Symbol
ABS control unit	G	Diode	G
ABS motor relay	A	Front speed sensor	E
ABS power relay	G	G-sensor	F
ABS valve relay	A	Rear speed sensor	H
ABS warning light	B	Self-diagnosis connector	D
		Stop light switch	C

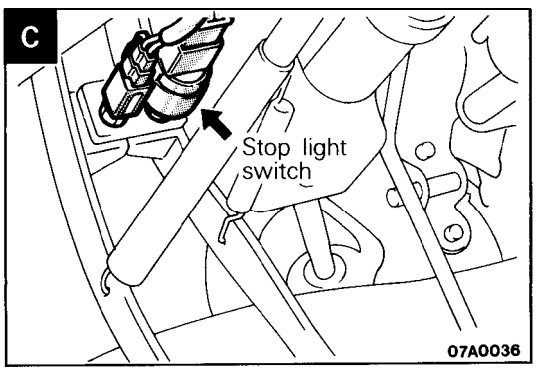
NOTE
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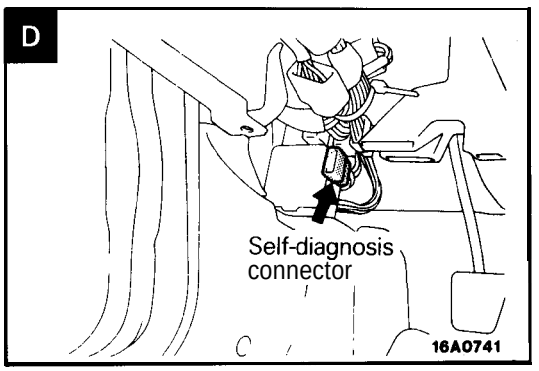


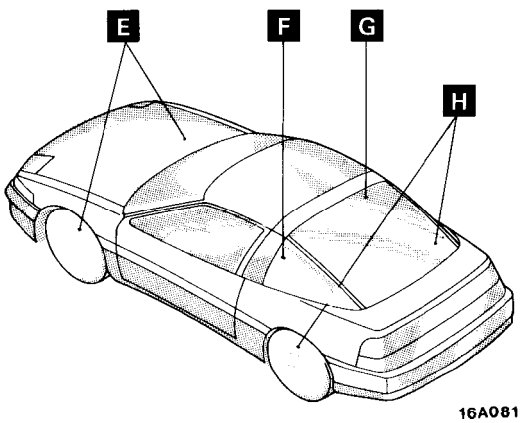


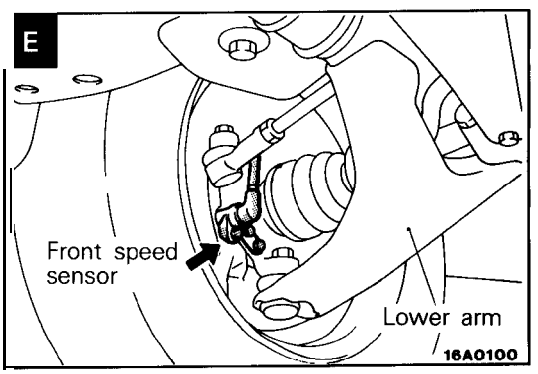

B
D
C
16A0734

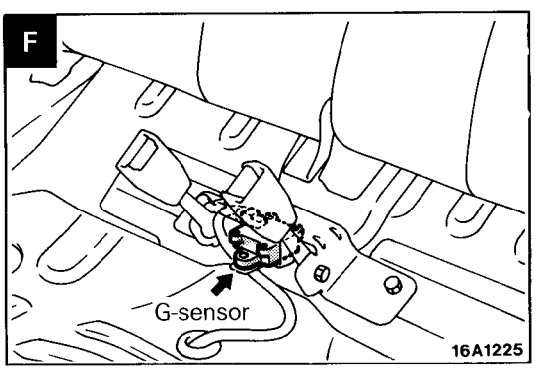

B
ABS
warning
light
68A0101

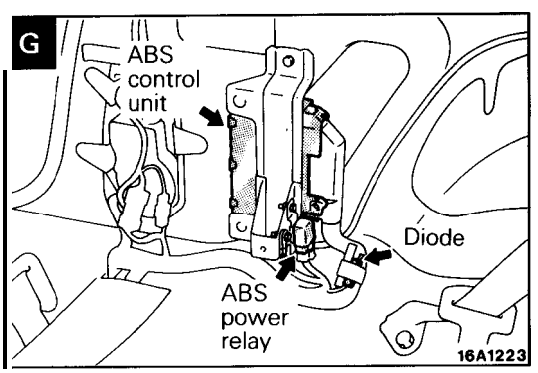

C
Stop light
switch
07A0036

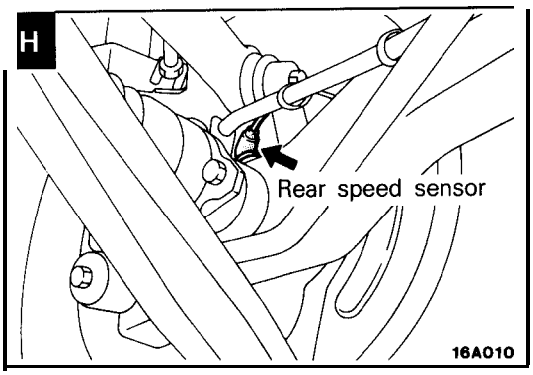

D
Self-diagnosis
connector
16A0741


E
F
G
H
16A0811


E
Front speed
sensor
Lower arm
16A0100

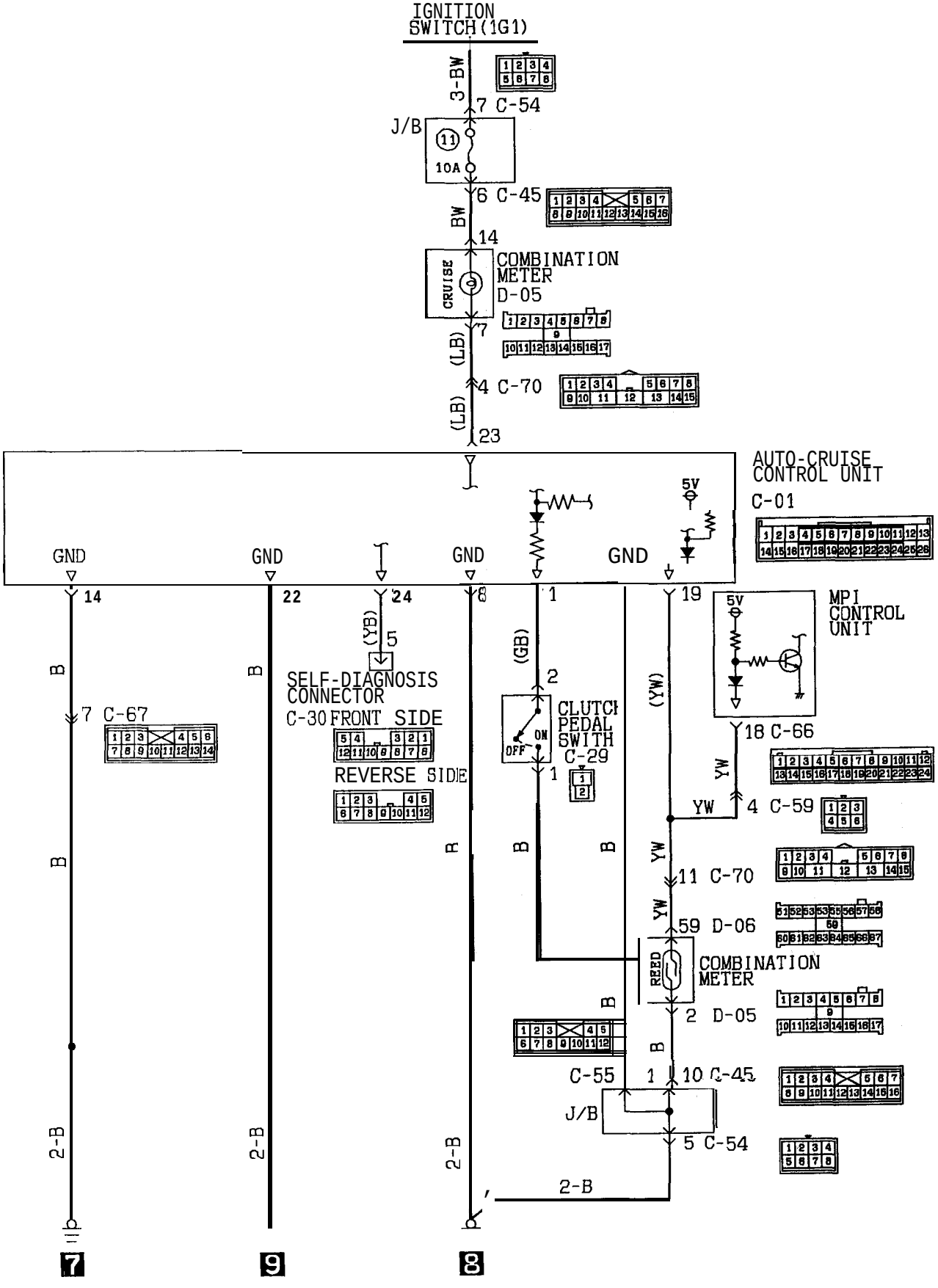

F
G-sensor
16A1225


G
ABS
control
unit
Diode
ABS
power
relay
16A1223

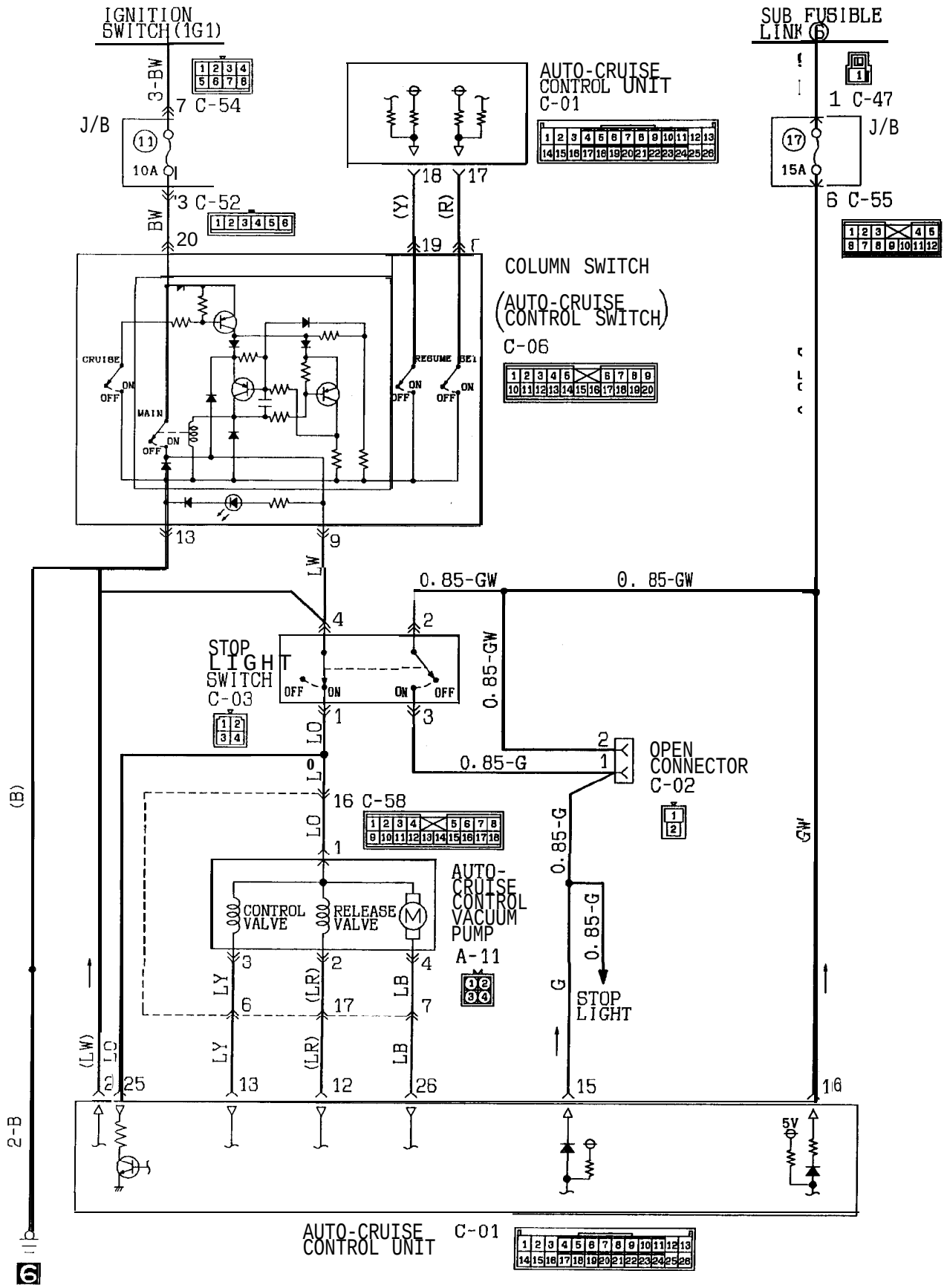

H
Rear speed sensor
16A010

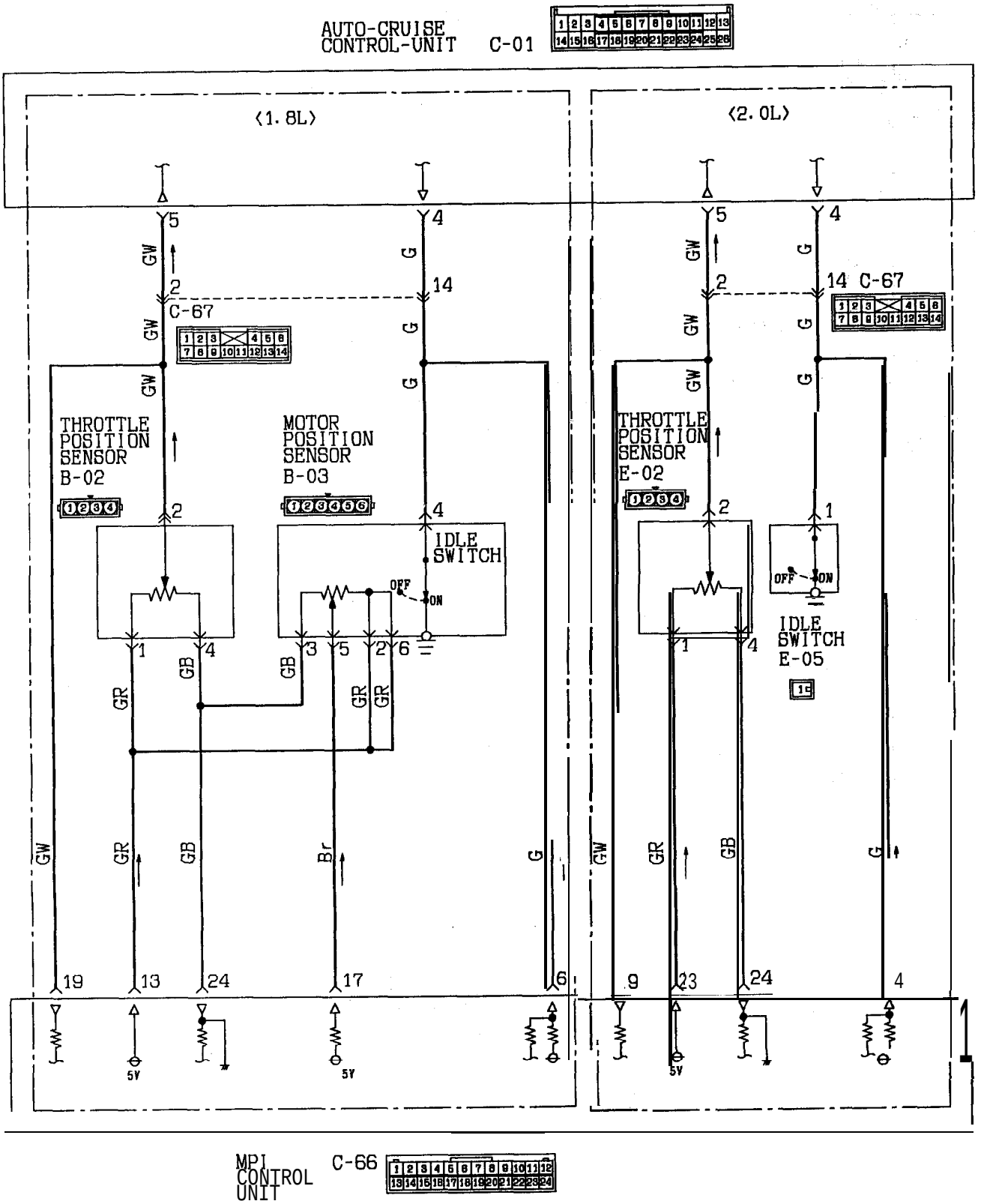
AUTO-CRUISE CONTROL CIRCUIT

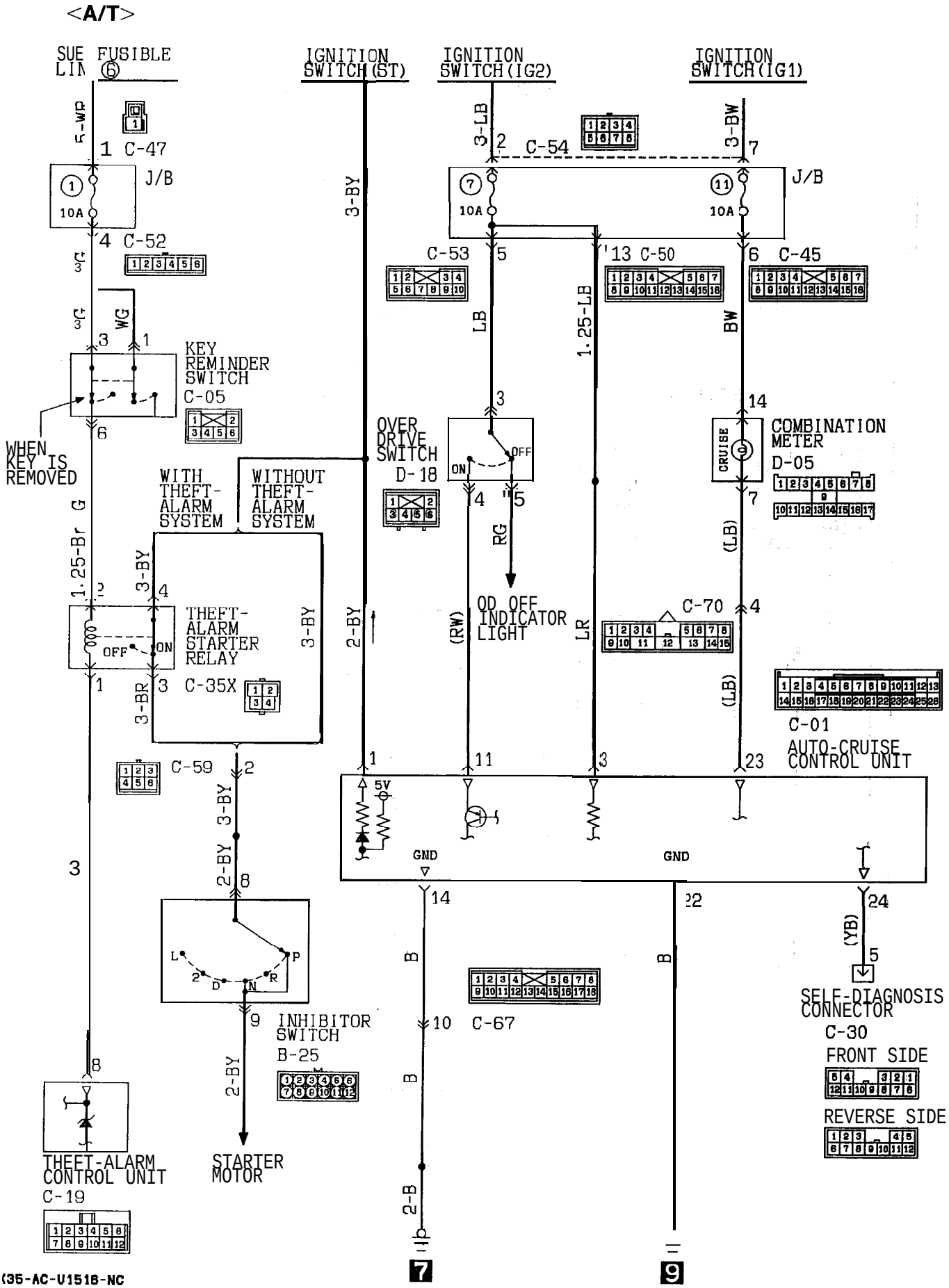
<M/T>



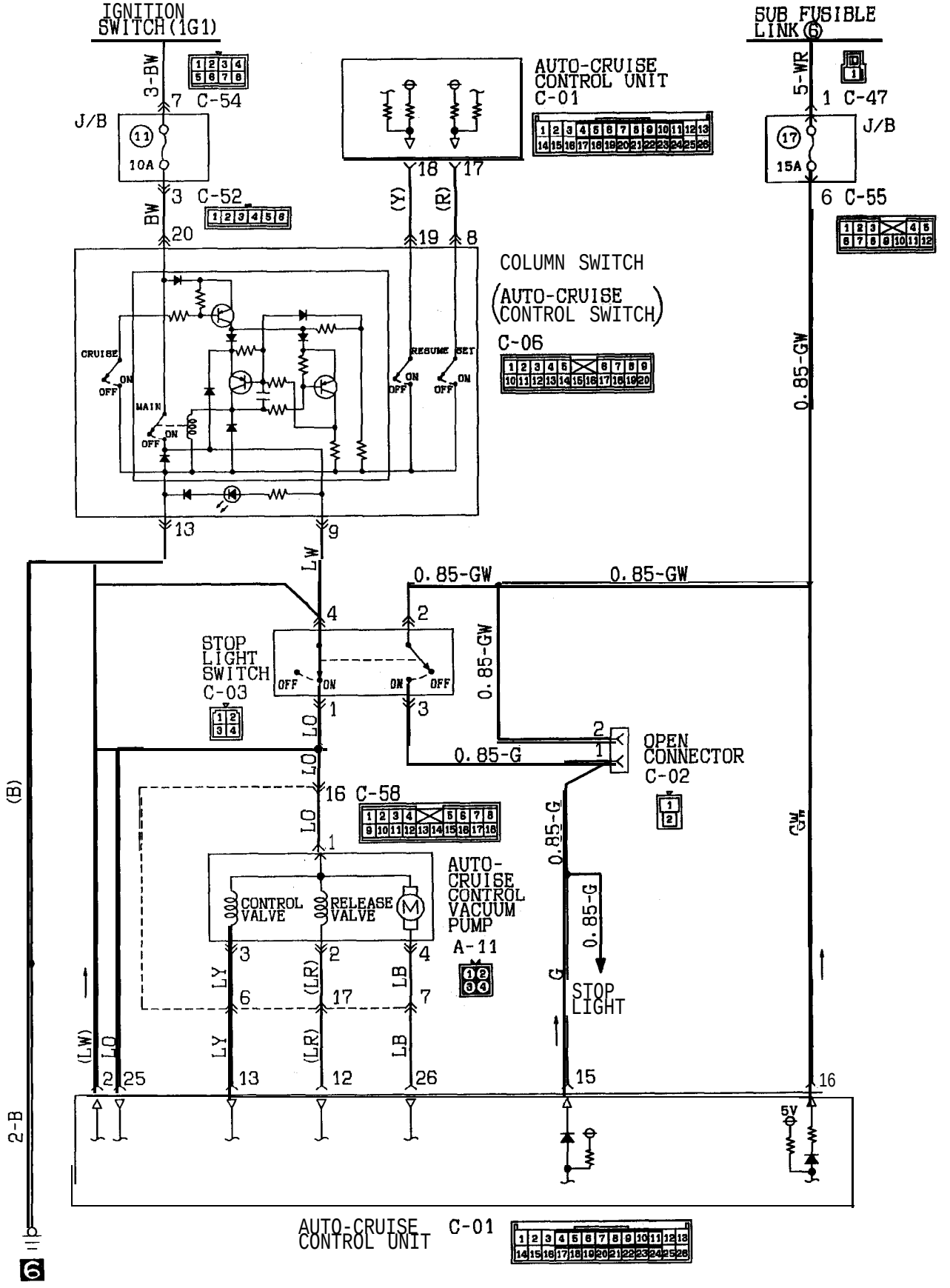
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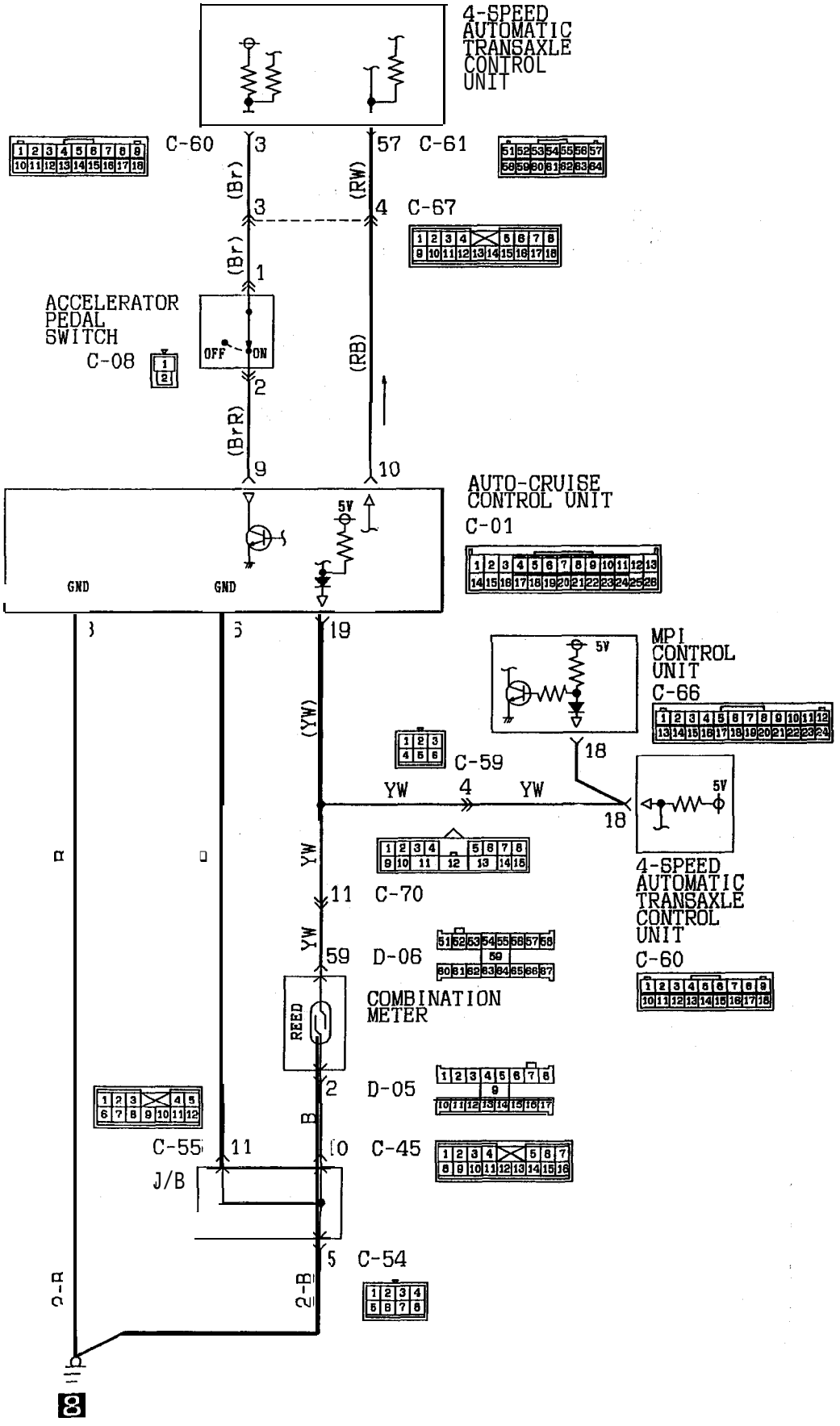

IGNITION SWITCH(1G1)
SUB FUSIBLE LINK (5)
AUTO-CRUISE CONTROL UNIT C-01
J/B
10A
15A
7 C-54
3 C-52
1 C-47
6 C-55
3-BW
BW
(Y)
(R)
COLUMN SWITCH
(AUTO-CRUISE CONTROL SWITCH)
C-06
CRUISE
MAIN
RESUME
SET
ON
OFF
0.85-GW
0.85-G
LW
LO
L
STOP LIGHT SWITCH C-03
OPEN CONNECTOR C-02
16 C-58
AUTO-CRUISE CONTROL VACUUM PUMP A-11
CONTROL VALVE
RELEASE VALVE
STOP LIGHT
LY
(LR)
LB
G
GW
(LW)
(B)
2-B
5V
AUTO-CRUISE CONTROL UNIT C-01

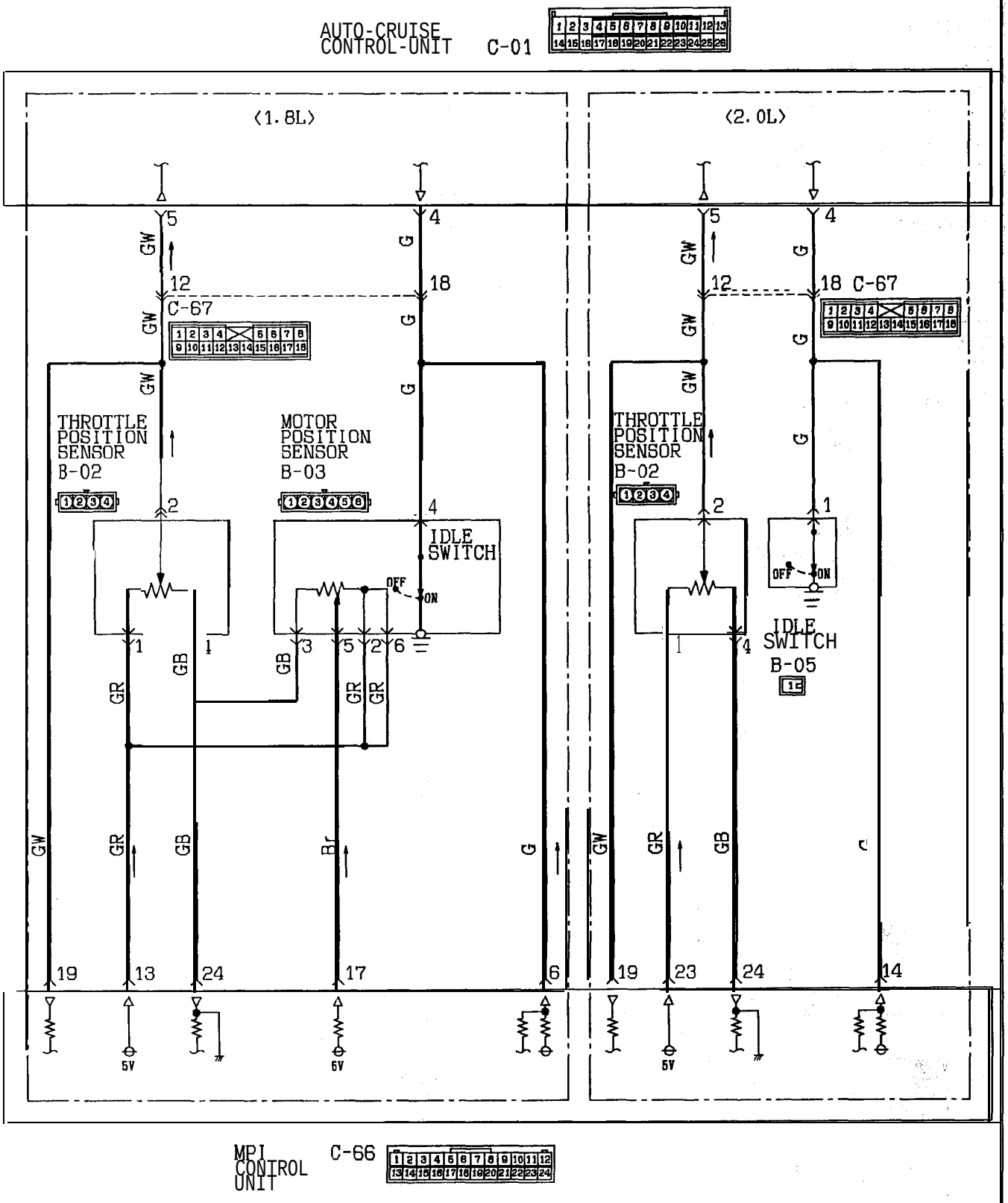

AUTO-CRUISE CONTROL-UNIT C-01
〈1.8L〉
〈2.0L〉
THROTTLE POSITION SENSOR B-02
MOTOR POSITION SENSOR B-03
IDLE SWITCH
THROTTLE POSITION SENSOR E-02
IDLE SWITCH E-05
C-67
GW
G
GR
GB
Br
OFF
ON
5V
MPI CONTROL UNIT C-66



(35-AC-U1516-NC


IGNITION SWITCH(1G1)
3-BW
7 C-54
J/B
11
10A
3 C-52
BW
20
AUTO-CRUISE CONTROL UNIT C-01
18
17
(Y)
(R)
19
8
SUB FUSIBLE LINK 6
5-WR
1 C-47
J/B
17
15A
6 C-55
0.85-GW
COLUMN SWITCH
(AUTO-CRUISE CONTROL SWITCH)
C-06
CRUISE
ON
OFF
MAIN
RESUME
SET
13
9
LW
0.85-GW
0.85-GW
4
2
STOP LIGHT SWITCH C-03
OFF
ON
ON
OFF
1
3
0.85-GW
LO
2
1
0.85-G
OPEN CONNECTOR C-02
LO
16 C-58
LO
1
(B)
AUTO-CRUISE CONTROL VACUUM PUMP A-11
CONTROL VALVE
RELEASE VALVE
3
2
4
LY
(LR)
LB
6
17
7
0.85-G
0.85-G
G
STOP LIGHT
(LW)
LO
2
25
LY
13
(LR)
12
LB
26
15
16
5V
2-B
6
AUTO-CRUISE CONTROL UNIT C-01


4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-60
C-61
57
3
(Br)
(RW)
C-67
4
ACCELERATOR PEDAL SWITCH
C-08
OFF
ON
(RB)
(BrR)
9
10
AUTO-CRUISE CONTROL UNIT
C-01
5V
GND
GND
19
MPI CONTROL UNIT
C-66
(YW)
C-59
YW
18
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-60
11
C-70
59
D-06
COMBINATION METER
REED
2
D-05
C-55
J/B
C-45
5
C-54
2-B
2-R

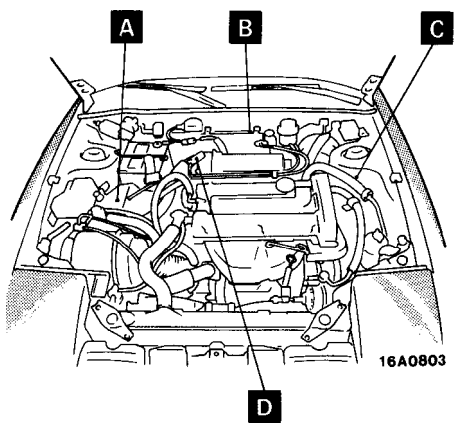

AUTO-CRUISE CONTROL-UNIT C-01
〈1.8L〉
〈2.0L〉
THROTTLE POSITION SENSOR B-02
MOTOR POSITION SENSOR B-03
IDLE SWITCH
IDLE SWITCH B-05
C-67
GW
G
GR
GB
Br
5V
MPI CONTROL UNIT C-66

COMPONENTS LOCATION

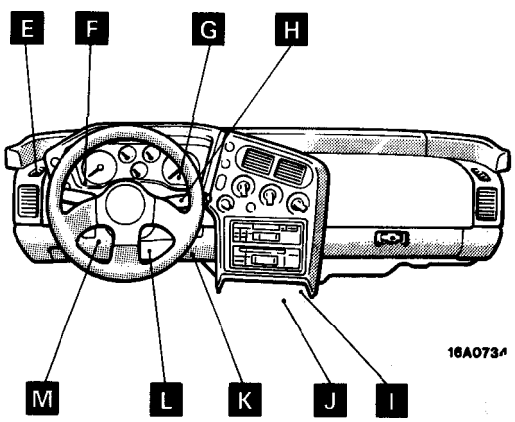
Name	Symbol	Name	Symbol
Accelerator pedal switch <A/T>	K	Idle switch	D
Auto-cruise control actuator	C	Inhibitor switch <A/T>	A
Auto-cruise control switch	H	Motor position sensor (Idle switch)	D
Auto-cruise control unit	E	Overdrive switch <A/T>	J
Auto-cruise control vacuum pump	B	Stop light switch	L
Auto-cruise indicator light	F	Throttle position sensor	D
Clutch switch <M/T>	M	Vehicle speed sensor (Reed switch)	G
4 A/T control unit			

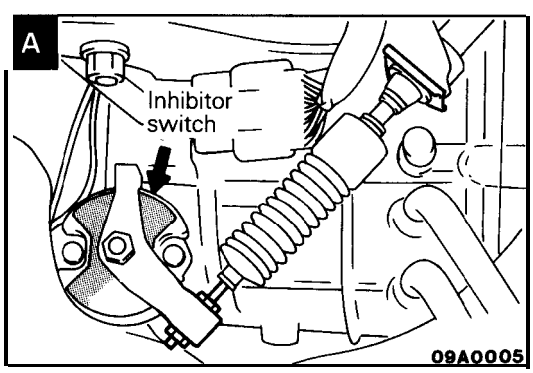
NOTE
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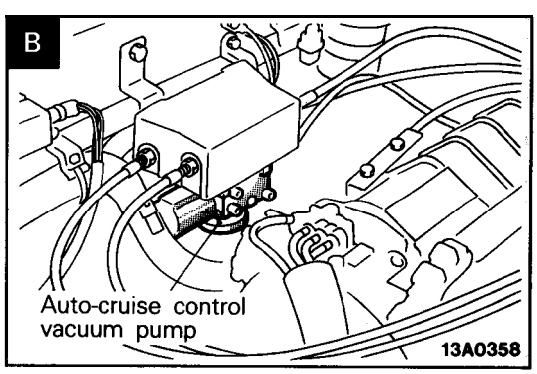
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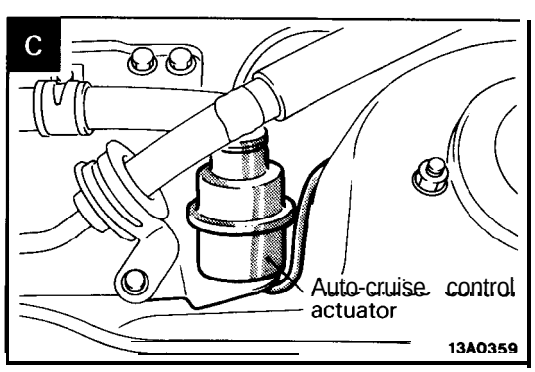


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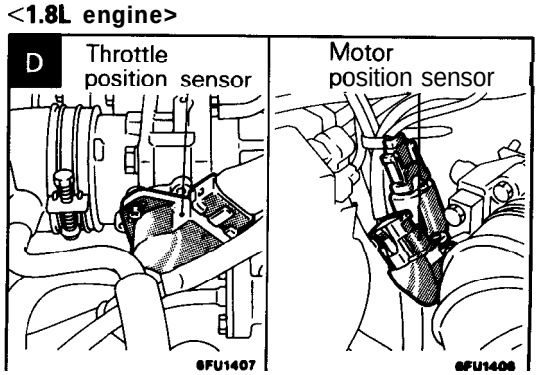




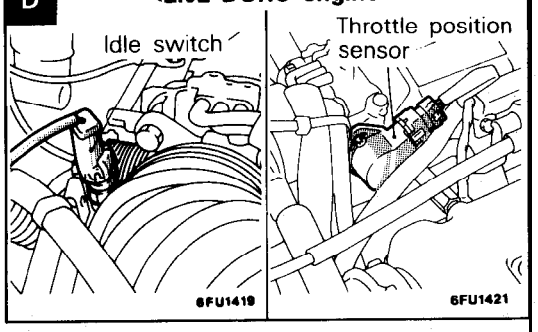




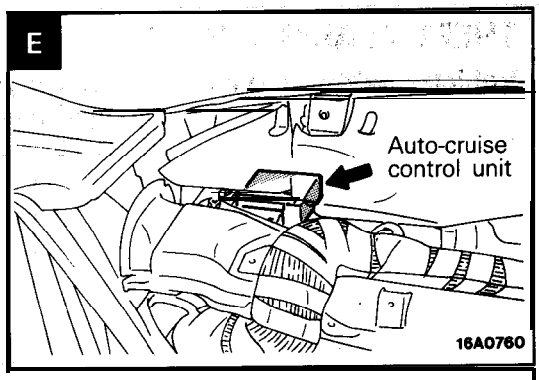
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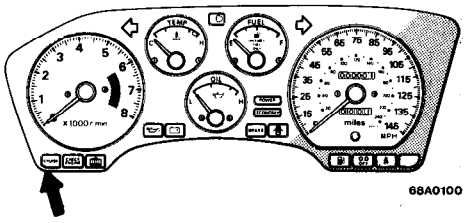
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E

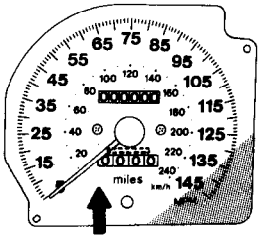


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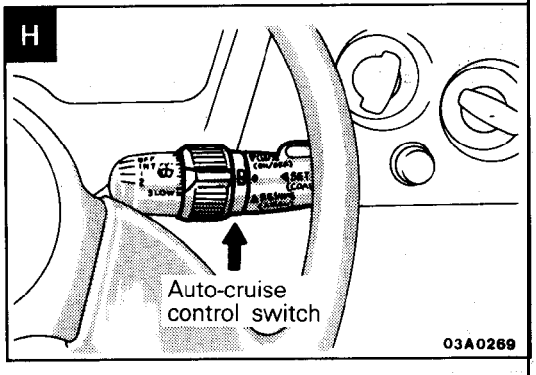


Auto-cruise indicator light

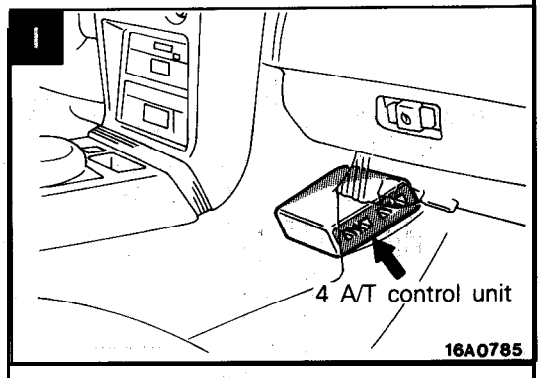
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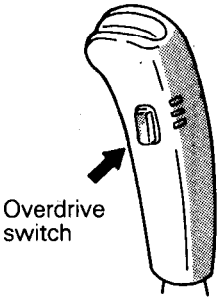
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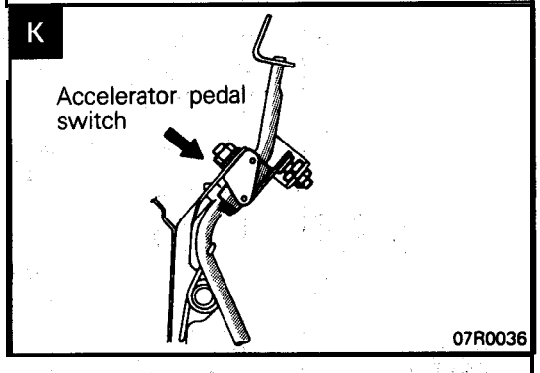
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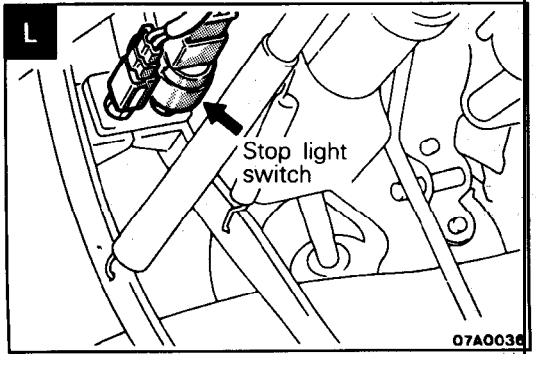
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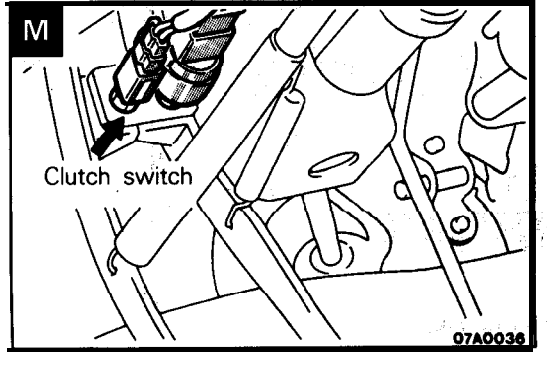
K



L

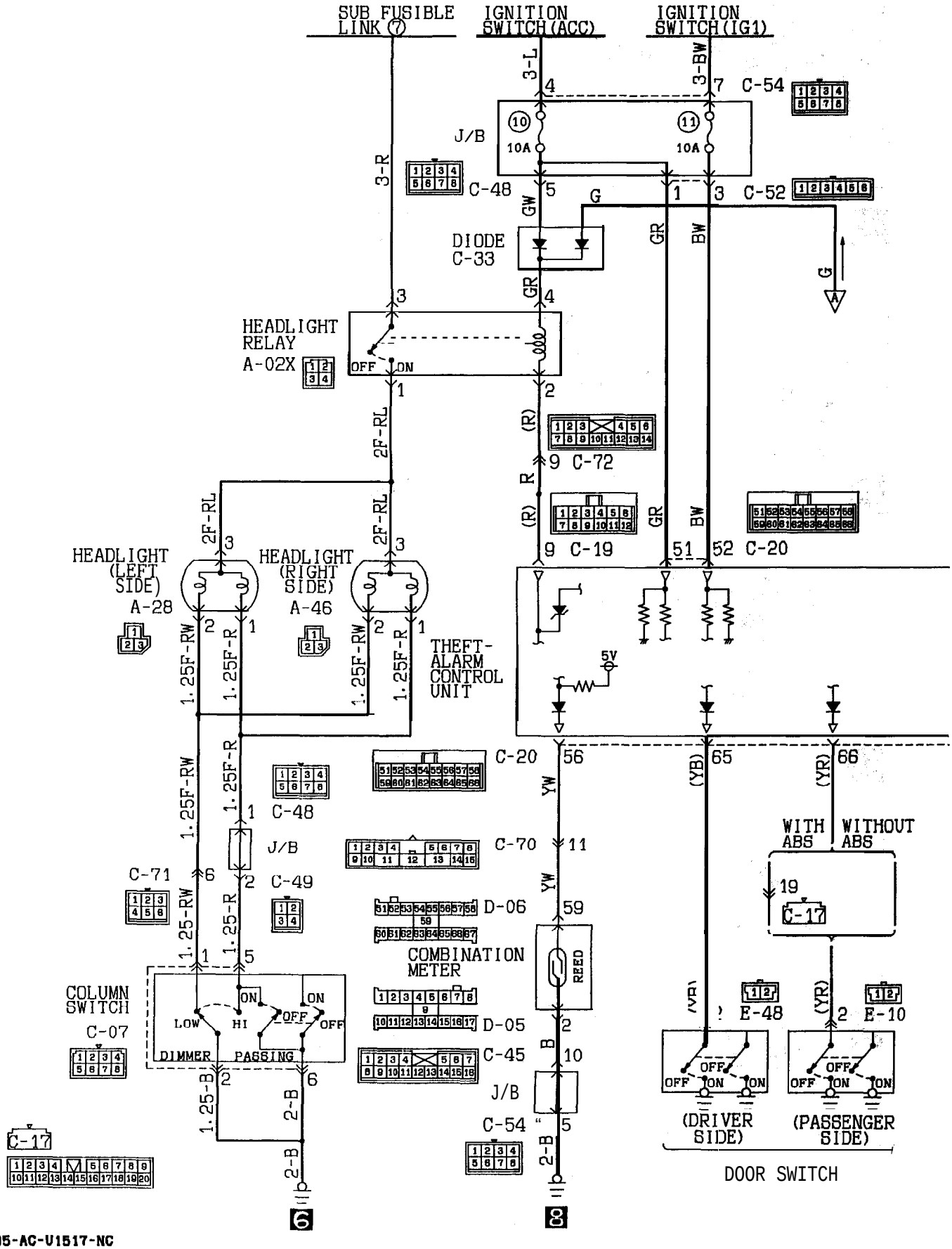


M

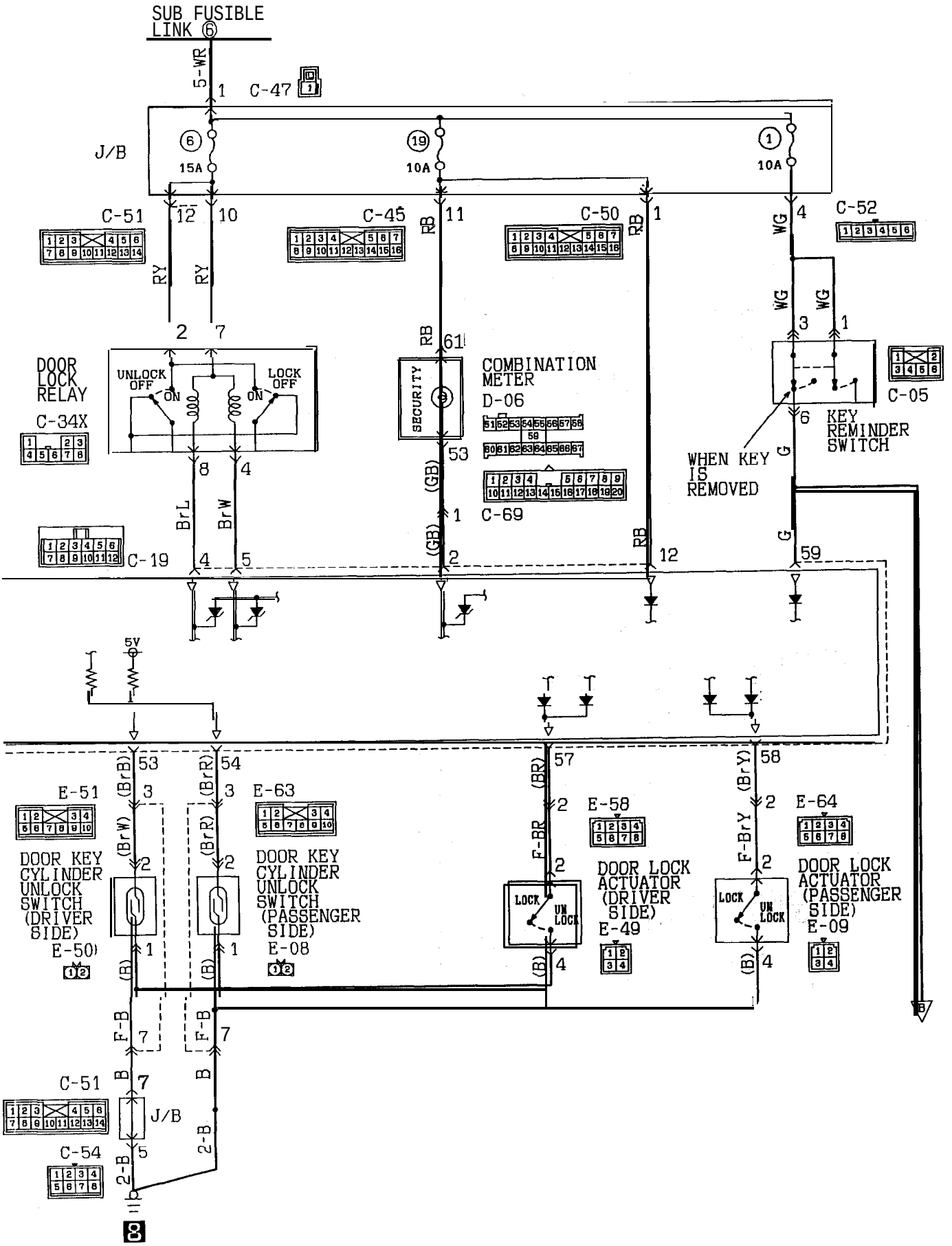


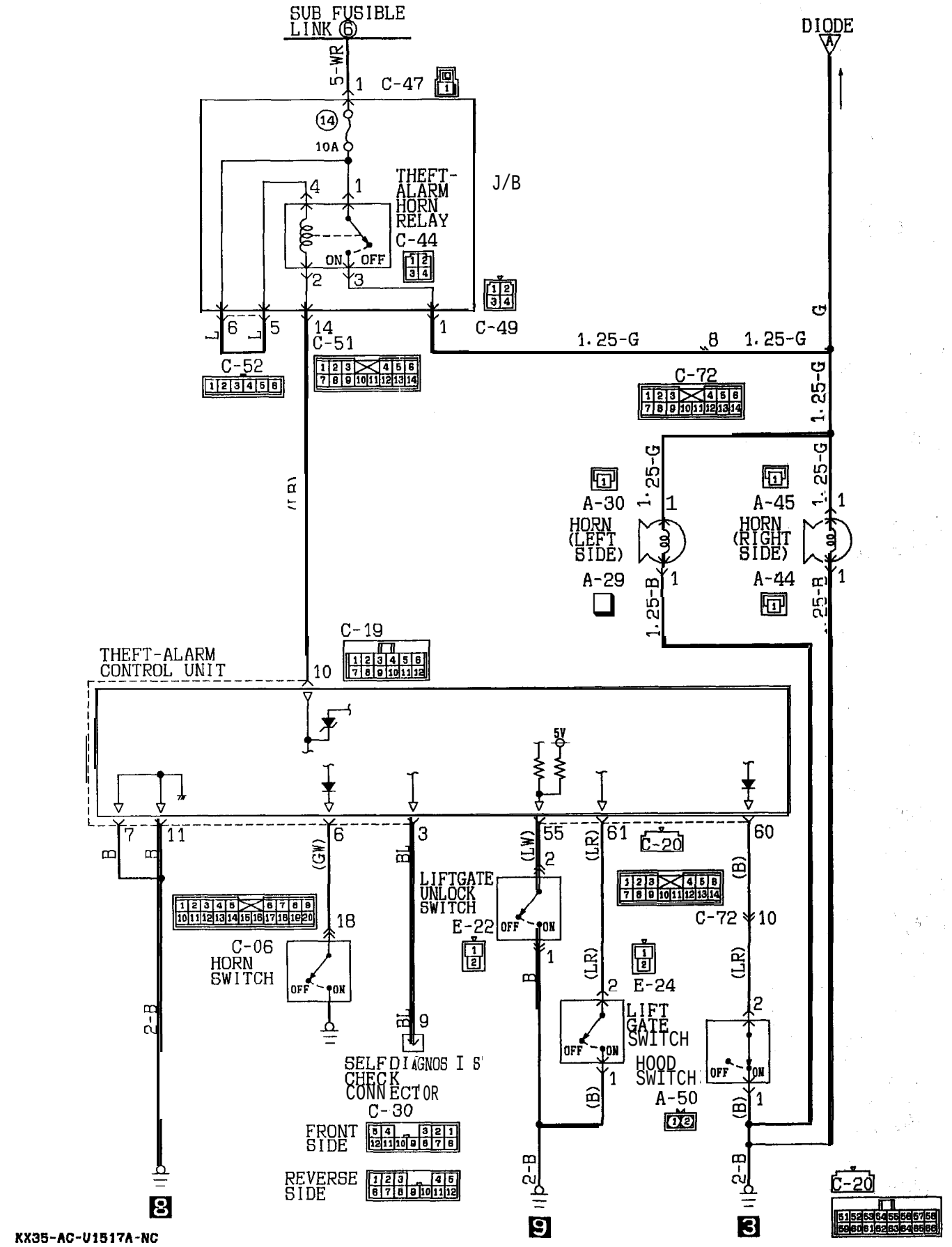
THEFT-ALARM CIRCUIT

Vehicles without daytime running light

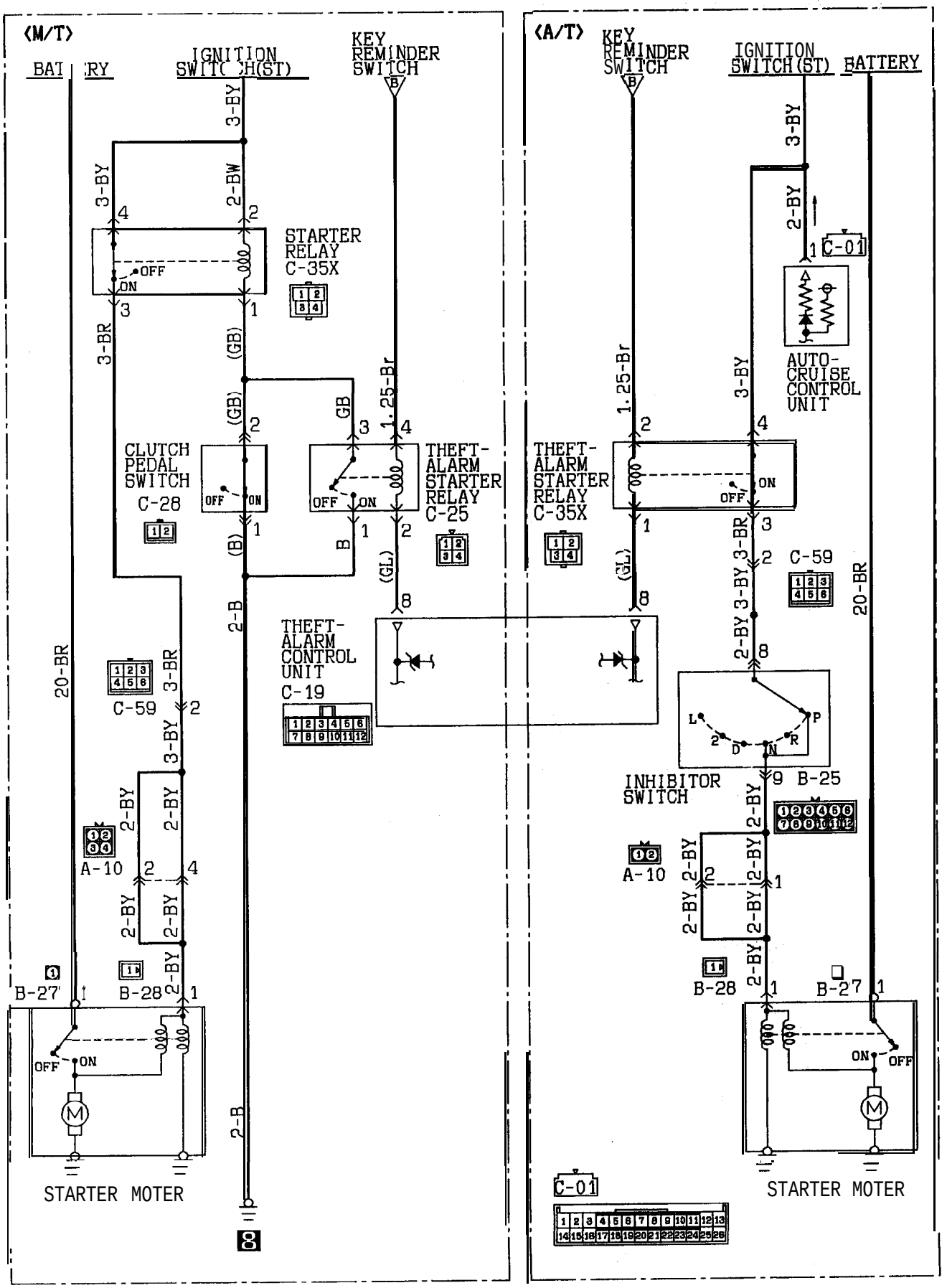


KX35-AC-U1517-NC

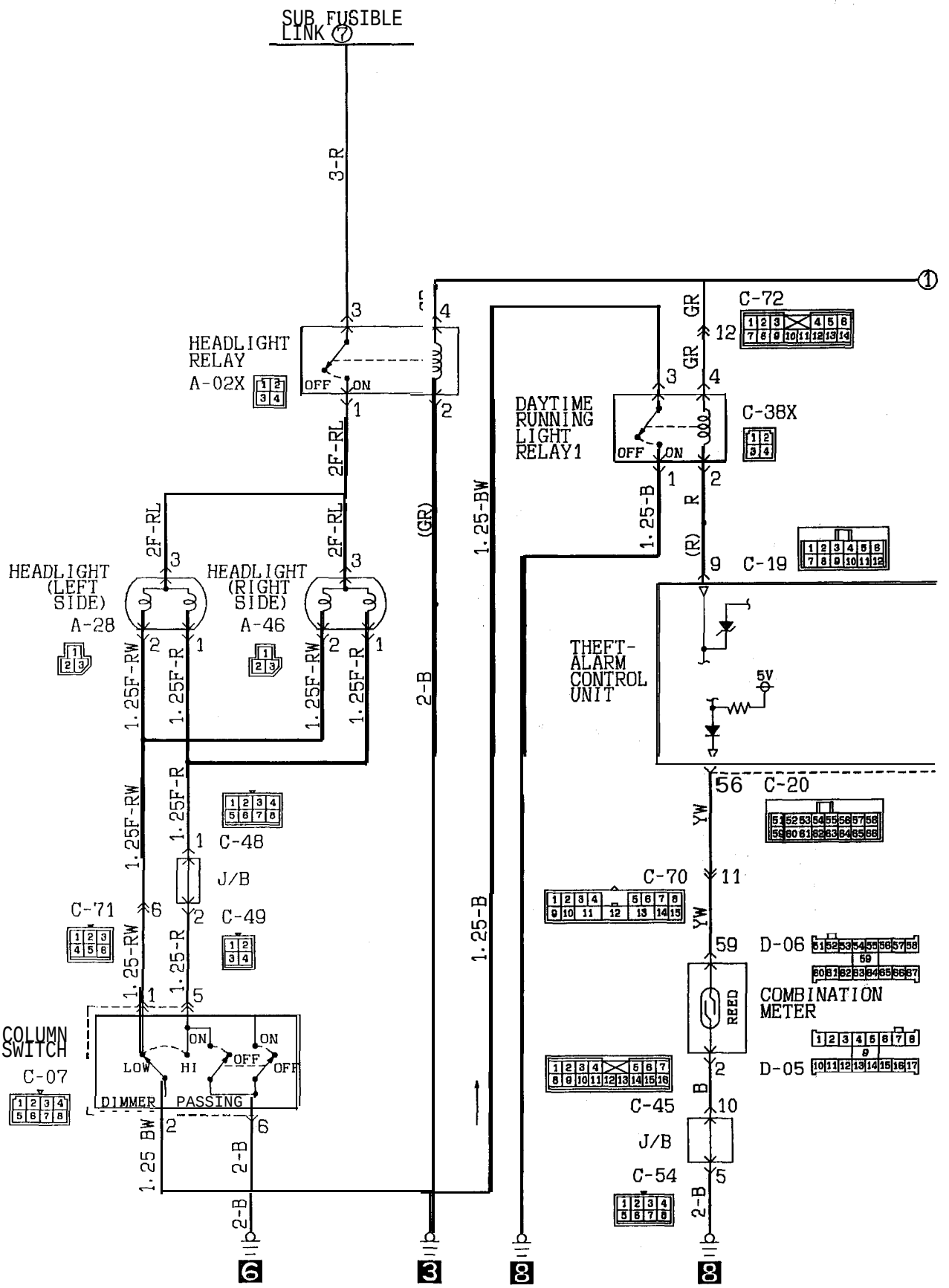

SUB FUSIBLE LINK ⑥
5-WR
1
C-47
J/B
⑥ 15A
⑲ 10A
① 10A
C-51
12
10
C-45
RB
11
C-50
RB
1
WG
4
C-52
RY
RY
2
7
WG
WG
3
1
DOOR LOCK RELAY
C-34X
UNLOCK OFF
ON
LOCK OFF
ON
RB
61
SECURITY
COMBINATION METER
D-06
C-05
6
KEY REMINDER SWITCH
WHEN KEY IS REMOVED
G
8
4
BrL
BrW
53
(GB)
1
C-69
C-19
4
5
(GB)
2
RB
12
G
59
5V
E-51
53
(BrB)
3
(BrR)
54
3
E-63
DOOR KEY CYLINDER UNLOCK SWITCH (DRIVER SIDE)
E-50
(BrW)
2
(BrR)
2
DOOR KEY CYLINDER UNLOCK SWITCH (PASSENGER SIDE)
E-08
1
1
(B)
(B)
F-B
7
F-B
7
B
7
B
C-51
J/B
5
2-B
C-54
2-B
8
57
(BR)
2
E-58
F-BR
2
DOOR LOCK ACTUATOR (DRIVER SIDE)
E-49
LOCK
UN LOCK
(B)
4
58
(BrY)
2
E-64
F-BrY
2
DOOR LOCK ACTUATOR (PASSENGER SIDE)
E-09
LOCK
UN LOCK
(B)
4
B

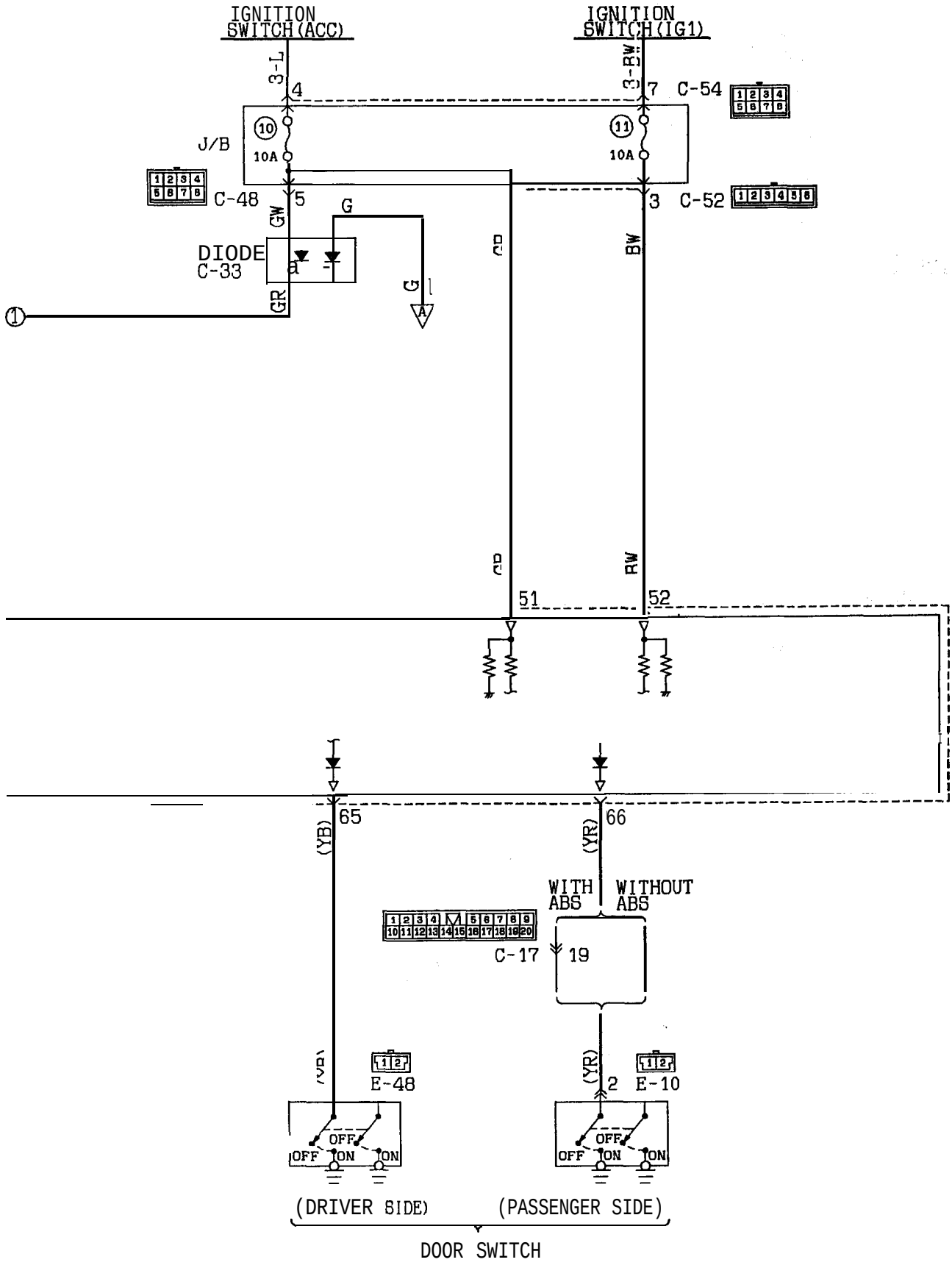


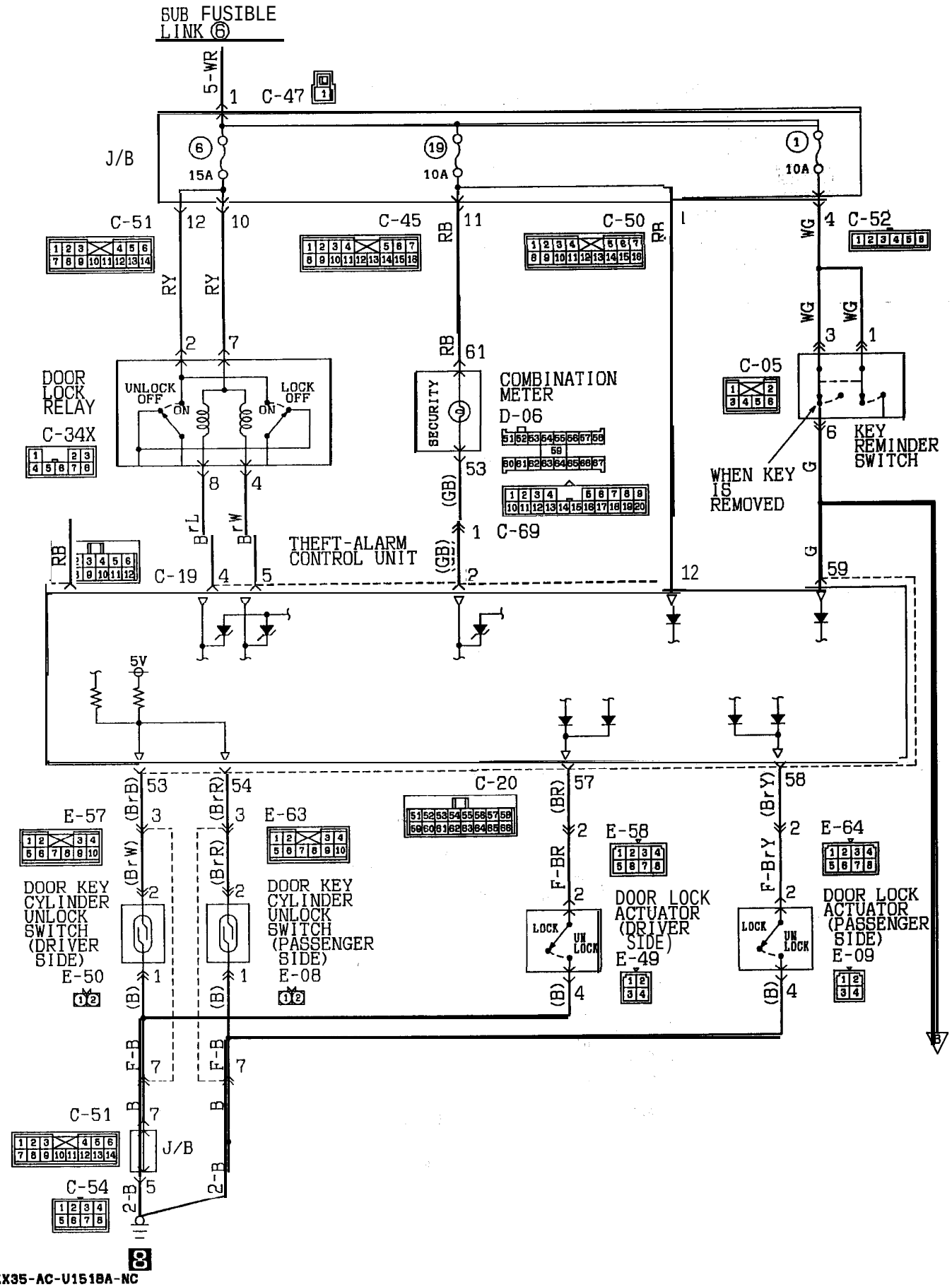
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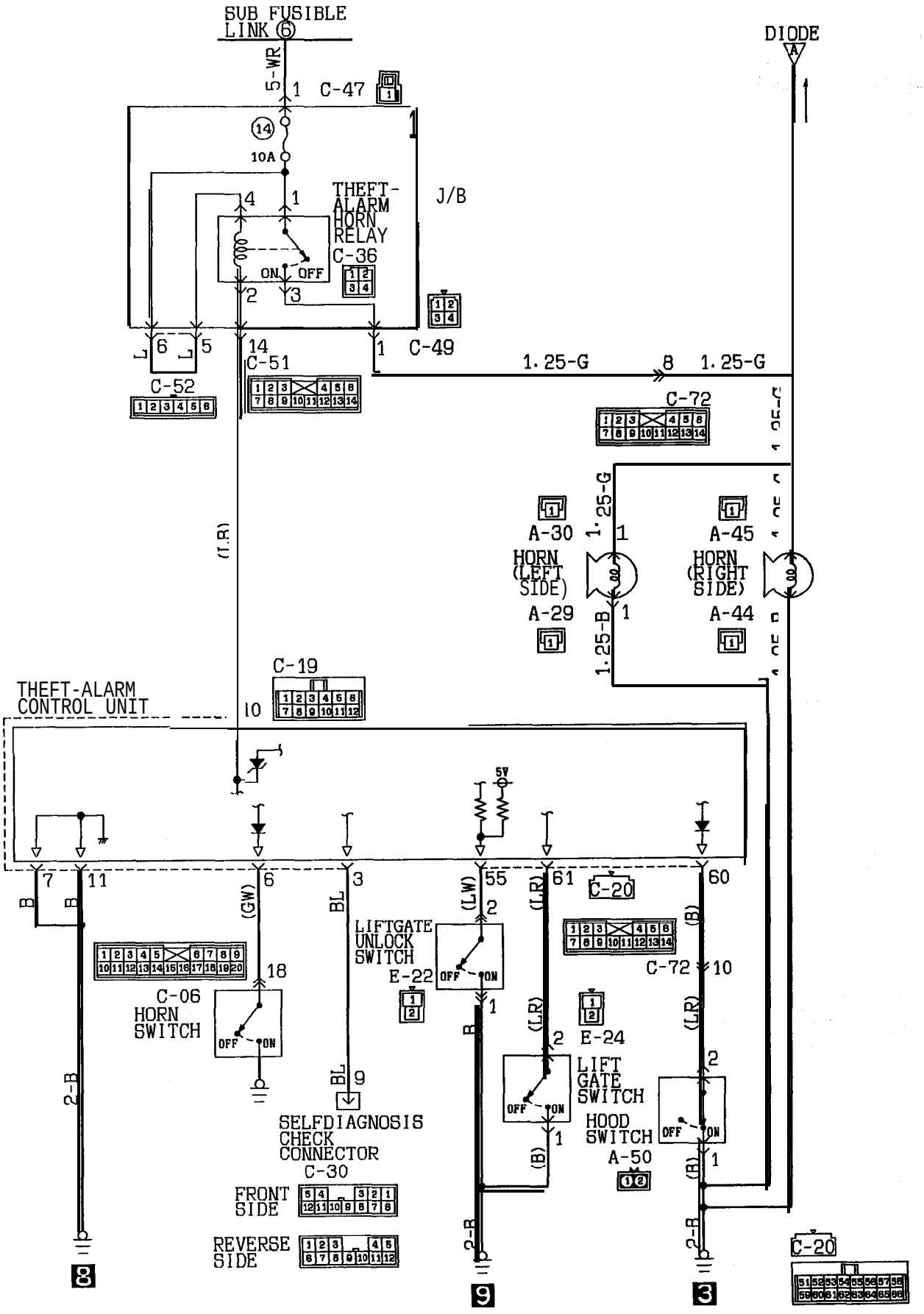

(M/T)
BAT RY
IGNITION SWITCH(ST)
KEY REMINDER SWITCH
STARTER RELAY C-35X
CLUTCH PEDAL SWITCH C-28
THEFT-ALARM STARTER RELAY C-25
THEFT-ALARM CONTROL UNIT C-19
C-59
A-10
B-27
B-28
STARTER MOTER
(A/T)
KEY REMINDER SWITCH
IGNITION SWITCH(ST)
BATTERY
AUTO-CRUISE CONTROL UNIT
THEFT-ALARM STARTER RELAY C-35X
INHIBITOR SWITCH
B-25
C-01
STARTER MOTER
3-BY
2-BW
3-BR
(GB)
GB
1.25-Br
(B)
2-B
(GL)
20-BR
2-BY
OFF
ON
P
L
D
N
R

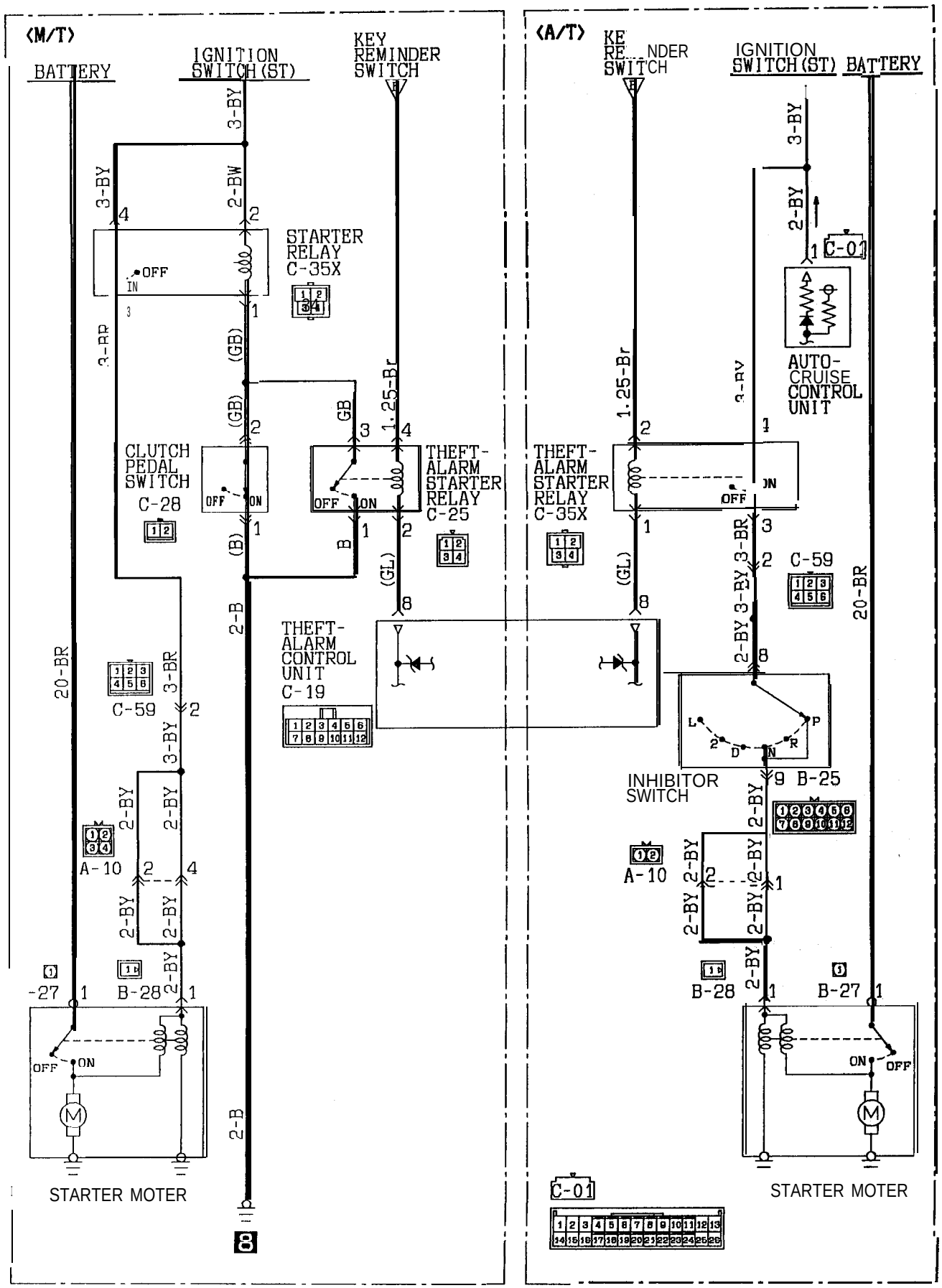
Vehicles with daytime running light




IGNITION SWITCH(ACC)
IGNITION SWITCH(IG1)
3-L
3-RW
4
7
C-54
J/B
10
11
10A
10A
C-48
5
3
C-52
GW
G
DIODE C-33
GR
GR
BW
GR
RW
51
52
65
66
(YB)
(YR)
WITH ABS
WITHOUT ABS
C-17
19
E-48
2
E-10
OFF
ON
(DRIVER SIDE)
(PASSENGER SIDE)
DOOR SWITCH

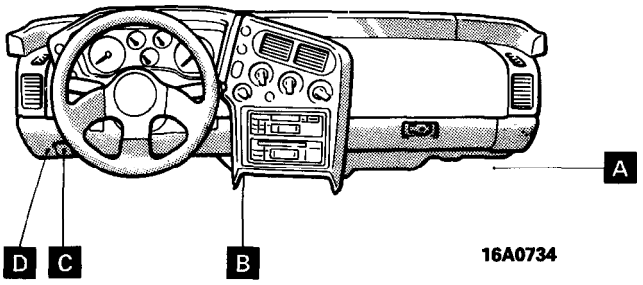

SUB FUSIBLE LINK ⑥
5-WR
1
C-47
J/B
⑥
15A
⑲
10A
①
10A
C-51
12
10
C-45
11
C-50
1
C-52
4
RY
RY
RB
RR
WG
WG
WG
2
7
61
3
1
DOOR LOCK RELAY
C-34X
UNLOCK OFF ON
LOCK OFF ON
SECURITY
COMBINATION METER
D-06
C-05
6
KEY REMINDER SWITCH
WHEN KEY IS REMOVED
G
8
4
53
BrL
BrW
(GB)
1
C-69
RB
C-19
4
5
THEFT-ALARM CONTROL UNIT
(GB)
2
12
G
59
5V
53
54
C-20
57
58
E-57
3
3
E-63
(BrB)
(BrR)
(BR)
(BrY)
2
2
E-58
2
E-64
(BrW)
(BrR)
F-BR
F-BrY
DOOR KEY CYLINDER UNLOCK SWITCH (DRIVER SIDE)
E-50
DOOR KEY CYLINDER UNLOCK SWITCH (PASSENGER SIDE)
E-08
DOOR LOCK ACTUATOR (DRIVER SIDE)
E-49
DOOR LOCK ACTUATOR (PASSENGER SIDE)
E-09
LOCK
UN LOCK
(B)
1
4
F-B
7
B
2-B
5
C-51
J/B
C-54
8
KX35-AC-U151BA-NC

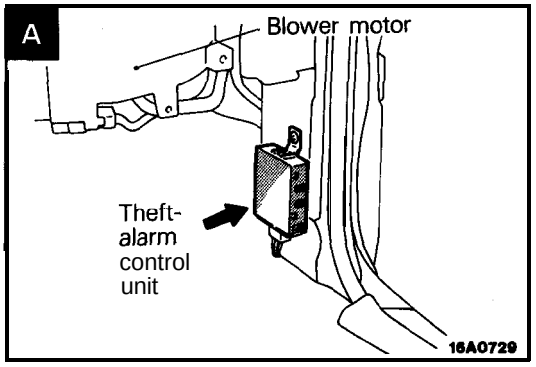

SUB FUSIBLE LINK ⑥
5-WR
1 C-47
⑭
10A
THEFT-ALARM HORN RELAY C-36
ON OFF
J/B
4 1
2 3
L 6 L 5
14 C-51
1 C-49
C-52
1.25-G
8 1.25-G
DIODE
C-72
A-30
A-29
HORN (LEFT SIDE)
A-45
A-44
HORN (RIGHT SIDE)
(LR)
C-19
THEFT-ALARM CONTROL UNIT
10
5V
7 11
B B
6 (GW)
3 BL
55 (LW)
61 (LR)
C-20
60
LIFTGATE UNLOCK SWITCH E-22
OFF ON
C-72 10
C-06 HORN SWITCH
18
OFF ON
2-B
BL 9
SELFDIAGNOSIS CHECK CONNECTOR C-30
FRONT SIDE
REVERSE SIDE
E-24
LIFT GATE SWITCH
HOOD SWITCH A-50
(B)
8
9
3
C-20

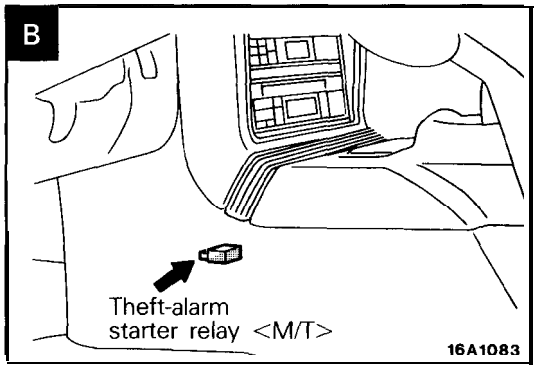

(M/T)
BATTERY
IGNITION SWITCH(ST)
KEY REMINDER SWITCH
STARTER RELAY C-35X
CLUTCH PEDAL SWITCH C-28
THEFT-ALARM STARTER RELAY C-25
THEFT-ALARM CONTROL UNIT C-19
C-59
A-10
B-28
B-27
STARTER MOTER
(A/T)
KE RE...NDER SWITCH
IGNITION SWITCH(ST)
BATTERY
THEFT-ALARM STARTER RELAY C-35X
AUTO-CRUISE CONTROL UNIT
C-01
INHIBITOR SWITCH
B-25
STARTER MOTER
KX35-AC-U1518B-NC

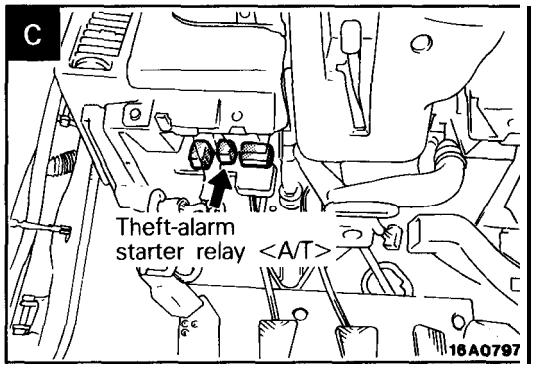
COMPONENTS LOCATION

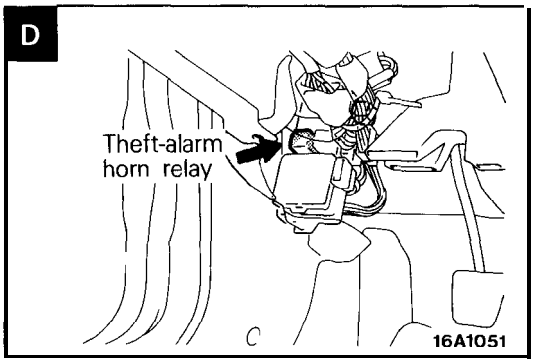
Name	Symbol	Name	Symbol
Theft-alarm control unit	A	Theft-alarm starter relay <A/T>	C
Theft-alarm horn relay	D	Theft-alarm starter relay <M/T>	B











NOTES

ENGINE ELECTRICAL

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N08AA--

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  - Service Specifications 142
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CHARGING SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08EB--

Items	Specifications
Alternator	
Type	Alternative current type with voltage regulator
Rated output VIA	
<U.S.A. - M/T - Non-Turbo>	12/65
<U.S.A. - AA, U.S.A. - Turbo, CANADA -1.8L Engine, CANADA -2.0L Engine - M/T - Non-Turbo>	12/75
<CANADA -2.0L Engine - A/T, CANADA -2.0L Engine-Turbo>	12/90
Voltage regulator	Electronic built-in type

SERVICE SPECIFICATIONS

N08EC--

Items		Specifications
Alternator		
Standard value		
Regulated voltage V		14.2–15.4 at –20°C (–4°F) 13.9-14.9 at 20°C (68°F) 13.4-14.6 at 60°C (140°F) 13.1–14.5 a t 80°C (176°F)
Slip ring O.D. mm (in.)		22.7 (.894)
Rotor coil resistance Ω		3-5
Limit		
Output current A	65 A 75 A 90 A	Min. 45.5 Min. 52.5 Min. 63
Slip ring O.D. mm (in.)		22.1 (.870)

TORQUE SPECIFICATIONS

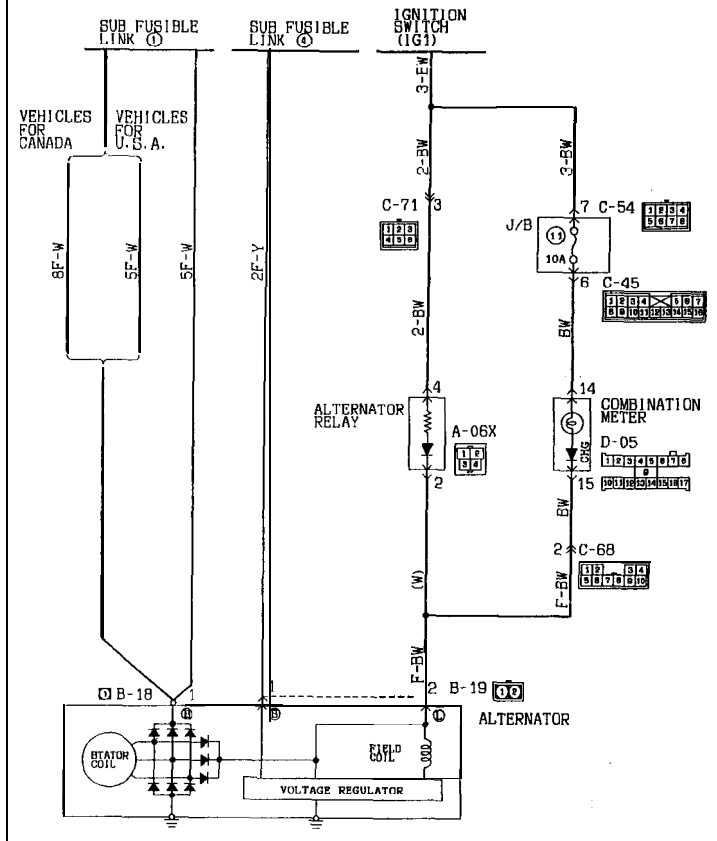
N08ED--

Items	Nm	ft.lbs.
Lock bolt	12–15	9-11
Alternator brace mounting bolt	15–22	11–16
Adjust bolt	8-12	6-9
Alternator pivot nut	20–25	15-18
Water pump pulley bolt	8–10	6-7
Alternator wiring harness connector mounting nut	4-6	3-4

TROUBLESHOOTING

- H A L

CIRCUIT DIAGRAM



OPERATION

When engine is stopped

When the ignition switch is switched to the ''ON'' position, electricity flows from the "L" terminal, of the alternator to the field coil, and at the same time the charging warning light illuminates.

