Service Manual

Colt/Summit
Colt Series 2000

1989

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.

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Printed in U.S.A.

GROUP / SECTION INDEX

N00AA--

NOTE:
For Engine, Chassis & Body, refer to ...
Volume-1
"Engine, Chassis & Body".

HOW TO USE THIS MANUAL

N00BAAP

CONTENTS

The preceding page contains GROUP INDEX which lists the group title and group number.

PAGE NUMBERS

All page numbers consist of two sets of digits separated by a dash. The digits preceding the dash identify the number of the group. The digits following the dash represent the consecutive page number within the group. The page numbers can be found on the top left or right of each page.

TEXT

Unless otherwise specified, each service procedure covers all models. Procedures covering specific models are identified by the model codes or similar designation (engine type, transaxle type, etc.). A description of these designations is covered in this unit under "VEHICLE IDENTIFICATION".

SERVICE PROCEDURES

The service steps are arranged in numerical order and attentions to be paid in performing vehicle service are described in detail in SERVICE POINTS.

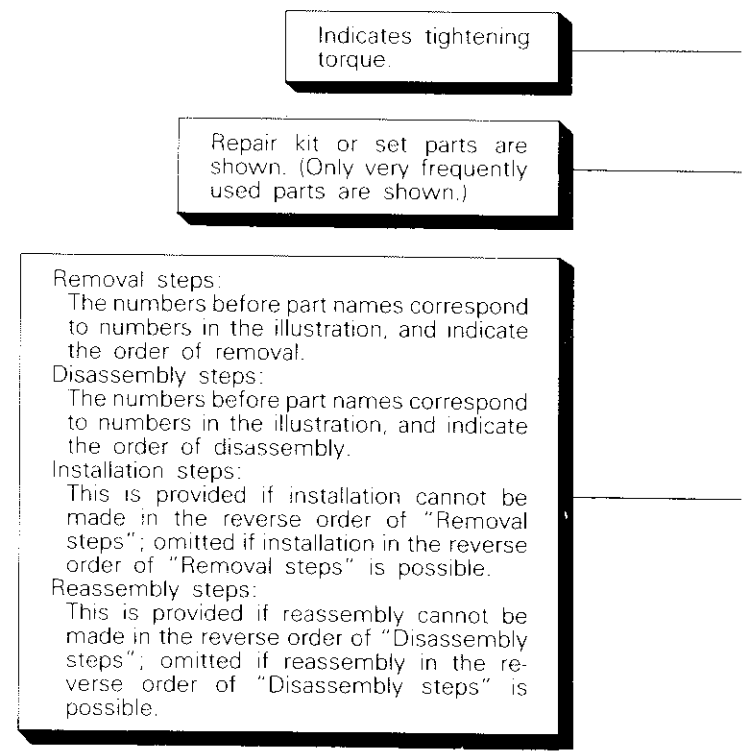
DEFINITION OF TERMS

STANDARD VALUE

Indicates the value used as the standard for judging the quality of a part or assembly on inspection or the value to which the part or assembly is corrected and adjusted. It is given by tolerance.

LIMIT

Shows the standard for judging the quality of a part or assembly on inspection and means the maximum or minimum value within which the part or assembly must be kept functionally or in strength. It is a value established outside the range of standard value.



MODEL INDICATIONS

The following abbreviations are used in this manual for classification of model types.

1500: Indicates models equipped with the 1.5 L (4G15) engine.
1600: Indicates models equipped with the 1.6 L (4G61) engine.
M/T: Indicates the manual transaxle, or models equipped with the manual transaxle.
A/T: Indicates the automatic transaxle, or models equipped with the automatic transaxle.
MPI: Indicates the multi-point injection, or engines equipped with the multi-point injection.
SOHC: Indicates an engine with the single overhead camshaft, or a model equipped with such an engine.
DOHC: Indicates an engine with the double overhead camshaft, or a model equipped with such an engine.
T/C: Indicates an engine with turbocharger, or a model equipped with such an engine.
N/A: Indicates an engine without turbocharger, or a model equipped with such an engine.

Page number

Group title

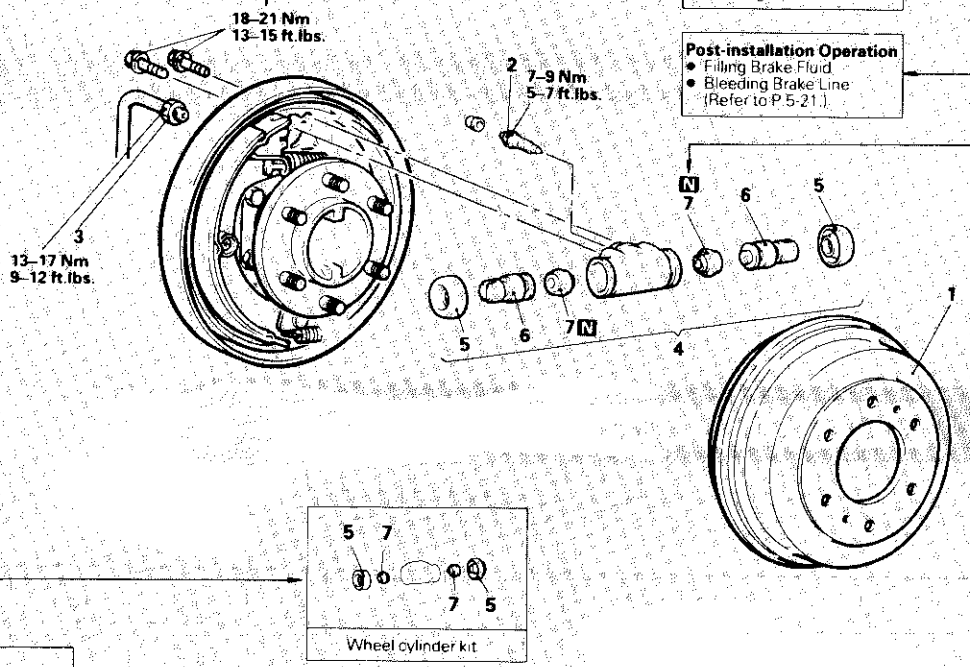
Section title

Indicates the incidental operation to be performed before removal or after installation.

REAR BRAKE WHEEL CYLINDER

REMOVAL AND INSTALLATION

N05VA



Pre-removal Operation
- Draining Brake Fluid

Post-installation Operation
- Filling Brake Fluid
- Bleeding Brake Line (Refer to P.5-21.)

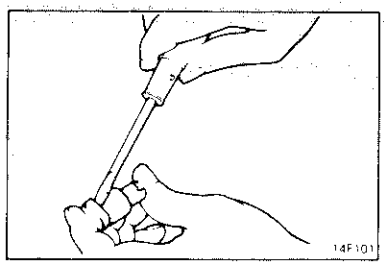
Indicates non-reusable part.

Wheel cylinder kit

Removal steps
1. Brake drum
2. Bleeder screw
3. Brake tube
◆◆ 4. Wheel cylinder assembly
◆◆ 5. Wheel cylinder boot
◆◆ 6. Piston assembly
◆◆ ◆◆ 7. Piston cup

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆ Refer to "Service Points of Removal"
(3) ◆◆ Refer to "Service Points of Installation"
(4) N : Non-reusable parts

14W600



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SERVICE POINTS OF REMOVAL

N05VBAA

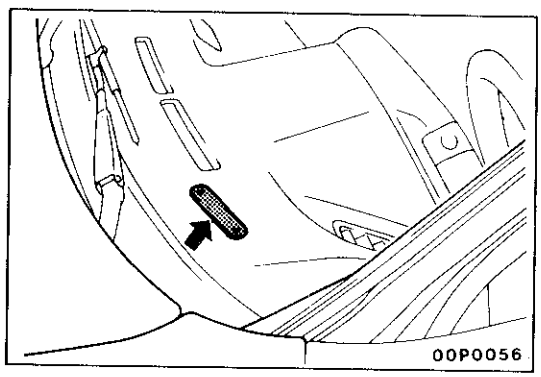
7. REMOVAL OF PISTON CUP

Using a screwdriver, remove the piston cup from the piston.

Classification of SERVICE POINTS
- ◆◆ Removal
- ◆◆ Installation
- ◆◆ Disassembly
- ◆◆ Reassembly

This number corresponds to the number in "Removal steps", "Disassembly steps", "Installation steps" or "Reassembly steps".

An explanation of procedures, notes, etc. regarding removal, installation, disassembly and reassembly.



VEHICLE IDENTIFICATION

N00CA--

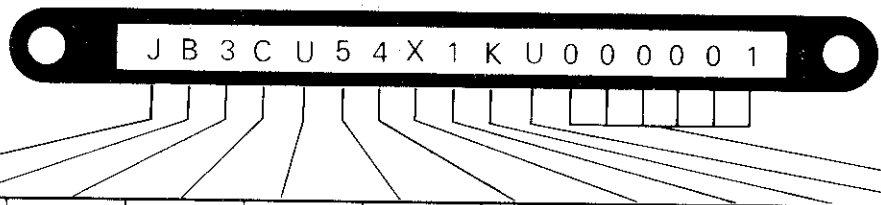
VEHICLE IDENTIFICATION NUMBER LOCATION

The vehicle identification number (V.I.N.) is located on a plate attached to the left top side of the instrument panel.

VEHICLE IDENTIFICATION CODE CHART PLATE

N00CB--

All vehicle identification numbers contain 17 digits. The vehicle number is a code which tells country, make, vehicle type, etc.



1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th Digit	9th Digit	10th Digit	11th Digit	12th to 17th Digits
Country	Make	Vehicle type	Others	Line	Price class	Body	Engine	*Check digits	Model year	Plant	Serial number
J– Japan	B– Dodge P– Plymouth E– Eagle	3– Passenger car	C– Automatic seat belt	U– Colt or Summit	1– Economy 2– Low 3– Medium 4– High 5– Premium	4– 3-door hatchback 6– 4-door sedan	X– 1.5 liters (96 CID) [SOHC-MPI] Y– 1.6 liters (98 CID) [DOHC-MPI] Z– 1.6 liters (98 CID) [DOHC-MPI -T/C]	1 2 3 . . . . . 9 X	K– 1989 year	U– Mizushima Plant	000001 to 999999

NOTE
* "Check digit" means a single number or letter X used to verify the accuracy of transcription of vehicle identification number.

VEHICLE IDENTIFICATION NUMBER LIST

N00CC--

HATCHBACK FOR FEDERAL

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU24X□KU	Dodge Colt	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL2D
JB3CU34X□KU			C52AMNDEL2D
			C52AMKDEL2D
JB3CU14X□KU			C52AMFSEL2D
JB3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL2D
JP3CU24X□KU	Plymouth Colt	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL2D
JP3CU34X□KU			C52AMNDEL2D
			C52AMKDEL2D
JP3CU14X□KU			C52AMFSEL2D
JP3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL2D

HATCHBACK FOR CALIFORNIA (Can also be sold in Federal States.)

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU24X□KU	Dodge Colt	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL7D
JB3CU34X□KU			C52AMNDEL7D
			C52AMKDEL7D
JB3CU14X□KU			C52AMFSEL7D
JB3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL7D
JP3CU24X□KU	Plymouth Colt	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL7D
JP3CU34X□KU			C52AMNDEL7D
			C52AMKDEL7D
JP3CU14X□KU			C52AMFSEL7D
JP3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL7D

HATCHBACK FOR CANADA

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU24X□KU	Dodge Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL3D
JB3CU34X□KU			C52AMNDEL3D
			C52AMKDEL3D
JB3CU14X□KU			C52AMFSEL3D
JB3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL3D
JP3CU24X□KU	Plymouth Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL3D
JP3CU34X□KU			C52AMNDEL3D
			C52AMKDEL3D
JP3CU14X□KU			C52AMFSEL3D
JP3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL3D

SEDAN FOR FEDERAL

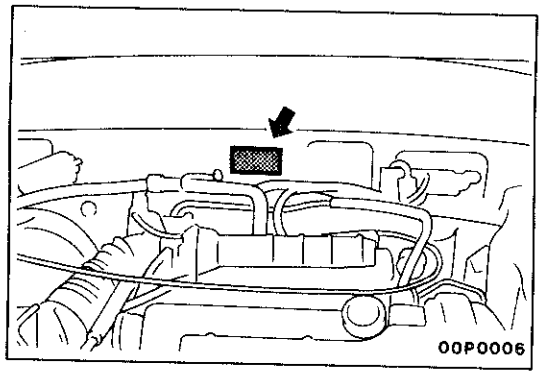
V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JE3CU26X□KU	Eagle Summit	1.5 liter (96 CID) [SOHC-MPI]	C62ASNMEL2E
			C62ASKMEL2E
JE3CU36X□KU			C62ASNDEL2E
			C62ASKDEL2E
JE3CU46X□KU			C62ASNJEL2E
			C62ASKJEL2E
JE3CU56Y□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPML2E
			C63ASRPML2E

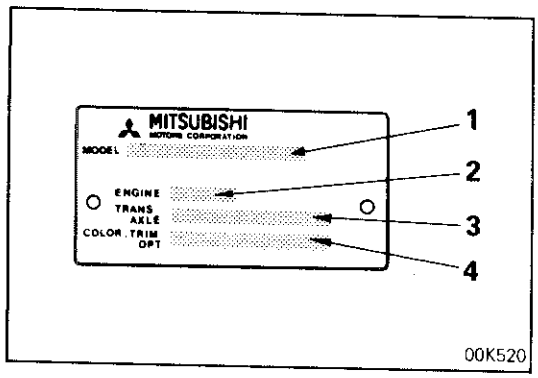
SEDAN FOR CALIFORNIA (Can also be sold in Federal States.)

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JE3CU26X□KU	Eagle Summit	1.5 liter (96 CID) [SOHC-MPI]	C62ASNMEL7E
			C62ASKMEL7E
JE3CU36X□KU			C62ASNDEL7E
			C62ASKDEL7E
JE3CU46X□KU			C62ASNJEL7E
			C62ASKJEL7E
JE3CU56Y□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPML7E
			C63ASRPML7E

SEDAN FOR CANADA

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU26X□KU	Dodge Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C62ASNMEL3D
			C62ASKMEL3D
JB3CU36X□KU			C62ASNDEL3D
			C62ASKDEL3D
JB3CU46X□KU			C62ASNJEL3D
			C62ASKJEL3D
JB3CU56Y□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPML3D
			C63ASRPML3D
JP3CU26X□KU	Plymouth Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C62ASNMEL3D
			C62ASKMEL3D
JP3CU36X□KU			C62ASNDEL3D
			C62ASKDEL3D
JP3CU46X□KU			C62ASNJEL3D
			C62ASKJEL3D
JP3CU56Y□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPML3D
			C63ASRPML3D





VEHICLE INFORMATION CODE PLATE

N00CD--

Vehicle information code plate is riveted onto the bulkhead in the engine compartment.
The place shows model code, engine model, transaxle model, and body color code.

1. MODEL — **C53AMNPTL2D**
   - Model series
   - Vehicle model
2. ENGINE — **4G61**
   - Engine model
3. TRANSAXLE — **KM210**
   - Transaxle model
4. COLOR, TRIM OPT — **H84**
   - Monotone exterior color code

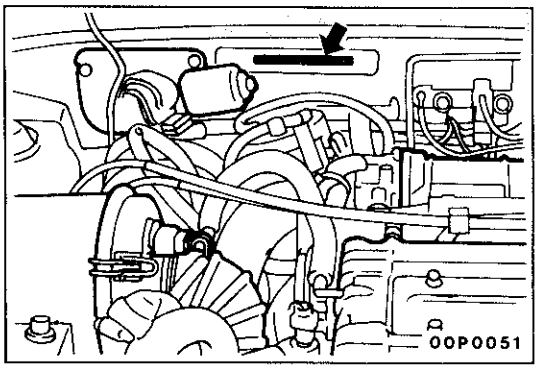
   R6HR48H39
   - Two color code
   - Exterior code

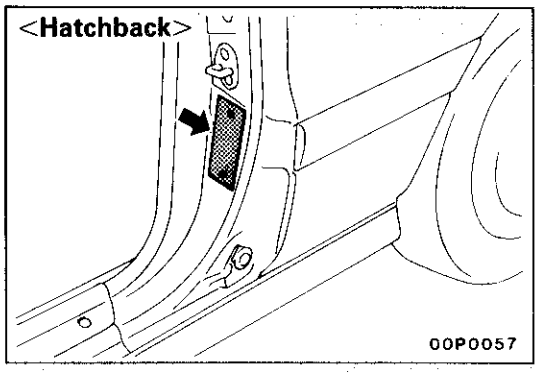
Two-tone exterior is shown by the exterior code followed by the two color codes.

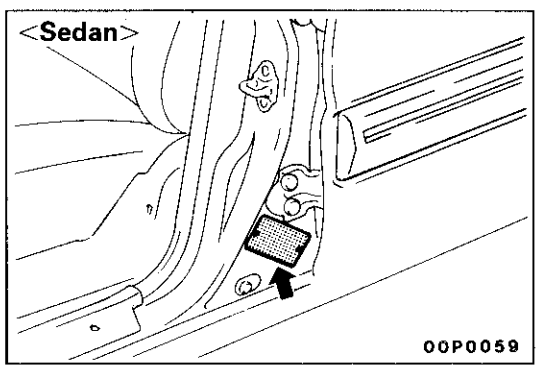
BODY COLOR CODE

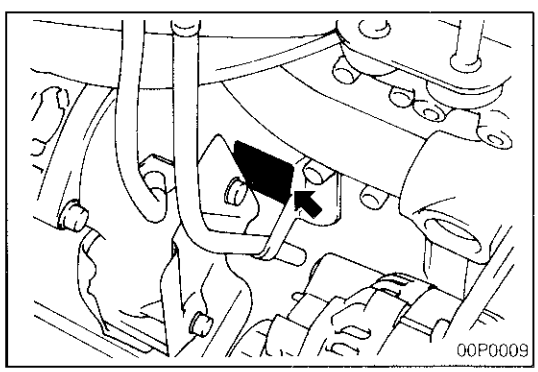
Exterior code	Body color
Monotone	
B80	Light Blue (M)
C46	Brown (M)
H84	Silver (M)
L83	Light Gray (M)
P89*1	Pink (M)
R48*1	Red (M)
R52	Red
T86	Blue (M)
T93*2	Blue (M)
W09	White
X09*1	Black
X15	Black
Two-tone	
R6HR48H39*1	Red (M)/Dark Gray (M)
T5HT86H84*1	Blue (M)/Silver (M)

NOTE
(1) M: Metallic
(2) *1: <Sedan>
(3) *2: <Hatchback>









CHASSIS NUMBER N00CE--

STAMPING LOCATION

The chassis number is stamped on the top center of the firewall located in the engine compartment.

CHASSIS NUMBER CODE CHART

C 5 0 A K U 1 0 0 0 0 1
1 2

1. Vehicle line
   C50A – COLT or SUMMIT
2. Refer to 10th thru 17th digits of V.I.N. plate.

VEHICLE SAFETY CERTIFICATION LABEL N00CF--

1. The vehicle safety certification label is attached to the face of left door pillar.
2. This label indicates the month and year of manufacture, Gross Vehicle Weight Rating (G.V.W.R.), Gross Axle Weight Rating (G.A.W.R.) front and rear, and Vehicle Identification Number (V.I.N.).

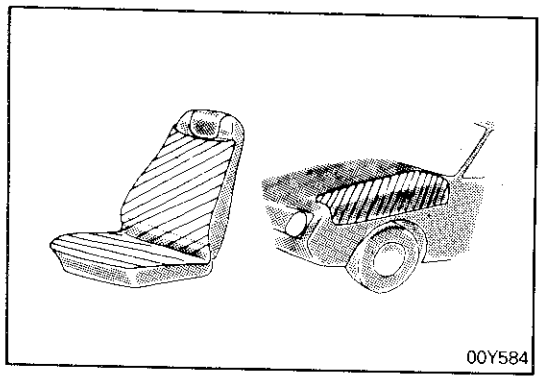
ENGINE MODEL STAMPING N00CG--

1. The engine model number is stamped at the front side on the top edge of the cylinder block as shown in the following:

Engine model	Engine displacement
4G15	1.5 liter (96 CID) [SOHC-MPI]
4G61	1.6 liter (98 CID) [DOHC-MPI] or [DOHC-MPI-T/C]

2. The engine serial number is stamped near the engine model number, and the serial number cycles, as shown below.

Engine serial number	Number cycling
AA0201 to YY9999	AA0201 - - - - - - - → AA9999 AB0001 - - - - - - - → AY9999 BA0001 - - - - - - → YY9999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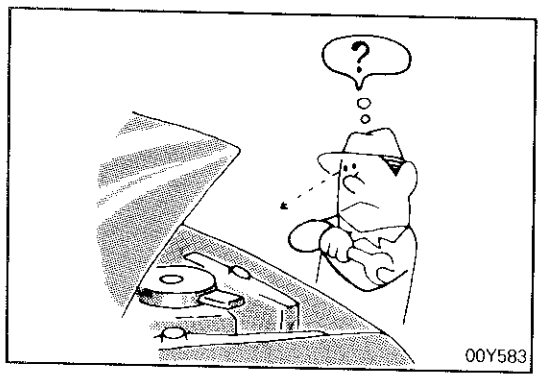
PRECAUTIONS BEFORE SERVICE N00DAAH

PROTECTING VEHICLE

If there is a likelihood of damaging painted or interior parts during service operations, protect them with suitable covers (such as Seat covers, Fender covers, etc.).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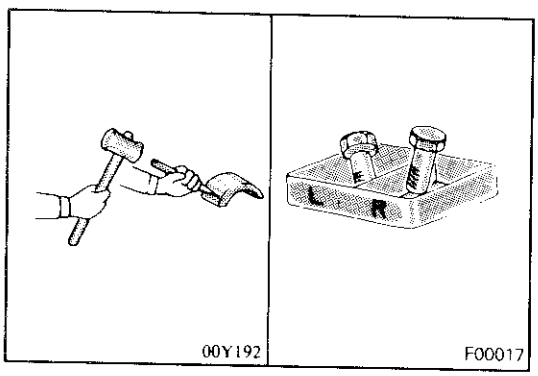
REMOVAL AND DISASSEMBLY

When checking a malfunction, find the cause of the problem. If it is determined that removal and/or disassembly is necessary, perform the work by following the procedures contained in this Service Manual.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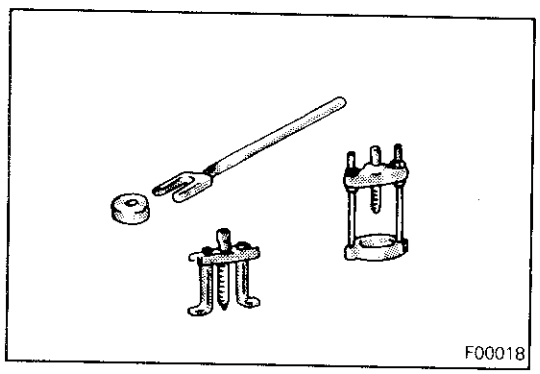
If punch marks or mating marks are made to avoid error in assembly and to facilitate the assembly work, be sure to make them in locations which will have no detrimental effect on performance and/or appearances.
If an area having many parts, similar parts, and/or parts which are symmetrical right and left is disassembled, be sure to arrange the parts so that they do not become mixed during the assembly process.

1. Arrange the parts removed in the proper order.
2. Determine which parts are to be reused and which are to be replaced.
3. If bolts, nuts, etc., are to be replaced, be sure to use only the exact size specified.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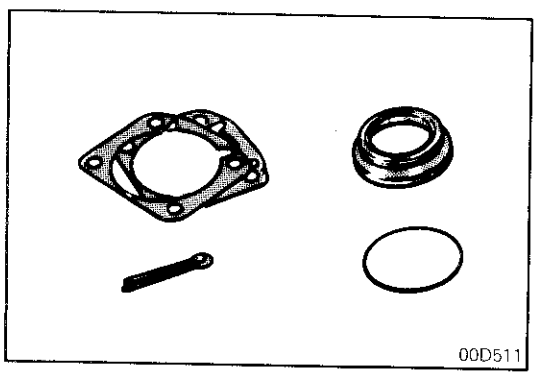
SPECIAL TOOLS

If other tools are substituted for the special tools to do service or repair work, there is the danger that vehicle parts might be damaged, or the technician might be injured; therefore, be sure to use the special tool whenever doing any work for which the use of one is specified.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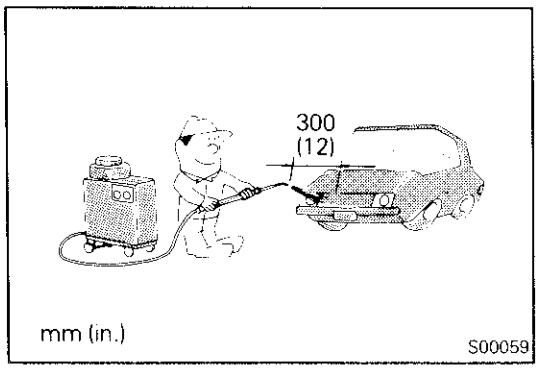
PARTS TO BE REPLACED

If any of the following parts are removed, they must be replaced with new parts.

1. Oil seals
2. Gaskets (except rocker cover gasket)
3. Packings
4. O-rings
5. Lock washers
6. Cotter pins
7. Self-locking nuts

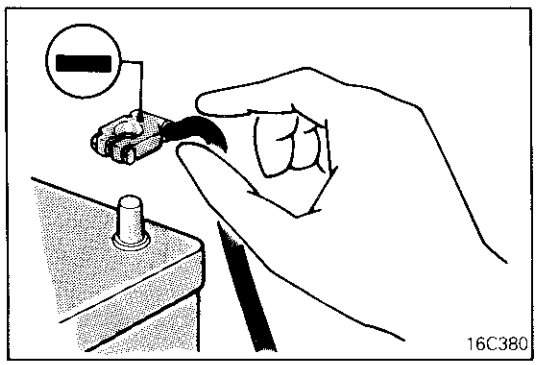
PARTS

When replacing parts, use MOPAR genuine parts.



VEHICLE WASHING

If high-pressure car-washing equipment or steam car-washing equipment is used to wash the vehicle, be sure to maintain the spray nozzle at a distance of at least 300 mm (12 in.) from any plastic parts and all opening parts (doors, luggage compartment, etc.).



SERVICING ELECTRICAL SYSTEM

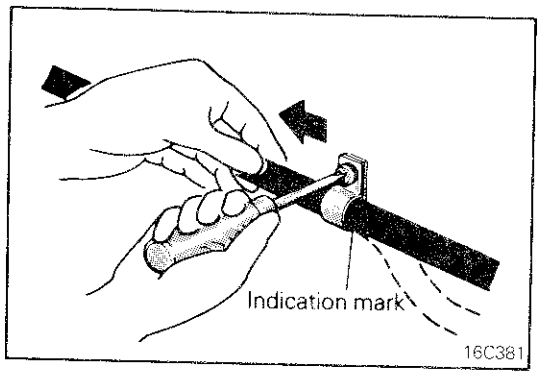
1. When servicing the electrical system, pay attention to the following.
   Never attempt to modify an electrical unit or to change wirings, which may otherwise cause not only a vehicle failure but a vehicle fire due to over-capacity load or short-circuit.
2. Before servicing the electrical system, disconnect the negative cable terminal from the battery.

   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 semi-conductor parts being damaged.)

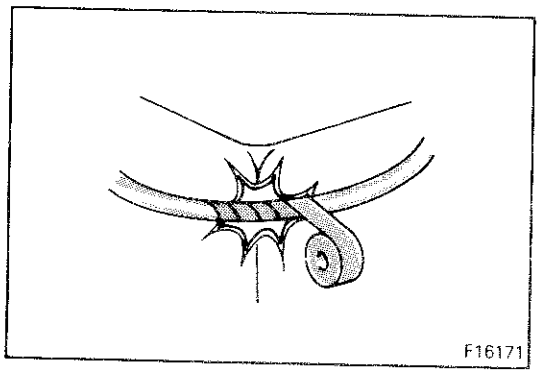
   2. For MPI-equipped models, after completion of the work steps (the battery's negative (–) terminal reconnected), warm up the engine and allow the engine to idle for approximately five minutes under the conditions described below in order to stabilize the engine control conditions. Once this time has elapsed, check 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

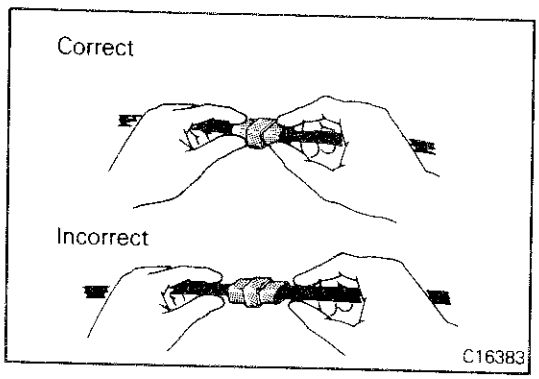


WIRING HARNESSES

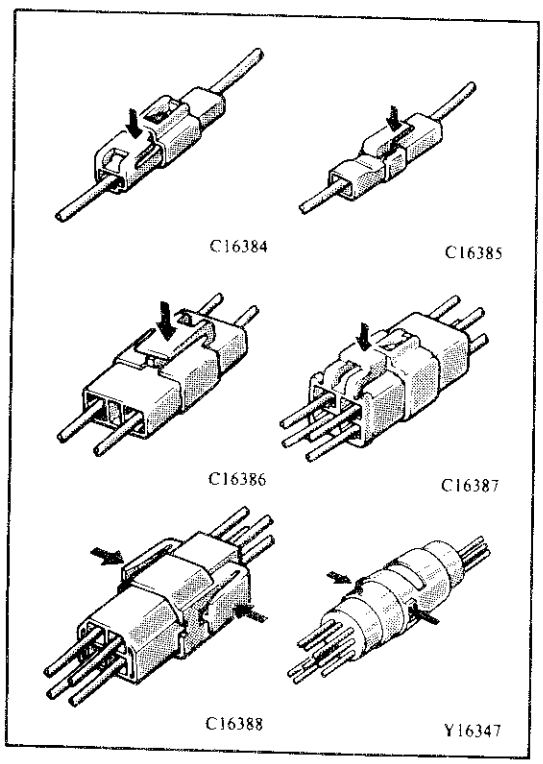
1. Secure the wiring harnesses by using clamps. However, for any harness which passes to the engine or other vibrating parts of the vehicle, allow some slack within a range that does not allow the engine vibrations to cause the harness to come into contact with any of the surrounding parts. Then secure the harness by using a clamp.
   In addition, if a mounting indication mark (yellow tape) is on a harness, secure the indication mark in the specified location.



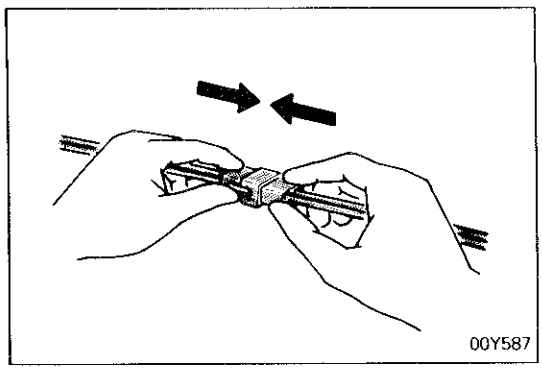
2. If any section of a wiring harness contacts the edge of a part, or a corner, wrap the section of the harness with tape or something similar in order to protect it from damage.



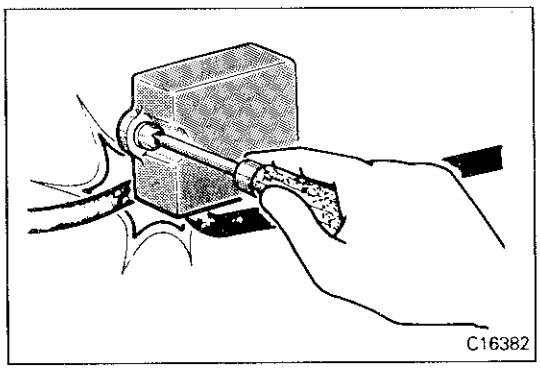
3. When disconnecting a connector, be sure to pull only the connector, not the harness.



4. Disconnect connectors which have catches by pressing in the direction indicated by the arrows in the illustration.

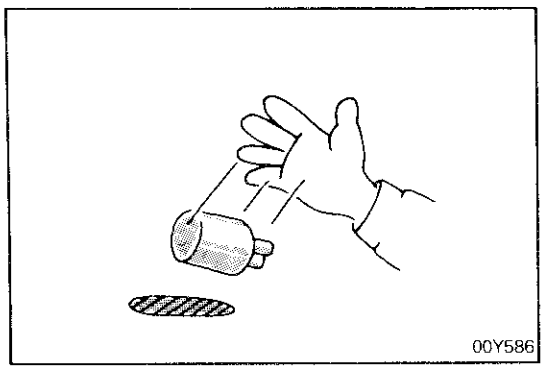


5. Connect connectors which have catches by inserting the connectors until they snap.

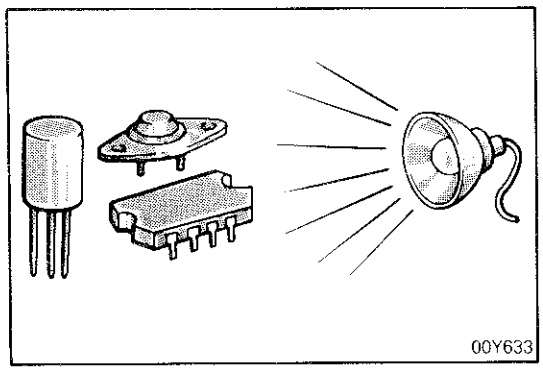


ELECTRICAL COMPONENTS

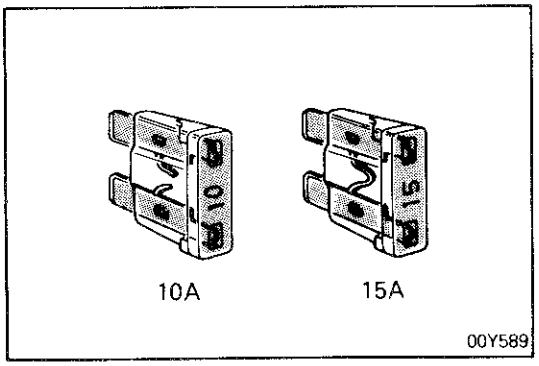
1. When installing any of the vehicle parts, be careful not to pinch or damage any of the wiring harnesses.



2. Sensors, relays, etc., are sensitive to strong impacts. Handle them with care so that they are not dropped or mishandled.



3. The electronic parts used for relays, etc., are sensitive to heat. If any service which causes a temperature of 80°C (176°F) or more is performed, remove the part or parts in question before carrying out the service.



FUSES AND FUSIBLE LINKS

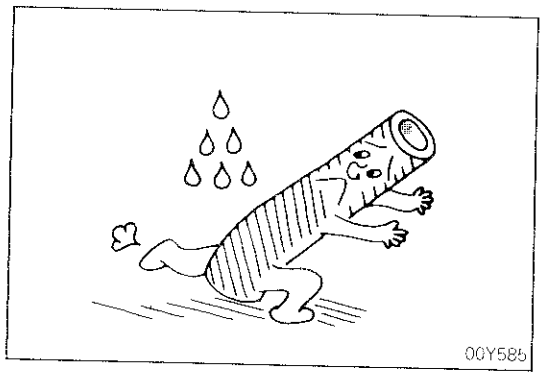
1. If a blown-out fuse is to be replaced, be sure to use only a fuse of the specified capacity. If a fuse of a capacity larger than that specified is used, parts may be damaged and the circuit may not be protected adequately.

Caution

1. **If a fuse is blown-out, be sure to eliminate the cause of the problem before installing a new fuse.**
2. **Check the condition of fuse holders. If rust or dirt is found, clean metal parts with a fine-grained sand-paper until proper metal-to-metal contact is made. Poor contact of any fuse holder will often lead to voltage drop or heating in the circuit and could result in improper circuit operation.**

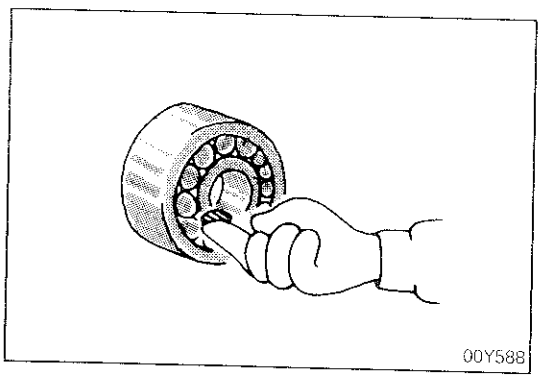
Nominal size	SAE gauge No.	Permissible current	
		In engine compartment	Other areas
0.3 mm²	AWG 22	–	5A
0.5 mm²	AWG 20	7A	13A
0.85 mm²	AWG 18	9A	17A
1.25 mm²	AWG 16	12A	22A
2.0 mm²	AWG 14	16A	30A
3.0 mm²	AWG 12	21A	40A
5.0 mm²	AWG 10	31A	54A

2. If additional optional equipment is to be installed in the vehicle, follow the procedure listed in the appropriate instruction manual; however, be sure to pay careful attention to the following points:
   (1) In order to avoid overloading the wiring, take the electrical current load of the optional equipment into consideration, and determine the appropriate wire size.
   (2) Where possible, route the wiring through the existing harnesses.
   (3) If an ammeter or similar instrument is to be connected to a live-wire circuit, use tape to protect the wire, use a clamp to secure the wire, and make sure that there is no contact with any other parts.
   (4) Be sure to provide a fuse for the load circuit of the optional equipment.



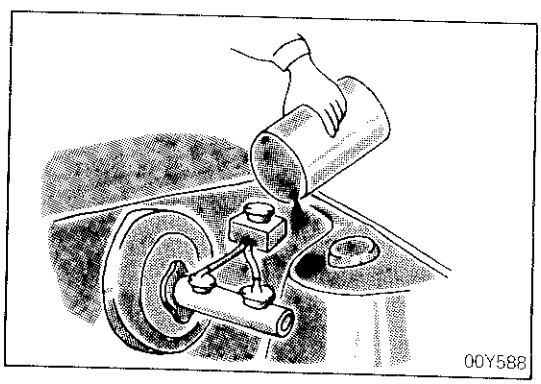
TUBES AND OTHER RUBBER PARTS

Be careful to avoid spilling any gasoline, oil, etc., because if it adheres to any tubes or other rubber parts, they might be adversely affected.



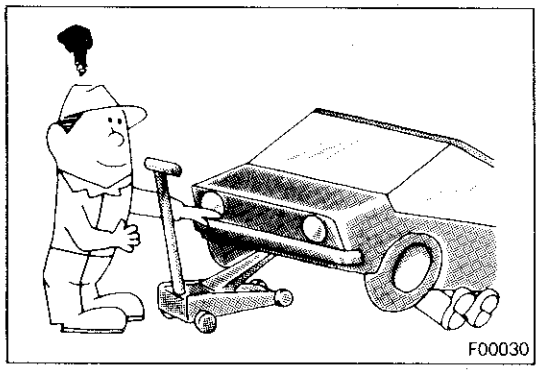
LUBRICANTS

In accordance with the instructions in this Service Manual, apply the specified lubricants in the specified locations during assembly and installation.



BRAKE FLUID

Be careful to avoid spilling any brake fluid on painted surfaces, because the paint coat might be discolored or damaged.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DOING SERVICE WORK IN GROUPS OF TWO OR MORE TECHNICIANS

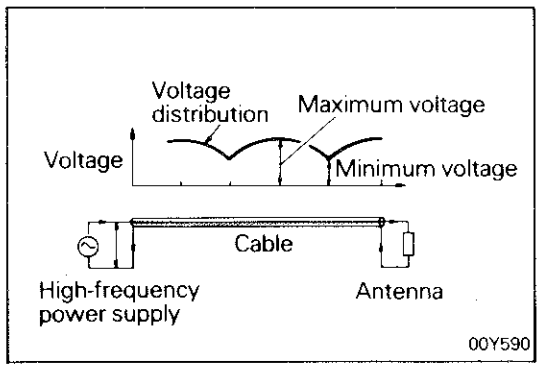
If the service work is to be done by two or more technicians working together, extra caution must be taken.

NOTE ON INSTALLATION OF RADIO EQUIPMENT

N00EA- -

The computers of the electronic control system has been designed so that external radio waves will not interfere with their operation.
However, if antenna or cable of amateur transceiver etc. is routed near the computers, it may affect the operation of the computers, even if the output of the transceiver is no more than 25W.
To protect each of the computers from interference by transmitter (hum, transceiver, etc.), the following should be observed.

1. Install the antenna on the roof or rear bumper.
2. Because radio waves are emitted from the coaxial cable of the antenna, keep it 200 mm (8 in.) away from the computers and the wiring harness. If the cable must cross the wiring harness, route it so that it runs at right angles to the wiring harness.
3. The antenna and the cable should be well matched, and the standing-wave ratio* should be kept low.
4. A transmitter having a large output should not be installed in the vehicle.
5. After installation of transmitter, run the engine at idle, emit radio waves from the transmitter and make sure that the engine is not affected.



* STANDING-WAVE RATIO

If an antenna and a cable having different impedances are connected, the input impedance Zi will vary in accordance with the length of the cable and the frequency of the transmitter, and the voltage distribution will also vary in accordance with the location.
The ratio between this maximum voltage and minimum voltage is called the standing-wave ratio. It can also be represented by the ratio between the impedances of the antenna and the cable.
The amount of radio waves emitted from the cable increases as the standing-wave ratio increases, and this increases the possibility of the electronic components being adversely affected.

TOWING AND HOISTING

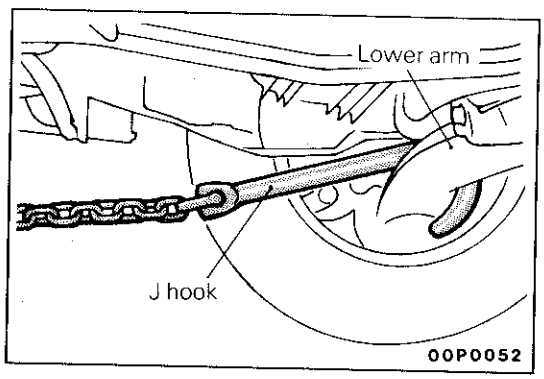
N00GA--

WRECKER TOWING RECOMMENDATION

This vehicle can be towed from the front by the following procedures with conventional sling type equipment.
Two beams of lumber 4" x 4" x 60" and a pair of spacer blocks are also required.

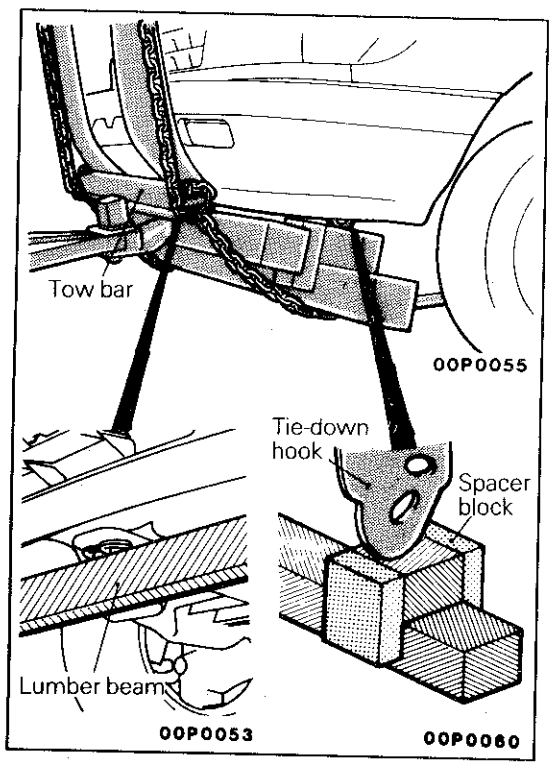
Caution

1. **This vehicle cannot be towed by a wrecker using rear sling-type equipment.**
2. **If a vehicle is towed from the rear, use wheel lift or flat bed equipment.**
3. **For vehicles provided with a large size air dam skirt, remove the skirt before towing. (Refer to GROUP 23 – Loose Panel.)**



FRONT PICKUP METHOD

(1) Attach the J hooks to the lower arm as illustrated.



(2) Mount a spacer block on one of the 4" x 4" x 60" beams and set the bottom end of the tie down hook on it. Then apply the other 4" x 4" x 60" beam to the attachment section of the center member.
(3) Position the tow bar under the bumper and attach the safety chains as illustrated.

LIFTING – GROUND CLEARANCE

Towed vehicle should be raised until wheels are a minimum of 10 cm (4 in.) from the ground. Be sure there is adequate ground clearance at the opposite end of the vehicle, especially when towing over rough terrain or when crossing sharp rises such as curbs. If necessary, ground clearance can be increased by removing the wheels from the lifted end of the disabled vehicle and carrying the lifted end closer to the ground. A 20 cm (8 in.) ground clearance must be maintained between brake drums or rotors and ground.

TOWING WHEN KEYS ARE NOT AVAILABLE

When a locked vehicle must be towed and keys are not available, the vehicle may be lifted and towed from the front, provided the parking brake is released. If not released, the rear wheels should be placed on a tow dolly.

SAFETY PRECAUTIONS

The following precautions should be taken when towing the vehicle.

1. Padding (heavy cloth or carpeting) should be placed between the towing sling cross bar and any painted surfaces.
2. Never attach a hook for towing to any parts other than those specified.
3. DO NOT LIFT OR TOW THE VEHICLE BY ATTACHING TO OR WRAPPING AROUND THE BUMPER.
4. A safety chain system completely independent of the primary lifting and towing attachment must be used.
5. Any loose or protruding parts of damaged vehicle such as hoods, doors, fenders, trim, etc., should be secured prior to moving the vehicle.
6. Operator should refrain from going under a vehicle while it is lifted by the towing equipment, unless the vehicle is adequately supported by safety stands.
7. Never allow passengers to ride in a towed vehicle.
8. State and local rules and regulations must be followed when towing a vehicle.

HOISTING

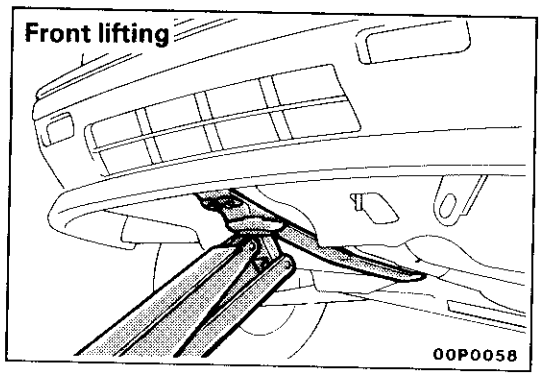
POST TYPE

Special care should be taken when raising the vehicle on a frame contact type hoist. The hoist must be equipped with the proper adapters in order to support the vehicle at the proper locations. (Refer to P.21.)

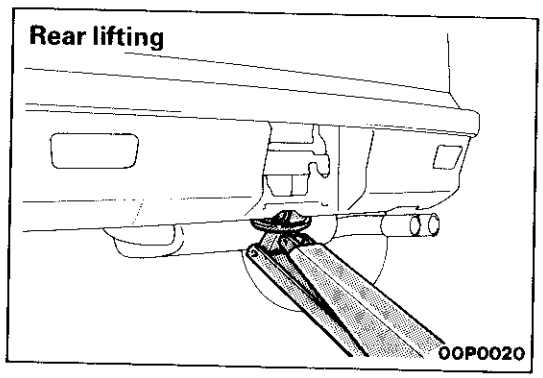
Caution

When service procedures require removing rear suspension, fuel tank, spare tire and lift gate, place additional weight on rear end of vehicle or anchor vehicle to hoist to prevent tipping of center of gravity changes.

Front lifting



Rear lifting



FLOOR JACK

A regular floor jack may be used under the mid point of center member, or the jack up bracket under the fuel tank.

Caution

1. **Never use a jack at the lateral rod or rear suspension assembly.**
2. **When lifting the front crossmember, do not allow jack lifting plate to contact stabilizer.**
3. **In order to prevent scarring the center member, place a piece of cloth on the jack's contact surface (to prevent corrosion caused by damage to the coating).**
4. **A floor jack must never be used on any part of the underbody.**
5. **Do not attempt to raise one entire side of the vehicle by placing a jack midway between front and rear wheels. This practice may result in permanent damage to the body.**

EMERGENCY JACKING

Jack receptacles are located at the body sills to accept the scissors jack supplied with the vehicle for emergency road service. Always block opposite wheels and jack on level surface.

FRAME CONTACT SUPPORT LOCATION

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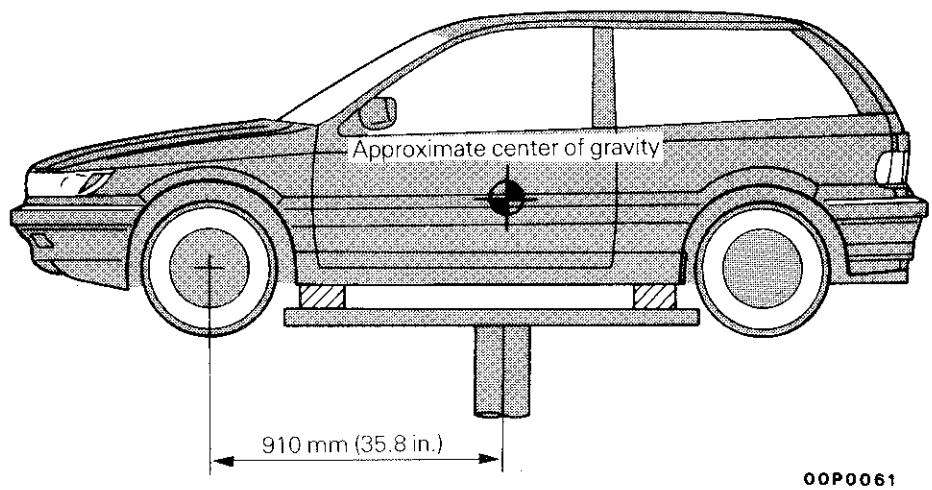

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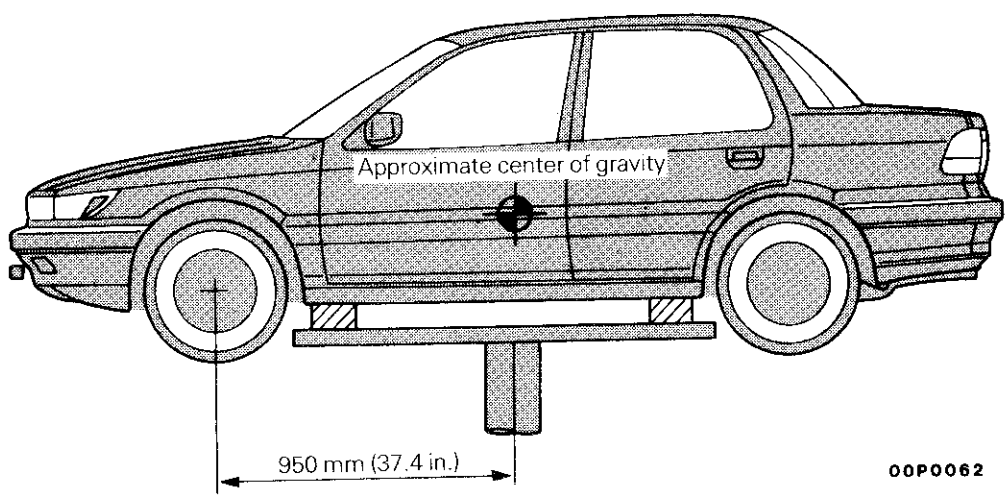

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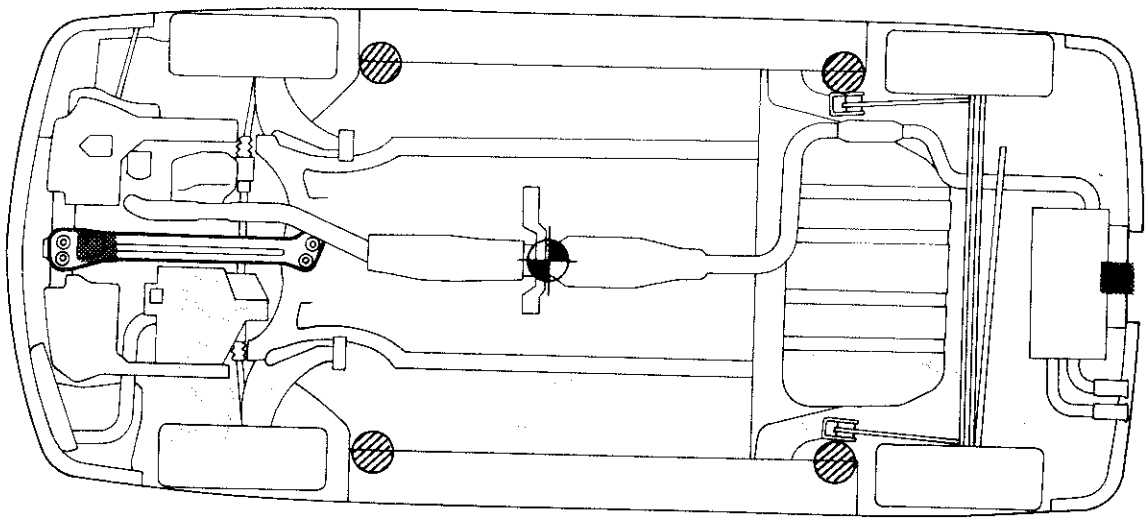
LIFTING, JACKING SUPPORT LOCATION



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Floor jack locations

Approximate center of gravity

Frame contact hoist, twin post hoist or scissors jack (emergency) locations

Caution

- **Never use a jack at the lateral rod or rear suspension assembly.**
- **In order to prevent scarring the center member, place a piece of cloth on the jack's contact surface (to prevent corrosion caused by damage to the coating).**
- **Never attempt to position a floor jack on any part of the vehicle underbody.**
- **Do not attempt to raise one entire side of the vehicle by placing a jack midway between the front and rear wheels. To do so could result in permanent damage to the body.**

GENERAL DATA AND SPECIFICATIONS

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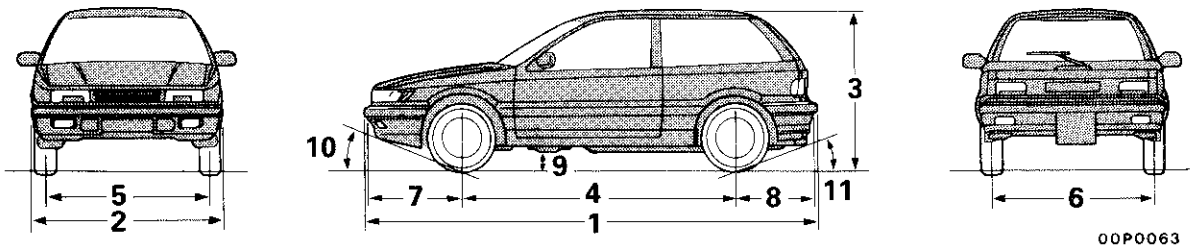
<Hatchback>



Items			C52AMFSEL2D/7D/3D	C52AMNMEL2D/7D/3D C52AMNDEL2D/7D/3D C52AMKDEL2D/7D/3D	C53AMNPTL2D/7D/3D
Vehicle dimensions mm (in.)					
Overall length		1	4,030 (158.7)	4,030 (158.7)	4,030 (158.7)
Overall width		2	1,665 (65.5)	1,670 (65.7)	1,670 (65.7)
Overall height		3	1,375 (54.1)	1,375 (54.1)	1,375 (54.1)
Wheel base		4	2,385 (93.9)	2,385 (93.9)	2,385 (93.9)
Tread	Front	5	1,430 (56.3)	1,430 (56.3)	1,430 (56.3)
	Rear	6	1,430 (56.3)	1,430 (56.3)	1,430 (56.3)
Overhang	Front	7	900 (35.4)	900 (35.4)	900 (35.4)
	Rear	8	745 (29.3)	745 (29.3)	745 (29.3)
Minimum running ground clearance mm (in.)		9	155 (6.1)	155 (6.1)	155 (6.1)
Angle of approach degrees		10	23.5°	23.5°	23.5°
Angle of departure degrees		11	25°	25°	25°
Vehicle weight kg (lbs.)					
Cub weights			996 (2,195)	998 (2,200) or *1 1,013 (2,233)	1,133 (2,497)
Gross vehicle weight rating			1,435 (3,163)	1,435 (3,163)	1,580 (3,483)
Gross axle weight rating					
Front			750 (1,653)	800 (1,763)	860 (1,895)
Rear			720 (1,587)	720 (1,587)	720 (1,587)
Seating capacity			5	5	5
Engine					
Model No.			4G15	4G15	4G61
Transaxle					
Model No.					
Manual transaxle			KM200	KM201	KM210
Automatic transaxle			–	KM171	–

NOTE
*1: <3-A/T>

Items	C52AMFSEL2D/7D/3D	C52AMNMEL2D/7D/3D C52AMNDEL2D/7D/3D C52AMKDEL2D/7D/3D	C53AMNPTL2D/7D/3D
Clutch Type	Dry-single disc & diaphragm spring	*2Dry-single disc & diaphragm spring	Dry-single disc & diaphragm spring
Chassis Tire Front suspension Type Rear suspension Type Brake Type Front Rear Steering Gear type Gear ratio Fuel tank Capacity liters (gals.)	145SR13 Independent strut 3-link torsion axle Disc Drum Rack and pinion ∞ 50 (13.2)	P155/80R13 Independent strut 3-link torsion axle Disc Drum Rack and pinion ∞ 50 (13.2)	P195/60R14 Independent strut 3-link torsion axle Disc Disc Rack and pinion ∞ 50 (13.2)

NOTE
*2: <M/T>

ENGINE SPECIFICATIONS

Items	4G15	4G61
Type	In-line SOHC	In-line DOHC
Number of cylinders	4	4
Bore mm (in.)	75.5 (2.97)	82.3 (3.24)
Stroke mm (in.)	82.0 (3.23)	75.0 (2.95)
Piston displacement cm^3 (CID)	1,468 (89.6)	1,595 (97.3)
Compression ratio	9.4	8.0
Firing order	1-3-4-2	1-3-4-2

TRANSAXLE SPECIFICATIONS

Items		KM200	KM201	KM210	KM171
Type		4-speed M/T	5-speed M/T	5-speed M/T	3-speed A/T
Gear ratio	1st	3.363	3.363	3.083	2.846
	2nd	1.947	1.947	1.833	1.581
	3rd	1.285	1.285	1.240	1.000
	4th	0.939	0.939	0.896	–
	5th	–	0.777	0.731	–
	Reverse	3.083	3.083	3.166	2.176
Final drive gear ratio		3.454	4.021	4.322	3.600

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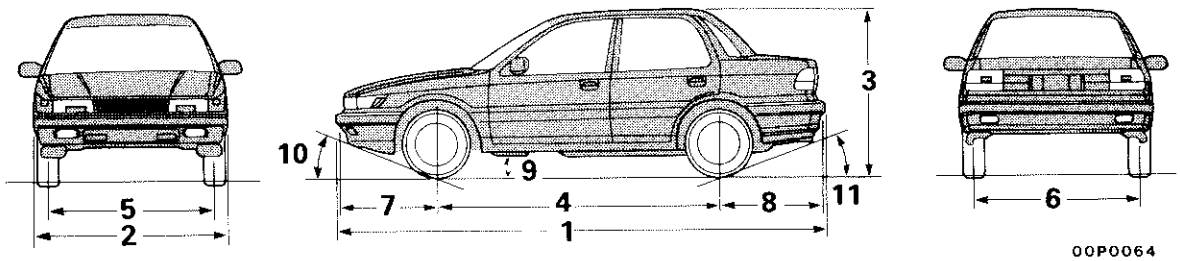


Items			C62ASNMEL2E/7E/3D C62ASKMEL2E/7E/3D C62ASNDEL2E/7E/3D C62ASKDEL2E/7E/3D	C62ASNJEL2E/7E/3D C62ASKJEL2E/7E/3D	C63ASNPML2E/7E/3D C63ASRPML2E/7E/3D
Vehicle dimensions mm (in.)					
Overall length		1	4,320 (170.1)	4,320 (170.1)	4,320 (170.1)
Overall width		2	1,670 (65.7)	1,670 (65.7)	1,670 (65.7)
Overall height		3	1,400 (55.1)	1,400 (55.1)	1,400 (55.1)
Wheel base		4	2,455 (96.7)	2,455 (96.7)	2,455 (96.7)
Tread	Front	5	1,430 (56.3)	1,430 (56.3)	1,430 (56.3)
	Rear	6	1,430 (56.3)	1,430 (56.3)	1,430 (56.3)
Overhang	Front	7	900 (35.4)	900 (35.4)	900 (35.4)
	Rear	8	965 (38.0)	965 (38.0)	965 (38.0)
Minimum running ground clearance mm (in.)		9	155 (6.1)	155 (6.1)	155 (6.1)
Angle of approach degrees		10	23.5°	23.5°	23.5°
Angle of departure degrees		11	21°	21°	21°
Vehicle weight kg (lbs.)					
Cub weights			1,027 (2,264) or *1 1,042 (2,297) or *2 1,029 (2,268) or *3 1,044 (2,301)	1,053 (2,321) or *4 1,068 (2,354)	1,142 (2,517) or *5 1,162 (2,561)
Gross vehicle weight rating			1,480 (3,262)	1,480 (3,262)	1,580 (3,483)
Gross axle weight rating					
Front			800 (1,763)	800 (1,763)	860 (1,895)
Rear			720 (1,587)	720 (1,587)	720 (1,587)
Seating capacity			5	5	5
Engine Model No.			4G15	4G15	4G61
Transaxle Model No.					
Manual transaxle			KM201	KM201	KM206
Automatic transaxle			KM171	KM171	KM176

NOTE
*1: C62ASKMEL2E/7E/3D
*2: C62ASNDEL2E/7E/3D
*3: C62ASKDEL2E/7E/3D
*4: <3-AT>
*5: <4-AT>

Items	C62ASNMEL2E/7E/3D C62ASKMEL2E/7E/3D C62ASNDEL2E/7E/3D C62ASKDEL2E/7E/3D	C62ASNJEL2E/7E/3D C62ASKJEL2E/7E/3D	C63ASNPML2E/7E/3D C63ASRPML2E/7E/3D
Clutch Type	*6Dry-single disc & diaphragm spring	*6Dry-single disc & diaphragm spring	*6Dry-single disc & diaphragm spring
Chassis Tire	P155/80R13	P175/70R13	P195/60R14
Front suspension Type	Independent strut	Independent strut	Independent strut
Rear suspension Type	3-link torsion axle	3-link torsion axle	3-link torsion axle
Brake Type Front	Disc	Disc	Disc
Rear	Drum	Drum	Disc
Steering Gear type	Rack and pinion	Rack and pinion	Rack and pinion
Gear ratio	∞	∞	∞
Fuel tank Capacity liters (gals.)	50 (13.2)	50 (13.2)	50 (13.2)

NOTE
*6: <M/T>

ENGINE SPECIFICATIONS

Items	4G15	4G61
Type	In-line SOHC	In-line DOHC
Number of cylinders	4	4
Bore mm (in.)	75.5 (2.97)	82.3 (3.24)
Stroke mm (in.)	82.0 (3.23)	75.0 (2.95)
Piston displacement cm^3 (CID)	1,468 (89.6)	1,595 (97.3)
Compression ratio	9.4	8.0
Firing order	1-3-4-2	1-3-4-2

TRANSAXLE SPECIFICATIONS

Items		KM201	KM206	KM171	KM176
Type		5-speed M/T	5-speed M/T	3-speed A/T	4-speed A/T
Gear ratio	1st	3.363	3.083	2.846	2.846
	2nd	1.947	1.947	1.581	1.581
	3rd	1.285	1.285	1.000	1.000
	4th	0.939	0.939	–	0.685
	5th	0.777	0.777	–	–
	Reverse	3.083	3.083	2.176	2.176
Final drive gear ratio		3.363	4.592	3.600	4.062

TIGHTENING TORQUE

N00JA-

Items	Head mark 4		Head mark 7	
	Nm	ft.lbs.	Nm	ft.lbs.
Thread for general purposes (size x pitch) mm				
6 x 1.0	3.0 – 3.9	2.2 – 2.9	4.9 – 7.8	3.6 – 5.8
8 x 1.25	7.9 – 12	5.8 – 8.7	13 – 19	9.4 – 14
10 x 1.25	16 – 23	12 – 17	27 – 39	20 – 29
12 x 1.25	29 – 43	21 – 32	47 – 72	35 – 53
14 x 1.5	48 – 70	35 – 52	77 – 110	57 – 85
16 x 1.5	67 – 100	51 – 77	130 – 160	90 – 120
18 x 1.5	100 – 150	74 – 110	180 – 230	130 – 170
20 x 1.5	150 – 190	110 – 140	260 – 320	190 – 240
22 x 1.5	200 – 260	150 – 190	340 – 430	250 – 320
24 x 1.5	260 – 320	190 – 240	420 – 550	310 – 410

Items	Nm	ft.lbs.	Remarks
Taper thread for pipes (size)			
PT 1/8	7.9 – 12	5.8 – 8.7	Internal thread: Aluminum
	16 – 19	12 – 14	Internal thread: Cast iron
PT 1/4	19 – 30	14 – 22	Internal thread: Aluminum
	34 – 45	25 – 33	Internal thread: Cast iron
PT 3/8	39 – 54	29 – 40	Internal thread: Aluminum
	58 – 73	43 – 54	Internal thread: Cast iron
Taper thread for dry sealed pipes (size)			
NPTF 1/16	4.9 – 7.8	3.6 – 5.8	Internal thread: Aluminum
	7.9 – 12	5.8 – 8.7	Internal thread: Cast iron
NPTF 1/8	7.9 – 12	5.8 – 8.7	Internal thread: Aluminum
	16 – 19	12 – 14	Internal thread: Cast iron
NPTF 1/4	19 – 30	14 – 22	Internal thread: Aluminum
	34 – 45	25 – 33	Internal thread: Cast iron

ELECTRICAL

CONTENTS

N08AA--

ELECTRICAL SYSTEM PARTS LOCATION

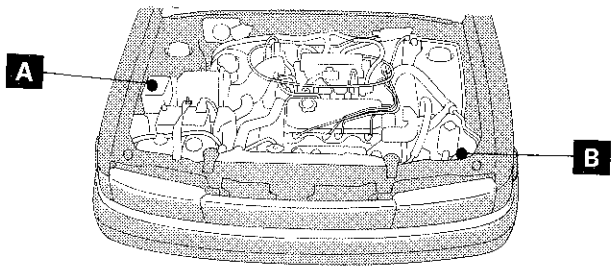
N08BA--

RELAY

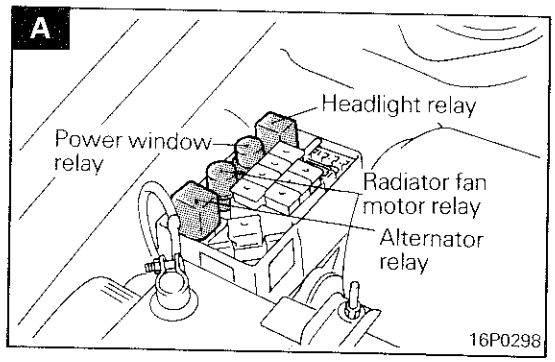
Name	Symbol	Name	Symbol
Air conditioner compressor relay	B	Heater relay	H
Alternator relay	A	Intermittent wiper relay	C
Automatic seatbelt motor relay <Vehicles for U.S.>	I	MPI control relay	E
Condenser fan motor control relay	B	Power window relay	A
Condenser fan motor relay	B	Radiator fan motor relay	A
Defogger relay	F	Seatbelt warning timer <Vehicles for Canada>	D
Defogger timer	H	Starter relay	E
Door lock relay	G	Turn signal and hazard flasher unit	H
Headlight relay	A		

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

Engine compartment



16P0362



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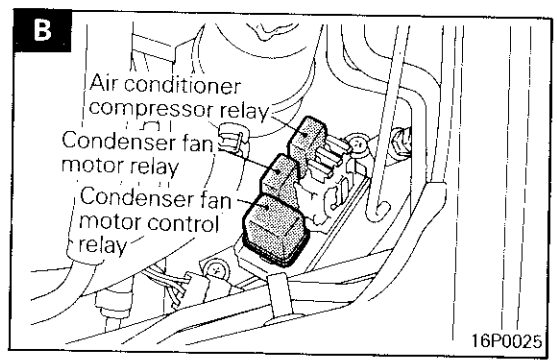
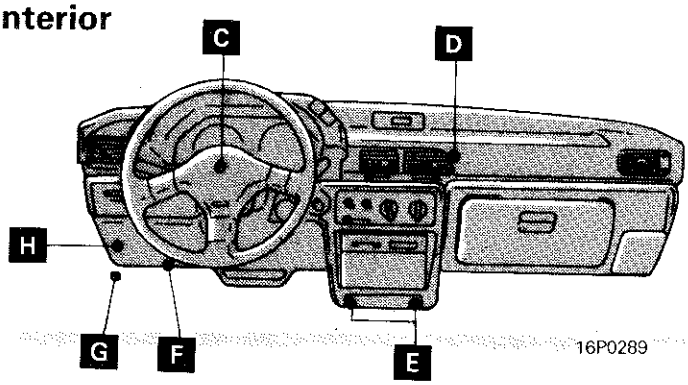


16P0025

Interior



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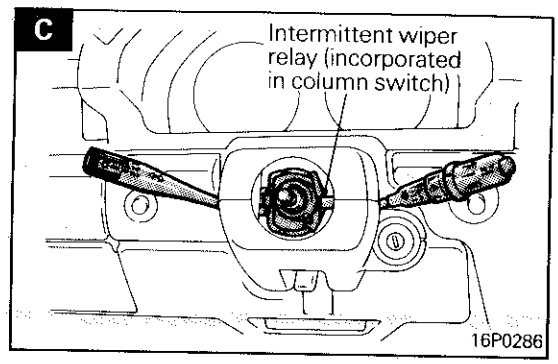

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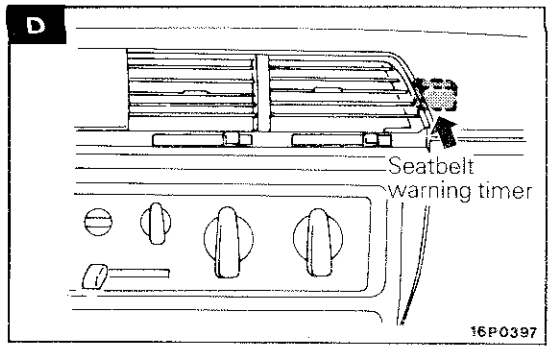

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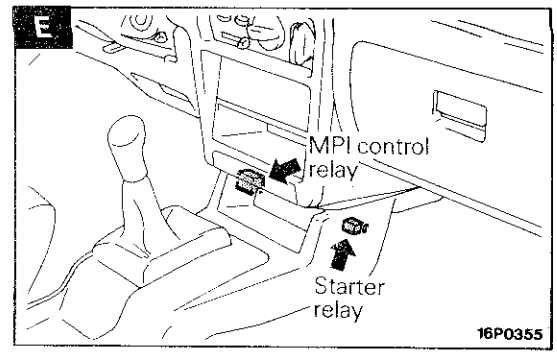

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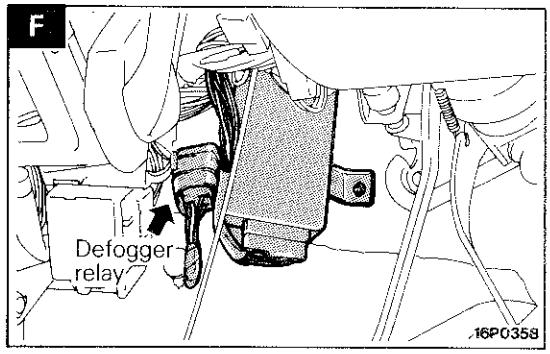

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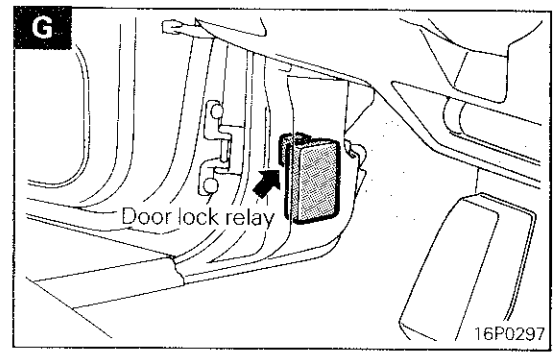

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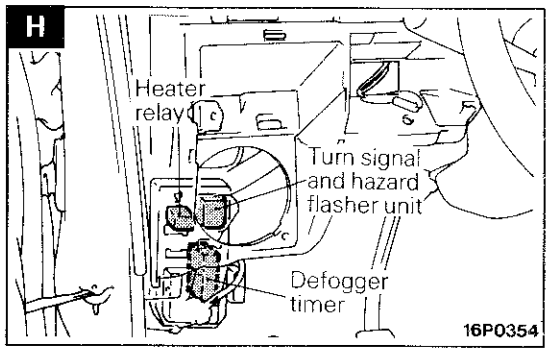
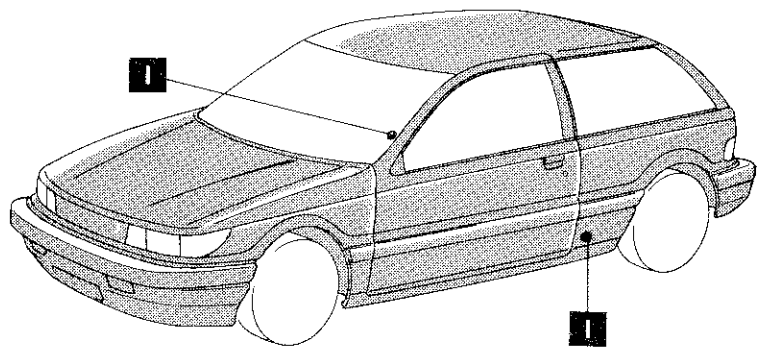
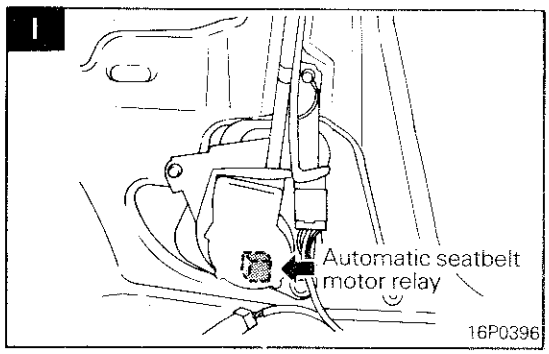


Interior



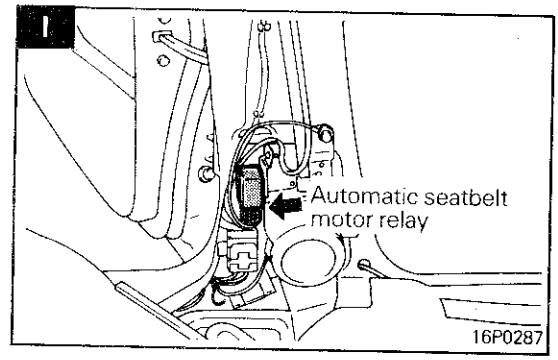
Hatchback

I



Sedan

I

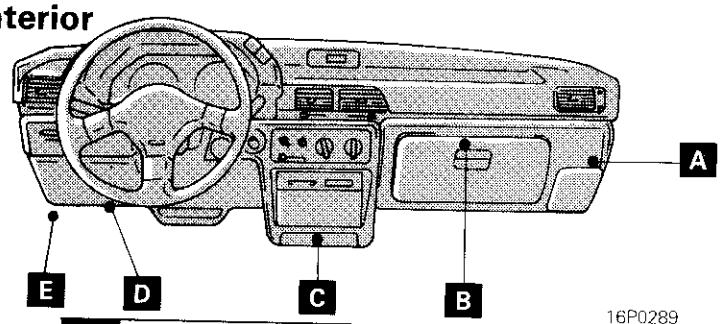


CONTROL UNIT

Name	Symbol	Name	Symbol
3A/T control unit	C	Automatic seatbelt control unit <Vehicles for U.S.>	F
4A/T control unit	C	Door lock control unit	E
Auto compressor control unit	B	MPI control unit	A
Auto-cruise control unit	D		

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

Interior



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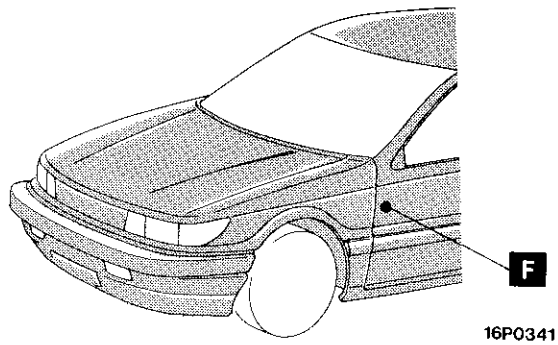

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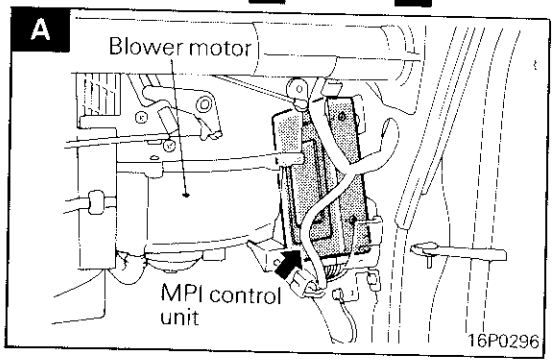
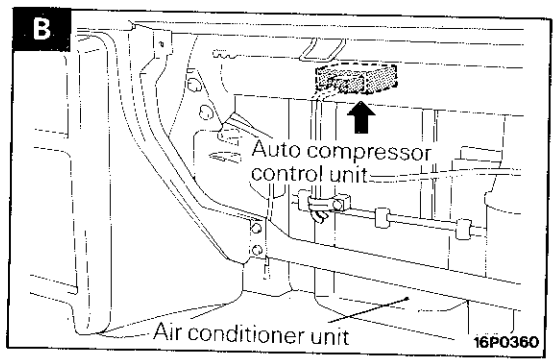
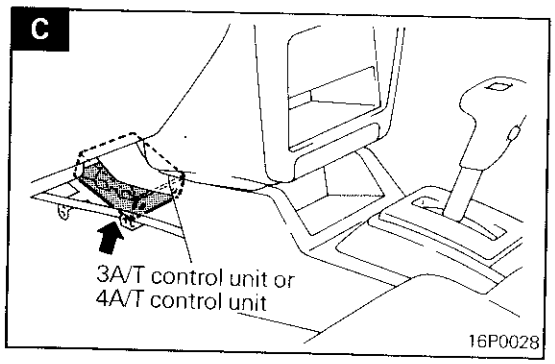
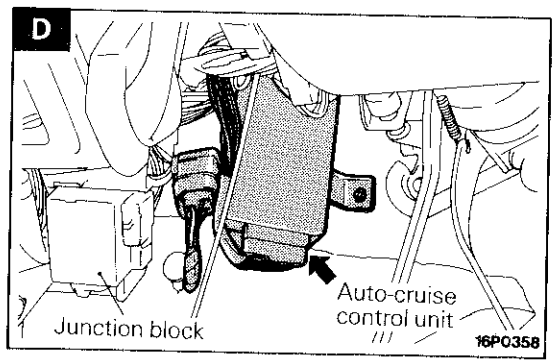
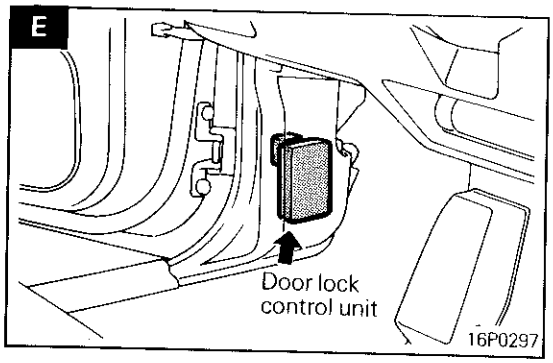
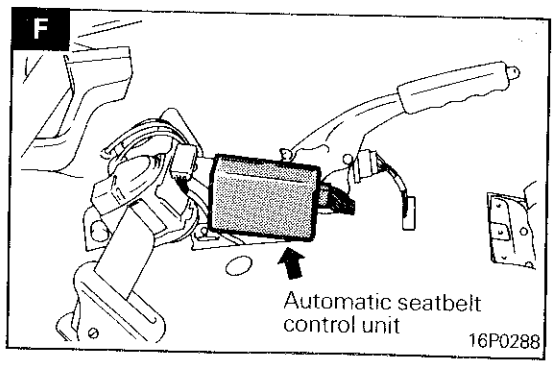












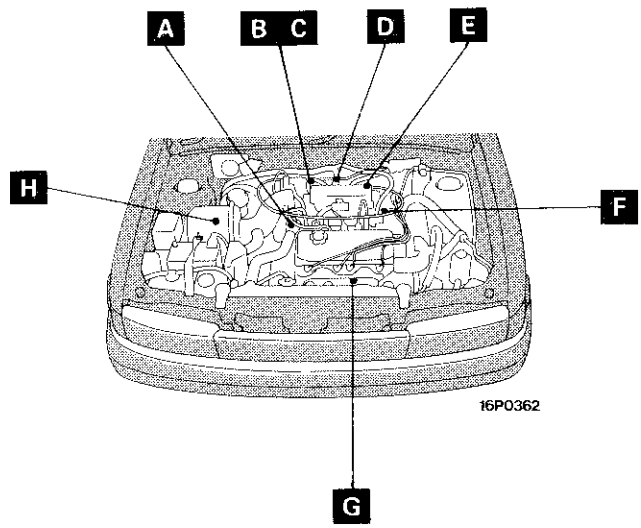
SENSOR

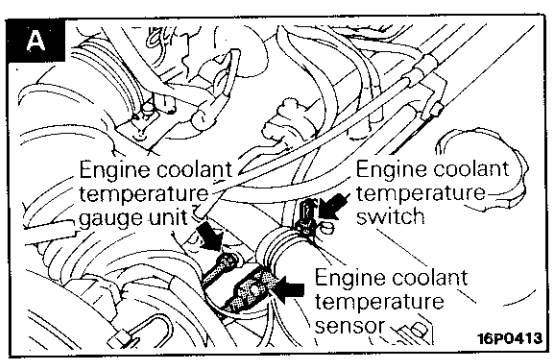
MPI (1.5L Engine)

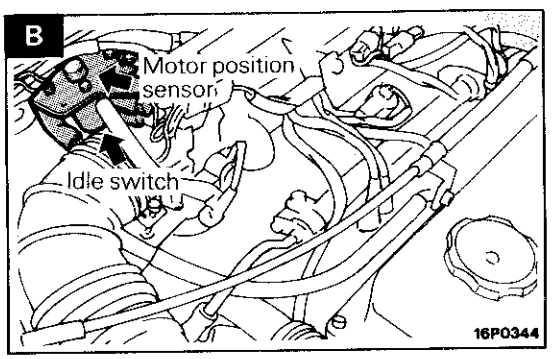
Name	Symbol	Name	Symbol
Air-flow sensor (incorporated within barometric-pressure sensor and intake air temperature sensor)	H	Engine coolant temperature switch <3A/T>	A
Air inlet sensor	J	Idle switch	B
Air thermo sensor	J	Motor position sensor	B
Crank angle sensor and top dead center sensor	F	Oxygen sensor	G
EGR temperature sensor <Vehicles for California>	D	Refrigerant temperature sensor	E
Engine coolant temperature gauge unit	A	Throttle position sensor	C
Engine coolant temperature sensor	A	Vehicle speed sensor (reed switch)	I

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

Engine compartment







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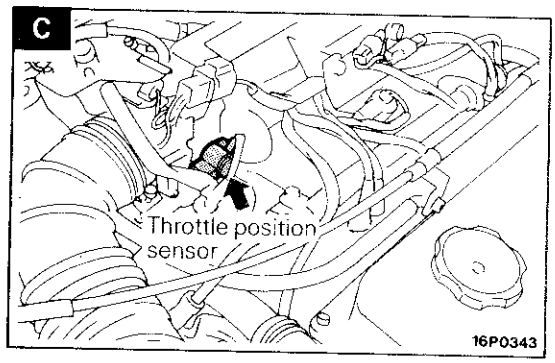

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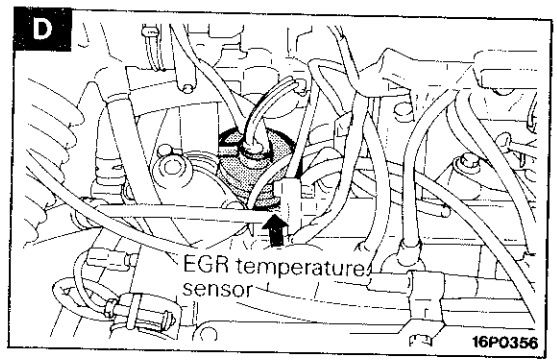

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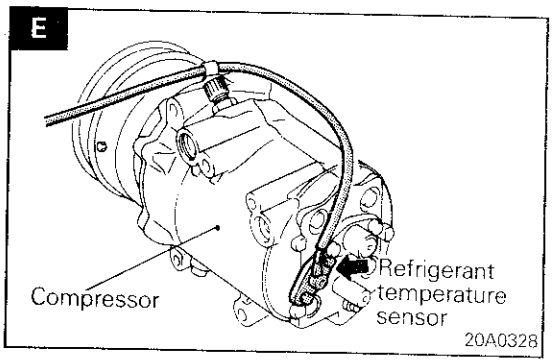

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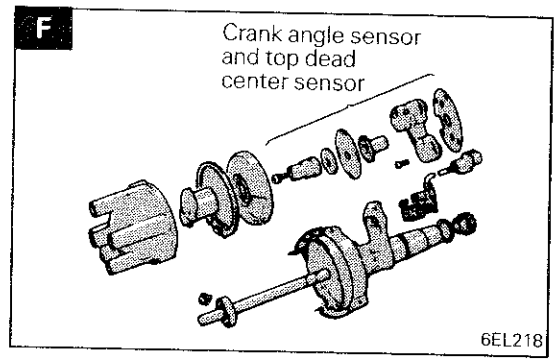

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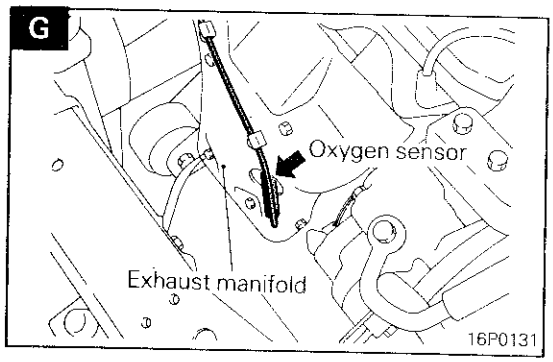

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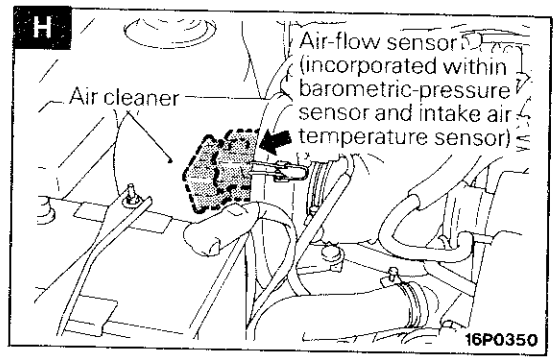
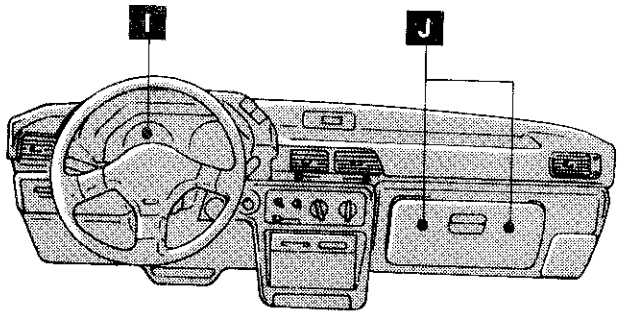


Interior

I J



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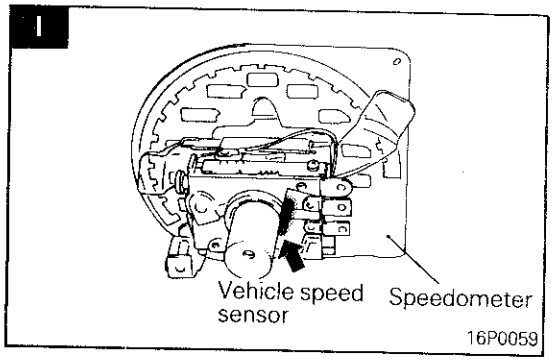

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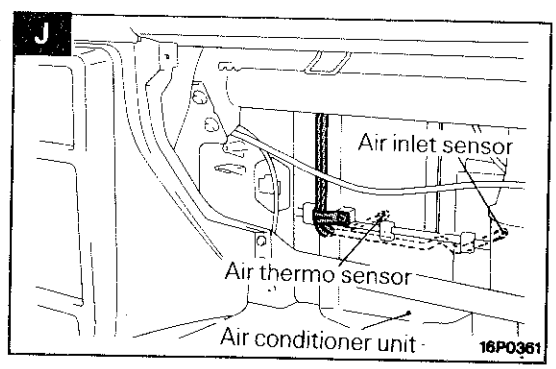
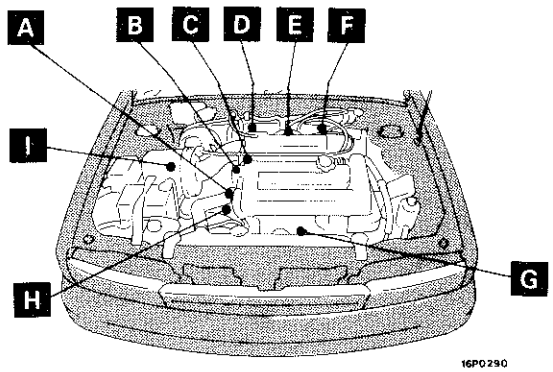


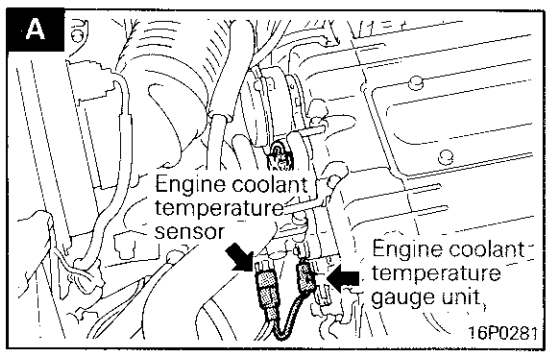
MPI (1.6L Engine)

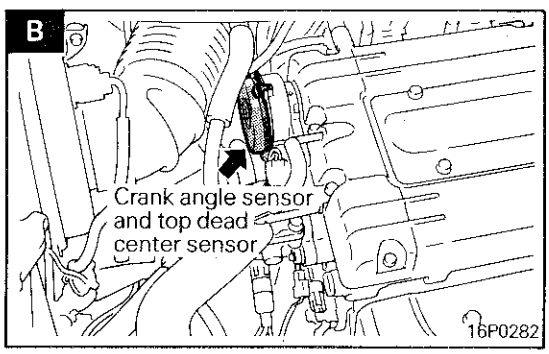
Name	Symbol	Name	Symbol
Air-flow sensor (incorporated within barometric-pressure sensor and intake air temperature sensor)	I	Engine coolant temperature gauge unit	A
Air inlet sensor	K	Engine coolant temperature sensor	A
Air thermo sensor	K	Idle switch	C
Automatic transaxle fluid temperature sensor <4A/T>	H	Oxygen sensor	G
Crank angle sensor and top dead center sensor	B	Refrigerant temperature sensor	F
Detonation sensor <T/C>	E	Throttle position sensor	C
EGR temperature sensor <Vehicles for California>	D	Vehicle speed sensor (reed switch)	J

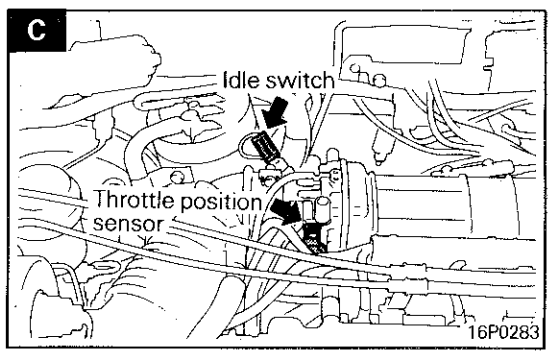
NOTE
The "Name" column is arranged in alphabetical order.

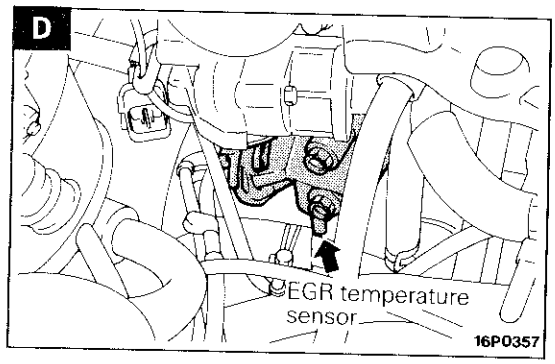
Engine compartment

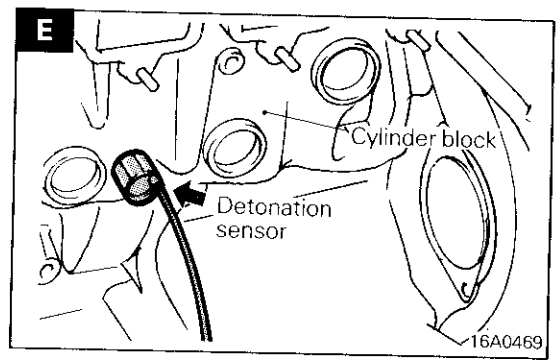


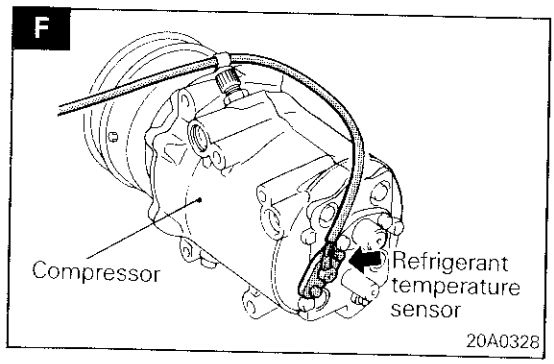


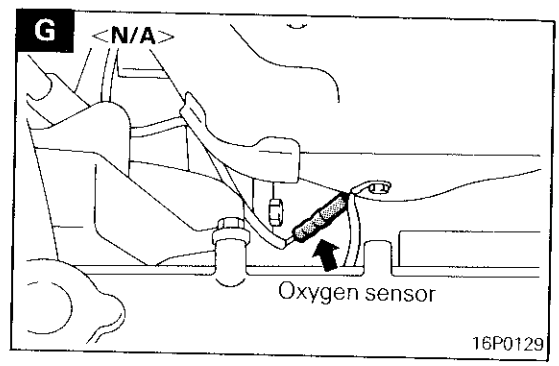


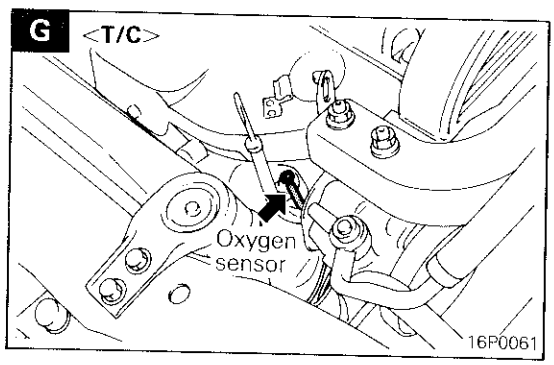


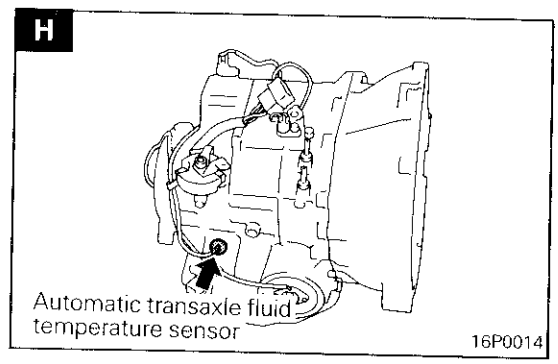

D
EGR temperature sensor
16P0357

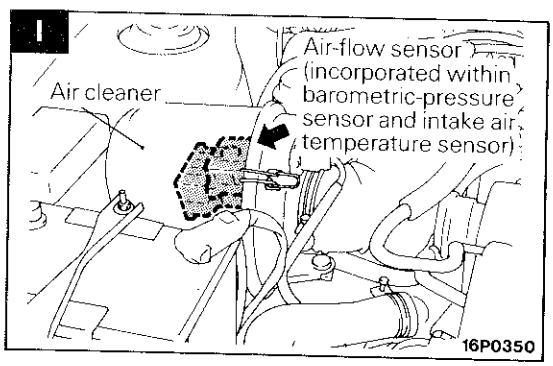

E
Cylinder block
Detonation sensor
16A0469


F
Compressor
Refrigerant temperature sensor
20A0328

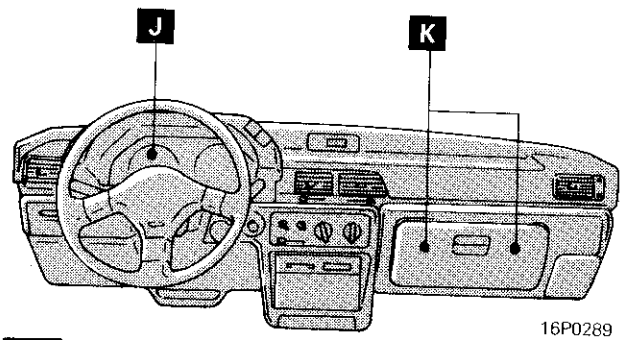

G <N/A>
Oxygen sensor
16P0129

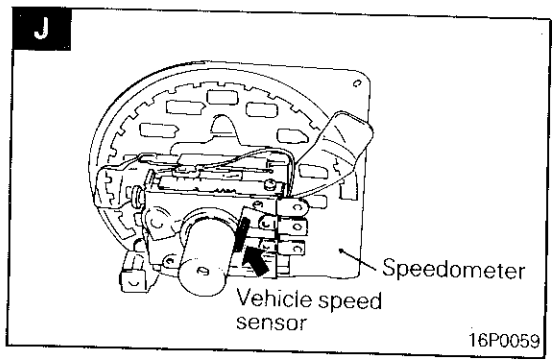

G <T/C>
Oxygen sensor
16P0061

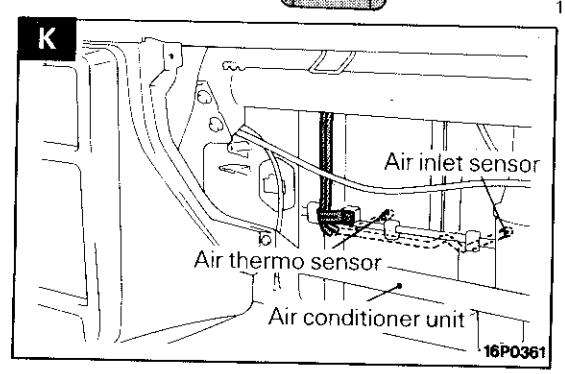

H
Automatic transaxle fluid temperature sensor
16P0014


I
Air cleaner
Air-flow sensor (incorporated within barometric-pressure sensor and intake air temperature sensor)
16P0350

Interior


J
K
16P0289


J
Speedometer
Vehicle speed sensor
16P0059

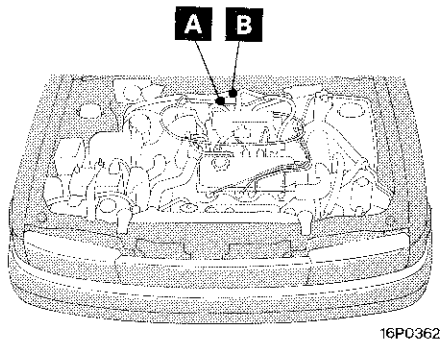

K
Air inlet sensor
Air thermo sensor
Air conditioner unit
16P0361

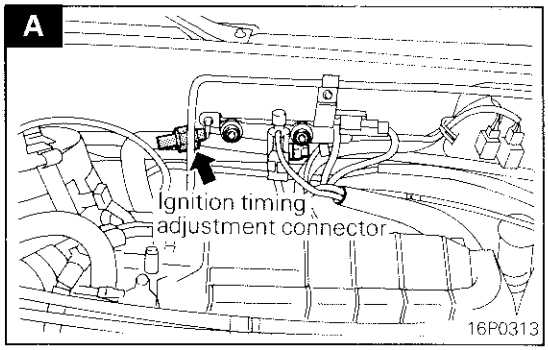
INSPECTION TERMINAL

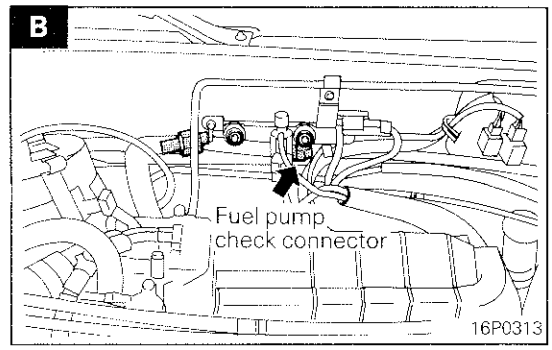
Name	Symbol	Name	Symbol
Fuel pump check connector	B	Oxygen sensor check connector<1.6L Engine>	D
Ignition timing adjustment connector	A	Self-diagnosis connector	C

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

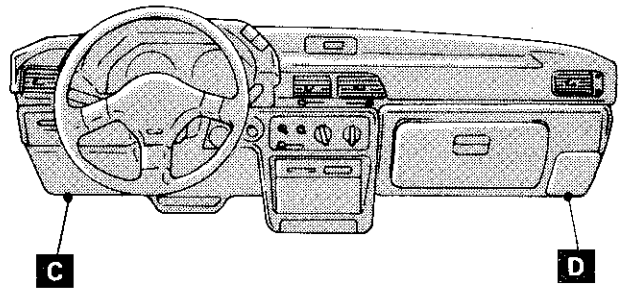
Engine compartment

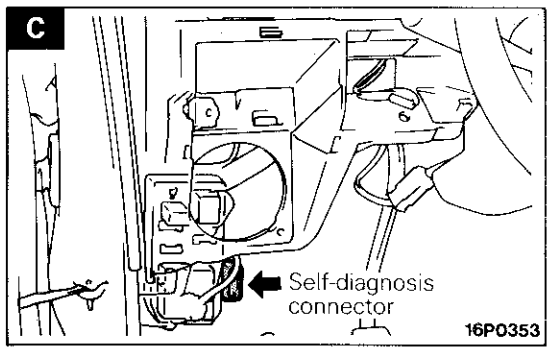


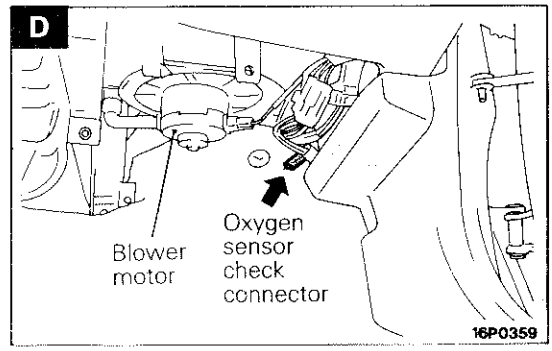




Interior





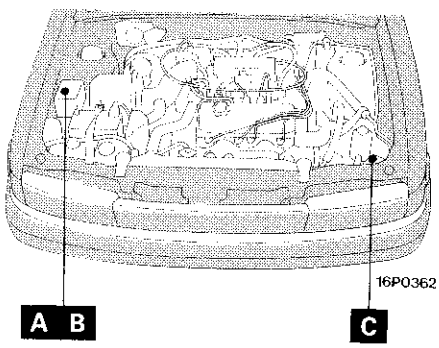


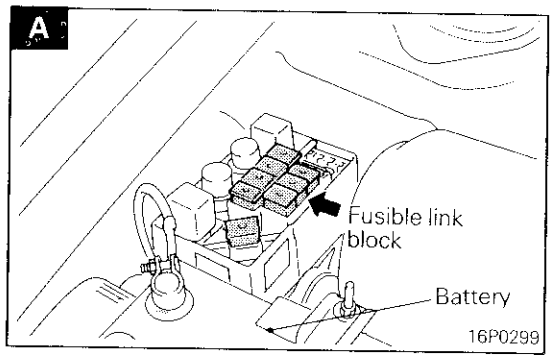
FUSIBLE LINK · FUSE

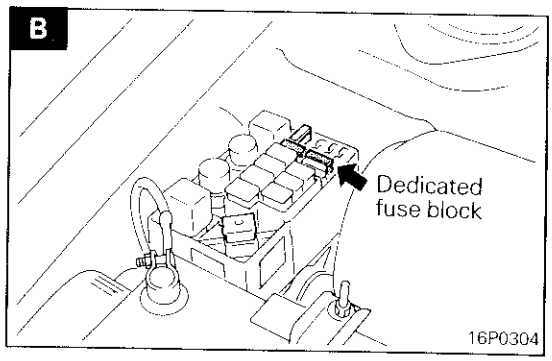
Name	Symbol	Name	Symbol
Dedicated fuse block	B	Fusible link block	A
Dedicated fuse block (air conditioner)	C	Multi-purpose fuse block	D

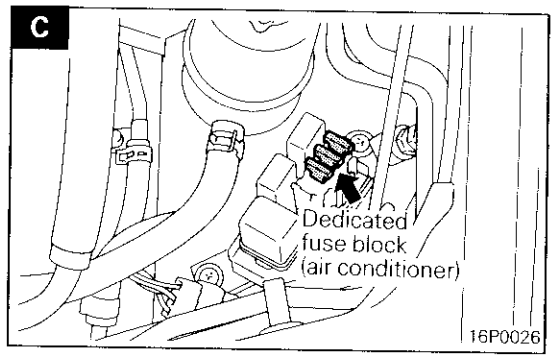
NOTE
The "Name" column is arranged in alphabetical order.

Engine compartment

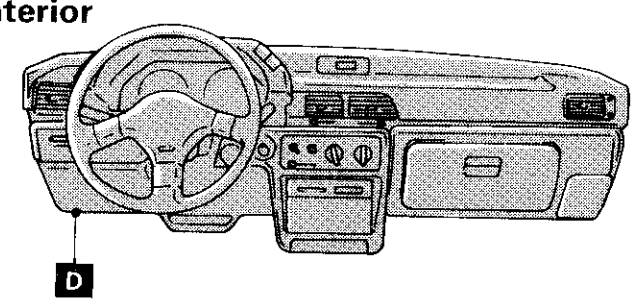


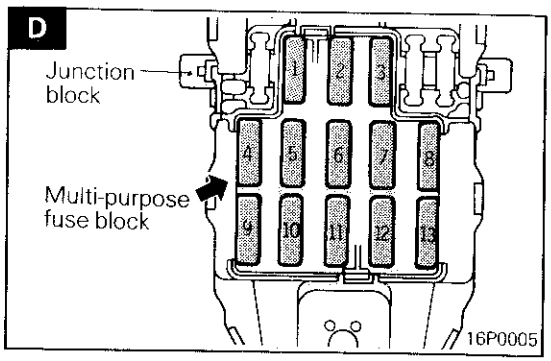






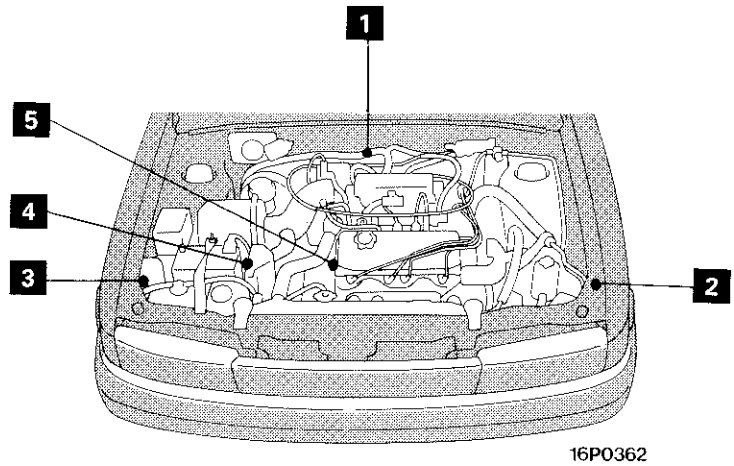
Interior





GROUNDING

Engine compartment



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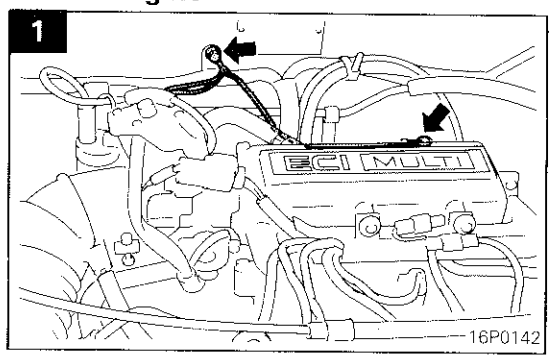

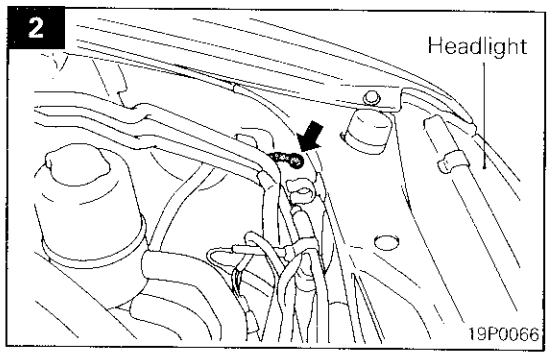

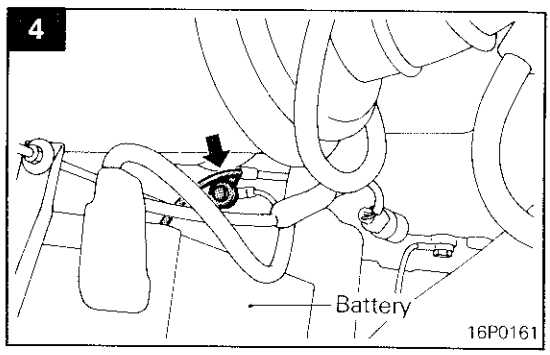

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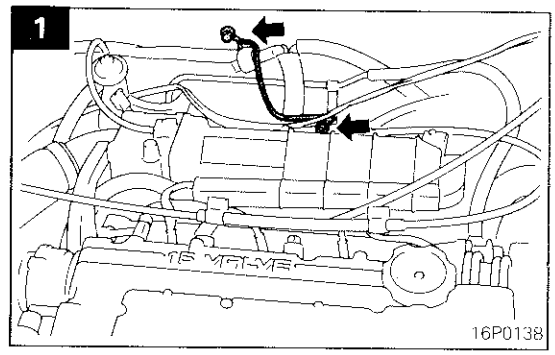
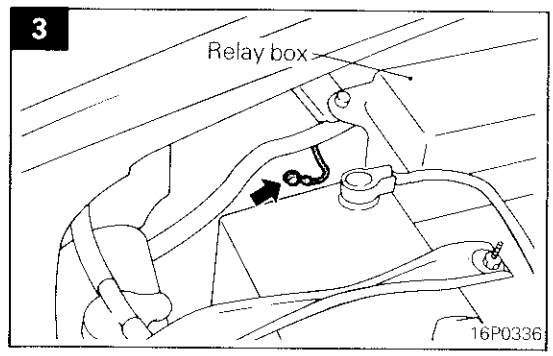
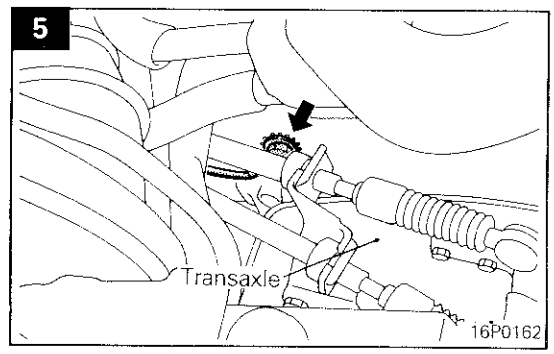
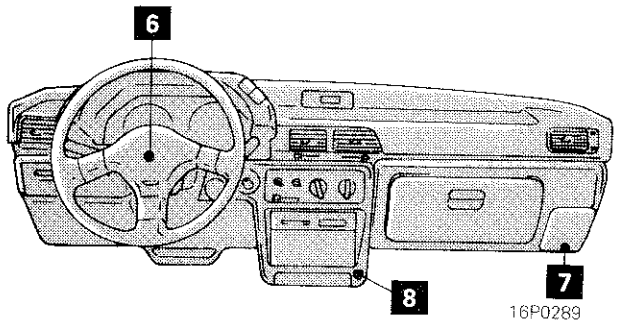
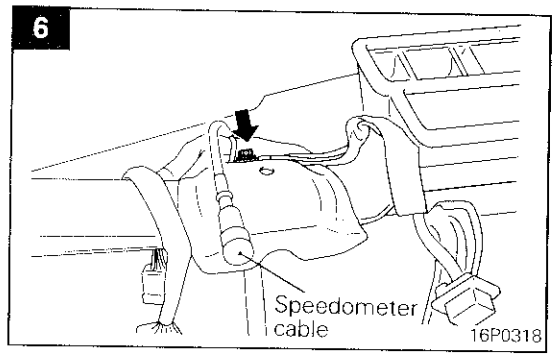


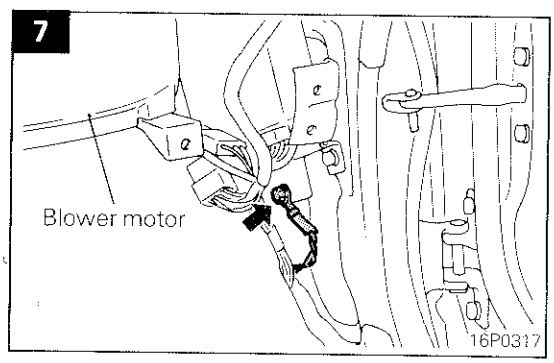


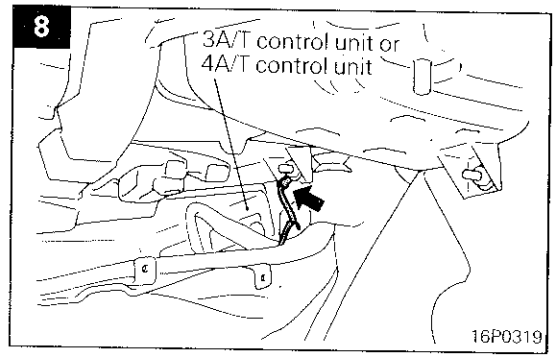


Instrument panel

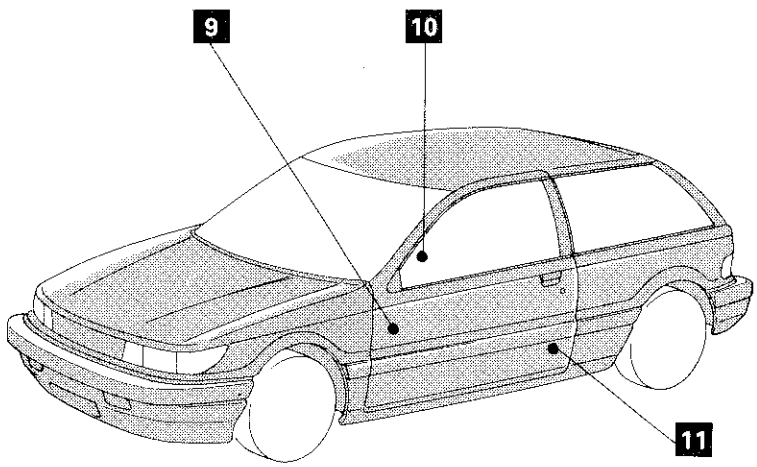






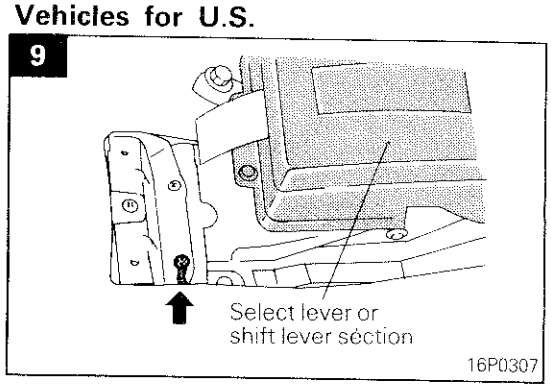


Floor and center pillar

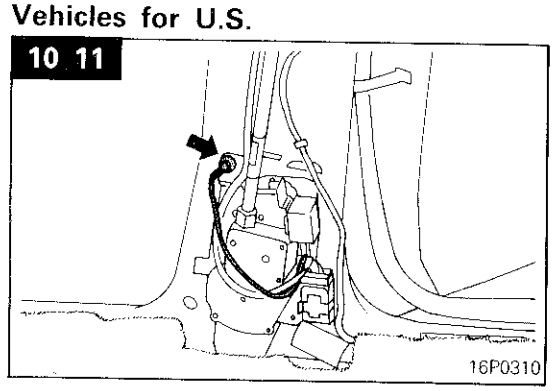


16P0341

Vehicles for U.S.

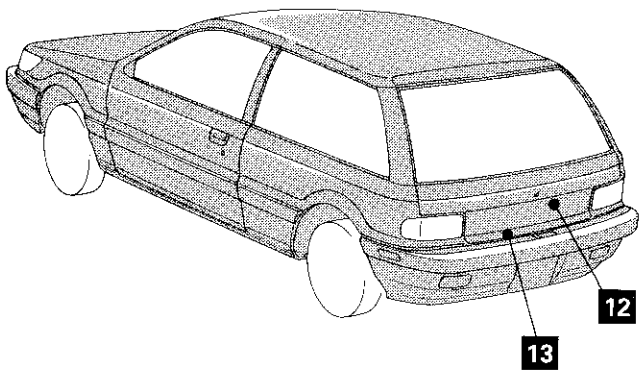


Vehicles for U.S.



Luggage compartment

<Hatchback>



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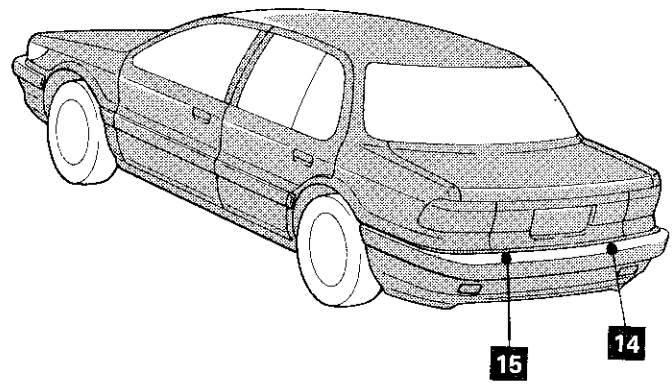

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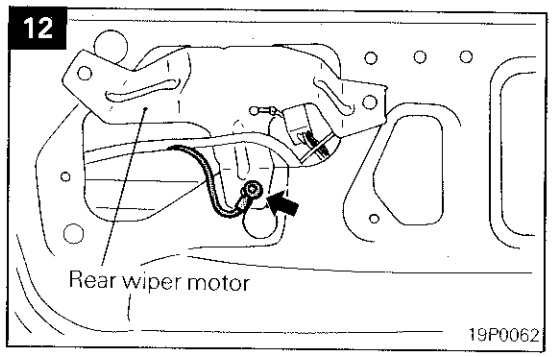
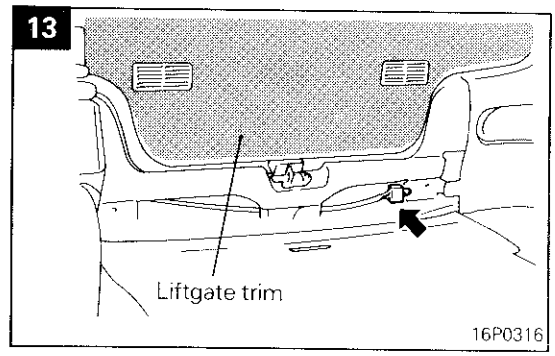
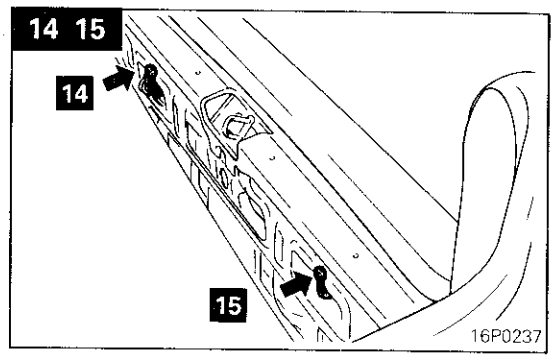
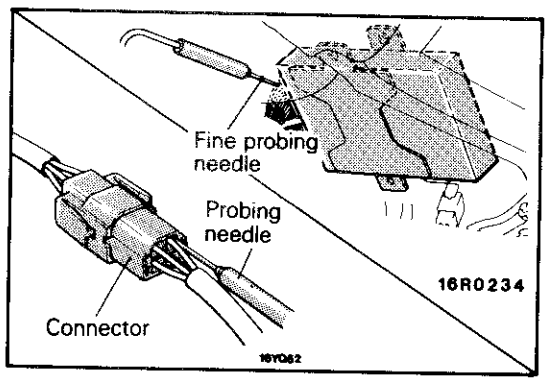








INSPECTION OF HARNESS CONNECTOR

N08CAAA

CONTINUITY AND VOLTAGE TEST FOR CONNECTOR

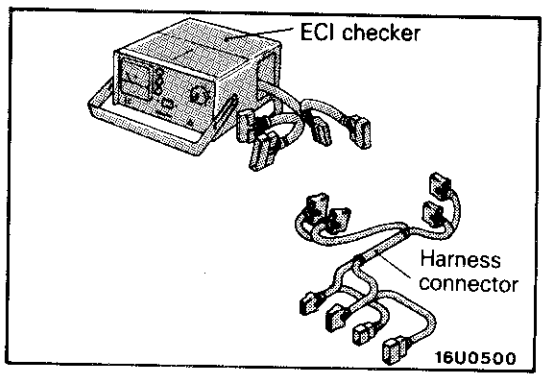
Following procedures shall be followed for testing continuity and voltage at connector in order to prevent improper contact and deterioration of waterproofing in connector.

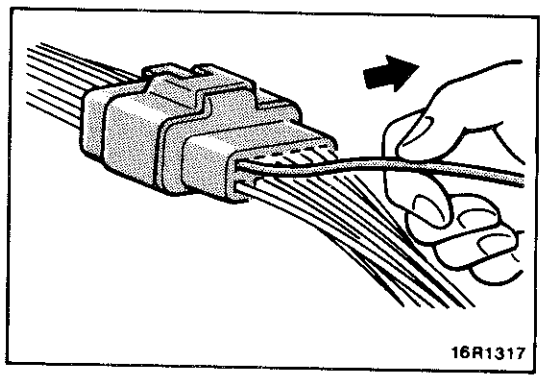
CONVENTIONAL (NON-WATERPROOF) CONNECTOR

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 deteriorate waterproofing and cause rusting. To inspect the energized circuit, use the ECI checker.



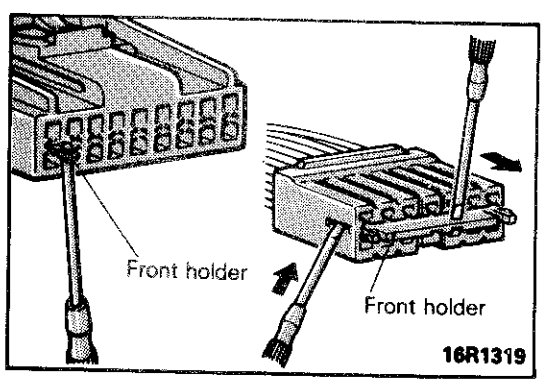


CHECK FOR IMPROPER ENGAGEMENT OF TERMINAL

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

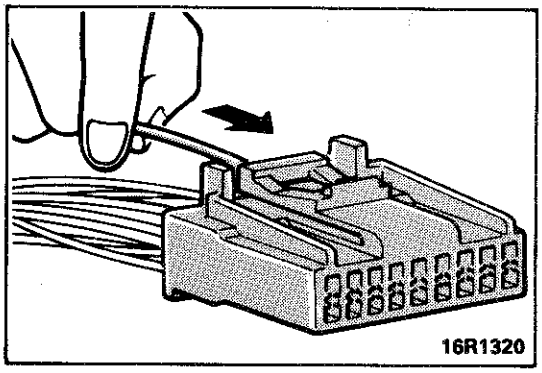
ENGAGING AND DISENGAGING OF CONNECTOR TERMINAL

Connectors which are loose shall be rectified by removing the female terminal from connector housing and raising its lance to establish a more secure engagement. Removal of connector terminal used for ECI and 4 A/T control circuit shall be done in the following manner.

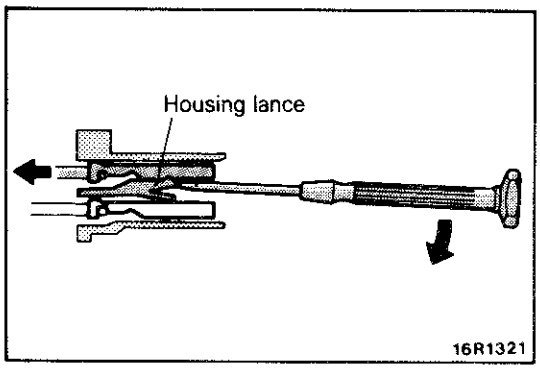


COMPUTER CONNECTOR

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

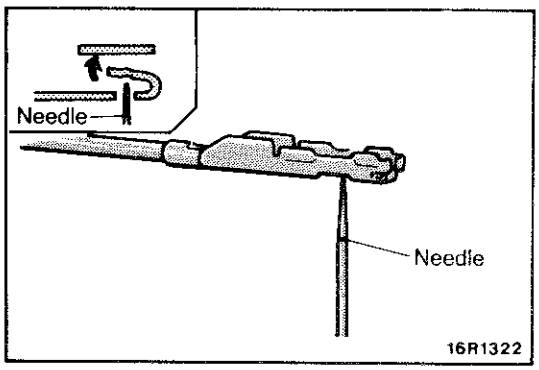


(2) Insert harness of terminal to be rectified deep into connector from harness side and hold it there.

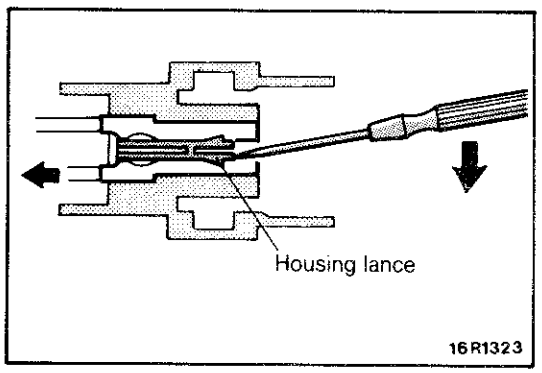


(3) Insert tip of screwdriver [1.4 mm (.06 in.) width] into connector in a manner as shown in the figure, raise housing lance slightly with it and pull out harness.

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

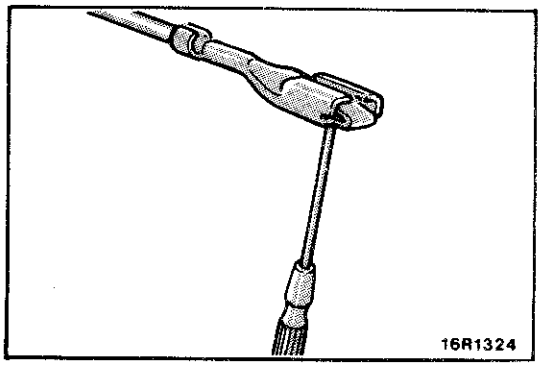


(4) Insert needle through a hole provided on terminal and raise contact point of male terminal.

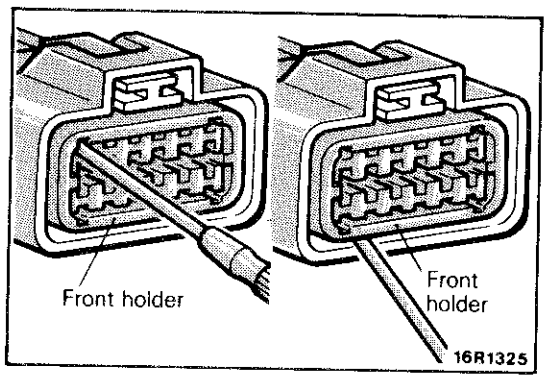


ROUND WATERPROOF CONNECTOR

(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.

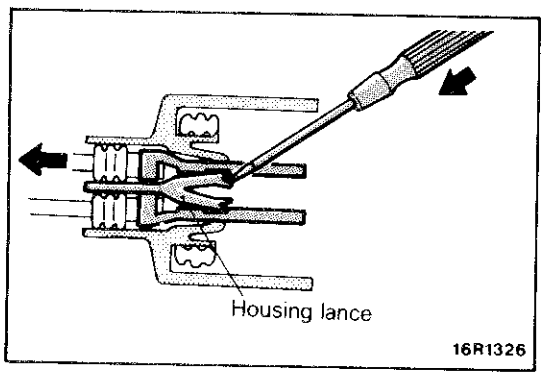


(3) Insert screwdriver through a hole provided on terminal and raise contact point of male terminal.

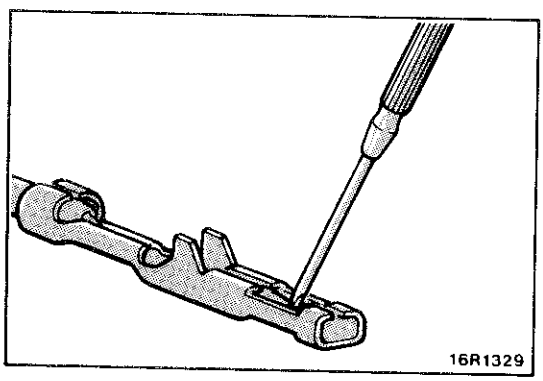


RECTANGULAR WATERPROOF CONNECTOR

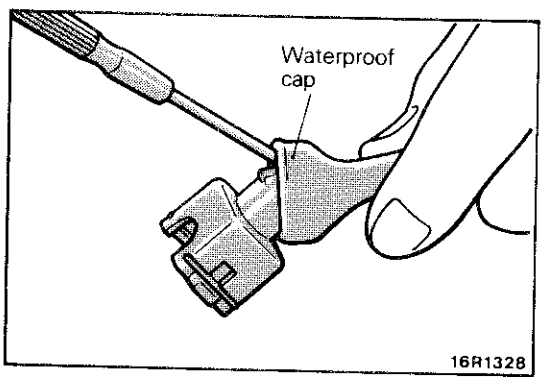
(1) Disengage front holder by using a screwdriver and remove it.



(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 drive to suit the size.

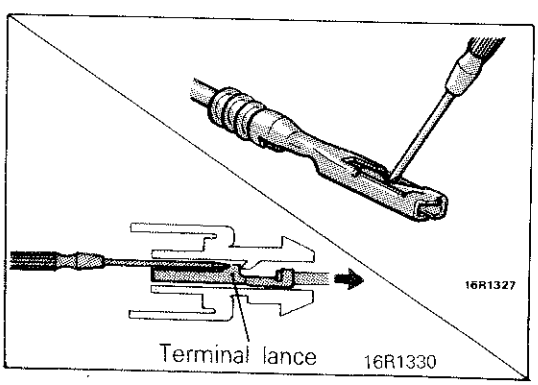


(3) Press contact point of male terminal down by holding a screwdriver [1.4 mm (.06 in.) width] in a manner as shown in the figure.



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.

WIRING HARNESS

TROUBLESHOOTING

N08DAAB

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.

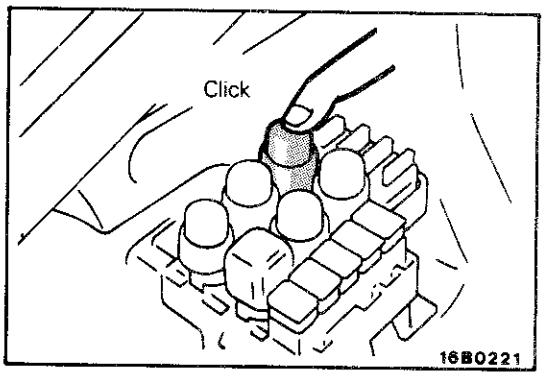
1 Observation of Problem Symptoms	Observe the symptom carefully. Check if there are also other problems.
2 Determination of Probable Causes	In determining the probable causes, it is necessary to check the wiring diagram to understand the circuit as a system. Knowledge of switches, relays and other parts 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.