When engine is being started/has started

When the engine is started, charging voltage is applied to the "L" terminal of the alternator, with the result that the charging warning light is extinguished. In addition, because battery voltage is applied to the "S" terminal of the alternator, this battery voltage is monitored at the IC voltage regulator, thus switching ON and OFF the current to the field coil and thereby controlling the amount of generation by the alternator.

Power is supplied to each load from the ''B'' terminal of the alternator.

NOTE

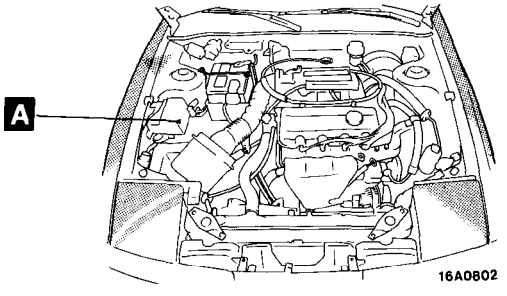
The alternator relay functions as a back-up for the flow of electricity to the field coil if there is a disconnection or damaged wiring of the charging warning light.

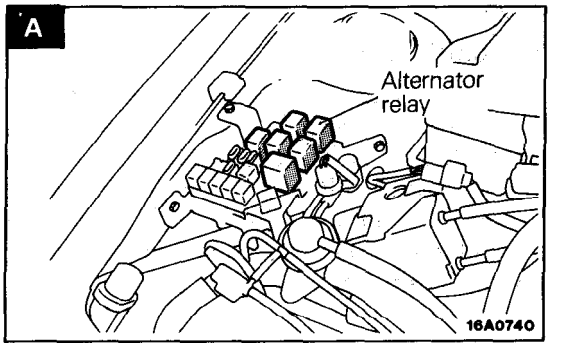
TROUBLESHOOTING HINTS

1. Charging indicator light does not go on when the ignition switch is turned to "ON", before the engine starts.
   - Check the bulb
2. Charging indicator light fails to go off once the engine starts.
   - Check the IC voltage regulator (located within the alternator).
3. Discharged or overcharged battery.
   - Check the IC voltage regulator (located within the alternator).
4. The charging warning light illuminates dimly.
   - Check the diode (within the combination meter) for a short-circuit.

COMPONENT LOCATION

Name	Symbol
Alternator relay	A





SERVICE ADJUSTMENT PROCEDURES

CHARGING SYSTEM INSPECTION N08EIAO

VOLTAGE DROP TEST OF ALTERNATOR OUTPUT WIRE

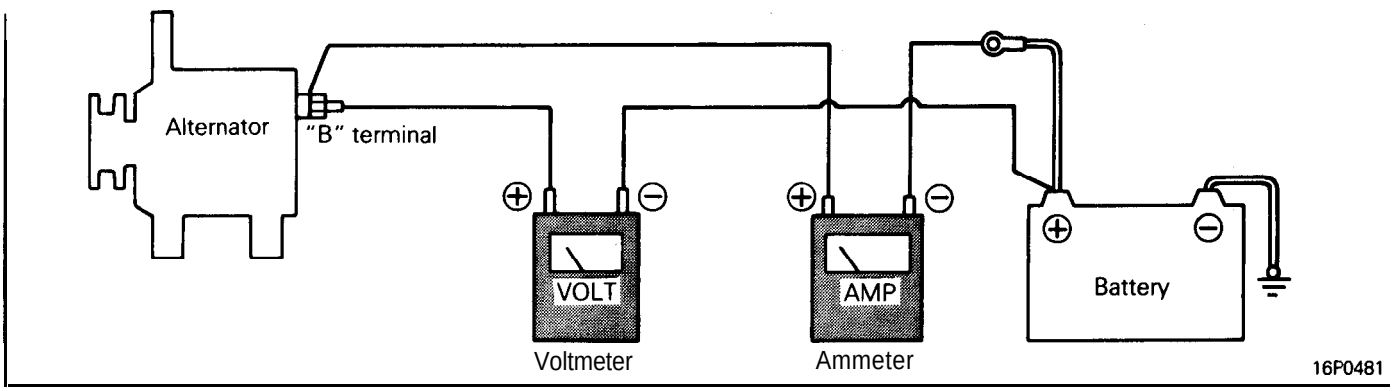
This test judges whether or not the wiring (including the fusible link) between the alternator B terminal and the battery (+) terminal is sound by the voltage drop method.

Preparation

(1) Turn the ignition switch to "OFF".
(2) Disconnect the battery ground cable.
(3) Disconnect the alternator output lead from the alternator "B" terminal.
(4) Connect a DC ammeter (0 to 100A) in series to the "B" terminal and the disconnected output lead. Connect the (+) lead of the ammeter to the ''B'' terminal and the (–) lead to the disconnected output wire.

NOTE
Use of a clamp type ammeter that can measure current without disconnecting the harness' is preferred. The reason is that when checking a vehicle that has a low output current due to poor connection of the alternator "B" terminal, such poor connection is corrected as the "B" terminal is loosened and a test ammeter is connected in its place and as a result, causes for the trouble may not be determined.

(5) Connect a digital voltmeter between the alternator "B" terminal and battery (+) terminal. Connect the (+) lead wire of the voltmeter to the "B" terminal and the (–) lead wire to the battery (+) terminal.
(6) Connect the battery ground cable.
(7) Leave the hood open.



Test

(1) Start the engine.
(2) Turn on or off the headlights and small lights and adjust the engine speed so that the ammeter reads 20 A and read off the voltmeter indication under this condition.

Result

(1) It is okay if the voltmeter indicates the standard value.

Standard value: 0.2 V max.

(2) If the voltmeter indicates a value that is larger than the standard value, poor wiring is suspected, in which case check the wiring from the alternator "B" terminal to fusible link to battery (+) terminal. Check for loose connection, color change due to overheated harness, etc. and correct them before testing again.

(3) Upon completion of the test, set the engine speed at idle.
Turn off the lights and turn off the ignition switch.
(4) Disconnect the battery ground cable.
(5) Disconnect the ammeter and voltmeter that have been connected for the test purpose.
(6) Connect the alternator output wire to the alternator "B" terminal.
(7) Connect the battery ground cable.

OUTPUT CURRENT TEST

This test judges whether or not the alternator gives an output current that is equivalent to the nominal output.

Preparation

(1) Prior to the test, check the following items and correct as necessary.
   (a) Check the battery installed in the vehicle to ensure that it is in sound state*. The battery checking method is described in "BATTERY".

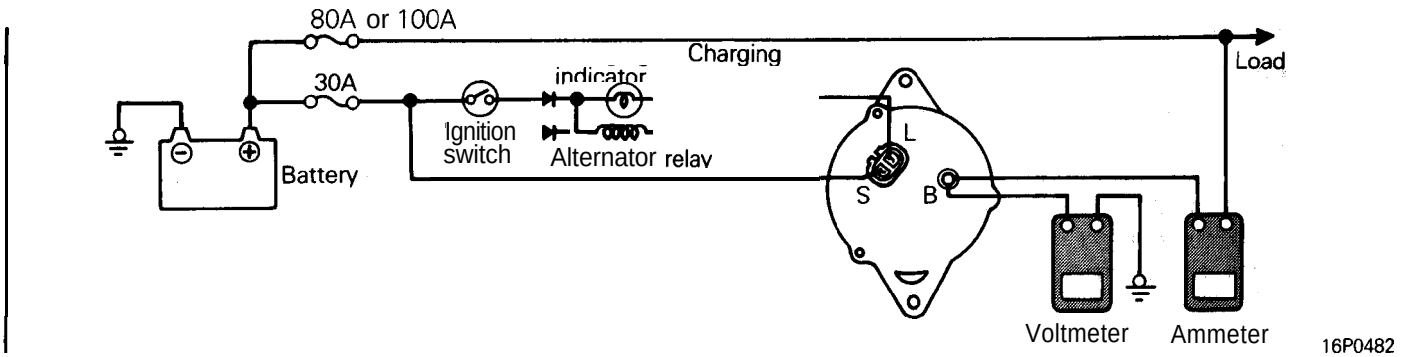
   NOTE
   "The battery that is used to test the output current should be one that has been rather discharged. With a fully charged battery, the test may not be conducted correctly due to an insufficient load.

   (b) Check tension of the alternator drive belt. The belt tension check method is described in "GROUP O-Maintenance Service".

(2) Turn off the ignition switch.
(3) Disconnect the battery ground cable.
(4) Disconnect the alternator output wire from the alternator "B" terminal.
(5) Connect a DC ammeter (0 to 100A) in series between the "B" terminal and the disconnected output wire. Connect the (+) lead of the ammeter to the "B" terminal and connect the (–) lead wire to the disconnected output wire.

   NOTE
   Tighten each connection by bolt and nut securely as a heavy current will flow. Do not relay on clips.

(6) Connect a voltmeter (0 to 20V) between the "B" terminal and ground. Connect the (+) lead wire to the alternator "B" terminal and (–) lead wire to a sound ground.
(7) Set the engine tachometer and connect the battery ground cable.
(8) Leave the engine hood open.



Test

(1) Check to see that the voltmeter reads the same value as the battery voltage.
   If the voltmeter reads OV, an open circuit in the wire between the alternator ''B'' terminal and battery (–) terminal, a blown fusible link or poor grounding is suspected.
(2) Turn on the headlight switch and start the engine.
(3) Set the headlight at high beam and the heater blower switch at HIGH, quickly increase the engine speed to 2,500 rpm and read the maximum output current value indicated by the ammeter.

   NOTE
   After the engine start up, the charging current quickly drops, therefore, above operation must be done quickly to read maximum current value correctly.

Result

(1) The ammeter reading must be higher than the limit value. If it is lower but the alternator output wire is normal, remove the alternator from the vehicle and check it.

Limit value:

45.5A min	**65A**
52.5A min	**75A**
63A min	**90A**

Caution

(a) The nominal output current value is shown on the nameplate affixed to the alternator body.

(b) The output current value changes with the electrical load and the temperature of the alternator itself.
Therefore, the nominal output current may not be obtained if the vehicle electrical load at the time of test is small.
In such a case, keep the headlights on to cause discharge of the battery or use lights of another vehicle as a load to increase the electrical load. The nominal output current may not be obtained if the temperature of the alternator itself or ambient temperature is too high. In such a case, reduce the temperature before testing again.

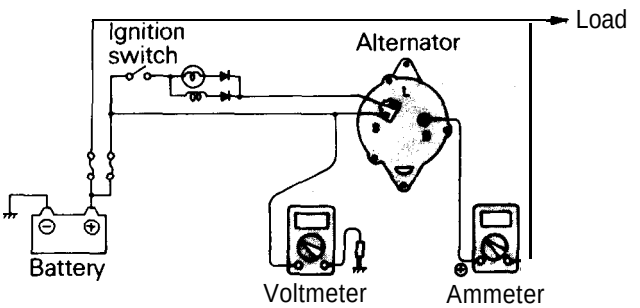
(2) Upon completion of the output current test, lower the engine speed to the idle speed and turn off the ignition switch.
(3) Disconnect the battery ground cable.
(4) Remove the test ammeter and voltmeter and the engine tachometer.
(5) Connect the alternator output wire to the alternator "B" terminal.
(6) Connect the battery ground cable.

REGULATED VOLTAGE TEST

The purpose of this test is to check that the electronic voltage regulator controls the voltage correctly.

Preparation

(1) Prior to the test, check the following items and correct if necessary.
(a) Check the battery installed on the vehicle to see that it is fully charged. For battery checking method, see "BATTERY".
(b) Check the alternator drive belt tension. For belt tension check, see "GROUP 0– Maintenance Service".
(2) Turn the ignition switch to "OFF".
(3) Disconnect the battery ground cable.
(4) Connect a digital voltmeter between the "S" terminal of the alternator and ground. Connect the (+) lead of the voltmeter to the "S" terminal of the alternator, inserting from the wire side of the 2-way connector and connect the (–) lead to sound ground or battery (–) terminal.



6EL252

(5) Disconnect the alternator output wire from the alternator "B" terminal.
(6) Connect a DC ammeter (0 to 100A) in series between the "B" terminal and the disconnected output wire. Connect the (+) lead of the ammeter to the "B" terminal and connect the (–) lead wire to the disconnected output wire.
(7) Set the engine tachometer and connect the battery ground cable.

Test

(1) Turn on the ignition switch and check that the voltmeter indicates the following value.

Voltage: Battery voltage

If it reads OV, there is an open circuit in the wire between' the alternator "S" terminal and the battery (+) or the fusible link is blown.
(2) Start the engine. Keep all lights and accessories off.
(3) Run the engine at a speed of about 2,500 rpm and read the voltmeter when the alternator output current drops to 10A or less.

Result

(1) If the voltmeter reading agrees with the value listed in' the regulating voltage table below, the voltage regulator is functioning correctly. If the reading is other than the standard value, the voltage regulator or the alternator is faulty.

Regulating voltage table

Voltage regulator ambient temperature °C (°F)	Regulating voltage V
-20 (–4)	14.2-15.4
20 (68)	13.9-14.9
60 (140)	13.4-14.6
80 (176)	13.1–14.5

(2) Upon completion of the test, set the engine speed at idle and turn off the ignition switch.
(3) Disconnect the battery ground cable.
(4) Remove the test voltmeter and ammeter and the engine tachometer.
(5) Connect the alternator output wire to the alternator “B” terminal.
(6) Connect the battery ground cable.

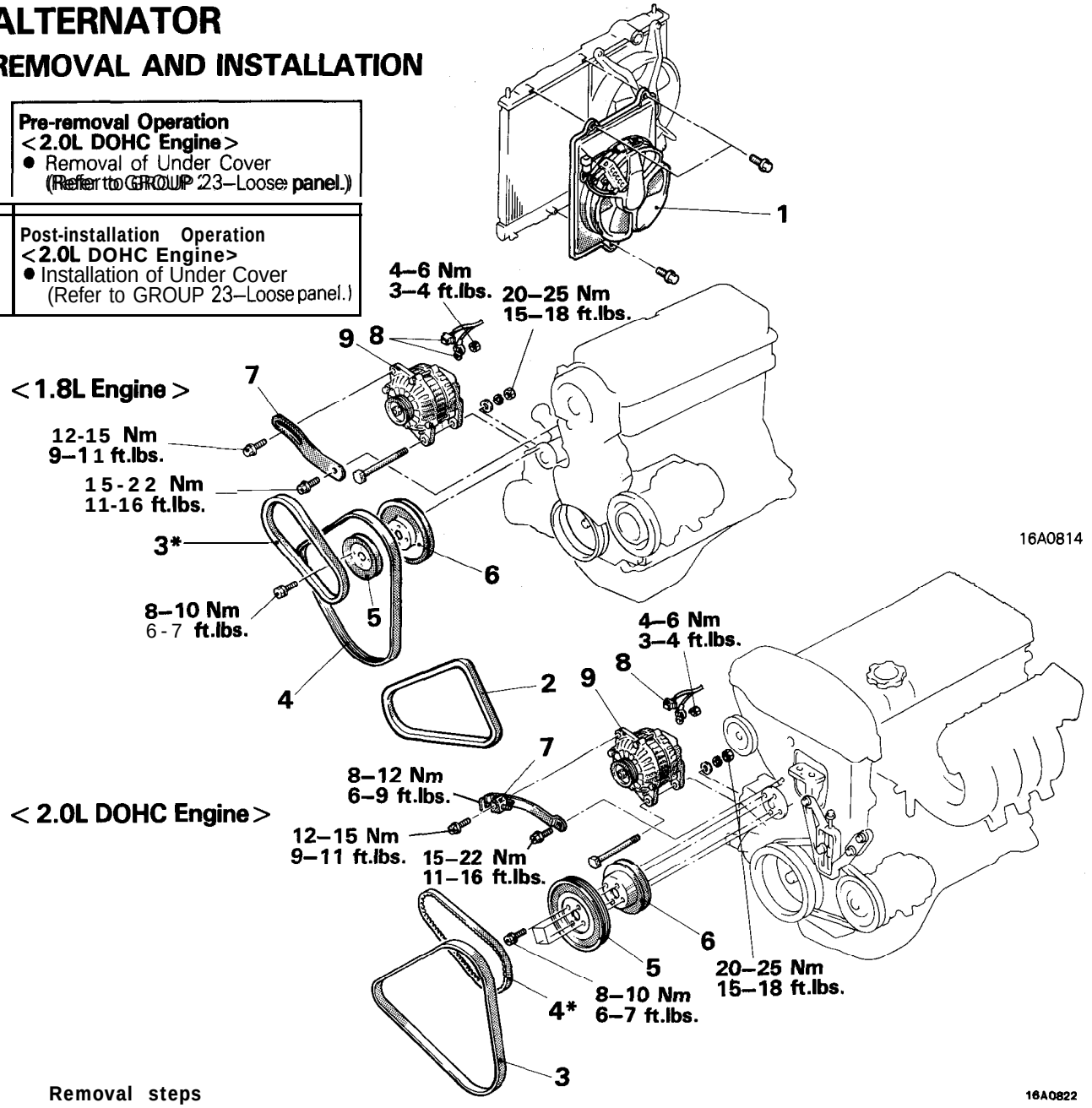
ALTERNATOR

REMOVAL AND INSTALLATION

N08EJAR

Pre-removal Operation
<2.0L DOHC Engine>
- Removal of Under Cover
(Refer to GROUP 23–Loose panel.)

Post-installation Operation
<2.0L DOHC Engine>
- Installation of Under Cover
(Refer to GROUP 23–Loose panel.)



Removal steps

1. Condenser fan motor (air conditioner equipped models)
- ● + 2. Air conditioner drive belt <1.8L Engine>
- ● + 3. Drive belt
- ● * 4. Drive belt
5. Water pump pulley
6. Water pump pulley
7. Alternator brace
8. Alternator wiring harness connector connection
9. Alternator

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● +: Refer to "Service Points of Installation".
(3) *: Power steering drive belt

SERVICE POINTS OF INSTALLATION

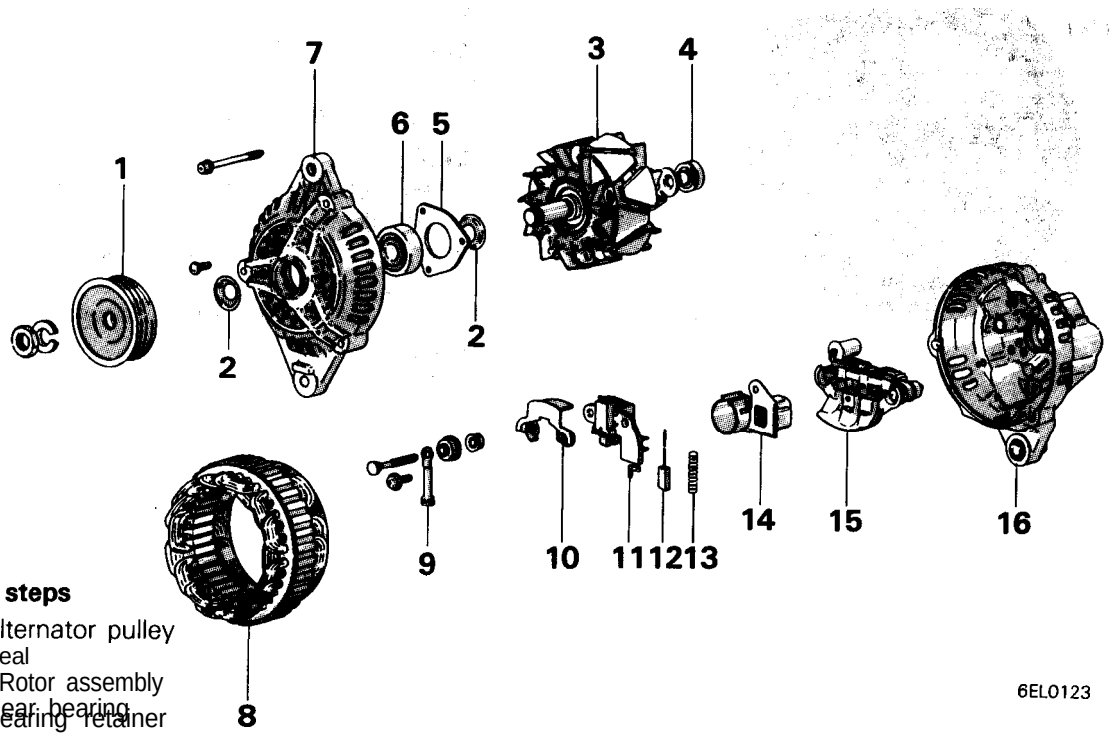
4./3. ADJUSTMENT OF DRIVE BELT TENSION

Refer to GROUP 7–Service Adjustment Procedures.
Refer to GROUP 19–Steering Oil Pump.

2. ADJUSTMENT OF DRIVE BELT TENSION

Refer to GROUP 24–Compressor.

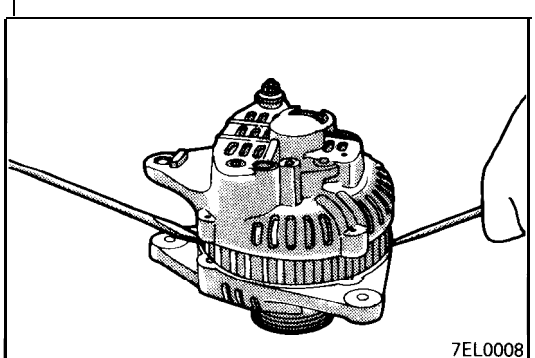
DISASSEMBLY AND REASSEMBLY

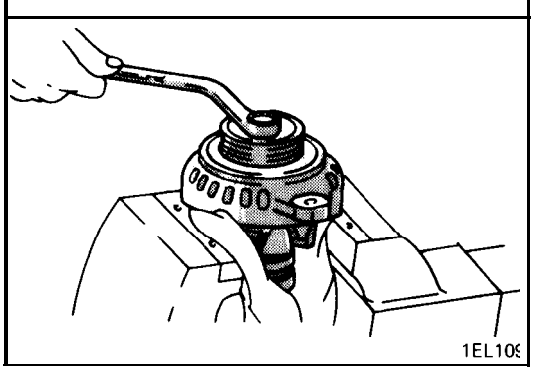


Disassembly steps

◆◆ 1. Alternator pulley
2. Seal
● a 3. Rotor assembly
4. Rear bearing
5. Bearing retainer
6. Front bearing
7. Front bearing
• ☒ 8. Stator
9. Terminal
10. Plate
11. Regulator and brush holder
12. Brush
13. Brush spring
14. Slinger
15. Rectifier
16. Rear bracket

NOTE
(1) Reverse the disassembly procedures. to reassemble.
(2) ◆◆: Refer to "Service Points of Disassembly".
(3) ● 4 : Refer to "Service Points of Reassembly".





SERVICE POINTS OF DISASSEMBLY

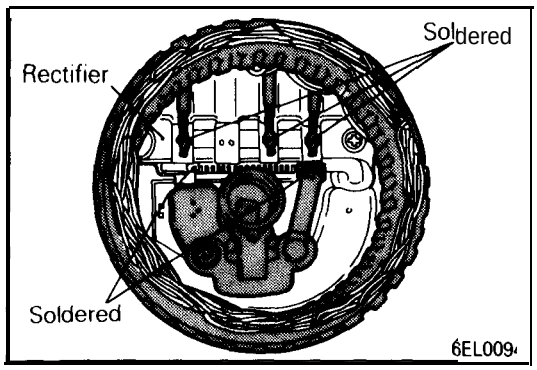
SEPARATION OF THE STATOR AND FRONT BRACKET

Insert plain screwdriver between front bracket and stator core and pry downward.

Caution
Do not insert screwdriver too deep, as there is danger of damage to stator coil.

1. REMOVAL OF ALTERNATOR PULLEY

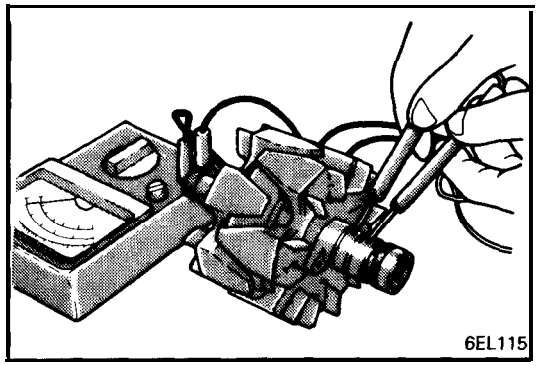
(1) Clamp the rotor in a vise with soft jaws.,,
(2) After removing the nut, remove the pulley and front bracket from the rotor.



8. REMOVAL OF STATOR

(1) When removing stator, unsolder three stator leads soldered to main diodes on rectifier.
(2) When removing rectifier from brush holder, unsolder two soldered points to rectifier.

Caution
When soldering or unsoldering, use care to make sure that heat of soldering iron is not transmitted to diodes for a long period. Finish soldering or unsoldering in as short a time as possible.
Use care that no undue force is exerted to leads of diodes.

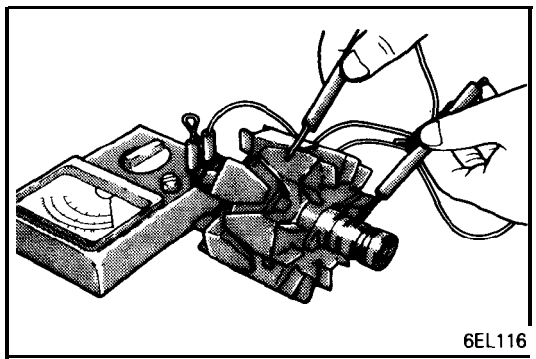


INSPECTION

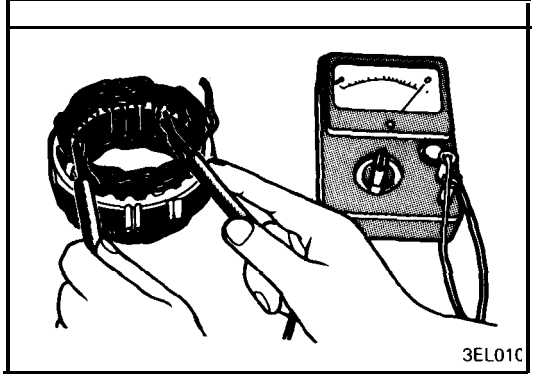
ROTOR

(1) Check rotor coil for continuity. Check to ensure that there is continuity between slip rings.
If resistance is extremely small, it means that there is a short. If there is no continuity or if there is short circuit, replace rotor assembly.

Resistance value: 3–5 Ω

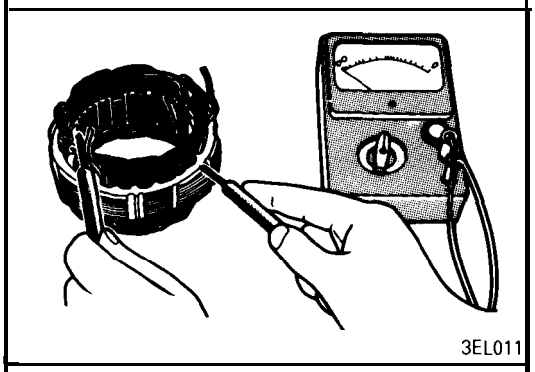


(2) Check rotor coil for grounding. Check to ensure that there is no continuity between slip ring and core. If there is continuity, replace rotor assembly.



STATOR

(1) Make continuity test on stator coil. Check to ensure that there is continuity between coil leads.
If there is no continuity, replace stator assembly.

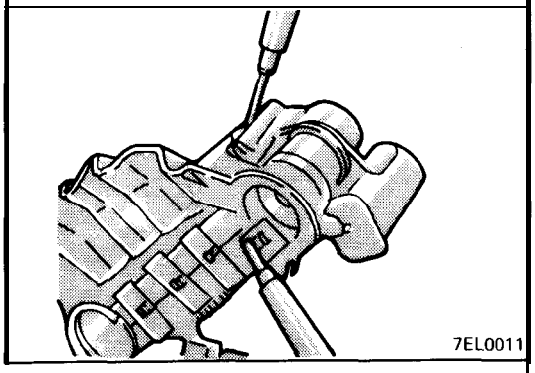

3EL011

(2) Check coil for grounding. Check to ensure that there is no continuity between coil and core. If there is continuity, replace stator assembly.

RECTIFIERS

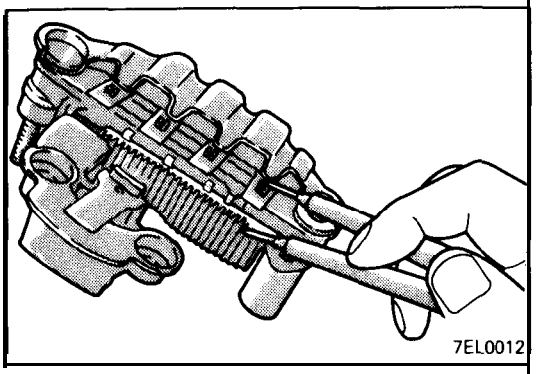
(1) Positive Rectifier Test

Check for continuity between positive rectifier and stator coil lead connection terminal with a circuit tester. If there is continuity in both directions, diode is shorted. Replace rectifier assembly.


7EL0011

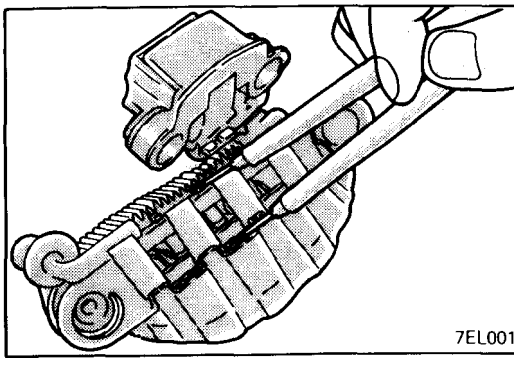
(2) Negative Rectifier Test

Check for continuity between negative rectifier and stator coil lead connection terminal. If there is continuity in both direction, diode is shorted, and rectifier assembly must be replaced.


7EL0012

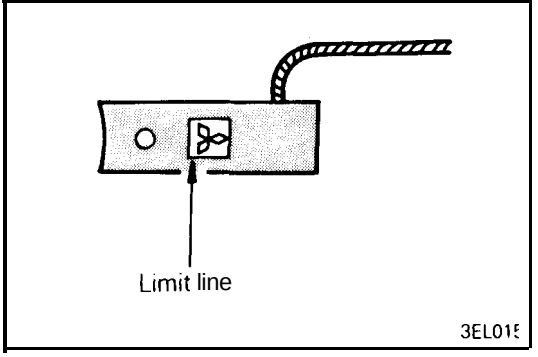
(3) Diode Trio Test

Check three diodes for continuity by connecting a circuit tester to both ends of each diode. If there is no continuity in both directions, diode is faulty and heatsink assembly must be replaced.

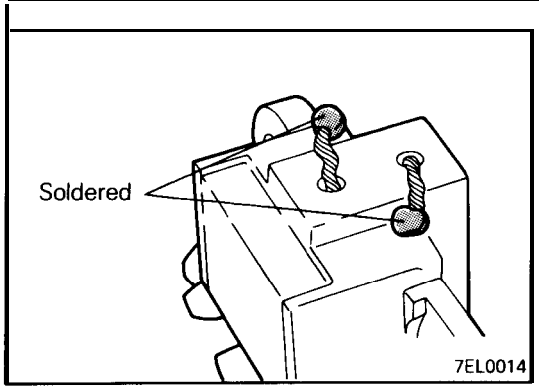

7EL001

BRUSH REPLACEMENT

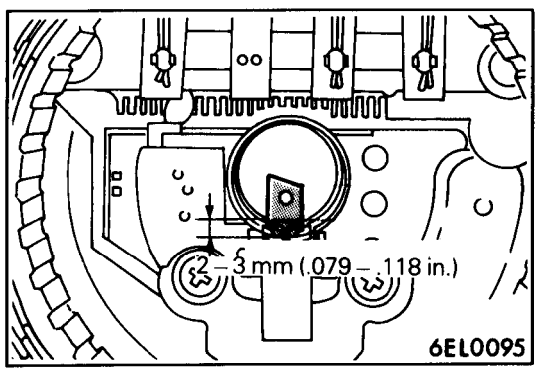
(1) Replace brush by the following procedures if it has been worn to limit line.



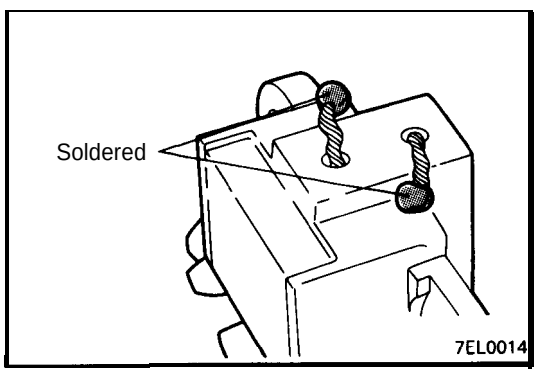
3EL015



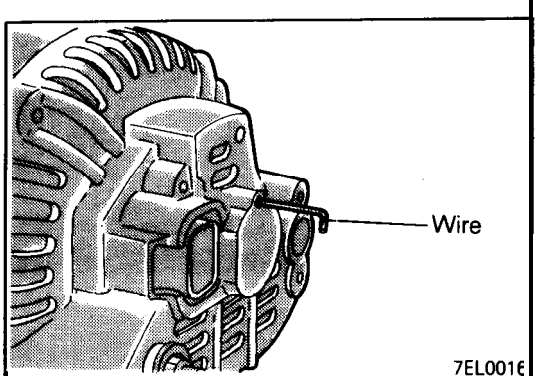
(2) Unsolder pigtail and remove old brush and spring.

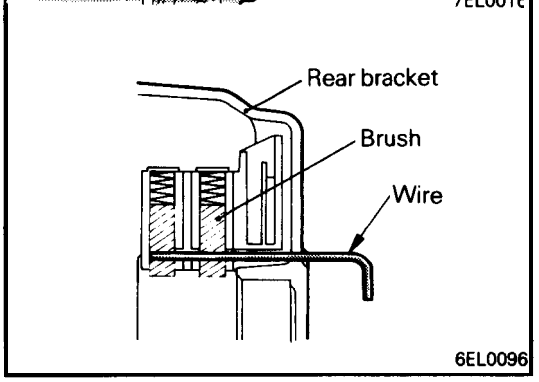


(3) Install brush spring and new brush in brush holder.
(4) insert the brush to where there is a space 2 to 3 mm (.079 to .118 in.) between the limit line and the end of the brush holder.



(5) Solder pigtail to brush holder as shown in the illustration.





SERVICE POINTS OF REASSEMBLY

3. INSTALLATION OF ROTOR ASSEMBLY

Before rotor is attached to rear bracket, insert wire through small hole made in rear bracket to lift brush. After rotor has been installed, remove the wire.

STARTING SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08FB-

Items	1.8L Engine	2.0L DOHC Engine
Starter motor		
Type	Direct drive	Reduction drive
Rated output kW/V	0.9/12	1.2/12
No. of pinion teeth	8	8

SERVICE SPECIFICATIONS

N08FC-

Items	Specifications
Standard value	
Starter motor	
Direct drive type	
Free running characteristics	
Terminal voltage V	11.5
Current A	60 or less
Speed rpm	6,600 or more
Pinion gap mm (in.)	0.5–2.0 (.020–.079)
Commutator runout mm (in.)	0.05 (.002)
Commutator diameter mm (in.)	32 (1.26)
Undercut depth mm (in.)	0.5 (.020)
Reduction drive type	
Free running characteristics	
Terminal voltage V	11
Current A	90 or less
Speed rpm	3,000 or more
Pinion gap mm (in.)	0.5–2.0 (.020–.079)
Commutator runout mm (in.)	0.05 (.002)
Commutator diameter mm (in.)	29.4 (1.158)
Undercut depth mm (in.)	0.5 (.020)
Limit	
Direct drive type	
Commutator runout mm (in.)	0.1 (.004)
Commutator diameter mm (in.)	31 (1.22)
Reduction drive type	
Commutator runout mm (in.)	0.1 (.004)
Commutator diameter mm (in.)	28.4 (1.118)

TORQUE SPECIFICATIONS

N08FD--

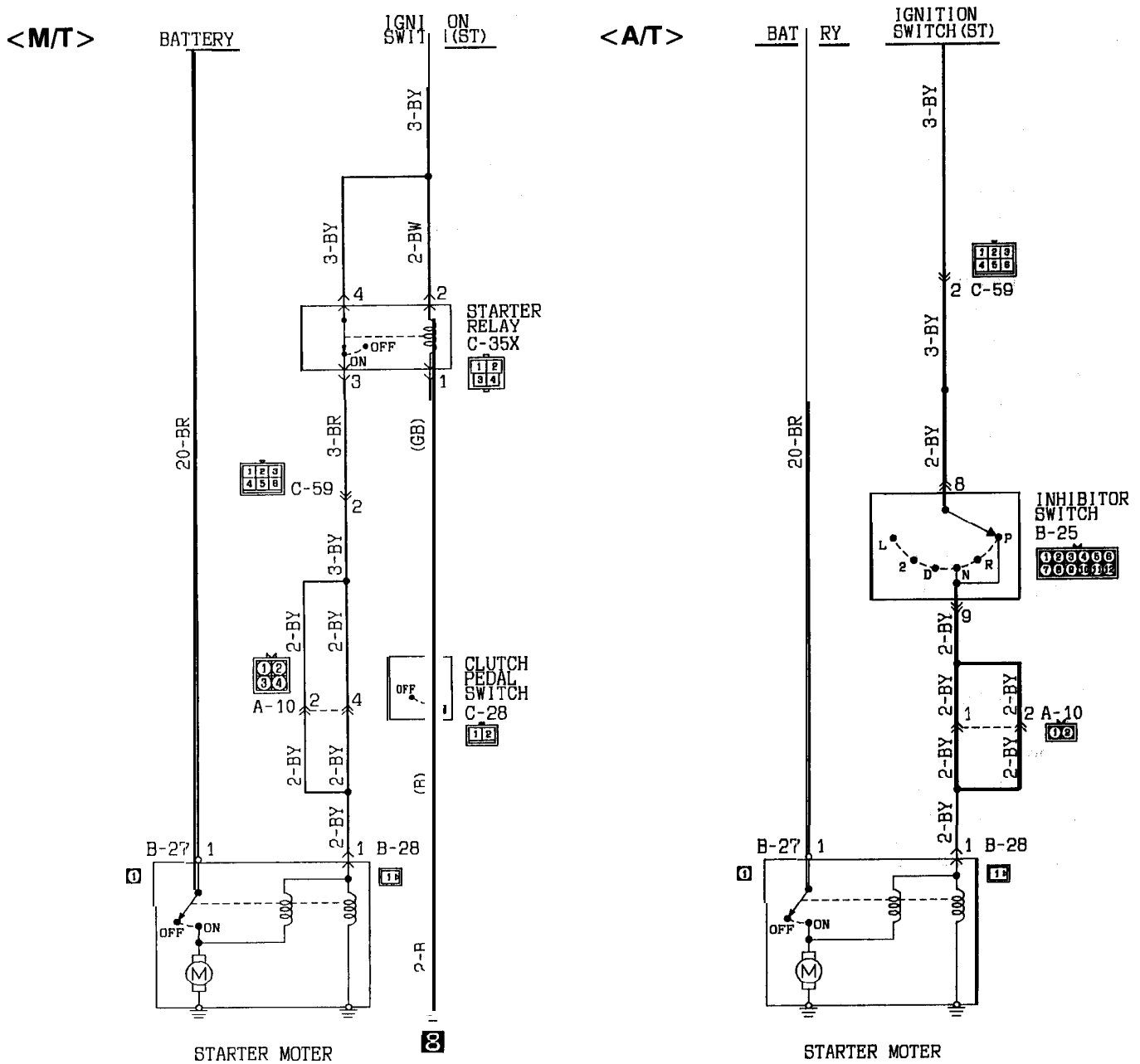
Items	Nm	ft.lbs.
Starter motor mounting bolts	27-34	20–25
Starter wiring harness connector mounting nut	10–16	7-11
Battery holder mounting bolts	2-3	1.5–2
Battery tray mounting bolts	9-14	6–10
Intake manifold stay mounting bolts	18–25	13-18

TROUBLESHOOTING

N08FHAFa

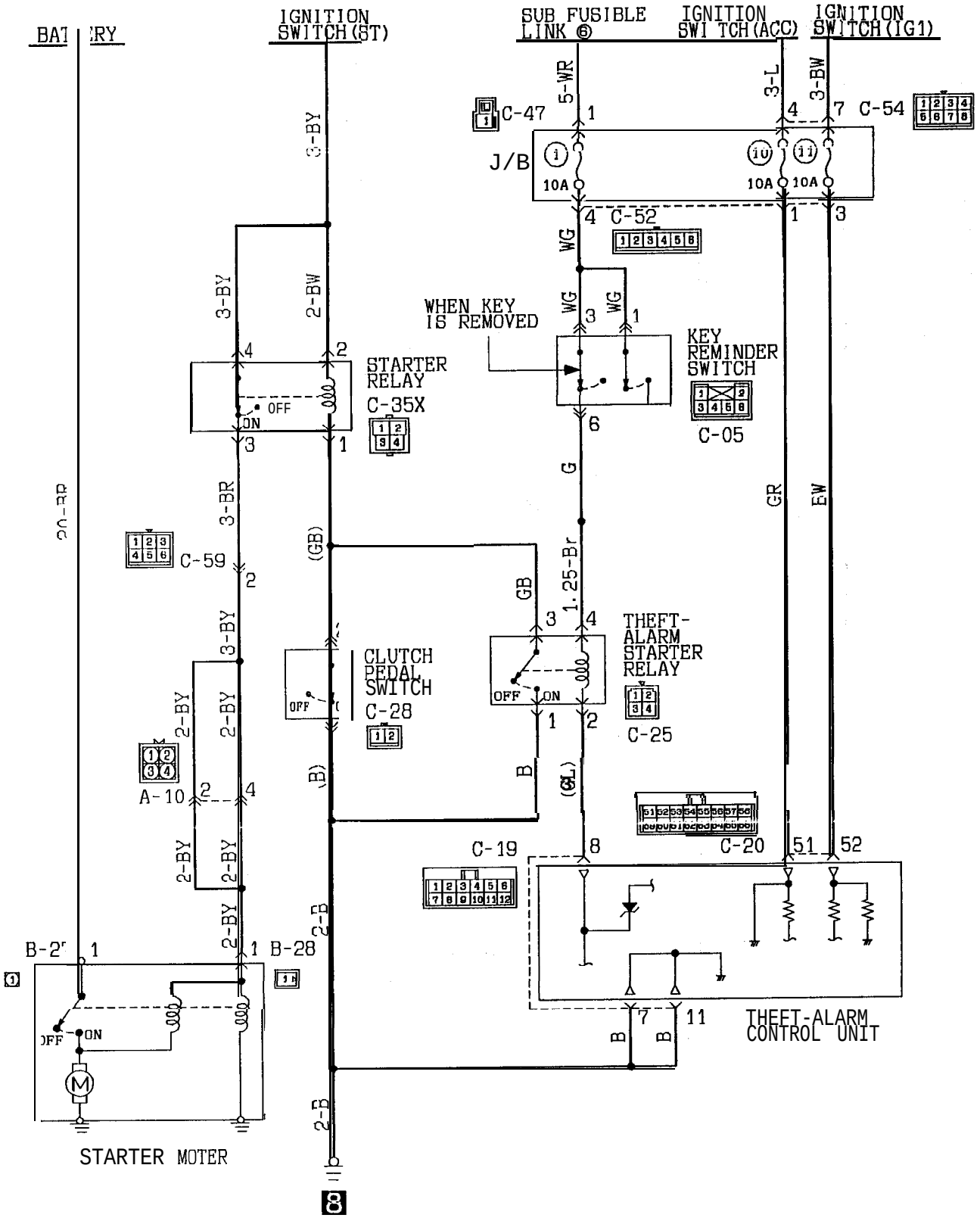
CIRCUIT DIAGRAM

Vehicles without theft-alarm system

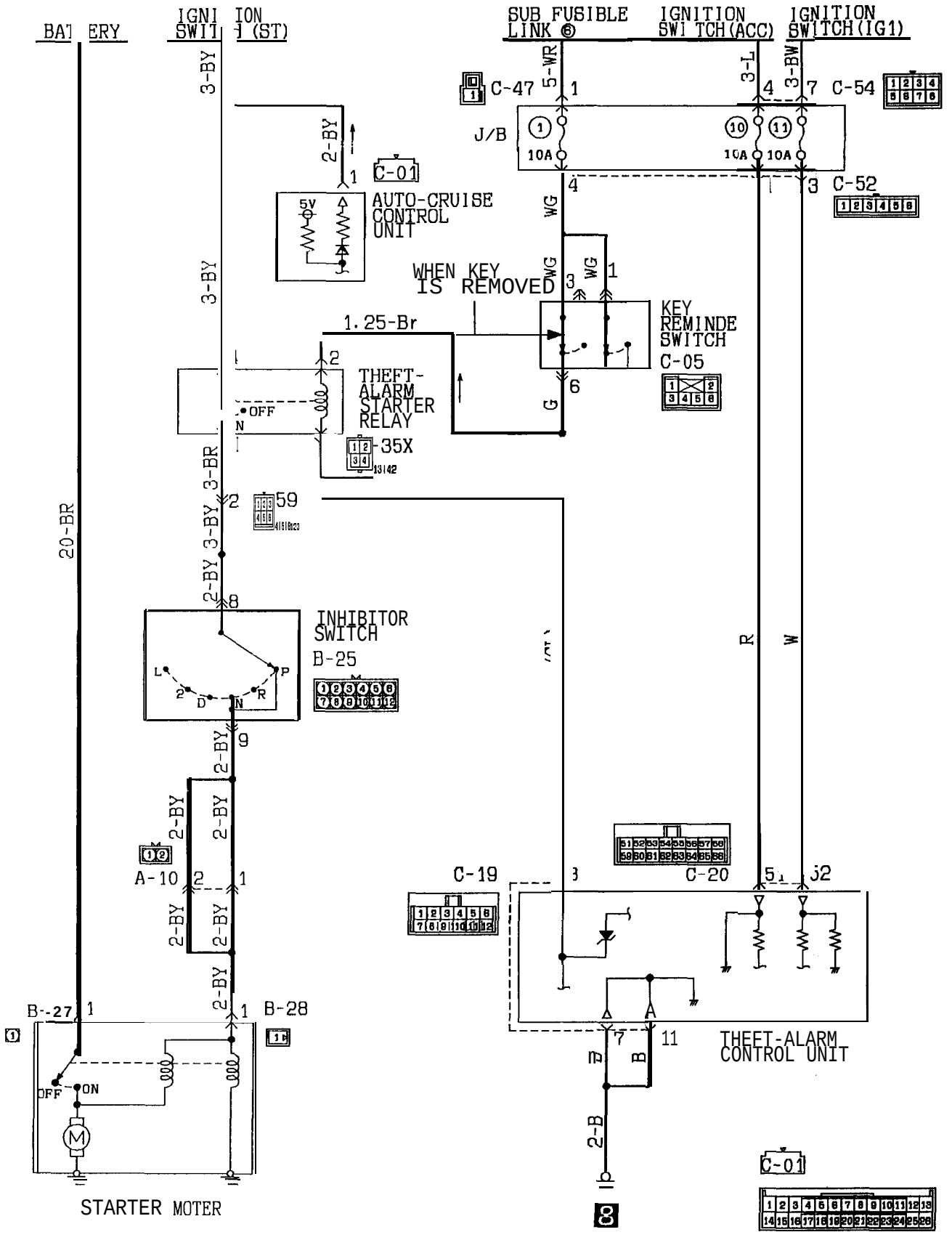


KX35-AC-U0204-NC

Vehicles with theft-alarm system <M/T>



Vehicles with theft-alarm <A/T>



X35-AC-U0206-NC

OPERATION

- For models equipped with the M/T, the clutch pedal switch contact is switched OFF when the clutch pedal is depressed; when the ignition switch is then switched to the "ST" position, electricity flows to the starter relay and the starter motor, the contact (magnetic switch) of the starter is switched ON and the starter motor is activated.

  NOTE
  If the ignition switch is switched to the "ST" position without the clutch pedal being depressed, electricity flows to the starter relay (coil), the clutch switch (contacts) and to ground, with the result that the contacts of the starter relay are switched OFF, and, because the power to the starter motor is thereby interrupted, the starter motor is not activated.

- For models equipped with the A/T, when the ignition switch is switched to the "ST" position while the selector lever is at the "P" or "N" position, the contact (magnetic switch) of the starter is switched ON and the starter motor is activated.

TROUBLESHOOTING HINTS

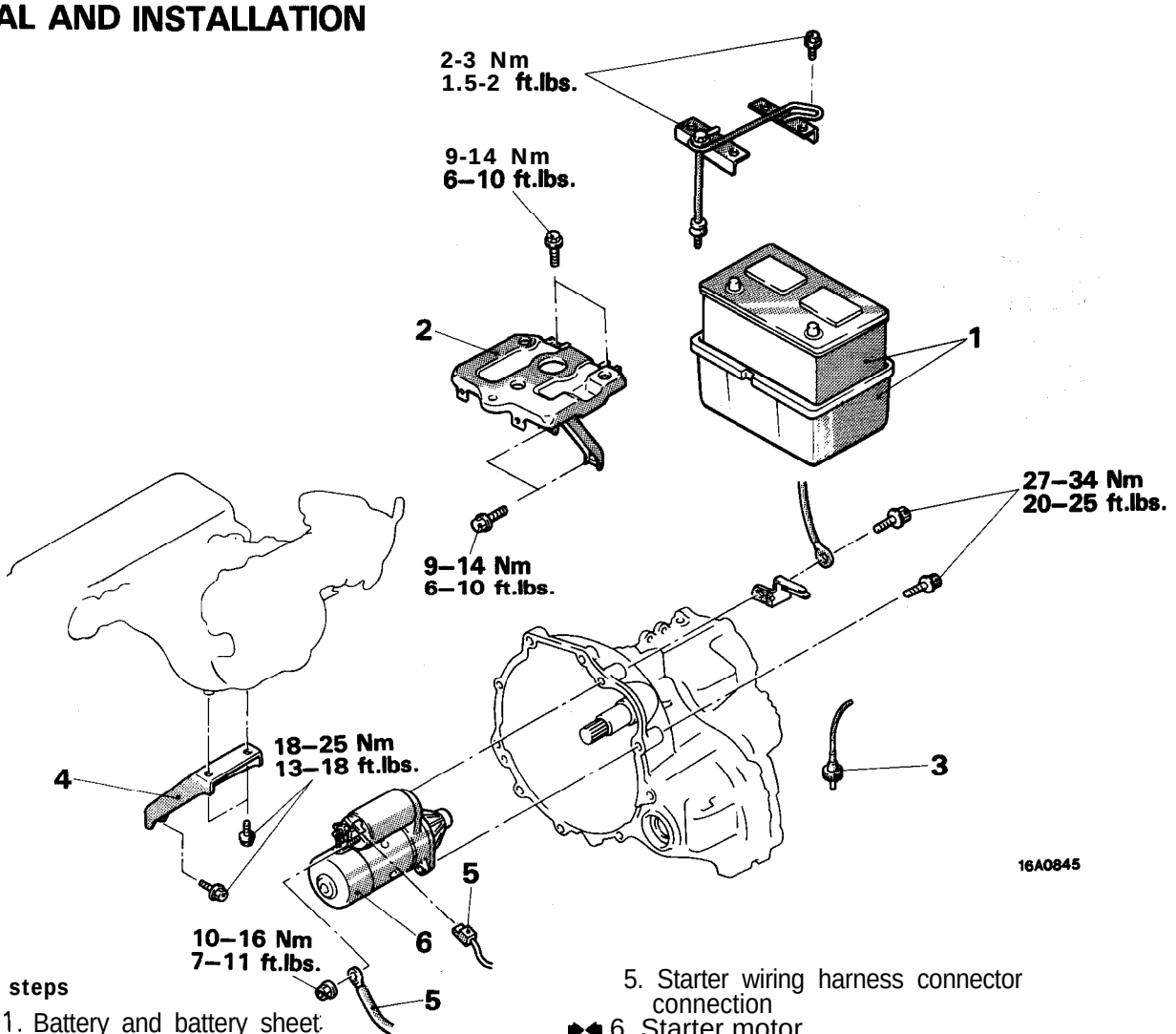
1. The starter motor does not operate at all.
   - Check the starter (coil).
   - Check for poor contact at the battery terminals.
2. The starter motor doesn't stop.
   - Check the starter (magnetic switch).

NOTE
For information concerning the starter relay and theft-alarm starter relay, refer to P.8-159,160 and for the theft-alarm system, refer to P.8-300.

STARTER MOTOR

N08FJAQ

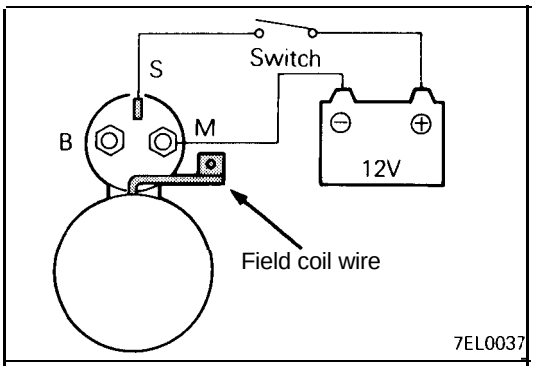
REMOVAL AND INSTALLATION



Removal steps

1. Battery and battery sheet
2. Battery tray
3. Connection on the transaxle side of the speedometer cable
4. Intake manifold stay <1.8L Engine>
5. Starter wiring harness connector connection
6. Starter motor

NOTE
Reverse the removal procedures to reinstall.

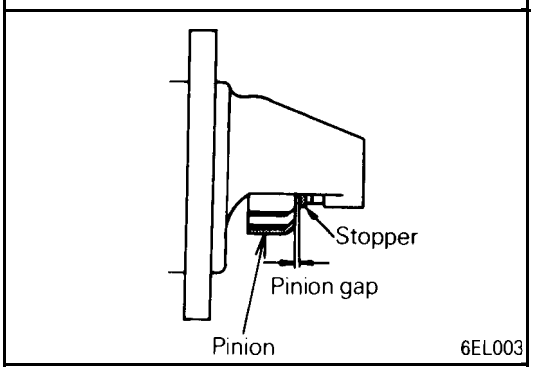


INSPECTION

PINION GAP ADJUSTMENT

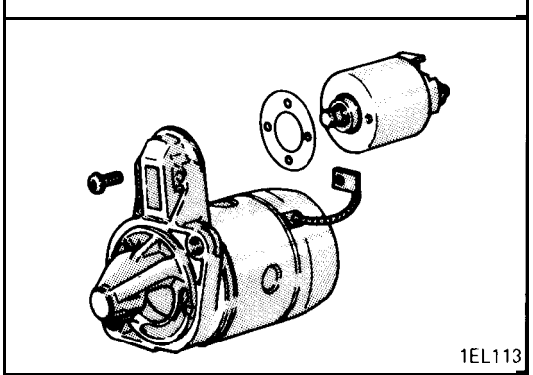
(1) Disconnect field coil wire from M-terminal of magnetic switch.
(2) Connect a 12V battery between S-terminal and M-terminal.
(3) Set switch to "ON", and pinion will move out.

Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.



(4) Check pinion to stopper clearance (pinion gap) with a feeler gauge.

Pinion gap: 0.5–2.0 mm (.020–.079 in.)



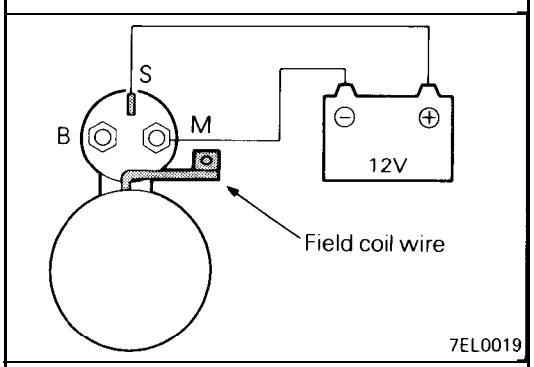
(5) If pinion gap is out of specification, adjust by adding or removing gaskets between magnetic switch and front bracket.

PULL-IN TEST OF MAGNETIC SWITCH

(1) Disconnect field coil wire from M-terminal of magnetic switch.
(2) Connect a 12V battery between S-terminal and M-terminal.

Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.

(3) If pinion moves out, then pull-in coil is good. If it doesn't, replace magnetic switch.

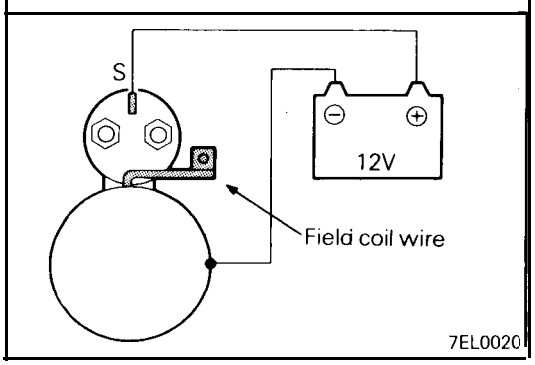


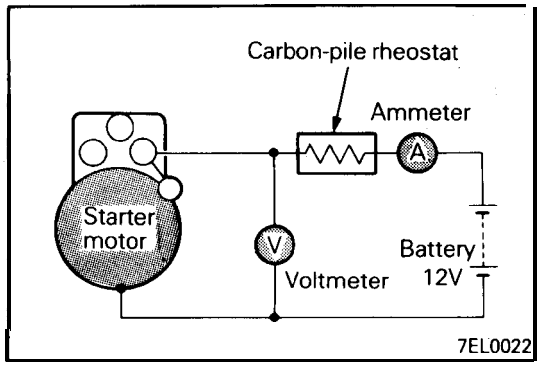
HOLD-IN TEST OF MAGNETIC SWITCH

(1) Disconnect field coil wire from M-terminal of magnetic switch.
(2) Connect a 12V battery between S-terminal and body.

Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.

(3) If pinion remains out, everything is in order. If pinion moves in, hold-in circuit is open. Replace magnetic switch.

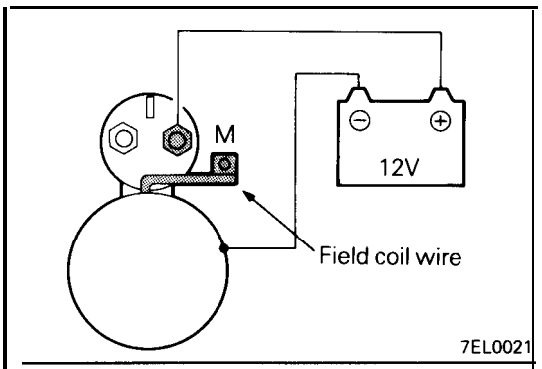




FREE RUNNING TEST

(1) Place starter motor in a vise equipped with soft jaws and connect a fully-charged 12-volt battery to starter motor as follows:
(2) Connect a test ammeter (100-ampere scale) and carbon pile rheostat in series with batten/ positive post and starter motor terminal.
(3) Connect a voltmeter (15-volt scale) across starter motor.
(4) Rotate carbon pile to full-resistance position.
(5) Connect battery cable from battery negative post to starter motor body.
(6) Adjust the rheostat until the battery voltage shown by the voltmeter is 11.5V (for the directdrive type) or 1 IV (for the reduction-drive type).
(7) Confirm that the maximum amperage is within the specifications and that the starter motor turns smoothly and freely.

Current: Max. 60 Amps (Direct drive type)
Max. 90 Amps (Reduction drive type)

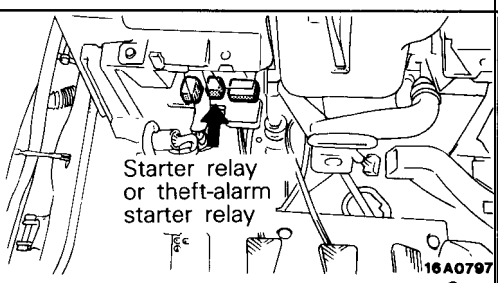


RETURN TEST OF MAGNETIC SWITCH

(1) Disconnect field coil wire from M-terminal of magnetic switch.
(2) Connect a 12V battery between M-terminal and body.

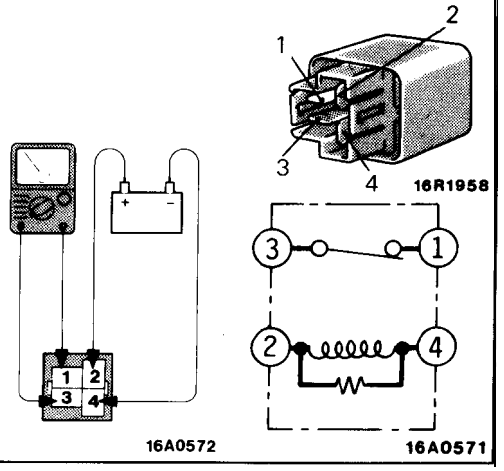
Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.

(3) Pull pinion out and release. If pinion quickly returns to its original position, everything is in order. If it doesn't, replace magnetic switch.

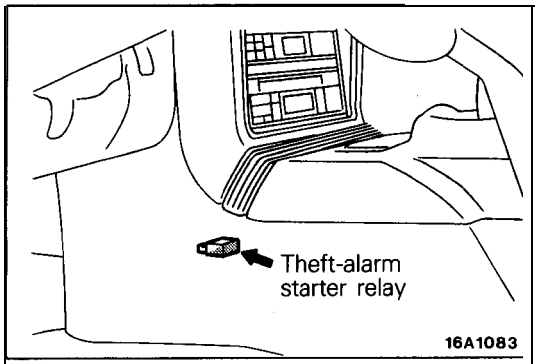


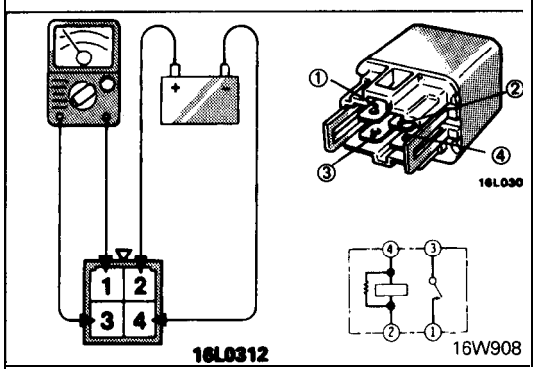
STARTER RELAY <M/T>
THEFT-ALARM STARTER RELAY <A/T>

(1) Remove the knee protector.
(Refer to GROUP 23–Instrument Panel.)
(2) Remove the relay from the underside of the relay box.
(3) Connect battery to terminal 2 and check continuity between terminals with terminal 4 grounded.



Power is supplied	1–3 terminals	No continuity
Power is not supplied	1–3 terminals	Continuity
	2-4 terminals	Continuity





THEFT-ALARM STARTER RELAY <M/T>

(1) Remove the floor console.
(Refer to GROUP 23–Floor Console.)
(2) Take out the theft-alarm starter relay.
(3) Connect battery to terminal 2 and check continuity between terminals with terminal 4 grounded.

Power is supplied	1–3 terminals	Continuity
Power is not supplied	1–3 terminals	No continuity
	2-4 terminals	Continuity

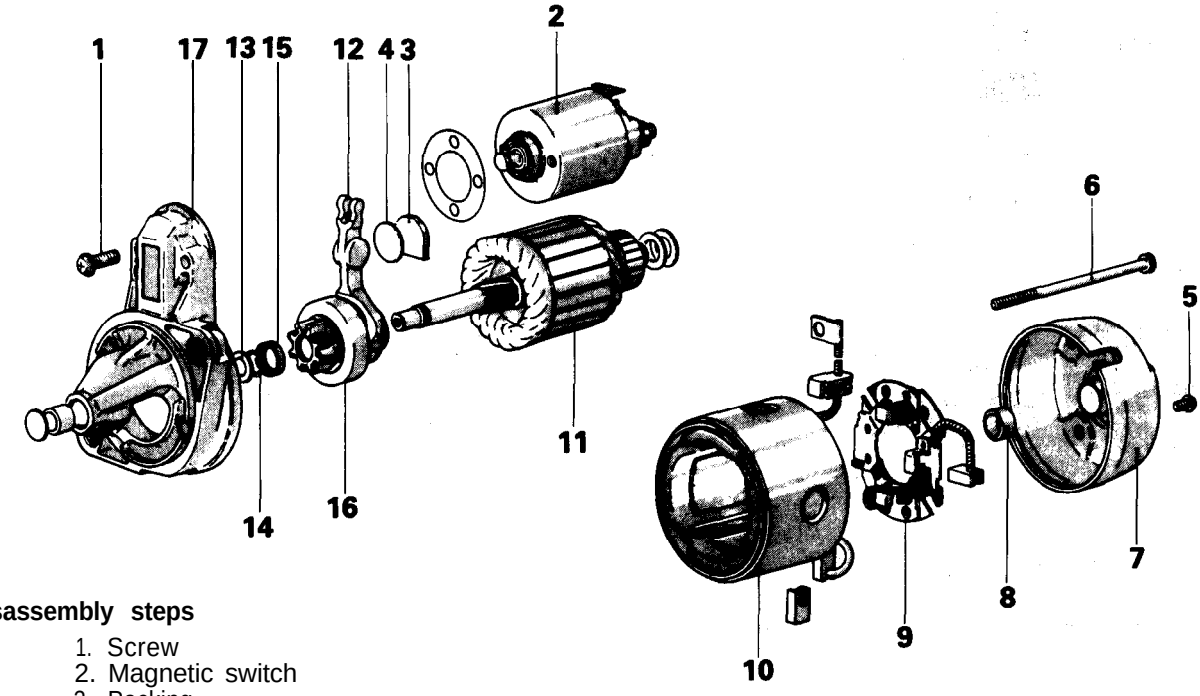
SERVICE POINTS OF INSTALLATION

6. INSTALLATION OF STARTER MOTOR

Clean both surfaces of starter motor flange and rear plate.

STARTER MOTOR (DIRECT DRIVE TYPE)

DISASSEMBLY AND REASSEMBLY

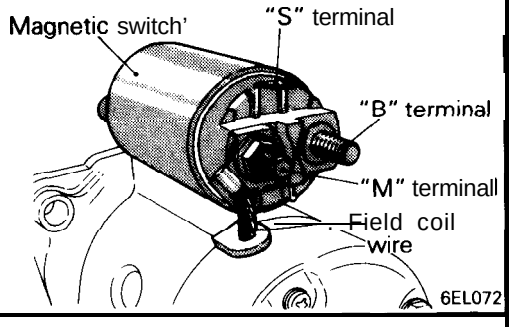


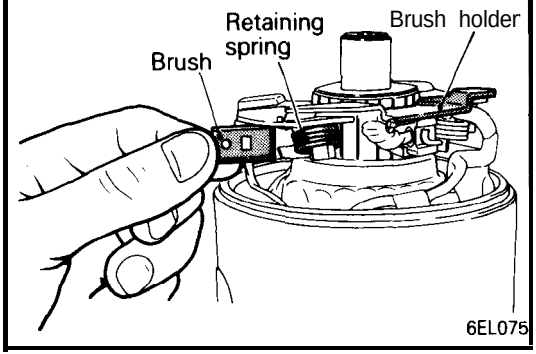
Disassembly steps

1. Screw
2. ◆◆ Magnetic switch
3. Packing
4. Plate
5. Screw
6. Through bolt
7. Rear bracket
8. Rear bearing
9. ◆◆ Brush holder assembly
10. Yoke assembly
11. Armature
12. Lever
13. Washer
14. ◆◆ ◆◆ Snap ring
15. ◆◆ ● * Stop ring
16. Overrunning clutch
17. Front bracket

1EL098

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆: Refer to "Service Points of Disassembly".
(3) ● O: Refer to "Service Points of Reassembly".





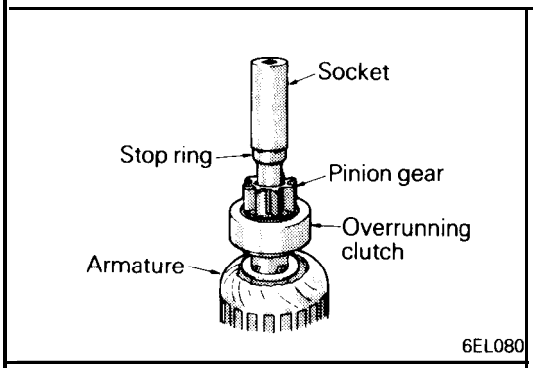
SERVICE POINTS OF DISASSEMBLY

2. REMOVAL OF MAGNETIC SWITCH

Disconnect field coil wire from "M" terminal of magnetic switch.

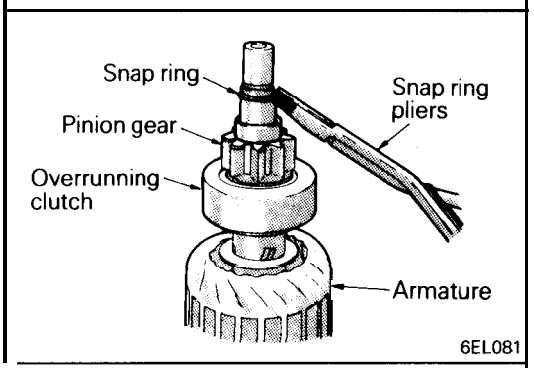
9. REMOVAL OF BRUSH HOLDER ASSEMBLY

Slide the two brushes from brush holder by prying retaining springs back.



14. REMOVAL OF SNAP RING/ 15. STOP RING

(1) Press stop ring off snap ring with a suitable socket.



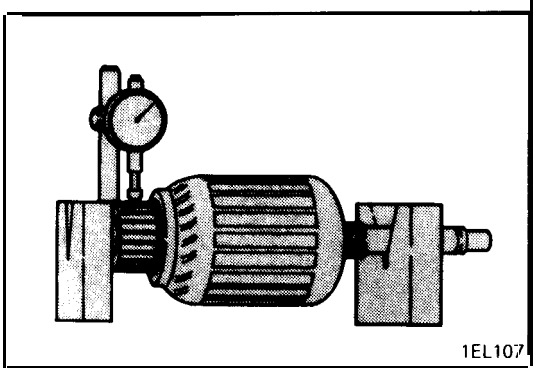
(2) Remove snap ring with snap ring pliers and then remove stop ring and overrunning clutch.

CLEANING STARTER MOTOR PARTS

1. Do not immerse parts in cleaning solvent. Immersing the yoke and field coil assembly and/or armature will damage insulation. Wipe these parts with a cloth only.
2. Do not immerse drive unit in cleaning solvent. Overrunning clutch is pre-lubricated at the factory and solvent will wash lubrication from clutch.
3. The drive unit may be cleaned with a brush moistened with cleaning solvent and wiped dry with a cloth.

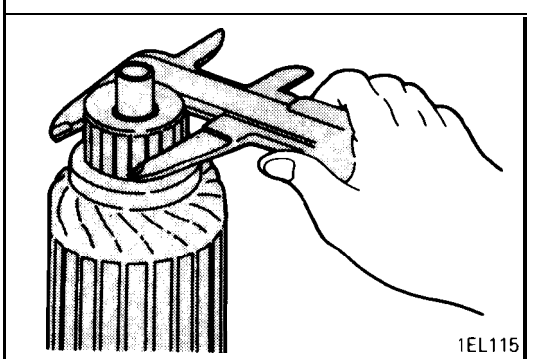
INSPECTION

INSPECTION OF COMMUTATOR



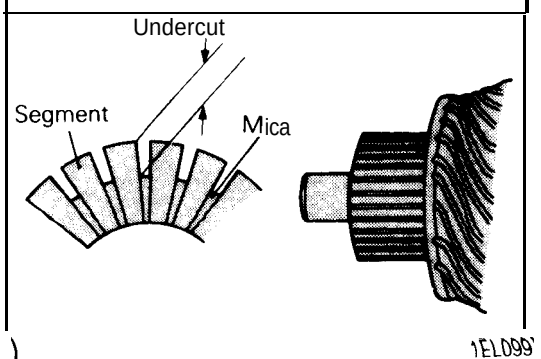
(1) Place the armature in a pair of "V" blocks and check the runout with a dial indicator.

Standard value: 0.05 mm (.002 in.)
Limit: 0.1 mm (.004 in.)



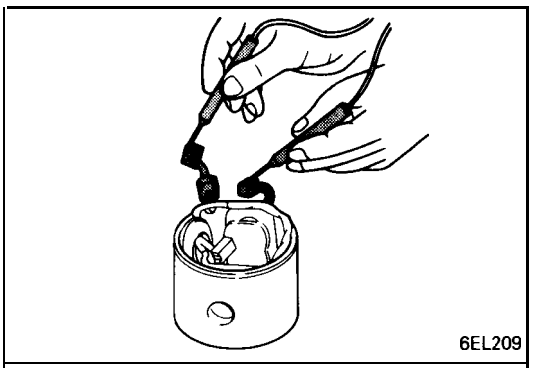
(2) Measure the commutator outer diameter.

Standard value: 32 mm (1.26 in.)
Limit: 31 mm (1.22 in.)



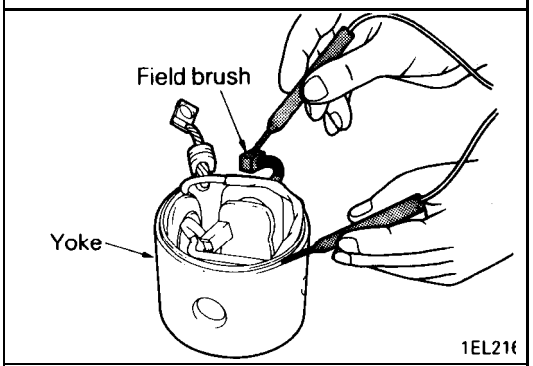
(3) Check the undercut depth between segments.

Standard value: 0.5 mm (.020 in.)


6EL209

TESTING FIELD COILS FOR GROUNDING

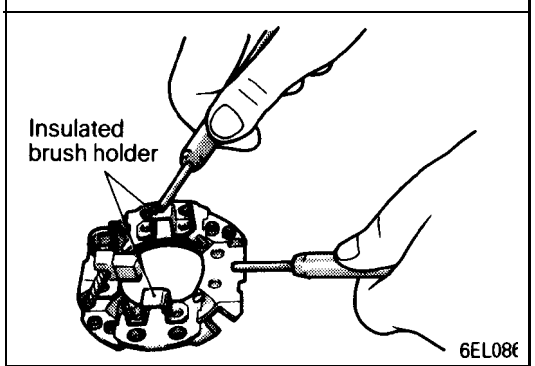
Check the continuity between field brushes. If there is continuity, the field coil is in order.



1EL21(

TESTING FIELD COIL FOR GROUNDING

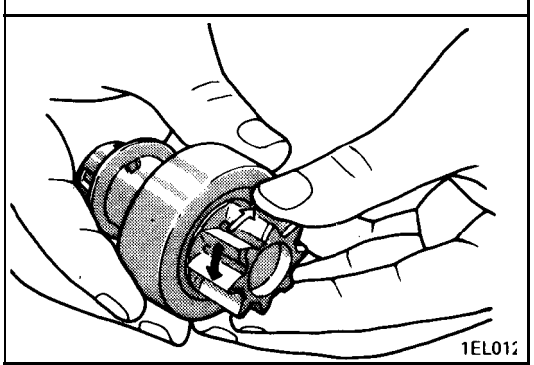
Check the continuity between field coil brush and yoke. If there is no continuity, the field coil is free from grounding.



6EL08(

BRUSH HOLDER

Check the continuity between brush holder plate and brush holder.
If there is no continuity, the brush holder is in order.

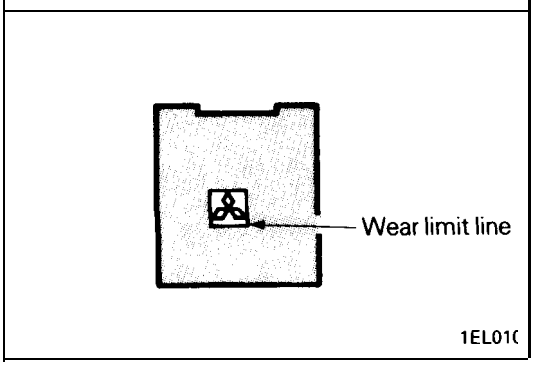

1EL01(

OVERRUNNING CLUTCH

1. While holding clutch housing, rotate the pinion. Drive pinion should rotate smoothly in one direction, but should not rotate in opposite direction. If clutch does, not function properly, replace overrunning clutch assembly.
2. Inspect pinion for wear or burrs. If pinion is worn or burred, replace overrunning clutch assembly. If pinion is damaged, also inspect ring gear for wear or burrs.

FRONT AND REAR BRACKET BUSHING

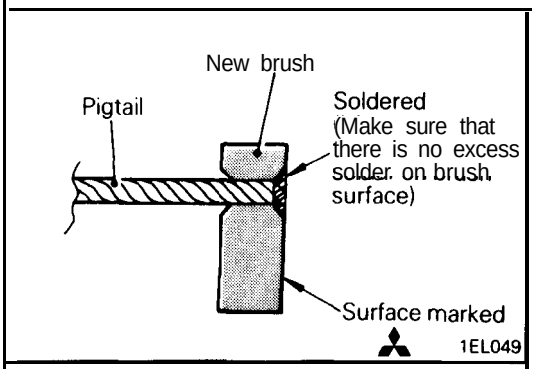
Inspect bushing for wear or burrs. If bushing is worn or burred, replace front bracket assembly or rear bracket assembly.



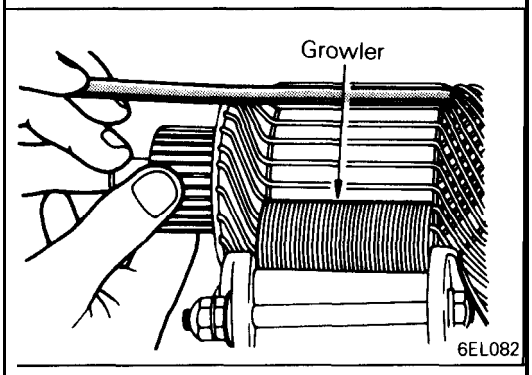
1EL01(

BRUSHES AND SPRINGS–REPLACEMENT

1. Brushes that are worn beyond wear limit line, or are oil-soaked, should be replaced.
2. When replacing field coil brushed, crush worn brush with pliers, taking care not to damage pigtail.



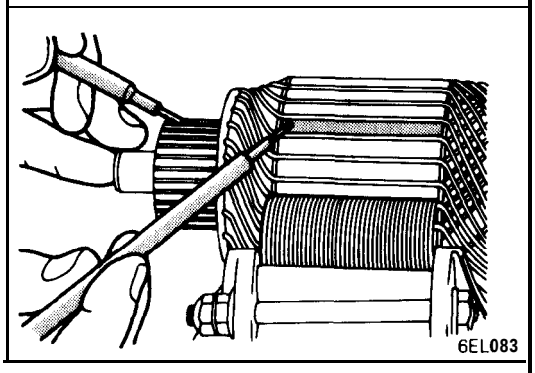
3. Sand pigtail end with sandpaper to ensure good soldering.
4. Insert pigtail into hole provided in new brush and solder it. Make sure that pigtail and excess solder do not come out onto brush surface.
5. When replacing ground brush, slide the brush from brush holder by prying retaining spring back.



TESTING ARMATURE

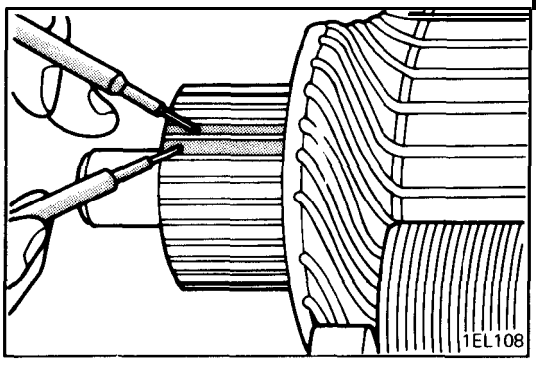
TESTING ARMATURE FOR SHORT-CIRCUIT

1. Place armature in a growler.
2. Hold a thin steel blade parallel and just above while rotating armature slowly in growler. A shorted armature will cause blade to vibrate and be attracted to the core. Replace shorted armature.



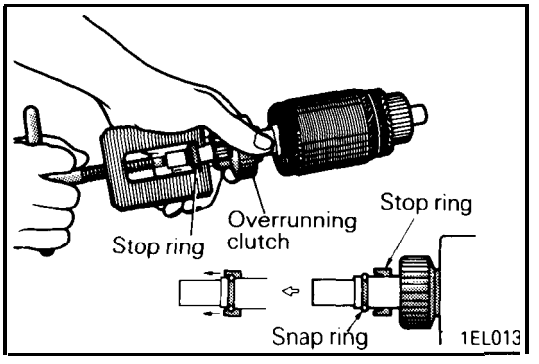
TESTING ARMATURE COIL FOR GROUNDING

Check the insulation between each commutator segment and armature coil core.
If there is no continuity, the insulation is in order.



INSPECTION OF ARMATURE COIL CONTINUITY

Check the continuity between segments. If there is continuity, the coil is in order.



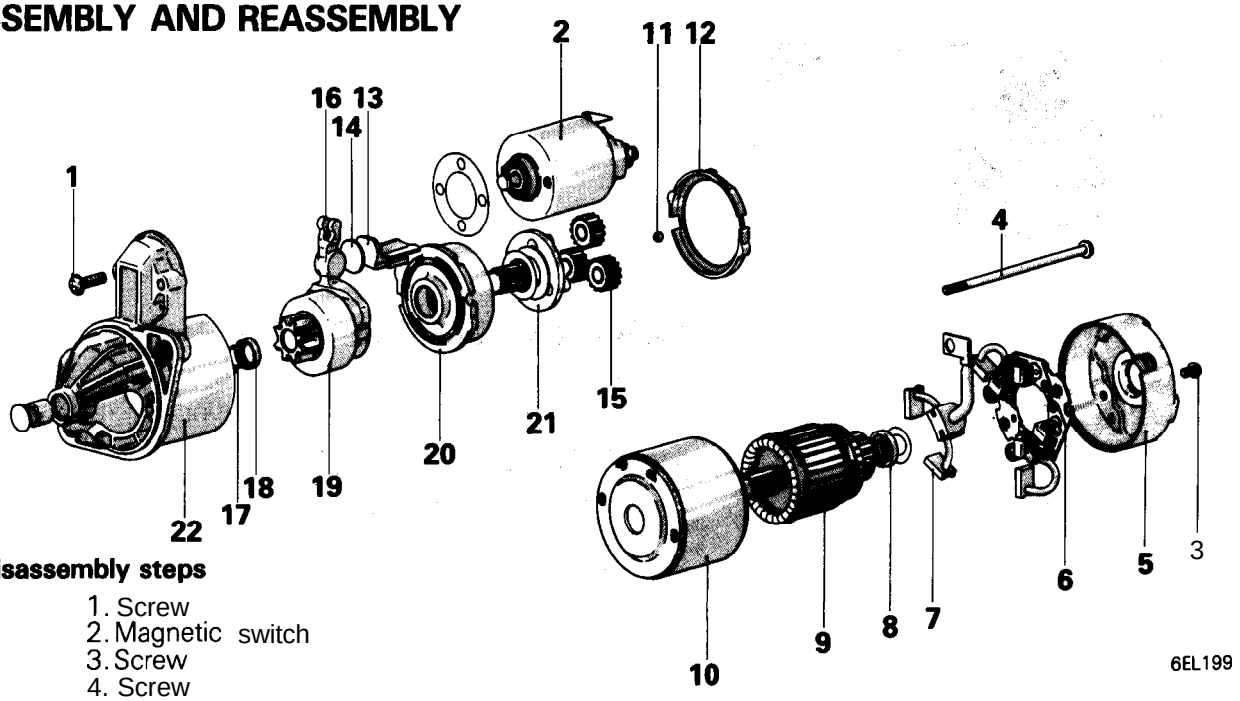
SERVICE POINTS OF REASSEMBLY

15. INSTALLATION OF STOP RING/ 14. SNAP RING

Using a suitable pulling tool, pull overrunning clutch stop ring over snap ring.

STARTER MOTOR (REDUCTION DRIVE TYPE)

DISASSEMBLY AND REASSEMBLY



Disassembly steps

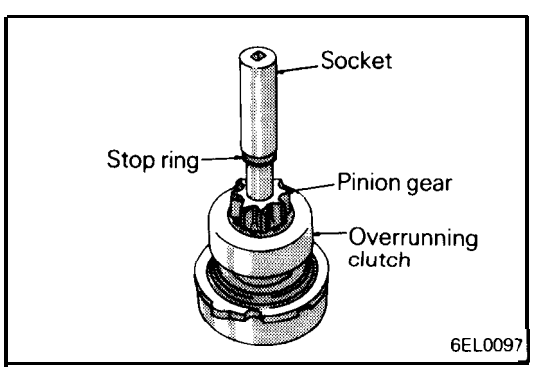
1. Screw
2. Magnetic switch
3. Screw
4. Screw
5. Rear bracket
6. Brush holder
7. Brush
8. Rear bearing
◆◆ 9. Armature
10. Yoke assembly
◆◆ 11. Ball
12. Packing A
13. Packing B
14. Plate
15. Planetary gear
16. Lever
◆◆ ◆◆ 17. Snap ring
◆◆ ◆◆ 18. Stop ring
19. Overrunning clutch
20. Internal gear
21. Planetary gear holder
22. Front bracket

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆: Refer to "Service Points of Disassembly".
(3) ● +: Refer to "Service Points of Reassembly".

SERVICE POINTS OF DISASSEMBLY

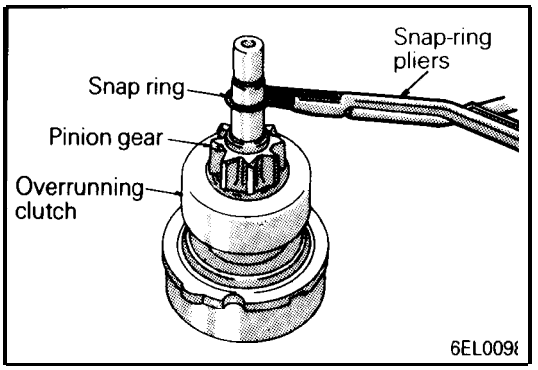
9. REMOVAL OF ARMATURE/ 11. BALL

Caution
When removing the armature, take care not to lose the ball (which is used as a bearing) in the armature end.



17. REMOVAL OF SNAP RING / 18. STOP RING

(1) Press the stop ring, by using an appropriate socket wrench, to the snap ring side.



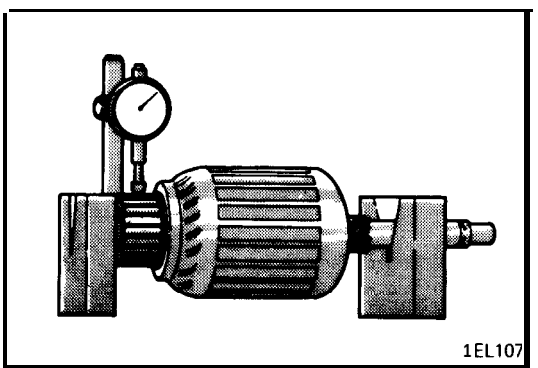
(2) After removing the snap ring (by using snap-ring pliers), remove the stop ring and the overrunning clutch.

CLEANING STARTER MOTOR PARTS

1. Do not immerse parts in cleaning solvent. Immersing the yoke and field coil assembly and/or armature will damage insulation. Wipe these parts with a cloth only.
2. Do not immerse drive unit in cleaning solvent. Overrunning clutch is pre-lubricated at the factory and solvent will wash lubrication from clutch.
3. The drive unit may be cleaned with a brush moistened with cleaning solvent and wiped dry with a cloth.

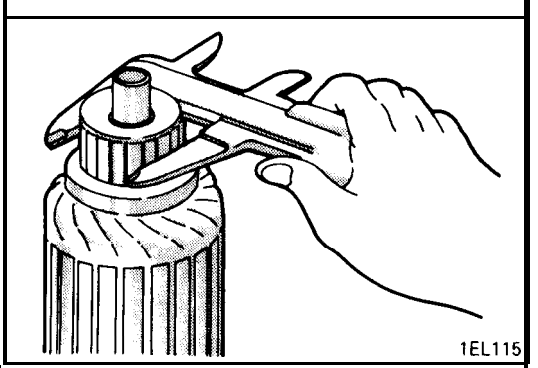
INSPECTION

CHECKING THE COMMUTATOR



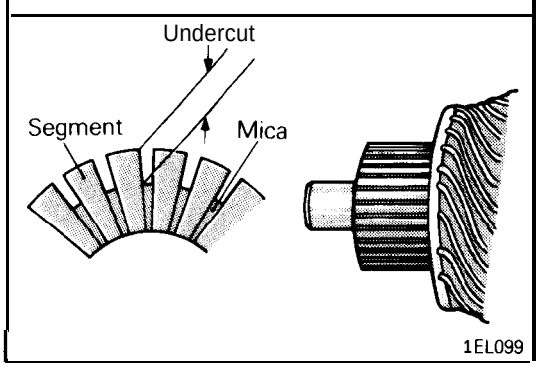
(1) Place the armature on a pair of V-blocks, and check the deflection by using a dial gauge.

Standard value: 0.05 mm (.002 in.)
Limit: 0.1 mm (.004 in.)



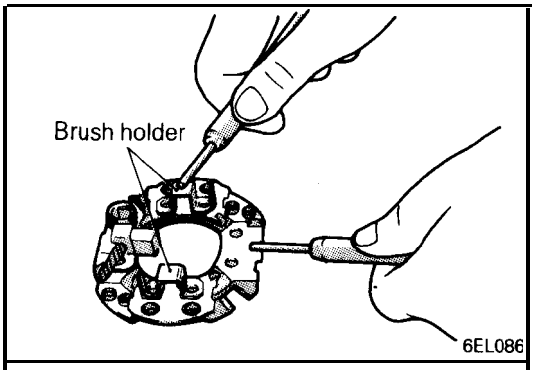
(2) Check the outer diameter of the commutator

Standard value: 29.4 mm (1.158 in.)
Limit: 28.4 mm (1.118 in.)



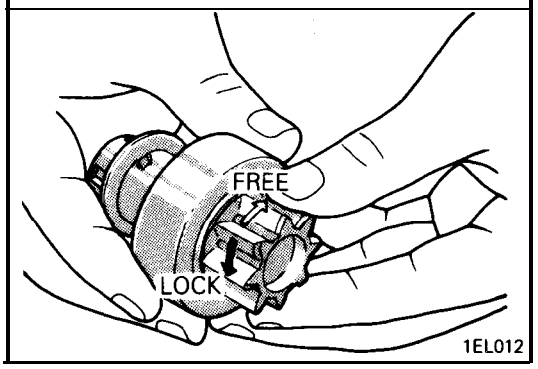
(3) Check the depth of the undercut between segments.

Standard value: 0.5 mm (.020 in.)



BRUSH HOLDER

Check for continuity between the brush holder plate and the brush holder.
The normal condition is non-continuity.

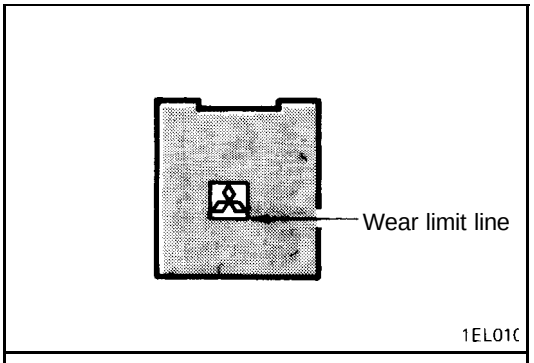


OVERRUNNING CLUTCH

1. While holding clutch housing, rotate the pinion. Drive pinion should rotate smoothly in one direction, but should not rotate in opposite direction. If clutch does not function properly, replace overrunning clutch assembly.
2. Inspect pinion for wear or burrs. If pinion is worn or burred, replace overrunning clutch assembly. If pinion is damaged, also inspect ring gear for wear or burrs.

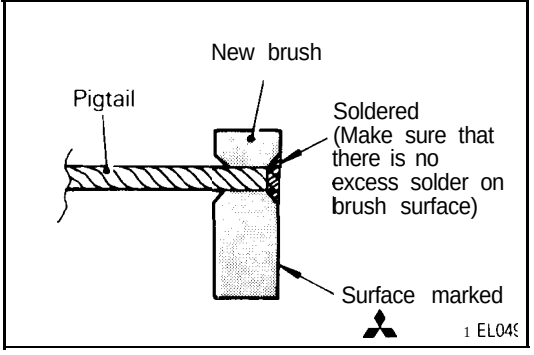
FRONT AND REAR BRACKET BUSHING

Inspect bushing for wear or burrs. If bushing is worn or burred, replace front bracket assembly or rear bracket assembly.

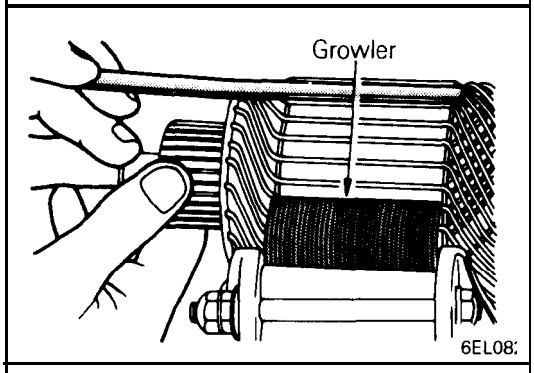


REPLACEMENT OF BRUSHES AND SPRINGS

1. Brushes that are worn beyond wear limit line, or oil-soaked, should be replaced.
2. When replacing field coil brushes, crush worn brush with pliers, taking care not to damage pigtail.



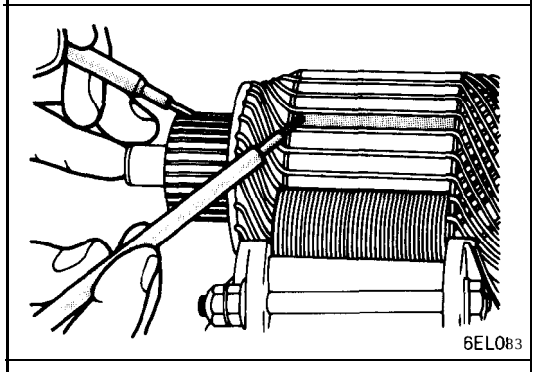
3. Sand pigtail end with sandpaper to ensure good soldering.
4. Insert pigtail into hole provided in new brush and solder it. Make sure that pigtail and excess solder do no come out onto brush surface.
5. When replacing ground brush, slide the brush from brush holder by prying retaining spring back.



TESTING ARMATURE

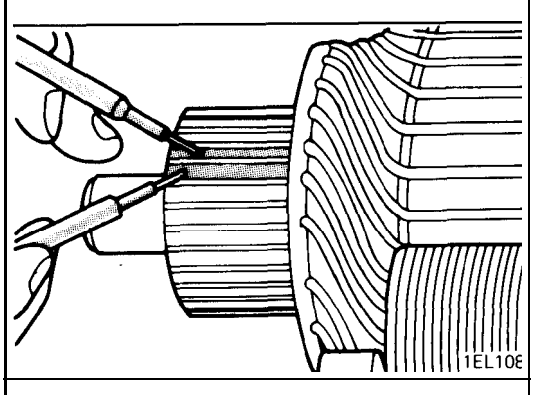
TESTING ARMATURE FOR SHORT-CIRCUIT

1. Place armature in a growler.
2. Hold a thin steel blade parallel and just above while rotating armature slowly in growler. A shorted armature will cause blade to vibrate and be attracted to the core. Replace shorted armature.



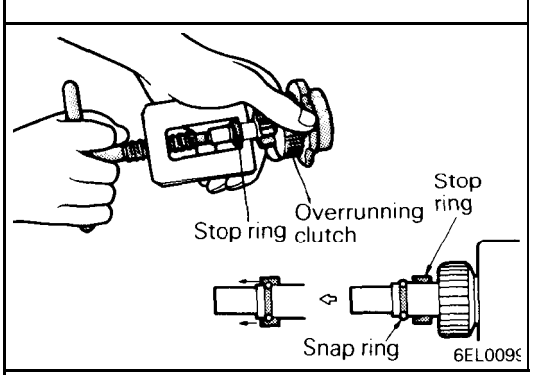
TESTING ARMATURE FOR GROUNDING

Check the insulation between the armature coil cores and the commutator segments. They are normal if there is no continuity.



CHECKING FOR ARMATURE COIL WIRING DAMAGE/ DISCONNECTION

Check for continuity between segments. The condition is normal if there is continuity.



SERVICE POINTS OF REASSEMBLY

18. INSTALLATION OF STOP RING/ 17. SNAP RING

Using a suitable pulling tool, pull overrunning clutch stop ring over snap ring,

IGNITION SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08GB--

DISTRIBUTOR

Items	1.8L Engine
Type	Contact pointless type
Identification No.	T6T5737 1
Part No.	MD1 55852
Advance mechanism	Controlled by engine control unit
Firing order	1–3–4–2

CRANK ANGLE SENSOR

Items	2.0L DOHC Engine
Type	Contact pointless type
Identification No.	T1T49571
Part No.	MD1 48855
Advance mechanism	Controlled by engine control unit
Firing order	1–3–4–2

IGNITION COIL

Iterns	Specifications
Type	Mold dual-coil
Identification No.	F-089
Part No.	MD1 58956

SPARK PLUG

Manufacturer	1.8L Engine, 2.0L DOHC Engine (Non-Turbo)	2.0L DOHC Engine (Turbo)
NGK	BPR6ES-11	BPR6ES
NIPPON DENSO	W20EPR11	W20EPR
CHAMPION	RN9YC4	RN9YC

SERVICE SPECIFICATIONS

N08GC--

Items	Specifications
Standard value	
Basic ignition timing at curb idle speed	5°BTDC
Actual ignition timing at curb idle speed	
1.8L Engine	10°BTDC
2.0L DOHC Engine	8°BTDC
Ignition coil	
Primary coil resistance at 20°C (68°F) Ω	
1.8L Engine	0.9–1.2
2.0L DOHC Engine	0.77–0.95
Secondary coil resistance at 20°C (68°F) kΩ	
1.8L Engine	19-27
2.0L DOHC Engine	10.3–13.9
Spark plug gap mm (in.)	
1.8L Engine, 2.0L DOHC Engine (Non-Turbo)	1.0–1.1 (.039–.043)
2.0L DOHC Engine (Turbo)	0.7–0.8 (.028–.031)

TORQUE SPECIFICATIONS

N08GD--

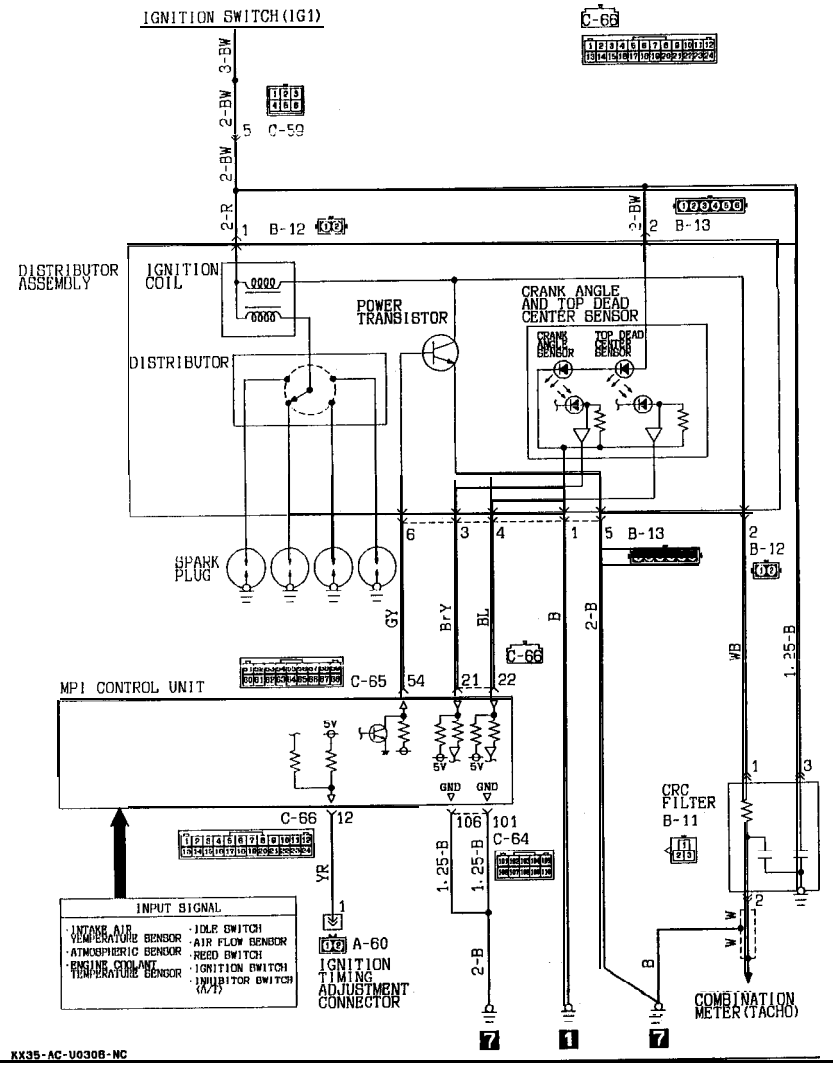
Items	Nm	ft.lbs.
Spark plug	20–30	14–22
Distributor mounting nut	10–13	7-9
Crank angle sensor mounting nut	10–13	7-9
Nut tightened together with throttle body stay	15–22	11-16
Ignition coil mounting bolt		
2.0L DOHC Engine	20–27	14–20
Center cover installation bolt	2.5-3.5	1.8-2.5
Power transister mounting bolt	10–12	7-9
Steering wheel installation nut	35-45	25-33

TROUBLESHOOTING

N08GHAJ

CIRCUIT DIAGRAM

< 1.8L Engine >



OPERATION

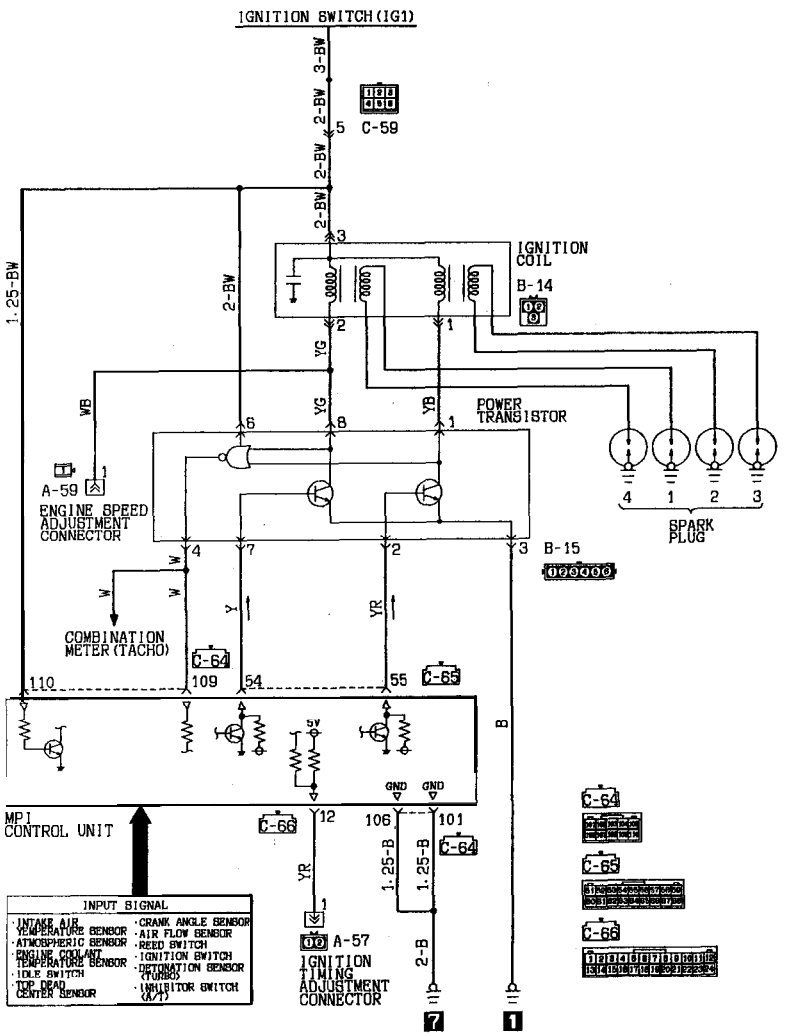
< 1.8L Engine >

- When the ignition switch is turned to "ON", battery voltage is applied to the ignition coil primary winding.
- As the distributor shaft rotates, ignition signals are transmitted from the multi-point injection control unit to the power transistor.
- These signals activate the power transistor to cause ignition coil primary winding current to flow from the ignition coil negative terminal through the power transistor to ground or be interrupted, repeatedly.
- This action induces high voltage in the secondary winding of the ignition coil. From the ignition coil, the secondary winding current produced flows through the distributor and spark plug to ground, thus causing ignition in each cylinder.

< 2.0L DOHC Engine >

- When the ignition switch is turned to "ON", battery voltage is applied to the ignition coil primary winding.
- As the crank angle sensor shaft rotates, ignition signals are transmitted from the multi-point injection control unit to the power transistor.
- These signals activate the power transistor to cause ignition coil primary winding current to flow from the ignition coil negative terminal through the power transistor to ground or be interrupted, repeatedly.
- This action induces high voltage in the secondary winding of the ignition coil. From the ignition coil, the secondary winding current produced flows through the spark plug to ground, thus causing ignition in each cylinder.

< 2.0L DOHC Engine >



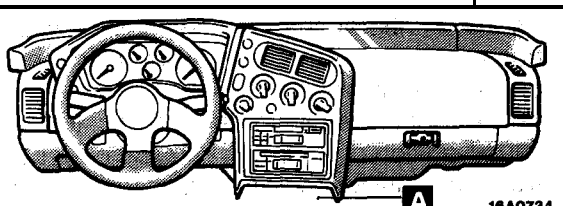
TROUBLESHOOTING HINTS

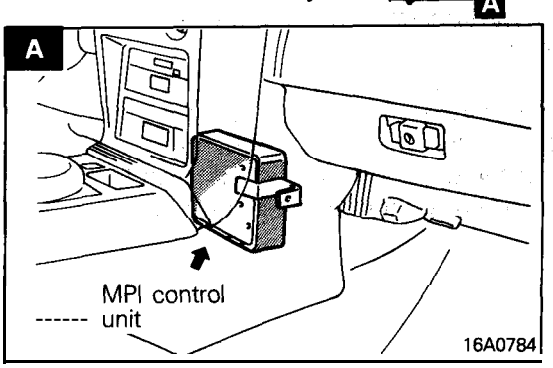
1. Engine cranks, but does not start.
   (1) Spark is insufficient or does not occur at all (on spark plug).
   - Check ignition coil.
   - Check distributor. <1.8L Engine>
   - Check crank angle sensor. <2.0L DOHC Engine >
   - Check power transistor.
   - Check spark plugs.

   (2) Spark is good.
   - Check ignition timing.
2. Engine idles roughly or stalls
   - Check spark plugs.
   - Check ignition timing.
   - Check ignition coil.
3. Poor acceleration
   - Check ignition timing.
4. Engine overheats or consumes excessive fuel
   - Check ignition timing.

COMPONENTS LOCATION

Name	Symbol
MPI control unit	A



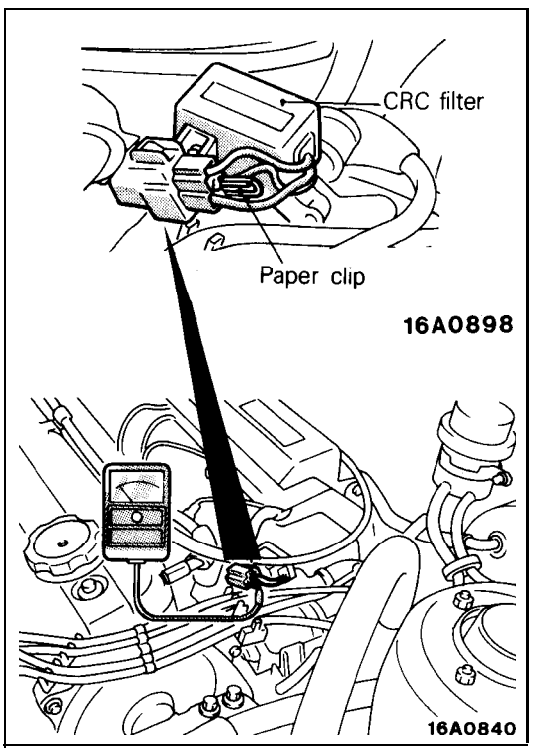


SERVICE ADJUSTMENT PROCEDURES

IGNITION TIMING ADJUSTMENT <1.8L Engine> N08GIIF

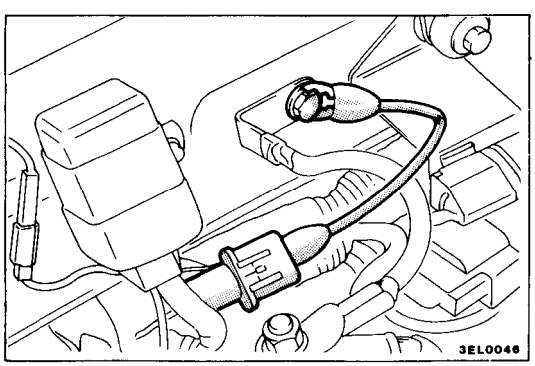
PRE-CONDITIONS FOR INSPECTION

- Engine coolant temperature: 85–95°C (185–205°F)
- Lights, electric cooling fan and accessories: OFF
- Steering wheel: neutral position
- Transaxle: neutral (N or P for A/T)

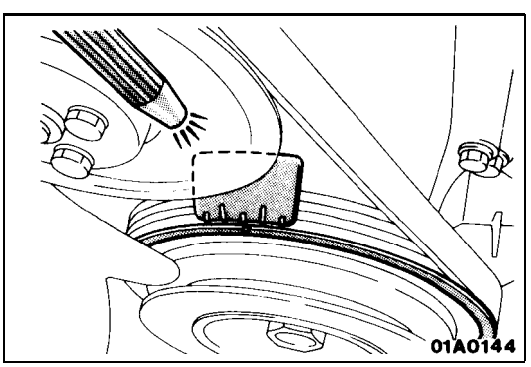


1. Connect timing light.
2. Insert paper clip into the CRC filter connector (3-pole connector, 0.5-W cable).
3. Connect the tachometer to the inserted clip.
4. Check curb idle speed.

   Curb idle speed: 700 ± 100 rpm

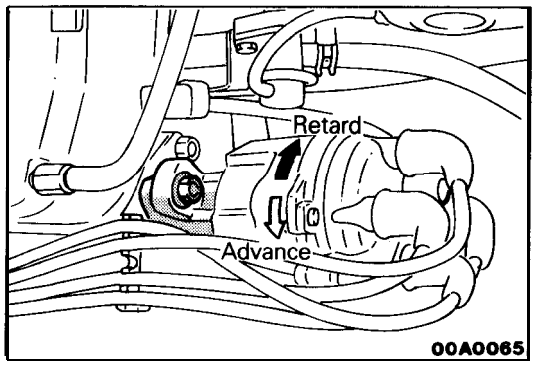


5. With the engine stopped, connect a jumper wire to the' terminal for ignition-timing adjustment (located in the engine compartment), and ground it.



6. Start and run the engine at curb idle speed.
7. Check basic ignition timing and adjust if necessary.

   Basic ignition timing: 5°BTDC



8. If not within the standard value range, loosen the distributor mounting nut and adjust by turning the distributor. Turning it to the right retards timing, and to the left advances it.
9. Tighten the nut after adjustment.

Caution
Be careful, when tightening the nut, that the distributor does not move.

10. Stop the engine.
11. Disconnect the lead wire connected at step 4.
12. Start and run the engine at curb idle speed.
13. Check to be sure that the idling ignition timing is the correct timing.

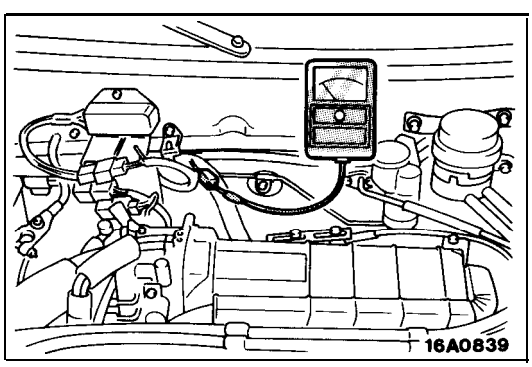
Actual ignition timing: 10°BTDC

NOTE
1. Actual ignition timing may vary, depending on the control mode of the engine control unit. In such a case, recheck the basic ignition timing. If there is no deviation, the ignition timing is functioning normally.
2. At high altitudes more than approximately 700 m (2,300 ft.) above sea level, the actual ignition timing is further advanced to ensure good combustion.

IGNITION TIMING ADJUSTMENT <2.0L DOHC Engine> N08GIIG

PRE-CONDITIONS FOR INSPECTION

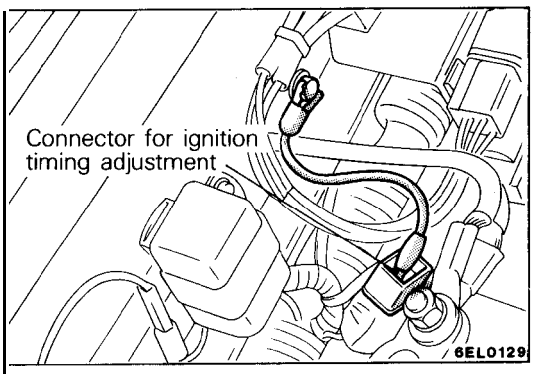
- Engine coolant temperature: 85–95°C (185–205°F)
- Lights, electric cooling fan and accessories: OFF
- Steering wheel: neutral position
- Transaxle: neutral



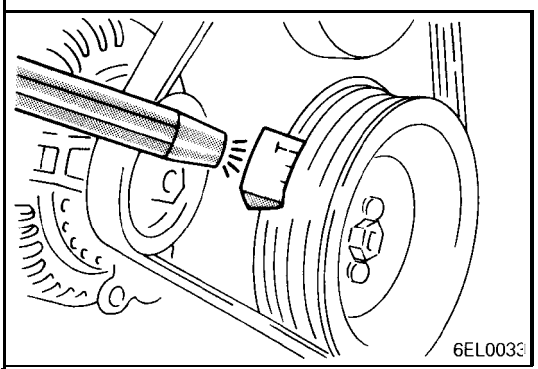
1. Connect timing light.
2. Insert paper clip into the engine revolution speed detection terminal provided in the engine compartment, and connect the tachometer to the inserted paper clip.

3. Check curb idle speed.

Curb idle speed: 750± 100 rpm

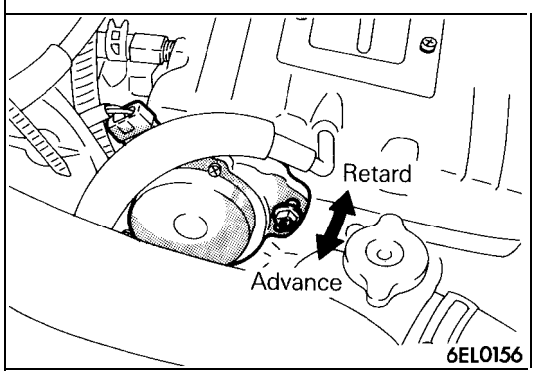


4. With the engine stopped, connect a jumper wire to the terminal for ignition-timing adjustment (located in the engine compartment), and ground it.



5. Start and run the engine at curb idle speed.
6. Check basic ignition timing and adjust if necessary.

Basic ignition timing: 5°BTDC



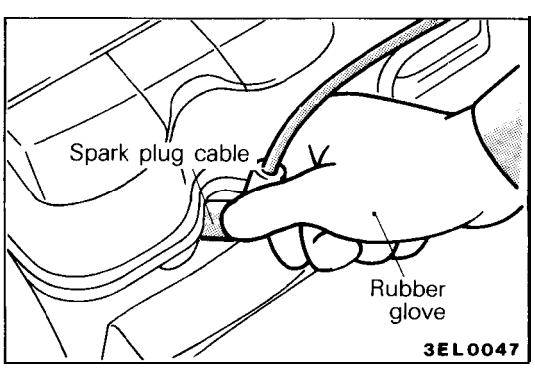
7. If not within the standard value range, loosen the crank angle sensor mounting nut and adjust by turning the crank angle sensor. Turning it to the right advances timing, and to the left retards it.
8. Tighten the nut after adjustment.

Caution
Be careful, when tightening the nut, that the crank angle sensor does not move.

9. Stop the engine.
10. Disconnect the lead wire connected at step 4.
11. Start and run the engine at curb idle speed.
12. Check to be sure that the idling ignition timing is the correct timing.

Basic ignition timing: 8°BTDC

NOTE
1. Actual ignition timing may vary, depending on the control mode of the engine control unit. In such a case, re-check the basic ignition timing. If there is no deviation, the ignition timing is functioning normally.
2. At high altitudes more than approximately 700 m (2,300 ft.) above sea level, the actual ignition timing is further advanced to ensure good combustion.

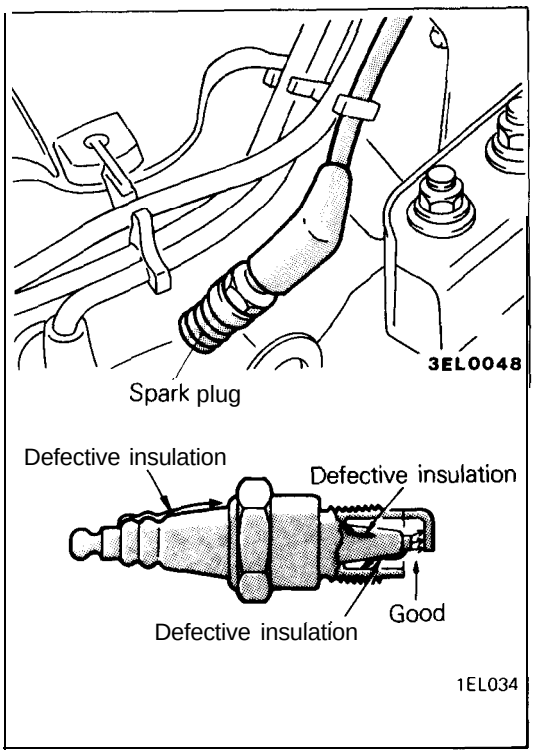


SPARK PLUG CABLE TEST N08GIGG

(1) Disconnect, one at a time, each of the spark plug cables while the engine is idling to check whether the engine's running performance changes or not.

Caution
Wear rubber gloves while doing so.

(2) If the engine performance does not change, check the resistance of the spark plug cable, and check the spark plug itself.



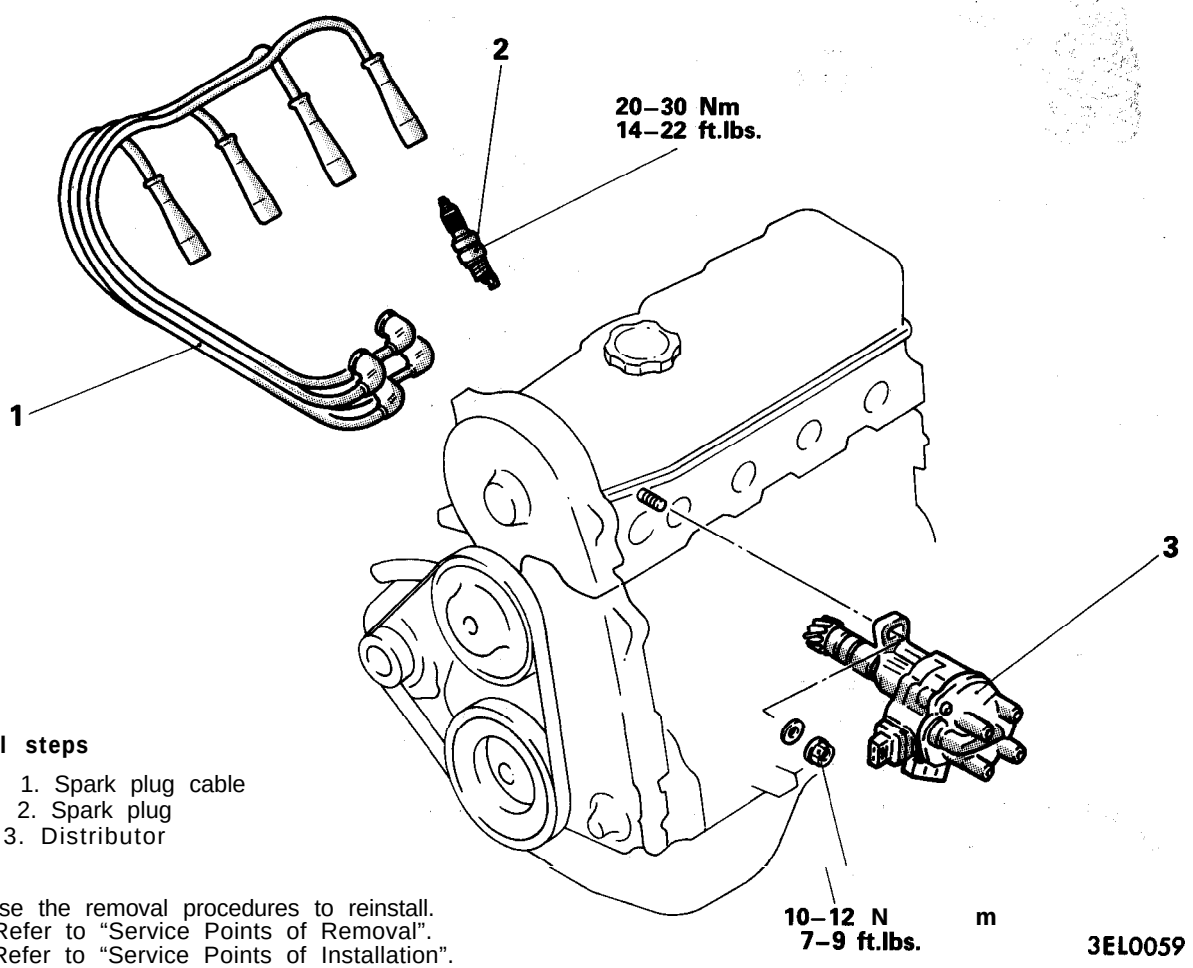
SPARK PLUG TEST

(1) Remove the spark plug and connect to the spark plug cable.
(2) Ground the spark plug outer electrode (body), and crank the engine.
Check to be sure that there is an electrical discharge between the electrodes at this time.

IGNITION SYSTEM

N08GJAO

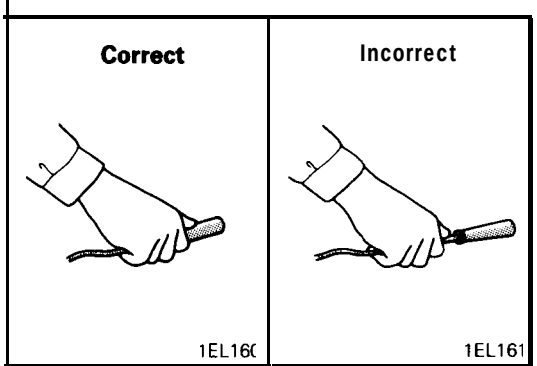
REMOVAL AND INSTALLATION <1.8L Engine>



Removal steps

◆◆ ● * 1. Spark plug cable
2. Spark plug
●◆ 3. Distributor

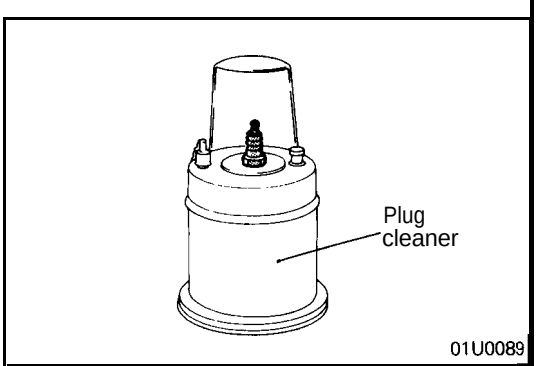
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ●◆: Refer to "Service Points of Installation".



SERVICE POINTS OF REMOVAL

1. REMOVAL OF SPARK PLUG CABLE

When disconnecting cable, hold cap.

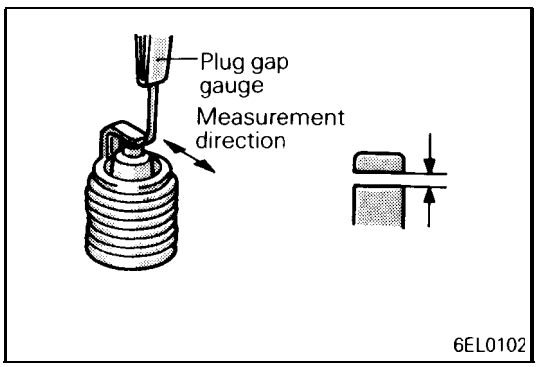


INSPECTION

SPARK PLUG

(1) Check the following items to see that electrodes are not burnt, and insulators are not broken, and how porcelain insulator is burnt.
- Broken insulators
- Wearing electrodes
- Deposited carbon

For cleaning, use a plug cleaner or wire brush. Clean porcelain insulator above shell as well.

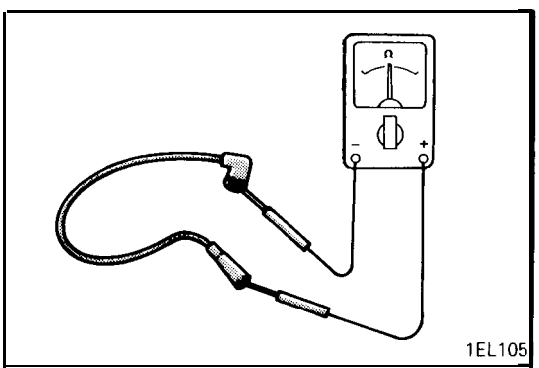


- Damaged or broken gasket.
- Burnt condition of porcelain insulator at spark gap.
  Dark deposit of carbon indicates too rich a fuel mixture or extremely low air intake. Also, misfiring due to excessive spark gap is suspected.
  White burn indicates too lean a fuel mixture or excessively advanced ignition timing. Also insufficient plug tightening is suspected.

(2) Clean with a plug cleaner.
Use an air gun to remove dust deposited on plug threads.

(3) Check plug gap using a plug gap gauge and adjust if it is not as specified.

Standard value:
<1.8L Engine, 2.0L DOHC Engine (Non-Turbo)>
1.0–1.1 mm (.039–.043 in.)
<2.0L DOHC Engine (Turbo)>
0.7–0.8 mm (.028–.031 in.)

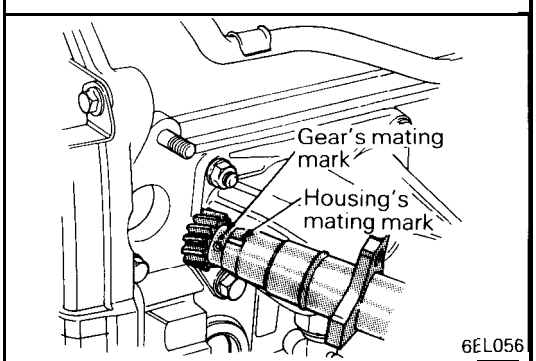


SPARK PLUG CABLE

(1) Check cap and coating for cracks.
(2) Measure resistance.

Unit: kΩ

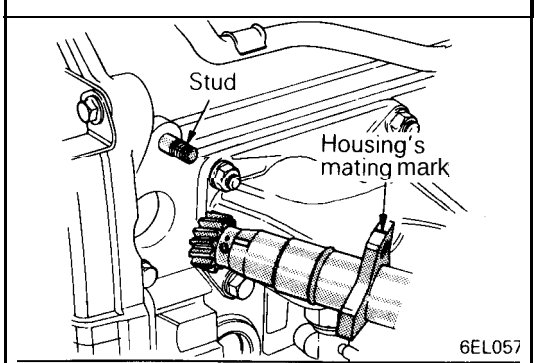
Spark plug cable			
No. 1	No. 2	No. 3	No. 4
10.1	11.5	12.0	13.0



SERVICE POINTS OF INSTALLATION

3. INSTALLATION OF DISTRIBUTOR

(1) Turn the crankshaft so that the No. 1 cylinder is at top dead center.
(2) Align the distributor housing and gear mating marks.

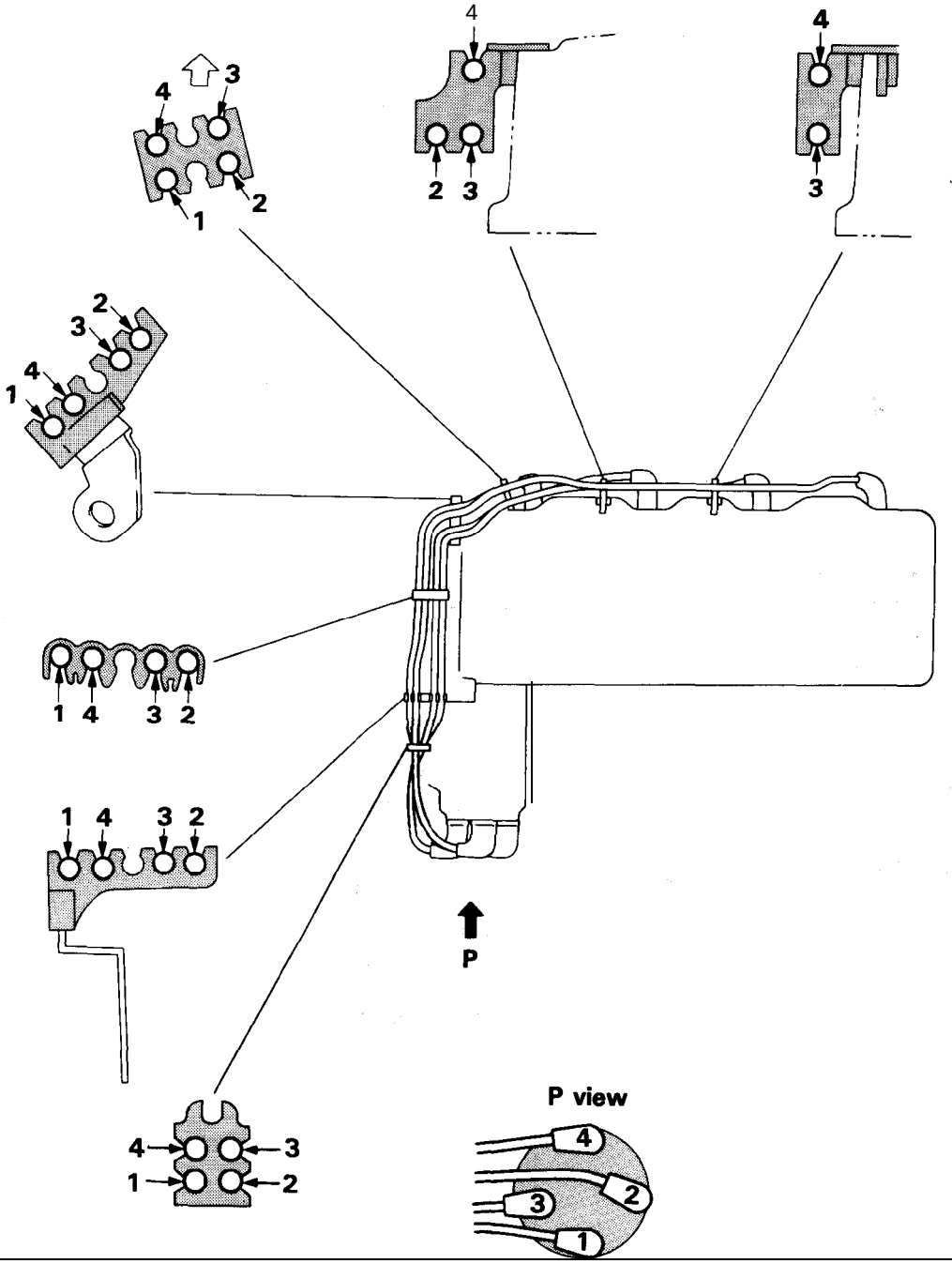


(3) Install the distributor to the engine while aligning the fine cut (groove or projection) of the distributor's installation flange with the center of the distributor installation stud.

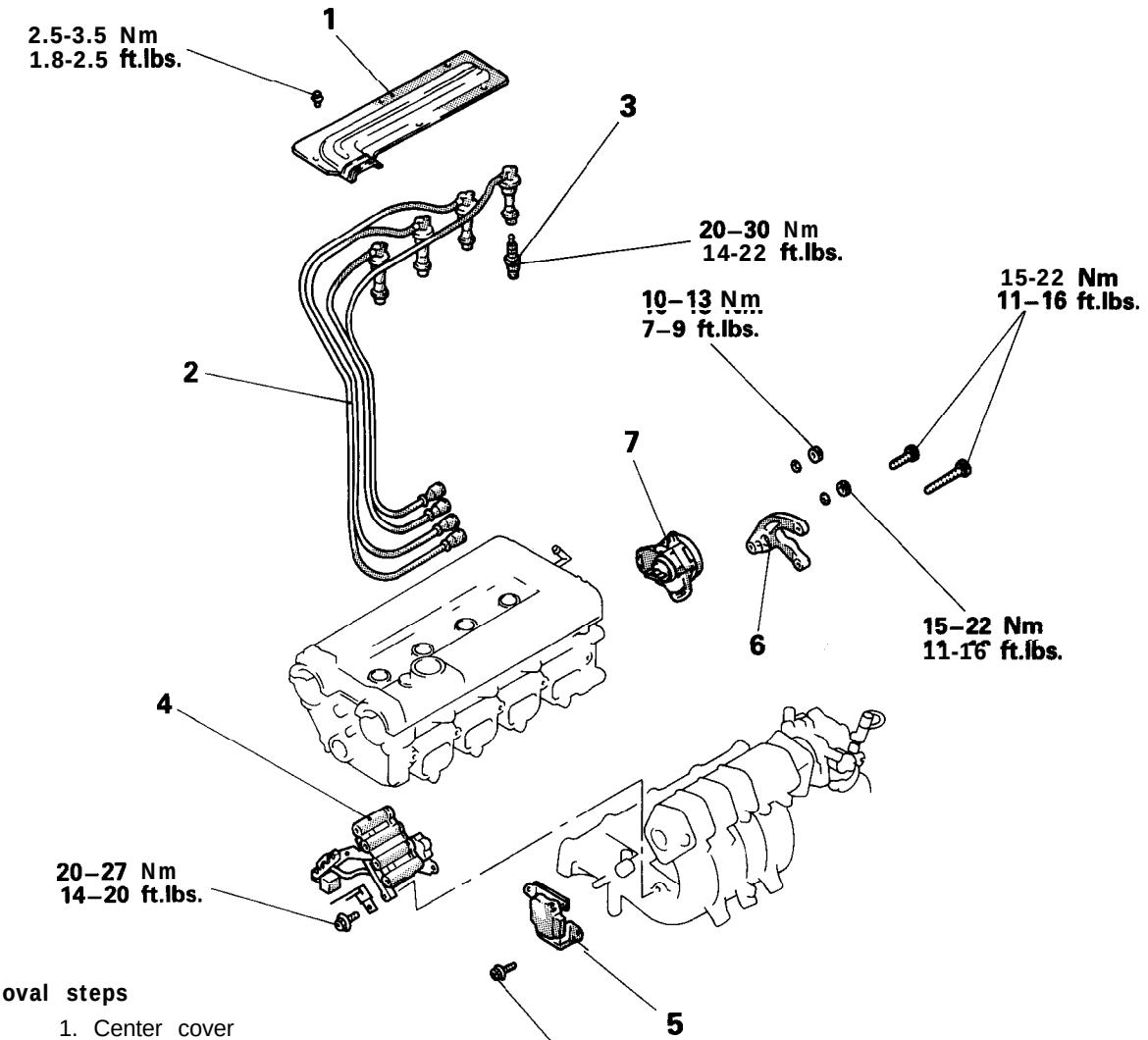
1. INSTALLATION OF SPARK PLUG CABLE

Improper arrangement of spark plug cables will induce voltage between the cables, causing miss firing and developing a surge at acceleration in high-speed operation. Therefore, be careful to arrange the spark plug cables properly by the following procedure.

1. Install the spark plug cable clamps as shown in the illustration.
2. The numerals on the support and clamp indicate the spark plug cable No.
3. Pay attention to the following items when the spark plug cables are installed.
   (1) Install the cables securely to avoid possible contact with metal parts.
   (2) Install the cables neatly, ensuring they are not too tight, loose, twisted or kinked.



REMOVAL AND INSTALLATION <2.0L DOHC Engine>

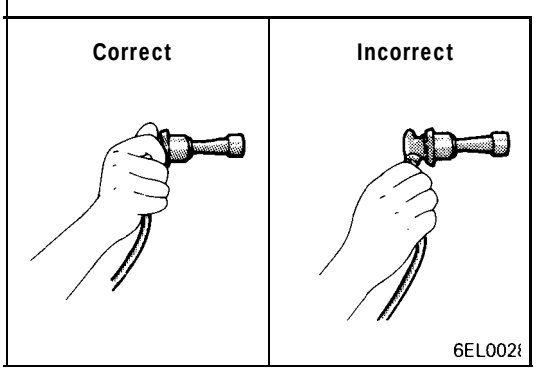


Removal steps

1. Center cover
● *● + 2. Spark plug cable
3. Spark plug
4. Ignition coil
5. Power transistor
6. Throttle body stay
◆◆ 7. Crank angle sensor

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to "Service Points of Removal".
(3) ● +: Refer to "Service Points of Installation".

6E L0157



SERVICE POINTS OF REMOVAL

2. REMOVAL OF SPARK PLUG CABLE

When disconnecting cable, hold cap.

INSPECTION

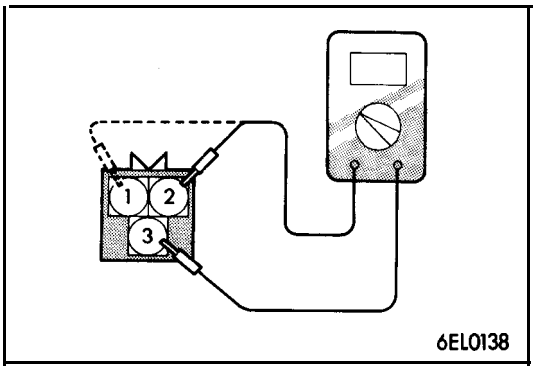
SPARK PLUG

Refer to P.8-177 for inspection procedures.

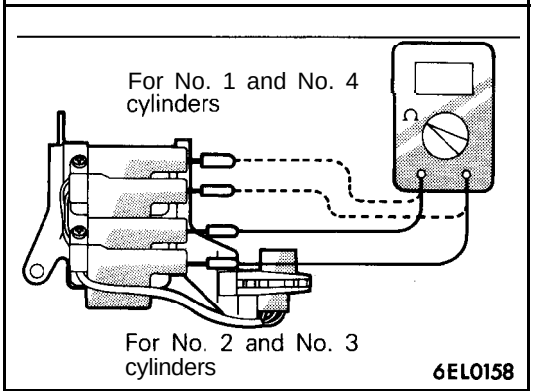
SPARK PLUG CABLE

(1) Check cap and coating for cracks.
(2) Measure resistance.

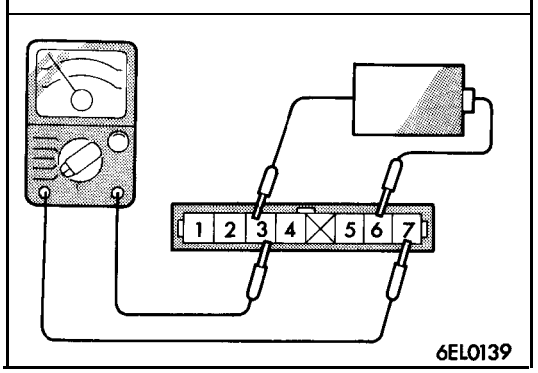
Spark plug cable			
No. 1	No. 2	No. 3	No. 4
5.8	8.4	10.6	9.7



6EL0138



6EL0158



6EL0139

IGNITION COIL

(1) Measurement of the primary coil resistance.
(2) Measure the resistance between connector terminals 3 and 2 (the coils at the No. 1 and No. 4 cylinder sides) of the ignition coil, and between terminals 3 and 1 (the coils at the No. 2 and No. 3 cylinder sides).

Standard value: 0.77–0.95 Ω

(3) Measurement of secondary coil resistance.
(4) Measure the resistance between the high-voltage terminals for the No. 1 and No. 4 cylinders, and between the high-voltage terminals for the No. 2 and No. 3 cylinders.

Standard value: 10.3–13.9 kΩ

Caution
Be sure, when measuring the resistance of the secondary coil, to disconnect the connector of the ignition coil.

POWER TRANSISTOR

NOTE
An analog-type circuit tester should be used.

Power transistor for coil for No. 1 and No. 4 cylinders
(1) Connect the negative (–) terminal of the 1.5V power supply to terminal ③ of the power transistor; then check whether there is continuity between terminal ⑦ and terminal ③ when terminal ⑥ and the positive (+) terminal are connected and disconnected.

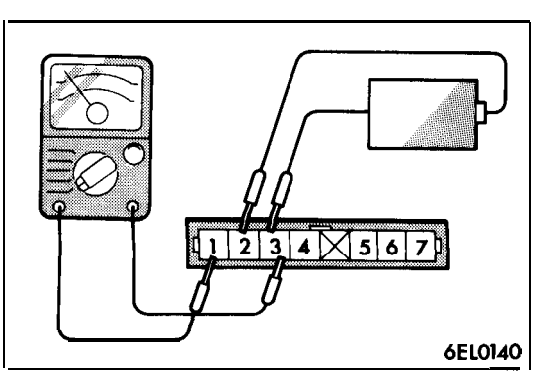
NOTE
Connect the negative (–) probe of the tester to terminal ⑦ of the power transistor.

Terminal ⑥ and (+) terminal	Terminal ⑦ and terminal ③
Connected	Continuity
Unconnected	No continuity

Power transistor for coil for No. 2 and No. 4 cylinders
(1) Connect the negative (–) terminal of the 1.5V power supply to terminal ③ of the power transistor; then check whether there is continuity between terminal ① and terminal ③ when terminal ② and the positive (+) terminal are connected and disconnected.

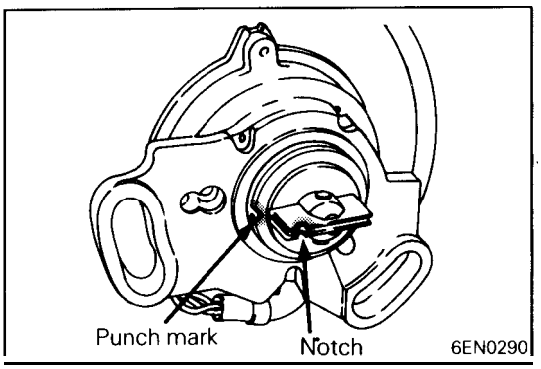
NOTE
Connect the negative (–) probe of the tester to terminal ① of the power transistor.

Terminal ② and (+) terminal	Terminal ① and terminal ③
Connected	Continuity
Unconnected	No continuity



6EL0140

If the results of the tests are not as shown above, replace the power transistor(s).



SERVICE POINTS OF INSTALLATION

7. INSTALLATION OF CRANK ANGLE SENSOR

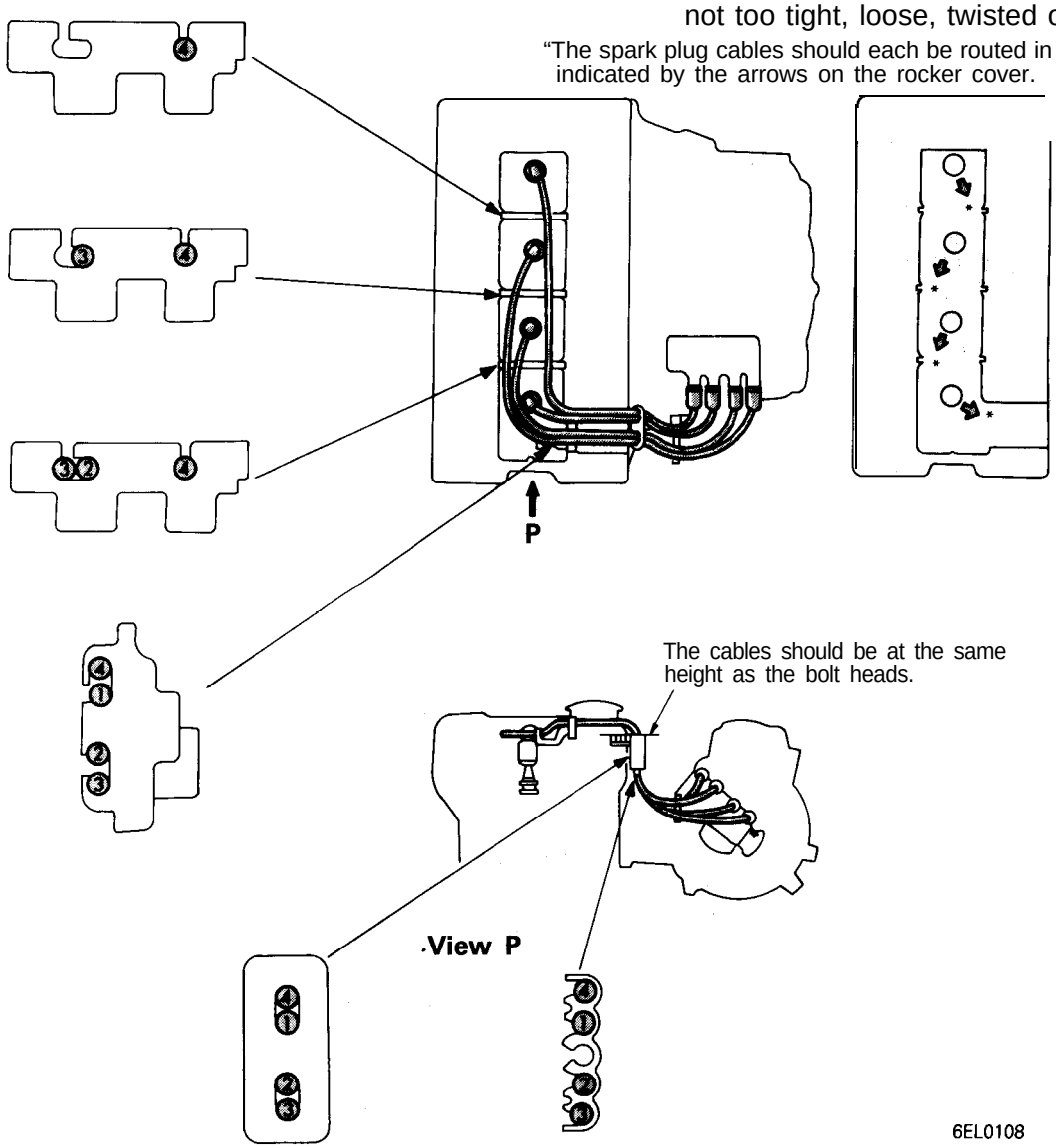
(1) Turn the crankshaft so that the No. 1 cylinder is at top dead center.
(2) Align the punch mark on the crank angle sensor housing with the notch in plate.
(3) Install the crank angle sensor on the cylinder head.

2. INSTALLATION OF SPARK PLUG CABLE

Improper arrangement of spark plug cables will induce voltage between the cables, causing miss firing and developing a surge at acceleration in high-speed operation. Therefore, be careful to arrange the spark plug cables properly by the following procedure.

1. Install the spark plug cable clamps as shown in the illustration.
2. The numerals on the support and clamp indicate the spark plug cable No.
3. Pay attention to the following items when the spark plug cables are installed.
   (1) Install the cables securely to avoid possible contact with metal parts.
   (2) Install the cables neatly, ensuring they are not too tight, loose, twisted or kinked.

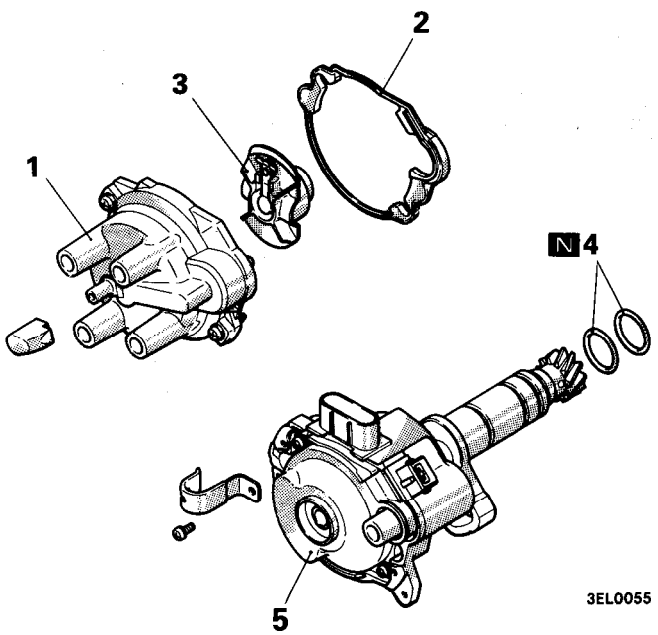
"The spark plug cables should each be routed in the directions indicated by the arrows on the rocker cover.



DISTRIBUTOR

N08GKCC

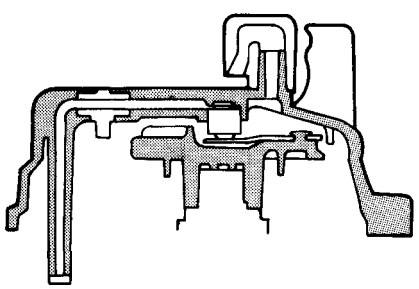
DISASSEMBLY AND REASSEMBLY

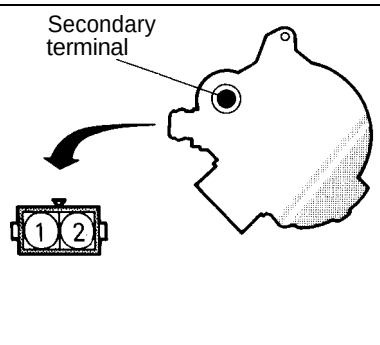


Disassembly steps

1. Distributor cap
2. Packing
3. Rotor
4. O-ring
5. Housing & shaft assembly

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) N: Non-reusable parts





INSPECTION

Check the following points; repair or replace if a problem is found.

CAP ROTOR

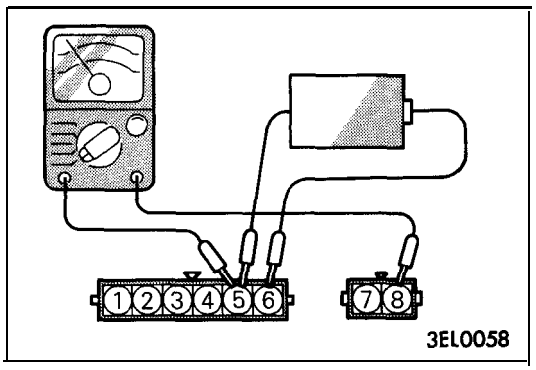
(1) There must be no cracking in the cap.
(2) There must be no damage to the cap's electrode or the rotor's electrode.
(3) Clean away any dirt from the cap and rotor.

IGNITION COIL

(1) Measure the resistances of the primary and secondary coils with the tester.
If the measurement is within the standard allowance, there are no broken wires or short-circuits.

Resistance of primary coil (Between terminals ①–②)
Standard value: 0.9–1 .2 Ω

Resistance of secondary coil (Between secondary terminal and terminal ① or ②)
Standard value: 19–27 kΩ



POWER TRANSISTOR

NOTE
Use an analog type circuit tester.

(1) Connect the negative (−) terminal of the 1.5V power supply to terminal ⑤ of the power transistor; then check whether there is continuity between terminal ⑤ and terminal ⑧ when terminal ⑥ and the positive (+) terminal are connected and disconnected.

NOTE
Connect the negative (−) probe of the tester to terminal ⑧ of the power transistor.

Terminal ⑥ and (+) terminal	Terminal ⑤ and terminal ⑧
Connected	Continuity
Unconnected	No continuity

CHASSIS ELECTRICAL

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BATTERY

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08EB--

Items		Vehicles for U.S.A. Vehicles for Canada (1.8L Engine-M/T)	Vehicles for Canada (1.8L Engine-A/T, 2.0L DOHC Engine)
Type		B.C.I. Group size 86	B.C.I. Group size 86
Ampere hours (5HR)	Ah	50	50
Cranking rating [at −18°C (0°F)]	A	430	525
Reserve capacity	min.	90	90

NOTES
1. CRANKING RATING is the current a battery can deliver for 30 seconds and maintain a terminal voltage of 7.2 volts or greater at a specified temperature.
2. RESERVE CAPACITY RATING is the amount of time a battery can deliver 25A and maintain a minimum terminal voltage of 10.5 at 27°C (80°F).

TROUBLESHOOTING

BATTERY TESTING PROCEDURE

N08EHAR

TEST STEP		RESULT ▶	ACTION TO TAKE
A0	VISUAL INSPECTION		
	• Remove negative cable, then positive cable. • Check for dirty or corroded connections.	(OK) ▶ (OK) ▶	CLEAN terminals and clamps. GO to A1. GO to A1.
A1	LOOSE BATTERY POST		
	• Check for loose battery post.	(OK) ▶ (OK) ▶	REPLACE battery. GO to A2.
A2	CRACKED BATTERY COVER		
	• Remove holddowns and shields. • Check for broken/cracked case or cover.	(OK) ▶ (OK) ▶	REPLACE battery. GO to A3.
A3	TEST INDICATOR/OPEN CIRCUIT VOLTAGE TEST		
	• Turn headlights on for 15 seconds • Turn headlights off for 2 minutes to allow battery voltage to stabilize. • Disconnect cables. • Read open circuit voltage.	(OK) ▶ Green dot invisible and open circuit voltage under 12.4 volts (OK) ▶	CHARGE battery at 5 amps then GO to A3. GO to A4.

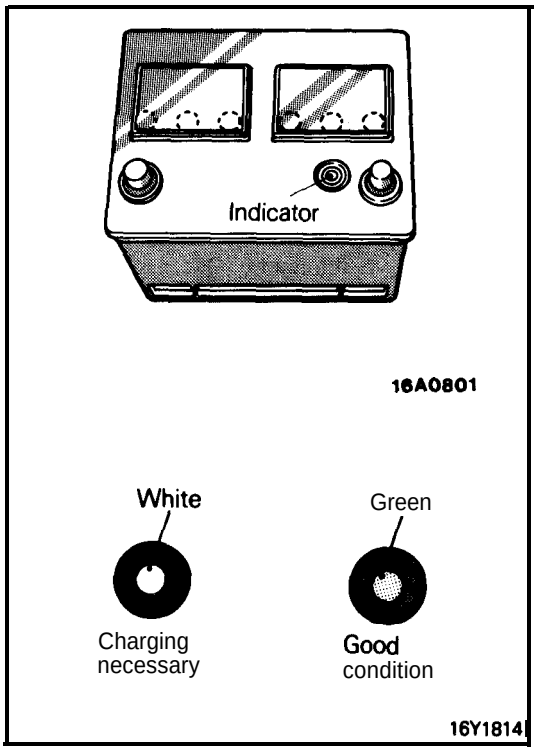
TEST STEP	RESULT	ACTION TO TAKE
14 LOAD TEST		
• Connect a load tester to the battery. • Load the battery at the recommended discharge rate (see LOAD TEST RATE CHART) for 15 seconds. • Read voltage after 15 seconds, then remove load.	(OK) ▶ Voltage is less than minimum listed (white indicator). (OK) ▶ Voltage is more than minimum listed.	REPLACE battery. Battery OK.

LOAD TEST CHART

Minimum Voltage	Temperature °F	Temperature °C
9.6	70 and above	21 and above
9.5	60	16
9.4	50	10
9.3	40	4
9.1	30	−1
8.9	20	−7
8.7	10	−12
8.5	0	−18

LOAD TEST RATE CHART

Load Test (Amps)	Cranking Rating 0°F	Reserve Capacity	Application
206 amps	430 amps	90 minutes	B.C.I. Group size 86
252 amps	525 amps	90 minutes	



SERVICE ADJUSTMENT PROCEDURES

BATTERY INSPECTION N08EIBF

BATTERY VISUAL INSPECTION (1)

The battery contains a visual test indicator which gives green signal when an adequate charge level exists, and white signal when charging is required.

BATTERY VISUAL INSPECTION (2)

Make sure ignition switch is in Off position and all battery feed accessories are Off.

1. Disconnect ground cable from battery before disconnecting (+) cable.
2. Remove battery from vehicle.

Caution
Care should be taken in the event battery case is cracked or leaking to protect hands from the electrolyte. A suitable pair of rubber gloves (not the household type) should be worn when removing battery by hand.

3. inspect battery carrier for damage caused by loss of acid from battery. If acid damage is present, it will be necessary to clean area with a solution of clean warm water and baking soda. Scrub area with a stiff bristle brush and wipe off with a cloth moistened with ammonia or baking soda in water.
4. Clean top of battery with same solutions as described in Step (3).
5. Inspect battery case and cover for cracks. If cracks are present, battery must be replaced.
6. Clean the battery post with a suitable battery post cleaning tool.
7. Clean the inside surfaces of the terminal clamps with a suitable battery terminal cleaning tool. Replace damaged or frayed cables and broken terminals clamps.
8. Install the battery in vehicle.
9. Connect (+) and (–) cables to battery in the order of mention.
10. Tighten the clamp nut securely.

LOAD TEST RATE CHART			
Load Test (Amps)	Cranking Rating 0°F	Reserve Capacity	Application
206 amps	430 amps	90 minutes	B.C.I. Group size 86
252 amps	525 amps	90 minutes	

LOAD TEST CHART		
Minimum Voltage	Temperature	
	°F	°C
9.6	70 and above	21 and above
9.5	60	16
9.4	50	10
9.3	40	4
9.1	30	- 1
8.9	20	- 7
8.7	10	- 1 2
8.5	0	- 1 8

Note
The temperature is an ambient temperature of the battery that has been exposed to for the preceding few hours.

BATTERY CHARGING N08EICJ

Caution
When batteries are being charged, an explosive gas forms beneath the cover of each cell. Do not smoke near batteries on charge or which have recently been charged.
Do not break live circuits at the terminals of the batteries on charge. A spark will occur where the live circuit is broken.
Keep all open flames away from the battery.

Battery electrolyte temperature may temporarily be allowed to rise to 55°C(131°F). Increase of electrolyte temperature above 55°C (131 °F) is harmful to the battery, causing deformation of battery cell, decrease in life of battery, etc.

CHARGE RATE

If the test indicator is white, the battery should be charged as outlined below.

OPEN CIRCUIT VOLTAGE TEST (3)

1. Turn headlights on for 15 seconds,
2. Turn headlights off for 2 minutes to allow battery voltage to stabilize.
3. Disconnect cables.
4. Read open circuit voltage.
5. If the open circuit voltage is under 12.4 volts, charge the battery. (See BATTERY CHARGING)

LOAD TEST (4)

1. Connect a load tester to the battery.
2. Load the battery at 15 amps for 15 seconds to remove surface charge.
3. Load the battery at the recommended discharge rate. (See LOAD TEST RATE CHART)
4. Read voltage after 15 seconds and then remove the load.
5. If the voltage is not maintained at the minimum voltage in the LOAD TEST CHART throughout the test, the battery should be replaced.

When the dot appears or when maximum charge shown below is reached, charging should be stopped.

NOTE
When the charging is performed at 5 amps, charging is virtually 100% three hours after the indicator's indication changes from white to green.
Use fast charging only in an emergency.
If the indicator does not turn to green even after the battery is charged, the battery should be replaced; do not overcharge.

Charge Rate Chart

Battery	Slow Charging		Fast Charging	
B.C.I. Group size 86 (430 amps or 525 amps)	5 amps 15 hrs.	10 amps 7.5 hrs.	20 amps 3.75 hrs.	30 amps 2.5 hrs.

IGNITION SWITCH

SPECIFICATIONS

LUBRICANTS

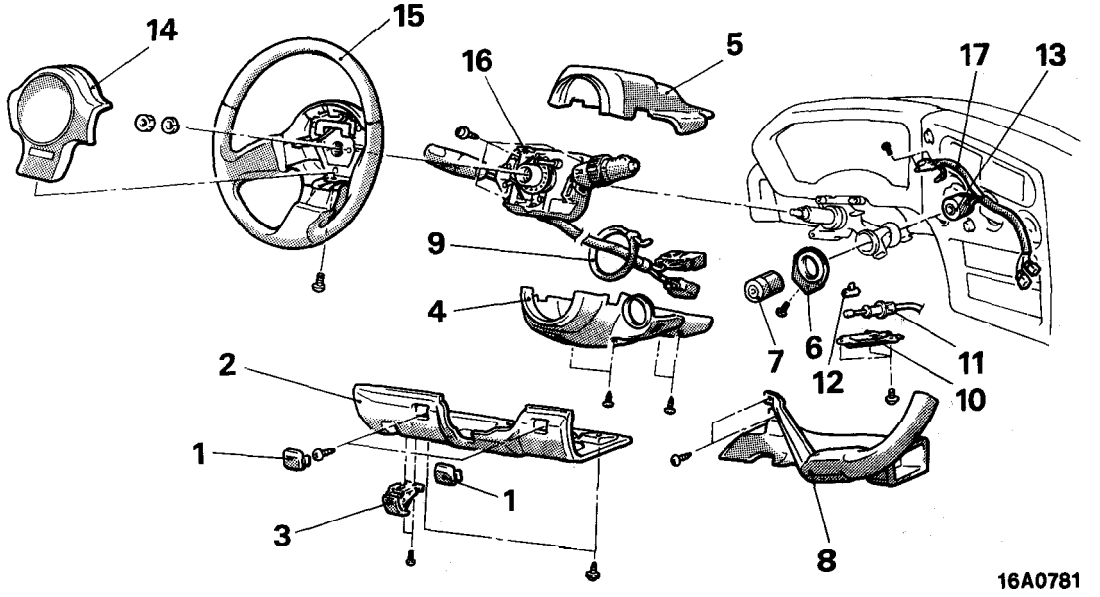
N08GF--

Items	Specified lubricant
Key interlock cable	MOPAR Multi-mileage Lubricant Part No. 2525035 or equivalent

IGNITION SWITCH

N08GLAX

REMOVAL AND INSTALLATION

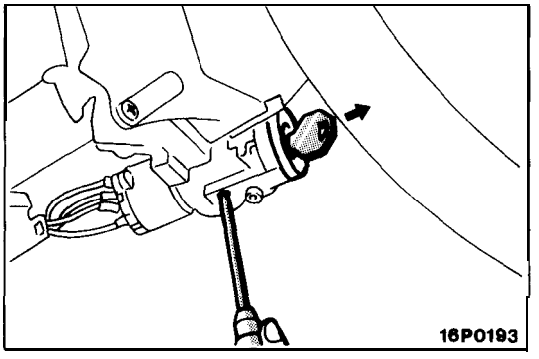


Removal steps

- ◆◆ 1. Plug
- 2. Knee protector
- 3. Hood lock release handle
- 4. Column cover lower
- 5. Column cover upper
- 6. Ignition key illumination light
- ◆◆ 7. Steering lock cylinder
- 8. Lap cooler duct and shower duct
- 9. Cable band
- 10. Cover*
- ◆◆ 11. Key interlock cable*
- ◆◆ 12. Slide lever*
- 13. Ignition switch segment
- ● + 14. Horn pad
- ● + 15. Steering wheel
- 16. Column switch
- 17. Key reminder switch segment

NOTE
* indicates **vehicles with** A/T.

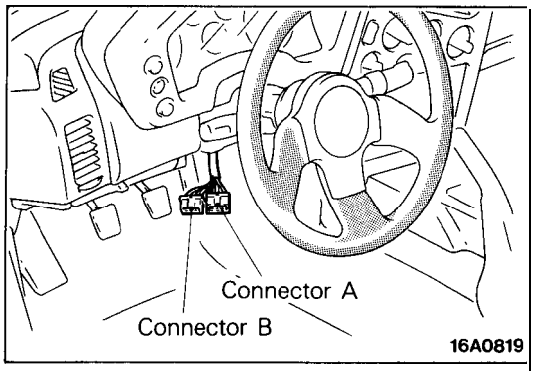
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation".

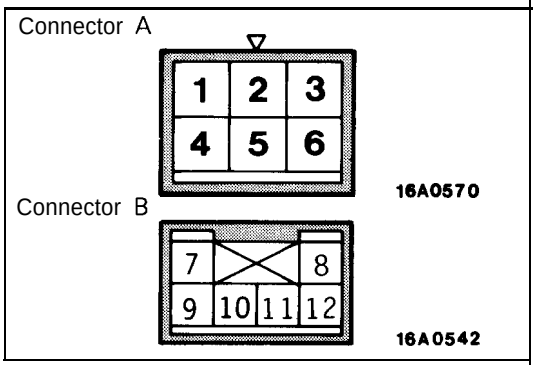


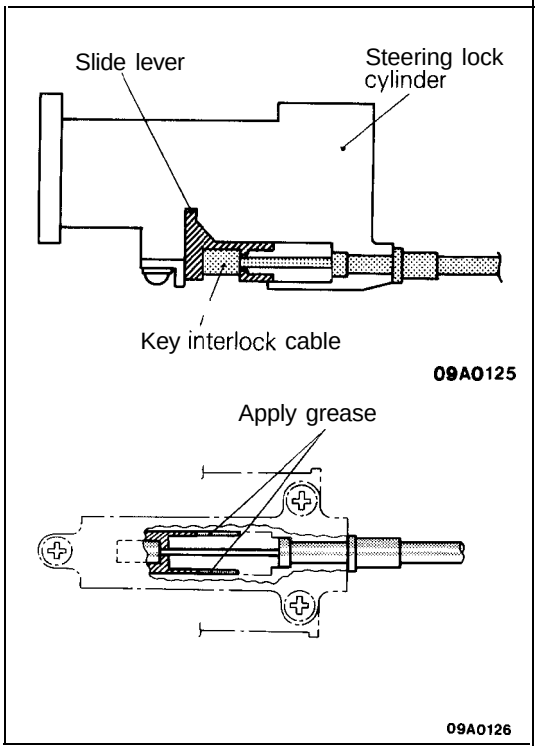
SERVICE POINTS OF REMOVAL

7. REMOVAL OF STEERING LOCK CYLINDER

(1) Insert the key in the steering lock cylinder and turn it to the "ACC" position.
(2) Using a cross-tip (+) screwdriver (small) or a similar tool, push the lock pin of the steering lock cylinder inward and then pull the steering lock cylinder toward you.







14. REMOVAL OF THE HORN PAD/15. STEERING WHEEL

Refer to GROUP 19–Steering Wheel and Shaft.