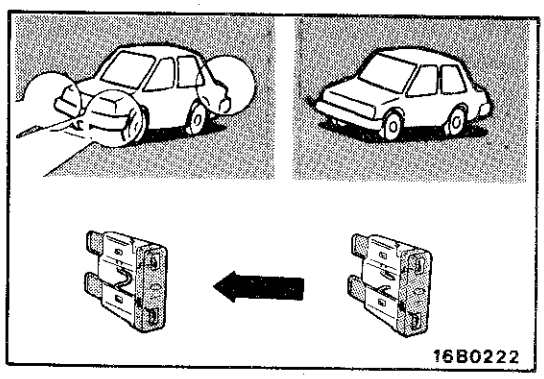
NOTE
Components of ECI, ETACS, ECS, etc. with ECU do not include 3 and 4 above. For this information, refer to a manual which includes details of these components.



INSPECTION

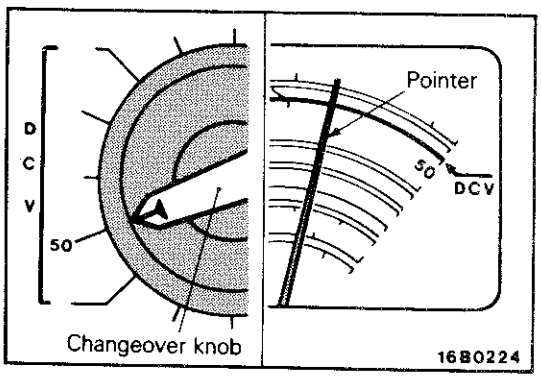
1. Visual and aural checks

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.



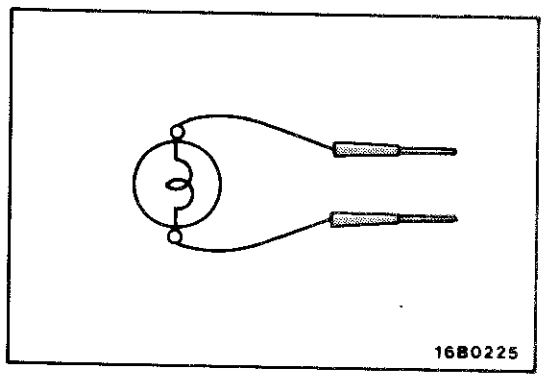
2. Simple checks

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.

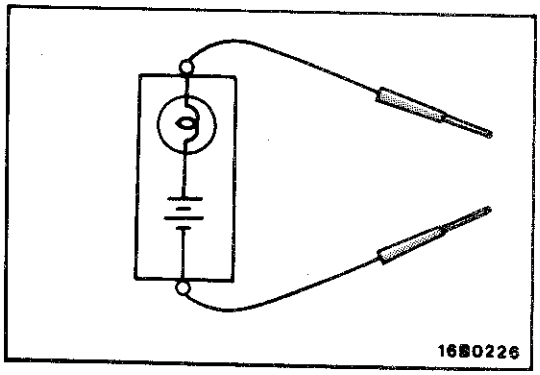


INSPECTION INSTRUMENTS

In inspection, make use of the following instruments.

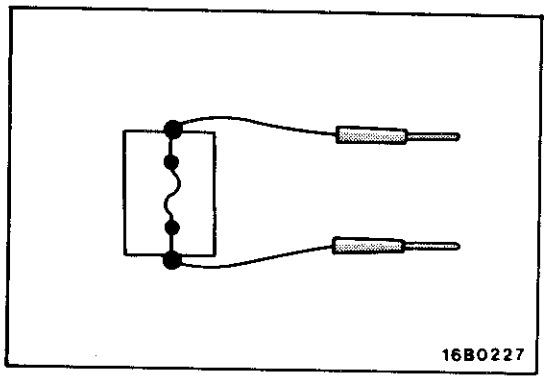
1. Test lights

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



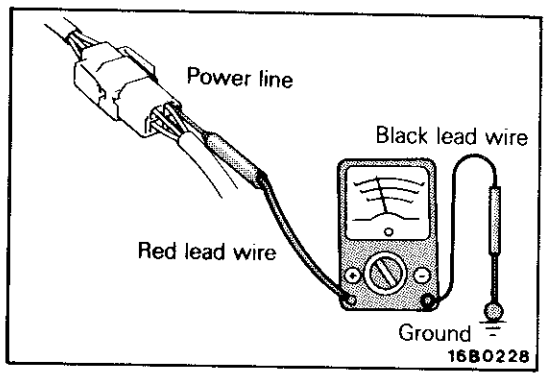
2. Self-power test light

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



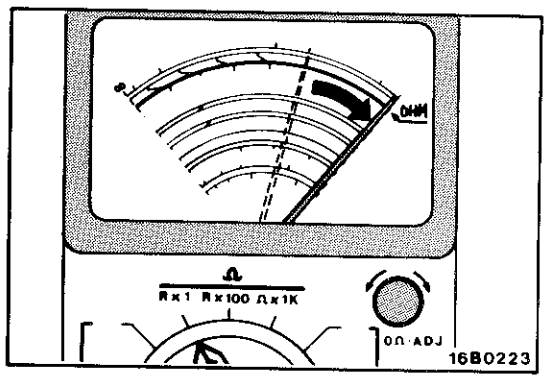
3. Jumper wire

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



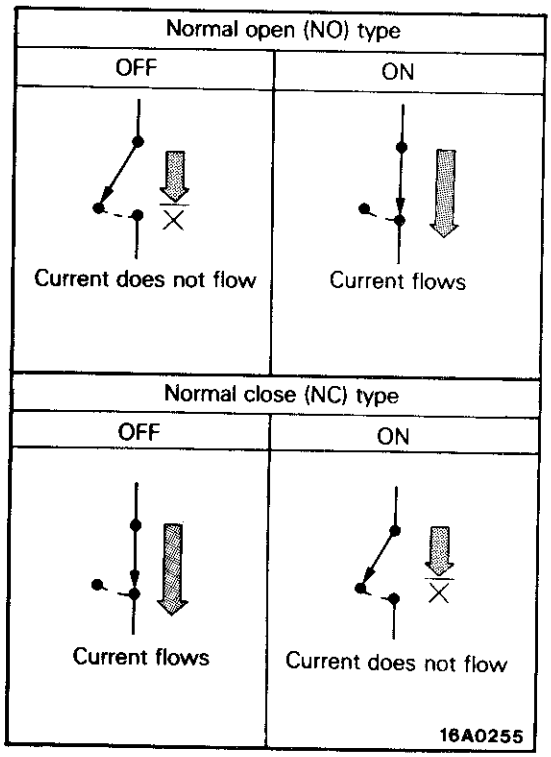
4. Voltmeter

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.

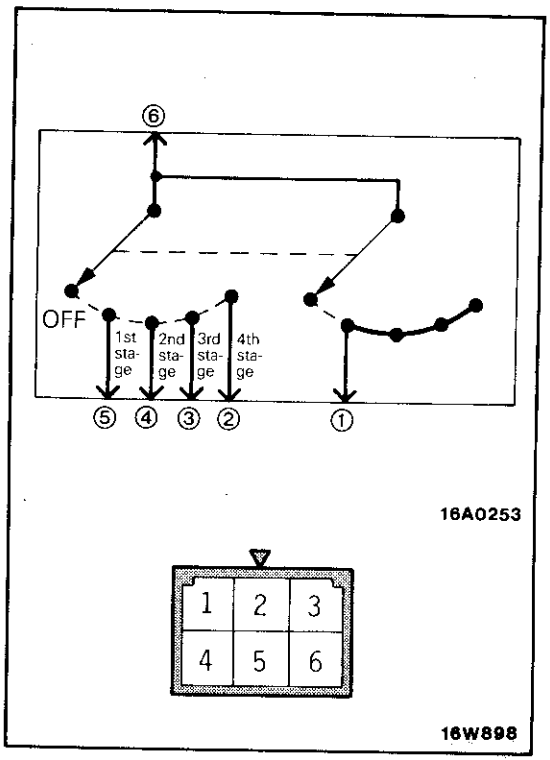


CHECKING SWITCHES

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.

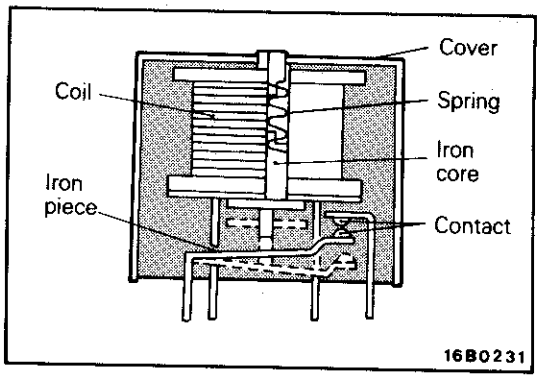


2. SWITCH CONNECTION

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

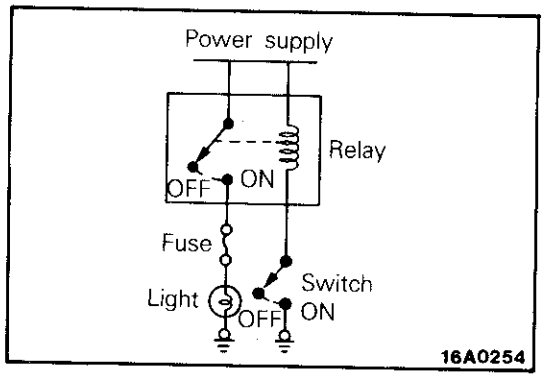
Position \ Terminal No.	1	2	3	4	5	6
OFF						
1st stage	○				○	○
2nd stage	○			○		○
3rd stage	○		○			○
4th stage	○	○				○

NOTE
○—○ denotes continuity between terminals.

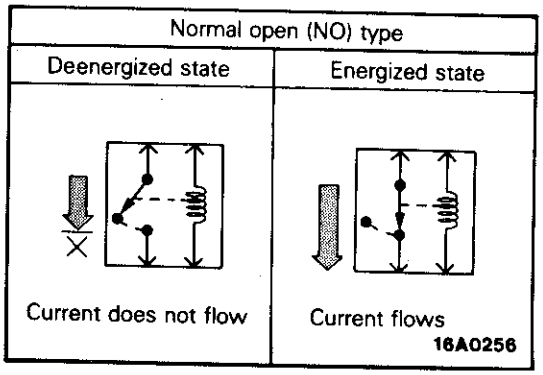


CHECKING RELAYS

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).

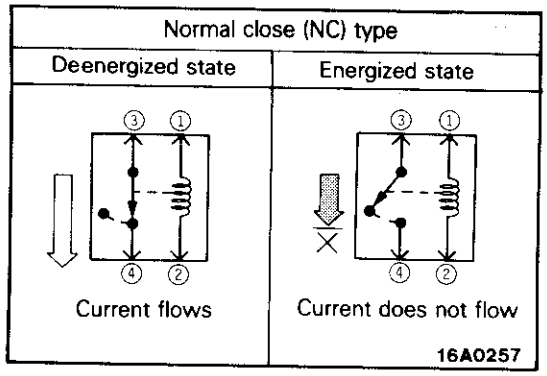


2. By using a relay, a heavy current can be turned on and off by a switch of small capacity. For example, in the circuit shown here, when the switch is turned on (closed), current flows to the coil of the relay. Then, its contact is turned on (closed) and the light comes on. The current flowing at this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

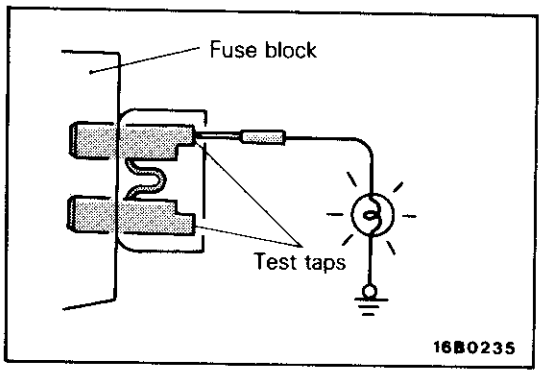


3. The relays may be classified into the normal open type and the normal close type by their contact construction.

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.

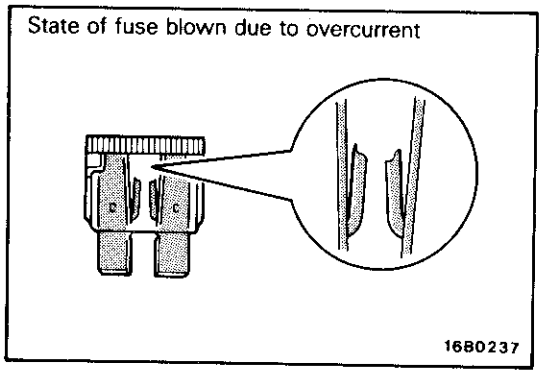


When a normal close type relay as illustrated here is checked, there should be continuity between terminals (1) and (2) and between terminals 3 and 4 when the relay is deenergized, and the continuity should be lost between terminals 3 and 4 when the battery voltage is applied to the terminals 1 and 2. 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

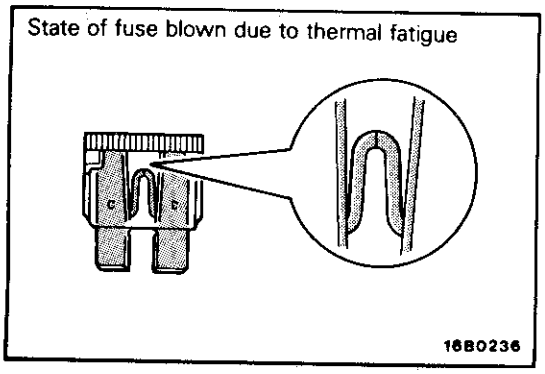
A blade type fuse has test taps provided to allow checking of the fuse itself without removing it from the fuse block. The fuse is okay if the test light comes on when its one lead is connected to the test taps (one at a time) and the other lead is grounded. (Change the ignition switch position adequately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



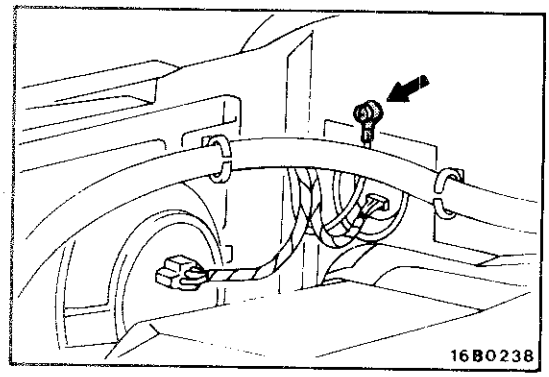
CAUTIONS IN EVENT OF BLOWN FUSE

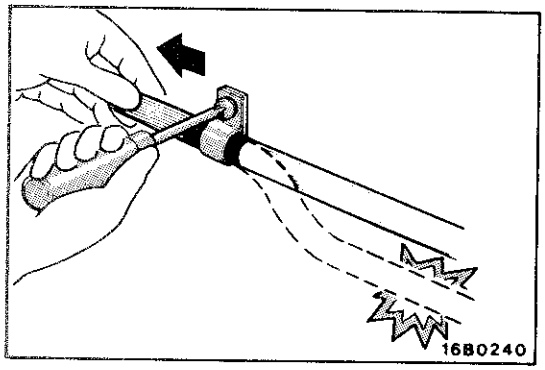
When a fuse is blown, there are two probable causes as follows: One is that it is blown due to flow of current exceeding its rating.
The other is that it is blown due to repeated on/off current flowing through it. Which of the two causes is responsible can be easily determined by visual check as described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

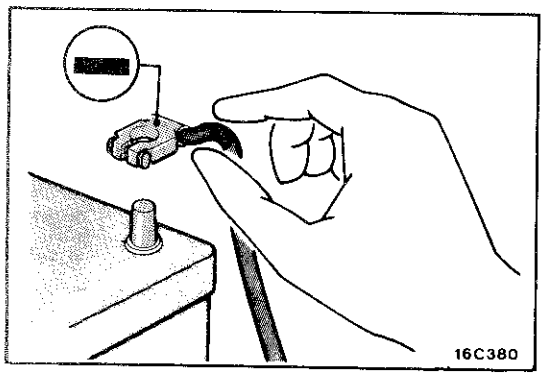
(1) Fuse blown due to current exceeding rating
The illustration shows the state of a fuse blown due to this cause. In this case, do not replace the fuse with a new one hastily since a current heavy enough to blow the fuse has flowed through it. First, check the circuit for shorting and check for abnormal 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 larger 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.

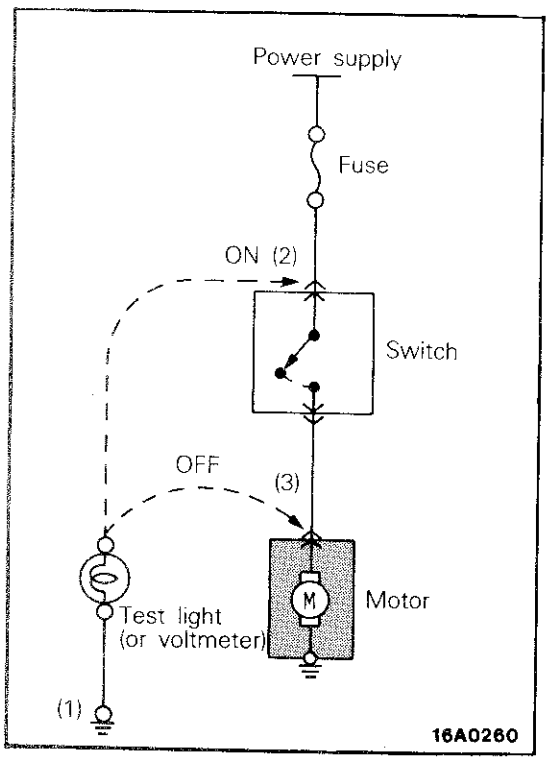


(2) Fuse blown due to repeated current on/off
The illustration shows the state of a fuse blown due to repeated current on/off. Normally, this type of problem occurs after fairly long period of use and hence is less frequent than the above type. In this case, you may simply replace with a new fuse of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

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.

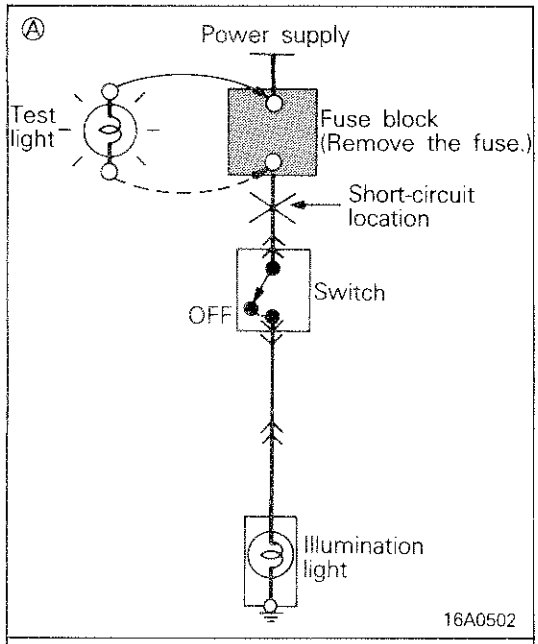
1. VOLTAGE CHECK

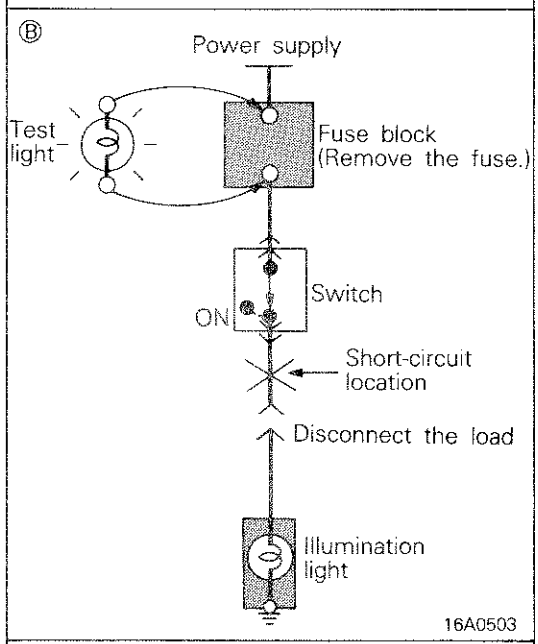
(1) Ground one lead wire of the test light. If a voltmeter is used instead of the test light, ground the grounding side lead wire.

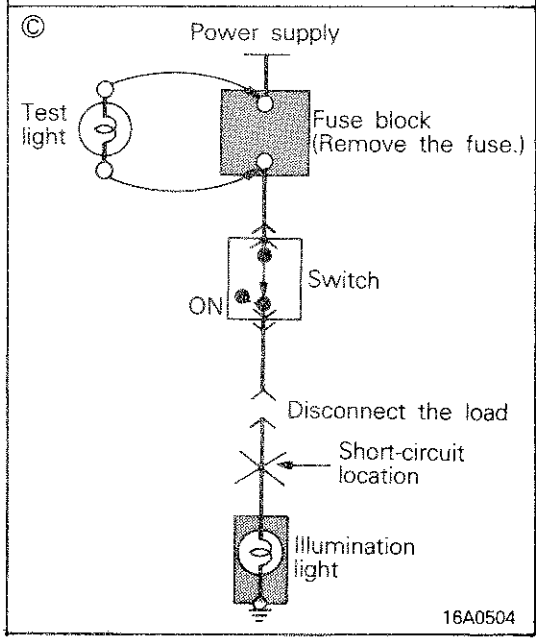
(2) Connect the other lead wire of the test light to the power side terminal of the switch connector. The test light should come on or the voltmeter should indicate a voltage.

(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 SHORT CIRCUITS

A blown fuse indicates that a circuit is shorted. The circuit responsible can be determined by the following procedures.

Remove the blown fuse and connect a test light in its place (Switch is in the OFF position)

↓

• Test light comes on → YES → Short circuit between fuse block and switch Ⓐ

NO ↓

Turn on the switch (Test light comes on but the illumination light does not come on)

↓

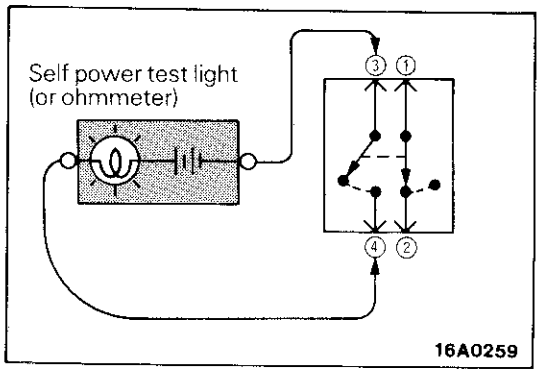
Disconnect the illumination light connector

↓

• Test light remains on → YES → Short circuit between the switch and illumination light connector Ⓑ

NO ↓

Short circuit between the illumination light connector and illumination light Ⓒ



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.

HOW TO READ WIRING DIAGRAMS

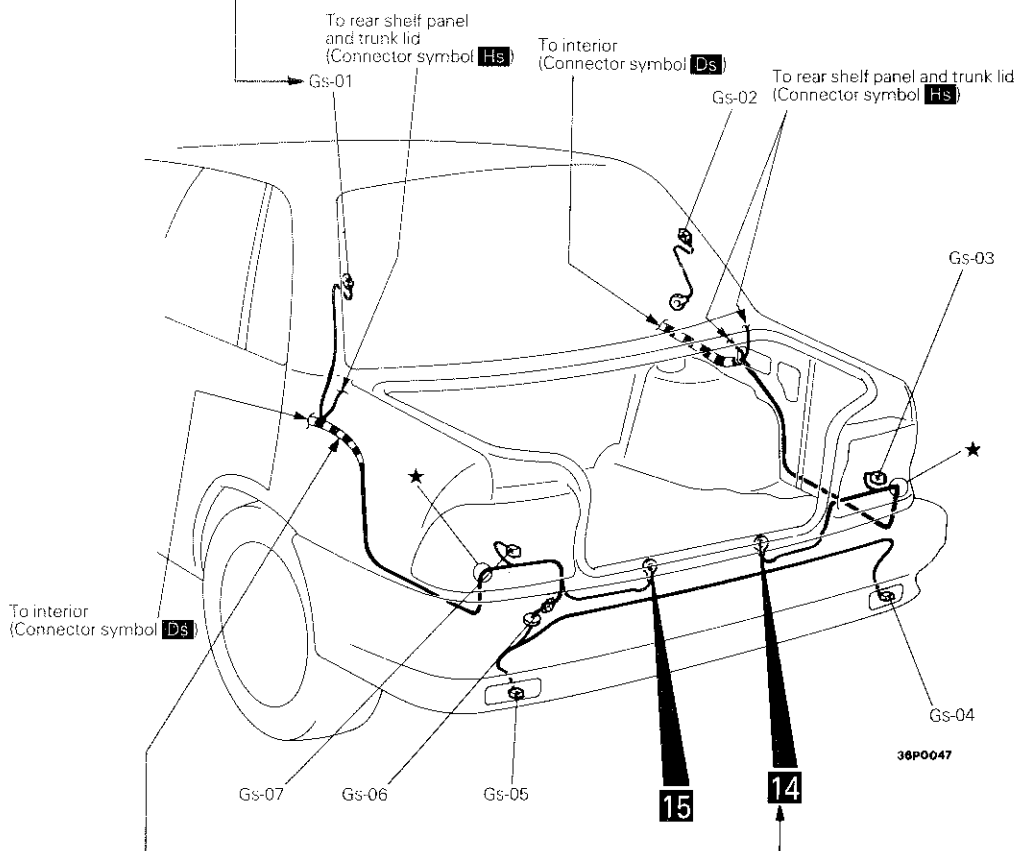
N08DBAM

HOW TO READ CONFIGURATION DIAGRAMS

The wiring harness diagrams clearly show the connector locations and harness routings at each site on actual vehicles.

Denotes connector No.
The same connector No. is used throughout the circuit diagrams to facilitate connector location searches.
The first alphabetical symbol indicates the location site of the connector and a number that follows is the unique number. Numbers are assigned to parts in clockwise order on the diagram.
In case connectors of the same shape (same number of poles) are located close to each other, connector colors are shown to aid in identification.

Example: A-12 (black)
- Connector color
- Number specific to connector (serial number)
- Connector location site symbol
  - A: Engine compartment
  - B: Engine and transaxle
  - C: Dash panel
  - D_H: Interior (Hatchback)
  - D_S: Interior (Sedan)
  - E: Instrument panel
  - F: Floor console
  - G_S: Luggage compartment
  - H_S: Rear shelf panel and trunk lid

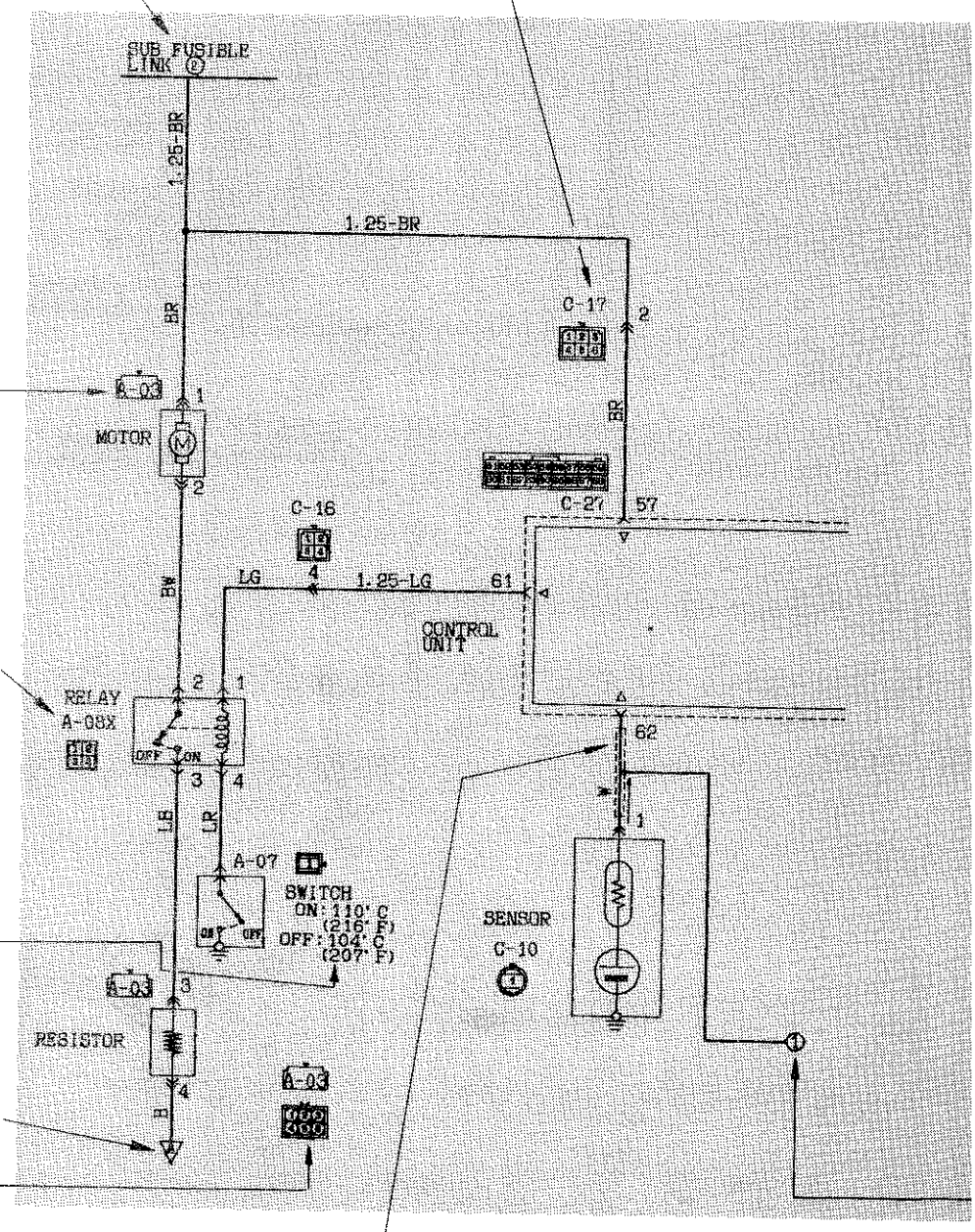


Denotes a section covered by a corrugated tube.

Denotes ground point.
Same ground number is used throughout circuit diagrams to facilitate search of ground point. Refer to P.8-11 for details of ground points.

HOW TO READ CIRCUIT DIAGRAMS

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 power takeout.

Indicates connector No. The same No. as in the wiring harness diagram is used.

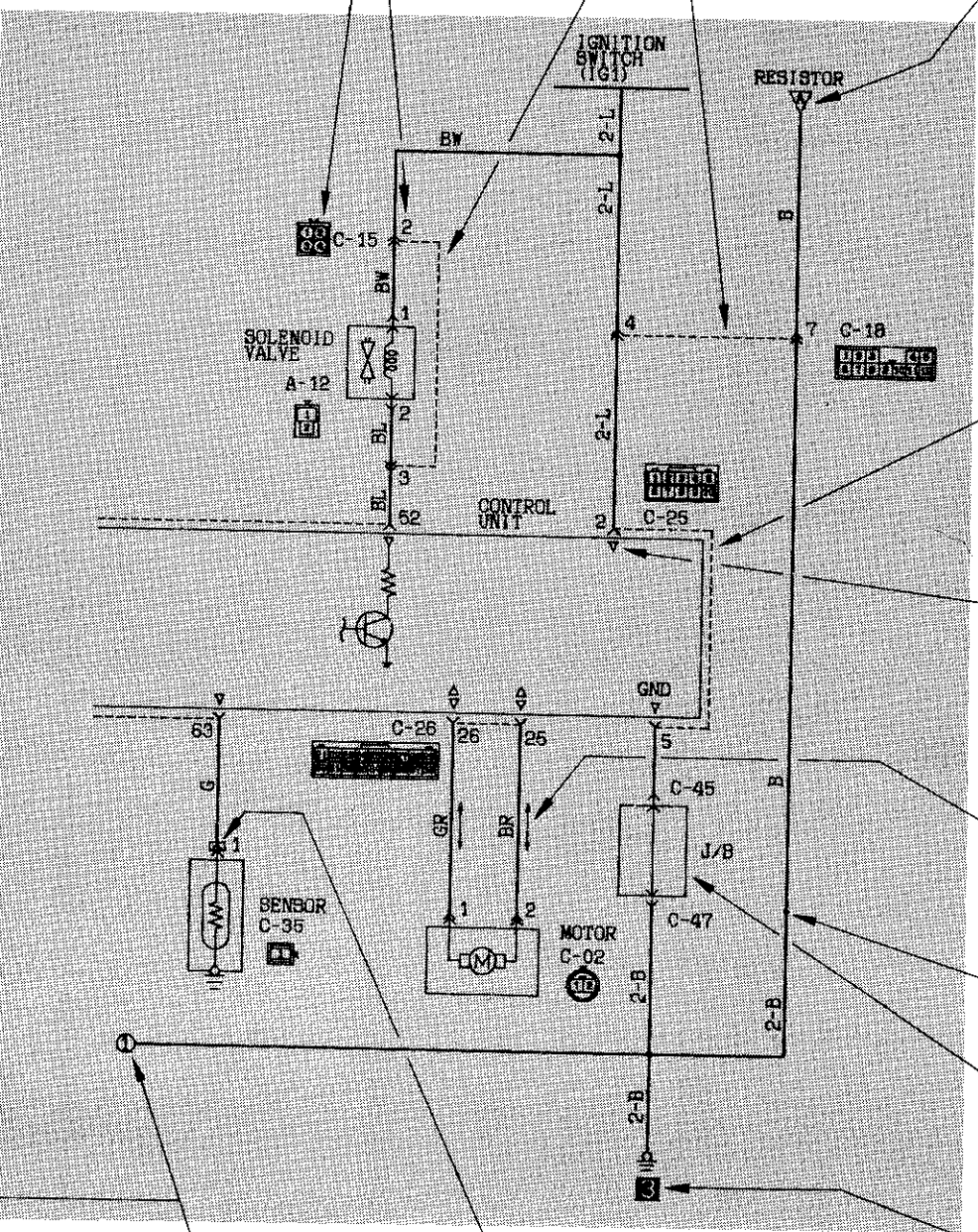
If the same connector is shown at two or more locations, the connector is indicated by ▽ with connector symbol shown inside.

An "X" at the end of a connector No. indicates that the connector is connected to a centralized junction that is shown in the section "Centralized Junction".

Indicates the operating conditions of the engine coolant switch, etc.

Indicates that the diagram is continued at Ⓐ on the next page.

Indicates shield wire.



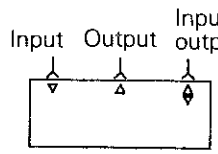
Indicates terminal No.

A broken line indicates that these connectors are the same intermediate connectors.

Indicates that the diagram is continued from (A) on the previous page.

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).



Indicates current flow downward or upward as controlled by the control unit.

Indicates harness junction where wire diameter or color changes.

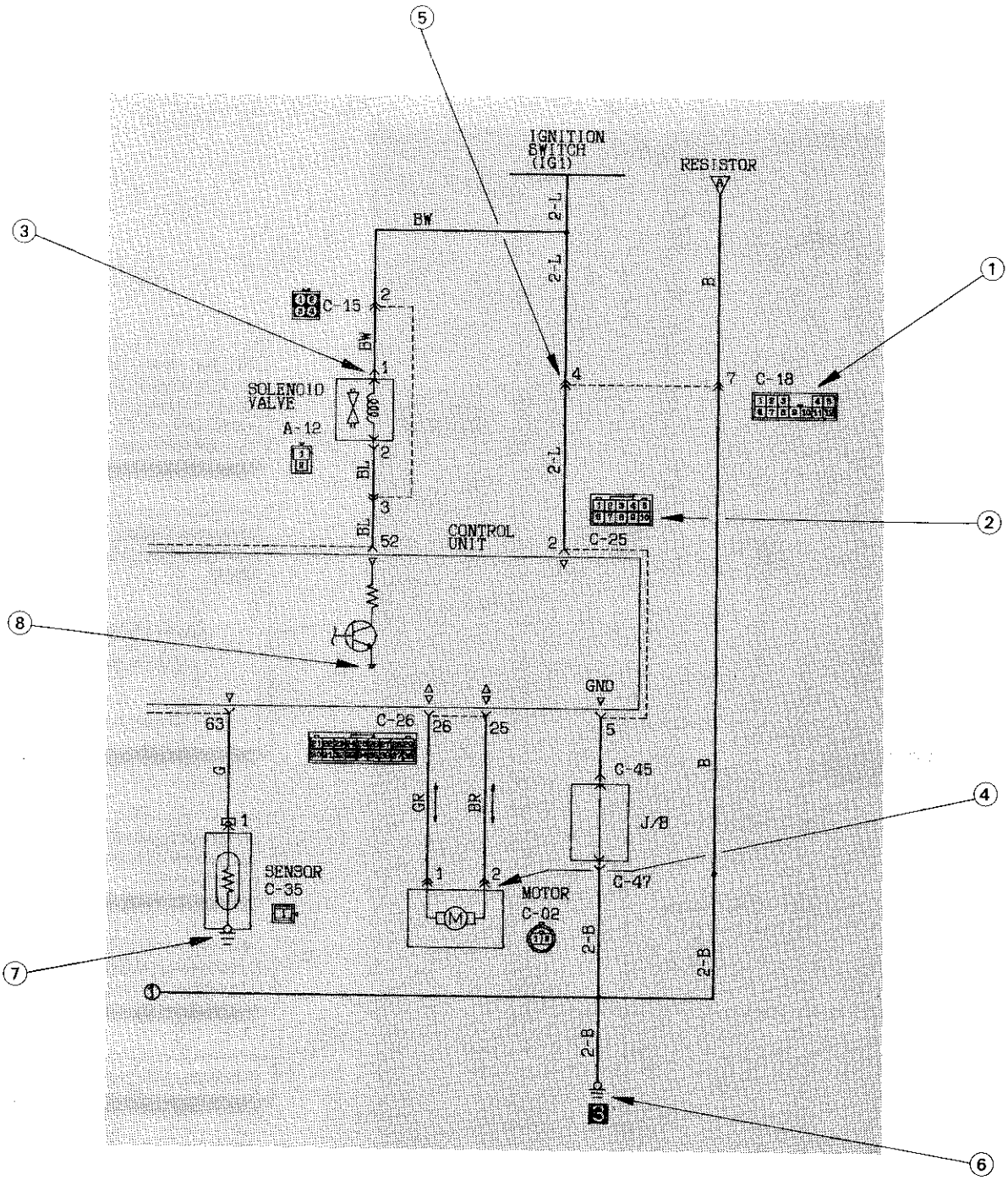
Indicates J/B (Junction Block).

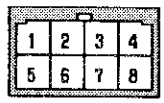
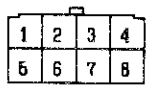
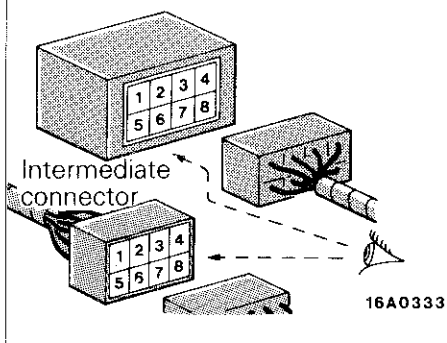
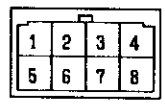
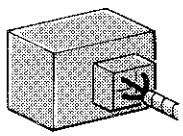
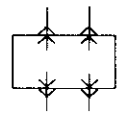
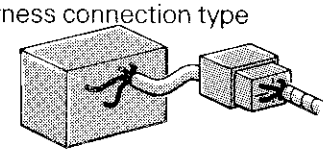
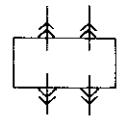
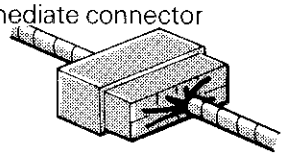
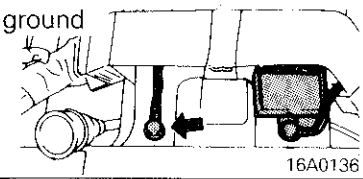
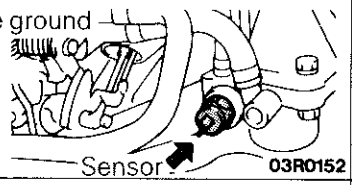
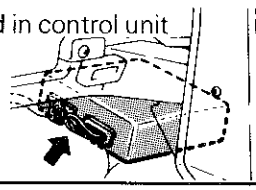
Indicates vehicle body ground point. (Same No. as that of ground point in ELECTRICAL SYSTEM PARTS LOCATION)

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.

MARKINGS FOR CONNECTOR GROUNDING



	No.	Item	Symbol	Contents
Connector marking	①	Male 		Double connector contour lines indicate male connector terminals and single contour lines indicates female terminals as illustrated here.
	–	Female 		
Connector symbol marking	②	Device 		The symbol indicates the connector as viewed from the illustrated direction. At the connection with a device, the connector symbol on the device side is shown, and for an intermediate connector, the male connector symbol is shown.
Connector connection marking	③	Direct connection type 		A connection between a device and connector on the harness side is either by direct insertion in the device (direct connection type) or by connection with a harness connector furnished on the device side (harness connection type). The two types are indicated as illustrated.
	④	Harness connection type  16A0334		
	⑤	Intermediate connector  16A0339		
Grounding markings	⑥	Body ground  16A0136		Grounding is either by body ground, device ground or control unit interior ground. These are indicated as illustrated.
	⑦	Device ground  03R0152		
	⑧	Ground in control unit  16A0109		

SYMBOLS

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

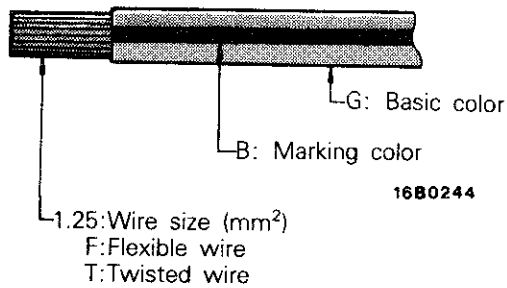
Battery	Body ground	Single bulb	Resistor	Diode	Capacitor
Fuse	Equipment ground	Dual bulb	Variable resistor	Zener diode	Crossing of wires without connection
Fusible link	ECU interior ground	Speaker	Coil	Transistor	Crossing of wires with connection
Connector (Female side / Male side)	Motor	Horn	Pulse generator	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).

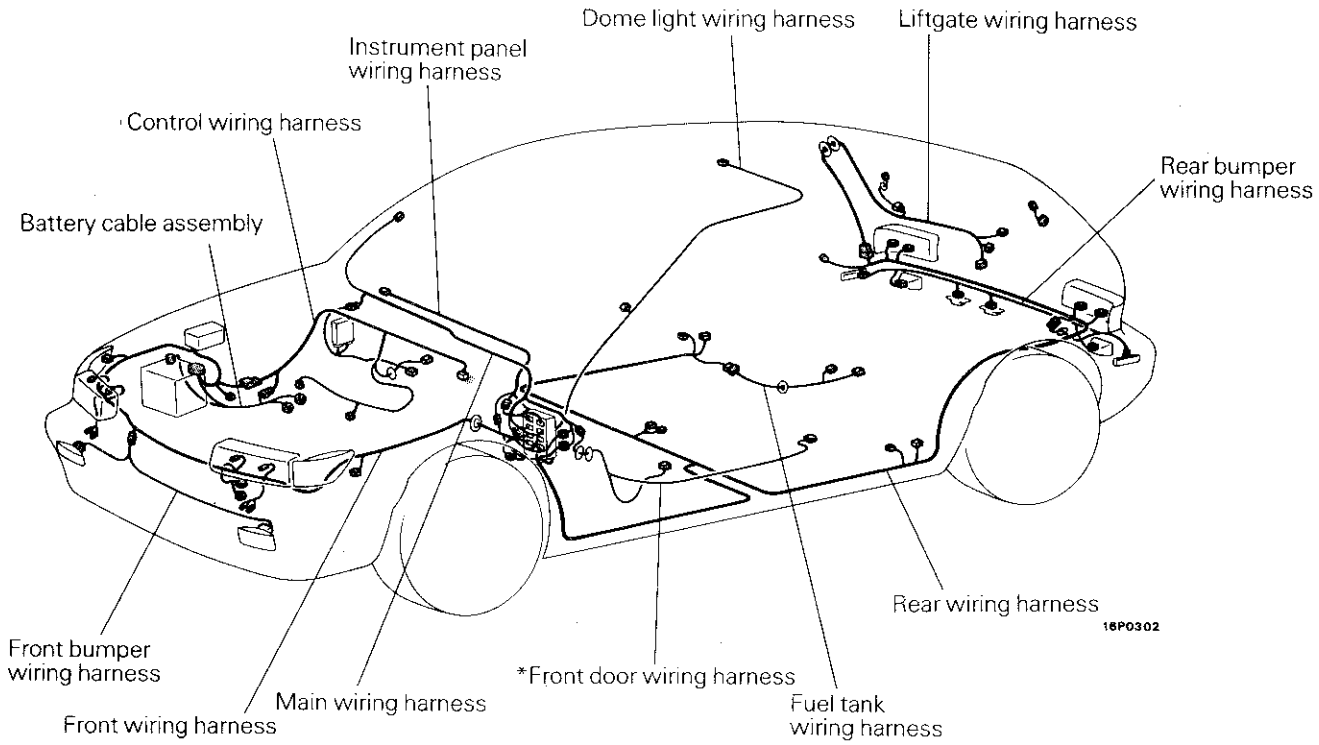
Code	Wire color	Code	Wire color
B	Black	Ll	Light blue
Br	Brown	O	Orange
G	Green	P	Pink
Gr	Gray	R	Red
L	Blue	Y	Yellow
Lg	Light green	W	White
Sb	Silver		

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.

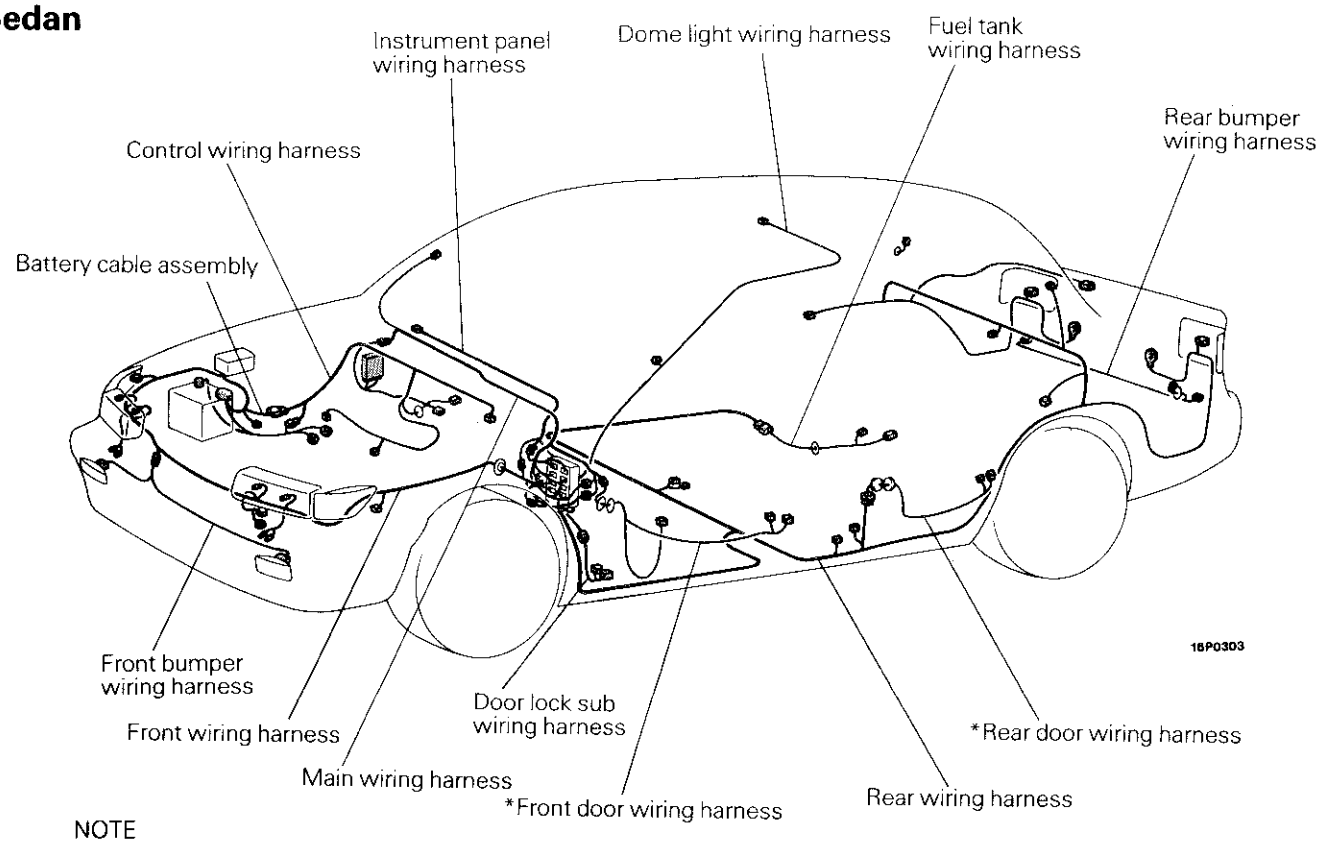
WIRING HARNESS OVERVIEW

N08DC--

Hatchback



Sedan

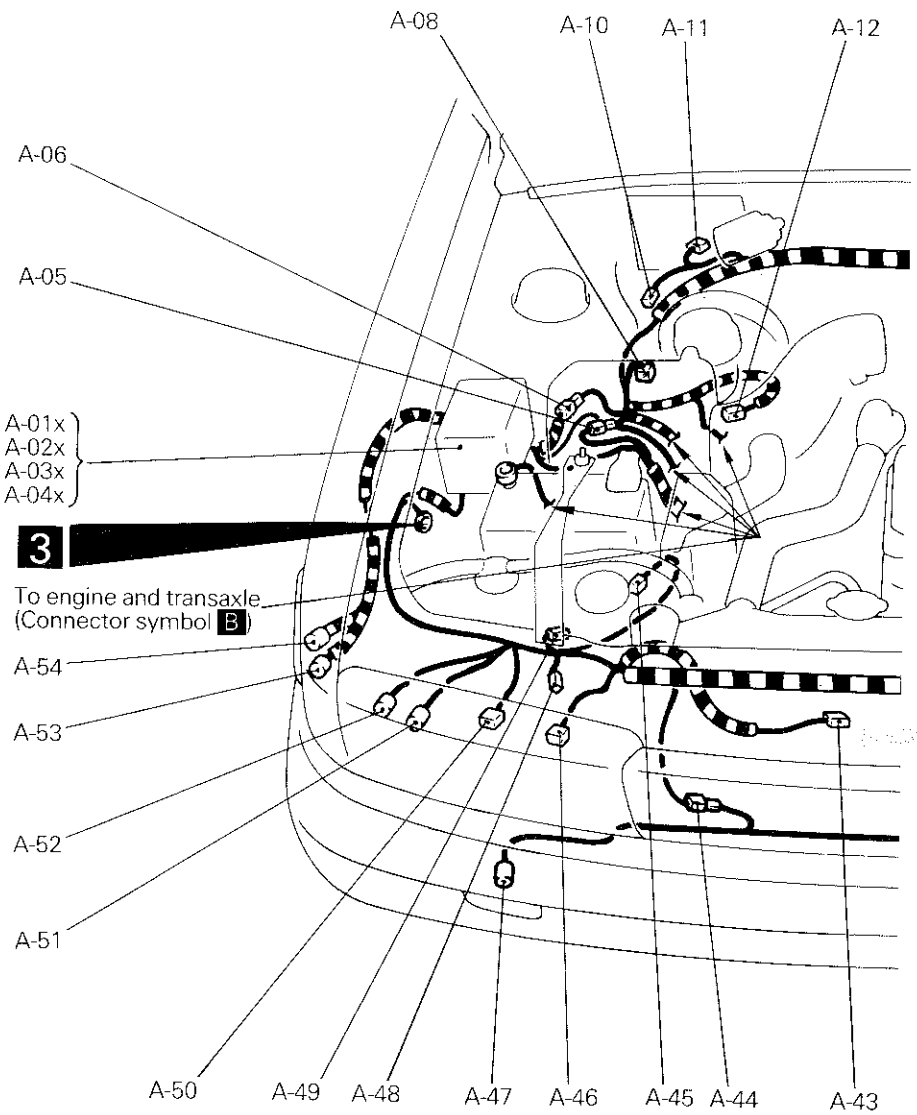


NOTE
(1) This illustration shows only the major wiring harnesses.
(2) * indicates also equipped at the right side.

1 ENGINE COMPARTMENT <1.5L Engine>

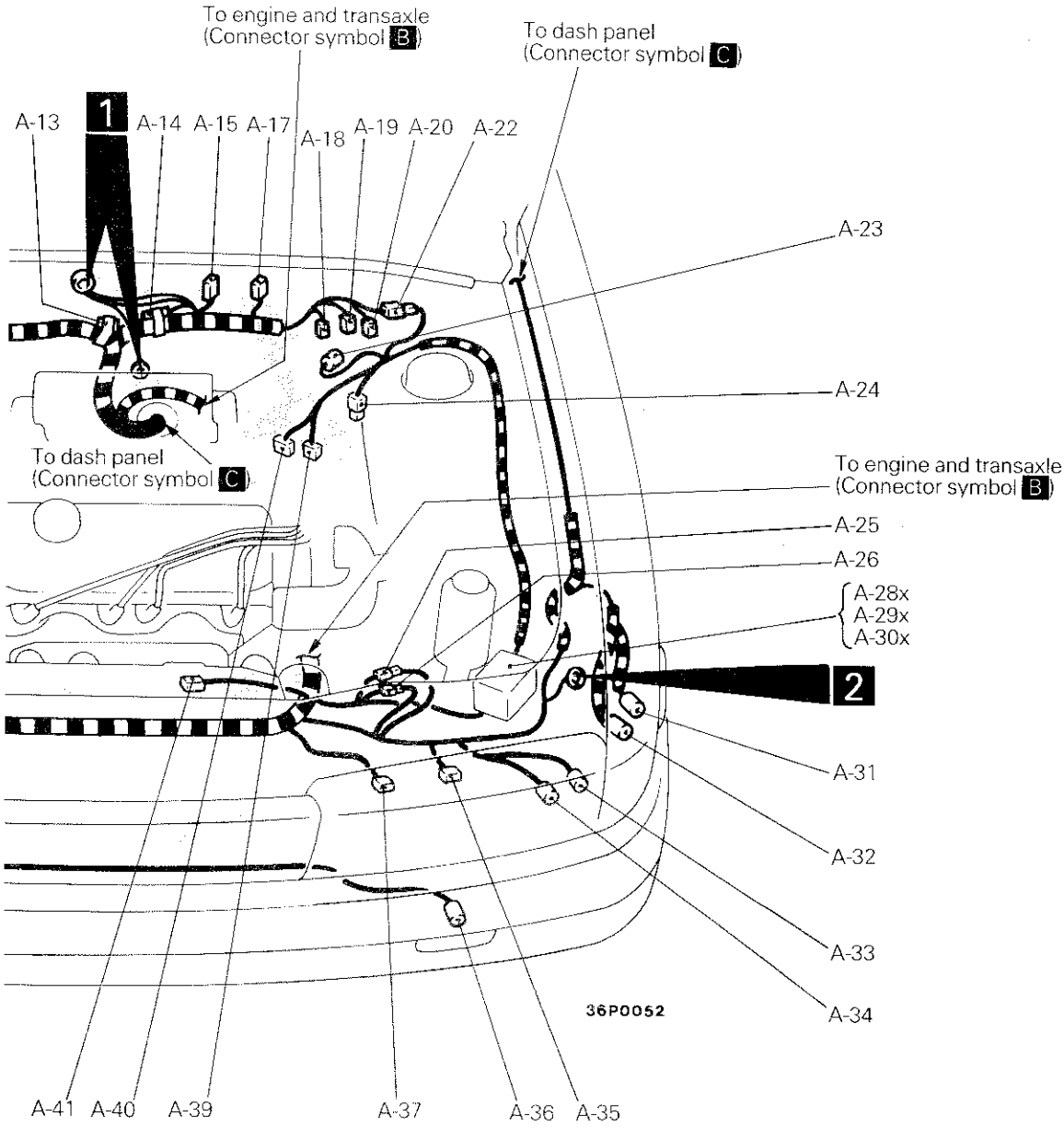
Connector symbol

A -01 to -54



A-01x Alternator relay
A-02x Radiator fan motor relay
A-03x Power window relay
A-04x Headlight relay
} Refer to CENTRALIZED JUNCTION

A-05 Battery cable assembly and control wiring harness combination
A-06 Front wiring harness and control wiring harness combination
A-07 –
A-08 Pulse generator <A/T>
A-09 –
A-10 Brake fluid level sensor
A-11 Wiper motor
A-12 Air flow sensor
A-13 Ignition timing adjustment connector
A-14 Fuel pump check connector
A-15 EGR control solenoid valve <Vehicles for California>
A-16 –
A-17 Purge control solenoid valve
A-18 Motor position sensor
A-19 Crank angle sensor and top dead center sensor
A-20 Throttle position sensor
A-21 –
A-22 Control wiring harness and air conditioner wiring harness combination
A-23 Dual pressure switch (for air conditioner)
A-24 Jumper connector
A-25 } Front wiring harness and air conditioner
A-26 } wiring harness combination
A-27 –
A-28x Air conditioner compressor relay
A-29x Condenser fan motor relay (for air conditioner)
A-30x Condenser fan motor control relay (for air conditioner)
} Refer to CENTRALIZED JUNCTION



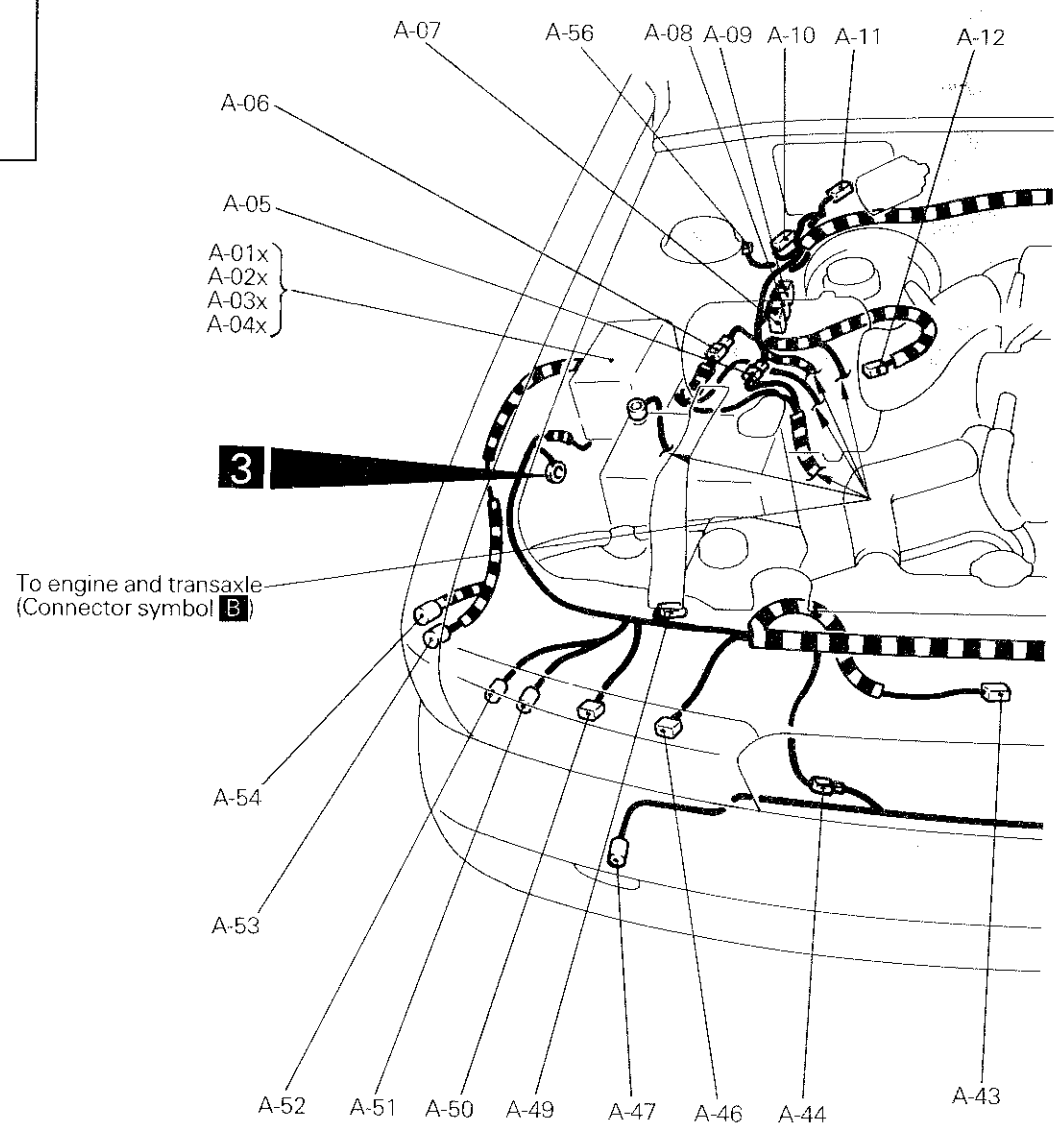
A-31, A-32 } Front combination light (Left side)
A-33, A-34 } Horn (Left side)
A-35 Headlight (Left side) <Type II>
A-36 Front turn-signal light (Left side)
A-37 Headlight (Left side) <Type I>
A-38 –
A-39 Refrigerant temperature sensor (for air conditioner)
A-40 Magnet clutch (for air conditioner)
A-41 Condenser fan motor (for air conditioner)
A-42 –
A-43 Radiator fan assembly
A-44 Front wiring harness and front bumper wiring harness combination
A-45 Rear washer motor <HATCHBACK>
A-46 Headlight (Right side) <Type I>
A-47 Front turn-signal light (Right side)
A-48 Washer fluid level switch
A-49 Washer motor
A-50 Headlight (Right side) <Type II>
A-51, A-52 } Horn (Right side)
A-53, A-54 } Front combination light (Right side)

Remarks
(1) For details concerning the ground point (example: 1), refer to P. 8-11.
(2) "–" means that the connector with code-number is not used.

2 ENGINE COMPARTMENT <1.6L Engine – N/A>

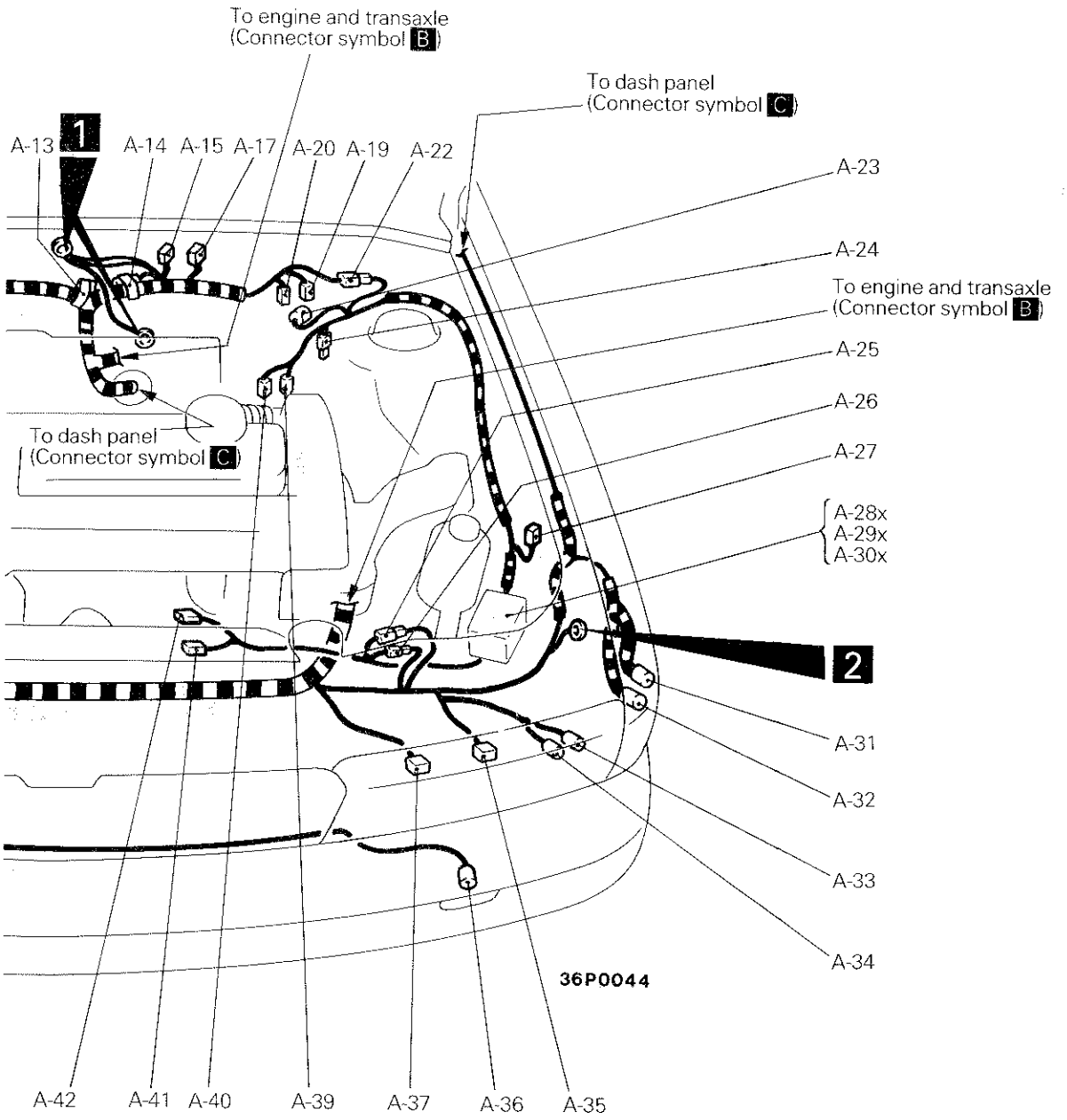
Connector symbol

A -01 to -56



A-01x Alternator relay
A-02x Radiator fan motor relay
A-03x Power window relay
A-04x Headlight relay
} Refer to CENTRALIZED JUNCTION

A-05 Battery cable assembly and control wiring harness combination
A-06 Front wiring harness and control wiring harness combination
A-07 Kickdown servo switch <A/T>
A-08 Pulse generator <A/T>
A-09 Automatic transaxle fluid temperature sensor <A/T>
A-10 Brake fluid level sensor
A-11 Wiper motor
A-12 Air flow sensor
A-13 Ignition timing adjustment connector
A-14 Fuel pump check connector
A-15 EGR control solenoid valve <Vehicles for California>
A-16 –
A-17 Purge control solenoid valve
A-18 –
A-19 Crank angle sensor and top dead center sensor
A-20 Throttle position sensor
A-21 –
A-22 Control wiring harness and air conditioner wiring harness combination
A-23 Dual pressure switch (for air conditioner)
A-24 Jumper connector
A-25 } Front wiring harness and air conditioner
A-26 } wiring harness combination
A-27 Pressure switch (for air conditioner)
A-28x Air conditioner compressor relay
A-29x Condenser fan motor relay (for air conditioner)
A-30x Condenser fan motor control relay (for air conditioner)
} Refer to CENTRALIZED JUNCTION



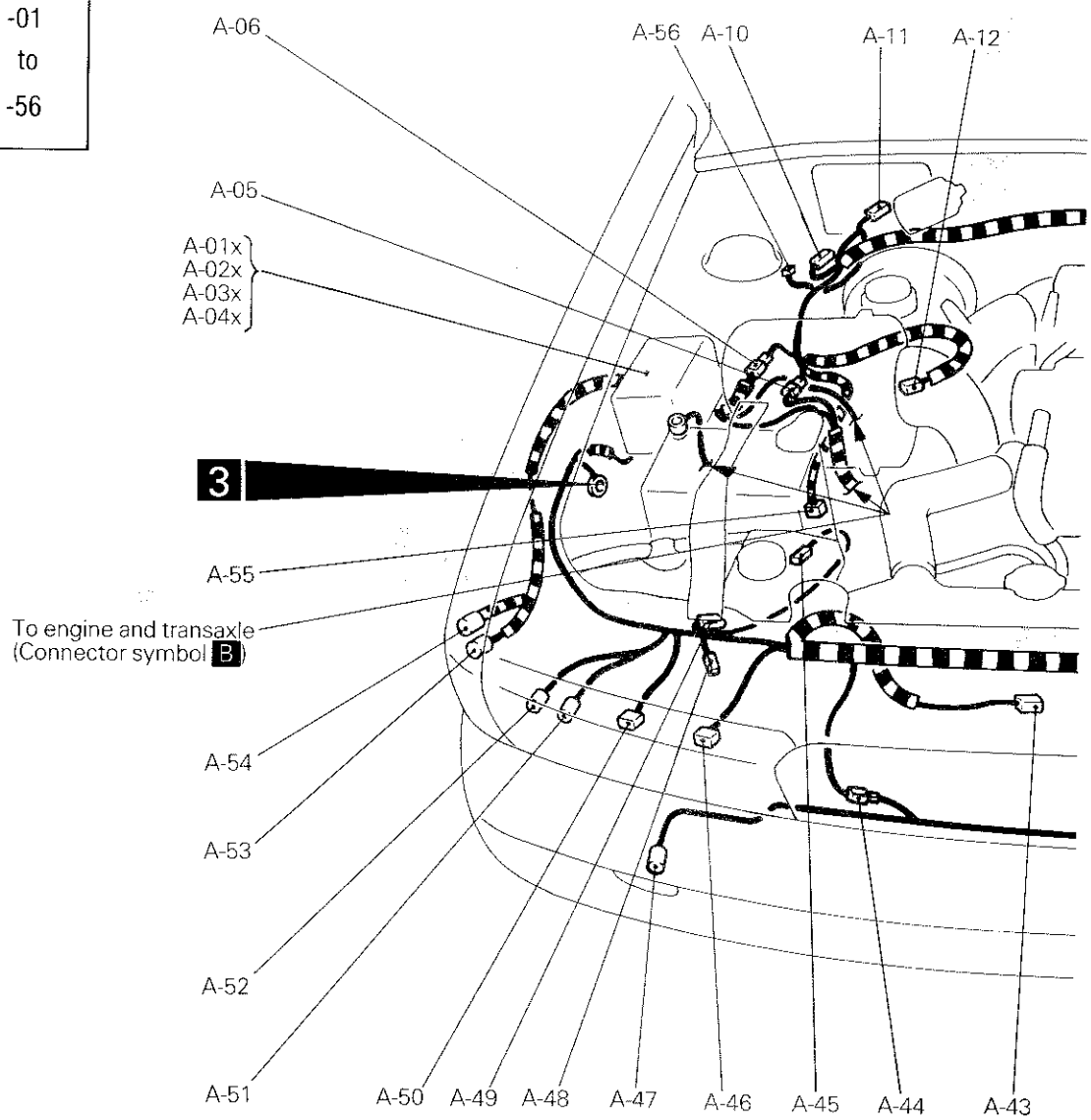
A-31 } Front combination light (Left side)
A-32
A-33 } Horn (Left side)
A-34
A-35 Headlight (Left side) <Type II>
A-36 Front turn-signal light (Left side)
A-37 Headlight (Left side) <Type I>
A-38 –
A-39 Refrigerant temperature sensor (for air conditioner)
A-40 Magnet clutch (for air conditioner)
A-41 Condenser fan motor (for air conditioner)
A-42 Resistor (for air conditioner)
A-43 Radiator fan assembly
A-44 Front wiring harness and front bumper wiring harness combination
A-45 –
A-46 Headlight (Right side) <Type I>
A-47 Front turn-signal light (Right side)
A-48 –
A-49 Washer motor
A-50 Headlight (Right side) <Type II>
A-51 } Horn (Right side)
A-52
A-53 } Front combination light (Right side)
A-54
A-55 –
A-56 Actuator (for auto-cruise control)

Remarks
(1) For details concerning the ground point (example: 1), refer to P. 8-11.
(2) "–" means that the connector with code-number is not used.

3 ENGINE COMPARTMENT <1.6L Engine – T/C>

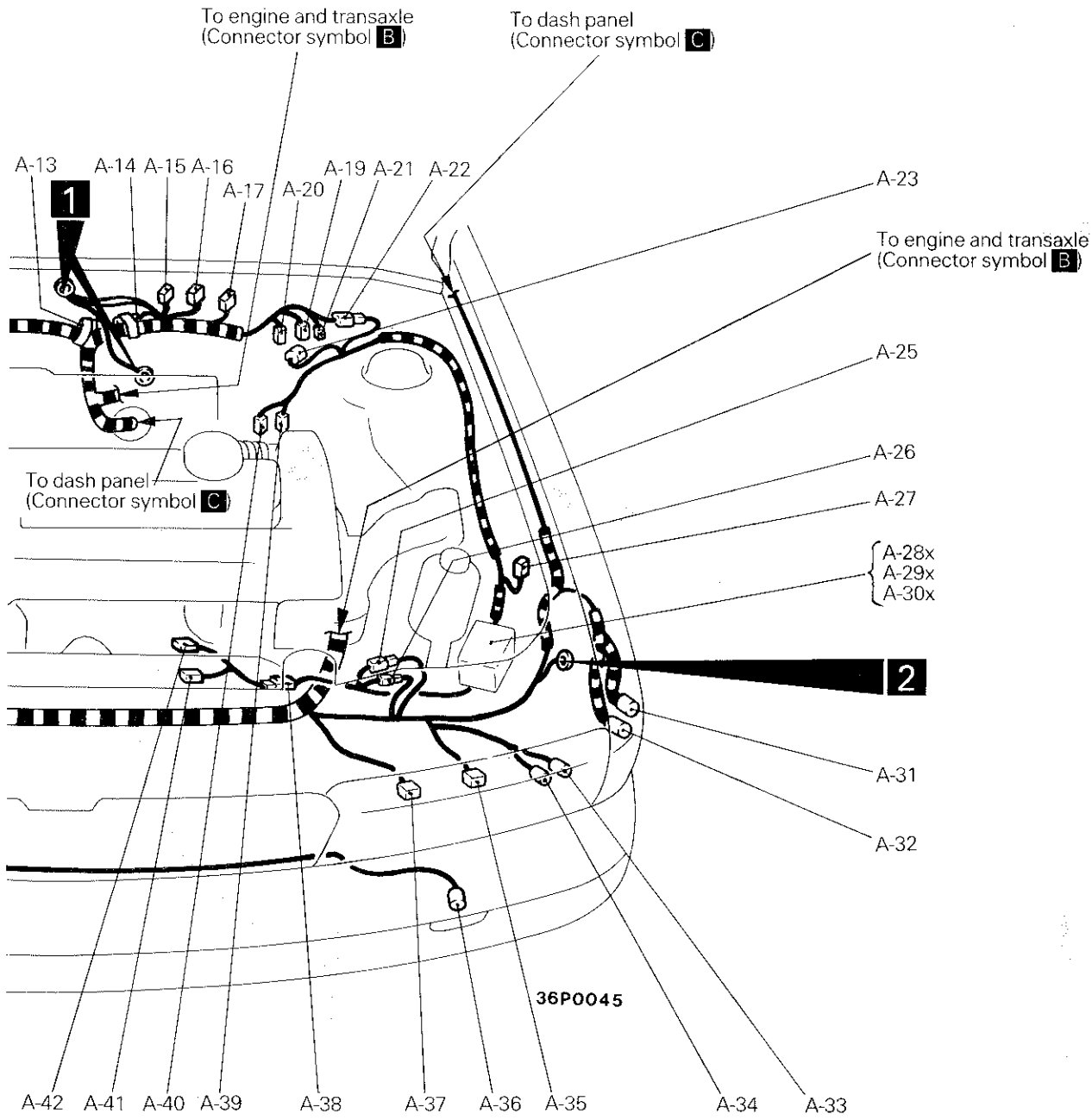
Connector symbol

A -01 to -56



A-01x Alternator relay
A-02x Radiator fan motor relay
A-03x Power window relay
A-04x Headlight relay
} Refer to CENTRALIZED JUNCTION

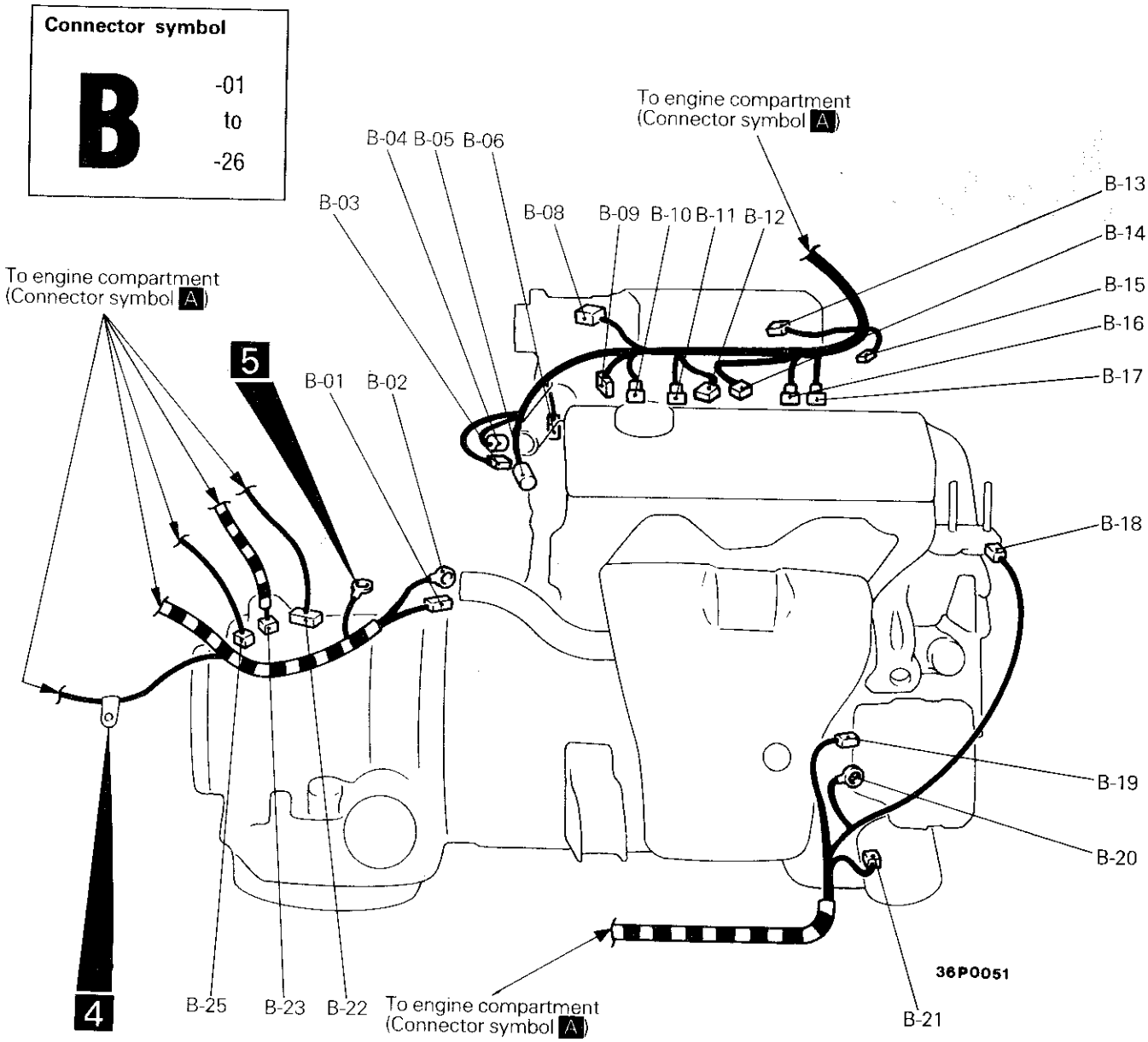
A-05 Battery cable assembly and control wiring harness combination
A-06 Front wiring harness and control wiring harness combination
A-07 –
A-08 –
A-09 –
A-10 Brake fluid level sensor
A-11 Wiper motor
A-12 Air flow sensor
A-13 Ignition timing adjustment connector
A-14 Fuel pump check connector
A-15 EGR control solenoid valve <Vehicles for California>
A-16 Fuel pressure control solenoid valve
A-17 Purge control solenoid valve
A-18 –
A-19 Crank angle sensor and top dead center sensor
A-20 Throttle position sensor
A-21 Resistor
A-22 Control wiring harness and air conditioner wiring harness combination
A-23 Dual pressure switch (for air conditioner)
A-24 –
A-25 Front wiring harness and air conditioner wiring harness combination
A-26 Front wiring harness and air conditioner wiring harness combination
A-27 Pressure switch (for air conditioner)
A-28x Air conditioner compressor relay
A-29x Condenser fan motor relay (for air conditioner)
A-30x Condenser fan motor control relay (for air conditioner)
} Refer to CENTRALIZED JUNCTION



A-31, A-32 } Front combination light (Left side)
A-33, A-34 } Horn (Left side)
A-35 Headlight (Left side) <Type II>
A-36 Front turn-signal light (Left side)
A-37 Headlight (Left side) <Type I>
A-38 Air conditioner wiring harness and joint wiring harness combination
A-39 Refrigerant temperature sensor (for air conditioner)
A-40 Magnet clutch (for air conditioner)
A-41 Condenser fan motor (for air conditioner)
A-42 Resistor (for air conditioner)
A-43 Radiator fan assembly
A-44 Front wiring harness and front bumper wiring harness combination
A-45 Rear washer motor
A-46 Headlight (Right side) <Type I>
A-47 Front turn-signal light (Right side)
A-48 Washer fluid level switch
A-49 Washer motor
A-50 Headlight (Right side) <Type II>
A-51, A-52 } Horn (Right side)
A-53, A-54 } Front combination light (Right side)
A-55 Waste gate solenoid valve
A-56 Actuator (for auto-cruise control)

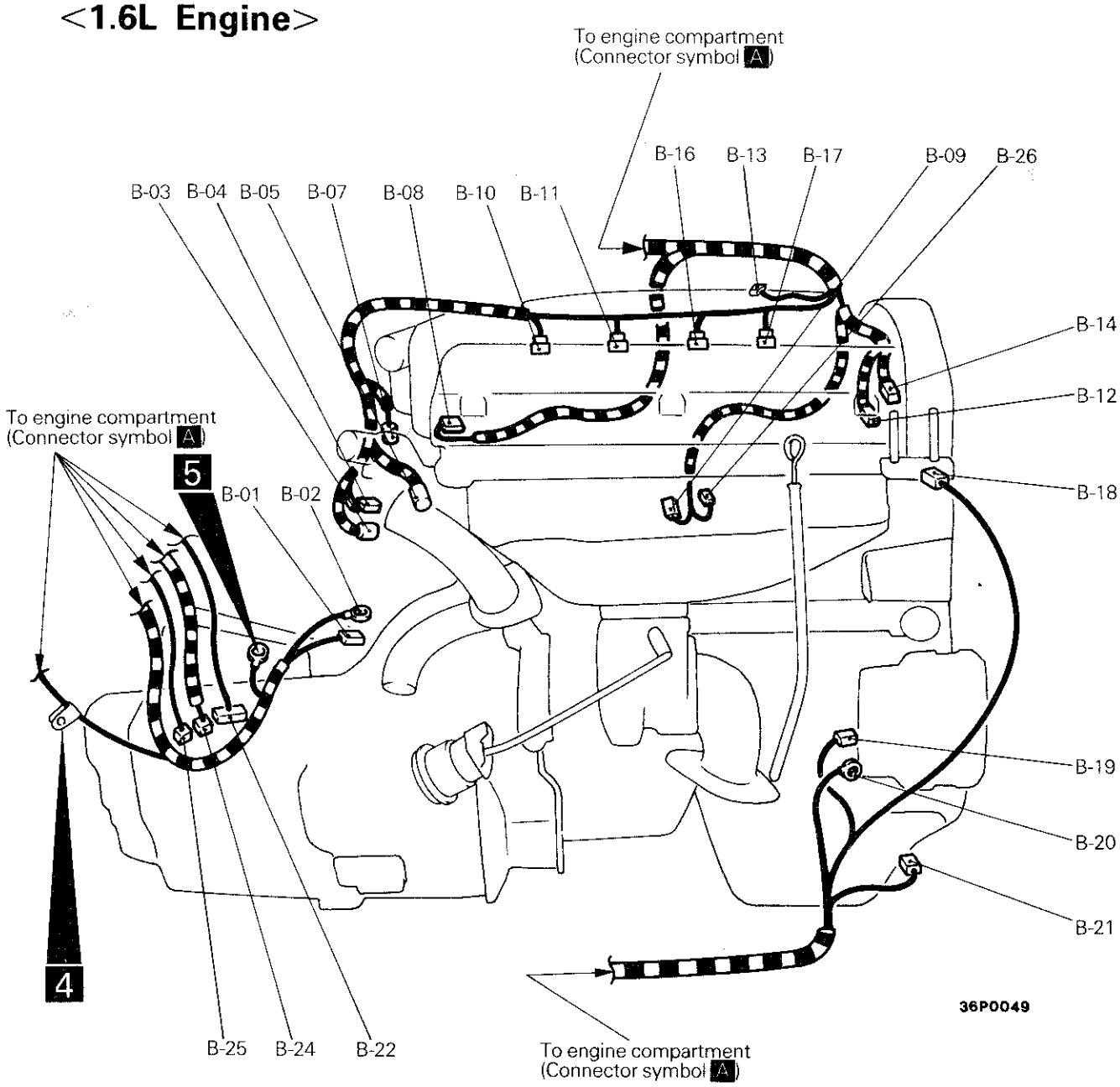
Remarks
(1) For details concerning the ground point (example: 1), refer to P. 8-11.
(2) "–" means that the connector with code-number is not used.

4 ENGINE AND TRANSAXLE
<1.5L Engine>



B-01, B-02 } Starter motor
B-03 Engine coolant temperature sensor
B-04 Engine coolant temperature gauge unit
B-05 Oxygen sensor
B-06 Engine coolant temperature switch <3 A/T>
B-07 Engine coolant temperature switch (for air conditioner)
B-08 Idle speed control actuator
B-09 EGR temperature sensor <Vehicles for California>
B-10 Injector (IV)
B-11 Injector (III)
B-12 Power transistor
B-13 Noise filter or jumper connector combination
B-14 Ignition coil
B-15 Condenser

<1.6L Engine>



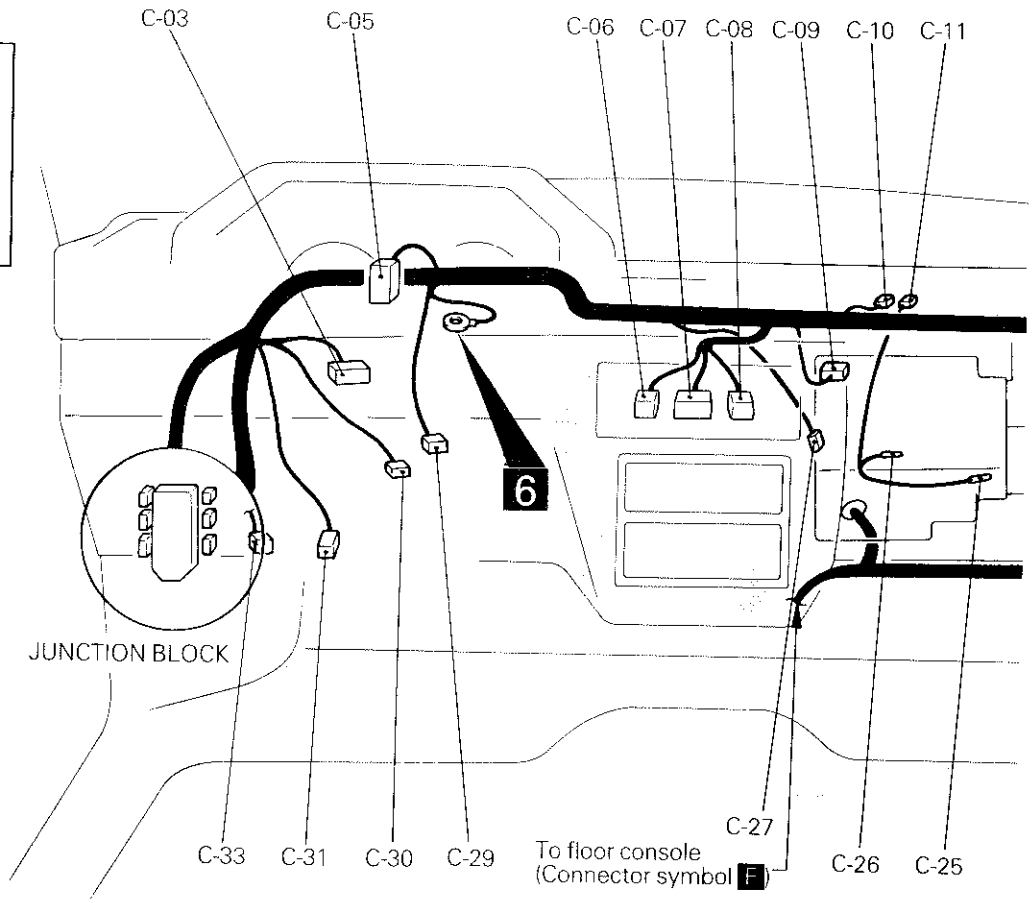
B-16 Injector (II)
B-17 Injector (I)
B-18 Power steering oil pressure switch
B-19, B-20 } Alternator
B-21 Oil pressure switch
B-22 Inhibitor switch <A/T>
B-23 Damper clutch control solenoid valve <3 A/T>
B-24 Solenoid valve <4 A/T>
B-25 Back-up light switch <M/T>
B-26 Detonation sensor <T/C>

Remark
For details concerning the ground point (example: A), refer to P.8-11.

5 DASH PANEL <1.5L Engine>

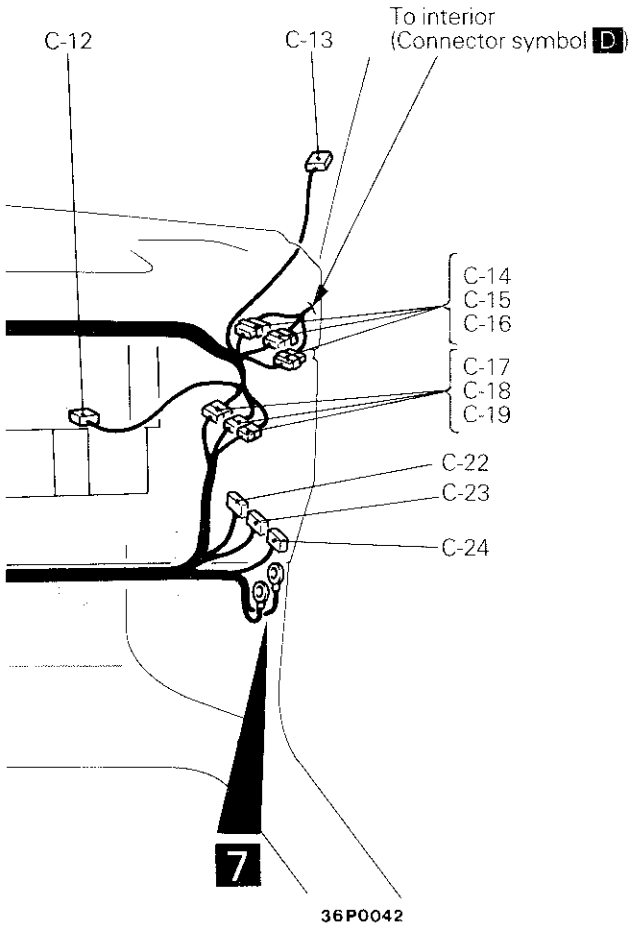
Connector symbol

C -01 to -59

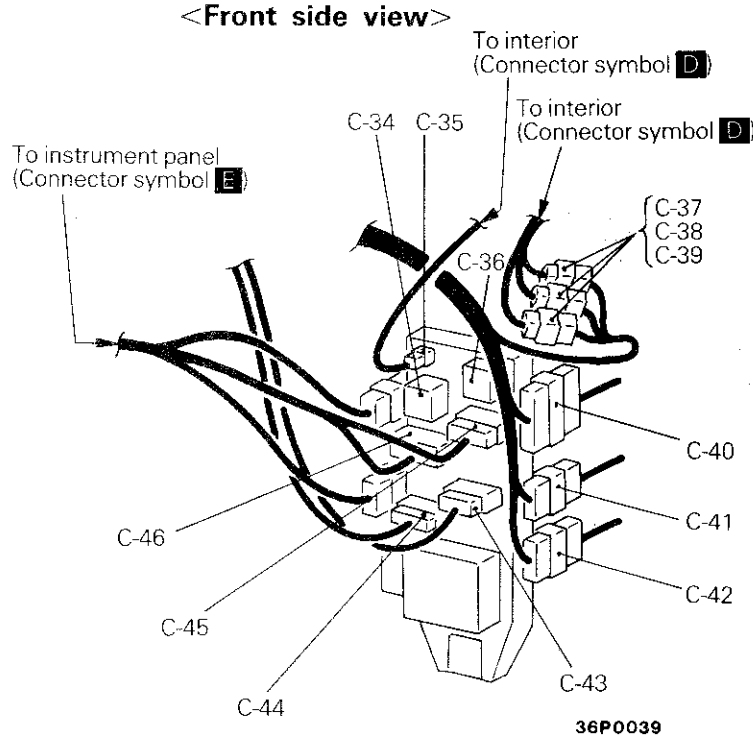


C-01 –
C-02 –
C-03 Column switch
C-04 –
C-05 Combination meter
C-06 Air conditioner switch
C-07 Blower switch
C-08 Heater control illumination light
C-09 Blower resistor
C-10, C-11 } Auto compressor control unit
C-12 Blower motor
C-13 Release switch (Right side) (for automatic seat belt)
C-14, C-15, C-16 } Main wiring harness and front door wiring harness (Right side) combination
C-17, C-18, C-19 } Main wiring harness and control wiring harness combination
C-20 –
C-21 –
C-22, C-23, C-24 } MPI control unit
C-25 Air thermo sensor (for air conditioner)
C-26 Air inlet sensor (for air conditioner)
C-27 Starter relay <M/T>
C-28 –
C-29 Stop light switch
C-30 Key reminder switch
C-31 Inter lock switch <M/T>
C-32 –
C-33 Defogger relay
C-34 Heater relay
C-35 Roof wiring harness and junction block combination
C-36 Turn-signal and hazard flasher unit
C-37, C-38, C-39 } Main wiring harness and front door wiring harness (Left side) combination
C-40 Main wiring harness and front wiring harness combination
C-41, C-42 } Main wiring harness and rear wiring harness combination

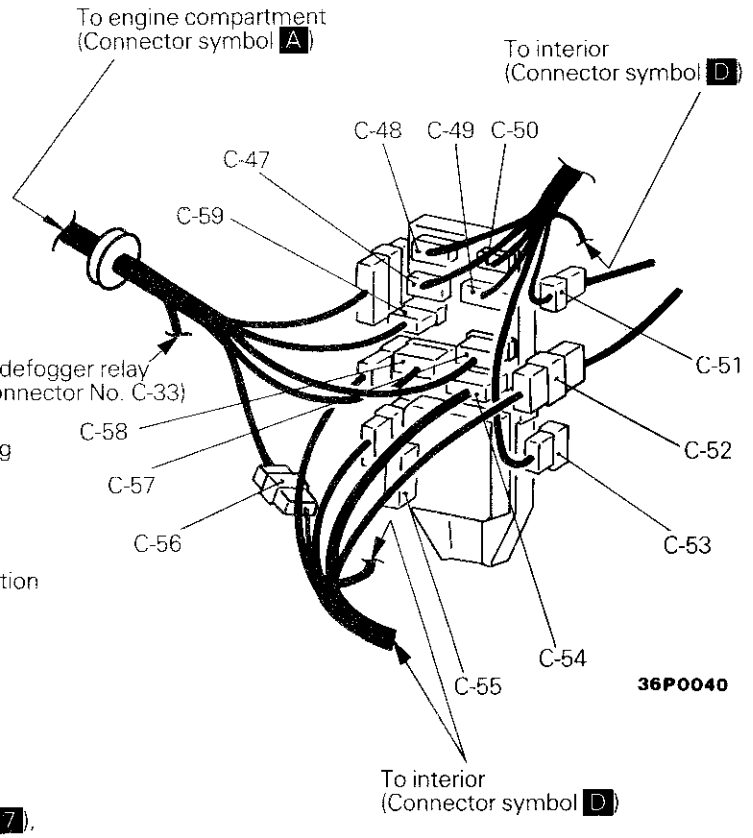
JUNCTION BLOCK



<Front side view>



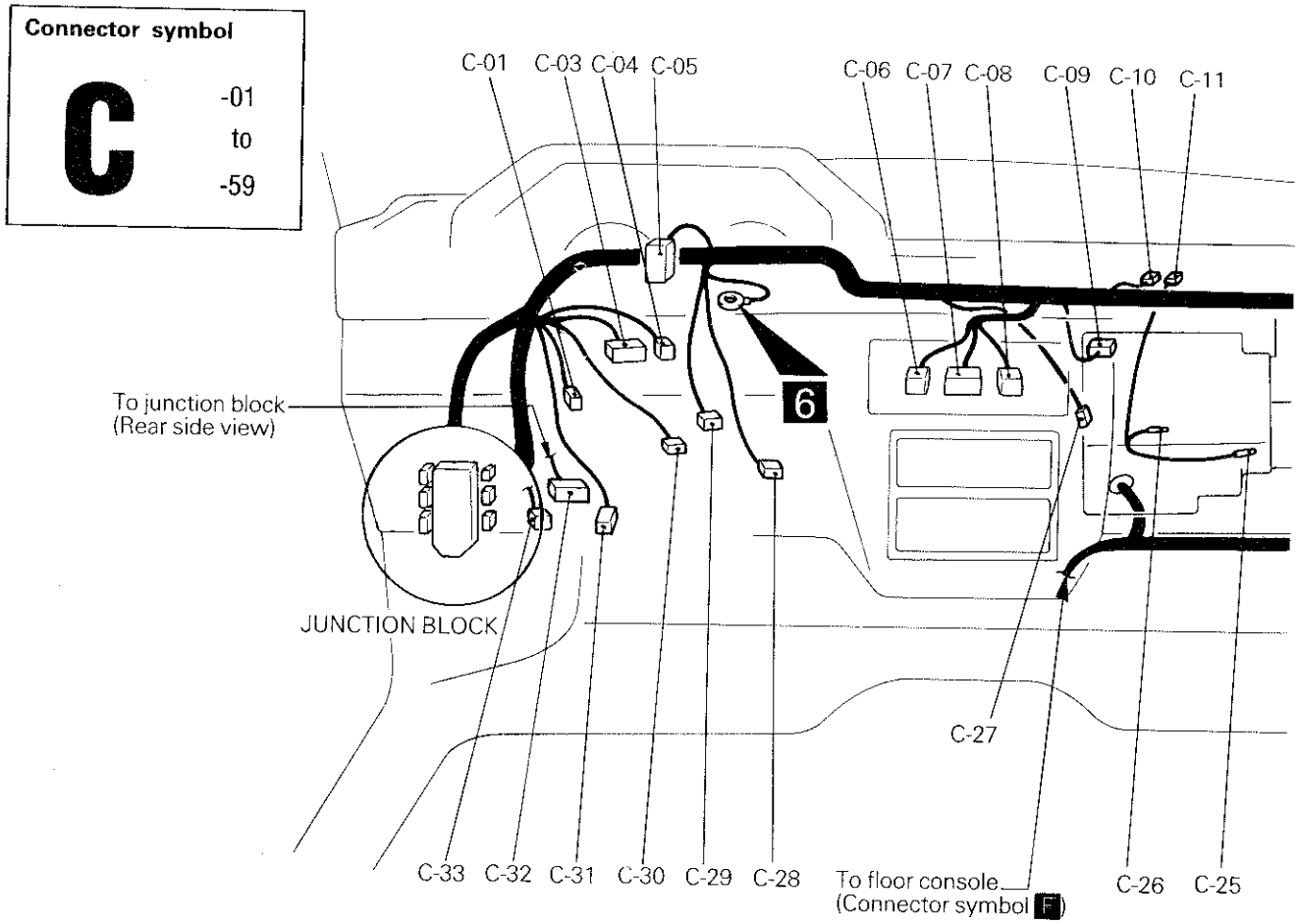
<Rear side view>



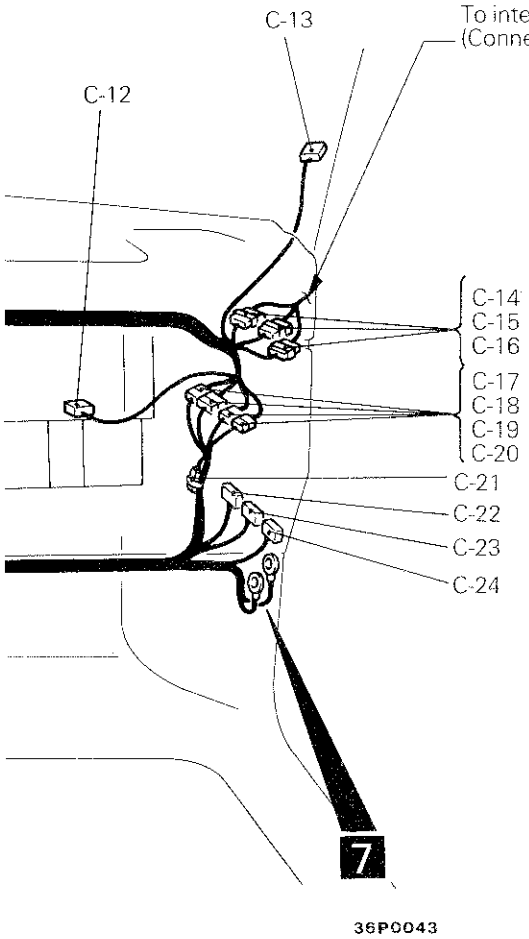
C-43 Ignition switch
C-44 Column switch
C-45, C-46 Instrument panel wiring harness and junction block combination
C-47, C-48, C-49, C-50 Main wiring harness and junction block combination
C-51 Main wiring harness and instrument panel wiring harness combination
C-52 Instrument panel wiring harness and rear wiring harness combination
C-53 Self-diagnosis connector
C-54 Rear wiring harness and junction block combination
C-55 Defogger timer
C-56 Rear wiring harness and front wiring harness combination
C-57, C-58, C-59 Front wiring harness and junction block combination

Remarks
(1) For details concerning the ground point (example: 7), refer to P.8-11.
(2) "–" means that the connector with code-number is not used.

6 DASH PANEL <1.6L Engine>

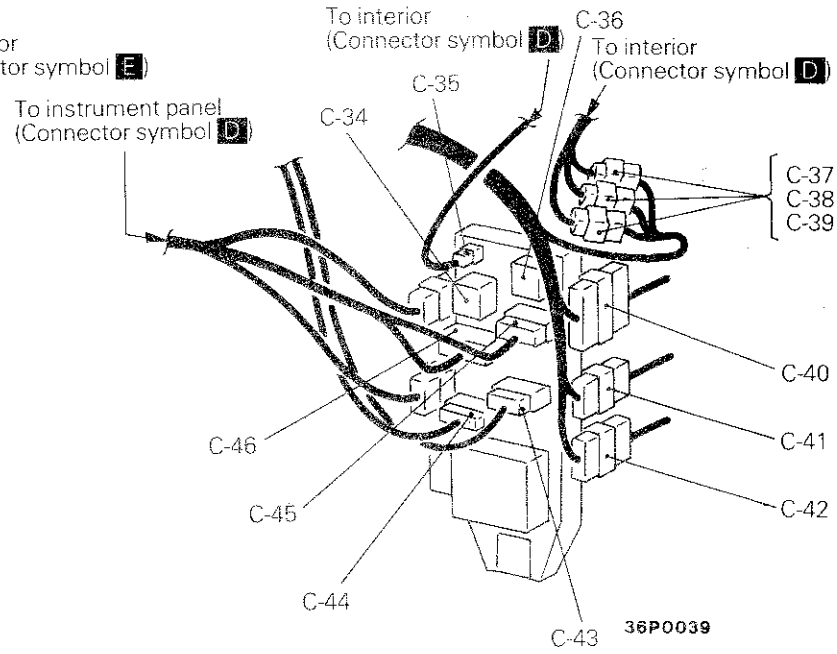


C-01 Clutch switch (Vehicles with auto-cruise control <M/T>)
C-02 –
C-03 Column switch
C-04 Column switch (Vehicles with auto-cruise control)
C-05 Combination meter
C-06 Air conditioner switch
C-07 Blower switch
C-08 Heater control illumination light
C-09 Blower resistor
C-10, C-11 } Auto-compressor control unit
C-12 Blower motor
C-13 Release switch (Right side) (for automatic seat belt)
C-14, C-15, C-16 } Main wiring harness and front door wiring harness (Right side) combination
C-17, C-18, C-19, C-20 } Main wiring harness and control wiring harness combination
C-21 Oxygen sensor check connector
C-22, C-23, C-24 } MPI control unit
C-25 Air thermo sensor (for air conditioner)
C-26 Air inlet sensor (for air conditioner)
C-27 Starter relay <M/T>
C-28 Accelerator pedal switch <A/T>
C-29 Stop light switch
C-30 Key reminder switch
C-31 Inter lock switch <M/T>
C-32 Auto-cruise control unit or *jumper connector
C-33 Defogger relay
C-34 Heater relay
C-35 Roof wiring harness and junction block combination
C-36 Turn-signal and hazard flasher unit
C-37, C-38, C-39 } Main wiring harness and front door wiring harness (Left side) combination
C-40 Main wiring harness and front wiring harness combination
C-41, C-42 } Main wiring harness and rear wiring harness combination
C-43 Ignition switch
C-44 Column switch

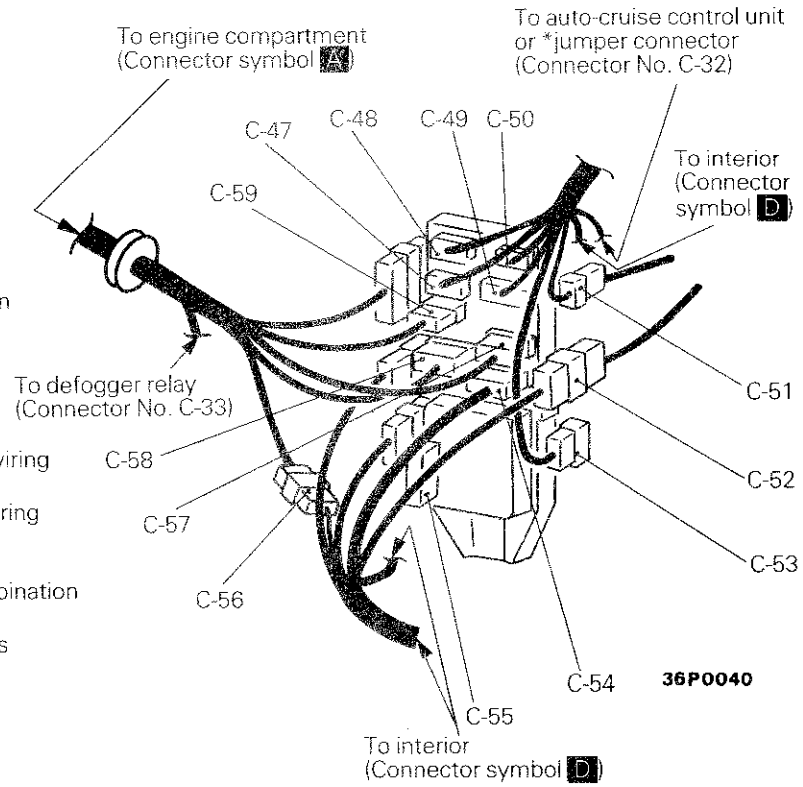


JUNCTION BLOCK

<Front side view>



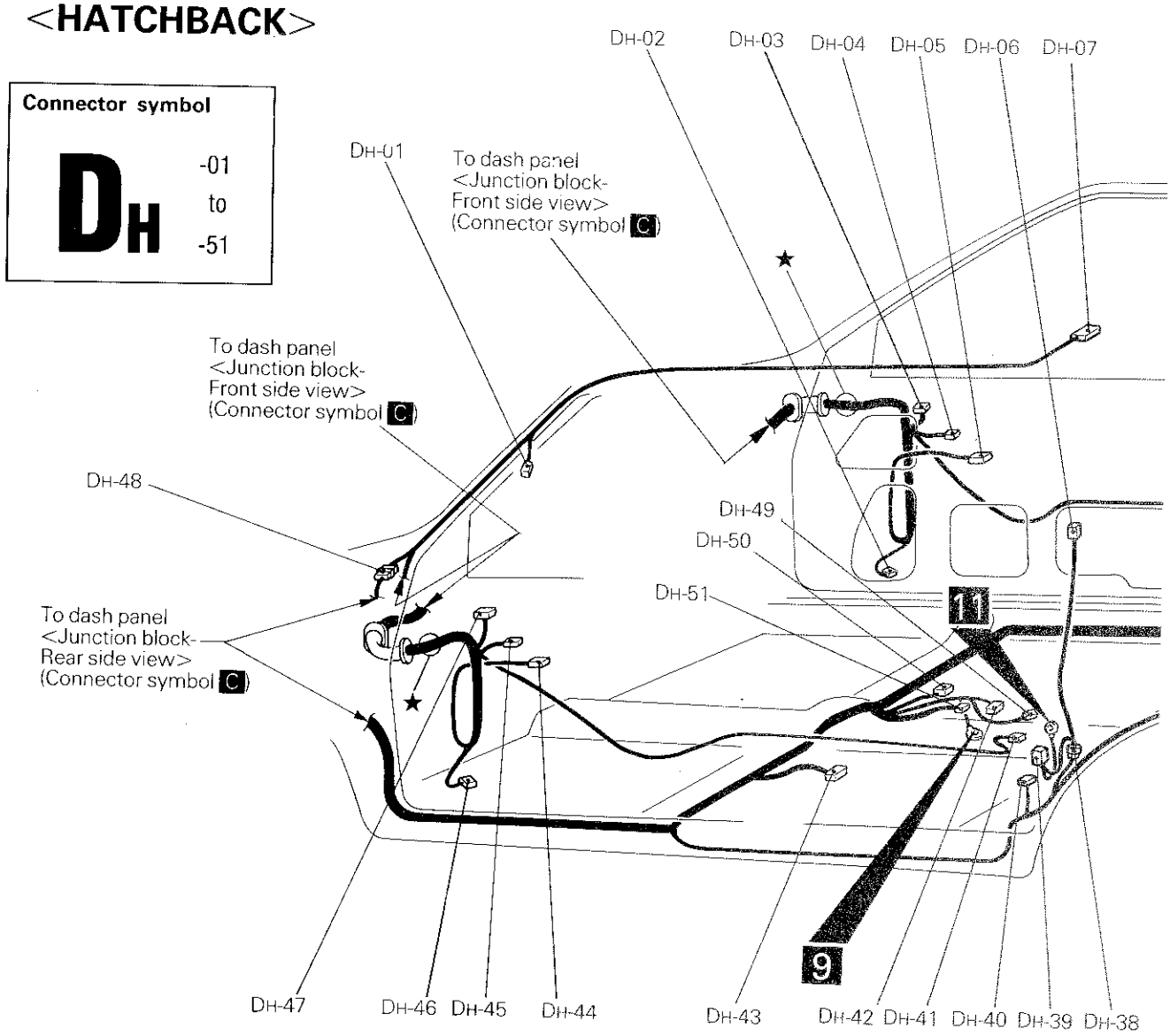
<Rear side view>



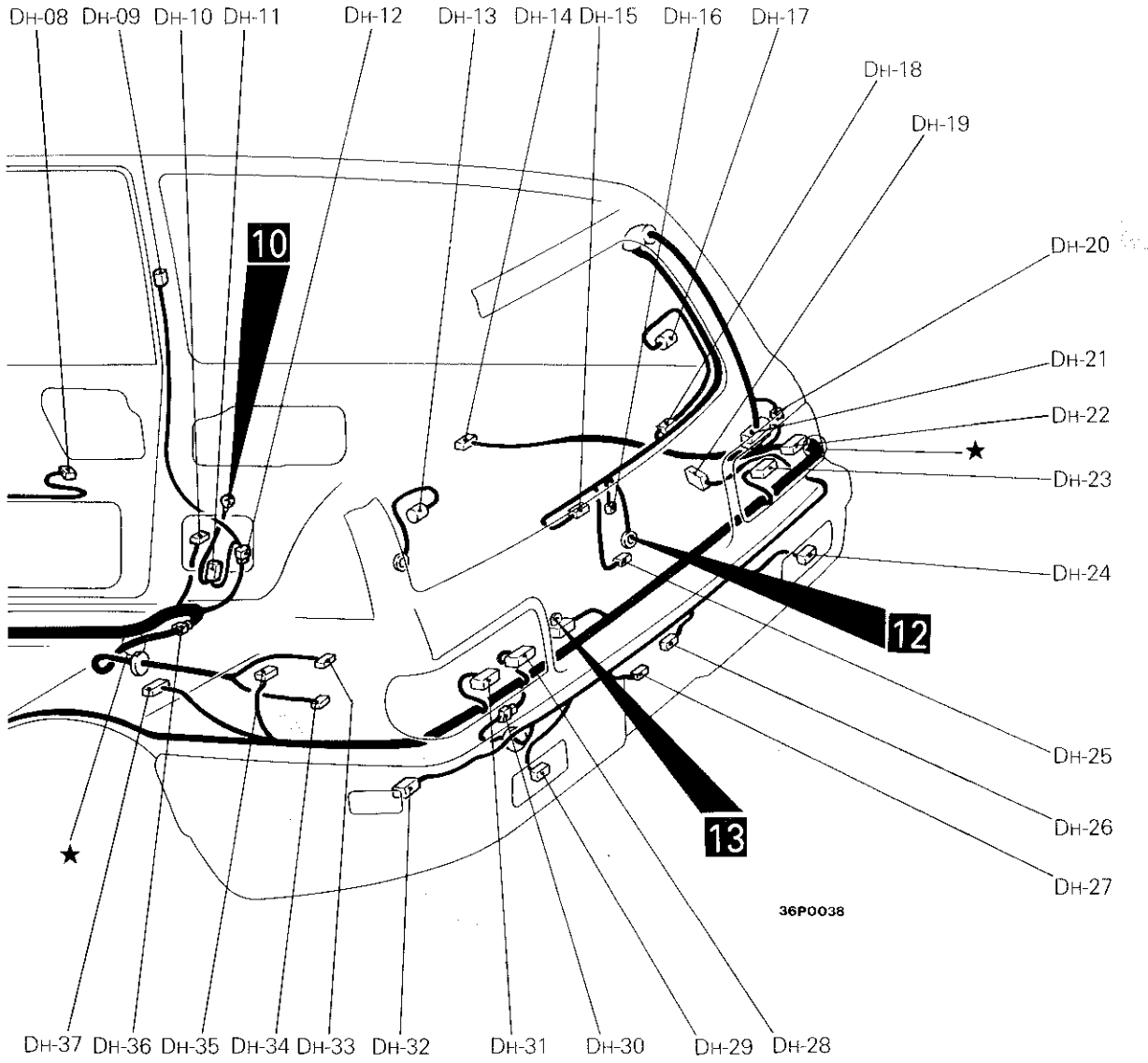
C-45, C-46	Instrument panel wiring harness and junction block combination
C-47, C-48, C-49, C-50	Main wiring harness and junction block combination
C-51	Main wiring harness and instrument panel wiring harness combination
C-52	Instrument panel wiring harness and rear wiring harness combination
C-53	Self-diagnosis connector
C-54	Rear wiring harness and junction block combination
C-55	Defogger timer
C-56	Rear wiring harness and front wiring harness combination
C-57, C-58, C-59	Front wiring harness and junction block combination

Remarks
(1) For details concerning the ground point (example: 7), refer to P.8-11.
(2) * mark indicates the optional wiring harness for auto-cruise control system.
(3) "–" means that the connector with code-number is not used.

7 INTERIOR <HATCHBACK>



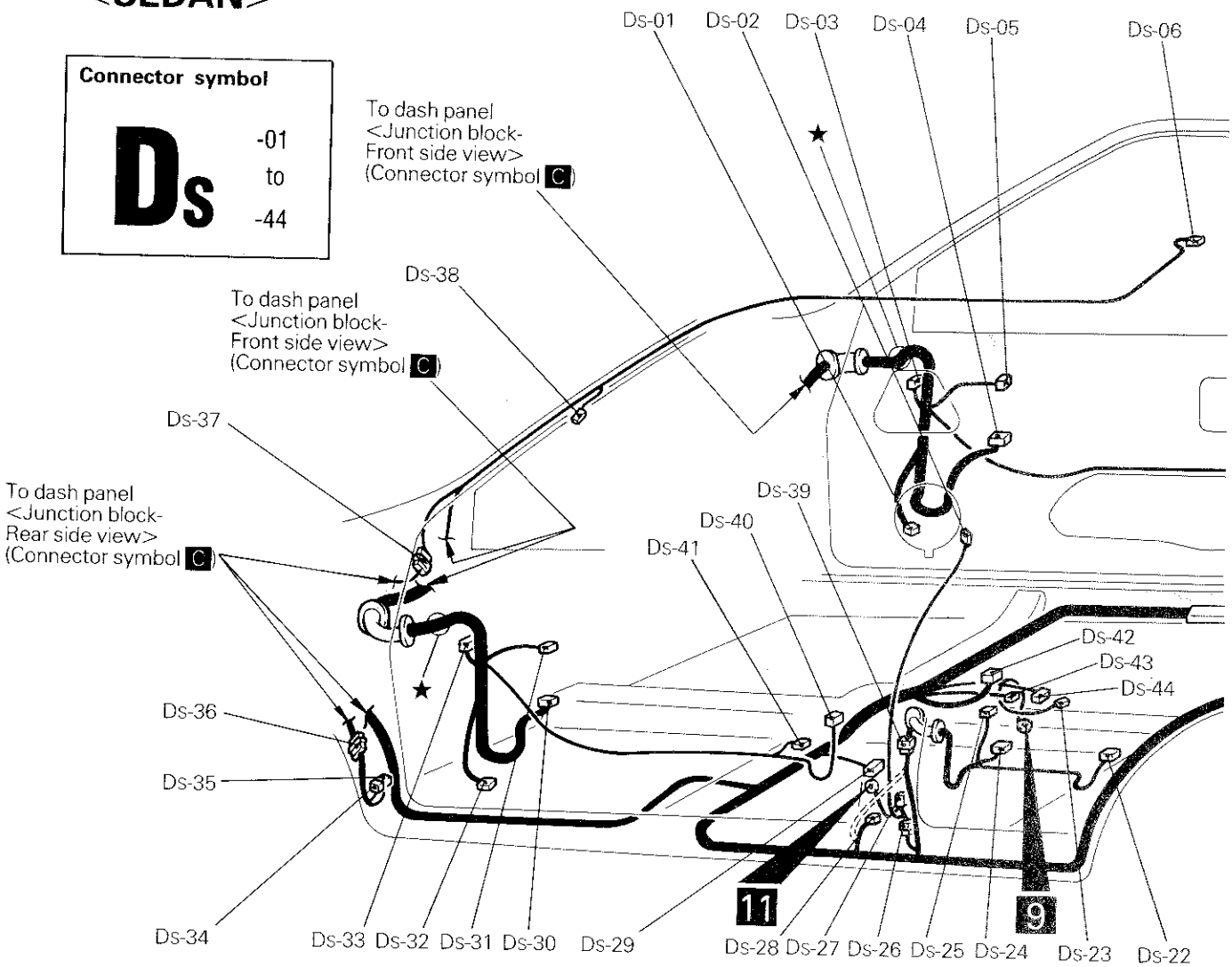
DH-01 Release switch (Left side) (for automatic seat belt)
DH-02 Door speaker (Right side)
DH-03 Door mirror (Right side)
DH-04 Power window motor (Right side)
DH-05 Power window sub switch (Right side)
DH-06 Fasten switch (Left side) (for automatic seat belt)
DH-07 Dome light
DH-08 Door latch switch (Right side) (for automatic seat belt)
DH-09 Fasten switch (Right side) (for automatic seat belt)
DH-10 Door switch (Right side)
DH-11 Automatic seat belt motor relay (Right side)
DH-12 Rear wiring harness and automatic seat belt wiring harness (Right side) combination
DH-13 Defogger (–)
DH-14 Rear speaker (Right side)
DH-15 High-mounted stop light
DH-16 Rear wiper motor
DH-17 Defogger (+)
DH-18 Liftgate wiring harness and defogger cable (+) combination
DH-19 Rear side marker light (Right side)
DH-20, DH-21 Rear wiring harness and liftgate wiring harness combination
DH-22, DH-23 Rear combination light (Right side)
DH-24 Back-up light (Right side)
DH-25 Liftgate switch
DH-26 License plate light (Right side)
DH-27 License plate light (Left side)
DH-28 Rear combination light (Left side)
DH-29 Back-up light (Left side)



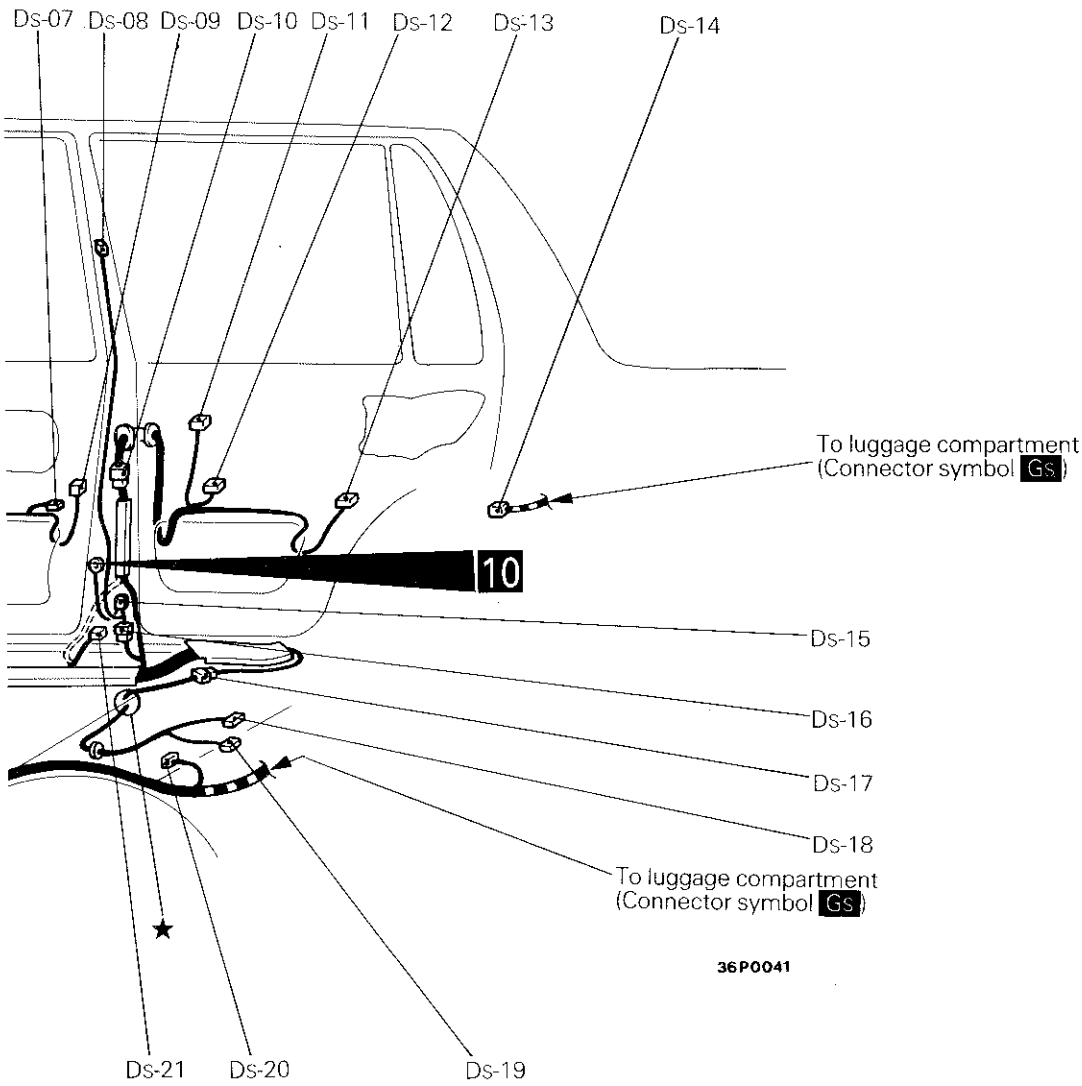
DH-30 Rear wiring harness and rear bumper wiring harness combination
DH-31 Rear combination light (Left side)
DH-32 Rear side marker light (Left side)
DH-33 Fuel gauge unit
DH-34 Fuel pump
DH-35 Luggage compartment light
DH-36 Rear wiring harness and fuel tank wiring harness combination
DH-37 Rear speaker (Left side)
DH-38 Rear wiring harness and automatic seat belt wiring harness (Left side) combination
DH-39 Automatic seat belt motor relay (Left side)
DH-40 Door switch (Left side)
DH-41 Door latch switch (Left side)
DH-42 Automatic seat belt control unit
DH-43 Buckle switch
DH-44 Power window main switch (Left side)
DH-45 Power window motor (Left side)
DH-46 Door speaker (Left side)
DH-47 Door mirror (Left side)
DH-48 Rear wiring harness and dome light wiring harness combination
DH-49 Outer switch (for automatic seat belt)
DH-50 Remote controlled mirror switch
DH-51 Parking brake switch

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: 12), refer to P.8-11.

8 INTERIOR <SEDAN>



Ds-01 Door speaker (Right side)
Ds-02 Fasten switch (Left side) (for automatic seat belt)
Ds-03 Door mirror (Right side)
Ds-04 Front power window sub switch (Right side)
Ds-05 Front power window motor (Right side)
Ds-06 Dome light
Ds-07 Door latch switch (Right side) (for automatic seat belt)
Ds-08 Fasten switch (Right side) (for automatic seat belt)
Ds-09 Front door lock actuator (Right side)
Ds-10 Rear wiring harness and rear door wiring harness (Right side) combination
Ds-11 Rear power window sub switch (Right side)
Ds-12 Rear power window motor (Right side)
Ds-13 Rear door lock actuator (Right side)
Ds-14 Rear door switch (Right side)
Ds-15 Automatic seat belt motor relay (Right side)
Ds-16 Rear wiring harness and automatic seat belt wiring harness (Right side) combination
Ds-17 Rear wiring harness and fuel tank wiring harness combination
Ds-18 Fuel gauge unit
Ds-19 Fuel pump
Ds-20 Rear door switch (Left side)
Ds-21 Front door switch (Right side)
Ds-22 Rear door lock actuator (Left side)
Ds-23 Outer switch (for automatic seat belt)
Ds-24 Rear power window motor (Left side)
Ds-25 Rear power window sub switch (Left side)



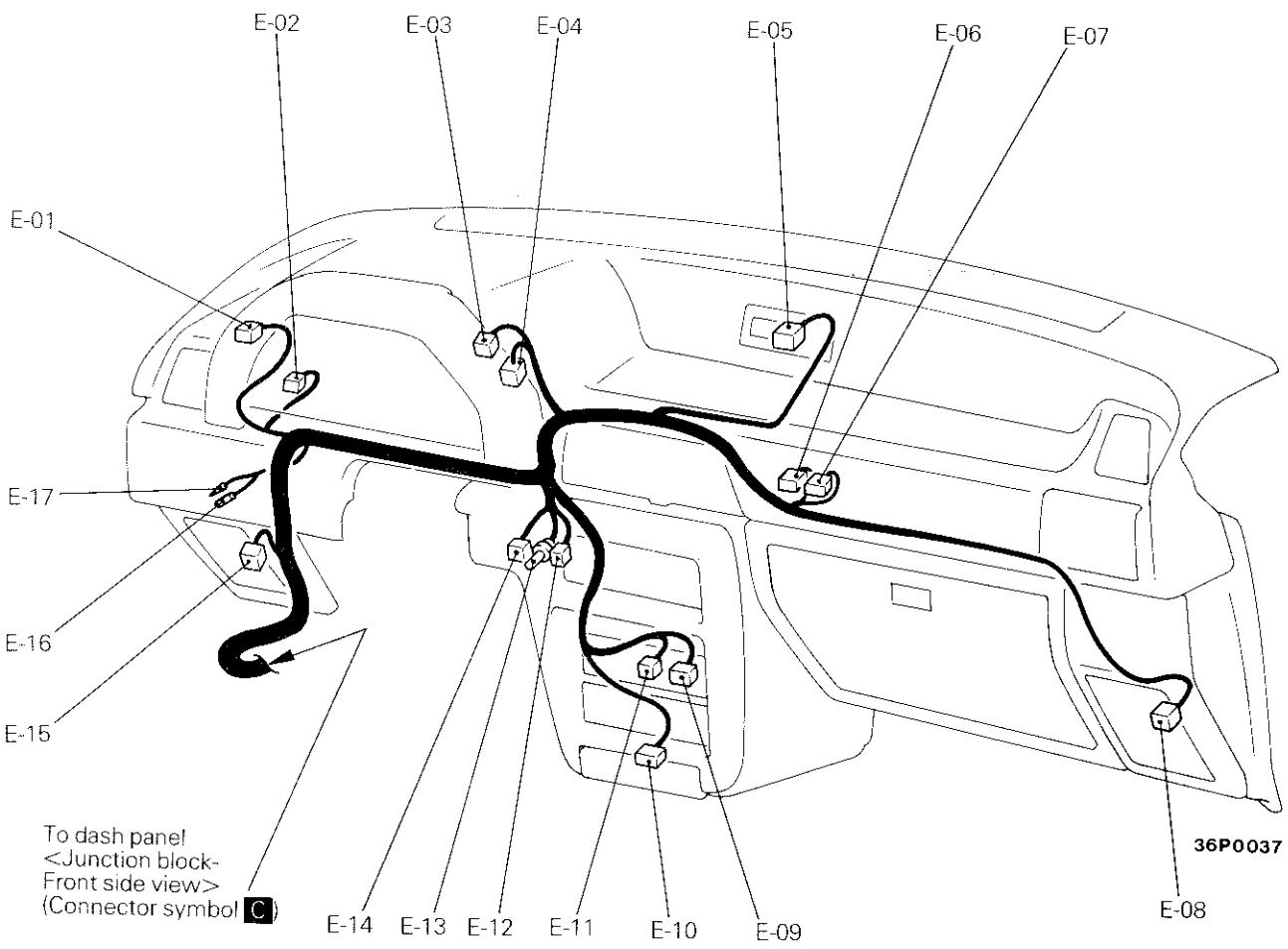
Ds-26 Rear wiring harness and automatic seat belt wiring harness (Left side) combination
Ds-27 Automatic seat belt motor relay (Left side)
Ds-28 Front door switch (Left side)
Ds-29 Buckle switch
Ds-30 Front power window main switch (Left side)
Ds-31 Front power window motor (Left side)
Ds-32 Door speaker (Left side)
Ds-33 Door mirror (Left side)
Ds-34 Door lock relay
Ds-35 Door lock control unit
Ds-36 Main wiring harness and door lock sub wiring harness combination
Ds-37 Rear wiring harness and dome light wiring harness combination
Ds-38 Release switch (Left side) (for automatic seat belt)
Ds-39 Rear wiring harness and rear door wiring harness (left side) combination
Ds-40 Front door lock actuator (Left side)
Ds-41 Door latch switch (Left side)
Ds-42 Remote controlled mirror switch
Ds-43 Parking brake switch
Ds-44 Automatic seat belt control unit

Remarks
(1) The mark ★ shows the standard mounting position of wiring harness.
(2) For details concerning the ground point (example: 9), refer to P.8-11.
(3) Cabling for vehicles not equipped with automatic seat belts is indicated by dotted lines (= = = = =).