INSPECTION

IGNITION SWITCH INSPECTION

(1) Remove the knee protector, the column cover (lower), and the column cover (upper).
(2) Disconnect the wiring connector from the ignition switch and key reminder switch, and connect an ohmmeter to the switch side connector.
(3) Operate the switch, and check the continuity between the terminals.

Position \ Terminal	Key	Ignition switch 6	3	4	2	5	1	Key reminder switch 7	8	Ignition key illumination light 9	12	10	11
LOCK	Removed									O	O		
ACC	Inserted	O	O					O	O				
ON	Inserted	O	O	O	O								
START	Inserted	O		O		O	O						

NOTE
O-O indicates that there is continuity between the terminals.

SERVICE POINTS OF INSTALLATION

12. INSTALLATION OF THE SLIDE LEVER/ 11. CONNECTION OF THE KEY INTERLOCK CABLE (STEERING LOCK ASSEMBLY SIDE)

(1) With the ignition key either at the “LOCK” position or removed, install the slide lever to the steering lock cylinder.
(2) Connect, as shown in the figure, the key interlock cable to the slide lever and the steering lock cylinder.
(3) Apply a light coating of multi-purpose grease where shown in the figure.
Grease: MOPAR Multi-mileage Lubricant Part No. 2525035 or equivalent
(4) Check whether or not the key interlock system is functioning normally.
(Refer to GROUP 2 1 -Service Adjustment Procedures.)

METERS AND GAUGES

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08HB--

METERS AND GAUGES

Items	Specifications
Speedometer	
Type	Rotary magnet type
Tachometer	
Type	Pulse type
Fuel gauge	
Type	Coil type
Fuel gauge unit	
Type	Variable resistance type
Engine coolant temperature gauge	
Type	Coil type
Engine coolant temperature gauge unit	
Type	Thermistor type
Oil pressure gauge	
Type	Bi-metal type
Oil pressure gauge unit	
Type	Bi-metal type
Pressure meter	
Type	Moving coil type

Indicators and Warning Lights

Items		Specifications
Indicator lights		
Turn signal indicator light	W	3.4 (158)
High beam indicator light	W	3.4 (158)
Charging warning light	W	1.4 (74)
Oil pressure warning light	W	1.4 (74)
Door ajar warning light	W	1.4 (74)
Brake warning light	W	1.4 (74)
Low fuel warning light	W	3.4 (158)
Seat belt warning light	W	1.4 (74)
Cruise control indicator light	W	1.4 (74)
Engine coolant level warning light	W	1.4 (74)
Check engine warning light	W	1.4 (74)
Anti-lock braking system warning light	W	1.4 (74)
A/T fluid temperature warning light* (in dome light)	W	1.4 (74)

NOTE
1. The values in parentheses denote SAE trade numbers.
2. The * symbol indicates vehicles with A/T <AWD>.

Items		Specifications
Security light*	W	1.4 (74)
Power indicator light <A/T>	W	1.4 (74)
Economy indicator light <A/T>	W	1.4 (74)
Overdrive indicator light <A/T>	W	1.4 (74)

NOTE
1. The values in parentheses denote SAE trade numbers.
2. The * symbol indicates vehicles with theft-alarm system.

SERVICE SPECIFICATIONS

N08HC--

Items		Specifications
Standard value		
Speedometer indication error	mph	
20		19-22
40		38-44
60		57-66
80		76-88
100		94–110
	Km/h	
40		37-44
80		75-88
120		113-132
160		150–176
Tachometer indication error	rpm	
Type 1 (8,000 rpm indication)		
700		± 100
3,000		± 150
5,000		± 250
Type 2 (9,000 rpm indication)*		
700		± 100
3,000		+ 225 -100
5,000		+ 325 -100
Operation range of fuel gauge unit	mm (in.)	
<FWD>		
Point F		43.1–48.1 (1.69-1.89)
Point E		175.5-179.5 (6.9–7.06)
<AWD>		
Point F		21.3–24.3 (.84–.96)
Point E		199.2–202.2 (7.84–7.96)
Fuel gauge unit resistance	Ω	
Point F		3 ± 2
Point E		110 ± 7
Engine coolant temperature gauge unit resistance [at 70°C (158°F)]	Ω	104 ± 13.5

NOTE
*: <2.0L DOHC Engine>

Items		Specifications
Fuel gauge resistance	Ω	
Between A-B		Approx. 230
Between A-C		Approx. 102
Between B-C		Approx. 102
Engine coolant temperature gauge resistance	Ω	
Between A-B		Approx. 130
Between A-C		Approx. 53
Between B-C		Approx. 162
Oil pressure gauge resistance value	Ω	Approx. 42
Pressure meter resistance value*	Ω	Approx. 72

NOTE
*: <2.0L DOHC Engine (Turbo)>

TORQUE SPECIFICATIONS

N08HD--

Items	Nm	ft.lbs.
Engine coolant temperature gauge unit	10–12	7 - 8

SEALANTS AND ADHESIVES

N08HF--

Items	Specified sealant and adhesive
Engine coolant temperature gauge unit	MOPAR Part No. 4318034 or equivalent

TROUBLESHOOTING

N08HHAJ

OPERATION

<Fuel gauge>

- When the ignition key is at the “ON” position, the fuel gauge is activated.
- When there is much fuel, the unit’s resistance is small and the current flowing in the circuit is great, so the gauge’s indicator indicates in the “F” area.
- When there is little fuel, the unit’s resistance is high and the current flowing in the circuit is small, so the gauge’s indicator indicates in the “E” area.

< Engine coolant temperature gauge >

- When the ignition key is at the “ON” position, the engine coolant temperature gauge is activated.
- When the engine coolant temperature is high, the unit’s resistance is low and there is a great flow of current in the circuit, so the gauge’s indicator indicates in the “H” area.
- When the engine coolant temperature is low, the unit’s resistance is high and there is a small flow of current in the circuit, so the gauge’s indicator indicates in the ‘‘C’’ area.

<Reed switch>

- Pulses are produced in accordance with the vehicle speed, and vehicle-speed signals are input to systems (the 4 A/T system, etc.) that regulate according to the vehicle speed.

<Oil Pressure Gauge>

- When the ignition switch is at the “ON” position, the oil pressure gauge is activated.
- When oil pressure is high, the internal contacts of the gauge unit are kept closed for a longer period of time. This causes more current to flow in the circuit, and the gauge pointer swings to the high pressure side.
- When oil pressure is low, the internal contacts of the gauge unit open in a shorter period of time. Therefore, there is less current flowing in the circuit and the gauge pointer swings to the low pressure side.

<Pressure meter>

- When the ignition key is set to the “ON” position, the gauge indicator will be at "0".
- When the engine is started, the indicator will move from “0” to the minus (–) side, and then, as the boost level increases, it will move to the plus (+) side.

NOTE
For operation of warning light and indicator light, refer to P.8-210 INDICATORS.

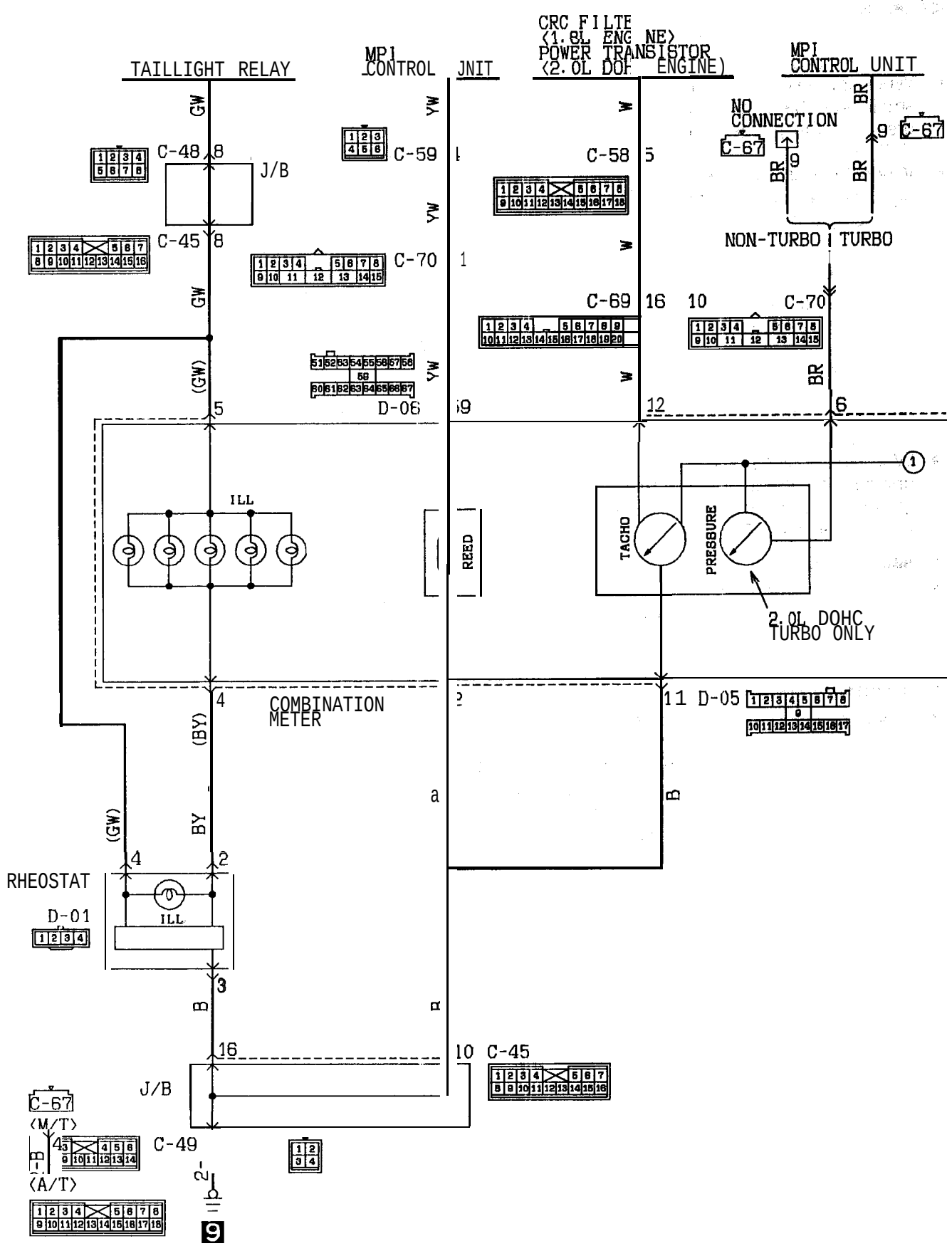
TROUBLESHOOTING HINTS

1. The fuel gauge doesn’t function, or shows the incorrect indication.
   (1) Disconnect the connector of the fuel gauge unit; the “F” side is indicated when terminal 3 (FWD) or 2 (AWD) is then grounded.
   - Check the fuel gauge.
2. The engine coolant temperature gauge doesn’t function, or shows the incorrect indication.
   (1) The “H” side is indicated when the connector of the engine coolant temperature gauge unit is disconnected and then grounded.
   - Check the engine coolant temperature gauge unit.
3. The oil pressure gauge doesn’t function, or shows the incorrect indication.
   (1) The “H” side is indicated when the connector of the oil pressure gauge unit is disconnected and then grounded.
   - Check the oil pressure gauge unit.
4. Systems dependent upon control according to the vehicle speed do not function correctly.
   - Check the reed switch (located within the speedometer).
5. The meter illumination light does not illuminate.
   (1) The tail lights illuminate.
   - Check the rheostat.

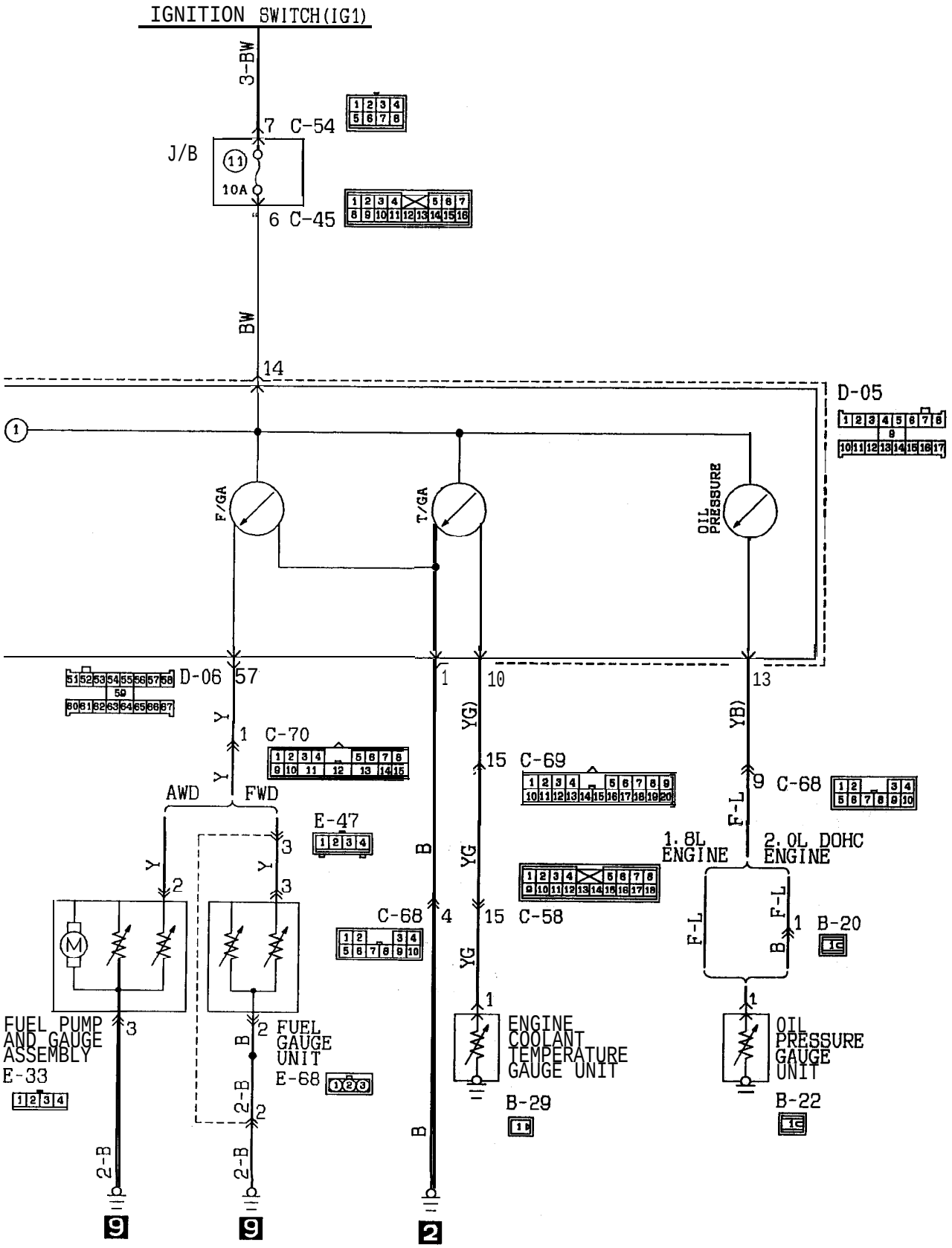
METER AND GAUGES CIRCUIT

N08HHAK

CIRCUIT DIAGRAM

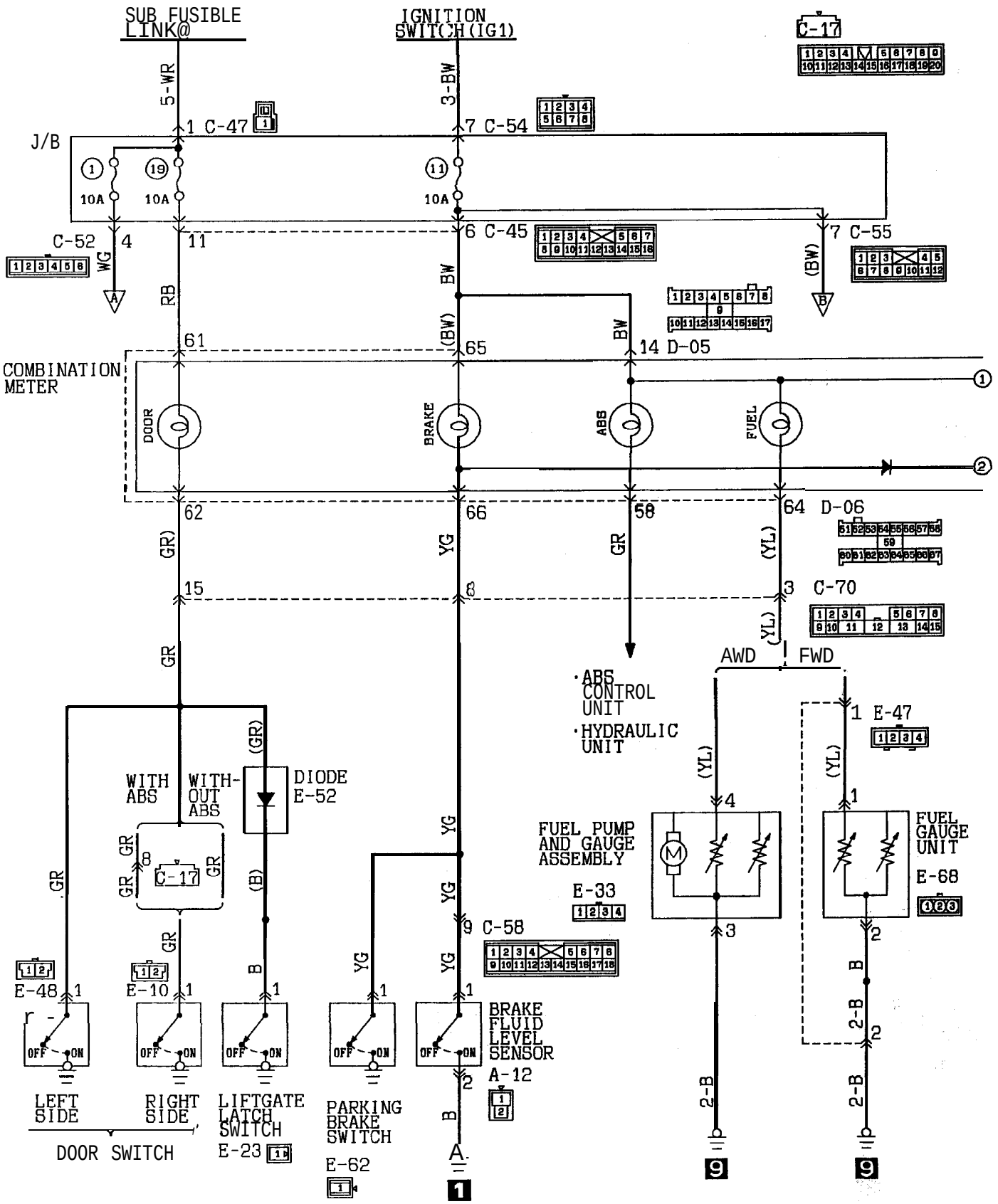


X35-AC-U1011-NC

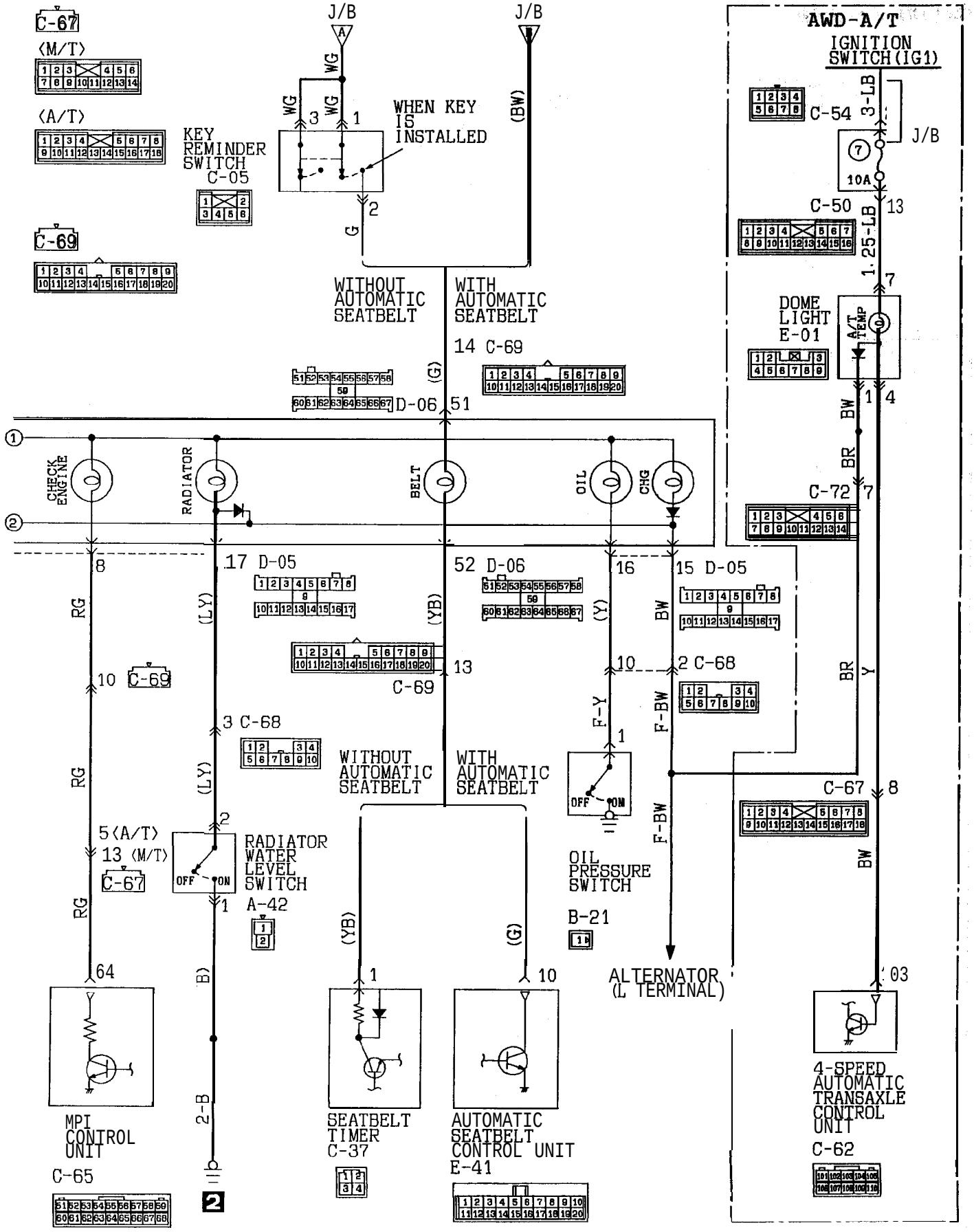

IGNITION SWITCH(IG1)
3-BW
7 C-54
J/B
11
10A
6 C-45
BW
14
D-05
F/GA
T/GA
OIL PRESSURE
D-06
57
1
10
13
Y
1 C-70
AWD
FWD
E-47
3
2
Y
3
B
YG
15 C-69
YG)
9 C-68
YB)
F-L
1.8L ENGINE
2.0L DOHC ENGINE
C-68
4
15 C-58
YG
1
B-20
1C
FUEL PUMP AND GAUGE ASSEMBLY
E-33
3
2 FUEL GAUGE UNIT
E-68
2-B
2
ENGINE COOLANT TEMPERATURE GAUGE UNIT
B-29
1B
OIL PRESSURE GAUGE UNIT
B-22
1C
9
9
2

WARNING LIGHT CIRCUIT

CIRCUIT DIAGRAM

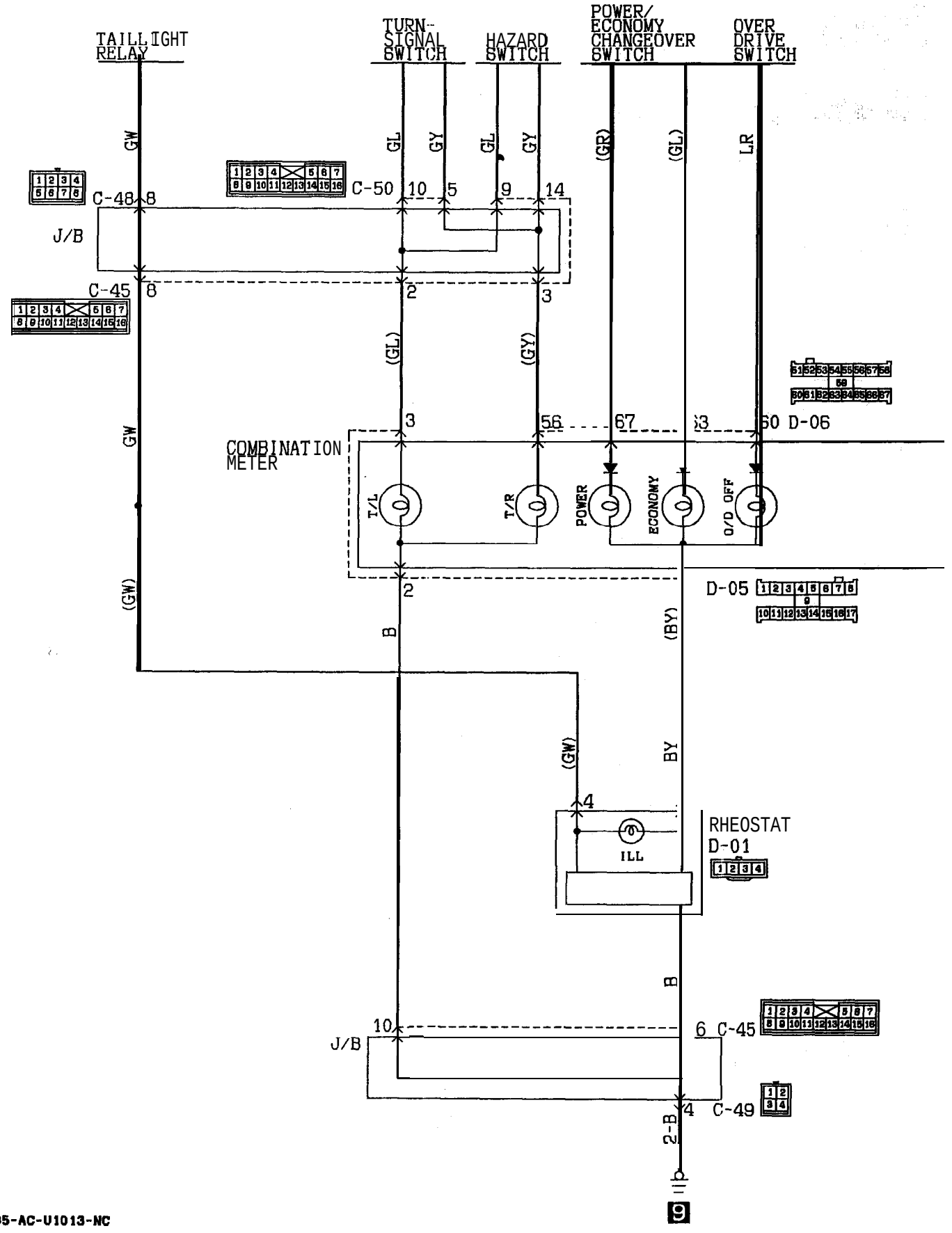


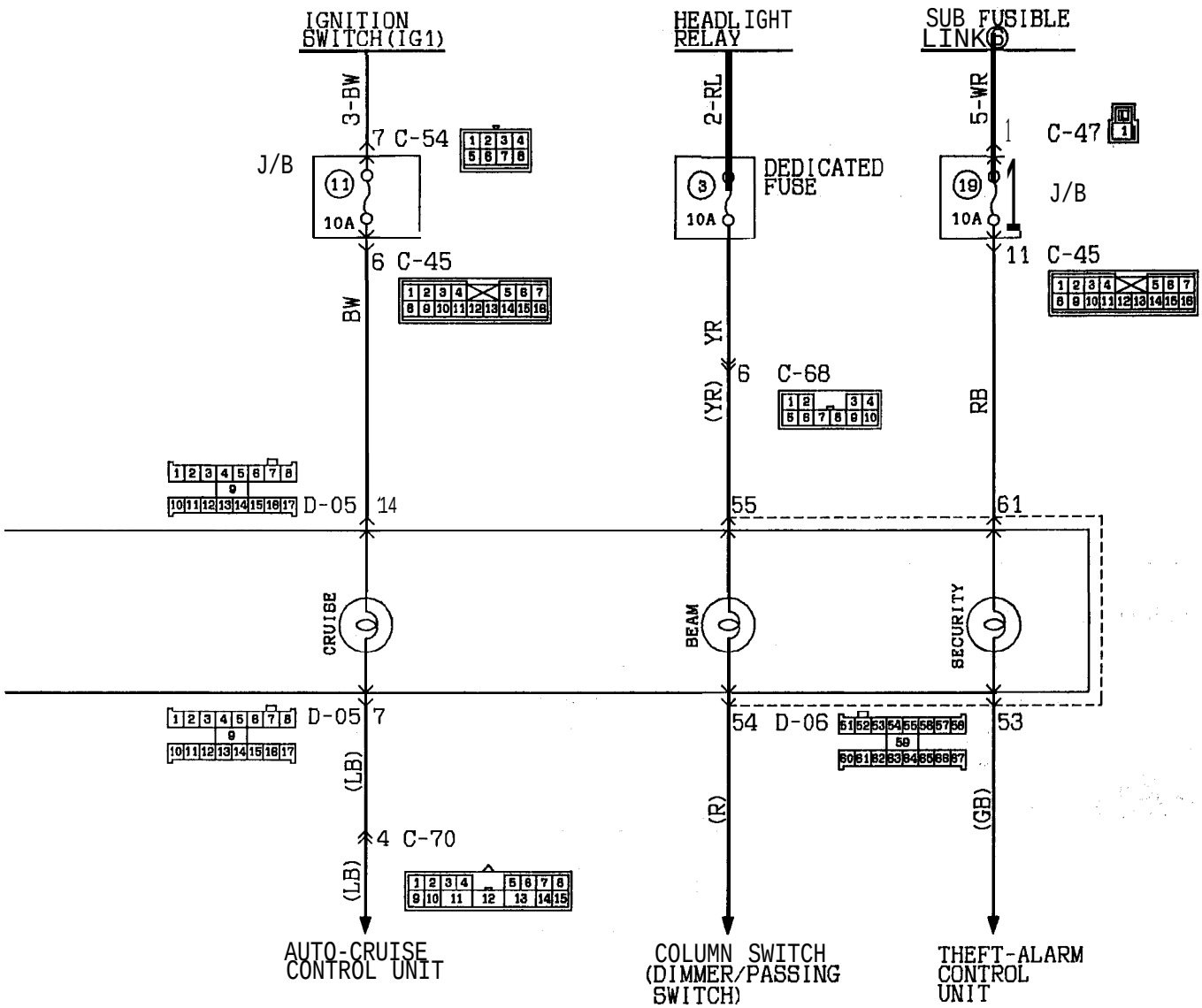
X35-AC-U1012-NC

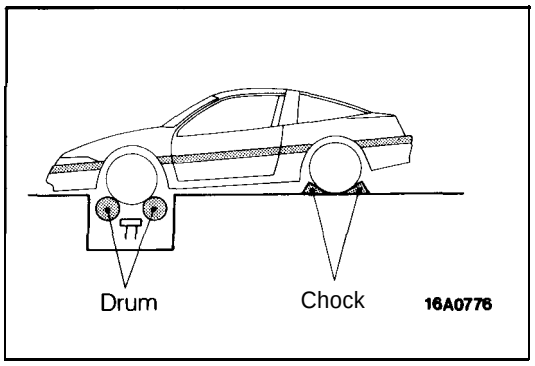

C-67
(M/T)
(A/T)
C-69
KEY REMINDER SWITCH C-05
J/B
WHEN KEY IS INSTALLED
WG
(BW)
G
WITHOUT AUTOMATIC SEATBELT
WITH AUTOMATIC SEATBELT
14 C-69
D-06 51
(G)
AWD-A/T
IGNITION SWITCH (IG1)
C-54
3-LB
10A
C-50
13
1.25-LB
7
DOME LIGHT E-01
A/T TEMP
BW
BR
C-72
CHECK ENGINE
RADIATOR
BELT
OIL
CHG
8
17 D-05
52 D-06
16
15 D-05
RG
(LY)
(YB)
(Y)
10 C-69
13
C-69
2 C-68
F-Y
F-BW
3 C-68
WITHOUT AUTOMATIC SEATBELT
WITH AUTOMATIC SEATBELT
OFF
ON
C-67
5 (A/T)
13 (M/T)
RADIATOR WATER LEVEL SWITCH
A-42
OIL PRESSURE SWITCH
B-21
64
B)
2-B
1
10
ALTERNATOR (L TERMINAL)
03
MPI CONTROL UNIT
C-65
SEATBELT TIMER C-37
AUTOMATIC SEATBELT CONTROL UNIT E-41
4-SPEED AUTOMATIC TRANSAXLE CONTROL UNIT
C-62
2

INDICATOR LIGHT CIRCUIT

CIRCUIT DIAGRAM




IGNITION SWITCH(IG1)
HEADLIGHT RELAY
SUB FUSIBLE LINK(6)
3-BW
2-RL
5-WR
7 C-54
J/B
11
10A
DEDICATED FUSE
3
10A
1
C-47
J/B
19
10A
6 C-45
11 C-45
BW
YR
(YR)
6 C-68
RB
D-05 14
55
61
CRUISE
BEAM
SECURITY
D-05 7
54 D-06
53
(LB)
(R)
(GB)
4 C-70
(LB)
AUTO-CRUISE CONTROL UNIT
COLUMN SWITCH (DIMMER/PASSING SWITCH)
THEFT-ALARM CONTROL UNIT



SERVICE ADJUSTMENT PROCEDURES

INSPECTION

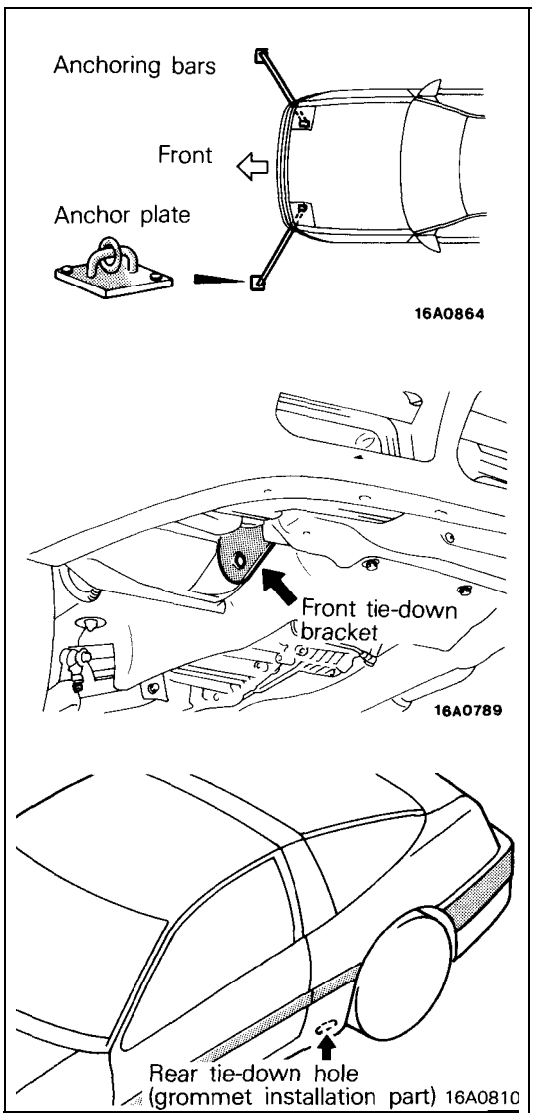
SPEEDOMETER INSPECTION N08HIAW

NOTE
For AWD models, refer to the section concerning special handling instructions for AWD models in "INTRODUCTION AND MASTER TROUBLESHOOTING".

Take note of the following before inspection:
(1) Assure tire pressure at standard value.
(Refer to GROUP 22–*Specifications.*)
(2) When placing the vehicle on a speedometer tester drum, make sure the center line of the vehicle is at right angles to the center line of the drum. Also, make sure the drum is positioned so as to center between the front tires.

Rear wheel safety procedures

(1) Be sure to chock both rear wheels to prevent the vehicle from moving. Secure the stoppers to the floor, or take measures to prevent the stoppers from slipping.
(2) Make sure the parking brake has been set.



Front wheel sway prevention procedure

(1) Attach anchoring bars on the tie-down brackets and secure their ends to the anchor plates.
(2) Make sure the tension on the right and left bars is the same. Also be sure there is enough tension on each bar.

Accident prevention procedures

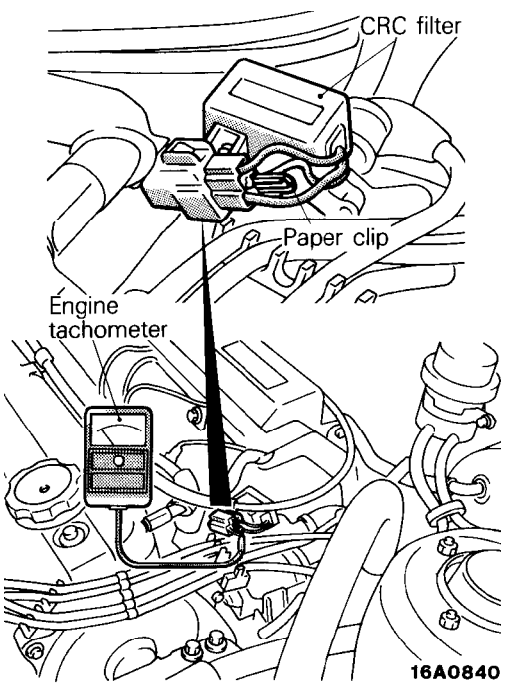
(1) Attach a chain or wire to the rear tie-down holes. Make sure the end of the wire or chain is secured firmly.
(2) Take all other necessary precautions.

Use a speedometer tester to measure the speedometer's indication error.

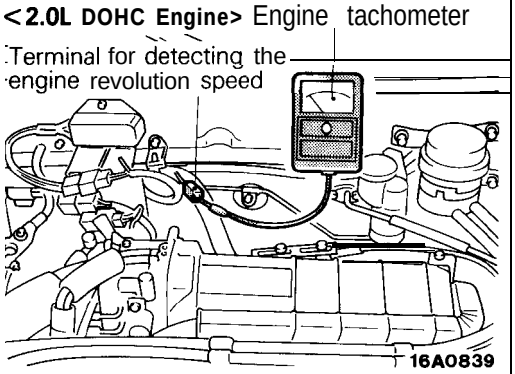
Standard value

Standard indication	Allowable range
mph	mph
20	19–22
40	38–44
60	57–66
80	76–88
100	94–110
km/h	km/h
40	37–44
80	75–88
120	113–132
160	150–176

<1.8L Engine>



<2.0L DOHC Engine> Engine tachometer



TACHOMETER INSPECTION N08HIBP

Connect engine tachometer and compare the engine tachometer and tachometer readings. Replace tachometer if difference is excessive.

Standard value:

Type 1 (8,000 rpm indication)	
700 **rpm**	**± 100 rpm**
3,000 rpm	**± 150 rpm**
5,000 rpm	**± 250 rpm**
Type 2 (9,000 rpm indication)	
700 rpm	**± 100 rpm**
3,000 rpm	$^{+225}_{-100}$ **rpm**
5,000 rpm	$^{+325}_{-100}$ **rpm**

Caution

As the tachometer is negative grounded, do not connect battery conversely to prevent damaging transistor and diode.

Connect the engine tachometer.

<1.8L Engine >

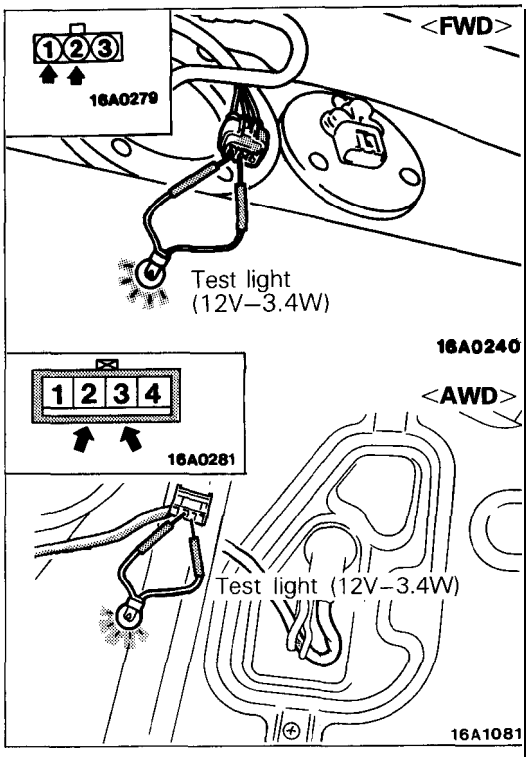
(1) Insert paper clip into the CRC filter connector (3-pole connector 0.5 W cable).
(2) Connect the engine tachometer to the inserted clip.

<2.0L DOHC Engine >

Insert paper clip into the engine revolution speed detection terminal provided in the engine compartment, and connect the engine tachometer to the inserted paper clip.

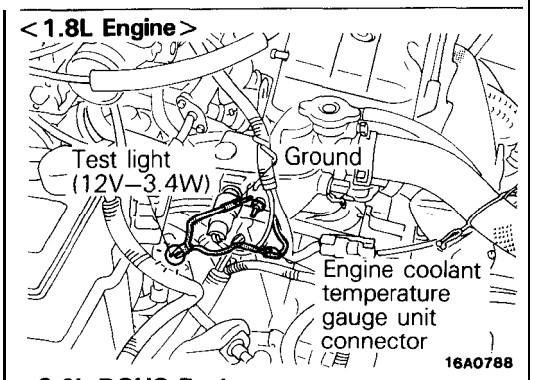
NOTE

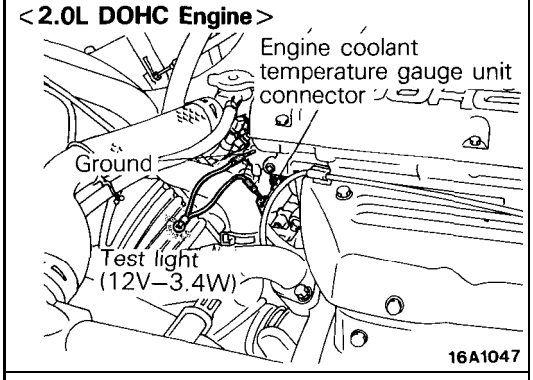
(1) For tachometer inspection, use of a fluxmeter-type engine tachometer is recommended. (Because a fluxmeter only needs to be clipped to the high tension cable.)
(2) <2.0L DOHC Engine>
For rpm, one-half of the actual engine rpm is indicated, so the actual engine rpm is two times the indicated value shown by the tachometer.



FUEL GAUGE SIMPLE INSPECTION N08HICI

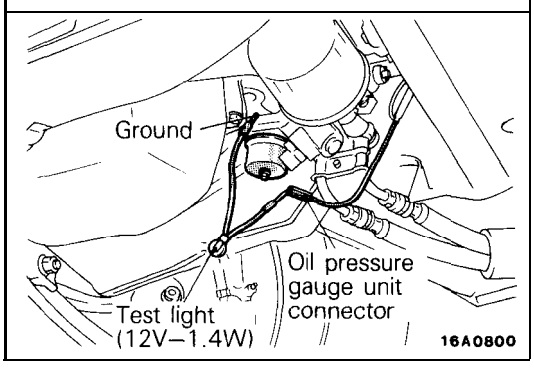
(1) Remove connector from fuel gauge unit in fuel tank.
(2) Ground the harness side connector via a test light (12V–3.4W).
(3) Turn ON ignition key.
(4) Assure test light goes on and gauge needle moves.
(5) If test light goes on but gauge needle does not move, replace fuel gauge.
If test light does not go on (and gauge needle does not move), check fuse for broken wire, or resistance between gauge terminals (refer to P.8-208), or break in harness. Replace or repair defective parts.





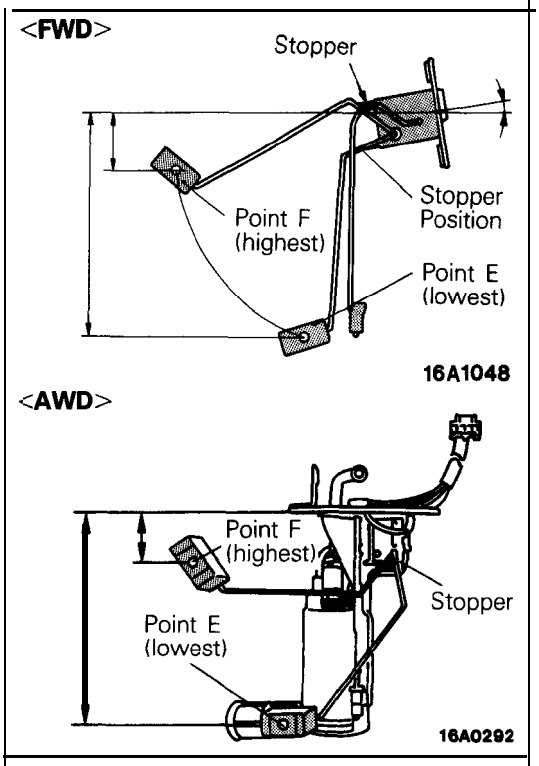
ENGINE COOLANT TEMPERATURE GAUGE SIMPLE INSPECTION N08HIDK

(1) Remove connector from engine coolant temperature gauge unit in engine compartment.
(2) Ground harness side connector via test light (12V–3.4W).
(3) Turn ON ignition key.
(4) Check that test light goes on and gauge needle moves.
(5) If test light goes on but the gauge needle does not move, replace engine coolant temperature gauge.
If test light does not go on (and gauge needle does not move), check fuse for broken wire, or resistance between gauge terminals (refer to P.8-208), or break in harness. Replace or repair defective part.



OIL PRESSURE GAUGE SIMPLE TEST N08HIFB

1. Disconnect the wiring connector from the oil pressure gauge unit inside the engine compartment.
2. Ground the connector at the harness through a test light.
3. Turn the ignition key to the ON position.
4. Check to be sure that the test light flashes or lights steadily and the oil pressure gauge operates.
5. If both the test light and gauge operate, the circuit to the gauge unit is normal and the gauge unit itself is faulty.
If the test light flashes or lights steadily but the gauge does not operate, the gauge is faulty.
If neither the test light nor the gauge operates, the oil pressure gauge circuit is faulty.



FUEL GAUGE UNIT INSPECTION

N08HIIS

To check, remove fuel gauge unit from fuel tank. (Refer to GROUP 14–Fuel Tank.)

Float Height of Fuel Gauge Unit

Move float and measure the height at point F (highest) and point E (lowest) with float arm touching stopper.

Standard value:

<FWD>

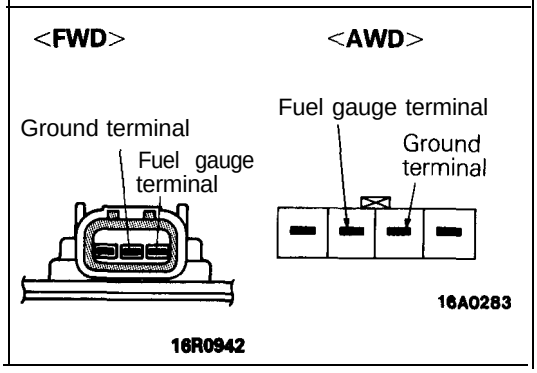
Point F 43.1–48.1 mm (1.69–1.89 in.)

Point E 175.5–179.5 mm (6.9–7.06 in.)

<AWD>

Point F 21.3–24.3 mm (.84–.96 in.)

Point E 199.2–202.2 mm (7.84–7.96 in.)



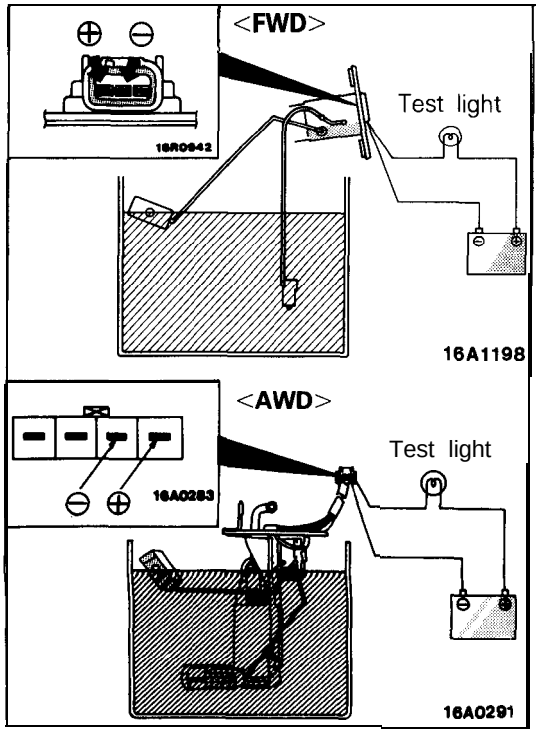
Standard Resistance of Fuel Gauge Unit

(1) Check that resistance value between the fuel gauge terminal and ground terminal is at standard value when fuel gauge unit float is at point F (highest) and point E (lowest).

Standard value: Point F 3±2 Ω

Point E 110±7 Ω

(2) Check that resistance value changes smoothly when float moves slowly between point F (highest) and point E (lowest).

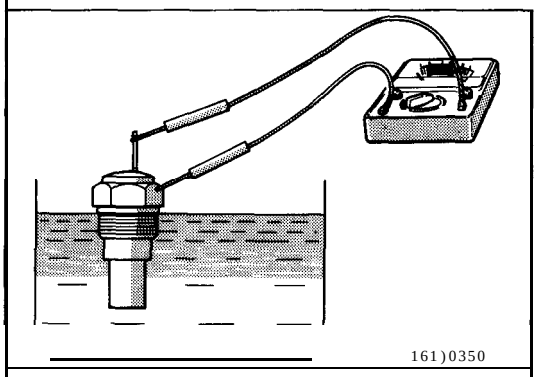


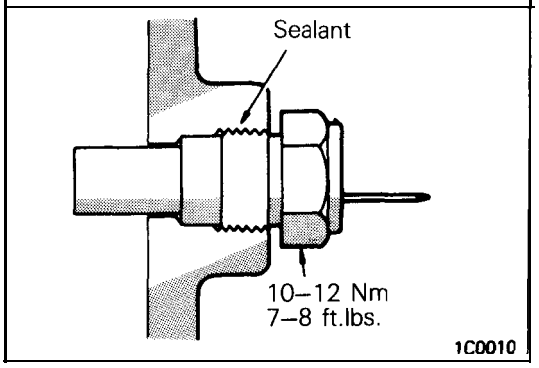
FUEL SENSOR INSPECTION

Connect fuel gauge unit to battery via test light (12V–3.4W). Immerse in water. Condition good if light goes off when unit thermistor **is in water** and lights when unit is removed from water.

Caution

After completing this test, wipe the unit dry and install it in the fuel tank.





ENGINE COOLANT TEMPERATURE GAUGE UNIT INSPECTION

N08HIKV

To check, remove engine coolant temperature gauge unit from intake manifold.

Standard Resistance of Engine Coolant Temperature Gauge Unit

(1) Immerse unit in 70°C (158°F) water to measure resistance.

Standard value: 104 ± 13.5 Ω

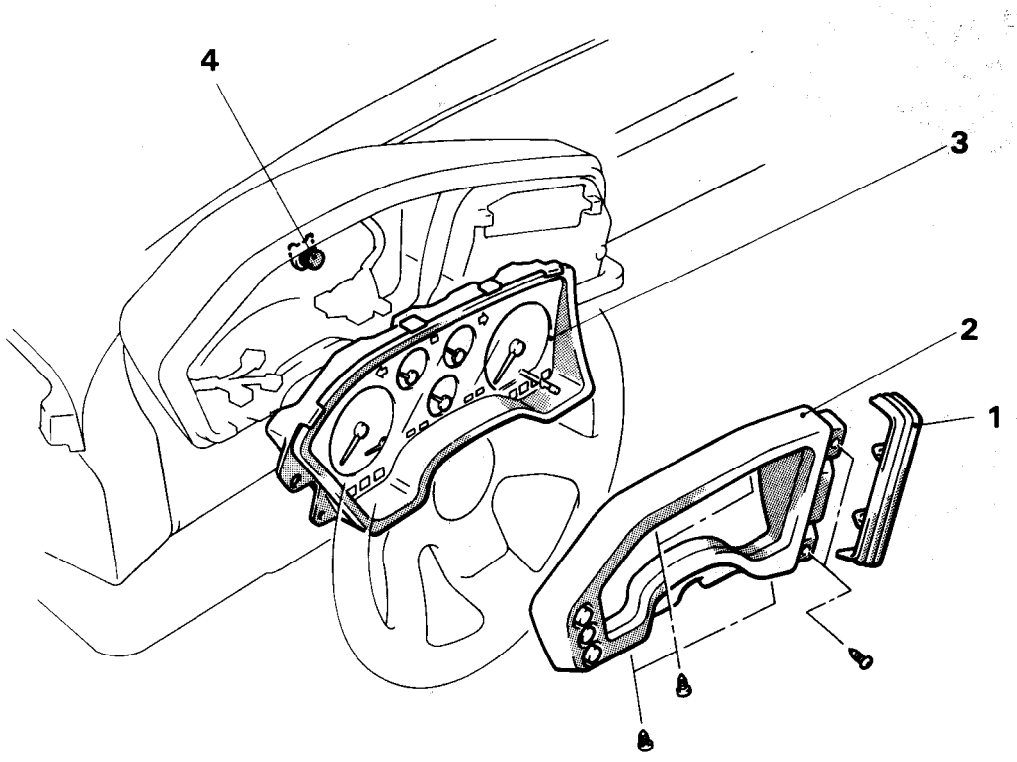
(2) After checking, apply the specified sealant around the thread of engine coolant temperature gauge unit and install on the intake manifold.

Specified sealant: MOPAR Part No. 4318034 or equivalent

METERS AND GAUGES

N08HJAO

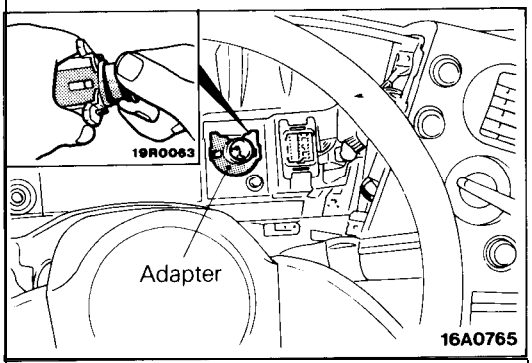
REMOVAL AND INSTALLATION

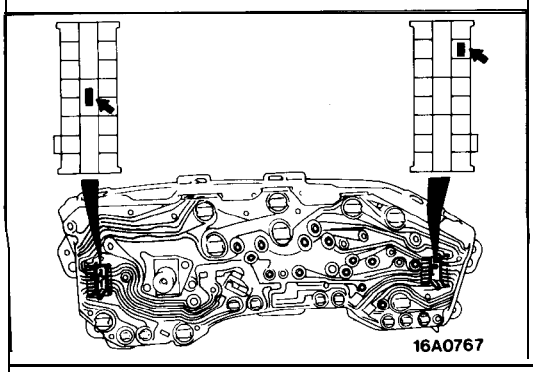


Removal steps

1. Cover (A)
2. Cluster panel assembly (A)
3. Combination meter
◆◆ 4. Adapter

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to "Service Points of Removal"





SERVICE POINTS OF REMOVAL

4. REMOVAL OF ADAPTER

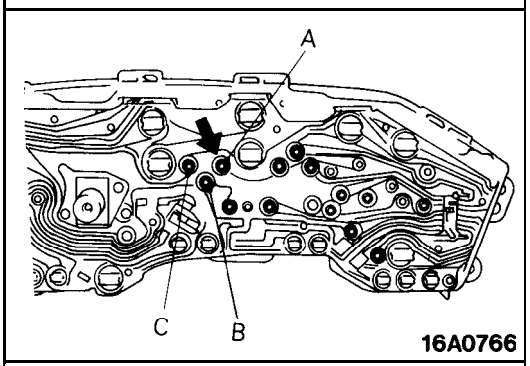
(1) Disconnect the speedometer cable at the transaxle end of the cable.
(2) Pull the speedometer cable slightly toward the vehicle interior, release the lock by turning the adaptor to the left or right, and then remove the adapter.

INSPECTION

Caution
For inspection, use a circuit tester which uses a measurement current of 4mA or less (excluding the reed switch inspection).

REED SWITCH INSPECTION

Use circuit tester to check circuit repeats off/on between terminals when speedometer shaft turned several times.



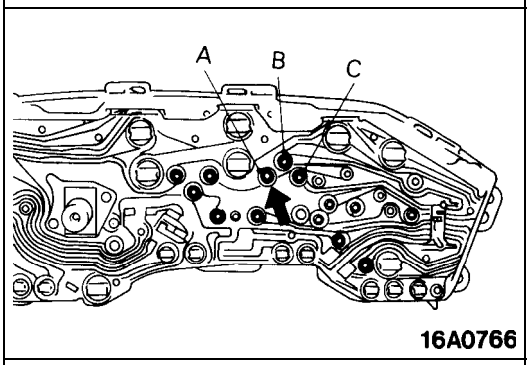
16A0766

FUEL GAUGE CIRCUIT INSPECTION

(1) Remove the IG terminal screw from area A.
(2) Measure resistance between terminals with circuit tester.

Standard value:

A–B	**Approx. 230 Ω**
A–C	**Approx. 102 Ω**
B–C	**Approx. 102 Ω**



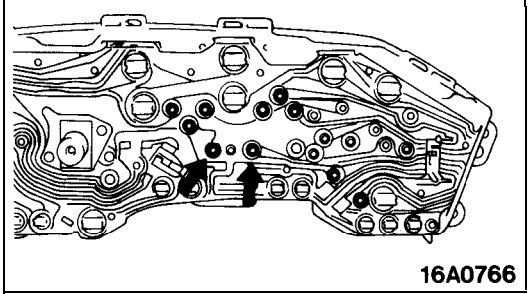
16A0766

ENGINE COOLANT TEMPERATURE GAUGE CIRCUIT INSPECTION

(1) Remove the IG terminal screw from area A.
(2) Measure resistance between terminals with circuit tester.

Standard value:

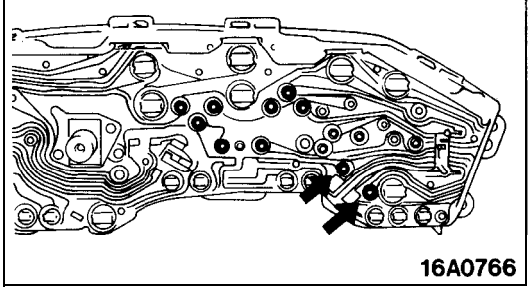
A–B	**Approx. 130 Ω**
A–C	**Approx. 53 Ω**
B–C	**Approx. 162 Ω**


16A0766

OIL PRESSURE GAUGE

Measure resistance between terminals with circuit tester.

Standard value: Approx. 42 Ω

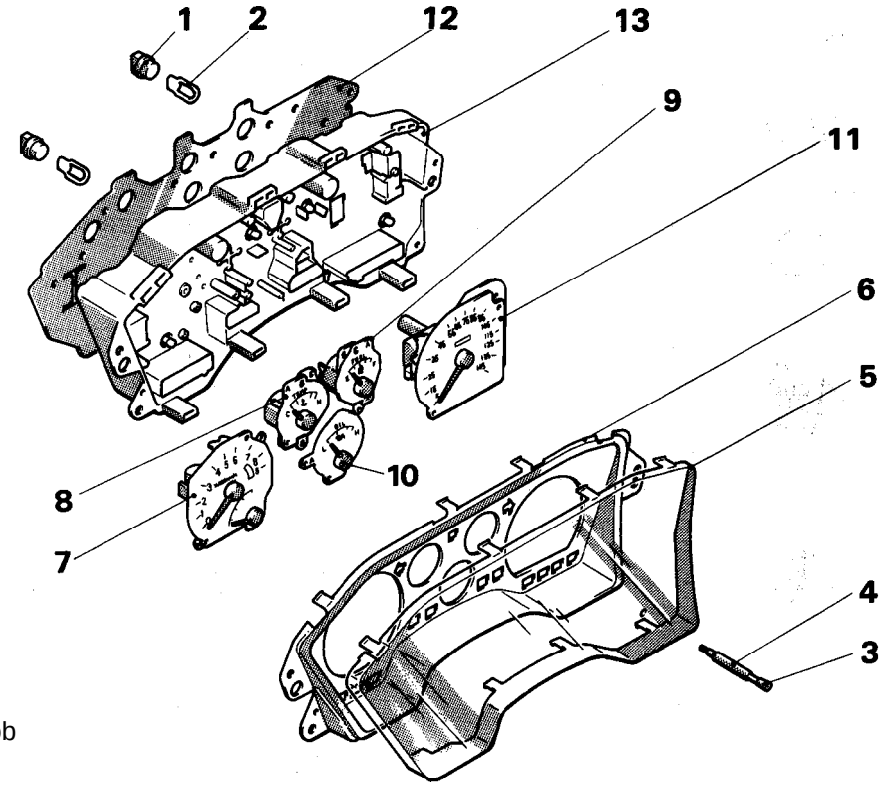

16A0766

PRESSURE METER

Measure resistance between terminals with circuit tester.

Standard value: Approx. 72 Ω

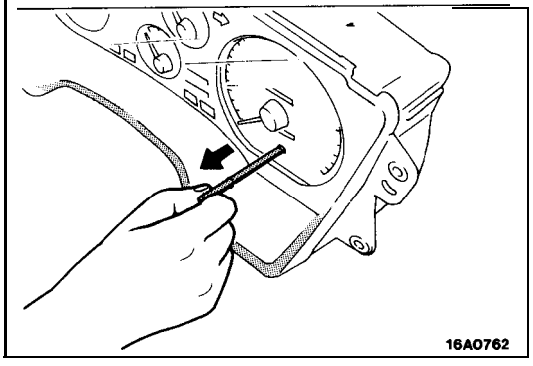
DISASSEMBLY AND REASSEMBLY



Disassembly steps

1. Bulb socket
2. Bulb
◆◆ 3. Trip counter reset knob
4. Insulator
5. Meter glass
6. Window plate
7. Tachometer or tachometer and pressure meter <Turbo >
8. Engine coolant temperature gauge
9. Fuel gauge
10. Oil pressure gauge
11. Speedometer
12. Printed-circuit board
13. Meter case

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆: Refer to "Service Points of Disassembly".



SERVICE POINTS OF DISASSEMBLY

3. REMOVAL OF TRIP COUNTER RESET KNOB

Holding the trip counter reset knob, pull it toward you, and the trip counter reset knob will be removed.

INDICATORS

N08HKAW

Symbol		Operation
	Turn signal indicator	This indicator flashes, as do the same side of turn-signal light flashes. If the turn-signal light is burnt out, the indicator flashes faster than normal indicator. This indicator is common with hazard light.
	High beam indicator	This indicator illuminates when the headlights are on high beam.
	Door-ajar warning	This indicator comes on when the door or liftgate is either open or not completely closed.
	Seat belt warning	<Vehicles with automatic seatbelt> This warning light warns the driver and front passenger to fasten their seat belts. If one or more seat belts are not fastened, the automatic seat belt control unit detects that fact and causes the warning light to be illuminated or flash. How long the light is illuminated or how many times it flashes depends on whether only one, or both of the belts remain unfastened.
		<Vehicles without automatic seatbelt> The seat belt warning light will flash for about six seconds when the ignition key is turned to the ON position. If at this time the driver's seat belt is not buckled, the alarm buzzer will sound four times in synchronism with the flashing of the warning light.
BRAKE	Brake warning (for U.S.A.)	This indicator comes on when the ignition key is in "ON" position, and goes off after the engine has started. This indicator comes on when the parking brake is applied or brake fluid level falls less than the specific level.
	Brake warning (for Canada)	
	Low fuel warning	This indicator comes on when the fuel in the fuel tank falls less than approx. 8 liters (2.1 gals.).
	Charging warning	This indicator comes on when the ignition key is in "ON" position, and goes off after the engine has started. This indicator comes on when the drive belt breaks or the trouble occurs in the charging system.
	Oil pressure warning	This indicator comes on when the ignition key is in "ON" position, and goes off after the engine has started. This indicator comes on when the oil fails or the trouble occurs in the oil circulating system while driving.
	Engine coolant level warning	This indicator illuminates when the coolant level in the radiator reservoir tank falls below the specified level.
CHECK ENGINE	Check engine warning light	This light illuminates when the ignition key is turned to the "ON" position, but should go out in a few seconds. If the light illuminates while the vehicle is moving, there is a malfunction of a component related to exhaust gases.

Symbol		Operation
CRUISE	Cruise control indicator light	The light illuminates when the auto-cruise control switch is switched ON, and the auto-cruise control system is activated.
OD OFF	Overdrive indicator	The light will light up when the overdrive switch is off.
POWER	Power indicator	The POWER indicator is lit when the PWR/ECO switch is in "PWR" position, while the ECONOMY indicator is lit in "ECO" position.
ECONOMY	Economy indicator	
SECU RITY	SECURITY light (Vehicles with theft-alarm system)	Illuminates for about 20 seconds when the theft-alarm system can be set, and then the illumination stops.
A/T TEMP 68W068	A/T fluid temperature warning light	This A/T fluid temperature warning light comes on when automatic transmission fluid temperature becomes abnormally high.
ANTI LOCK	Anti-lock braking system warning light	When the ignition switch is set to the ON position, the light flashes two times (for FWD) or four times (for AWD) to confirm the operation of the anti-lock braking system warning light. This light illuminates when a malfunction is discovered in the anti-lock braking system.

LIGHTING SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08IB--

Items	Specifications
Exterior lights	
Headlight W	65145
Fog light W	35
Front turn-signal light W	27/8 (1157)
Front combination light	
Side marker light CP	3 (168)
Position light CP	3 (168)
Rear side marker light CP	3 (168)
Rear combination light	
Turn-signal light CP	32 (1156)
Stop and tail light CP	32/2 (2057)
Back-up light W	27
License plate light CP	3 (168)
High-mounted stop light W	27 or 5*
Interior lights	
Front dome light	
Dome light W	8
Spot light W	8
Foot light W	3.4
Glove compartment light W	3.4
Luggage compartment light W	5

NOTE
1. *: Vehicles with rear air spoiler
2. The values in parentheses denote SAE trade numbers.

SERVICE SPECIFICATIONS

N08IC--

Items	Specifications
Limit	
Headlight intensity	20,000 cd or more

TORQUE SPECIFICATIONS

N08ID--

Items	Nm	ft.lbs.
Link assembly lock nut (outside)	5 - 7	4 - 5
Link assembly lock nut (inside)	3 - 5	2 - 3

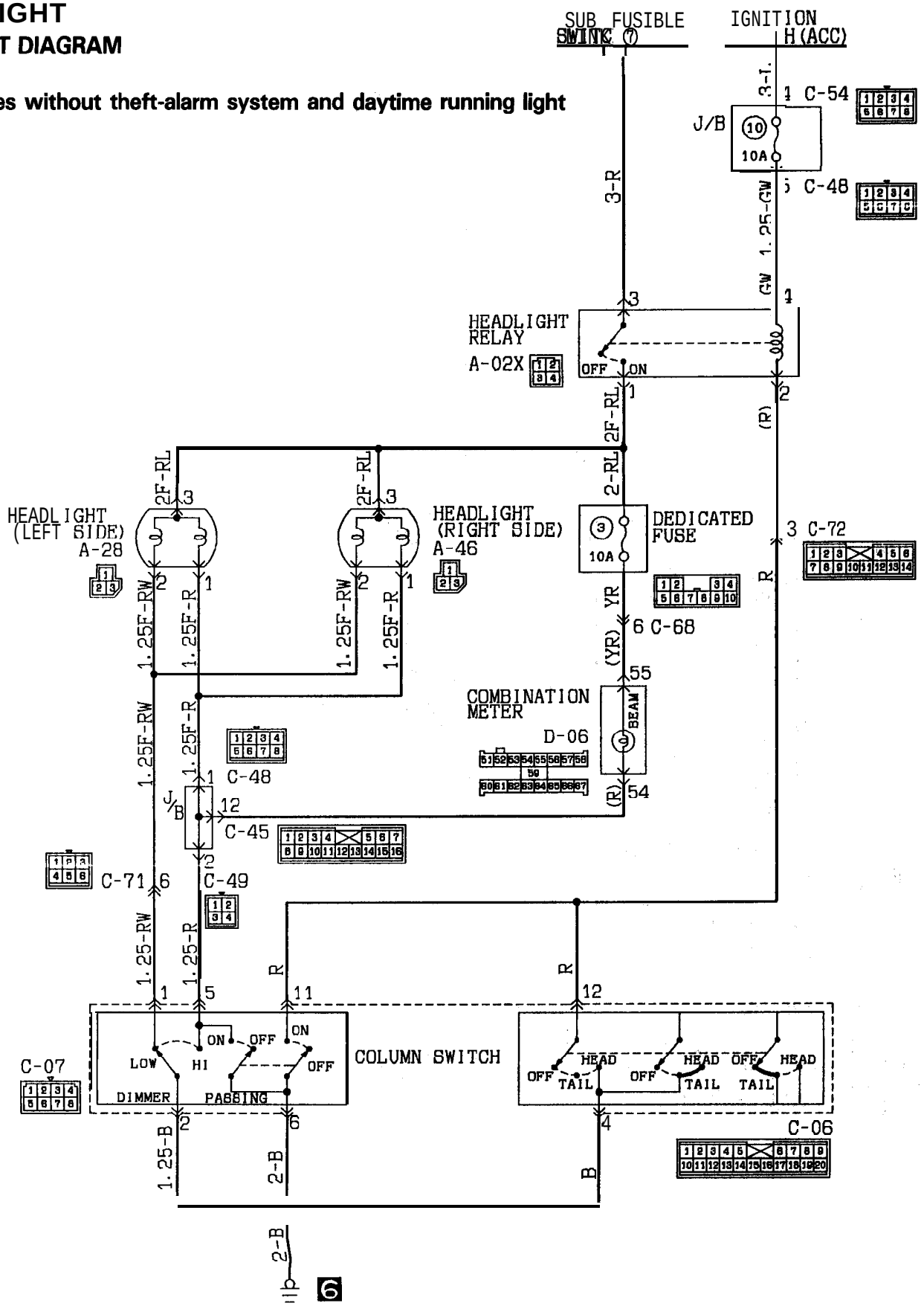
TROUBLESHOOTING

N08IHBN

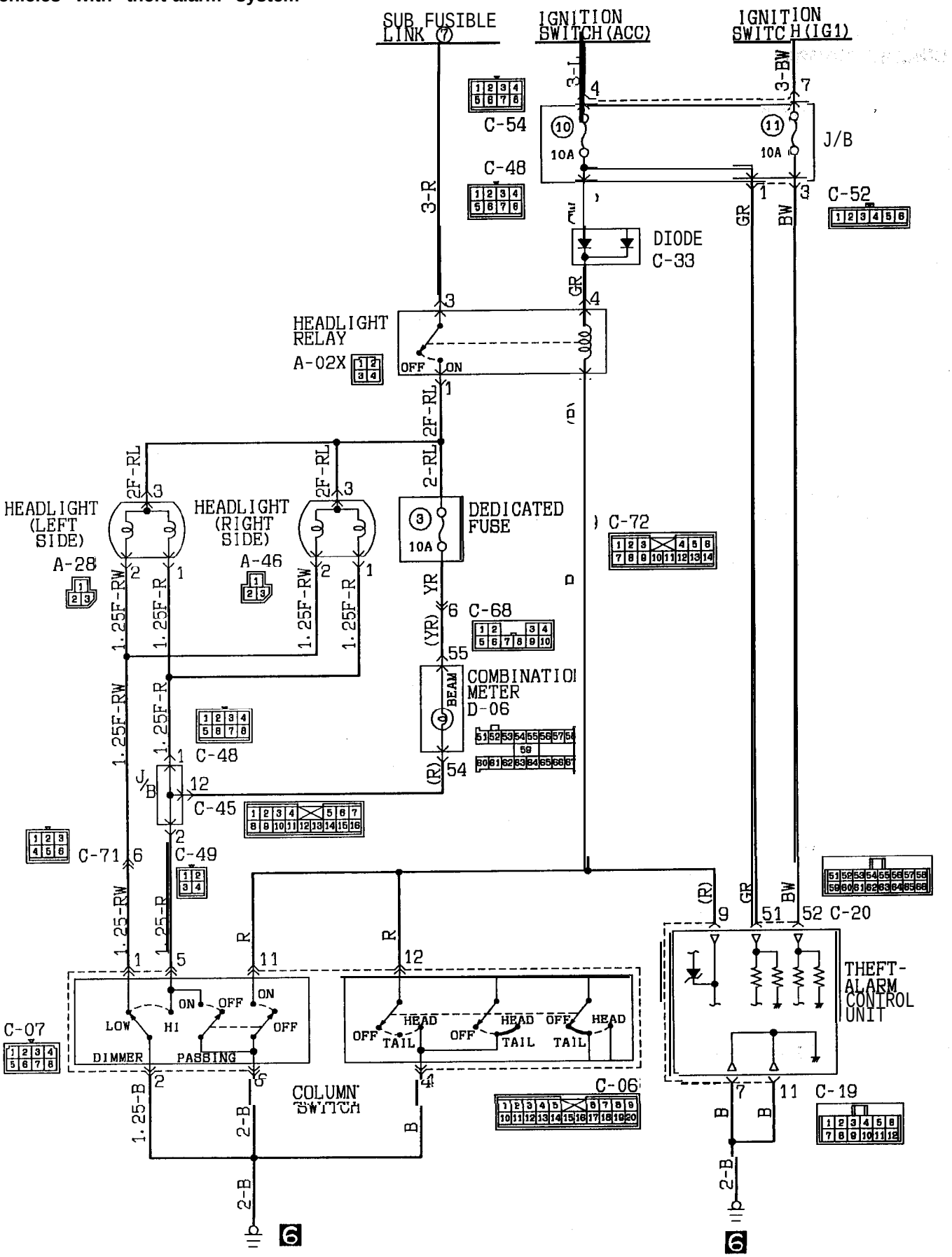
HEADLIGHT

CIRCUIT DIAGRAM

Vehicles without theft-alarm system and daytime running light



Vehicles with theft-alarm system



X35-AC-U0818-NC

OPERATION <VEHICLES WITHOUT DAYTIME RUNNING LIGHT>

Conditions for switch-ON of headlight relay

Ignition switch	Lighting switch	Dimmer·passing switch	Headlight relay
"ACC" or "ON"	"HEAD"	—	ON
"ACC" or "ON"	—	"PASS"	ON

<Low-beam operation>

- The headlight relay is switched ON when the lighting switch is set to the "HEAD" position.
- The low beam of the headlights will illuminate when, in this condition, the dimmer/passing switch is set to the "LO" position.

<High-beam operation>

- The headlight relay is switched ON when the lighting switch is set to the "HEAD" position.
- The high beam of the headlights will illuminate when, in this condition, the dimmer/passing switch is set to the "HI" position.

<High-beam indicator light>

- This indicator illuminates during use of the high beam of the headlights, and when the passing signal (high beam) is activated, thus indicating that the headlights' high beam is illuminated.

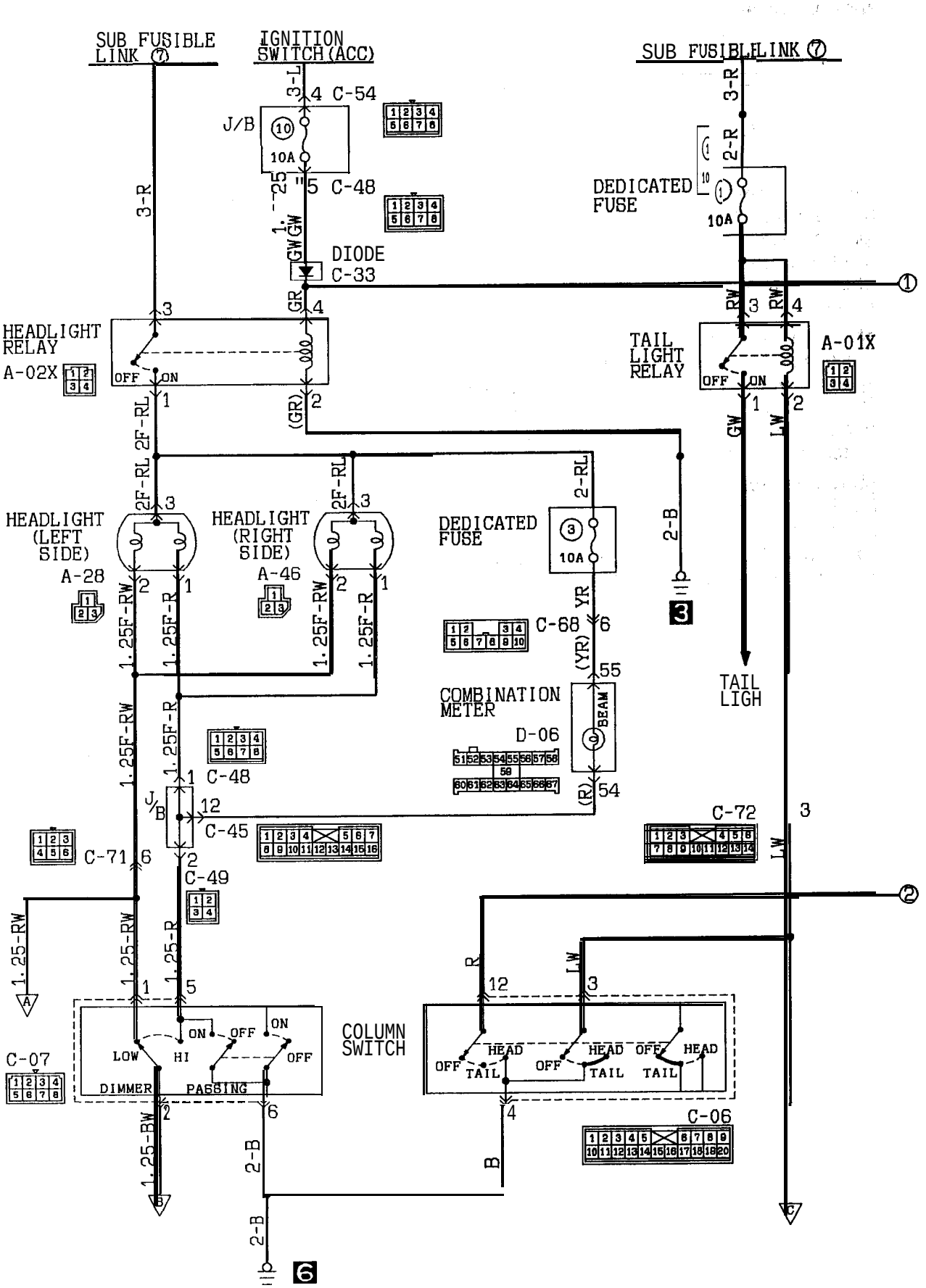
TROUBLESHOOTING HINTS

1. Headlights don't come on.
   1) But the tail lights do illuminate.
      - Check the headlight relay.
      - Check the multi-purpose fuse ⑩.
   2) The tail lights also don't illuminate.
      - Check the lighting switch.
2. The low beam at both sides doesn't illuminate.
   - Check the "LO" contacts of the dimmer switch.
3. The upper beam at both sides doesn't illuminate.
   1) The passing signal functions OK.
      - Check the "HI" contacts of the dimmer switch.
   2) The passing signal doesn't function.
      - Check the dimmer switch.
4. One headlight doesn't illuminate.
   - Check the bulb.
5. Can't switch from low to high beam or vice-versa.
   - Check the dimmer switch
6. The high beam indicator light doesn't illuminate.
   1) The high beam of the headlights is normal.
      - Check dedicated fuse No. ③.
      - Check the bulb.

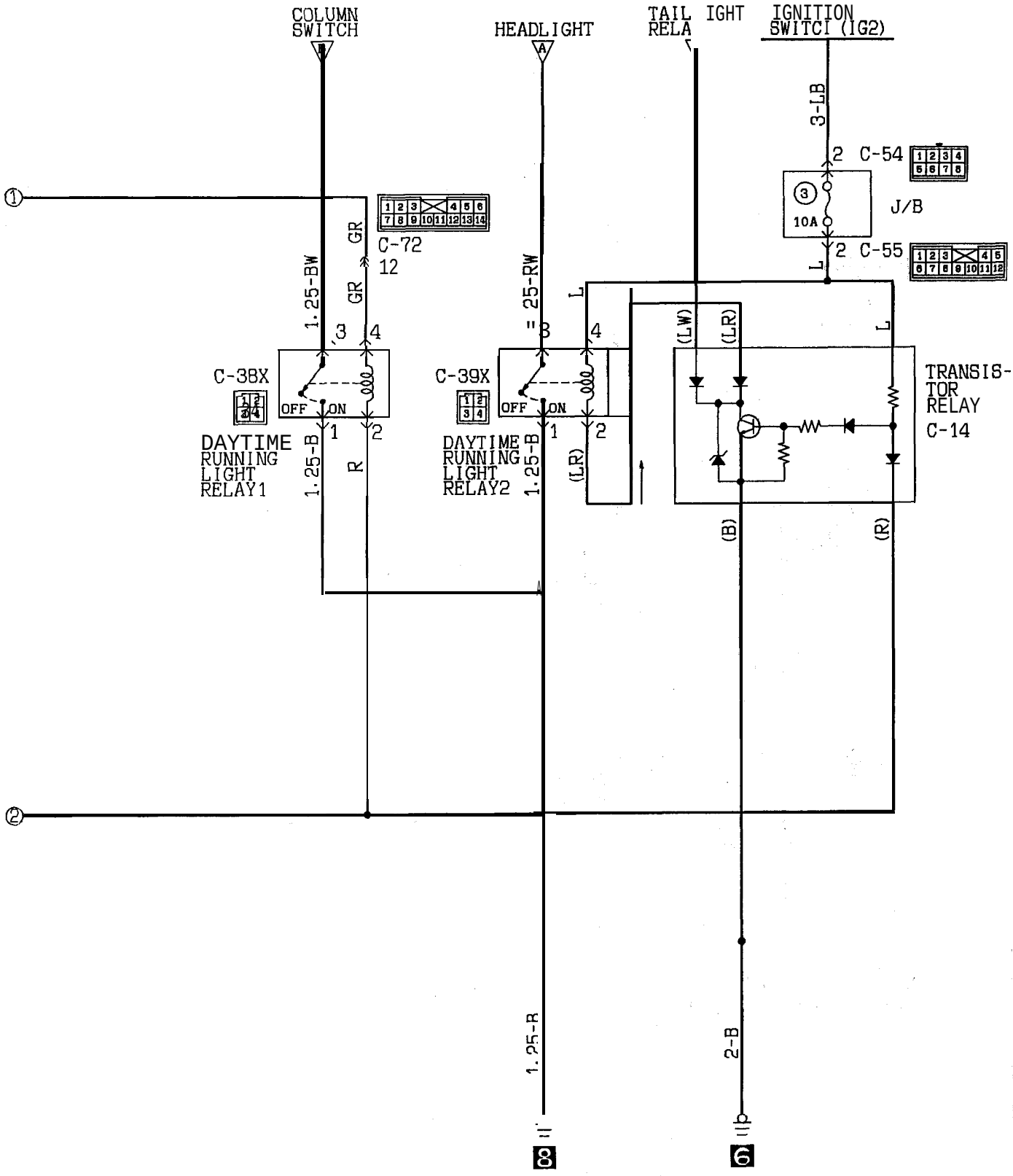
NOTE

For information concerning the headlight relay, refer to P.8-244, and for the theft-alarm system, refer to P.8-300.