9 INSTRUMENT PANEL

Connector symbol

E -01 to -17

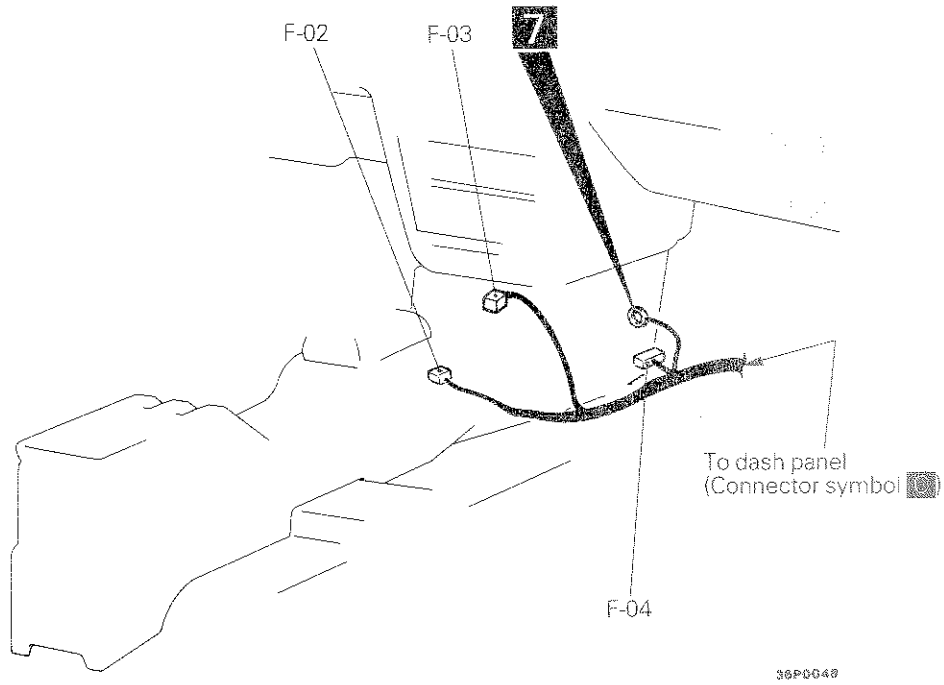


E-01 Defogger switch
E-02 Combination meter
E-03 Hazard switch
E-04 Rear wiper washer switch <HATCHBACK>
E-05 Clock
E-06 Seat belt warning timer <Vehicles for CANADA>
E-07 Warning buzzer
E-08 Front speaker (Right side)
E-09 Radio or Radio with tape player
E-10 Ashtray illumination lighter
E-11 Radio or Radio with tape player
E-12 Cigarette lighter (+)
E-13 Cigarette lighter illumination light
E-14 Cigarette lighter (–)
E-15 Front speaker (Left side)
E-16, E-17 } Rheostat

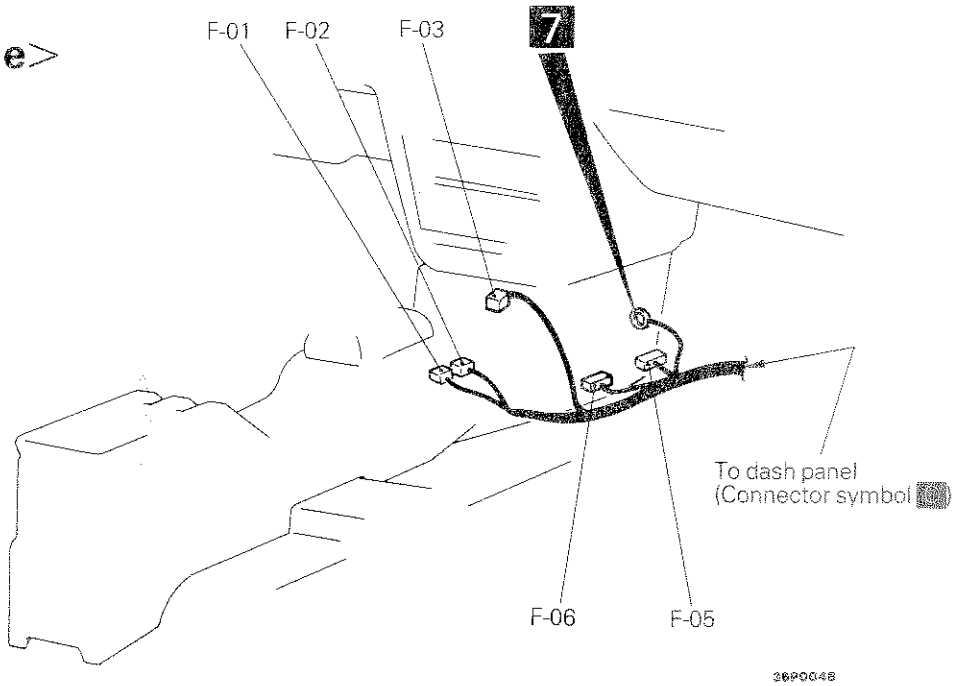
10 FLOOR CONSOLE

Connector symbol	
F	-01 to -06

<1.5L Engine>



<1.6L Engine>



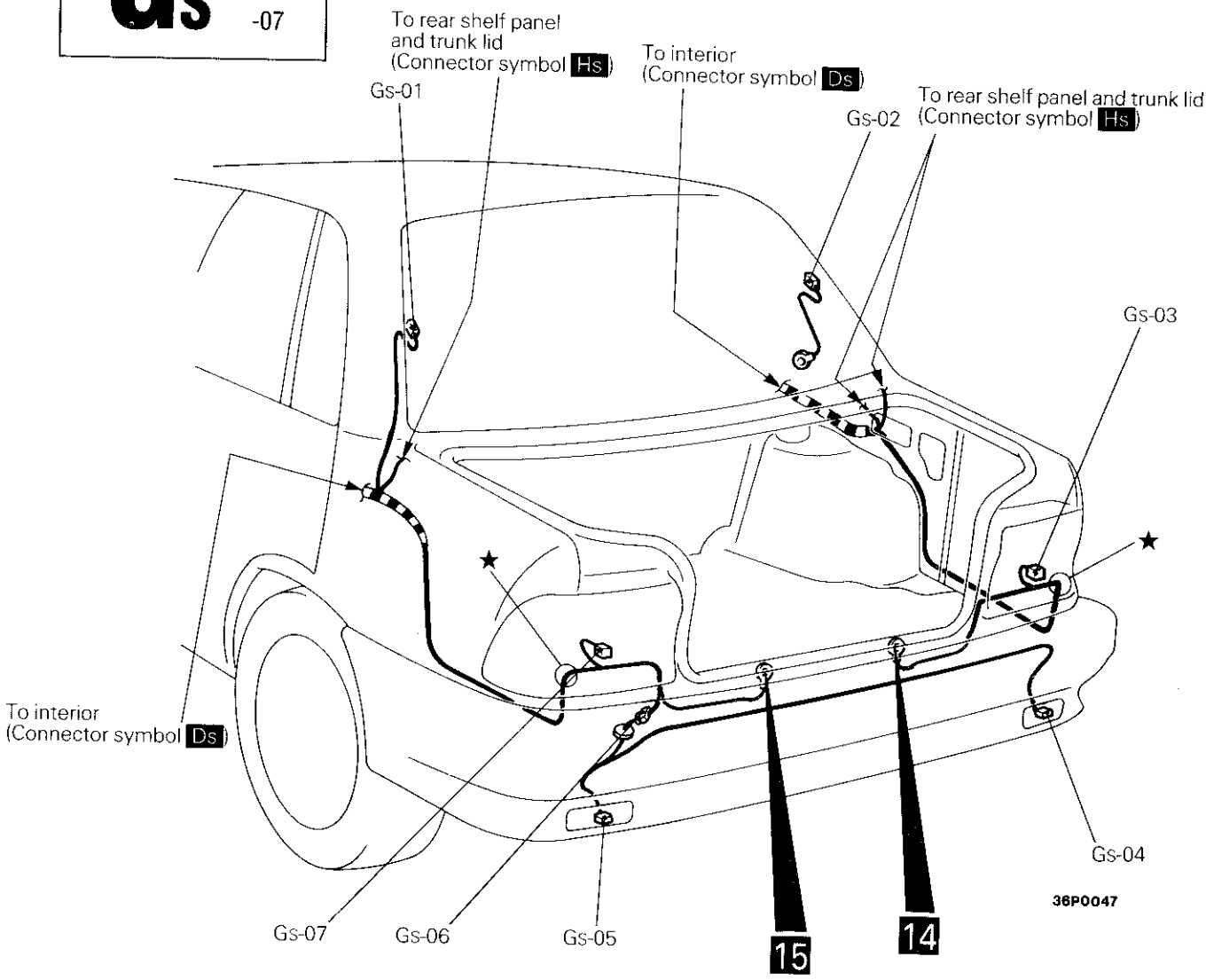
F-01 Over drive switch
F-02 Automatic transaxle selector lever position illumination light
F-03 MPI control relay
F-04 3 A/T control unit
F-05 } 4 A/T control unit
F-06

Remark
For details concerning the ground point (example: 2), refer to P.8-11.

11 LUGGAGE COMPARTMENT

Connector symbol

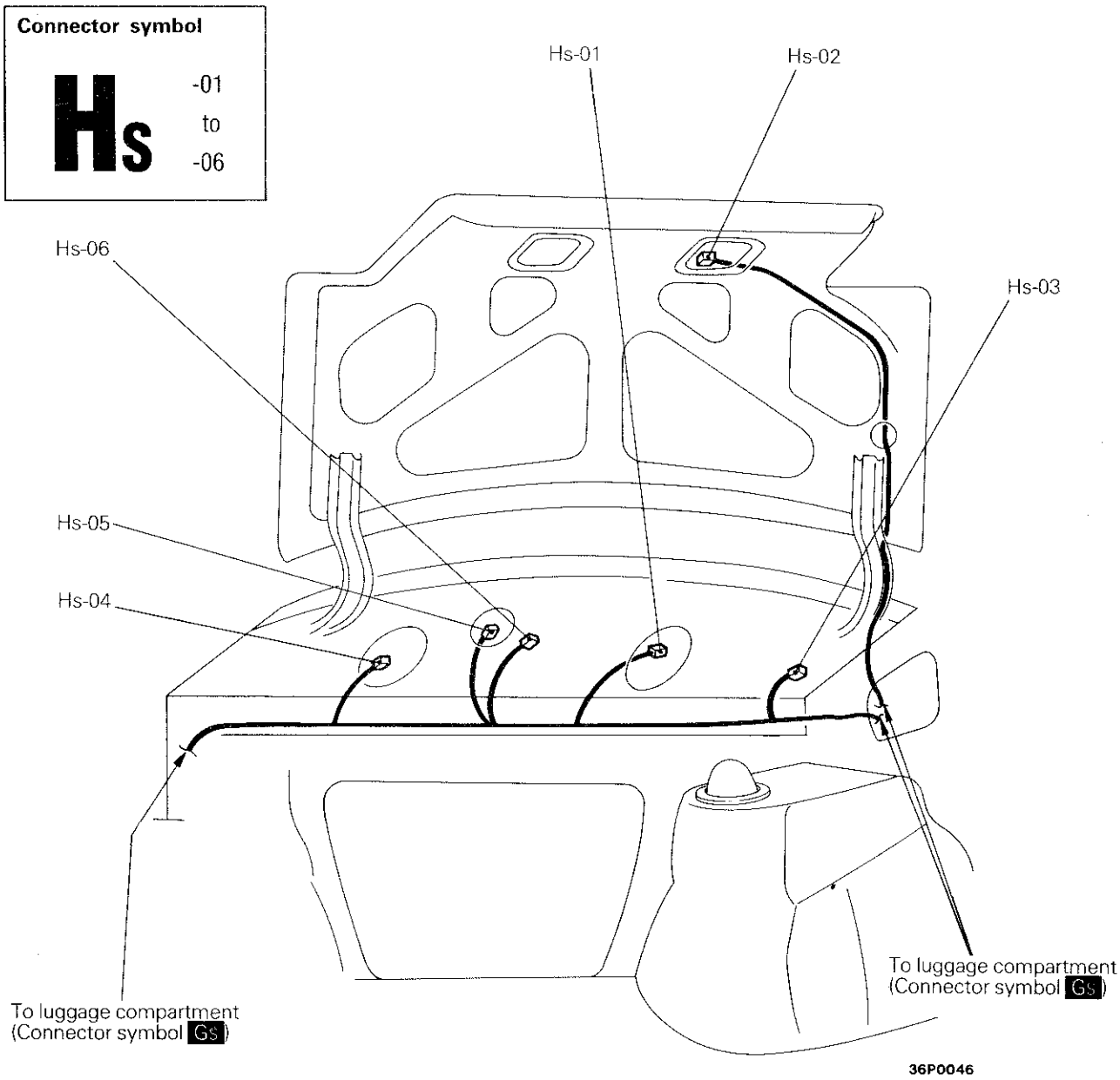
Gs -01 to -07



Gs-01 Defogger (+)
Gs-02 Defogger (–)
Gs-03 Rear combination light (right side)
Gs-04 Back-up light (Right side)
Gs-05 Back-up light (Left side)
Gs-06 Raer wiring harness and rear bumper wiring harness combination
Gs-07 Rear combination light (Left side)

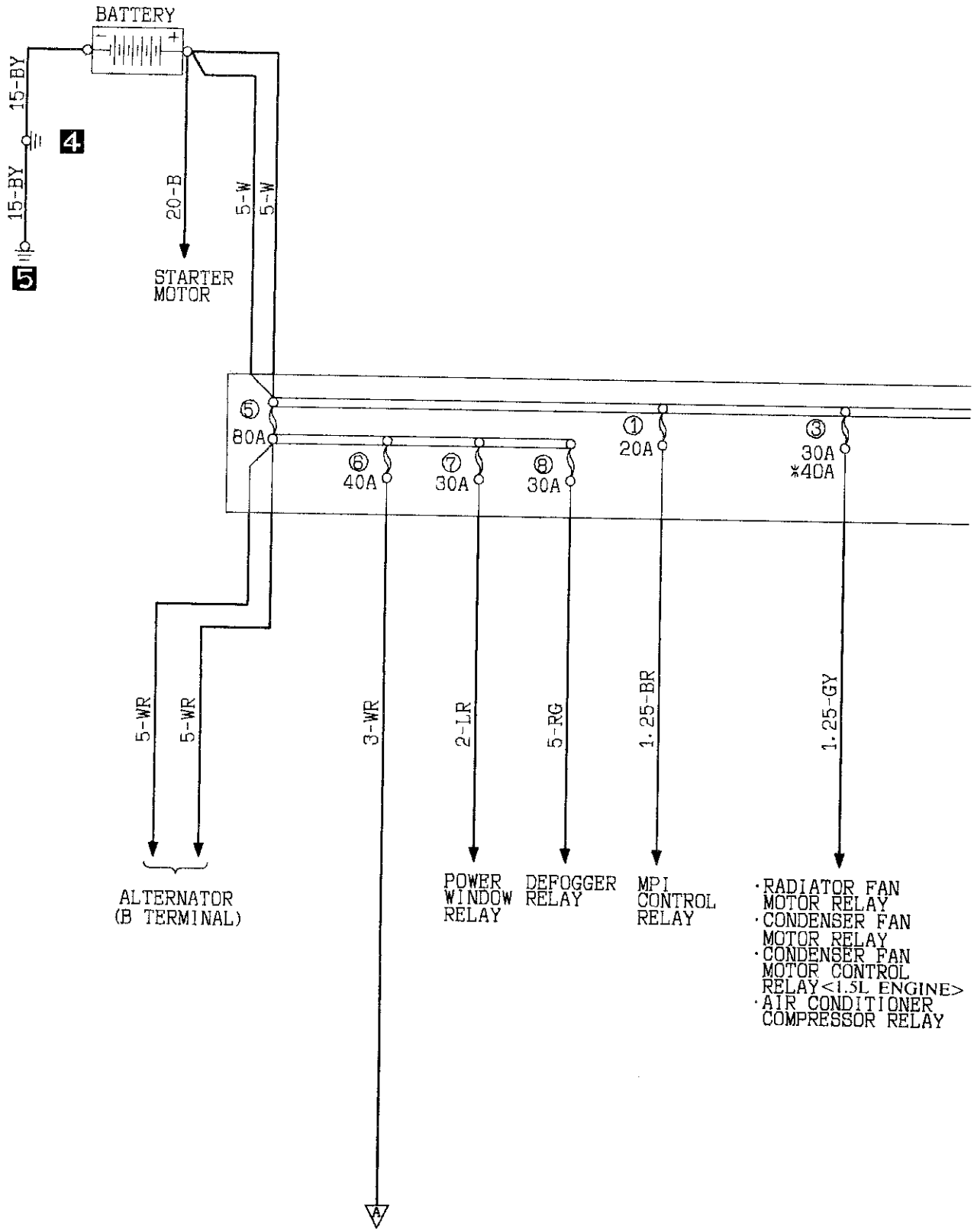
Remarks
(1) For details concerning the ground point (example: 14), refer to P.8-11.
(2) The mark ★ shows the standard mounting position of wiring harness.

12 REAR SHELF PANEL AND TRUNK LID

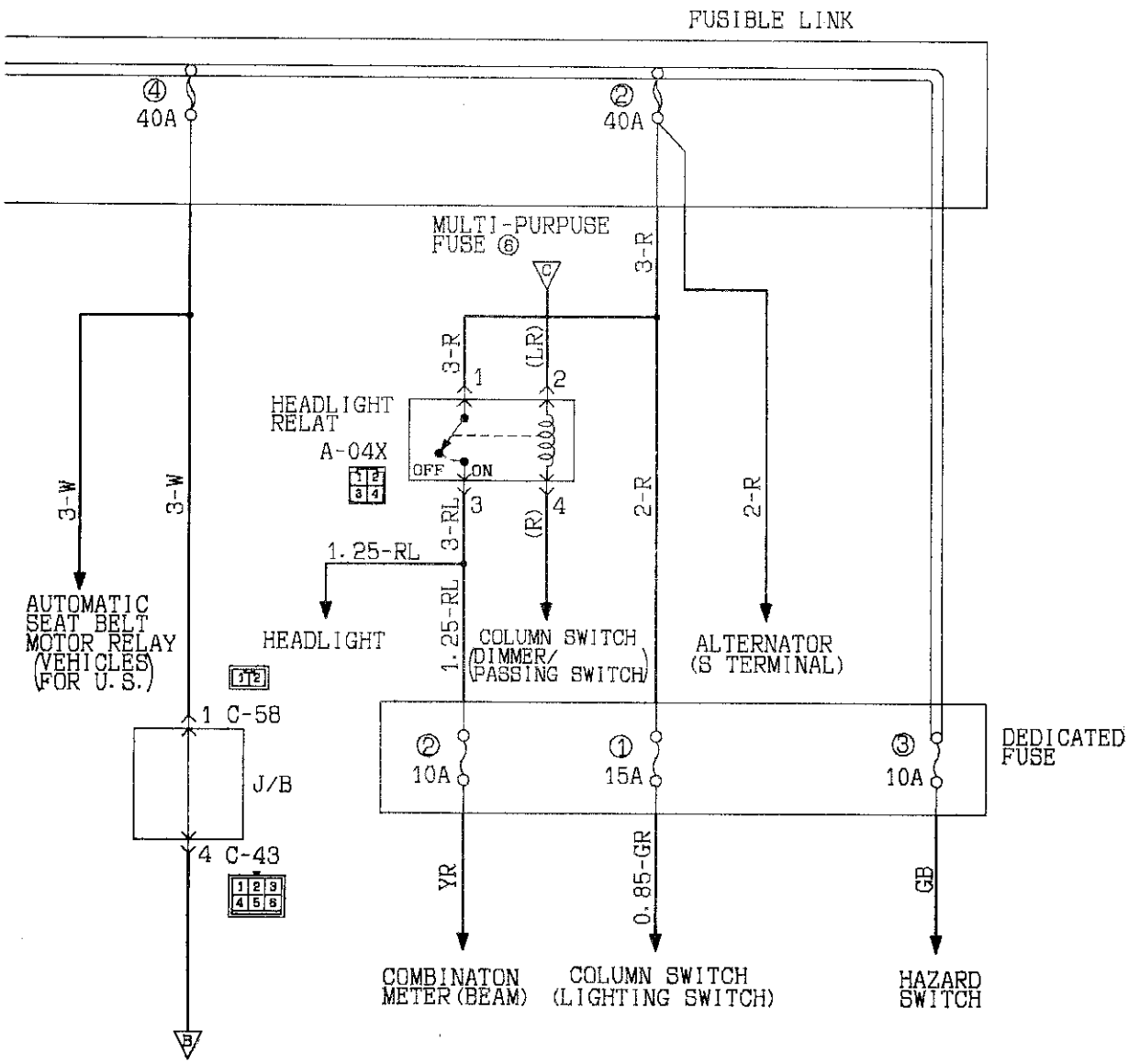


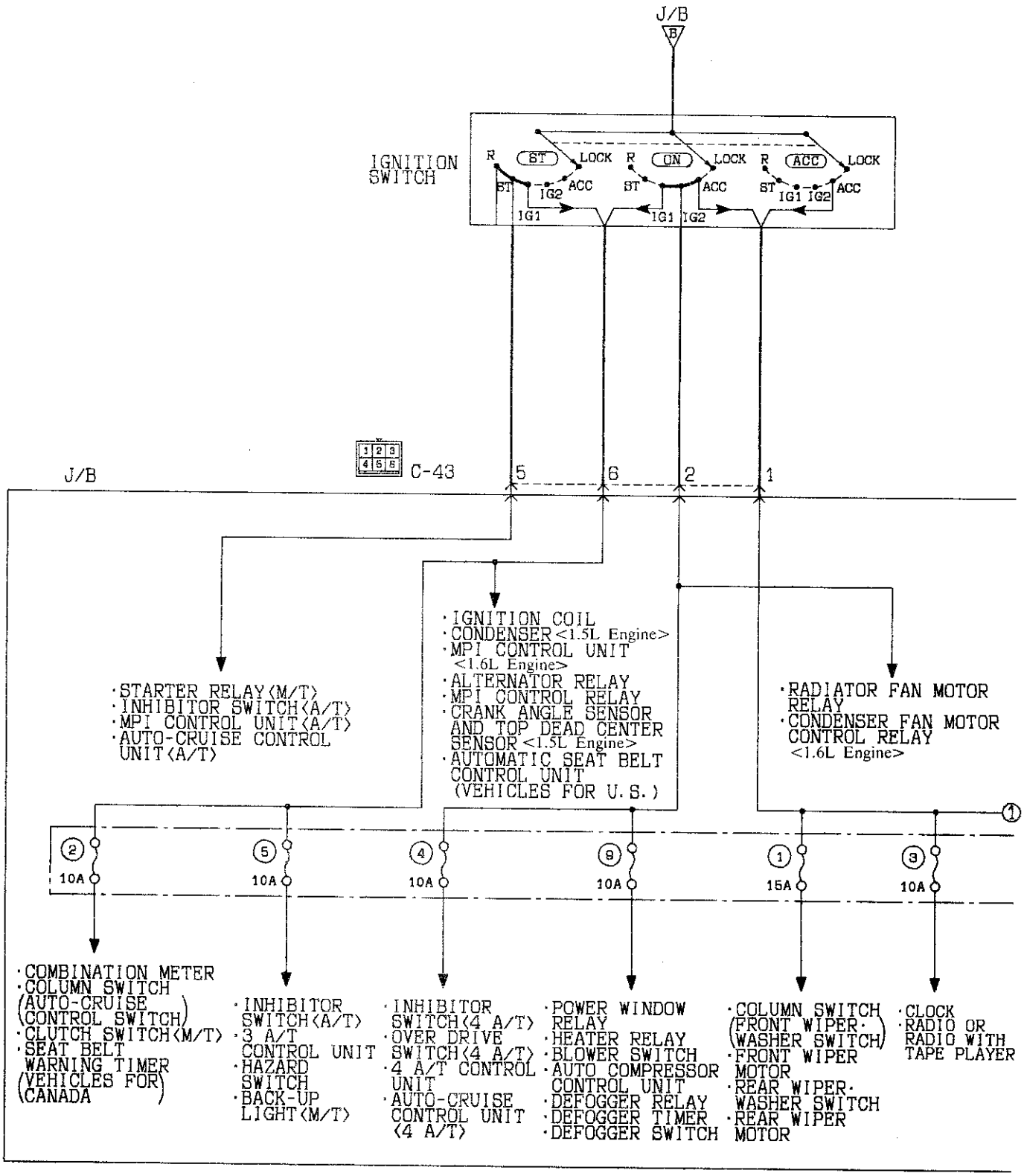
Hs-01 Rear speaker (Right side)
Hs-02 License plate light
Hs-03 Luggage compartment light switch
Hs-04 Rear speaker (Left side)
Hs-05 High-mounted stop light
Hs-06 Luggage compartment light

1 POWER DISTRIBUTION CIRCUIT

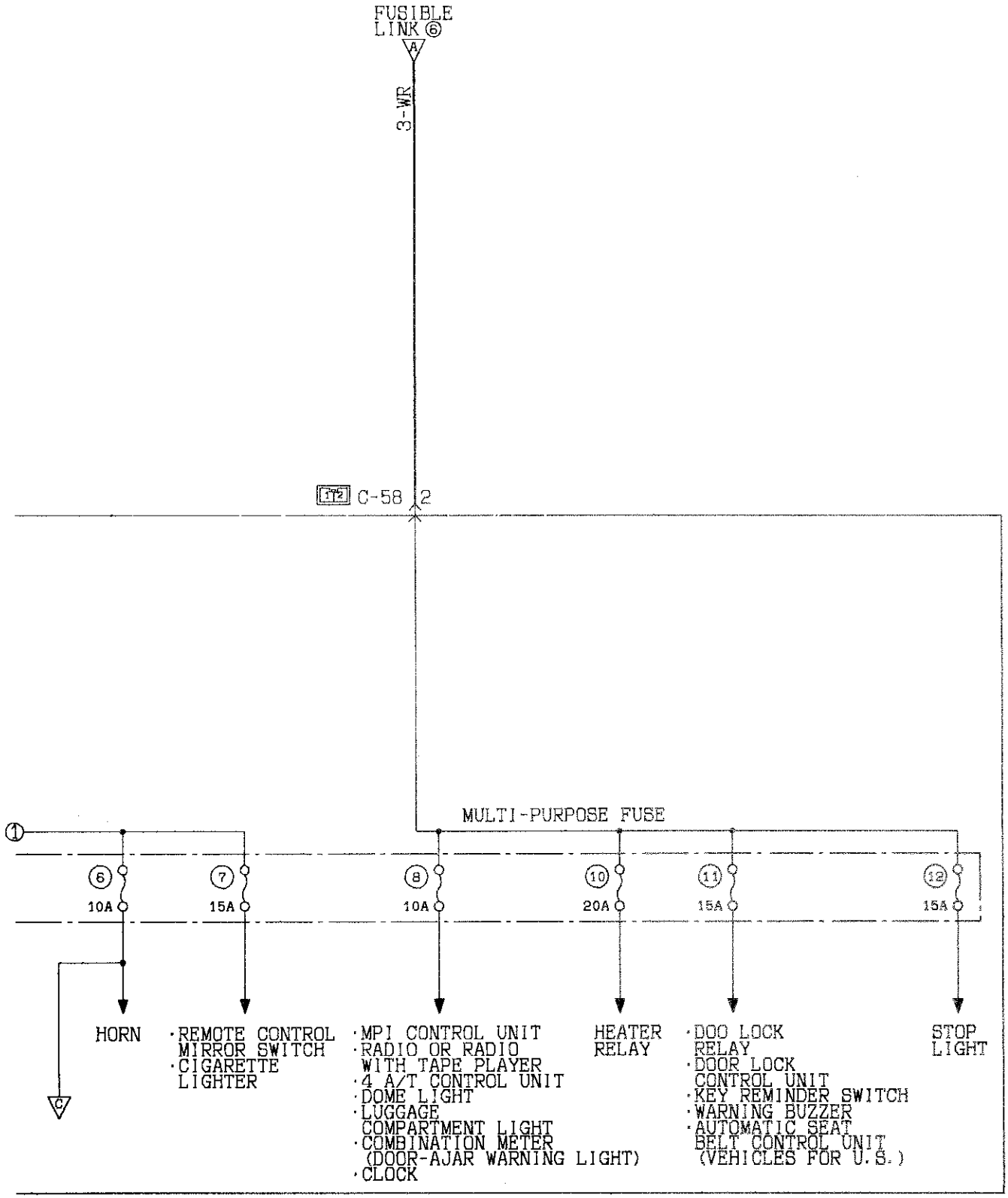


REMARK *MARK INDICATES VEHICLES WITH 1.6L Engine FOR U.S..


FUSIBLE LINK
④ 40A
② 40A
MULTI-PURPUSE FUSE ⑥
3-R
3-R
(LR)
1
2
HEADLIGHT RELAT
A-04X
OFF
ON
3-W
3-W
3-RL
3
(R)
4
2-R
2-R
1.25-RL
AUTOMATIC SEAT BELT MOTOR RELAY (VEHICLES FOR U.S.)
HEADLIGHT
1.25-RL
COLUMN SWITCH (DIMMER/ PASSING SWITCH)
ALTERNATOR (S TERMINAL)
1 C-58
J/B
4 C-43
② 10A
① 15A
③ 10A
DEDICATED FUSE
YR
0.85-GR
GB
COMBINATON METER(BEAM)
COLUMN SWITCH (LIGHTING SWITCH)
HAZARD SWITCH

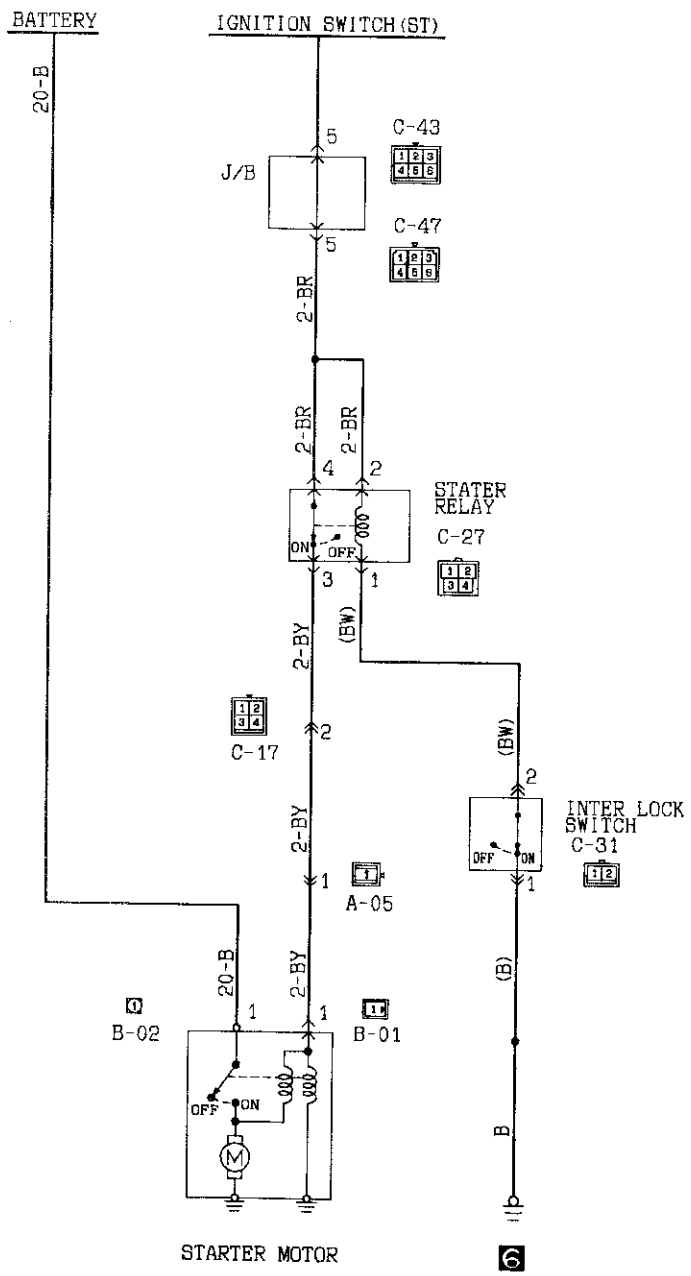


REMARKS
(1) THE ABOVE CIRCUIT DIAGRAM SHOWS THE CURRENT FLOW AT THE IGNITION KEY POSITION "ACC", "ON" AND "ST" COMBINED
(2) BE SURE TRACE THE APPROPRIATE CIRCUIT DEPENDING ON THE IGNITION KEY POSITION

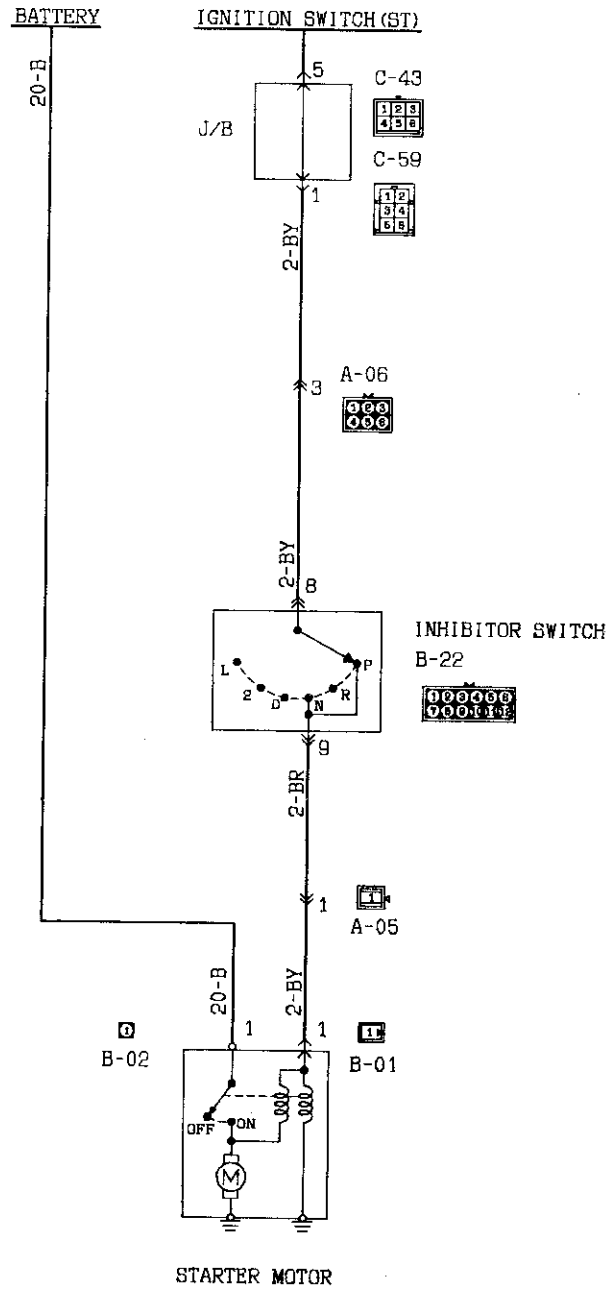

FUSIBLE LINK ⑥
A
3-WR
C-58
2
MULTI-PURPOSE FUSE
①
⑥ 10A
⑦ 15A
⑧ 10A
⑩ 20A
⑪ 15A
⑫ 15A
C
HORN
·REMOTE CONTROL MIRROR SWITCH
·CIGARETTE LIGHTER
·MPI CONTROL UNIT
·RADIO OR RADIO WITH TAPE PLAYER
·4 A/T CONTROL UNIT
·DOME LIGHT
·LUGGAGE COMPARTMENT LIGHT
·COMBINATION METER (DOOR-AJAR WARNING LIGHT)
·CLOCK
HEATER RELAY
·DOO LOCK RELAY
·DOOR LOCK CONTROL UNIT
·KEY REMINDER SWITCH
·WARNING BUZZER
·AUTOMATIC SEAT BELT CONTROL UNIT (VEHICLES FOR U.S.)
STOP LIGHT

2 STARTER CIRCUIT

2-1 〈M/T〉



2-2 〈A/T〉

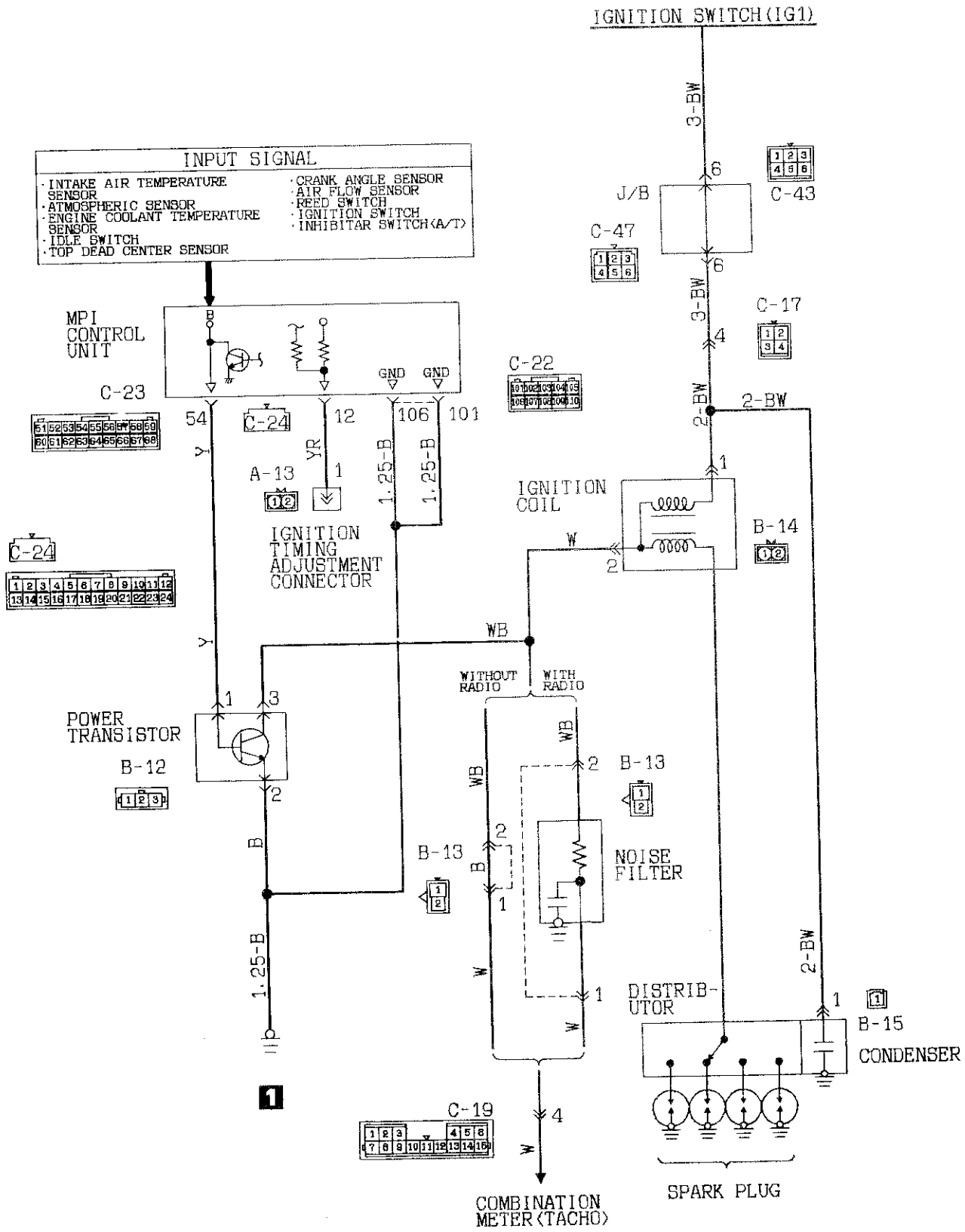


KX35-AC-C0201-N

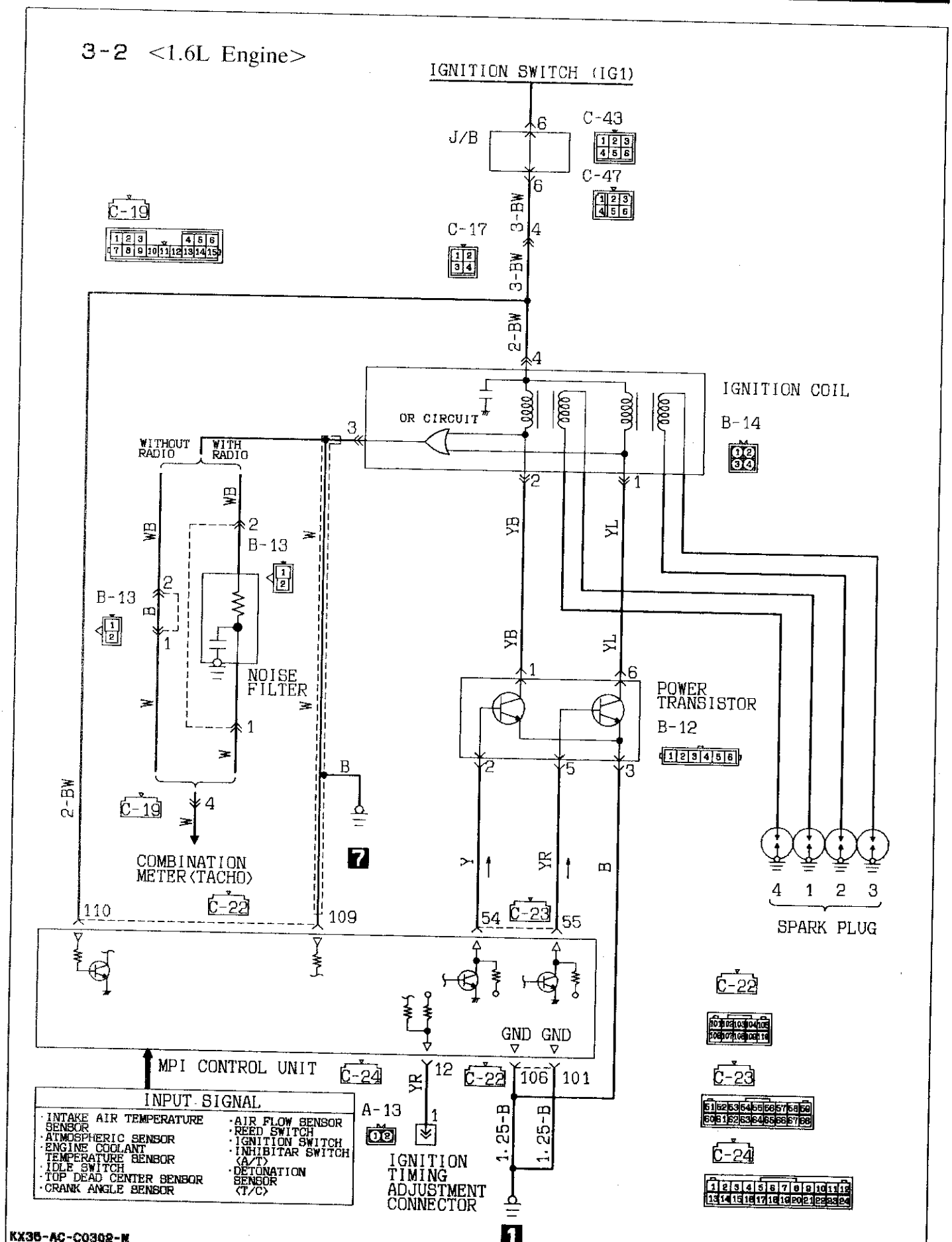
KX35-AC-C0202-N

3 IGNITION CIRCUIT

3-1 <1.5L Engine>

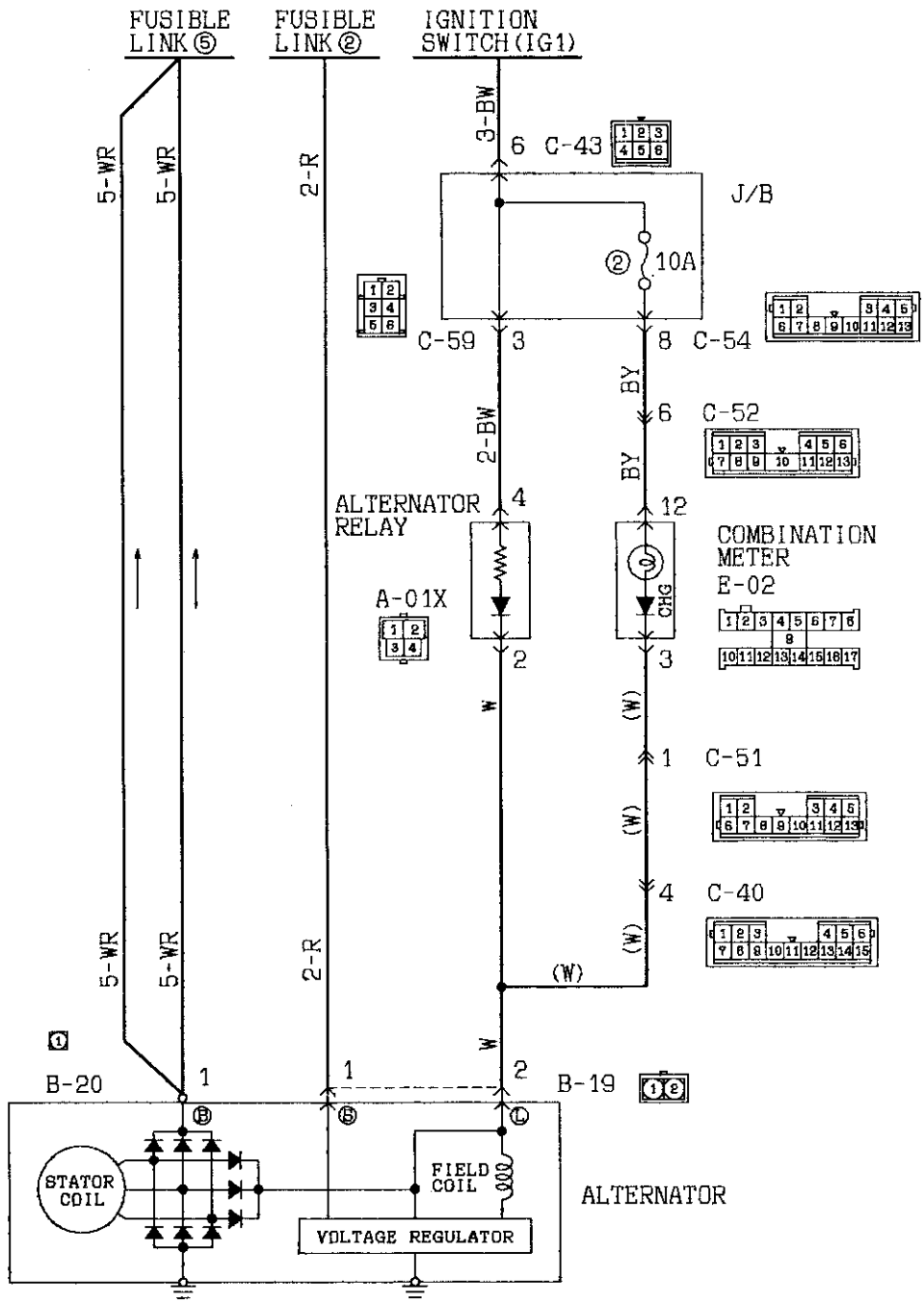


KX35-AC-C0301-N



KX36-AC-C0302-M

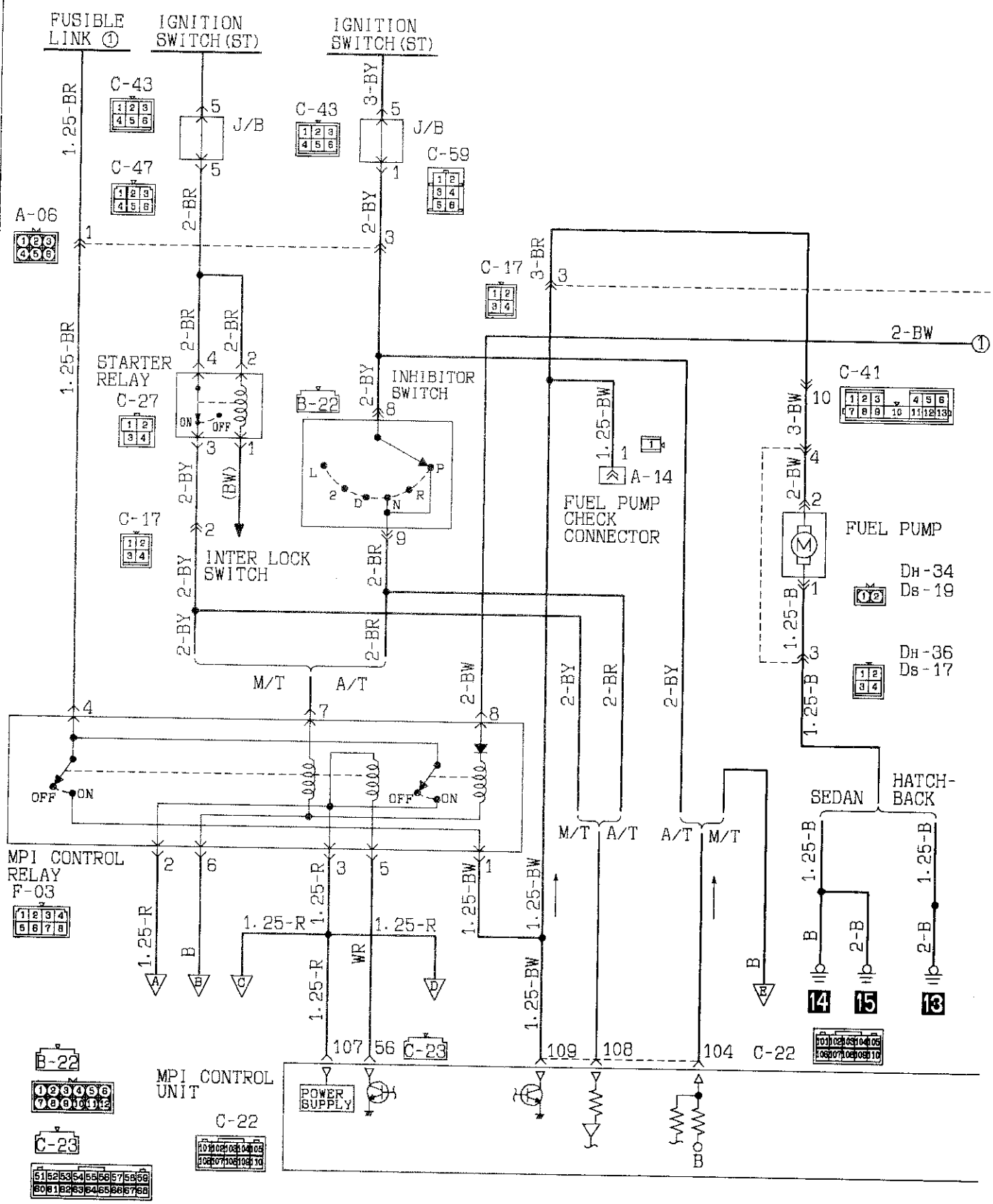
4 CHARGING CIRCUIT

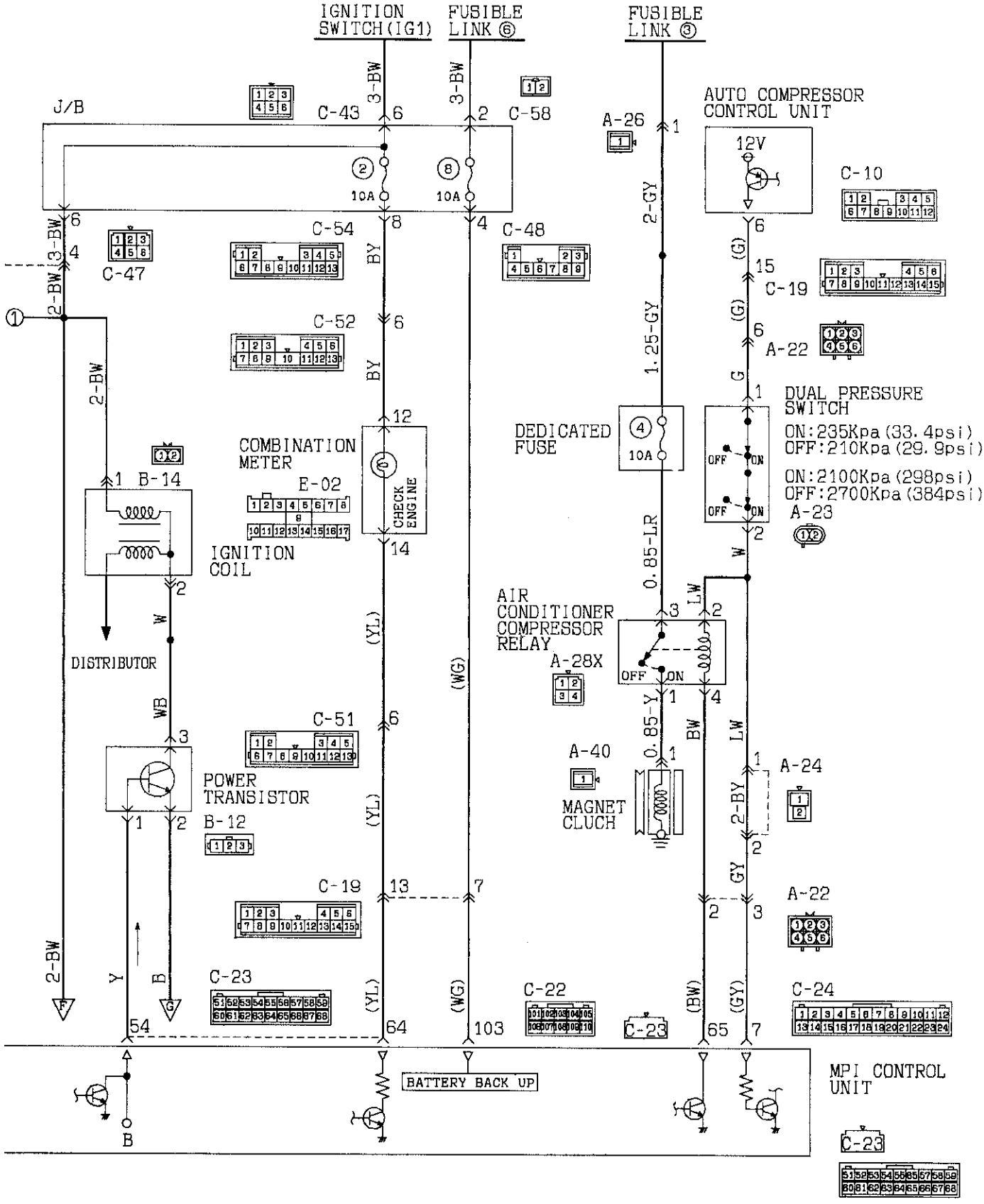


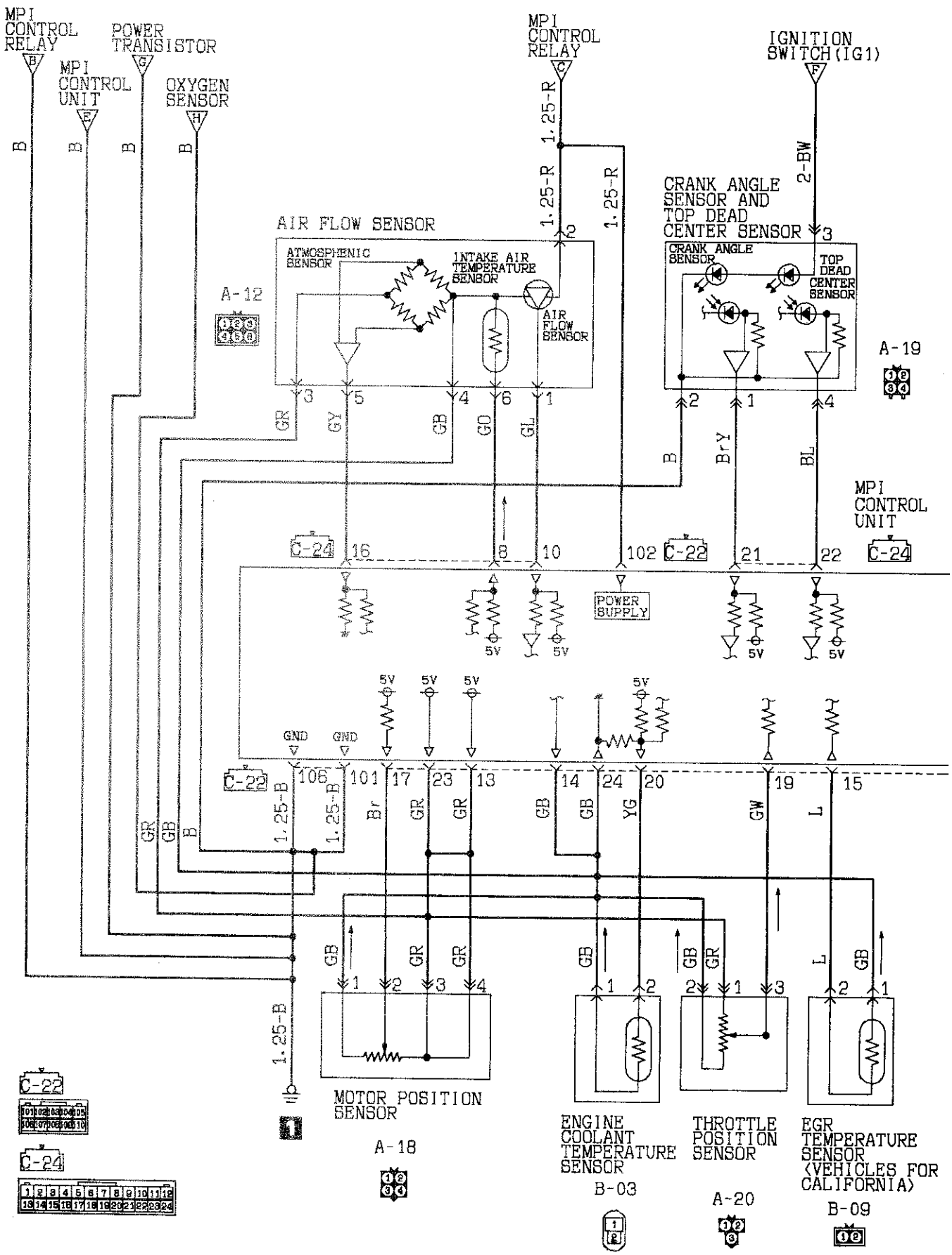
KX36-AC-C0401-N

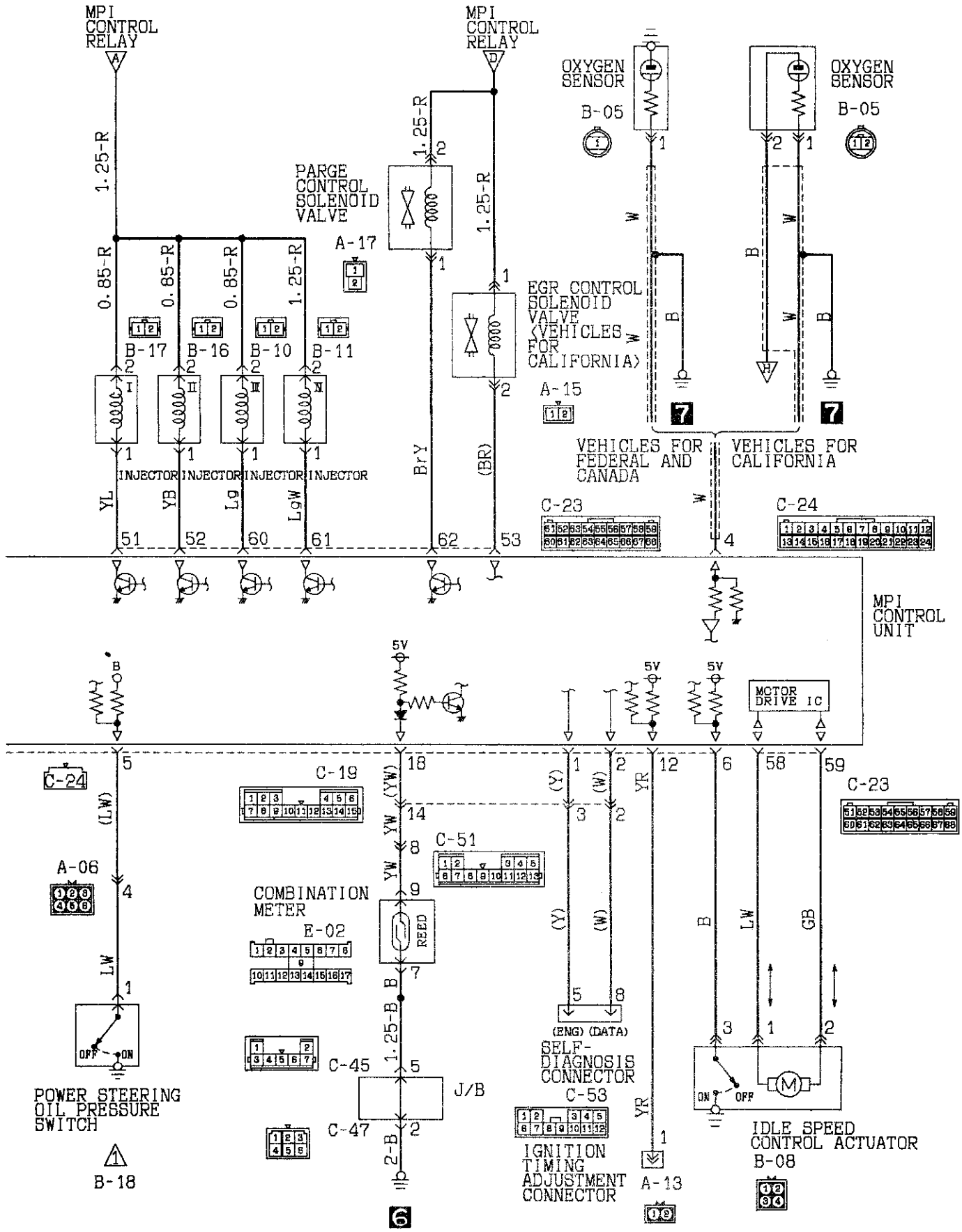
5 MPI CIRCUIT

5-1 <1.5L Engine>



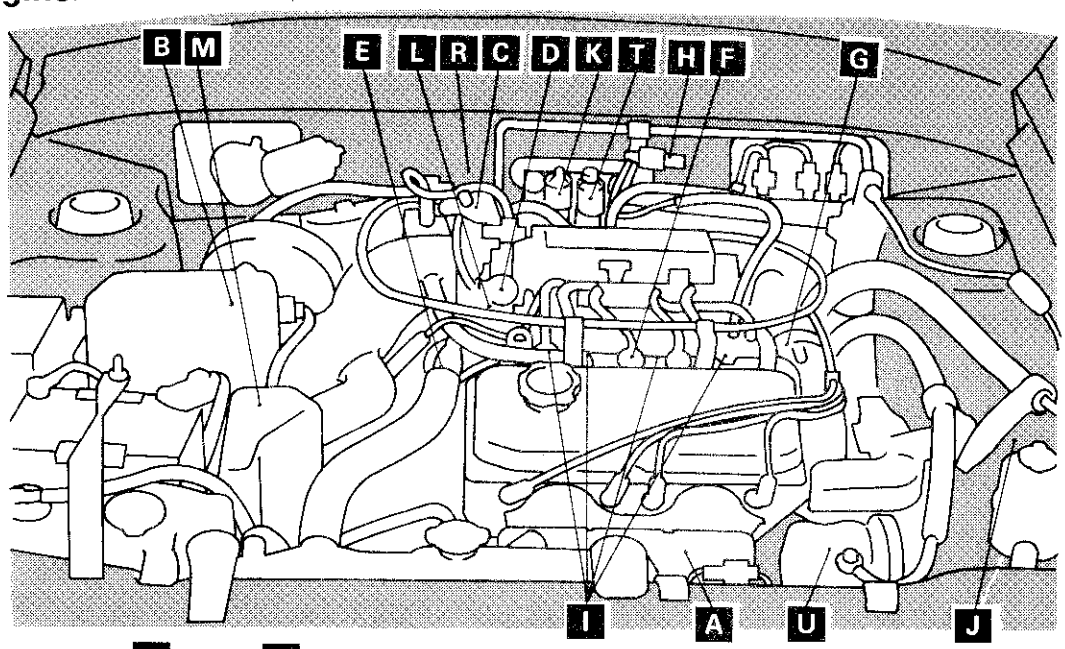

IGNITION SWITCH(IG1)
FUSIBLE LINK ⑥
FUSIBLE LINK ③
J/B
C-43
C-58
A-26
AUTO COMPRESSOR CONTROL UNIT
12V
C-10
10A
C-54
C-48
C-47
C-19
A-22
C-52
DUAL PRESSURE SWITCH
ON:235Kpa (33.4psi)
OFF:210Kpa (29.9psi)
ON:2100Kpa (298psi)
OFF:2700Kpa (384psi)
A-23
DEDICATED FUSE
COMBINATION METER
E-02
CHECK ENGINE
B-14
IGNITION COIL
DISTRIBUTOR
AIR CONDITIONER COMPRESSOR RELAY
A-28X
C-51
POWER TRANSISTOR
B-12
A-40
MAGNET CLUCH
A-24
C-19
C-23
C-22
C-24
BATTERY BACK UP
MPI CONTROL UNIT
3-BW
2-BW
BY
2-GY
1.25-GY
(G)
G
W
0.85-LR
LW
(YL)
(WG)
WB
0.85-Y
BW
2-BY
GY
Y
B
(BW)
(GY)


MPI CONTROL RELAY
POWER TRANSISTOR
MPI CONTROL UNIT
OXYGEN SENSOR
MPI CONTROL RELAY
IGNITION SWITCH(IG1)
AIR FLOW SENSOR
ATMOSPHENIC SENSOR
INTAKE AIR TEMPERATURE SENSOR
AIR FLOW SENSOR
CRANK ANGLE SENSOR AND TOP DEAD CENTER SENSOR
CRANK ANGLE SENSOR
TOP DEAD CENTER SENSOR
A-12
A-19
MPI CONTROL UNIT
C-24
C-22
POWER SUPPLY
GND
5V
MOTOR POSITION SENSOR
A-18
ENGINE COOLANT TEMPERATURE SENSOR
B-03
THROTTLE POSITION SENSOR
A-20
EGR TEMPERATURE SENSOR (VEHICLES FOR CALIFORNIA)
B-09

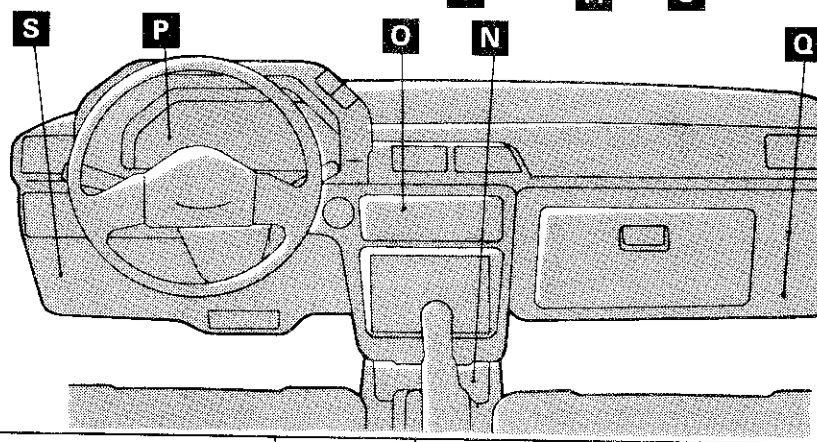

MPI CONTROL RELAY
MPI CONTROL RELAY
OXYGEN SENSOR
B-05
OXYGEN SENSOR
B-05
PARGE CONTROL SOLENOID VALVE
A-17
EGR CONTROL SOLENOID VALVE <VEHICLES FOR CALIFORNIA>
A-15
B-17
B-16
B-10
B-11
INJECTOR
INJECTOR
INJECTOR
INJECTOR
VEHICLES FOR FEDERAL AND CANADA
VEHICLES FOR CALIFORNIA
C-23
C-24
MPI CONTROL UNIT
MOTOR DRIVE IC
C-24
C-19
C-51
A-06
COMBINATION METER
E-02
REED
POWER STEERING OIL PRESSURE SWITCH
B-18
C-45
J/B
C-47
(ENG) (DATA)
SELF-DIAGNOSIS CONNECTOR
C-53
IGNITION TIMING ADJUSTMENT CONNECTOR
A-13
IDLE SPEED CONTROL ACTUATOR
B-08
C-23
6
7
7

MPI SYSTEM COMPONENTS
COMPONENTS LOCATION
<1.5L Engine>

N14IB-A



1FU0287

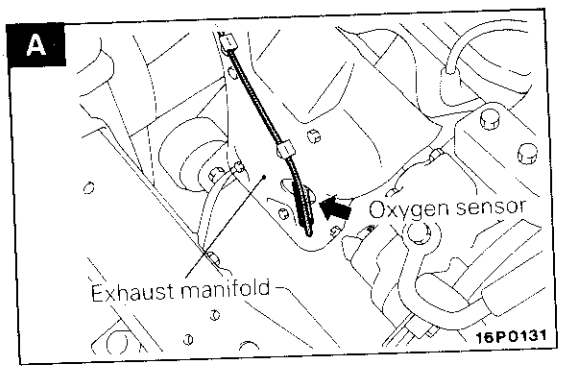


1FU0288

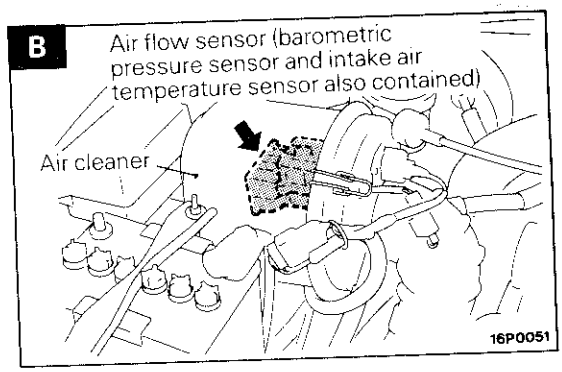
Name	Symbol	Name	Symbol
Air conditioner relay	J	Ignition coil (power transistor)	F
Air conditioner switch	O	Ignition timing adjustment terminal	R
Air flow sensor (incorporating intake air temperature sensor and barometric pressure sensor)	B	Inhibitor switch <A/T>	M
Crank angle sensor and No. 1 cylinder TDC sensor	G	Injector	I
Diagnosis terminal	S	MPI control relay	N
EGR control solenoid valve*	K	Oxygen sensor	A
EGR temperature sensor*	L	Power steering oil pressure switch	U
Engine control unit	Q	Purge control solenoid valve	H
Engine coolant temperature sensor	E	Throttle position sensor	D
Fuel pump drive terminal	T	Vehicle speed sensor (reed switch)	P
Idle speed control servo (idle position switch, motor position sensor)	C	–	–

NOTE
*: <California>
The "Name" column is arranged in alphabetical order.

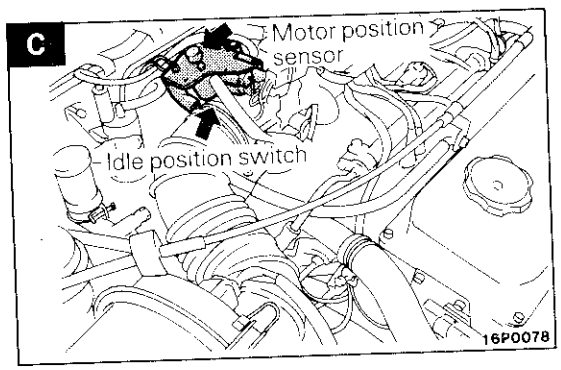
A


Oxygen sensor
Exhaust manifold
16P0131

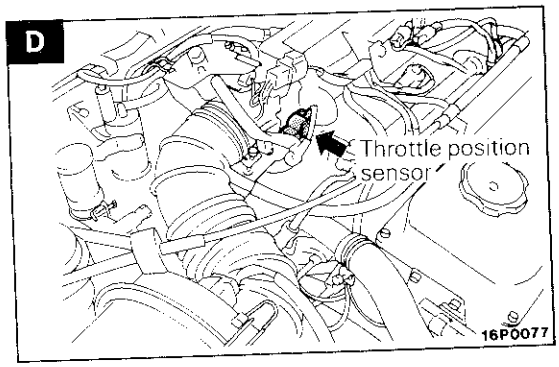
B


Air flow sensor (barometric pressure sensor and intake air temperature sensor also contained)
Air cleaner
16P0051

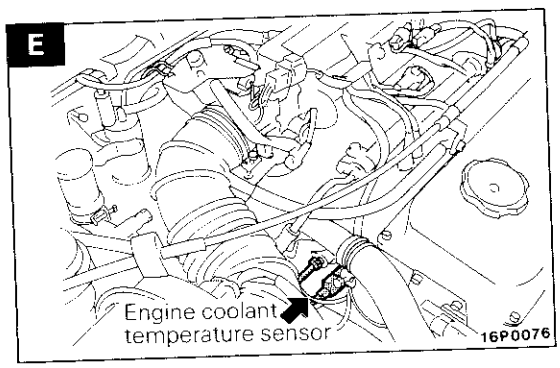
C


Motor position sensor
Idle position switch
16P0078

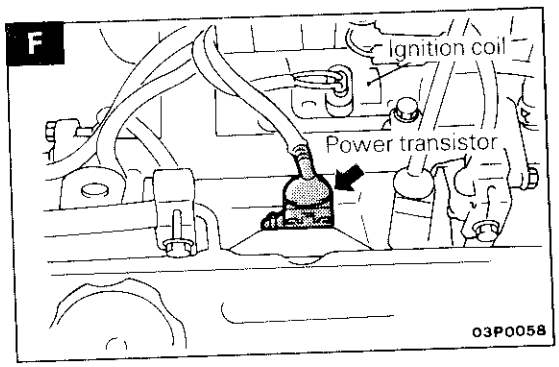
D


Throttle position sensor
16P0077

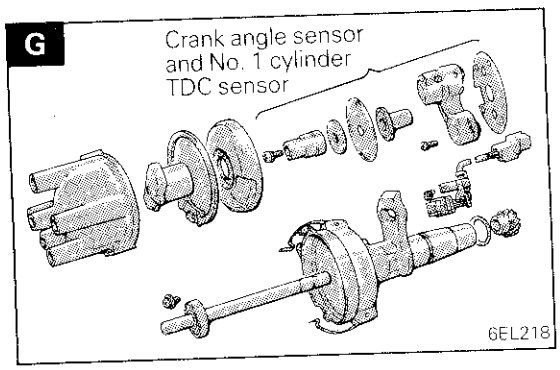
E


Engine coolant temperature sensor
16P0076

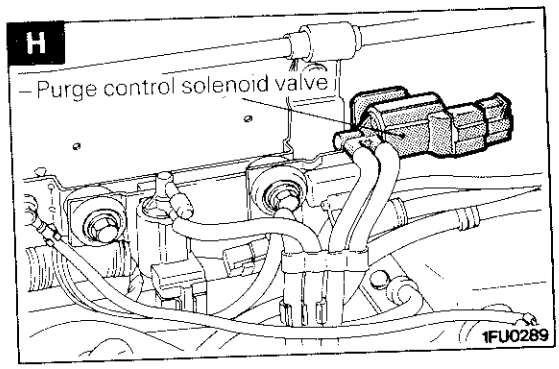
F


Ignition coil
Power transistor
03P0058

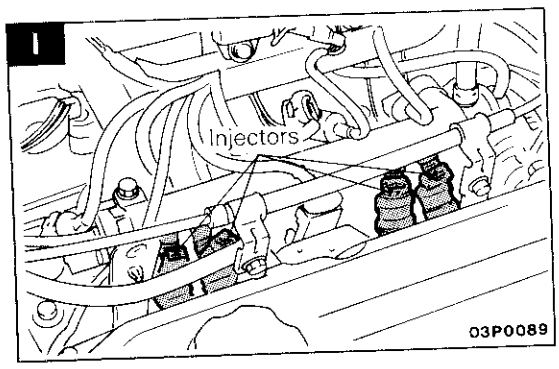
G


Crank angle sensor and No. 1 cylinder TDC sensor
6EL218

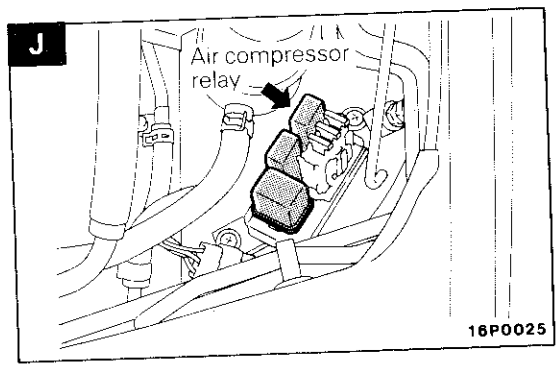
H


Purge control solenoid valve
1FU0289

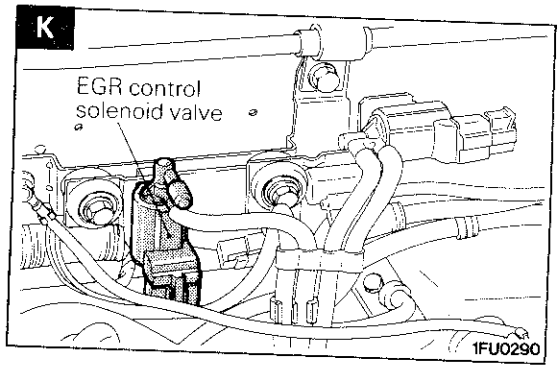
I


Injectors
03P0089

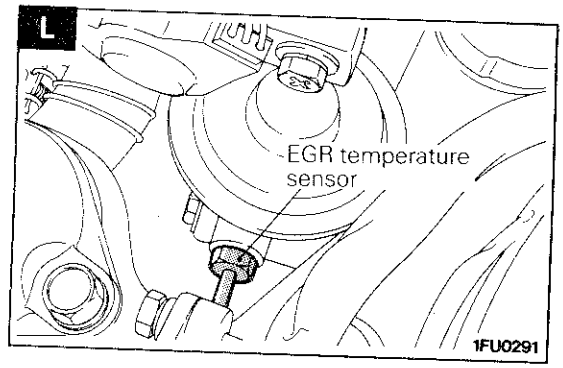
J


Air compressor relay
16P0025

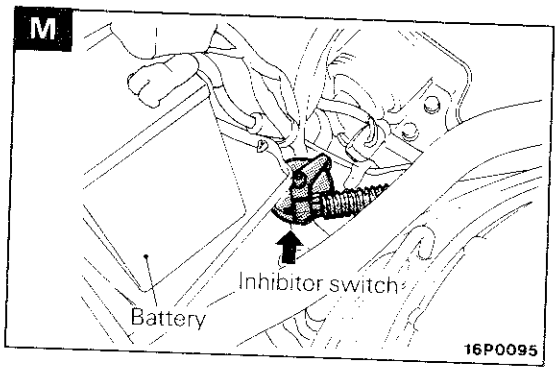
K


EGR control solenoid valve
1FU0290

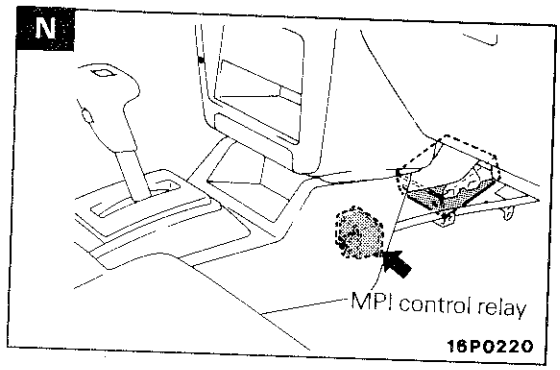
L


EGR temperature sensor
1FU0291

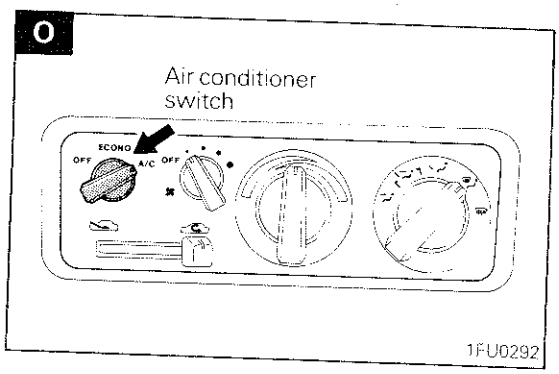
M


Inhibitor switch
Battery
16P0095

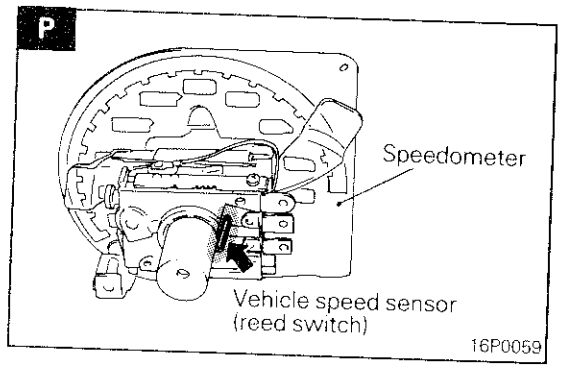
N


MPI control relay
16P0220

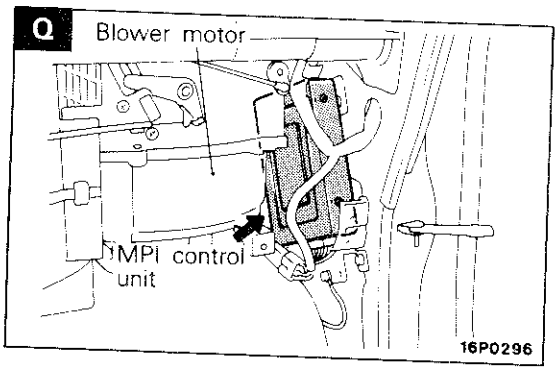
O


Air conditioner switch
ECONO
OFF
A/C
OFF
1FU0292

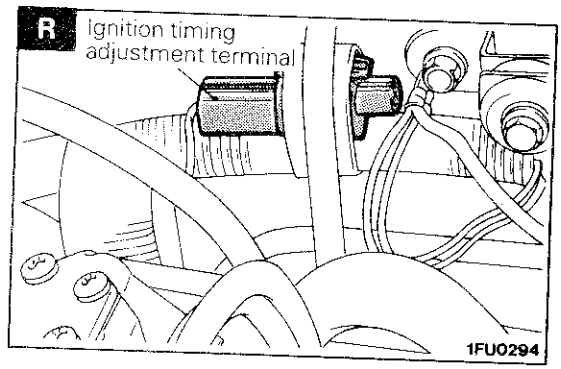
P


Speedometer
Vehicle speed sensor (reed switch)
16P0059

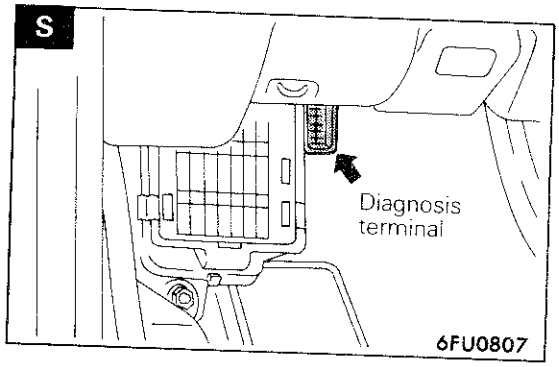
Q


Blower motor
MPI control unit
16P0296

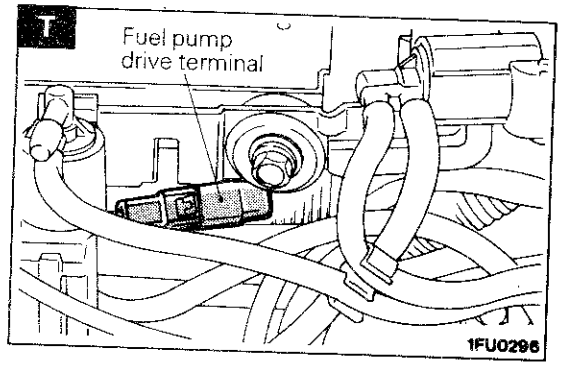
R


Ignition timing adjustment terminal
1FU0294

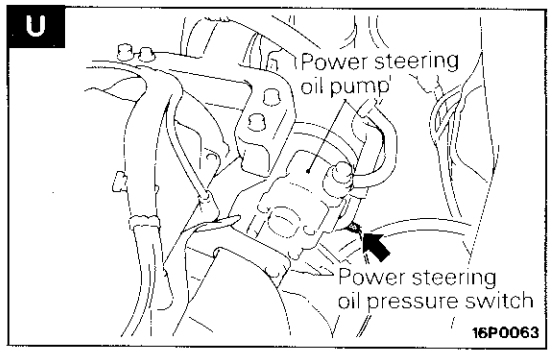
S

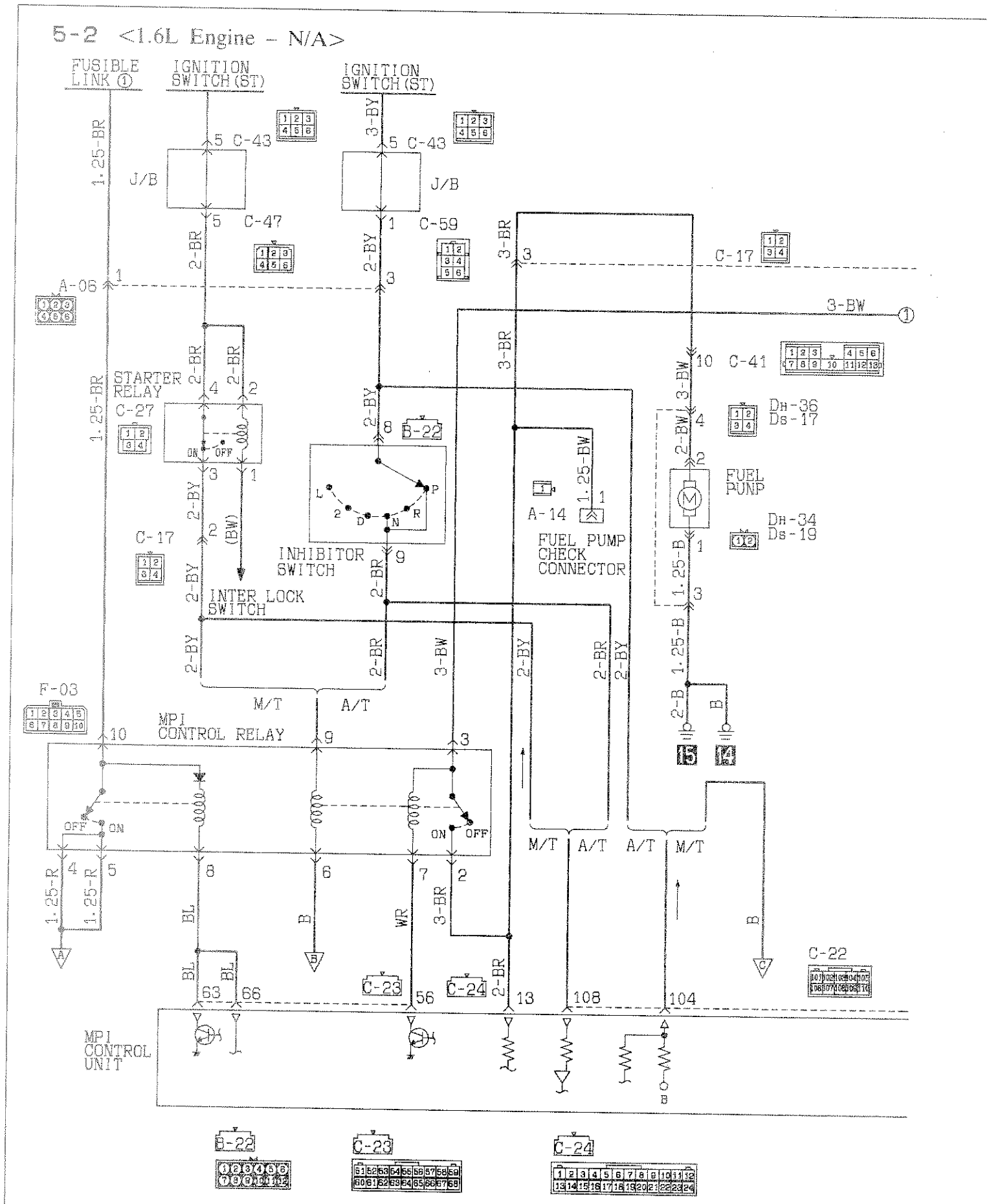

Diagnosis terminal
6FU0807

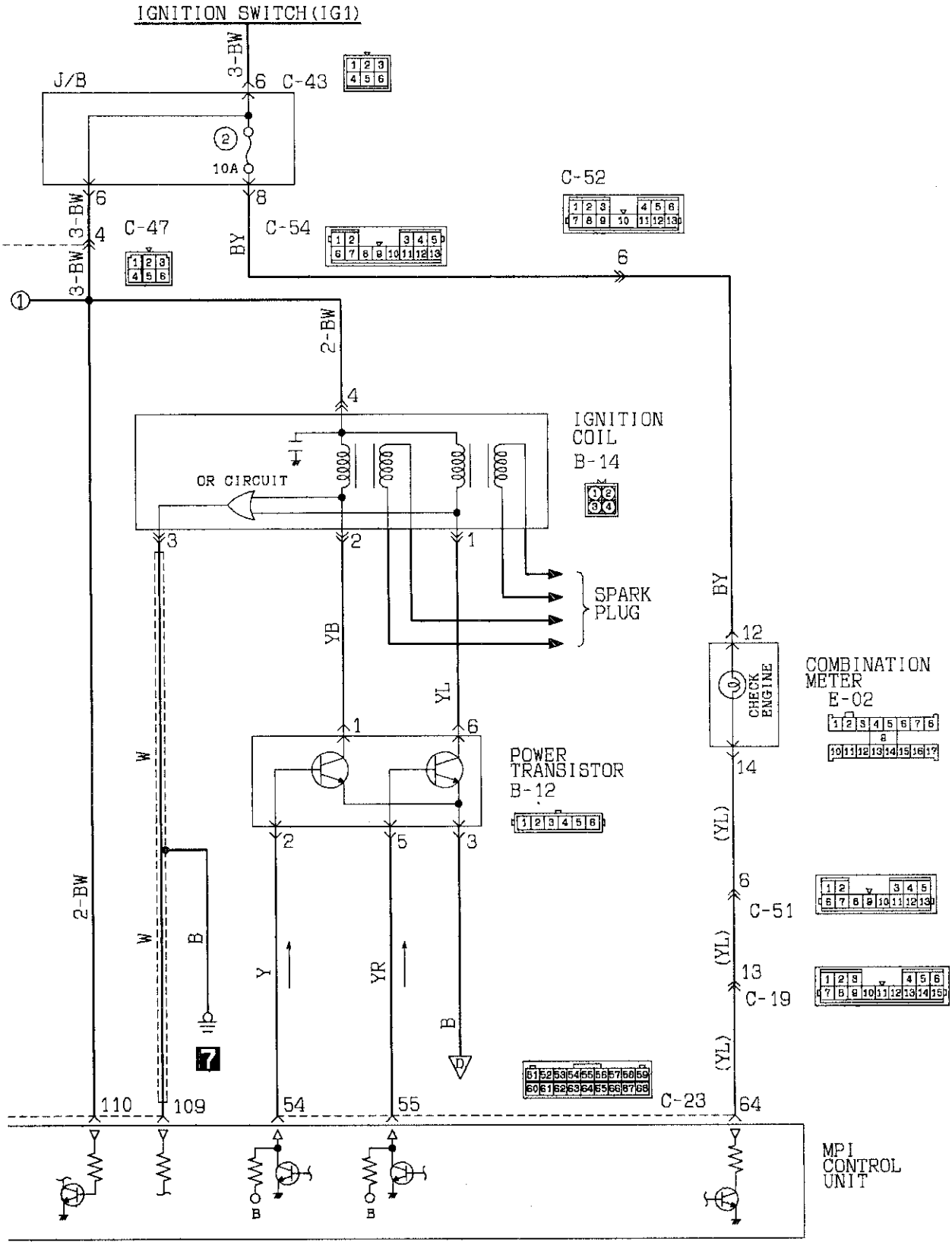
T

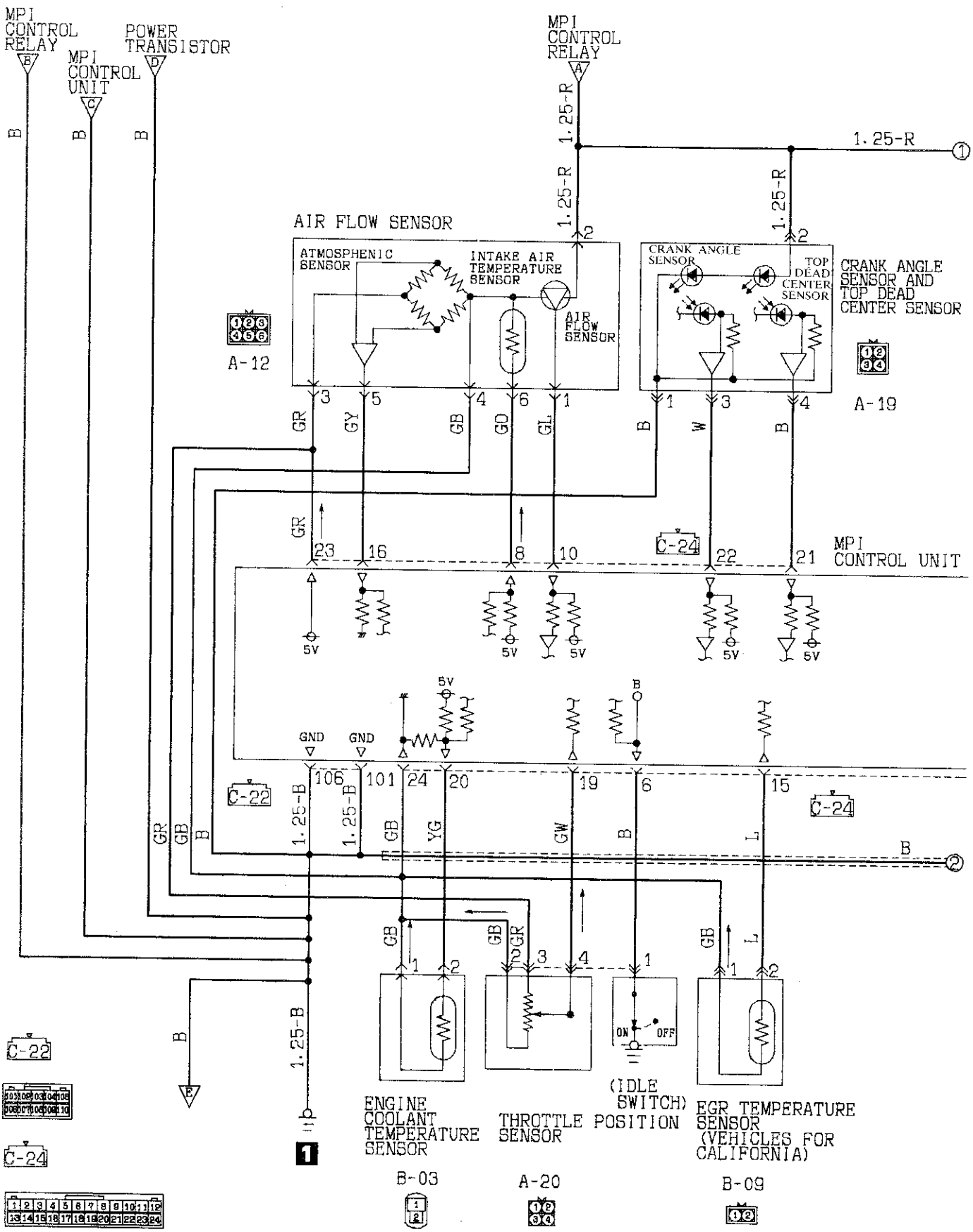

Fuel pump drive terminal
1FU0296

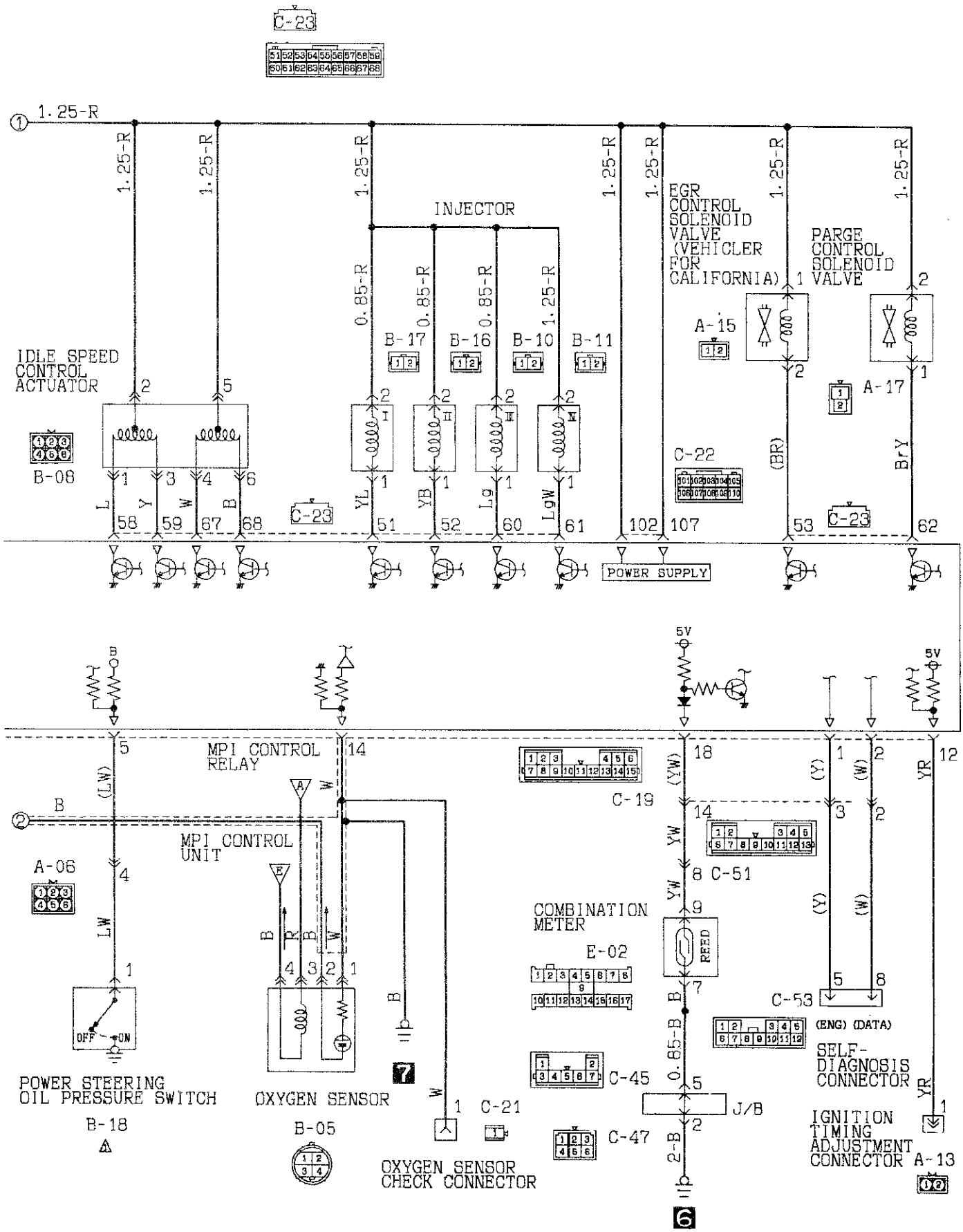
U

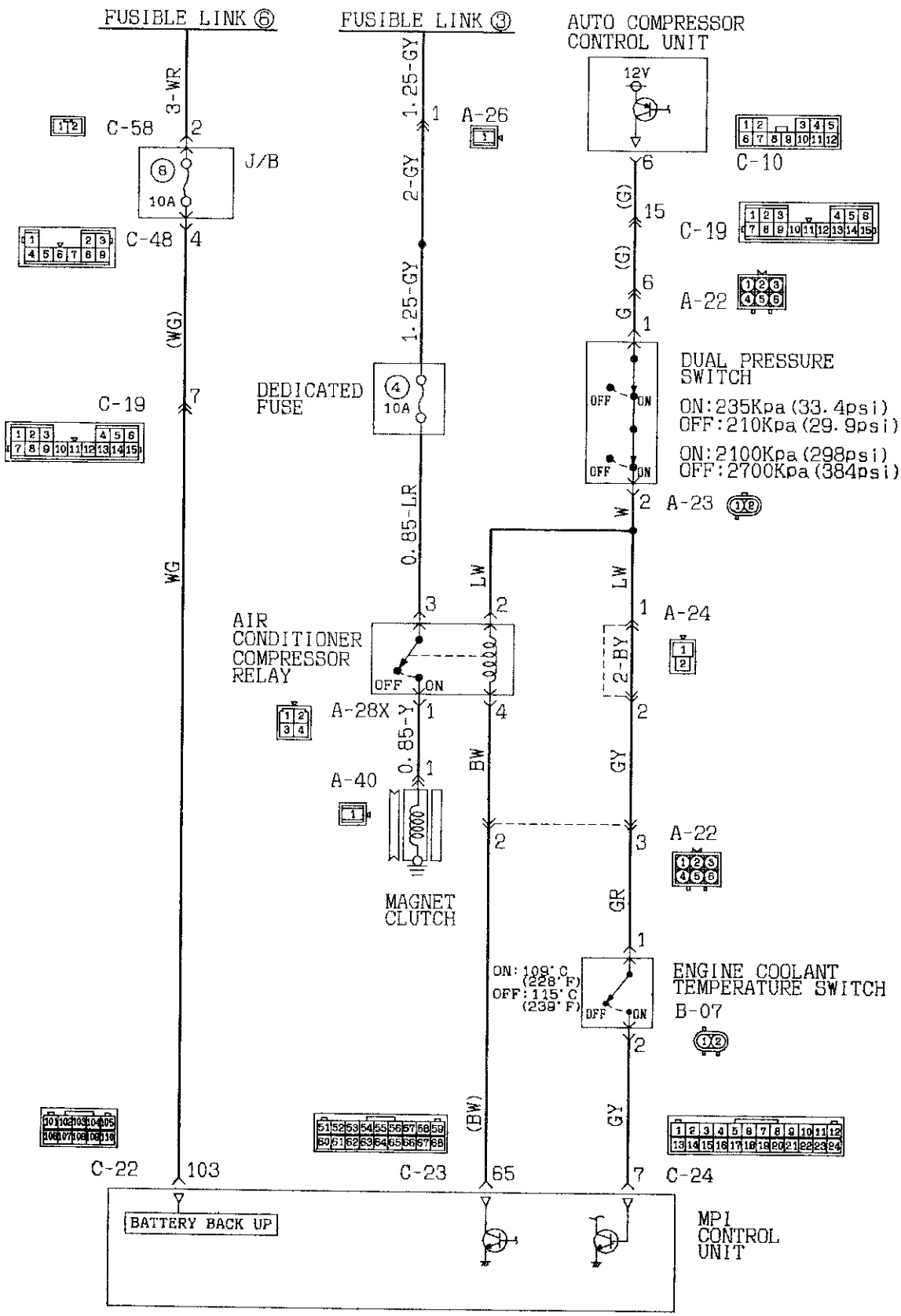

Power steering
oil pump
Power steering
oil pressure switch
16P0063


5-2 <1.6L Engine – N/A>
FUSIBLE LINK ①
IGNITION SWITCH(ST)
IGNITION SWITCH(ST)
J/B
J/B
C-43
C-47
C-59
C-17
A-06
STARTER RELAY
C-27
B-22
C-41
DH-36
DS-17
FUEL PUMP
DH-34
DS-19
A-14
FUEL PUMP CHECK CONNECTOR
INHIBITOR SWITCH
INTER LOCK SWITCH
F-03
MPI CONTROL RELAY
M/T
A/T
MPI CONTROL UNIT
C-22
C-23
C-24
1.25-BR
2-BR
3-BY
3-BR
3-BW
2-BW
2-BY
1.25-B
2-B
B
1.25-R
BL
WR
(BW)
ON
OFF
P
R
N
D
2
L

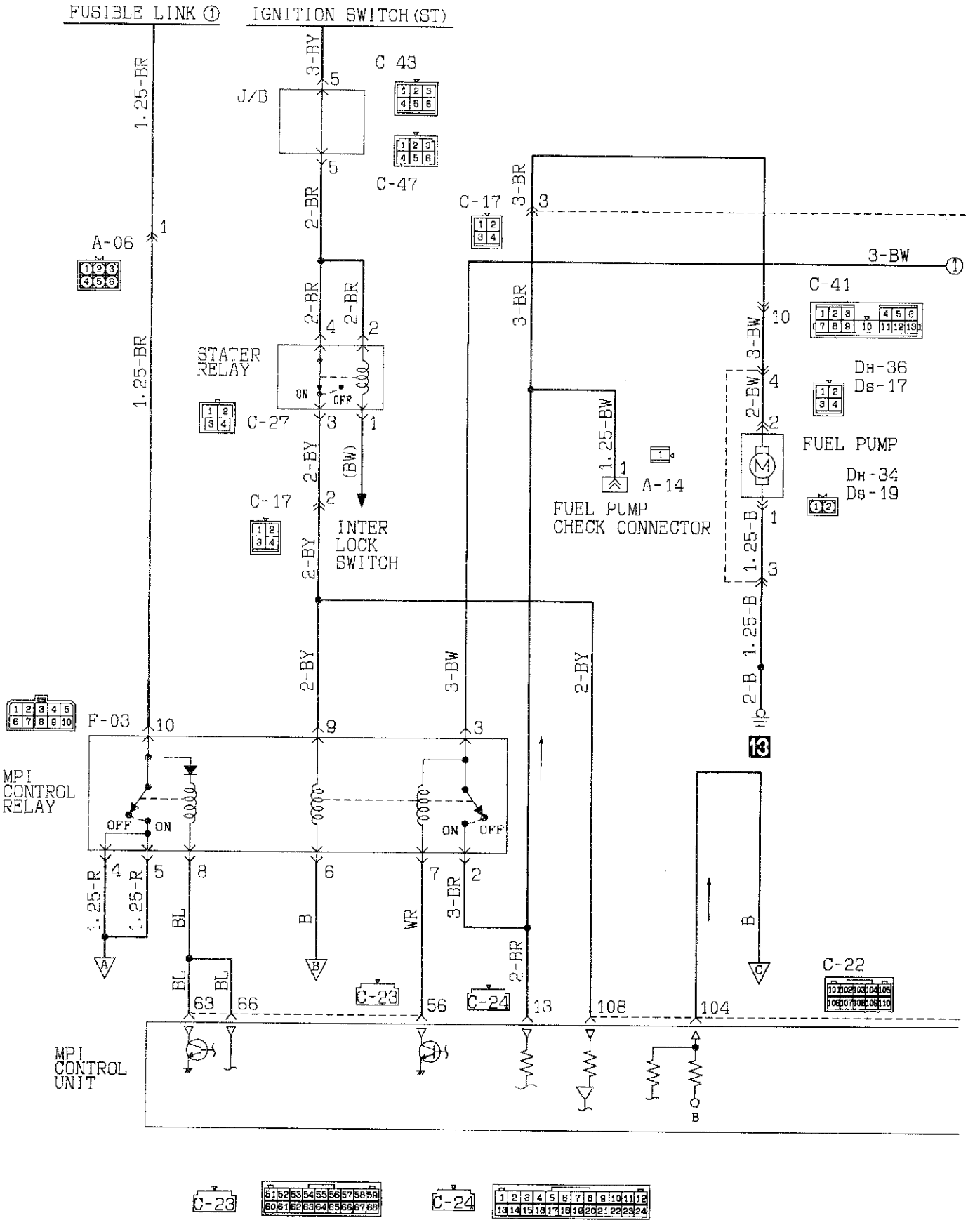

IGNITION SWITCH(IG1)
3-BW
J/B
6
C-43
2
10A
8
C-52
C-47
4
C-54
BY
3-BW
6
1
2-BW
4
IGNITION COIL
B-14
OR CIRCUIT
3
2
1
SPARK PLUG
YB
YL
BY
12
COMBINATION METER
E-02
CHECK ENGINE
1
6
14
POWER TRANSISTOR
B-12
W
2-BW
2
5
3
(YL)
6
C-51
W
B
Y
YR
B
(YL)
13
C-19
7
(YL)
110
109
54
55
C-23
64
MPI CONTROL UNIT
B
B


MPI CONTROL RELAY
POWER TRANSISTOR
MPI CONTROL UNIT
MPI CONTROL RELAY
1.25-R
AIR FLOW SENSOR
ATMOSPHENIC SENSOR
INTAKE AIR TEMPERATURE SENSOR
AIR FLOW SENSOR
CRANK ANGLE SENSOR
TOP DEAD CENTER SENSOR
CRANK ANGLE SENSOR AND TOP DEAD CENTER SENSOR
A-12
A-19
GR
GY
GB
GO
GL
B
W
C-24
MPI CONTROL UNIT
5V
GND
C-22
1.25-B
YG
GW
L
ON
OFF
(IDLE SWITCH)
ENGINE COOLANT TEMPERATURE SENSOR
THROTTLE POSITION SENSOR
EGR TEMPERATURE SENSOR (VEHICLES FOR CALIFORNIA)
B-03
A-20
B-09

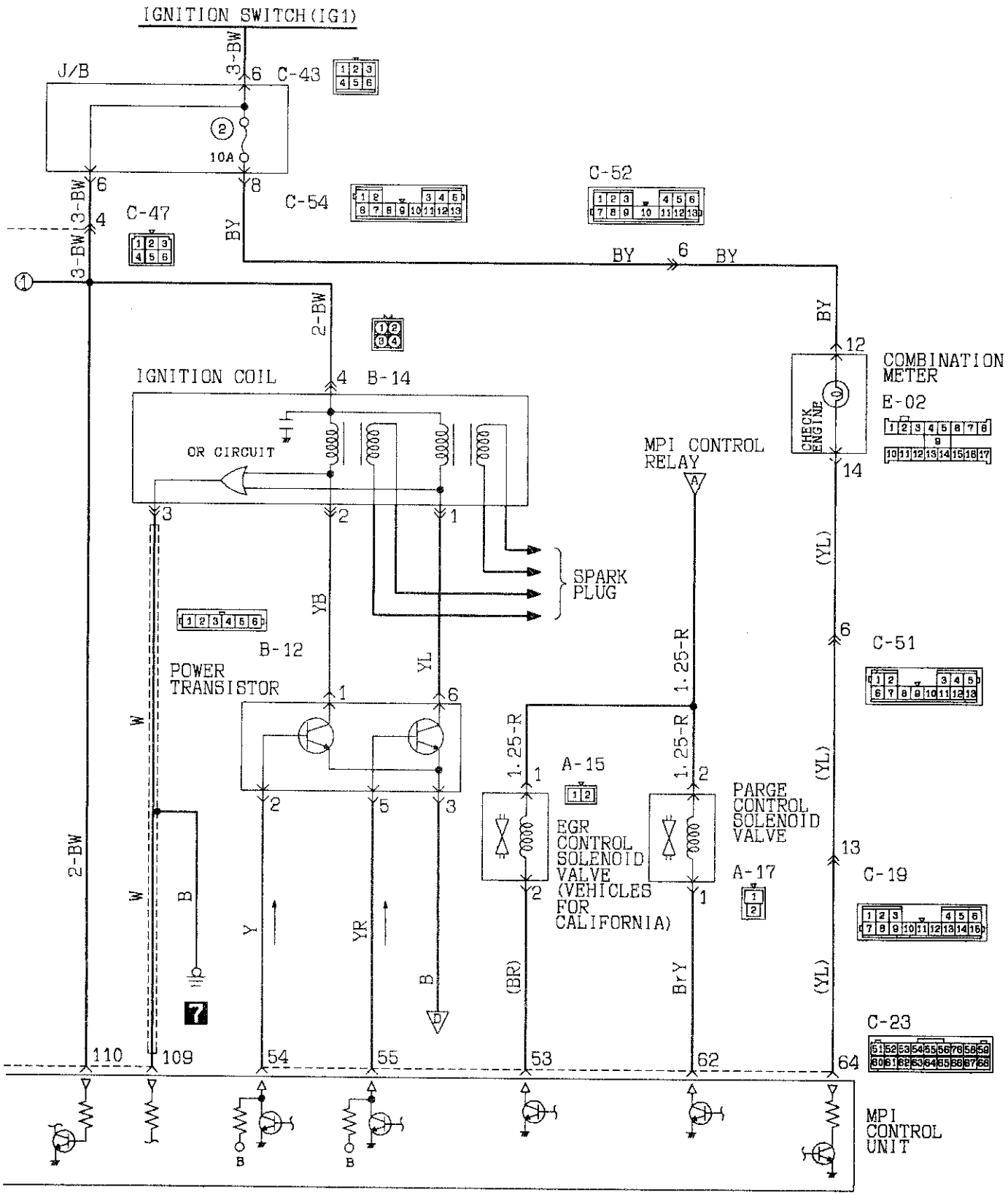

C-23
1.25-R
INJECTOR
EGR CONTROL SOLENOID VALVE (VEHICLER FOR CALIFORNIA)
PARGE CONTROL SOLENOID VALVE
IDLE SPEED CONTROL ACTUATOR
B-08
B-17
B-16
B-10
B-11
A-15
A-17
C-22
POWER SUPPLY
MPI CONTROL RELAY
MPI CONTROL UNIT
A-06
C-19
C-51
COMBINATION METER
E-02
REED
C-53
(ENG) (DATA)
SELF-DIAGNOSIS CONNECTOR
C-45
J/B
C-47
IGNITION TIMING ADJUSTMENT CONNECTOR A-13
POWER STEERING OIL PRESSURE SWITCH
B-18
OXYGEN SENSOR
B-05
C-21
OXYGEN SENSOR CHECK CONNECTOR
OFF
ON
5V

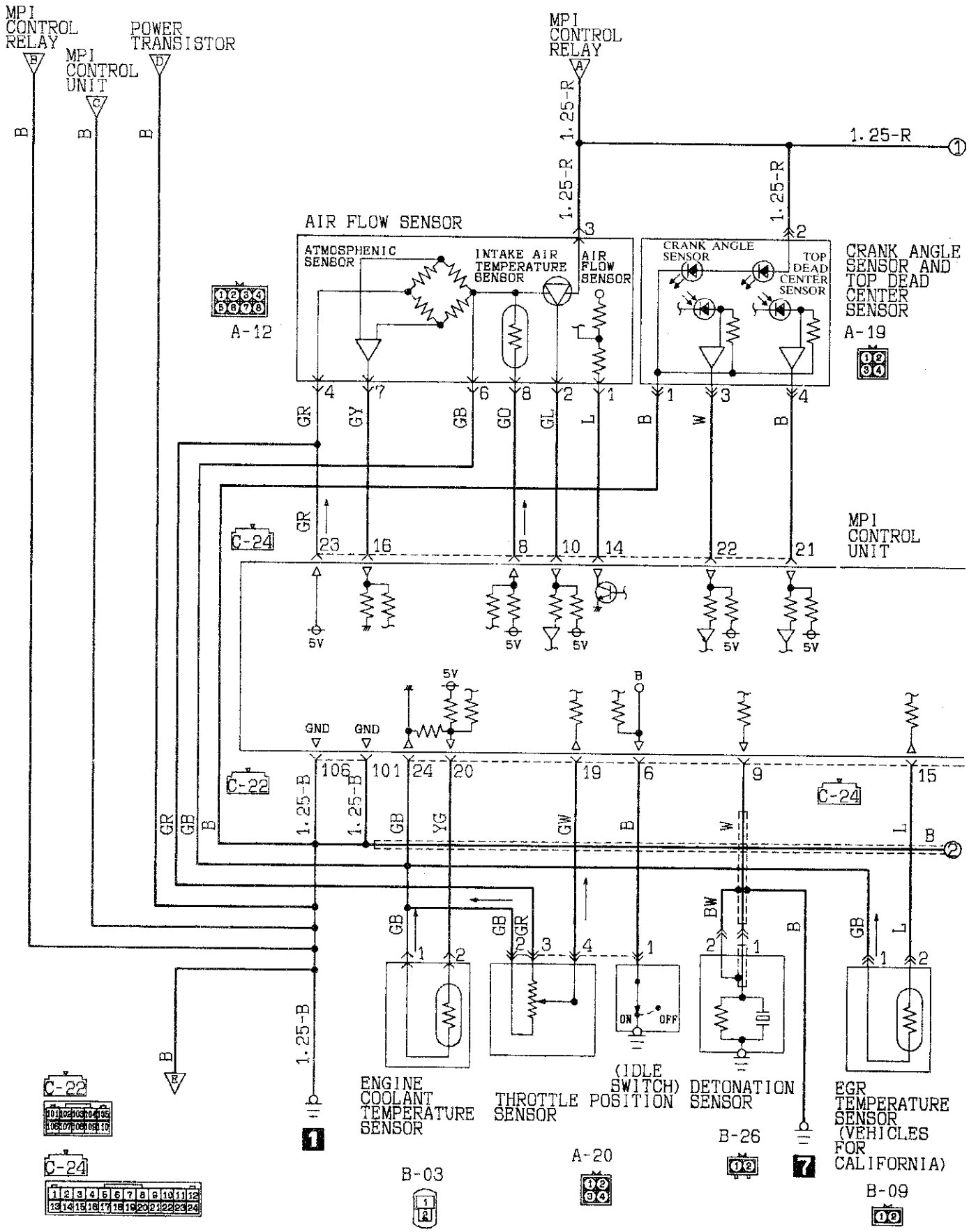

FUSIBLE LINK ⑥
FUSIBLE LINK ③
AUTO COMPRESSOR CONTROL UNIT
12V
3-WR
C-58
2
J/B
⑥
10A
C-48
4
(WG)
C-19
7
WG
1.25-GY
1
A-26
2-GY
1.25-GY
DEDICATED FUSE
④
10A
0.85-LR
3
AIR CONDITIONER COMPRESSOR RELAY
OFF
ON
A-28X
1
4
0.85-Y
1
A-40
MAGNET CLUTCH
BW
2
(BW)
C-23
65
C-10
6
(G)
15
C-19
(G)
6
G
1
A-22
DUAL PRESSURE SWITCH
ON:235Kpa (33.4psi)
OFF:210Kpa (29.9psi)
ON:2100Kpa (298psi)
OFF:2700Kpa (384psi)
W
2
A-23
LW
2
LW
1
A-24
2-BY
2
GY
3
A-22
GR
1
ON: 109°C (228°F)
OFF: 115°C (239°F)
ENGINE COOLANT TEMPERATURE SWITCH
B-07
2
GY
7
C-24
C-22
103
BATTERY BACK UP
MPI CONTROL UNIT

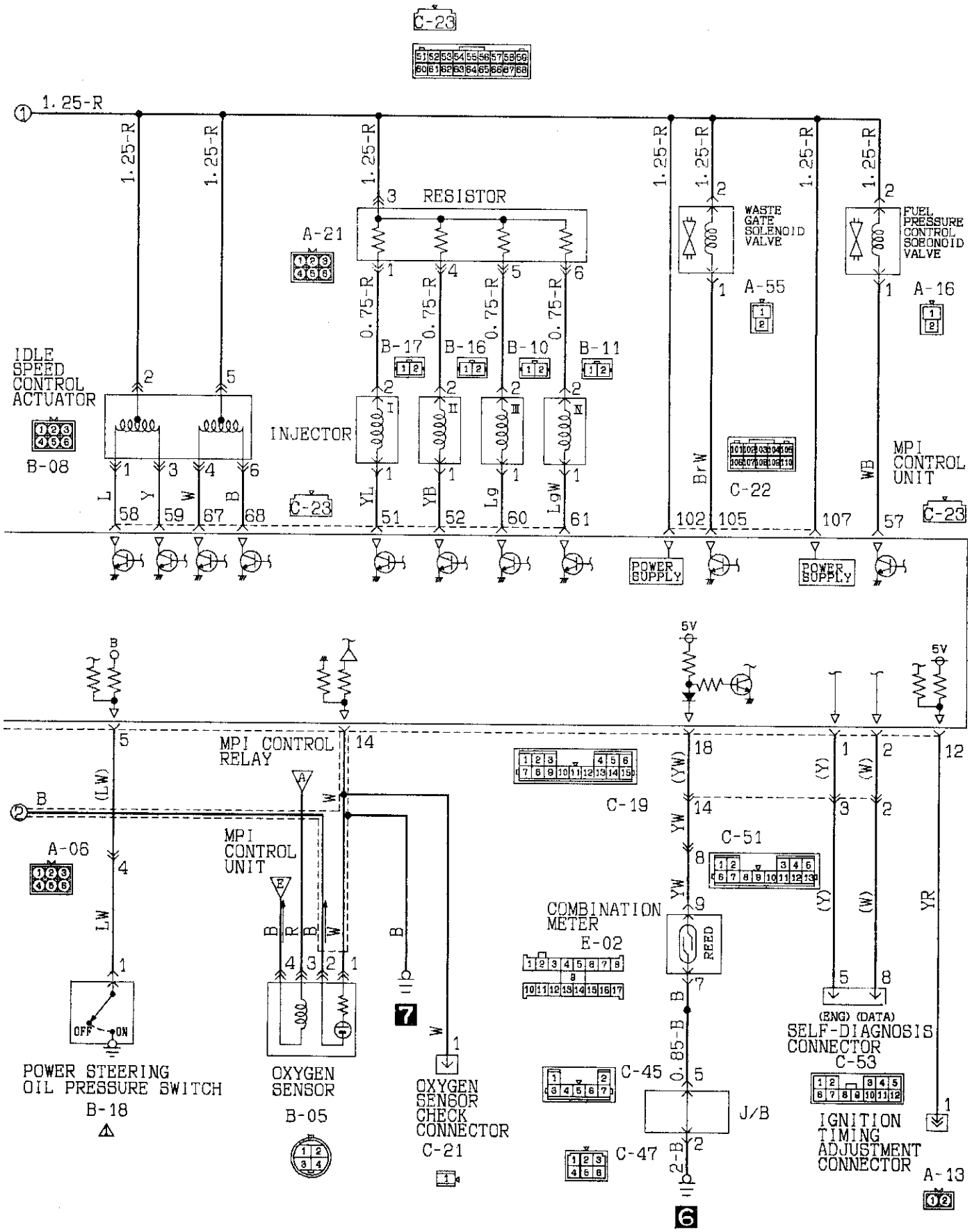
5-3 <1.6L Engine – T/C>

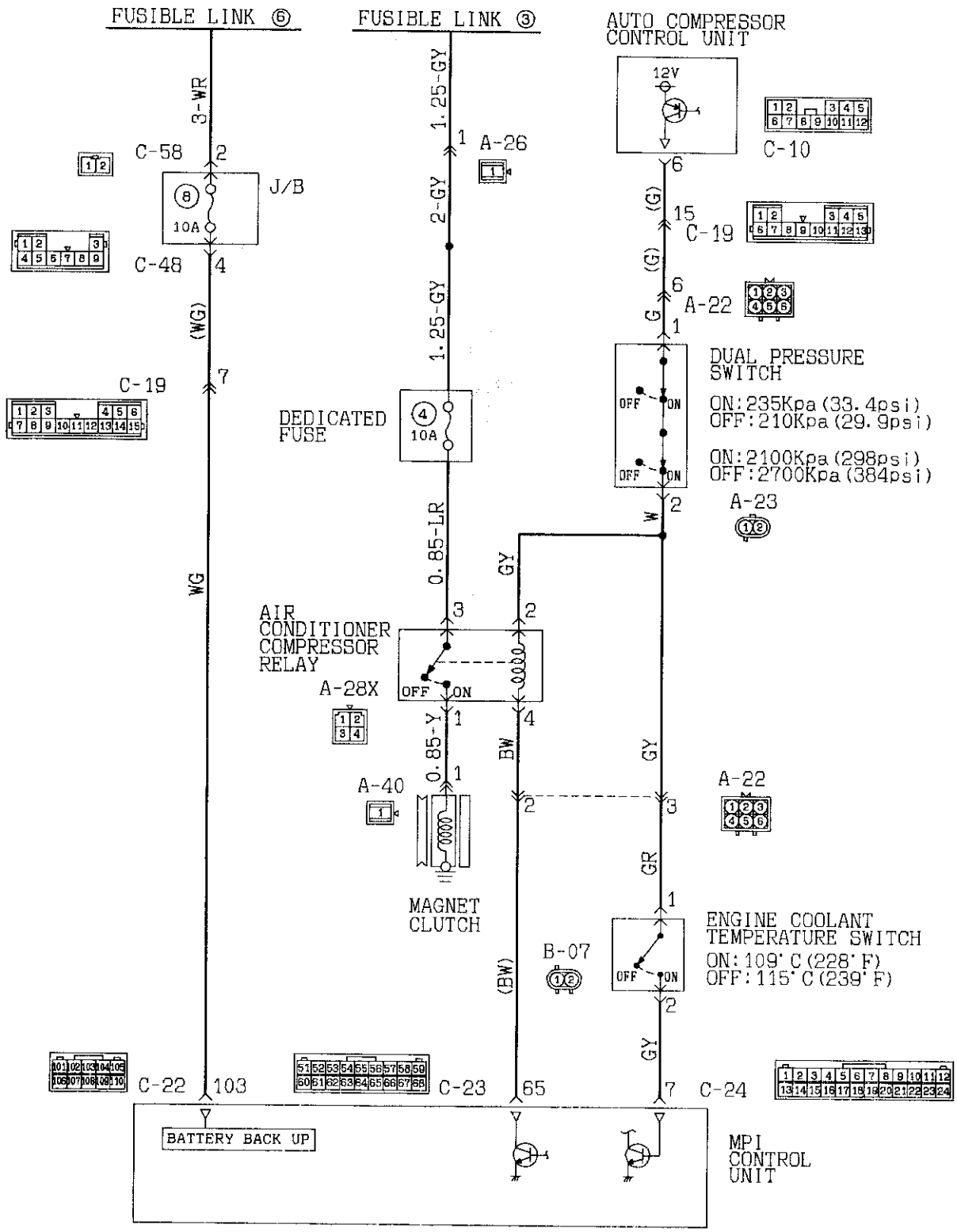


KX35-AC-C0503-N


IGNITION SWITCH(IG1)
J/B
C-43
C-54
C-52
C-47
10A
IGNITION COIL
B-14
OR CIRCUIT
SPARK PLUG
B-12
POWER TRANSISTOR
MPI CONTROL RELAY
COMBINATION METER
E-02
CHECK ENGINE
C-51
C-19
C-23
A-15
A-17
EGR CONTROL SOLENOID VALVE (VEHICLES FOR CALIFORNIA)
PARGE CONTROL SOLENOID VALVE
MPI CONTROL UNIT
3-BW
2-BW
BY
YB
YL
W
B
Y
YR
(BR)
BrY
(YL)
1.25-R

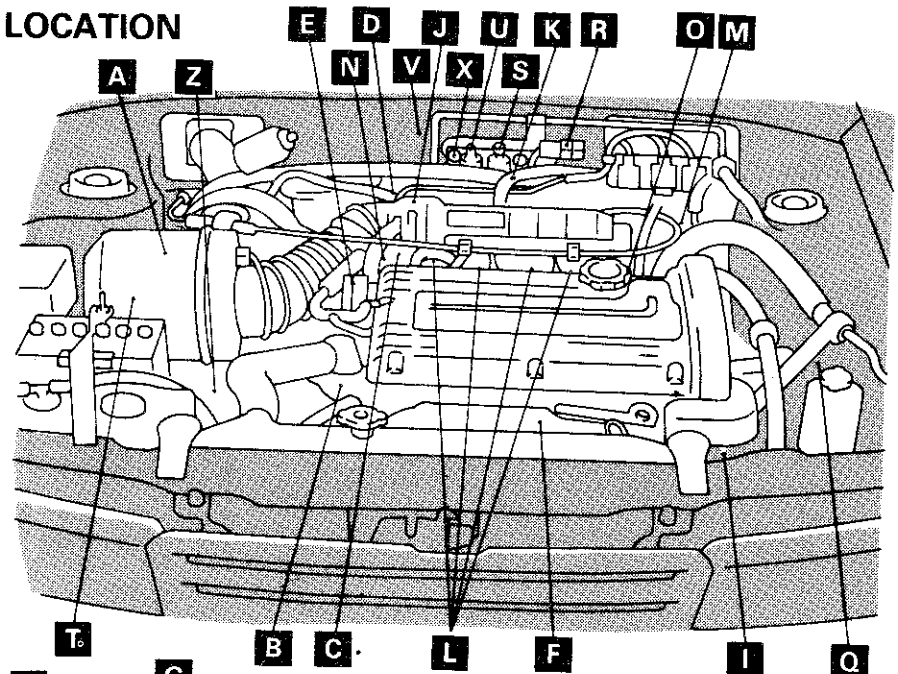

MPI CONTROL RELAY
POWER TRANSISTOR
MPI CONTROL UNIT
MPI CONTROL RELAY
1.25-R
AIR FLOW SENSOR
ATMOSPHENIC SENSOR
INTAKE AIR TEMPERATURE SENSOR
AIR FLOW SENSOR
CRANK ANGLE SENSOR
TOP DEAD CENTER SENSOR
CRANK ANGLE SENSOR AND TOP DEAD CENTER SENSOR
A-12
A-19
GR
GY
GB
GO
GL
L
B
W
BW
C-24
C-22
MPI CONTROL UNIT
5V
GND
YG
GW
1.25-B
ENGINE COOLANT TEMPERATURE SENSOR
THROTTLE POSITION SENSOR
(IDLE SWITCH)
DETONATION SENSOR
EGR TEMPERATURE SENSOR (VEHICLES FOR CALIFORNIA)
ON
OFF
B-03
A-20
B-26
B-09


C-23
1.25-R
RESISTOR
A-21
WASTE GATE SOLENOID VALVE
FUEL PRESSURE CONTROL SOLENOID VALVE
A-55
A-16
IDLE SPEED CONTROL ACTUATOR
B-08
INJECTOR
B-17
B-16
B-10
B-11
0.75-R
C-22
MPI CONTROL UNIT
POWER SUPPLY
MPI CONTROL RELAY
MPI CONTROL UNIT
A-06
C-19
C-51
COMBINATION METER
E-02
REED
SELF-DIAGNOSIS CONNECTOR C-53
(ENG) (DATA)
IGNITION TIMING ADJUSTMENT CONNECTOR
A-13
POWER STEERING OIL PRESSURE SWITCH
B-18
OXYGEN SENSOR
B-05
OXYGEN SENSOR CHECK CONNECTOR
C-21
C-45
C-47
J/B
5V

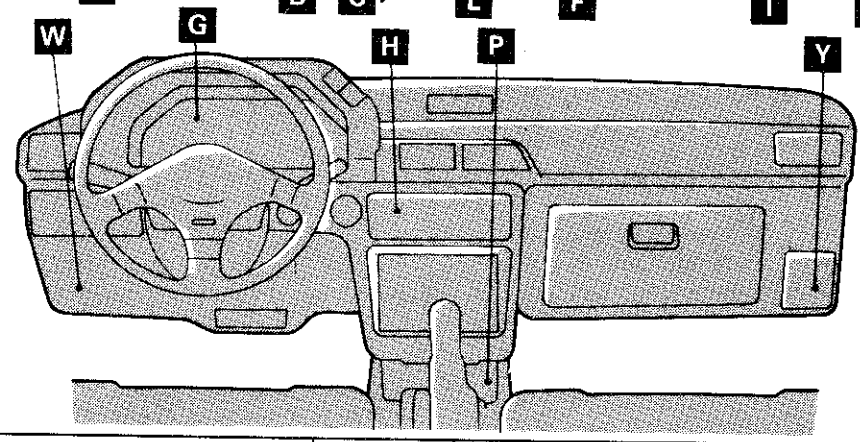

FUSIBLE LINK ⑥
FUSIBLE LINK ③
AUTO COMPRESSOR CONTROL UNIT
3-WR
C-58
2
J/B
8
10A
C-48
4
(WG)
7
C-19
WG
1.25-GY
1
A-26
2-GY
1.25-GY
DEDICATED FUSE
4
10A
0.85-LR
3
AIR CONDITIONER COMPRESSOR RELAY
A-28X
OFF
ON
0.85-Y
1
A-40
MAGNET CLUTCH
GY
2
BW
4
(BW)
B-07
12V
6
(G)
15
C-19
(G)
6
G
1
A-22
DUAL PRESSURE SWITCH
ON:235Kpa(33.4psi)
OFF:210Kpa(29.9psi)
ON:2100Kpa(298psi)
OFF:2700Kpa(384psi)
W
2
A-23
GY
3
A-22
GR
1
ENGINE COOLANT TEMPERATURE SWITCH
ON:109°C(228°F)
OFF:115°C(239°F)
2
GY
7
C-10
C-22
103
C-23
65
C-24
BATTERY BACK UP
MPI CONTROL UNIT

MPI SYSTEM COMPONENTS
COMPONENTS LOCATION
<1.6L Engine>

N14IB-A



6FU1022

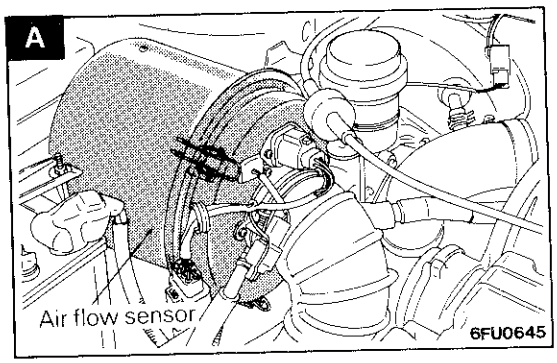


6FU1023

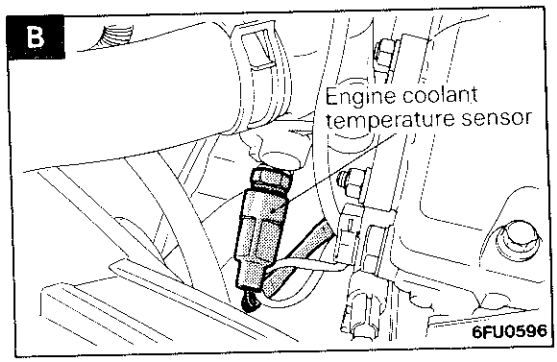
Name	Symbol	Name	Symbol
Air conditioner relay	Q	Idle speed control servo	N
Air conditioner switch	H	Ignition coil (power transistor)	O
Air flow sensor (incorporating intake air temperature sensor and barometric pressure sensor)	A	Ignition timing adjustment terminal	V
Crank angle sensor and top dead center sensor	E	Inhibitor switch <A/T>	Z
Detonation sensor	K	Injector	L
Diagnosis terminal	W	MPI control relay	P
EGR control solenoid valve*	U	Oxygen sensor	F
EGR temperature sensor*	J	Power steering oil pressure switch	I
Engine control unit	Y	Purge control solenoid valve	R
Engine coolant temperature sensor	B	Resistor	M
Fuel pressure control solenoid valve	S	Throttle position sensor	C
Fuel pump check terminal	X	Vehicle speed sensor (reed switch)	G
Idle position switch	D	Waste gate solenoid valve	T

NOTE
*: <California>
The "Name" column is arranged in alphabetical order.

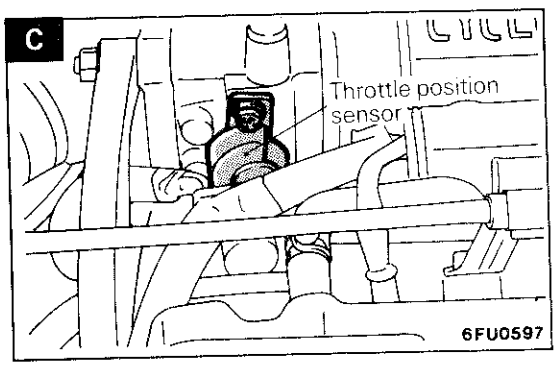
A


Air flow sensor
6FU0645

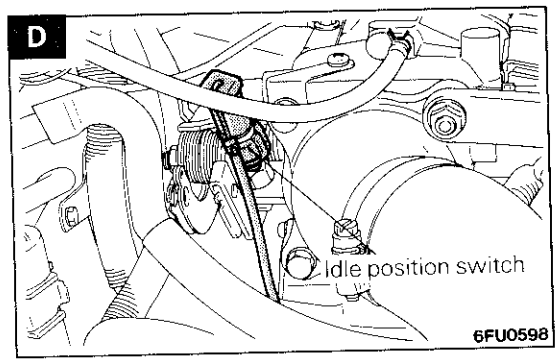
B


Engine coolant temperature sensor
6FU0596

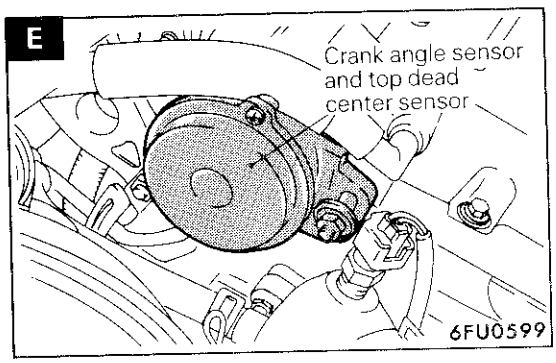
C


Throttle position sensor
6FU0597

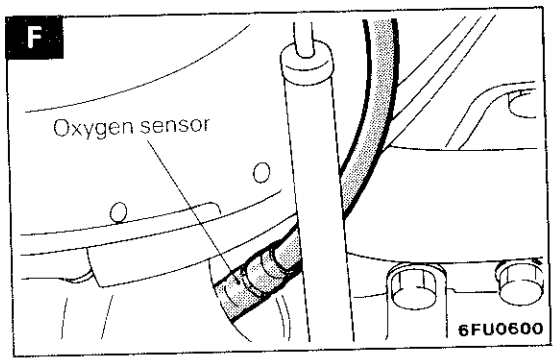
D


Idle position switch
6FU0598

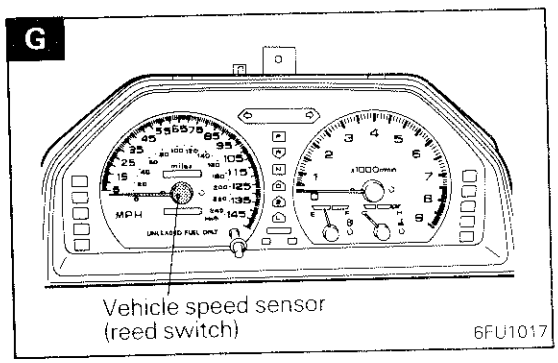
E


Crank angle sensor and top dead center sensor
6FU0599

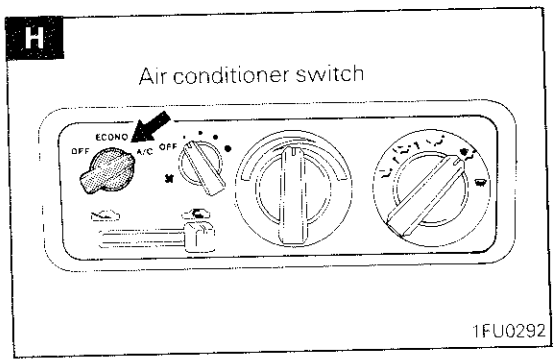
F


Oxygen sensor
6FU0600

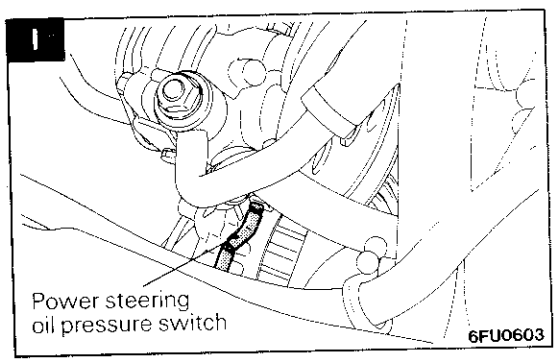
G


Vehicle speed sensor (reed switch)
6FU1017

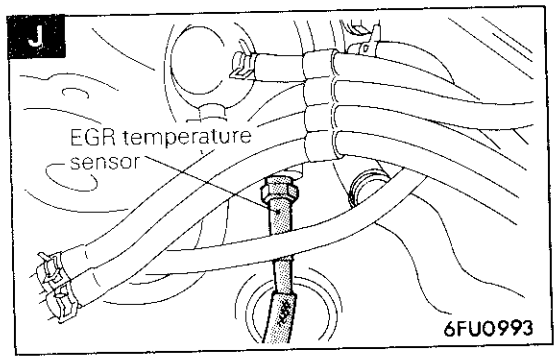
H


Air conditioner switch
ECONO
OFF
A/C
OFF
1FU0292

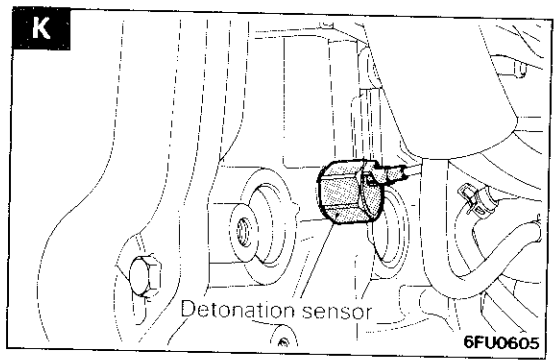
I


Power steering oil pressure switch
6FU0603

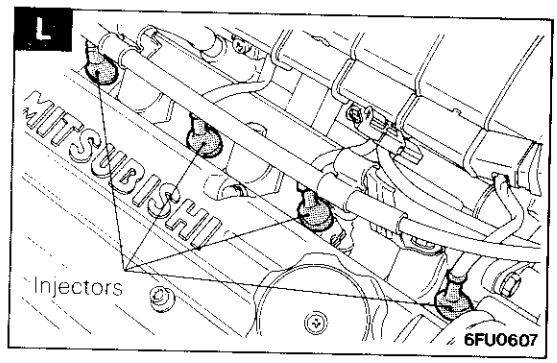
J


EGR temperature sensor
6FU0993

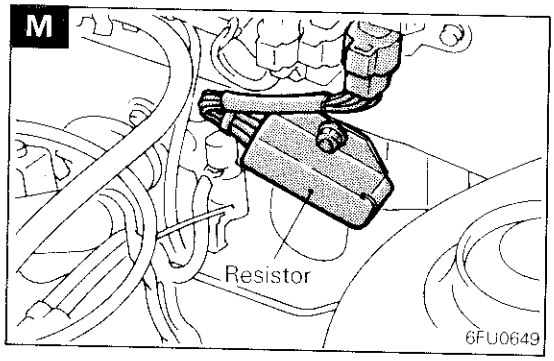
K


Detonation sensor
6FU0605

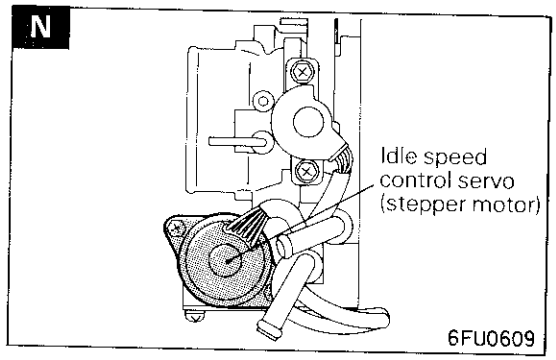
L


MITSUBISHI
Injectors
6FU0607

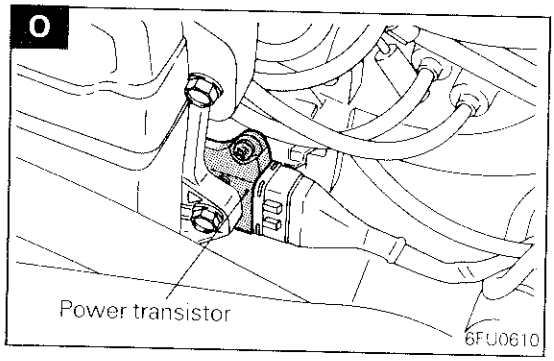
M


Resistor
6FU0649

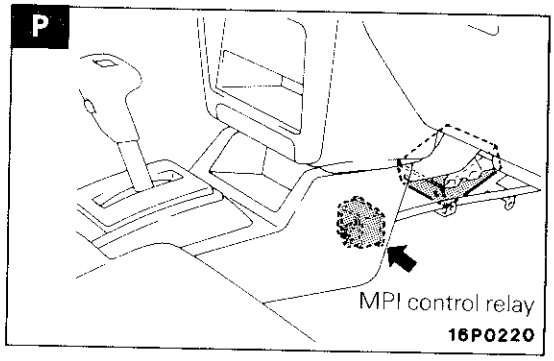
N


Idle speed
control servo
(stepper motor)
6FU0609

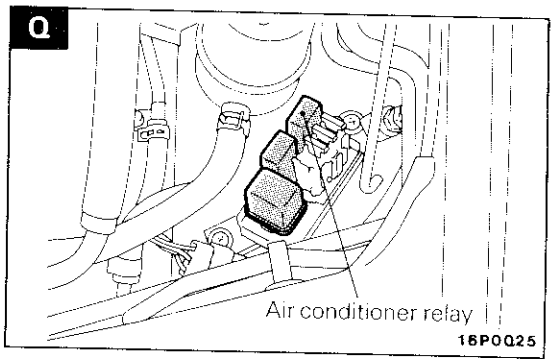
O


Power transistor
6FU0610

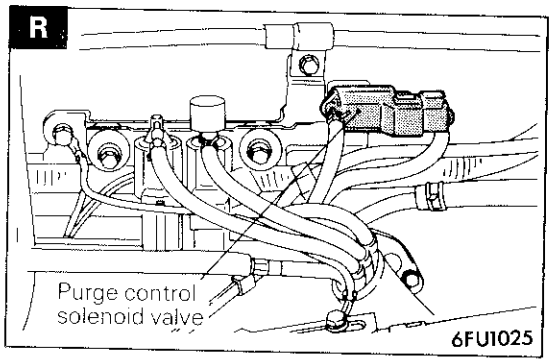
P


MPI control relay
16P0220

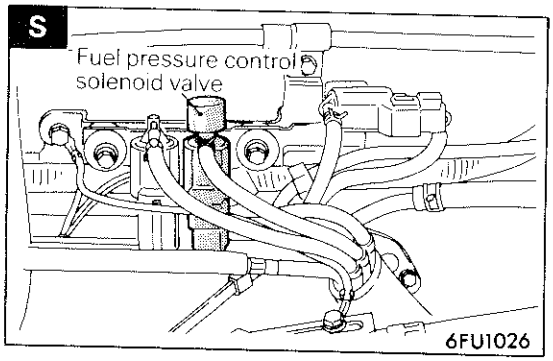
Q


Air conditioner relay
16P0025

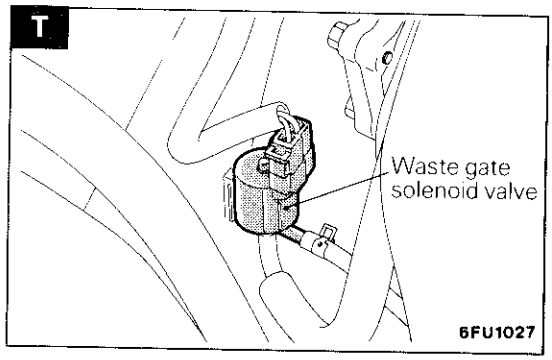
R


Purge control
solenoid valve
6FU1025

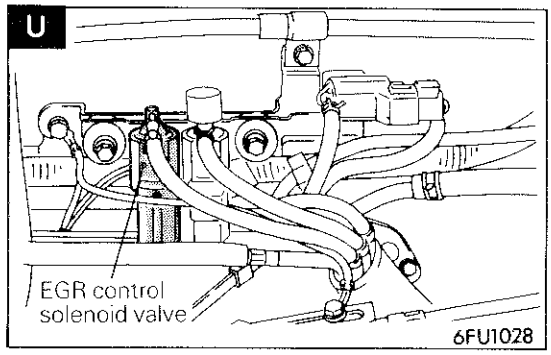
S


Fuel pressure control
solenoid valve
6FU1026

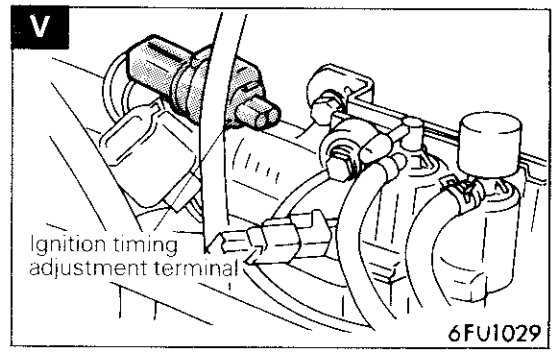
T


Waste gate
solenoid valve
6FU1027

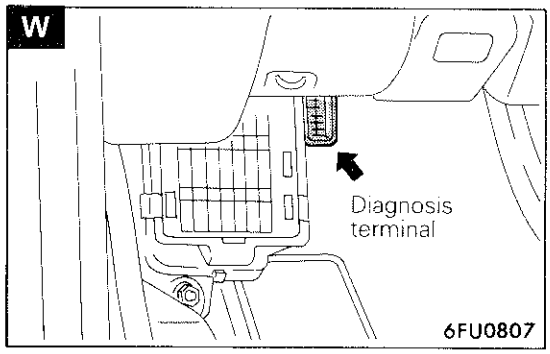
U


EGR control solenoid valve
6FU1028

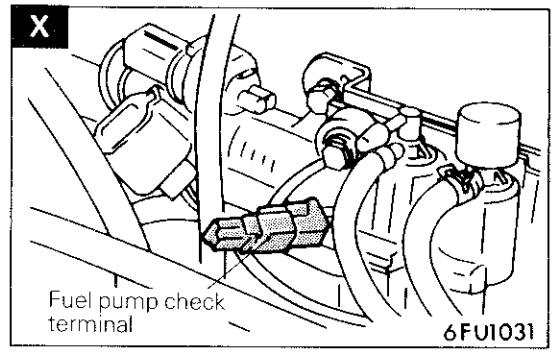
V


Ignition timing adjustment terminal
6FU1029

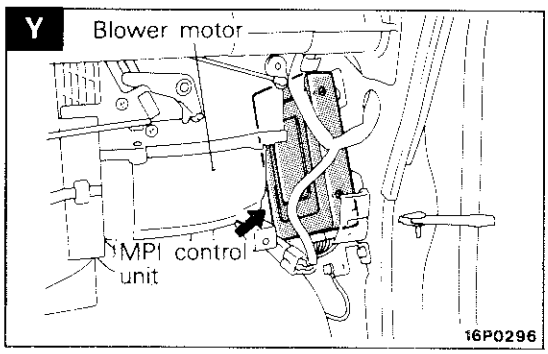
W


Diagnosis terminal
6FU0807

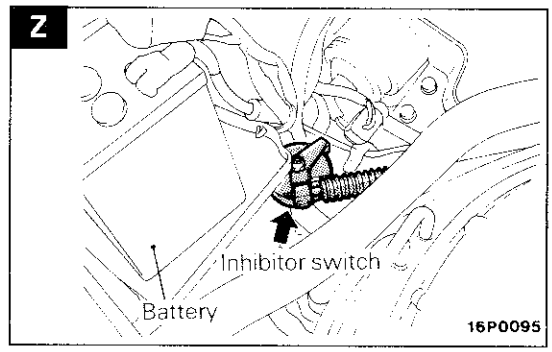
X


Fuel pump check terminal
6FU1031

Y

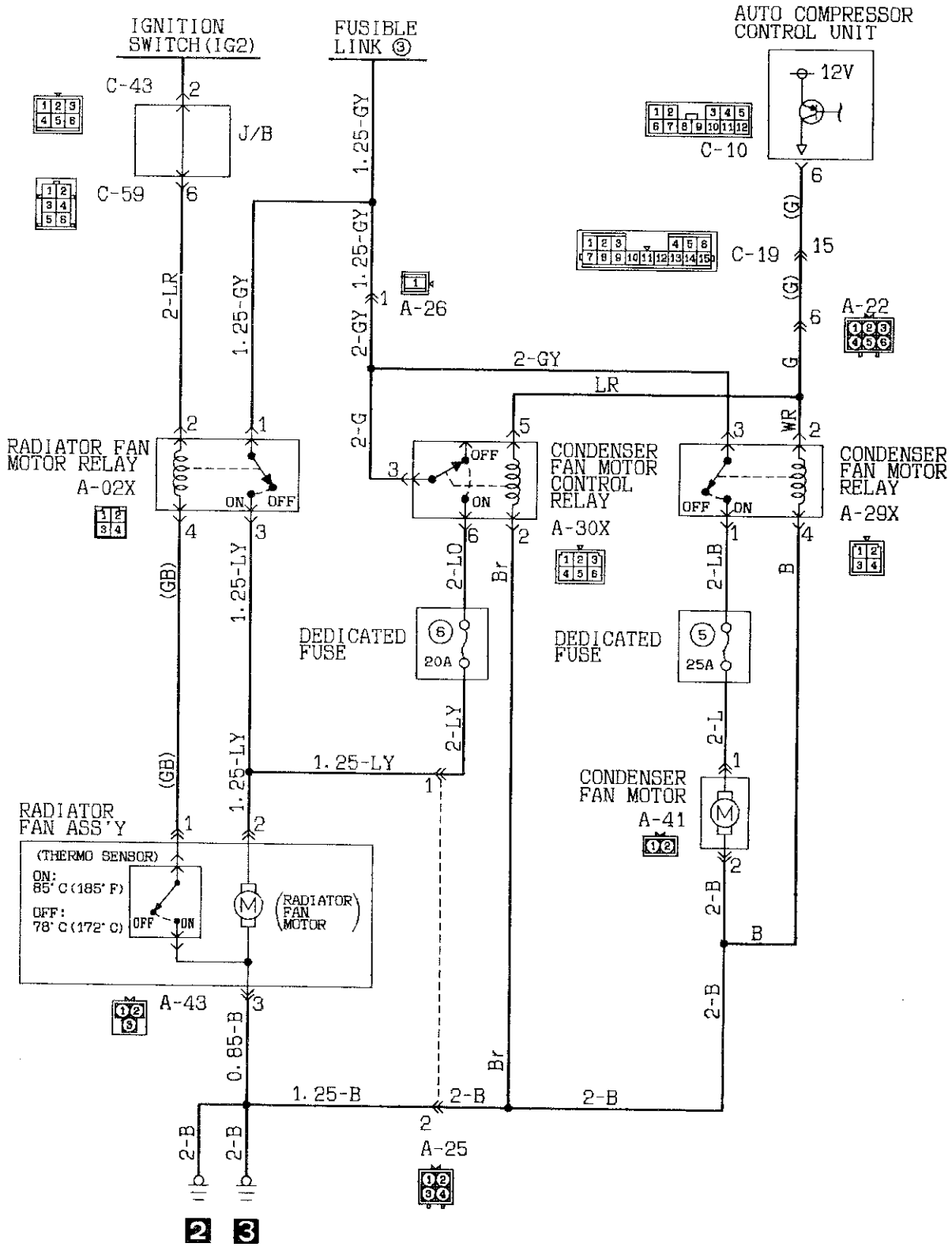

Blower motor
MPI control unit
16P0296

Z

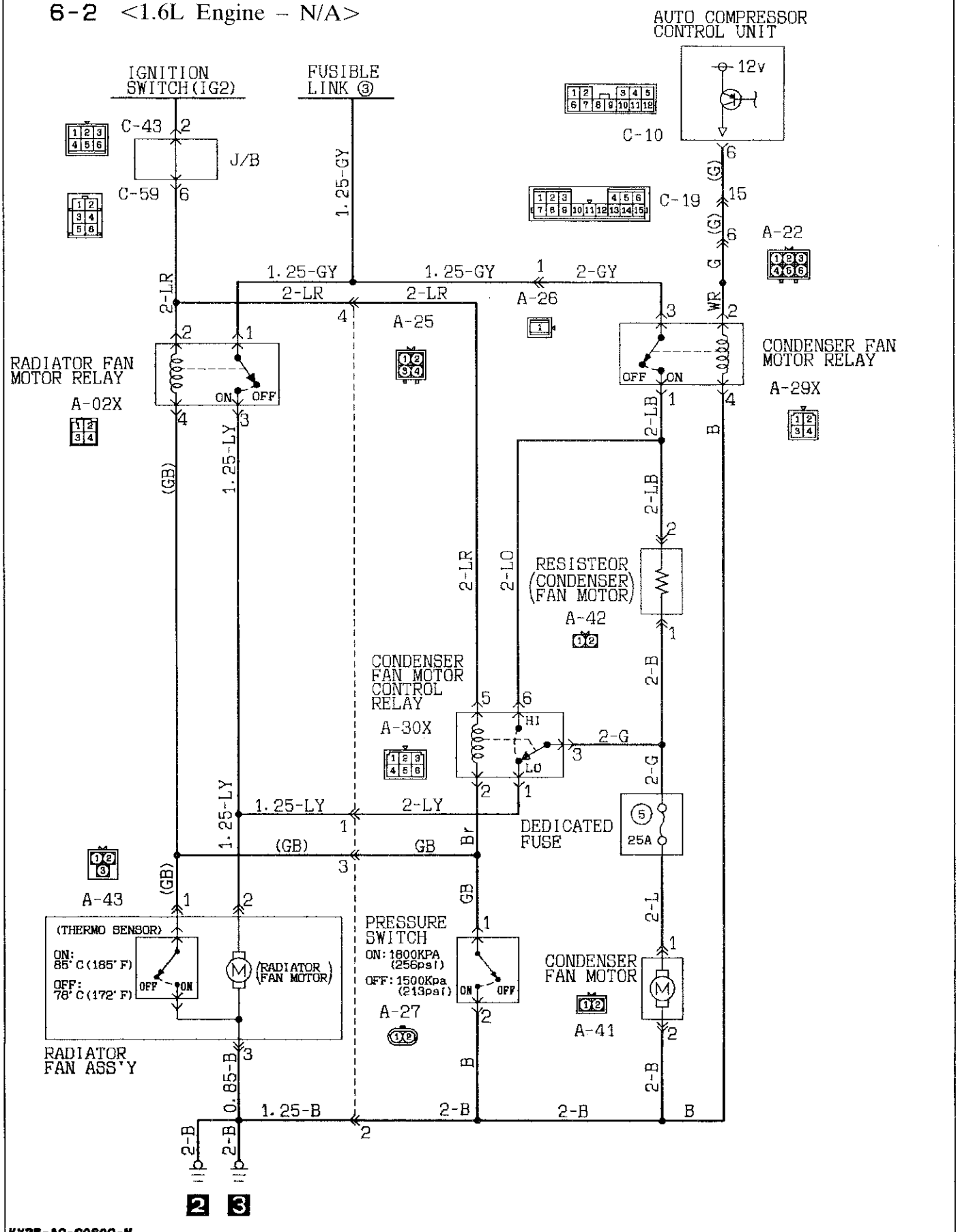

Inhibitor switch
Battery
16P0095

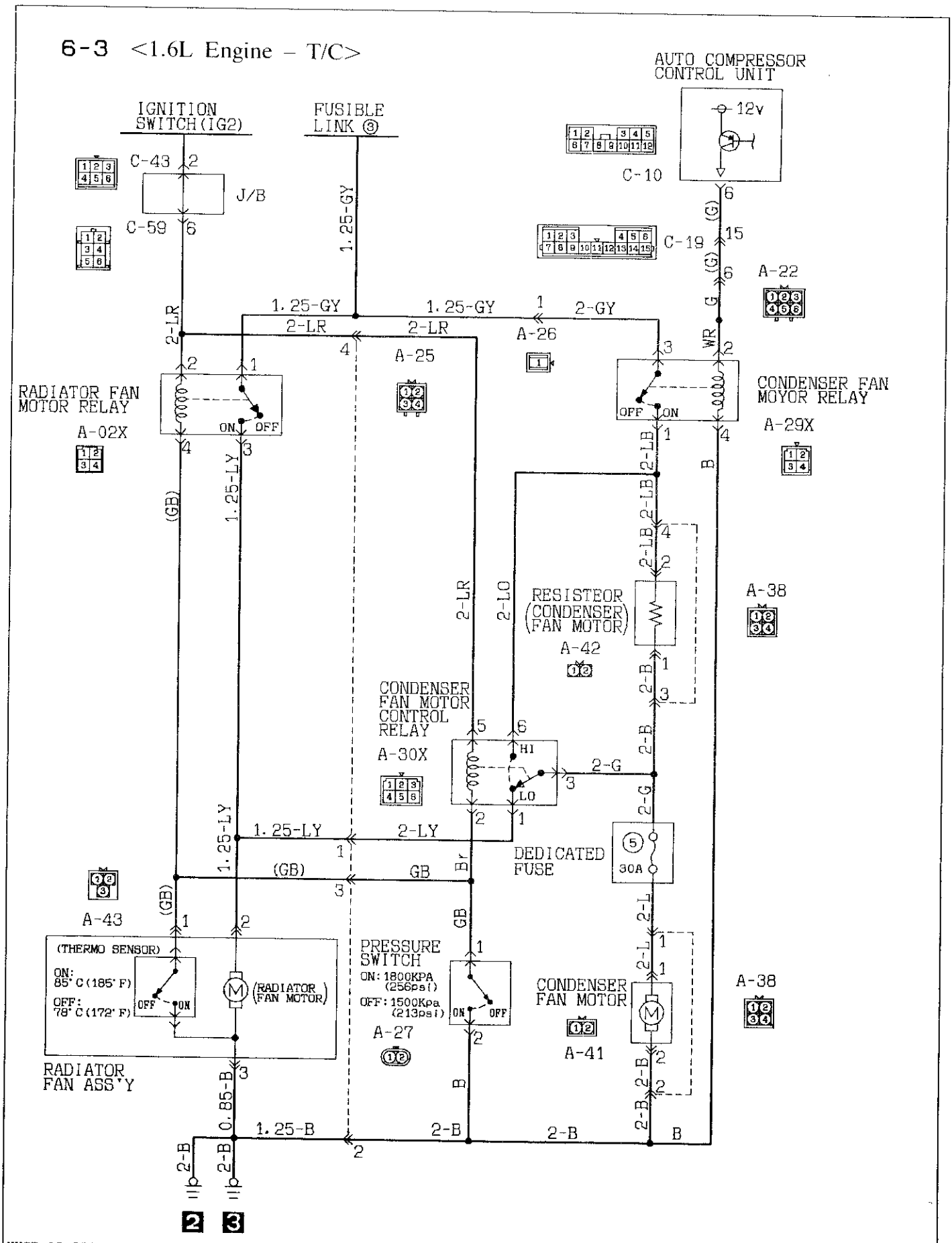
6 COOLING CIRCUIT

6-1 <1.5L Engine>

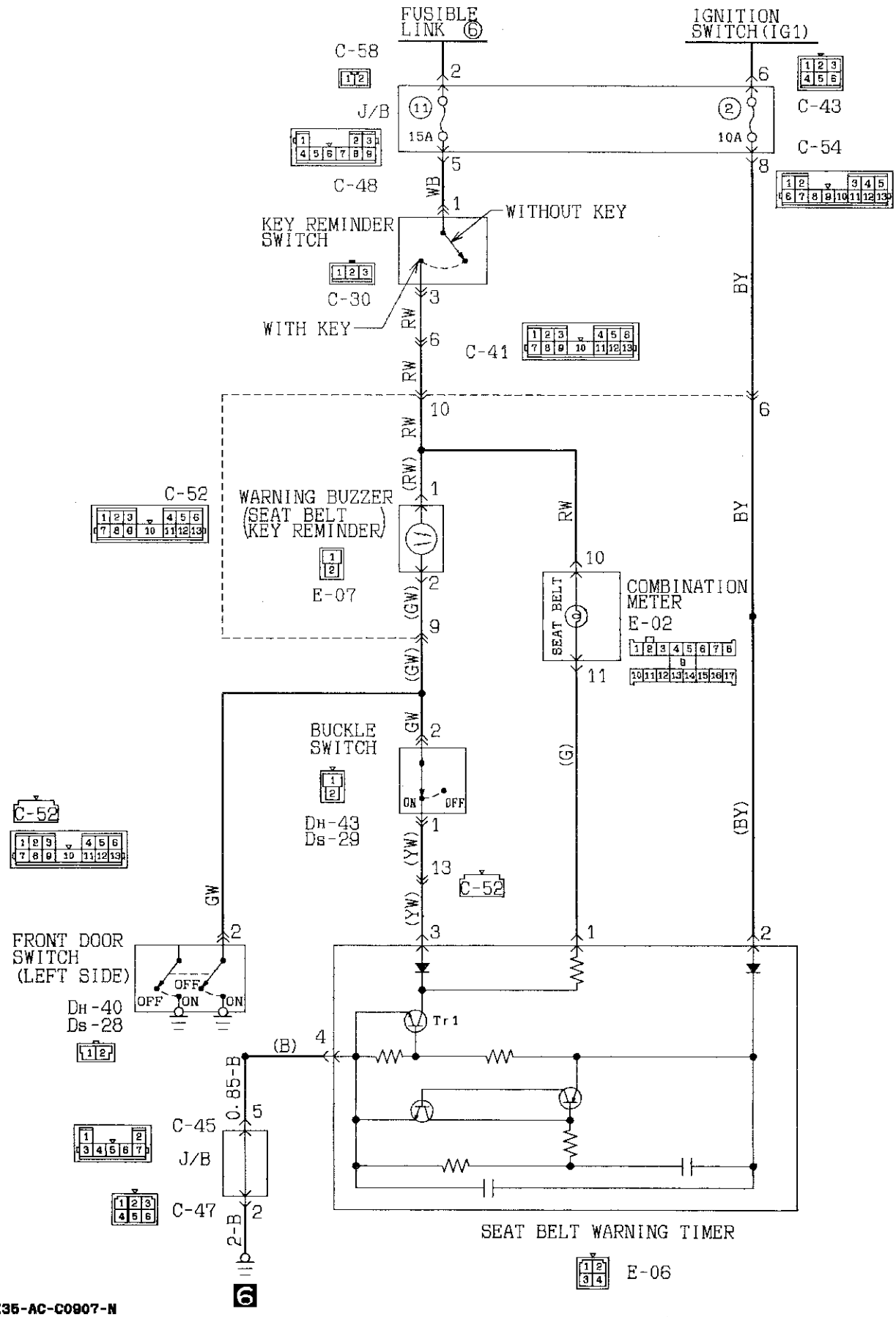


6-2 <1.6L Engine – N/A>

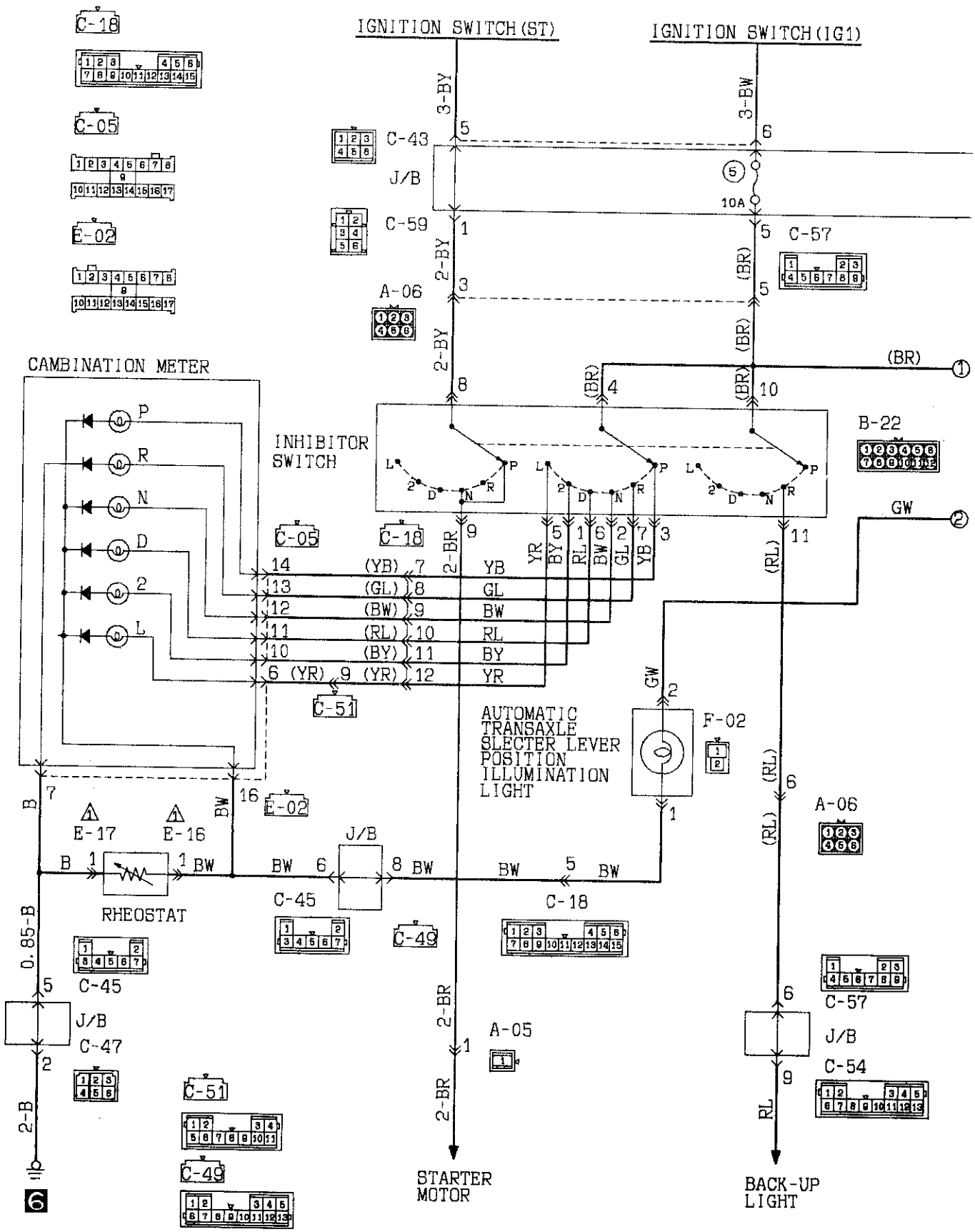



6-3 <1.6L Engine – T/C>
AUTO COMPRESSOR CONTROL UNIT
12v
IGNITION SWITCH(IG2)
FUSIBLE LINK ③
C-43
J/B
C-59
C-10
C-19
A-22
A-26
A-25
1.25-GY
2-LR
2-GY
G
WR
RADIATOR FAN MOTOR RELAY
A-02X
ON
OFF
CONDENSER FAN MOYOR RELAY
A-29X
(GB)
1.25-LY
2-LB
B
RESISTEOR (CONDENSER FAN MOTOR)
A-42
A-38
2-LO
2-B
CONDENSER FAN MOTOR CONTROL RELAY
A-30X
HI
LO
2-G
1.25-LY
2-LY
DEDICATED FUSE
30A
GB
Br
A-43
(THERMO SENSOR)
ON: 85° C (185° F)
OFF: 78° C (172° F)
(RADIATOR FAN MOTOR)
PRESSURE SWITCH
ON: 1800KPA (256psi)
OFF: 1500Kpa (213psi)
A-27
CONDENSER FAN MOTOR
A-41
2-L
RADIATOR FAN ASS'Y
0.85-B
1.25-B
2-B
2 3
KX35-AC-C0603-N

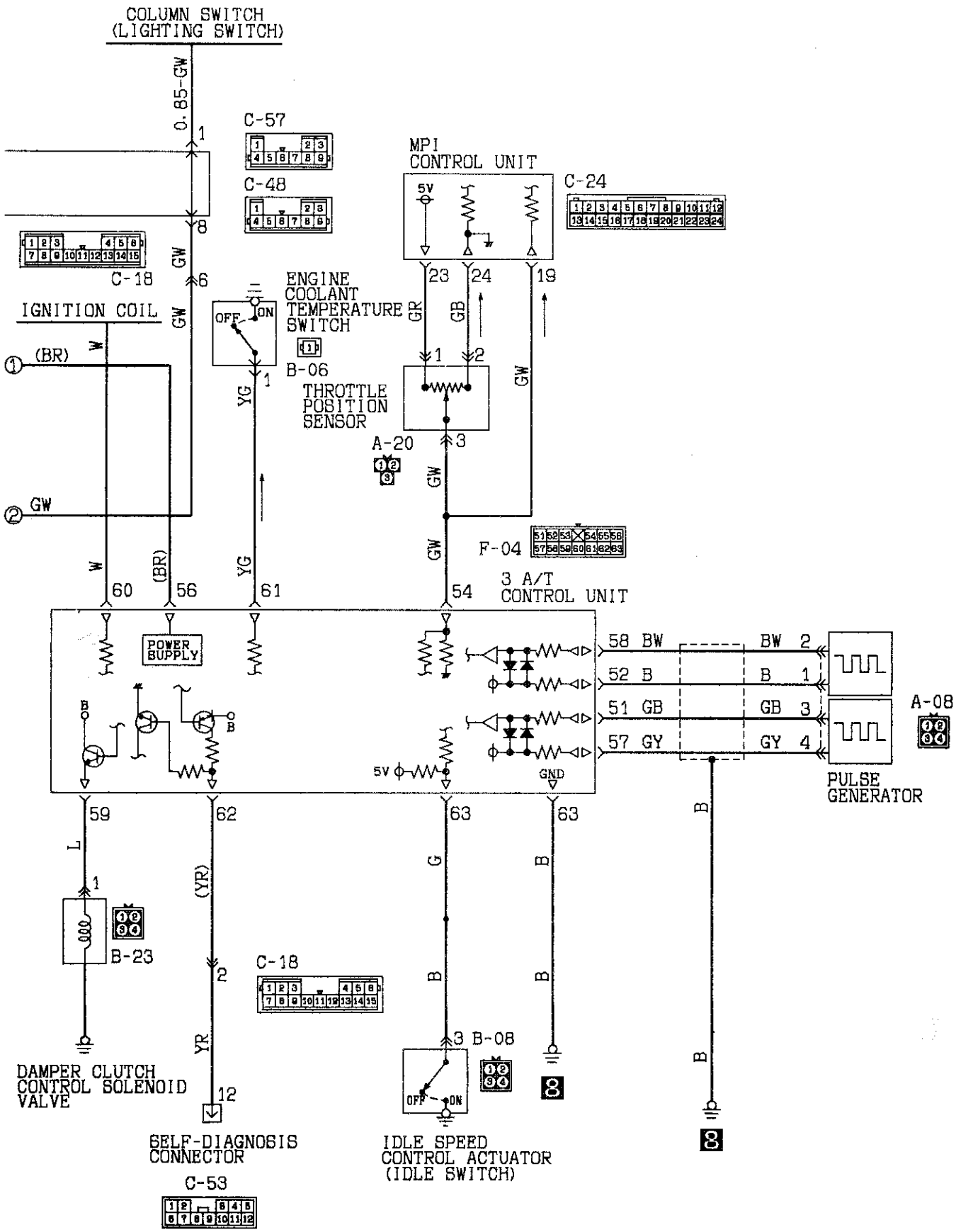
7 BUZZER CIRCUIT<Vehicles for CANADA>



8 3 A/T CIRCUIT



XX35-AC-C0701-N


COLUMN SWITCH
(LIGHTING SWITCH)
0.85-GW
C-57
C-48
C-18
GW
IGNITION COIL
(BR)
W
GW
ENGINE
COOLANT
TEMPERATURE
SWITCH
OFF
ON
B-06
YG
THROTTLE
POSITION
SENSOR
MPI
CONTROL UNIT
5V
C-24
23
24
19
GR
GB
GW
A-20
F-04
3 A/T
CONTROL UNIT
POWER
SUPPLY
60
56
61
54
58 BW
52 B
51 GB
57 GY
BW 2
B 1
GB 3
GY 4
A-08
PULSE
GENERATOR
GND
59
62
63
63
L
(YR)
G
B
B-23
C-18
YR
12
3 B-08
DAMPER CLUTCH
CONTROL SOLENOID
VALVE
SELF-DIAGNOSIS
CONNECTOR
C-53
IDLE SPEED
CONTROL ACTUATOR
(IDLE SWITCH)

3 A/T CONTROL COMPONENTS

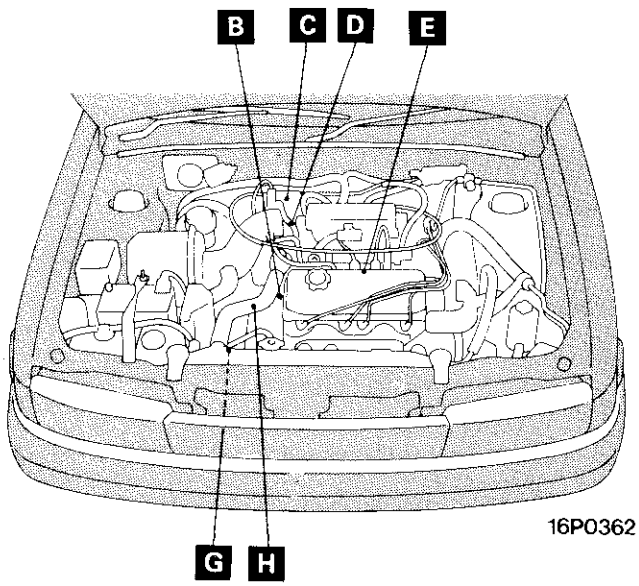
COMPONENTS LOCATION

N21EC--0

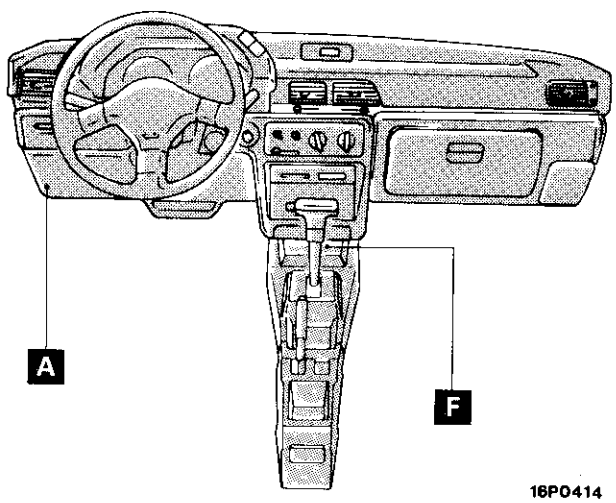
Name	Symbol	Name	Symbol
A/T inspection connector	A	Idle position switch	C
Control unit	F	Ignition coil (power transistor)	E
Damper clutch control solenoid valve (DCCSV)	G	Pulse generators	H
Engine coolant temperature switch	B	Throttle position sensor	D

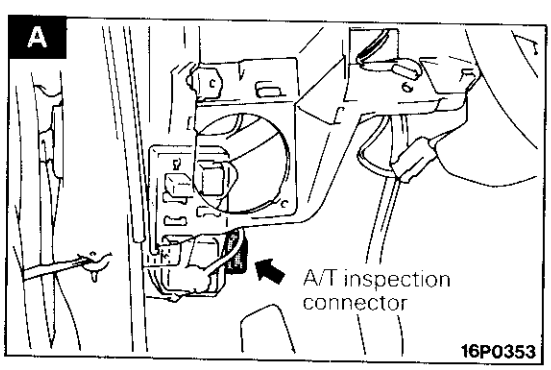
NOTE
The "Name" column is arranged in alphabetical order.

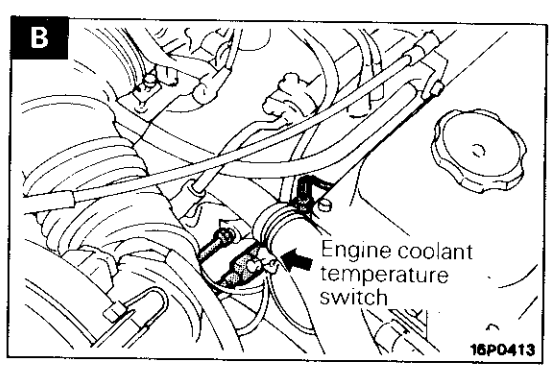
Engine compartment



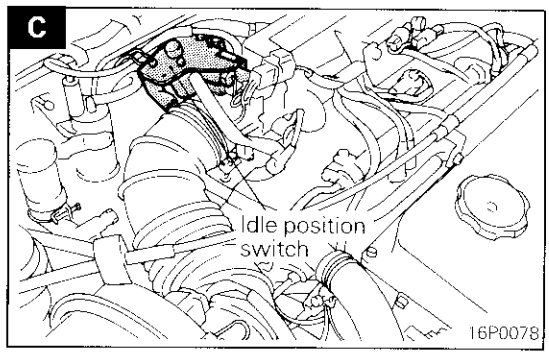
Instrument panel



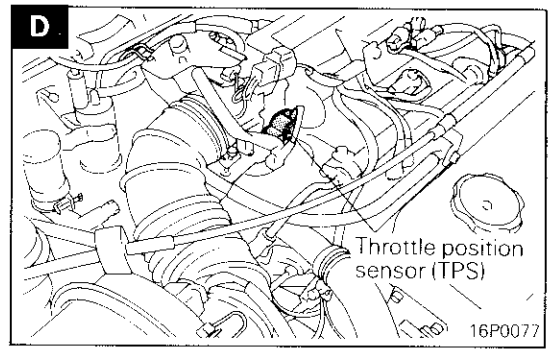




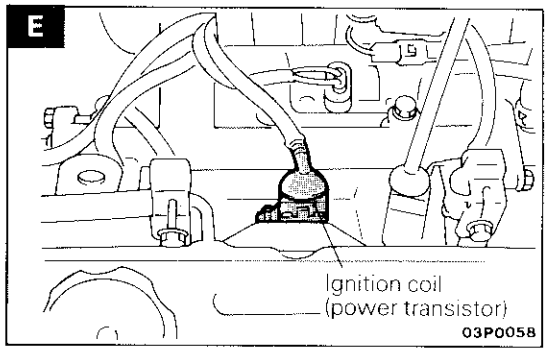
C


Idle position switch
16P0078

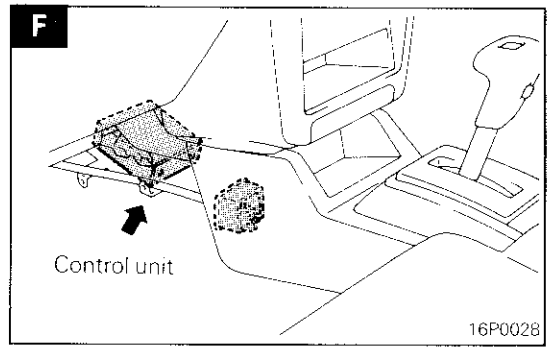
D


Throttle position sensor (TPS)
16P0077

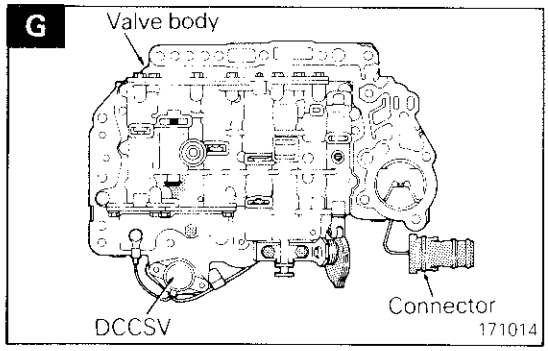
E


Ignition coil (power transistor)
03P0058

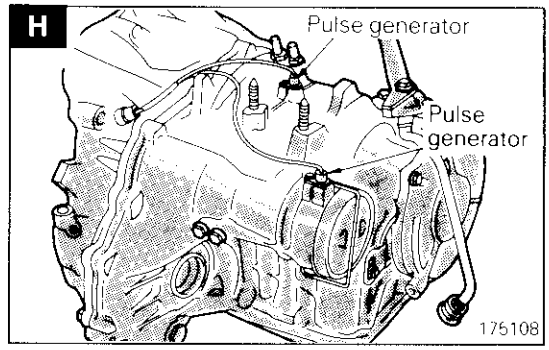
F


Control unit
16P0028

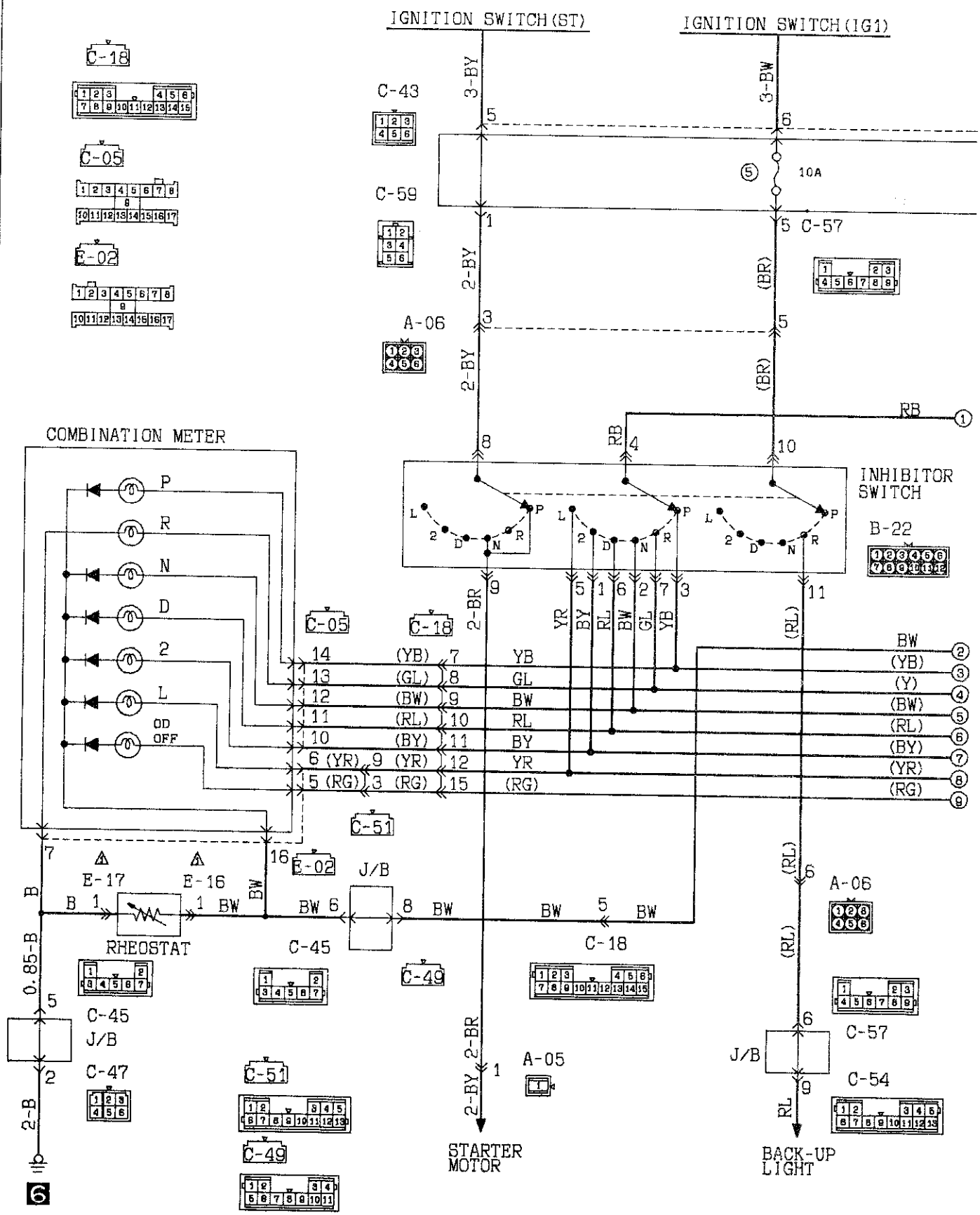
G


Valve body
DCCSV
Connector
171014

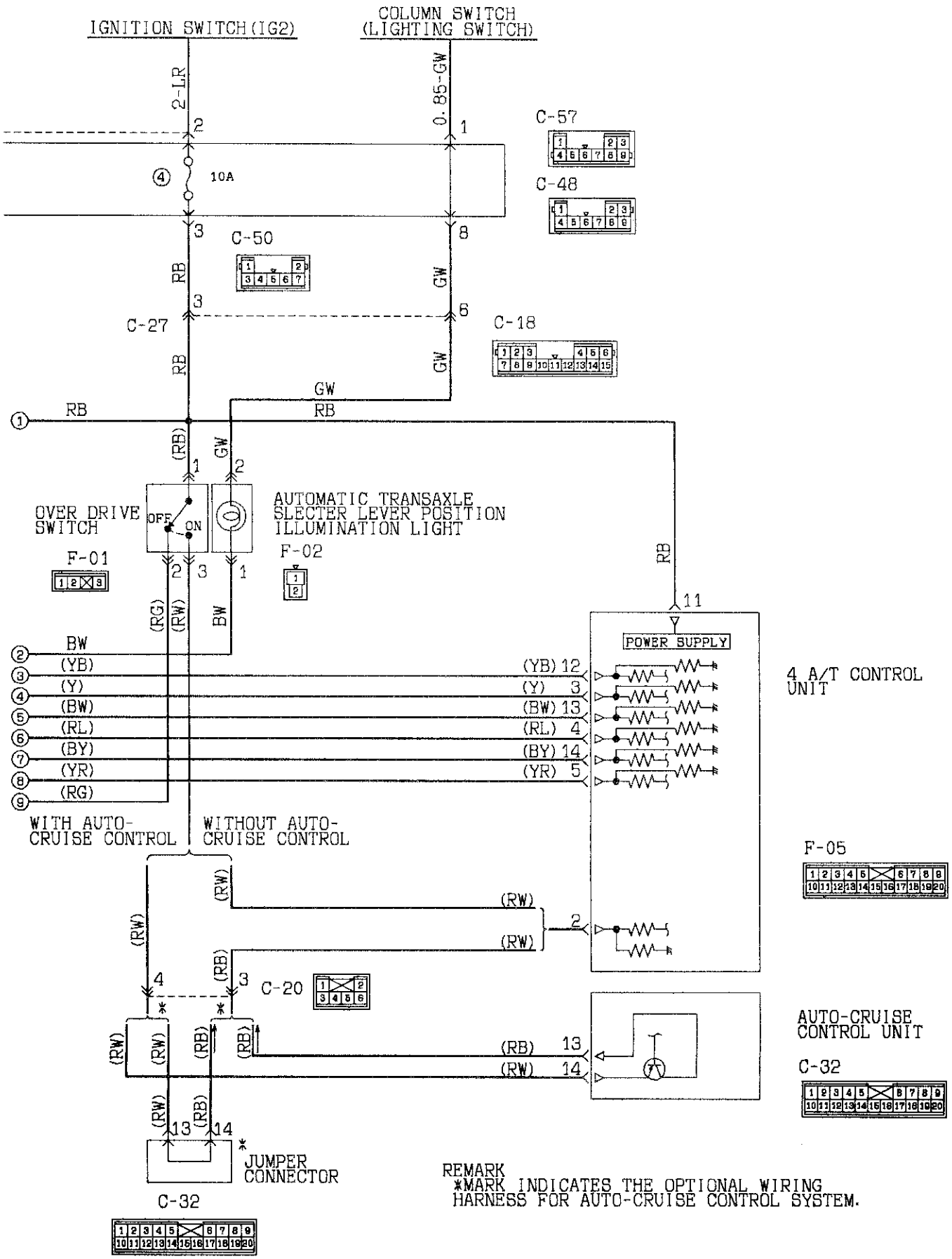
H

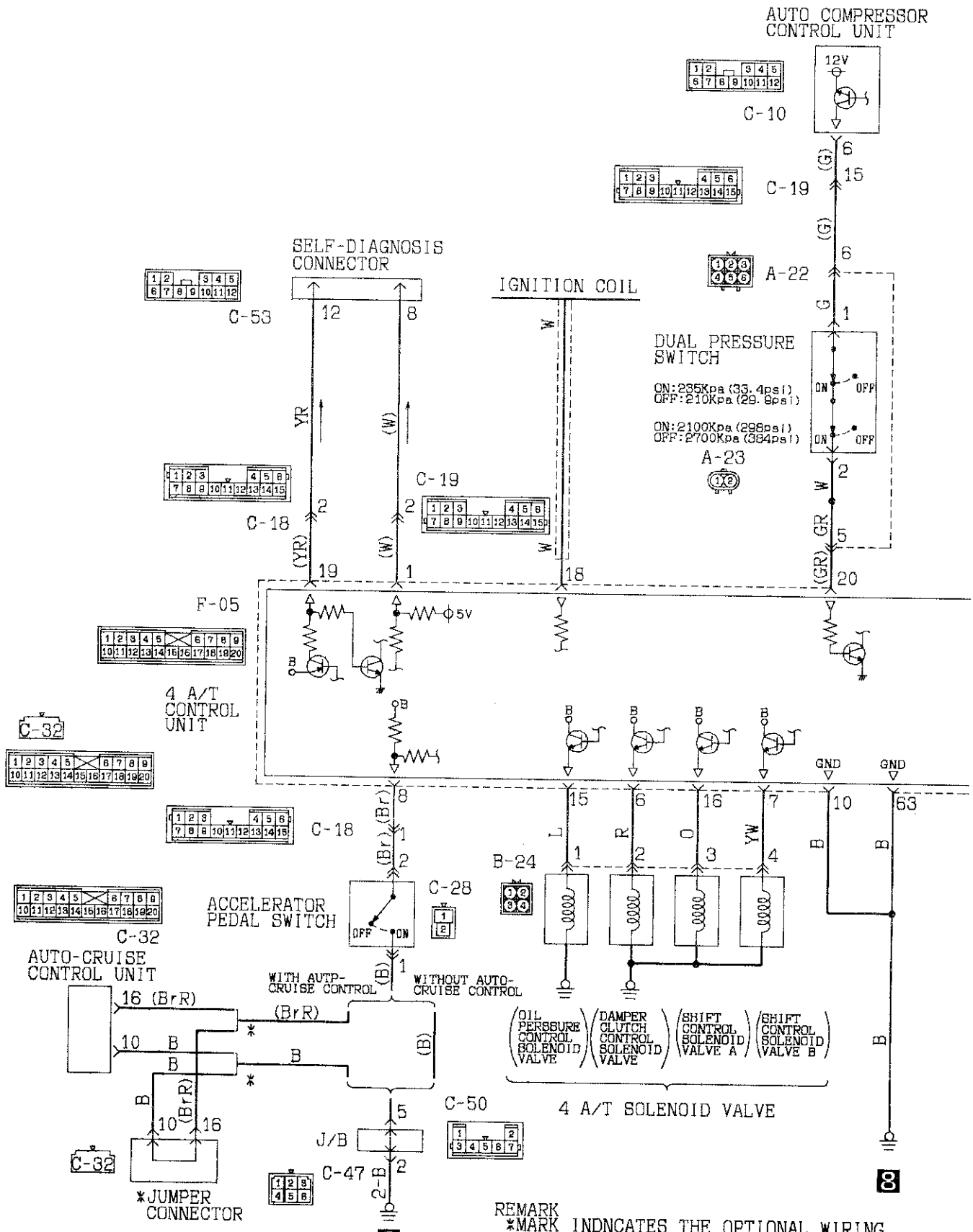

Pulse generator
Pulse generator
175108

9 4 A/T CIRCUIT

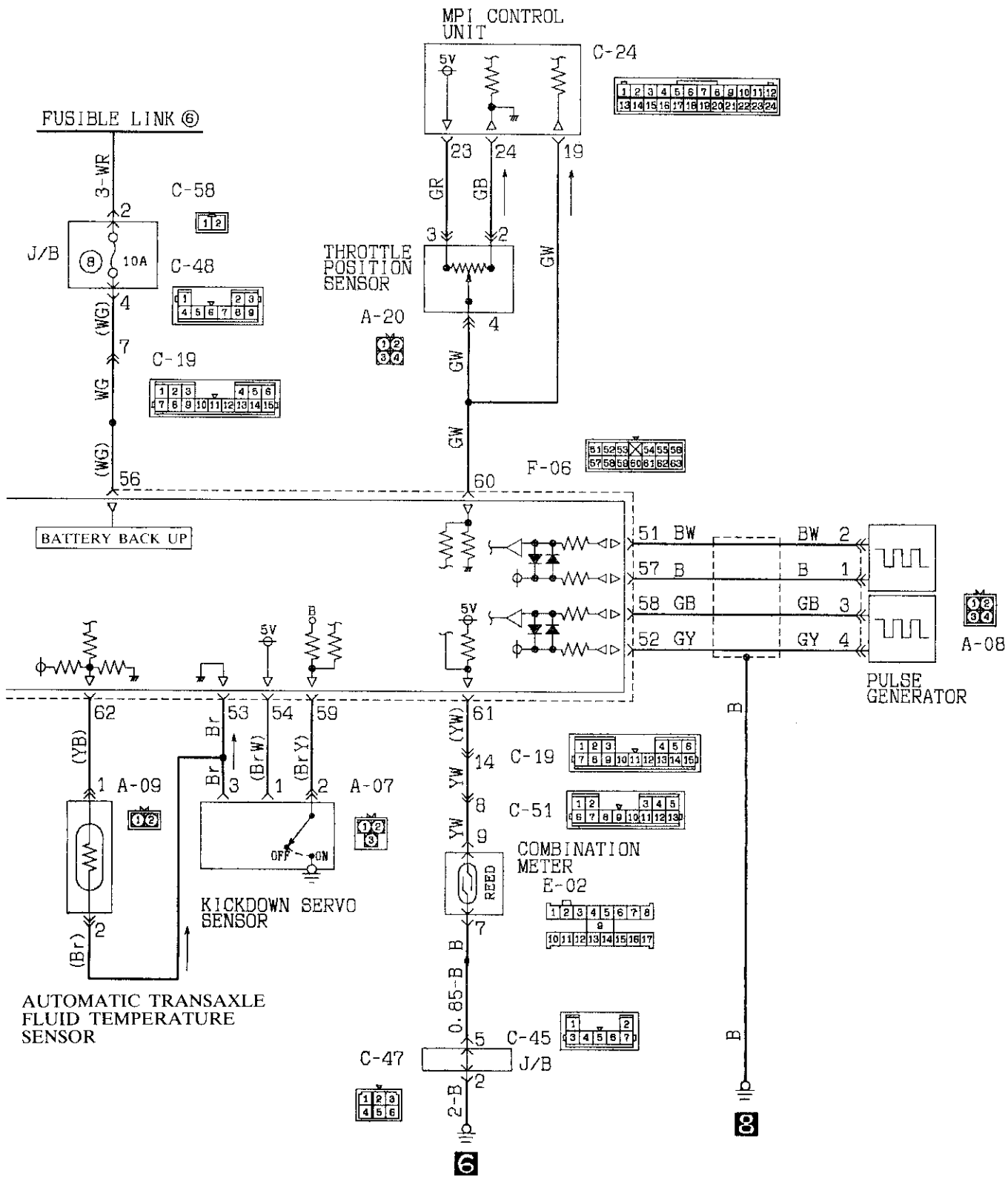


KK35-AC-C0702-N


IGNITION SWITCH(IG2)
COLUMN SWITCH
(LIGHTING SWITCH)
2-LR
0.85-GW
10A
C-57
C-48
C-50
C-27
C-18
RB
GW
OVER DRIVE
SWITCH
OFF
ON
AUTOMATIC TRANSAXLE
SLECTER LEVER POSITION
ILLUMINATION LIGHT
F-01
F-02
BW
(YB)
(Y)
(BW)
(RL)
(BY)
(YR)
(RG)
POWER SUPPLY
4 A/T CONTROL
UNIT
WITH AUTO-
CRUISE CONTROL
WITHOUT AUTO-
CRUISE CONTROL
F-05
C-20
AUTO-CRUISE
CONTROL UNIT
C-32
JUMPER
CONNECTOR
REMARK
*MARK INDICATES THE OPTIONAL WIRING
HARNESS FOR AUTO-CRUISE CONTROL SYSTEM.



REMARK
*MARK INDNCATES THE OPTIONAL WIRING HARNESS FOR AUTO-CRUISE CONTROL SYSTEM.

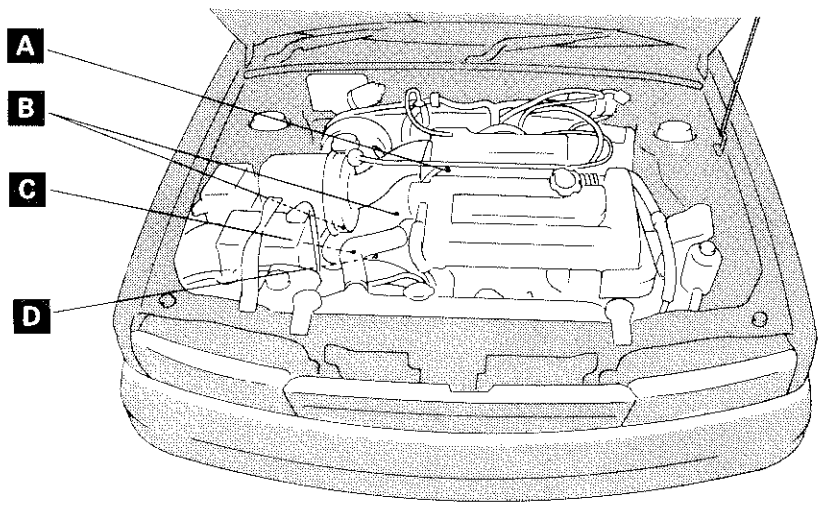

MPI CONTROL UNIT
C-24
5V
23
24
19
GR
GB
GW
FUSIBLE LINK ⑥
3-WR
C-58
2
J/B
⑧
10A
C-48
4
(WG)
7
C-19
WG
(WG)
56
THROTTLE POSITION SENSOR
A-20
3
2
4
GW
60
F-06
BATTERY BACK UP
51 BW
57 B
58 GB
52 GY
BW 2
B 1
GB 3
GY 4
A-08
PULSE GENERATOR
5V
B
62
(YB)
1 A-09
53
54
59
Br
(BrW)
(BrY)
3
1
2 A-07
OFF
ON
KICKDOWN SERVO SENSOR
(Br)
2
AUTOMATIC TRANSAXLE FLUID TEMPERATURE SENSOR
61
(YW)
14
C-19
YW
8
C-51
9
REED
COMBINATION METER
E-02
7
0.85-B
B
5
C-45
C-47
J/B
2
2-B
6
8

4 A/T CONTROL COMPONENTS

N21EC- -1

COMPONENTS LOCATION

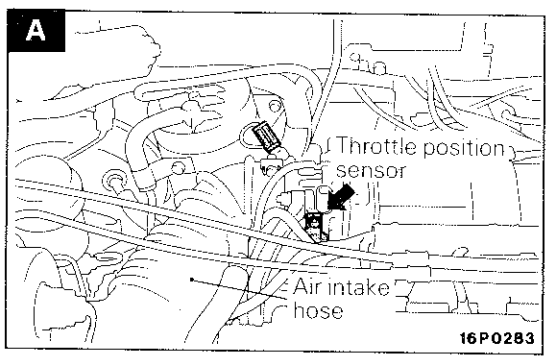
Engine compartment

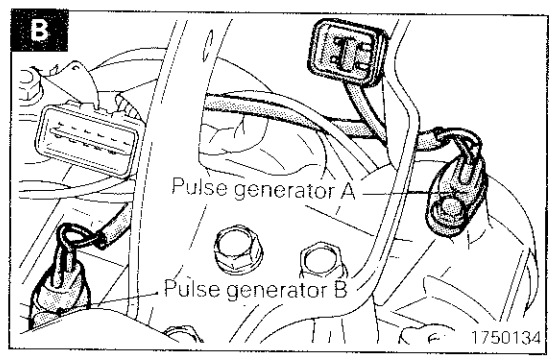


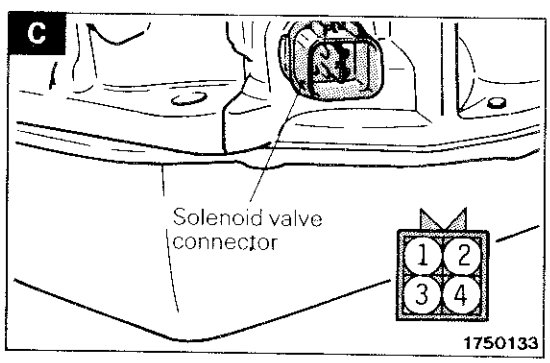
16P0290

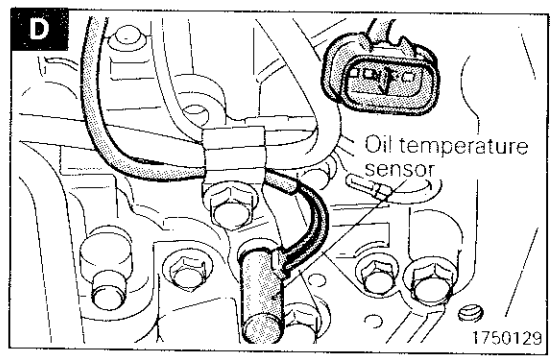
Name	Symbol	Name	Symbol
Oil temperature sensor	D	Solenoid valve connector	C
Pulse generator A	B	Throttle position sensor	A
Pulse generator B	B		

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

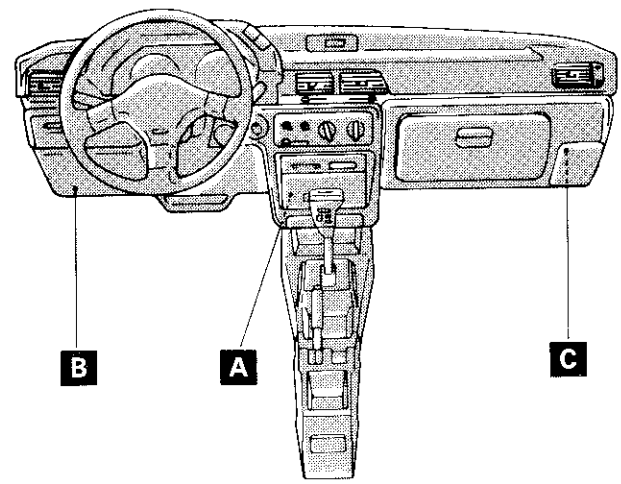








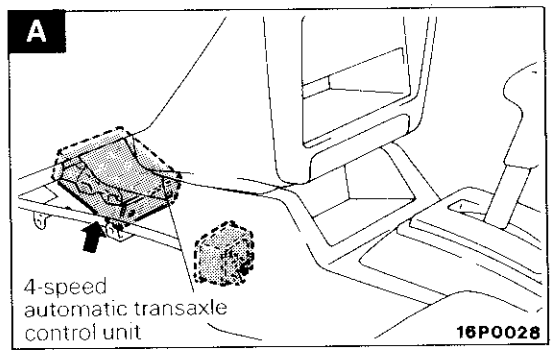
Interior

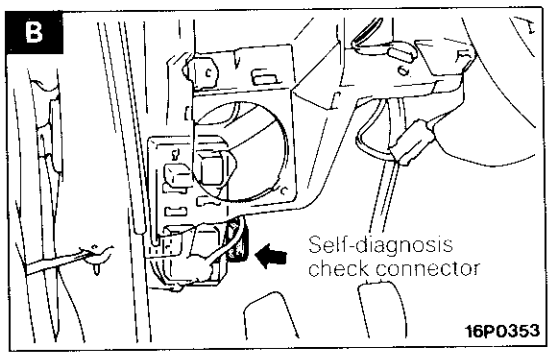


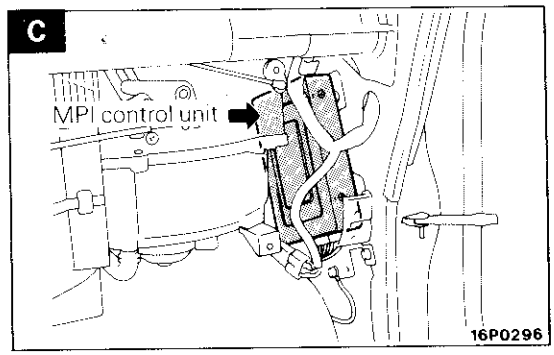
16P0292

Name	Symbol
4-speed automatic transaxle control unit	A
MPI control unit	C
Self-diagnosis check connector	B

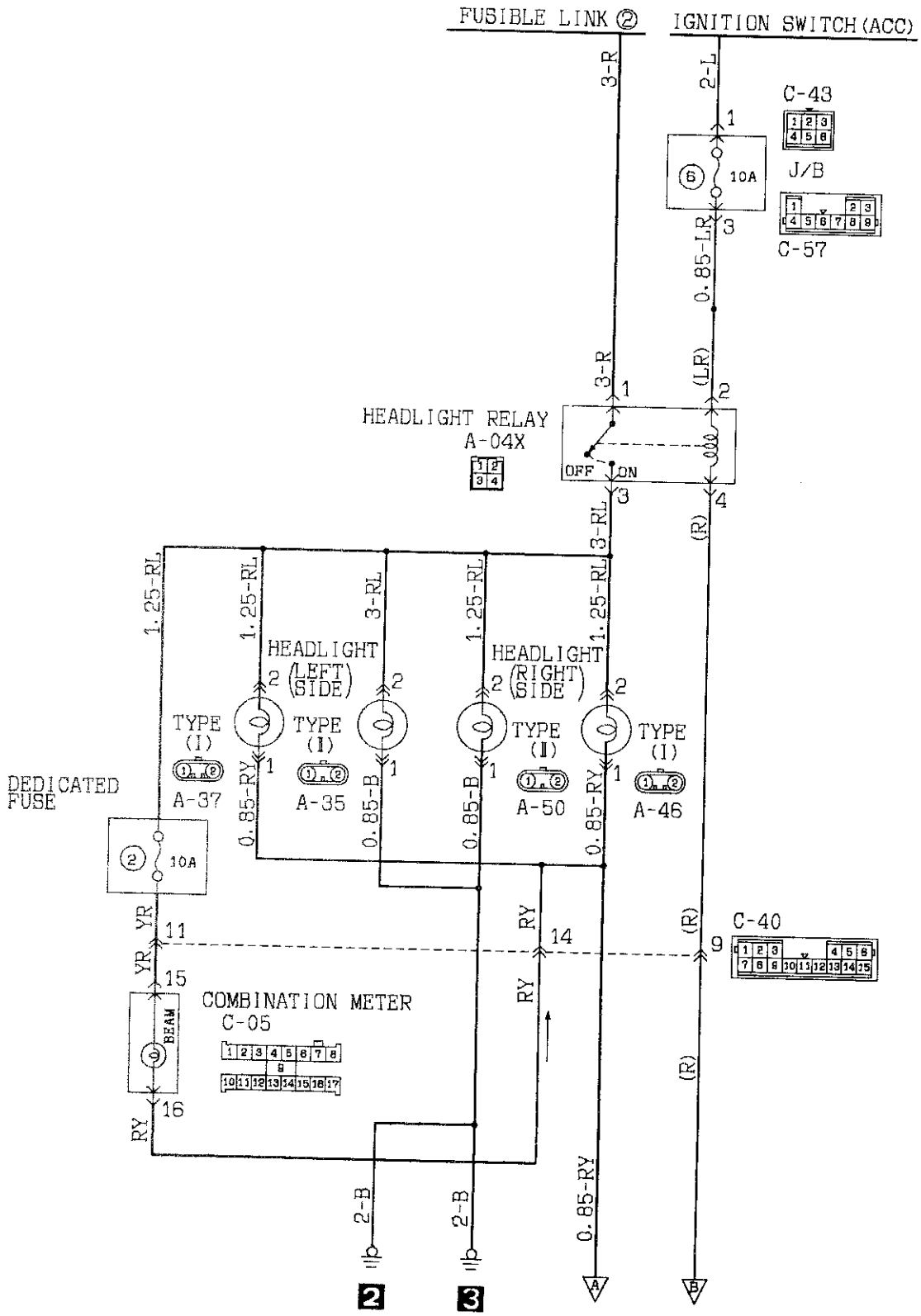
NOTE
The "Name" column is arranged in alphabetical order.

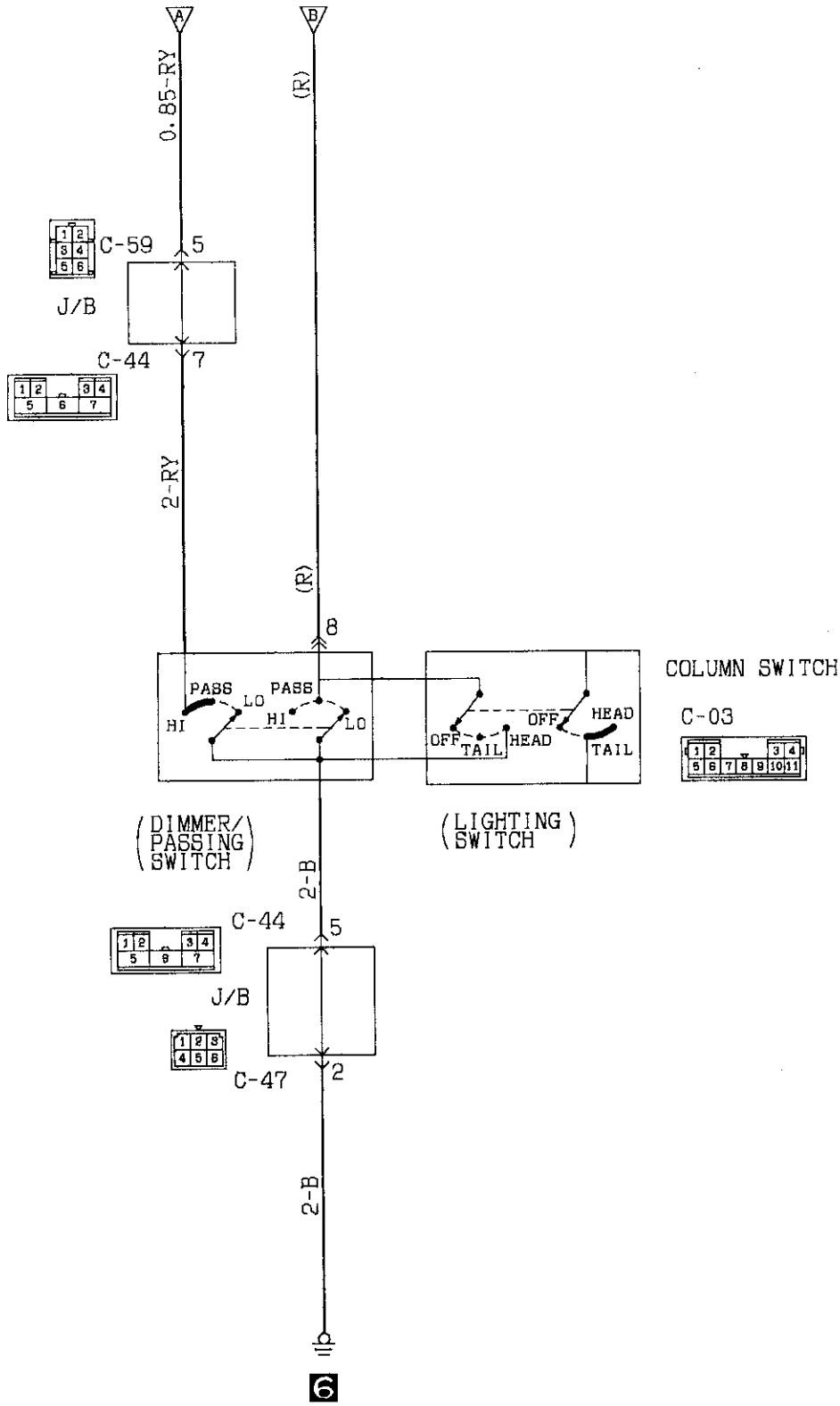






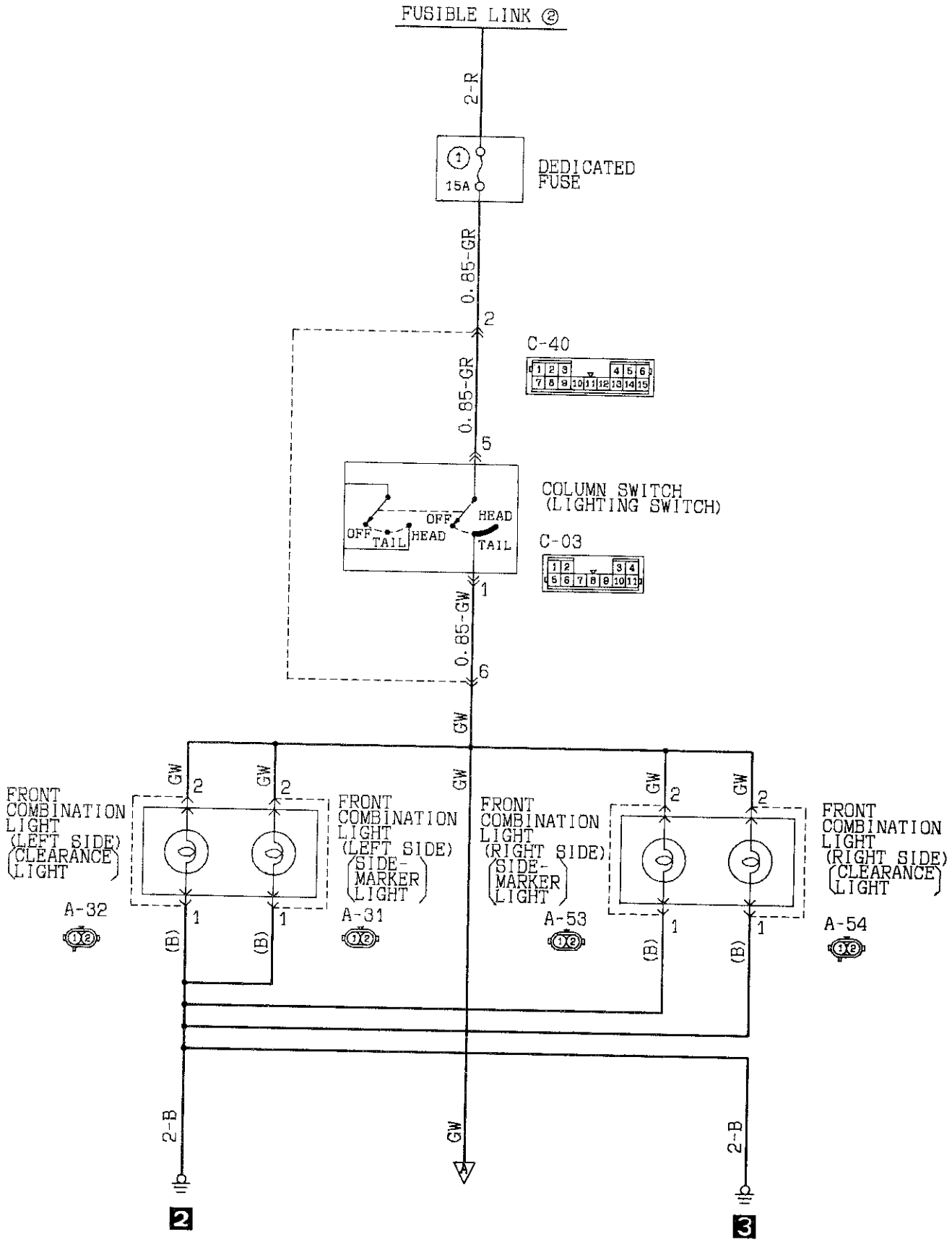
10 HEADLIGHT CIRCUIT

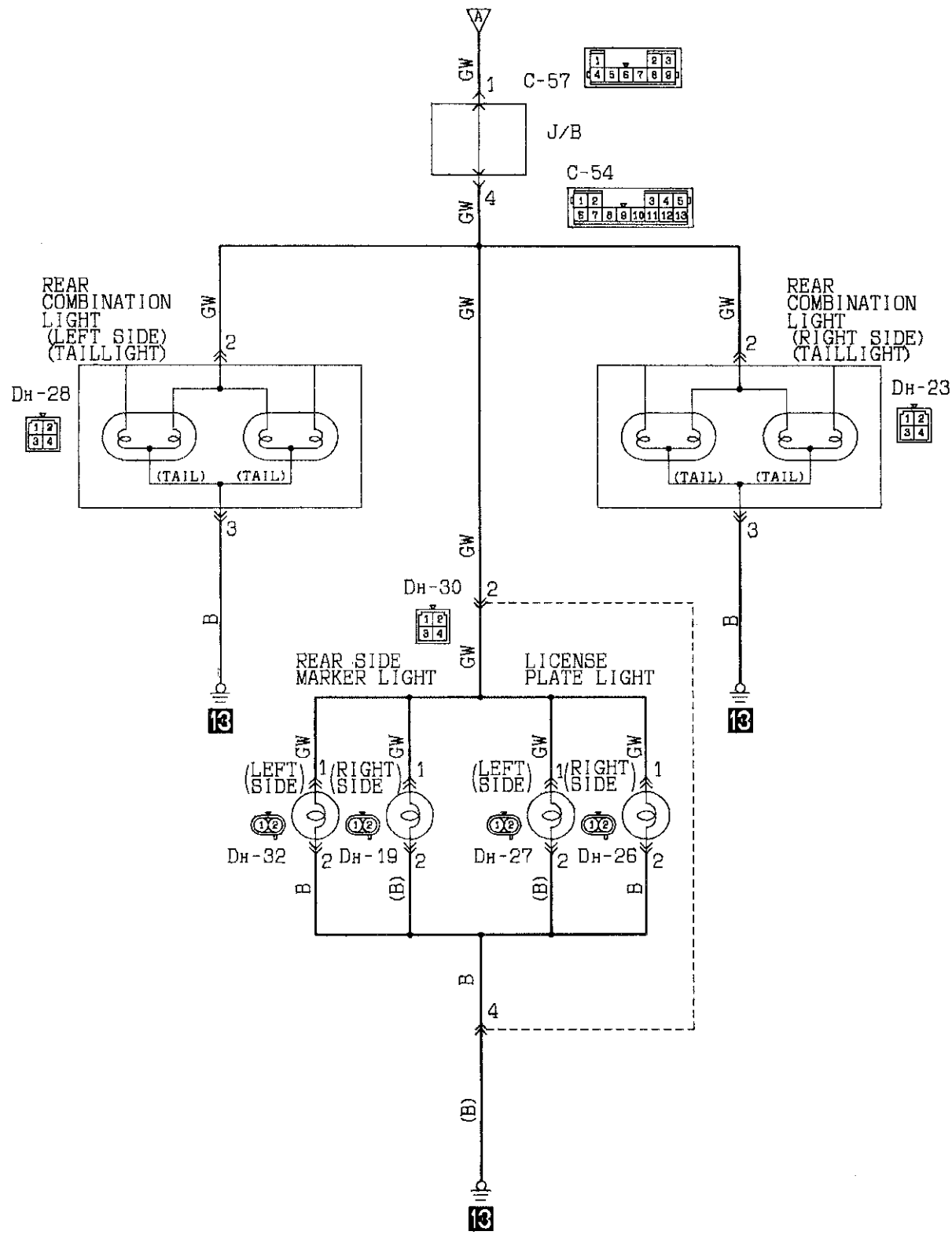



A
B
0.85-RY
(R)
C-59
5
J/B
C-44
7
2-RY
(R)
8
PASS
LO
HI
PASS
HI
LO
OFF
HEAD
OFF
TAIL
HEAD
TAIL
COLUMN SWITCH
C-03
(DIMMER/ PASSING SWITCH)
(LIGHTING SWITCH)
2-B
C-44
5
J/B
C-47
2
2-B
6

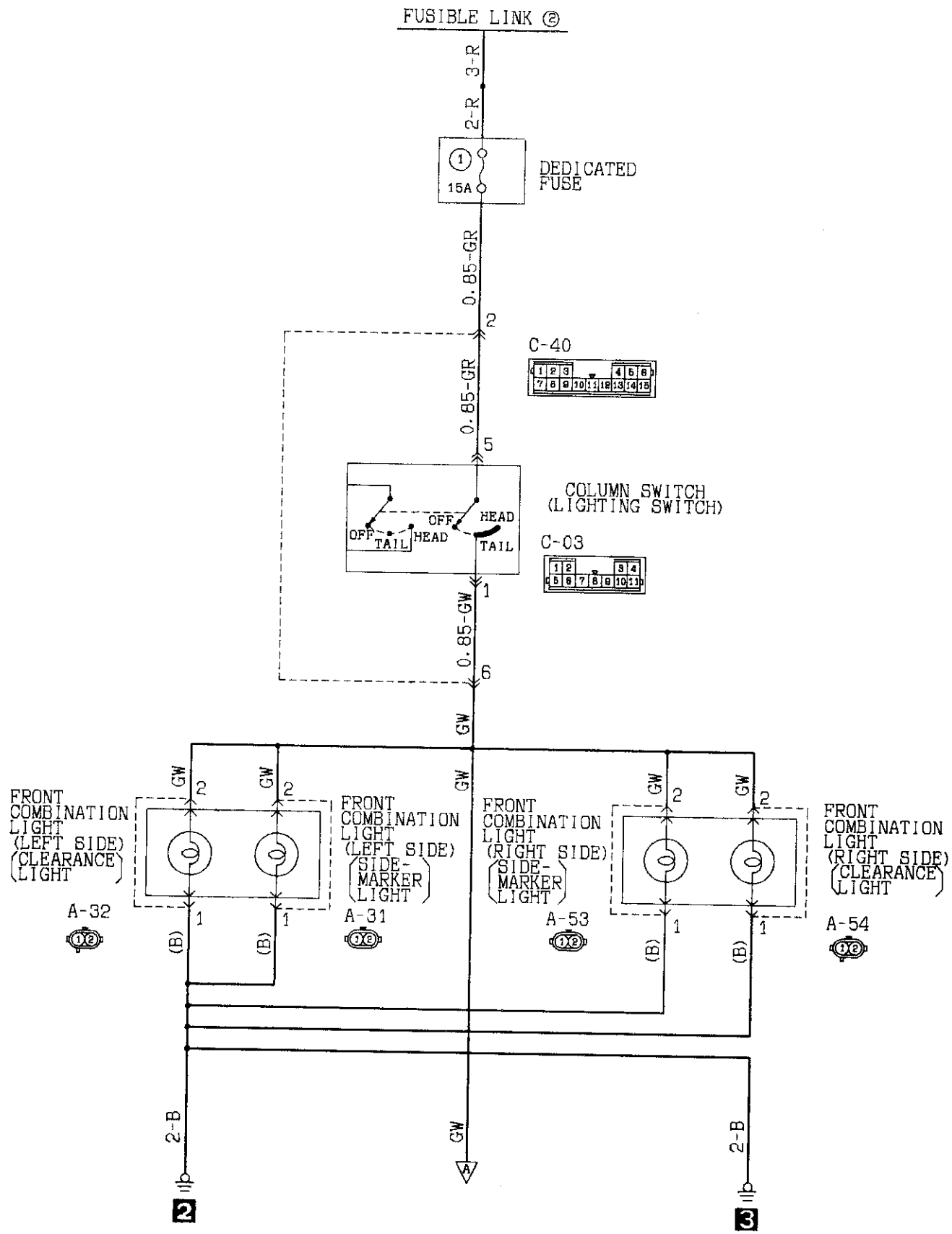
11 TAILLIGHT, SIDE-MARKER LIGHT, CLEARANCE LIGHT AND LICENSE PLATE LIGHT CIRCUIT

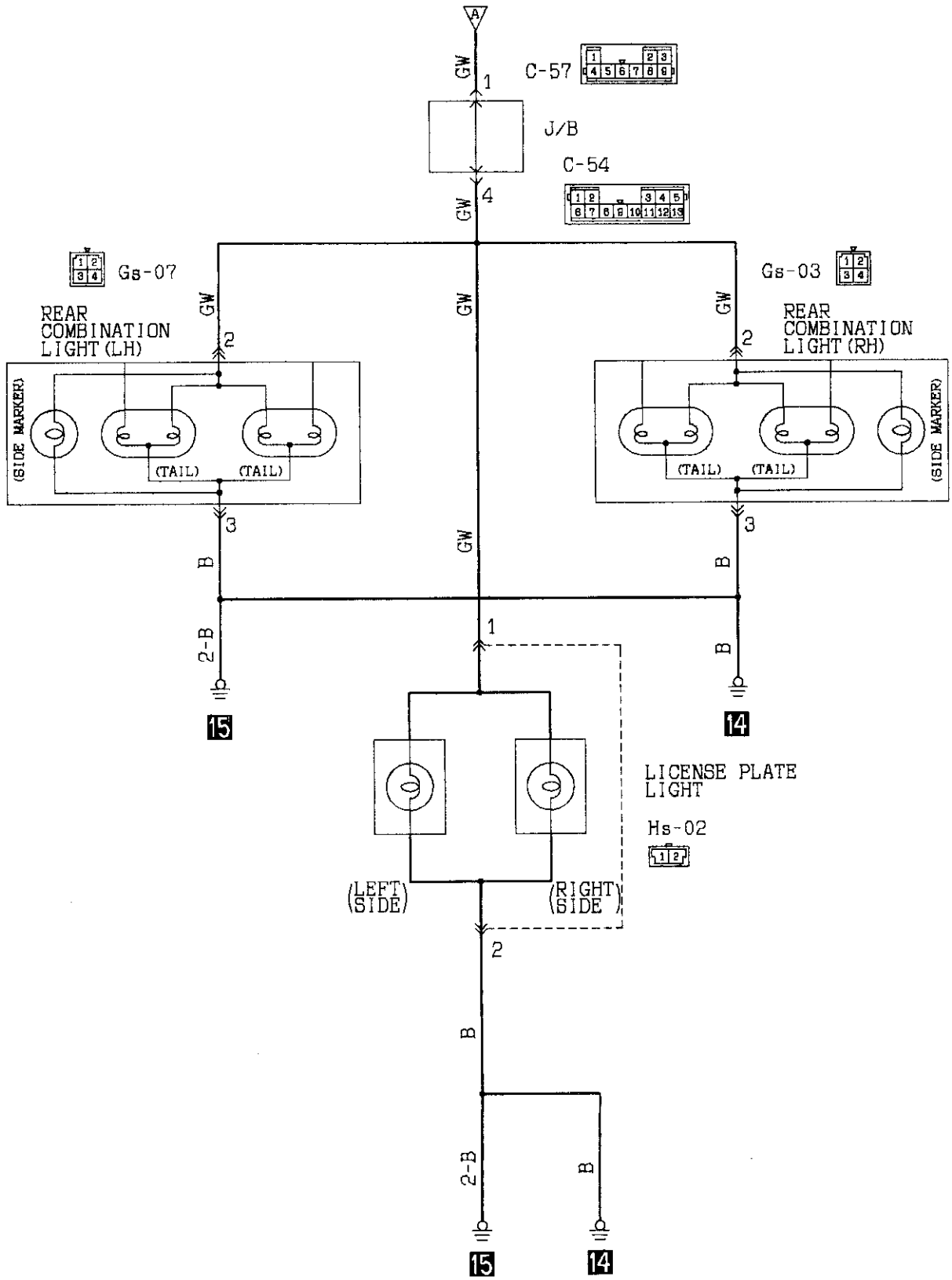
11 – 1 <HATCHBACK>




C-57
J/B
C-54
REAR COMBINATION LIGHT (LEFT SIDE) (TAILLIGHT)
REAR COMBINATION LIGHT (RIGHT SIDE) (TAILLIGHT)
DH-28
DH-23
(TAIL)
(TAIL)
DH-30
REAR SIDE MARKER LIGHT
LICENSE PLATE LIGHT
(LEFT SIDE)
(RIGHT SIDE)
DH-32
DH-19
DH-27
DH-26
GW
B
(B)
13

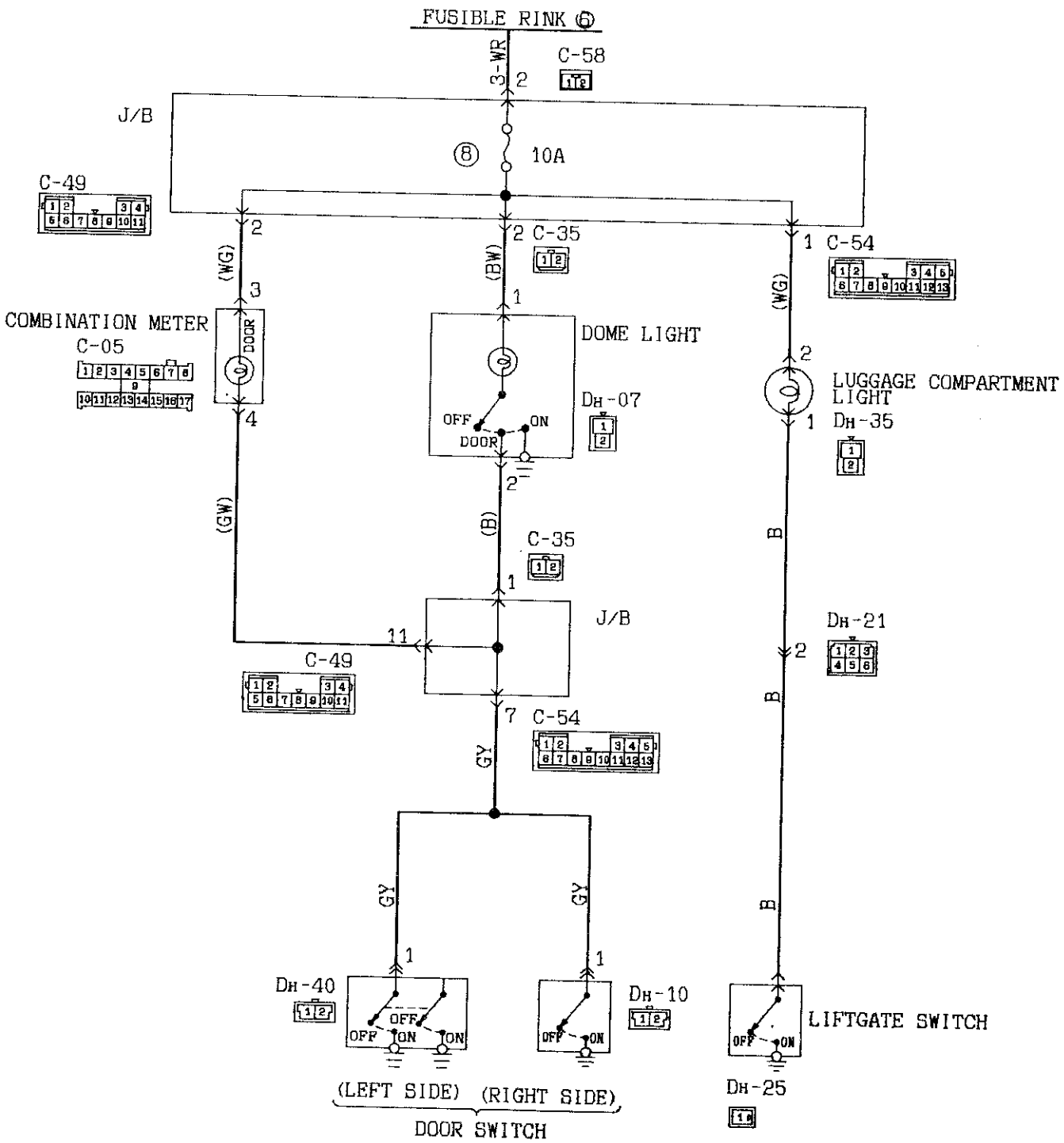
11 – 2 〈SEDAN〉


FUSIBLE LINK ②
3-R
2-R
15A
DEDICATED FUSE
0.85-GR
2
C-40
0.85-GR
5
COLUMN SWITCH (LIGHTING SWITCH)
OFF
TAIL
HEAD
C-03
1
0.85-GW
6
GW
FRONT COMBINATION LIGHT (LEFT SIDE) (CLEARANCE LIGHT)
A-32
FRONT COMBINATION LIGHT (LEFT SIDE) (SIDE-MARKER LIGHT)
A-31
FRONT COMBINATION LIGHT (RIGHT SIDE) (SIDE-MARKER LIGHT)
A-53
FRONT COMBINATION LIGHT (RIGHT SIDE) (CLEARANCE LIGHT)
A-54
(B)
2-B
2
3

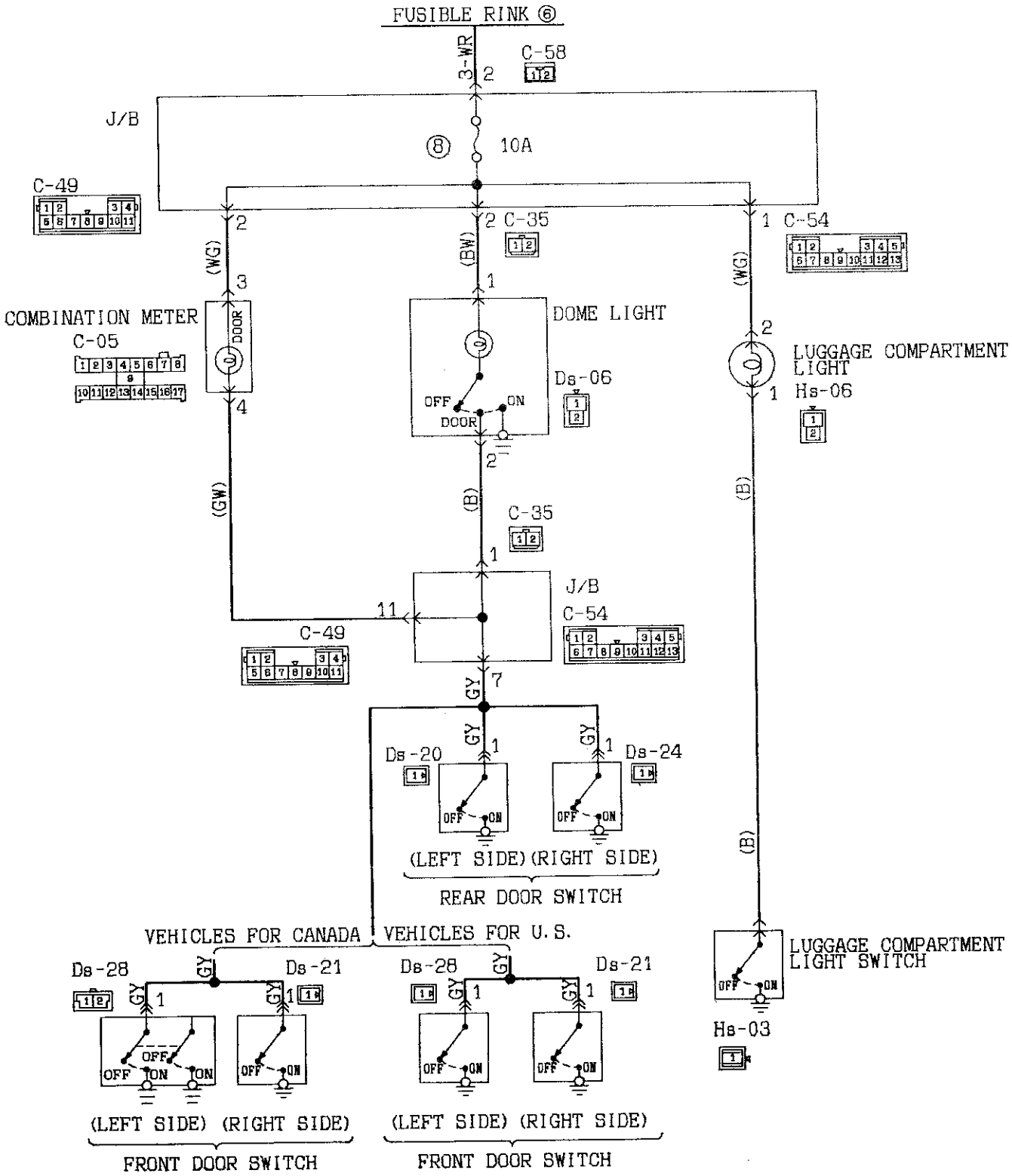

A
GW
1
C-57
J/B
C-54
4
GW
Gs-07
Gs-03
REAR COMBINATION LIGHT (LH)
REAR COMBINATION LIGHT (RH)
GW
2
GW
GW
2
(SIDE MARKER)
(TAIL)
(TAIL)
(TAIL)
(TAIL)
(SIDE MARKER)
3
3
B
B
GW
2-B
1
B
15
14
LICENSE PLATE LIGHT
Hs-02
(LEFT SIDE)
(RIGHT SIDE)
2
B
2-B
B
15
14

12 DOME LIGHT AND LUGGAGE COMPARTMENT LIGHT CIRCUIT

12 – 1 <HATCHBACK>

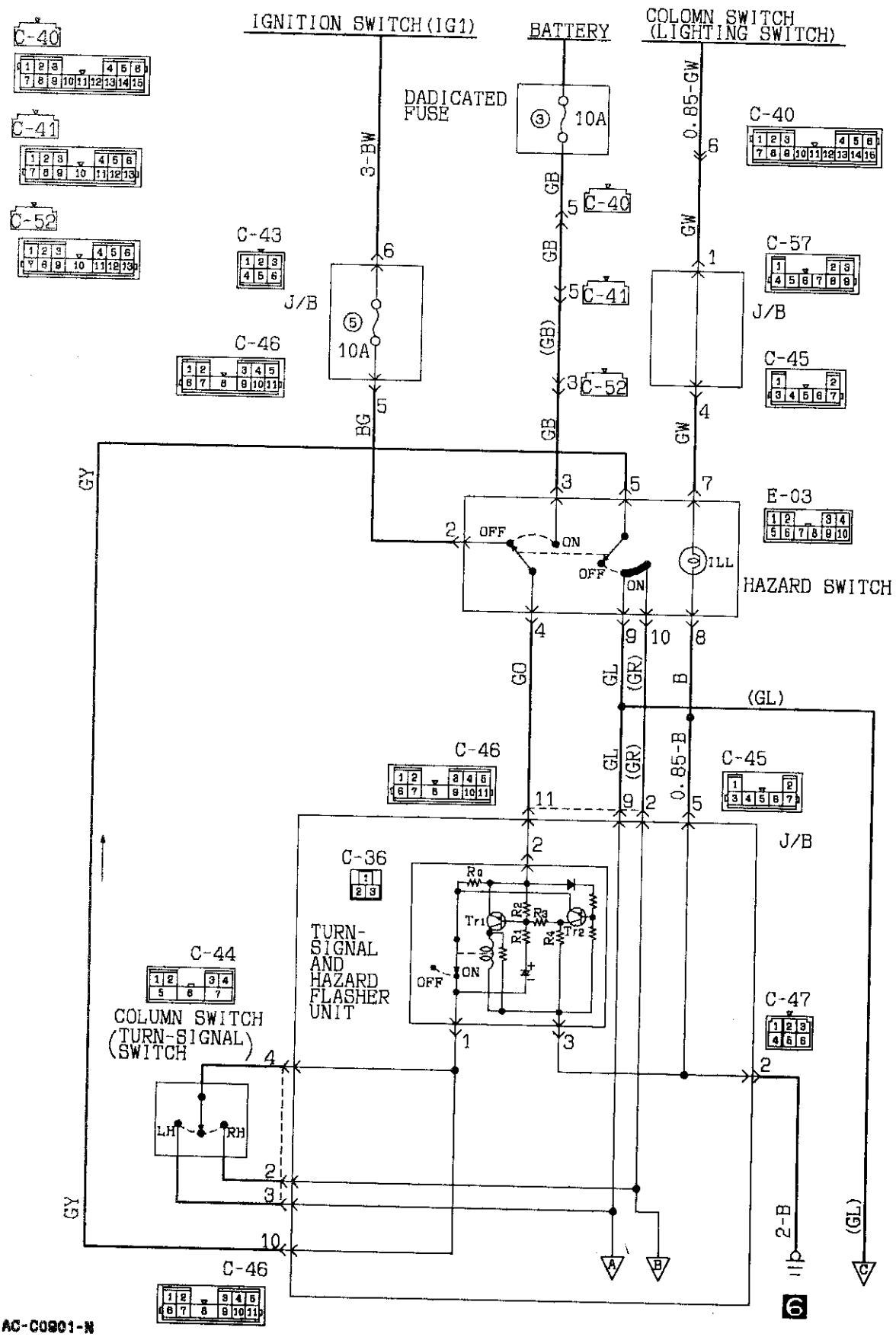


12 – 2 <SEDAN>

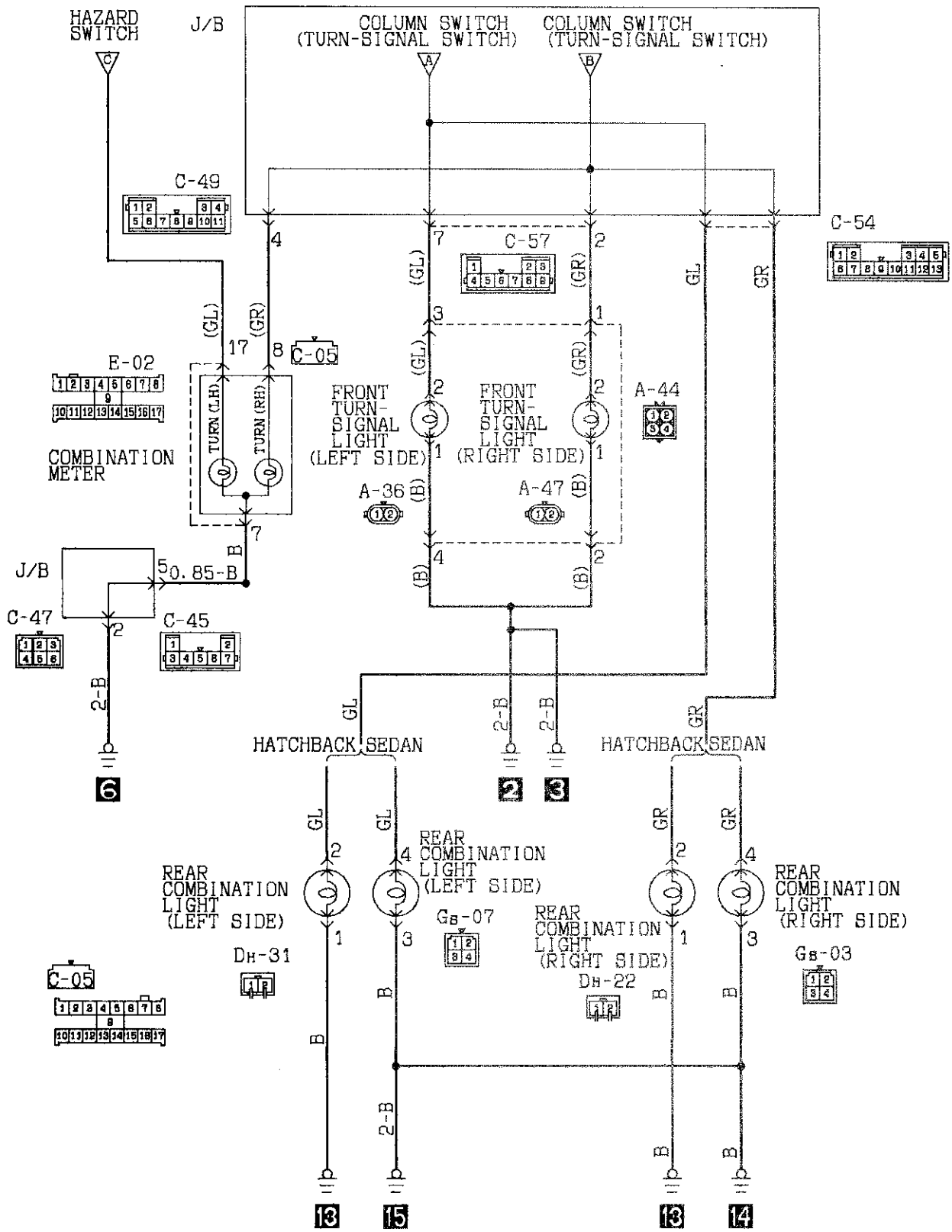


KX35-AC-C0805-N

13 TURN-SIGNAL LIGHT AND HAZARD LIGHT CIRCUIT

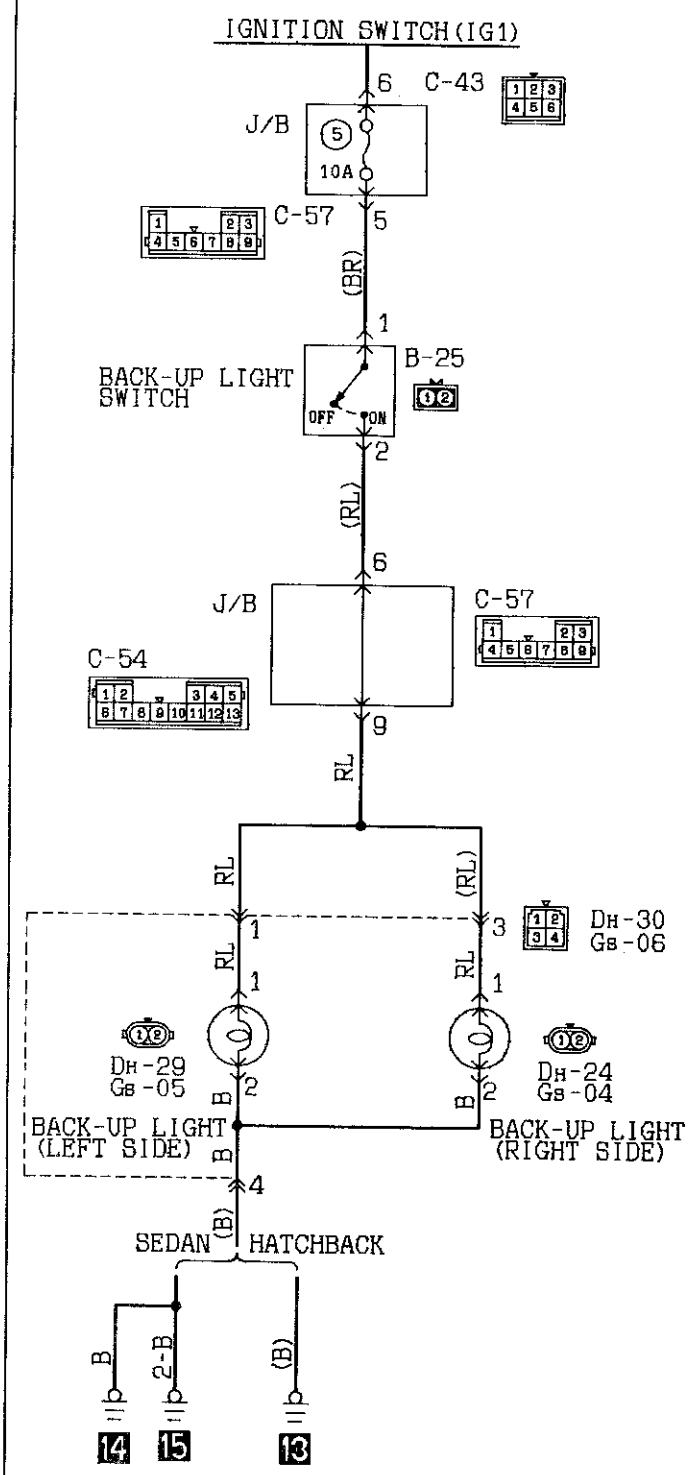


KX35-AC-C0901-N

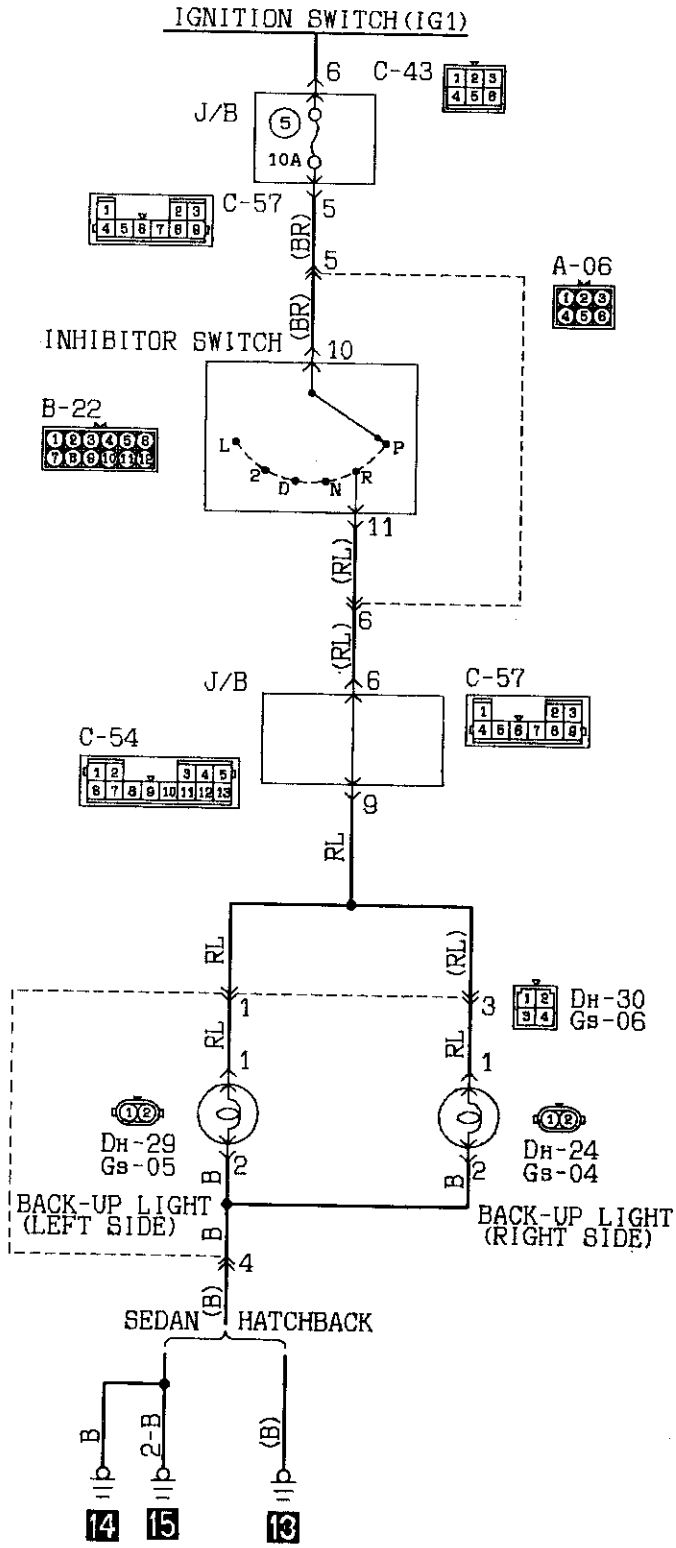

HAZARD SWITCH
J/B
COLUMN SWITCH (TURN-SIGNAL SWITCH)
COLUMN SWITCH (TURN-SIGNAL SWITCH)
C-49
C-54
C-57
C-05
E-02
COMBINATION METER
TURN (LH)
TURN (RH)
FRONT TURN-SIGNAL LIGHT (LEFT SIDE)
FRONT TURN-SIGNAL LIGHT (RIGHT SIDE)
A-44
A-36
A-47
J/B
C-47
C-45
0.85-B
2-B
GL
GR
B
HATCHBACK SEDAN
HATCHBACK SEDAN
REAR COMBINATION LIGHT (LEFT SIDE)
REAR COMBINATION LIGHT (LEFT SIDE)
REAR COMBINATION LIGHT (RIGHT SIDE)
REAR COMBINATION LIGHT (RIGHT SIDE)
GB-07
GB-03
DH-31
DH-22
C-05
6
2
3
13
15
13
14