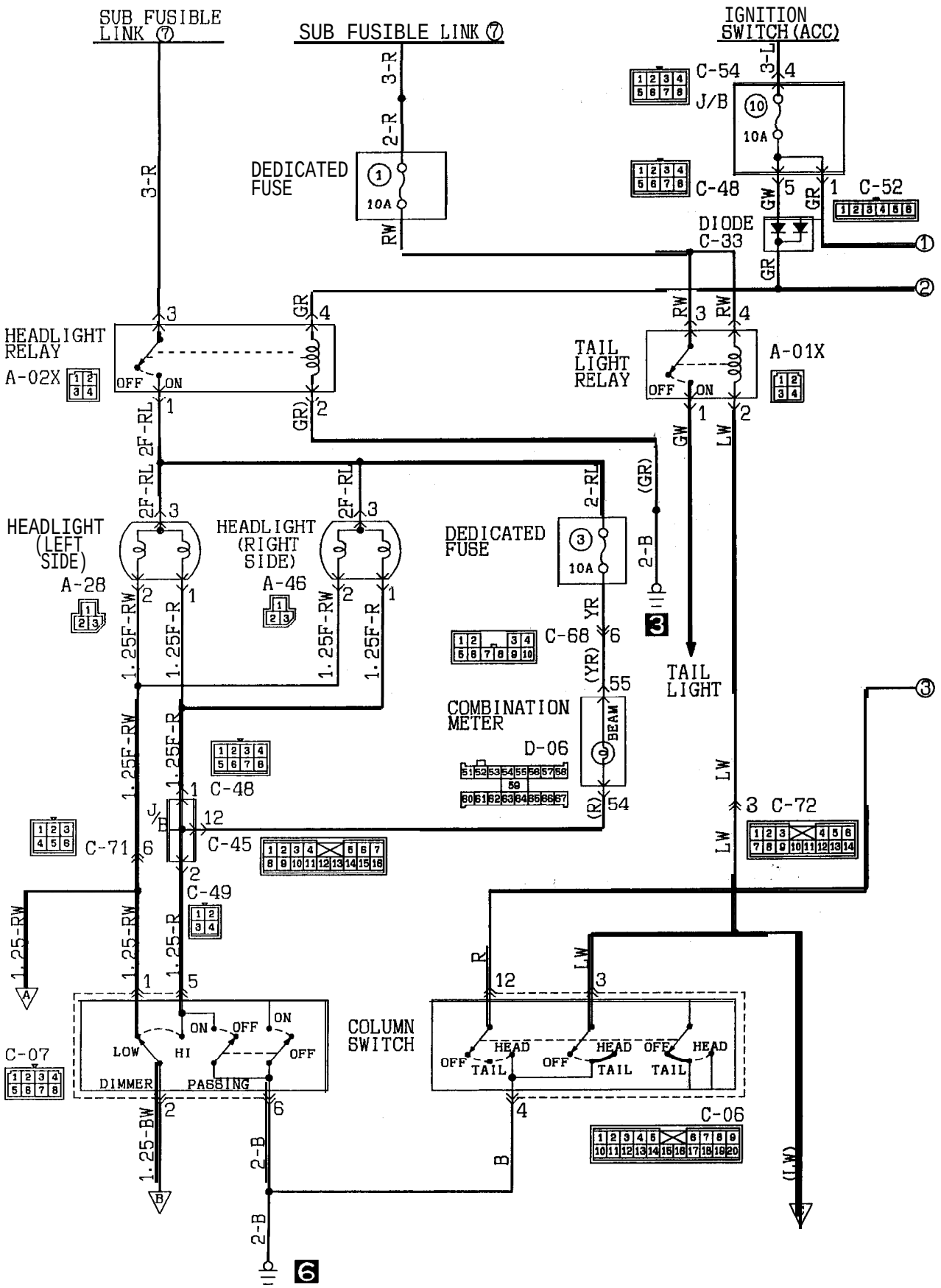
Vehicles with daytime running light



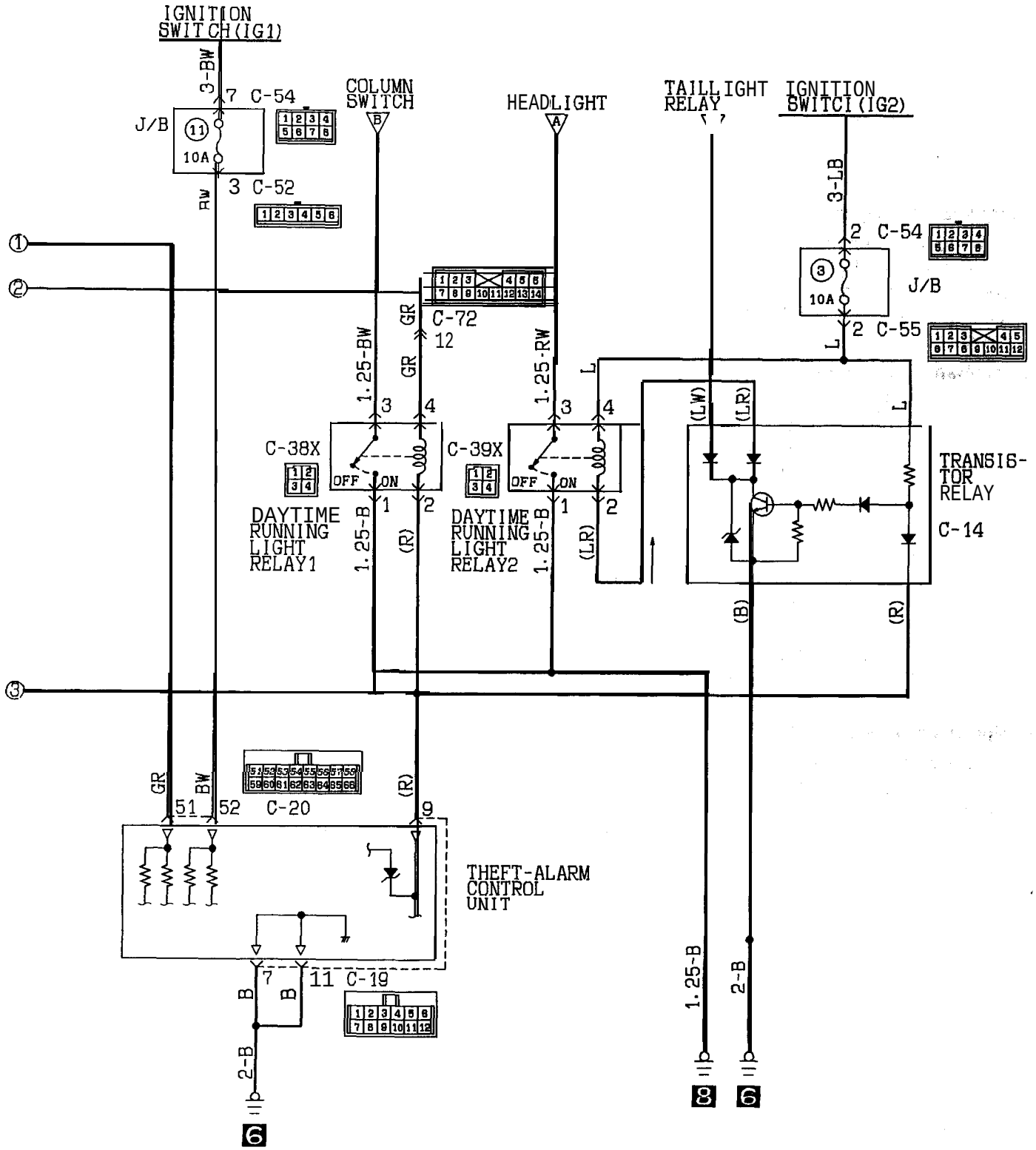
X35-AC-U0819-NC


COLUMN SWITCH
HEADLIGHT
TAIL LIGHT RELAY
IGNITION SWITCH (IG2)
3-LB
2 C-54
J/B
10A
3
2 C-55
L
C-72
12
GR
GR
1.25-BW
3
4
C-38X
OFF
ON
1
2
DAYTIME RUNNING LIGHT RELAY1
1.25-B
R
1.25-RW
C-39X
DAYTIME RUNNING LIGHT RELAY2
(LR)
(LW)
TRANSIS-TOR RELAY C-14
(B)
(R)
1.25-R
2-B
8
6

Vehicles with theft-alarm and daytime running light



KX35-AC-U0820-NC


IGNITION SWITCH(IG1)
3-BW
7 C-54
J/B
11
10A
3 C-52
RW
COLUMN SWITCH
HEADLIGHT
TAILLIGHT RELAY
IGNITION SWITCH(IG2)
3-LB
2 C-54
3
10A
J/B
2 C-55
L
C-72
12
GR
1.25-BW
1.25-RW
3
4
C-38X
C-39X
OFF
ON
1
2
DAYTIME RUNNING LIGHT RELAY1
DAYTIME RUNNING LIGHT RELAY2
1.25-B
(R)
(LR)
(LW)
TRANSISTOR RELAY
C-14
(B)
C-20
51
52
9
GR
BW
THEFT-ALARM CONTROL UNIT
7
11 C-19
B
2-B
6
8
1.25-B
2-B

OPERATION < VEHICLES WITH DAYTIME RUNNING LIGHT >

Conditions for switch-ON of headlight relay

Ignition switch	Lighting switch	Dimmer passing switch	Headlight relay
''ON''	''OFF''	—	ON
"ACC" or "ON"	"HEAD"	—	ON
"ACC" or "ON"		"PASS"	ON

< Daytime running light operation >

- Turning the ignition switch to the ON position causes the headlight relay, daytime running light relay (2), and tail light relay to be energized, which causes the headlights, tail lights, etc. to come on.

< Low-beam operation >

- Placing the lighting switch in the HEAD position causes the headlight relay and daytime running light relay (1) to be energized.
- If the dimmer/passing switch is placed in the LO position at this time, the headlights light up in low beam.

< High-beam operation >

- Placing the lighting switch in the HEAD position causes the headlight relay and daytime running light relay (1) to be energized.
- If the dimmer/passing switch is placed in the HI position at this time, the headlights light up in high beam.

< High-beam indicator light >

- This indicator illuminates during use of the high beam of the headlights, and when the passing signal (high beam) is activated, thus indicating that the headlights' high beam is illuminated.

TROUBLESHOOTING HINTS

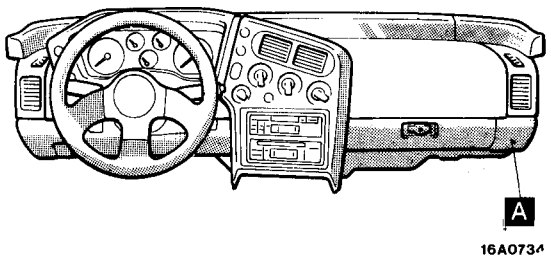
1. Headlights don't come on.
   (1) But the tail lights do illuminate.
   - Check the headlight relay.
   - Check the multi-purpose fuse ⑩.

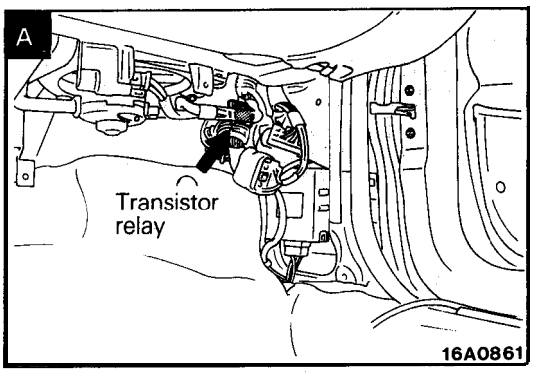
   (2) The tail lights also don't illuminate.
   - Check the lighting switch.
2. The low beam at both sides doesn't illuminate.
   - Check the "LO" contacts of the dimmer switch.
3. The upper beam at both sides doesn't illuminate.
   (1) The passing signal functions OK.
   - Check the "HI" contacts of the dimmer switch.

   (2) The passing signal doesn't function.
   - Check the dimmer switch.
   - Check the daytime running light relay (1).
   - Check the transistor relay.
4. One headlight doesn't illuminate.
   - Check the bulb.
5. Can't switch from low to high beam or vice-versa.
   - Check the dimmer switch.
6. With the ignition switch at the "ON" position, the headlights' low beam does not illuminate.
   - Check the daytime running light relay (2).
   - Check the transistor relay.
7. The high beam indicator light doesn't illuminate.
   (1) The high beam of the headlights is normal.
   - Check dedicated fuse No. ③.
   - Check the bulb.

COMPONENTS LOCATION

Name	Symbol
Transistor relay	A





NOTE
For information concerning the headlight relay, daytime running light relay, refer to P.8-244, 246, and for the theft-alarm system, refer to P.8-300.

FOG LIGHT

OPERATION

- Set the lighting switch to the "HEAD" position.
- If the fog light switch is set at the "ON" position when the dimmer switch is at the "low" position, current flows through the multi-purpose fuse, lighting switch, diode, fog light switch, fog light relay, dimmer switch, daytime running light relay 1* and ground, causing the fog light relay contacts to close.

  NOTE
  * indicates vehicles with daytime running light.
- Once the fog light relay contacts have closed, current flows through the dedicated fuse, fog light relay (contacts), fog lights, and ground, causing the fog lights to go on.

TROUBLESHOOTING HINTS

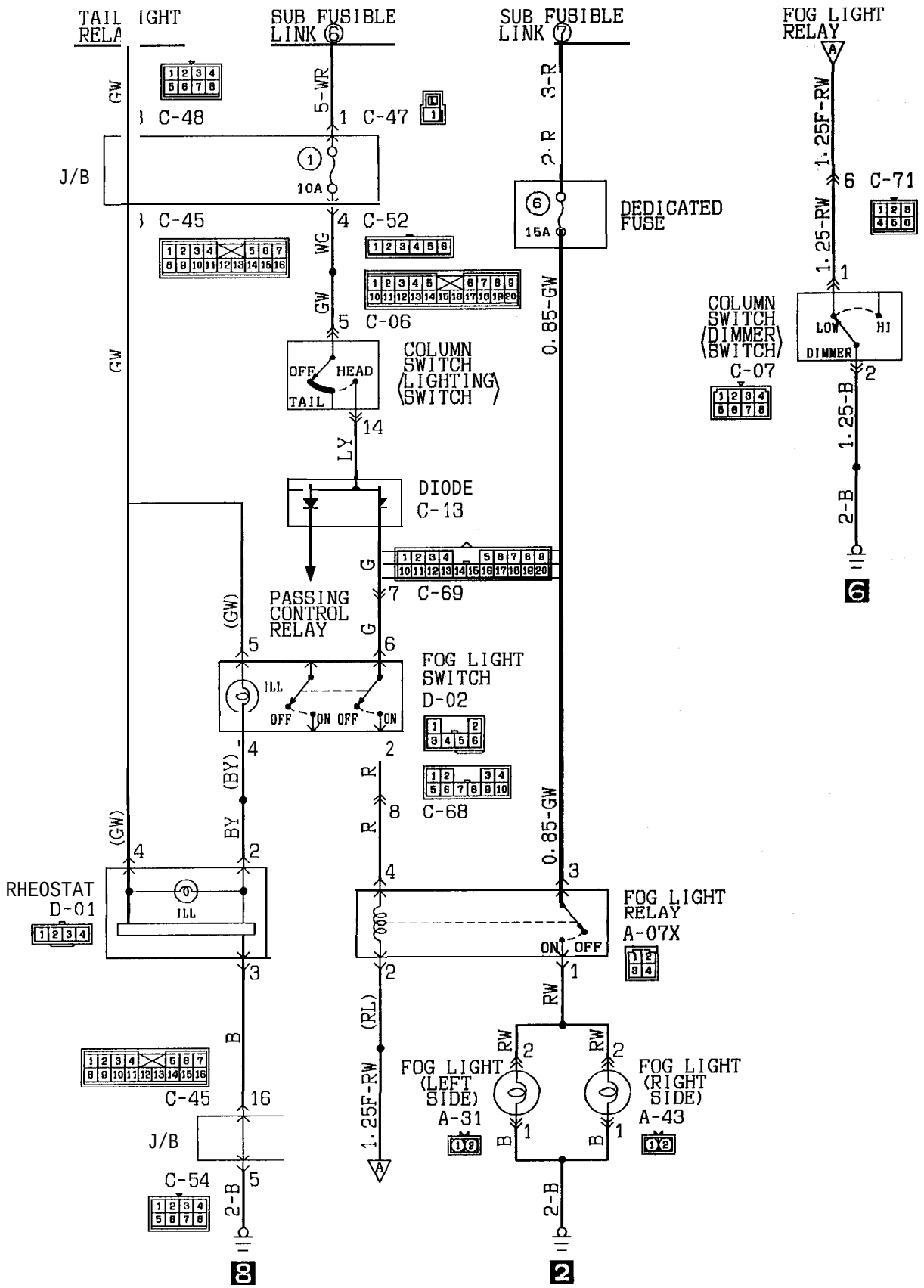
1. The right or left fog lights only go on.
   - Check the bulb.
2. Fog lights do not go on when the fog light switch is set at "ON".
   - Check the dedicated fuse ⑥.

NOTE
For information concerning the fog light relay, refer to P.8-244.

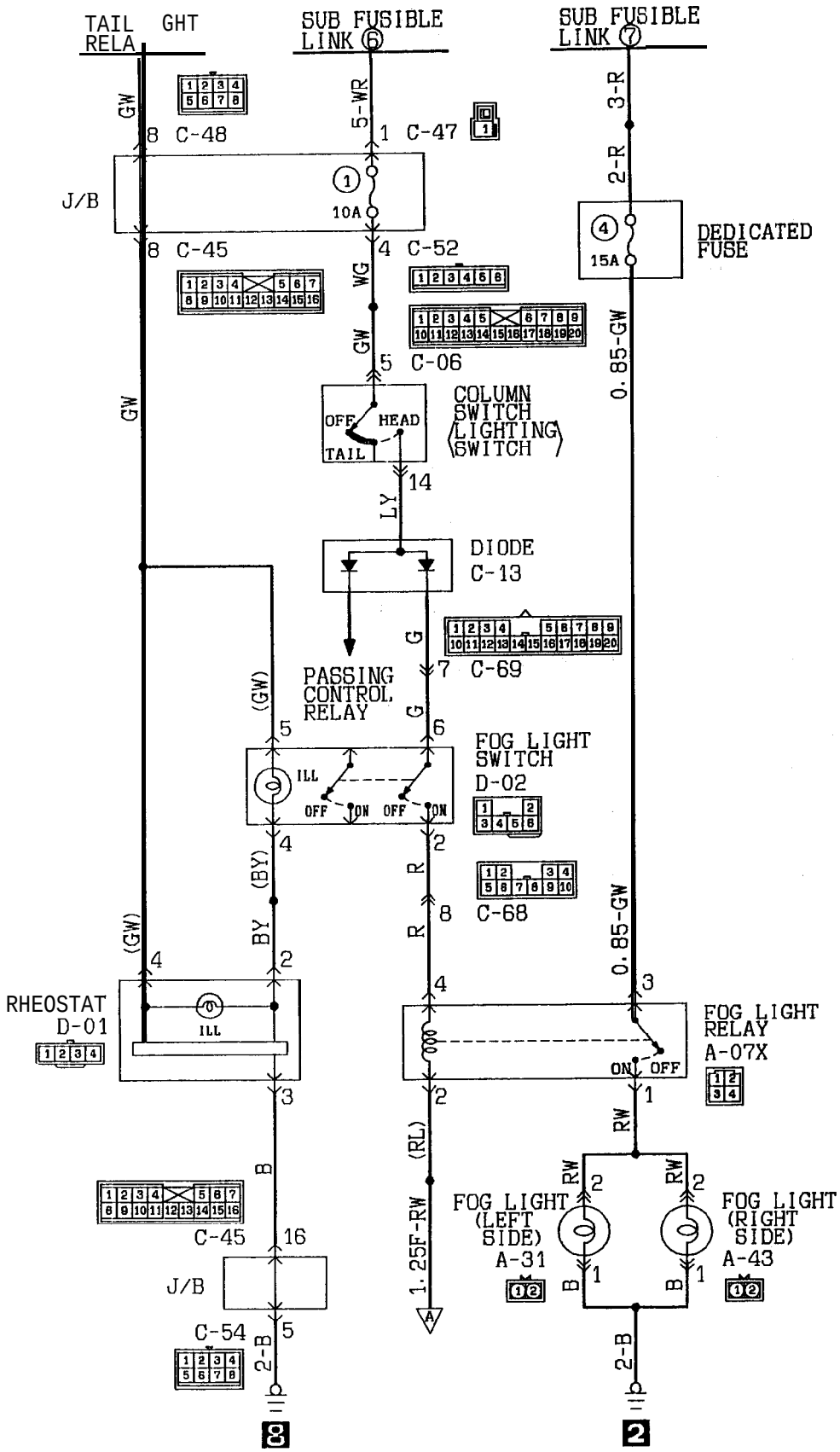
CIRCUIT DIAGRAM

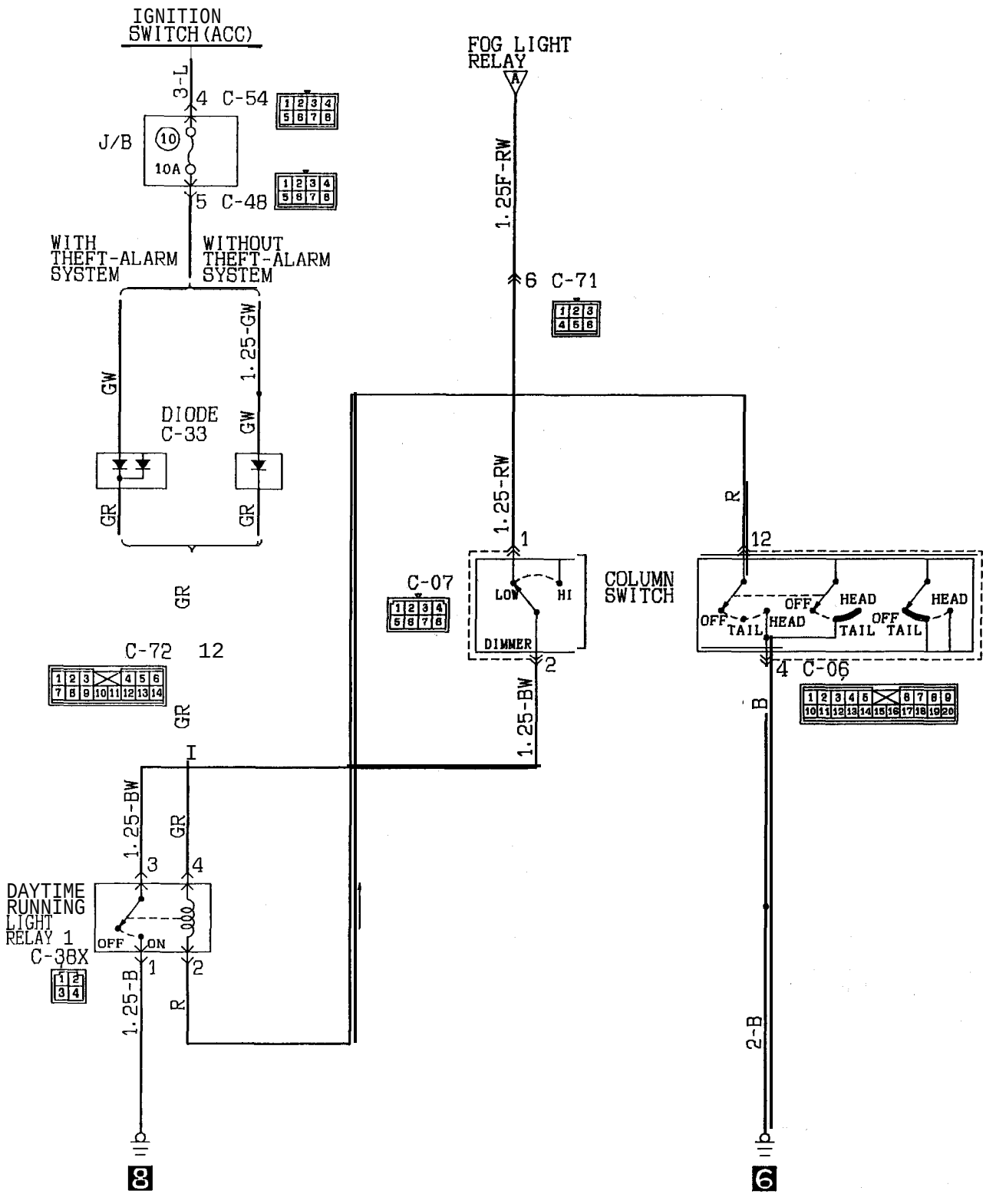
N081HKB

Vehicles without daytime running light



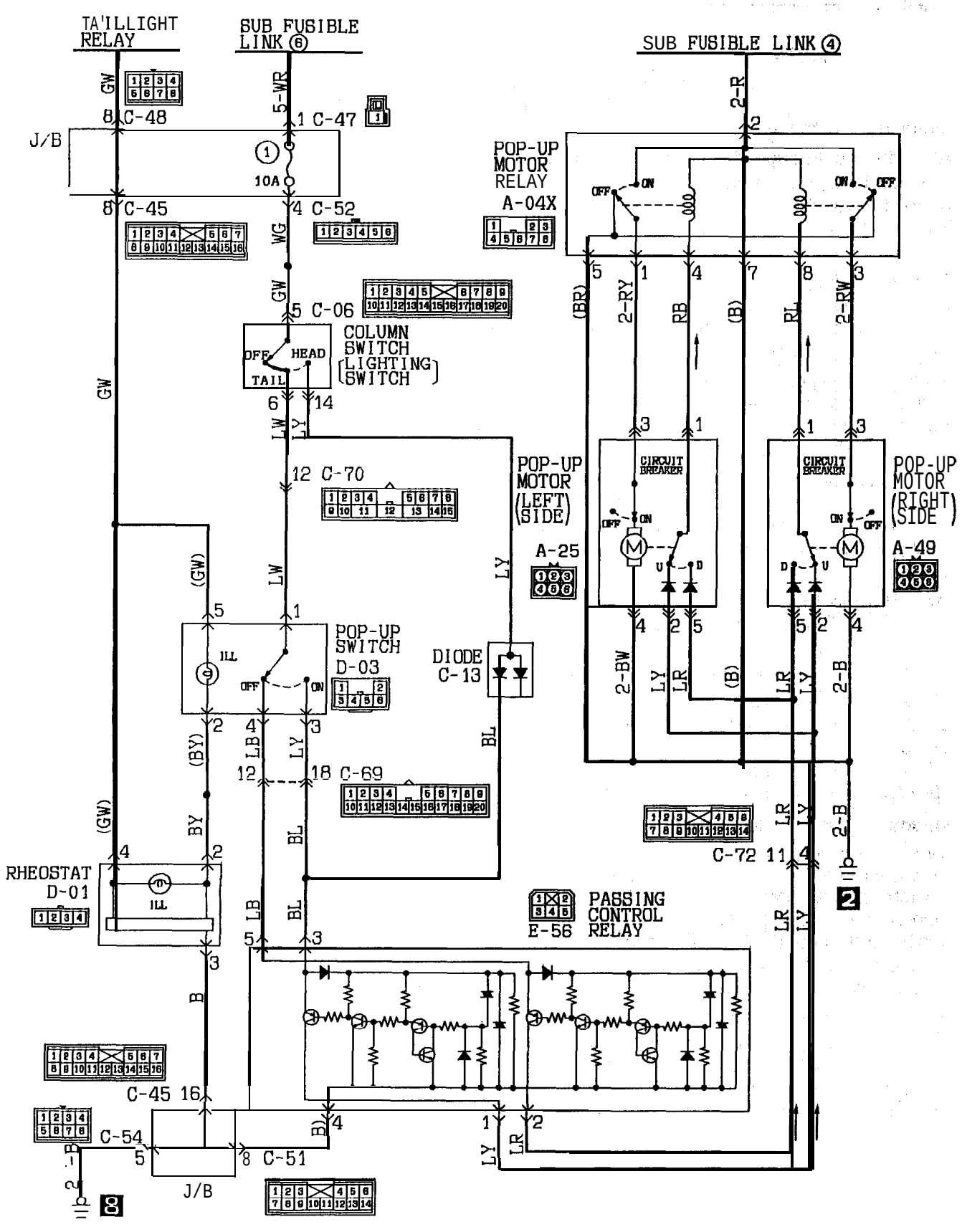
Vehicles with daytime running light




IGNITION SWITCH (ACC)
3-L
4 C-54
J/B
10
10A
5 C-48
WITH THEFT-ALARM SYSTEM
WITHOUT THEFT-ALARM SYSTEM
GW
1.25-GW
DIODE C-33
GR
GR
GR
C-72 12
I
1.25-BW
GR
3
4
DAYTIME RUNNING LIGHT RELAY 1
C-38X
OFF
ON
1
2
1.25-B
R
8
FOG LIGHT RELAY
A
1.25F-RW
6 C-71
1.25-RW
1
C-07
LOW
HI
DIMMER
2
1.25-BW
R
12
COLUMN SWITCH
OFF
HEAD
TAIL
OFF
HEAD
TAIL
OFF
HEAD
TAIL
4 C-06
B
2-B
6

POP-UP MECHANISM

CIRCUIT DIAGRAM



KX35-AC-U0821-NC

OPERATION

Functions of the Lighting Switch

- Battery voltage is always applied to the lighting switch through multi-purpose fuse ①.

  When the lighting switch is set at the "Head" position, current flows through the passing control relay, pop-up motor (up-switch), pop-up motor relay (coil), and ground, closing the pop-up motor relay contacts.

  After flowing through the closed pop-up motor relay contacts, current flows through the pop-up motor to ground.
  The pop-up motor starts operating to raise the retractable headlight.

  Once the pop-up motor has revolved up to its UP limit, the switch inside the motor switches its contact from the UP side to the DOWN side.

  This operation of the switch causes the circuit leading to the pop-up motor relay (coil) to open and the pop-up motor stops, maintaining the retractable headlight in its raised position.

- When the lighting switch is set at the "OFF" or "Tail" position, current flows through the lighting switch, pop-up switch, passing control relay, pop-up motor (down-switch), pop-up motor relay (coil), and ground, closing the pop-up motor relay contacts.

  After flowing through the closed pop-up motor relay contacts, current flows through the pop-up motor to ground. The pop-up motor begins operating to retract the headlight.

  Once the pop-up motor has revolved up to its DOWN limit, the switch inside the motor switches its contact from the DOWN side to the UP side, and the motor stops, maintaining the headlight in its retracted position.

Functions of the Pop-up Switch

- When the pop-up switch is set at "ON", current flows through multi-purpose fuse ①, lighting switch, pop-up switch, passing control relay, pop-up motor (up-switch), pop-up motor relay (coil), and ground. The retractable headlights rises just as it does when the lighting switch is set at the "Head" position.
- When the pop-up switch is set at "OFF", current flows through the pop-up switch, the passing control relay, the pop-up motor (down-switch), the pop-up motor relay (coil), and ground. The headlight retracts just as it does when the lighting switch is set at the "OFF" or "Tail" position.

TROUBLESHOOTING HINTS

1. Headlights do not rise
   (1) They rise only when the lighting switch is operated.
   - Check the pop-up switch.

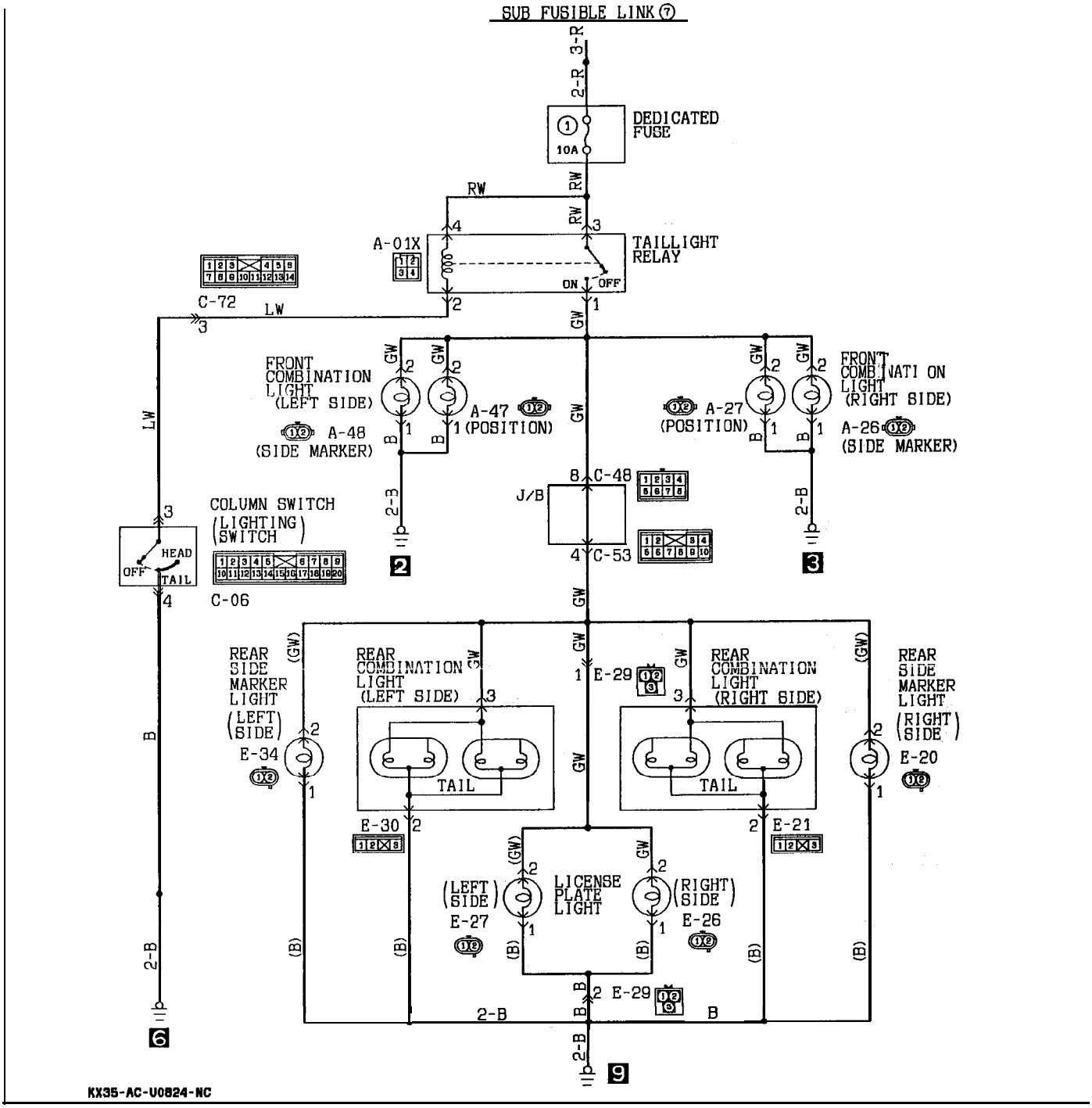
   (2) They rise only when the pop-up switch is operated.
   - Check the lighting switch.
2. Headlights do not retract
   - Check the pop-up switch.
   - Check the passing control relay.
3. One headlight does not move
   - Check the pop-up motor relay.
   - Check the pop-up motor.

NOTE
For information concerning the pop-up motor relay and passing control relay, refer to P.8-244, 245.

TAIL LIGHT, POSITION LIGHT, SIDE MARKER LIGHT AND LICENSE PLATE LIGHT

N08IHCI

CIRCUIT DIAGRAM



OPERATION

- The tail light relay is switched ON when the lighting switch is set to the "TAIL" or "HEAD" position.
- As a result, electricity flows via dedicated fuse No. ① to each light, and each light illuminates.

TROUBLESHOOTING HINTS

1. All lights do not illuminate.
   (1) The headlights also do not illuminate.
   - Check sub-fusible link No. ⑦.

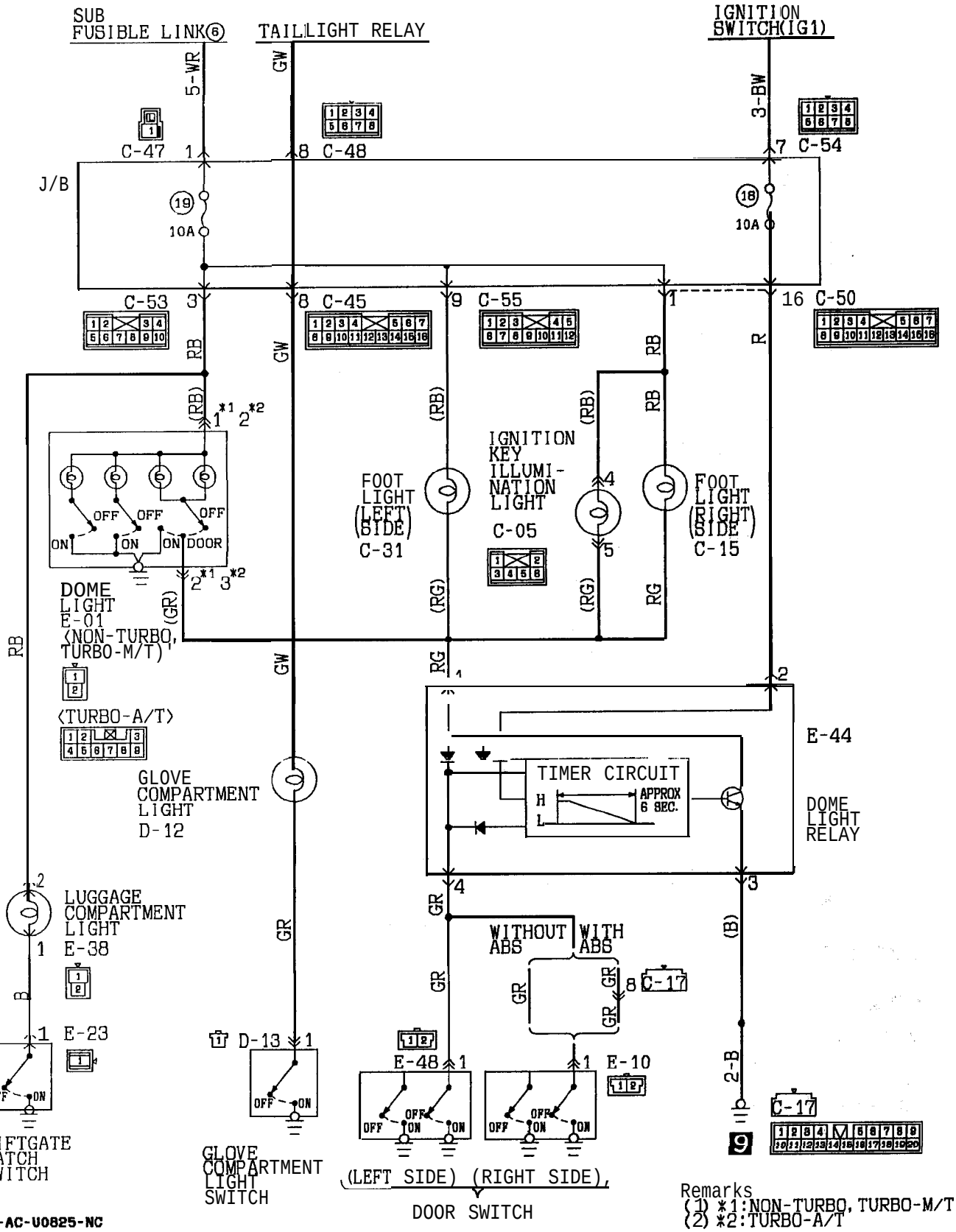
   (2) The headlights illuminate.
   - Check the tail light relay.
   - Check dedicated fuse No. ①.

NOTE
Refer to P.8-220 for information concerning models equipped with daytime running lights.

DOME LIGHT, IGNITION KEY ILLUMINATION LIGHT, FOOT LIGHT, GLOVE COMPARTMENT LIGHT AND LUGGAGE COMPARTMENT LIGHT CIRCUIT

N08IHEI

CIRCUIT DIAGRAM



EX35-AC-U0825-NC

OPERATION

<Luggage compartment light >

- Battery voltage is always applied (via sub-fusible link No. ⑥ and multipurpose fuse No. ⑲ to the luggage compartment light.
- When the liftgate is opened, the luggage compartment light switch is switched ON and the luggage compartment light illuminates.

<Glove compartment light >

- The tail light relay is switched ON when the lighting switch is set to the "TAIL" or "HEAD" position.
- When, with the lighting switch at the "TAIL" or "HEAD" position, the glove compartment is opened, the glove compartment light switch is switched ON, and the glove compartment light is illuminated.

<Dome light >

- Placing the dome light switch in the ON position causes the dome light to come on at all times.
- Opening any one of the doors with the dome light switch in the DOOR position causes the dome light to come on.
- When all doors are closed, the dome light relay is activated causing the dome light to decrease its intensity of light gradually and to go out in about 6 seconds.

Remarks

- If the ignition switch is in the ON position, the dome light does not decrease its light intensity, rather it goes out at once.

<Foot lights and ignition key illumination light >

- When either driver or co-driver door is opened, the foot lights and ignition key illumination light come on.
- When all doors are closed, the dome light relay is activated causing the foot lights and ignition key illumination light to decrease its intensity of light gradually and to go out in about 6 seconds.

Remarks

- If the ignition switch is in the ON position, the foot lights and ignition key illumination light does not decrease its light intensity, rather it goes out at once.

TROUBLESHOOTING HINTS

1. The luggage compartment light does not come on.
   (1) The dome light also does not illuminate.
   - Check multipurpose fuse No. ⑲.
2. Dome light, foot lights and ignition key illumination light do not come on.
   (1) Luggage compartment light is not illuminate, either.
   - Check multipurpose fuse No. ⑲.

   (2) Dome light does not come on when any door is opened with the dome light switch in the DOOR position.
   - Check bulb.
   - Check dome light switch.

   (3) Dome light does not come on when a door is opened with the dome light switch in the DOOR position.
   - Check door switch.

   (4) One of dome light, foot lights and ignition key illumination light is not lit.
   - Check bulb.
3. Dome light, foot lights and ignition key illumination light go out at once when doors are closed.
   - Check dome light relay.

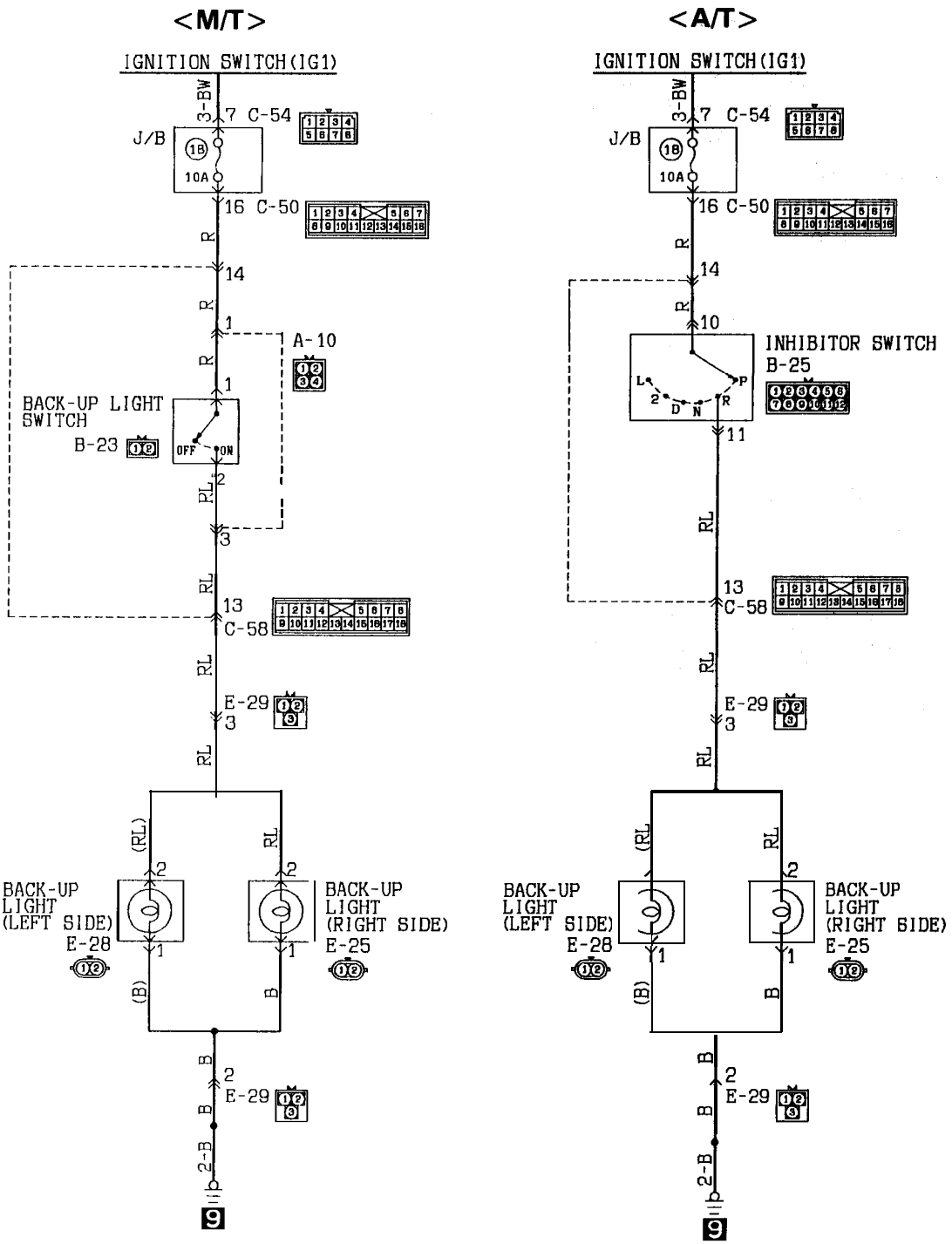
NOTE

For information concerning the dome light relay, refer to P.8-245.

BACK-UP LIGHT CIRCUIT

N08IHDD

CIRCUIT DIAGRAM



X35-AC-U0911-NC

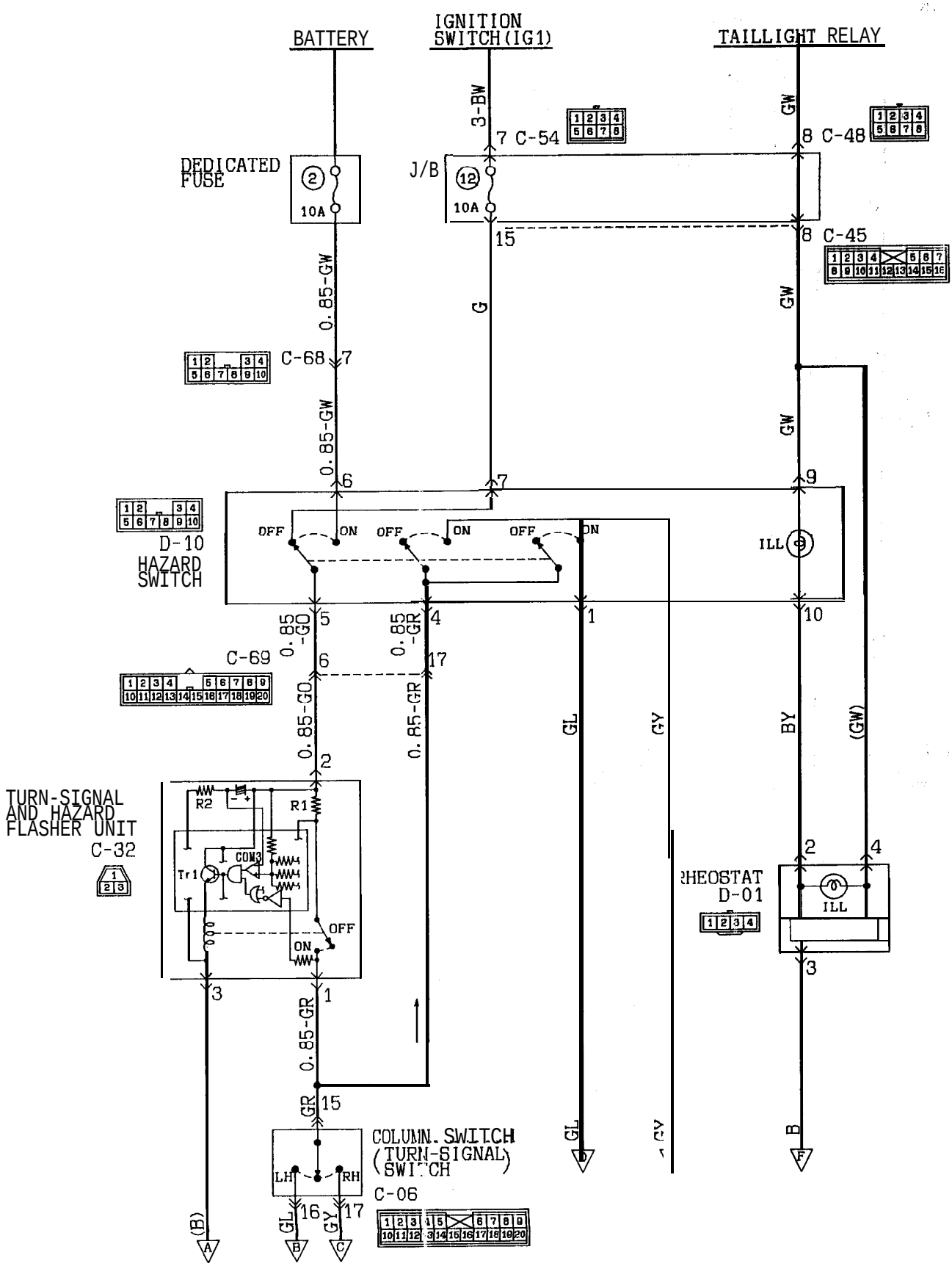
OPERATION

- When, with the ignition switch at the "ON"' position, the shift lever (or the selector lever) is moved to the "R" position, the backup light switch (M/T) is switched ON (or the inhibitor switch (A/T) is switched to the "R" position), and the backup light illuminates.

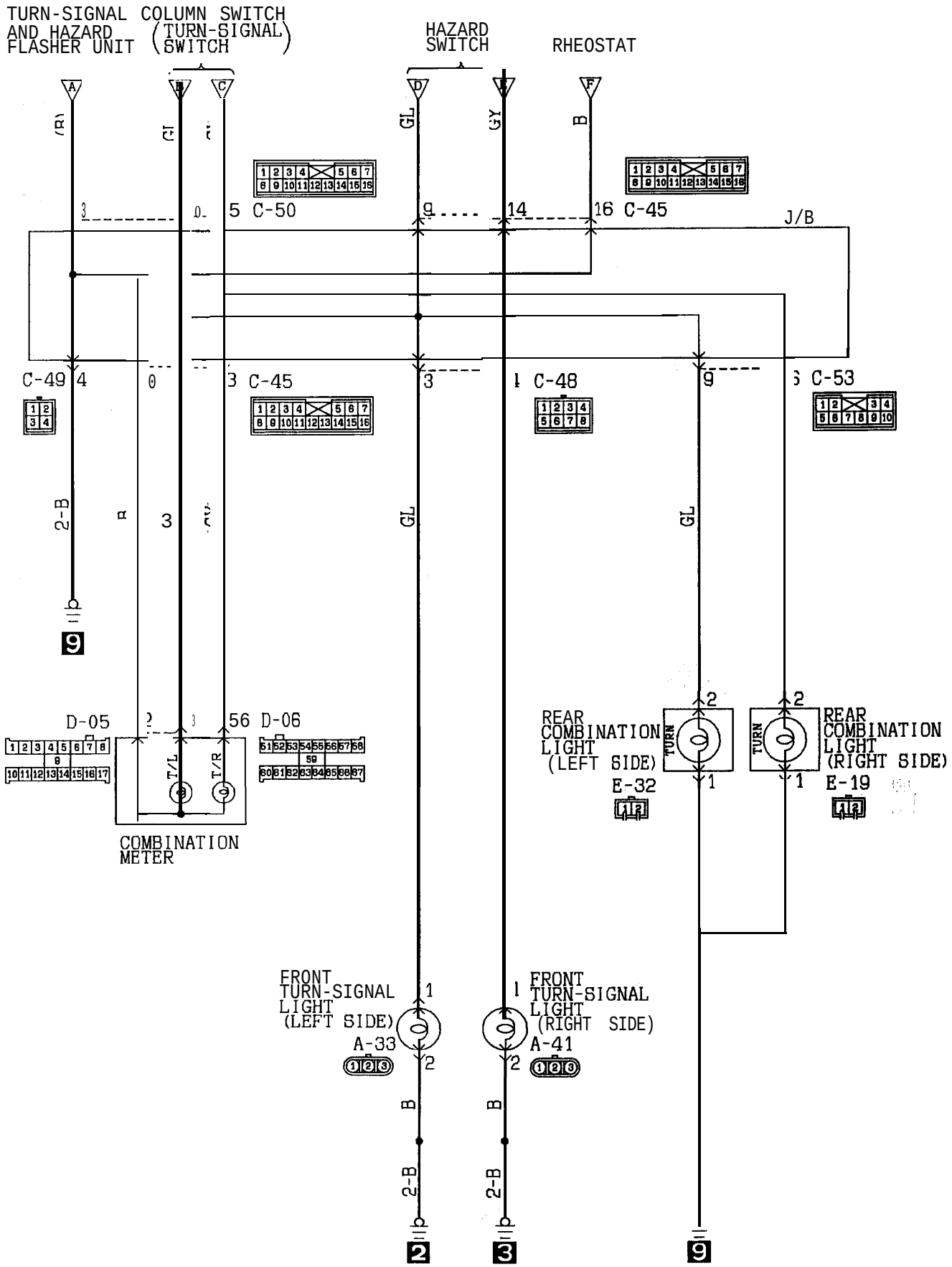
TURN-SIGNAL LIGHT AND HAZARD LIGHT CIRCUIT

N08IHGEa

CIRCUIT DIAGRAM



KX35-AC-U0910-NC


TURN-SIGNAL COLUMN SWITCH AND HAZARD FLASHER UNIT (TURN-SIGNAL SWITCH)
HAZARD SWITCH
RHEOSTAT
C-50
C-45
J/B
C-49
C-45
C-48
C-53
2-B
GL
GY
B
D-05
D-06
T/L
T/R
COMBINATION METER
REAR COMBINATION LIGHT (LEFT SIDE)
E-32
REAR COMBINATION LIGHT (RIGHT SIDE)
E-19
FRONT TURN-SIGNAL LIGHT (LEFT SIDE)
A-33
FRONT TURN-SIGNAL LIGHT (RIGHT SIDE)
A-41
TURN
2
3
9

OPERATION

< Turn-signal lights >

1. When operation is normal
- When the ignition switch is switched to the "ON" position, battery voltage is applied (via the hazard switch) to the turn-signal and hazard flasher unit.
- When the turn-signal switch is switched to the "LH" (or ''RH'') position, Trl (within the flasher unit) is switched ON and the relay contact (also within the flasher unit) is switched ON. As a result, the "LH" (or ''RH'') turn-signal lights and turn-signal indicator light illuminate.
- At the same time, charging to the capacitor (via R2) begins, and charging continues until the lower-limit potential (set by COM3) is reached.
- When the capacitor becomes fully charged, the COM3 output reverses and Trl is switched OFF; the relay contact is also switched OFF, and, as a result, the "LH" (or ''RH'') turn-signal lights and turn-signal indicator light are switched OFF.
- At the same time that Trl is switched OFF, the capacitor begins discharging, and, when discharging finishes, the output of COM3 once again reverses and Trl is switched ON, after which the "LH" (or ''RH'') turn-signal lights and turn-signal indicator light illuminate.
- As a result of the continued repetition of the steps described above, the "LH" (or ''RH'') turn-signal lights and turn-signal indicator light flash ON and OFF repeatedly.

2. If one light's wiring is damaged or disconnected
- If the bulb for one turn-signal light is damaged or disconnected, the result is an overall increase of the resistance for the entire light circuitry, resulting is a decrease of the voltage at the R1 part within the flasher unit.
- As a result of this being detected, the lower-limit potential set by COM3 is increased, with the result that the time required for charging of the capacitor becomes shorter.
- As a result, the ON and OFF cycles of Trl also become shorter, and thus the number of flashes of the lights becomes greater.

< Hazard-warning lights >

- When the hazard-warning switch is switched to the "ON" position, the relay contact of the turn signal and hazard flasher unit is switched ON and OFF repeatedly, in the same manner as for the operation of the turn-signal lights, and the left and right turn-signal lights and turn-signal indicator lights simultaneously flash repeatedly.

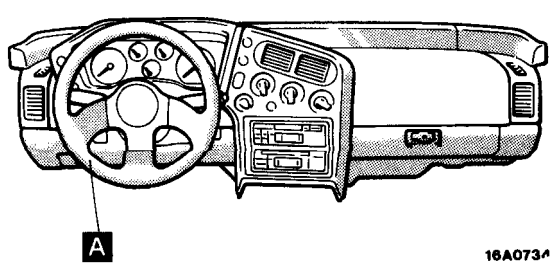
NOTE
- The number of flashes of the hazard-warning lights does not change if there is damaged or disconnected wiring of one light.

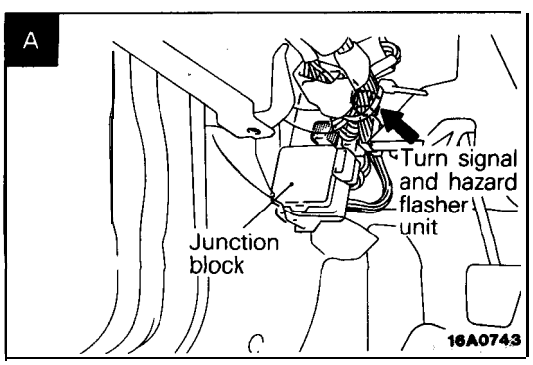
TROUBLESHOOTING HINTS

1. The turn-signal lights and hazard-warning lights do not operate at all.
   - Check the hazard switch contact (power supply side).
   - Check the turn-signal and hazard flasher unit.
2. All turn-signal lights at the left (or right) side do not function.
   (1) The hazard-warning lights function normally.
   - Check the hazard switch contact (turn-signal side).
   - Check the turn-signal switch.
3. The number of flashes of the turn-signal lights is excessive.
   - Check the bulbs.
4. The hazard-warning lights do not function.
   (1) The turn-signal lights function normally.
   - Check the hazard switch contact (hazard-warning light side).

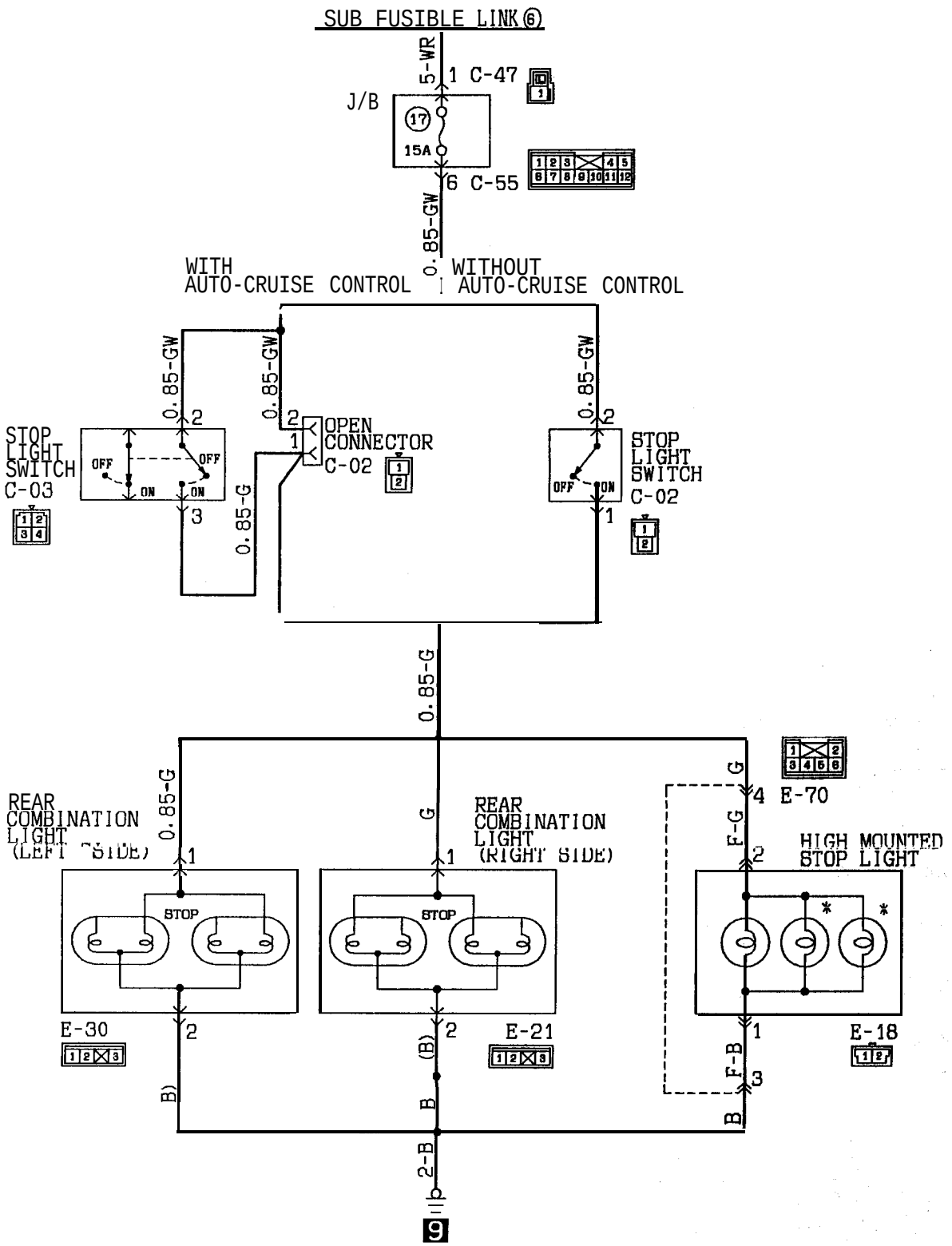
COMPONENTS LOCATION

Name	Symbol
Turn-signal and hazard flasher unit	A

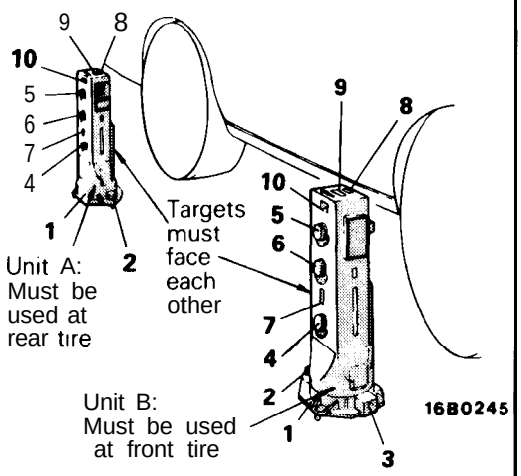




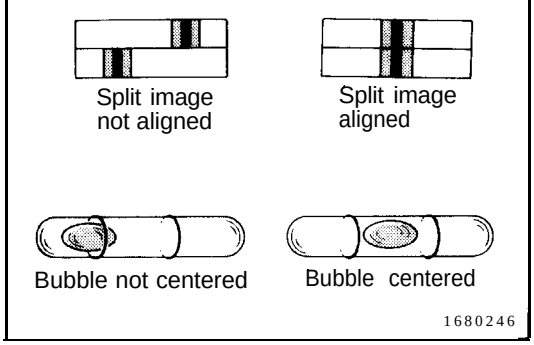
STOP LIGHT CIRCUIT



Remark
·*indicates vehicles with rear spoiler.



1. Calibration fixture
2. Thumb adjusting screws
3. Level vial
4. Floor level offset dial
5. Horizontal dial knob
6. Vertical dial knob
7. Aimer level vial
8. Level vial bubble
9. Top port hole
10. Viewing port



SERVICE ADJUSTMENT PROCEDURES

N08IIAC

HEADLIGHT AIMING

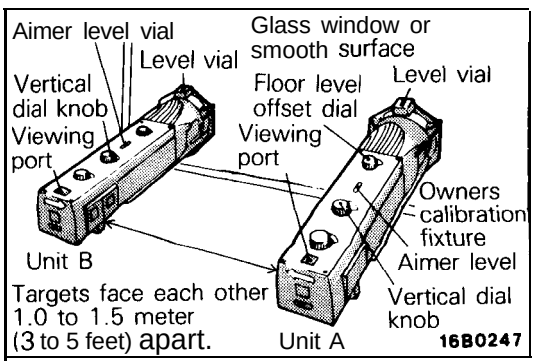
PRE-AIMING INSTRUCTIONS

1. Test dimmer switch operation.
2. Observe operation of high beam light mounted in instrument cluster.
3. Inspect for badly rusted or faulty headlight assemblies. These conditions must be corrected before a satisfactory adjustment can be made.
4. Place vehicle on a level floor.
5. Bounce front suspension through three (3) oscillations by applying body weight to hood or bumper.
6. Inspect tire inflation.
7. Rock vehicle sideways to allow vehicle to assume its normal position.
8. If fuel tank is not full, place a weight in trunk of vehicle to simulate weight of a full tank [3 kg (6.5 lbs.) per gallon].
9. There should be no other load in the vehicle other than driver or substituted weight of approximately 70 kg (150 lbs.) placed in driver's position.
10. Thoroughly clean headlight lenses.

COMPENSATING THE AIMERS (C-4466) FOR FLOOR SLOPE

The floor level offset dial must coincide with the floor slope for accurate aiming. Calibration fixtures are included with the aimers.

1. Attach one calibration fixture to each aimer. Fixtures will easily snap into position on aimer when properly positioned.
2. Place aimers at center line of each wheel on one side of vehicle. Unit A must be placed at rear wheel with target facing forward. Unit B must be placed at front wheel with target facing rearward.
3. Adjust thumb adjusting screw on each calibration fixture by turning either clockwise or counterclockwise until level vial bubble registers in a centered, level position.
4. Look into top port hole of Unit A. Turn horizontal knob until split image is aligned.
5. Transfer plus or minus reading indicated on horizontal dial to floor level offset dial on each aimer. Press floor level dial inward to set reading.
6. Remove calibration fixtures from both units.



TESTING AIMER CALIBRATION

The aimer calibration may be off due to extended use. Calibration fixtures used in conjunction with aimers can be used to check and adjust aimers.

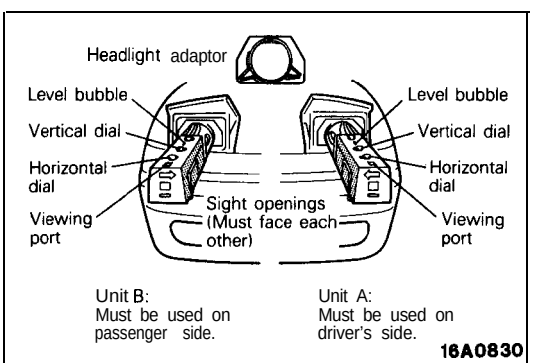
1. Turn thumb adjusting screw on each calibration fixture until it is approximately the same distance as the supporting posts.
2. Attach calibration fixtures to each unit with level vials on top.

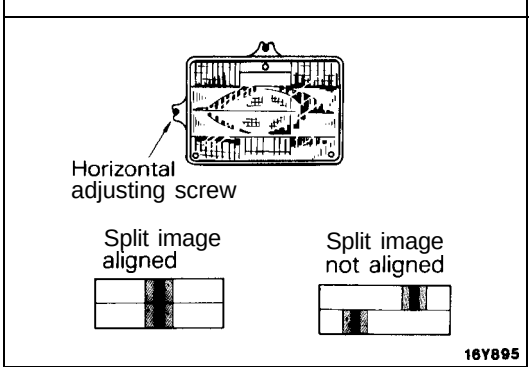
3. Locate a true vertical plate glass window or smooth surface and secure aimers three to five feet apart so split image targets can be located in viewing ports.
4. Set floor level dial at zero.
5. Rotate thumb adjusting screws on each calibration fixture until level vials on fixtures are centered.
6. With both calibration level vials centered turn vertical dial knobs on each aimer until aimer level vials are centered. If aimer vertical dial pointers read between 112 up and 1/2 down, aimers are within allowable vertical tolerance. Recalibrate units if beyond these limits.

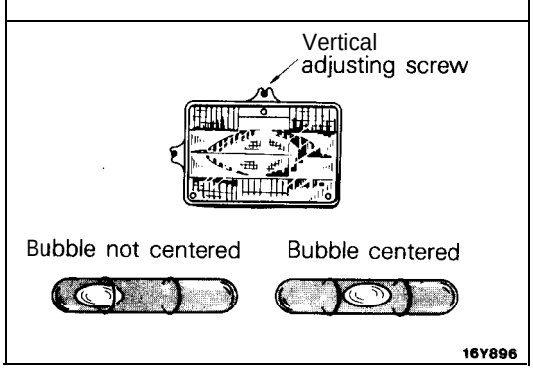
   Vertical dial pointer reading (on each aimer):
   1/2 up to 1/2 down

7. Adjust horizontal dial knob on each aimer until split image targets align. If aimer horizontal dial pointers read between 1 left and 1 right, the aimers are within allowable tolerance limits. Recalibrate units if beyond these limits.

   Horizontal dial pointer reading (on each aimer):
   1 left to 1 right







MOUNTING AIMERS

1. If necessary to expose adjusting screws, remove headlight trim rings.
2. Snap proper adaptor into position on each aimer making full contact with aimer mounting flange.
3. Position aimers on headlights by pushing piston handle forward, engaging rubber suction cup. Immediately pull back piston handle until it locks in place.

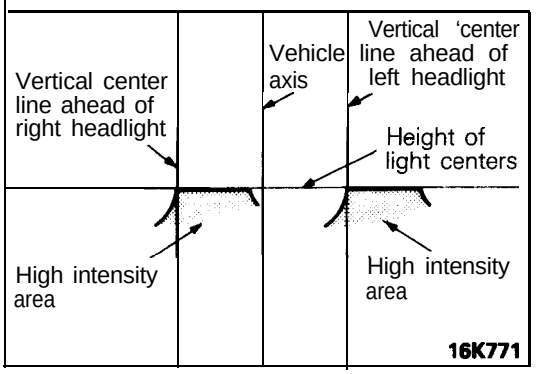
NOTE
Steel inserts are molded into position on the adaptor to insure accuracy. These inserts must be in contact with the three guide points on the lights when the aimers are properly positioned.

HORIZONTAL ADJUSTMENT

1. Set horizontal dial to zero.
2. Check to see that the split image target lines are visible in the viewing port. If necessary, rotate each aimer slightly to locate the target.
3. Turn horizontal screw on side of headlight until split image of target line appears in mirrors as one solid line. To remove "backlash", make final adjustment by turning adjusting screw in a clockwise direction.
4. Repeat the last three steps on opposite headlight.

VERTICAL ADJUSTMENT

1. The vertical dial should be set at zero. (For passenger vehicles an "0" setting is generally required. For special settings, consult local state laws.)
2. Turn vertical adjusting screw until the level bubble is centered between the lines.
3. Repeat the last two steps on the opposite headlight.
4. Re-check target alignment on both aimers and readjust horizontal aim if necessary.
5. Remove aimers by pressing "vacuum release" button located on piston handle.



AIMING WITH SCREEN

HEADLIGHT AIM PREPARATION

Place vehicle on a known level floor 7.6 m (25 feet) from aiming screen or light colored wall. Four lines of adhesive tape or like are required on screen or wall:

1. Position a vertical tape so that it is aligned with the vehicle center line.
2. Position a horizontal tape with reference to center line of headlight.
3. Position a vertical tape on the screen with reference to the center line of each of headlights.

VISUAL HEADLIGHT ADJUSTMENT

1. A properly aimed lower beam will appear on the aiming screen 7.6 m (25 feet) in front of the vehicle. The shaded area as shown in the illustration indicates high intensity zone.
2. Adjust low beam of headlights to match the low beam pattern of the right and left headlights.

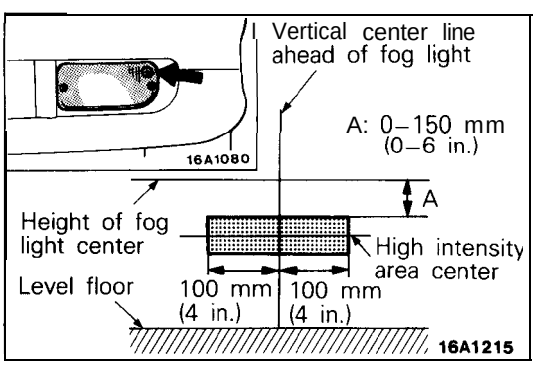
LUMINOUS INTENSITY MEASUREMENT

Measure the luminous intensity of headlights with a photometer in accordance with the instruction manual prepared by the manufacturer of the photometer and make sure that the luminous intensity is within the following limit.

Limit: 20,000 cd or more

NOTE

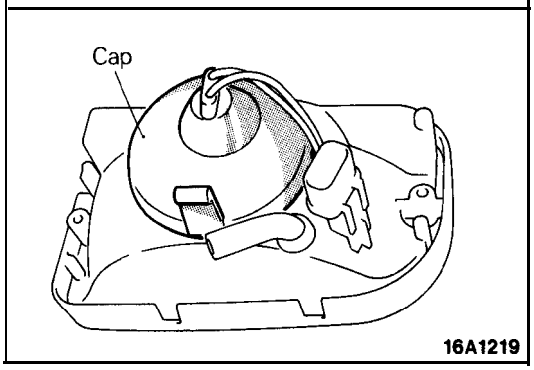
(1) 'When measuring the luminous intensity of headlight, keep the engine at 2,000 rpm and have the battery charged.
(2) If there are specific regulations for luminous intensity, of headlights in the region where the vehicle is operated, make sure that the intensity conforms to the requirements of such regulations.



FOG LIGHT AIMING

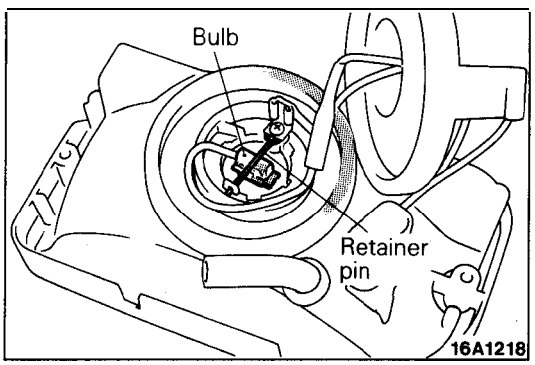
N08IIEA

1. Place vehicle on a known level floor 7.6 m (25 feet) from aiming screen or light colored wall.
2. Use adjusting screw to adjust the top end of high intensity zone to dimension A.

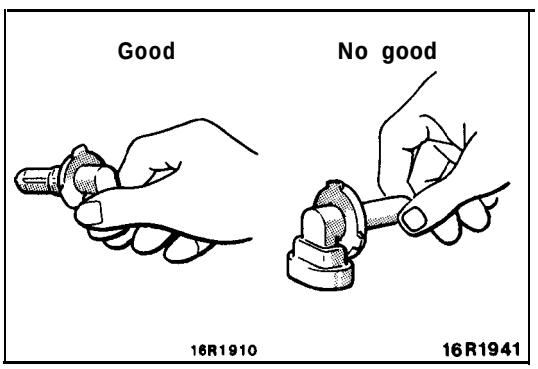


FOG LIGHT BULB REPLACEMENT N08IIGA

1. Remove the fog light.
2. Detach the cap.



3. Remove the retainer pin and take out the bulb.



Caution

1. **Never hold the halogen light bulb with a bare hand, dirty glove, etc.**
2. **If the glass surface is dirty, be sure to clean it with alcohol, paint thinner, etc., and install it after drying it thoroughly.**

4. Be sure to attach the cap.

NOTE

Be sure to install the cap securely because, if it is not, an insecure installation could cause such problems as clouding of the lens, or intrusion of moisture to inside the light unit.

5. Install the fog light and make the aiming adjustment.

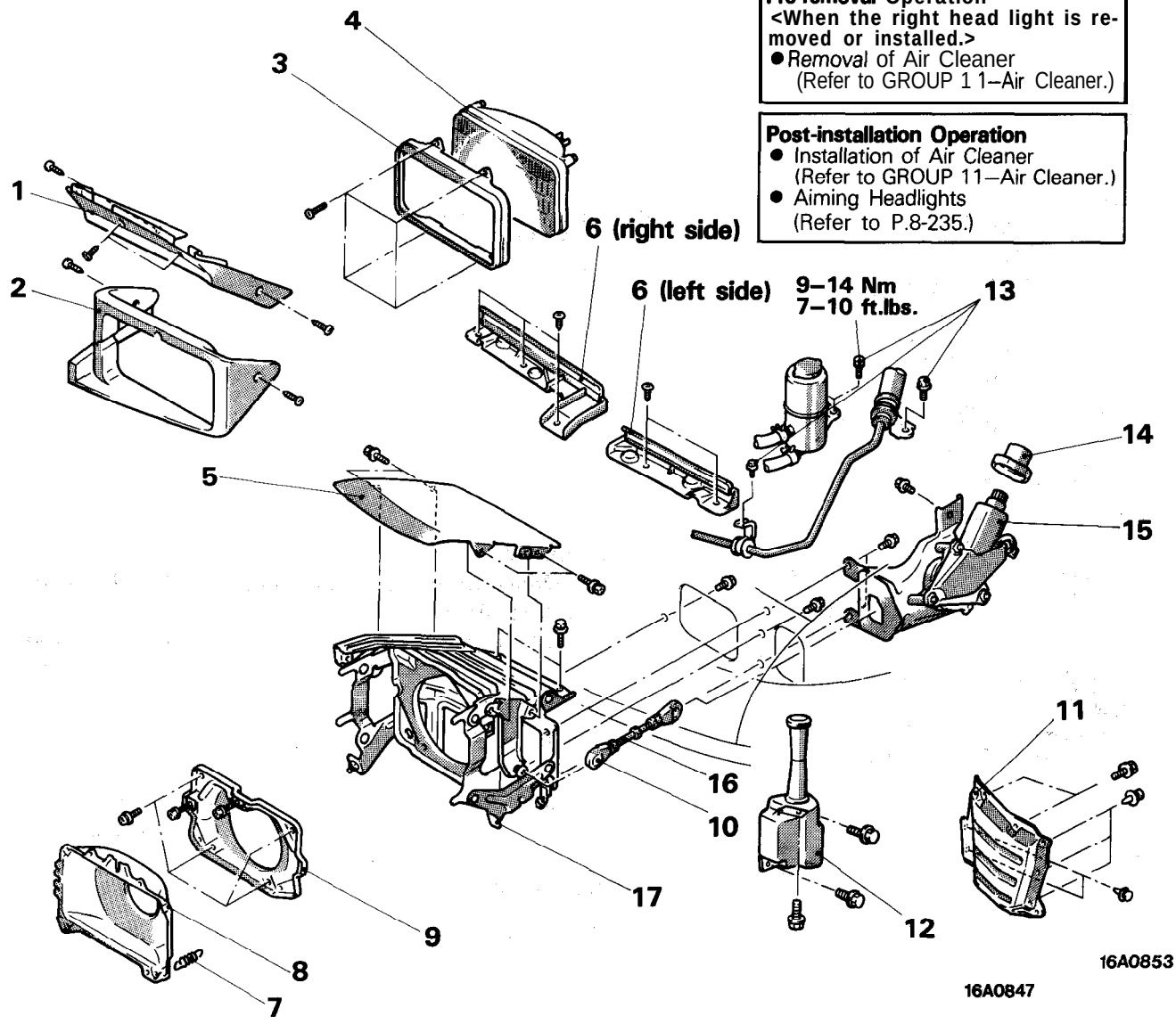
HEADLIGHT

N08IJAN

REMOVAL AND INSTALLATION

Pre-removal Operation
<When the right head light is removed or installed.>
- Removal of Air Cleaner
  (Refer to GROUP 1 1–Air Cleaner.)

Post-installation Operation
- Installation of Air Cleaner
  (Refer to GROUP 11–Air Cleaner.)
- Aiming Headlights
  (Refer to P.8-235.)



Removal steps

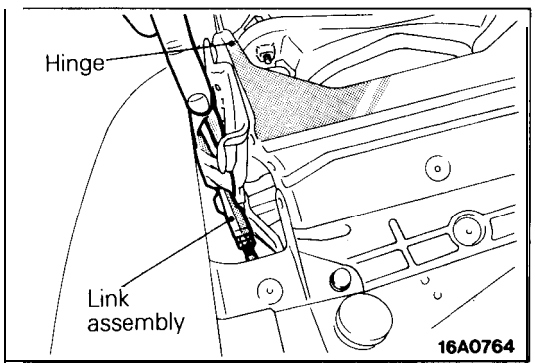
◆◆ 1. Headlight bezel, upper
2. Headlight bezel, lower
3. Retaining ring
4. Headlight
5. Headlight hood
6. Headlight hood protector
7. Spring
8. Mounting ring
9. Housing
◆◆ 10. Connector between link assembly and hinge
11. Front splash shield extension
12. Window washer tank
◆◆ 13. Power steering oil reservoir and air conditioner liquid pipe clamp (air conditioner equipped models)
14. Boot
◆◆ 15. Pop-up motor and bracket assembly
◆◆ 16. Link assembly
◆◆ 17. Hinge

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation".

SERVICE POINTS OF REMOVAL

1. REMOVAL OF HEADLIGHT BEZEL, UPPER

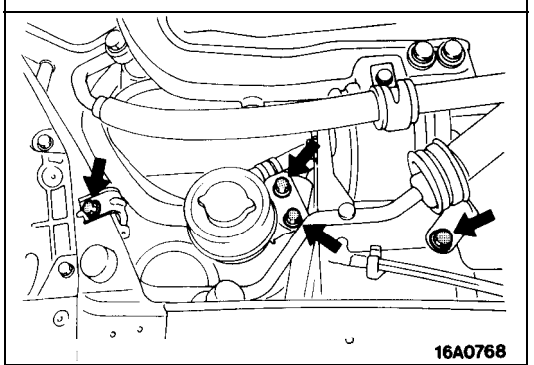
(1) Raise the headlights by using the pop-up switch. Disconnect the negative (–) battery terminal.
(2) Remove the headlight bezel, upper.



10. REMOVAL OF CONNECTOR BETWEEN LINK ASSEMBLY AND HINGE

Using a flat head screwdriver (wrap cloth or similar on the ball joint area to prevent injury), disconnect the connector.

NOTE
When disconnecting the line assembly from the hinge, hold the hinge by hand.



13. REMOVAL OF POWER STEERING OIL RESERVOIR MOUNTING BOLTS AND AIR CONDITIONER LIQUID PIPE CLAMP (Vehicles with air conditioner)

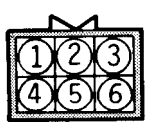
Remove bolts which mount the power steering oil reservoir and air conditioner liquid pipe clamp.

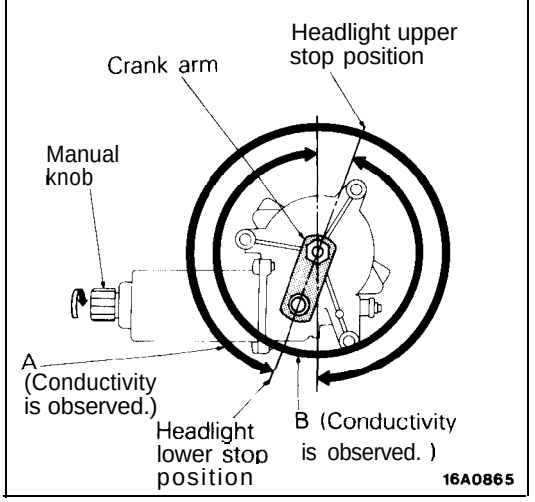
NOTE
Don't remove the return hose and pressure hose of the power steering oil reservoir.
Moreover, don't incline the oil reservoir.

INSPECTION

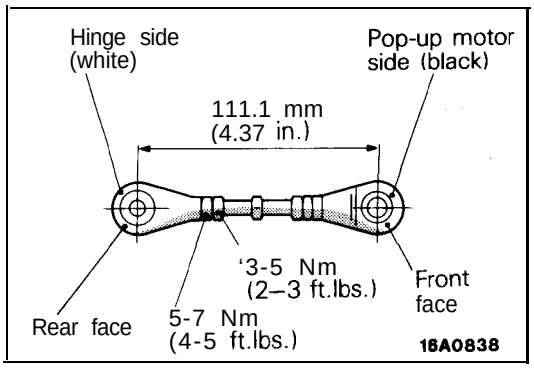
POP-UP MOTOR

Rotate the manual knob of the pop-up motor clockwise by hand to check continuity between terminals.





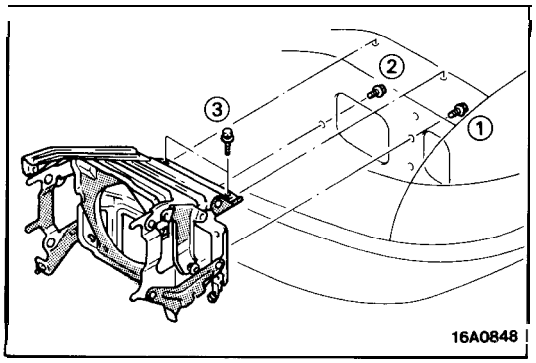
Terminal	Continuity range
When the (+) terminal of the ohmmeter is connected to ① and the (–) terminal is connected to ②	B
When the (+) terminal of the ohmmeter is connected to ① and the (–) terminal is connected to ⑤	A



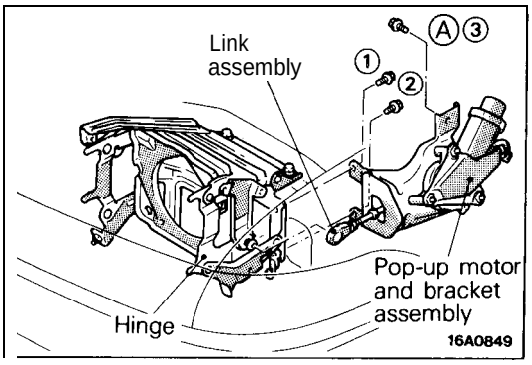
SERVICE POINT OF INSTALLATION

17. INSTALLATION OF HINGE/16. LINK ASSEMBLE/15. POP-UP MOTOR AND BRACKET ASSEMBLY

(1) Check the line assembly for length illustrated.



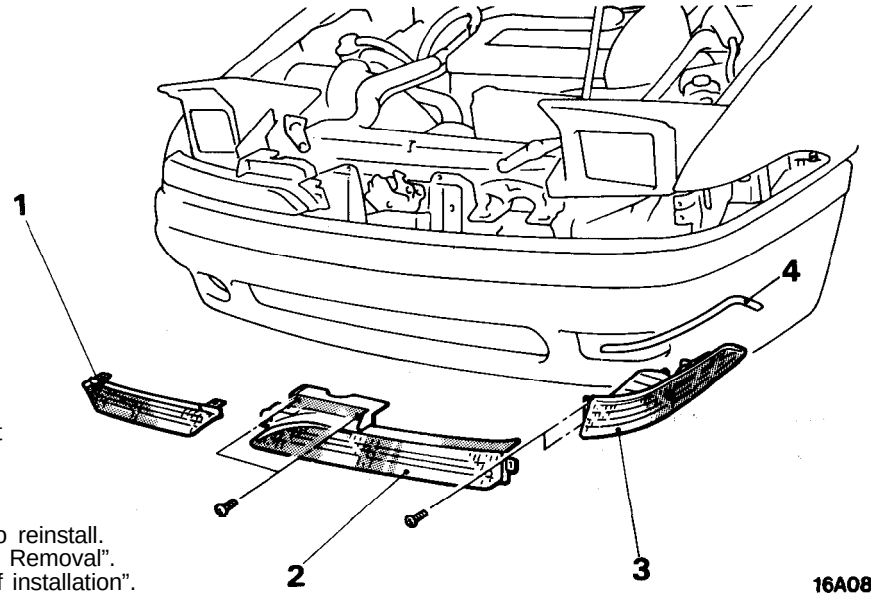
(2) Mount the hinge by tightening the hinge mounting bolts in the sequence illustrated.



(3) After attaching the link assembly to the hinge, loosely tighten bolt A.
Then, mount the pop-up motor and bracket assembly by tightening the bolts in the sequence illustrated.

FRONT TURN SIGNAL LIGHT AND FRONT COMBINATION LIGHT N08ILAC

REMOVAL AND INSTALLATION



Removal steps

- ⬮ ☒ 1. Front garnish
- ◆◆ ▶◀ 2. Front turn signal light
- ⬮ + 3. Front combination light
- 4. End rubber

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ● +: Refer to "Service Points of installation".

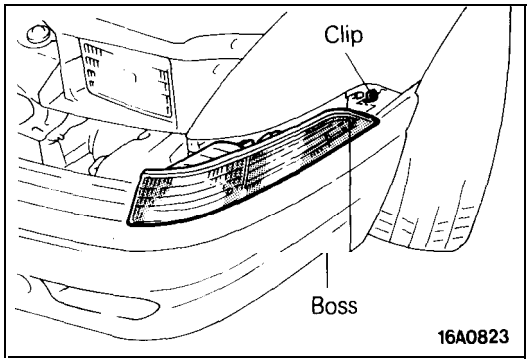
SERVICE POINTS OF REMOVAL

1. REMOVAL OF FRONT GARNISH

Refer to GROUP 23—Grille.

2. REMOVAL OF FRONT TURN SIGNAL LIGHT

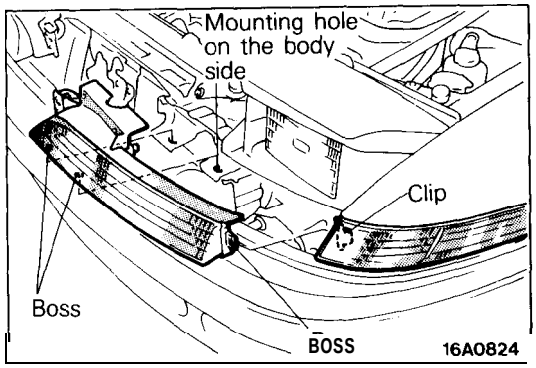
(1) Raise the headlights by using the pop-up switch. Disconnect the negative (−) battery terminal.
(2) Remove the front turn signal light.



SERVICE POINTS OF INSTALLATION

3. INSTALLATION OF FRONT COMBINATION LIGHT

Insert the bosses of the front combination light into the clip areas of the front fender. Then, mount the front combination light with the mounting screws.



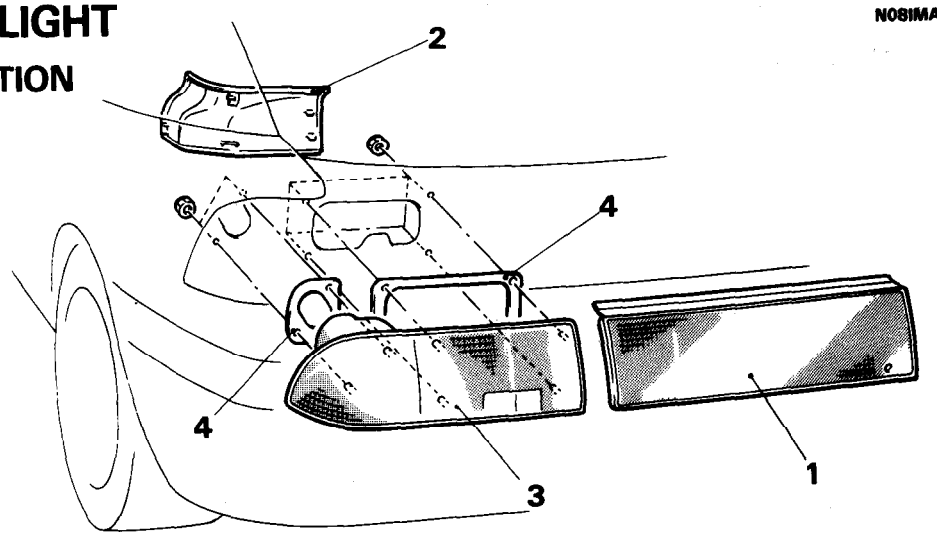
2. INSTALLATION OF FRONT TURN SIGNAL LIGHT

Insert the bosses of the front turn signal light into the clip area of the combination light and the mounting hole on the body side. Then, mount the front turn signal light with the mounting screws.

REAR COMBINATION LIGHT

REMOVAL AND INSTALLATION

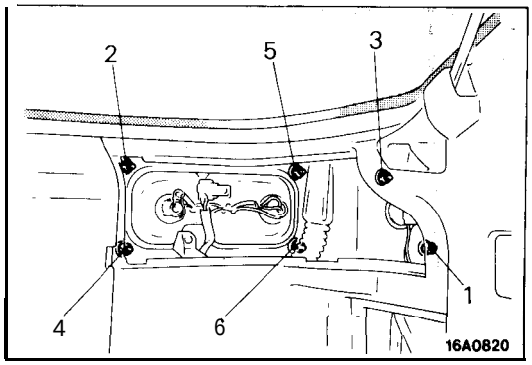
N08IMAG



Removal steps

◆◆ 1. Rear panel garnish
2. Lid C (Lid D when the right rear combination light is removed or installed)
● 3. Rear combination light
4. Gasket

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● : Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation".



SERVICE POINTS OF REMOVAL

1. REMOVAL OF REAR PANEL GARNISH

Refer to GROUP 23–Garnishes.

SERVICE POINTS OF INSTALLATION

3. INSTALLATION OF REAR COMBINATION LIGHT

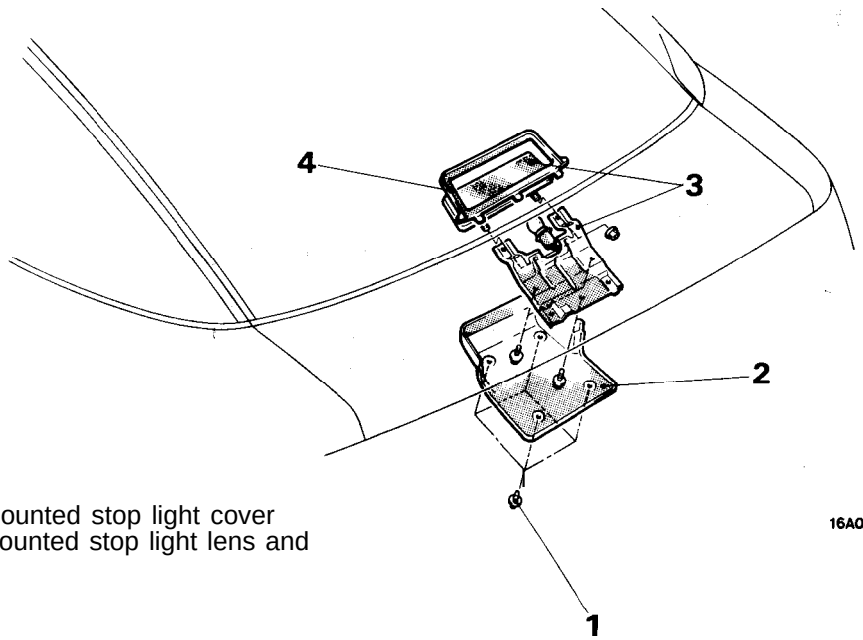
Mount the rear combination light by tightening the nuts in the sequence illustrated.

HIGH MOUNTED STOP LIGHT

REMOVAL AND INSTALLATION

N08IKAK

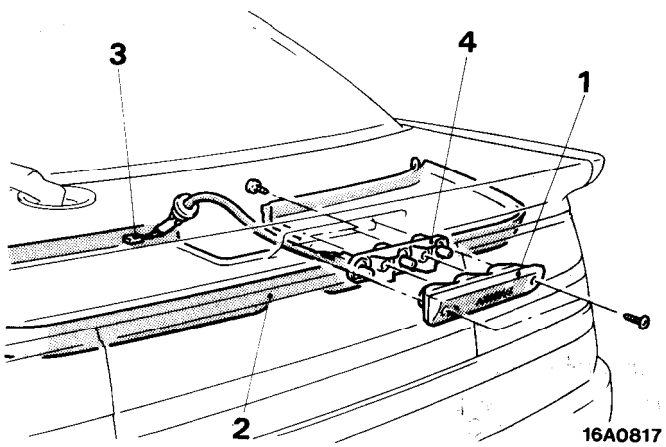
<Vehicles without rear air spoiler>



Removal steps

1. Clip
2. High mounted stop light cover
3. High mounted stop light lens and bracket
4. Gasket

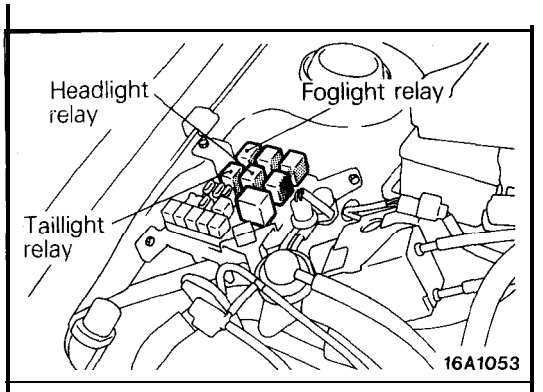
<Vehicles with rear air spoiler >

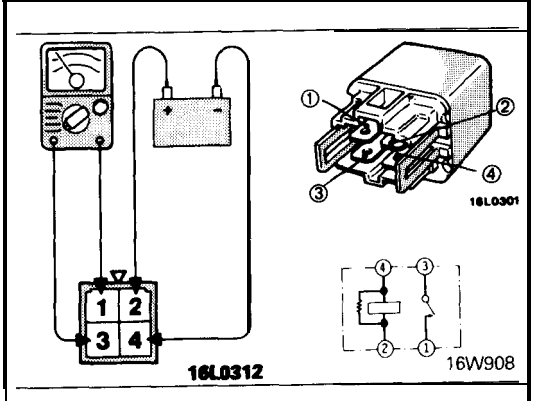


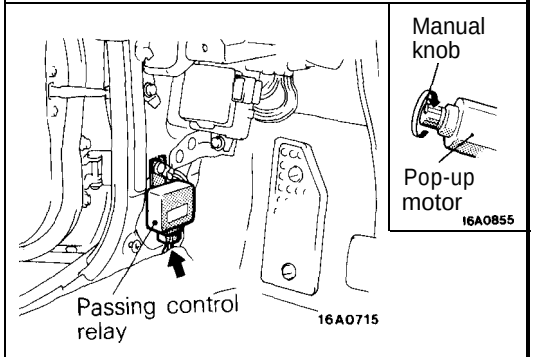
Removal steps

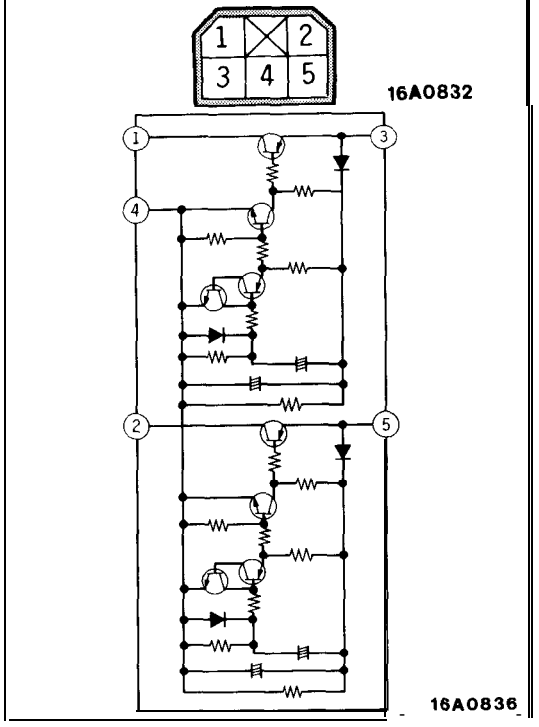
◆◆ 1. High mounted stop light unit
2. Liftgate trim
3. Wiring harness connector
4. Socket

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to "Servie Points of Removal".









SERVICE POINTS OF REMOVAL

2. REMOVAL OF LIFTGATE TRIM <Vehicles with rear air spoiler >

Refer to GROUP 23–Trims.

RELAY

N08ISAE

INSPECTION

HEADLIGHT RELAY /TAILLIGHT RELAY/FOG LIGHT RELAY

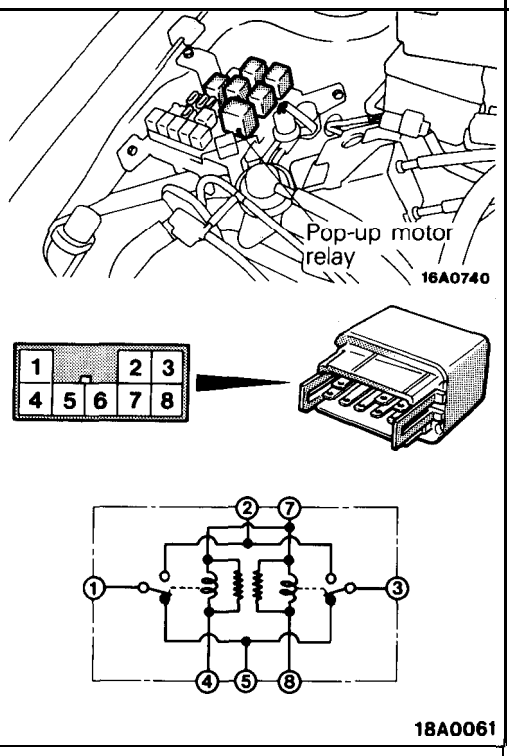
(1) Take out the headlight relay, taillight relay or foglight relay from the engine compartment relay box.
(2) Connect battery to terminal 2 and check continuity between terminals with terminal 4 grounded.

Power is supplied	1–3 terminals	Continuity
Power is not supplied	1–3 terminals	No continuity
	2-4 terminals	Continuity

PASSING CONTROL RELAY

(1) Remove the cowl side trim (left side).
Refer to GROUP 23–Trims.
(2) House the headlights.
(3) Remove the sub-fusible link No. 4.
(Refer to P.8-9.)
(4) Remove the boot on the rear area of the pop-up motor, and turn the manual knob of the pop-up motor approx. 10 turns clockwise.
(The same procedure is applicable for the left and right sides.)
(5) Keeping the passing control relay mounted on the body side, operate the pop-up switch to check the voltage of each terminal.

Switch position	Terminal	Output state
Pop-up switch OFF→ON	3	12V
	1	12V is output for approx. 5 seconds.
Pop-up switch ON→OFF	5	12V
	2	12V is output for approx. 5 seconds.

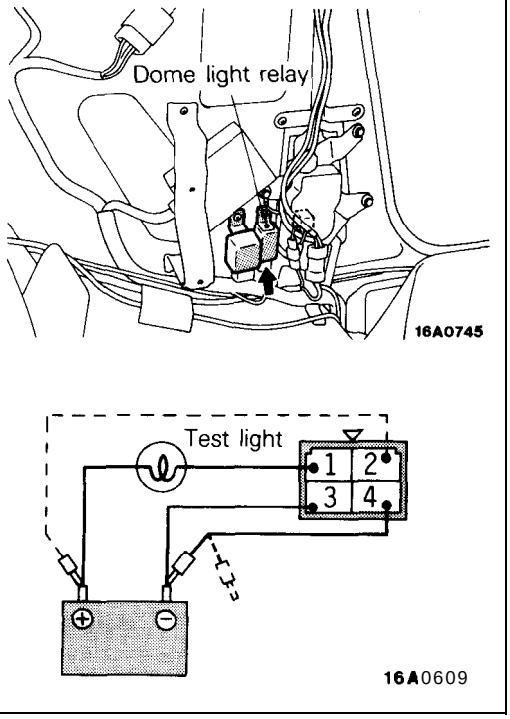


POP-UP MOTOR RELAY

(1) Take out the pop-up motor relay from the engine compartment relay box.
(2) Check for continuity between terminals under the conditions' described below.

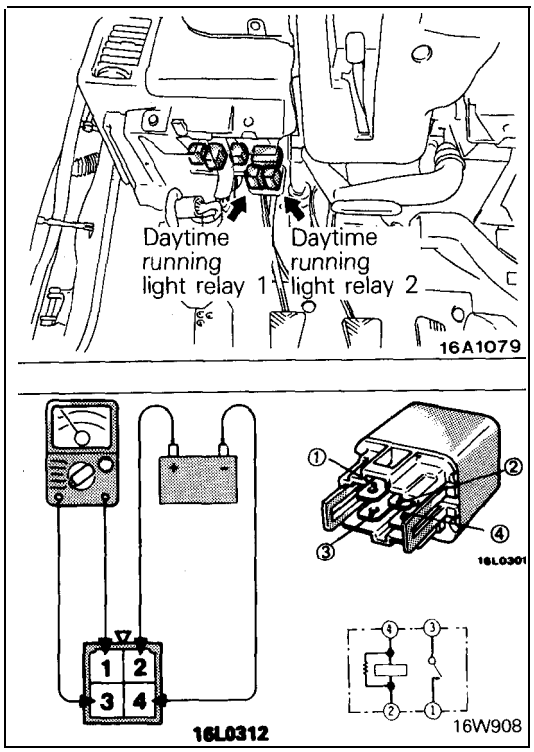
Terminal / Battery voltage	1	2	3	4	5	7	8
Continuity no voltage	○		○		○	○	○
					○		
Continuity with voltage	○	○		⊖		⊕	
		○	○			⊕	⊖

NOTE
(1) O-O indicates that there is continuity between the terminals.
(2) ⊕---⊖ indicates terminals to which battery voltage is applied.



DOME LIGHT RELAY

(1) Remove the quarter trim (left side).
Refer to GROUP 23–Trims.
(2) Remove the dome light relay.
(3) Connect the battery and the test light to the dome light relay as shown in the figure.
(4) Check that the test light comes on when connected as shown by the solid line. Then check that the test light dims out for approx. 6 seconds when the 4th terminal is disconnected. Moreover, check that the test light goes out instantaneously when the 2nd terminal is connected at this time (while the test light is dimming).



DRL (DAYTIME RUNNING LIGHT) RELAY 1, 2 < VEHICLES FOR CANADA >

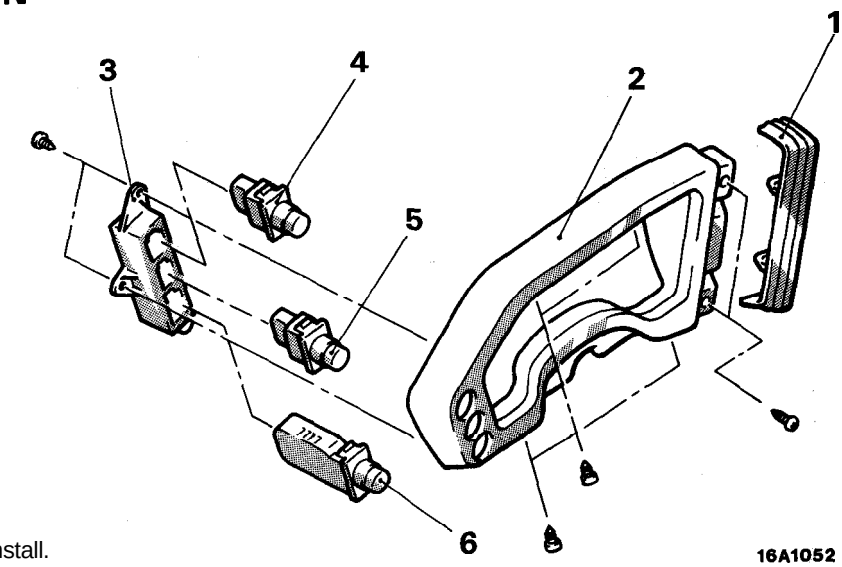
(1) Take out the daytime running light relay from the instrument panel relay box.
(2) Connect battery to terminal 2 and check continuity between terminals with terminal 4 grounded.

Power is supplied	1–3 terminals	Continuity
Power is not supplied	1–3 terminals	No continuity
	2-4 terminals	Continuity

POP-UP SWITCH, FOG LIGHT SWITCH AND RHEOSTAT

N08IRAI

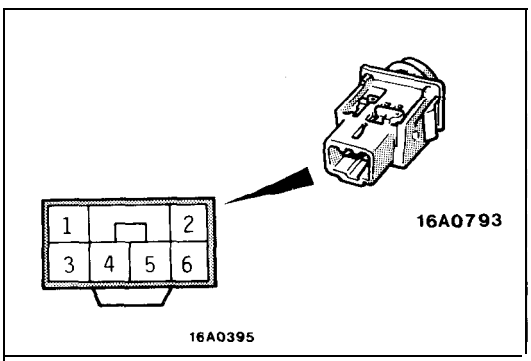
REMOVAL AND INSTALLATION



Removal steps

1. Cover (A)
2. Cluster panel (A)
3. Switch holder
4. Pop-up switch
5. Fog light switch
6. Rheostat

NOTE
Reverse the removal procedures to reinstall.



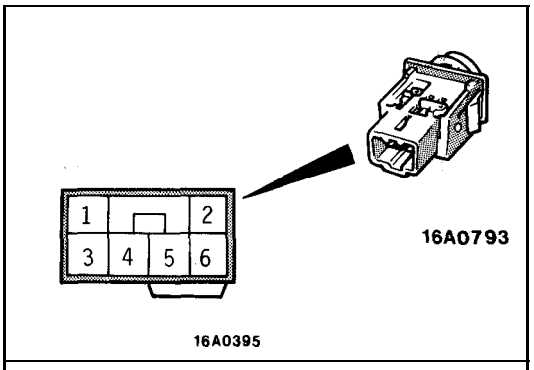
INSPECTION

POP-UP SWITCH

Operate the switch to check for continuity between terminals.

Switch position \ Terminal	1	3	4	2	5
OFF	0		0	Illumination light	
ON	○	○			

NOTE
○—○ indicates that there is continuity between the terminals.

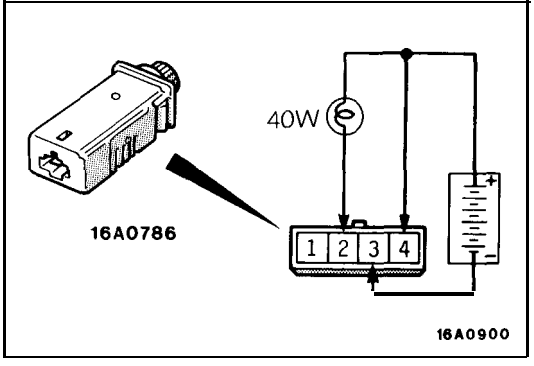


FOG LIGHT SWITCH

Operate the switch to check for continuity between terminals.

Switch position \ Terminal	1	3	2	6	4	5
OFF					Illumination light	
ON	O	O	O	O		

NOTE
O-O indicates that there is continuity between the terminals.

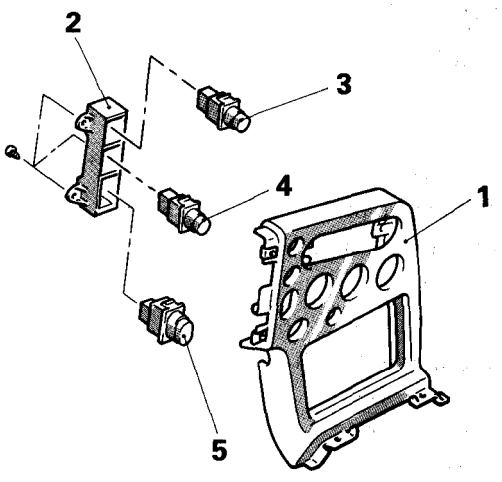


RHEOSTAT

(1) Connect the battery and a test bulb (40W) as shown 'in the figure.
(2) The function of the rheostat is normal if the intensity of illumination changes smoothly, without flashing or flickering, when the rheostat is operated.

HAZARD SWITCH

REMOVAL AND INSTALLATION



Removal steps

- ◆ ☒ 1. Cluster panel (B)
  2. Switch holder
  3. Hazard switch
  4. Rear window defogger switch
  5. Rear wiper and washer switch

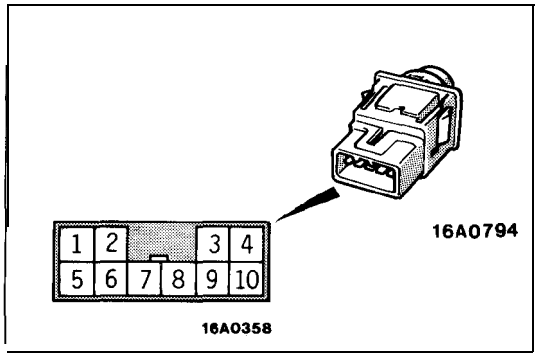
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".

SERVICE POINTS OF REMOVAL

1. REMOVAL OF CLUSTER PANEL (B)

Refer to GROUP 23—Instrument Panel.

INSPECTION



Operate the switch to check for continuity between terminals.

Switch position \ Terminal	1	2	4	5	6	7	9	10
OFF				O		O	Illumination light	
ON	O	O	O	O	O			

NOTE
(1) O-O indicates that there is continuity between the terminals.
(2) Refer to P.8-298, check the rear window defogger switch.
(3) Refer to P.8-263, check the rear wiper and washer switch.

COLUMN SWITCH

SPECIFICATIONS

GENERAL SPECIFICATIONS

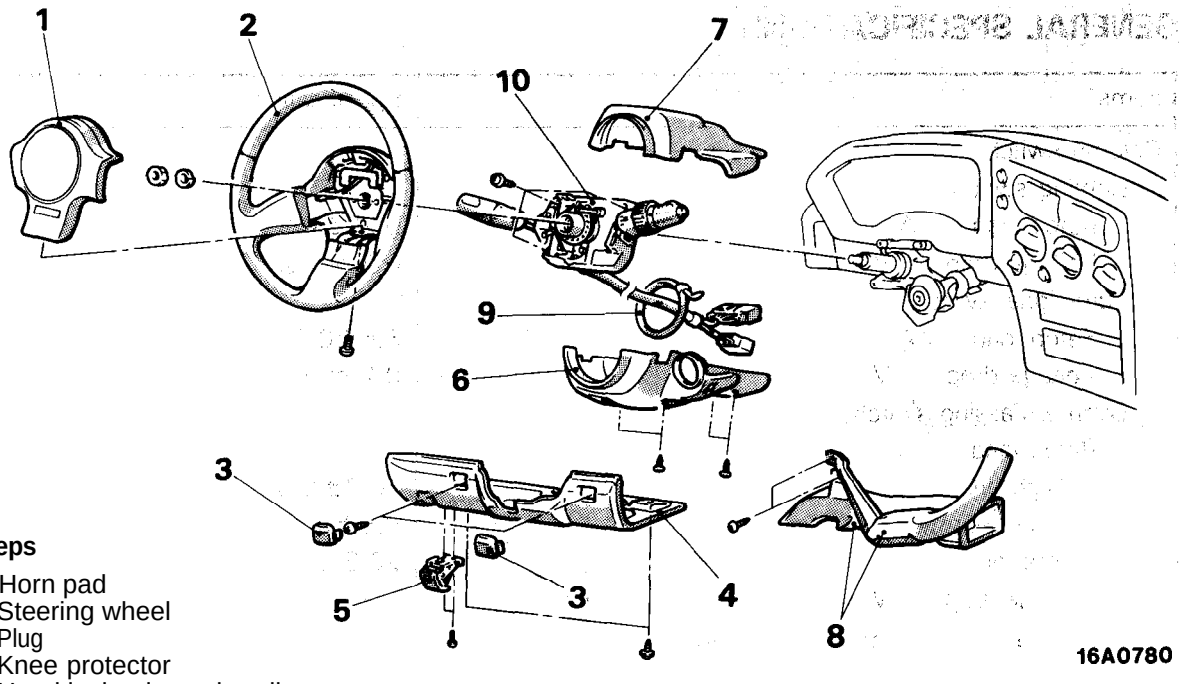
N08JBAH

Items	Specifications
Column switch	
Lighting switch	
Rated load A	0.22 ±0.05
Voltage drop V	0.2 or less
Turn-signal switch	
Rated load A	6.6±0.5
Voltage drop V	0.2 or less
Dimmer/Passing switch	
Rated load A	
High beam	10.7±0.8
Low beam	9.8±0.7
Passing	20.5±1.5
Voltage drop V	0.2 or less
Windshield wipers and washer switch	
Rated load	
Wiper switch A	
LO, HI	4
INT	0.22±0.05
Washer switch A	Max. 4
Intermittent volume mA	Max. 25
Intermittent wiper switch	
Operation mode	Adjustable-timing intermittent wipers
Intermittent interval sec	Approx. 3–12
Auto cruise control switch	
Rated load A	
SET	0.2±0.1
RESUME	0.2±0.1
Voltage drop V	0.2 or less
Horn switch	
Rated load A	Max. 6
Pop-up switch	
Rated load A	1±0.2

COLUMN SWITCH

N08JJAJ

REMOVAL AND INSTALLATION



Removal steps

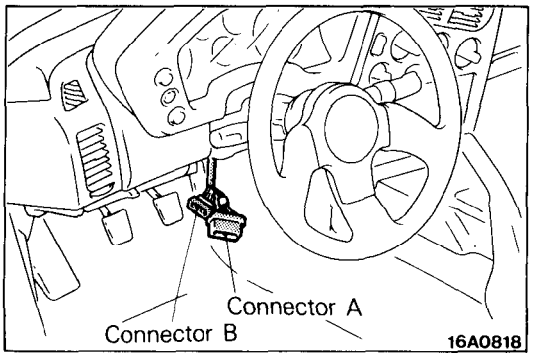
- ⧫ ☒ 1. Horn pad
- ⧫ ☒ 2. Steering wheel
- 3. Plug
- 4. Knee protector
- 5. Hood lock release handle
- 6. Lower column cover
- 7. Upper column cover
- 8. Lap cooler duct and shower duct
- 9. Cable band
- 10. Column switch

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to “Service Points of, Removal”.

SERVICE POINTS OF REMOVAL

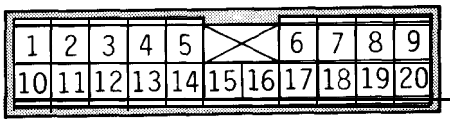
1. REMOVAL OF HORN PAD/2. STEERING WHEEL

Refer to GROUP 1 9–Steering Wheel and Shaft.

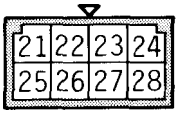


INSPECTION

(1) Remove the knee protector and the lower column cover.
(2) Disconnect the column switch connector and check the continuity between the terminals for each switch.



Connector A



Connector B

16A0192

LIGHTING SWITCH

Operate the switch and check the continuity between the terminals.

Switch position \ Terminal	3	4	12	5	6	14
OFF				O—O		
≡D○≡	O—O			O—O		
≡D	O—O—O			O—		—O

NOTE
O-O indicates that there is continuity between the terminals.

TURN SIGNAL SWITCH

Operate the switch and check the continuity between the terminals.

Switch position \ Terminal	15	16	17
Left	0 —— 0		
Neutral			
Right	0 ——		—O

NOTE
O-O indicates that there is continuity between the terminals.

DIMMER/PASSING SWITCH

Operate the switch and check the continuity between the terminals.

Switch position \ Terminal		11	21	22	25	26
Dimmer switch	Low		O—O			
	High			O—O		
Passing switch	P1	O—	O—O		—O	—O
	P2	O—		O—O	—O	—O

NOTE
(1) O-O indicates that there is continuity between the terminals.,
(2) P1 represents the passing operation when the dimmer switch is in the "Low" position! and P2 represents the operation when it is in the "High" position.

WIPER/WASHER SWITCH

Refer to P.8-258.

AUTO-CRUISE CONTROL SWITCH

Refer to GROUP 14—Auto-Cruise Control System.

WIPER AND WASHER SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08KB--

Items	Specifications
Windshield wiper motor	
Type	Ferrite-magnet type
Speed control system	Third brush system
Braking system	Dynamic brake system
rpm at load of 1Nm (0.72 ft.lbs.)	
Low speed	48±4
High speed	70±7
Nominal torque Nm (ft.lbs.)	21 (15)
Rear wiper motor	
Motor type	Ferrite-magnet type
Braking system	Dynamic braking system
rpm at load of 6 Nm (4.3 ft.lbs.)	38±5
Windshield wiper blade	
Wiping angle	
Driver's side	81°±2°
Passenger's side	98.5°±2°
Wiper blade length mm (in.)	
Driver's side	500 (19.7)
Passenger's side	500 (19.7)
Rear wiper blade	
Wiping angle	$94.5°^{+0}_{-6°}$
Wiper blade length mm (in.)	450 (17.7)
Window washer motor and pump	
Motor type	Direct current ferrite magnet type
Pump type	Centrifugal type
Power consumption A	4.0 or less
Time of continuous use sec.	
With washer fluid	Max. 60
Empty operation	Max. 20
Nozzle jet pressure kPa (psi)	110 (15.6) or more
Tank capacity lit.' (qts.)	2.0 (2.1) or more
Rear window washer motor and pump	
Motor type	Direct current ferrite magnet type
Pump type	Centrifugal type
Power consumption A	3.8 or less
Time of continuous use sec.	
With washer fluid	Max. 60
Empty operation	Max. 20
Nozzle jet pressure kPa (psi)	120 (17) or more
Tank capacity lit. (qts.)	1.2 (1.3) or more

Items	Specifications
Wiper and washer switch	
Rated load A	
Wiper switch	
LO, HI	4
INT	0.22 ± 0.05
Washer switch	Max. 4
Voltage drop (at 12V and the rated load) V	
Wiper switch	0.2 or less
Washer switch	0.5 or less
Rear wiper and washer switch	
Rated load A	
Wiper switch	5
Washer switch	5
Voltage drop V	0.1 or less
Intermittent wiper relay	
< Front (incorporated in column switch) >	
Intermittent interval (min.-max.) sec.	
Variable-interval intermittent wiper	Approx. 3– 12
Delay time in washer moving sec.	0.4–0.9
< Rear >	
Intermittent interval sec.	8 ± 2

SERVICE SPECIFICATIONS

N08KC--

Items	Specifications
Standard value	
Windshield wiper blade stopping position mm (in.)	25 (1.0)
Rear wiper blade stopping position mm (in.)	30 (1.2)

TORQUE SPECIFICATIONS

N08KD--

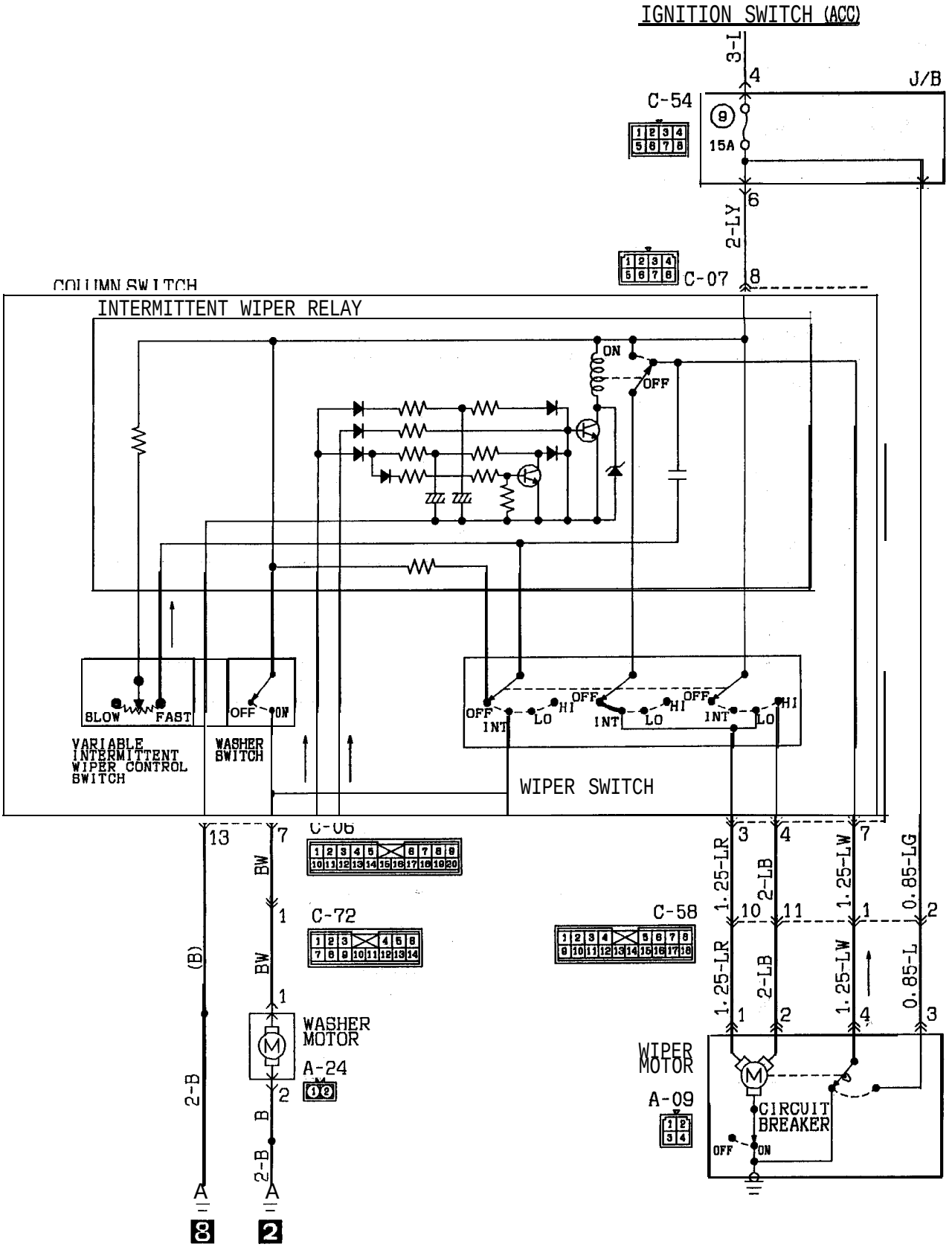
Items	Nm	ft.lbs.
Windshield wiper arm locking nut	10–16	7-12
Windshield wiper pivot shaft installing nuts	4-6	3-4
Windshield wiper installing bolt	7–11	5-8
Rear wiper arm locking nut	6-9	4-7
Rear wiper motor bracket installing nut	7–10	5-7

TROUBLESHOOTING

N08KHBJ

WINDSHIELD WIPER AND WASHER

CIRCUIT DIAGRAM



X35-AC-U1307-NC

OPERATION

<Low-speed (and high-speed) wiper operation>

- When the wiper switch is placed in the LO position with the ignition switch in the ACC or ON position, wipers operate continuously at low speed.
- Placing the wiper switch in the HI position causes the wipers to operate at high speed.

<Auto wiper stop operation>

- When the wiper switch is placed in the OFF position, the cam contacts of wiper motor causes current to flow through the auto wiper stop circuit, allowing the wiper blades to cycle before they reach to the stop positions.

<Intermittent wiper operation>

- When the wiper switch is placed in the INT position with the ignition switch in ACC or ON position, the intermittent wiper relay is energized causing the intermittent wiper relay contacts to close and open repeatedly.
- When the contacts are closed, the wiper motor is energized.
- When the wiper motor is energized, the relay contacts open; however, the cam contacts keep the wiper motor energized until the wiper blades return to their stop position.

<Washer-wiper operation>

- When the washer switch is turned ON, the intermittent wiper relay contacts close causing wipers to cycle two to three times.

TROUBLESHOOTING HINTS

1. Wipers do not operate.
   (1) Washer is not operative, either.
   - Check multi-purpose. fuse No.⑨.
   - Check ground.
2. Low-speed (or high-speed) wiper operation only is inoperative.
   - Check wiper switch.
3. Wipers do not stop.
   - Check wiper motor.
   - Check intermittent wiper relay.
   - Check wiper switch.
4. Intermittent wiper operation is inoperative.
   - Check terminal voltage of steering-column switch (with a built-in intermittent wiper relay) with the intermittent wiper relay energized.

Terminal No.	Voltage	Check
3	0V	Intermittent wiper relay or wiper switch
	12V	Intermittent wiper relay
	0↔12V (alternating)	– (Normal)

5. The length of pause for intermittent operation cannot be varied.
   - Check variable intermittent wiper control switch.
   - Check intermittent wiper relay.
6. Washer is inoperative.
   (1) Wiper is operative on washer-wiper operation.
   - Check washer motor.

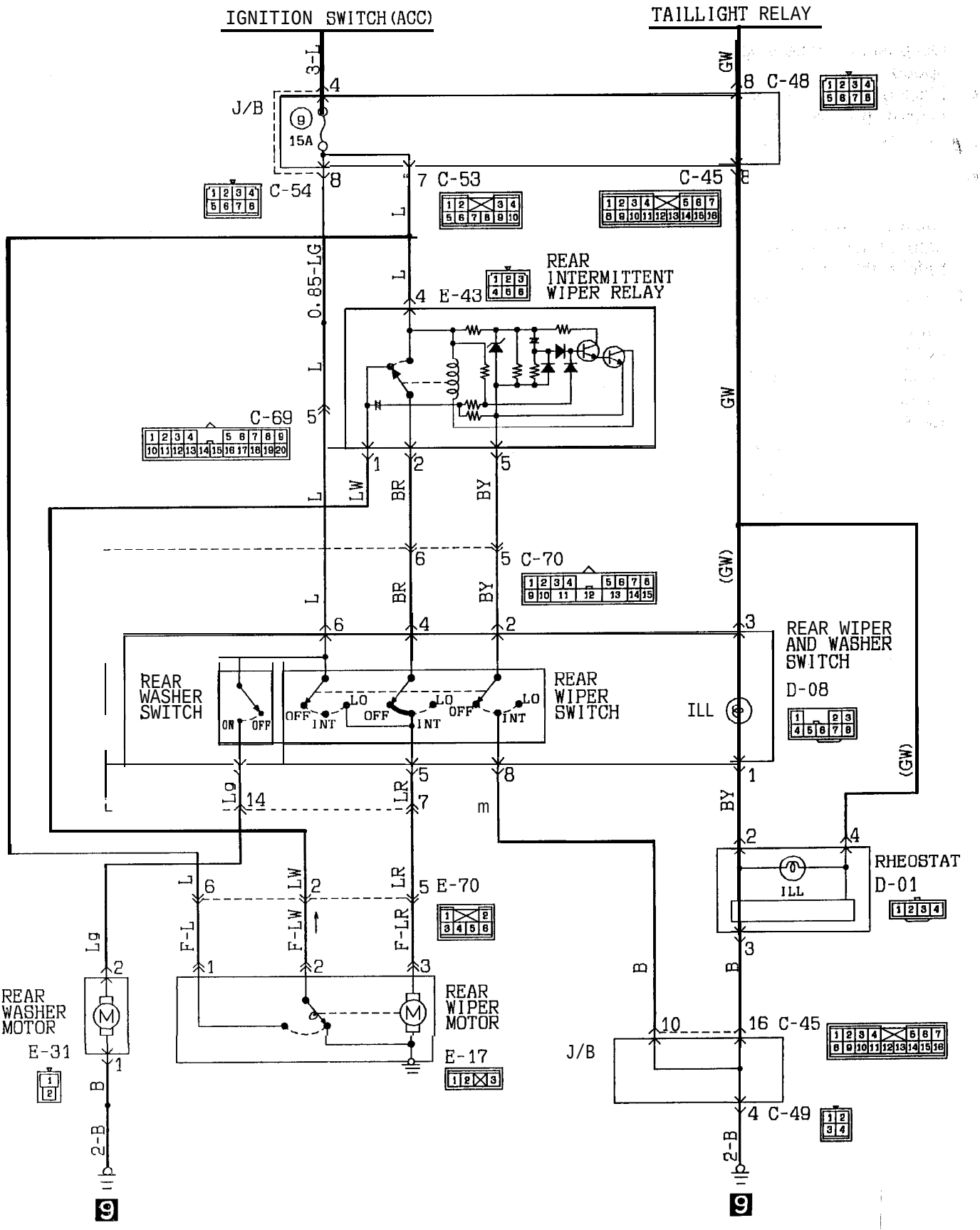
   (2) Washer-wiper operation is inoperative also.
   - Check washer switch.
7. Washer-wiper operation is inoperative.
   - Check intermittent wiper relay.

NOTE
For information concerning the intermittent wiper relay, refer to P.8-257.

REAR WIPER AND WASHER

N08KHBK

CIRCUIT DIAGRAM



KX35-AC-U1308-NC

OPERATION

< Low-speed wiper operation >

- When the rear wiper switch is placed in the ON position with the ignition switch in the ACC or ON position, wipers operate continuously at low speed.

< Auto wiper stop operation >

- When the rear wiper switch is placed in the OFF' position, the cam contacts of wiper motor causes current to flow through the auto wiper stop circuit, allowing the wiper blades to cycle before they reach to the stop positions.

< Intermittent wiper operation >

- When the rear wiper switch is placed in the INT position with the ignition switch in ACC or ON position, the rear intermittent wiper relay is energized causing the rear intermittent wiper relay contacts to close and open repeatedly.
- When the contacts are closed, the wiper motor is energized.
- When the rear wiper motor is energized, the rear intermittent wiper relay contacts open; however, the cam contacts keep the rear wiper motor, energized until the wiper blades return to their, stop position.

TROUBLESHOOTING HINTS

1. Wipers do not operate.
   (1) Washer is not operative, either.
   - Check multi-purpose fuse No. ⑨.
   - Check ground.
2. Low-speed wiper operation only is inoperative.
   - Check wiper switch.
3. Wipers do not stop.
   - Check wiper motor.
   - Check rear intermittent wiper relay.
   - Check rear wiper switch.
4. Intermittent wiper operation is inoperative.
   - Check terminal voltage of the rear intermittent wiper relay energized.

   (Refer to P.8-260 for information concerning the installation position of the intermittent wiper relay.)

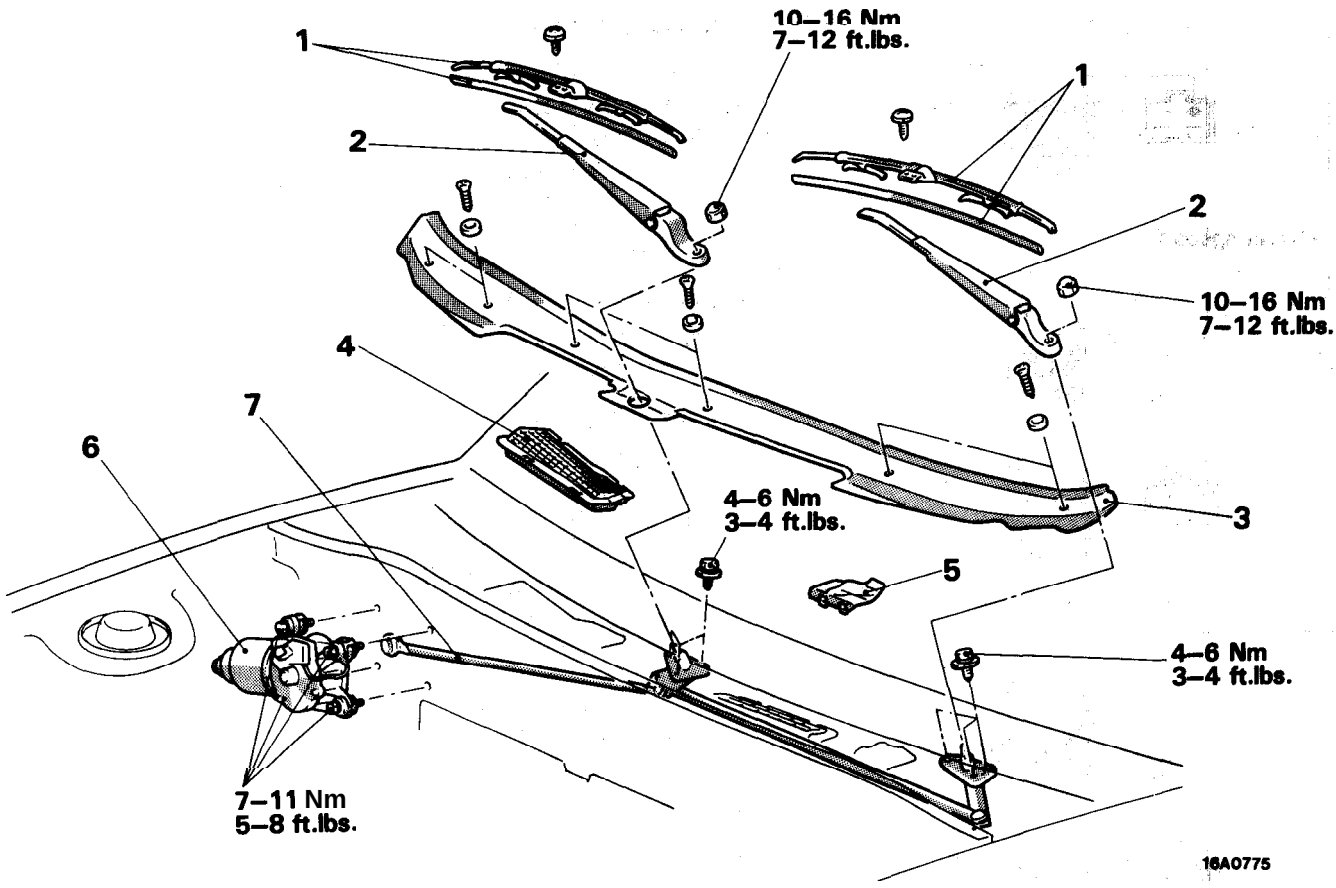
Terminal No.	Voltage	Check
2	0V	Rear intermittent wiper relay or rear wiper switch
	12V	Rear intermittent wiper relay
	0↔12V (alternating)	– (Normal)

5. Washer is inoperative.
   - Check washer motor.
   - Check washer switch.

WINDSHIELD WIPER

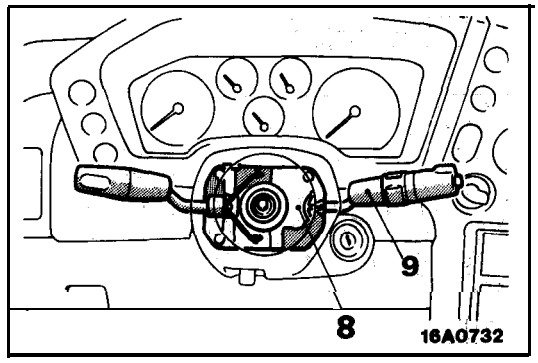
N08KJAK

REMOVAL AND INSTALLATION

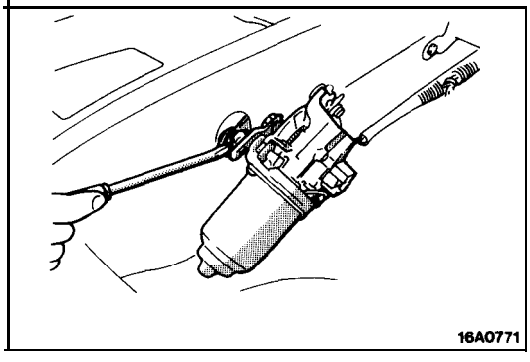


Removal steps

- ◆◆ 1. Wiper blades
- ◆◆ 2. Wiper arms
- 3. Front deck garnish
- 4. Air inlet garnishes
- 5. Hole cover
- ● ☒ 6. Wiper motor
- 7. Linkage
- 8. Intermittent wiper relay (incorporated within the column switch)
- ● ☒ 9. Wiper and washer switch



NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation"



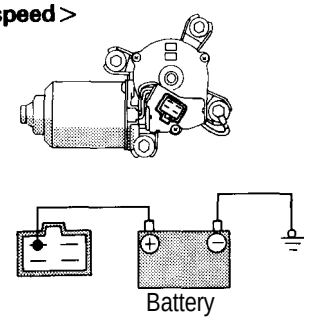
SERVICE POINTS OF REMOVAL

6. REMOVAL OF WIPER MOTOR

Loosen the wiper motor assembly mounting bolts, and then remove the wiper motor assembly.
Disconnect the linkage and the motor assembly, and then remove the linkage.

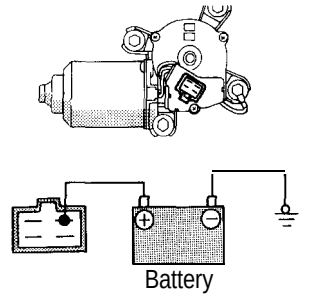
Caution
Because the installation angle of the crank arm and the motor has been set, do not remove them unless it is necessary to do so. If they must be removed, remove them only after marking their mounting positions.

<Low speed>

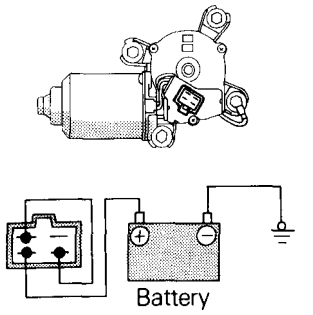


16A0773

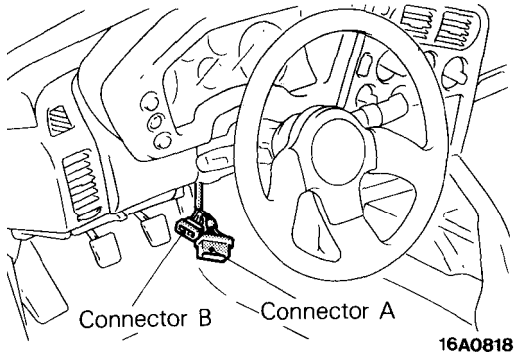
< High speed >



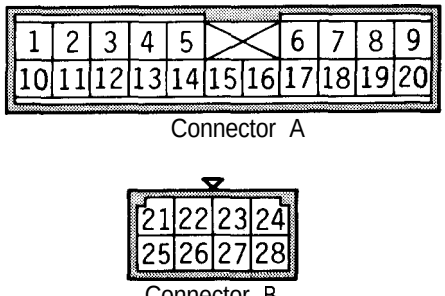
16A0774



16A0772



16A0818



16A0192

9. REMOVAL OF WIPER AND WASHER SWITCH

Refer to P.8-249.

INSPECTION

WIPER MOTOR

Check the wiper motor after first disconnecting the wiring harness connector, and with the wiper motor remaining installed to the body.

Operation of Wiper Motor at LOW speed

Connect a battery to the wiper motor as shown in the illustration and inspect motor operation at LOW speed.

Operation of Wiper Motor at HIGH speed

Connect a battery to the wiper motor as shown in the illustration and inspect motor operation at HIGH speed.

Operation of Wiper Motor at STOP Position

(1) Run the wiper motor at LOW speed, disconnect the battery, and stop the motor.
(2) Reconnect the battery as shown in the illustration, and confirm that after the motor starts turning at LOW speed, it stops at the automatic stop position.

WIPER SWITCH

(1) Remove the knee protector and column cover. (Refer to P.8-249.)
(2) Disconnect the column switch connector and check the continuity between the terminals for each switch.

Switch position \ Terminal		2	3	24	27	28
Wiper switch	OFF	O			O	
	INT	O			O	
	LO	O				O
	HI			O		O

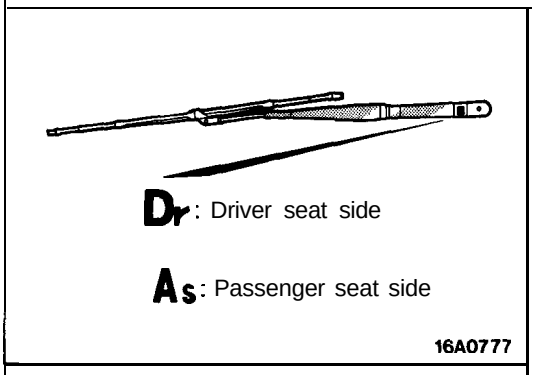
NOTE
O-O indicates that there is continuity between the terminals.

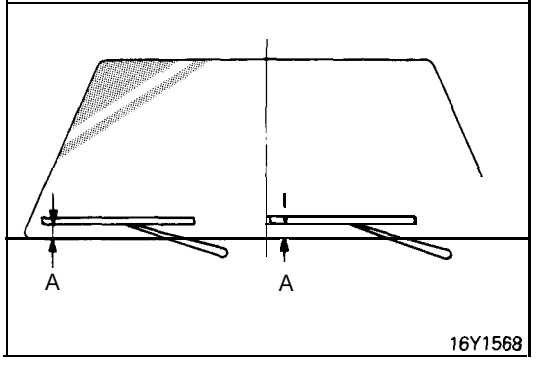
WASHER SWITCH

Operate the switch and check the continuity between the terminals.

Switch position \ Terminal	7	28
OFF		
ON	O	O

NOTE
O-O indicates that there is continuity between the terminals.





SERVICE POINTS OF INSTALLATION

2. INSTALLATION OF WIPER ARMS

When mounting the wiper arm, check the "identification marks.

1. INSTALLATION OF WIPER BLADES

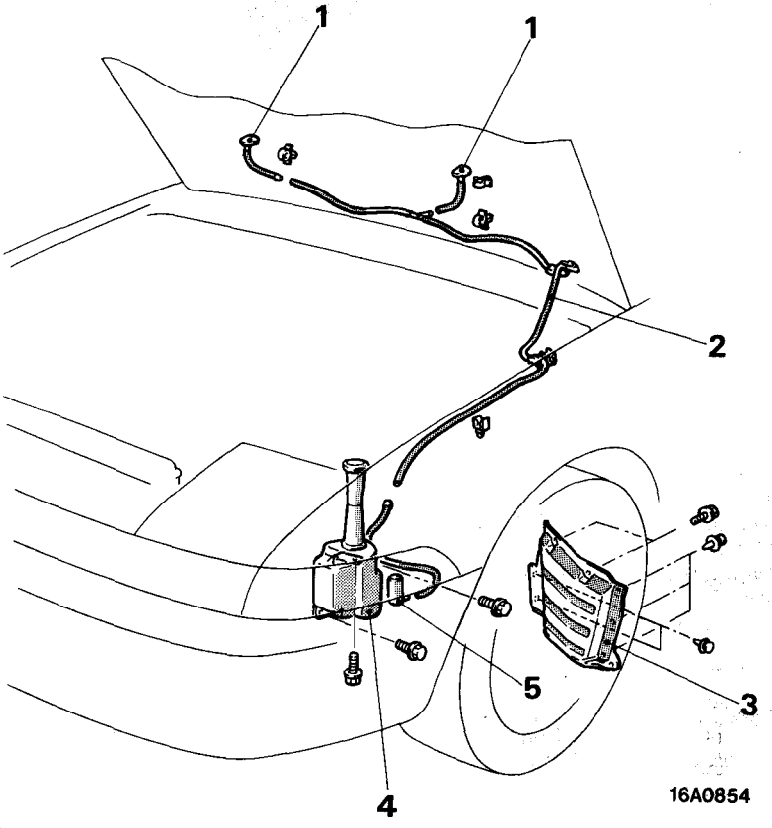
Install the wiper arm to the pivot shaft of the wiper linkage so that the stop position of the wiper blades is such that the dimension at the ends of the wiper blades and at the end of the front deck garnish is the dimension A indicated in the figure.

Standard value (dimension A): 25 mm (1.0 in.)

WINDOW WASHER

N08KKAH

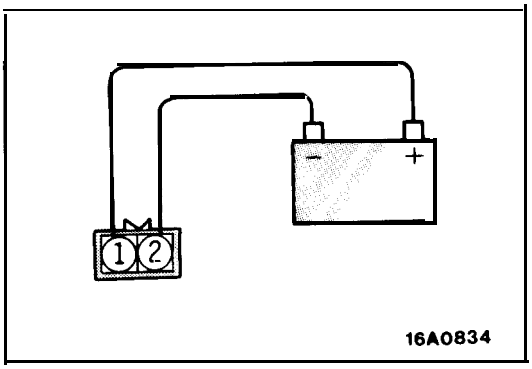
REMOVAL AND INSTALLATION



Removal steps

1. Washer nozzle
2. Washer tube
3. Front splash shield extension
4. Washer tank
5. Washer motor

NOTE
(1) Reverse the removal procedures to reinstall.
(2) For information concerning the windshield washer switch, refer to the WINDSHIELD WIPER section (P.8-258.)



INSPECTION

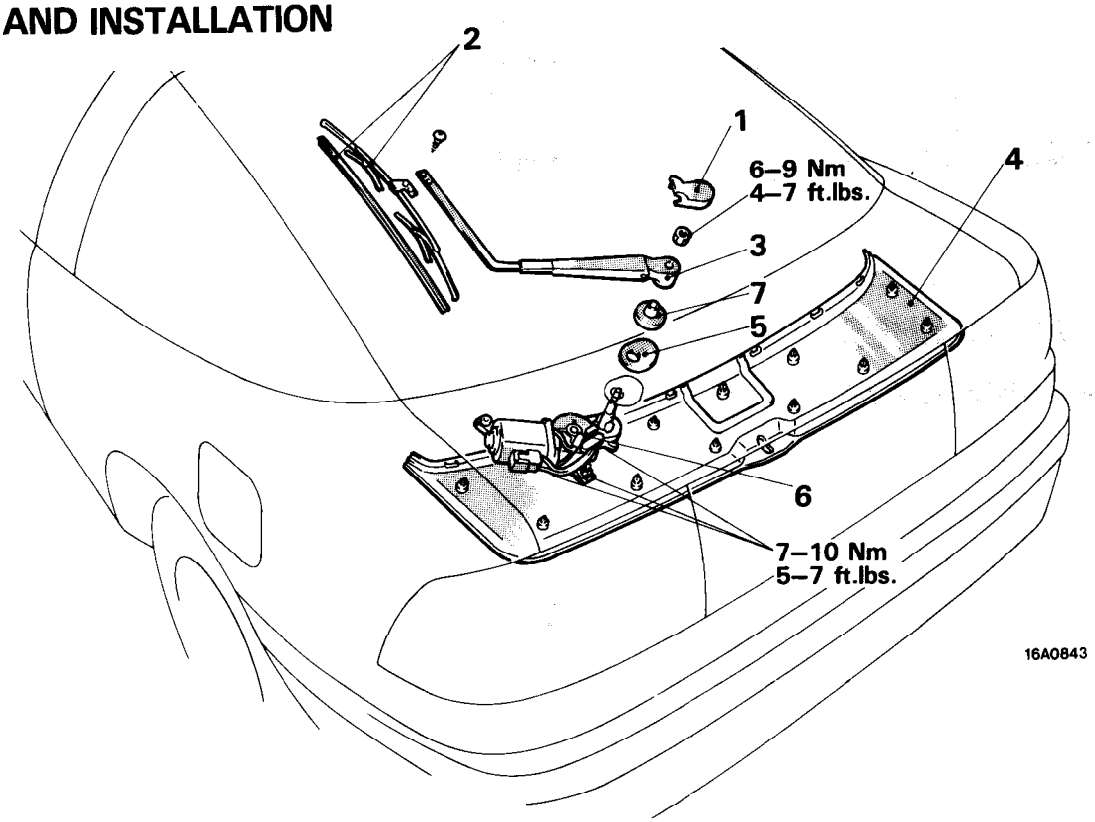
WASHER' MOTOR

(1) With the washer motor installed to the washer tank, fill the washer tank with water.
(2) Connect battery (+) and (–) cables to terminals respectively to see that the washer motor runs and water is injected.

REAR WIPER

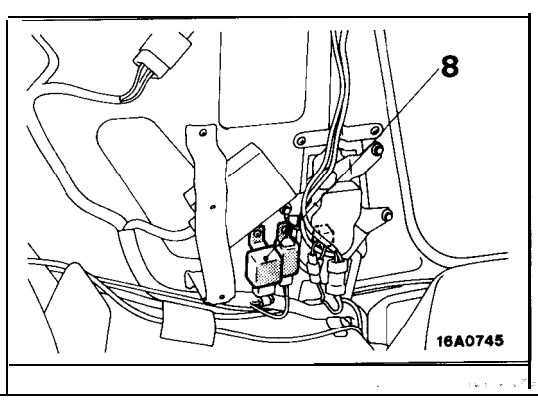
N08KKAI

REMOVAL AND INSTALLATION



Removal steps

1. Cover
- a 2. Wiper blade
- a 3. Wiper arm
- ⊠ 4. Liftgate trim
5. Rear wiper grommet <Vehicles with rear air spoiler>
6. Rear wiper motor assembly
- a 7. Grommet
8. Intermittent wiper relay

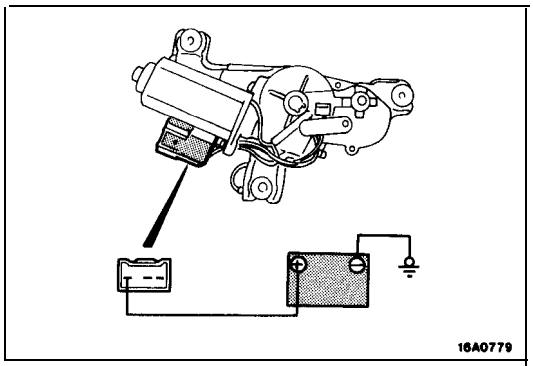


NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to "Service Points of Removal".
(3) ● *: Refer to "Service Points of Installation"

SERVICE POINTS OF REMOVAL

4. REMOVAL OF **LIFTGATE** TRIM

Refer to GROUP 23–Liftgate Trim.


16A0779

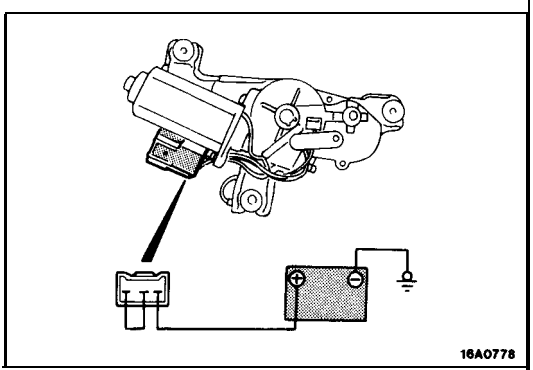
INSPECTION

WIPER MOTOR

Check the wiper motor after first disconnecting the wiring harness connector, and with the wiper motor remaining installed to the body.

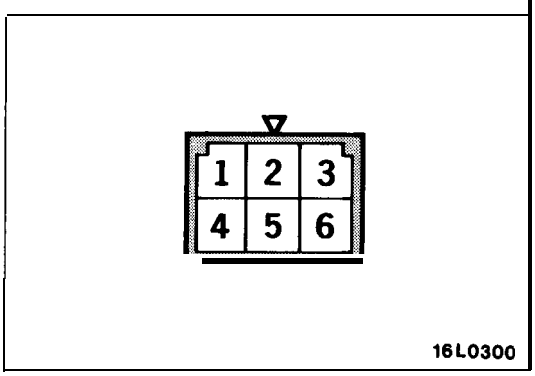
Operation of Wiper Motor at LOW speed

Connect a battery to the wiper motor as shown in the illustration and inspect motor operation.


16A0778

Operation of Wiper Motor at STOP Position

(1) Run the wiper motor, disconnect the battery, and, stop the motor.
(2) Reconnect the battery as shown in the illustration, and confirm that after the motor starts turning, it stops at the automatic stop position.

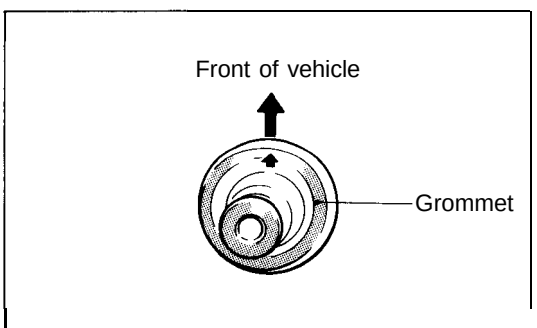


16L0300

INTERMITTENT WIPER RELAY <FOR REAR WIPER>

(1) Remove the quarter trim. (Refer to GROUP 23–Trims.)
(2) Keeping the intermittent wiper relay connected to the connector of the wiring harness, operate the wiper and check the voltage at terminal (2).

When the rear wiper stops : 0V
When the rear wiper activates: 12V

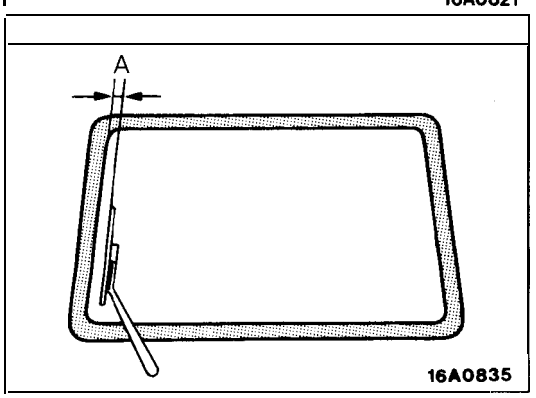


16A0821

SERVICE POINTS OF INSTALLATION

7. INSTALLATION OF GROMMET

Mount the grommet so that the arrow on the grommet is positioned as shown.



16A0835

3. INSTALLATION OF WIPER ARM/2. WIPER BLADE

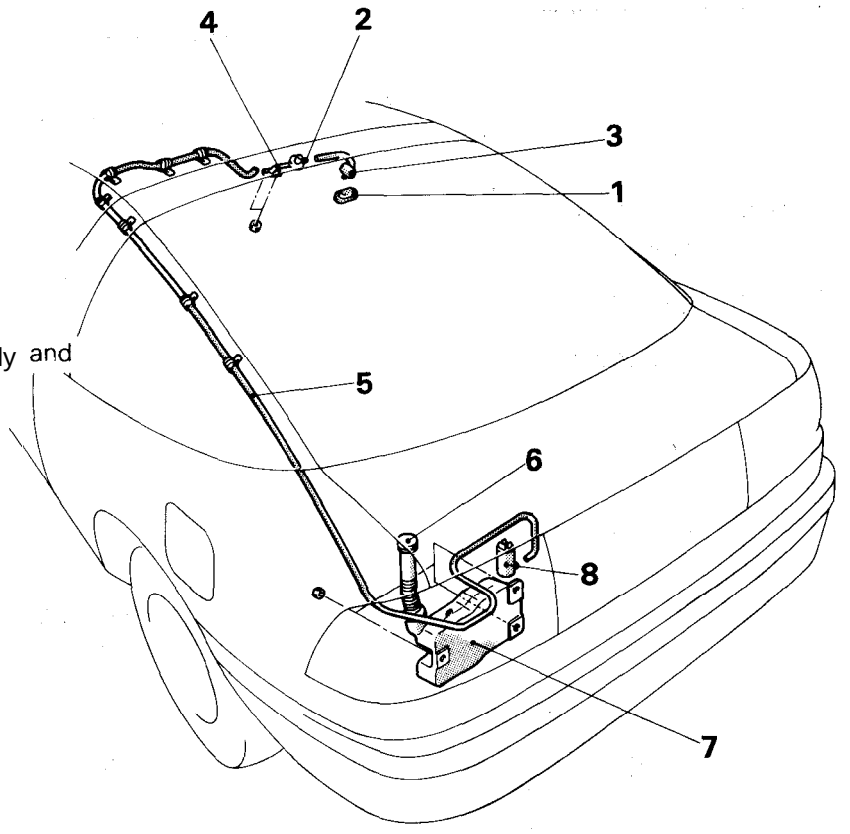
Set up the wiper arm so that the wiper blade may stop at the dimension A, away from the end of the colored area of the liftgate glass.

Standard value (dimension A): 30 mm (1.2 in.)

REAR WASHER

N08KLCG

REMOVAL AND INSTALLATION



Removal steps of nozzle assembly

1. Plug
2. Connection between joint assembly and nozzle assembly
- ◆◆ 3. Nozzle assembly

Removal steps of washer tube

Headlining
(Refer to GROUP 23–Headlining)
Rear side trim and rear piller trim
(Refer to GROUP 23–Trims)

- ◆◆ 4. Joint assembly
5. Washer tube

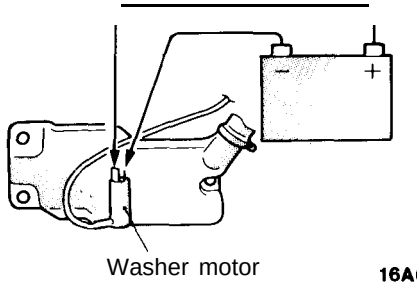
Removal steps of washer tank

Rear side trim
(Refer to GROUP 23–Trims)

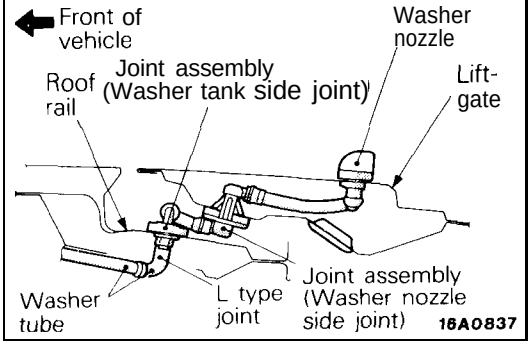
6. Cap
7. Washer tank
8. Washer motor

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● 4 : Refer to "Service Points of Installation".

16A0844



16A0831



16A0837

INSPECTION

WASHER MOTOR

(1) With the washer motor installed to the washer tank, fill the washer tank with water.
(2) Connect battery (+) and (–) cables to terminals respectively to see that the washer motor runs and water is injected.

SERVICE POINTS OF INSTALLATION

4. INSTALLATION OF JOINT ASSEMBLY/3. NOZZLE ASSEMBLY

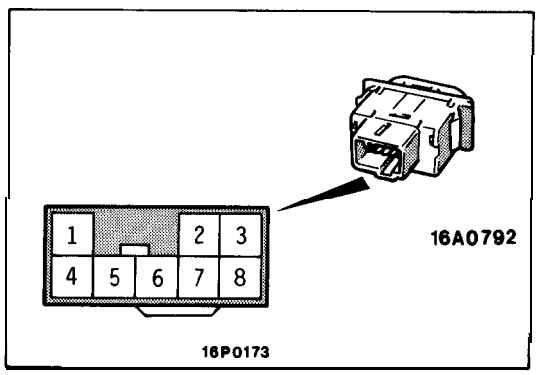
(1) Attach the joint assembly (joint on the washer tank side) to the roof rail, and connect it to the washer tube (so that the end of the L type joint of the washer tube may face toward the front of the vehicle).
(2) Attach the washer nozzle to the liftgate, and connect the washer tube of the washer nozzle to the joint assembly (joint on the washer nozzle).
(3) Attach the joint assembly (joint on the washer nozzle side) to the liftgate.

REAR WIPER AND WASHER SWITCH

N08K0AD

REMOVAL AND INSTALLATION

Refer to P.8-247.



INSPECTION

Operate the switch to check for continuity between terminals.

Switch position \ Terminal		2	4	5	6	7	8	3	1
Wiper switch	OFF		O—O					Illumination light	
	ON			O—O	O—O				
	INT	0	O—O	O—O			0		
Washer switch					O—O	O—O			

NOTE

O-O indicates that there is continuity between the terminals. ,

HORN

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08LB--

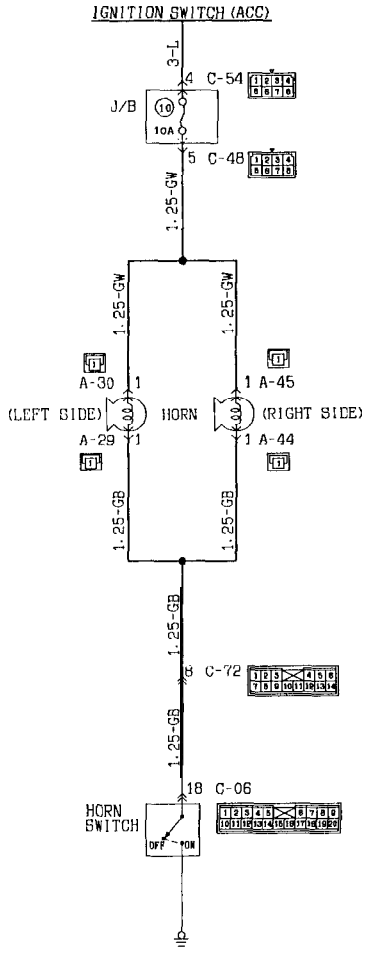
Items	Specifications
Type	Flat type
Effective sounding voltage V	11.5–15
Power consumption A	3.0
Sound level dB	
"low" sound	100–112
"high" sound	100–112
Fundamental frequency Hz	
"low" sound	370
"high" sound	415

TROUBLESHOOTING

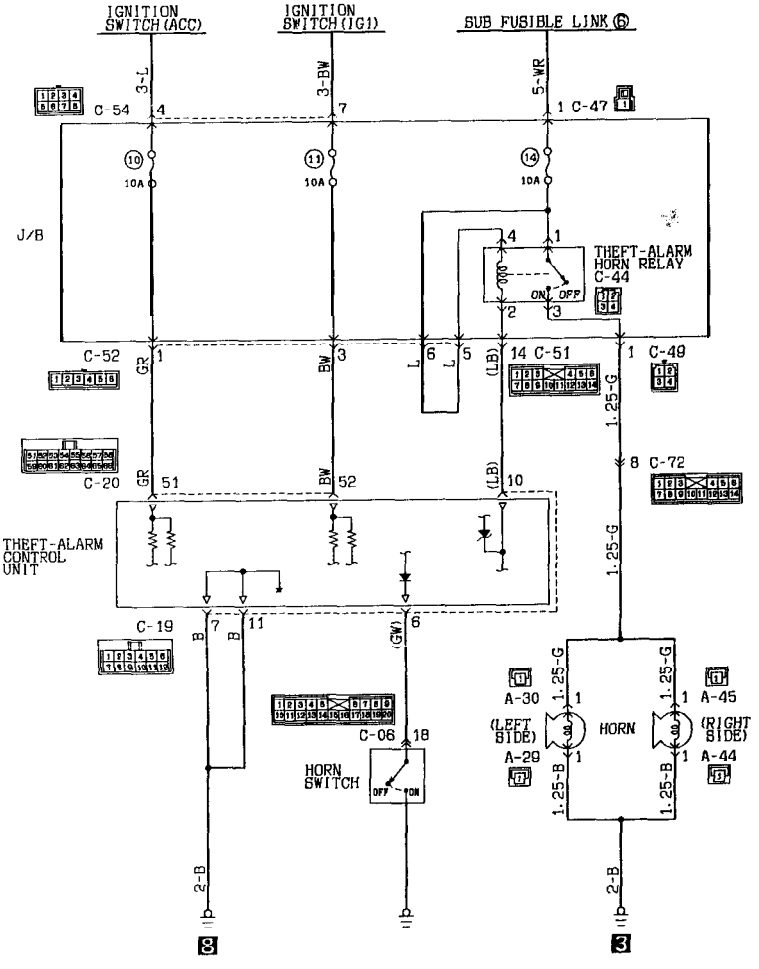
N08LHAE

CIRCUIT DIAGRAM

Vehicles without theft-alarm system



Vehicles with theft-alarm system



XX35-AC-U0913-NC

XX35-AC-U0914-NC

OPERATION

- When the ignition key is turned to the “ACC” or the “ON” position, battery voltage is constantly applied to the horn.
- When the horn switch is switched ON, electricity flows to multi-purpose fuse ⑩, the horn, the horn switch and ground.
- In this condition, electricity flows to multi-purpose fuse ⑩, the horn, the horn switch and ground, and horn sounds.

TROUBLESHOOTING HINTS

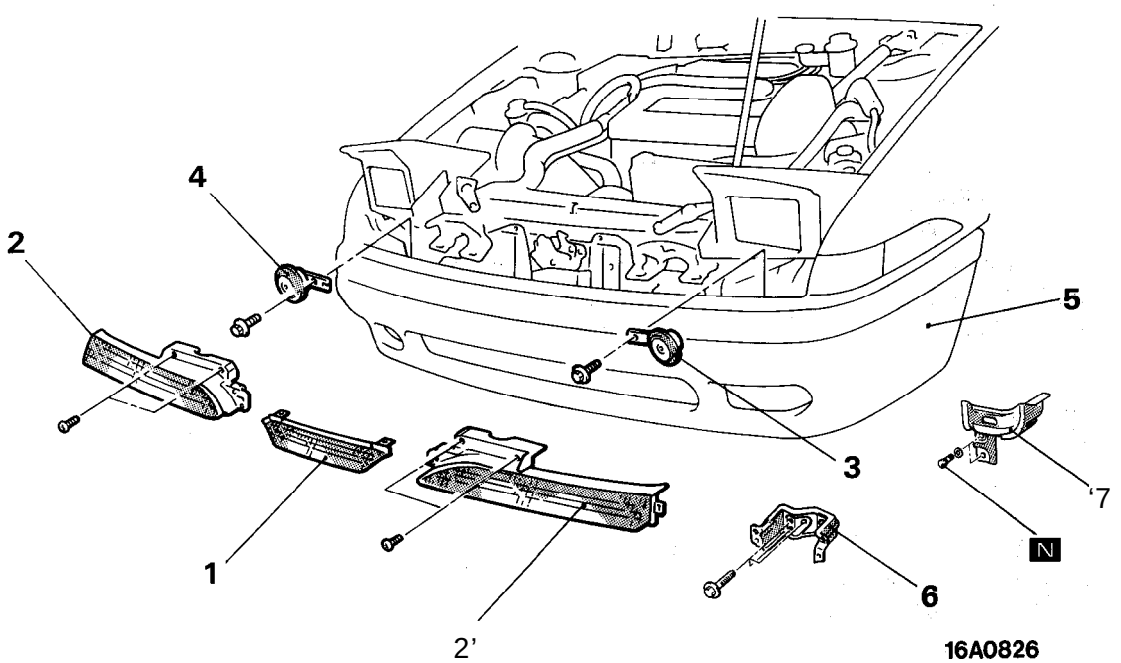
1. One of the horn does not sound.
   - Check the horn.
2. Horns do not sound.
   - Check the horn switch.
   - Check the multi-purpose fuse ⑩.

NOTE
(1) For vehicles equipped with the theft-alarm system, refer to P.8-300.
(2) For theft-alarm horn relay location, refer to P.8-266.

HORN

REMOVAL AND INSTALLATION

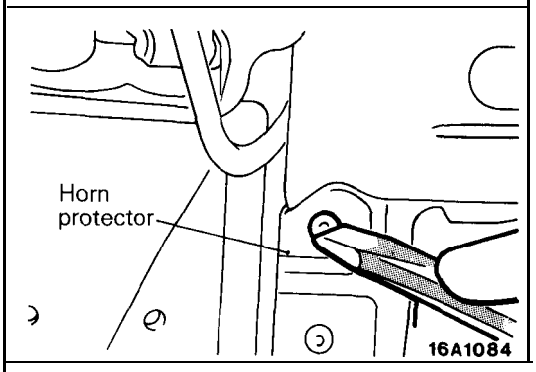
N08LJAK

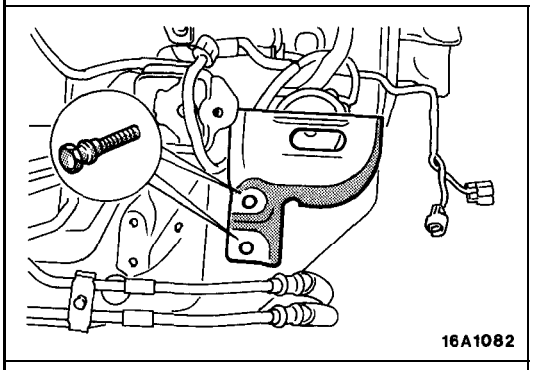


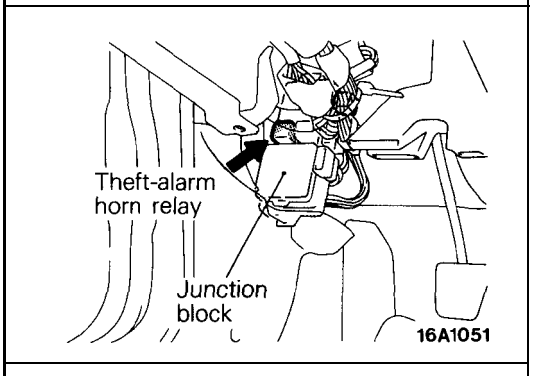
Removal steps

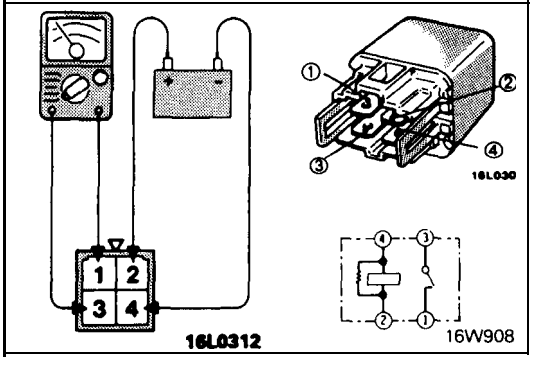
◆◆ 1. Front garnish
● a 2. Front turn signal light
3. Horn (Low sound)
4. Horn (High sound)*1
5. Front bumper*2
6. Fog light bracket**
◆◆ ● * 7. Horn protector*2

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to “Service Points of Removal”.
(3) ◆◆: Refer to “Service Points of Installation”.
(4) ❑ : Non-reusable parts
(5) *1 indicates the dual type horn.
(6) The ● 2 symbol is applicable to vehicles equipped with the theft-alarm system. Note that 5, 6 and 7 need not be removed for removal of the horn only.









SERVICE POINTS OF REMOVAL

1. REMOVAL OF FRONT GARNISH

Refer to GROUP 23–Grille.

7. REMOVAL OF HORN PROTECTOR

(1) Place a chisel at the head of the bolt holding the horn protector, and then use a hammer to tap so that the horn protector bolt's head is tapped in the counterclockwise direction to loosen the horn protector installation bolt.
(2) Remove the horn protector installation bolt, and then remove the horn protector.

SERVICE POINTS OF INSTALLATION

7. INSTALLATION OF HORN PROTECTOR

(1) Install the horn protector.
(2) Tighten the horn protector installation bolt until its head twists off.

2. INSTALLATION OF FRONT TURN SIGNAL LIGHT

Refer to P.8-241.

RELAY

INSPECTION

THEFT-ALARM HORN RELAY

(1) Take out the theft-alarm horn relay from relay block.
(2) Connect battery to terminal 2 and check continuity between terminals with terminal 4 grounded.