14 BACK-UP LIGHT CIRCUIT

14 – 1 〈M/T〉



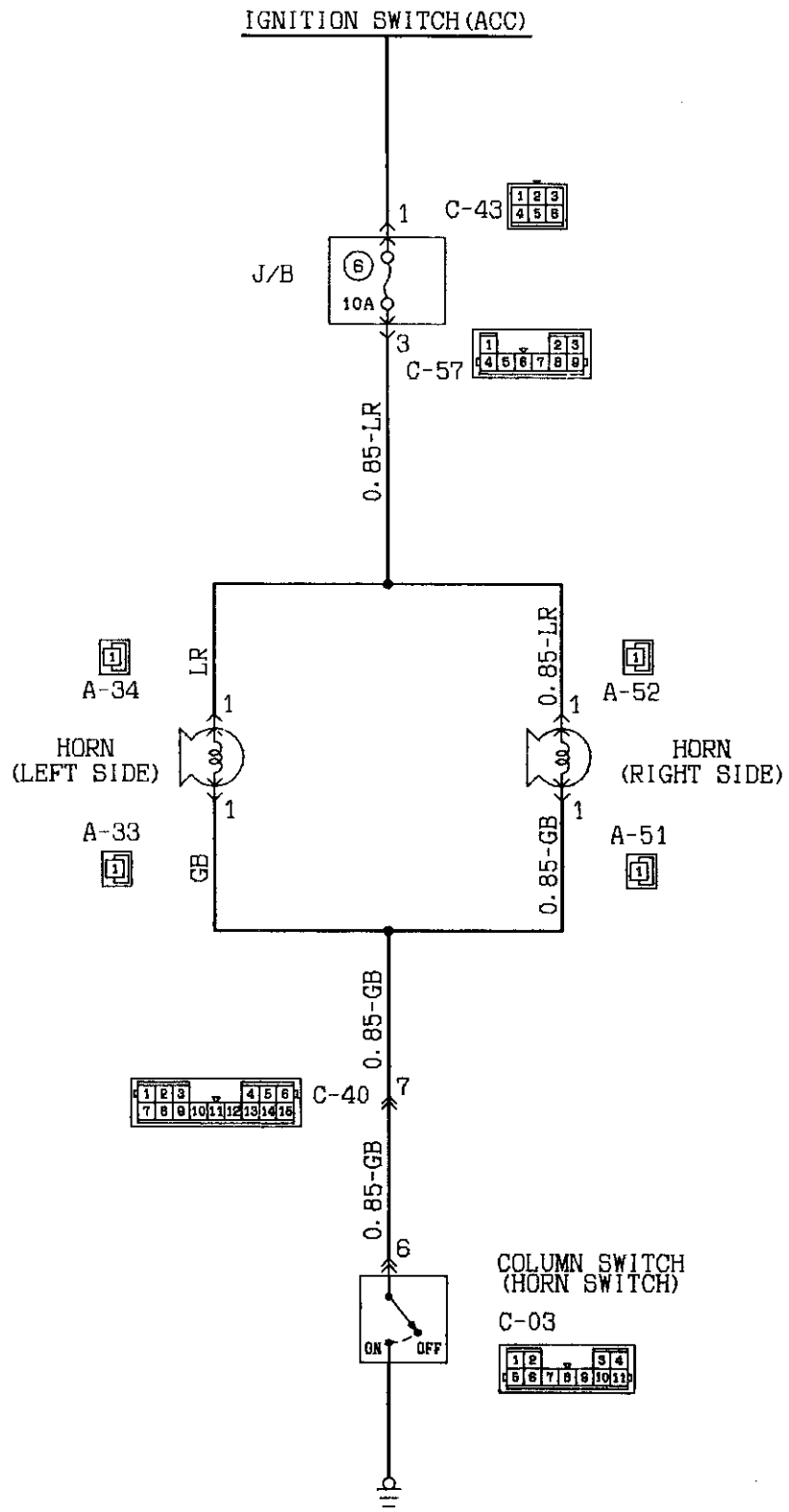
14 – 2 〈A/T〉



KX35-AC-C0902-N

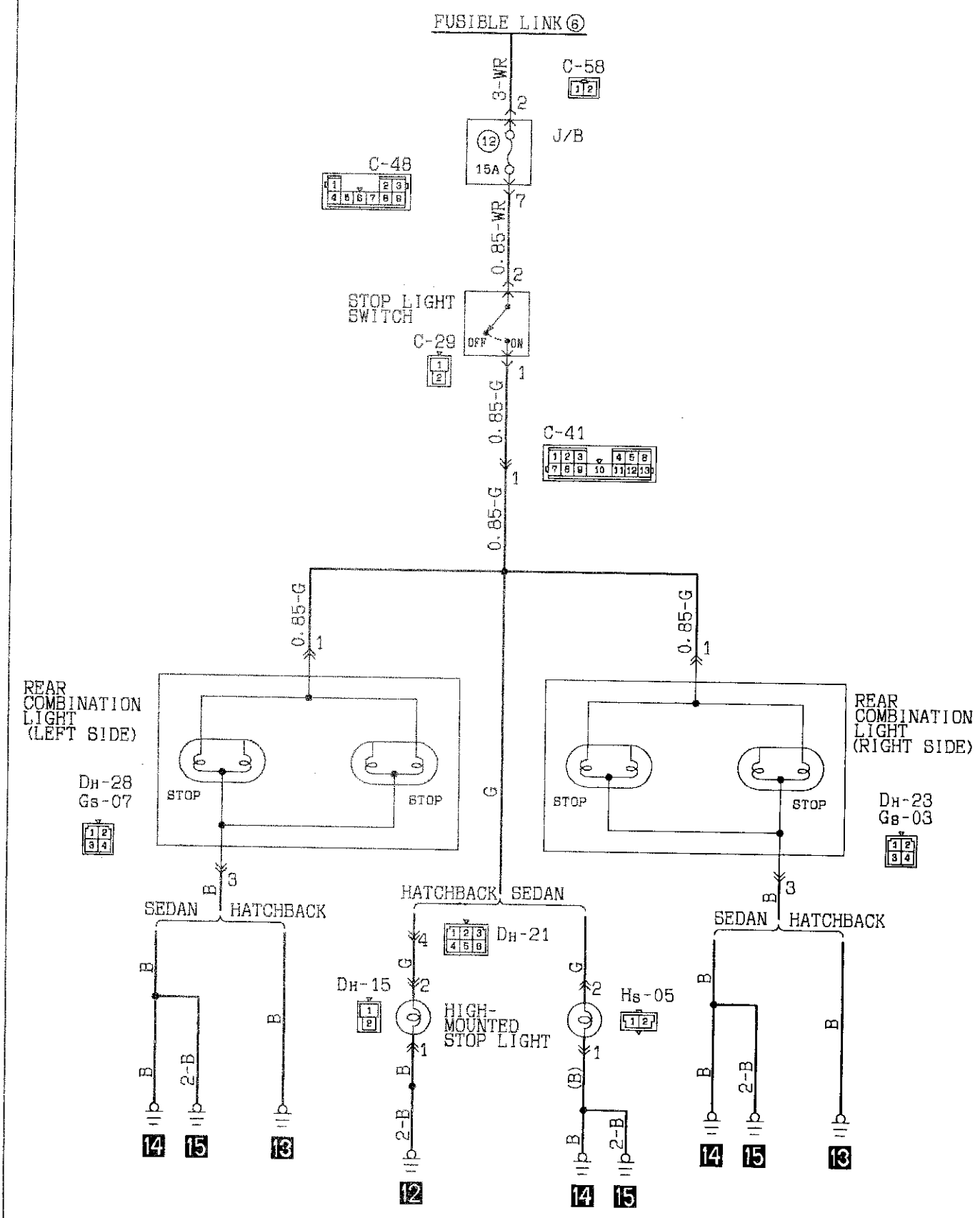
KX35-AC-C0903-N

15 HORN CIRCUIT



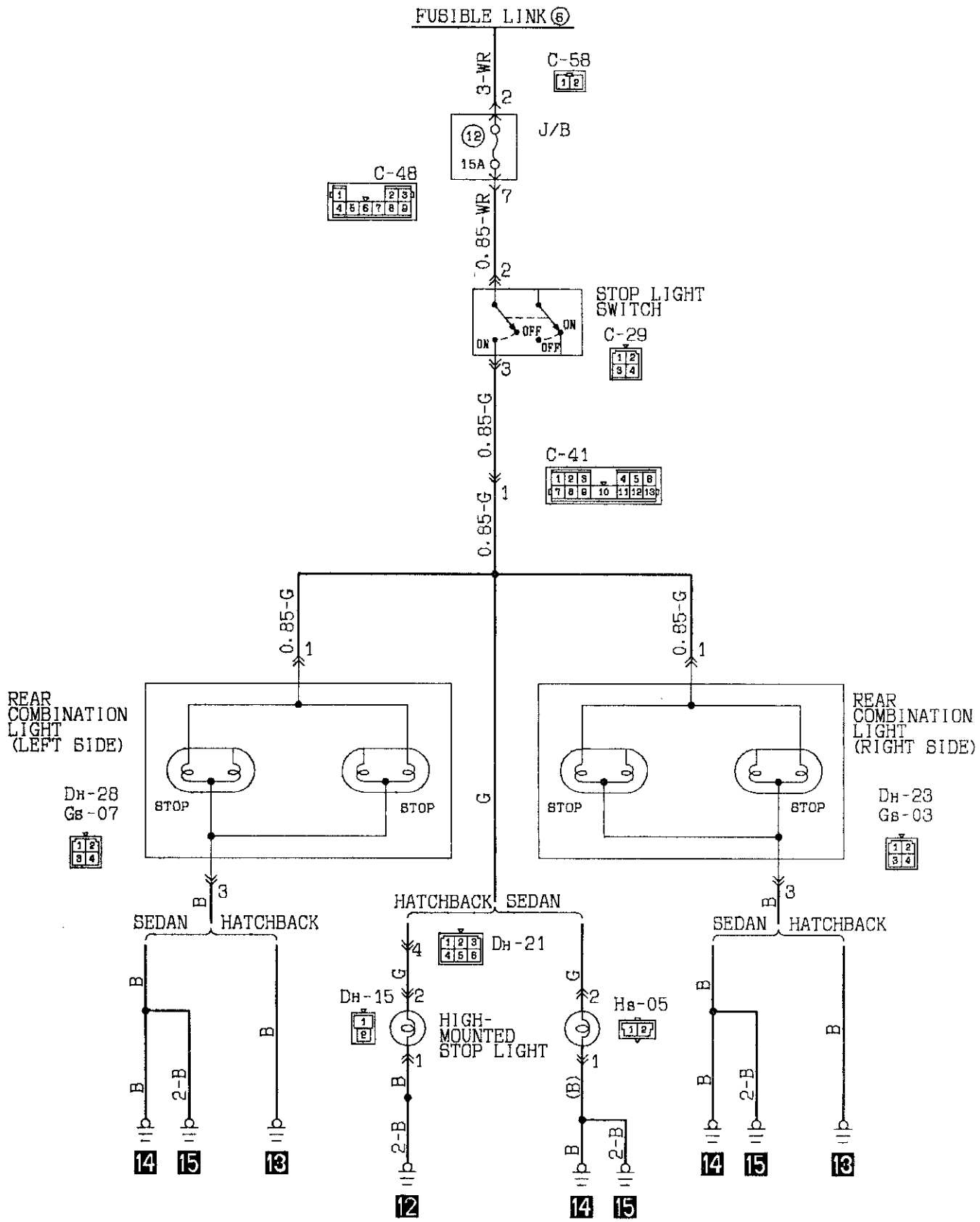
KX35-AC-C0906-N

16 STOP LIGHT CIRCUIT
16 – 1 <VEHICLES WITHOUT AUTO-CRUISE CONTROL>



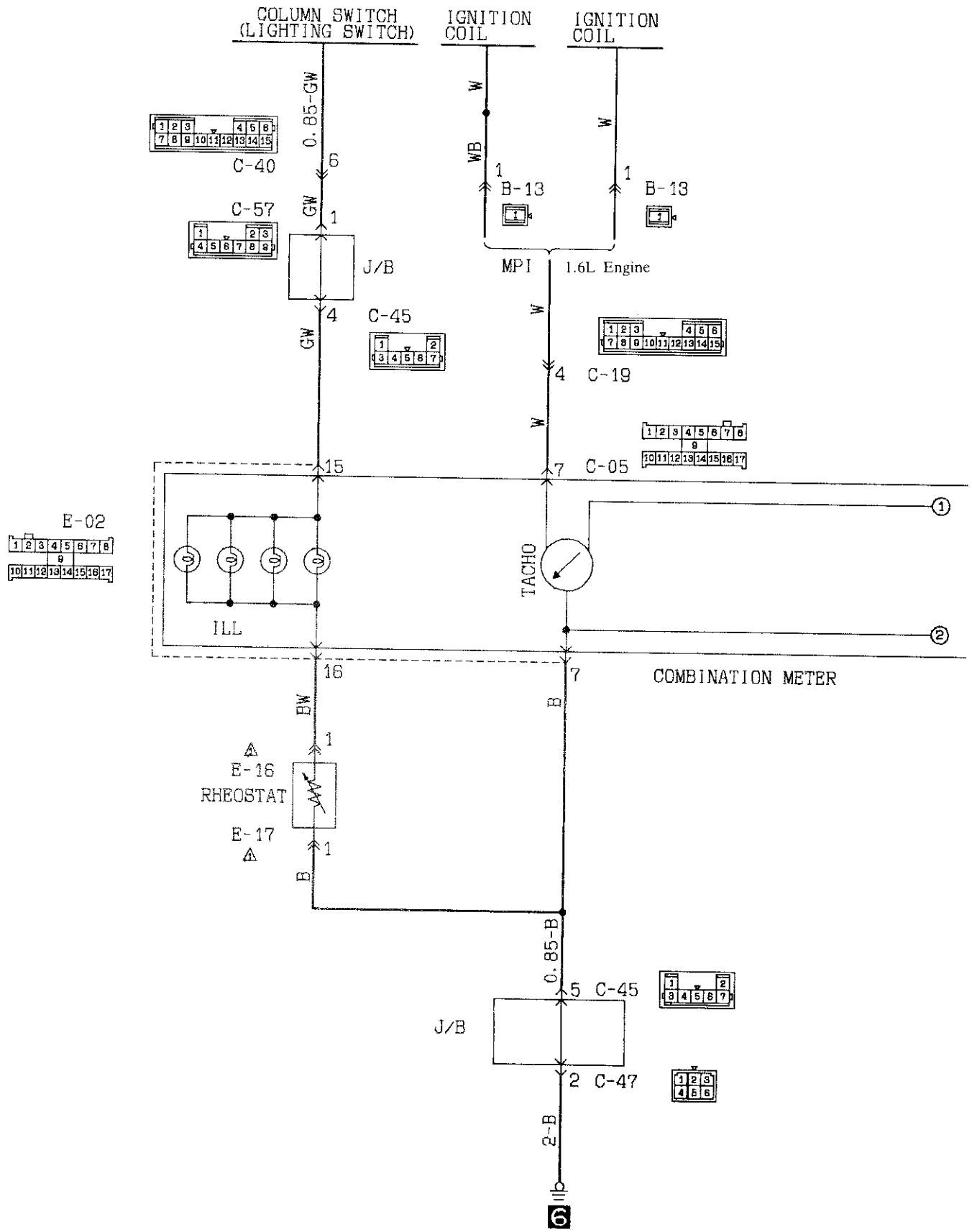
KX35-AC-C0904-N

16 – 2 <VEHICLES WITH AUTO-CRUISE CONTROL>

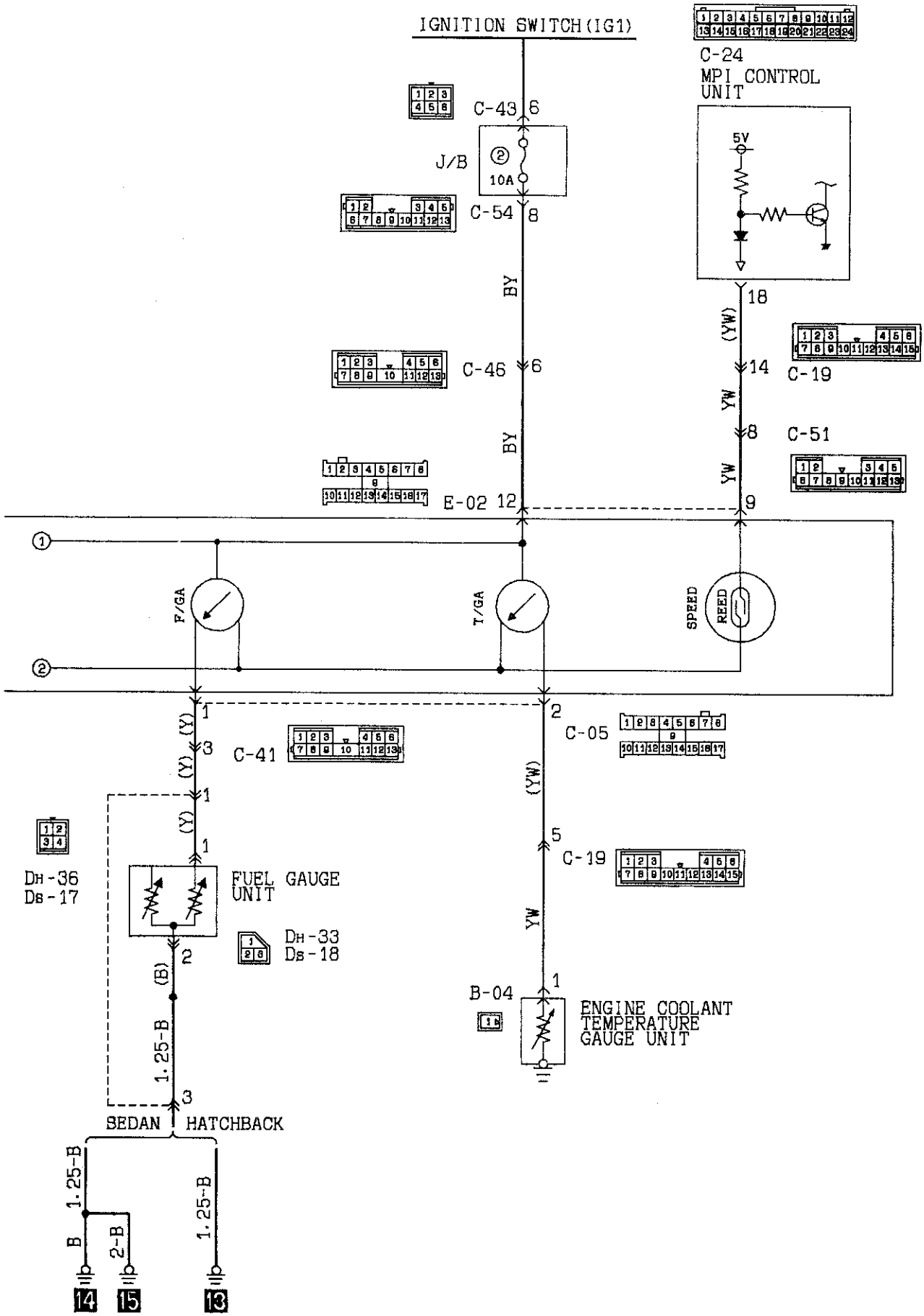


KX35-AC-C0905-N

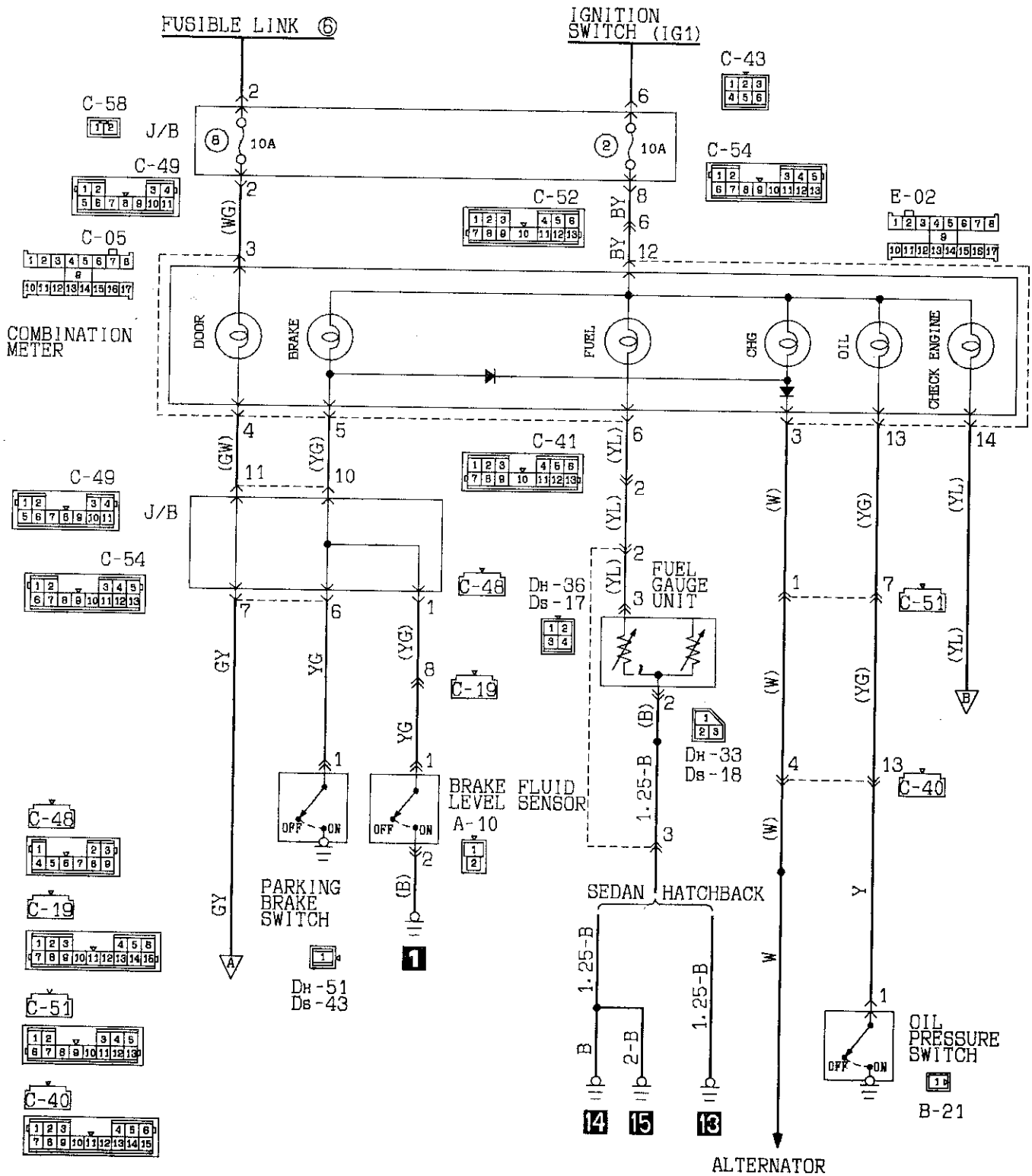
17 METER AND GAUGE CIRCUIT

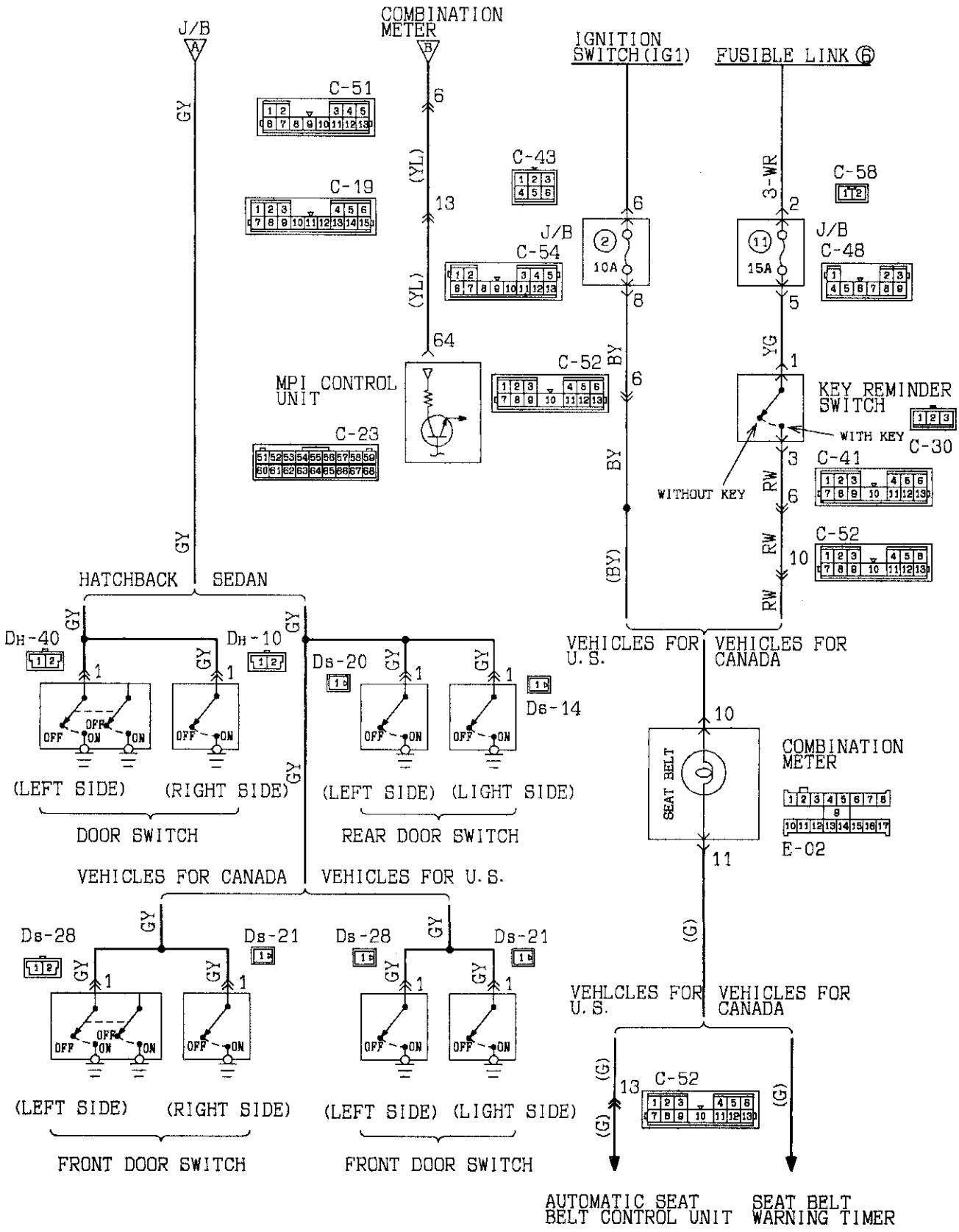


KX35-AC-C1001-N

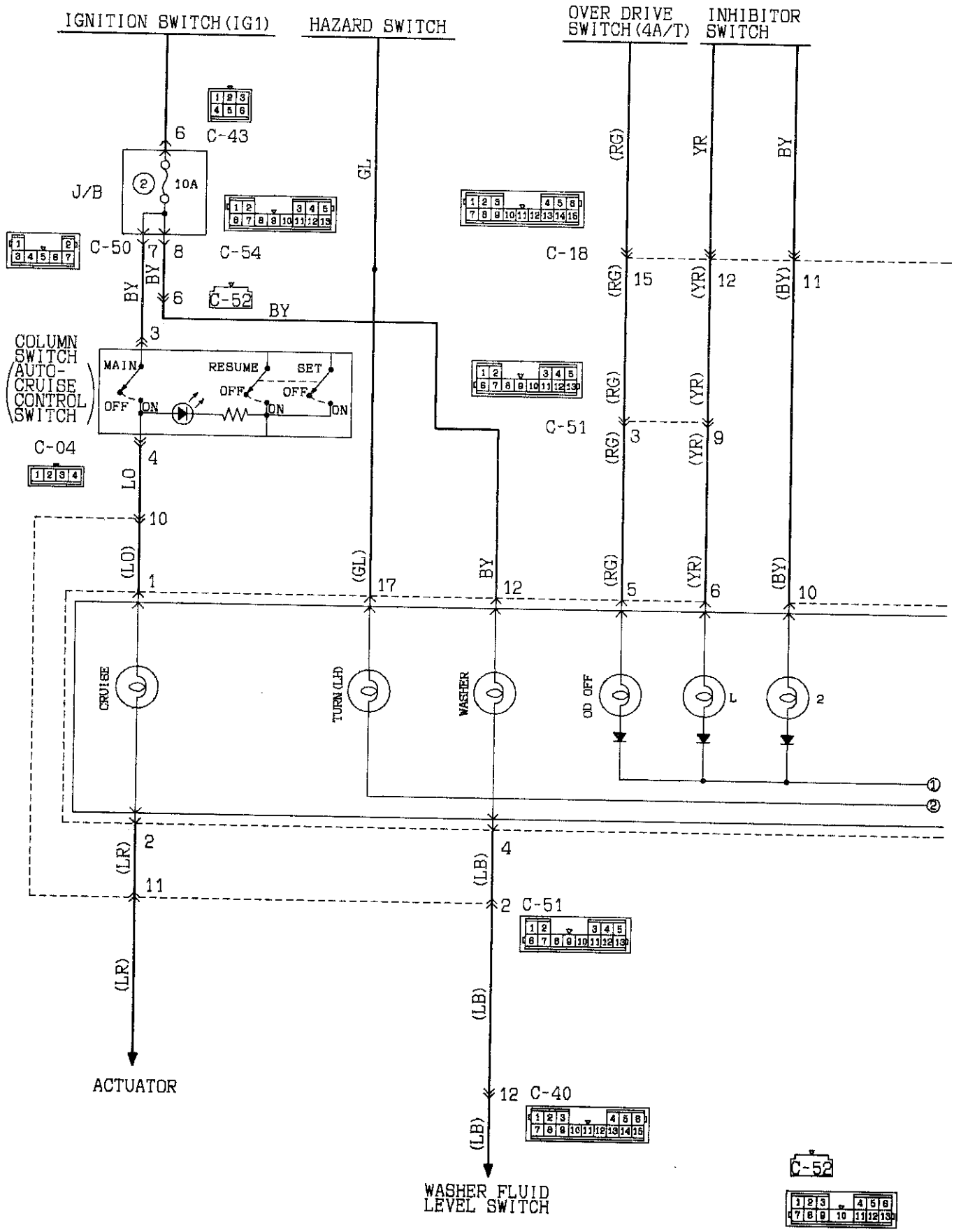

IGNITION SWITCH(IG1)
C-43
6
J/B
②
10A
C-54
8
BY
C-46
6
BY
E-02
12
C-24
MPI CONTROL UNIT
5V
18
(YW)
14
C-19
YW
8
C-51
YW
9
①
②
F/GA
T/GA
SPEED
REED
1
(Y)
3
C-41
(Y)
1
(Y)
1
DH-36
DB-17
FUEL GAUGE UNIT
DH-33
DB-18
2
(B)
1.25-B
3
SEDAN
HATCHBACK
1.25-B
B
2-B
1.25-B
14
15
13
2
C-05
(YW)
5
C-19
YW
B-04
1
ENGINE COOLANT TEMPERATURE GAUGE UNIT

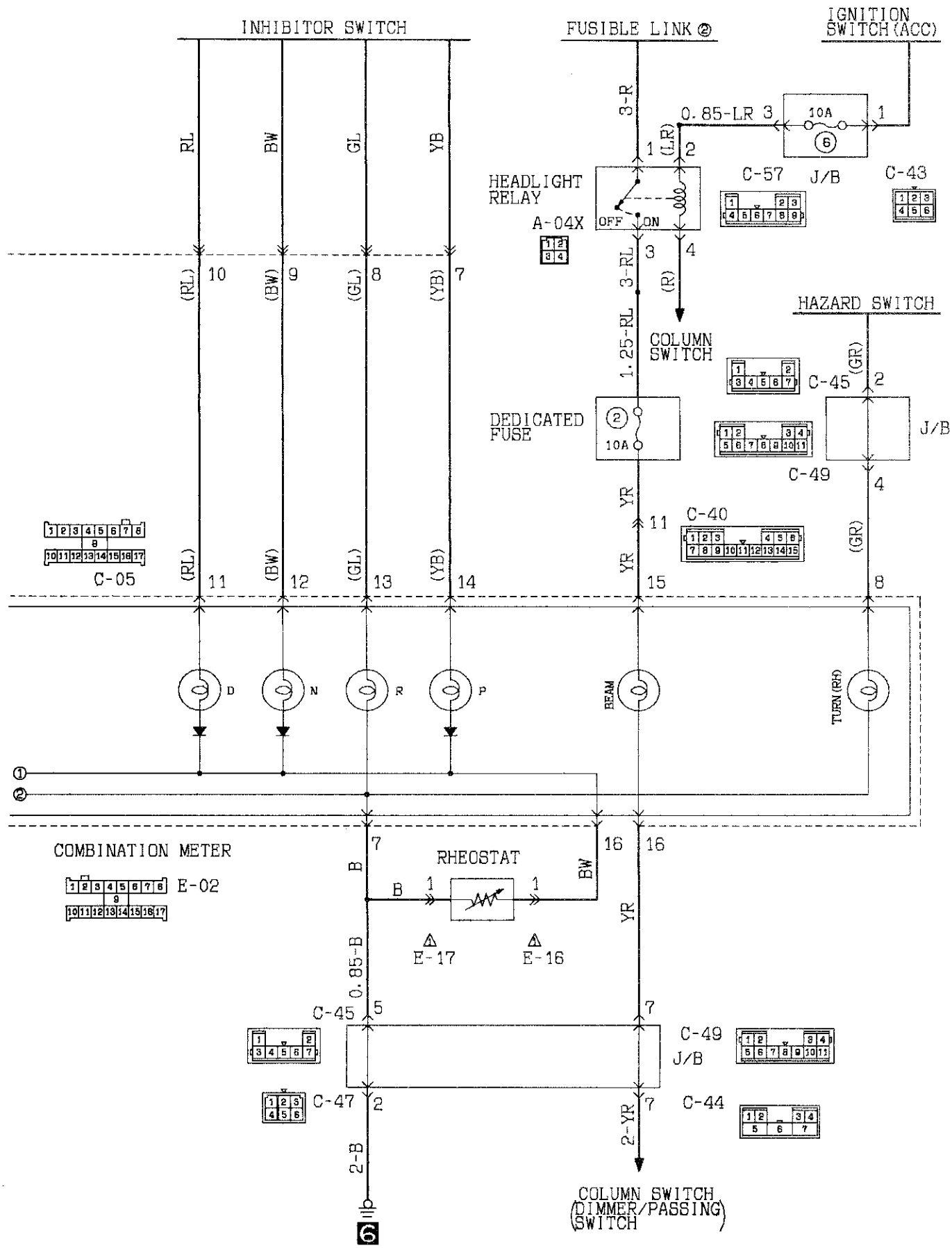
18 WARNING LIGHT CIRCUIT



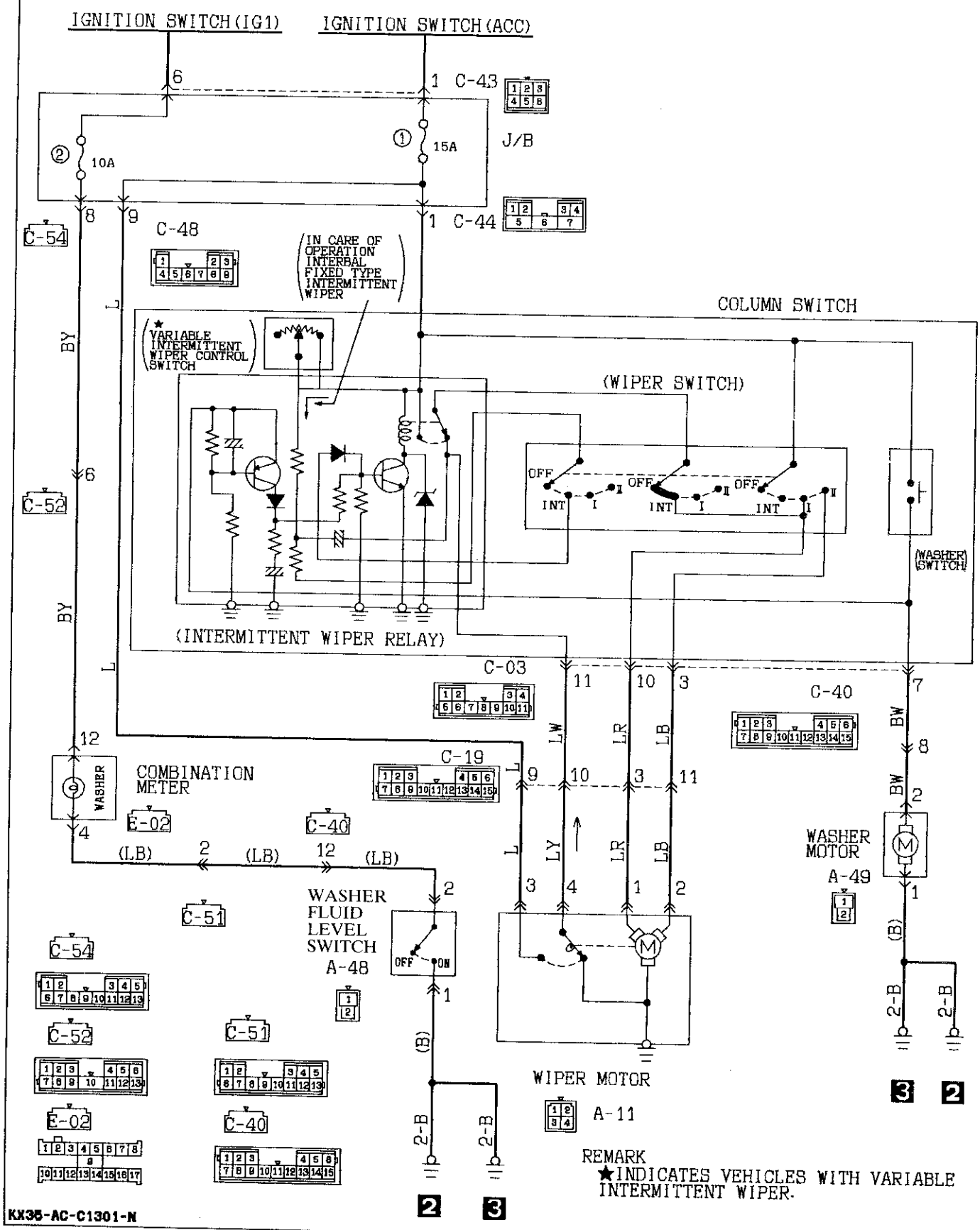

J/B
COMBINATION METER
IGNITION SWITCH(IG1)
FUSIBLE LINK ⑥
C-51
C-19
C-43
C-54
C-58
C-48
J/B
10A
15A
MPI CONTROL UNIT
C-52
C-23
KEY REMINDER SWITCH
WITH KEY
WITHOUT KEY
C-30
C-41
C-52
HATCHBACK
SEDAN
DH-40
DH-10
DS-20
DS-14
(LEFT SIDE)
(RIGHT SIDE)
(LEFT SIDE)
(LIGHT SIDE)
DOOR SWITCH
REAR DOOR SWITCH
VEHICLES FOR CANADA
VEHICLES FOR U.S.
VEHICLES FOR U.S.
VEHICLES FOR CANADA
SEAT BELT
COMBINATION METER
E-02
DS-28
DS-21
DS-28
DS-21
(LEFT SIDE)
(RIGHT SIDE)
(LEFT SIDE)
(LIGHT SIDE)
FRONT DOOR SWITCH
FRONT DOOR SWITCH
VEHICLES FOR U.S.
VEHICLES FOR CANADA
C-52
AUTOMATIC SEAT BELT CONTROL UNIT
SEAT BELT WARNING TIMER

19 INDICATOR LIGHT CIRCUIT

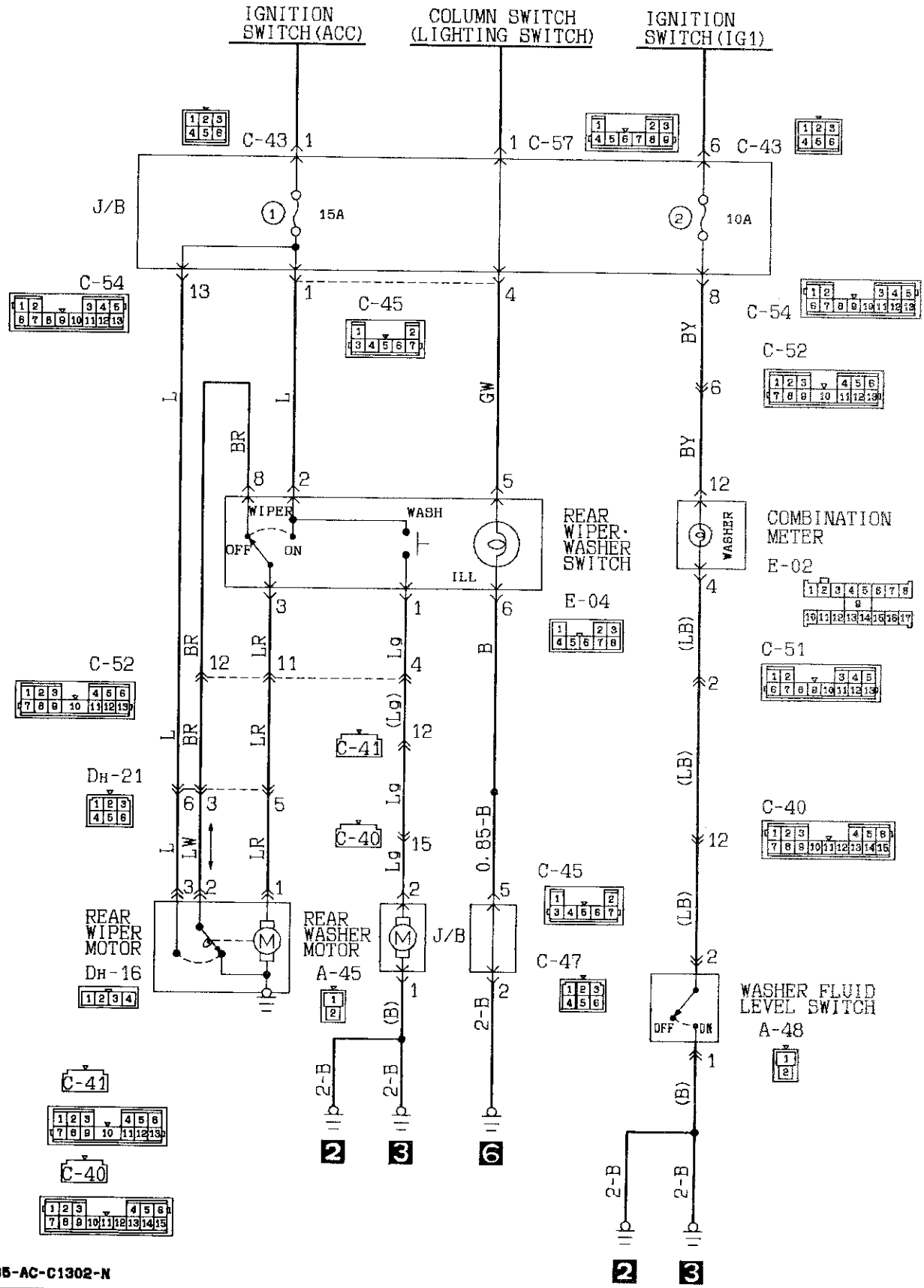



INHIBITOR SWITCH
FUSIBLE LINK ②
IGNITION SWITCH (ACC)
RL
BW
GL
YB
3-R
0.85-LR 3
10A
1
(LR) 1
2
⑥
HEADLIGHT RELAY
A-04X
OFF
ON
C-57 J/B
C-43
3
4
3-RL
(R)
1.25-RL
COLUMN SWITCH
HAZARD SWITCH
(GR)
C-45 2
DEDICATED FUSE
② 10A
J/B
C-49
4
YR
11
C-40
(RL) 10
(BW) 9
(GL) 8
(YB) 7
C-05
(RL) 11
(BW) 12
(GL) 13
(YB) 14
15
8
D
N
R
P
BEAM
TURN (RH)
①
②
COMBINATION METER
E-02
7
B
RHEOSTAT
16
16
BW
B 1
1
YR
E-17
E-16
0.85-B
C-45 5
7
C-49 J/B
C-47 2
7
C-44
2-YR
2-B
COLUMN SWITCH (DIMMER/PASSING SWITCH)
6

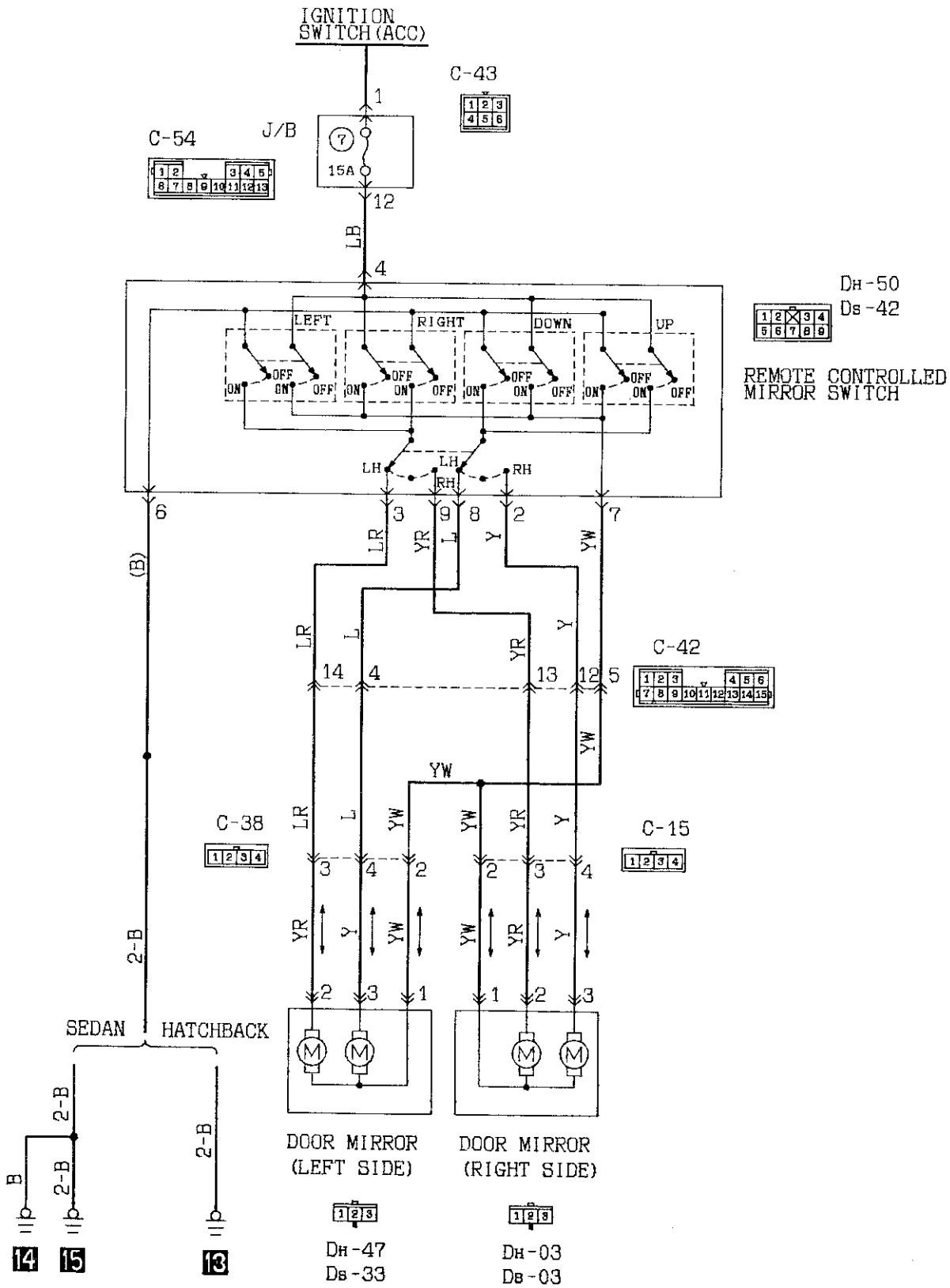
20 WINDSHIELD WIPER AND WASHER CIRCUIT



21 REAR WIPER AND WASHER CIRCUIT

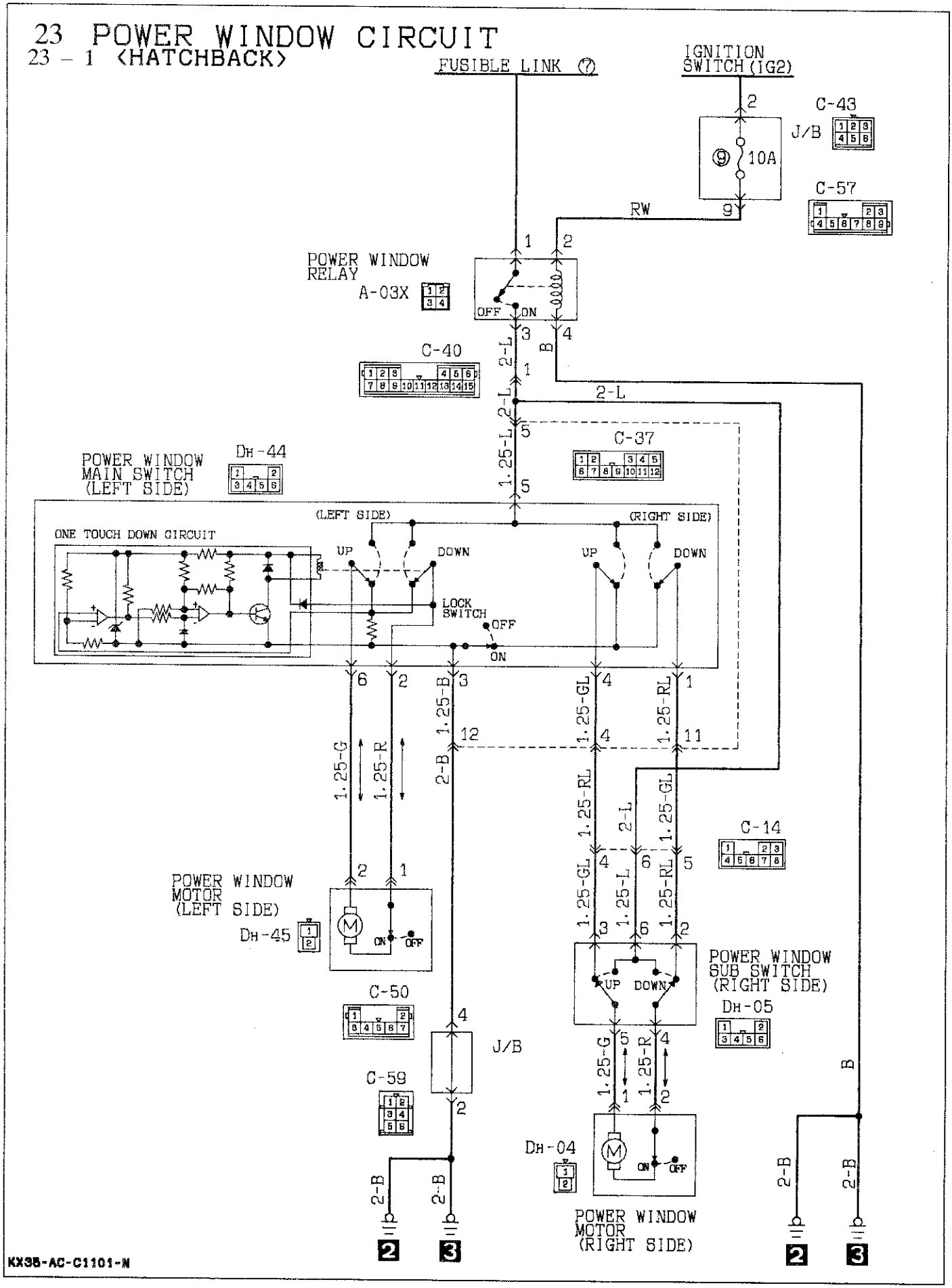


22 REMOTE CONTROLLED MIRROR CIRCUIT



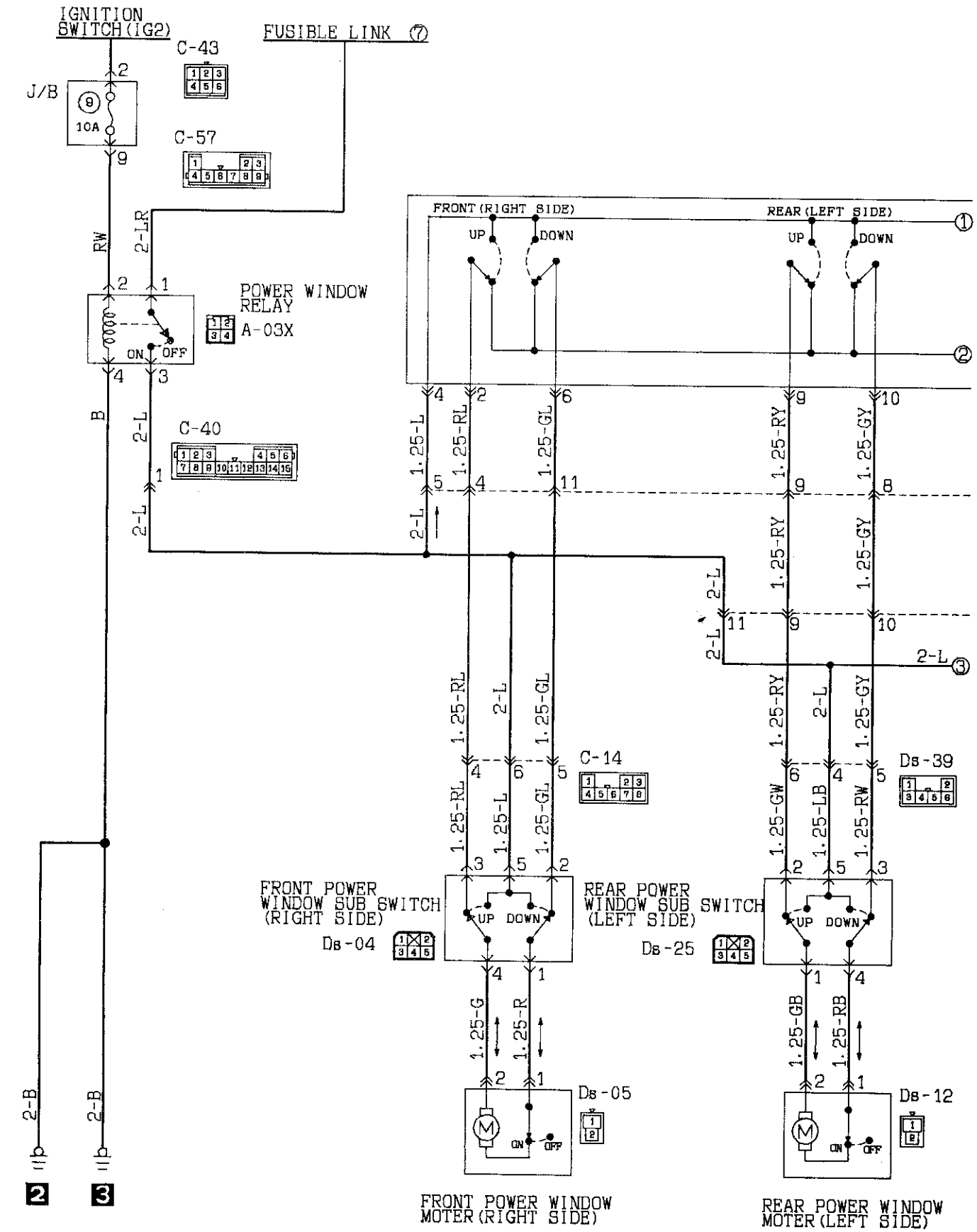
23 POWER WINDOW CIRCUIT

23 – 1 <HATCHBACK>

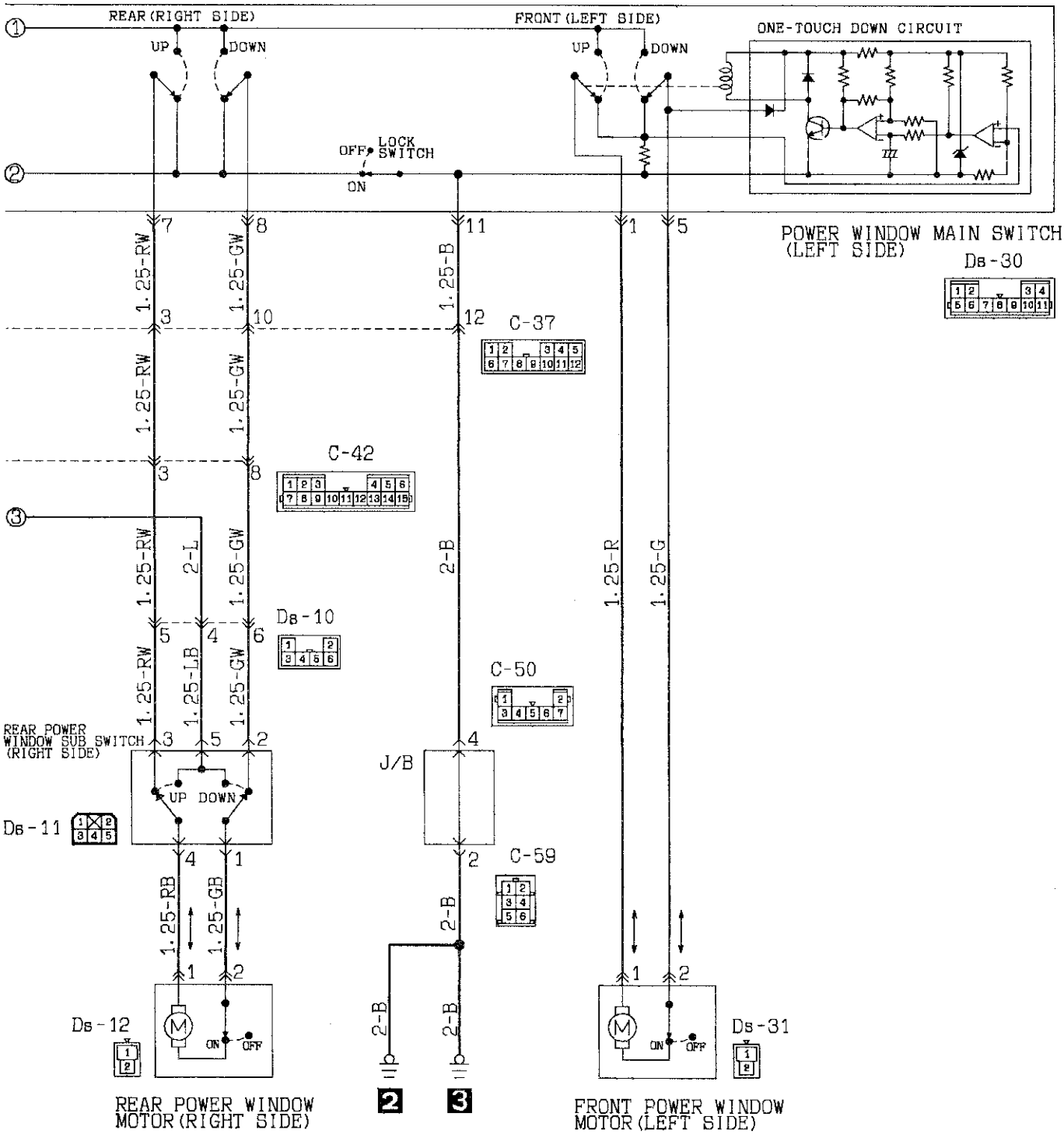


KX35-AC-C1101-N

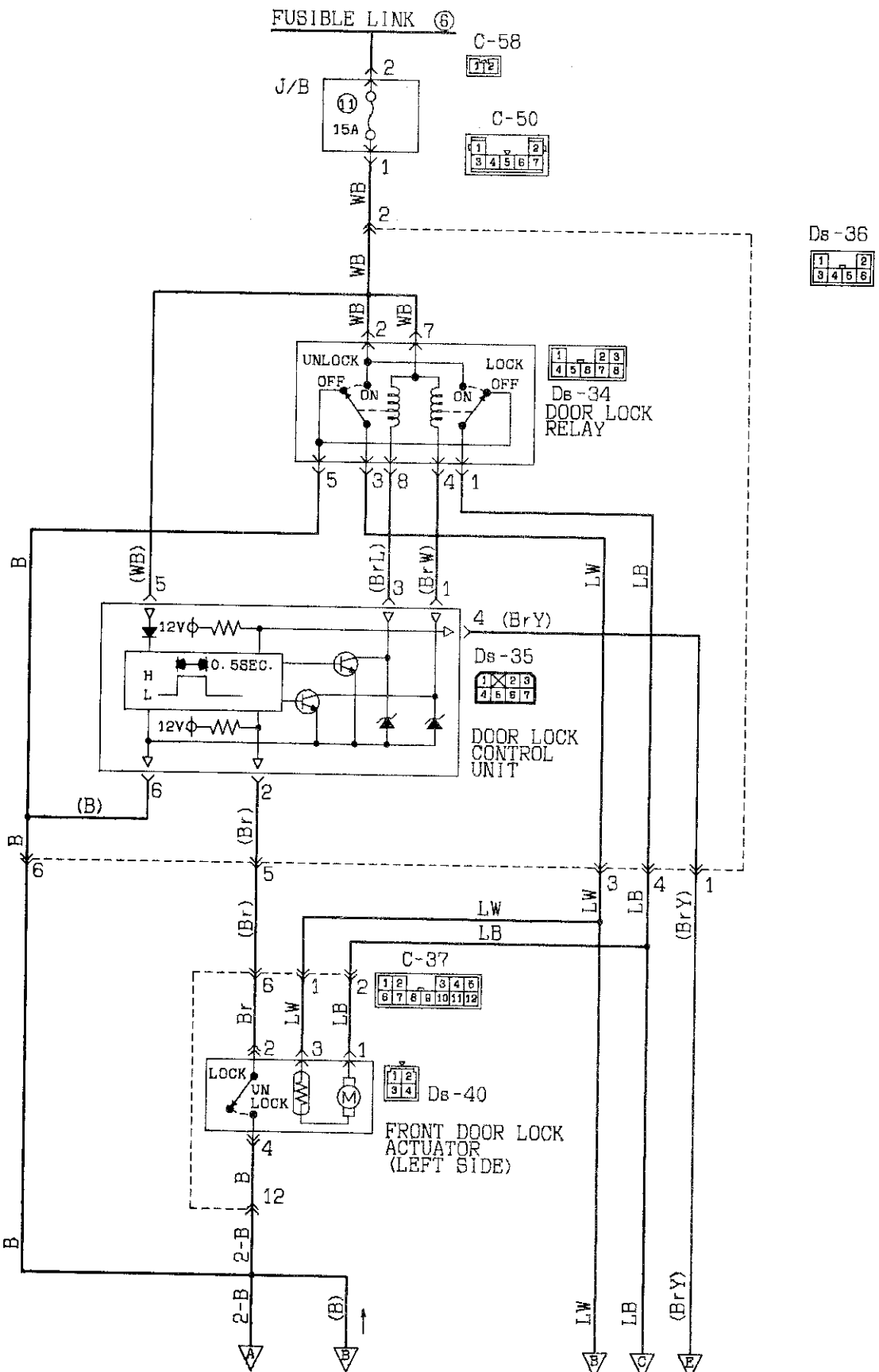
23 – 2 <SEDAN>



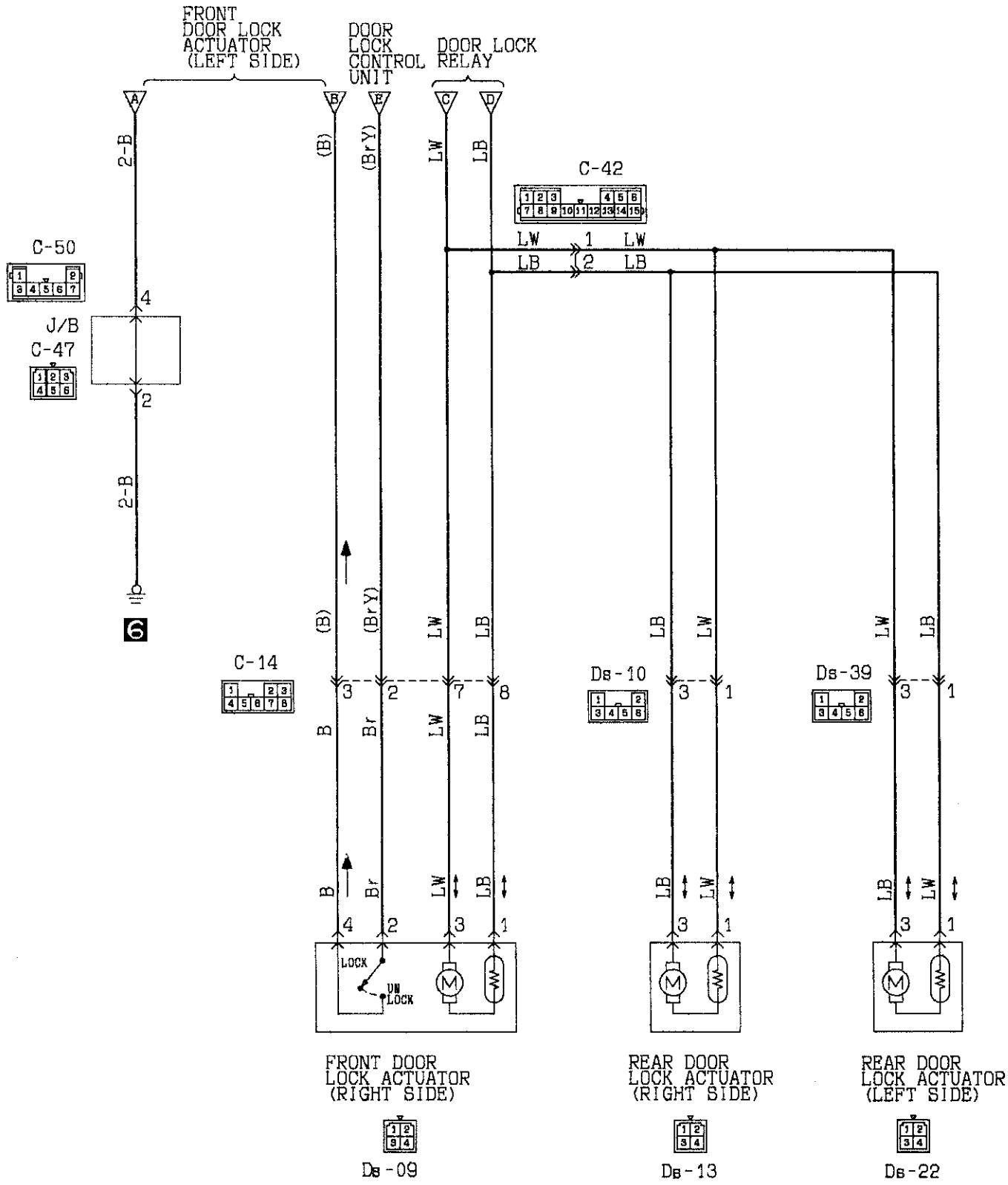
KX35-AC-C1102-N


REAR (RIGHT SIDE)
FRONT (LEFT SIDE)
ONE-TOUCH DOWN CIRCUIT
UP
DOWN
OFF
LOCK SWITCH
ON
POWER WINDOW MAIN SWITCH (LEFT SIDE)
D8-30
C-37
C-42
D8-10
C-50
C-59
REAR POWER WINDOW SUB SWITCH (RIGHT SIDE)
D8-11
J/B
D8-12
D8-31
1.25-RW
1.25-GW
1.25-B
1.25-R
1.25-G
2-L
1.25-LB
2-B
1.25-RB
1.25-GB
REAR POWER WINDOW MOTOR (RIGHT SIDE)
FRONT POWER WINDOW MOTOR (LEFT SIDE)
2
3

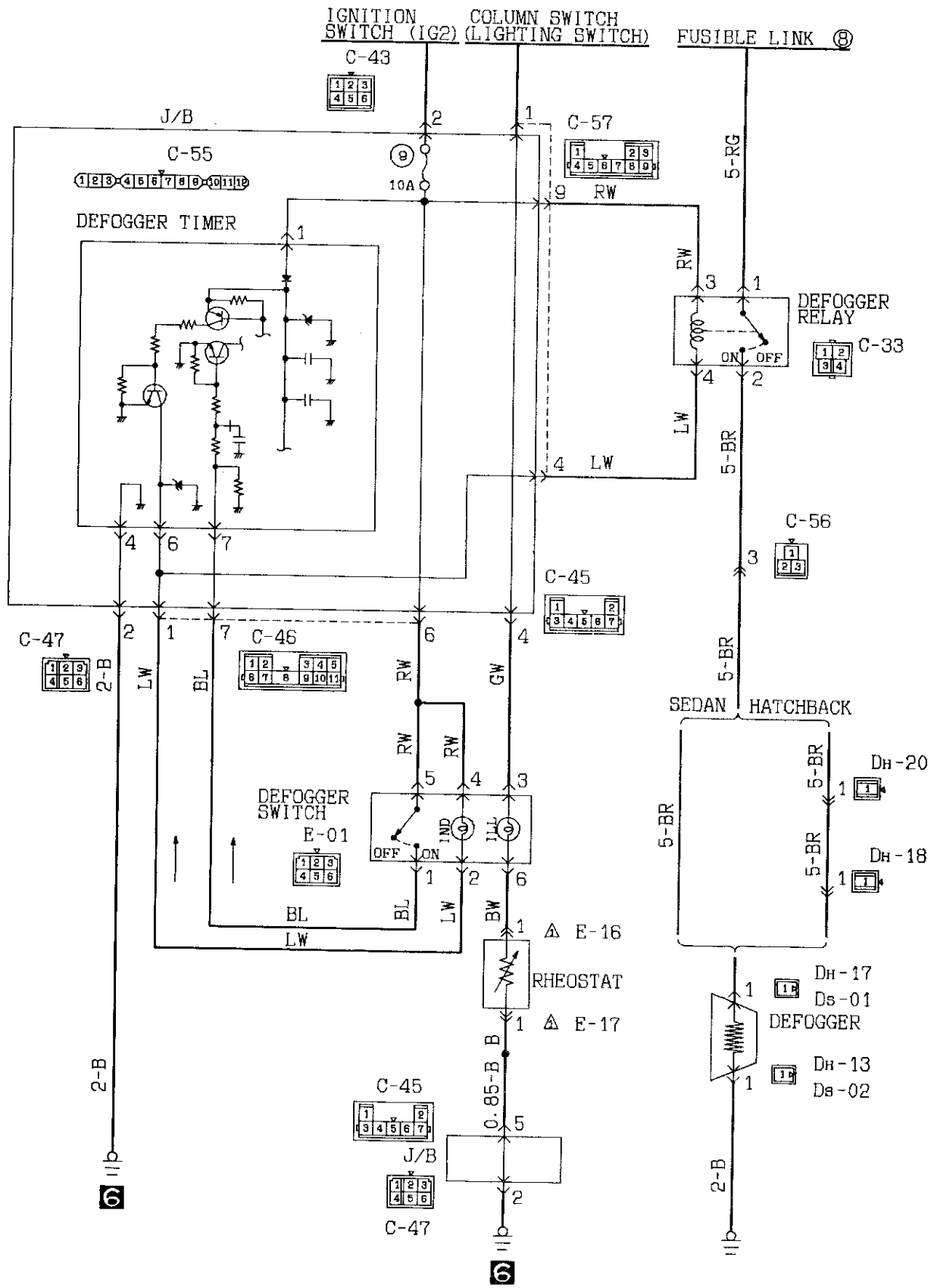
24 CENTRAL DOOR LOCKING CIRCUIT



KX36-AC-C1103-N

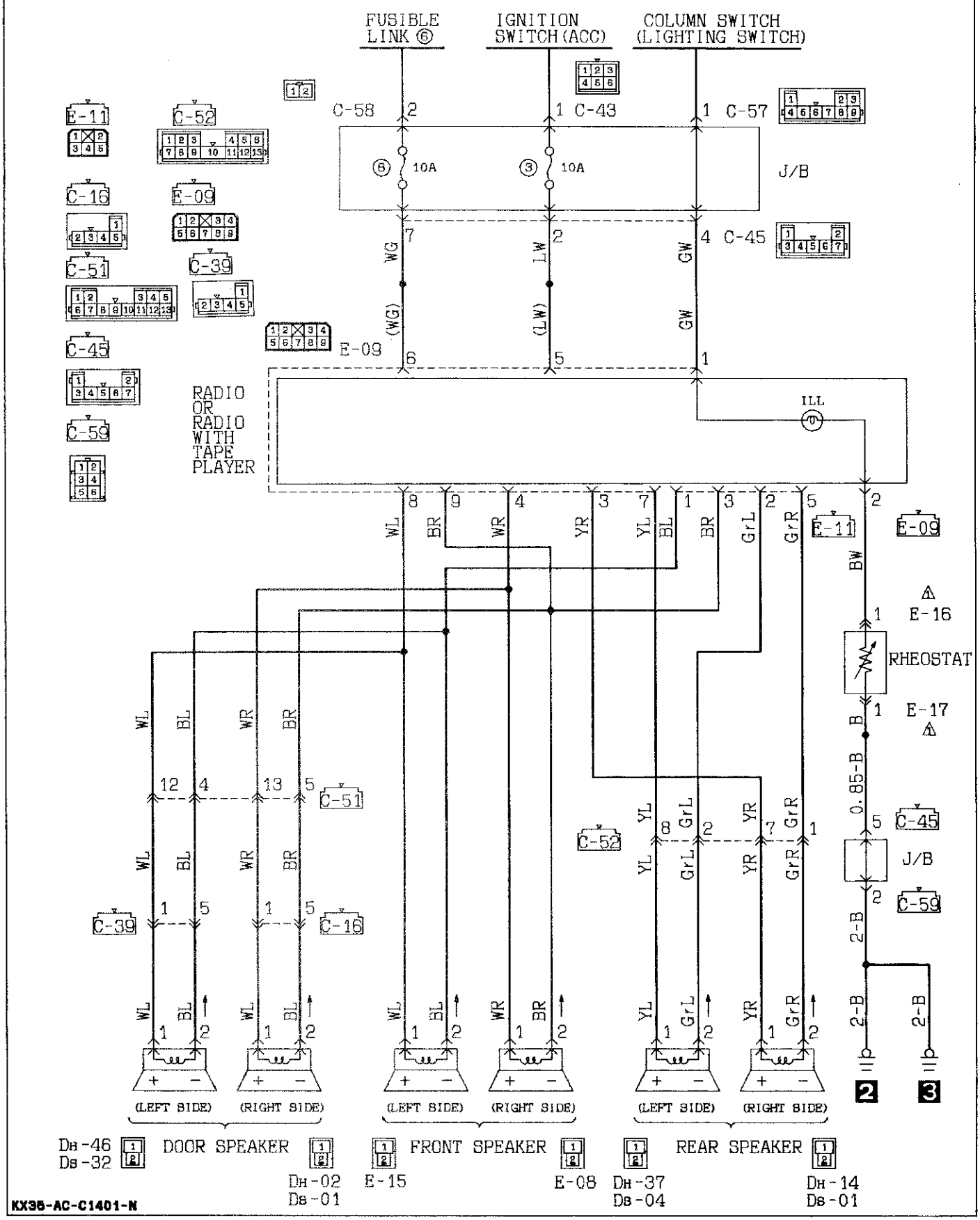

FRONT DOOR LOCK ACTUATOR (LEFT SIDE)
DOOR LOCK CONTROL UNIT
DOOR LOCK RELAY
C-50
C-47
J/B
C-14
C-42
Ds-10
Ds-39
2-B
(B)
(BrY)
LW
LB
B
Br
LOCK
UN LOCK
FRONT DOOR LOCK ACTUATOR (RIGHT SIDE)
REAR DOOR LOCK ACTUATOR (RIGHT SIDE)
REAR DOOR LOCK ACTUATOR (LEFT SIDE)
Ds-09
Ds-13
Ds-22

25 DEFOGGER CIRCUIT

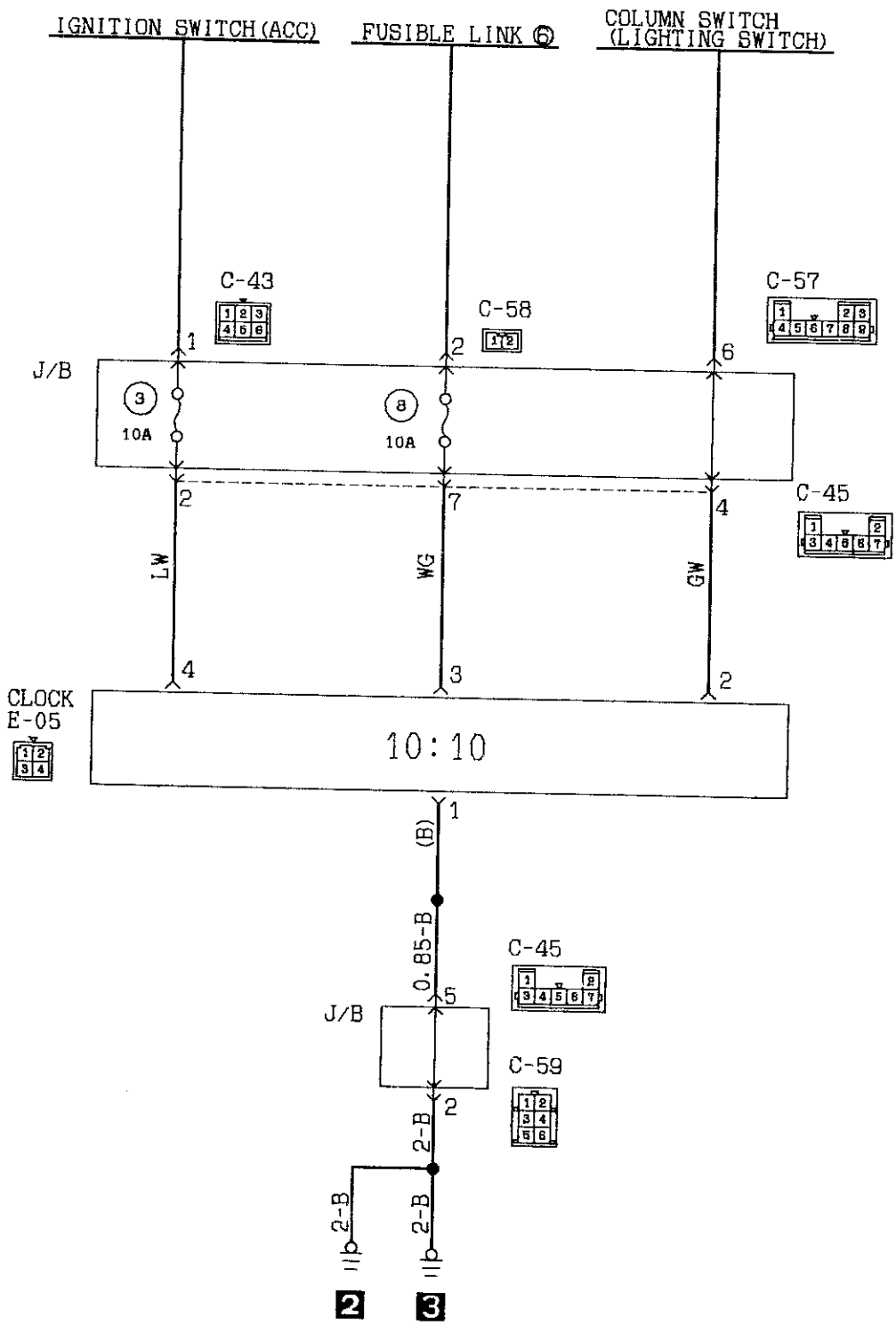


KX35-AC-C1304-N

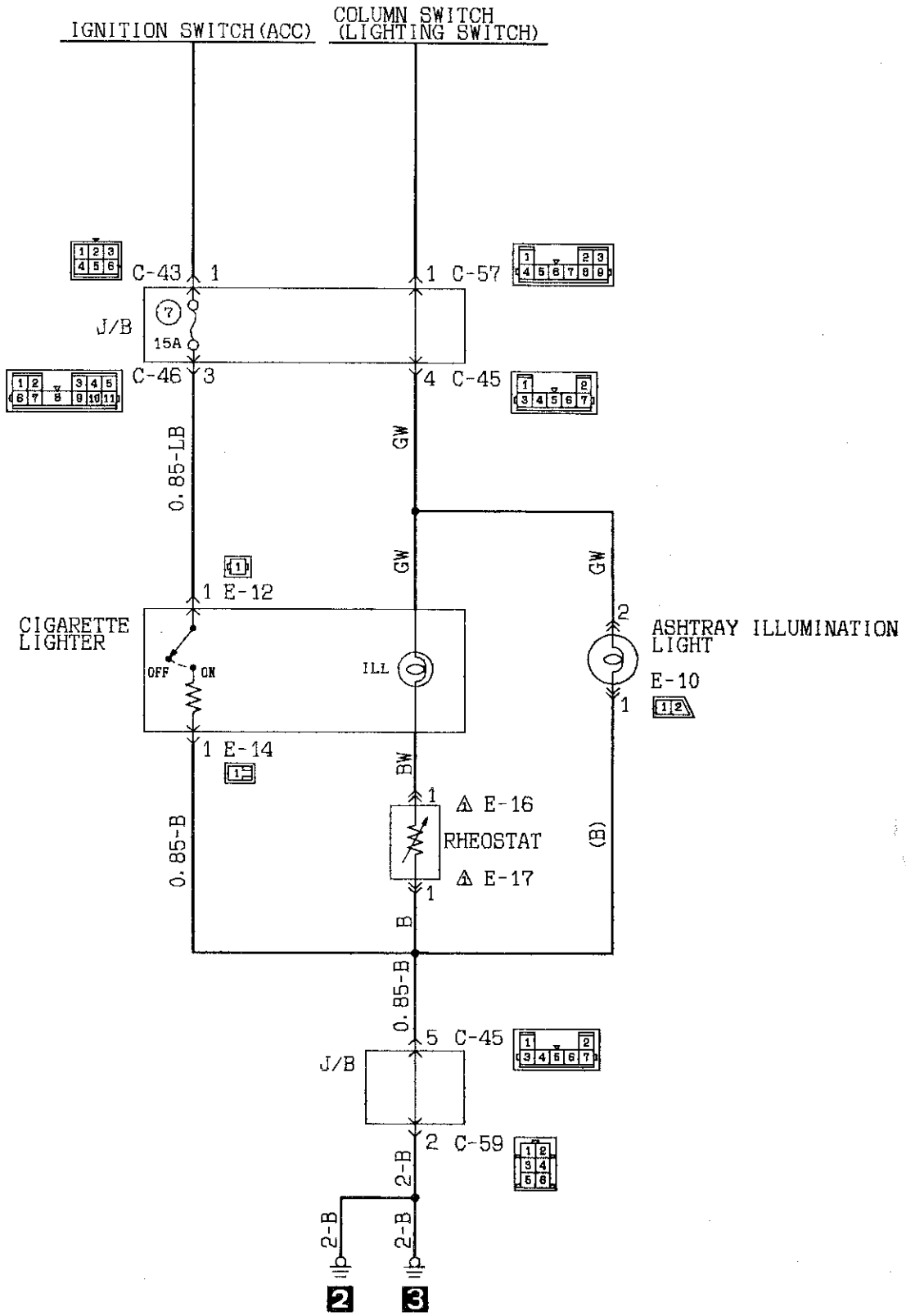
26 AUDIO CIRCUIT



27 CLOCK CIRCUIT

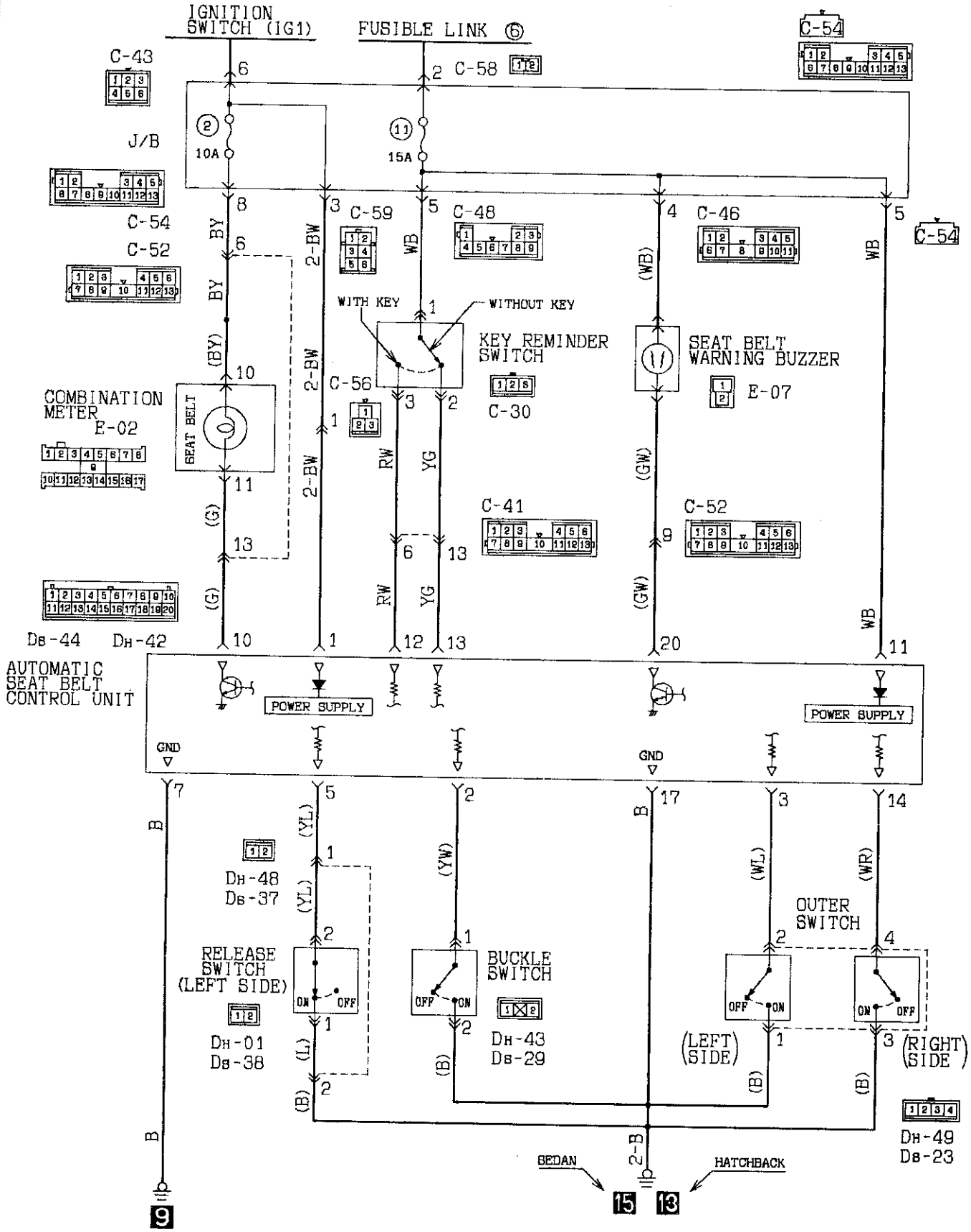


28 CIGARETTE LIGHTER CIRCUIT

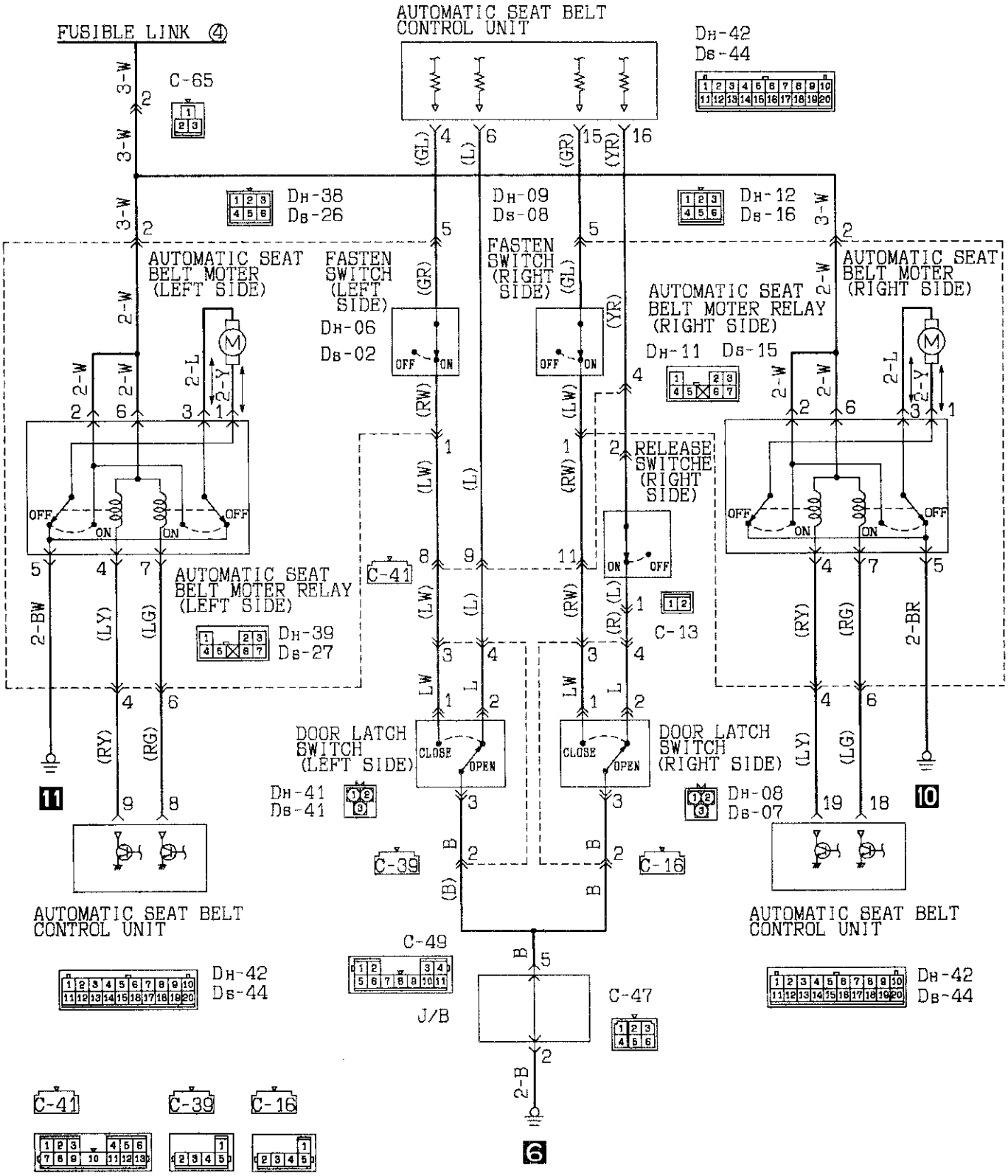


KX36-AC-C1403-N

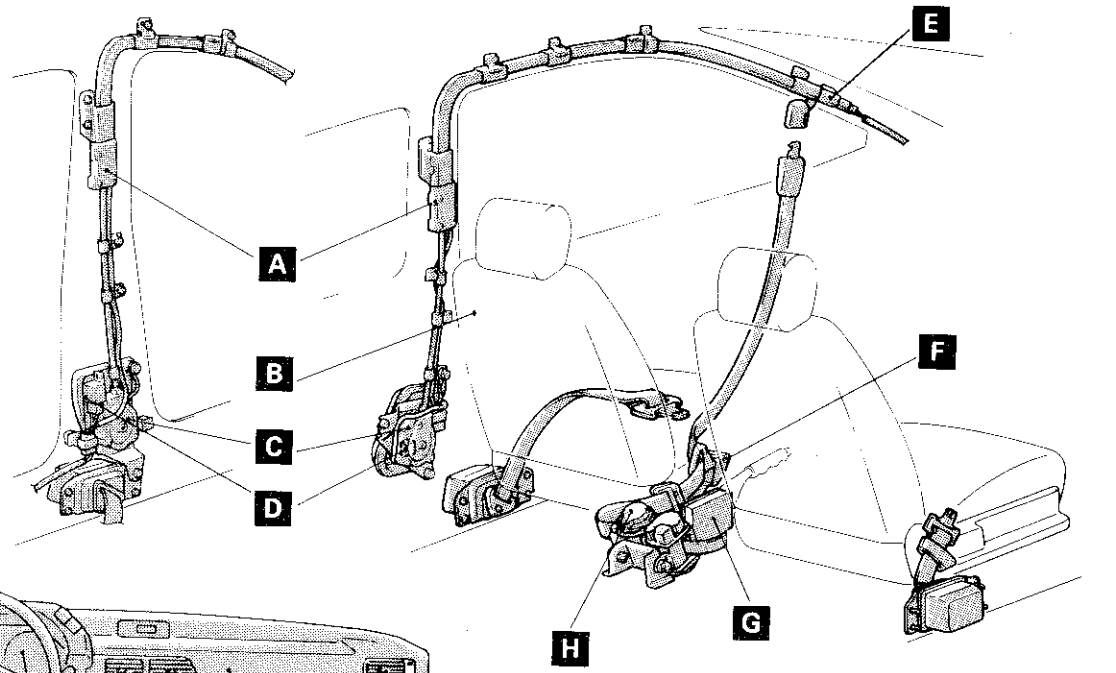
29 AUTOMATIC SEAT BELT CIRCUIT <Vehicles for U.S.>

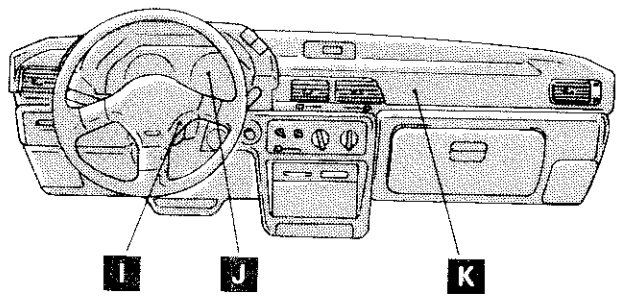


KX35-AC-C1503-N


FUSIBLE LINK ④
C-65
AUTOMATIC SEAT BELT CONTROL UNIT
DH-42
DS-44
DH-38
DS-26
DH-09
DS-08
DH-12
DS-16
AUTOMATIC SEAT BELT MOTER (LEFT SIDE)
FASTEN SWITCH (LEFT SIDE)
DH-06
DS-02
FASTEN SWITCH (RIGHT SIDE)
AUTOMATIC SEAT BELT MOTER RELAY (RIGHT SIDE)
DH-11
DS-15
AUTOMATIC SEAT BELT MOTER (RIGHT SIDE)
RELEASE SWITCHE (RIGHT SIDE)
AUTOMATIC SEAT BELT MOTER RELAY (LEFT SIDE)
DH-39
DS-27
C-41
C-13
DOOR LATCH SWITCH (LEFT SIDE)
DOOR LATCH SWITCH (RIGHT SIDE)
DH-41
DS-41
DH-08
DS-07
C-39
C-16
C-49
J/B
C-47
AUTOMATIC SEAT BELT CONTROL UNIT
AUTOMATIC SEAT BELT CONTROL UNIT
DH-42
DS-44
DH-42
DS-44
C-41
C-39
C-16
11
10
6
OFF
ON
CLOSE
OPEN
2-W
2-L
2-Y
2-BW
2-BR
2-B
3-W
(GL)
(L)
(GR)
(YR)
(RW)
(LW)
(LY)
(LG)
(RY)
(RG)
(R)
LW
L
B

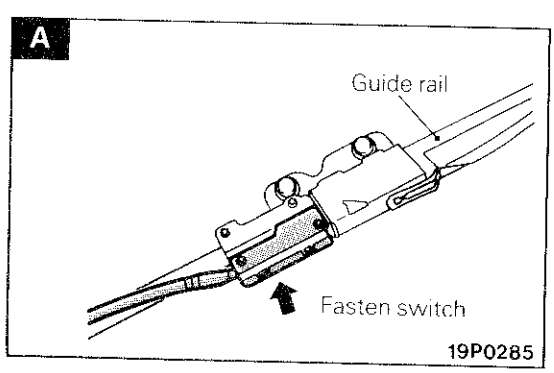
AUTOMATIC SEAT BELT COMPONENTS
COMPONENTS LOCATION

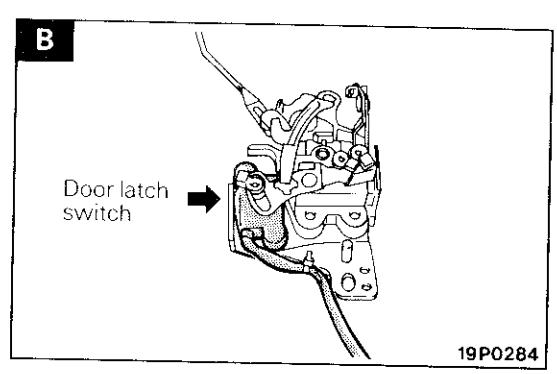




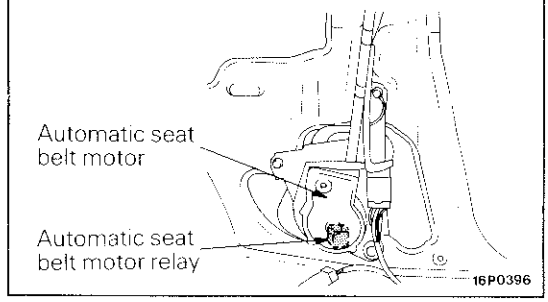
Name	Symbol	Name	Symbol
Automatic seat belt control unit	G	Fasten switch	A
Automatic seat belt motor	C	Key reminder switch	I
Automatic seat belt motor relay	D	Outer switch	H
Buckle switch	F	Seat belt warning light	J
Buzzer	K	Release switch	E
Door latch switch	B		

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

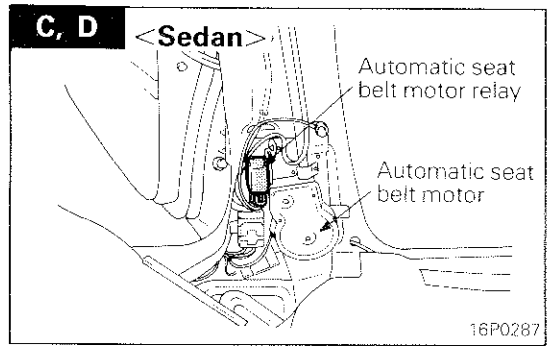




C, D <Hatchback>



C, D <Sedan>



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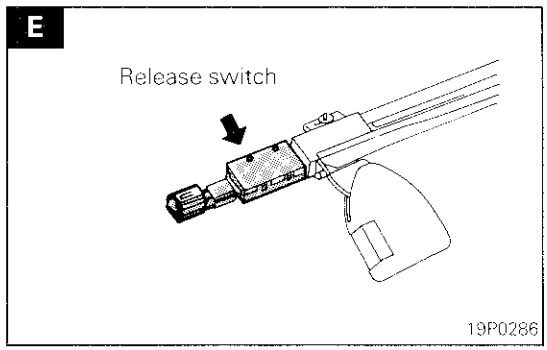
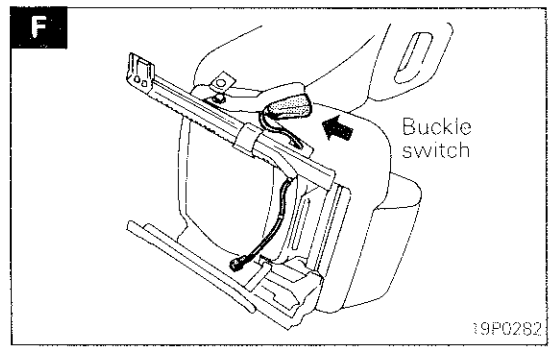
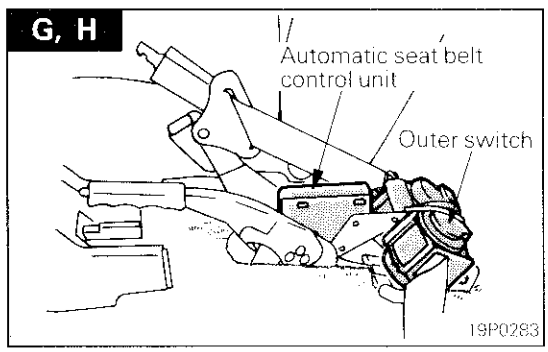


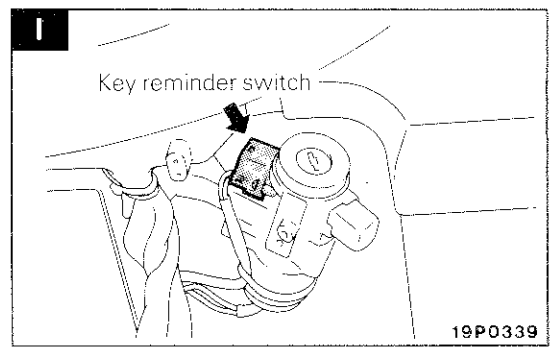
F



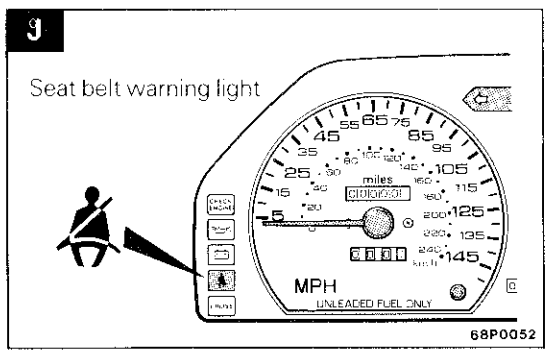
G, H



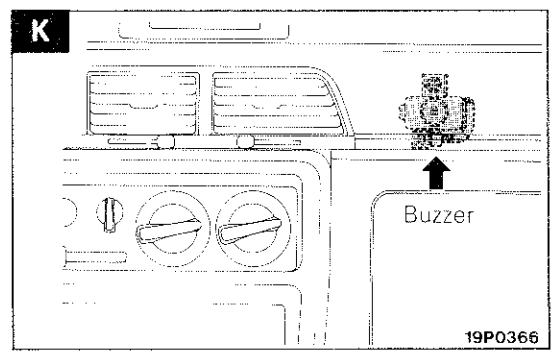
I



J

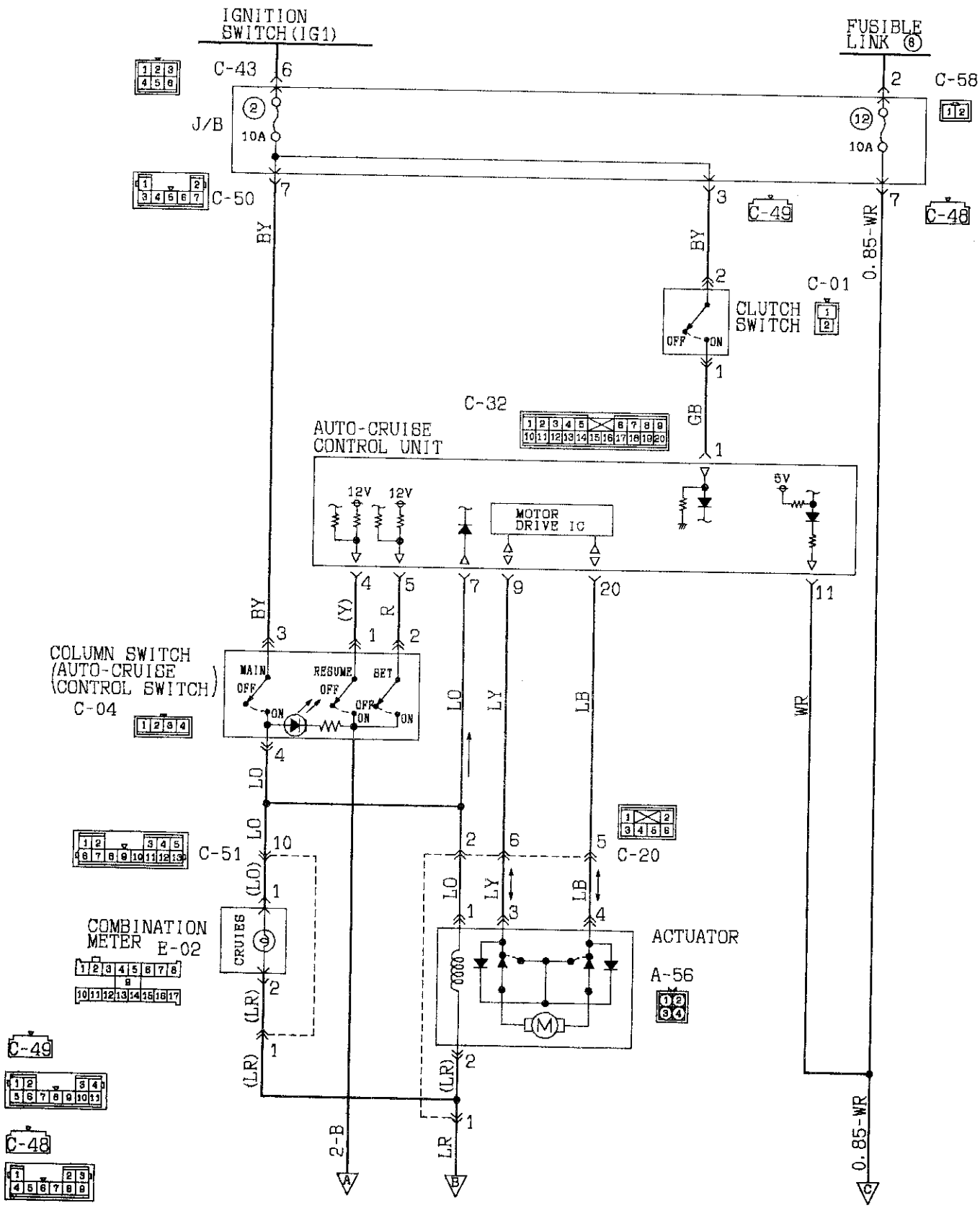


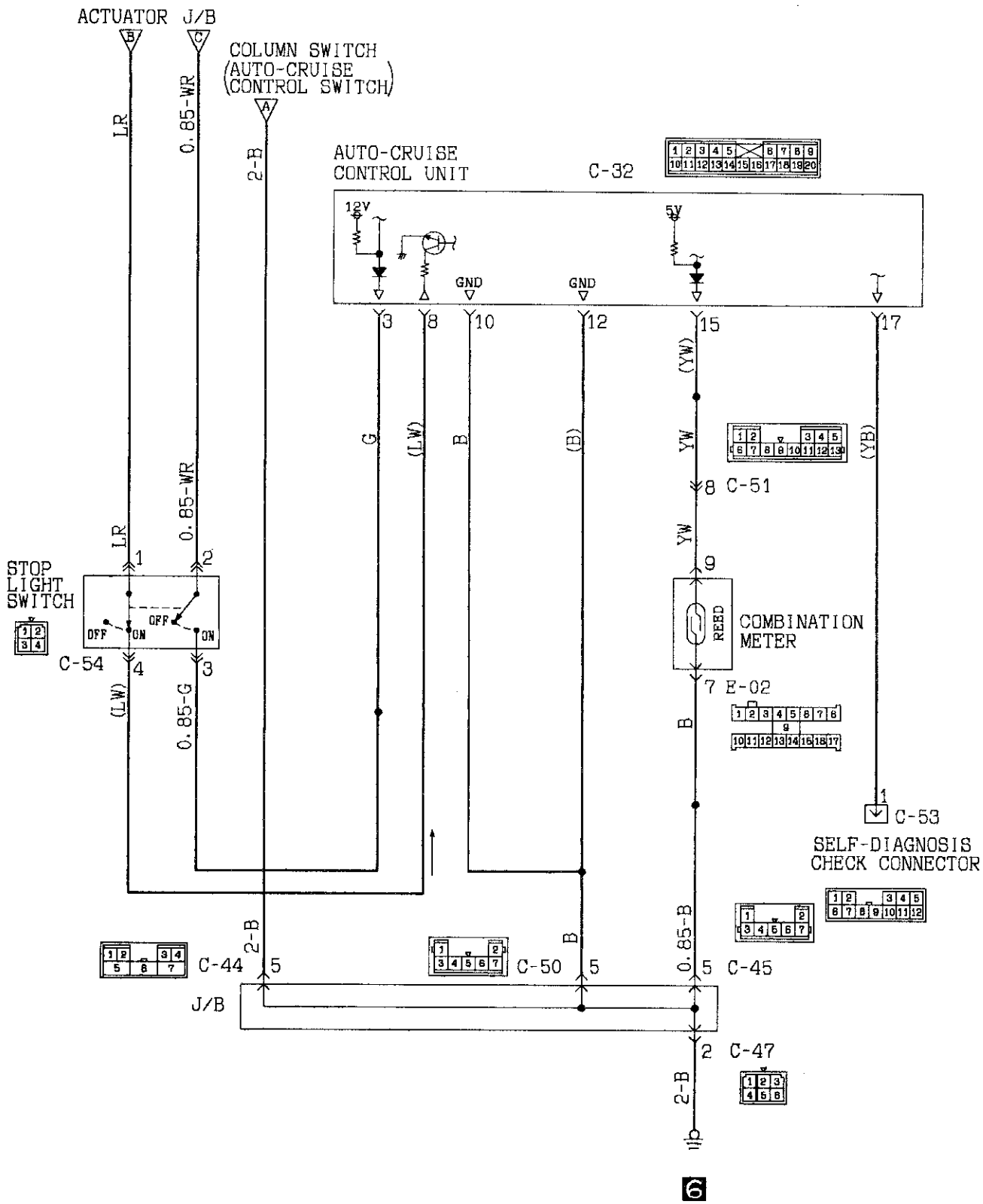
K



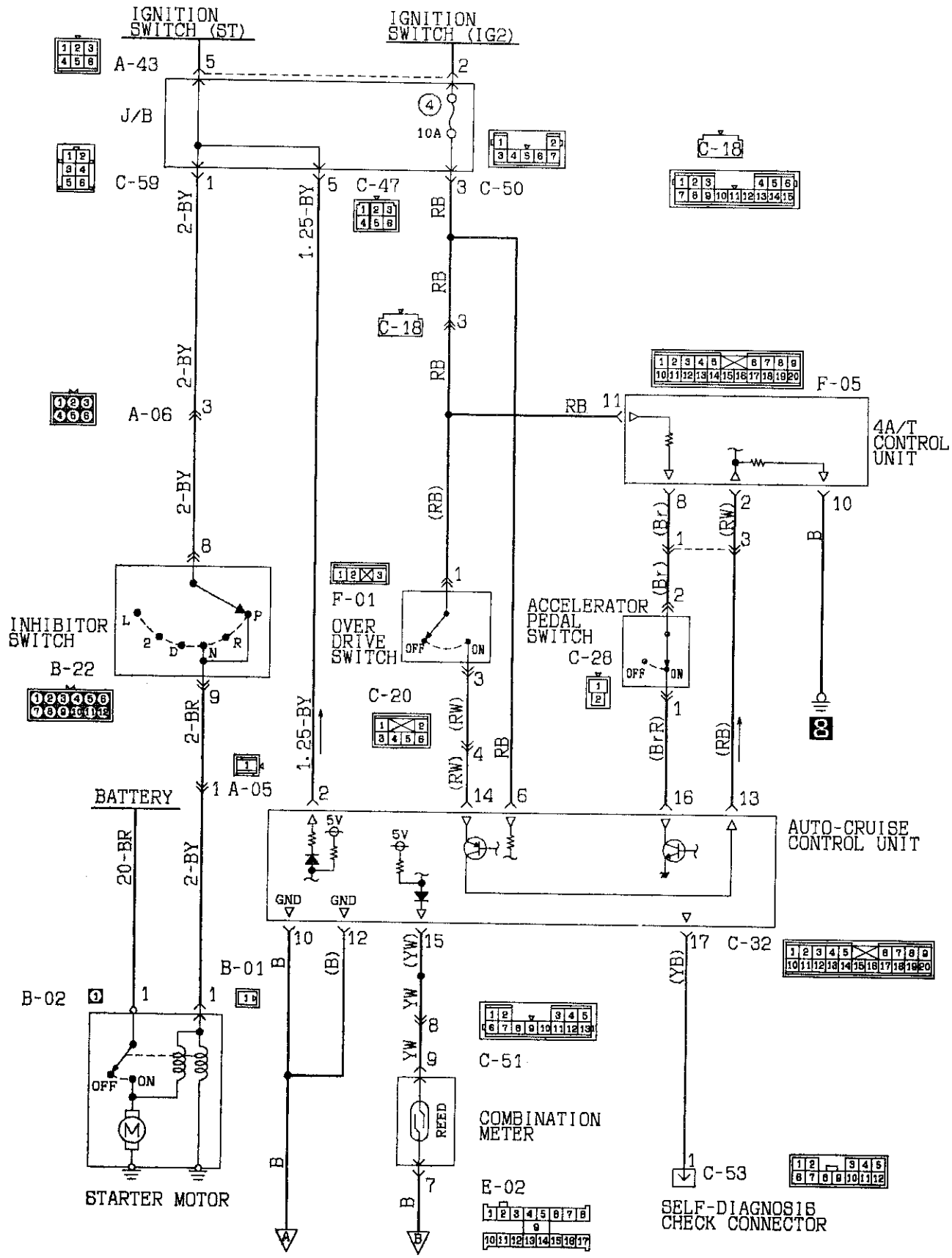
30 AUTO-CRUISE CONTROL CIRCUIT

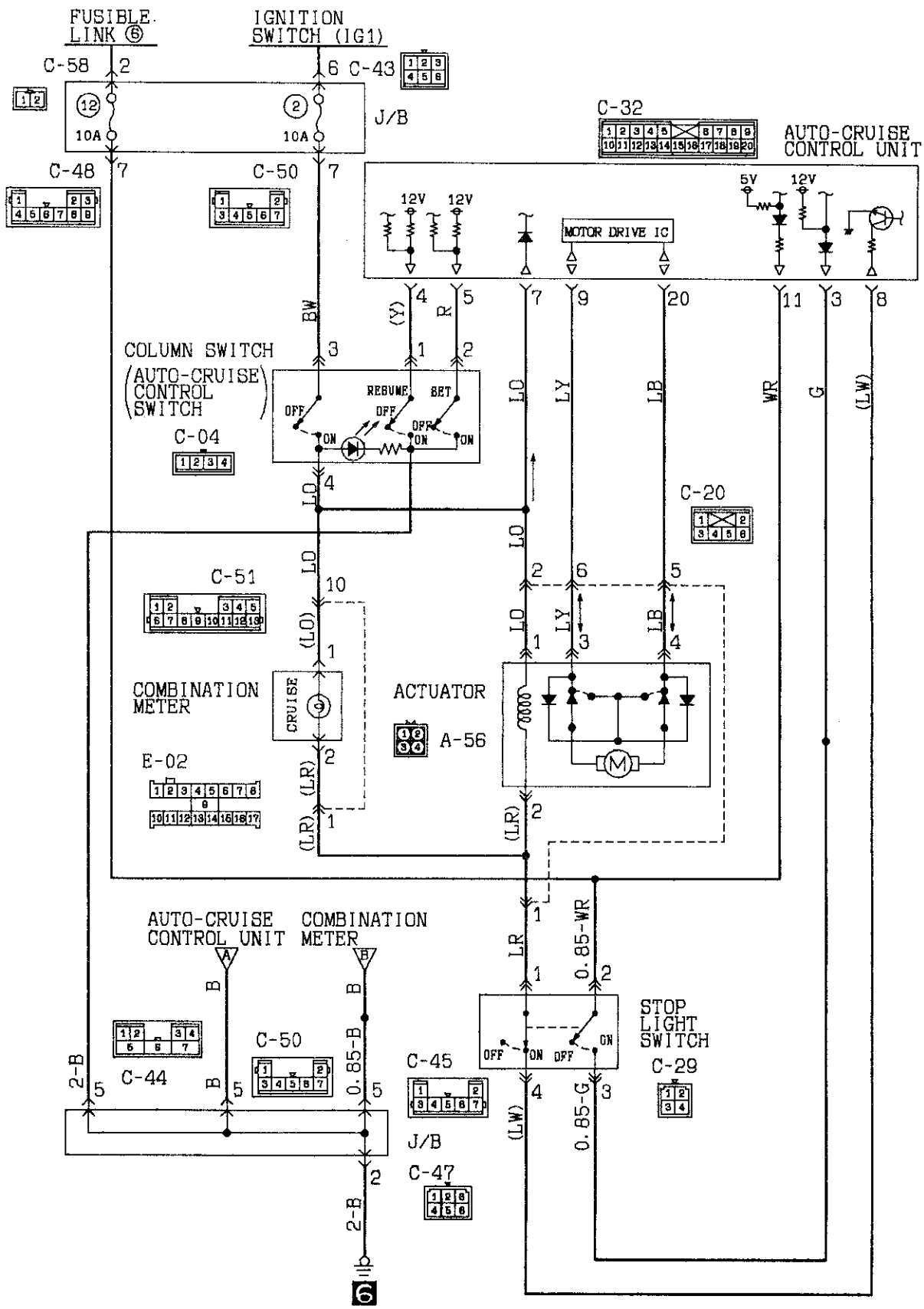
30 – 1 <1.6 Engine – M/T>




ACTUATOR J/B
COLUMN SWITCH (AUTO-CRUISE CONTROL SWITCH)
AUTO-CRUISE CONTROL UNIT
C-32
12V
5V
GND
GND
LR
0.85-WR
2-B
STOP LIGHT SWITCH
OFF
ON
C-54
(LW)
0.85-G
G
B
(B)
YW
(YW)
(YB)
C-51
REED
COMBINATION METER
E-02
C-53
SELF-DIAGNOSIS CHECK CONNECTOR
C-44
C-50
C-45
J/B
C-47
0.85-B
6

30 – 2 <1.6L Engine – 4A/T>



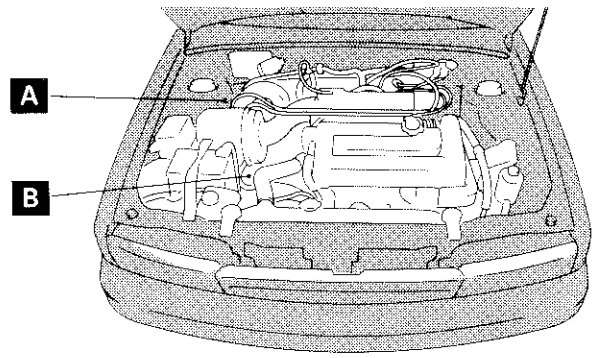

FUSIBLE LINK ⑤
IGNITION SWITCH (IG1)
C-58
C-43
J/B
10A
10A
C-48
C-50
C-32
AUTO-CRUISE CONTROL UNIT
MOTOR DRIVE IC
12V
12V
5V
12V
COLUMN SWITCH (AUTO-CRUISE CONTROL SWITCH)
C-04
RESUME
SET
OFF
ON
C-20
C-51
COMBINATION METER
CRUISE
ACTUATOR
A-56
E-02
AUTO-CRUISE CONTROL UNIT
COMBINATION METER
C-44
C-50
C-45
J/B
C-47
STOP LIGHT SWITCH
C-29
BW
(Y)
R
LO
LY
LB
WR
G
(W)
(LO)
(LR)
LR
0.85-WR
0.85-B
0.85-G
2-B
(LW)

AUTO-CRUISE CONTROL COMPONENTS
COMPONENTS LOCATION

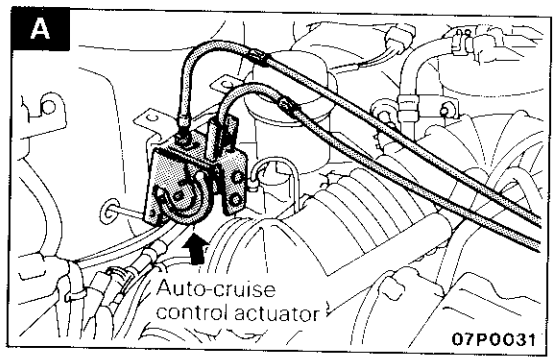
Name	Symbol	Name	Symbol
Accelerator pedal switch <A/T>	H	Inhibitor switch <A/T>	B
Auto-cruise control actuator	A	Overdrive switch <A/T>	G
Auto-cruise control switch	E	Stop light switch	I
Auto-cruise control unit	K	Vehicle speed sensor (Reed switch)	D
Auto-cruise indicator light	C	4-A/T control unit 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

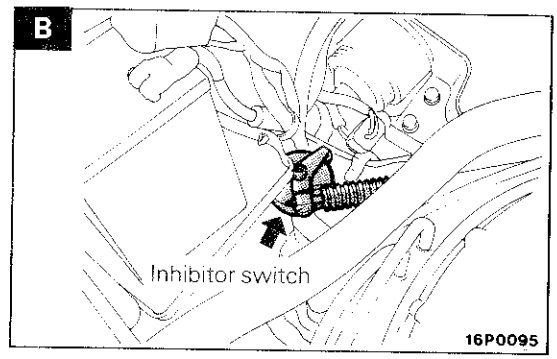
NOTE
The "Name" column is arranged in alphabetical order.

Engine compartment

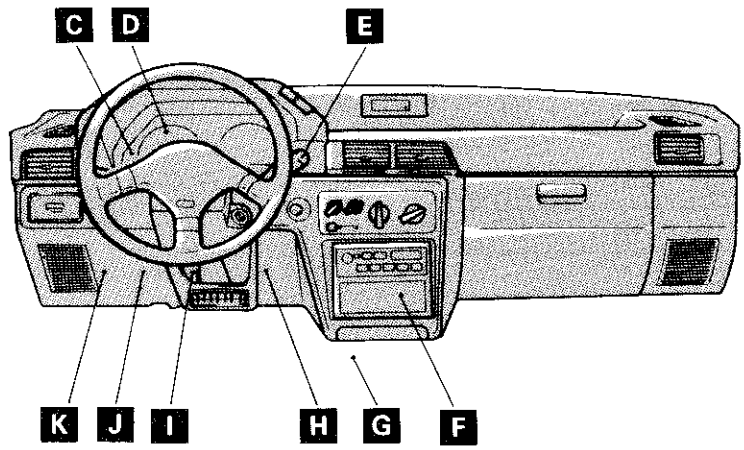


07P0030



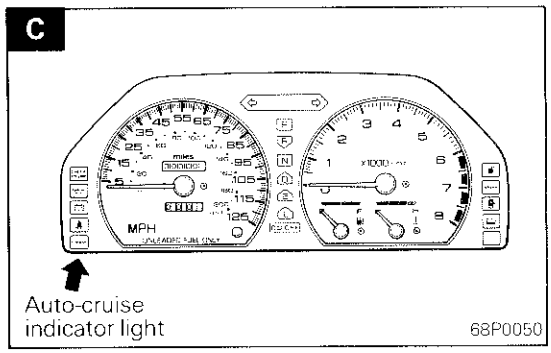


Interior

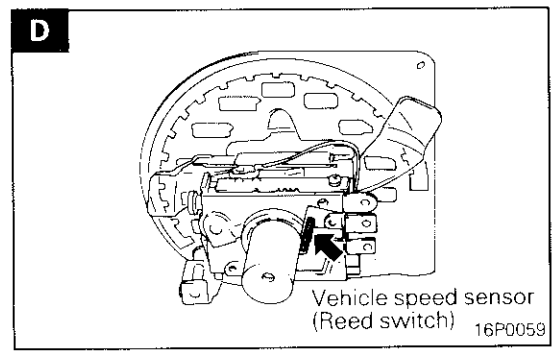


19P0254

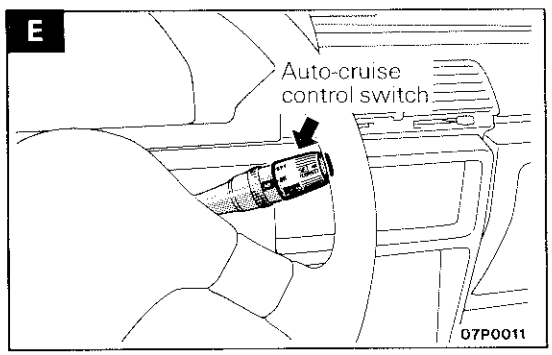
C



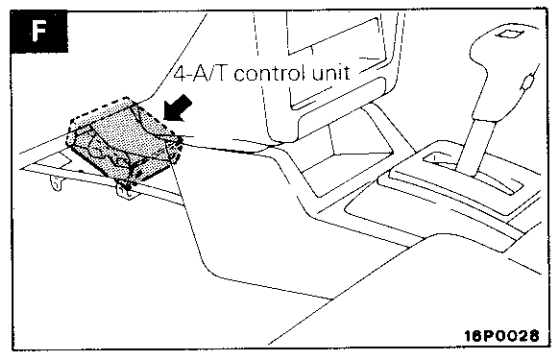
D



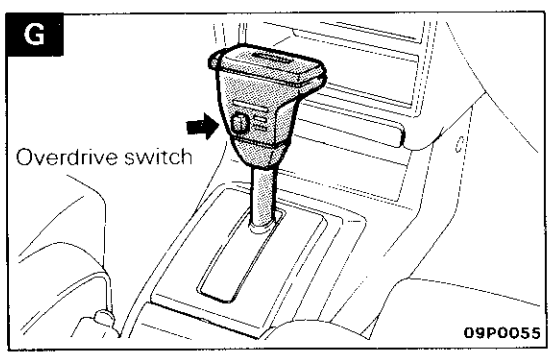
E



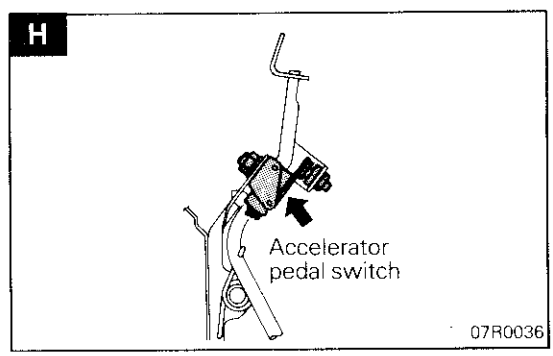
F



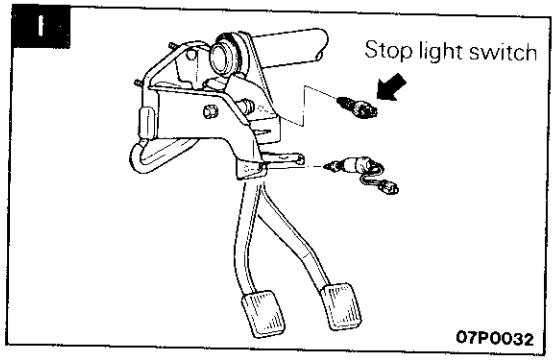
G



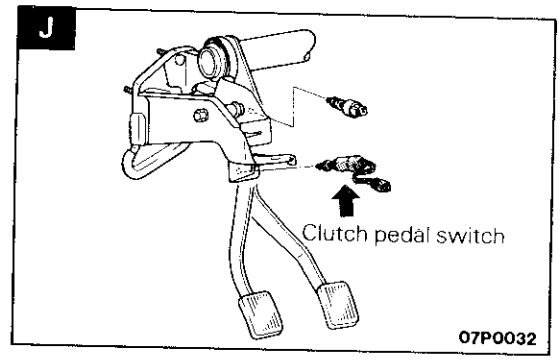
H



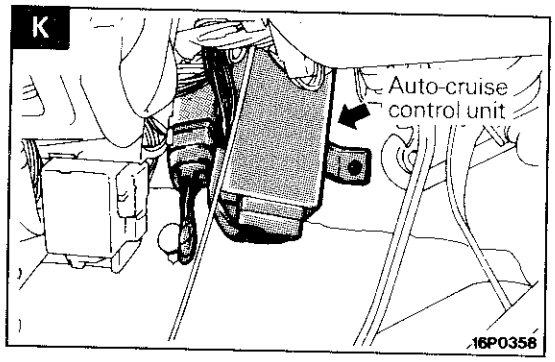
I


Stop light switch
07P0032

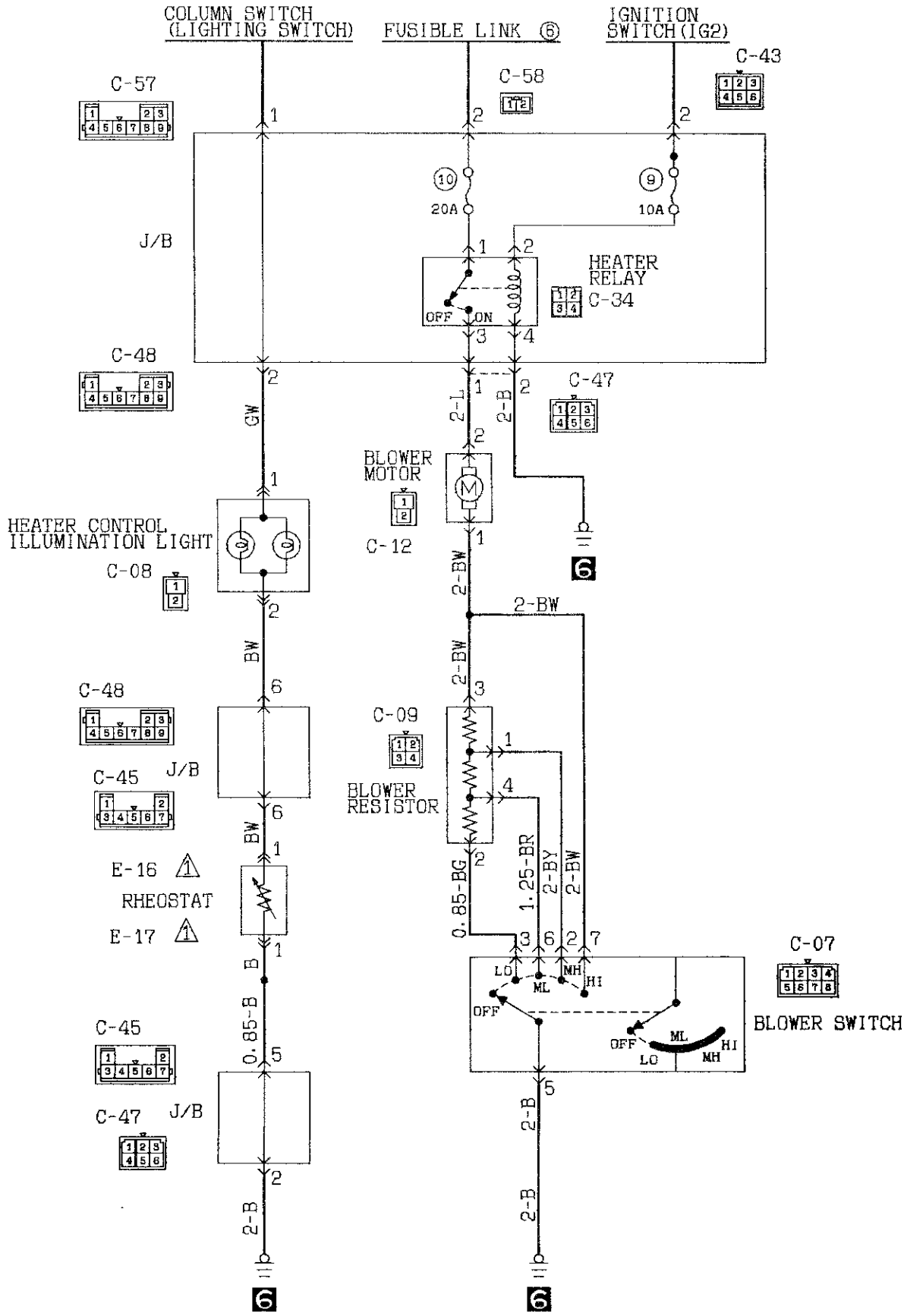
J


Clutch pedal switch
07P0032

K


Auto-cruise
control unit
16P0358

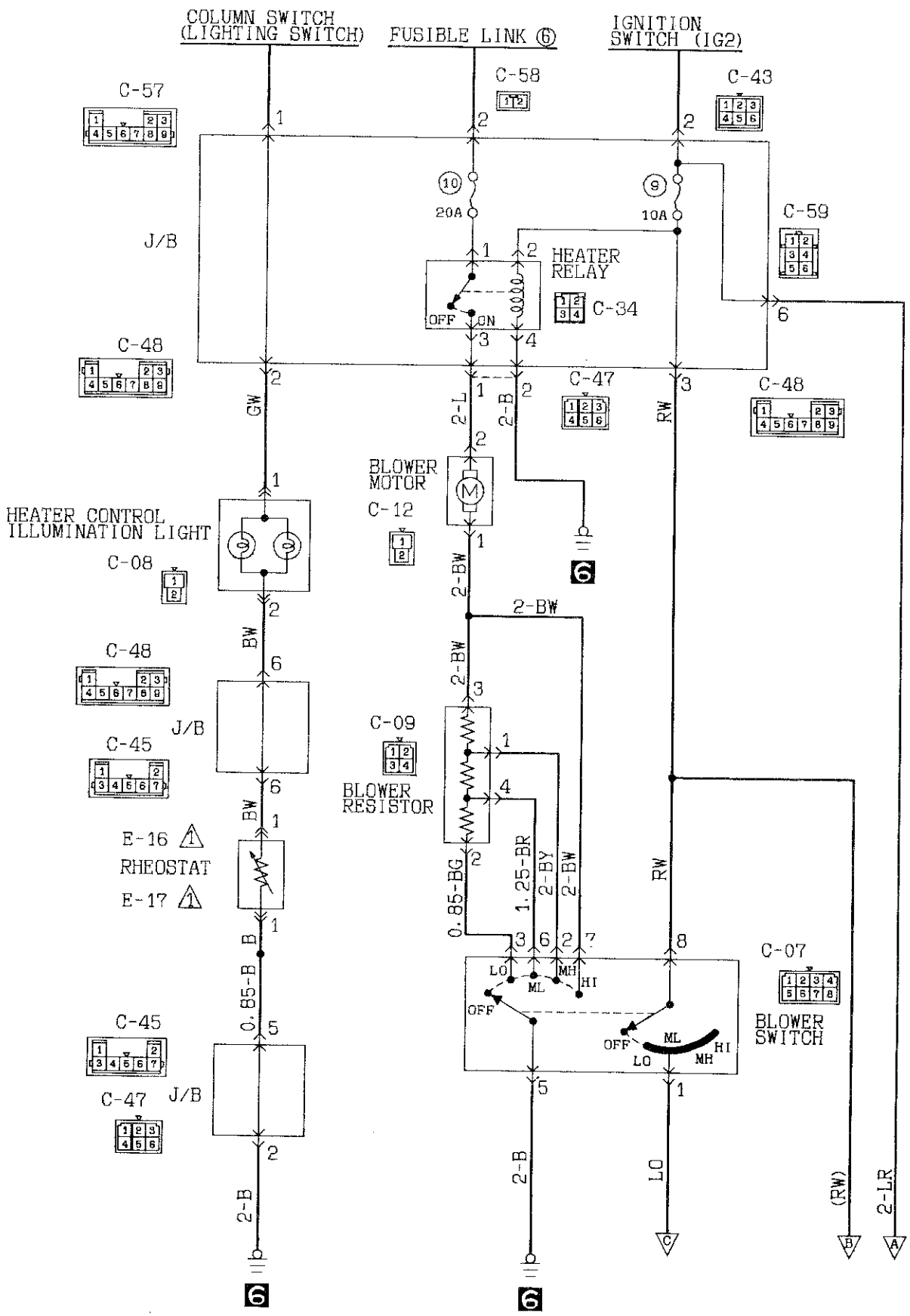
31 HEATER CIRCUIT

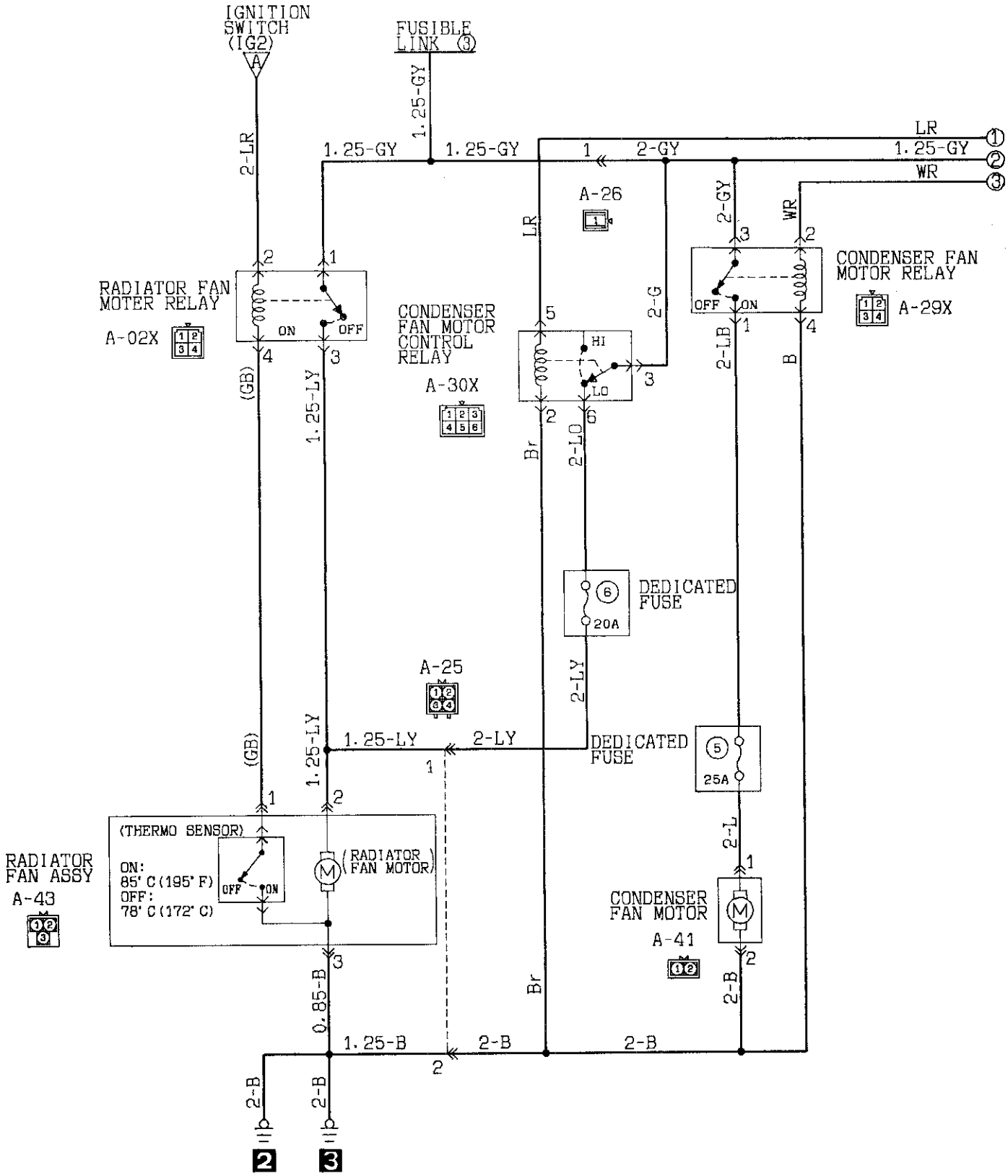


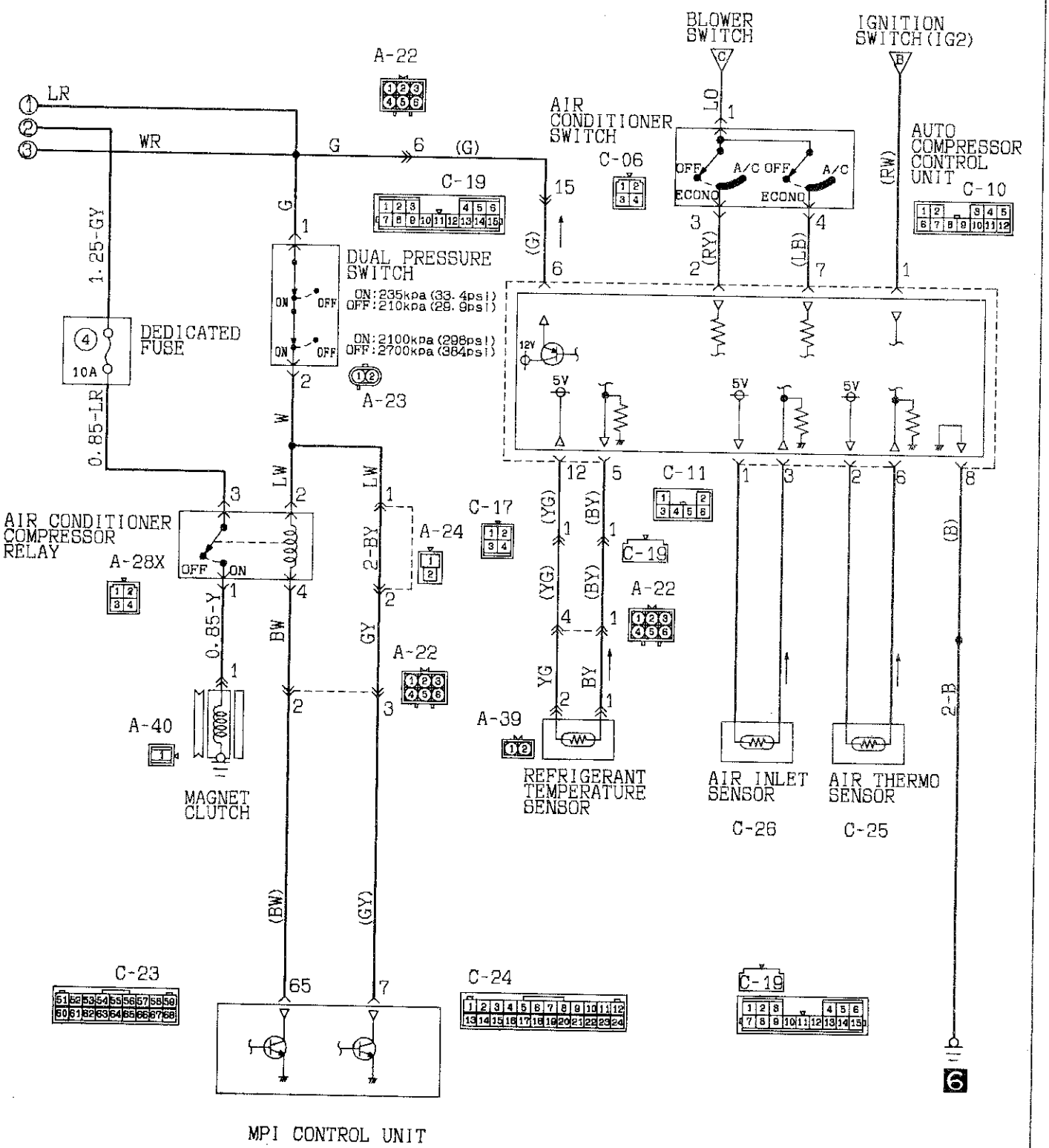
KX36-AC-C1201-N

32 AIR CONDITIONER CIRCUIT

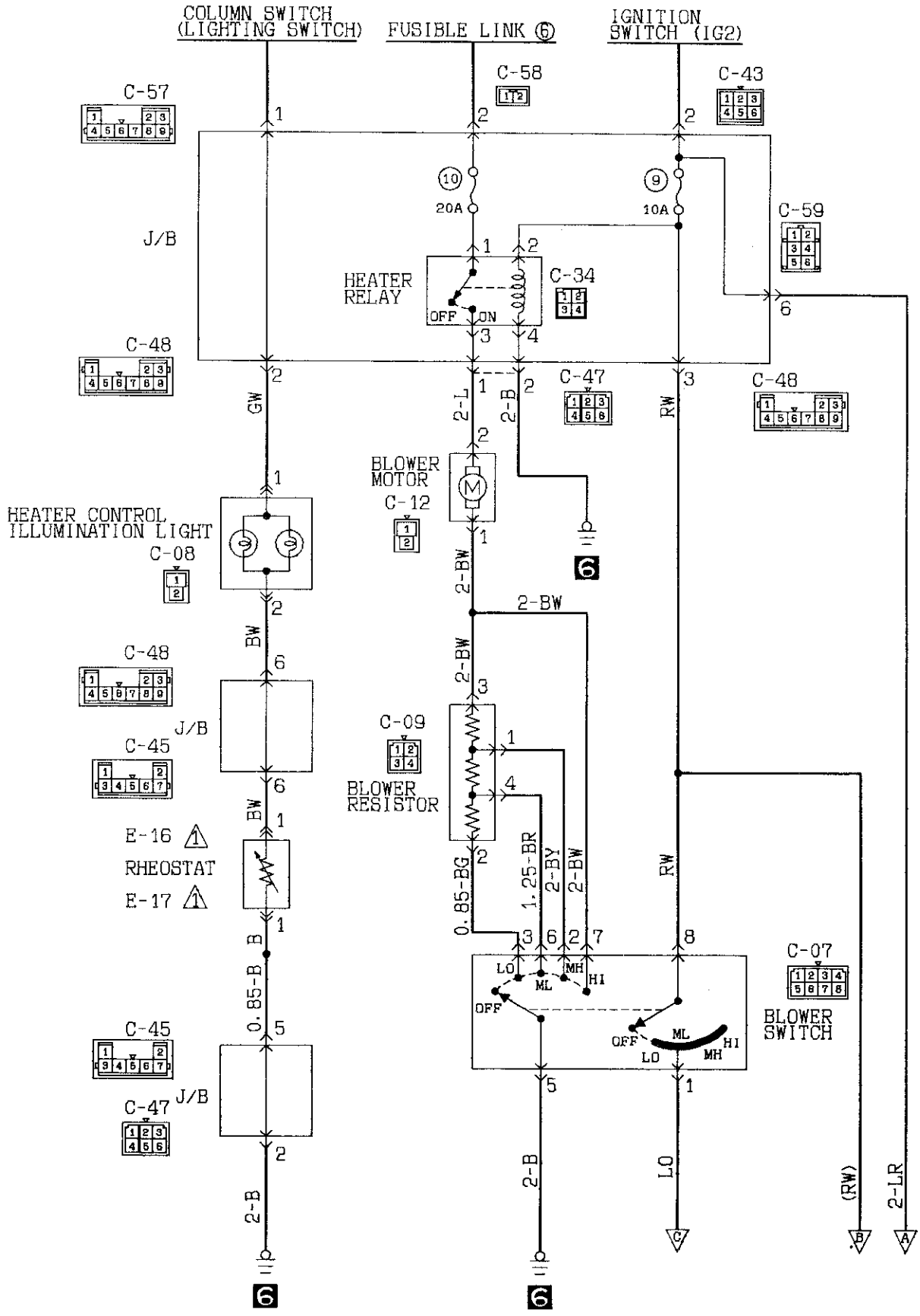
32 – 1 <1.5L Engine>

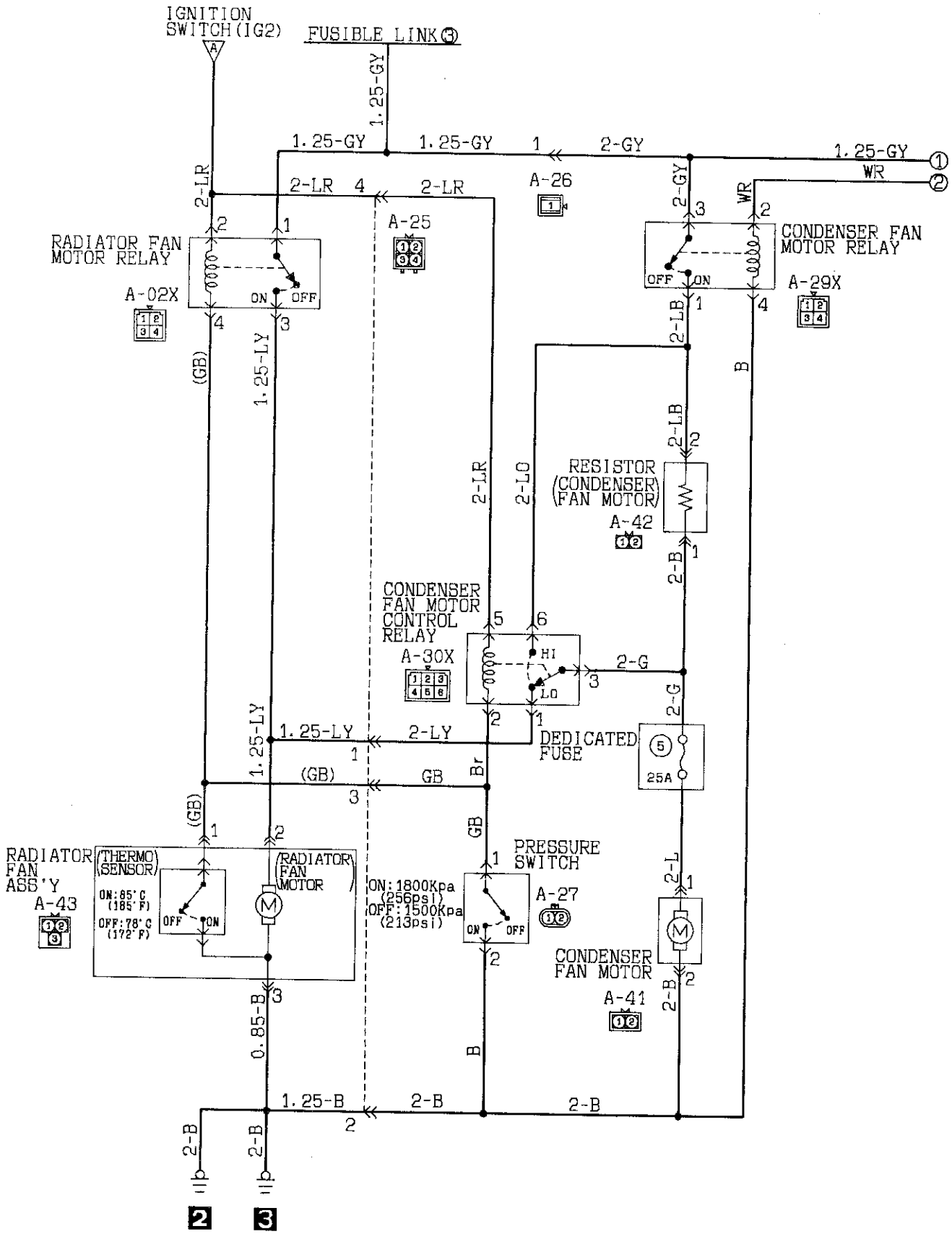


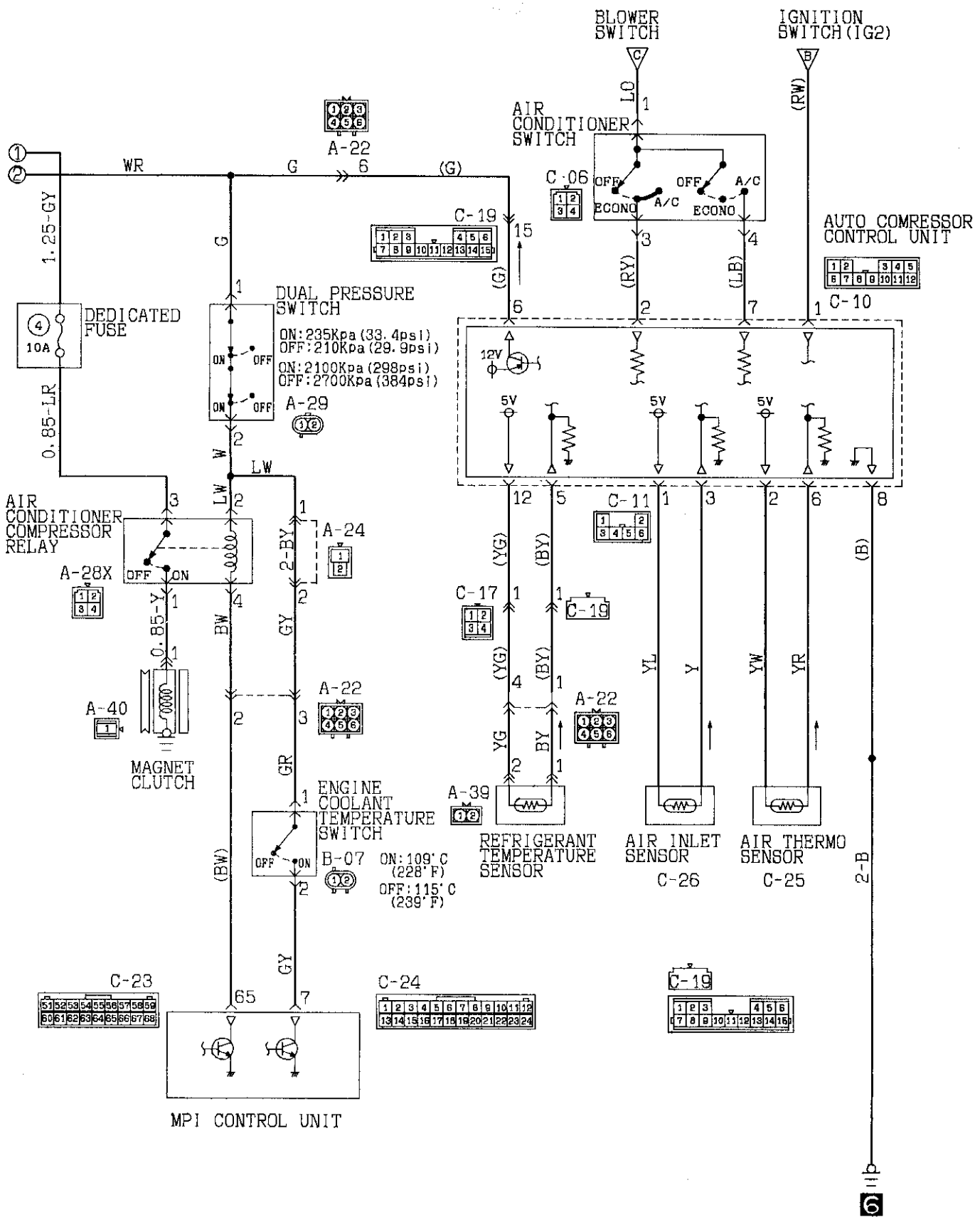

IGNITION SWITCH (IG2)
A
FUSIBLE LINK ③
1.25-GY
2-LR
1.25-GY
1.25-GY
1
2-GY
LR
1.25-GY
①
②
WR
③
A-26
LR
2-GY
WR
RADIATOR FAN MOTER RELAY
A-02X
ON
OFF
CONDENSER FAN MOTOR CONTROL RELAY
A-30X
HI
LO
2-G
OFF
ON
CONDENSER FAN MOTOR RELAY
A-29X
2-LB
B
(GB)
1.25-LY
Br
2-LO
⑥
20A
DEDICATED FUSE
A-25
2-LY
1.25-LY
2-LY
DEDICATED FUSE
⑤
25A
(GB)
1.25-LY
(THERMO SENSOR)
ON:
85° C (195° F)
OFF:
78° C (172° C)
OFF
ON
(RADIATOR FAN MOTOR)
RADIATOR FAN ASSY
A-43
2-L
CONDENSER FAN MOTOR
A-41
Br
0.85-B
2-B
1.25-B
2-B
2-B
2-B
2
3


BLOWER SWITCH
IGNITION SWITCH(IG2)
A-22
LR
WR
G
6
(G)
AIR CONDITIONER SWITCH
C-06
LO
OFF
A/C
ECONO
AUTO COMPRESSOR CONTROL UNIT
C-10
(RW)
C-19
15
1.25-GY
DUAL PRESSURE SWITCH
ON:235kpa (33.4psi)
OFF:210kpa (28.9psi)
ON:2100kpa (298psi)
OFF:2700kpa (384psi)
DEDICATED FUSE
10A
A-23
0.85-LR
W
LW
AIR CONDITIONER COMPRESSOR RELAY
A-28X
C-17
A-24
2-BY
0.85-Y
BW
GY
A-40
MAGNET CLUTCH
(RY)
(LB)
12V
5V
C-11
(YG)
(BY)
YG
BY
A-39
REFRIGERANT TEMPERATURE SENSOR
AIR INLET SENSOR
C-26
AIR THERMO SENSOR
C-25
(B)
2-B
6
(BW)
(GY)
C-23
65
7
C-24
MPI CONTROL UNIT

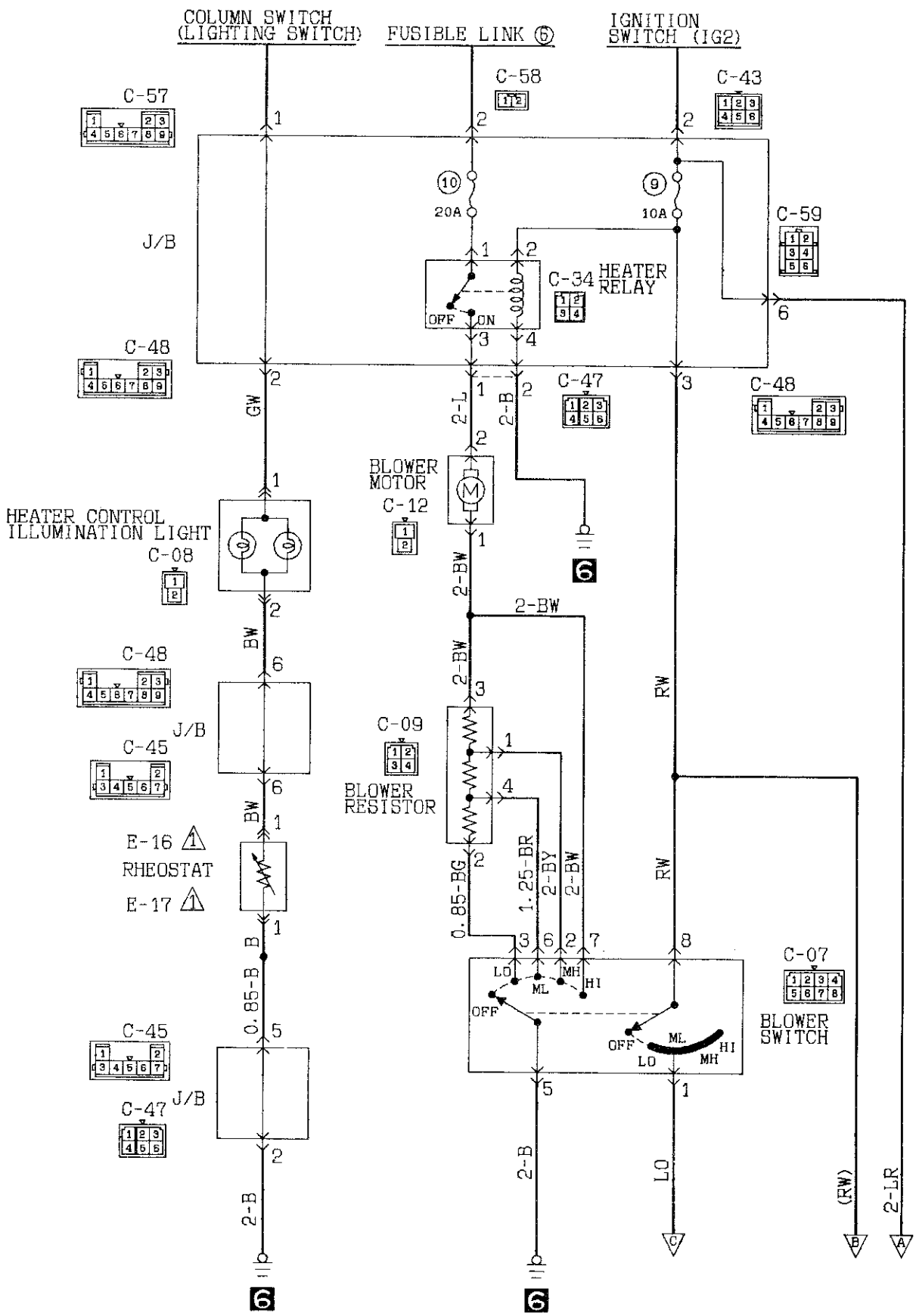
32 – 2 <1.6L Engine – N/A>



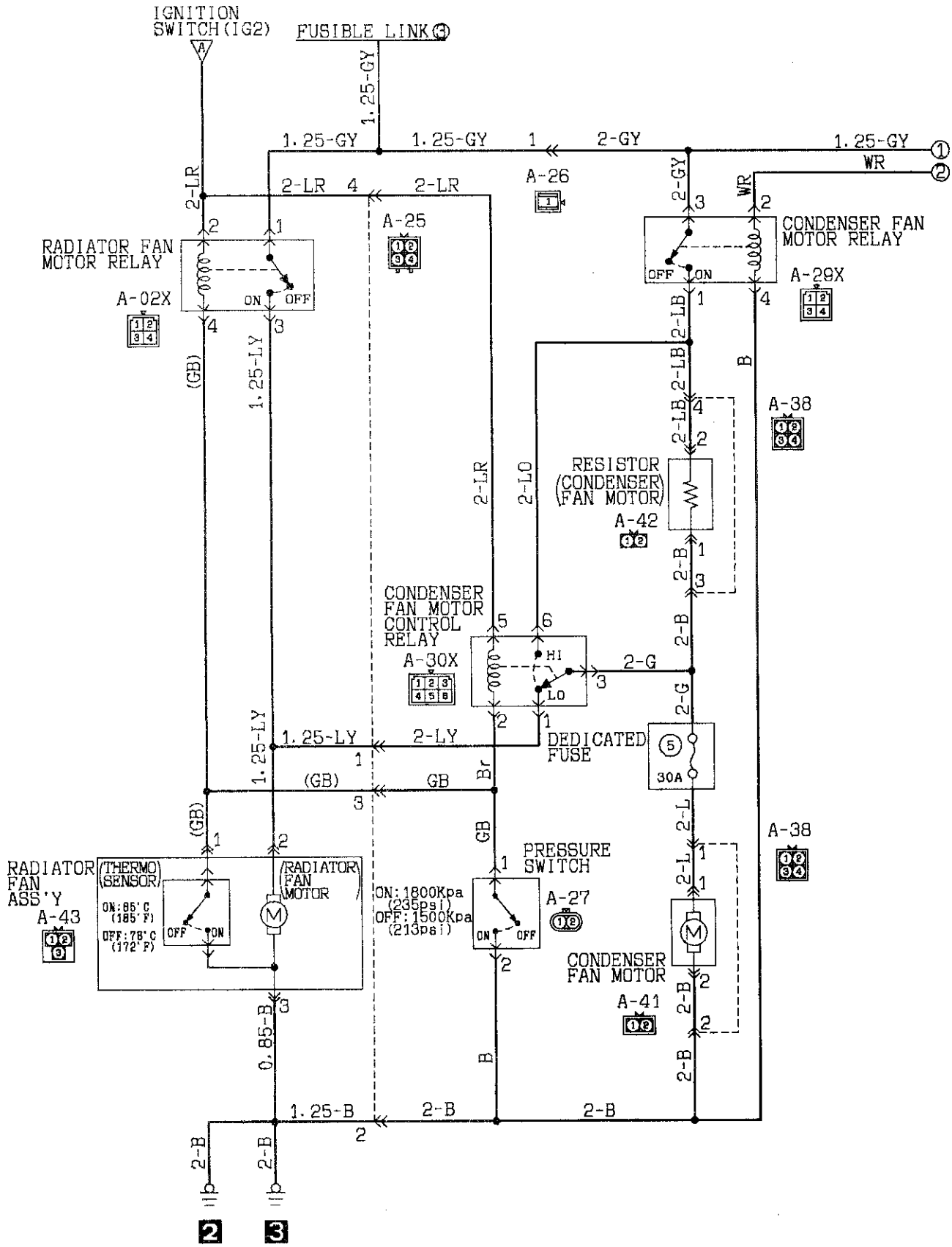

IGNITION SWITCH(IG2)
FUSIBLE LINK③
1.25-GY
2-GY
WR
2-LR
A-26
A-25
RADIATOR FAN MOTOR RELAY
A-02X
ON
OFF
CONDENSER FAN MOTOR RELAY
A-29X
2-LB
B
(GB)
2-LO
RESISTOR (CONDENSER) (FAN MOTOR)
A-42
CONDENSER FAN MOTOR CONTROL RELAY
A-30X
HI
LO
2-G
DEDICATED FUSE
25A
2-LY
GB
Br
RADIATOR FAN ASS'Y
A-43
(THERMO SENSOR)
ON:85°C (185°F)
OFF:78°C (172°F)
(RADIATOR FAN MOTOR)
PRESSURE SWITCH
ON:1800Kpa (256psi)
OFF:1500Kpa (213psi)
A-27
2-L
CONDENSER FAN MOTOR
A-41
0.85-B
1.25-B
2-B
2
3


BLOWER SWITCH
IGNITION SWITCH(IG2)
AIR CONDITIONER SWITCH
LO
(RW)
OFF
A/C
ECONO
AUTO COMRESSOR CONTROL UNIT
C-10
A-22
C-06
C-19
WR
G
(G)
1.25-GY
DEDICATED FUSE
10A
DUAL PRESSURE SWITCH
ON:235Kpa(33.4psi)
OFF:210Kpa(29.9psi)
ON:2100Kpa(298psi)
OFF:2700Kpa(384psi)
A-29
0.85-LR
W
LW
(RY)
(LB)
12V
5V
AIR CONDITIONER COMPRESSOR RELAY
A-28X
A-24
2-BY
GY
BW
0.85-Y
A-40
MAGNET CLUTCH
GR
ENGINE COOLANT TEMPERATURE SWITCH
B-07
ON:109°C (228°F)
OFF:115°C (239°F)
(BW)
C-11
C-17
(YG)
(BY)
YG
BY
A-39
REFRIGERANT TEMPERATURE SENSOR
YL
Y
AIR INLET SENSOR
C-26
YW
YR
AIR THERMO SENSOR
C-25
(B)
2-B
C-23
C-24
MPI CONTROL UNIT
6

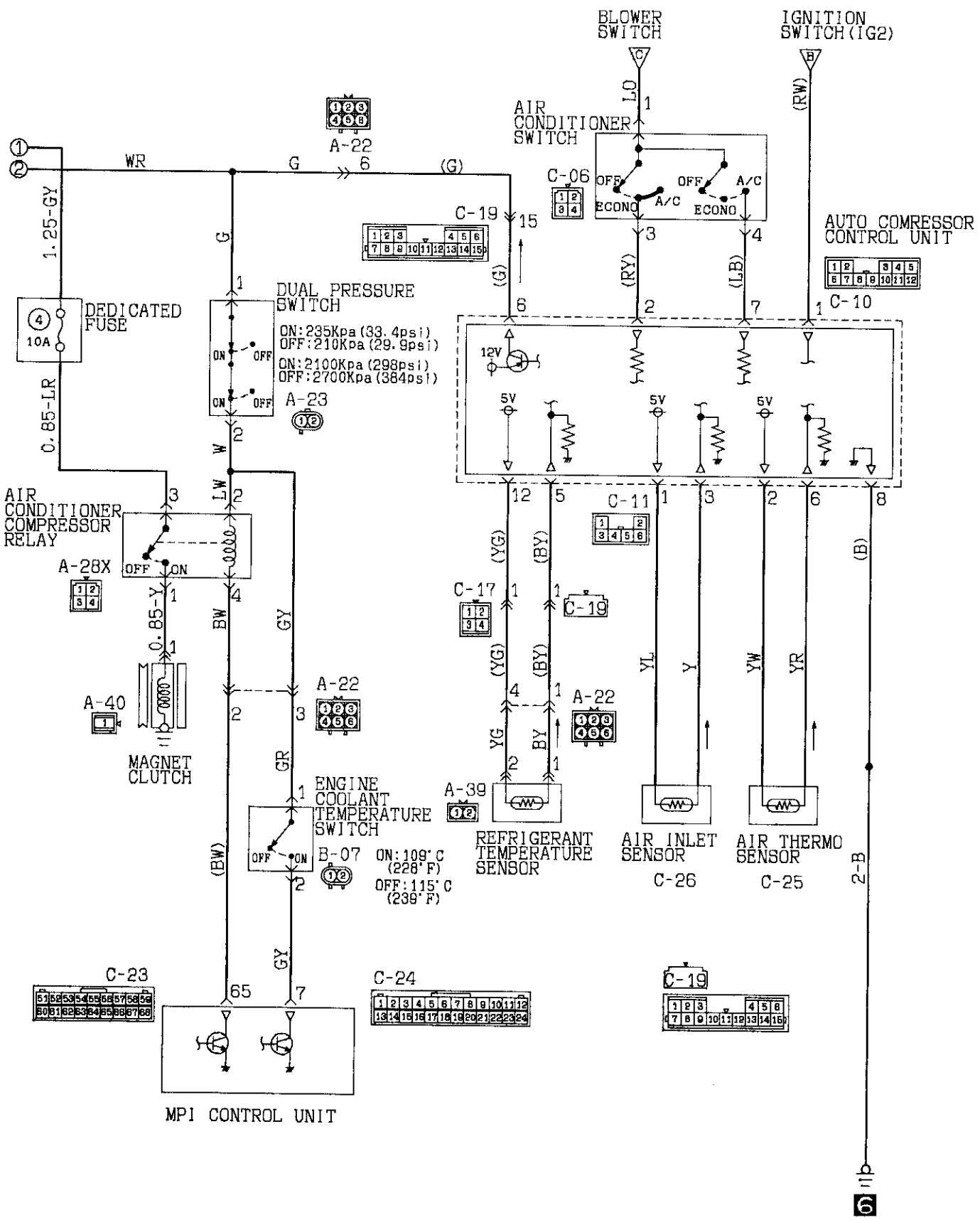
32 – 3 <1.6L Engine – T/C>



KX35-AC-C1204-N



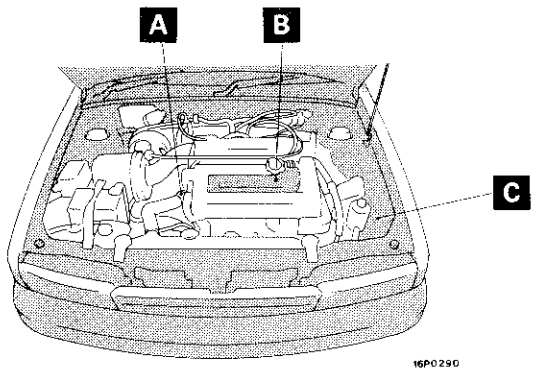
KX35-AC-C1204A-N

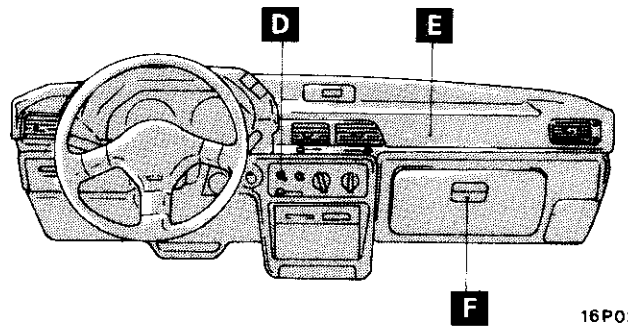

BLOWER SWITCH
IGNITION SWITCH(IG2)
AIR CONDITIONER SWITCH
LO
(RW)
A-22
C-06
OFF
ECONO
A/C
C-19
AUTO COMRESSOR CONTROL UNIT
C-10
1.25-GY
WR
G
(G)
DEDICATED FUSE
10A
DUAL PRESSURE SWITCH
ON:235Kpa(33.4psi)
OFF:210Kpa(29.9psi)
ON:2100Kpa(298psi)
OFF:2700Kpa(384psi)
A-23
(RY)
(LB)
12V
5V
0.85-LR
W
LW
AIR CONDITIONER COMPRESSOR RELAY
A-28X
0.85-Y
BW
GY
C-11
C-17
(YG)
(BY)
YL
Y
YW
YR
(B)
A-40
MAGNET CLUTCH
GR
ENGINE COOLANT TEMPERATURE SWITCH
B-07
ON:109°C (228°F)
OFF:115°C (239°F)
(BW)
A-39
REFRIGERANT TEMPERATURE SENSOR
AIR INLET SENSOR
C-26
AIR THERMO SENSOR
C-25
2-B
C-23
C-24
MPI CONTROL UNIT
6

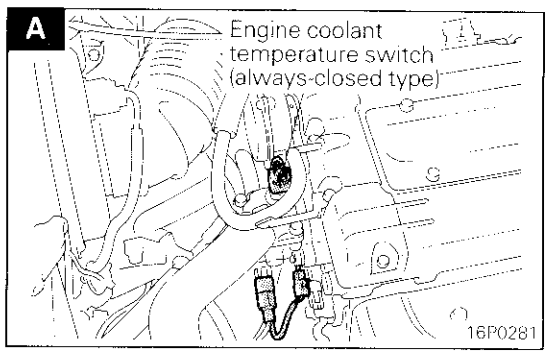
AIR CONDITIONER CONTROL COMPONENTS
COMPONENTS LOCATION

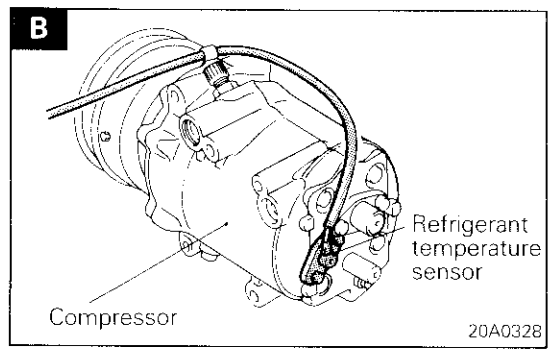
Name	Symbol	Name	Symbol
Air conditioner compressor relay	C	Auto compressor control unit	E
Air conditioner switch	D	Engine coolant temperature switch (always-closed type)	A
Air-inlet sensor	F	Refrigerant temperature sensor	B
Air-thermo sensor	F		

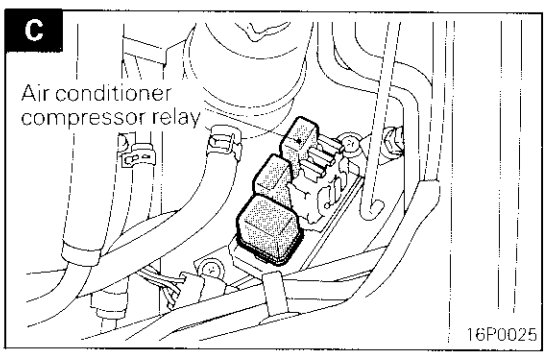
NOTE
The "Name" column is arranged in alphabetical order.

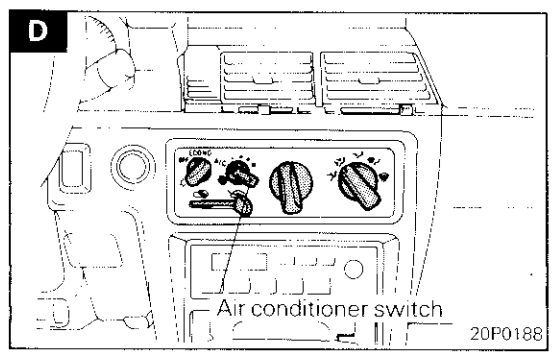


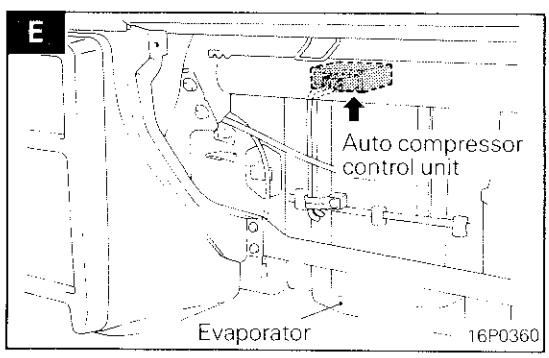


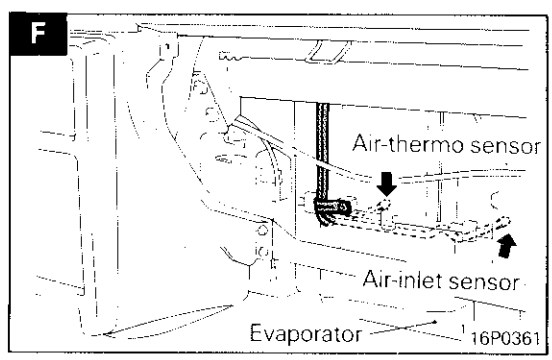




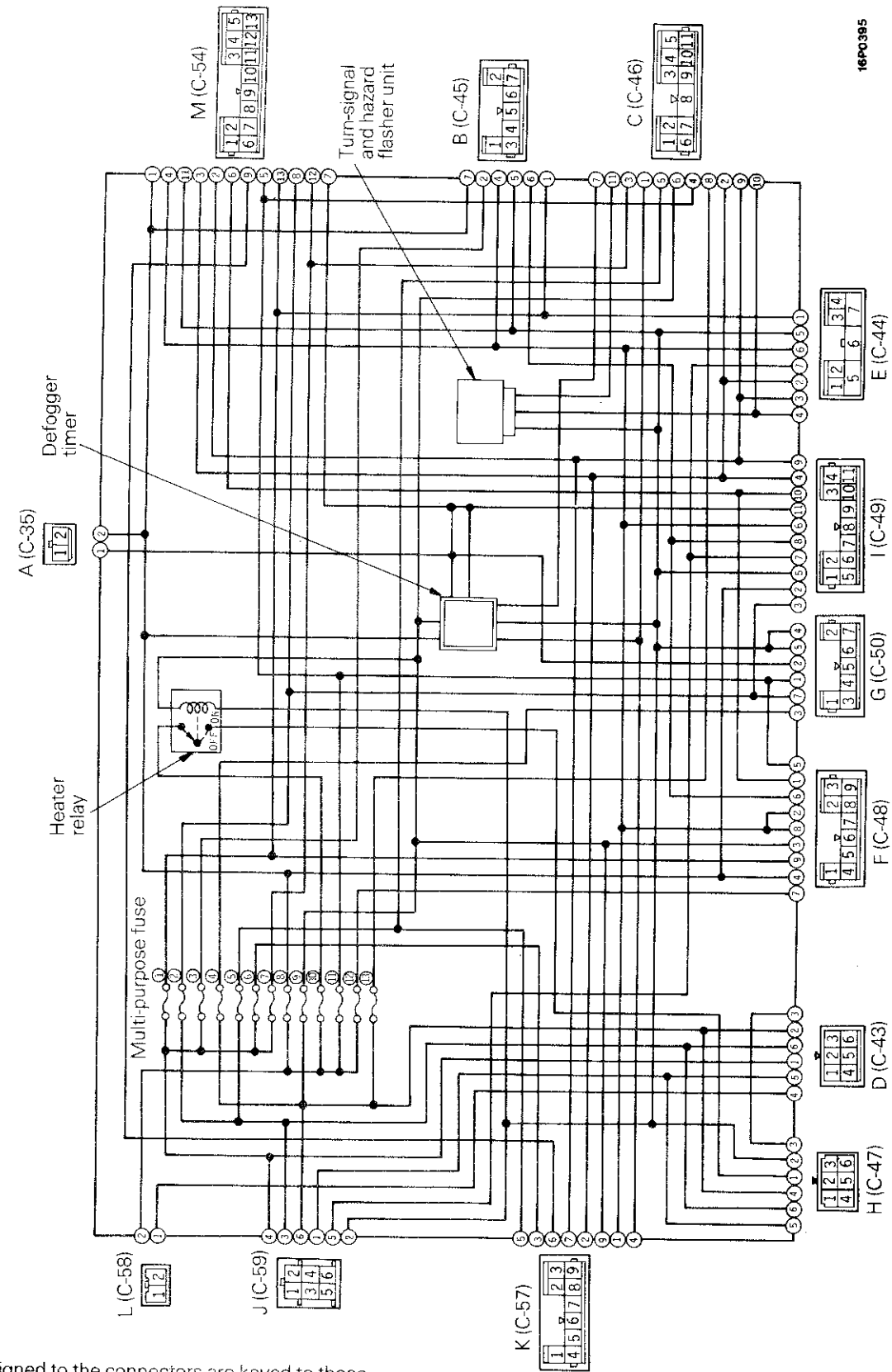






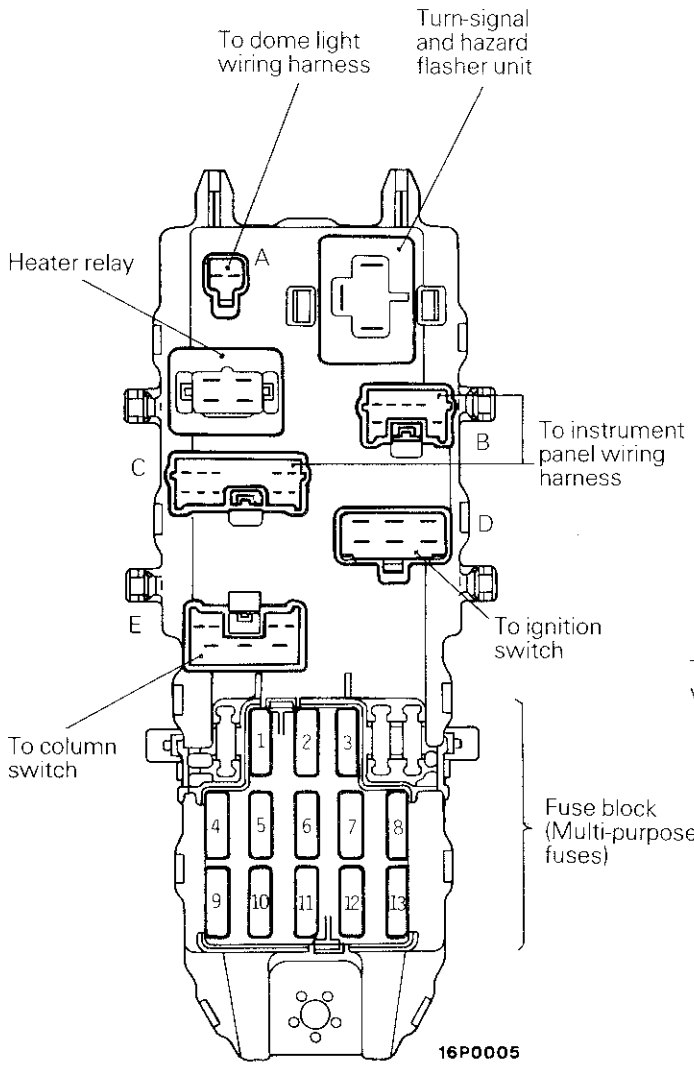


33 JUNCTION BLOCK

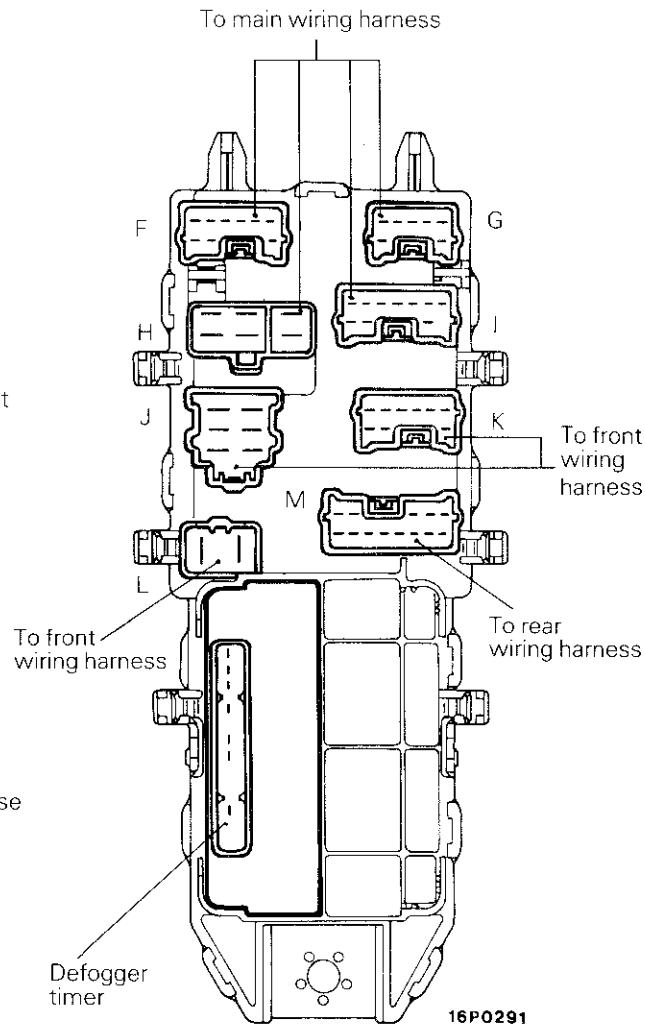


Remarks
(1) Alphabets assigned to the connectors are keyed to those assigned to connectors on P. 8-151.
(2) Terminals of the harness side connector are indicated in parentheses ( ).

Front


To dome light wiring harness
Turn-signal and hazard flasher unit
Heater relay
A
B
C
D
E
To instrument panel wiring harness
To ignition switch
To column switch
1
2
3
4
5
6
7
8
9
10
11
12
13
Fuse block (Multi-purpose fuses)
16P0005

Back

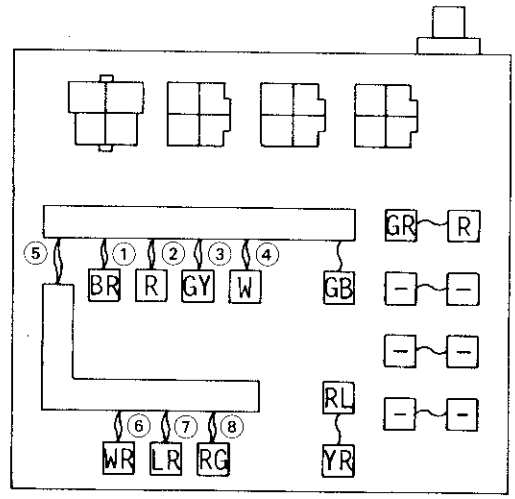

To main wiring harness
F
G
H
I
J
K
L
M
To front wiring harness
To front wiring harness
To rear wiring harness
Defogger timer
16P0291

34 CENTRALIZED JUNCTION

FUSIBLE LINK (Relay box in engine compartment)

No.	Circuit	Housing color	Rated capacity
1	MPI circuit	Blue	20
2	Headlight circuit	Green	40
3	Radiator fan motor circuit	Pink or *Green	30 or *40
4	Ignition circuit	Green	40
5	Alternator circuit, fusible link ⑥, ⑦, ⑧ circuit	Black	80
6	Multi-purpose fuse a power supply source	Green	40
7	Power window circuit	Pink	30
8	Defogger circuit	Pink	30

NOTE
*: <Vehicles for U.S.>



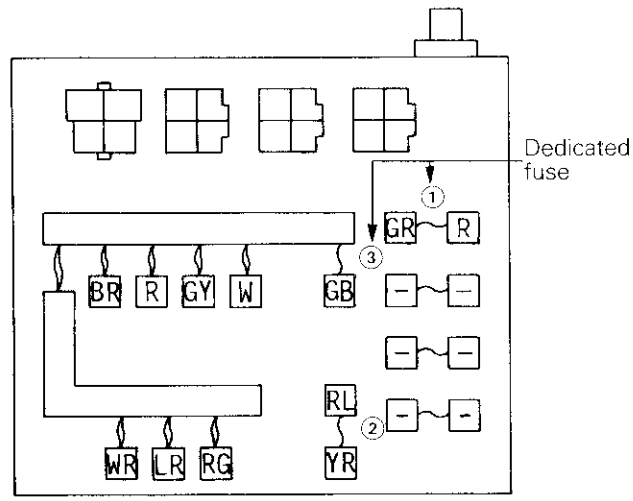
37P0007

DEDICATED FUSE

Power supply circuit	No.	Rated capacity (A)	Housing Color	Circuit
Fusible link ②	1	15	Blue	Taillight circuit
Fusible link ②	2	10	Red	Upper beam circuit
Battery	3	10	Red	Hazard warning light circuit
Fusible link ③	4	10	Red	Air conditioner circuit
	5	25 or *1 30	Transparent or *1 Green	
	6	*2 20	Yellow	

NOTE
*1: <T/C>
*2: <1.5L Engine>

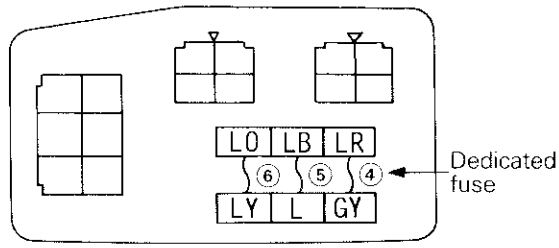
<Relay box in engine compartment>



37P0007

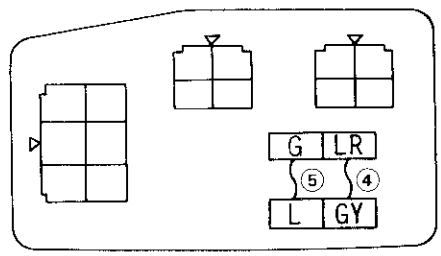
<Air conditioner relay bracket>

1.5L Engine



37P0003

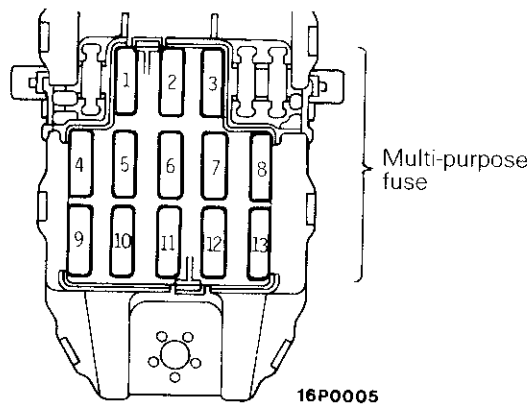
1.6L Engine



37P0004

MULTI-PURPOSE FUSE (In junction block)

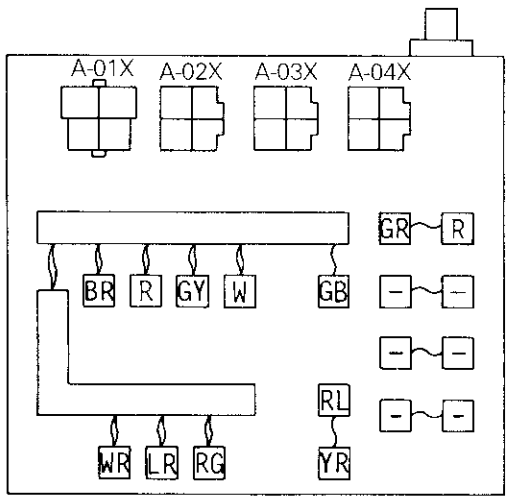
Power supply circuit		No.	Rated capacity (A)	Load circuit
Ignition switch	ACC	1	15	Windshield wiper and washer, Rear wiper and washer
	IG_1	2	10	Meter and gauges, indicator lights, warning lights, clutch switch <M/T>, automatic seat belt control unit
	ACC	3	10	Radio, clock
	IG_2	4	10	4 A/T control unit, overdrive switch <4 A/T>, inhibitor switch <4 A/T>, auto-cruise control unit <4 A/T>
	IG_1	5	10	Back-up light, inhibitor switch <3 A/T, 4 A/T>, hazard warning light, 3 A/T control unit
	ACC	6	10	Horn, headlight relay
		7	15	Cigarette lighter, remote-controlled mirror
Battery		8	10	Dome light, luggage compartment light, clock, radio, MPI control unit, 4 A/T control unit, defogger timer, door-ajar warning light
Ignition switch IG_2		9	10	Power window relay, defogger relay, defogger timer, defogger switch, heater relay, blower switch, auto compressor control unit
Battery		10	20	Heater relay
		11	15	Door lock relay, door lock control unit, automatic seat belt control unit, seat belt warning buzzer, key reminder switch
		12	15	Stop light, auto-cruise control unit
Ignition switch IG_2		13	–	–



CENTRALIZED RELAY

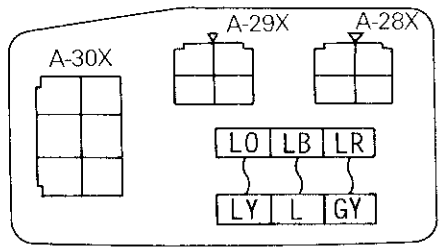
Classification		Name	Classification		Name
Relay box in engine compartment	A-01X	Alternator relay	Air conditioner relay bracket	A-28X	Air conditioner compressor relay
	A-02X	Radiator fan motor relay		A-29X	Condenser fan motor relay
	A-03X	Power window relay		A-30X	Condenser fan motor control relay
	A-04X	Headlight relay			

<Relay box in engine compartment>



37P0007

<Air conditioner relay bracket>



37P0003

CHARGING SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

ALTERNATOR

N08EB- -

Items	1.5L Engine	1.6L Engine-N/A-M/T	1.6L Engine-N/A-A/T 1.6L Engine-T/C
Type Identification No. Part No. Rated output V/A Voltage regulator	Battery voltage sensing A2T09493 MD114620 12/75 Electronic built-in type	Battery voltage sensing A3T03493 MD136838 12/65 Electronic built-in type	Battery voltage sensing A3T03393 MD136839 12/75 Electronic built-in type

BATTERY

Items	U.S.	Canada
Type	50B24R(S)-MF	65D23R-MF
Ampere hours (5HR) Ah	36	52
Cranking rating A [at –17.8°C (0°F)]	390	420
Reserve capacity min.	71	111

NOTE
1. CRANKING RATING is the current a battery can deliver for 30 seconds and maintain a terminal voltage of 7.2 or greater at a specified temperature.
2. RESERVE CAPACITY is the amount of time a battery can deliver 25 A and maintain a minimum terminal voltage of 10.5 at 26.7°C (80°F).

SERVICE SPECIFICATIONS

N08EC- -

Items	Specifications
Standard value	
Alternator	
Regulated voltage	
Ambient temp. at voltage regulator V	
–20°C (–4°F)	14.2 – 15.4
20°C (68°F)	13.9 – 14.9
60°C (140°F)	13.4 – 14.6
80°C (176°F)	13.1 – 14.5
Slip ring O.D. mm (in.)	23 (.906)
Rotor coil resistance Ω	Approx. 3.1
Limit	
Slip ring O.D. mm (in.)	22.4 (.882)

TORQUE SPECIFICATIONS

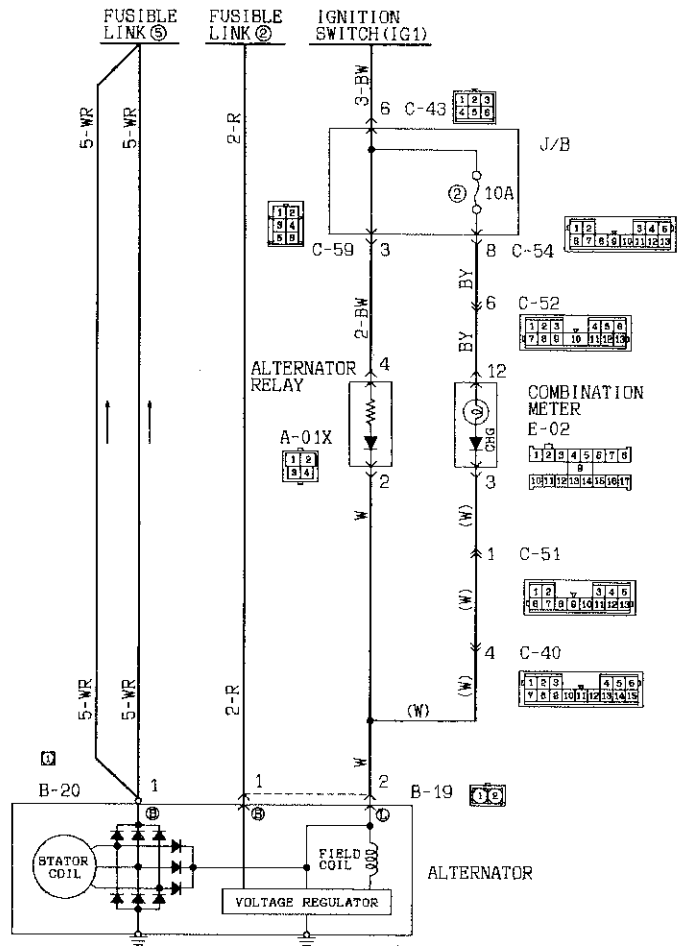
N08ED- -

Items	Nm	ft.lbs.
Alternator brace bolt	12 – 15	9 – 11
Alternator brace mounting bolt	20 – 27	15 – 20
Alternator pivot nut	20 – 25	15 – 18
Alternator wiring harness installation nut	2.5 – 4.0	2 – 3
Water pump pulley bolt	8 – 10	6 – 7
Battery holder mounting bolt and nut	2 – 3	1 – 2

TROUBLESHOOTING

N08EHAG

CIRCUIT DIAGRAM



KX35-AC-C0401-N

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.

SERVICE ADJUSTMENT PROCEDURES

CHARGING SYSTEM INSPECTION N08EIAJ

VOLTAGE DROP TEST OF ALTERNATOR OUTPUT WIRE

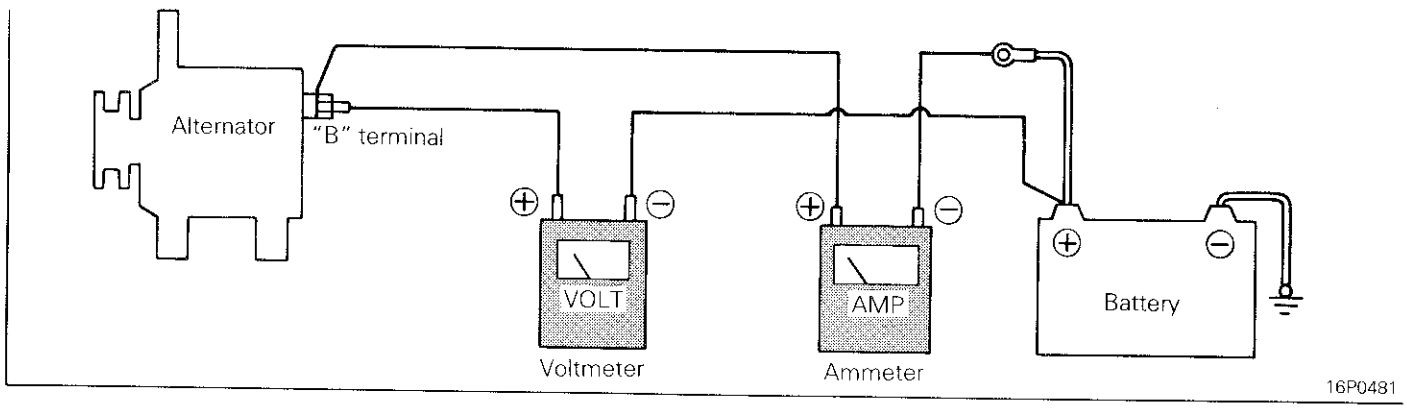
This test judges whether or not the wiring (including the fusible link) between the alternator B terminal and the battery (+) terminal is sound by the voltage drop method.

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".

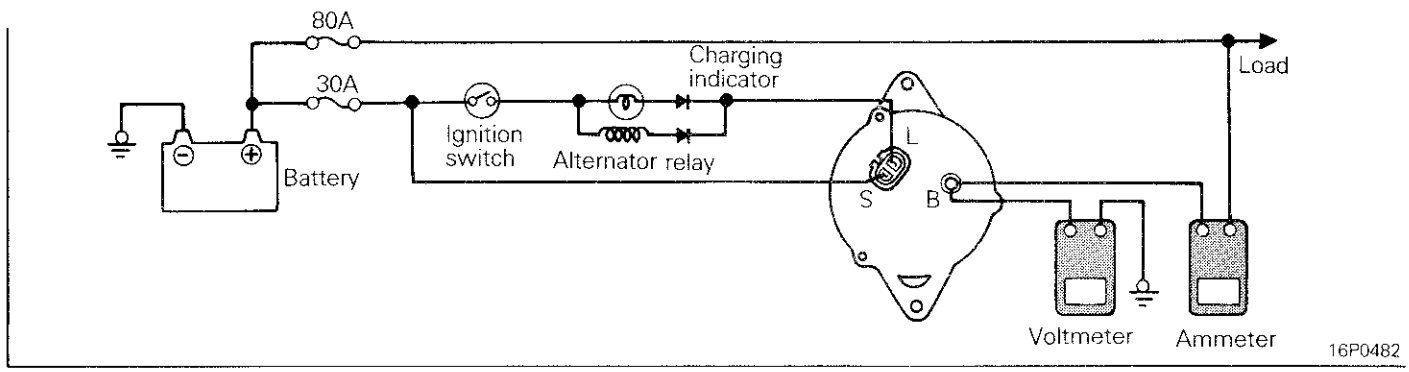
   NOTE
   *The battery that is used to test the output current should be one that has been rather discharged. With a fully charged battery, the test may not be conducted correctly due to an insufficient load.

   (b) Check tension of the alternator drive belt. The belt tension check method is described in "GROUP 7 – Service Adjustment Procedures".

(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 0V, 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:

A3T03493	**45.5A min.**
A2T09493, A3T03393	**52.5A min.**

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.

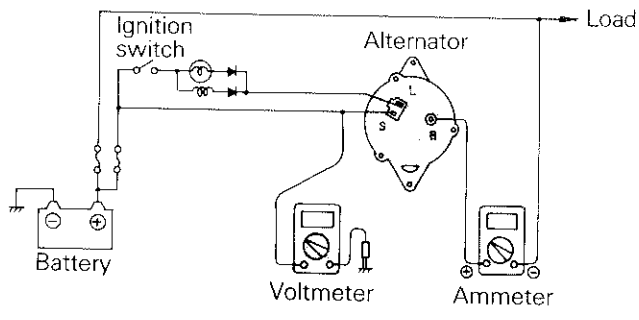
(2) Upon completion of the output current test, lower the engine speed to the idle speed and turn off the ignition switch.
(3) Disconnect the battery ground cable.
(4) Remove the test ammeter and voltmeter and the engine tachometer.
(5) Connect the alternator output wire to the alternator "B" terminal.
(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 7 – Service Adjustment Procedures".
(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.
Valtage: Battery voltage
If it reads 0V, 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

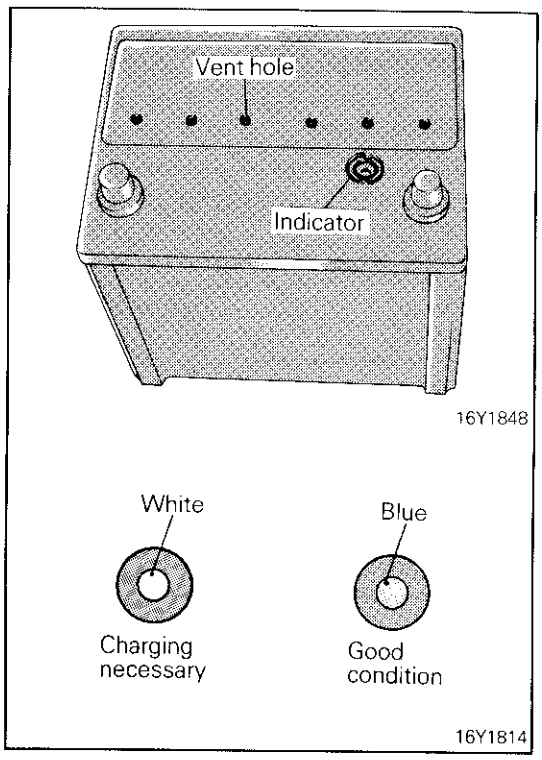
Voltage regulator ambient temperature °C (°F)	Regulating voltage V
–20 (–4)	14.2 – 15.4
20 (68)	13.9 – 14.9
60 (140)	13.4 – 14.6
80 (176)	13.1 – 14.5

(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.

BATTERY INSPECTION N08EIBA

BATTERY VISUAL INSPECTION (1)

The battery contains a visual test indicator which gives blue 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.

BATTERY CHARGING

N08EICG

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

NOTE
If the indicator does not turn to blue even after the battery is charged, the battery should be replaced; do not overcharge.

Charge Rate Chart

Battery	50B24R(S)-MF 50B24R(S) (375 amps)	65D23R-MF (410 amps)
Slow Charging	5 amps 8 hrs.	5 amps 10 hrs.
	10 amps 4 hrs.	10 amps 5 hrs.
Fast Charging	20 amps 2 hrs.	20 amps 2.5 hrs.
	30 amps 1.5 hrs.	30 amps 1.5 hrs.

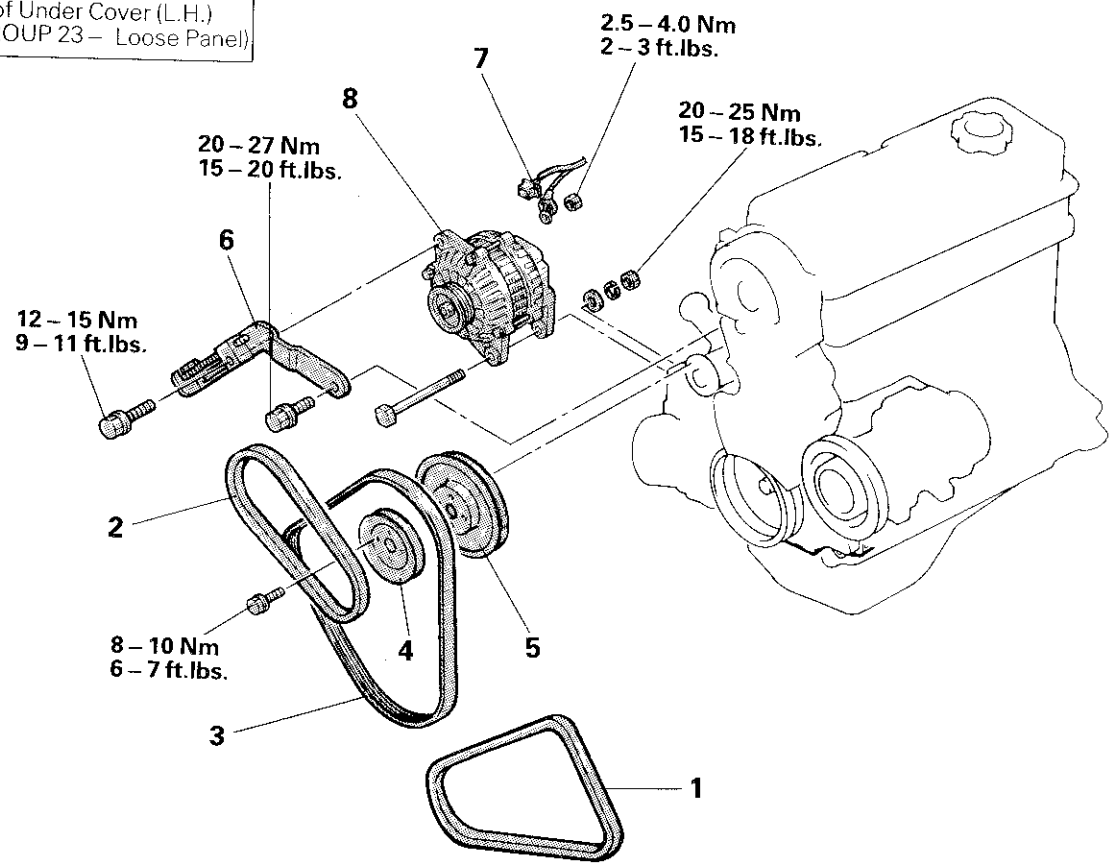
ALTERNATOR

N08EJAN

REMOVAL AND INSTALLATION <1.5L Engine>

Pre-removal Operation
- Removal of Under Cover (L.H.) (Refer to GROUP 23 – Loose Panel)

Post-installation Operation
- Installation of Under Cover (L.H.) (Refer to GROUP 23 – Loose Panel)



Removal steps

◆◆ 1. Drive belt (Air conditioner)
◆◆ 2. Drive belt (Power steering)
◆◆ 3. Drive belt
4. Water pump pulley
5. Water pump pulley
6. Alternator brace
7. Alternator connector connection
8. Alternator

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

16P0366

SERVICE POINTS OF INSTALLATION

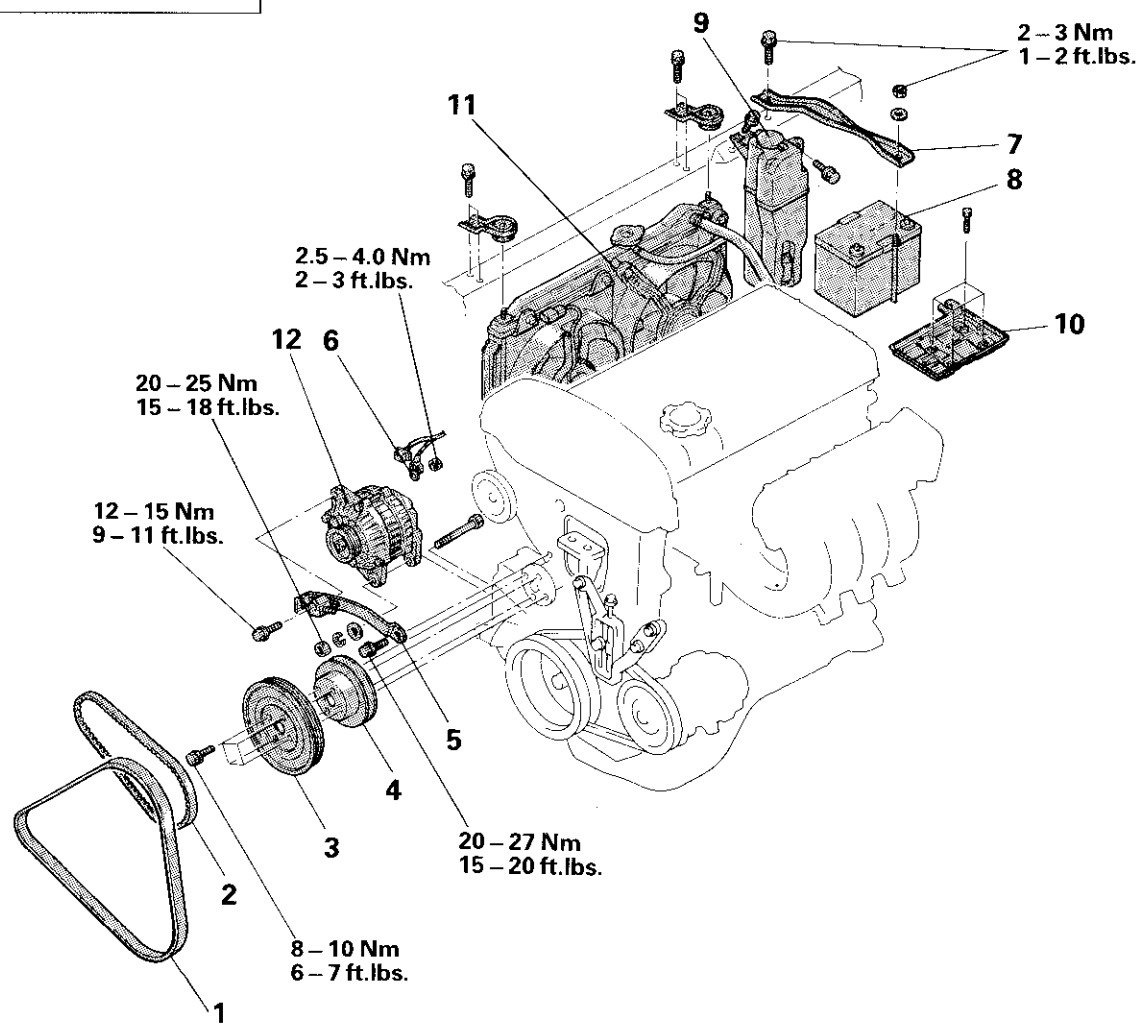
3. / 2. / 1. DRIVE BELT TENSION ADJUSTMENT

Refer to GROUP 11 – Engine Adjustment.

REMOVAL AND INSTALLATION <1.6L Engine>

Pre-removal Operation
- Removal of Under Cover (L.H.) (Refer to GROUP 23 – Loose Panel)

Post-installation Operation
- Installation of Under Cover (L.H.) (Refer to GROUP 23 – Loose Panel)

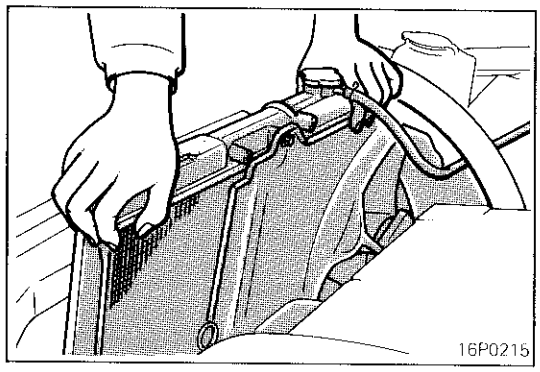


Removal steps

◆◆ 1. Drive belt
◆◆ 2. Drive belt (Power steering)
3. Water pump pulley
4. Water pump pulley
5. Alternator brace assembly
6. Alternator connector connection
7. Battery holder
8. Battery
9. Washer tank
10. Battery tray
◆◆ 11. Radiator
12. Alternator

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

16P0381



SERVICE POINT OF REMOVAL

11. REMOVAL OF RADIATOR

Remove the attaching bolts at the top of the radiator and lift up the radiator.

Caution
Do not disconnect the radiator hose.

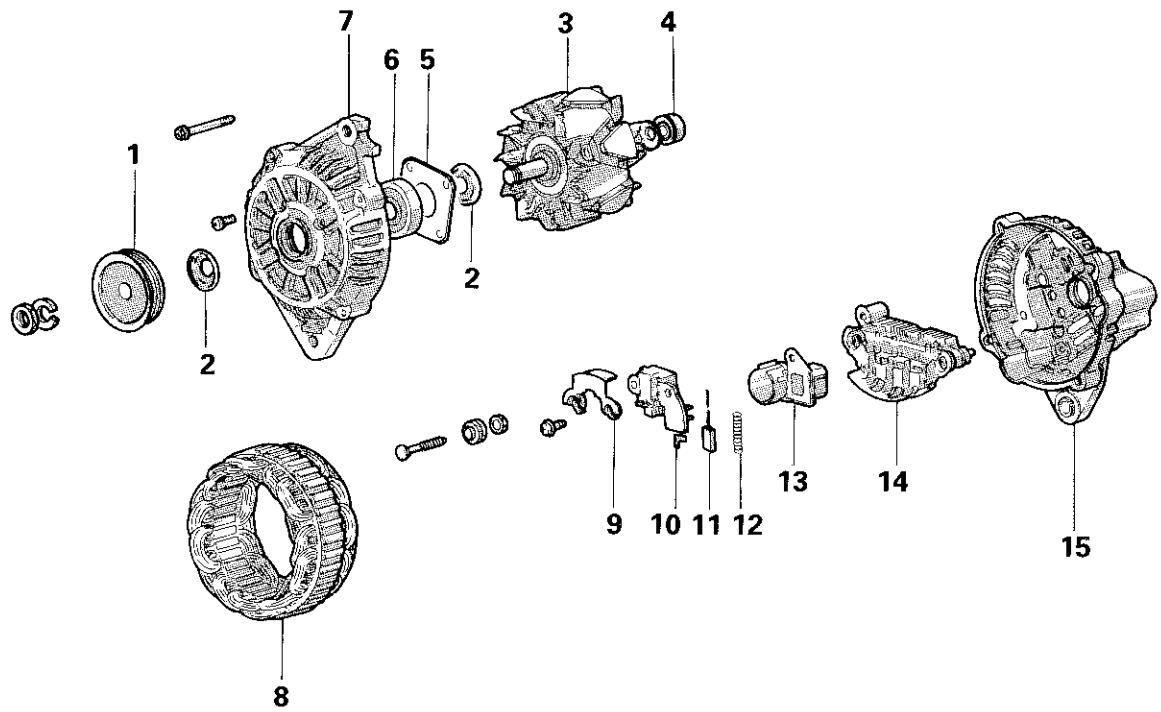
SERVICE POINTS OF INSTALLATION

2. / 1. DRIVE BELT TENSION ADJUSTMENT

Refer to GROUP 11 – Engine Adjustment.

DISASSEMBLY AND REASSEMBLY

<1.5L Engine>



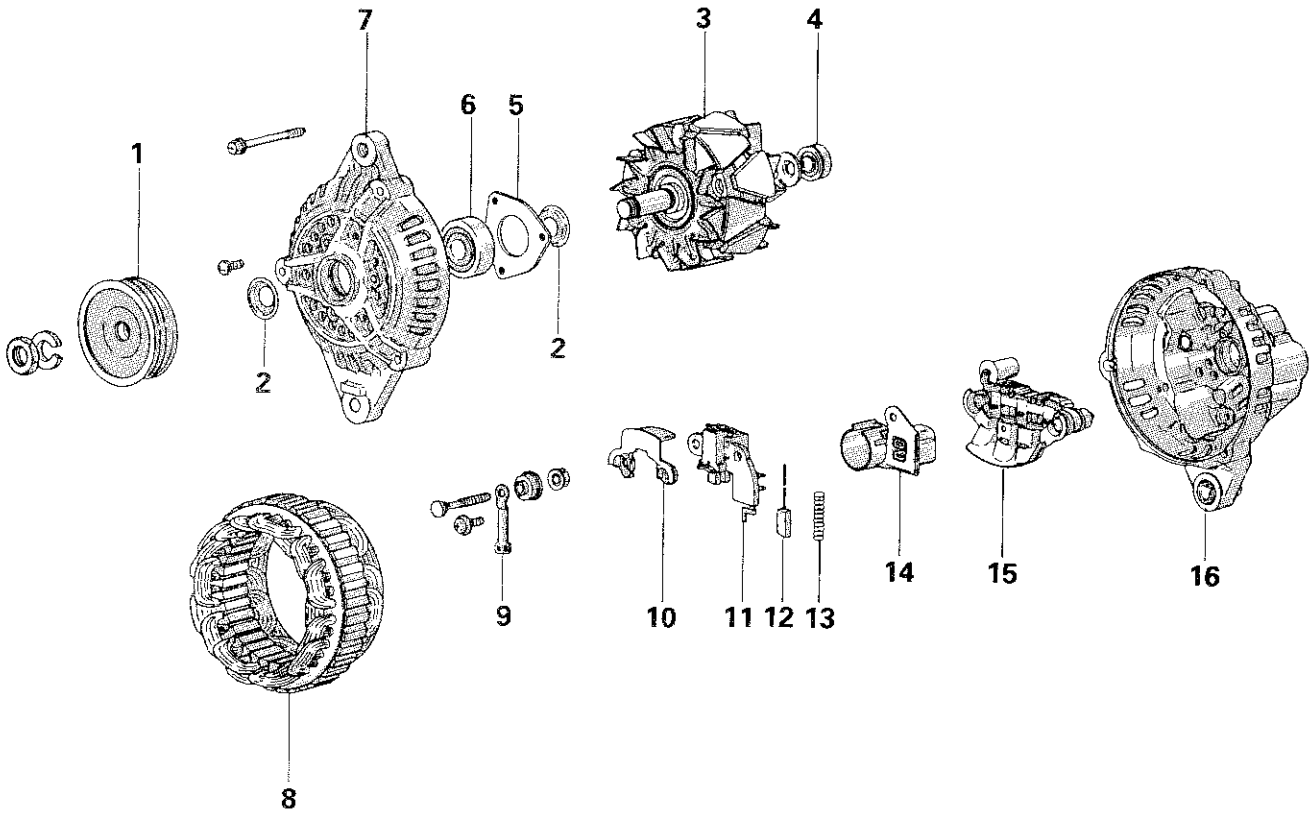
Disassembly steps

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

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

DISASSEMBLY AND REASSEMBLY

<1.6L Engine>

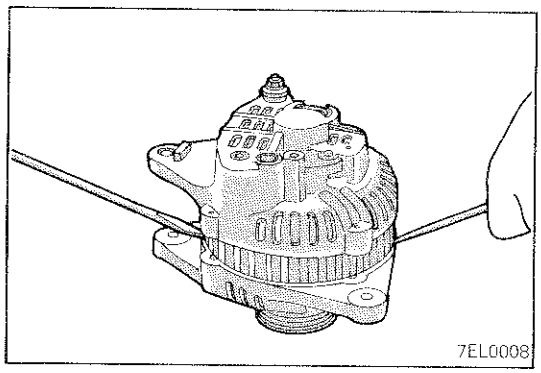


Disassembly steps

◆◆ 1. Alternator pulley
2. Shim
◆◆ 3. Rotor assembly
4. Rear bearing
5. Bearing retainer
6. Front bearing
7. Front bracket
◆◆ 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) ◆◆: Refer to "Service Points of Reassembly".

6EL0123

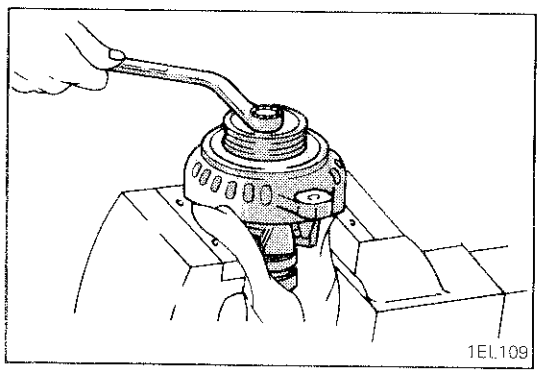

7EL0008

SERVICE POINTS OF DISASSEMBLY

SEPARATING THE STATOR AND FRONT BRACKET

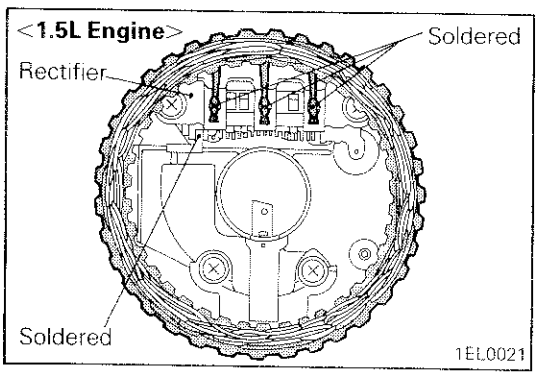
Insert plain screwdriver between front bracket and stator core and pry downward.

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


1EL109

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.

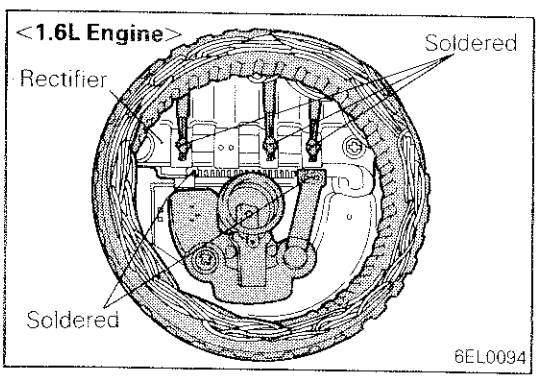


1EL0021

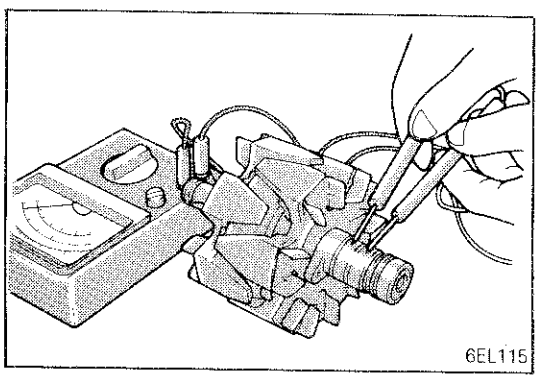
8. REMOVAL OF STATOR

(1) When removing stator, unsolder stator leads soldered to main diodes on rectifier.
(2) When removing the rectifier from the brush holder, unsolder the terminals that are soldered to the rectifier.

Caution
(1) 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.
(2) Use care that no undue force is exerted to leads of diodes.



6EL0094

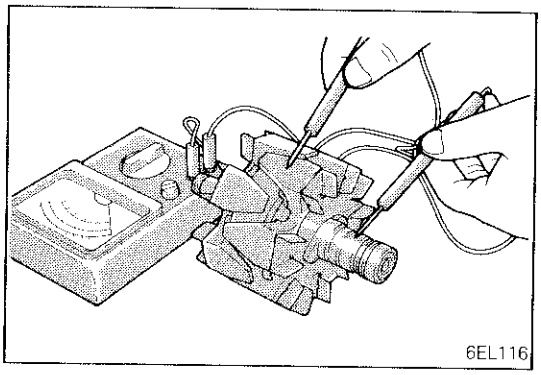

6EL115

INSPECTION

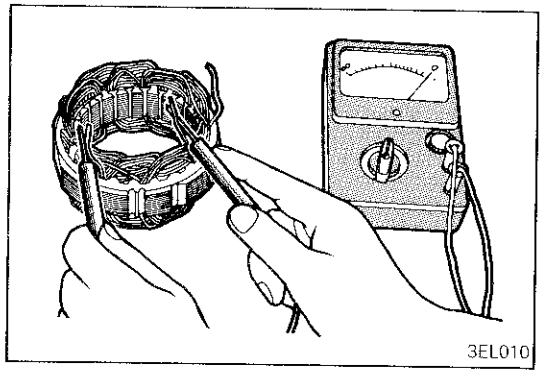
ROTOR

(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 : Approx 3.1 Ω

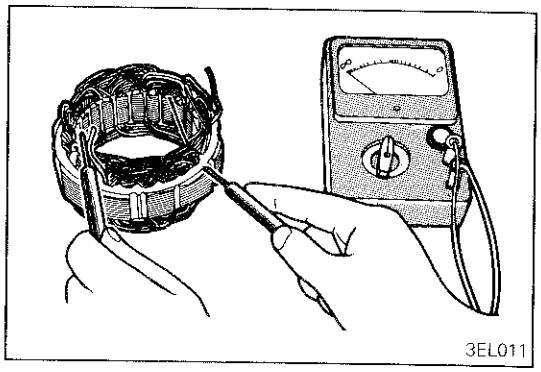


(2) Check rotor coil for grounding. Check to ensure that there is no continuity between slip ring and core. If there is continuity, replace rotor assembly.

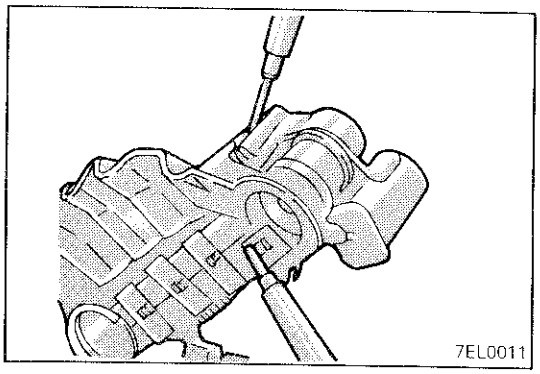


STATOR

(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.



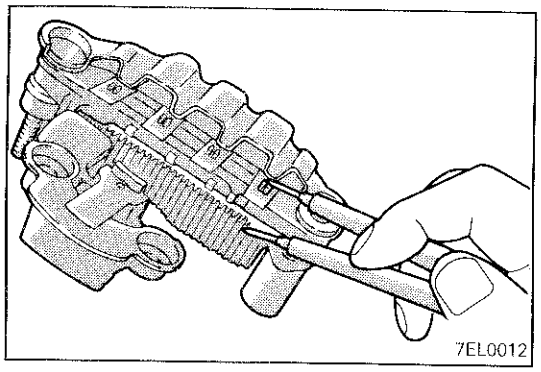
(2) Check coil for grounding. Check to ensure that there is no continuity between coil and core. If there is continuity, replace stator assembly.



RECTIFIERS

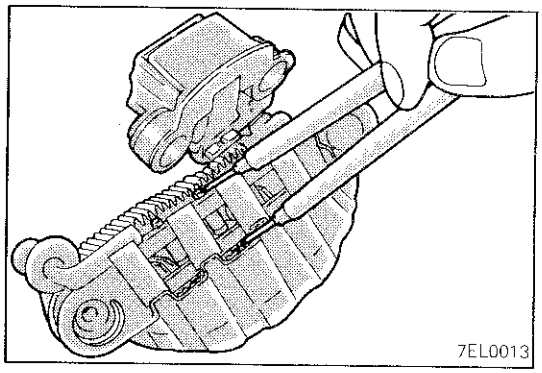
(1) Positive Rectifier Test

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.



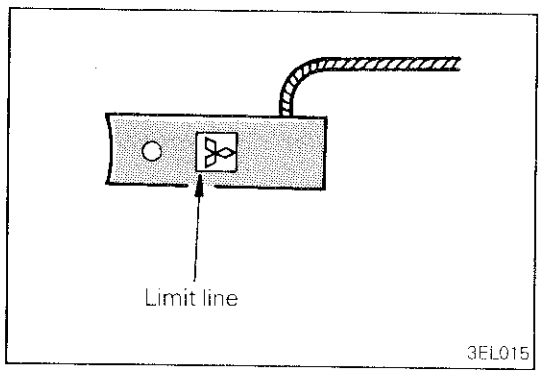
(2) Negative Rectifier Test

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.



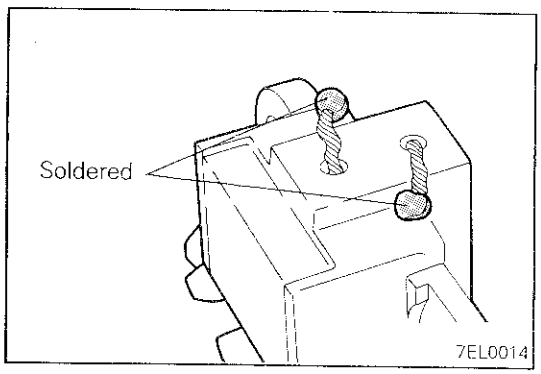
(3) Diode Trio Test

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.

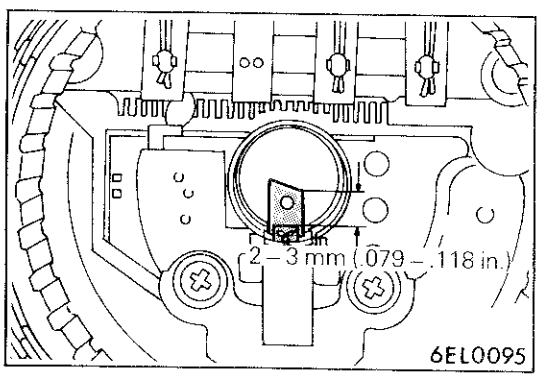


BRUSH REPLACEMENT

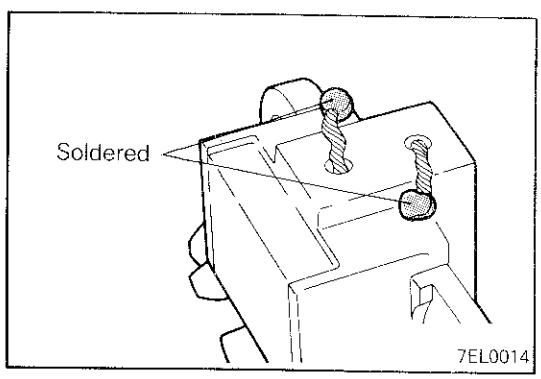
(1) Replace brush by the following procedures if it has been worn to limit line.



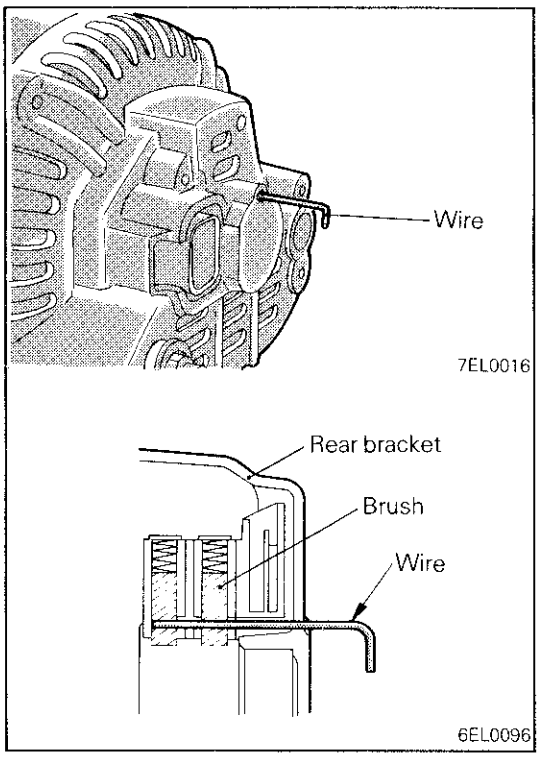
(2) Unsolder pigtail and remove old brush and spring.



(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 POINT 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	1.5L Engine-M/T	1.5L Engine-A/T	1.6L Engine
Starter motor			
Type	Direct drive	Direct drive	Reduction drive
Identification No.	M3T32592	M3T41081	M1T70481
Part No.	MD081567	MD100431	MD099667
Rated output kW/V	0.7/12	0.9/12	1.2/12
No. of pinion teeth	8	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 M3T32592	6,500 or more
M3T41081	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--

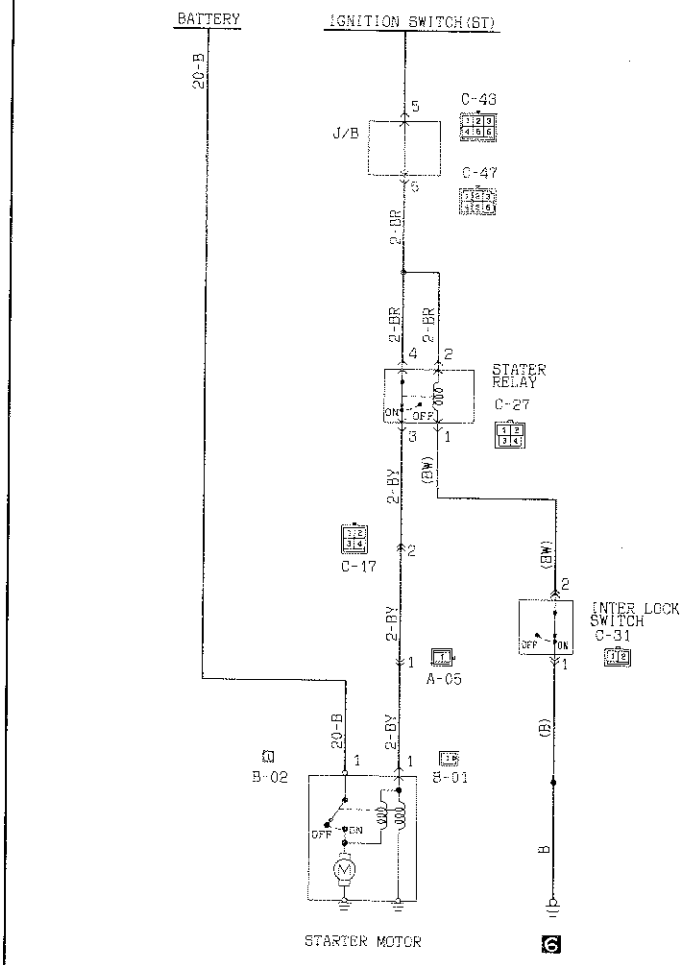
Items	Nm	ft.lbs.
Starter motor mounting bolts	27 – 34	20 – 24
Starter motor wiring harness installation nut	10 – 16	7 – 12

TROUBLESHOOTING

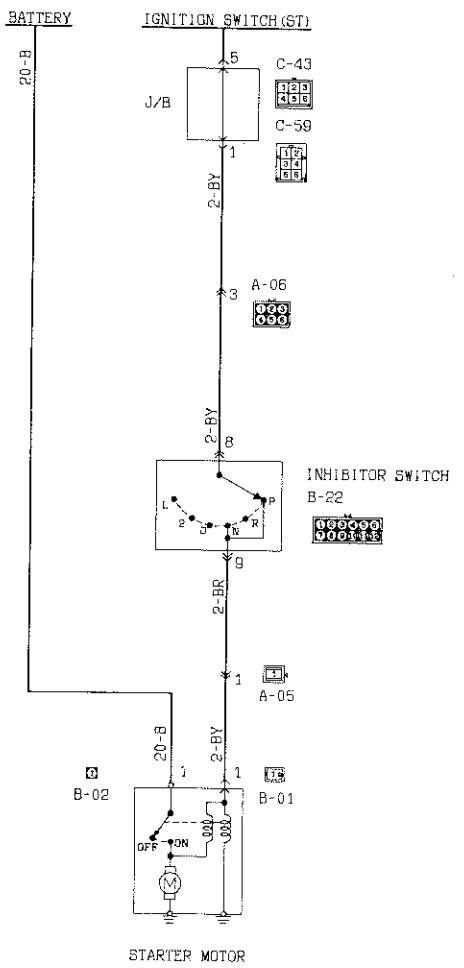
N08FHAF

CIRCUIT DIAGRAM

<M/T>



<A/T>



OPERATION

- For models equipped with the M/T, the clutch 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 (magnet switch).

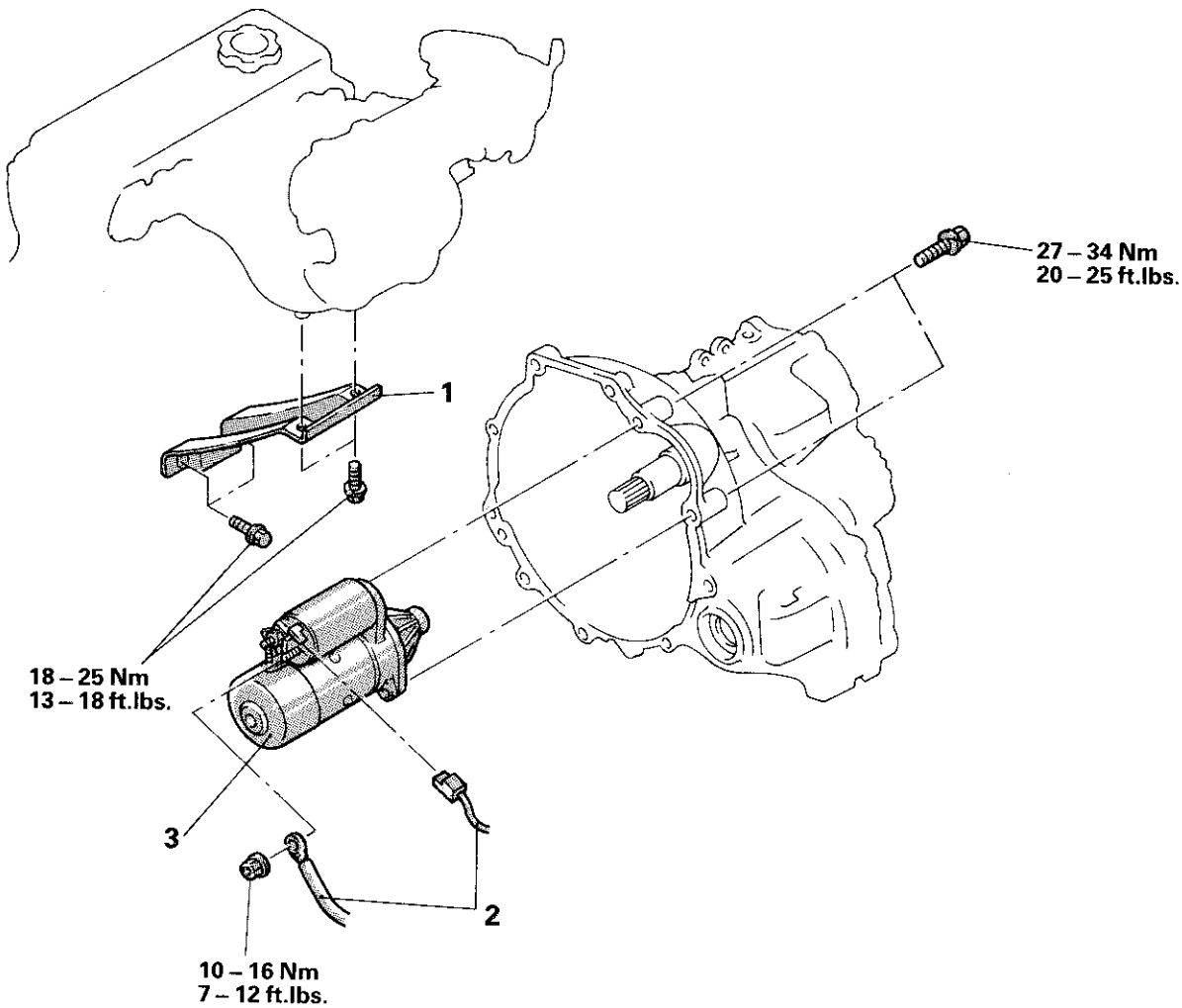
STARTER MOTOR

N08FJAL

REMOVAL AND INSTALLATION

Pre-removal Operation
- Removal of Air Cleaner
(Refer to GROUP 11 – Air Cleaner)

Post-installation Operation
- Installation of Air Cleaner
(Refer to GROUP 11 – Air Cleaner)

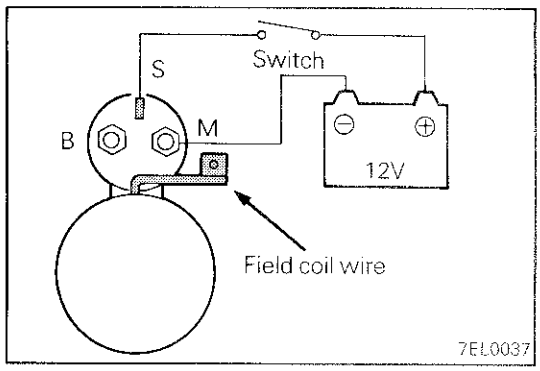


Removal steps

1. Intake manifold stay <1.5L Engine>
2. Starter connector connection
3. Starter

NOTE
Reverse the removal procedures to reinstall.

16A0220

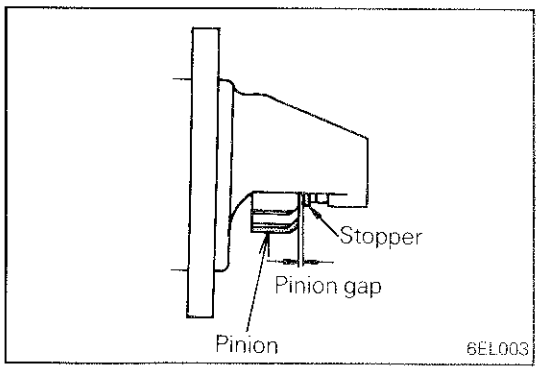


INSPECTION

PINION GAP ADJUSTMENT

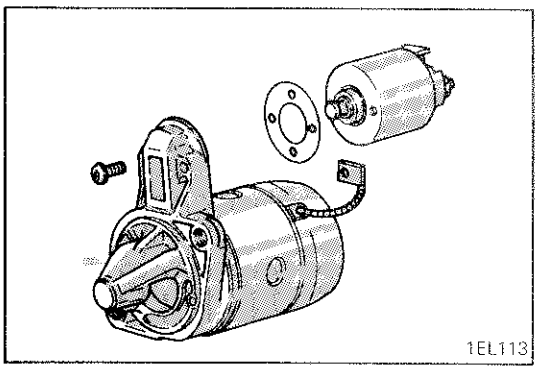
(1) Disconnect field coil wire from M-terminal of magnetic switch.
(2) Connect a 12V battery between S-terminal and M-terminal.
(3) Set switch to "ON", and pinion will move out.

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

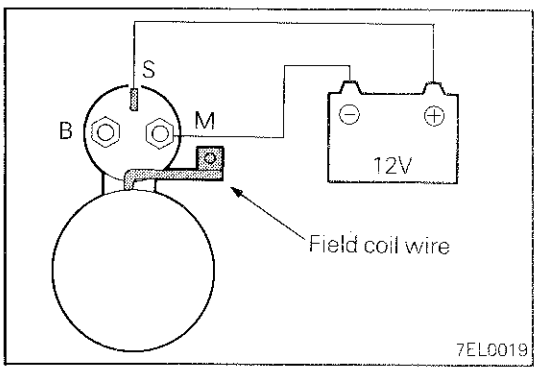


(4) Check pinion to stopper clearance (pinion gap) with a feeler gauge.

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.

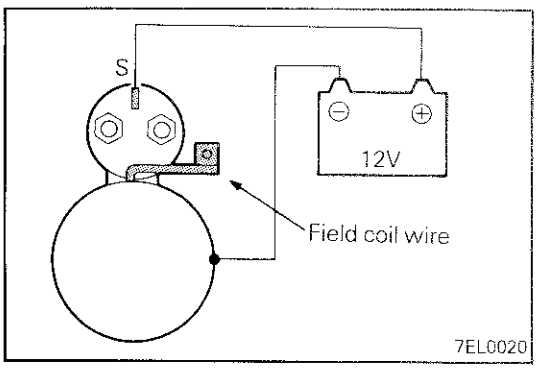


PULL-IN TEST OF MAGNETIC SWITCH

(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.

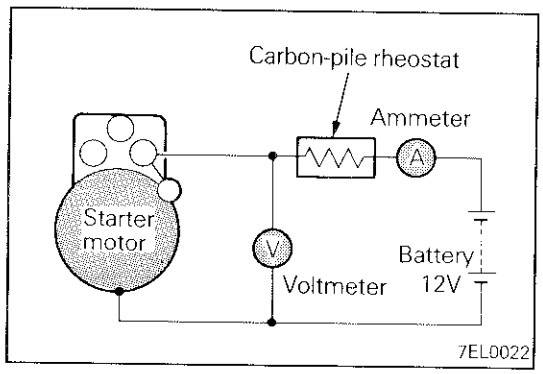


HOLD-IN TEST OF MAGNETIC SWITCH

(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.

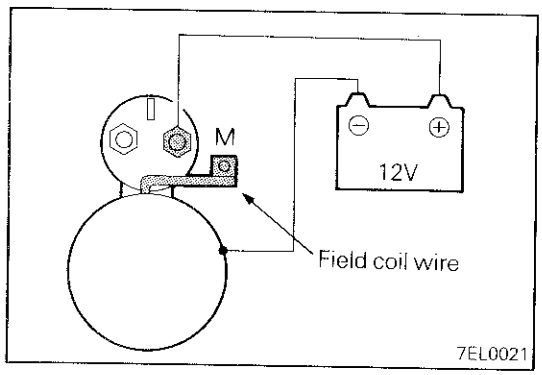
(3) If pinion remains out, everything is in order. If pinion moves in, hold-in circuit is open. Replace magnetic switch.



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 battery 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 rheostat until battery voltage shown on the voltmeter reads 11.5V (direct drive type) or 11V (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)

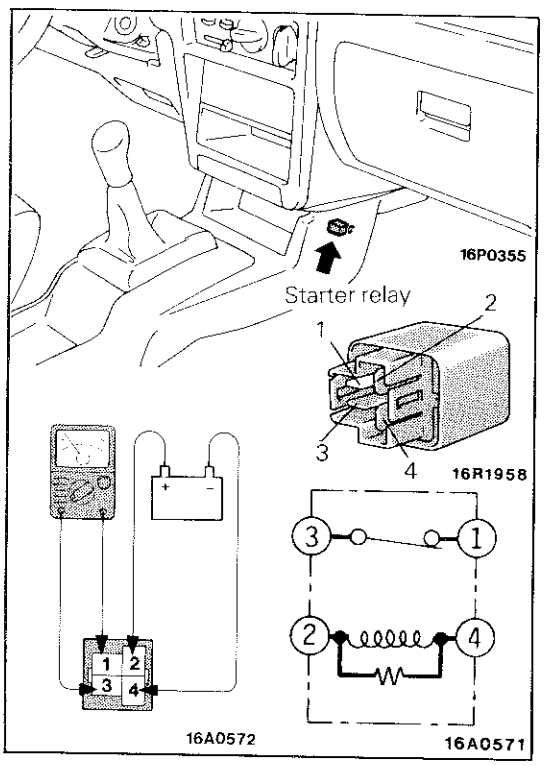


RETURN TEST OF MAGNETIC SWITCH

(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

(1) Remove the starter relay.
(2) 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

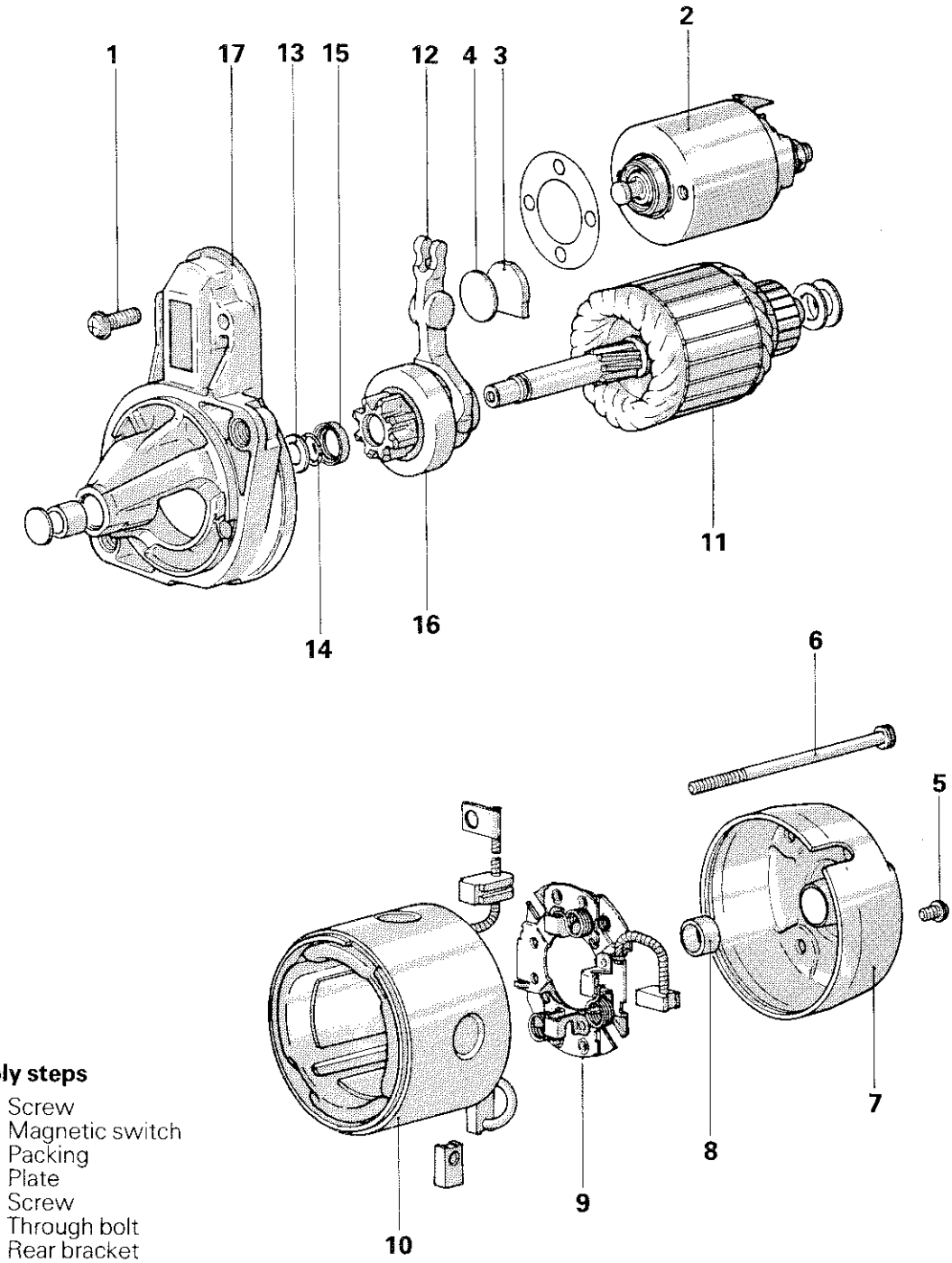
SERVICE POINT OF INSTALLATION

1. INSTALLATION OF STARTER MOTOR

Clean both surfaces of starter motor flange and rear plate.

STARTER MOTOR (DIRECT DRIVE TYPE)

DISASSEMBLY AND REASSEMBLY

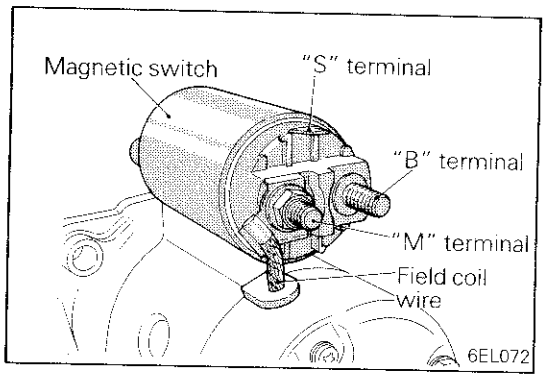


Disassembly steps

- 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

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

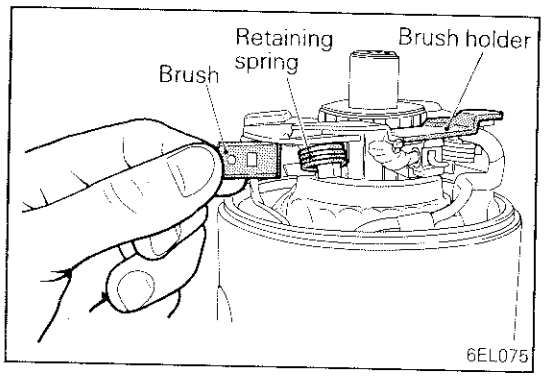
1EL098



SERVICE POINTS OF DISASSEMBLY

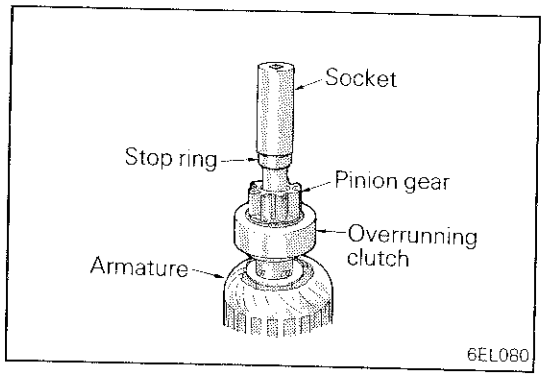
2. REMOVAL OF MAGNETIC SWITCH

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



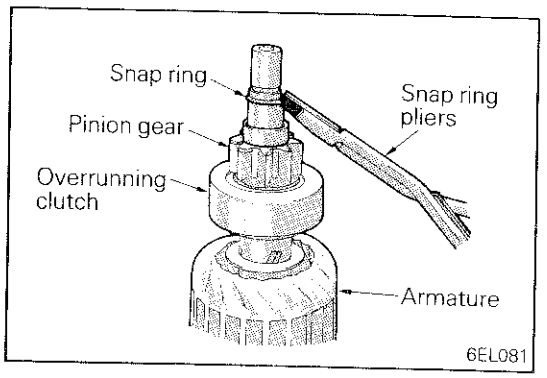
9. REMOVAL OF BRUSH HOLDER ASSEMBLY

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



14. REMOVAL OF SNAP RING / 15. STOP RING

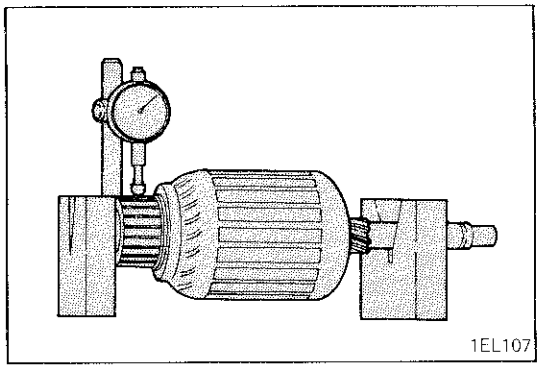
(1) Press stop ring off snap ring with a suitable socket.



(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.

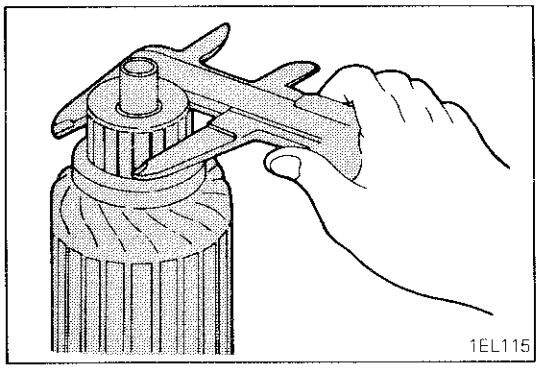


INSPECTION

INSPECTION OF COMMUTATOR

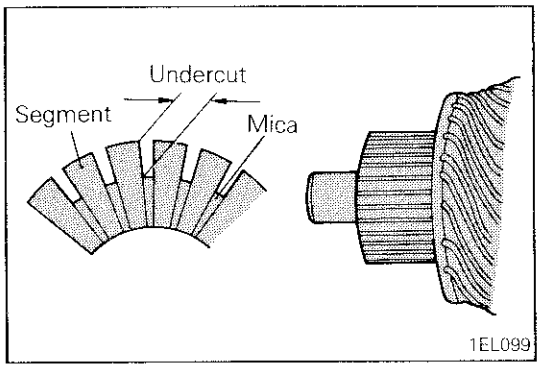
(1) Place the armature in a pair of "V" blocks and check the runout with a dial indicator.

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



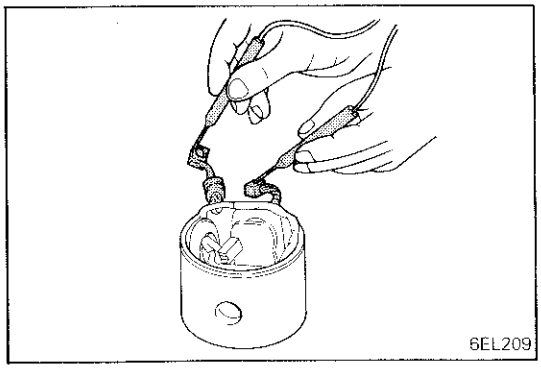
(2) Measure the commutator outer diameter.

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



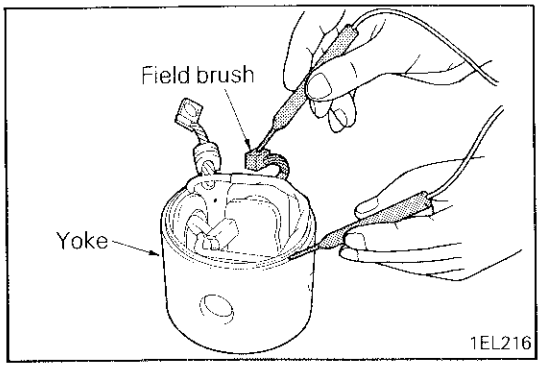
(3) Check the undercut depth between segments.

Standard value: 0.5 mm (.020 in.)



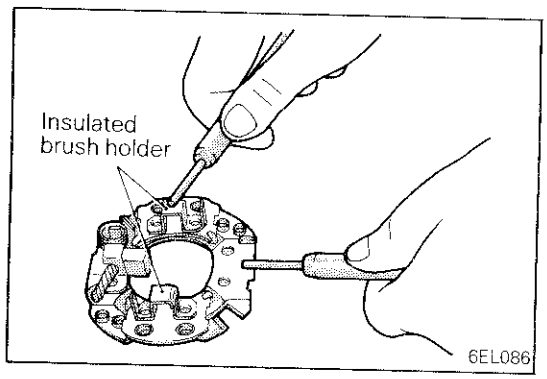
TESTING FIELD COILS FOR GROUNDING

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



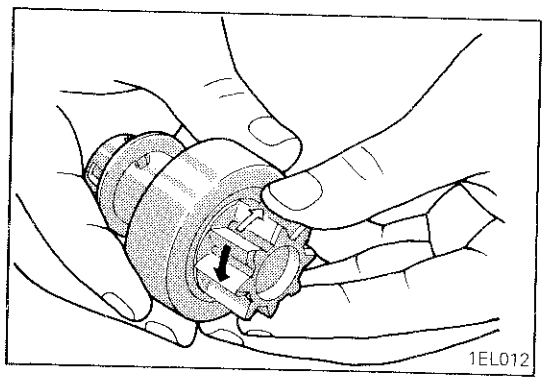
TESTING FIELD COIL FOR GROUNDING

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



BRUSH HOLDER

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

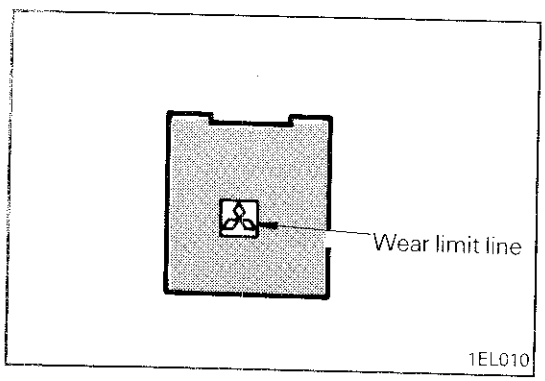


OVERRUNNING CLUTCH

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.

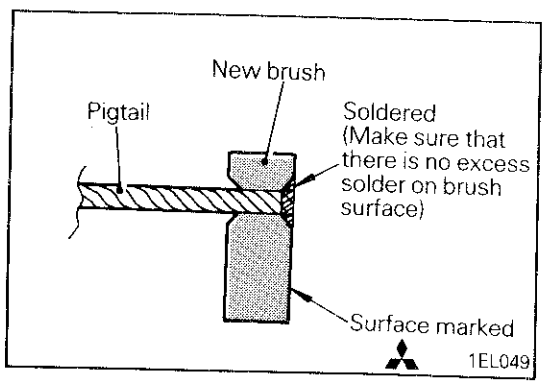
FRONT AND REAR BRACKET BUSHING

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

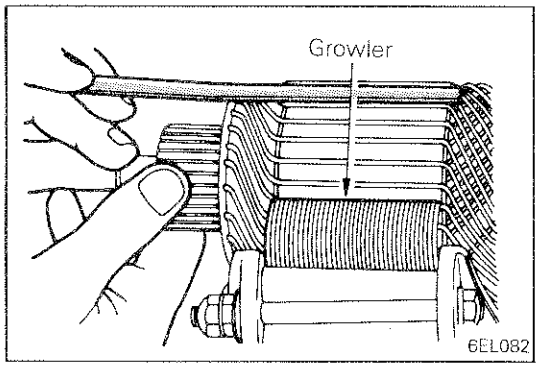


BRUSHES AND SPRINGS – REPLACEMENT

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.



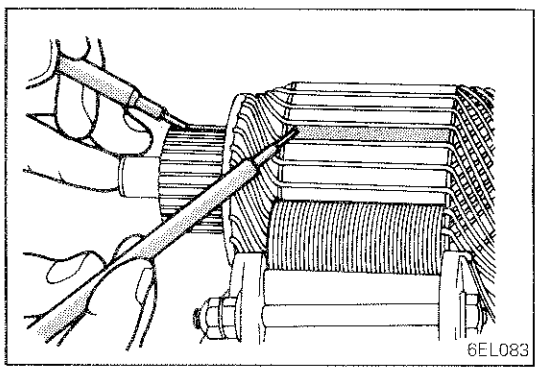
3. Sand pigtail end with sandpaper to ensure good soldering.
4. Insert pigtail into hole provided in new brush and solder it. Make sure that pigtail and excess solder do not come out onto brush surface.
5. When replacing ground brush, slide the brush from brush holder by prying retaining spring back.



TESTING ARMATURE

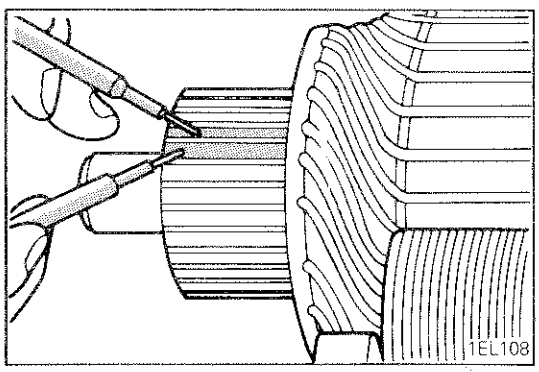
TESTING ARMATURE FOR SHORT-CIRCUIT

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.



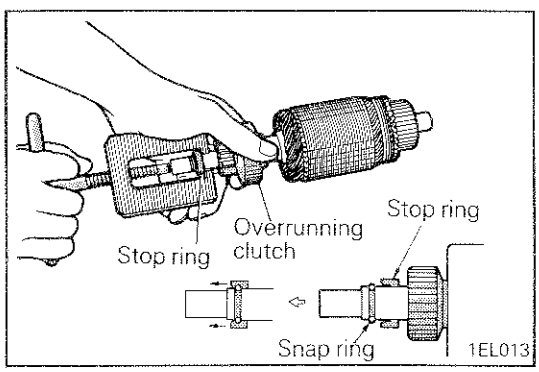
TESTING ARMATURE COIL FOR GROUNDING

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.



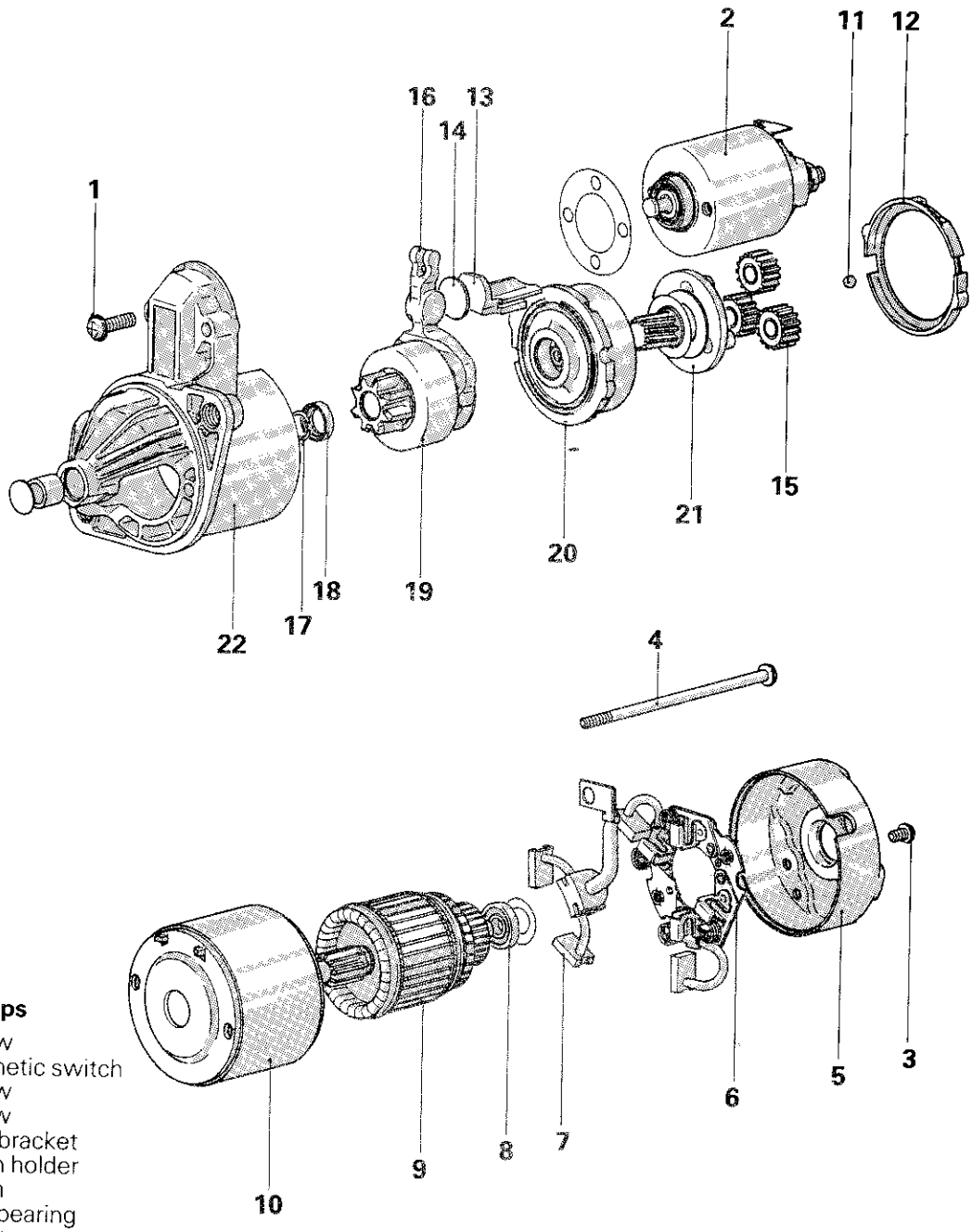
SERVICE POINTS OF REASSEMBLY

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

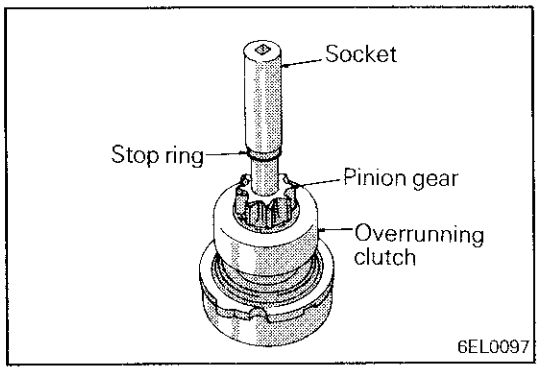
NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆: Refer to "Service Points of Disassembly".
(3) ◆◆: Refer to "Service Points of Reassembly".

6EL199

SERVICE POINTS OF DISASSEMBLY

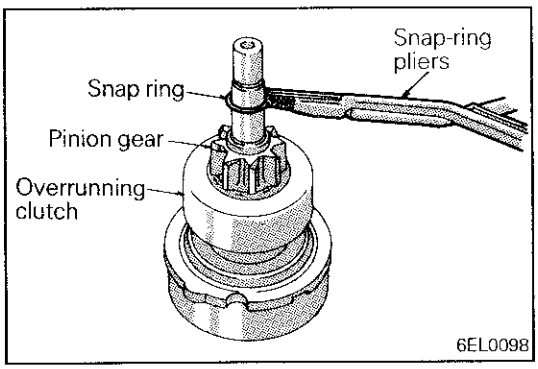
9. REMOVAL OF ARMATURE / 11. BALL

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

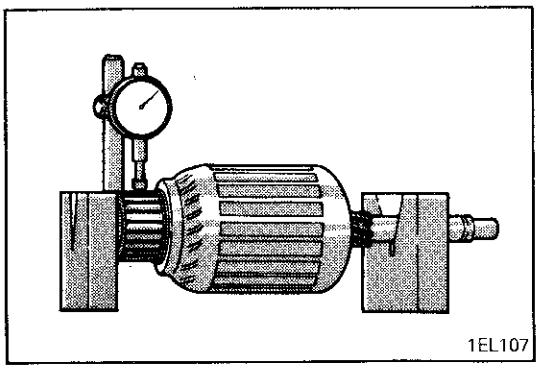
(1) Press the stop ring, by using an appropriate socket wrench, to the snap ring side.



(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.

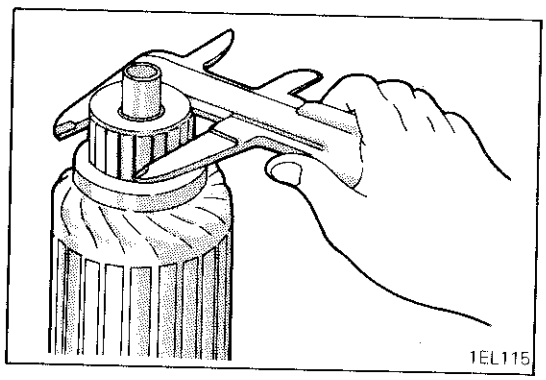


INSPECTION

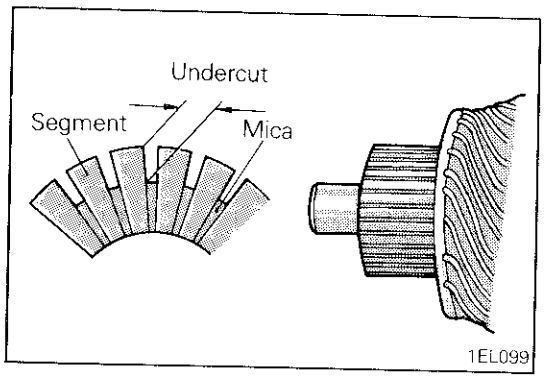
CHECKING THE COMMUTATOR

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

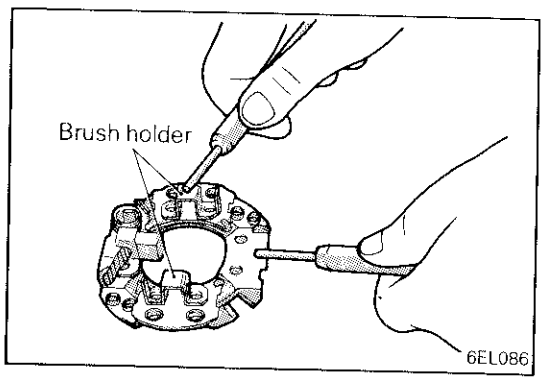
Standard value: 0.05 mm (.0020 in.)
Limit: 0.1 mm (.0040 in.)



(2) Check the outer diameter of the commutator.
Standard value: 29.4 mm (1.158 in.)
Limit: 28.4 mm (1.118 in.)

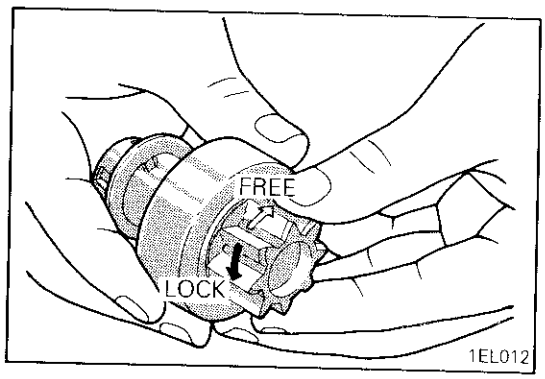


(3) Check the depth of the undercut between segments.
Standard value: 0.5 mm (.020 in.)



BRUSH HOLDER

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

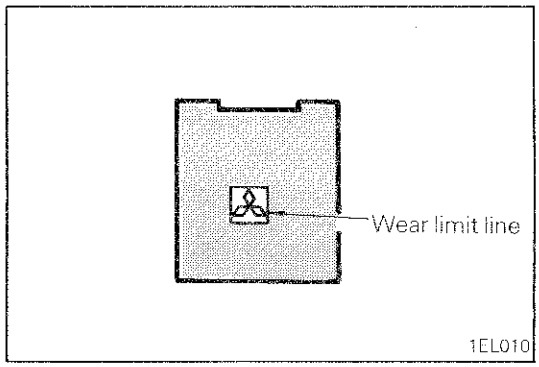


OVERRUNNING CLUTCH

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.

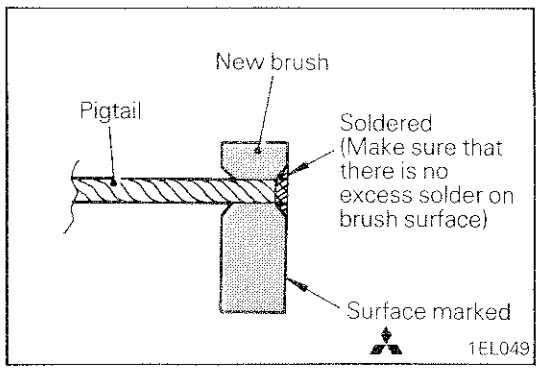
FRONT AND REAR BRACKET BUSHING

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

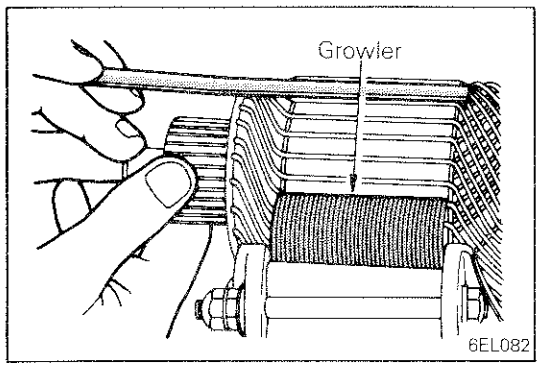
1. Brushes that are worn beyond wear limit line, or oil-soaked, should be replaced.
2. When replacing field coil brushes, crush worn brush with pliers, taking care not to damage pigtail.



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 not come out onto brush surface.
5. When replacing ground brush, slide the brush from brush holder by prying retaining spring back.

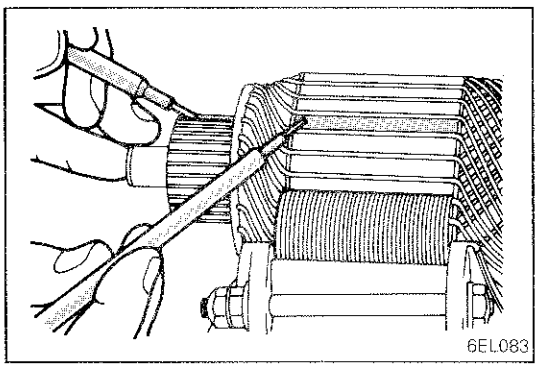
TESTING ARMATURE

TESTING ARMATURE FOR SHORT-CIRCUIT



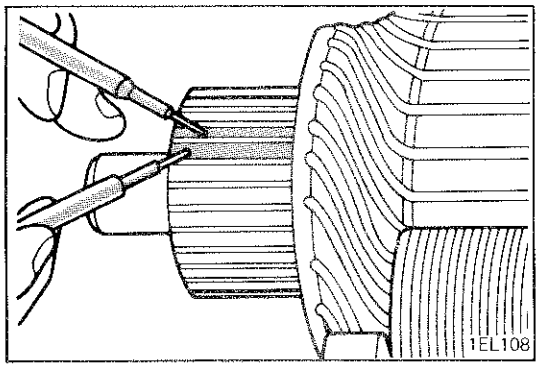
1. Place armature in a growler.
2. Hold a thin steel blade parallel and just above while rotating armature slowly in growler. A shorted armature will cause blade to vibrate and be attracted to the core. Replace shorted armature.

TESTING ARMATURE FOR GROUNDING

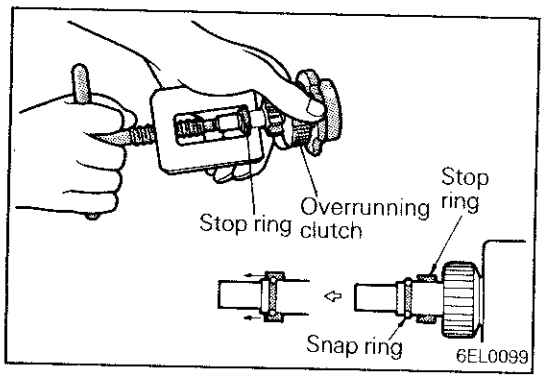


Check the insulation between the armature coil cores and the commutator segments. They are normal if there is no continuity.

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 overunning clutch stop ring over snap ring.