Power is supplied	1–3 terminals	Continuity
Power is not supplied	1–3 terminals	No continuity
	2-4 terminals	Continuity

CIGARETTE LIGHTER

SPECIFICATIONS

GENERAL SPECIFICATIONS

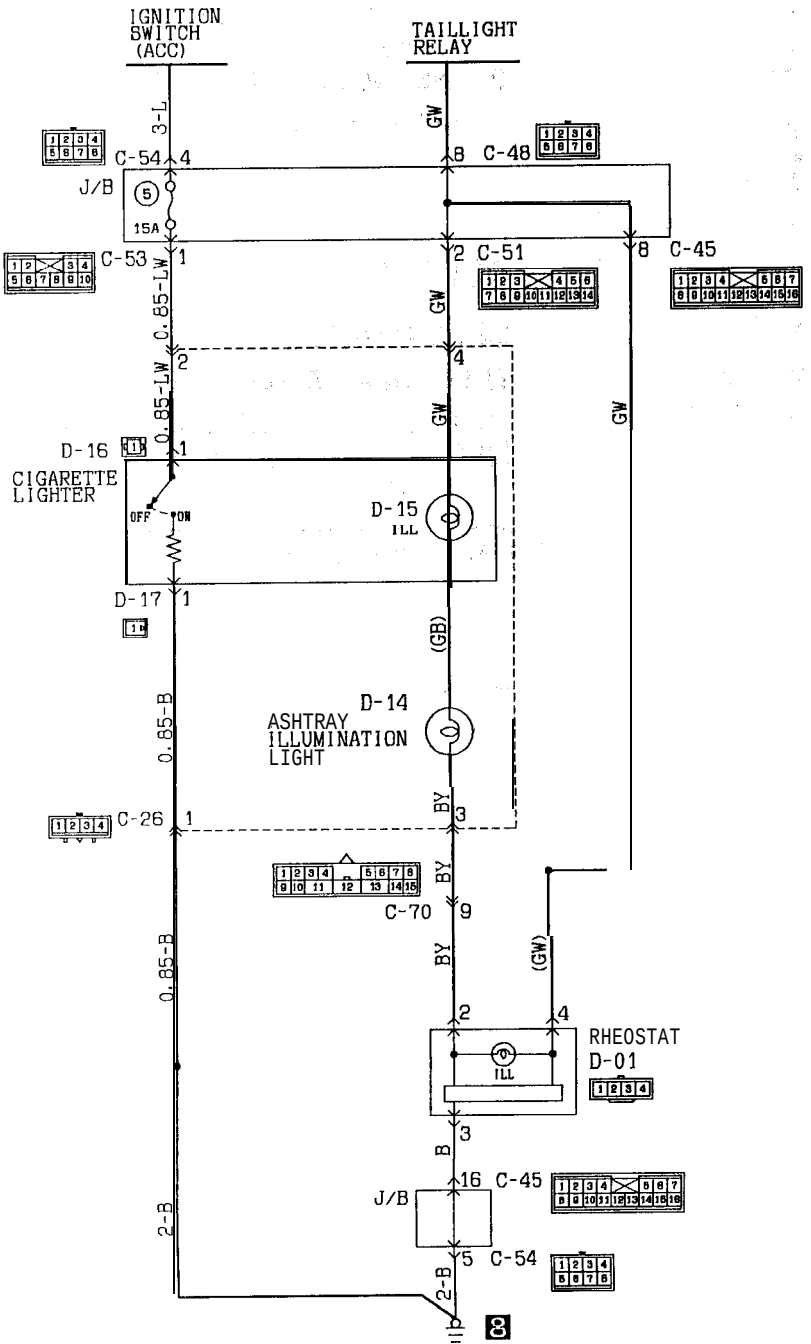
N08MB--

items	Specifications
Max. input W	120
Reset time second	Within 18
Thermal fuse fusion temperature °C (°F)	180–250 (356–482)

TROUBLESHOOTING

N08MHCA

CIRCUIT DIAGRAM



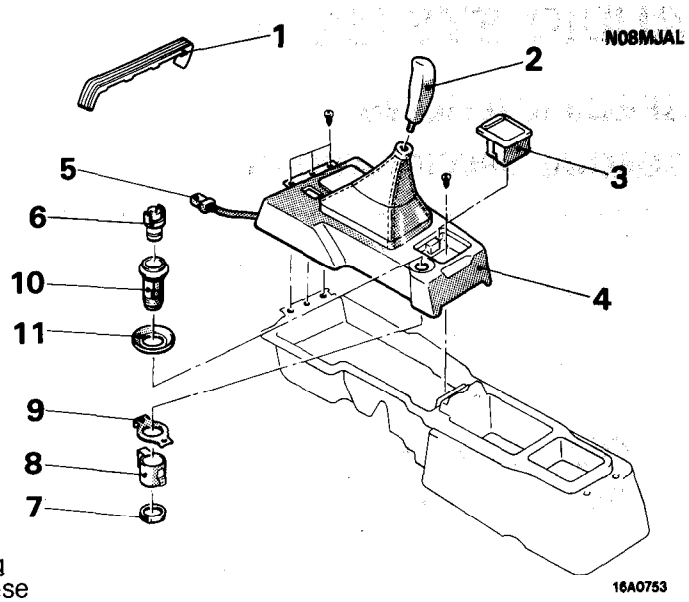
XX35-AC-U1408-NC

CIGARETTE LIGHTER

REMOVAL AND INSTALLATION

Pre-removal Operation
- Removal of Side Cover (B) (Refer to GROUP 23–Floor Console.)

Post-installation Operation
- Installation of Side Cover (B) (Refer to GROUP 23–Floor Console.)



Removal stpes

1. Cover (B)
2. Shift lever knob <M/T>
3. Ashtray
4. Floor console garnish
5. Connection of floor console wiring harness connector and power/ economy changeover switch connector <A/T>
6. Plug
7. Fixing ring
   a. Socket case
9. Plate
10. Socket
11. Protector

NOTE
Reverse the removal procedures to reinstall

INSPECTION

- Take out the plug, and check for a worn edge on the element spot connection, and for shreds of tobacco or other material on the element.
- Using an ohmmeter, check the continuity of the element.

CAUTIONS FOR USE OF THE CIGARETTE LIGHTER SOCKET AS AUXILIARY POWER SOURCE

1. When using a ''plug-in'' type of accessory, do not use anything with a load of more than 120W.

2. **It is recommended that only the lighter be inserted in the receptacle.**
   Use of ''plug-in'' type accessories may damage the receptacle and result in poor retention of the lighter.

   NOTE
   The specified load should be strictly observed, because overloaded cord burns the ignition switch and harness.

AUDIO SYSTEM

SPECIFICATIONS

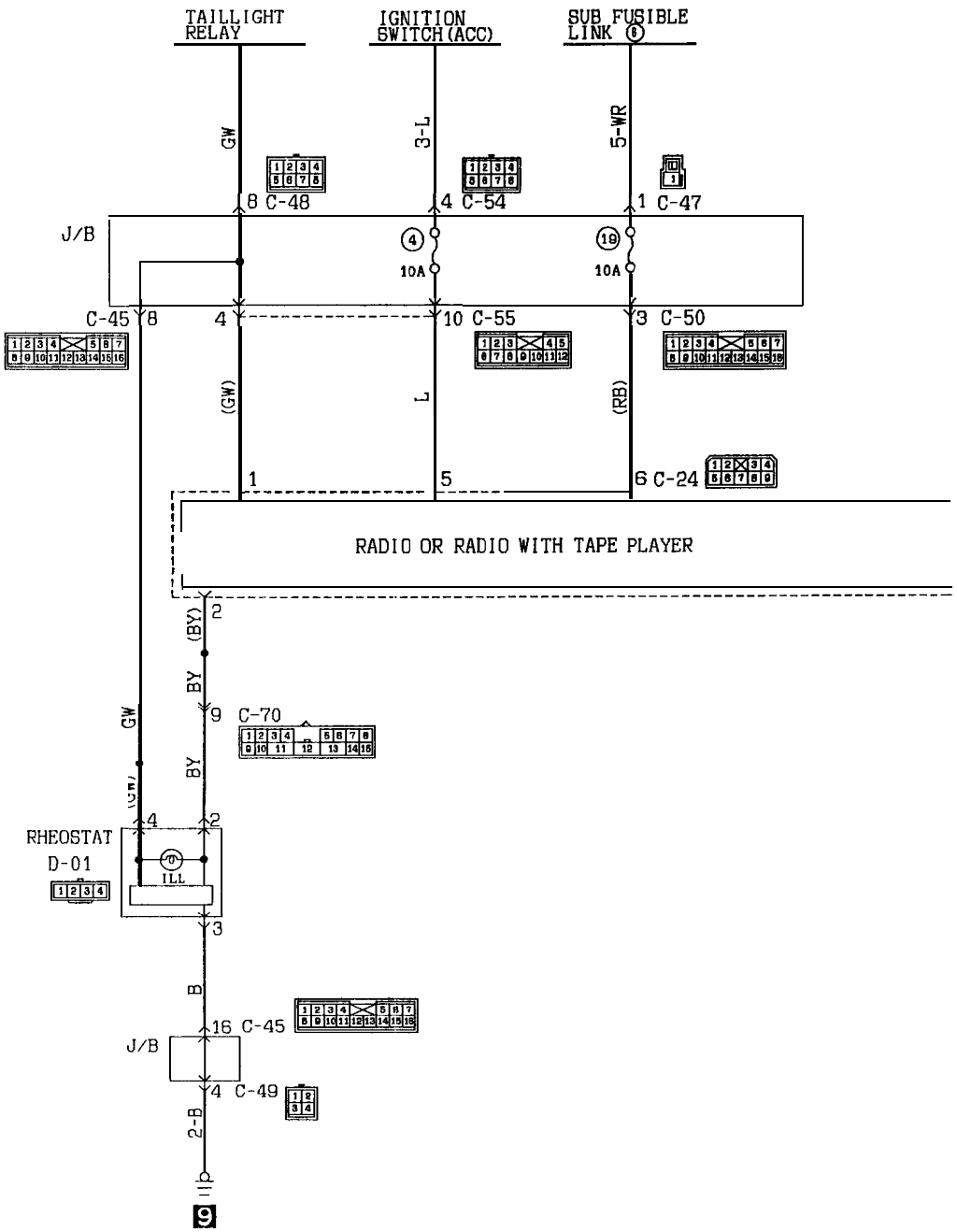
TORQUE SPECIFICATIONS

Items	Nm	ft.lbs.
Whip antenna mast	5 - 6	3.6-4.3

TROUBLESHOOTING

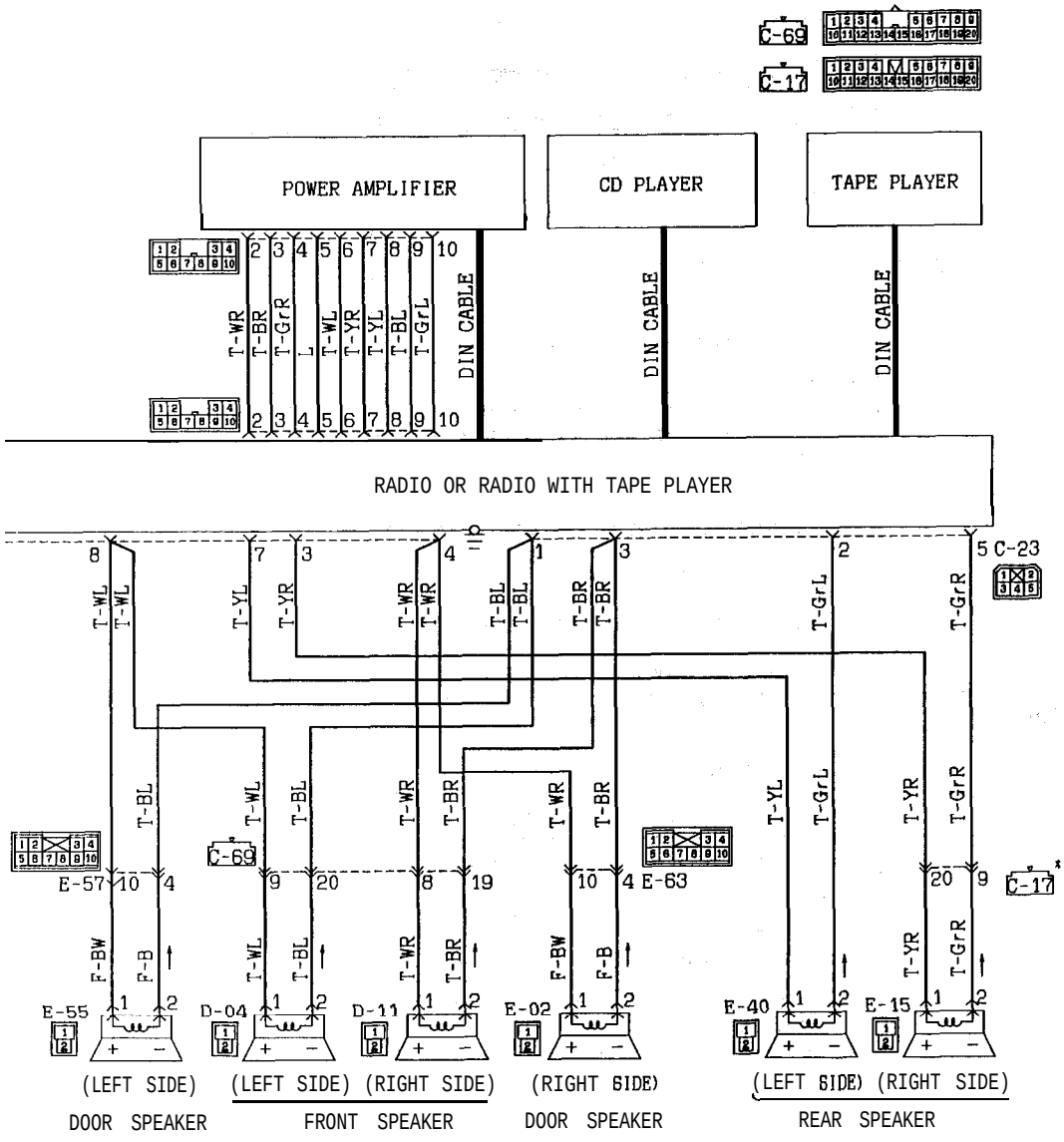
N08NHAO

AUDIO CIRCUIT DIAGRAM



OPERATION

- When the radio power switch is turned on with the ignition switch at “ACC” or “ON”, current flows through fuse No.4, radio, and ground, causing the radio to operate.
- Battery voltage is always supplied for use of the memory and other functions in the radio.



Remark
·The connector indicated by the * symbol is applicable to vehicles with ABS.

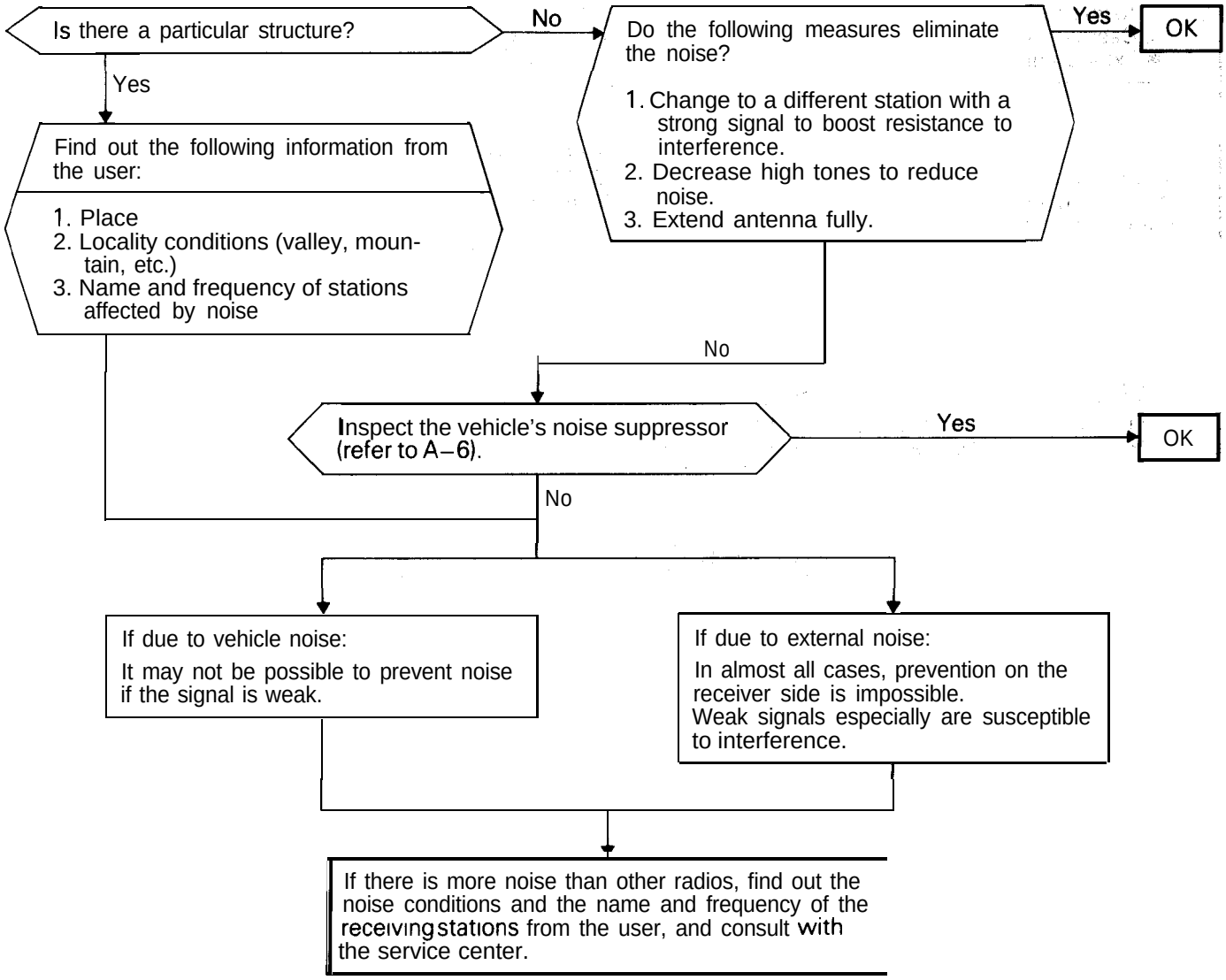
TROUBLESHOOTING CHART

Item	Problem Symptom	Relevant Chart
A. Noise	1. Noise appears at certain places when traveling (AM).	A-I
	2. Noise appears at certain places when traveling (FM).	A-2
	3. Mixed with noise, only at night (AM).	A-3
	4. Broadcasts can be heard but both AM and FM have a lot of noise.	A-4
	5. There is more noise either on AM or on FM.	A-5
	6. There is noise when starting the engine.	A-6
	7. Some noise appears when there is vibration or shocks during traveling.	A-7
	8. Noise sometimes appears on FM during traveling.	A-8
	9. Ever-present noise.	A-9
B. Radio	1. No sound.	B-I
	2. No sound from one speaker.	B-2
	3. There is noise but no reception for both AM and FM.	B-3
	4. No sound from AM, or no sound from FM.	B-4
	5. Insufficient sensitivity.	B-5
	6. Distortion on AM or on both AM and FM.	B-6
	7. Distortion on FM only.	B-7
	8. Too few automatic select stations.	B-8
	9. Insufficient memory (preset stations are erased).	B-9
C. Cassette Player	1. Cassette tape will not be accepted.	C-1
	2. No sound.	C-2
	3. No sound from one speaker.	C-3
	4. Sound quality is poor, or sound is weak.	C-4
	5. Cassette tape will not be ejected.	C-5
	6. Wow & flutter. Tape speed is fast or slow.	C-6
	7. Automatic search does not work (only for models with automatic search function).	C-7
	8. Faulty auto reverse.	C-8
	9. Tape gets caught in mechanism.	C-9
D. CD Player	1. CD will not be accepted.	D-I
	2. No sound.	D-2
	3. CD sound skips.	D-3
	4. Sound quality is poor.	D-4
	5. CD will not be ejected.	D-5
	6. No sound from one speaker.	D-6

CHART

A. NOISE

A–1 Noise appears at certain places when traveling (AM).



A–2 Noise appears at certain places when traveling (FM).

Do the following measures eliminate the noise?

- Change to a different station with a strong signal to boost resistance to interference.
- Decrease high tones to reduce noise.
- Extend antenna fully.

Yes → OK

No

If there is more noise than other radios, find out the noise conditions and the name and frequency of the receiving stations from the user, and consult with the service center.

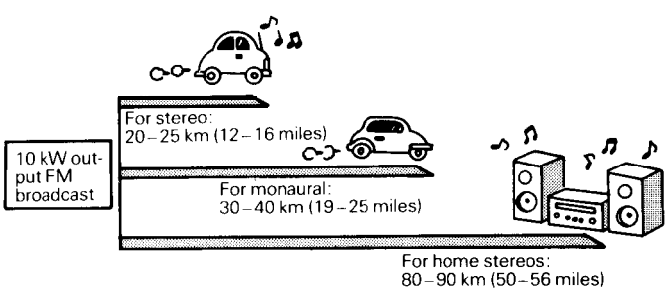
NOTE

About FM waves:

FM waves have the same properties as light, and can be reflected and blocked. Wave reception is not possible in the shadow of obstructions such as buildings or mountains.

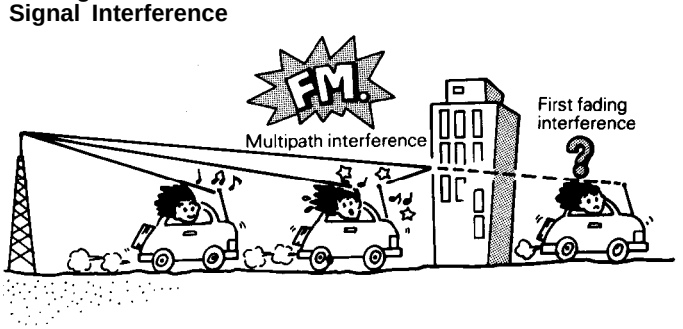
1. The signal becomes weak as the distance from the station's transmission antenna increases. Although this may vary according to the signal strength of the transmitting station and intervening geographical formations or buildings, the area of good reception is approx. 20–25 km (12–16 miles) for stereo reception, and 30–40 km (19-25 miles) for monaural reception.
2. The signal becomes weak when an area of shadow from the transmitting antenna (places where there are obstructions such as mountains or buildings between the antenna and the car), and noise will appear. <This is called first fading, and gives a steady buzzing noise.>
3. If a direct signal hits the antenna at the same time as a signal reflected by obstructions such as mountains or buildings, interference of the two signals will generate noise. During traveling, noise will appear each time the vehicle's antenna passes through this kind of obstructed area. The strength and interval of the noise varies according to the signal strength and the conditions of reflection. <This is called multipath noise, and is a repetitious buzzing. >
4. Since FM stereo transmission and reception has a weaker field than monaural, it is often accompanied by a hissing noise.

FM Broadcast Good Reception Areas



16A0663

FM Signal Characteristics and Signal Interference

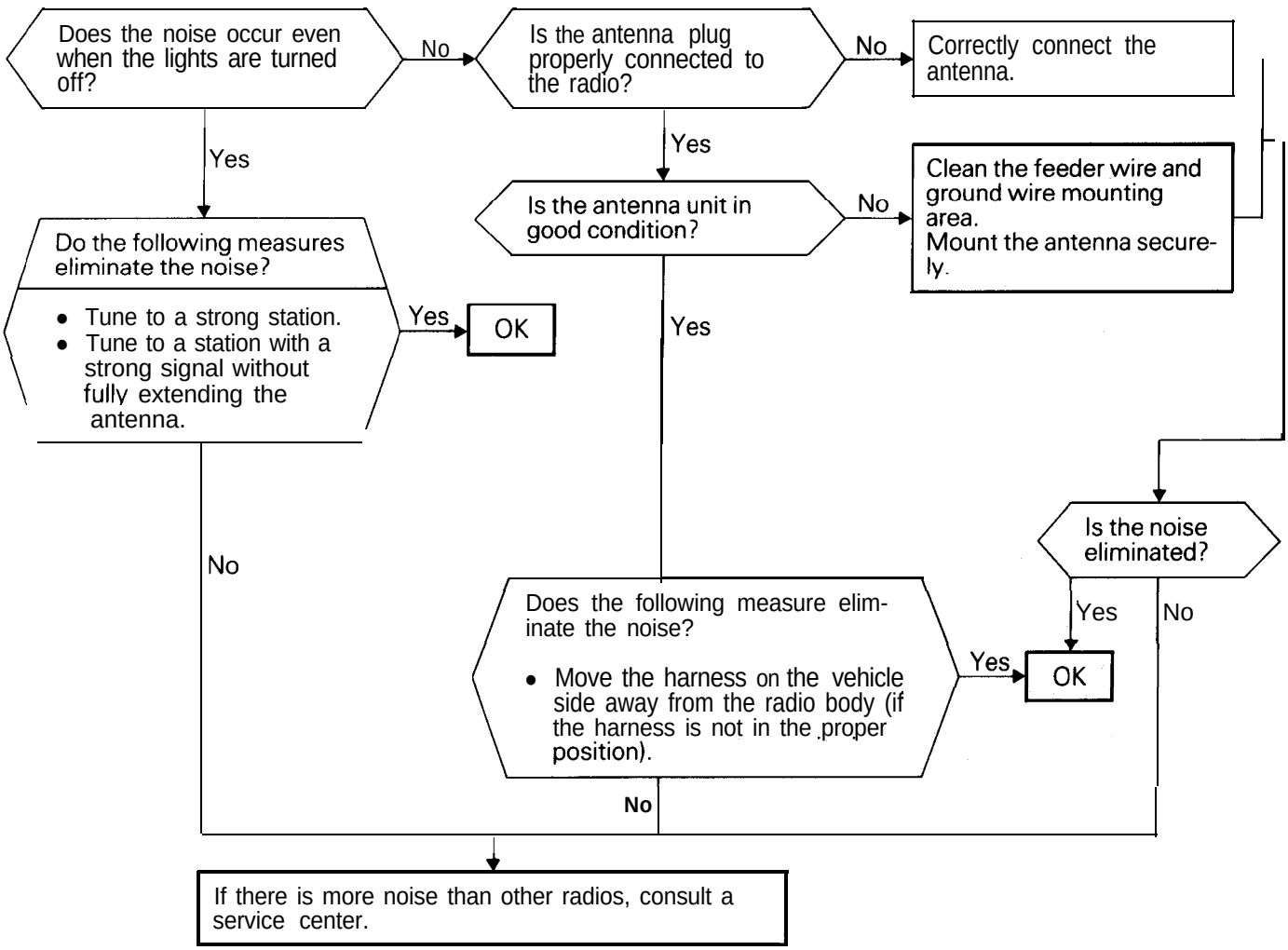


16A0664

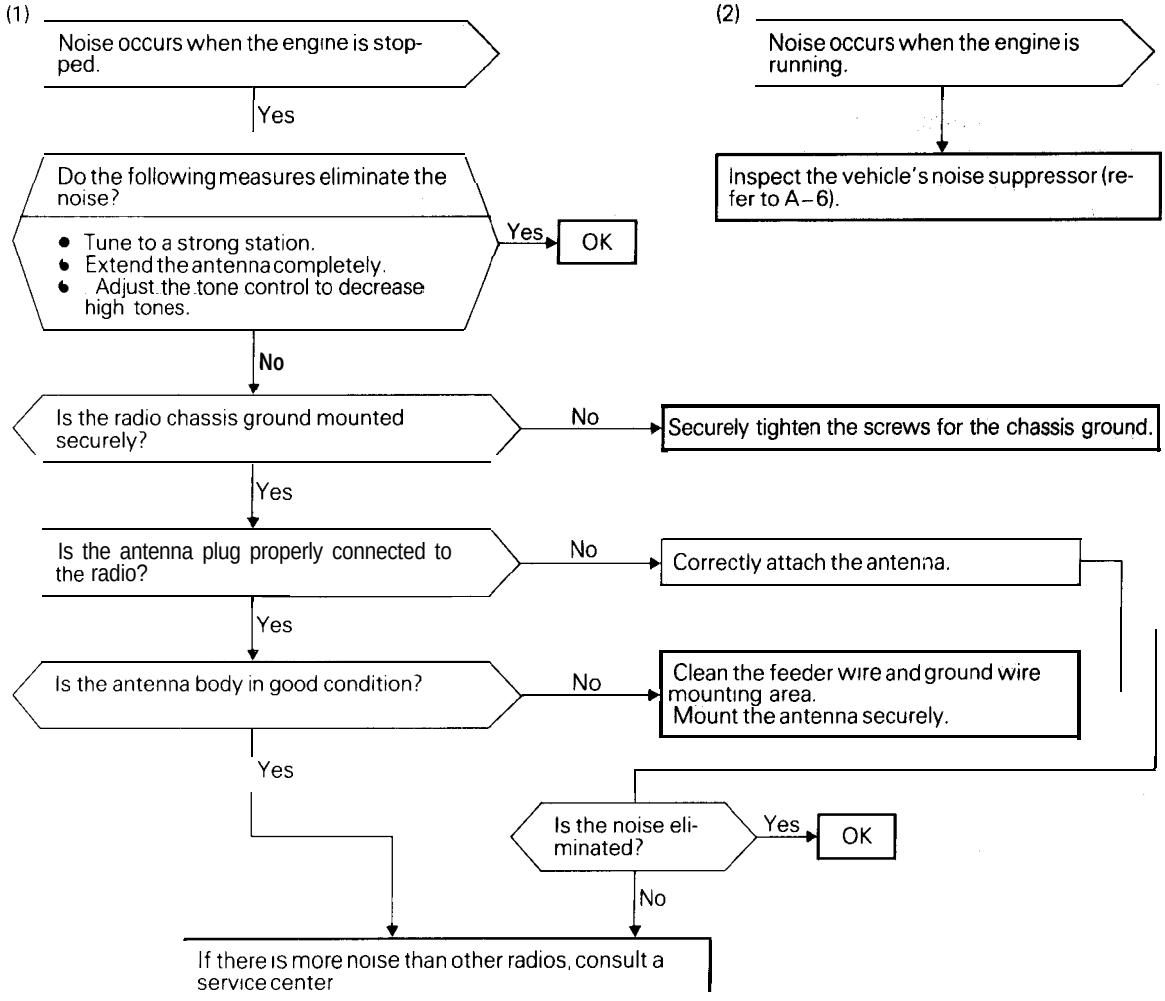
A–3 Mixed with noise, only at night (AM).

The following factors can be considered as possible causes of noise appearing at night.
Factors due to signal conditions:
Due to the fact that long-distance signals are more easily received at night, even stations that are received without problem during the day may experience interference in a general worsening of reception conditions. The weaker station is more susceptible to interference, and a change to a different station or the appearance of a beat sound* may occur.

*Beat sound: Two signals close in frequency interfere with each other, creating a repetitious high-pitched sound. This sound is generated not only by sound signals but by electrical waves as well.

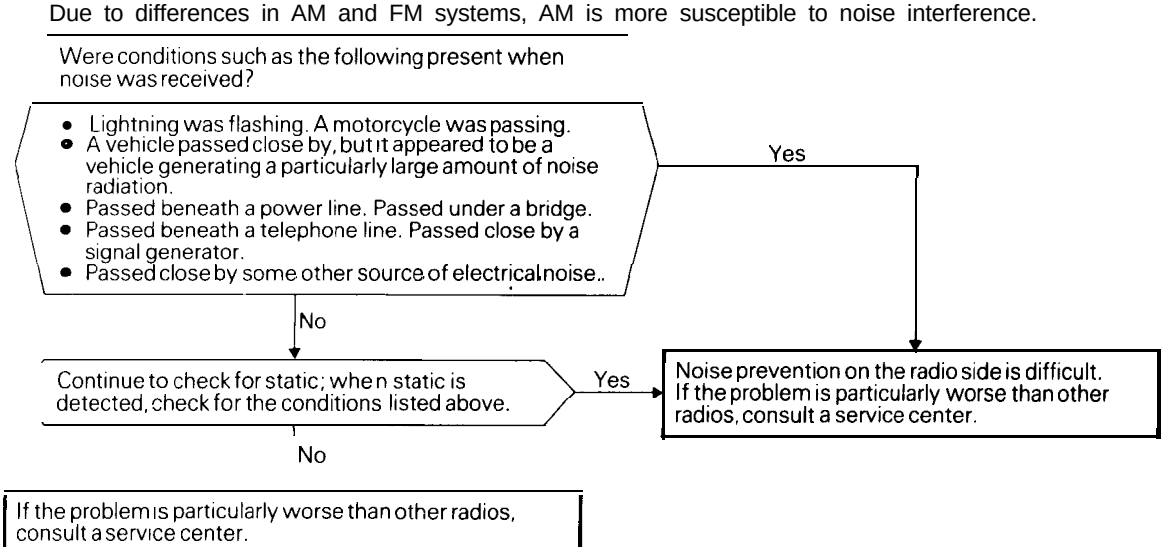


A–4 Broadcasts can be heard but both AM and FM have a lot of noise.



A–5 There is more noise either on AM or on FM.

1. There is much noise only on AM
Due to differences in AM and FM systems, AM is more susceptible to noise interference.



2. There is much noise only on FM
Due to differences in FM and AM systems, FM is not as susceptible as AM to interference from engines, power lines, lightning, etc. On the other hand, there are cases due to the characteristics of FM waves of noise or distortion generated by typical noise interference (first fading and multipath). (Refer to A–2.)
<Noise (hissing) occurs in weak signal areas such as mountainous regions, but this is not due to a problem with the radio.>

A–6 There is noise when starting the engine.

Noise type Sounds are in parentheses [ ].	Conditions	Cause	Inspection or replacement	
			Noise-preventive part	Mounting place (next page)
AM, FM: Ignition noise [Popping, Snapping, Cracking, Buzzing]	● Increasing the engine speed causing the popping sound to speed up, and volume decreases. ● Disappears when the ignition switch is turned to ACC.	● Mainly due to the spark plugs. ● Due to the engine noise.	● CRC filter ● Ground cable	3 **2, 4, 6**
AM, FM: Defogger noise	It is generated when the defogger switch is turned on or off.	When the defogger switch is turned on or off, spark noise enters the antenna.	Noise condenser	1, **5**
Other electrical components	–	Noise may appear as electrical components become older.	Repair or replace electrical components.	
Static electricity [Cracking, Crinkling]	● Disappears when the vehicle is completely stopped. ● Severe when the clutch is engaged.	Occurs when parts or wiring move for some reason and contact metal parts of the body.	Return parts or wiring to their proper position.	
	● Various noise are produced depending on the body part of the vehicle.	Due to detachment from the body of the front hood, bumpers, exhaust pipe and muffler, suspension, etc.	Ground parts by bonding. Cases where the problem is not eliminated by a single response to one area are common, due to several body parts being imperfectly grounded.	

Caution

1. Connecting a high tension cable to the noise filter may destroy the noise filter and should never be done.

2. Check that there is no external noise. Since failure due this may result in misdiagnosis due to inability to identify the noise source, this operation must be performed.

3. Noise prevention should be performed by suppressing strong sources of noise step by step.

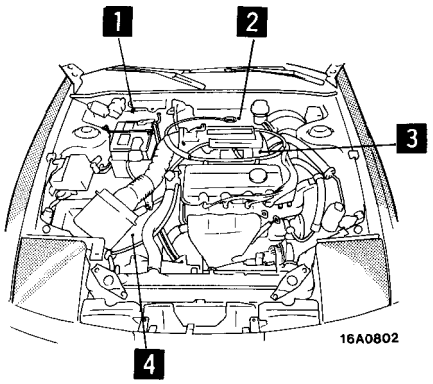
NOTE

1. Condenser
   The condenser does not pass D.C. current, but as the number of waves increases when it passes A.C. current, impedance (resistance against A.C.) decreases, and current flow is facilitated. A noise suppressing condenser which takes advantage of this property is inserted between the power line for the noise source and the ground. This suppresses noise by grounding the noise component (A.C. or pulse signal) to the body of the vehicle.
2. Coil
   The coil passes D.C. current, but impedance rises as the number of waves increases relative to the A.C. current. A noise suppressing coil which takes advantage of this property is inserted into the power line for the noise source, and works by preventing the noise component from flowing or radiating out of the line.

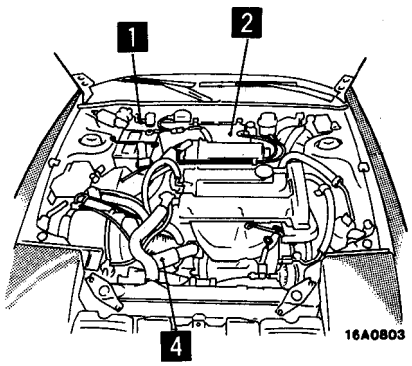
NOISE SUPPRESSOR LOCATION

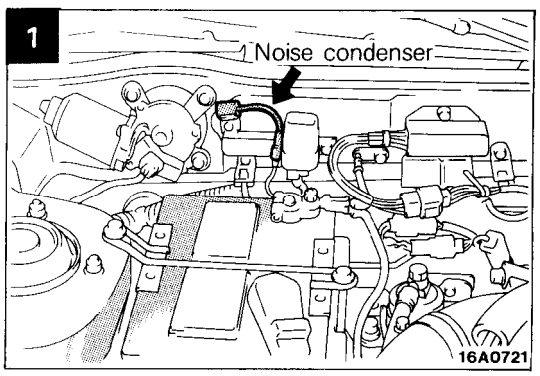
Engine compartment

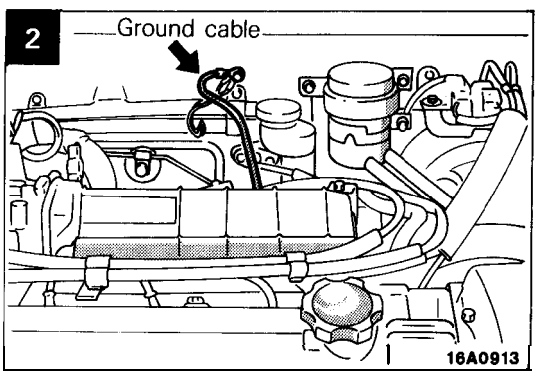
< 1.8L Engine >

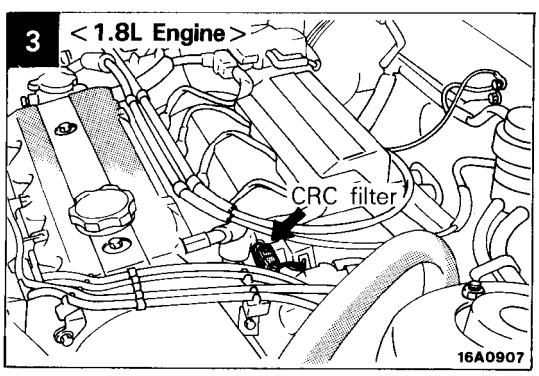


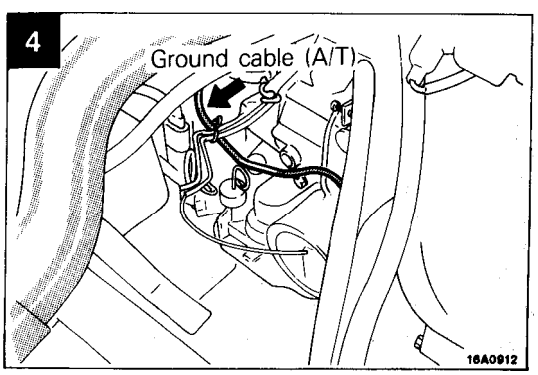
< 2.0L DOHC Engine >

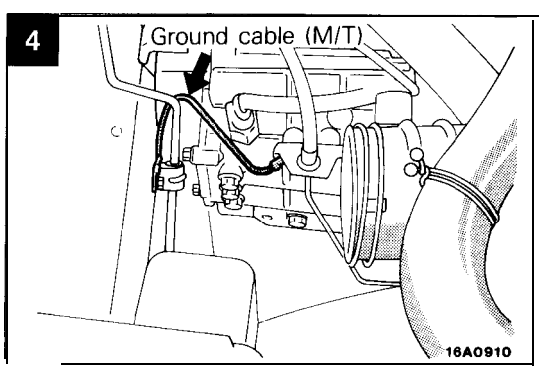




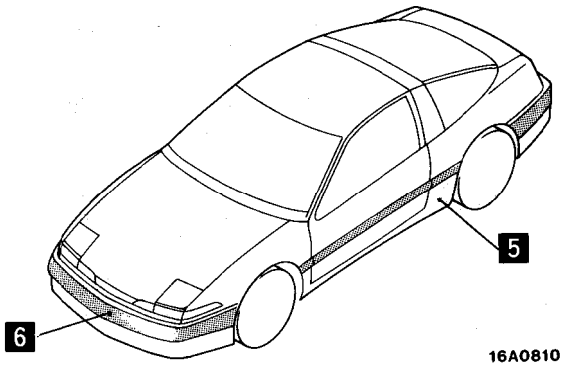


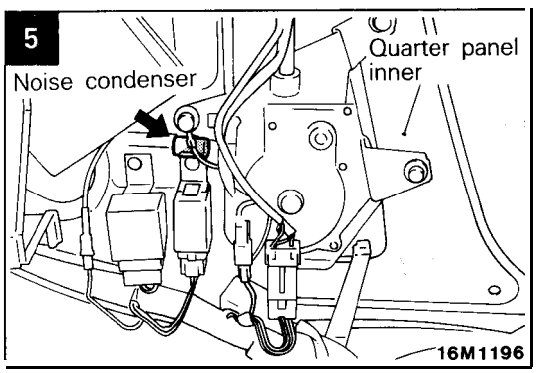


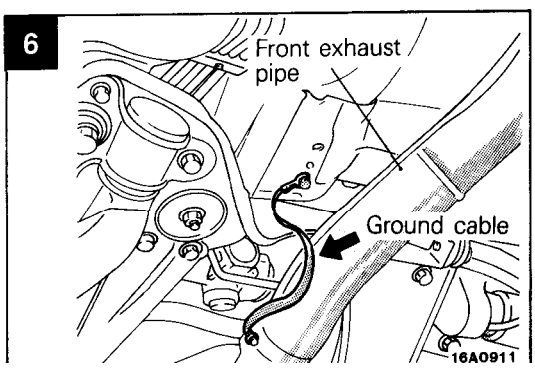




Interior–Rear section and front floor lower part







A–7 Some noise appears when there is vibration or shocks during traveling.

Are connectors properly connected?
- No → Ensure proper connection.
- Yes ↓

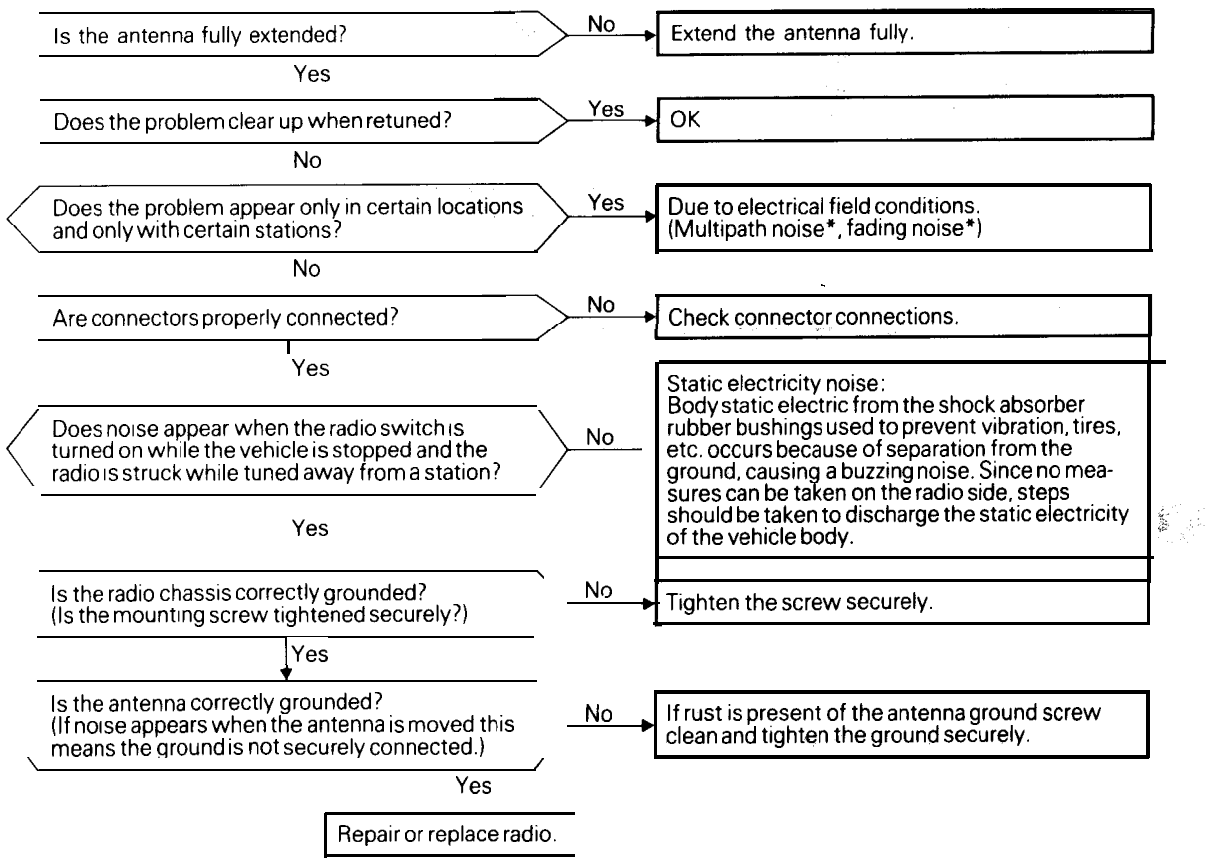
Does noise appear when the radio switch is turned on while the vehicle is stopped and the radio is struck while tuned away from a station?
- No → Static electricity noise: Body static electric from the shock absorber rubber bushings used to prevent vibration, tires, etc. occurs because of separation from the ground, causing a buzzing noise. Since no measures can be taken on the radio side, steps should be taken to discharge the static electricity of the vehicle body.
- Yes ↓

Is the radio correctly grounded? (Is the mounting screw tightened securely?)
- No → Tighten the screw securely.
- Yes ↓

Is the antenna correctly grounded? (If noise appears when the antenna is moved this means the ground is not securely connected.)
- No → If rust is present of the antenna ground screw clean and tighten the ground securely.
- Yes ↓

Repair or replace radio.

A–8 Noise sometimes appears on FM during traveling.



*About multipath noise and fading noise

Because the frequency of FM waves is extremely high, it is highly susceptible to effects from geological formations and buildings. These effects disrupt the broadcast signal and obstruct reception in several ways.

- Multipath noise
  This describes the echo that occurs when the broadcast signal is reflected by a large obstruction and enters the receiver with a slight time delay relative to the dierct signal (repetitious buzzing).
- Fading noise
  This is a buzzing noise that occurs when the broadcast beam is disrupted by obstructing objects and the signal strength fluctuates intricately within a narrow range.

A–9 Ever-present noise.

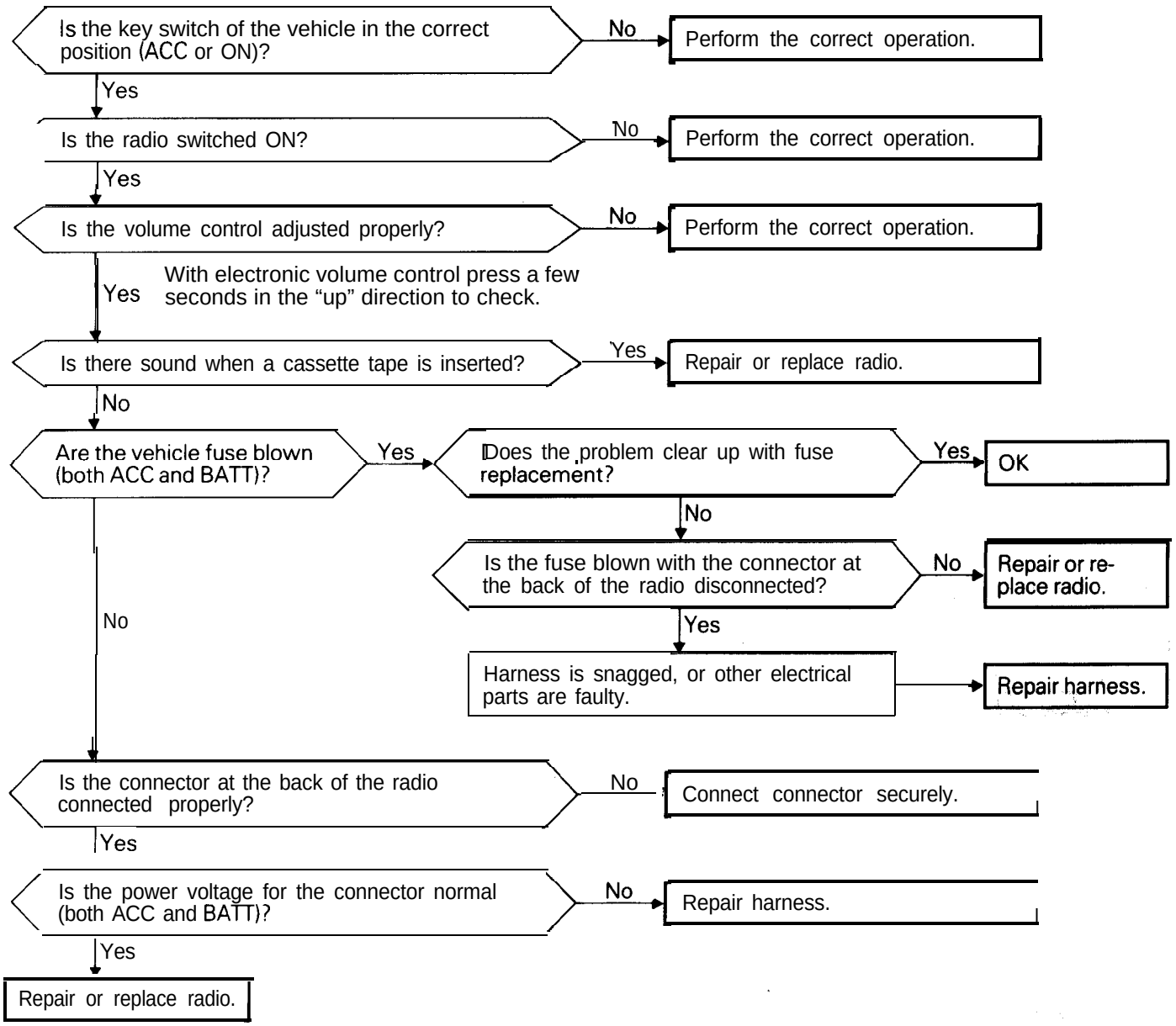
Noise is often created by the following factors, and often the radio is OK when it is checked individually.

- Traveling conditions of the vehicle
- Terrain of area traveled through
- Surrounding buildings
- Signal conditions
- Time period

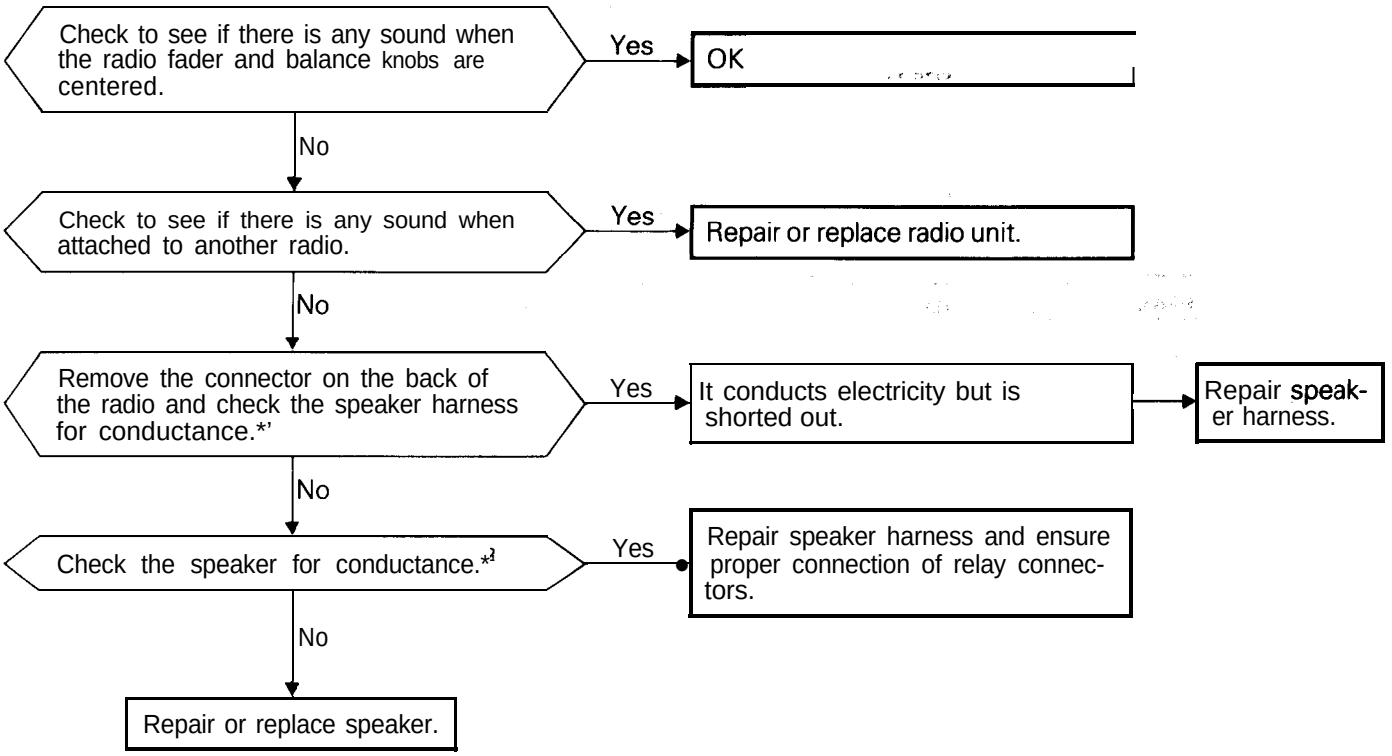
For this reason, if there are still problem with noise even after the measures described in steps A-I to A–8 have been taken, get information on the factors listed above as well as determining whether the problem occurs with AM or FM, the station names, frequencies, etc., and contact a service center.

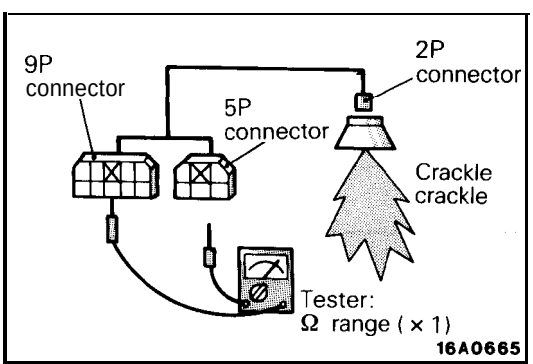
B. RADIO

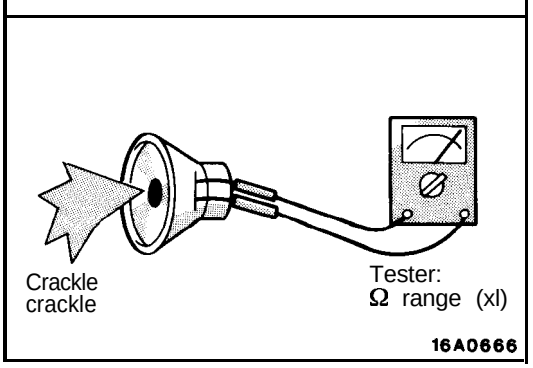
B–1 No sound.



B–2 | No sound from one speaker.





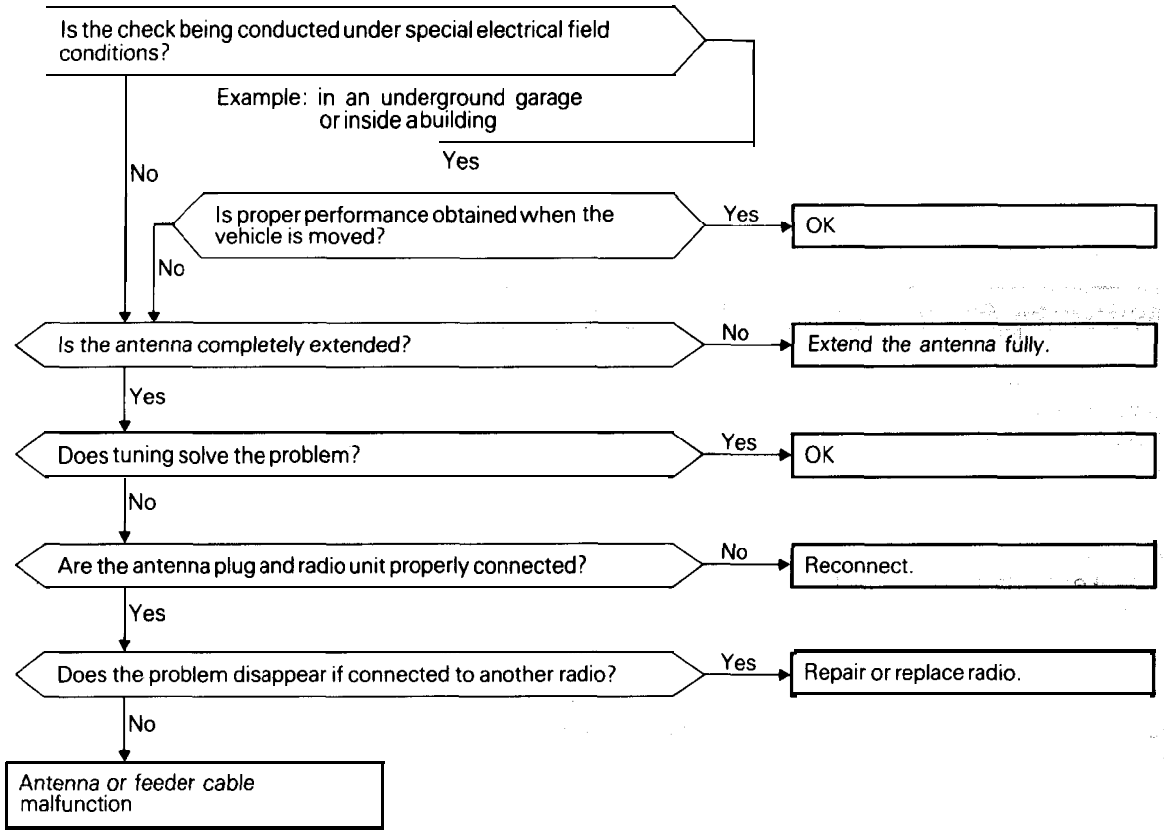


*1Conductance check method 1
(1) Remove 9P and 5P connectors from radio.
(2) Insert test probe into connector terminal.
(Concerning speaker connector, refer to P.8-270.)

	Check result		
Determination	Normal	Malfunction	Malfunction
Resistance (Ω)	4	Near 0	Test needle doesn't move.
Condition	Speaker crackles.	When there is no sound from the speaker, it is shorted out.	No sound from speaker, burns out.

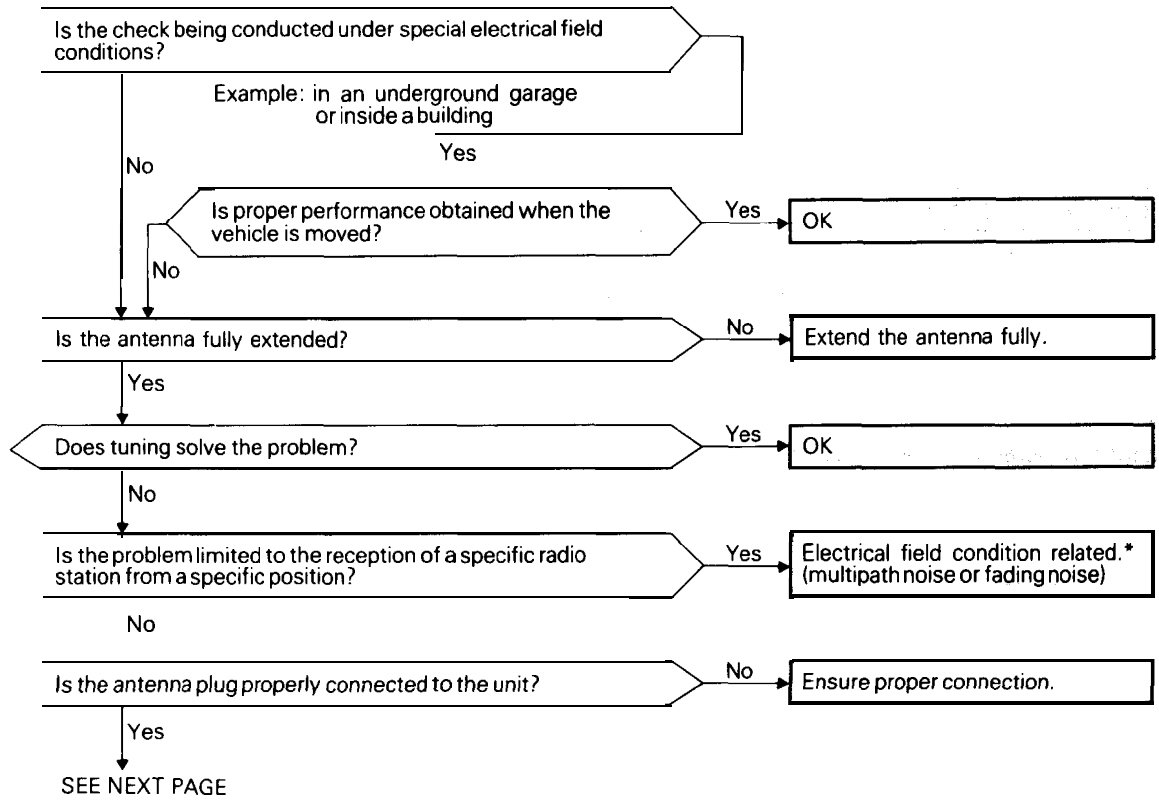
*2Conductance check method 2
(1) Remove the speaker 2P connector.
(2) Insert the test probe into the connector terminal.
(3) Refer the results to the above chart.

B–3 There is noise but no reception for both AM and FM.



B–4 No sound from AM, or no sound from FM. ——— Refer to B-3

B–5 Insufficient sensitivity.



CONTINUED FROM PREVIOUS PAGE

Does the problem disappear when a different radio IS connected?
- Yes → Repair or replace radio.
- No → Antenna or feeder cable malfunction

*For multipath noise and fading noise problems, refer to P.8-280.

B–6 Distortion on AM or on both AM and FM.

How much distortion is there?
- Occasional → Distortion in the vicinity of the radio station
  - Yes → Excessive antenna input
  - No → Are the speaker cords in contact with the cone paper?
- Constant → Are the speaker cords in contact with the cone paper?

Are the speaker cords in contact with the cone paper?
- Yes → Remove cords away from cone paper.
- No → Remove the speakers and check for torn cone paper or foreign objects.

Remove the speakers and check for torn cone paper or foreign objects.
- Yes → Repair or replace speakers.
- No → Check for deformation with speaker installed.

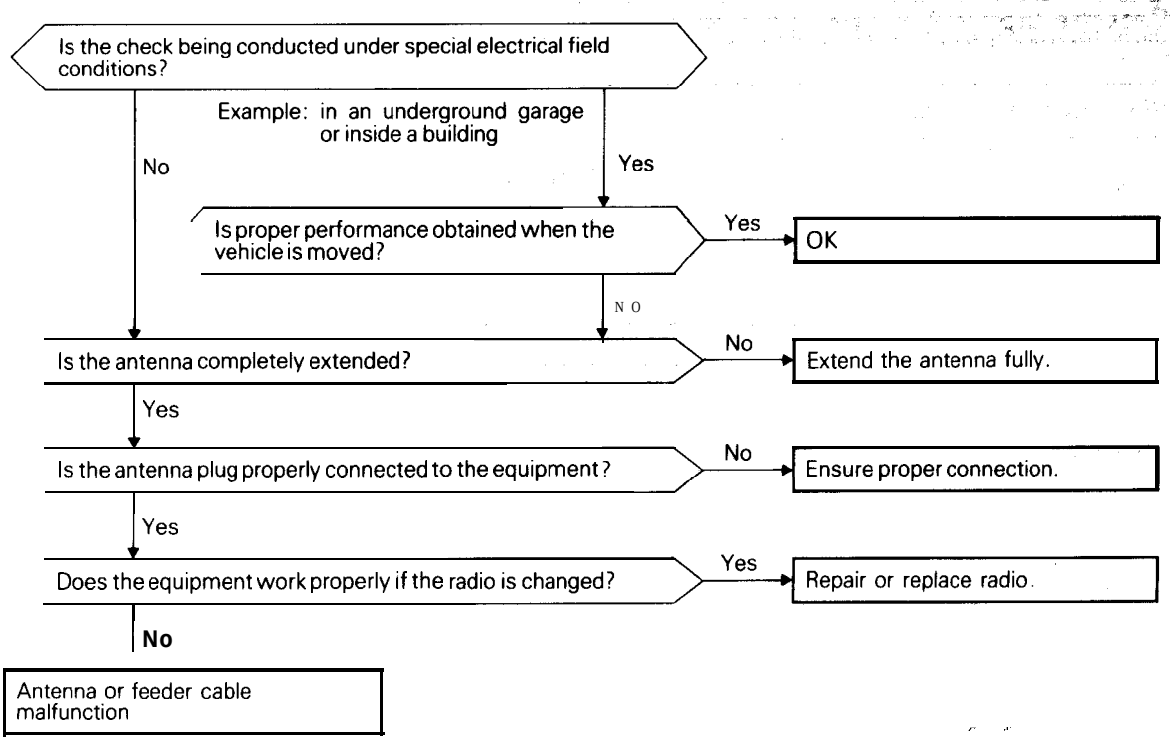
Check for deformation with speaker installed.
- Yes → Install speaker securely.
- No → Repair or replace radio.

B–7 Distortion on FM only.

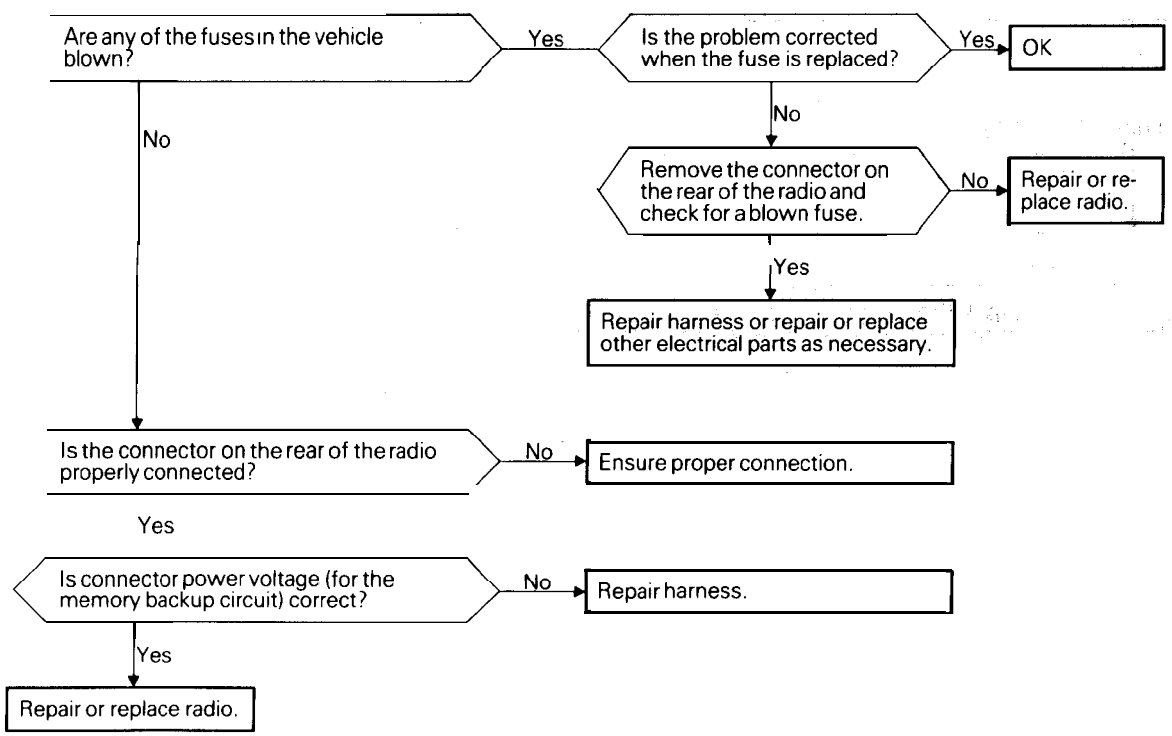
Does the distortion persist when the radio is tuned to another station?
- No → Due to weak electrical field of radio station
- Yes → Does distortion increase or decrease when the vehicle is moved?

Does distortion increase or decrease when the vehicle is moved?
- Yes → Due to multipath noise
- No → Repair or replace radio.

B–8 Too few automatic select stations.

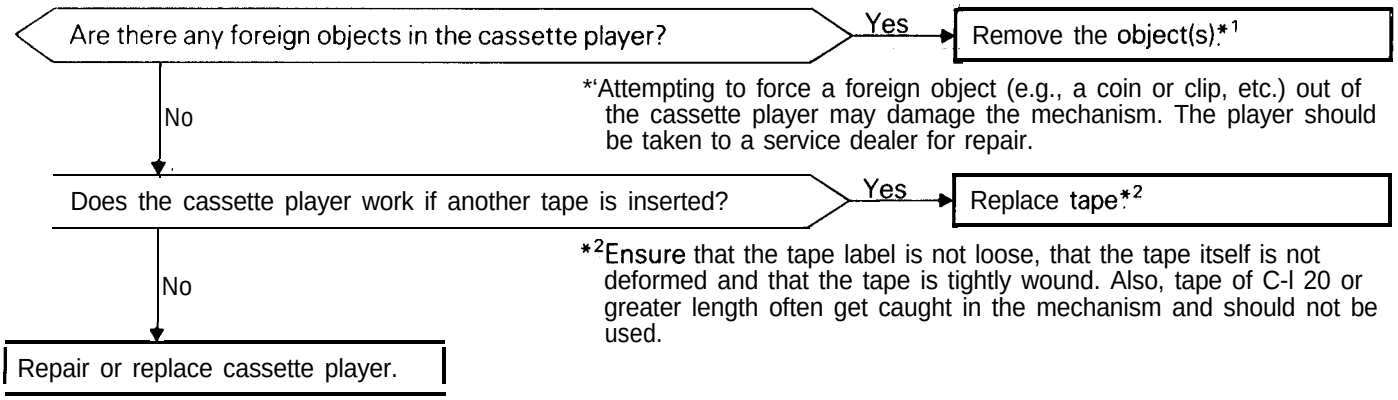


B–9 Insufficient memory (preset stations are erased).



C. CASSETTE PLAYER

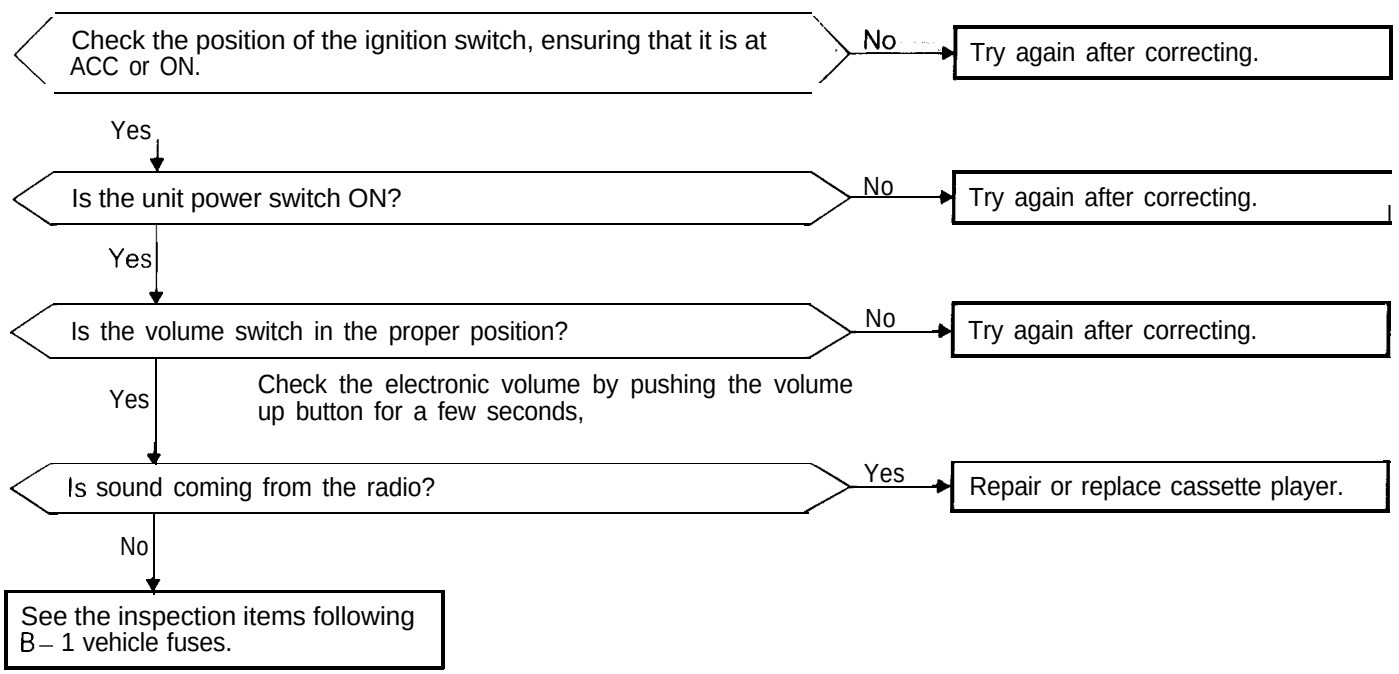
C–1 Cassette tape will not be accepted.



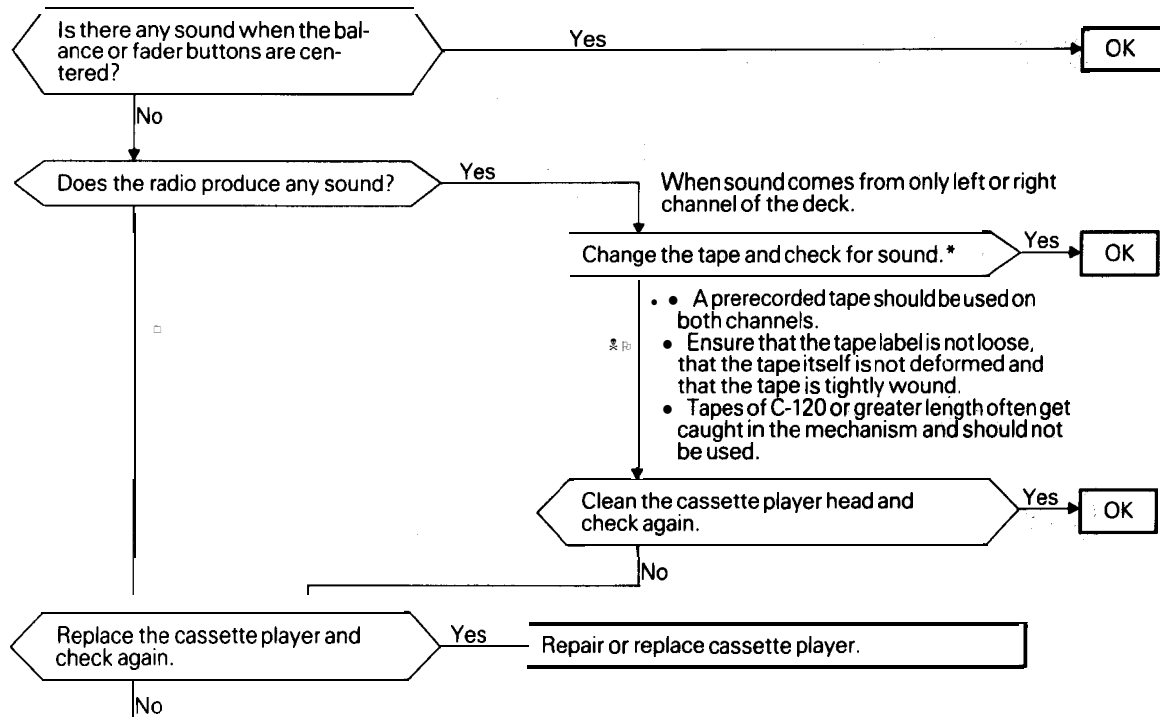
*1 Attempting to force a foreign object (e.g., a coin or clip, etc.) out of the cassette player may damage the mechanism. The player should be taken to a service dealer for repair.

*2 Ensure that the tape label is not loose, that the tape itself is not deformed and that the tape is tightly wound. Also, tape of C-I 20 or greater length often get caught in the mechanism and should not be used.

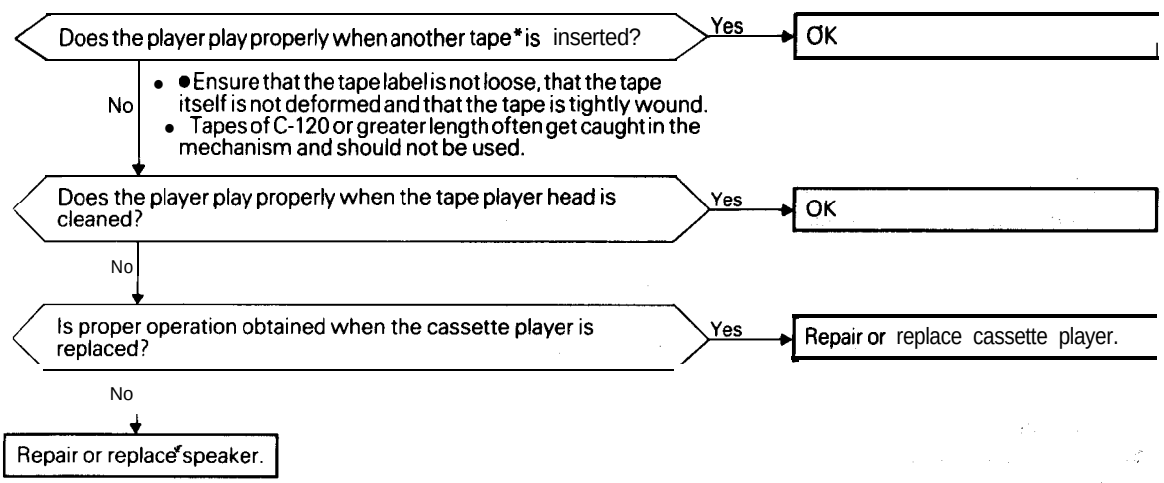
C–2 No sound (even after a tape has been inserted).



C–3 No sound from one speaker.



C–4 Sound quality is poor, or sound is weak.

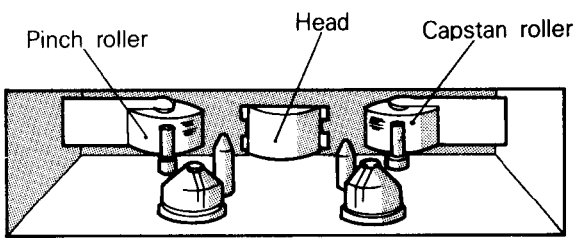


C–5 Cassette tape will not be ejected.

The problems covered here are all the result of the use of a bad tape (deformed or not properly tightened) or of a malfunction of the cassette player itself. Malfunctions involving the tape becoming caught in the mechanism and ruining the case are also possible, and attempting to force the tape out of the player can cause damage to the mechanism. The player should be taken to a service dealer for repair.

C–6 Wow & flutter. Tape speed is fast or slow.

Does the player play OK if the tape is changed?
- Yes → OK
- No → Are there any foreign objects inside the cassette player?
  - Yes → Remove foreign object(s).
  - No → Is the head or capstan roller dirty?



- Yes → Clean.
- No → Repair or replace cassette player.

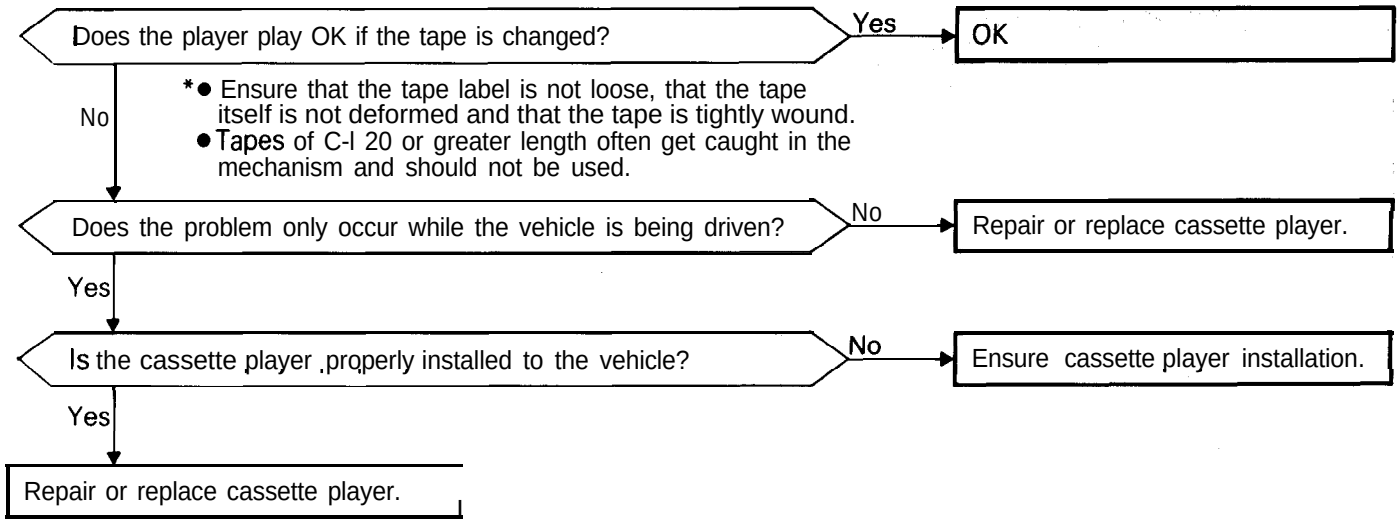
C–7 Automatic search does not work (only for models with the automatic search function).

Does the MSS (automatic search) button*1 depress properly?
- No → Button improperly operated.
- Yes → Does the player play OK if the tape*2 is changed?
  - Yes → Tape used is bad.
  - N → Repair or replace cassette player.

*1 • When the time between songs on a tape is less than three seconds, or when there is a three second period in the middle of a song in which the volume level is extremely low, the automatic search function may not work properly.

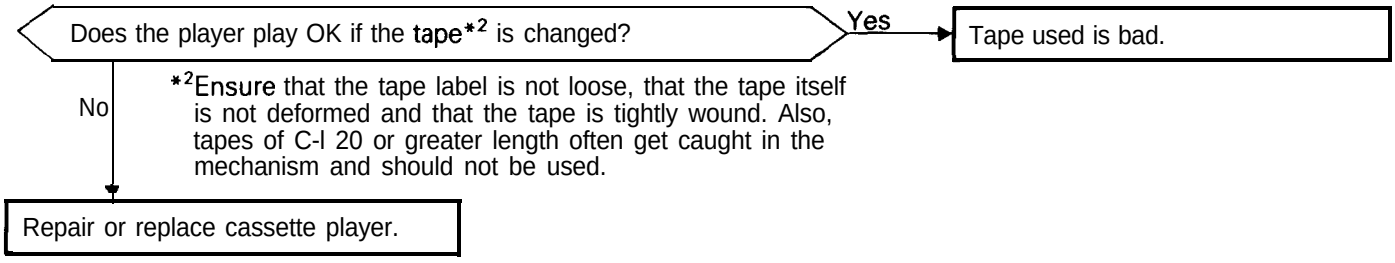
*2 • Ensure that the tape label is not loose, that the tape itself is not deformed and that the tape is tightly wound. Also, tapes of C-l 20 or greater length often get caught in the mechanism and should not be used.

C–8 Faulty auto reverse.

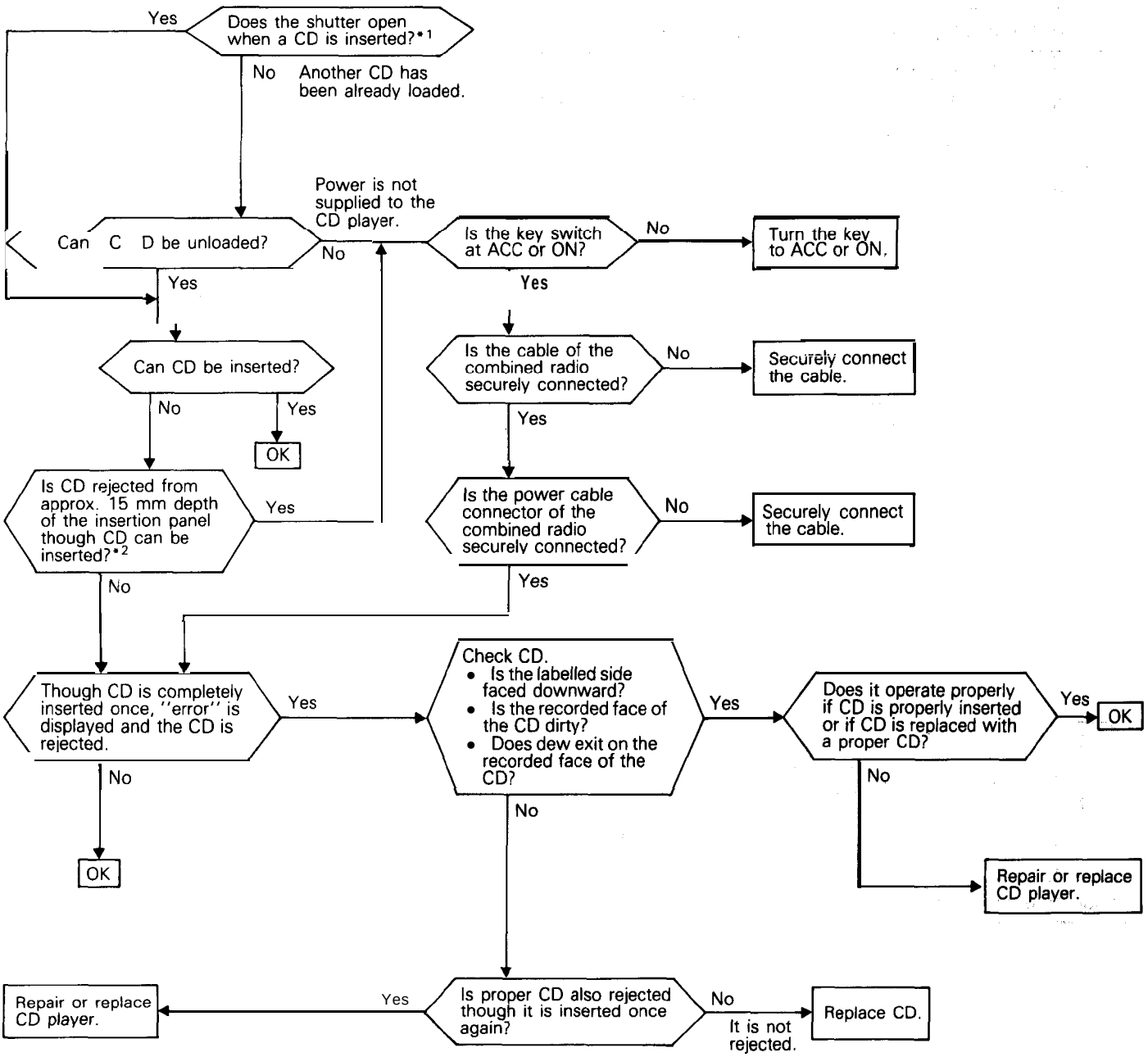


C–9 Tape gets caught in mechanism.*1

*1 When the tape is caught in the mechanism, the case may not eject. When this occurs, do not try to force the tape out as this may damage the tape player mechanism. Take the cassette to a service dealer for repair.