IGNITION SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08GB--

DISTRIBUTOR

Items	1.5L Engine
Type	Contact pointless type
Identification No.	T3T64173
Part No.	MD122509
Advance mechanism	Controlled by Engine Control Unit
Firing order	1 - 3 - 4 - 2

CRANK ANGLE SENSOR

Items	1.6L Engine
Type	Contact pointless type
Identification No.	T1T49072
Part No.	MD129147
Advance mechanism	Controlled by Engine Control Unit
Firing order	1 - 3 - 4 - 2

IGNITION COIL

Items	1.5L Engine	1.6L Engine
Type	Mold single-coil	Mold dual-coil
Identification No.	F-088	F-089
Part No.	MD114994	MD126461

POWER TRANSISTOR

Items	1.5L Engine	1.6L Engine
Identification No.	J121	J122
Part No.	MD112479	MD127742

SPARK PLUG

Items	1.5L Engine 1.6L Engine-N/A	1.6L Engine-T/C
NGK	BPR6ES-11	BPR6ES
NIPPON DENSO	W20EPR11	W20EPR
CHAMPION	RN9YC4	RN9YC

IGNITION SWITCH

Items	Specifications
Load capacity A	
AM-ACC	15
AM-IG$_1$	12
AM-IG$_2$	20
AM-ST	15
AM-R	15

SERVICE SPECIFICATIONS

N08GC--

Items	Specifications
Standard value	
Basic ignition timing at curb idle speed	5° BTDC
Actual ignition timing at curb idle speed	
<1.5L Engine>	10° BTDC
<1.6L Engine>	8° BTDC
Ignition coil	
Primary coil resistance at 20°C (68°F) Ω	
<1.5L Engine>	0.72 – 0.88
<1.6L Engine>	0.77 – 0.95
Secondary coil resistance at 20°C (68°F) kΩ	10.3 – 13.9
Spark plug gap mm (in.)	
<1.6L Engine-T/C>	0.7 – 0.8 (.028 – .031)
<1.5L Engine, 1.6L Engine-N/A>	1.0 – 1.1 (.039 – .043)

TORQUE SPECIFICATIONS

N08GD--

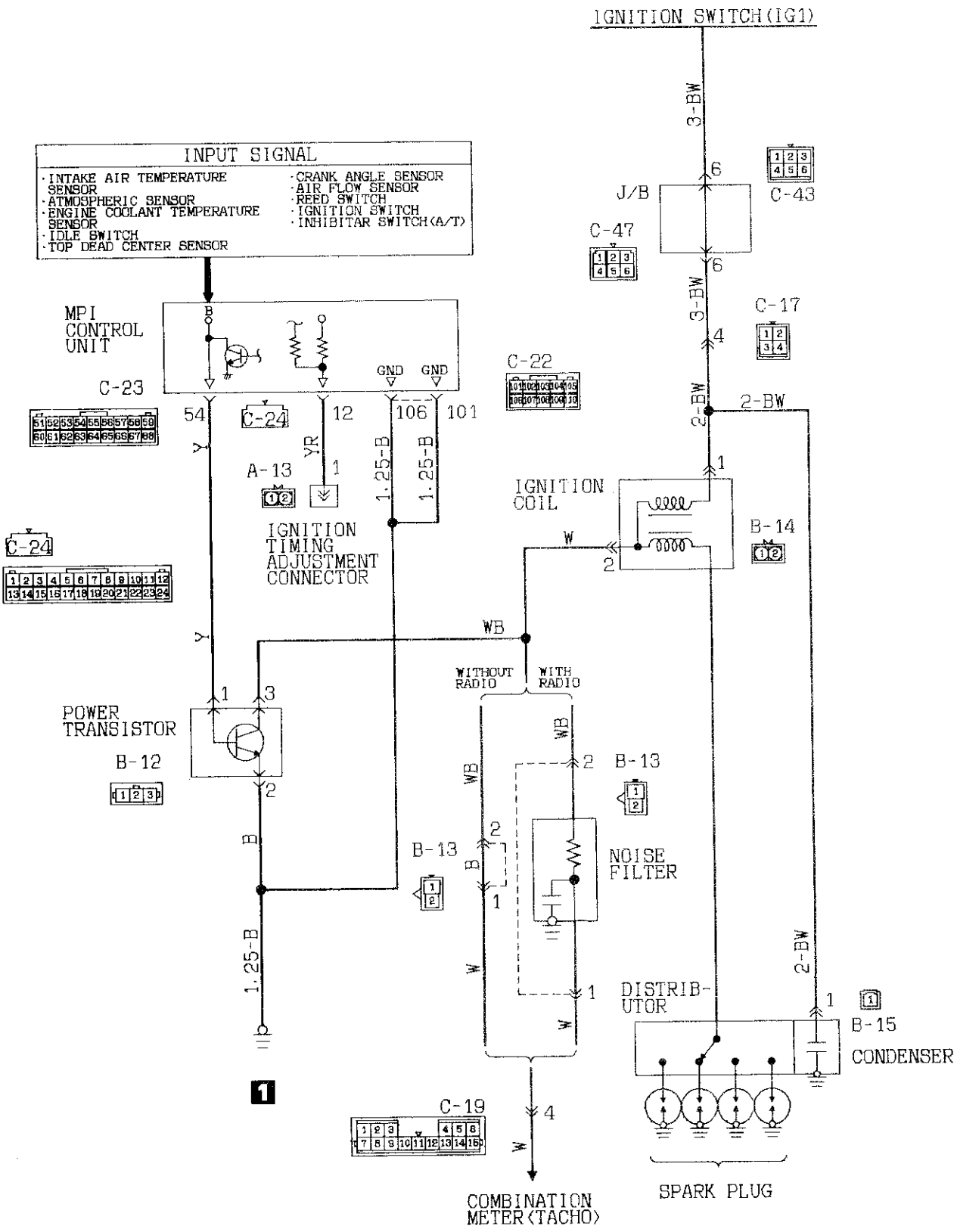
Items	Nm	ft.lbs.
Spark plug	20 – 30	15 – 21
Distributor mounting nut	10 – 12	7 – 8
Crank angle sensor mounting nut	10 – 13	7 – 9
Throttle body stay nut	15 – 22	11 – 15
Ignition coil mounting bolt		
<1.5L Engine>	12 – 15	9 – 10
<1.6L Engine>	20 – 27	15 – 19
Center cover mounting bolt	2.5 – 3.5	2 – 3
Steering wheel installation nut	35 – 45	25 – 33

TROUBLESHOOTING

N08GHAH

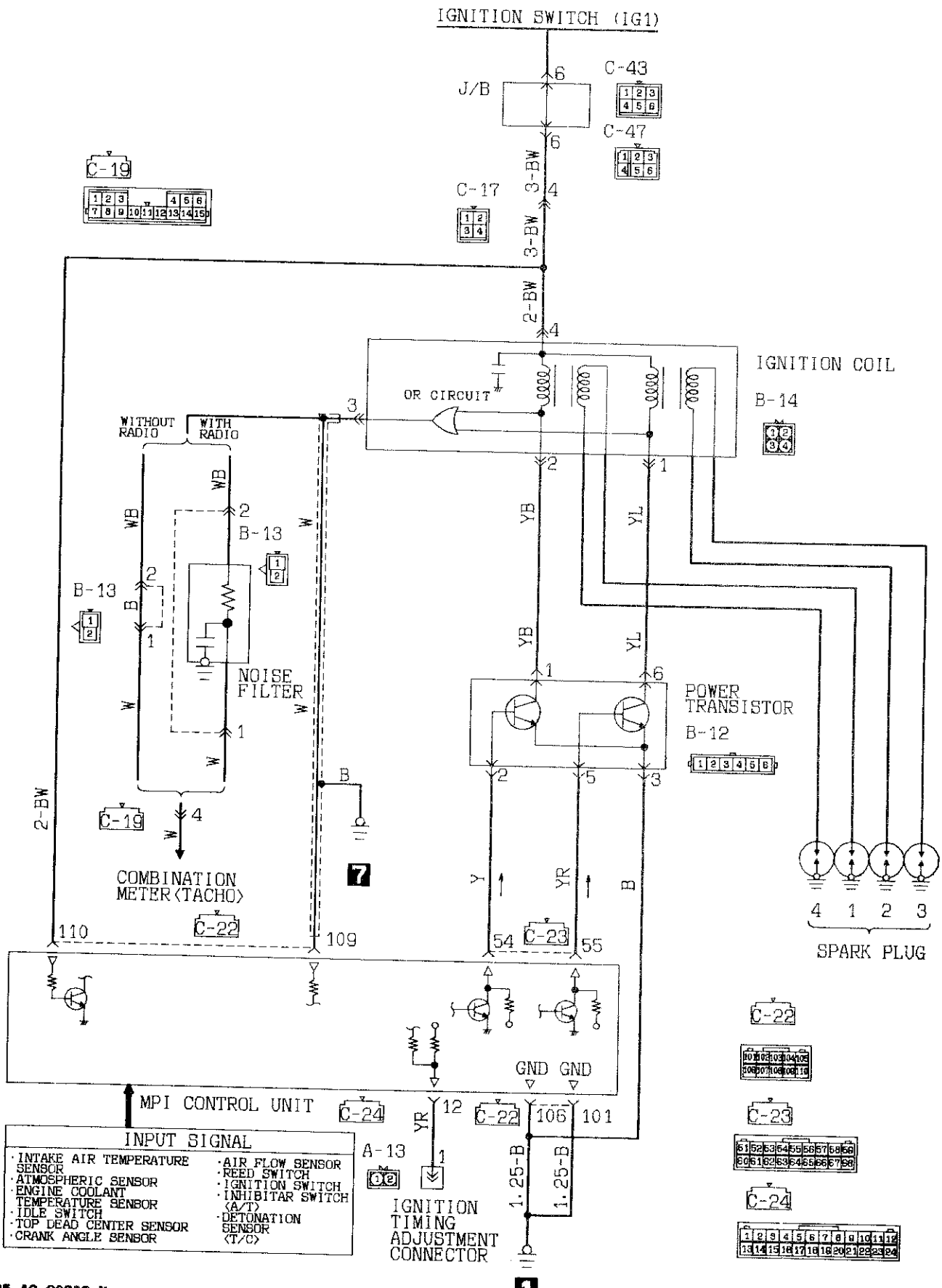
CIRCUIT DIAGRAM

<1.5L Engine>



KX35-AC-C0301-N

<1.6L Engine>



KX36-AC-C0302-N

OPERATION

<1.5L 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.

<1.6L 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.

  Remarks
  For discussion regarding the ignition timing control, refer to GROUP 14, FUEL SYSTEM in Technical Description.

TROUBLESHOOTING HINTS

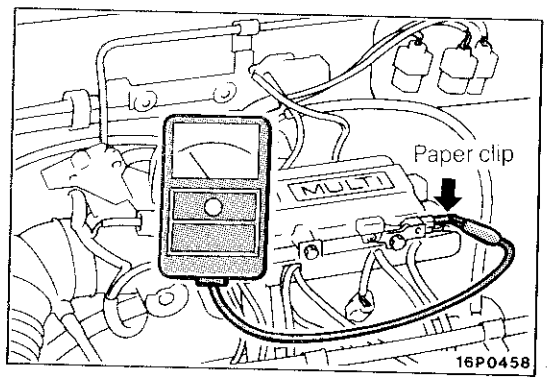
1. Engine cranks, but does not start.
   1) Spark is insufficient or does not occurs at all (on spark plug).
      - Check ignition coil.
      - Check distributor. <1.5L Engine>
      - Check crank angle sensor. <1.6L Engine>
      - Check power transistor.
      - Check spark plugs.
   2) Spark is 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.

SERVICE ADJUSTMENT PROCEDURES

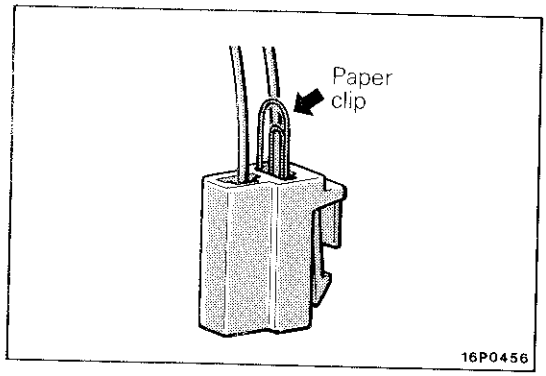
IGNITION TIMING ADJUSTMENT <1.5L Engine>

N08GIID

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)

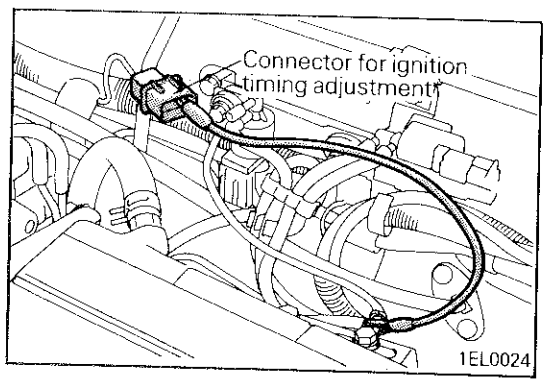


1. Connect timing light.
2. Insert the paper clip from behind the connector, connect the clip and the tachometer.

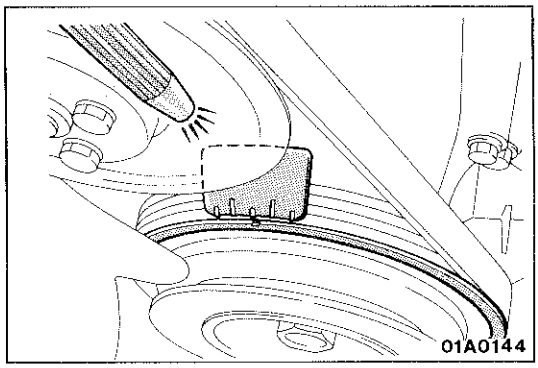


Caution
1. **The connector contact should not be separated.**
2. **The paper clip should be inserted along the terminal surface.**

3. Check curb idle speed.
   Curb idle speed: 750±100 rpm

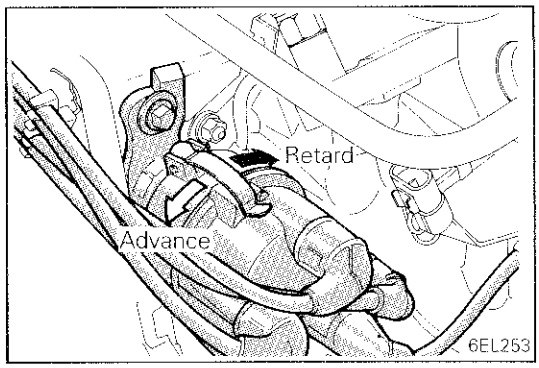


4. With the engine stopped, connect a lead wire with alligator clips to the terminal for ignition-timing adjustment (located in the engine compartment), and ground it.



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 distributor mounting nut and adjust by turning the distributor. Turning it to the right retards timing, and to the left advances it.
8. Tighten the nut after adjustment.

Caution
Be careful, when tightening the nut, that the distributor 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.

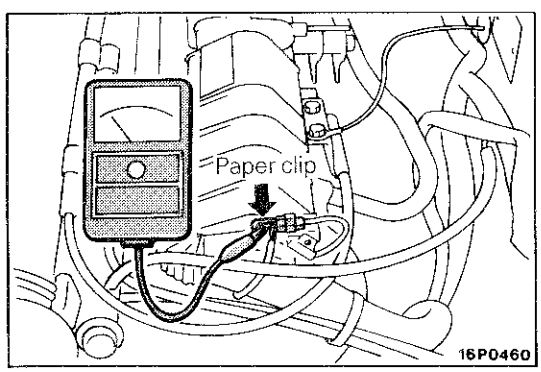
Actual ignition timing: 10°BTDC

NOTE
1. Actual ignition timing may vary, depending on the control mode of the engine control unit. In such a case, 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.

IGNITION TIMING ADJUSTMENT <1.6L Engine>

N08GIIE

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)



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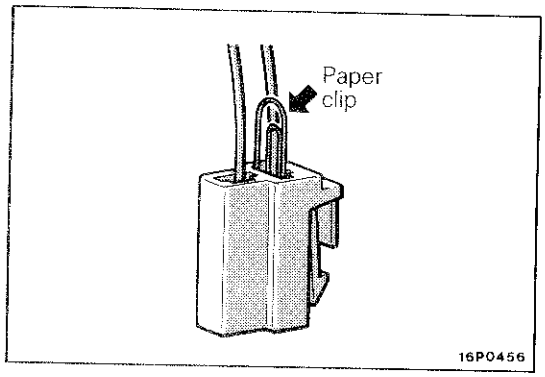

Caution
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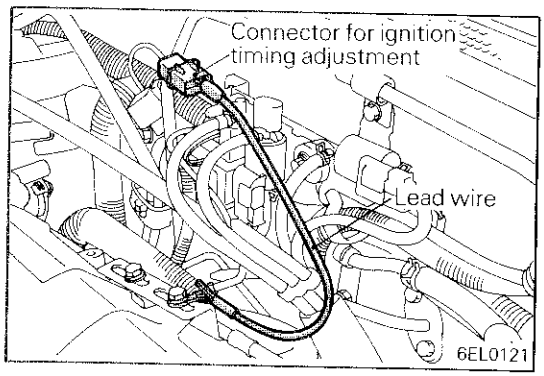
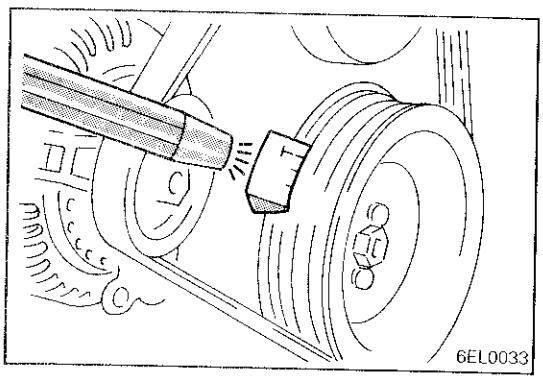
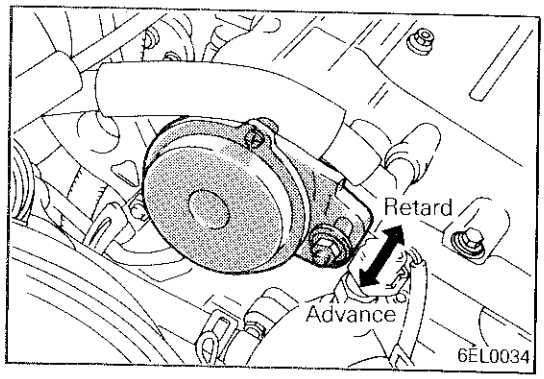
3. Check curb idle speed.
   Curb idle speed: 750±100 rpm



4. With the engine stopped, connect a lead wire with alligator clips 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

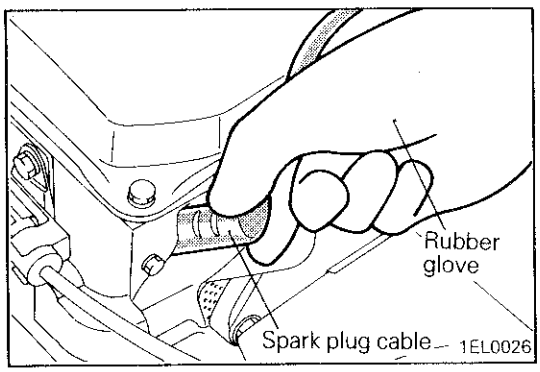


7. If not within the standard value range, loosen the crank angle sensor mounting nut and adjust by turning the crank angle sensor.
   Turning it to the right advances timing, and to the left retards it.
8. Tighten the nut after adjustment.
   Caution
   Be careful, when tightening the nut, that the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

Actual 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.

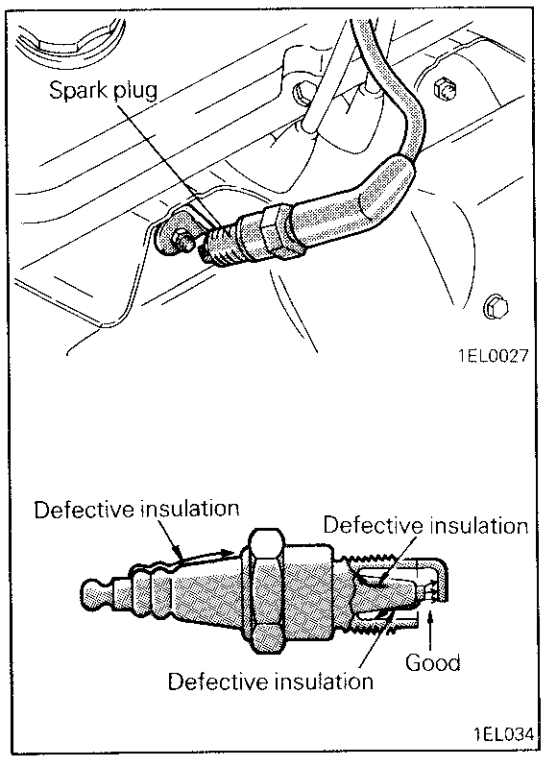


SPARK PLUG CABLE TEST N08GIGE

(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.

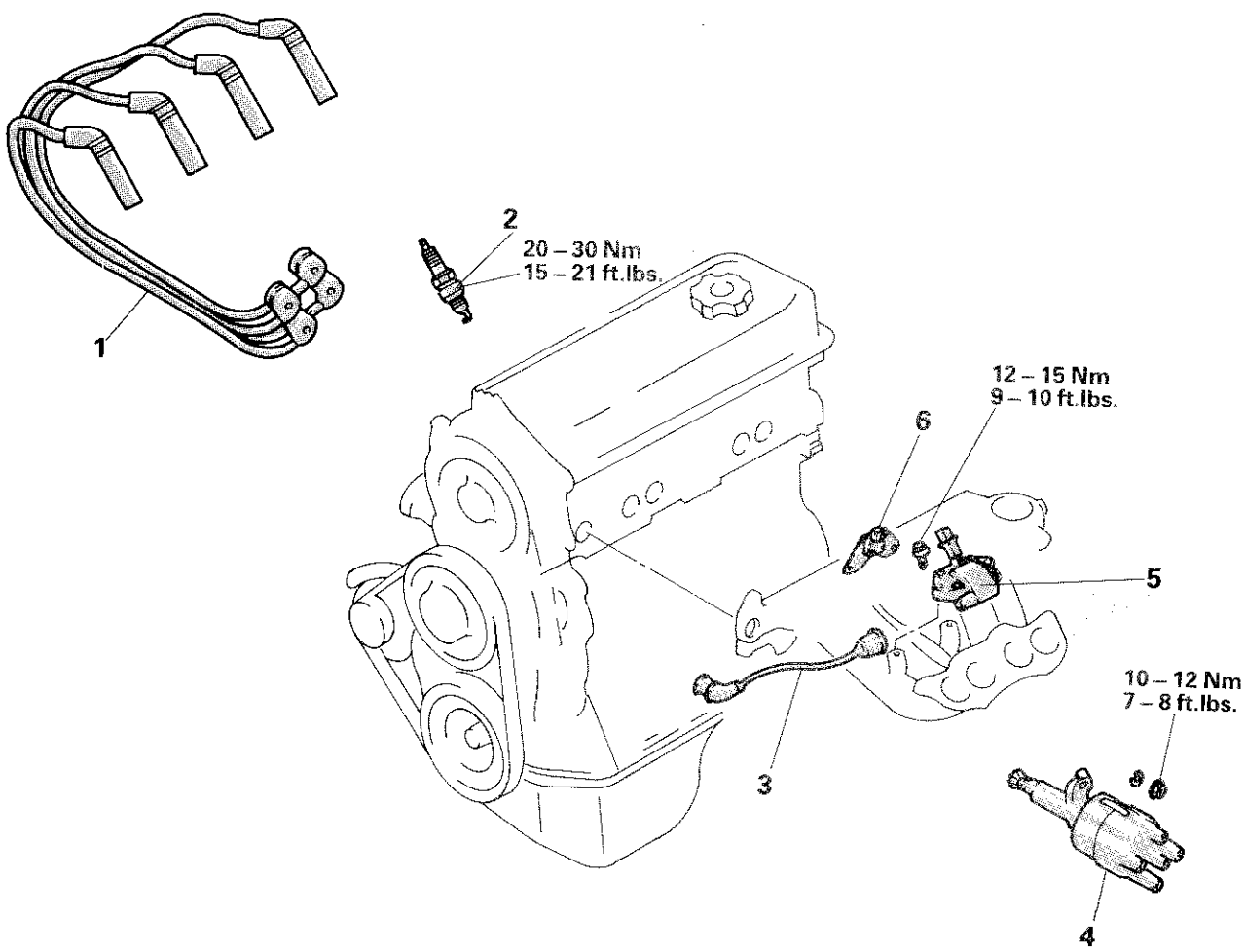
HIGH TENSION CABLE SPARK TEST <1.5L Engine>

(1) Disconnect the high-tension cable from the distributor cap.
(2) Hold the high tension cable about 6 – 8 mm (.24 – .31 in.) away from engine proper (grounding portion such as cylinder block) and crank engine to verify that sparks are produced.

IGNITION SYSTEM

N08GJAH

REMOVAL AND INSTALLATION <1.5L Engine>

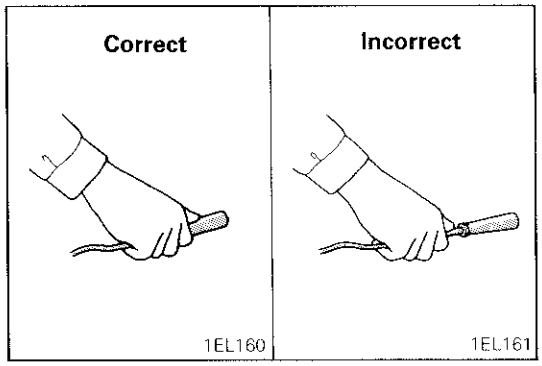


Removal steps

◆◆ ●◆ 1. Spark plug cable
2. Spark plug
3. High tension cable
●◆ 4. Distributor
5. Ignition coil
6. Power transistor

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

1EL0009



SERVICE POINTS OF REMOVAL

1. REMOVAL OF SPARK PLUG CABLE / 3. HIGH TENSION CABLE

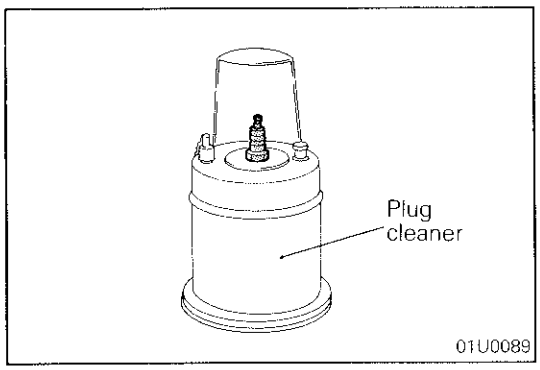
When disconnecting cable, hold cap.

INSPECTION

SPARK PLUG

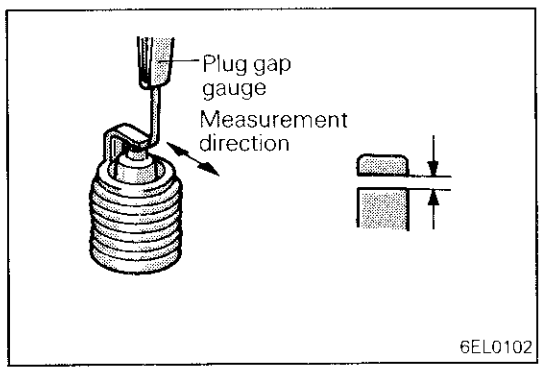
(1) Check the following items to see that electrodes are not burnt, and insulators are not broken, and how porcelain insulator is burnt.
- Broken insulators
- Wearing electrodes
- Deposited carbon
  For cleaning, use a plug cleaner or wire brush. Clean porcelain insulator above shell as well.
- Damaged 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: 1.0 – 1.1 mm (.039 – .043 in.)

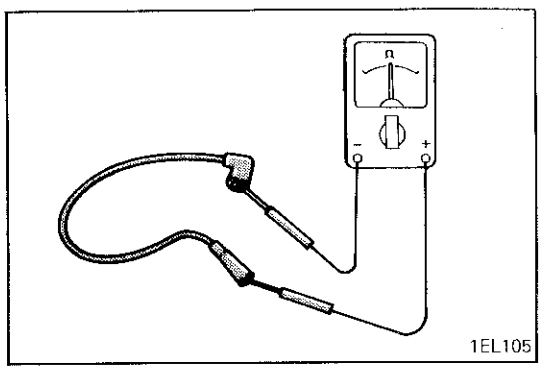


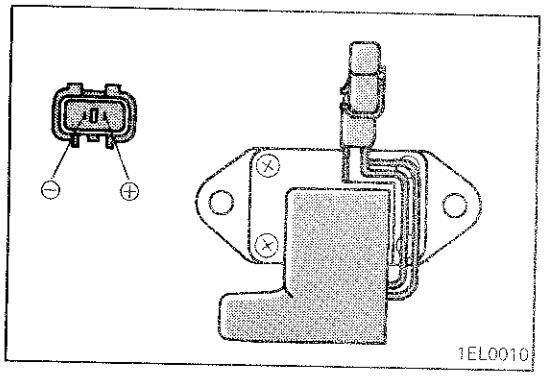
SPARK PLUG CABLE

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

Unit: kΩ

High tension cable	Spark plug cable			
	No. 1	No. 2	No. 3	No. 4
Approx. 2.7	9.8	11.5	11.0	12.6





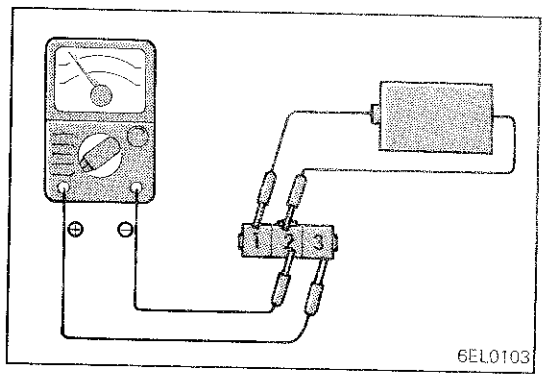
IGNITION COIL

(1) Measurement of the primary coil resistance
Measure the resistance of the positive (+) terminal and negative (–) terminal of the ignition coil.

Standard value: 0.72 – 0.88 Ω

(2) Measurement of the secondary coil resistance
Measure the resistance of the positive (+) terminal and the high-voltage terminal.

Standard value: 10.3 – 13.9 kΩ

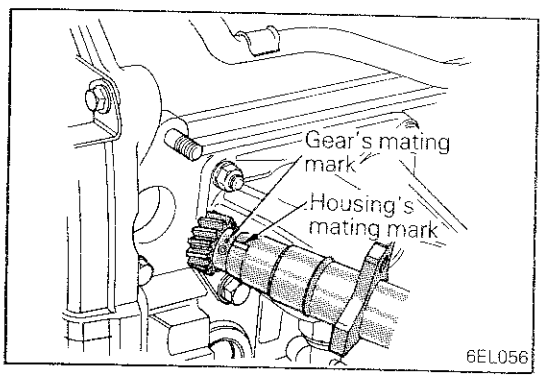


POWER TRANSISTOR

(1) Connect the negative (–) terminal of the 1.5V power supply to terminal ② of the power transistor; then check whether there is continuity between terminal ② and terminal ③ when terminal ① and the positive (+) terminal are connected and disconnected.

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

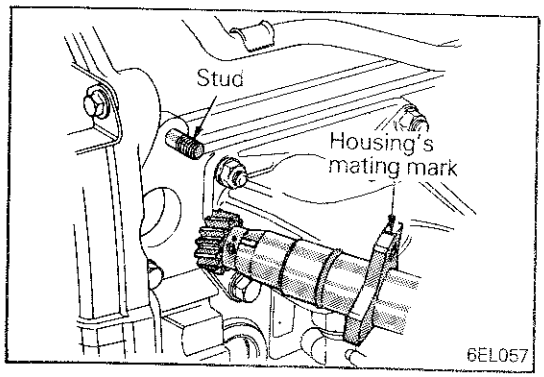
(2) Replace the power transistor if there is a malfunction.



SERVICE POINTS OF INSTALLATION

4. 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.

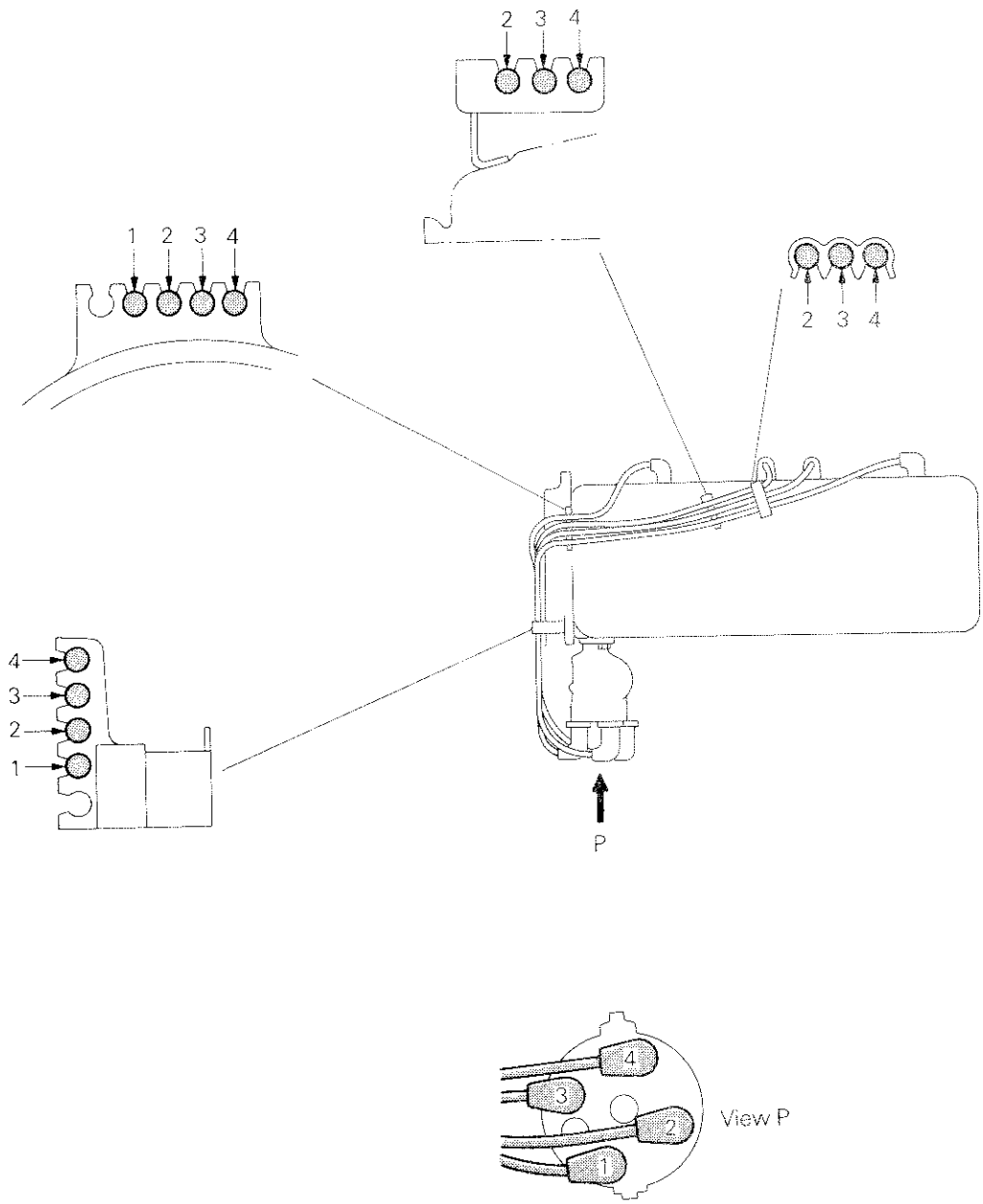


(3) Install the distributor to the engine while aligning the fine cut (groove or projection) of the distributor's installation flange with the center of the distributor installation stud.

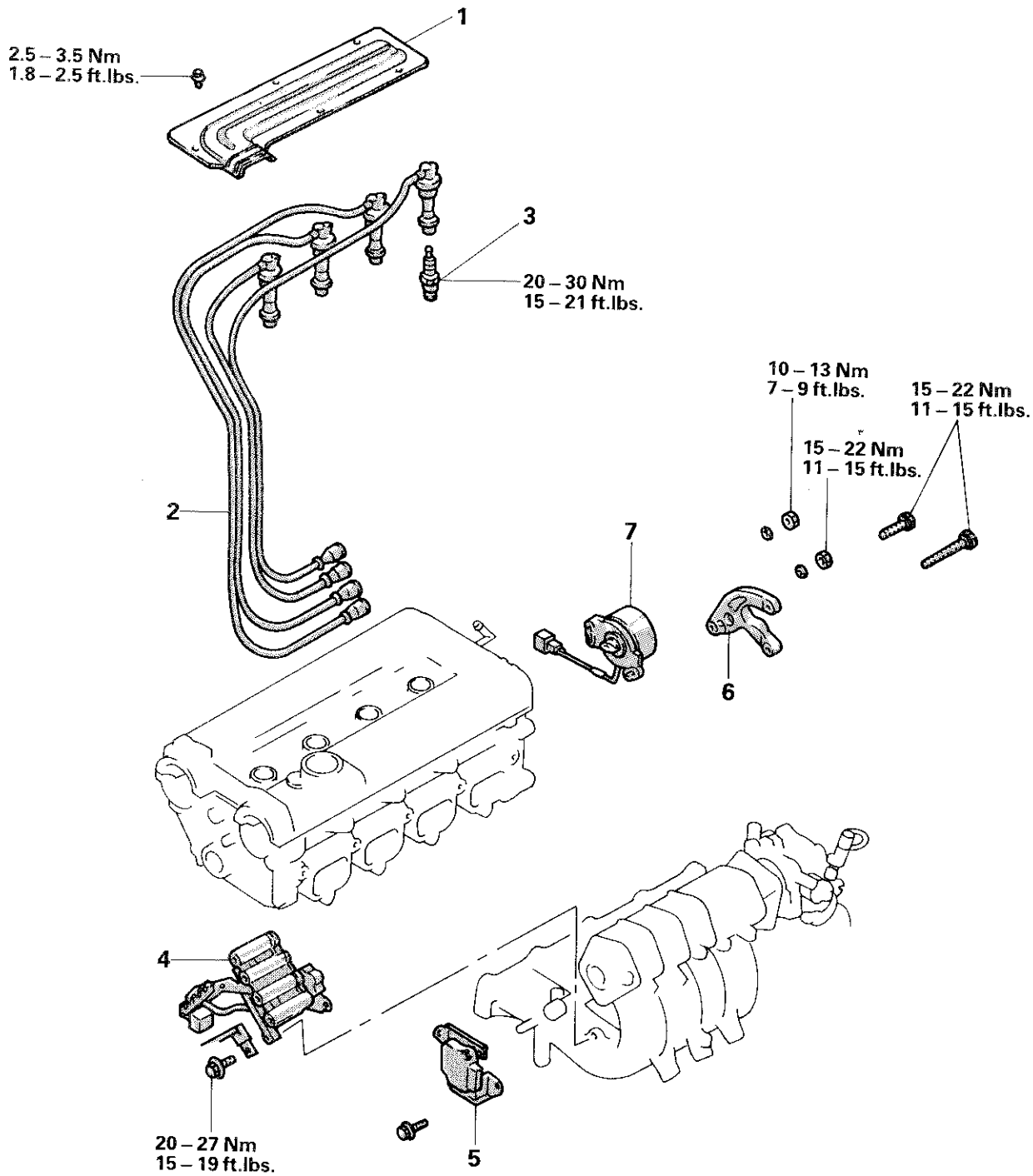
1. INSTALLATION OF SPARK PLUG CABLE

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 <1.6L Engine>

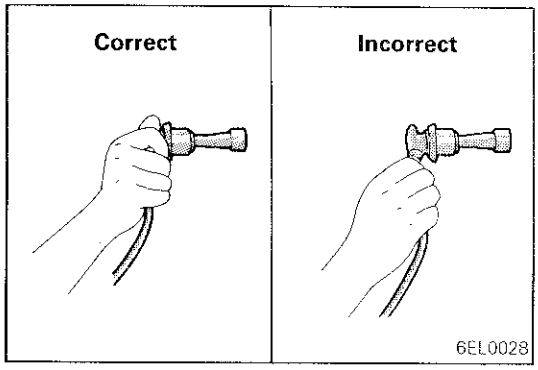


Removal steps

- 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".

6EL0105



SERVICE POINT OF REMOVAL

2. REMOVAL OF SPARK PLUG CABLE

When disconnecting the cable, hold the cap.

INSPECTION

SPARK PLUG

Refer to P. 8-197 for the spark plug inspection procedures.

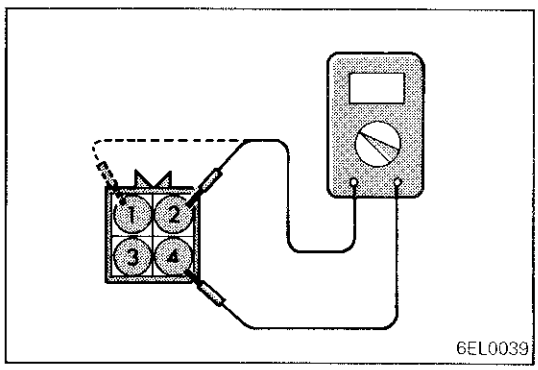
Standard value:
N/A: 1.0 – 1.1 mm (.039 – .043 in.)
T/C: 0.7 – 0.8 mm (.028 – .031 in.)

SPARK PLUG CABLE

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

Unit: kΩ

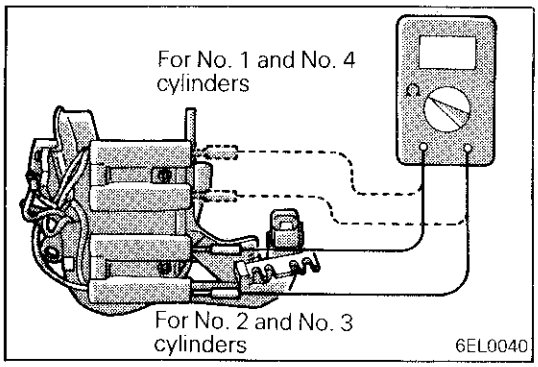
Spark plug cable			
No. 1	No. 2	No. 3	No. 4
5.8	8.4	10.6	9.7



IGNITION COIL

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

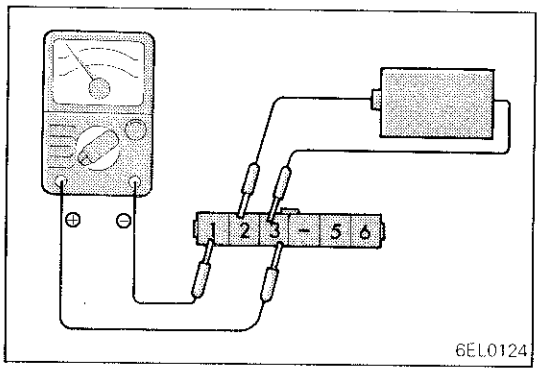
Standard value: 0.77 – 0.95 Ω



(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
When measuring the resistance of the secondary coil, be sure to disconnect the connector of the ignition coil.



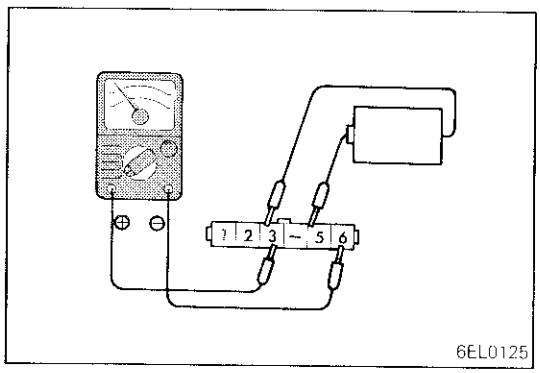
POWER TRANSISTOR

NOTE
Use an analog type circuit tester.

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 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

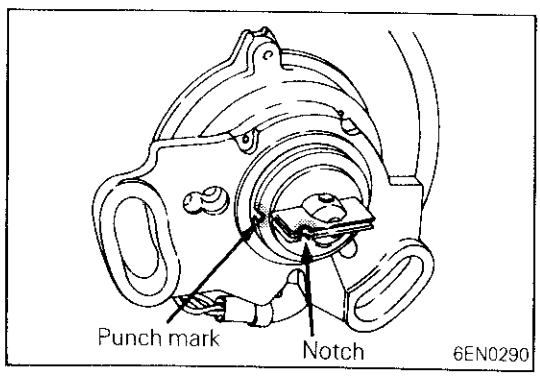


Power transistor for coil for No. 2 and No. 4 cylinders
(1) Connect the negative (–) terminal of the 1.5V power supply to terminal ③ of the power transistor; then check whether there is continuity between terminal ⑥ and terminal ③ when terminal ⑤ and the positive (+) terminal are connected and disconnected.

NOTE
Connect the negative (–) probe of the tester to terminal ⑥ of the power transistor.

Terminal ⑤ and (+) terminal	Terminal ⑥ and terminal ③
Connected	Continuity
Unconnected	No continuity

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



SERVICE POINTS OF INSTALLATION

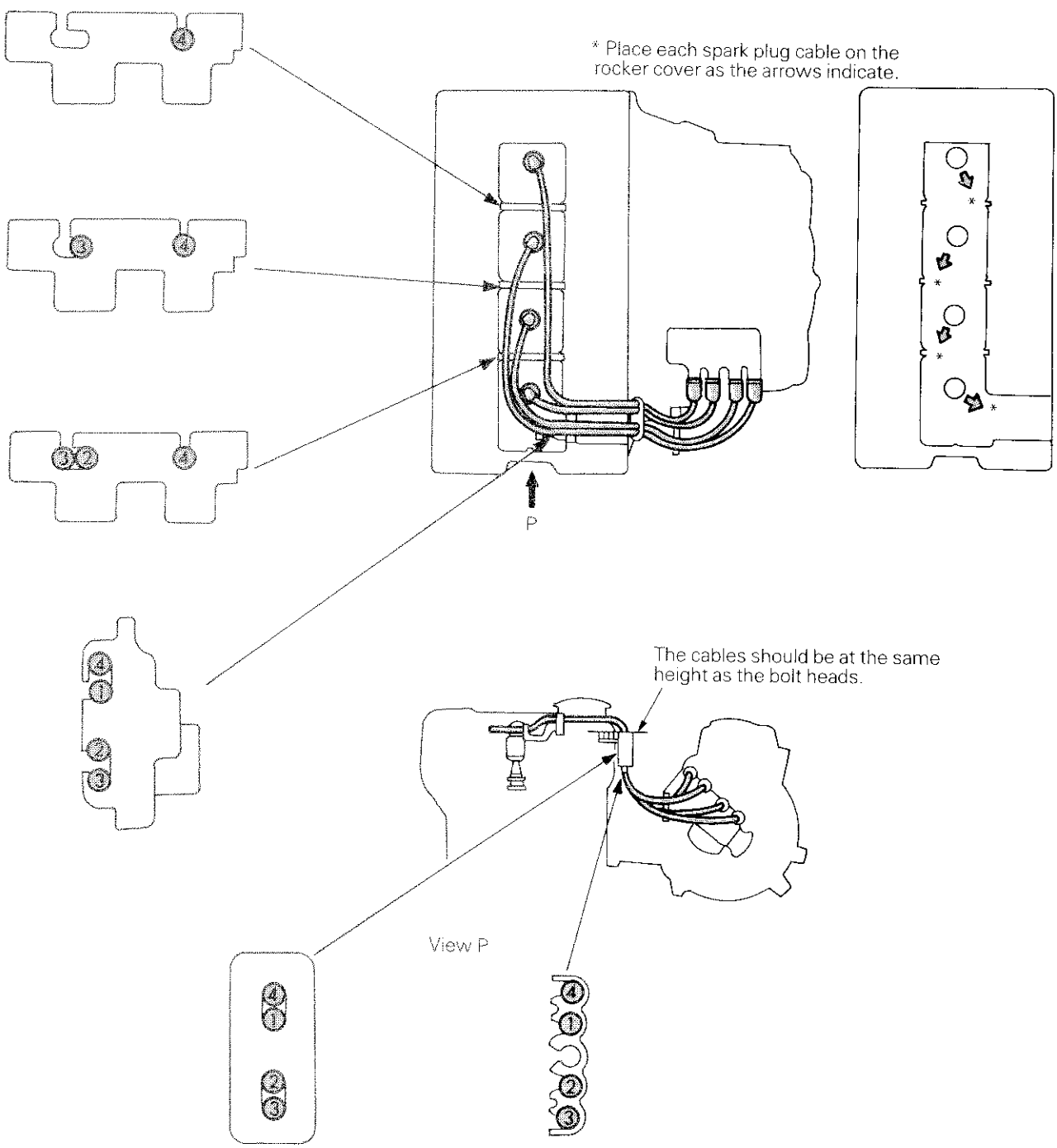
7. INSTALLATION OF CRANK ANGLE SENSOR

(1) Turn the crankshaft so that the No. 1 cylinder piston is at top dead center.
(2) Align the punch mark on the crank angle sensor housing with the notch in the 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 misfiring and a surge to develop when accelerating during high-speed operation. Therefore, be careful to arrange the spark plug cables properly by the following procedure.

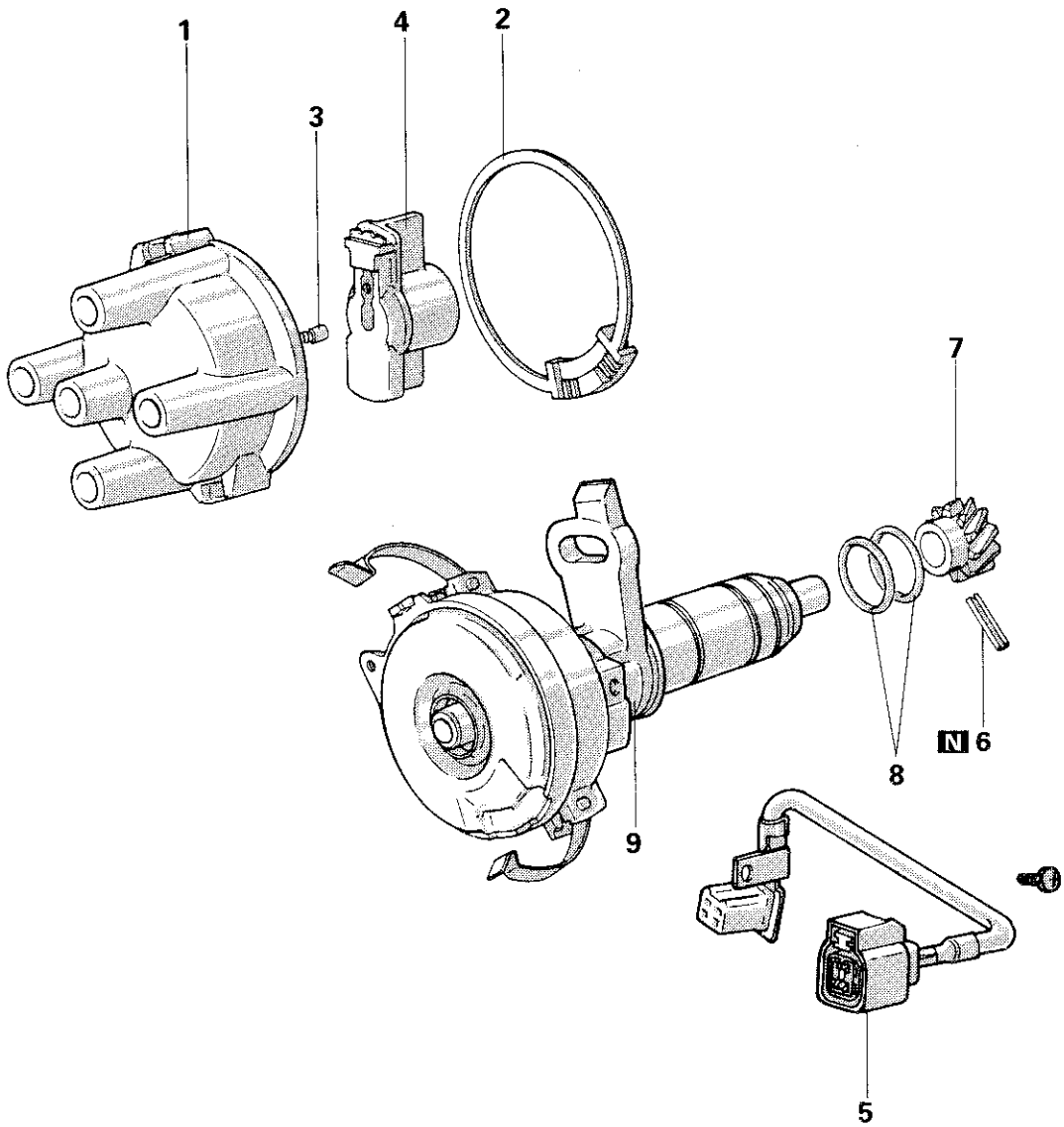
1. Install the spark plug cable clamps as shown in the illustration.
2. The numerals on the support and clamp indicate the spark plug cable No.
3. Pay attention to the following items when the spark plug cables are installed.
   (1) Install the cables securely to avoid possible contact with metal parts.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


* Place each spark plug cable on the rocker cover as the arrows indicate.
P
The cables should be at the same height as the bolt heads.
View P

DISTRIBUTOR <1.5L Engine>

N08GKCB

DISASSEMBLY AND REASSEMBLY

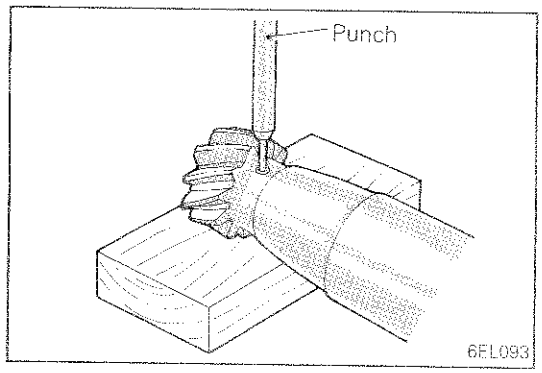


Disassembly steps

1. Distributor cap
2. Packing
3. Contact carbon
4. Rotor
5. Lead wire
6. Spring pin
- ◆◆ ◆◆ 7. Driven gear
8. O-ring
9. Distributor housing

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆: Refer to "Service Points of Disassembly".
(3) ◆◆: Refer to "Service Points of Reassembly".
(4) N: Non-reusable parts

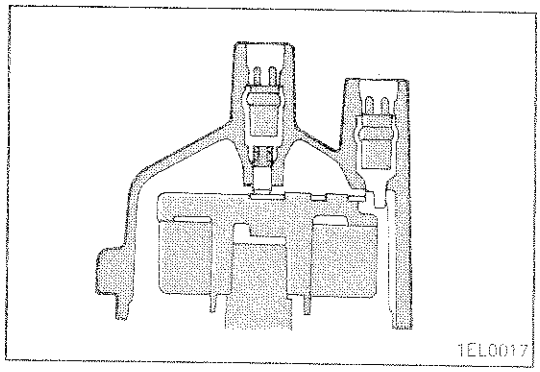
1EL0016



SERVICE POINT OF DISASSEMBLY

7. DISASSEMBLY OF DRIVEN GEAR

(1) Make a position identification mark (for the drive gear) on the distributor shaft.
(2) Place the drive gear on a soft base (wooden block) so that the spring pin can come out.
(3) Punch out the spring pin by using a pin punch.



INSPECTION

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

CAP ROTOR

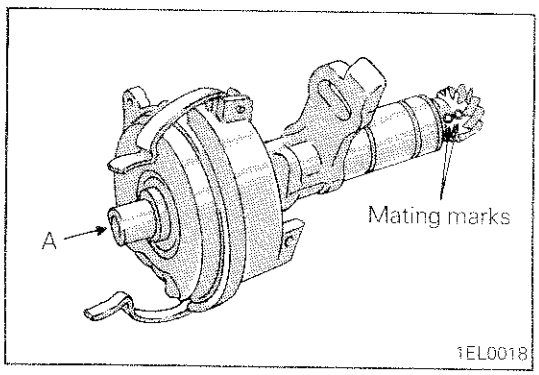
(1) There must be no cracking in the cap.
(2) There must be no damage to the cap's electrode or the rotor's electrode.
(3) Clean away any dirt from the cap and rotor.

SERVICE POINT OF REASSEMBLY

Take out and clean the disassembled parts. Do not use cleaning oil or similar products for cleaning.

7. REASSEMBLY OF DRIVEN GEAR

(1) Align with the mark made at the time of disassembly, and install the drive gear to the distributor shaft.



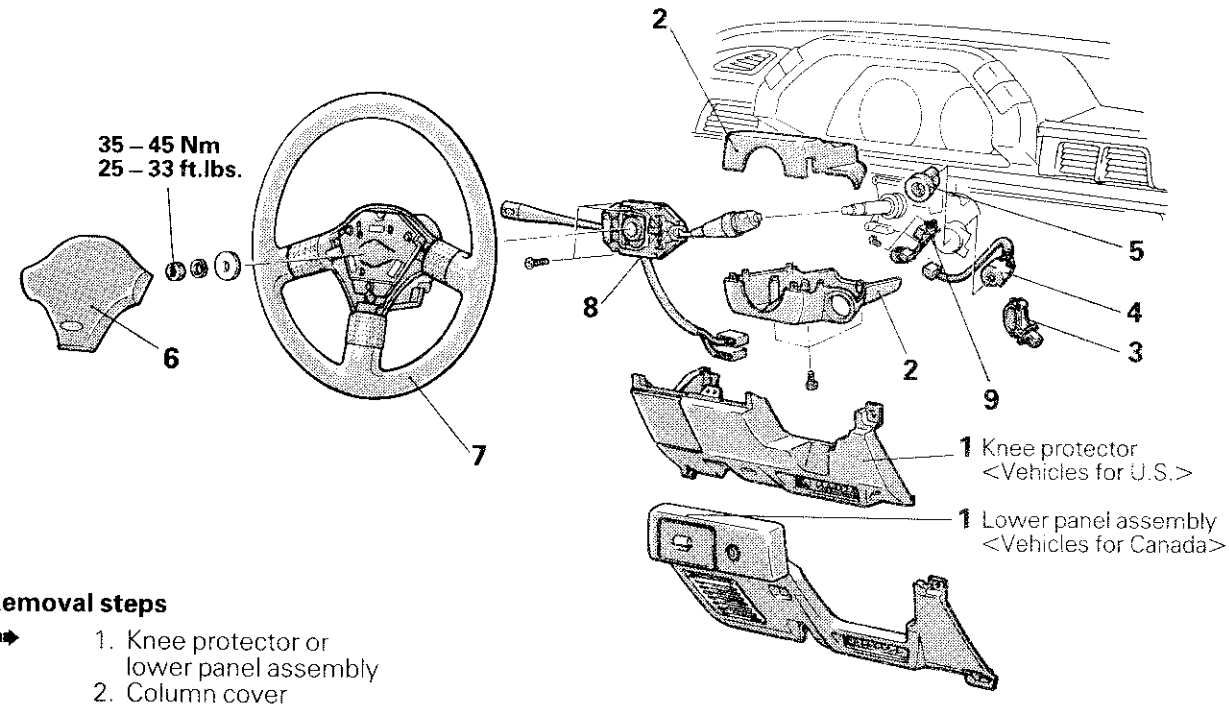
(2) When aligning the driven gear's mating mark and the housing's mating mark, make the combination so that notch "A" at the shaft end is at the position shown in the figure, and then align the spring pin hole and drive in a new spring pin.

Caution
Drive in the spring pin so that the slits are at a right angle relative to the shaft.

IGNITION SWITCH

N08GLAM

REMOVAL AND INSTALLATION



Removal steps

- ◆◆ 1. Knee protector or lower panel assembly
- 2. Column cover
- 3. Clip
- 4. Ignition switch
- ◆◆ 5. Steering lock cylinder
- 6. Horn pad
- ◆◆ 7. Steering wheel
- 8. Column switch
- 9. Key reminder switch

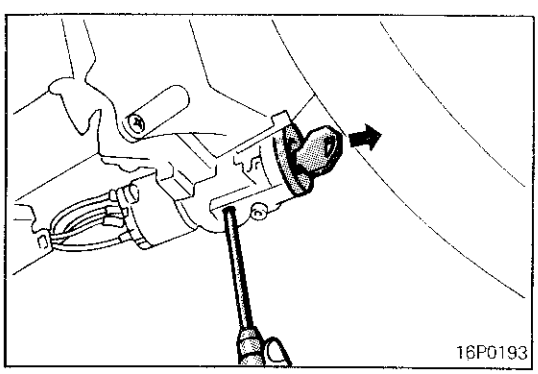
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".

16P0378

SERVICE POINTS OF REMOVAL

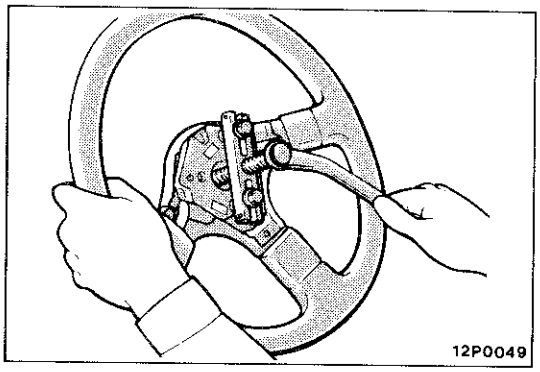
1. REMOVAL OF KNEE PROTECTOR OR LOWER PANEL ASSEMBLY

Refer to GROUP 23 – Instrument Panel.



5. REMOVAL OF STEERING LOCK CYLINDER

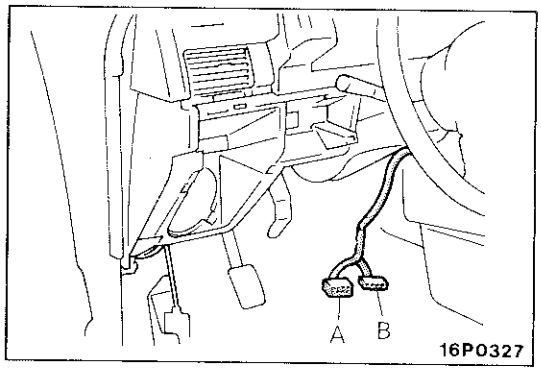
(1) Insert the key in the steering lock cylinder and turn it to the "ACC" position.
(2) Using a cross-tip (+) screwdriver (small) or a similar tool, push the lock pin of the steering lock cylinder inward and then pull the steering lock cylinder toward you.



7. REMOVAL OF STEERING WHEEL

(1) Make mating marks on the steering wheel and the steering wheel shaft.
(2) Remove the steering wheel by using a steering wheel puller.

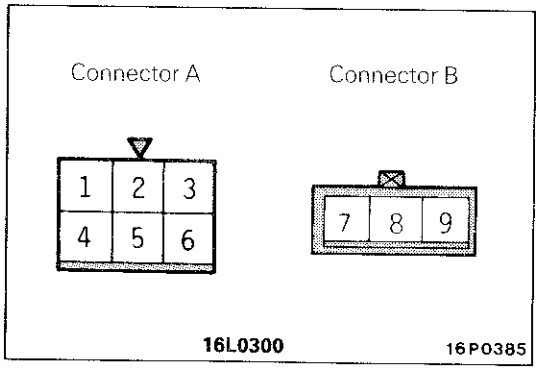
Caution
Do not hammer on the steering wheel to remove it; doing so may damage the collapsible mechanism.



INSPECTION

IGNITION SWITCH INSPECTION

(1) Remove the knee protector (or lower panel assembly), and the column cover. (Refer to GROUP 23 – Instrument Panel.)
(2) Disconnect the wiring connector from the ignition 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	9
	Removed							○—○		
LOCK	Inserted							○—————○		
ACC		○—○								
ON		○—○—○—○								
START		○———○———○—○								

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

METERS AND GAUGES

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08HB--

METERS AND GAUGES

Items	Specifications
Speedometer	
Type	Rotary magnet type
Tachometer	
Type	Pulse type
Fuel gauge	
Type	Cross coil type fixed needle gauge
Fuel gauge unit	
Type	Variable resistance type (with fuel level warning sensor)
Engine coolant termperature gauge	
Type	Cross coil type
Engine coolant temperature gauge unit	
Type	Thermistor type

INDICATORS AND WARNING LIGHTS

Items	Specifications
Indicator lights	
Turn signal indicator light W	3.4 (158)
High beam indicator light W	1.4 (74)
Charging warning light W	1.4 (74)
Oil pressure warning light W	1.4 (74)
Door ajar indicator light W	1.4 (74)
Brake warning light W	1.4 (74)
Fuel level warning light W	3.4 (158)
Seat belt warning light W	1.4 (74)
Overdrive "OFF" position indicator light W	1.4 (74)
Automatic transaxle position indicator light W	1.4 (74)
Auto-cruise control indicator light W	1.4 (74)
Washer fluid level indicator light W	1.4 (74)
Check engine indicator light W	1.4 (74)

NOTE
The values in parentheses denote SAE trade numbers.

SERVICE SPECIFICATIONS

N08HC--

Items	Specifications
Standard Value	
Tachometer indication error rpm	
Type 1 (8,000 rpm indication)	
1,000	±100
3,000	±150
5,000	±250
*Type 2 (9,000 rpm indication)	
1,000	±100
3,000	+225 −100
5,000	+325 −125
Operation range of fuel gauge unit mm (in.)	
Point F	12 – 14 (.47 – .55)
Point E	125 – 127 (4.92 – 5.0)
Fuel gauge unit resistance Ω	
Point F	1 – 5
Point E	103 – 117
Engine coolant temperature gauge unit resistance Ω [at 70°C (158°F)]	90.5 – 117.5
Fuel gauge resistance Ω	
Between A – B	77 – 93
Between A – C	59 – 71
Between B – C	76 – 92
Engine coolant temperature gauge resistance Ω	
Between B – D	144 – 174
Between C – D	68 – 82
Between B – C	76 – 92

NOTE
*: <1.6L Engine>

TORQUE SPECIFICATIONS

N08HD--

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

SEALANTS AND ADHESIVES

N08HF--

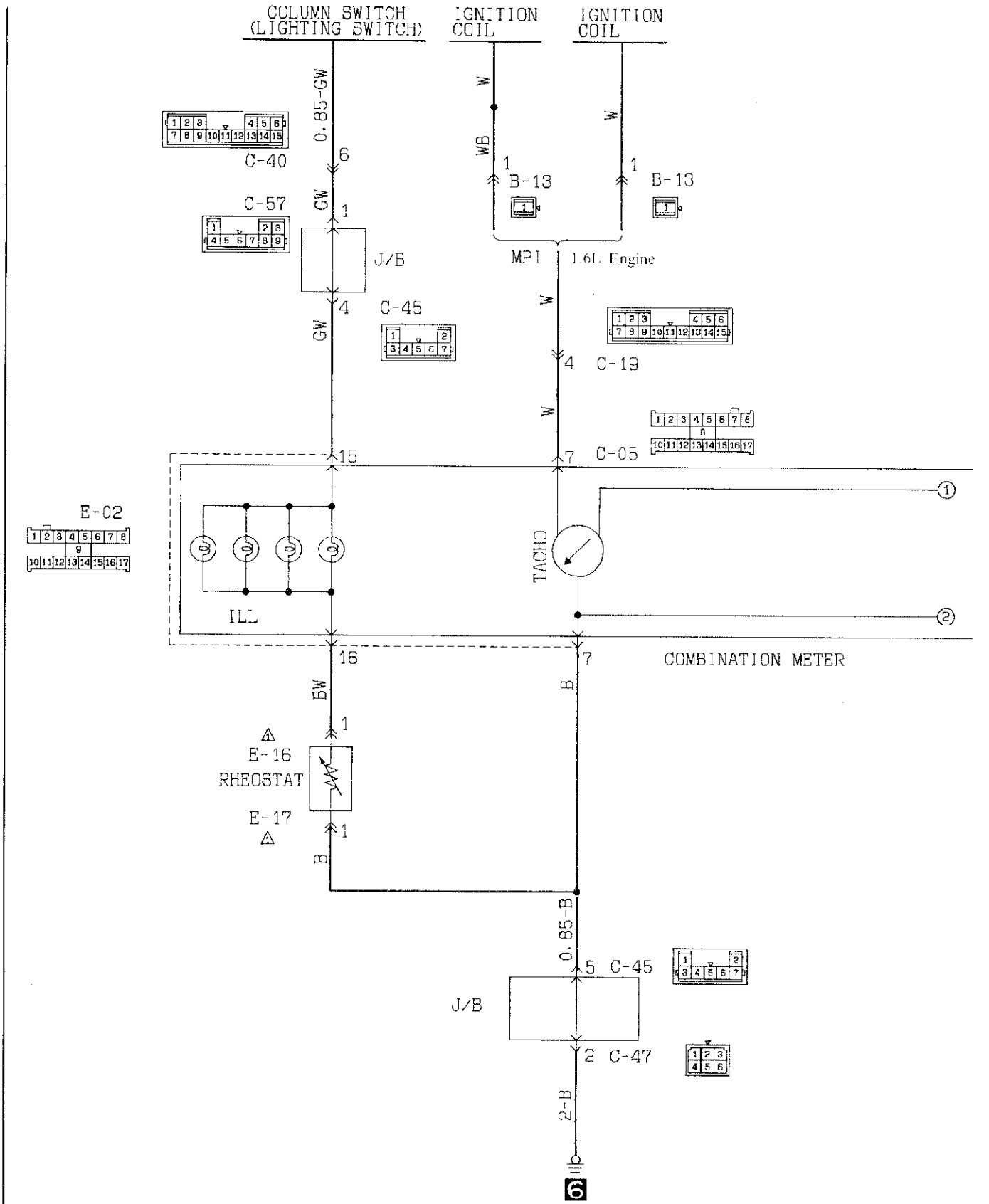
Items	Specified sealants and adhesives	Quantity
Engine coolant temperature gauge unit threaded portion	MOPAR Part No. 4318034 or equivalent	As required

TROUBLESHOOTING

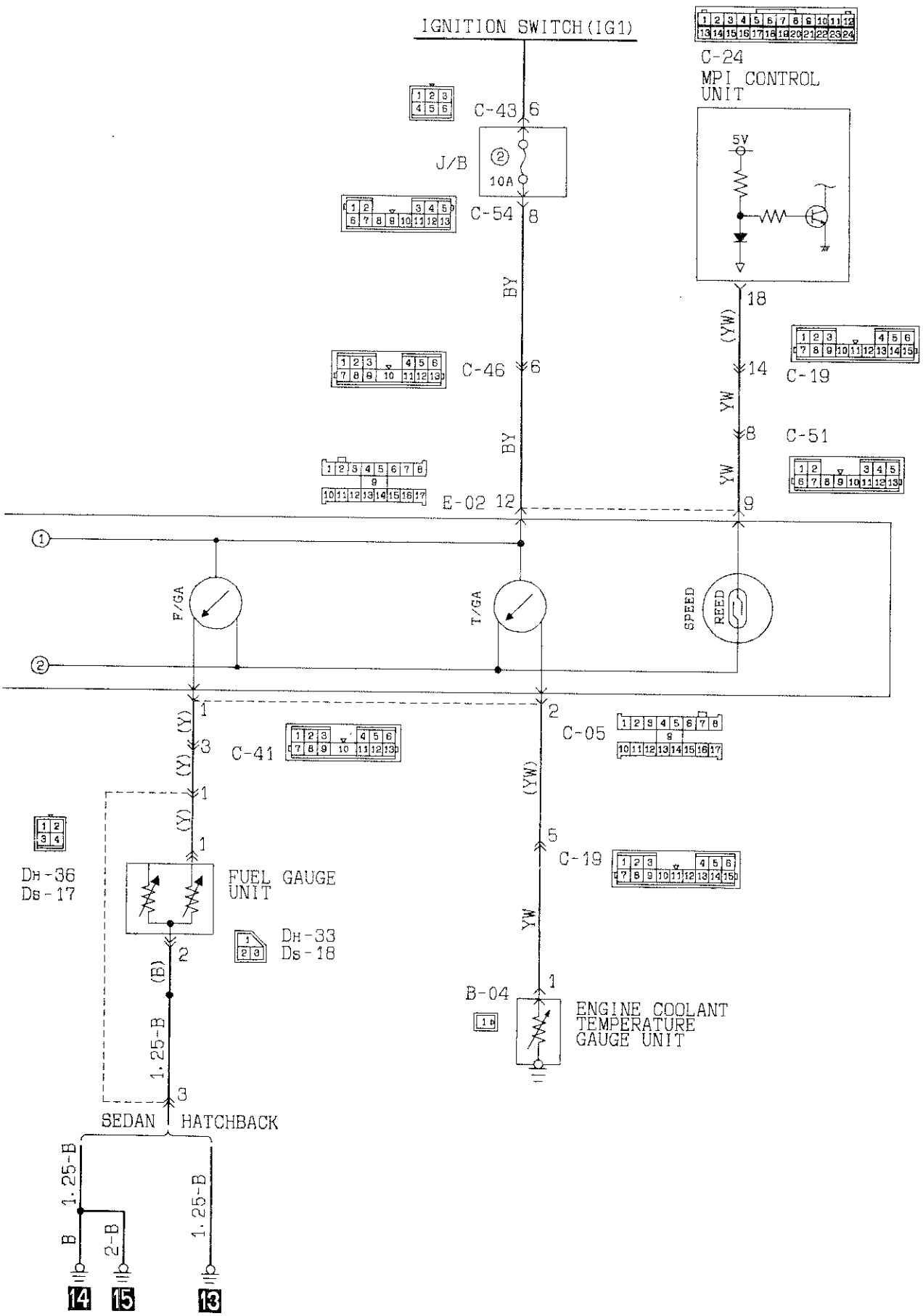
METER AND GAUGES

N08HHAH

CIRCUIT DIAGRAM



KX35-AC-C1001-N


IGNITION SWITCH(IG1)
C-24
MPI CONTROL UNIT
5V
C-43
6
J/B
②
10A
C-54
8
BY
18
(YW)
C-19
14
C-46
6
YW
8
C-51
BY
YW
9
E-02
12
①
②
F/GA
T/GA
SPEED
REED
1
(Y)
3
C-41
2
C-05
(YW)
5
C-19
YW
1
(Y)
1
DH-36
DS-17
FUEL GAUGE UNIT
DH-33
DS-18
2
(B)
1.25-B
3
B-04
1
ENGINE COOLANT TEMPERATURE GAUGE UNIT
SEDAN
HATCHBACK
1.25-B
B
2-B
1.25-B
14
15
13

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>

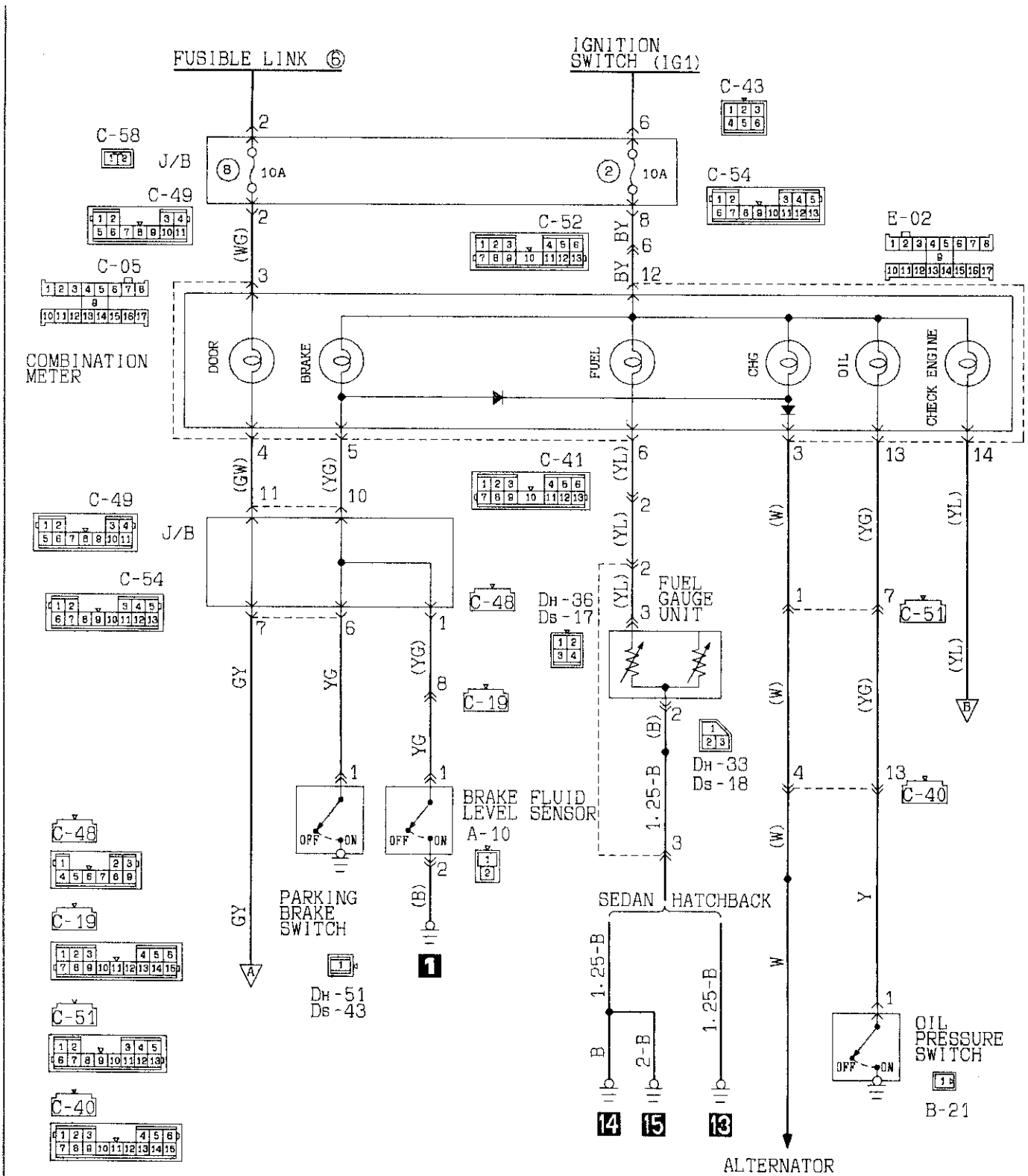
- Pulses are produced in accordance with the vehicle speed, and vehicle-speed signals are input to systems (the transaxle-control system, etc.) that regulate according to the vehicle speed.

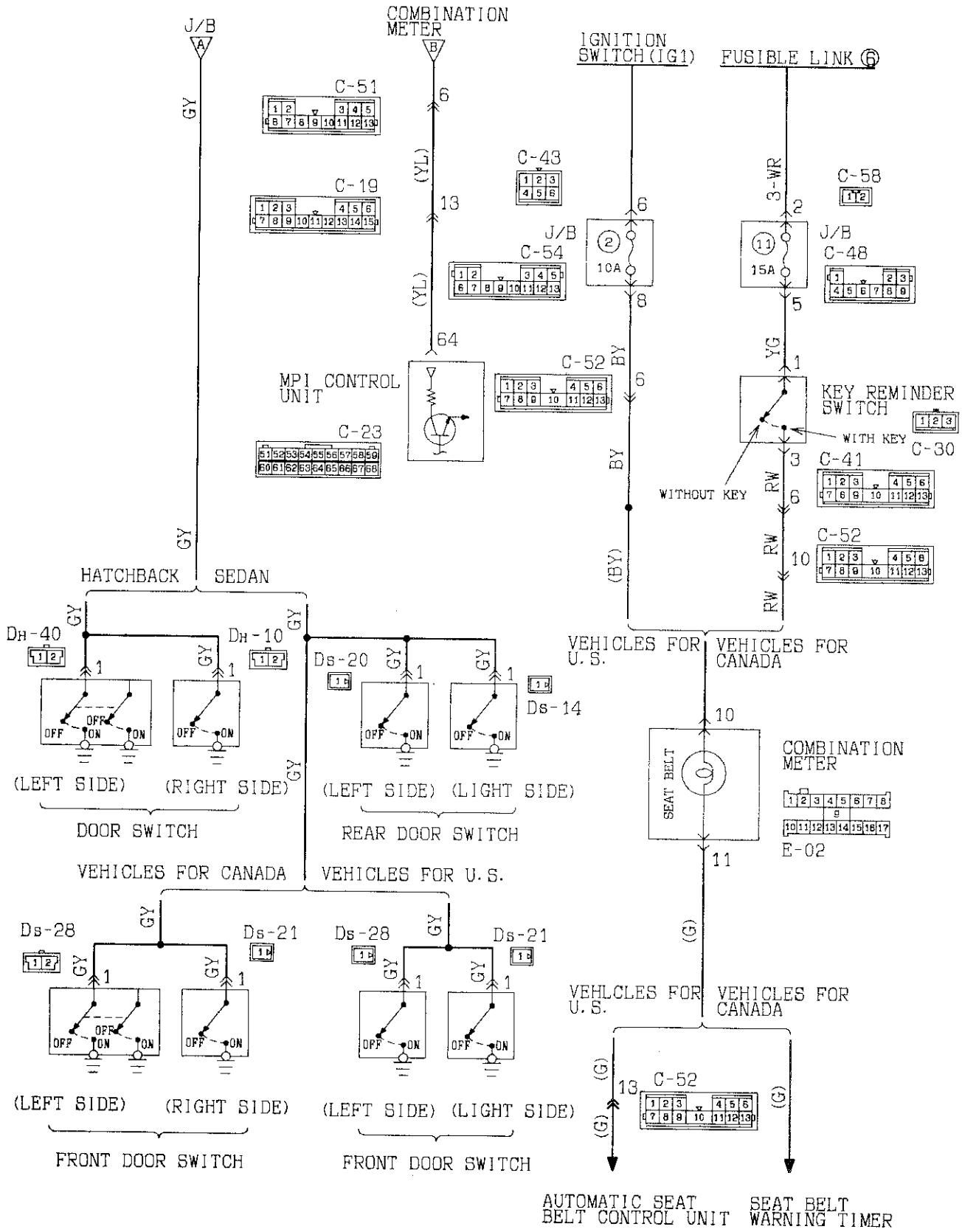
TROUBLESHOOTING HINTS

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 ① 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. Systems dependent upon control according to the vehicle speed do not function correctly.
   - Check the reed switch (located within the speedometer).
4. The meter illumination light does not illuminate.
   1) The tail lights illuminate.
      - Check the rheostat.

WARNING LIGHT

CIRCUIT DIAGRAM

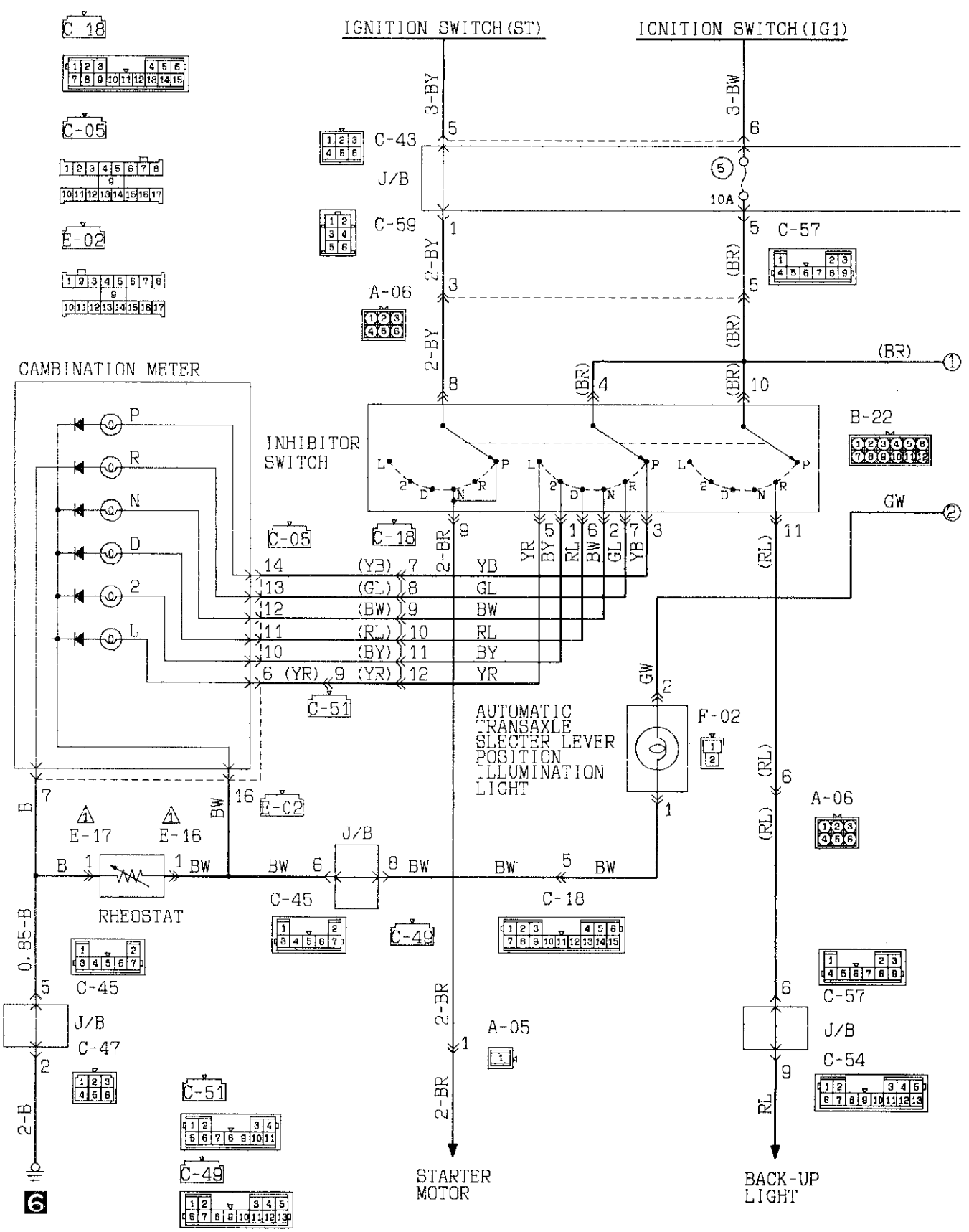



J/B
COMBINATION METER
IGNITION SWITCH(IG1)
FUSIBLE LINK ⑥
C-51
C-19
C-43
C-54
C-58
C-48
C-52
C-23
C-41
C-30
C-52
MPI CONTROL UNIT
KEY REMINDER SWITCH
WITH KEY
WITHOUT KEY
10A
15A
GY
(YL)
BY
(BY)
YG
3-WR
RW
HATCHBACK
SEDAN
DH-40
DH-10
Ds-20
Ds-14
OFF
ON
(LEFT SIDE)
(RIGHT SIDE)
(LIGHT SIDE)
DOOR SWITCH
REAR DOOR SWITCH
VEHICLES FOR CANADA
VEHICLES FOR U.S.
Ds-28
Ds-21
FRONT DOOR SWITCH
SEAT BELT
COMBINATION METER
E-02
(G)
AUTOMATIC SEAT BELT CONTROL UNIT
SEAT BELT WARNING TIMER

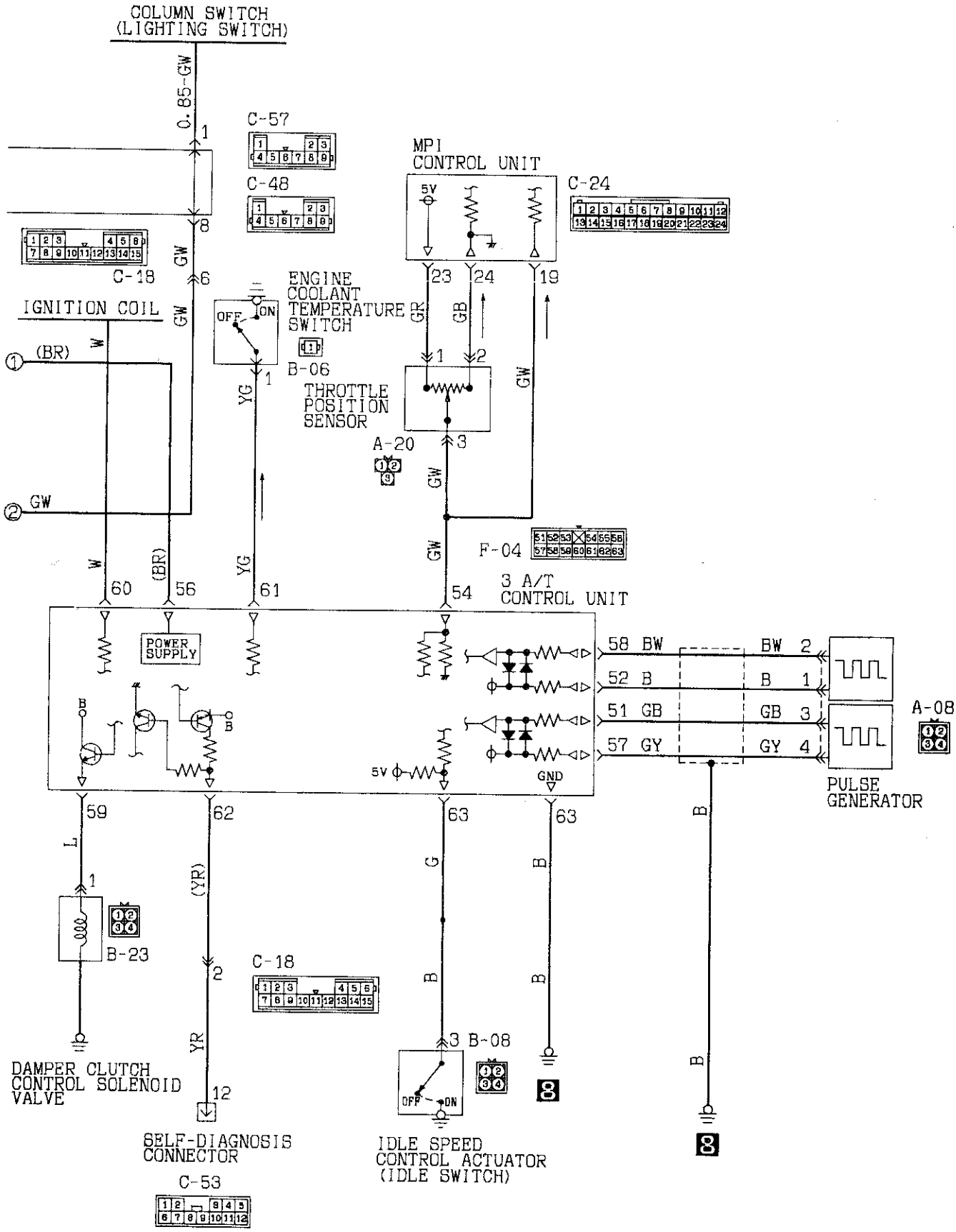
INDICATOR LIGHT

CIRCUIT DIAGRAM

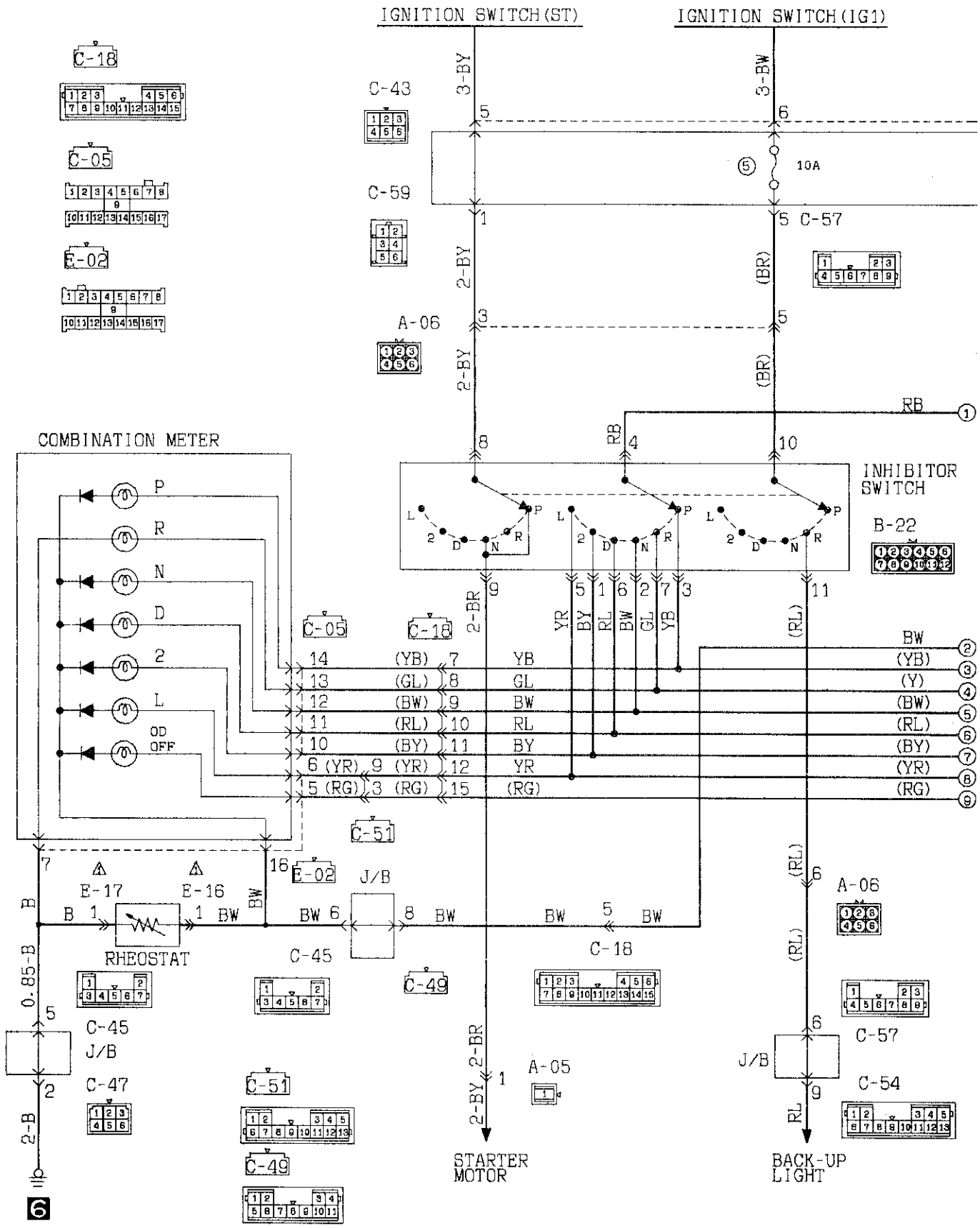
<3 A/T>



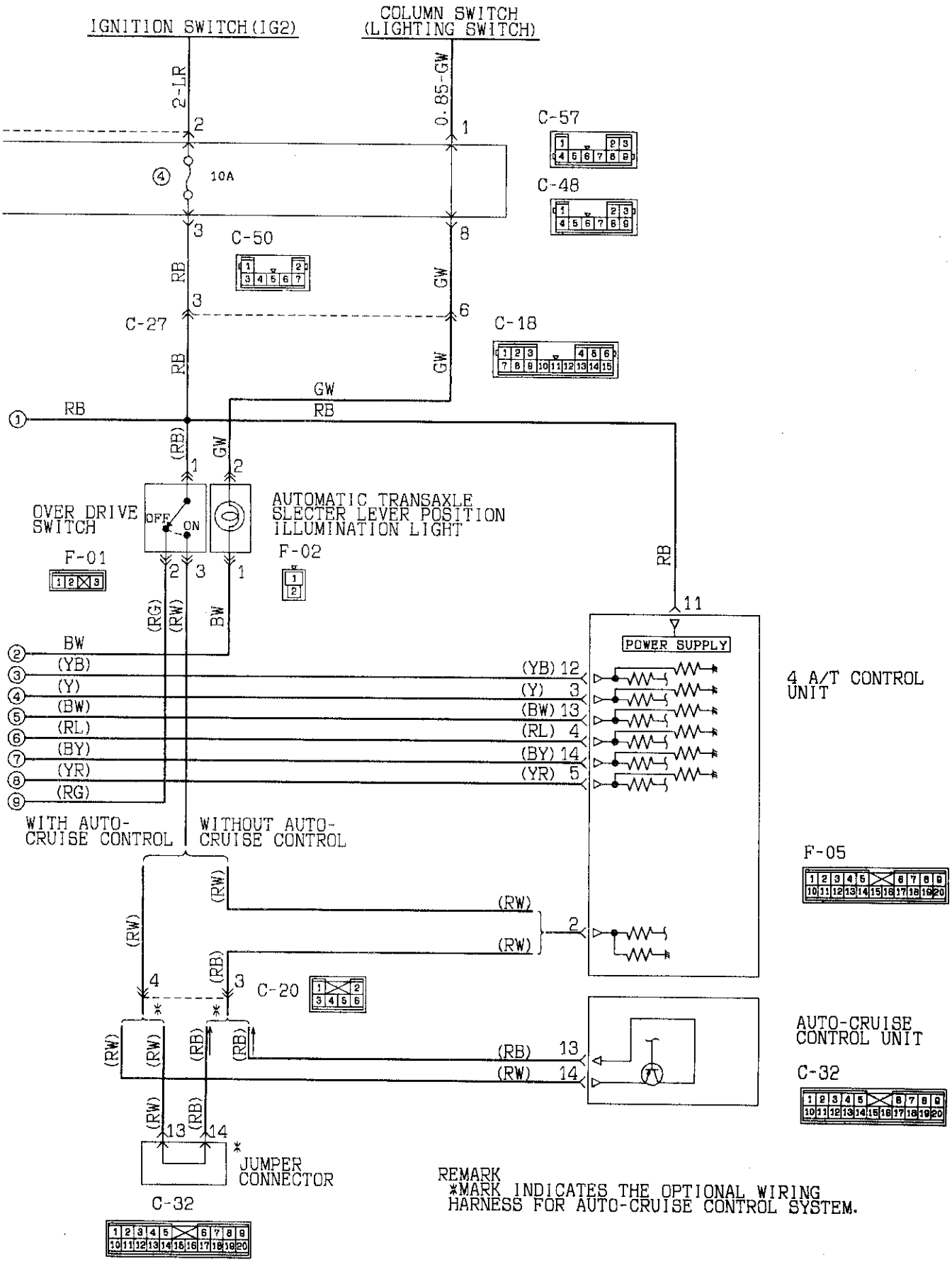
KX3B-AC-C0701-N

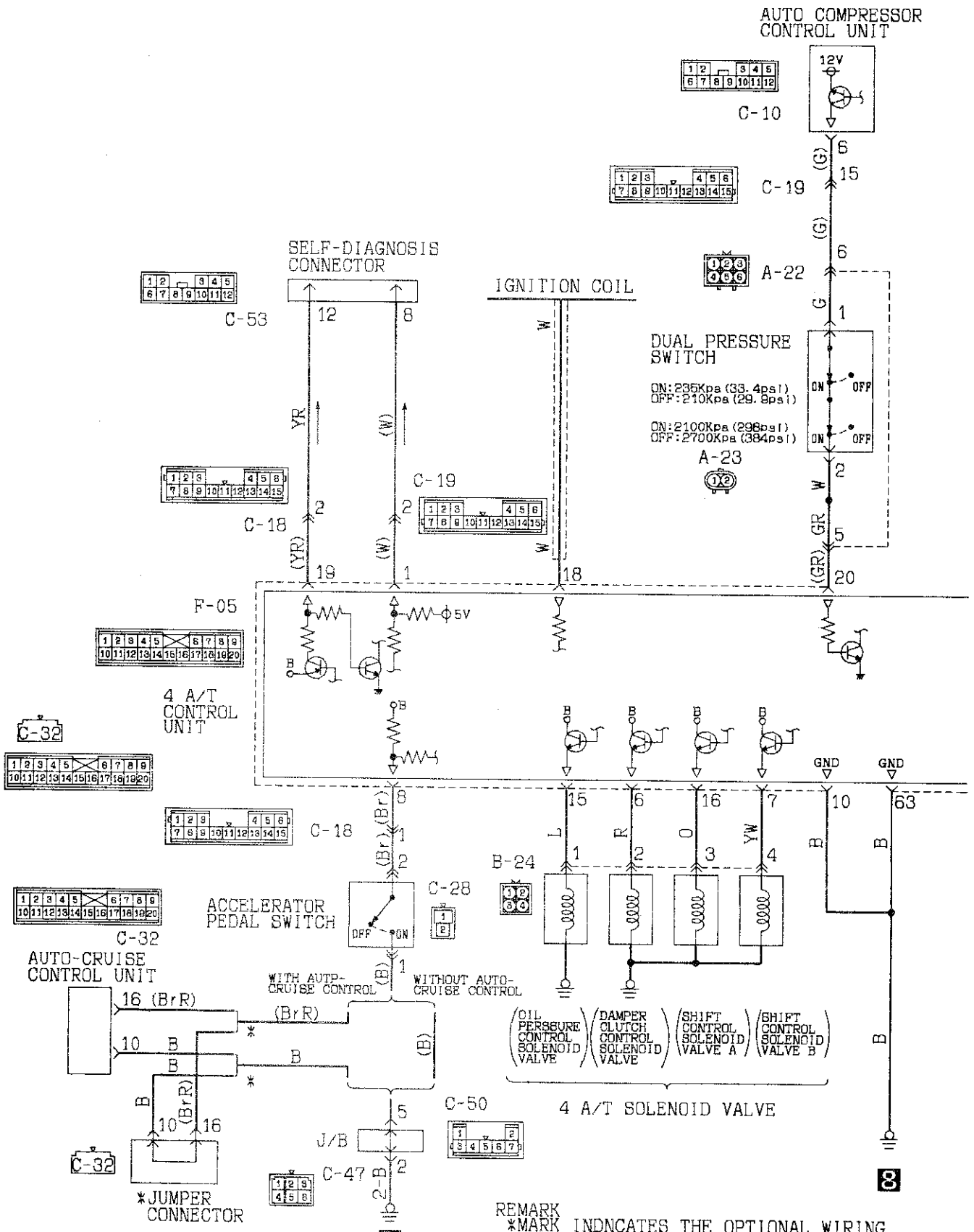

COLUMN SWITCH
(LIGHTING SWITCH)
0.85-GW
1
C-57
C-48
MPI
CONTROL UNIT
C-24
5V
8
GW
C-18
6
IGNITION COIL
ENGINE
COOLANT
TEMPERATURE
SWITCH
OFF
ON
B-06
THROTTLE
POSITION
SENSOR
23
24
19
GR
GB
GW
1
2
3
A-20
(BR)
W
YG
GW
F-04
3 A/T
CONTROL UNIT
60
56
61
54
POWER
SUPPLY
58 BW
52 B
51 GB
57 GY
BW 2
B 1
GB 3
GY 4
A-08
PULSE
GENERATOR
5V
GND
59
62
63
63
L
(YR)
G
B
B
B
1
2
3
B-23
C-18
B-08
YR
12
B
8
DAMPER CLUTCH
CONTROL SOLENOID
VALVE
SELF-DIAGNOSIS
CONNECTOR
C-53
IDLE SPEED
CONTROL ACTUATOR
(IDLE SWITCH)

<4 A/T>

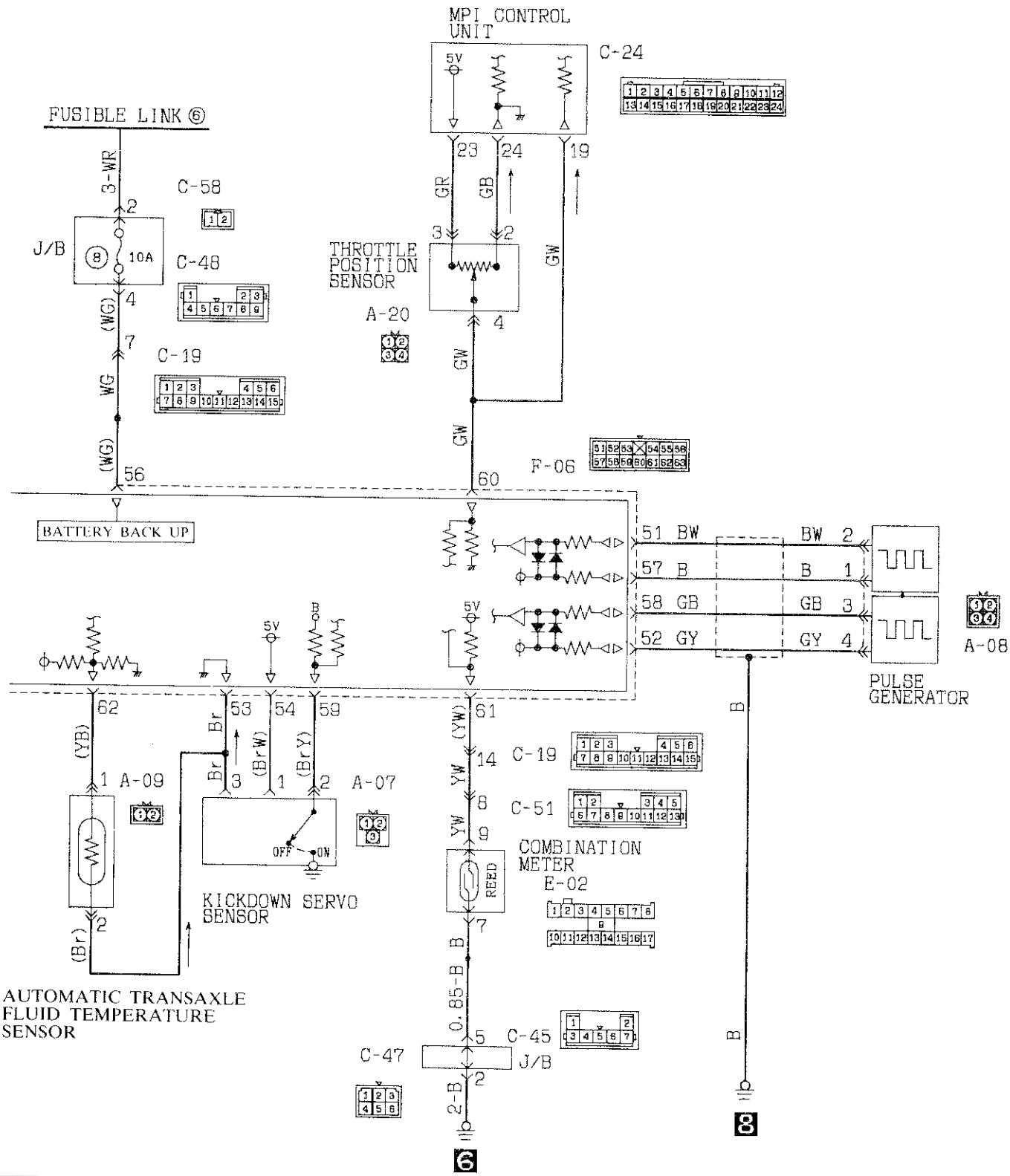


KX35-AC-C0702-N


IGNITION SWITCH(IG2)
COLUMN SWITCH (LIGHTING SWITCH)
2-LR
0.85-GW
10A
C-57
C-48
C-50
C-27
C-18
RB
GW
OVER DRIVE SWITCH
OFF
ON
AUTOMATIC TRANSAXLE SLECTER LEVER POSITION ILLUMINATION LIGHT
F-01
F-02
BW
(YB)
(Y)
(BW)
(RL)
(BY)
(YR)
(RG)
(RW)
POWER SUPPLY
4 A/T CONTROL UNIT
WITH AUTO-CRUISE CONTROL
WITHOUT AUTO-CRUISE CONTROL
F-05
C-20
AUTO-CRUISE CONTROL UNIT
C-32
JUMPER CONNECTOR
REMARK
*MARK INDICATES THE OPTIONAL WIRING HARNESS FOR AUTO-CRUISE CONTROL SYSTEM.



REMARK
*MARK INDNCATES THE OPTIONAL WIRING HARNESS FOR AUTO-CRUISE CONTROL SYSTEM.


MPI CONTROL UNIT
C-24
FUSIBLE LINK ⑥
3-WR
C-58
J/B
⑧ 10A
C-48
(WG)
C-19
WG
(WG)
56
BATTERY BACK UP
THROTTLE POSITION SENSOR
A-20
23
24
19
GR
GB
GW
3
2
4
GW
GW
60
F-06
51 BW
57 B
58 GB
52 GY
BW 2
B 1
GB 3
GY 4
A-08
PULSE GENERATOR
62
(YB)
1 A-09
53
54
59
Br
(BrW)
(BrY)
3
1
2
A-07
OFF
ON
KICKDOWN SERVO SENSOR
(Br)
2
AUTOMATIC TRANSAXLE FLUID TEMPERATURE SENSOR
61
(YW)
14
C-19
YW
8
C-51
YW
9
COMBINATION METER
E-02
REED
7
0.85-B
B
5
C-45
C-47
J/B
2
2-B
6
B
B
8

OPERATION

<Brake warning light>

- The brake fluid level sensor or the parking brake switch is switched ON, and the brake warning light illuminates when, with the ignition switch at the "ON" position, the brake fluid level is at or below the specified level, or the parking brake lever is pulled.

<Fuel warning light>

- The resistance of the level sensor becomes smaller when, with the ignition switch at the "ON" position, the fuel level decreases and the level sensor part is exposed above the surface of the fuel.
  When this resistance value reaches the specified value or below, the fuel warning light illuminates to indicate that the amount of fuel remaining is low.

<Oil-pressure warning light>

- The oil-pressure switch is switched ON, causing the oil-pressure warning light to illuminate as a warning when, with the ignition switch at the "ON" position, the oil pressure does not increase due to an abnormal condition within the oil lubrication system.

<Charging warning light>

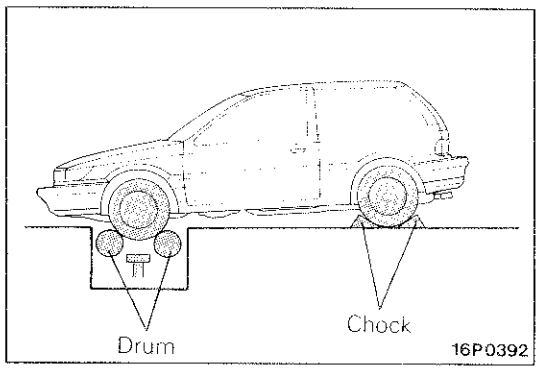
- Refer to the section concerning the charging circuitry (P. 8-157).

<Check engine warning light>

- Refer to GROUP 9 – Service Adjustment Procedures.

<Seat belt warning light>

- Refer to GROUP 23 – Troubleshooting.



SERVICE ADJUSTMENT PROCEDURES

INSPECTION

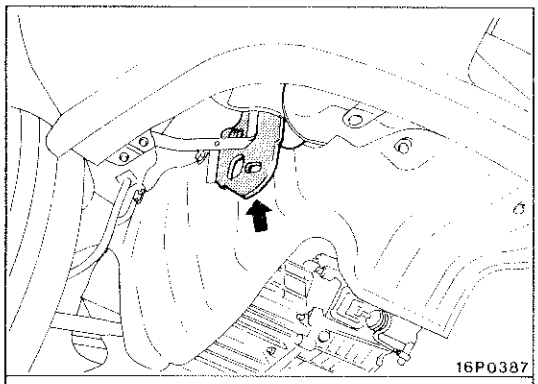
SPEEDOMETER INSPECTION

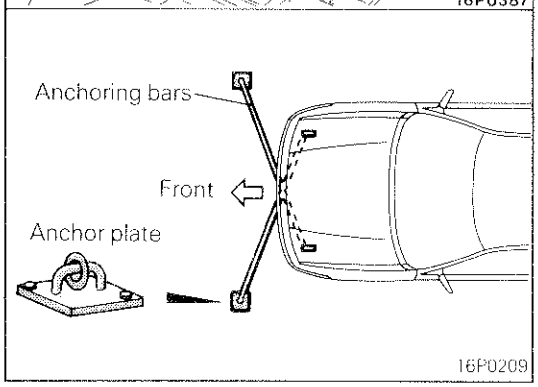
N08HIAL

Take note of the following before inspection:
(1) Assure tire pressure at standard value.
(Refer to GROUP 22 – General 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

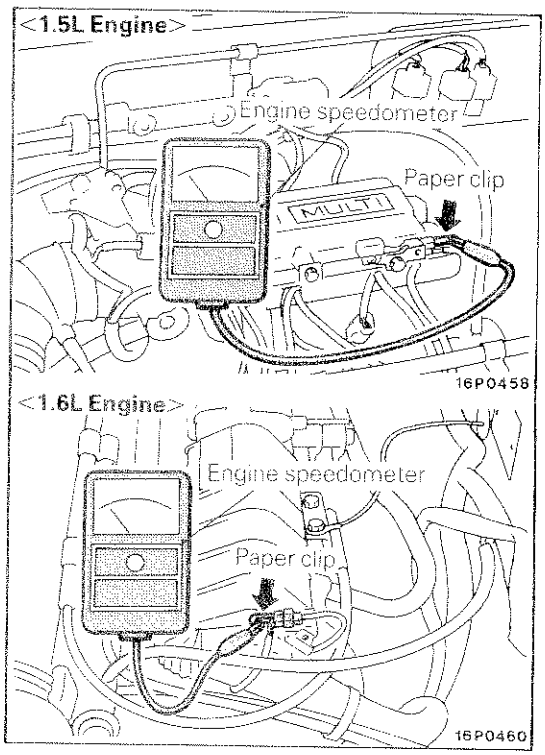
(1) Remove the under cover.
(Refer to GROUP 23 – Loose Panel.)
(2) Attach anchoring bars on the tie-down brackets and secure their ends to the anchor plates.
(3) Make sure the tension on the right and left bars is the same. Also be sure there is enough tension on each bar.

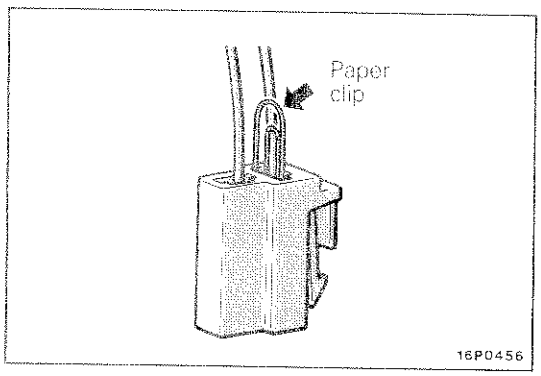
Accident prevention procedures

(1) Attach a chain or wire to the rear traction hook. 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 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





TACHOMETER INSPECTION

N08HIBK

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

Standard value:

Type 1 (8,000 rpm indication)

1,000 ±100 rpm
3,000 ±150 rpm
5,000 ±250 rpm

Type 2 (9,000 rpm indication)

1,000 ± 100 rpm
3,000 +225 rpm −100 rpm
5,000 +325 rpm −125 rpm

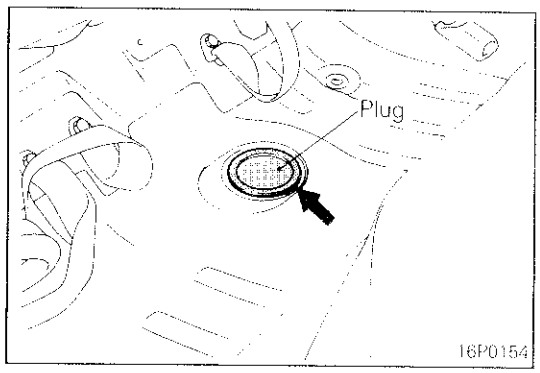
Caution
As the tachometer is negative grounded, do not connect battery conversely to prevent damaging transistor and diode.

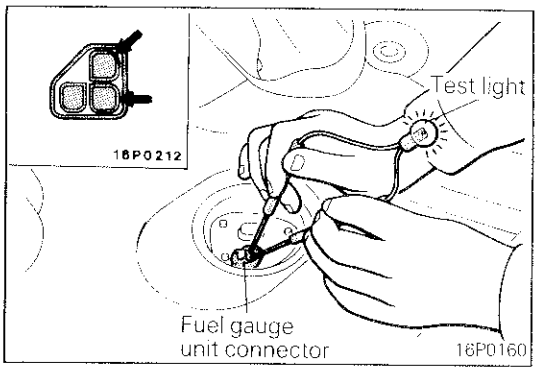
(1) Connect a engine speedometer.
Insert a paper clip in connector.

Caution
Insert the paper clip parallel to the terminal surface as shown in the figure at left.

(2) Connect the engine speedometer to the inserted clip.

NOTE
For tachometer inspection, use of a fluxmeter-type engine speedometer is recommended. (Because a fluxmeter only needs to be clipped to the high tension cable.)

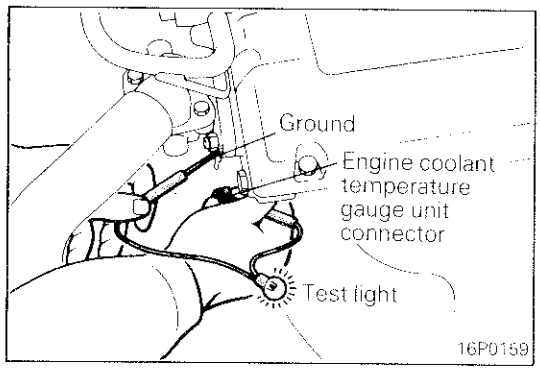




SIMPLE FUEL GAUGE INSPECTION

N08NICJ

(1) Remove the rear seat cushion and remove the plug located on the rear floor. (Refer to GROUP 23 – Seat.)
(2) Remove the connector of the fuel gauge unit located at the top of the fuel tank.
(3) Ground the harness side connector via a test light (12V–3.4W).
(4) Turn ON ignition key.
(5) Assure test light goes on and gauge needle moves.
If test light goes on but gauge needle does not move, replace fuel gauge.
(6) 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. 8-228), or break in harness. Replace or repair defective parts.
(7) Mount the plug. (Refer to GROUP 14 – Service Adjustment Procedures.)

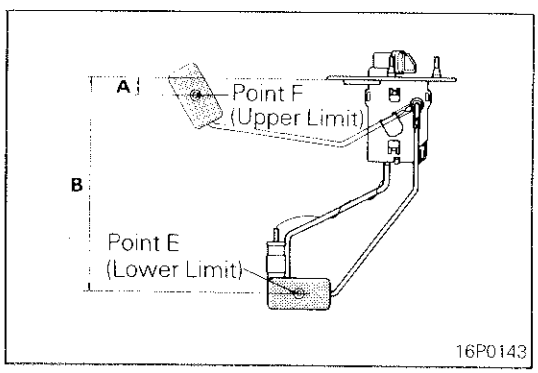


ENGINE COOLANT TEMPERATURE GAUGE SIMPLE INSPECTION

N08HIDI

(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. 8-228), or break in harness. Replace or repair defective part.

NOTE
Because the position for installation of the engine coolant temperature gauge unit differs depending on the engine's specifications, refer to the sensor installation position (P. 8-5) for information concerning the installation position.



FUEL GAUGE UNIT INSPECTION

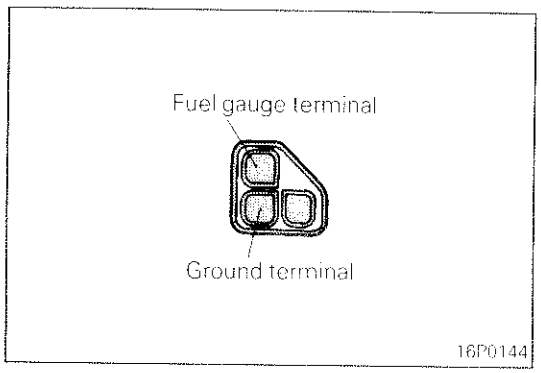
N08HIIL

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:
Point F: 12 – 14 mm (.47 – .55 in.)
Point E: 125 – 127 mm (4.92 – 5.0 in.)

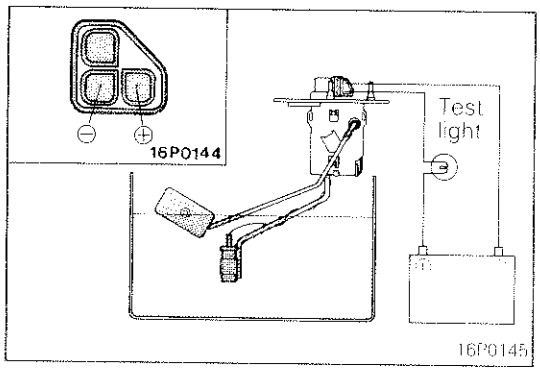


Standard Resistance of Fuel Gauge Unit

(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

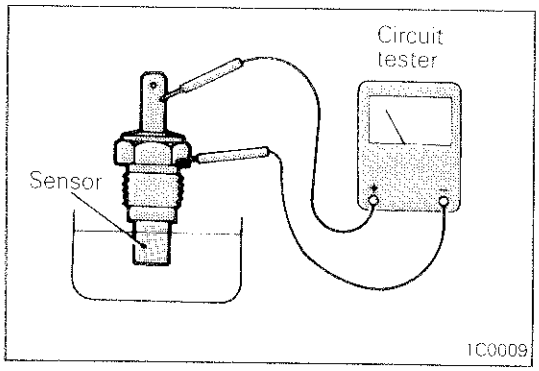
(2) Check that resistance value changes smoothly when float moves slowly between point F (highest) and point E (lowest).



FUEL SENSOR

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.



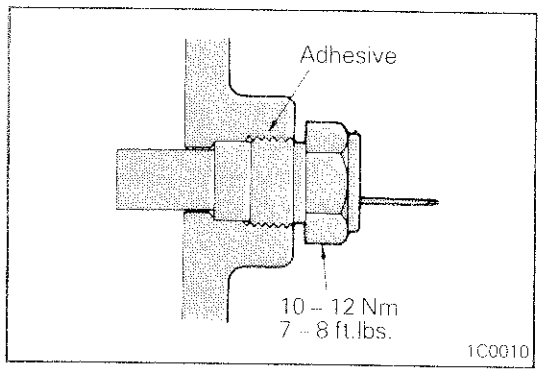
ENGINE COOLANT TEMPERATURE GAUGE UNIT INSPECTION N08HIKL

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



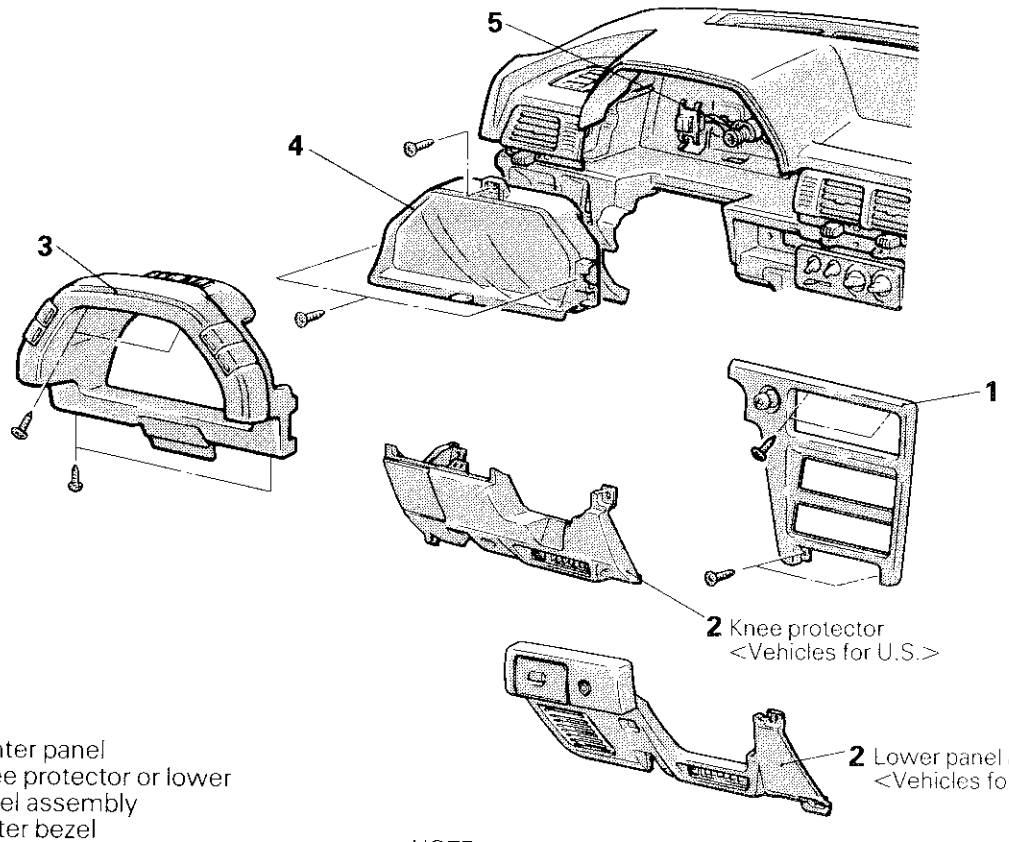
(2) After checking, apply the specified adhesive around the thread of engine coolant temperature gauge unit and install on the intake manifold.

Specified sealant: MOPAR Part No. 4318034 or equivalent

METERS AND GAUGES

REMOVAL AND INSTALLATION

N08HJAL



Removal steps

1. Center panel
2. ◆◆ Knee protector or lower panel assembly
3. Meter bezel
4. Combination meter
5. ◆◆ Adapter

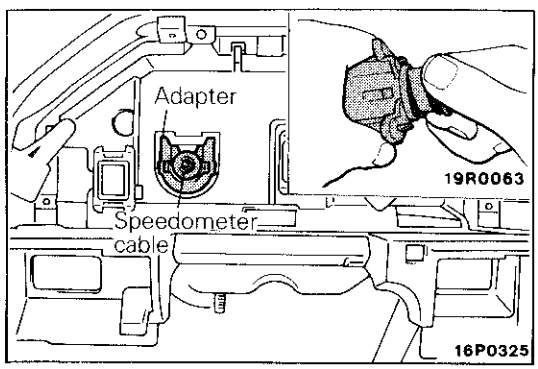
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".

16P0372

SERVICE POINTS OF REMOVAL

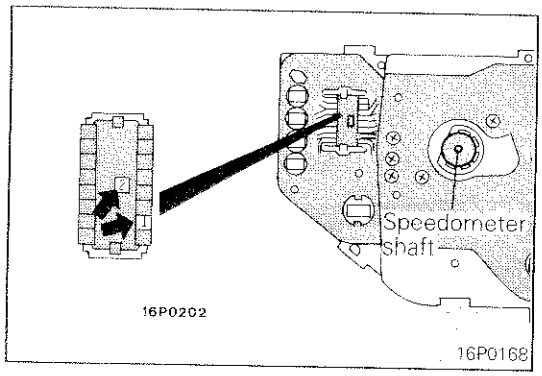
2. REMOVAL OF KNEE PROTECTOR OR LOWER PANEL ASSEMBLY

Refer to GROUP 23 – Instrument Panel.



5. REMOVAL OF ADAPTER

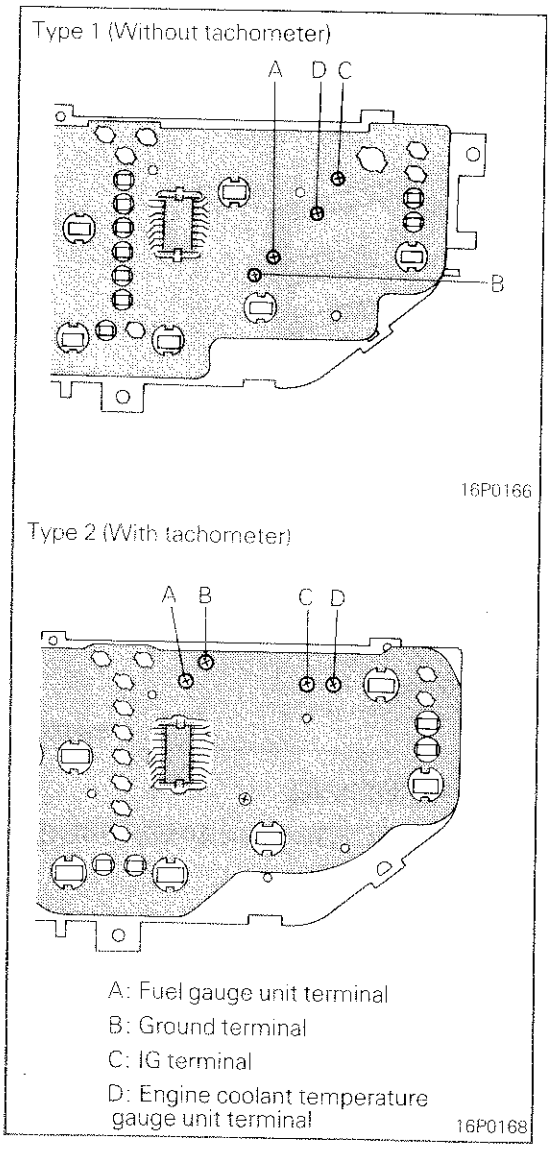
(1) Disconnect the speedometer cable at the transaxle end of the cable.
(2) Pull the speedometer cable slightly toward the vehicle interior, release the lock by turning the adapter to the left or right, and then remove the adapter.



INSPECTION

REED SWITCH INSPECTION

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



FUEL GAUGE CIRCUIT INSPECTION

Measure resistance between terminals with circuit tester.

Standard value:

A – B	**77 – 93 Ω**
A – C	**59 – 71 Ω**
B – C	**76 – 92 Ω**

ENGINE COOLANT TEMPERATURE GAUGE CIRCUIT INSPECTION

Measure resistance between terminals with circuit tester.

Standard value:

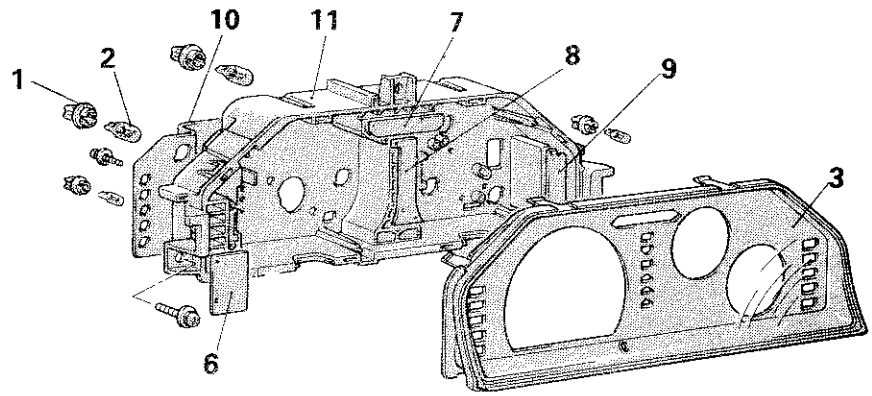
B – D	**144 – 174 Ω**
C – D	**68 – 82 Ω**
B – C	**76 – 92 Ω**

NOTE

(1) If the resistance value is extremely small, a short circuit in the coil is suspected. If the resistance value is too large, an open circuit in the coil is suspected.

(2) Even if the resistance value between the terminals is normal, the pointer will indicate an intermediate temperature if the zener diode in the engine coolant temperature gauge is defective.
If the pointer indicates an intermediate temperature regardless of the engine coolant temperature, check the engine coolant temperature gauge unit and harness.
If they are functioning normally, a defective zener diode in the engine coolant temperature gauge is suspected.

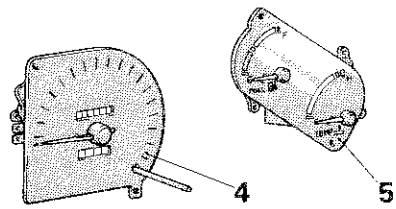
DISASSEMBLY AND REASSEMBLY



Disassembly steps

Type 1 (without tachometer)

1. Bulb socket
2. Bulb
3. Meter glass
4. Speedometer
5. Combination gauge
6. Indicator lens (L.H.)
7. Turn and beam indicator lens
8. Automatic transaxle position indicator light <A/T>
9. Indicator lens (R.H.)
10. Printed-circuit board
11. Meter case

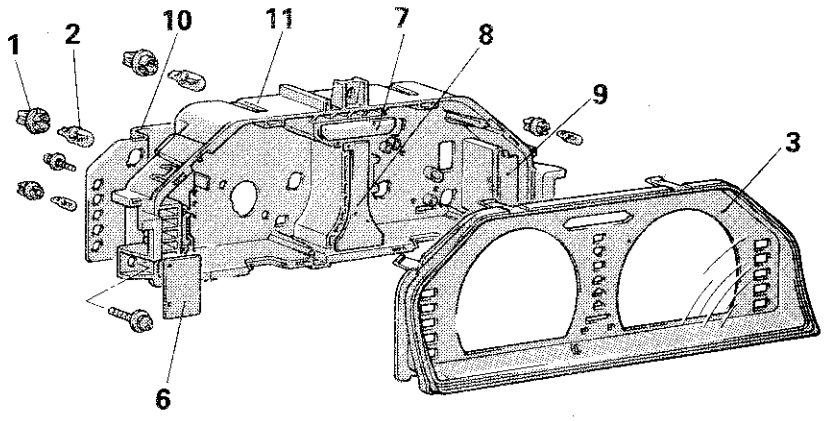


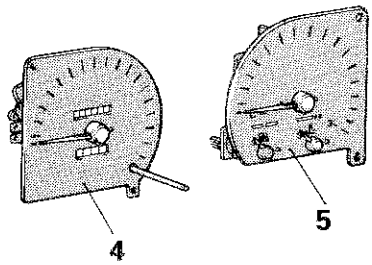
16P0210

Disassembly steps

Type 2 (with tachometer)

1. Bulb socket
2. Bulb
3. Meter glass
4. Speedometer
5. Tachometer and gauge
6. Indicator lens (L.H.)
7. Turn and beam indicator lens
8. Automatic transaxle position indicator light <A/T>
9. Indicator lens (R.H.)
10. Printed-circuit board
11. Meter case



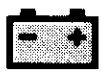


NOTE
Reverse the disassembly procedures to reassemble.