D-I CD will not be accepted.

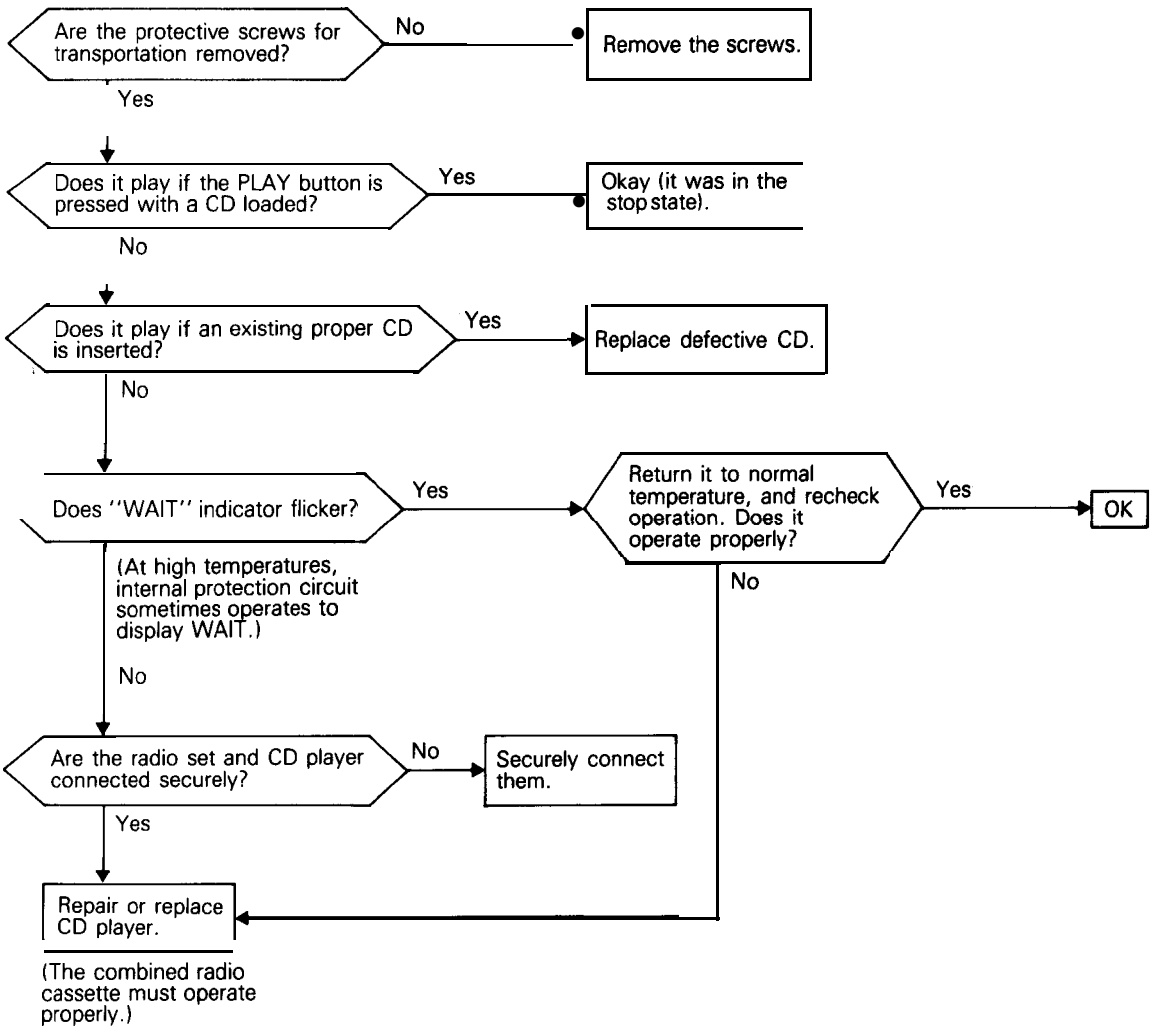


*1 If the CD is already loaded, doesn't the shutter open to allow insertion when another CD is inserted?

• *2 If the key switch is not at ACC or ON, the CD stops at depth of 15 mm below the panel surface even when it is inserted, and it will be rejected when pushed farther?

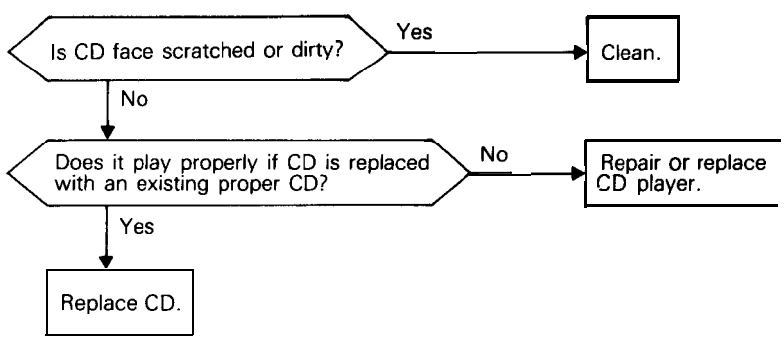
*3 Even though the CD is loaded, E (error) is sometimes displayed with the CD rejected because of vibration/shock or dew on the CD face or optical lens.

D–2 No sound.

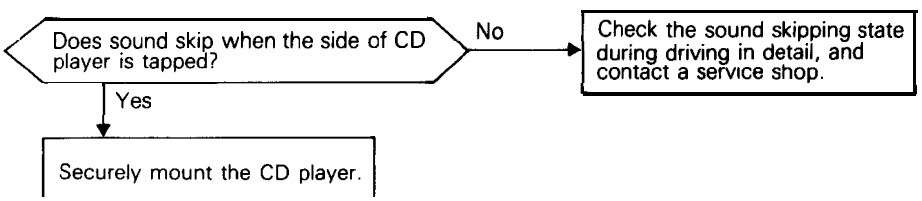


D–3 CD sound skips.

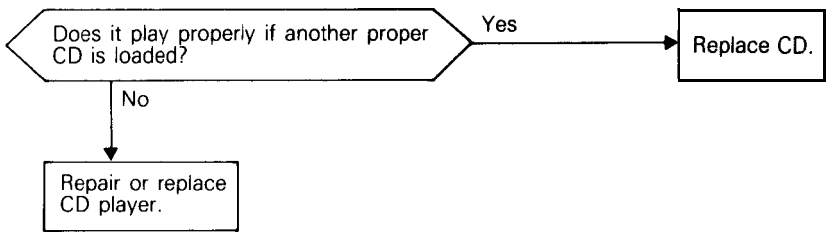
1. Sound sometimes skips during parking.



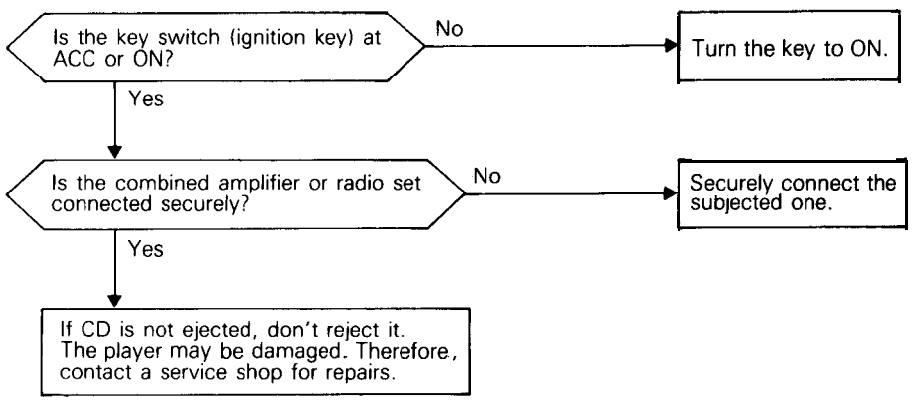
2. Sound sometimes skips during driving.
   (Stop vehicle, and check it.)
   (Check it by using a proper CD which is free of scratch, dirt or other abnormality.)



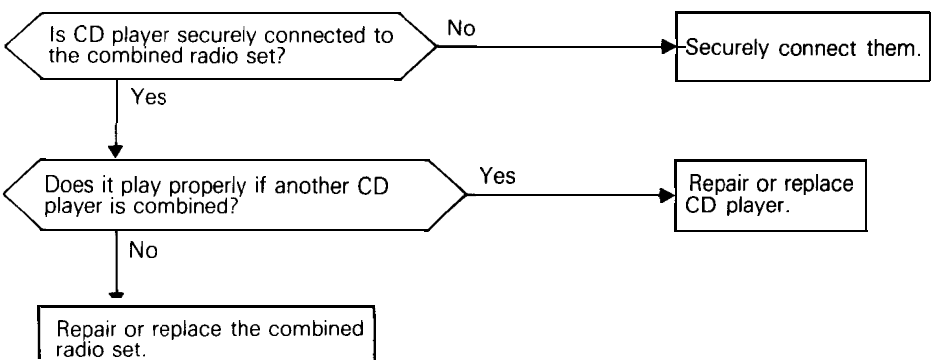
D–4 Sound quality is poor.



D–5 CD will not be ejected.

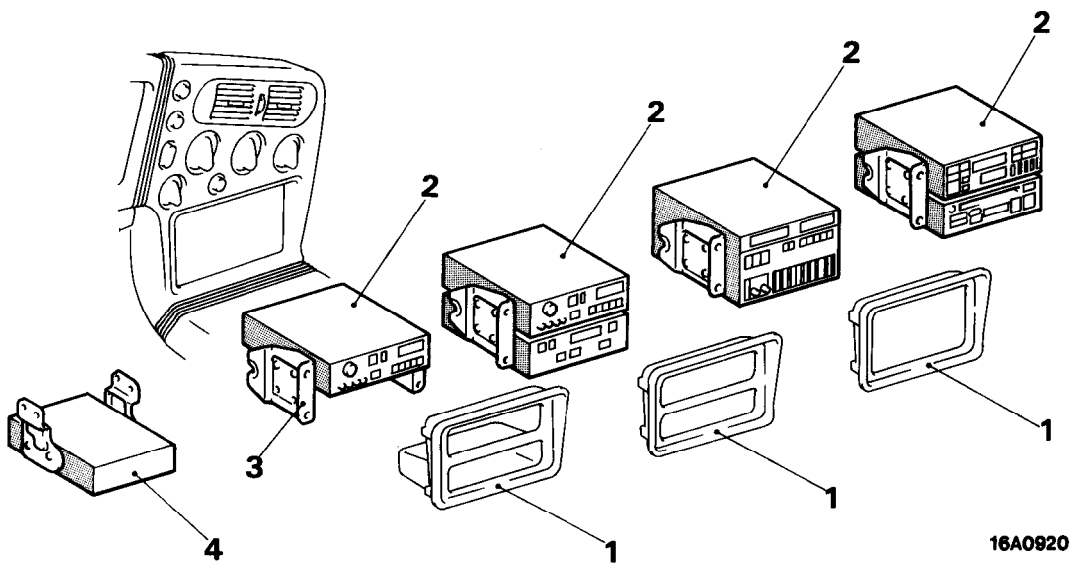


D–6 No sound from one speaker.



RADIO AND TAPE PLAYER

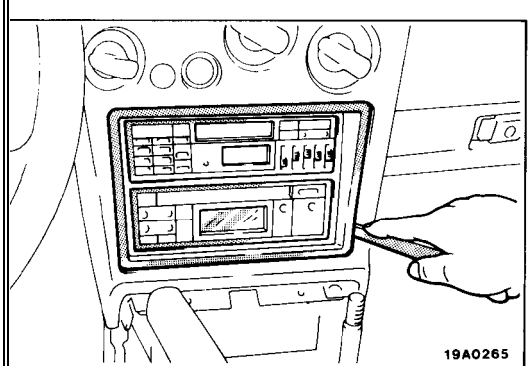
REMOVAL AND INSTALLATION

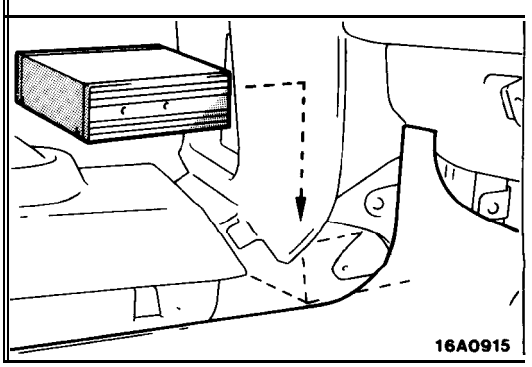


Removal steps

- ◊ ☒ 1. Radio panel
- 2. Radio, Radio with tape player, Radio and tape player with graphic equalizer, Radio and tape player with CD player.
- 3. Radio bracket
- ◆◆ 4. Amplifier

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ● *: Refer to "Service Points of Removal".





SERVICE POINTS OF REMOVAL

1. REMOVAL OF RADIO PANEL

Use a plastic trim tool to pry the lower part of the radio panel and remove it from the floor console.

4. REMOVAL OF AMPLIFIER

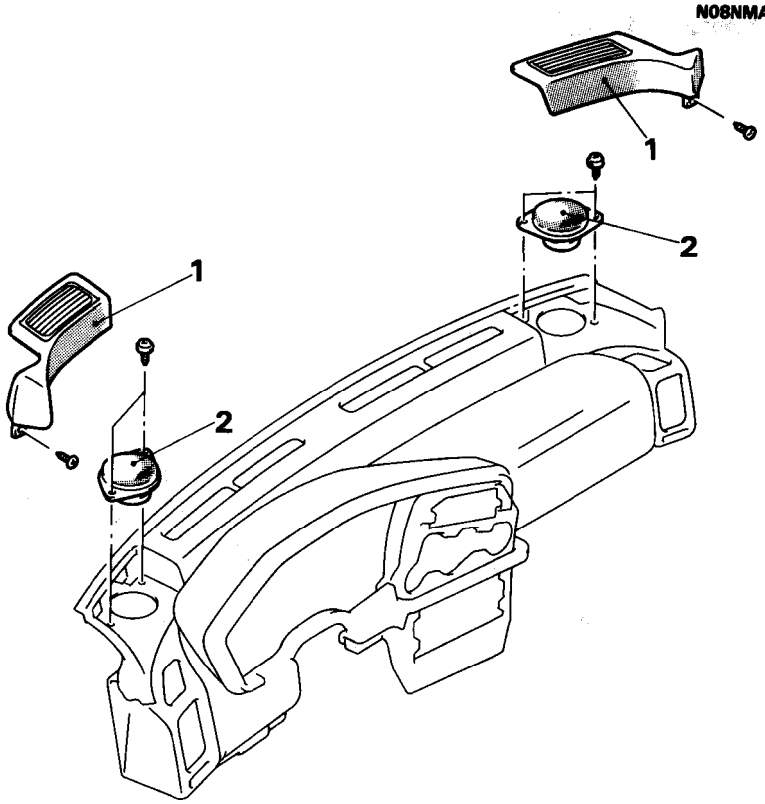
Remove the side cover of the console box, and remove the amplifier.

SPEAKER

<Front speaker>

N08NMAK

REMOVAL AND INSTALLATION



Removal steps

1. Front speaker garnish
2. Front speaker

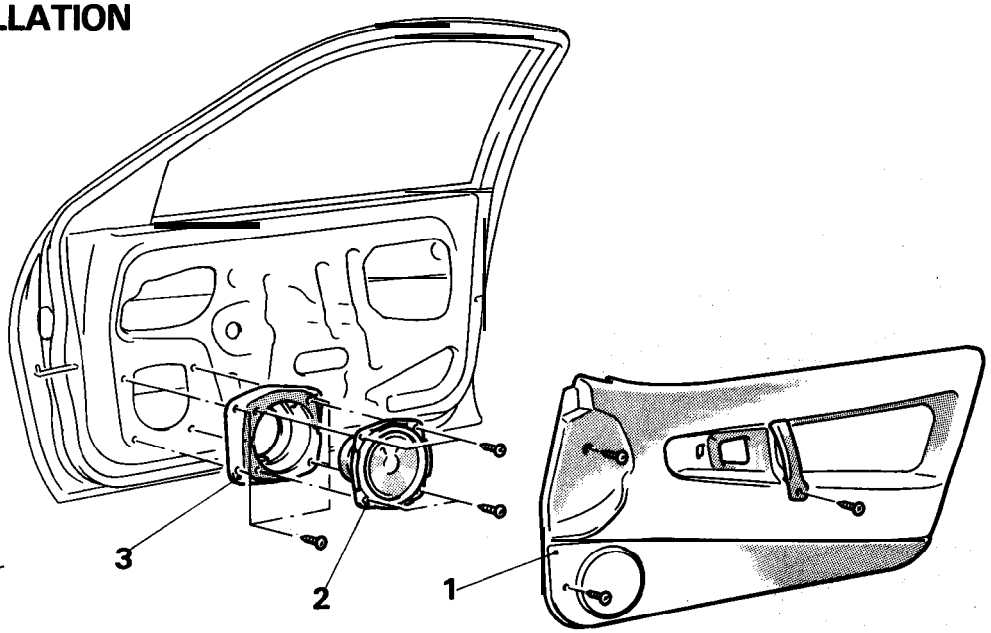
NOTE
Reverse the removal procedures to reinstall.

16A0917

<Door speaker>

N08NNAD

REMOVAL AND INSTALLATION



Removal steps

- ◆ ☒ 1. Door trim
  2. Door speaker
  3. Speaker cover

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".

16A0914

SERVICE POINTS OF REMOVAL

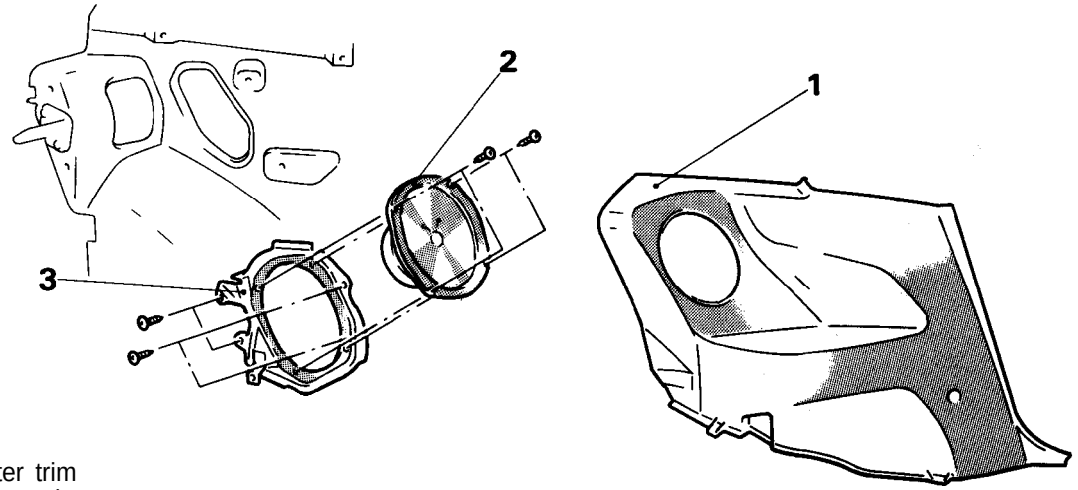
1. REMOVAL OF DOOR TRIM

Refer to GROUP 23–Trims.

<Rear speaker>

N08NOAJ

REMOVAL AND INSTALLATION



Removal steps

◆◆ 1. Quarter trim
2. Rear speaker
3. Speaker cover

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".

16A0916

SERVICE POINTS OF REMOVAL

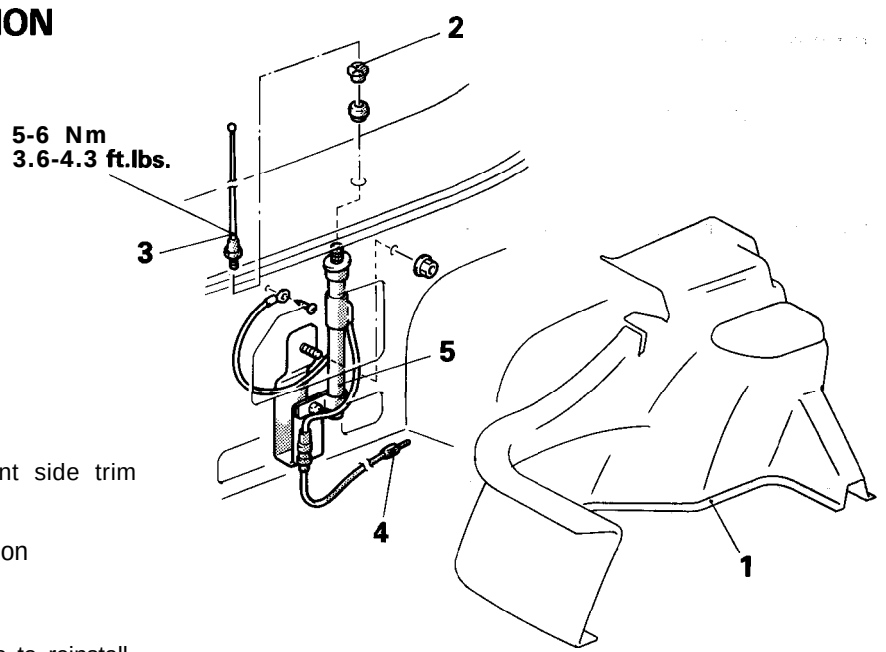
1. REMOVAL OF QUARTER TRIM

Refer to GROUP 23–Trims.

ANTENNA ASSEMBLY

N08NPAJ

REMOVAL AND INSTALLATION



Removal steps

◆◆ 1. Luggage compartment side trim
2. Ring nut
3. Antenna mast
4. Feeder wire connection
5. Antenna base

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal"

16A1215

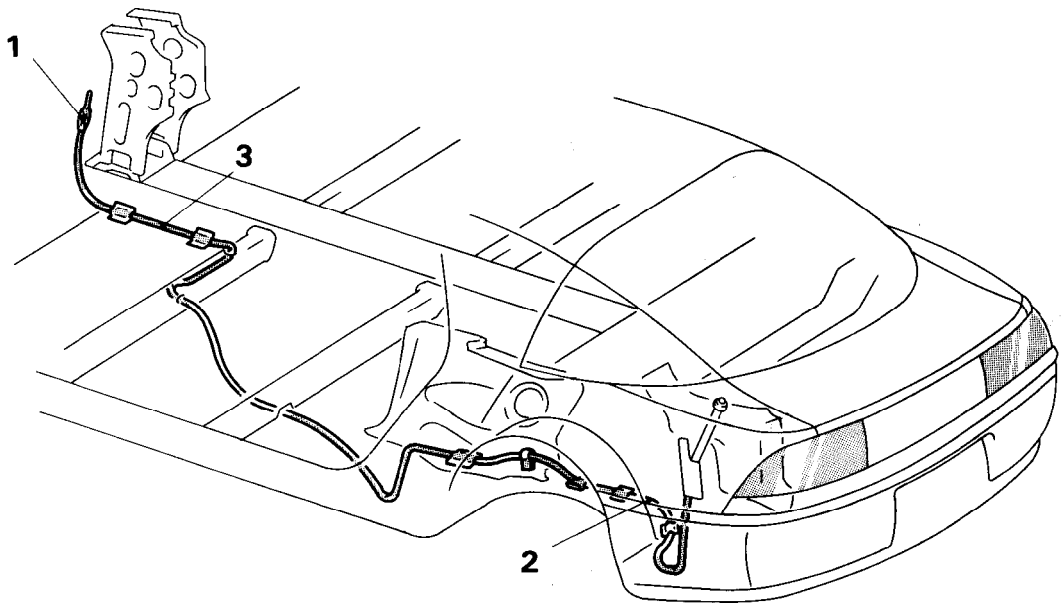
SERVICE POINTS OF REMOVAL

1. REMOVAL OF LUGGAGE COMPARTMENT SIDE TRIM

Refer to GROUP 23–Trims.

FEEDER CABLE

REMOVAL AND INSTALLATION



16A0919

Removal steps

1. Feeder cable and radio connections
2. Antenna and feeder cable connection
3. Feeder cable

NOTE
Reverse the removal procedures to reinstall.

Pre-removal Operation
- Removal of the Front Seat, Rear Seat, and Floor Console (Refer to GROUP 23–Seat anc Floor Console.)
- Removal of the Quarter Trim anc Luggage Compartment Side Trim (Refer to GROUP 23–Trims.)

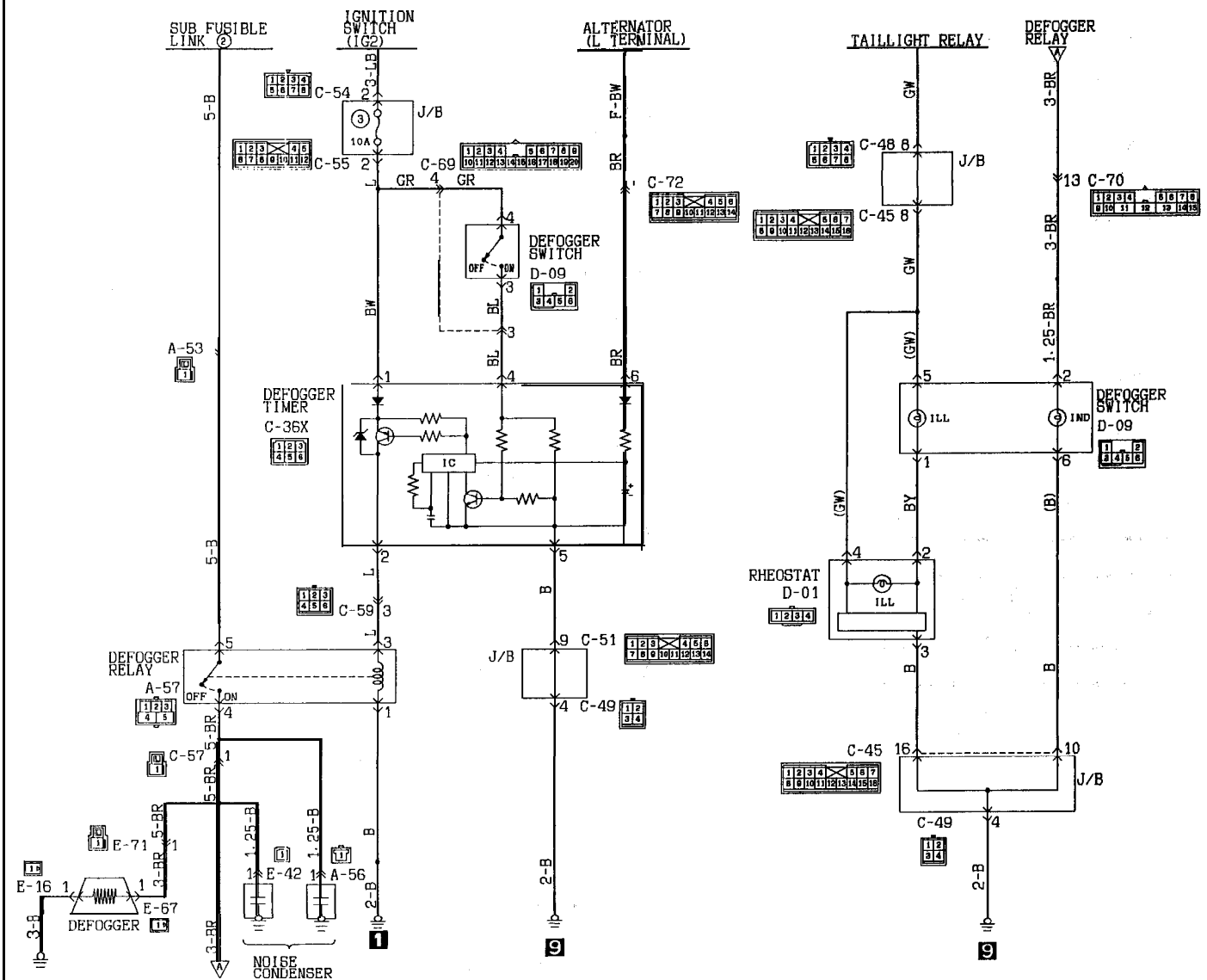
Post-installation Operation
- Installation of the Front Seat, Rear Seat and Floor Console. (Refer to GROUP 23–Seat and Floor Console.)
- Installation of the Quarter Trim and Luggage Compartment Side Trim (Refer to GROUP 23–Trims.)

REAR WINDOW DEFOGGER

TROUBLESHOOTING

N08PHBG

CIRCUIT DIAGRAM



OPERATION

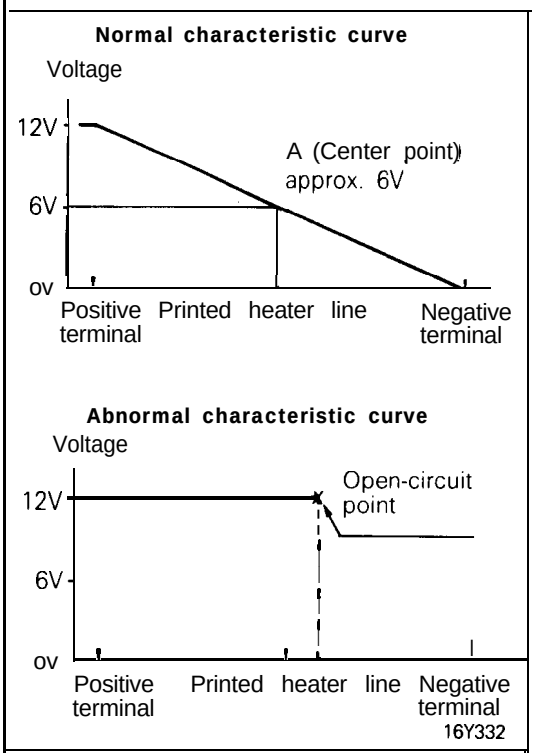
- When the defogger switch is turned ON with the ignition switch in ON position, the defogger relay is energized causing defogger to operate.
- At the same time, the defogger indicator light lights up indicating that the defogger is in operation.
- The defogger timer keeps the defogger relay remaining energized for 11 minutes after the defogger switch has been turned ON. If the defogger switch is pushed a second time during this 11 min. period, timer is cancelled and the defogger is turned off.

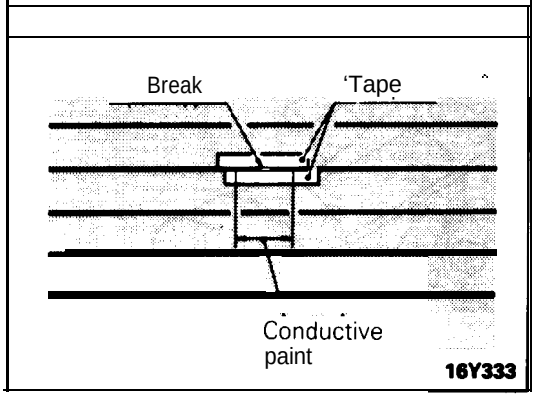
TROUBLESHOOTING HINTS

1. Defogger is inoperative.
   (1) Indicator does not come on, either.
   - Check multi-purpose fuse No. ③.
   - Check defogger relay.

   (2) Indicator comes on.
   - Check defogger.
2. Defogger timer is inoperative.
   - Check defogger timer.

NOTE
For information concerning the defogger relay and defogger timer, refer to P.8-299.





SERVICE ADJUSTMENT PROCEDURES

N08POAA

THE PRINTED-HEATER LINES CHECK

(1) Run engine at 2,000 rpm. Check heater element with battery at full.
(2) Turn ON rear window defogger switch. Measure heater element voltage with circuit tester at rear window glass center A.

Condition good if indicating about 6V.

(3) If 12V is indicated at A, there is a break in the negative terminals from A.
Move test bar slowly to negative terminal to detect where voltage changes suddenly (0V).
(4) If OV is indicated at A, there is a break in the positive terminals from A. Detect where the voltage changes suddenly (12V) with the same method described.

THE PRINTED-HEATER LINES REPAIR

REQUIRED MATERIALS

- Thinner
- Tape
- Conductive paint
- Lead-free gasoline
- Fine brush

(1) Clean disconnected area with lead-free gasoline. Tape along both sides of heater element.
(2) Mix conductive paint thoroughly. Thin the required amount of paint in a separate container with a small amount of thinner and paint break three times at 15 minute intervals.
(3) Remove tape and leave for a while before use (circuit complete).
(4) When completely dry (after 24 hours) finish exterior with a knife.

Caution
Clean glass with a soft cloth (dry or damp) along defogger heater element.

REAR WINDOW DEFOGGER SWITCH

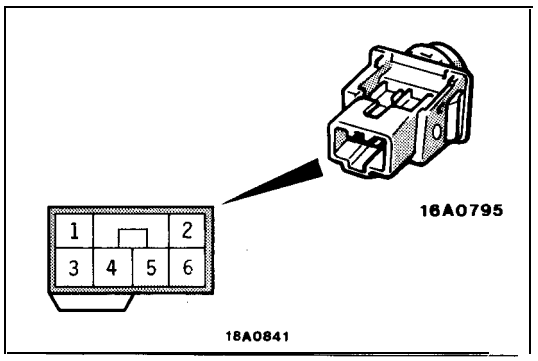
N08PJBJ

REMOVAL AND INSTALLATION

Refer to P.8-247.

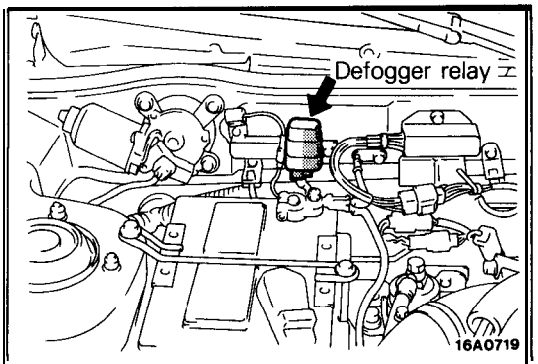
INSPECTION

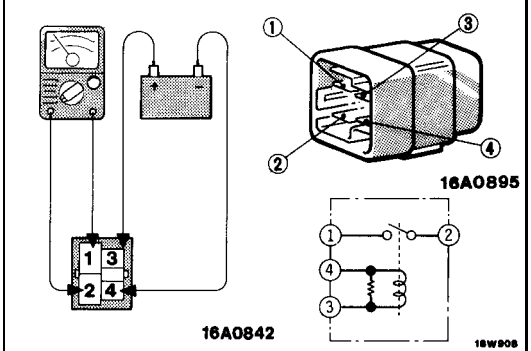
Operate the switch and check the continuity between the terminals.

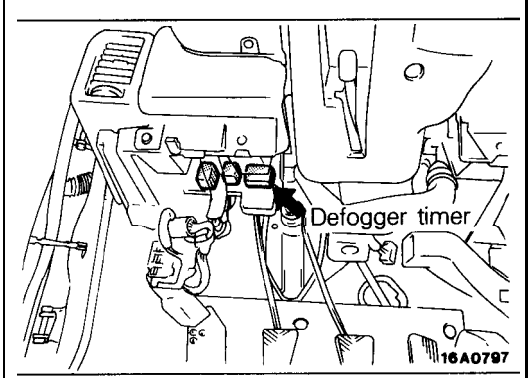


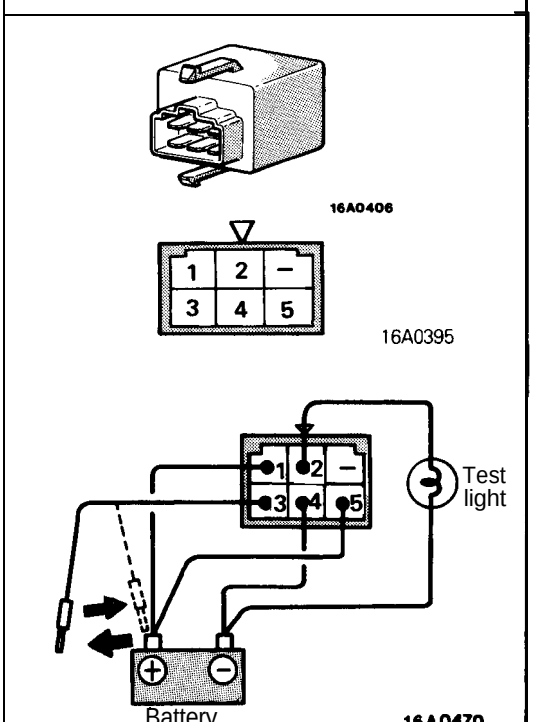
Switch position \ Terminal	3	4	5	2	6
OFF					
ON	O—O		Illumination light		Indicator light

NOTE
O-O indicates that there is continuity between the terminals.









DEFOGGER RELAY

N08PLAC

INSPECTION

(1) Remove defogger relay from junction block.
(2) Connect battery power source to terminal 2. Check circuit between terminals with terminal 4 grounded.

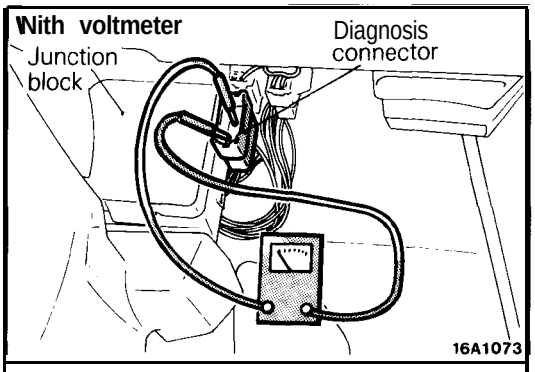
Power is supplied	1–2 terminals	Continuity
Power is not supplied	1–2 terminals	No continuity
	3-4 terminals	Continuity

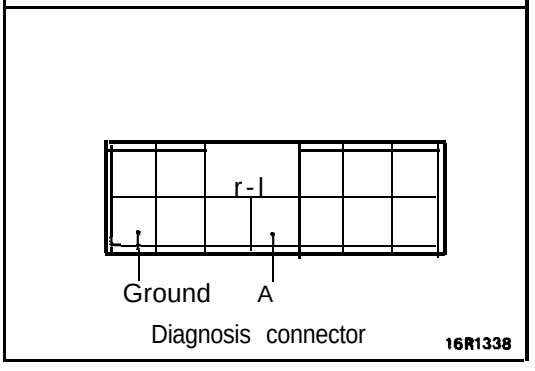
DEFOGGER TIMER

N08PPAA

INSPECTION

(1) Remove the knee protector.
(Refer to P.8-249.)
(2) Remove the defogger timer from indoor relay box.'
(3) Connect the battery and the test light to the timer as shown in the figure.
(4) Check to be sure that the test light illuminates for approximately eleven seconds when battery voltage is applied to terminal 3 for a few seconds.
(5) Check to be sure that the test light switches OFF when battery voltage is again applied, during the test described above, to terminal 3.





THEFT-ALARM SYSTEM

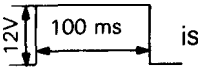
TROUBLESHOOTING

N08CNAC

TROUBLESHOOTING GUIDE

CHECKING THE INPUT

1. Connect a voltmeter between terminal for "A" and terminal for ground, or connect the multi-use tester to the diagnosis connector.
2. Check to be sure that voltage should be output with the ignition key "OFF", door switch "ON" (door opening) and the following switch "ON".
   - Key-reminder switch
   - Hood switch
   - Door switch
   - Door lock actuator switch
   - Door and liftgate key cylinder switch
   - Liftgate switch

Tester	output
Voltmeter	Rectangular wave  is output

If there is no output of a voltage pattern at all, check for a malfunction of that switch or for damaged or disconnected wiring.

TROUBLESHOOTING QUICK-REFERENCE TABLE

For information concerning the locations of electrical components, refer to P.8-139.

1. ARMING / DISARMING RELATIONSHIP

Trouble symptom	Cause	Check method	Remedy
The system is not armed (The SECURITY light doesn't illuminate, and the alarm doesn't function.) (The central door locking system functions normally. If the central locking system does not function normally, refer to P.8-306.	Damaged or disconnected wiring of ECU power supply circuit	Check by using check chart P.8-303.	Replace the sub fusible' link No. ①, ⑥ or repair the harness.
	Damaged or disconnected wiring of door switch input circuit	Check by using check chart P.8-305.	Repair the harness or replace the door switch.
The arming procedures are followed, but the SECURITY light does not illuminate. (There is an alarm, however, when an alarm test is conducted after about 20 seconds have passed.)	Damaged or disconnected wiring of SECURITY light activation circuit	Check by using check chart P.8-309.	Replace the fuse No. ⑲ or repair the harness.
	Blown SECURITY light bulb		Replace the bulb.
	Malfunction of the ECU	—	Replace the ECU.
The alarm sounds in error when, while the system is armed, a door or the liftgate is unlocked by using the key.	Damaged or disconnected wiring of a door key cylinder and the liftgate unlock switch input circuit.	If input checks P.8-300 indicate a malfunction, check by using check chart P.8-307.	Repair the harness replace a door key cylinder and the liftgate unlock switch.
	Malfunction of a door key cylinder and the liftgate unlock switch		
	Malfunction of the ECU		Replace the ECU.

2. ACTIVATION / DEACTIVATION RELATIONSHIP

Trouble symptom	Cause	Check method	Remedy
There is no alarm when, as an alarm test, a door is opened without using the key. (The arming and disarming are normal, and the alarm is activated when the liftgate or hood is opened.)	Damaged or disconnected wiring of door switch (all doors) input circuit	If input checks P.8-300 indicate a malfunction, check by using check chart P.8-305.	Repair the harness or replace the door switch.
	Malfunction of the door switch		
	Malfunction of the ECU	—	Replace the ECU.
There is no alarm when, as an alarm test, the liftgate is opened without using the key. (The alarm is activated, however, by opening a door or the hood.)	Damaged or disconnected wiring of liftgate switch input circuit	If input checks P.8-300 indicate a malfunction, check by using check chart P.8-308.	Repair the harness or replace the liftgate switch.
	Malfunction of the liftgate switch		
	Malfunction of the ECU	—	Replace the ECU.
There is no alarm when, as an alarm test the hood is opened from within the vehicle. (The alarm is activated, however, by opening a door or the liftgate.)	Damaged or disconnected wiring of hood switch input circuit	If input checks P.8-300 indicate a malfunction, check by using check chart P.8-304.	Repair the harness or replace the hood switch.
	Malfunction of the hood switch		
	Malfunction of the ECU	—	Replace the ECU.

Trouble symptom	Cause	Check method	Remedy.
Engine would not start. [Engine starting is possible when the starter relay is in the switched-off (normally closed) condition, with the clutch switch is in the switch-off and the ECU harness connector disconnected.]	There is a short-circuit of the starter relay activation circuit	Check by using check chart P.8-313.	Repair the harness.
Engine would not start. [When the ECU harness connector is disconnected, the theft-alarm starter relay is switched-off (normally closed) and the engine starts (inhibitor switch at N or P position.)]	There is a short-circuit of the theft-alarm starter relay activation circuit	Check by using check chart P.8-314.	Repair the harness.
When, as a test of the alarm, a door or the liftgate is opened without using the key, or the hood is opened from within the vehicle, the theft-alarm horn sounds but the headlights don't flash. (The headlights can, however, be switched ON by using the passing switch.)	Damaged or disconnected wiring of diode D_2	Check by using check chart P.8-311, 312.	Repair the harness or replace the diode D_2.
	Damaged or disconnected wiring of headlight power supply circuit or headlight activation circuit		Replace the headlight relay or the headlight. Replace the daytime running light relay.
	Malfunction of the ECU		Replace the ECU.
The headlights flash during an alarm test but the horn does not sound.	Damaged or disconnected wiring of horn relay power supply circuit or horn activation circuit	Check by using check chart P.8-310.	Repair the harness. Replace the horn. Replace the sub fusible link.
	Malfunction of the ECU		Replace the ECU.
The system is not deactivated when, during an alarm test in which the alarm is intentionally activated, the door or liftgate is unlocked by using the key. (The system also cannot be disarmed.)	Damaged or disconnected wiring of door key cylinder and liftgate unlock switch input circuit	If input checks (P.8-300) indicate a malfunction, check by using check chart P.8-307.	Repair the harness. Replace the key cylinder switch or the liftgate switch.
	Malfunction of door key cylinder and liftgate unlock switch.		
	Malfunction of the ECU		Replace the ECU.

ECU: Electronic Control Unit

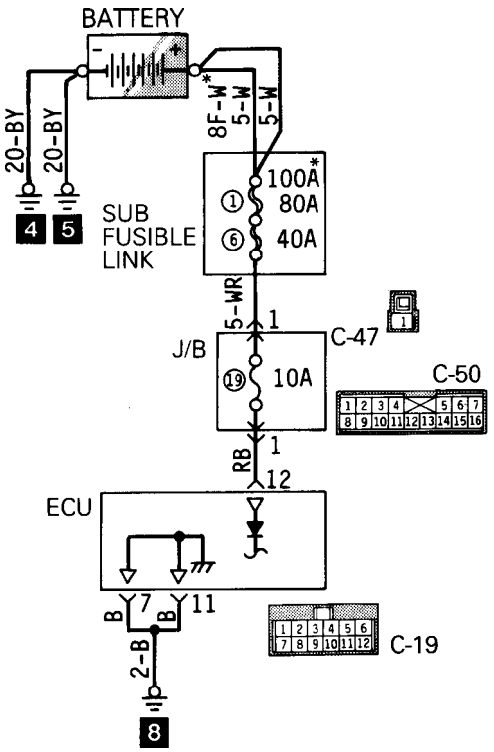
NOTE

(1) If the liftgate unlock switch or door key cylinder unlock switch is operated roughly, or if these switches have been installed incorrectly or switches themselves are defective the ECU may not accept the warning or alarm canceling signal. In such case, the alarm operation will take place when the door is opened using a key. [When the door key cylinder switch has been shorted, however, if the ignition switch is turned ON, the ECU judges the detection switch as faulty and thereafter, it will prevent setting of (warning) alarm untill the shorting is corrected.]

(2) If the liftgate is opened using a key and is left as opened when the door key cylinder switch system has a trouble (wiring harness damage, open circuit, etc.), the ECU judges it as the liftgate holding mode and does not produce alarm even when the door is opened,

CHECKING THE CIRCUIT AND INDIVIDUAL PART

1. ETACS POWER-SUPPLY AND GROUND CIRCUITS



16A1199

Description of operation

The battery supplies a stabilized 5V power supply to the **ECU,** via the constant-voltage circuit and terminal ⑫ (which is directly connected to the battery).

ECU terminal voltage (Connection condition of the ECU connector).

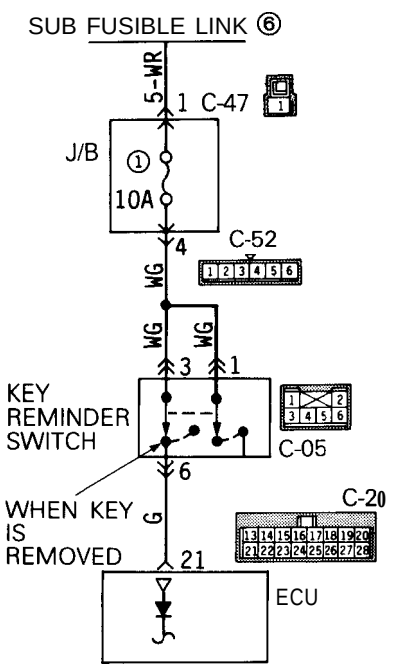
ECU terminal No.	Signal	Condition	-Terminal voltage
⑫	ECU power supply	At all times	System voltage'

Checking the ground circuit (Disconnect the connector and check at the wiring harness side.)

ECU terminal No.	Connected to/measured component	Measurement	Tester connection	Check condition	Standard
⑦, ⑪	ECU ground	Resistance	⑦–ground ⑪-ground	At all times	Continuity

NOTE
*: Vehicles for Canada.

2. KEY-REMINDER SWITCH INPUT CIRCUIT



16A1200

Description of operation

The key-reminder switch is switched OFF and HIGH-level signals are sent to the ECU when the key is inserted into the ignition key cylinder: when the key is removed, the key-reminder switch is switched ON and LOW-level signals are sent to the ECU.

ECU terminal voltage (Connection condition of the ECU connector).

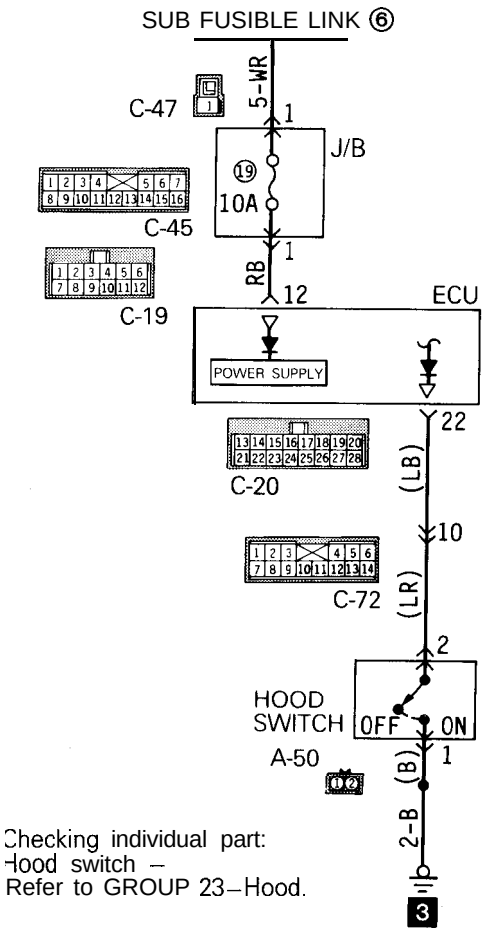
ECU terminal No.	Signal	Condition	Terminal voltage
㉑	Key-reminder switch	Key removed	System voltage
		Key inserted	0V

Checking the key-reminder switch circuit (Disconnect the connector of the ECU and check at the wiring harness side.)

ECU terminal No.	Connected to/measured component	Measurement	Tester connection	Check condition	Standard
㉑	Key-reminder switch	Resistance	@-ground	Key removed	Continuity
				Key inserted	No continuity

Checking individual part
Key-reminder switch Refer to P.8-191.
Ignition switch .. Refer to P.8-191.

3. HOOD SWITCH INPUT CIRCUIT



Checking individual part:
Hood switch –
Refer to GROUP 23–Hood.

16A1201

Description of operation

When the hood is closed (the hood switch is switched OFF), HIGH-level signals are sent to the ECU.
When the hood is opened (the hood switch is switched ON), LOW-level signals are sent to the ECU.

ECU terminal voltage (Connection condition of the ECU connector).

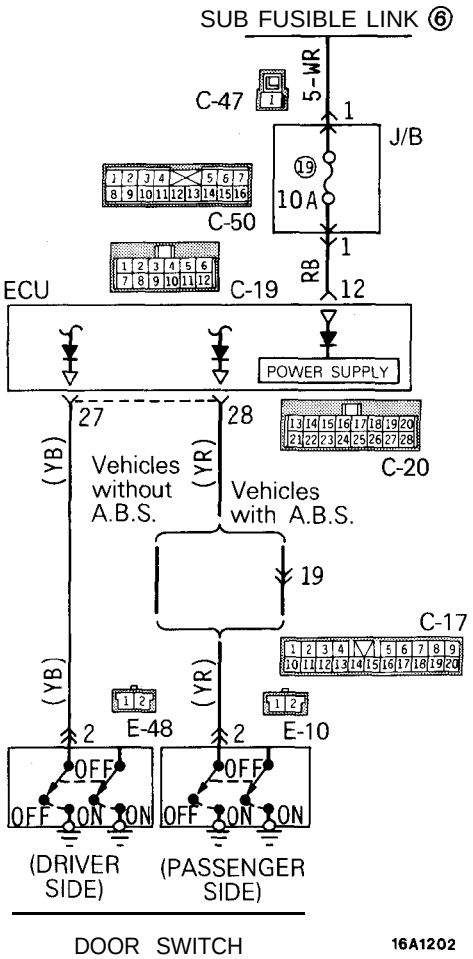
ECU terminal No.	Signal	Condition		Terminal voltage
㉒	Hood switch	Hood	Open	ov
			Closed	5V*

* Measurement is not possible by using a voltmeter, but is possible by using an oscilloscope.

Checking the hood switch circuit (Disconnect the connector of the ECU and check at the wiring harness side).

ECU terminal No.	Connected to/measured part	Measurement	Tester connection	Check condition		Standard
㉒	Hood switch	Resistance	@-ground	Hood	Closed	No continuity
					Open	Continuity

4. DOOR SWITCH INPUT CIRCUIT



Checking individual part:
Door switch – Refer to GROUP 23–Door Assembly.

Description of operation

When the door is closed (the door switch is switched OFF), HIGH-level signals are sent to the ECU.
When the door is opened (the door switch is switched ON), LOW-level signals are sent to the ECU.

ECU terminal voltage (Connection condition of the ECU)

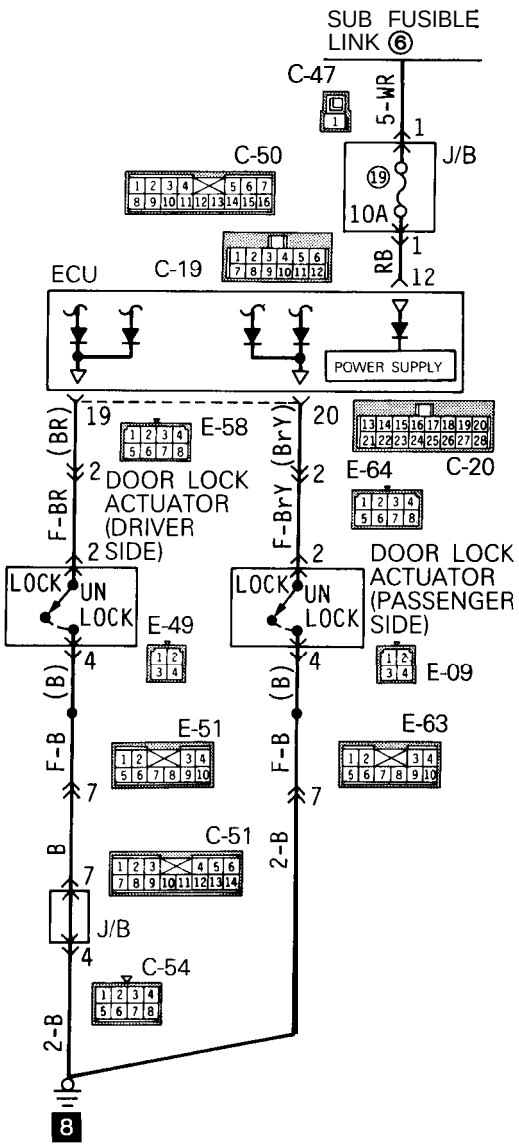
ECU terminal No.	Signal	Condition		Terminal voltage
㉗	Driver door switch	Driver door	Open	OV
			Closed	5V*
㉘	Passenger door switch	Passenger door	Open	OV
			Closed	5V*

* Measurement is not possible by using a voltmeter, but is possible by using an oscilloscope.

Checking the door switch circuit (Disconnect the connector of the ECU and check at the wiring harness side.)

ECU erminal No.	Connected to/measured part	Measurement	Tester connection	Check condition		Standard
㉗	Driver door switch	Resistance	㉗–ground	Driver door	Closed	No continuity
					Open	Continuity
㉘	Passenger door switch	Resistance	㉘–ground	Passenger door	Closed	No continuity
					Open	Continuity

5. DOOR LOCK ACTUATOR SWITCH INPUT CIRCUIT



Checking individual part:
Door lock actuator switch ~ Refer to GROUP 23–Control Door locking system.

Description of operation

When a door is locked by the lock knob or the key, the door lock actuator switch is switched OFF, and HIGH-level signals are sent to the ECU. These signals active the timer circuit of the ECU, there by causing the activation circuit to function, thus activating the door lock actuator of all doors.

ECU terminal voltage (Connection condition of the ECU connector)

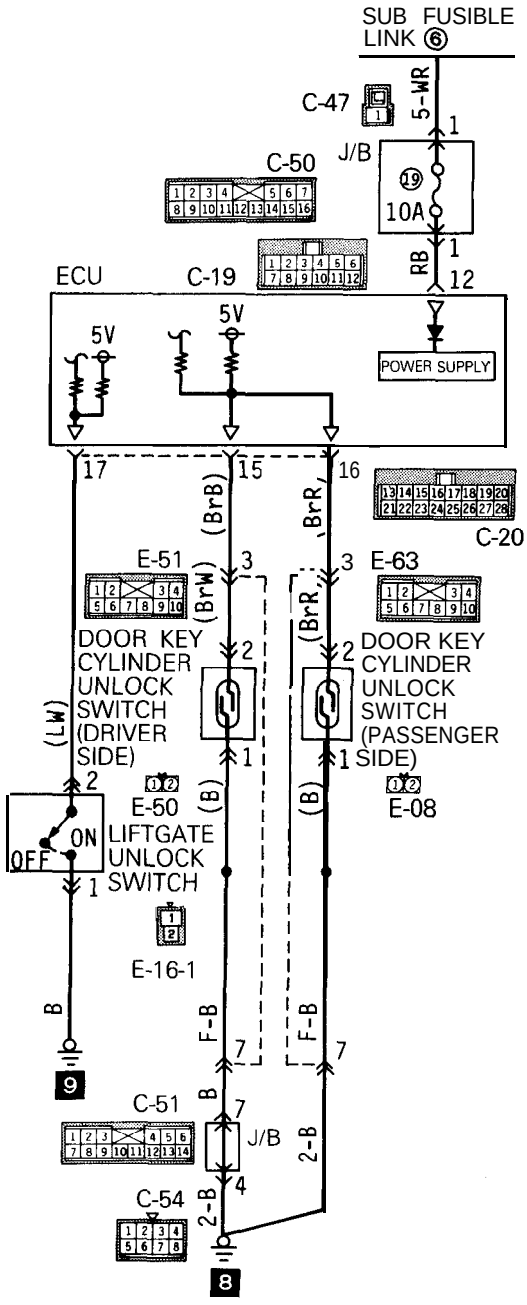
ECU terminal No.	Signal	Condition		Terminal voltage
⑲	Door lock actuator switch (driver door)	Door lock actuator switch	Lock: OFF	5V*
			Unlock: ON	o v
⑳	Door lock actuator switch (passenger door)	Door lock actuator switch	Lock: OFF	5V*
			Unlock: ON	o v

* Measurement is not possible by using a voltmeter, but is possible by using an oscilloscope.

Checking the door lock switch circuit (Disconnect the connector of the ECU and check at the wiring harness side.)

ECU terminal No.	Connected to/measured part	Measurement	Tester connection	Check conditions		Standard
⑲	Door lock actuator switch	Resistance	@-ground	Door lock actuator switch	Lock: OFF	No continuity
					Unlock: ON	Continuity
⑳	Door lock actuator switch	Resistance	@-ground	Door lock actuator switch	Lock: OFF	No continuity
					Unlock: ON	Continuity

6. DOOR KEY CYLINDER AND LIFTGATE UNLOCK SWITCH INPUT CIRCUIT



16A1204

Checking individual part:
Door key cylinder unlock switch – Refer to GROUP 23–Door Handle and Latch.
Liftgate unlock switch – Refer to GROUP 23–Liftgate.

Description of operation

When the door key is rotated or the liftgate key is unlocked, LOW-level signals are sent to the ECU.

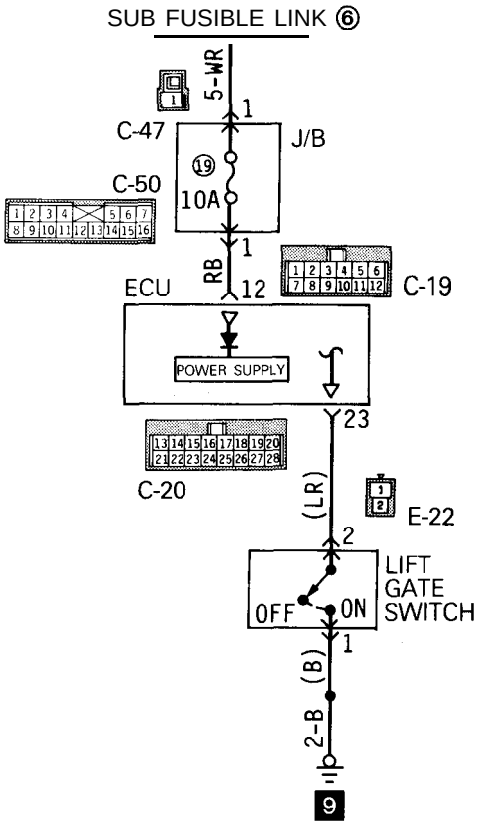
ECU terminal voltage (Connection. condition of the ECU connector)

ECU terminal No.	Signal	Condition		Terminal voltage
⑮	Door key cylinder unlock switch	Door key cylinder (Drive side)	Not rotate	5V
			Rotate	o v
⑯	Door key cylinder unlock switch	Door key cylinder (passenger side)	Not rotate	5V
			Rotate	o v
⑰	Liftgate unlock switch	Liftgate	Lock	5V
			Unlock	o v

Checking the door key cylinder and liftgate unlock switch circuit

ECU srminal No.	Connected to/measured part	Measurement	Tester connection	Check conditions		Standard
⑮	Door key cylinder unlock switch	Resistance	⑮–ground	Door key cylinder	Not rotate	No continuity
					Rotate	Continuity
⑯	Door key cylinder unlock switch	Resistance	⑯–ground	Door key cylinder	Not rotate	No continuity
					Rotate	Continuity
⑰	Liftgate unlock switch	Resistance	@-ground	Liftgate	Lock	No continuity
					Unlock	Continuity

7. LIFTGATE SWITCH INPUT CIRCUIT



16A1205

Checking individual part:
Liftgate switch – Refer to GROUP 23– Liftgate.

Description of operation

When the liftgate is closed (the liftgate switch is switched OFF), HIGH-level signals are sent to the ECU.

When the liftgate is opened (the liftgate switch is switched ON), LOW-level signals are sent to the ECU.

ECU terminal voltage (Connection condition of the ECU connector)

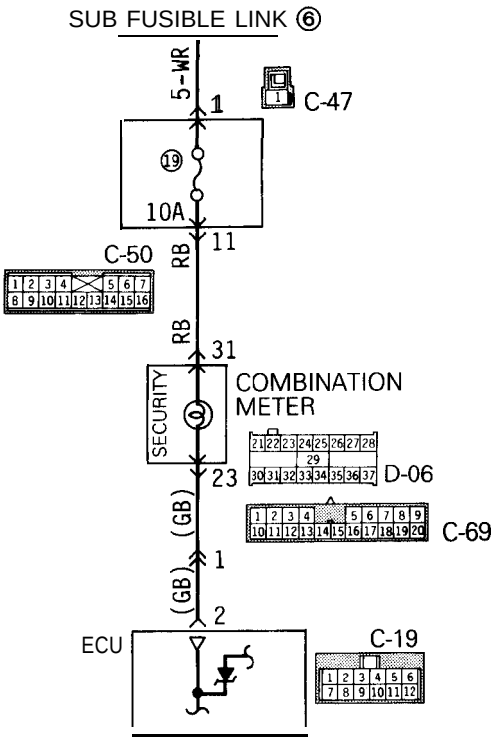
ECU terminal No.	Signal	Condition		Terminal voltage
㉓	Liftgate switch	Liftgate	Open	0V
			Closed	5V*

* Measurement is not possible by using a voltmeter, but is possible by using an oscilloscope.

Checking the liftgate switch circuit (Disconnect the connector of the ECU and Check at the wiring harness side)

ECU terminal No.	Connected to/measured part	Measurement	Tester connection	Check conditions		Standard
㉓	Liftgate switch	Resistance	@-ground	Liftgate	Closed	No continuity
					Open	Continuity

8. SECURITY LIGHT ACTIVATION CIRCUIT



Description of operation

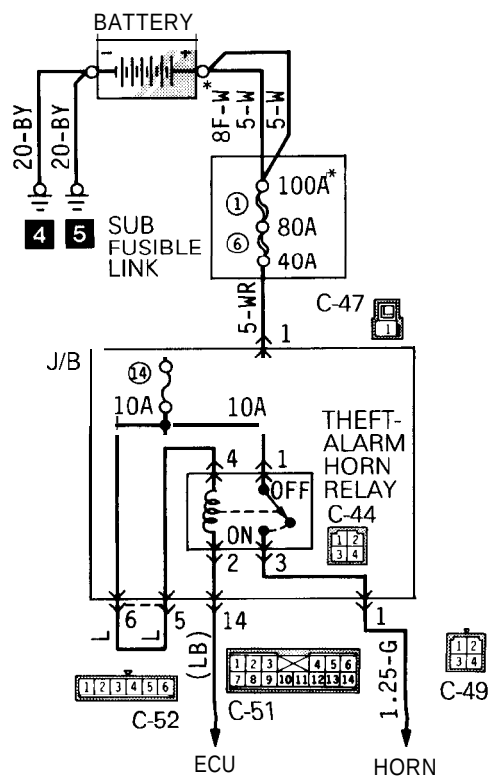
If all doors are in locked state after key locking or key-less locking, the ECU transistor is turned ON and the security light comes on.

Checking the security light activation circuit (Disconnect the connector of the ECU and check at the wiring harness side.)

Step	Check object	Judgement: Normal	Judgement: Mal-function	Cause	Remedy
1	D–06 connector terminal voltage (RB–Ground)	System voltage	OV	Fuse ⑲ damaged or disconnected	Replace the fuse
				Harness damaged or disconnected, or short-circuit	Repair the harness
2	D–06 connector terminal voltage (GB-Ground)	System voltage	ov	Damaged or disconnected wiring of SECURITY light bulb	Replace the bulb
				Harness damaged or disconnected	Repair the harness
3	ECU terminal voltage	System voltage	ov	Harness damaged or disconnected, or short-circuit	Repair the harness

16A1206

9. THEFT-ALARM HORN RELAY POWER-SUPPLY CIRCUIT



16A1207

Description of operation

Power voltage is always supplied to the theft-alarm horn relay.

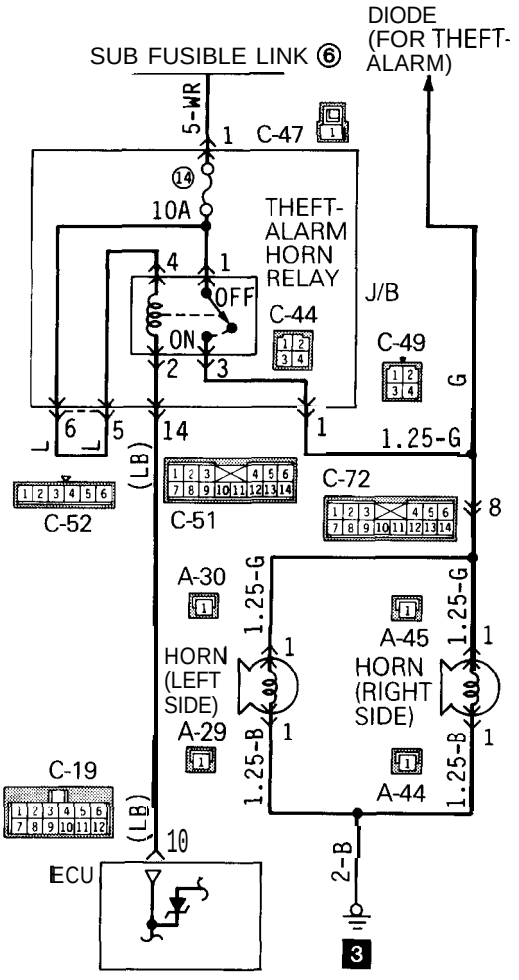
Checking the horn relay power-supply circuit (Disconnect the theft-alarm horn relay)

Check object	Judgement: Normal	Judgement: Malfunction	Cause	Remedy
(J/B side) terminal voltage (1–Ground)	System voltage	OV	Fuse ⑭ or Sub fusible link blown	Replace the fuse or the sub fusible link
			Damaged or disconnected harness	Repair the harness

Checking individual part:
Theft-alarm horn relay-Refer to P.8-266.

NOTE
*: Vehicles for Canada.

10. THEFT-ALARM HORN ACTIVATION CIRCUIT



Description of operation

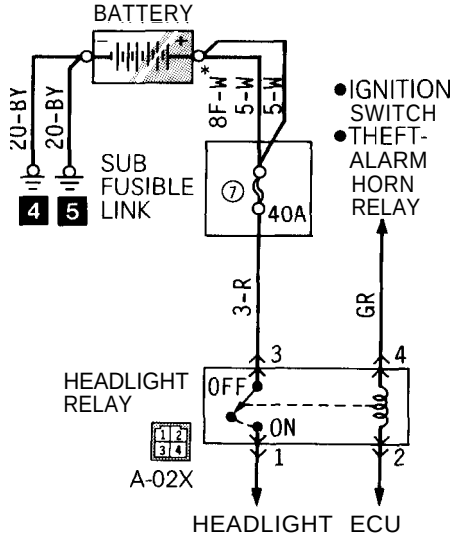
The ECU transistor is turned ON if the vehicle door, etc. are opened without use of the key.

This energizes the theft-alarm horn relay to activate the horn.

Checking the horn activation circuit (Disconnect the connector of the ECU, then short-circuit terminal No. 10 (LB line), and activate the theft-alarm horn relay.

Step	Check object	Judgement: Normal	Judgement: Malfunction	Cause	Remedy
1	Theft-alarm relay terminal voltage (3–Ground)	System voltage	0V	Malfunction of the theft-alarm horn relay	Check the theft-alarm horn relay (Refer to P.8-266.)
2	Horn terminal voltage (1–Ground)	System voltage	0V	Harness damaged or disconnected	Repair the harness
3	Horn terminal voltage (1 -Ground)	Horn sounds (0V)	Horn doesn't sound (0V)	Malfunction of the horn	Replace the horn
			Batten/ voltage	Damaged or disconnected wiring of ground circuit	Repair the harness

11. HEADLIGHT POWER-SUPPLY CIRCUIT



Description of operation

Power voltage is always supplied to the headlight relay.

Checking the headlight power-supply circuit (Disconnect the headlight relay)

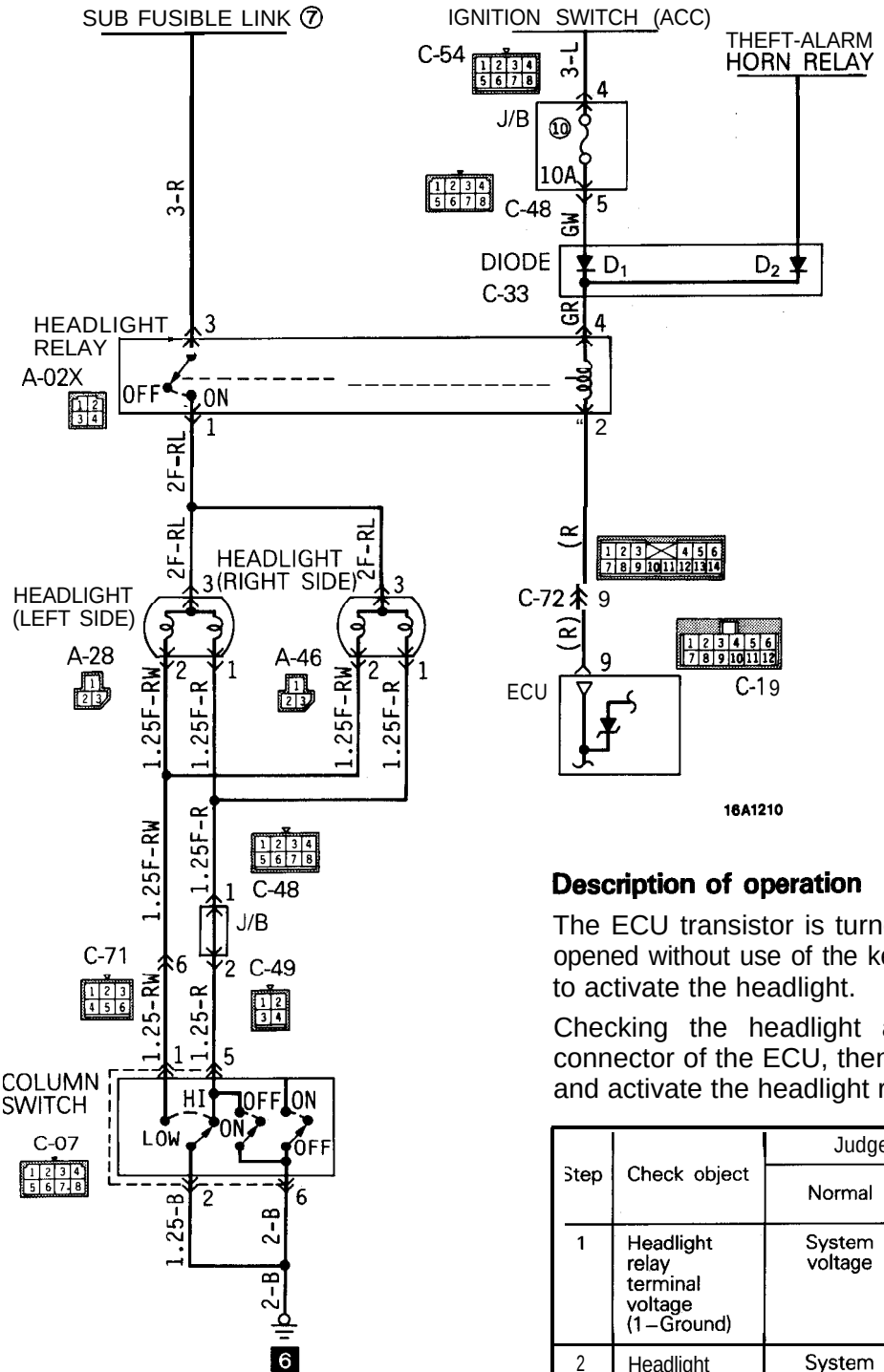
Check object	Judgement: Normal	Judgement: Malfunction	Cause	Remedy
(Wiring harness side) terminal voltage (3–Ground)	System voltage	0V	Sub fusible link blown	Replace the sub fusible link
			Damage or disconnected harness	Repair the harness

Checking individual part:
Headlight relay-Refer to P.8-244.

NOTE
*: Vehicles for Canada.

12. HEADLIGHT ACTIVATION CIRCUIT

① VEHICLES WITHOUT DAYTIME RUNNING LIGHT



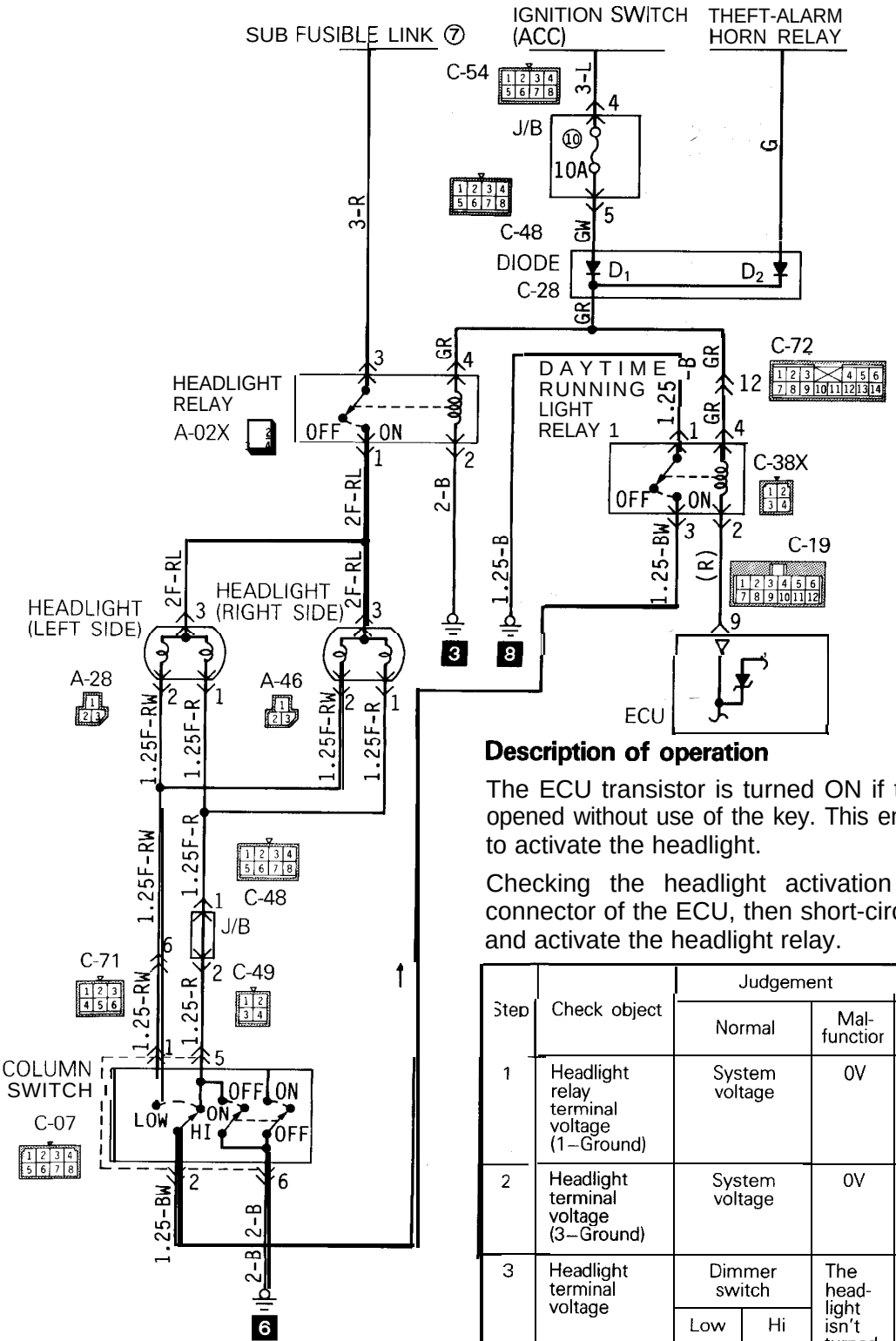
Description of operation

The ECU transistor is turned ON if the vehicle door, etc. are opened without use of the key. This energizes the headlight relay to activate the headlight.

Checking the headlight activation circuit (Disconnect the connector of the ECU, then short-circuit terminal No. 9 (R line) and activate the headlight relay.

Step	Check object	Judgement		Cause	Remedy
		Normal	Mal-function		
1	Headlight relay terminal voltage (1–Ground)	System voltage	0V	Malfunction of the headlight relay	Check the headlight relay (Refer to P.8-244.)
2	Headlight terminal voltage (3–Ground)	System voltage	ov	Harness damaged or disconnected	Repair the harness
3	Headlight terminal voltage	Dimmer switch: Low	Dimmer switch: Hi	The headlight isn't turned on	Malfunction of the headlight. Harness damaged or disconnected. Malfunction of dimmer switch	Replace the headlight or dimmer switch Repair the harness
	(1 -Ground)	System voltage	OV			
	(P-Ground)	0V	System voltage			

② VEHICLES WITH DAYTIME RUNNING LIGHT



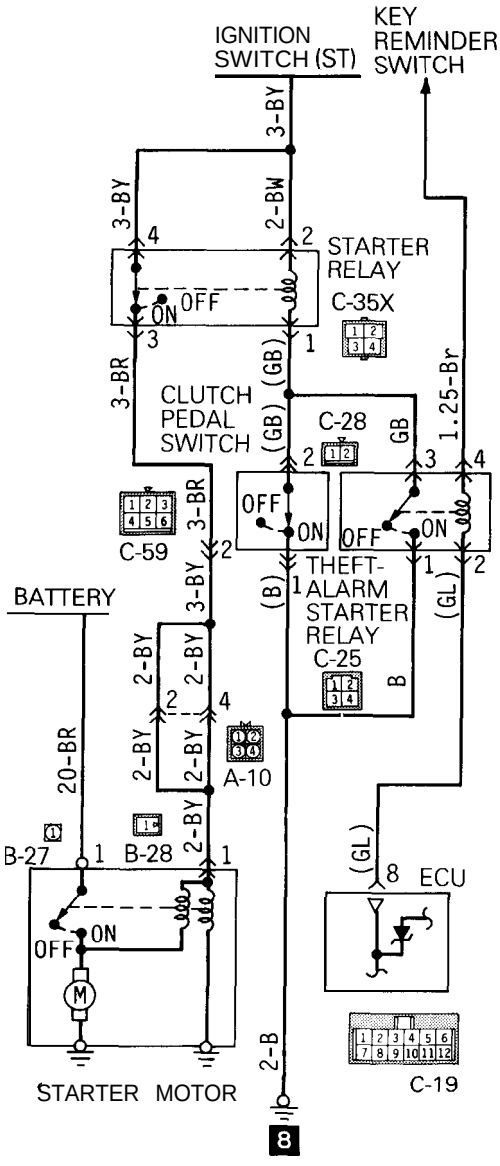
Description of operation

The ECU transistor is turned ON if the vehicle door, etc. are opened without use of the key. This energizes the headlight relay to activate the headlight.

Checking the headlight activation circuit (Disconnect the connector of the ECU, then short-circuit terminal No. 9 (R line) and activate the headlight relay.

Step	Check object	Judgement		Cause	Remedy
		Normal	Mal-functior		
1	Headlight relay terminal voltage (1–Ground)	System voltage	0V	Malfunction of the headlight relay	Check the headlight relay (Refer to P.8-244.)
2	Headlight terminal voltage (3–Ground)	System voltage	0V	Harness damaged or disconnected	Repair the harness
3	Headlight terminal voltage	Dimmer switch: Low	Dimmer switch: Hi	The head-light isn't turned on	Malfunction of the headlight. Harness damaged or disconnected. Malfunction of dimmer switch	Replace the headlight or dimmer switch Repair the harness
	(1–Ground)	System voltage	0V		
	(2–Ground)	0V	System voltage		
4	Continuity between dimmer SW connector No.2 and DRL relay 1 connector	0Ω		∞Ω	Harness damaged or disconnected. Malfunction of the relay	Repair the harness Check the relay

13. STARTER RELAY ACTIVATION CIRCUIT <M/T>



16A1211

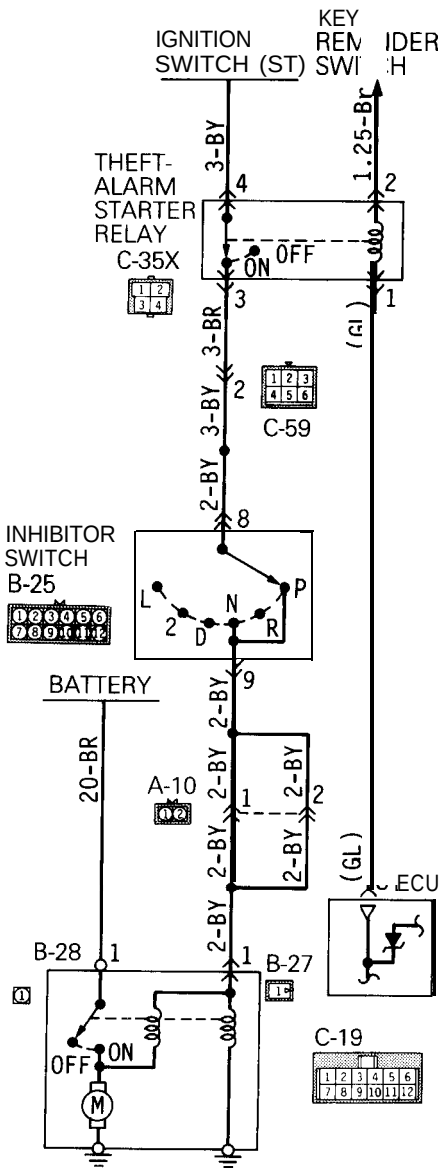
Description of operation

The ECU transistor is turned ON if the vehicle door etc. are opened without use of the key. This turns OFF the starter relay and power ceases to be supplied to the starter magnet switch.

Checking the starter relay activation circuit (Disconnect the connector of the ECU, depress fully the clutch pedal and activate the starter relay)

Step	Check object	Judgement		Cause	Remedy
		Normal	Mal-function		
1	Starter relay terminal voltage (3—Ground)	System voltage	0V	Malfunction of the starter relay	Check the starter relay
2	Starter motor terminal (1—Ground)	System voltage	0V	Harness damaged or disconnected	Repair the harness
	(Starter motor connector B-28: Separation)				
3	Continuity between "B-28" connector and ground	0Ω	∞Ω	Damaged magnet switch	Replace magnet switch

14. THEFT-ALARM STARTER RELAY ACTIVATION CIRCUIT <A/T>



16A1212

Description of operation

The ECU transistor is turned ON if the vehicle door etc. are opened without use of the key. This turns OFF the theft-alarm starter relay and power ceases to be supplied to the starter magnet switch.

Checking the theft-alarm starter relay activation circuit (Disconnect the connector of the ECU and set the inhibitor switch to the N or P range.)

Step	Check object	Judgement		Cause	Remedy
		Normal	Mal-function		
1	Theft-alarm starter relay terminal voltage (3–Ground)	System voltage	0V	Malfunction of the theft-alarm starter relay	Check the theft-alarm starter relay
2	Starter motor terminal (1–Ground)	System voltage	0V	Harness damaged or disconnected	Repair the harness
(Starter motor connector B-27: Separation)					
3	Continuity between "B-27" connector and ground	0Ω	∞Ω	Damaged magnet switch	Replace magnet switch

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