16P0211

INDICATORS

N08HKAL

Symbol		Operation
	Turn signal indicator light	This indicator flashes, as do the same side of turn-signal light flashes. If the turn-signal light is burnt out, the blinking of indicator slows down. This indicator is common with hazard light.
	High beam indicator light	This indicator illuminates when the headlights are on high beam.
	Door-ajar warning light	This indicator comes on when the door is either open or not completely closed.
	Seat belt warning light (for U.S.)	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.
	Seat belt warning light (for Canada)	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 for about six seconds in synchronism with the flashing of the warning light.
BRAKE	Brake warning light (for U.S.)	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 light (for Canada)	
	Fuel warning light	This indicator comes on when the fuel in the fuel tank falls less than approx. 8 liters (2.1 gals.).
	Charging warning light	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.

Symbol		Operation
	Oil pressure warning light	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.
OD OFF	Overdrive OFF indicator light	The light will light up when the overdrive switch is off.
P R N D 2 L	Automatic transaxle-position indicator light	This indicator light illuminates to indicate the position at which the selector lever is set.
	Washer fluid level indicator light	This indicator comes on when the washer fluid level in the washer tank falls to a low 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.
CRUISE	Auto-cruise control indicator light	The light illuminates when the auto-cruise control switch is switched ON, and the auto-cruise control system is activated.

LIGHTING SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08IB--

Items	Specifications
Exterior lights	
Headlight	
Type I W	65
Type II W	55
Front turn-signal light W	27 (1156)
Front combination light	
Side marker light CP	3 (168)
Position light W	5
*1Rear side marker light CP	3 (168)
Rear combination light	
Turn-signal light CP	32 (1156)
Stop and tail light CP	32/3 (2057)
*2Rear side marker light CP	3 (168)
Back-up light W	27 (1156)
License plate light *1CP or *2W	*13 (168) or *210
High-mounted stop light CP	21
Interior lights	
Dome light W	10
Luggage compartment light W	5

NOTE
1. *1: <Hatchback>
2. *2: <Sedan>
3. The values in parentheses denote SAE trade numbers.

SERVICE SPECIFICATIONS

N08IC--

Items	Specifications
Limit	
Headlight intensity	
Type I	18,000 cd or more
Type II	7,000 cd or more

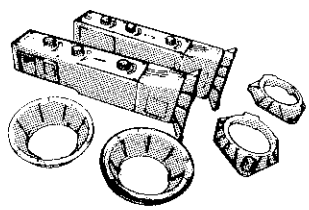
SEALANTS AND ADHESIVES

N08IH--

Items	Specified adhesive	Quantity
Connection of rear combination light and body	MOPAR Rope Caulk Sealer 3/16x80" roll Part No. 4026044 or equivalent	As required

SPECIAL TOOLS

N08IG- -

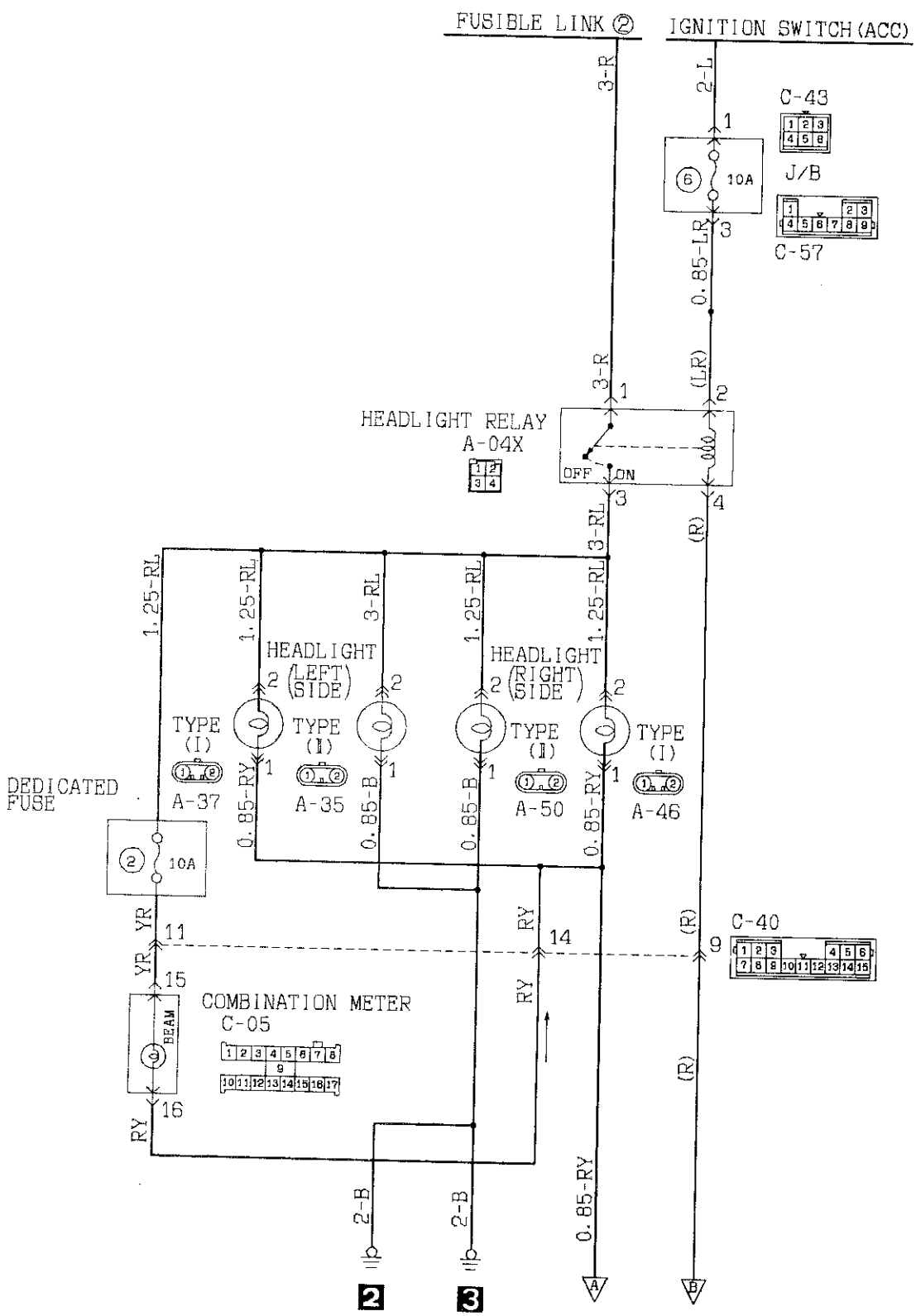
Tool	Number	Name	Use
	C-4466	Headlight aimer	Aiming of headlight

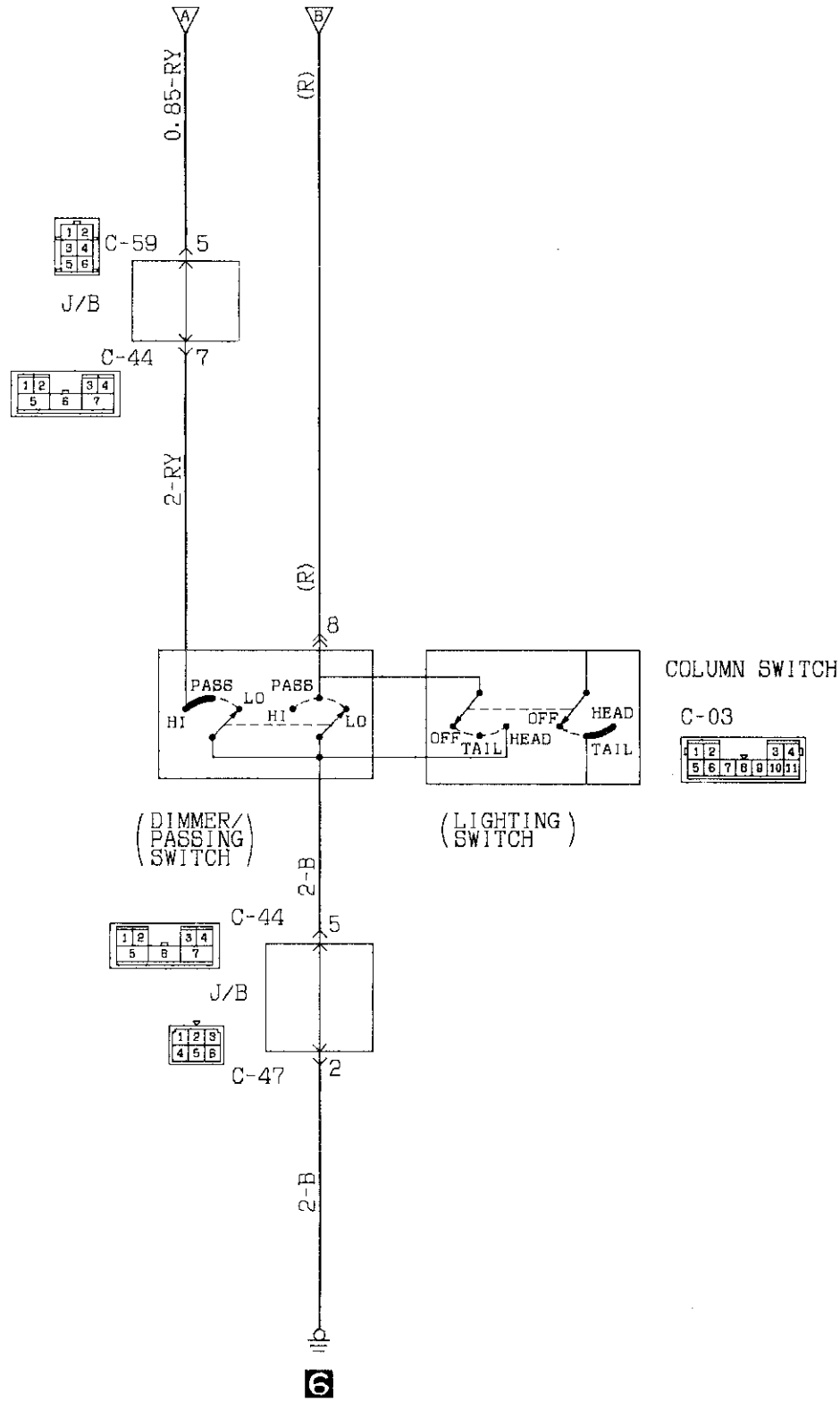
TROUBLESHOOTING

HEADLIGHT

CIRCUIT DIAGRAM

N08IHBH




A
B
0.85-RY
(R)
C-59
5
J/B
C-44
7
2-RY
(R)
8
PASS
LO
PASS
HI
HI
LO
OFF
HEAD
OFF
TAIL
HEAD
TAIL
COLUMN SWITCH
C-03
(DIMMER/ PASSING SWITCH)
(LIGHTING SWITCH)
2-B
C-44
5
J/B
C-47
2
2-B
6

OPERATION

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.

<Upper-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.

<Upper-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

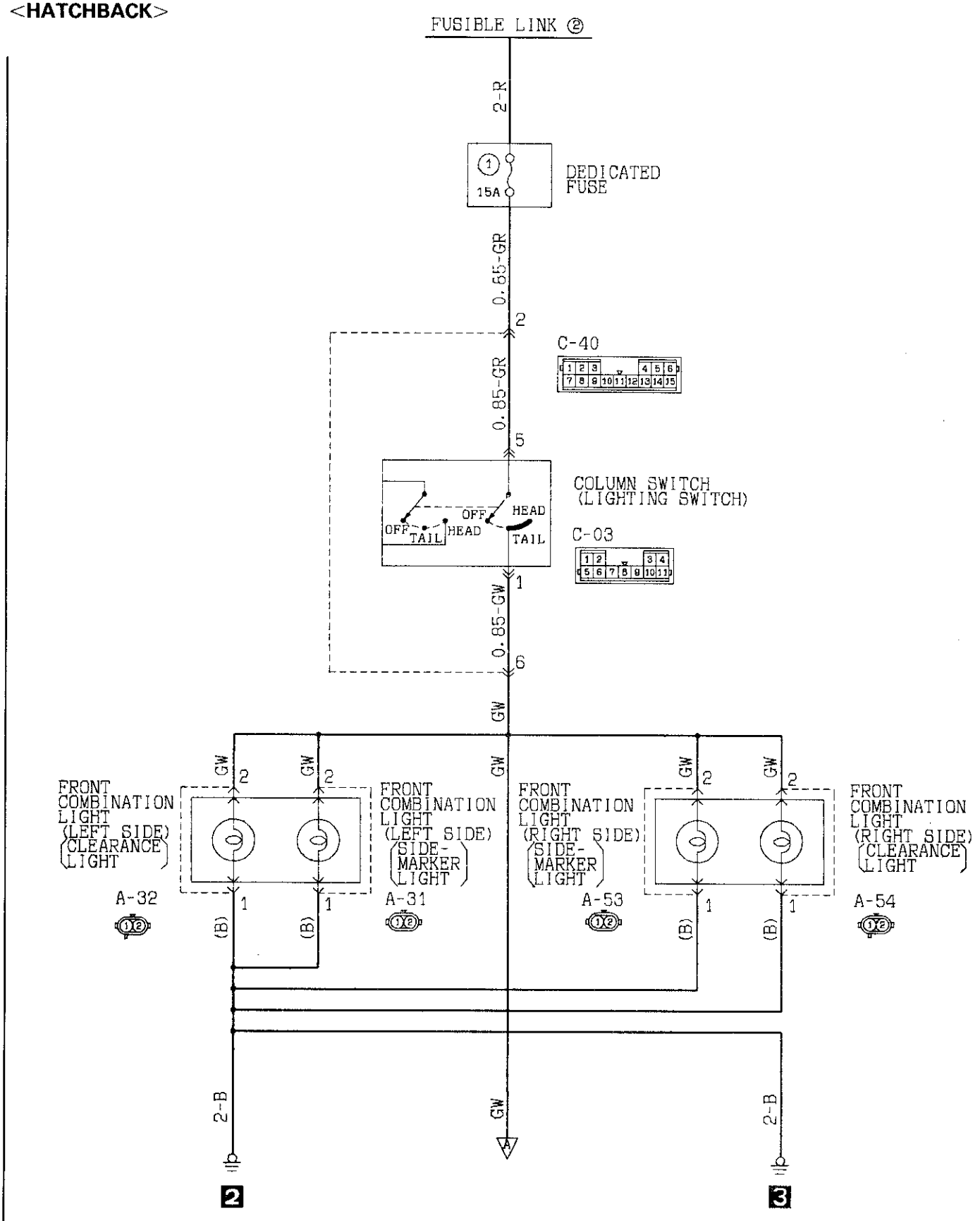
1. Headlights don't come on.
   1) But the tail lights do illuminate.
      - Check the headlight relay.
      - Check the lighting switch.
   2) The tail lights also don't illuminate.
      - Check the fusible link No. ②.
2. The low beam at both sides doesn't illuminate.
   - Check the "LO" contacts 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. ②.
      - Check the bulb.

TAILLIGHT, SIDE-MARKER LIGHT, CLEARANCE LIGHT AND LICENSE PLATE LIGHT

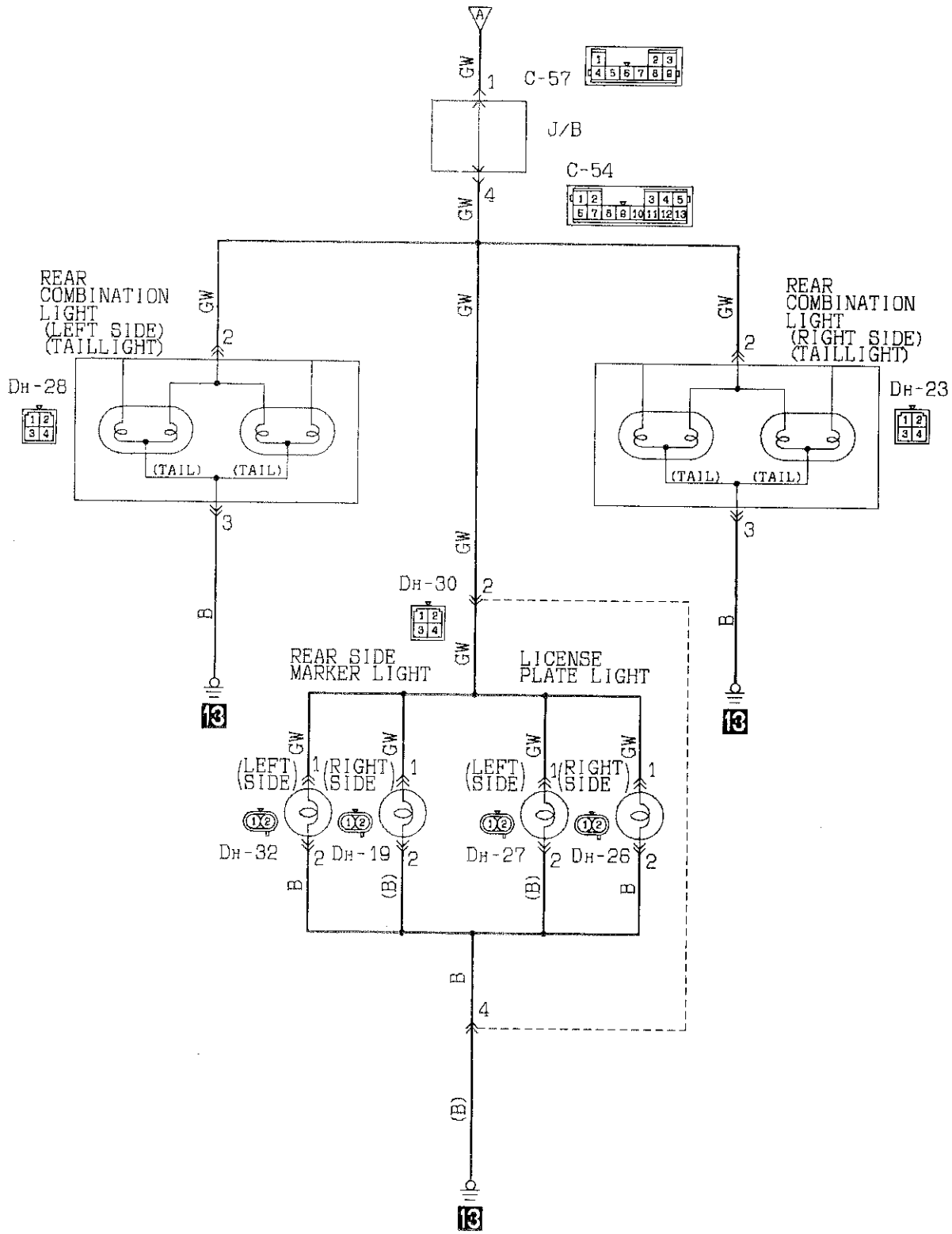
N08IHCG

CIRCUIT DIAGRAM

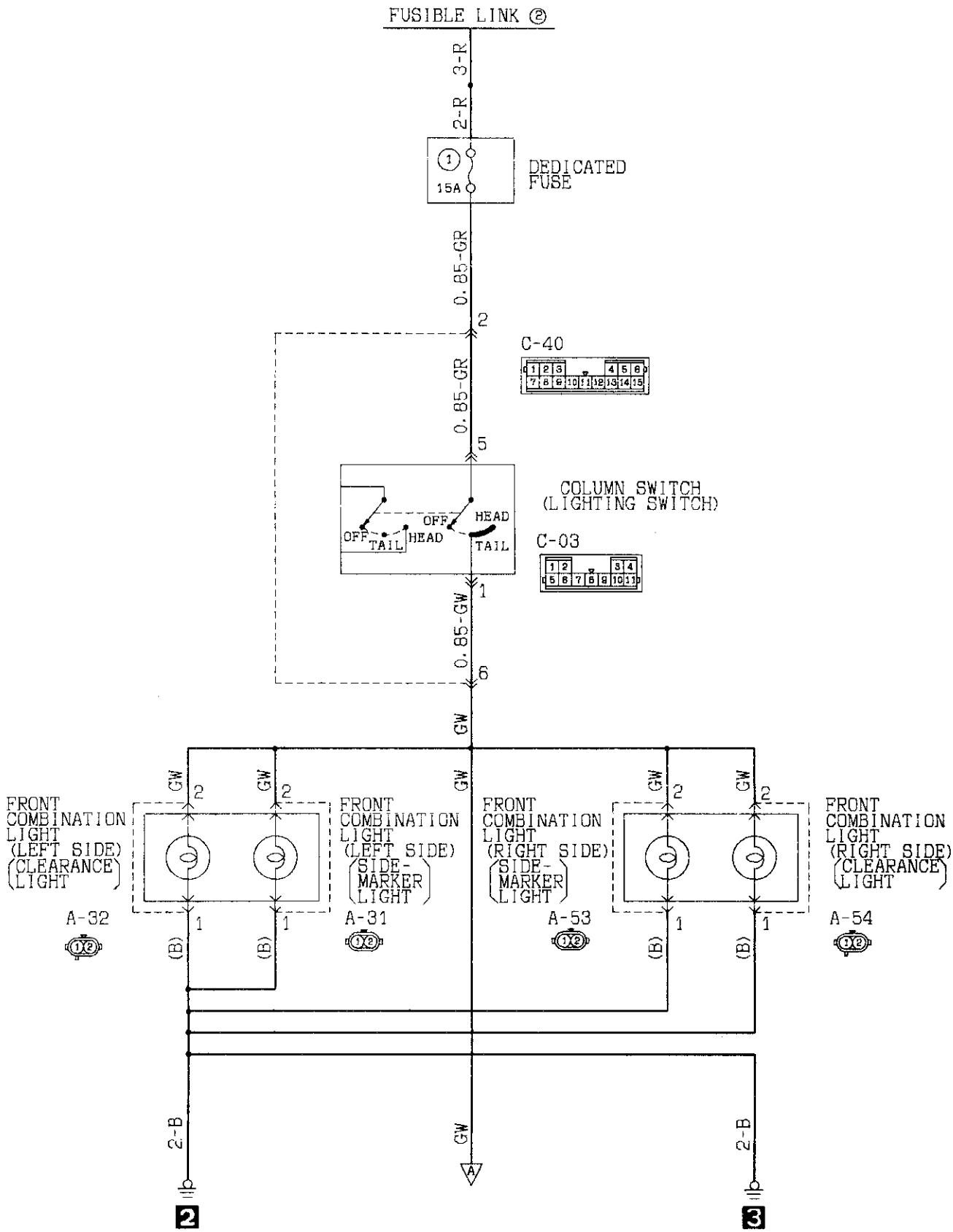
<HATCHBACK>



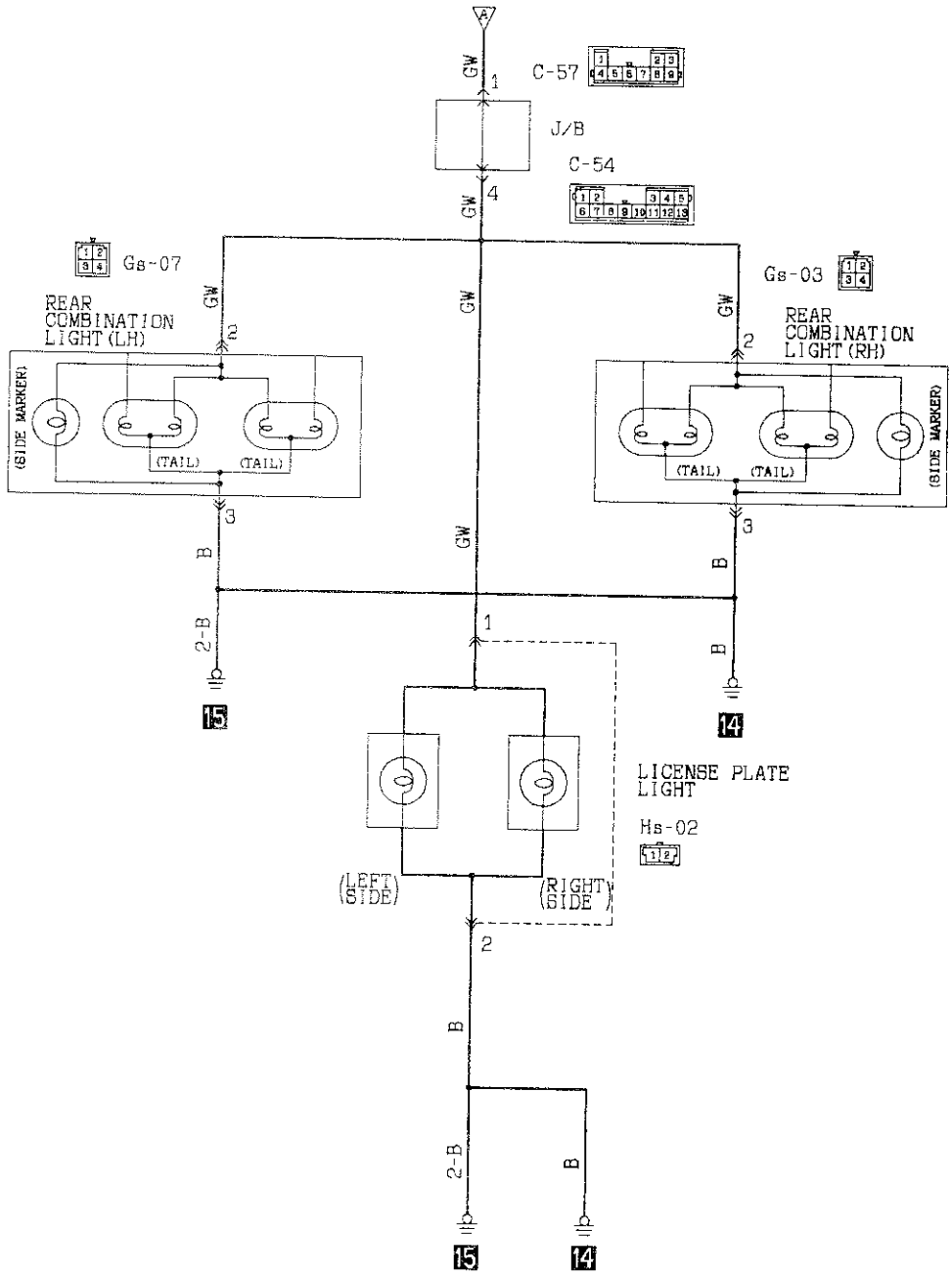
KX35-AC-C0802-N


A
GW
1
C-57
J/B
C-54
4
REAR COMBINATION LIGHT (LEFT SIDE) (TAILLIGHT)
REAR COMBINATION LIGHT (RIGHT SIDE) (TAILLIGHT)
D⊢28
D⊢23
2
(TAIL)
3
B
13
D⊢30
REAR SIDE MARKER LIGHT
LICENSE PLATE LIGHT
(LEFT SIDE)
(RIGHT SIDE)
D⊢32
D⊢19
D⊢27
D⊢26
(B)
4

<SEDAN>



KX35-AC-C0803-N



OPERATION

- When the lighting switch is set to the "TAIL" or "HEAD" position, electricity flows via dedicated fuse No. ① to each light, and each light illuminates.

TROUBLESHOOTING HINTS

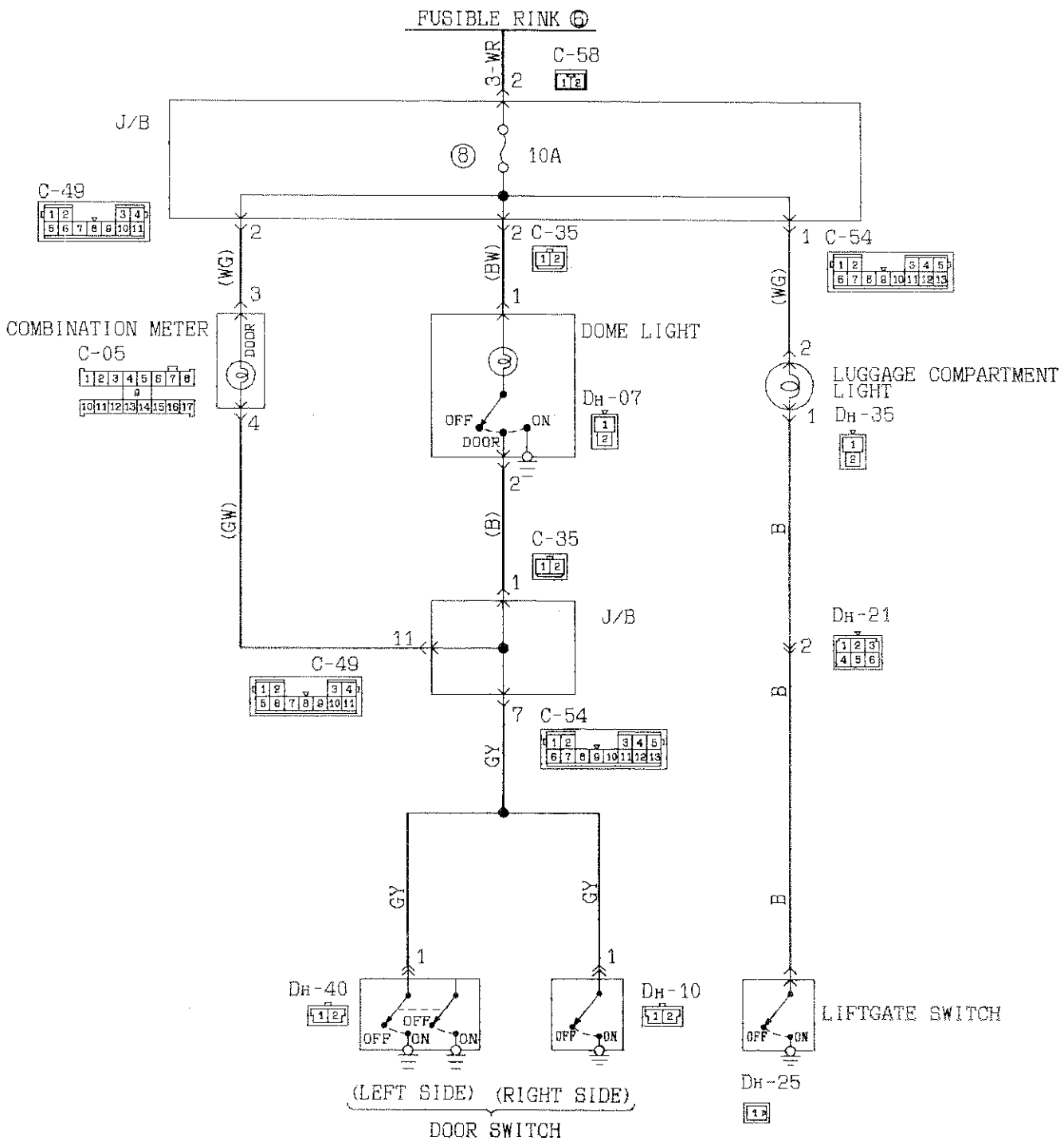
1. All lights do not illuminate.
   1) The headlights also do not illuminate.
      - Check fusible link No. ②.
   2) The headlights illuminate.
      - Check dedicated fuse No. ①.

DOME LIGHT AND LUGGAGE COMPARTMENT LIGHT

N08IHEG

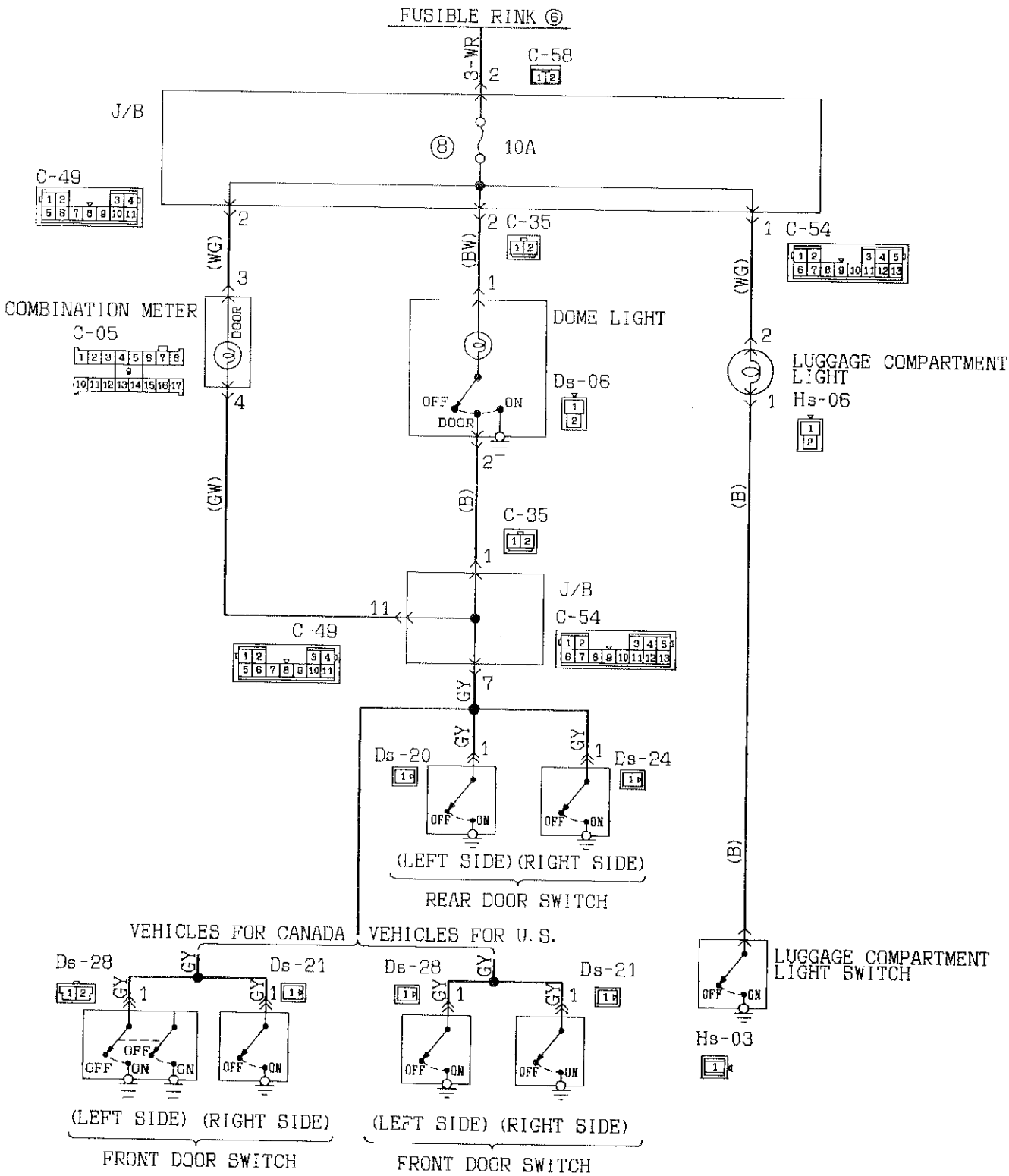
CIRCUIT DIAGRAM

<HATCHBACK>



KX35-AC-C0804-N

<SEDAN>


FUSIBLE RINK ⑥
3-WR
2
C-58
J/B
⑧
10A
C-49
2
2 C-35
1 C-54
(WG)
(BW)
(WG)
3
1
COMBINATION METER
C-05
DOOR
DOME LIGHT
Ds-06
OFF
ON
DOOR
2
LUGGAGE COMPARTMENT LIGHT
1 Hs-06
4
(GW)
2
(B)
(B)
C-35
1
J/B
C-54
11
C-49
7
GY
GY
GY
Ds-20
Ds-24
1
1
OFF
ON
(LEFT SIDE) (RIGHT SIDE)
REAR DOOR SWITCH
VEHICLES FOR CANADA
VEHICLES FOR U.S.
Ds-28
Ds-21
Ds-28
Ds-21
LUGGAGE COMPARTMENT LIGHT SWITCH
Hs-03
(LEFT SIDE) (RIGHT SIDE)
FRONT DOOR SWITCH
(LEFT SIDE) (RIGHT SIDE)
FRONT DOOR SWITCH

OPERATION

<Dome light>

- The dome light is always illuminated when the dome light switch is at the "ON" position.
- The dome light illuminates when any door is opened while the dome light switch is at the "DOOR" position.
- The dome light switches OFF when all doors are closed.

<Luggage compartment light>

- Battery voltage is always applied (via fusible link No. ⑥ and multipurpose fuse No. ⑧) to the luggage compartment light.
- When the lift gate or trunk lid is opened, the luggage compartment light switch is switched ON and the luggage compartment light illuminates.

TROUBLESHOOTING HINTS

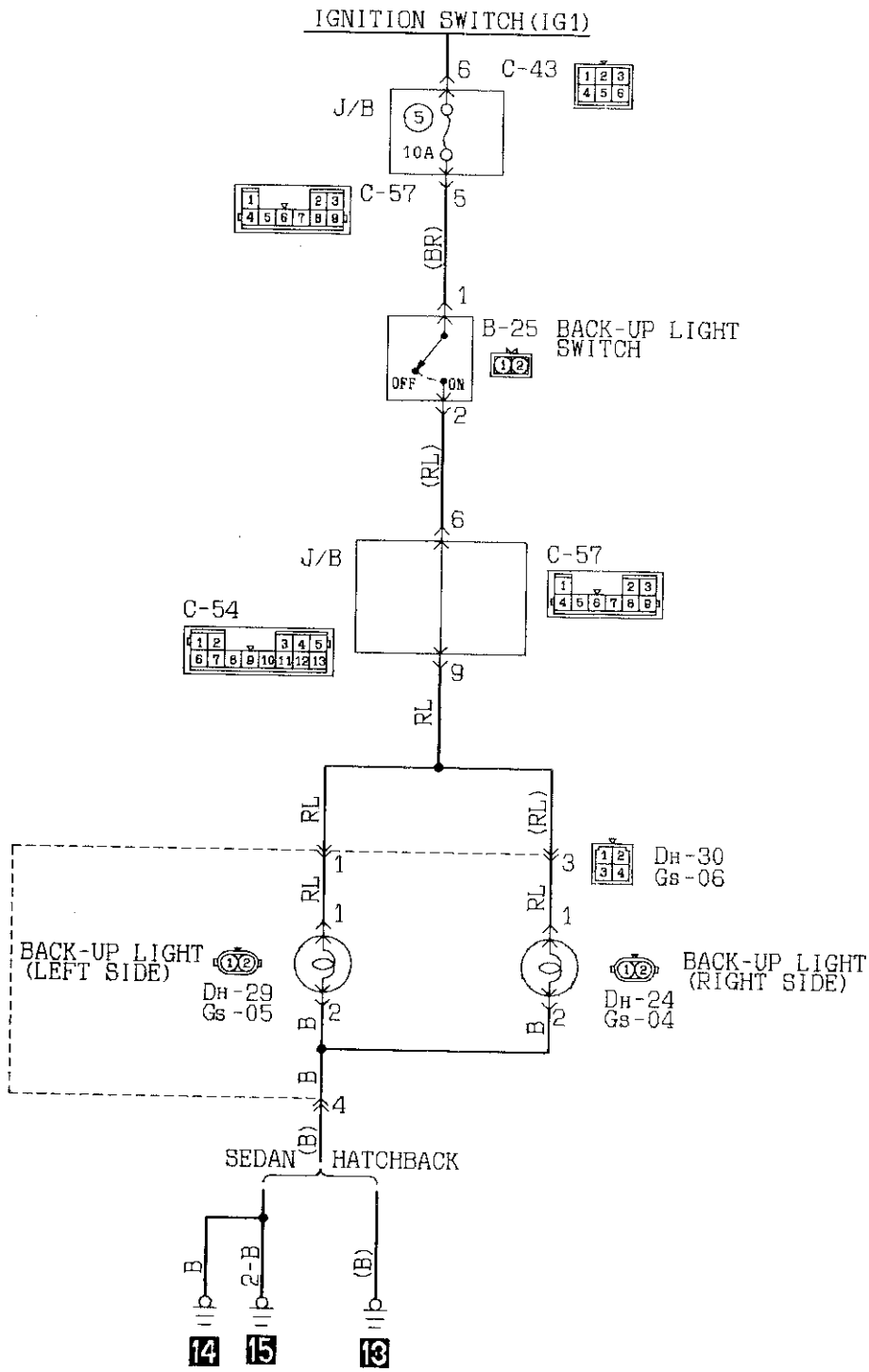
1. The dome light does not illuminate.
   1) The clock is stopped also.
      - Check multipurpose fuse No. ⑧
   2) The dome light does not illuminate when, with the dome light switch at the "DOOR" position, any door is opened.
      - Check the bulb.
      - Check the dome light switch.
   3) The dome light does not illuminate when, with the dome light switch at the "DOOR" position, a certain door or doors is/are opened.
      - Check the door switch [the door switch(es) for the door(s) that does not activate the dome light when opened].
2. The luggage compartment light does not illuminate.
   1) The dome light also does not illuminate.
      - Check multipurpose fuse No. ⑧.

BACK-UP LIGHT

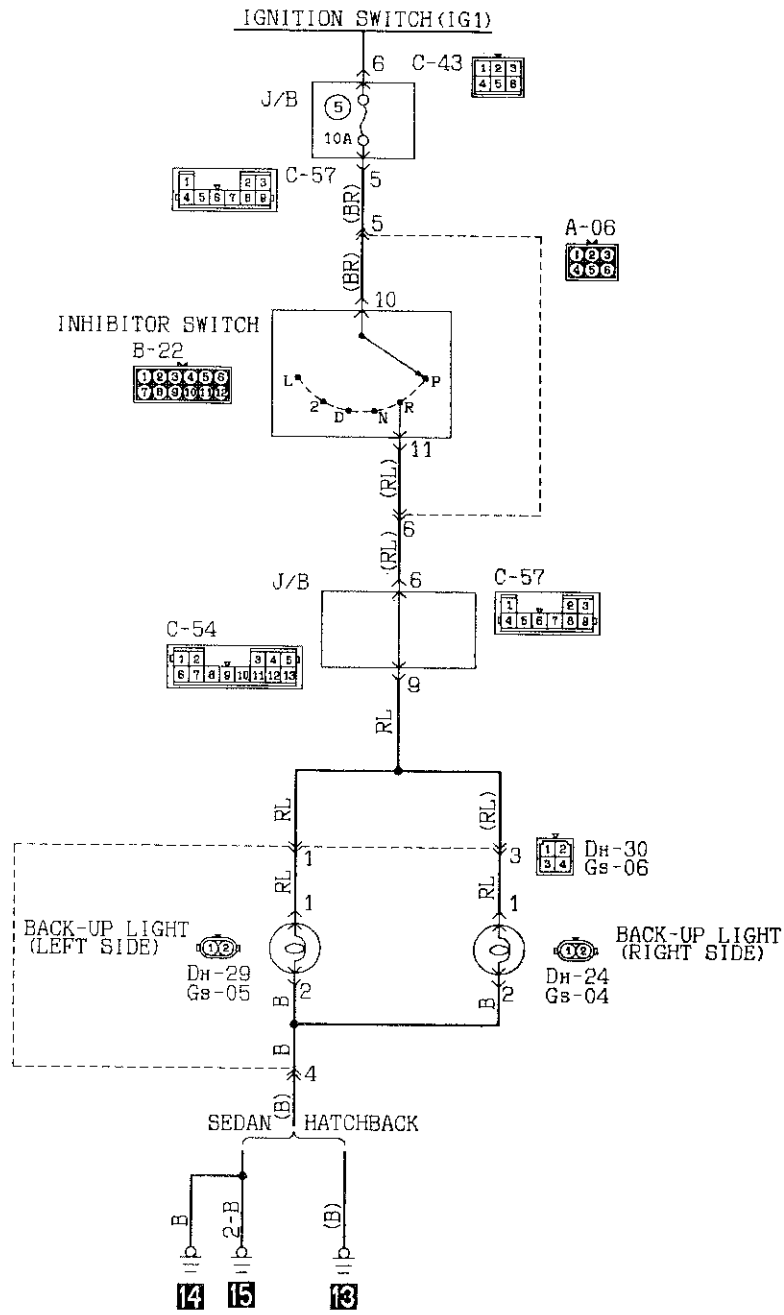
N08IHDE

CIRCUIT DIAGRAM

<M/T>



<A/T>



KX35-AC-C0903-N

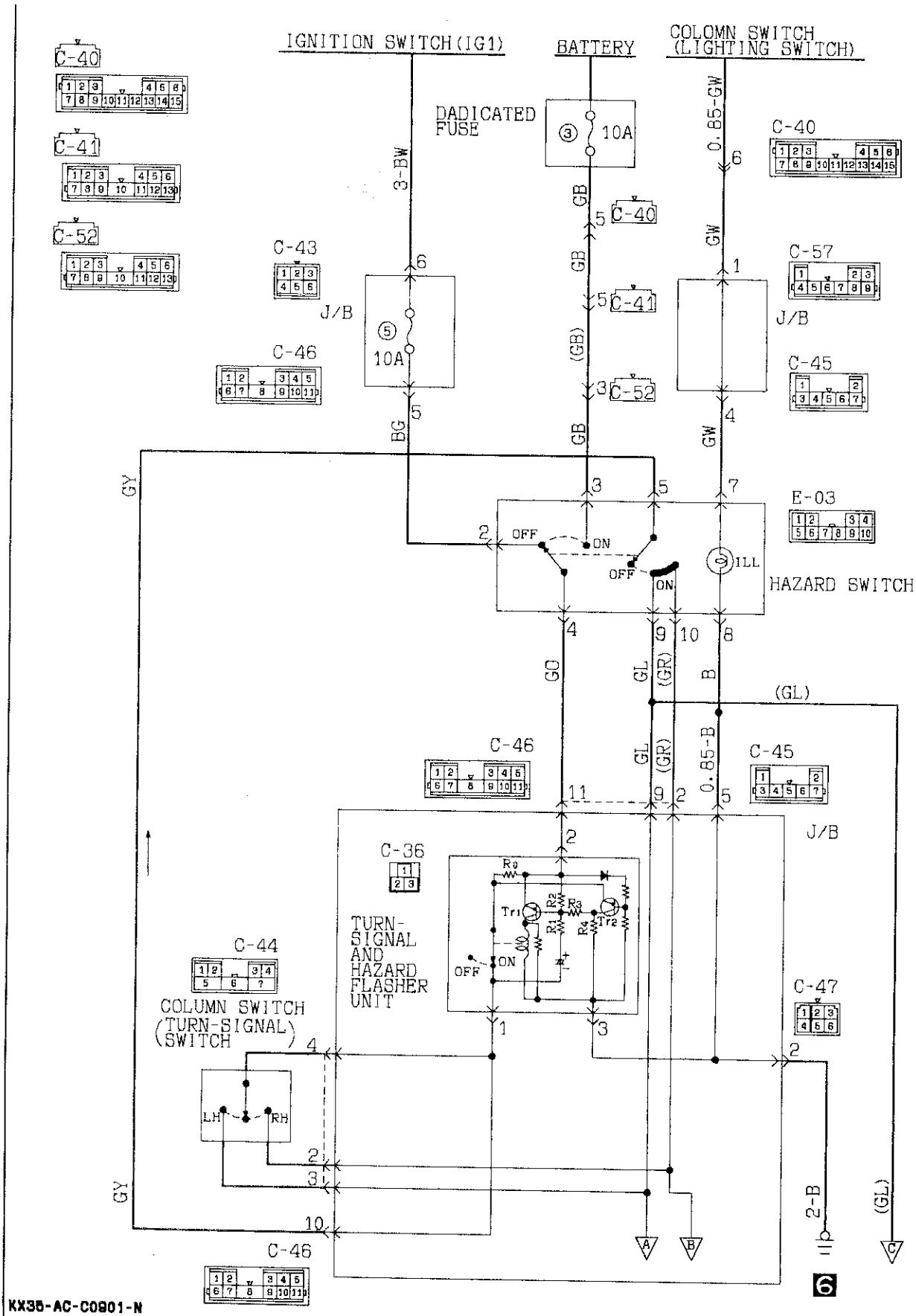
OPERATION

- When, with the ignition switch at the "ON" position, the shift lever (or the selector lever) is moved to the "R" position, the back-up light switch (M/T models) is switched ON [or the inhibitor switch (A/T models) is switched to the "R" position], and the back-up light illuminates.

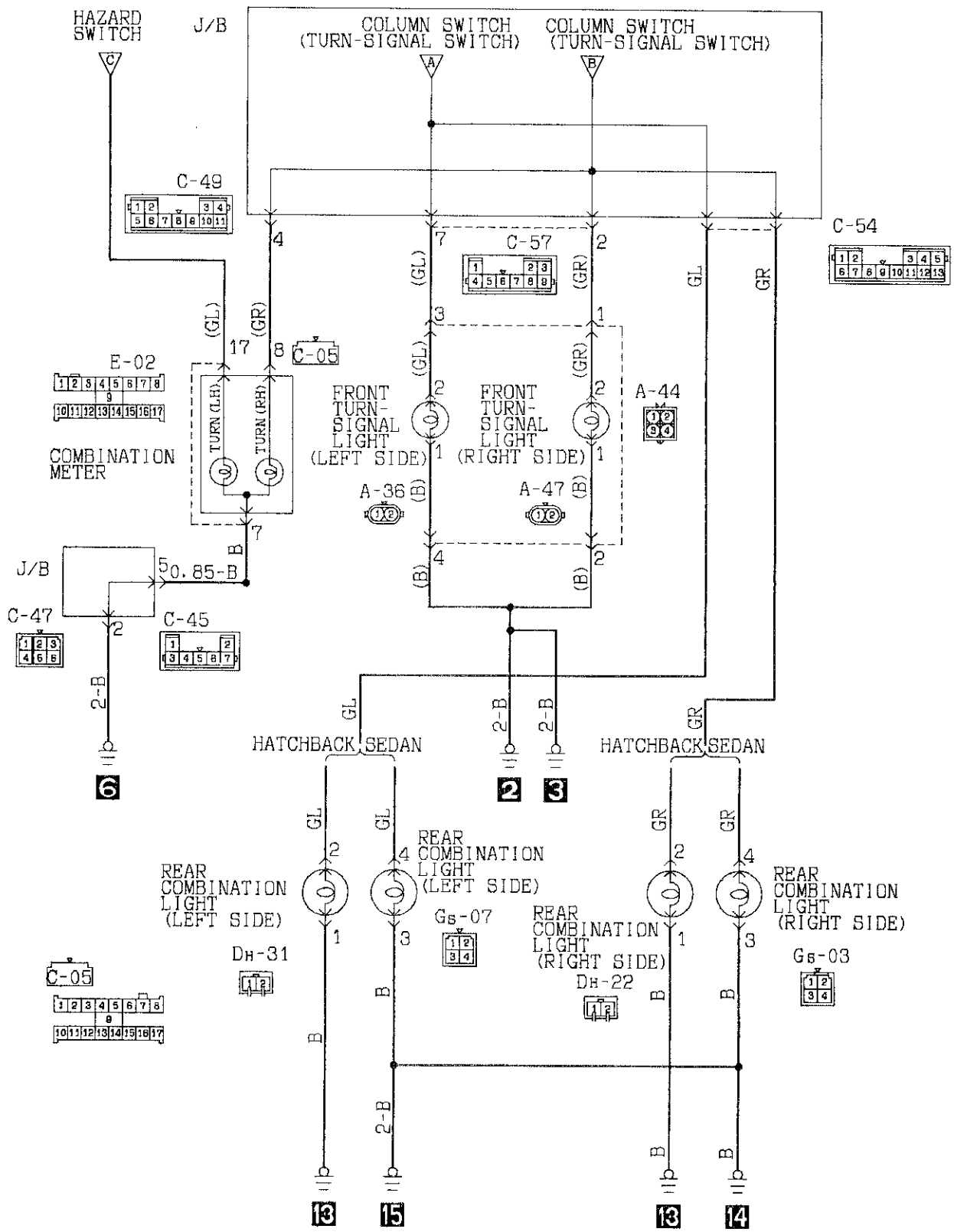
TURN-SIGNAL LIGHT AND HAZARD LIGHT

N08IHGF

CIRCUIT DIAGRAM



KX35-AC-C0901-N


HAZARD SWITCH
J/B
COLUMN SWITCH (TURN-SIGNAL SWITCH)
COLUMN SWITCH (TURN-SIGNAL SWITCH)
C-49
C-57
C-54
C-05
E-02
COMBINATION METER
TURN (LH)
TURN (RH)
FRONT TURN-SIGNAL LIGHT (LEFT SIDE)
FRONT TURN-SIGNAL LIGHT (RIGHT SIDE)
A-44
A-36
A-47
J/B
C-47
C-45
0.85-B
HATCHBACK
SEDAN
REAR COMBINATION LIGHT (LEFT SIDE)
REAR COMBINATION LIGHT (RIGHT SIDE)
G5-07
G5-03
DH-31
DH-22
C-05
6
2
3
13
15
13
14

OPERATION

<Turn-signal lights>

1. Normal Operation
   - When the ignition switch is placed in the "ON" position, current flows through the hazard switch to the turn-signal and hazard flasher unit. Tr_2 in the turn-signal and hazard flasher unit is "ON", and Tr_1 is "OFF".
   - When the turn-signal switch is placed in the "LH" (or "RH") position, current flows through the relay contacts in the turn-signal and hazard flasher unit to the turn-signal lights. As a result, the emitter potential of Tr_2 falls, forcing Tr_2 to the "OFF" state.
   - Then current flows through R_3 and R_4 to the base of Tr_1, causing Tr_1 to be "ON". The operations up to this point are performed in such a short period that the turn-signal lights do not become red-hot but stay in the OFF state.
   - If the relay contacts are placed in the "OFF" state, the emitter potential of Tr_2 rises again, causing Tr_2 to be "ON". The base current of Tr_1, on the other hand, flows through R_1 and a capacitor to the turn-signal lights, Tr_1 continues to be "ON", and the relay contacts stay "OFF", so the turn-signal lights continue to be "OFF".
   - When the capacitor is fully charged, Tr_1 is turned "OFF" and the relay contacts enter the "ON" state, so the turn-signal lights come on. At the same time, Tr_2 is turned "OFF".
   - When the turn-signal lights are ON, the capacitor is discharged through the closed circuit made up of R_1, R_2, R_0 and the relay contacts, and the turn-signal lights continue to glow until the end of the discharge.
   - When the capacitor finishes discharging, the base current of Tr_1 begins to flow through R_3 and R_4, causing Tr_1 to be "ON" again. Then the function of the relay coil places the relay contacts in the "OFF" position, and the turn-signal lights go out.
   - When the relay contacts are placed in the "OFF" position, Tr_2 is turned "ON", and the capacitor begins to be recharged by the base current of Tr_1.
   - These operations are repeated to allow the turn-signal lights and turn-signal indicators "LH" (or "RH") to continue flashing.
2. One Bulb Open-Circuit
   - If the bulb of any of the turn-signal lights has an open-circuit, the resistance of the light circuit as a whole will increase; the voltage drop across R_0 will be about a half of the voltage drop that occurs when normal. The emitter potential of Tr_2 falls but not low enough to cause Tr_2 to be "OFF", so Tr_2 stays "ON".
   - As a result, current cannot flow through R_3 and R_4 to the base of Tr_1, so Tr_1 continues to be in the "OFF" state (the relay contacts continue to be in the "ON" state), and the turn-signal lights continue to glow (do not flash).

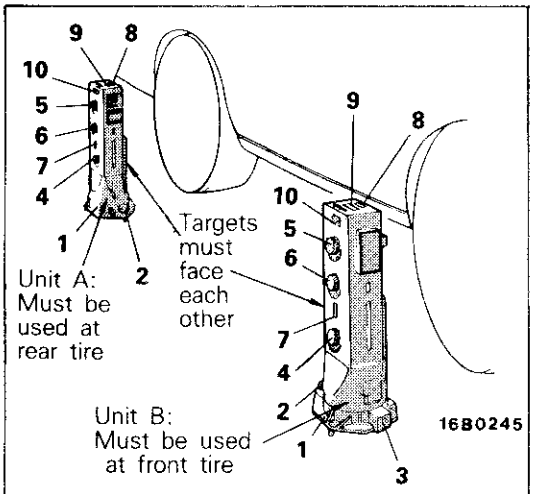
<Hazard-warning lights>

- When the hazard-warning switch is switched to the "ON" position, the relay contact of the 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.

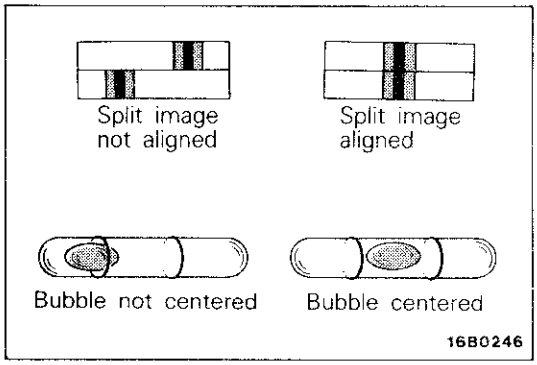
NOTE
- The number of flashes of the hazard-warning lights does not change if there is damaged or disconnected wiring of one light.

TROUBLESHOOTING HINTS

1. The turn-signal lights and hazard-warning lights do not operate at all.
   - Check the hazard-warning switch contact (power supply side).
   - Check the 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-warning switch contact (turn-signal side).
      - Check the turn-signal switch.
3. Turn-signal lights continue to illuminate.
   - Check the bulbs.
4. The hazard-warning lights do not function.
   1) The turn-signal lights function normally.
      - Check the hazard-warning switch contact (hazard-warning light side).



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

HEADLIGHTS AIMING

N08IIBE

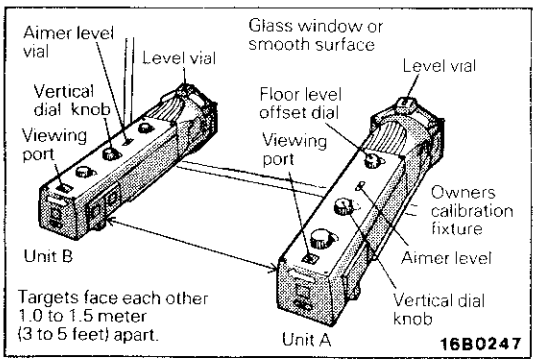
PRE-AIMING INSTRUCTIONS

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.

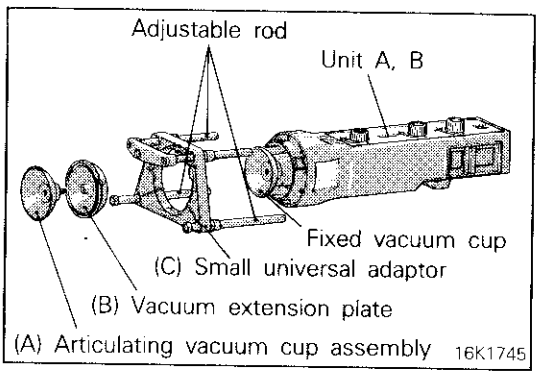
5. Rotate thumb adjusting screws on each calibration fixture until level vials on fixtures are centered.
6. With both calibration level vials centered, turn vertical dial knobs on each aimer until aimer level vials are centered. If aimer vertical dial pointers read between 1/2 up and 1/2 down, aimers 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.

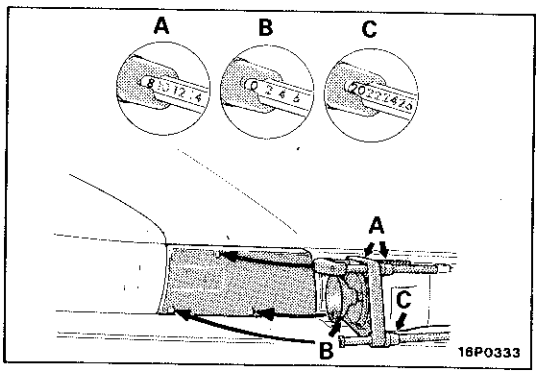
   Horizontal dial pointer reading (on each aimer): 1 left to 1 right

MOUNTING AIMERS

1. Remove the calibration fixture from each unit.
2. As shown in the figure, install the articulating vacuum cup assembly (A), vacuum extension plate (B) and small universal adaptor (C) to each unit.

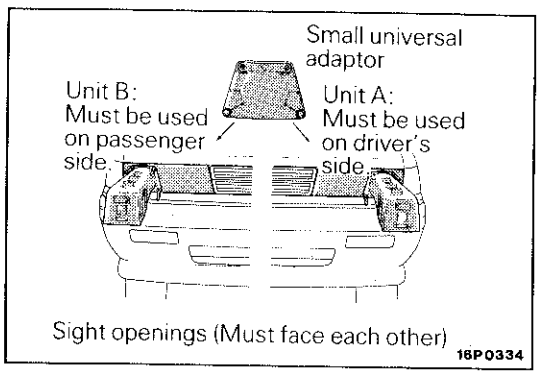


3. Make the length of the adjustable rod as shown in the figure.



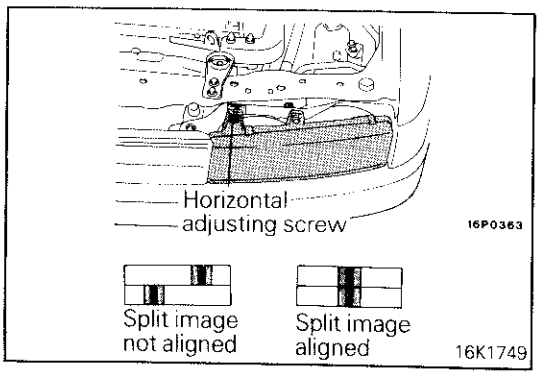
4. Position aimers on headlights by pushing piston handle forward, engaging rubber suction cup. Immediately pull back piston handle until it locks in place.

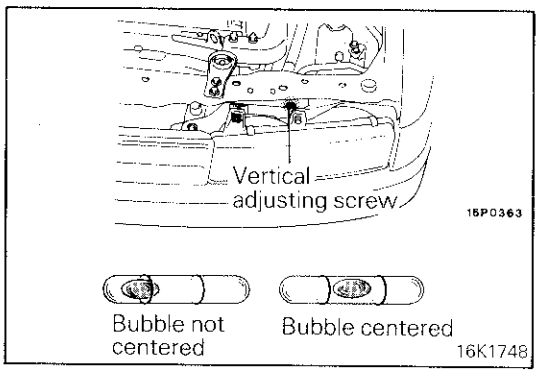
   NOTE
   Steel inserts are molded into position on the adaptor to insure accuracy. These inserts must be in contact with the three guide points on the lights when the aimers are properly positioned.

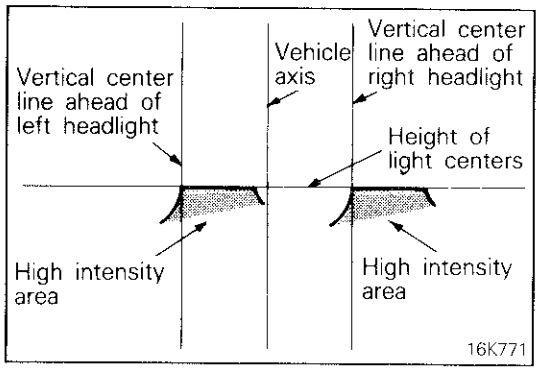


HORIZONTAL ADJUSTMENT

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 "O" 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.

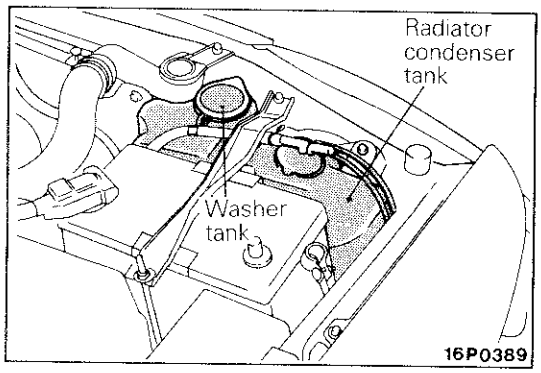
   NOTE
   Once the headlight low beams have been visually adjusted, high beam adjustment is unnecessary.

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: Type I 18,000 cd or more
Type II 7,000 cd or more

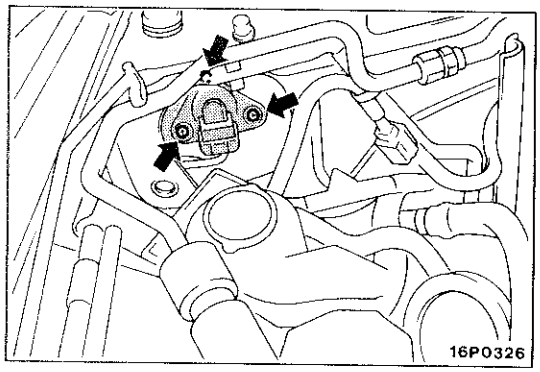
NOTES
(1) When measuring the luminous intensity of headlight, keep the engine at 2,000 rpm and have the battery charged.
(2) If there are specific regulations for luminous intensity of headlights in the region where the vehicle is operated, make sure that the intensity conforms to the requirements of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



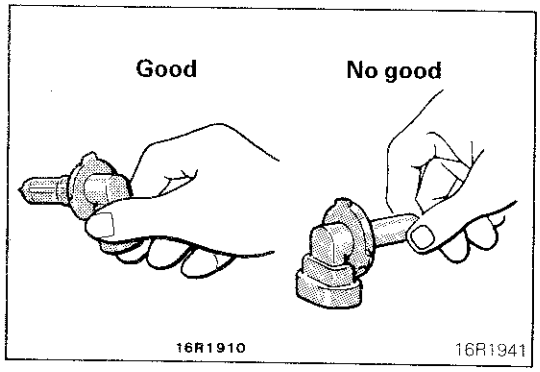
REPLACEMENT OF REPLACEABLE BULB N08IIFD

HEADLIGHT

(1) When the right bulb is to be replaced, remove the washer tank and radiator condenser tank.
(Refer to P.8-275.)
(2) Disconnect the harness connector.

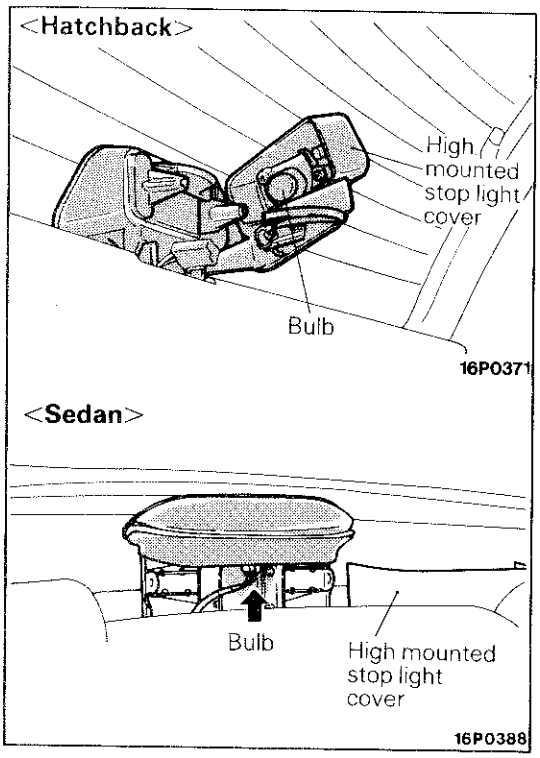


(3) Remove the socket holder and then pull out the halogen bulb.



Caution

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



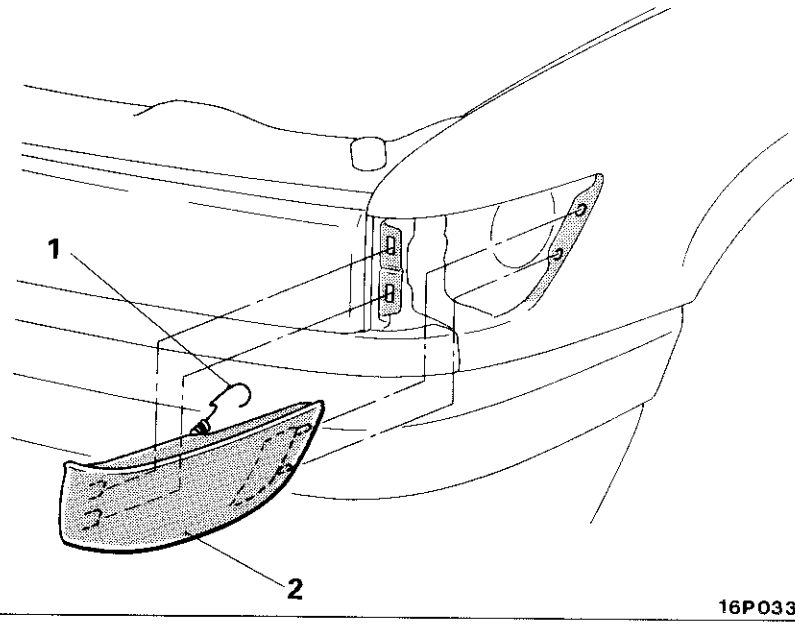
HIGH MOUNTED STOP LIGHT

1. Remove the high mounted stop light cover installation screws, and then remove the high mounted stop light cover.
2. Remove the bulb from the high mounted stop light.

FRONT COMBINATION LIGHT

N08ILAB

REMOVAL AND INSTALLATION

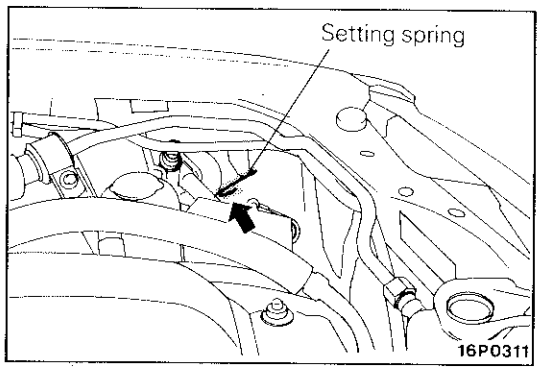


16P0330

Removal steps

◆◆ ▶◀ 1. Setting spring
▶◀ 2. Front combination light

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

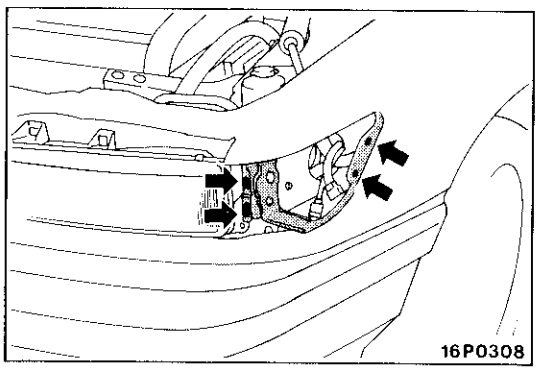


16P0311

SERVICE POINT OF REMOVAL

1. DISCONNECT OF SETTING SPRING

Disconnect the front combination light setting spring (at the end in the engine compartment), and then remove the front combination light.

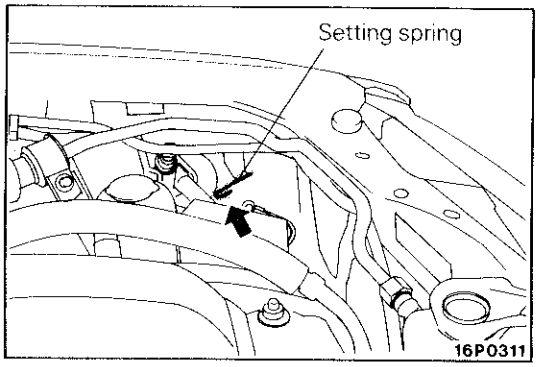


16P0308

SERVICE POINTS OF INSTALLATION

2. INSTALLATION OF FRONT COMBINATION LIGHT / 1. CONNECTION OF SETTING SPRING

(1) Insert the front combination light into the headlight side installation hole from the front, and securely fit the positioning bosses into the holes of the fender.



16P0311

(2) Pull the setting spring into the engine compartment, twist it 90°, and secure it to the body.

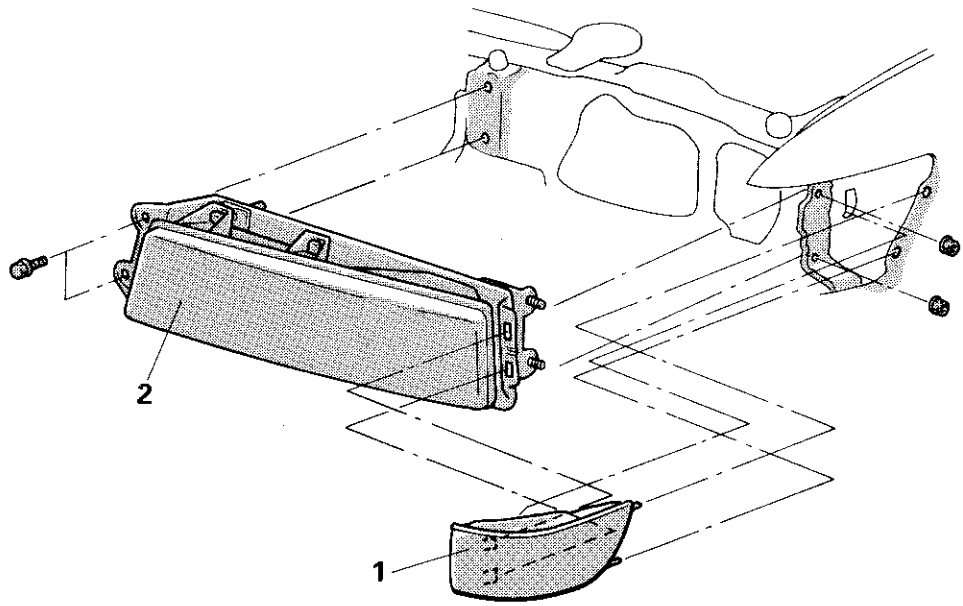
HEADLIGHTS

N08IJAL

REMOVAL AND INSTALLATION

Pre-removal Operation
- Removal of Radiator Grilles (Refer to GROUP 23 – Grille and Moulding)

Post-installation Operation
- Installation of Radiator Grilles (Refer to GROUP 23 – Grille and Moulding)
- Aiming Adjustment (Refer to P.8-249)



Removal steps

◆◆ 1. Front combination lights
◆◆ 2. Headlight

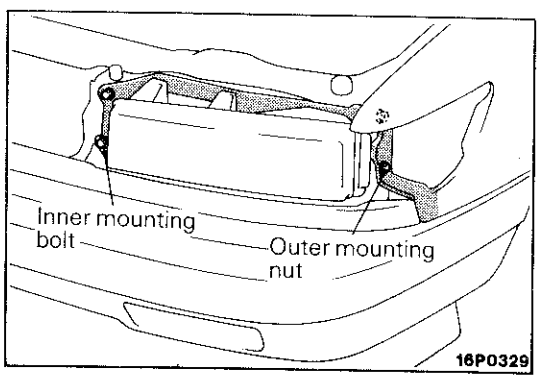
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation".

16P0332

SERVICE POINT OF REMOVAL

1. REMOVAL OF FRONT COMBINATION LIGHT

Refer to P.8-253.



16P0329

SERVICE POINT OF INSTALLATION

2. INSTALLATION OF HEADLIGHT

(1) After the outer mounting nut has been tightened, tighten the inner mounting bolt.
(2) After a headlight has been mounted, check that the headlight lens surface is flush with the extension of the plane of the fender panel.

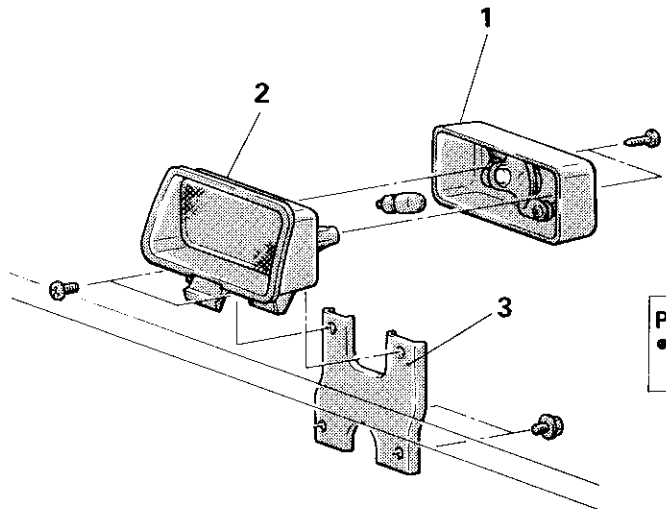
HIGH MOUNTED STOP LIGHT

N08IKAL

REMOVAL AND INSTALLATION

<Hatchback>

Pre-removal Operation
- Removal of Liftgate Trim (Refer to GROUP 23 – Trims)



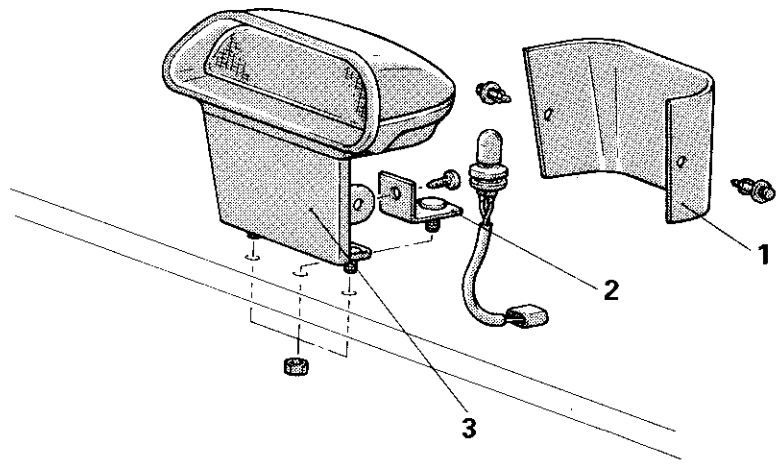
Post-installation Operation
- Installation of Liftgate Trim (Refer to GROUP 23 – Trims)

Removal steps

1. High mounted stop light cover
2. High mounted stop light
3. High mounted stop light bracket

NOTE
Reverse the removal procedures to reinstall.

<Sedan>



Removal steps

1. High mounted stop light cover
2. High mounted stop light bracket
3. High mounted stop light

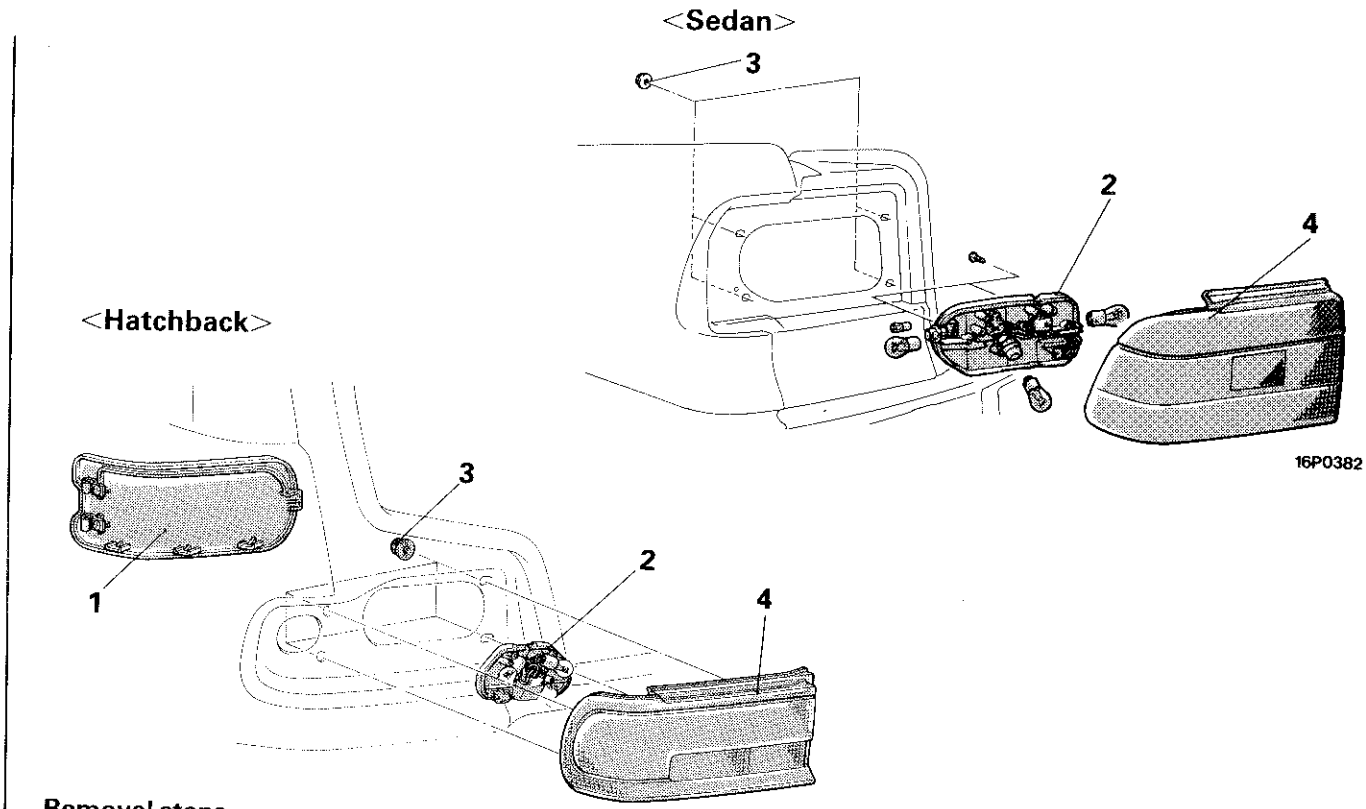
NOTE
Reverse the removal procedures to reinstall.

16P0375

REAR COMBINATION LIGHTS

N08IMAD

REMOVAL AND INSTALLATION

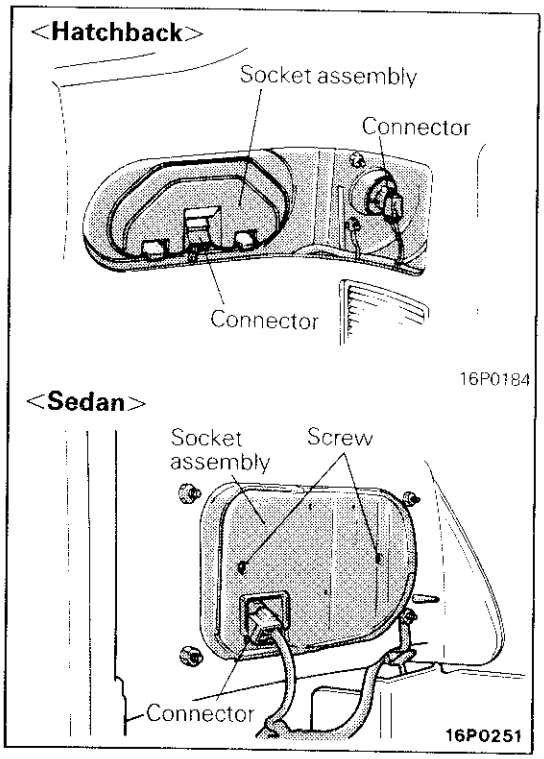


Removal steps

1. Lid <Hatchback>
2. Socket assembly
3. Rear combination light mounting nuts
4. Rear combination light

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation".
(4) The light bulb can be replaced once the socket assembly is removed.

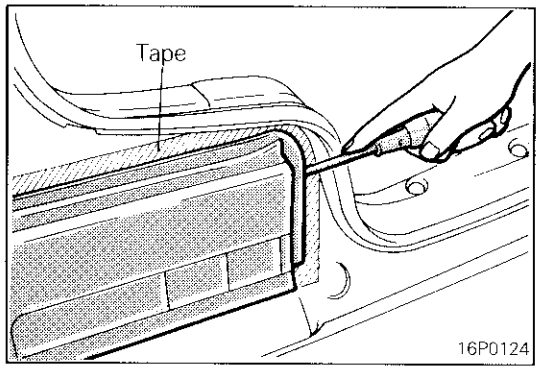
16P0150



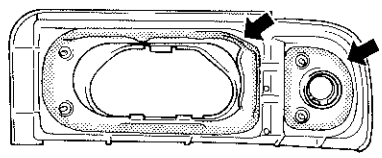
SERVICE POINTS OF REMOVAL

3. REMOVAL OF SOCKET ASSEMBLY

(1) Remove the socket assembly and harness connector.
(2) Remove the socket assembly.



<Hatchback>



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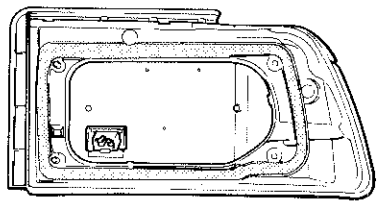


4. REMOVAL OF REAR COMBINATION LIGHT

(1) Attach tape (cloth adhesive tape) or similar material around the rear combination light.
(2) Using a flat-tip (–) screwdriver, slowly pry the rear combination light part while pulling the rear combination light toward you in order to remove it.

Caution
Take particular care when prying the rear combination light because excessive force or careless prying might cause scarring of the rear combination light or of the body surface.

SERVICE POINT OF INSTALLATION

4. INSTALLATION OF REAR COMBINATION LIGHT

(1) Remove any remaining adhesive material from the body surface and the rear combination light, and then use unleaded petrol to remove any grease or oil from the body side adhesive area.
(2) Apply adhesive material to the area indicated in the illustration.

Specified adhesive:
MOPAR Rope Caulk Sealer 3/16 x 80" roll
Part Number 4026044 or equivalent

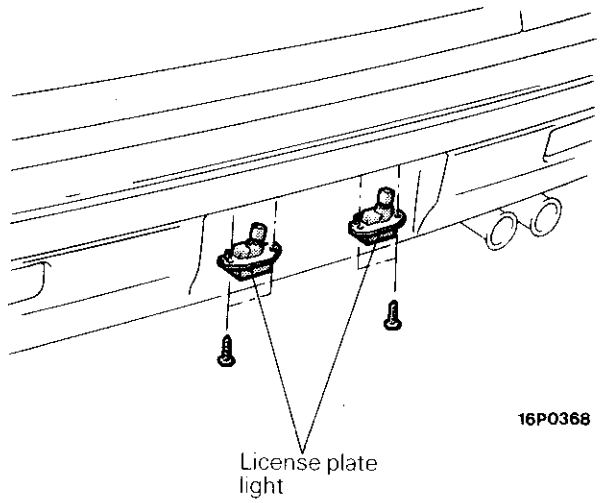
(3) Install the rear combination light.

LICENSE PLATE LIGHT

N08IVAB

REMOVAL AND INSTALLATION

<Hatchback>



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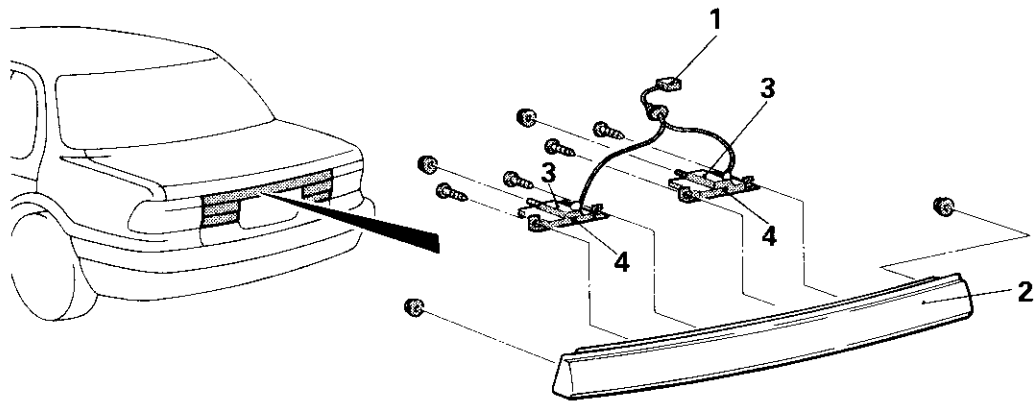
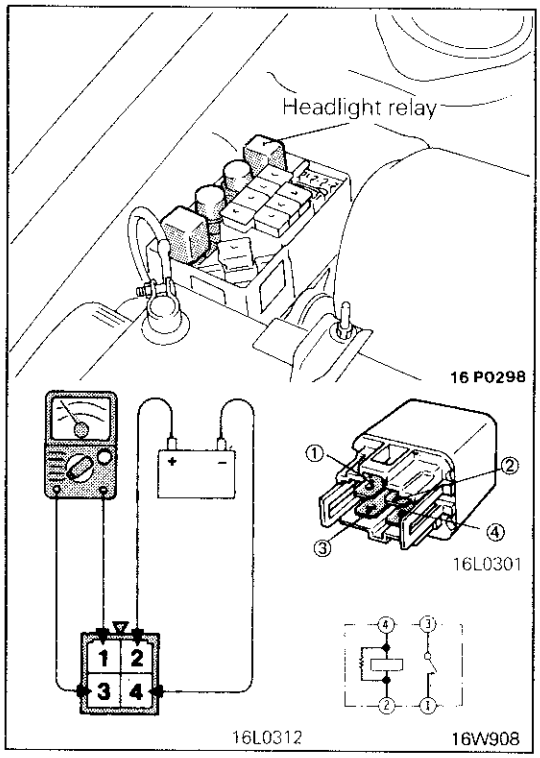


Removal steps

1. License plate light connector connection
2. Trunk lid upper garnish
3. License plate light bracket
4. License plate light

NOTE
(1) Reverse the removal procedures to reinstall.
(2) The bulb can be replaced by removing the license plate light lens only.

16P0391



RELAY

N08ISAB

INSPECTION

HEADLIGHT RELAY

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

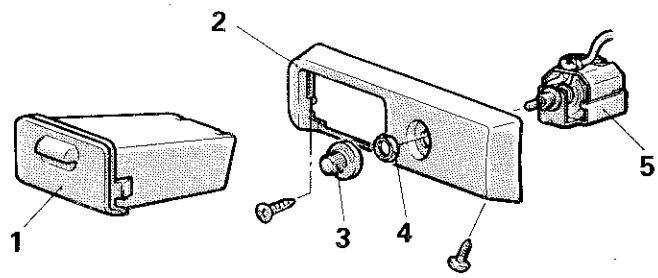
Power is supplied	1 – 3 terminals	Continuity
Power is not supplied	1 – 3 terminals	No continuity
	2 – 4 terminals	Continuity

RHEOSTAT

N08IRAG

REMOVAL AND INSTALLATION

<Vehicles for U.S.>



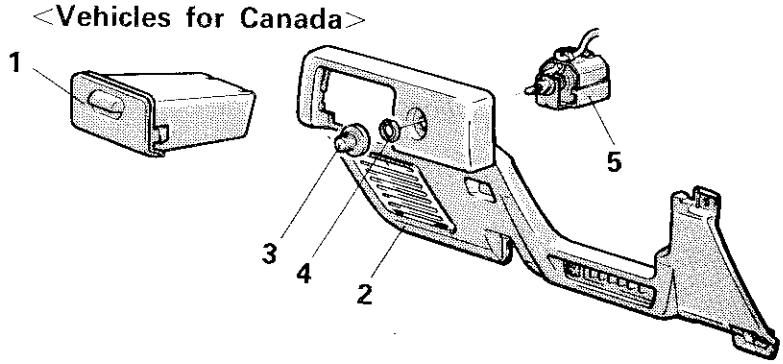
16P0364

Removal steps

◆◆ 1. Sunglass pocket
2. Side panel
3. Knob
4. Ring nut
5. Rheostat

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

<Vehicles for Canada>

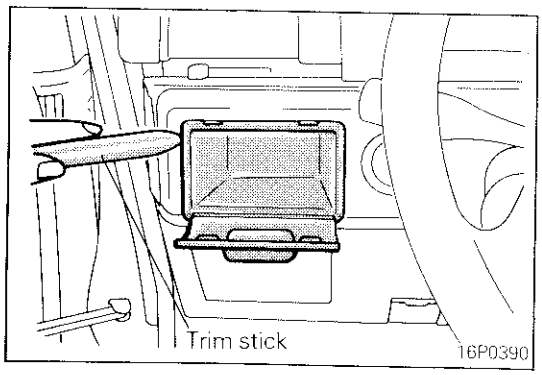


Removal steps

◆◆ 1. Sunglass pocket
◆◆ 2. Lower panel assembly
3. Knob
4. Ring nut
5. Rheostat

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

16P0365



16P0390

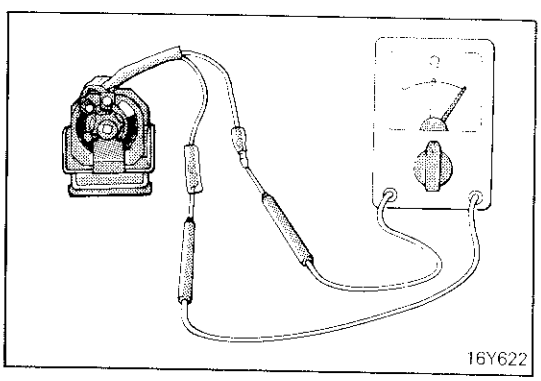
SERVICE POINTS OF REMOVAL

1. REMOVAL OF SUNGLASS POCKET

Using a trim stick, remove the sunglass pocket.

2. LOWER PANEL ASSEMBLY <Vehicles for Canada>

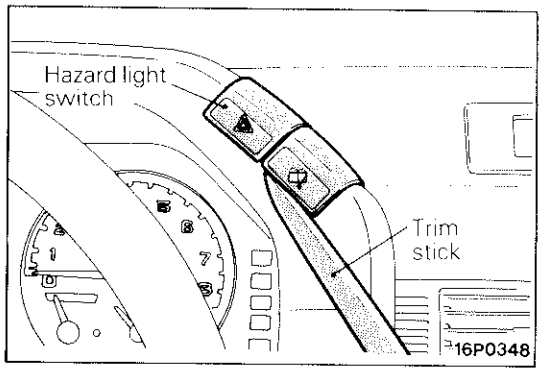
Refer to GROUP 23 – Instrument Panel.



16Y622

INSPECTION

(1) With the connector disconnected, measure the continuity between the rheostat terminals with an ohmmeter.
(2) If the resistance value varies smoothly between 0 and 10 ohms throughout the entire operation range, the rheostat is functioning properly.

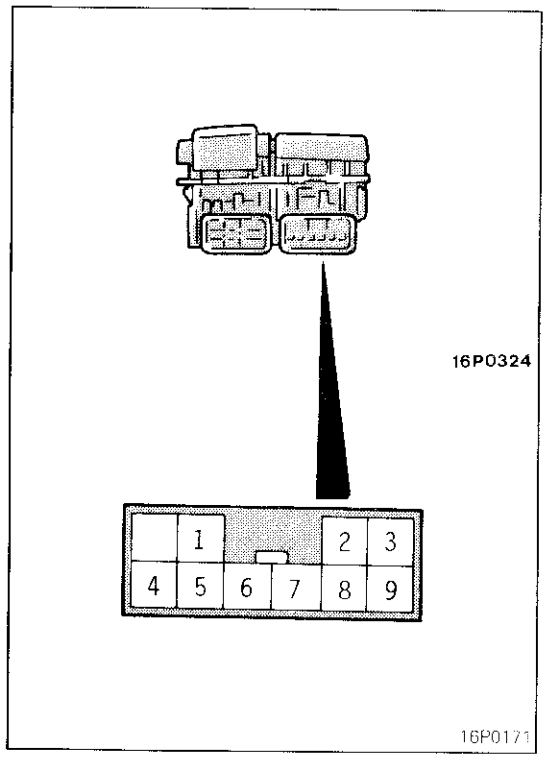


HAZARD LIGHT SWITCH

N08IQAF

SERVICE POINT OF REMOVAL

Using a trim stick, remove the hazard light switch.



INSPECTION

Operate the switch to check for continuity between terminals.

Switch position \ Terminal	1	2	3	4	5	8	9	6	7
OFF	○		○					Illumination light	
ON		○	○	○	○	○	○		

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

COLUMN SWITCH

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08JBAD

Items	Specifications
Column switch	
Lighting switch	
Rated load A	0.3
Voltage drop V	0.2 or less
Turn-signal switch	
Rated load A	5.0
Voltage drop V	0.2 or less
Dimmer/passing switch	
Rated load A	
High beam	Max 24.2
Low beam	Max 10.8
Voltage drop V	0.2 or less
Auto-cruise control switch	
Rated load A	
SET	0.1 – 0.3
RESUME	0.1 – 0.3
Voltage drop V	0.2 or less
Windshield wipers and washer switch	
Rated load A	
Wiper switch	
LO	3.5
HI	4.5
Washer switch	3.5
Voltage drop V	
Wiper switch	0.2 or less
Washer switch	0.5 or less
Intermittent wiper switch	
Operation mode	
Type 1	2 speed type
Type 2	2 speed fixed-interval intermittent wiper
Type 3	2 speed variable-interval intermittent wiper
Intermittent interval (min.-max.) sec.	
Type 2	Approx. 4
Type 3	1.5 – 10.5

TORQUE SPECIFICATIONS

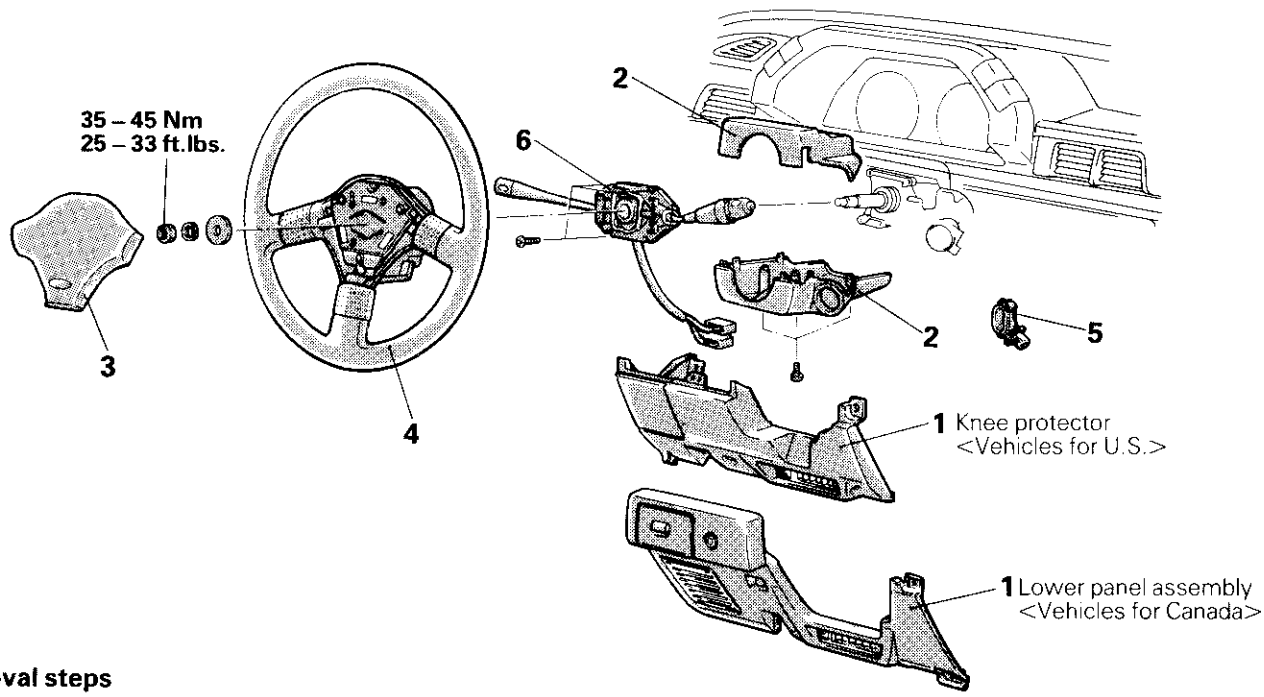
N08JC--

Items	Nm	ft.lbs.
Steering wheel installing nut	35 – 45	25 – 33

COLUMN SWITCH

N08JJAE

REMOVAL AND INSTALLATION



Removal steps

◆◆ 1. Knee protector or lower panel assembly
2. Column cover
3. Horn pad
◆◆ 4. Steering wheel
5. Clip
6. Column switch

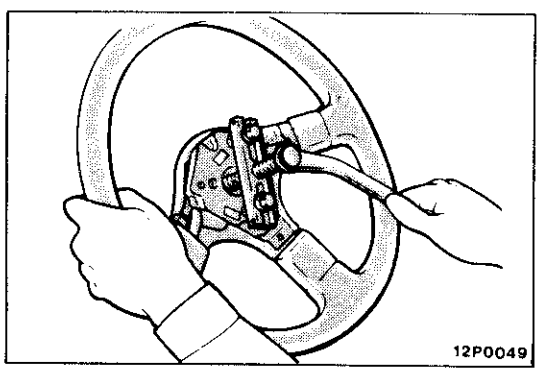
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".

16P0379

SERVICE POINTS OF REMOVAL

1. REMOVAL OF KNEE PROTECTOR OR LOWER PANEL ASSEMBLY

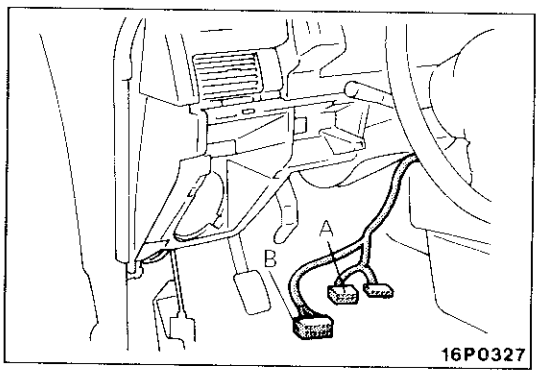
Refer to GROUP 23 – Instrument Panel.



4. REMOVAL OF STEERING WHEEL

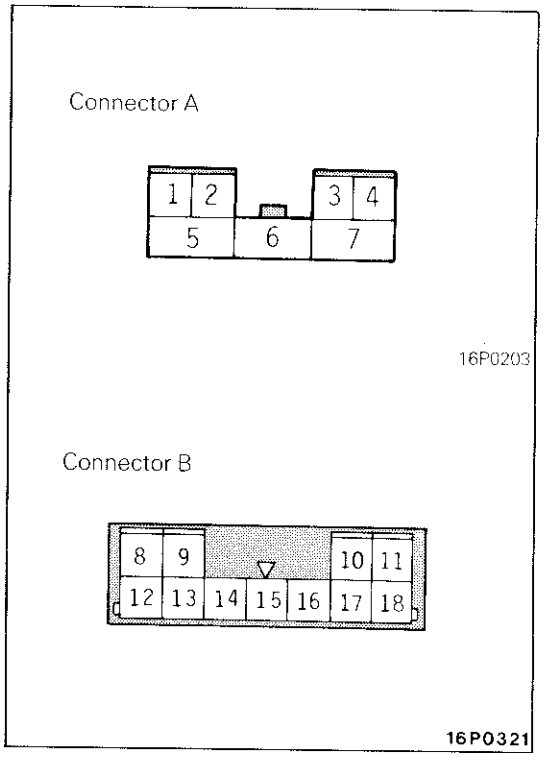
(1) Make mating marks on the steering wheel and the steering wheel shaft.
(2) Use a steering wheel puller to remove the steering wheel.

Caution
Do not hammer on the steering wheel to remove it; doing so may damage the collapsible mechanism.



INSPECTION

(1) Remove the knee protector (or lower panel assembly) and the column cover. (Refer to GROUP 23 – Instrument panel.)
(2) Disconnect the column switch connector and check the continuity between the terminals for each switch.



LIGHTING AND DIMMER/PASSING SWITCH

Operate the switch and check the continuity between the terminals.

Switch position		Terminal 5	8	7	12	15	16
Lighting switch	OFF						
	≡D○≡		○		○		
	≡D		○	○	○	○	
Dimmer switch	Low			○			○
	High	○		○			
	Passing switch	○		○		○	

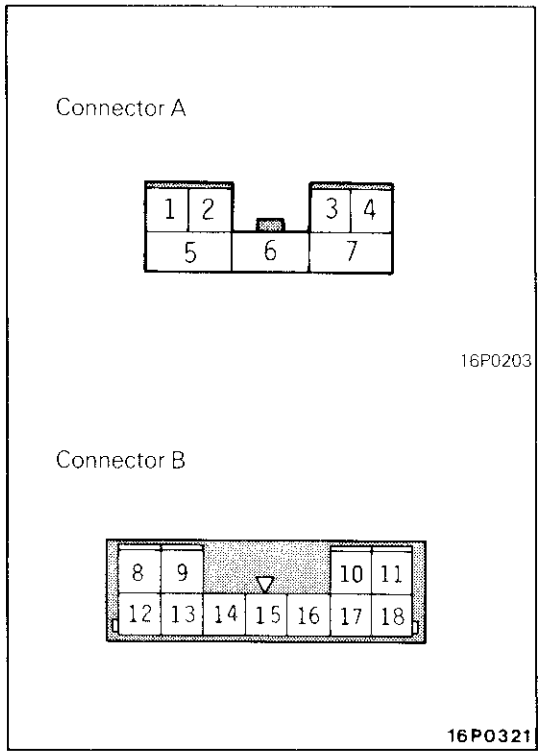
NOTE
(1) ○–○ indicates that there is continuity between the terminals.
(2) ○–○ indicates internal connections in the switch.

TURN SIGNAL SWITCH

Operate the switch and check the continuity between the terminals.

Switch position	Terminal 1	2	3
Left	○	○	
Neutral			
Right	○		○

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



WIPER SWITCH

Operate the switch and check the continuity, between the terminals.

Switch position \ Terminal	10	17	18	4	14
OFF		○—○		○- - - -	- -○
*INT		○—○		○	
		○—○		○- - - -	- -○
1		○		○	
				○- - - -	- -○
2	○			○	
				○- - - -	- -○

NOTE
(1) ○–○ indicates that there is continuity between the terminals.
(2) The * symbol indicates models equipped with intermittent wipers.
(3) ○ ○ indicates continuity when the washer switch is in the ON state.

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	Permanent-magnet type
Speed control system	Third brush system
Braking system	Dynamic brake system
rpm at load of 1 Nm (0.72 ft.lbs.)	
Low speed	47 ± 5
High speed	69 ± 7
Nominal torque Nm (ft.lbs.)	22 (16)
Rear wiper motor <Hatchback>	
Motor type	Permanent-magnet type
Braking system	Dynamic braking system
rpm at load of 6 Nm (4.3 ft.lbs.)	33 – 43
Bound torque Nm (ft.lbs.)	60 (43)
Windshield wiper blade	
Wiping angle	
Driver's side	82° ± 2°
Passenger's side	100 ± 2°
Wiper blade length mm (in.)	
Driver's side	500 (19.7)
Passenger's side	425 (16.7)
Rear wiper blade <Hatchback>	
Wiping angle	$110°^{+1°}_{-3°}$
Wiper blade length mm (in.)	325 (12.8)
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.)	2.2 (2.3) or more

Items	Specifications
Wiper and washer switch	
Rated load A	
Wiper switch	
LO	3.5
HI	4.5
Washer switch	3.5
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 <Hatchback>	
Rated load A	
Wiper switch	5
Washer switch	5
Voltage drop V	0.1 or less
Intermittent wiper relay (incorporated in column switch)	
Intermittent interval (min.-max.) sec.	
Fixed-interval intermittent wiper	Approx. 4
Variable-interval intermittent wiper	1.5 – 10.5
Delay time in washer moving sec.	0.3 – 0.7

TORQUE SPECIFICATIONS

N08KD- -

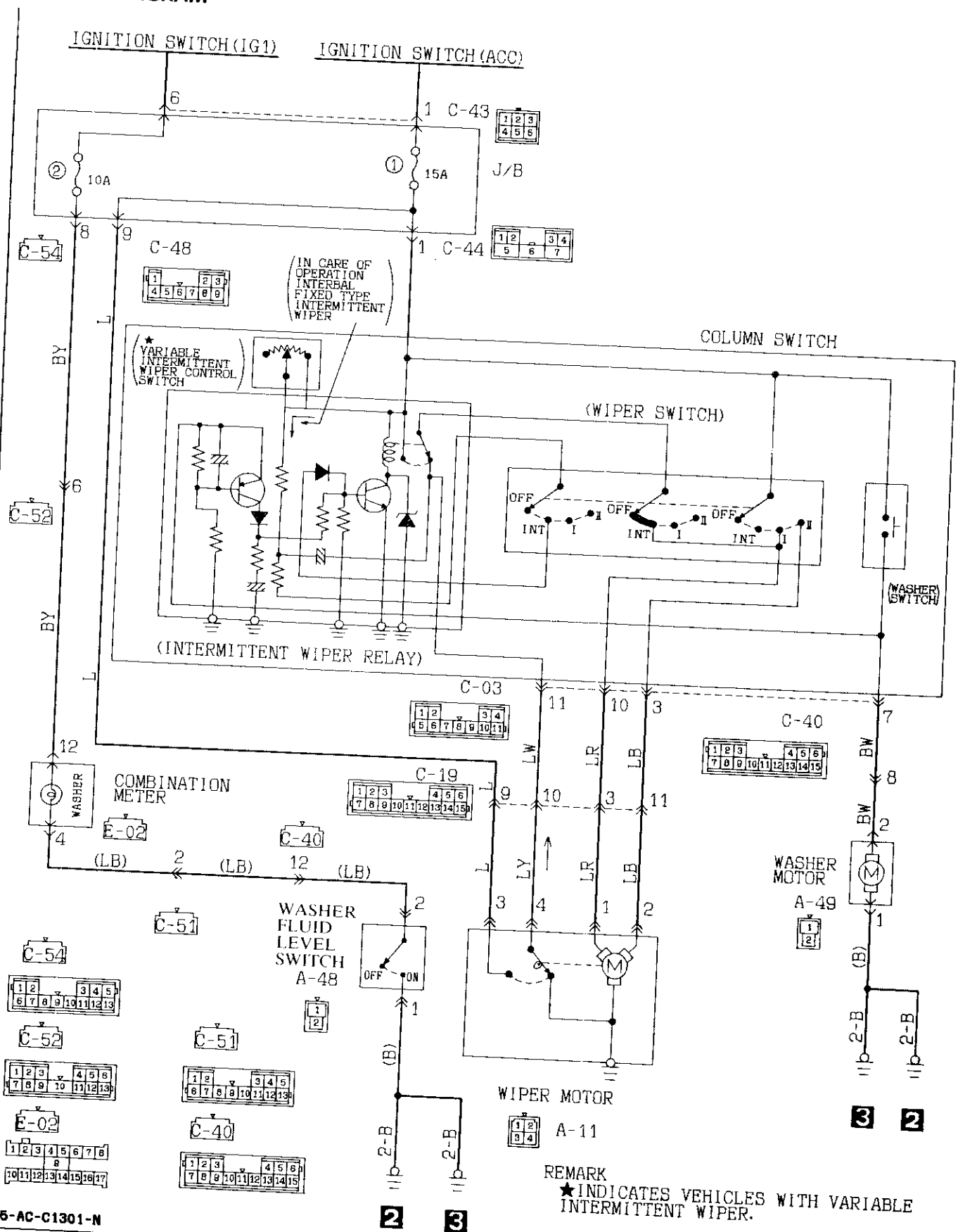
Items	Nm	ft.lbs.
Windshield wiper arm locking nut	10 – 16	7 – 12
Windshield wiper pivot shaft installing nuts	4 – 6	3 – 4
Rear wiper arm locking nut	6 – 9	4 – 7
Rear wiper motor bracket installing nut	6 – 9	4 – 7
Battery holder installing nut and bolt	2 – 3	1 – 2

TROUBLESHOOTING

WINDSHIELD WIPER AND WASHER

N08KHBH

CIRCUIT DIAGRAM



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

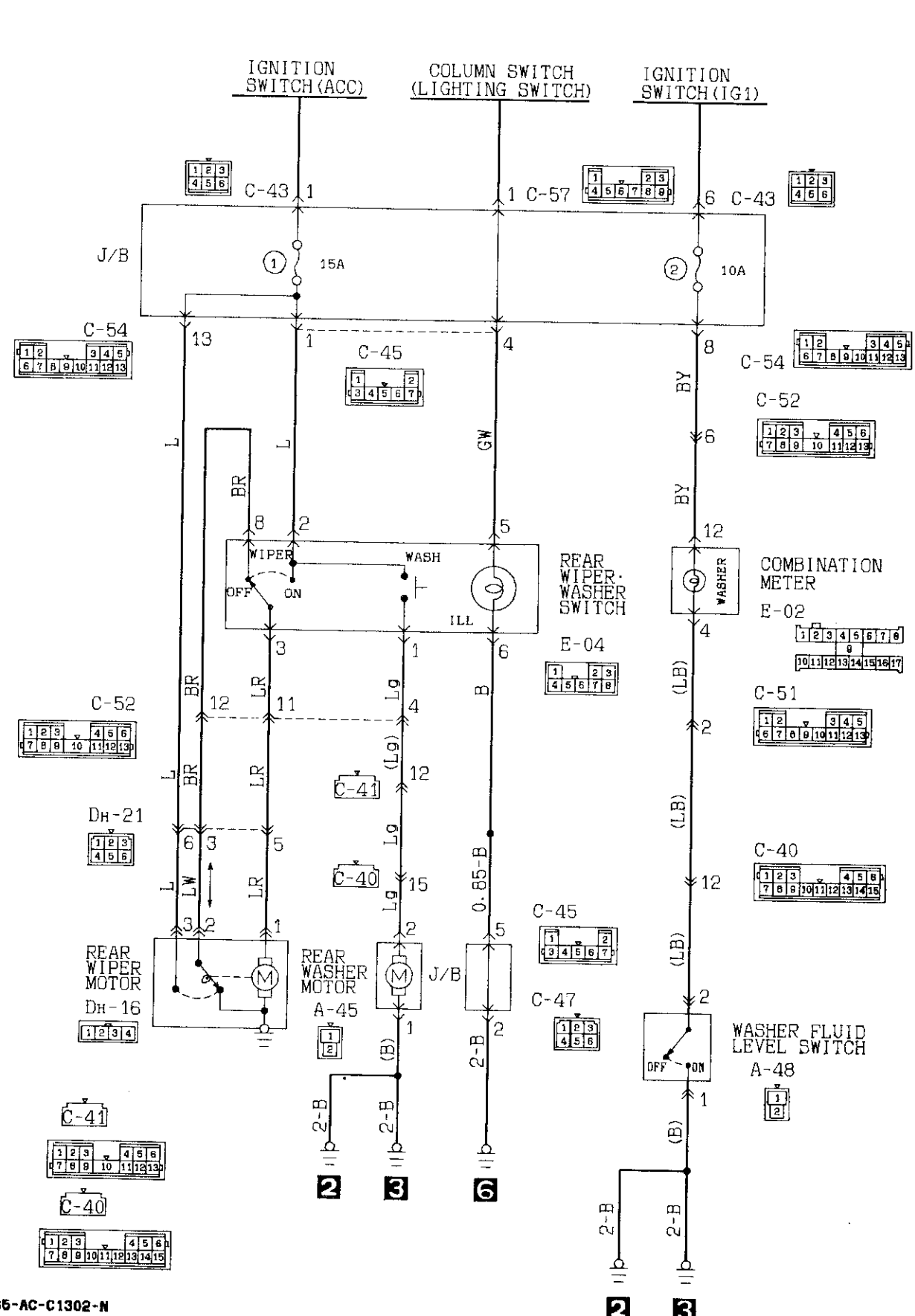
1. Wipers do not operate.
   1) Washer is not operative, either.
      - Check multi-purpose fuse No. ①.
      - Check ground.
2. Low-speed (or high-speed) wiper operation only is inoperative.
   - Check wiper switch.
3. Wipers do not stop.
   - Check wiper motor.
   - Check intermittent wiper relay.
   - 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
10	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.

REAR WIPER AND WASHER

CIRCUIT DIAGRAM



OPERATION

<Low speed operation>

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

<Operation for stopping wiper automatically>

- When the rear wiper switch is turned from the "LO" to the "OFF" position, current is supplied to the automatic wiper stopping circuit by the action of the cam contact of the rear wiper motor. The rear wiper continues to operate until the wiper blade returns to its at-rest position.

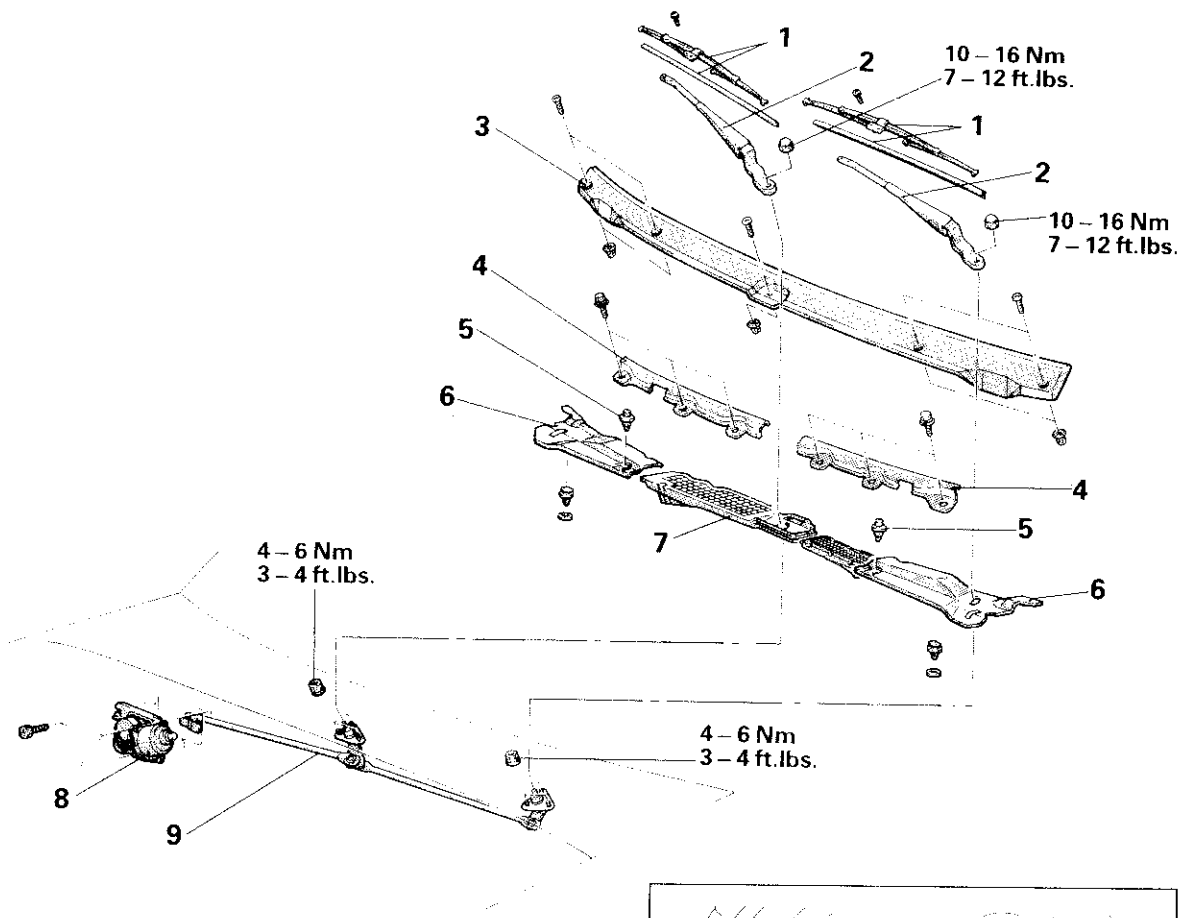
TROUBLESHOOTING HINTS

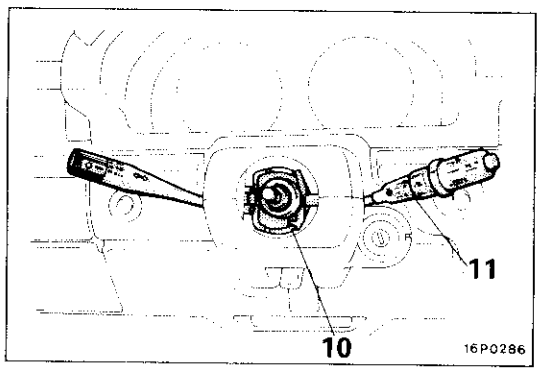
1. Wiper fails to operate.
   1) Front wipers do not operate, either.
      - Check multi-purpose fuse No. ①.
2. Wiper does not stop.
   - Check wiper motor.
   - Check rear wiper switch.
3. Washer does not operate.
   1) Wiper operates.
      - Check washer switch.
      - Check washer motor.

WINDSHIELD WIPER

N08KJAJ

REMOVAL AND INSTALLATION



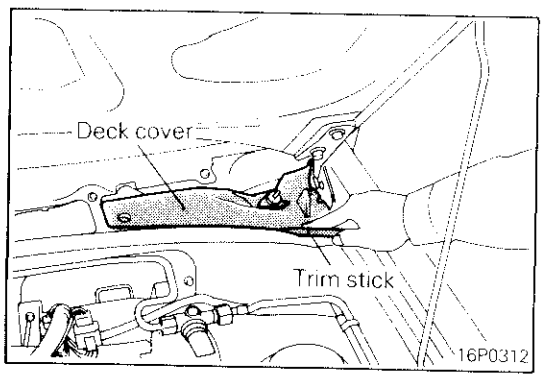


Removal steps

1. Wiper blade
2. Wiper arm
3. Front deck garnish
4. Windshield holder
◆◆ 5. Clip
◆◆ 6. Deck cover
7. Air inlet garnish
◆◆ 8. Wiper motor
9. Wiper linkage
◆◆ 10. Intermittent wiper relay
◆◆ 11. Wiper and washer switch

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

16P0412



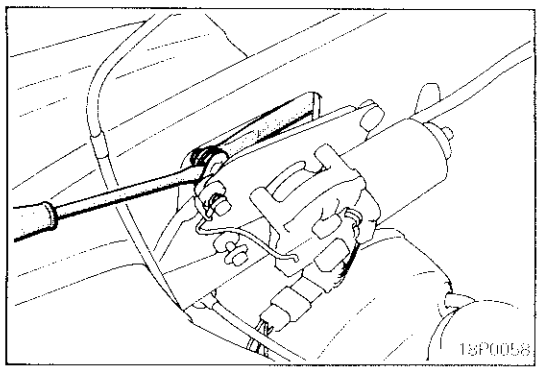
SERVICE POINTS OF REMOVAL

5. REMOVAL OF CLIP

Refer to GROUP 23 – Instrument Panel.

6. REMOVAL OF DECK COVER

Use a trim stick to pry up the deck cover clips and remove the deck cover.



8. 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.

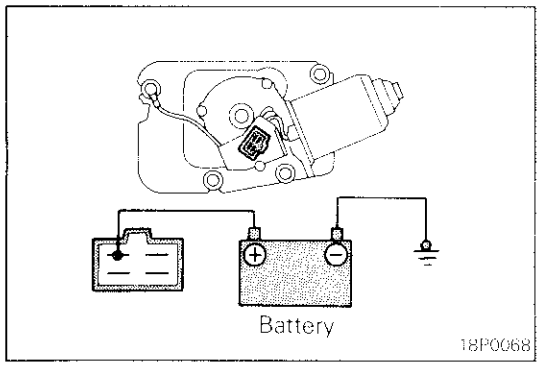
Caution
Because the installation angle of the crank arm and the motor has been set, do not remove them unless it is necessary to do so. If they must be removed, remove them only after marking their mounting positions.

10. REMOVAL OF INTERMITTENT WIPER RELAY

Refer to P.8-263.

11. REMOVAL OF WIPER AND WASHER SWITCH

Refer to P.8-263.



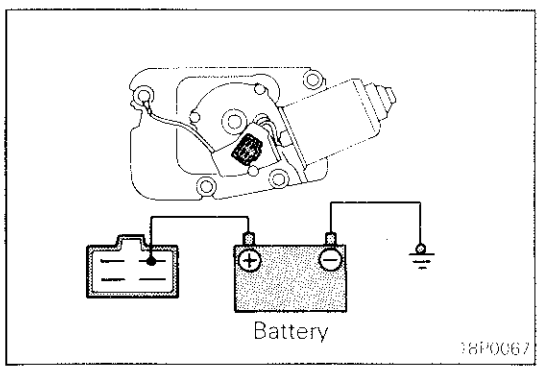
INSPECTION

WIPER MOTOR

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

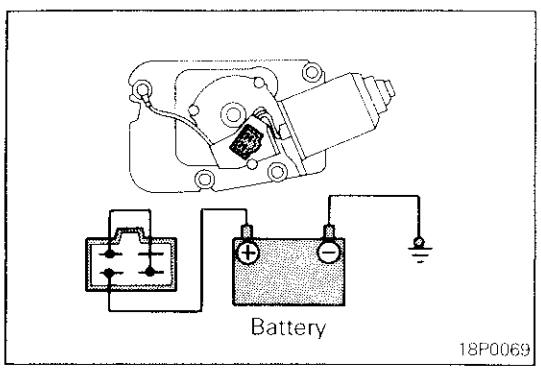
Operation of Wiper Motor at LOW speed

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



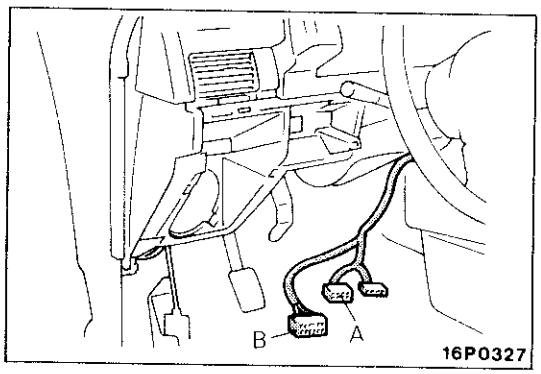
Operation of Wiper Motor at HIGH speed

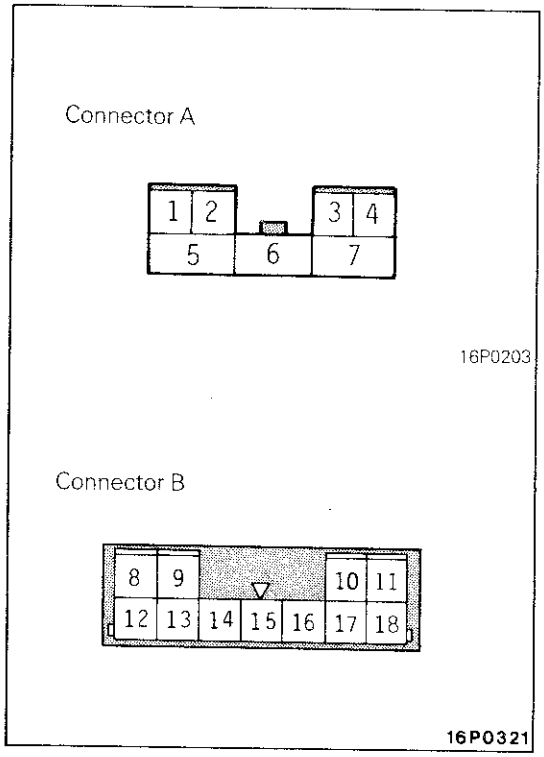
Connect a battery to the wiper motor as shown in the illustration and inspect motor operation at HIGH speed.



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 AND WASHER SWITCH

(1) Remove the knee protector (or lower panel assembly) and the column cover.
(Refer to GROUP 23 – Instrument Panel.)
(2) Disconnect the column switch connector and check the continuity between the terminals for each switch.

Switch position \ Terminal	10	17	18	4	14
OFF		○—○		○- - -○	
*INT		○—○ ○—○		○ ○- - -○	
1		○		○ ○- - -○	
2	○			○ ○- - -○	

NOTE
(1) ○—○ indicates that there is continuity between the terminals.
(2) The * symbol indicates models equipped with intermittent wipers.
(3) ○—○ Indicates continuity when the washer switch is in the ON state.

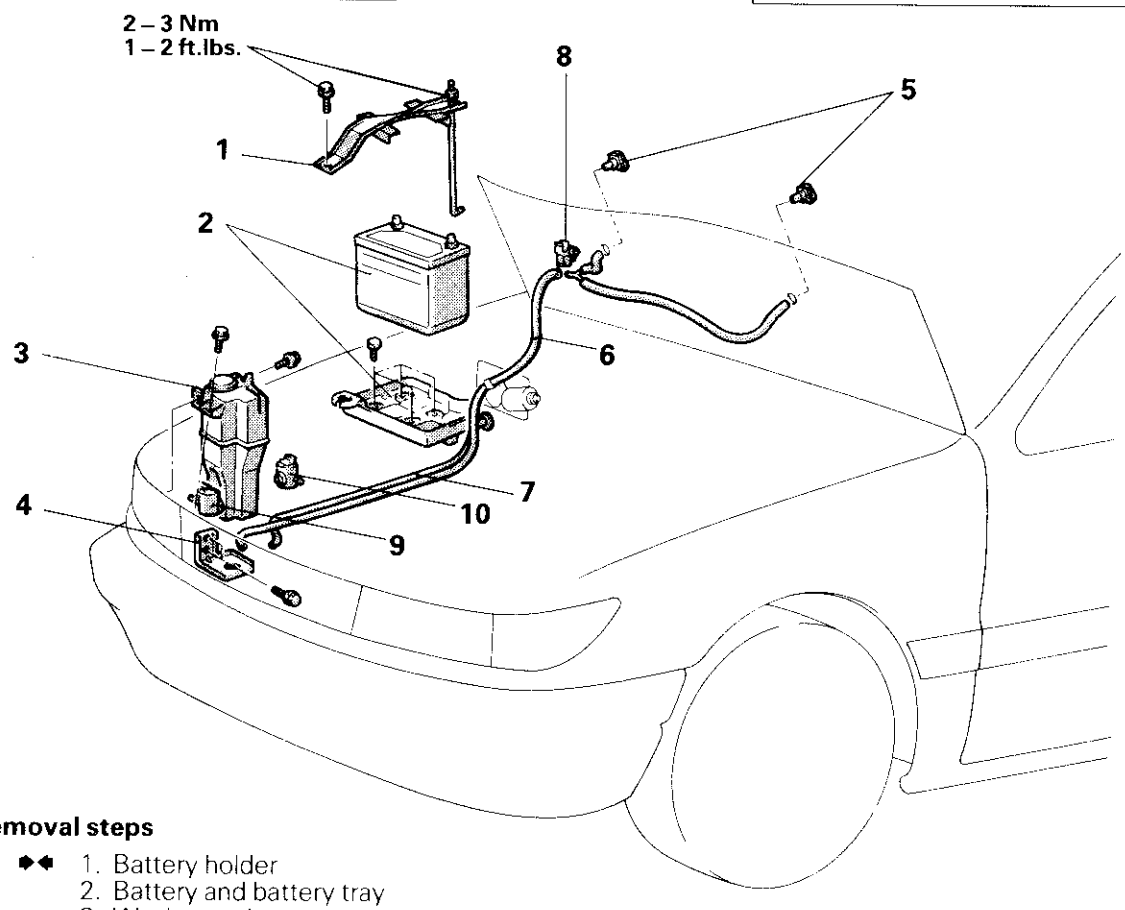
WINDOW WASHER

N08KLAF

REMOVAL AND INSTALLATION

Pre-removal Operation
- Removal of Air Cleaner (Refer to GROUP 11 – Air Cleaner)
- Removal of Hood Insulator <T/C> (Refer to GROUP 23 – Hood)

Post-installation Operation
- Installation of Air Cleaner (Refer to GROUP 11 – Air Cleaner)
- Installation of Hood Insulator <T/C> (Refer to GROUP 23 – Hood)

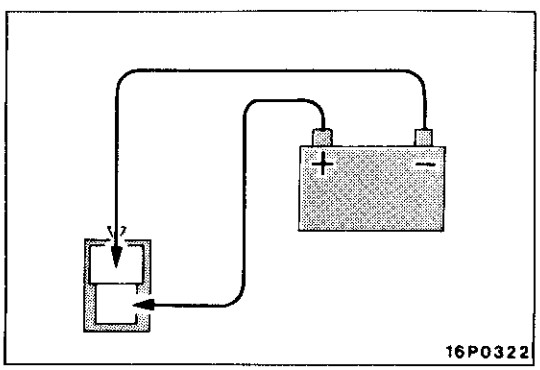


Removal steps

◆◆ 1. Battery holder
2. Battery and battery tray
3. Washer tank
4. Washer tank bracket
5. Nozzles
6. Front washer tube
7. Rear washer tube (Rear wiper and washer equipped vehicles)
8. Clip
9. Washer motor, front
10. Washer motor, rear (Rear wiper and washer equipped vehicles)

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Installation".
(3) For information on the windshield washer switch, refer to the WINDSHIELD WIPER section (P.8-272).

16P0373



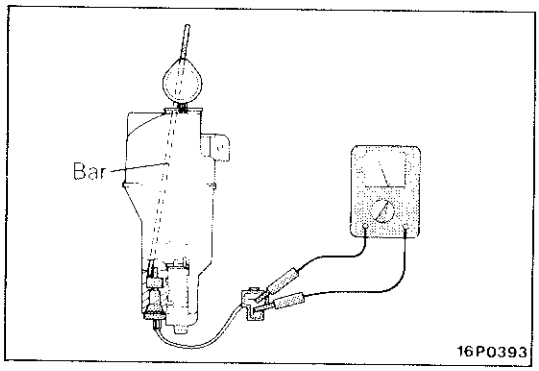
16P0322

INSPECTION

WASHER MOTOR

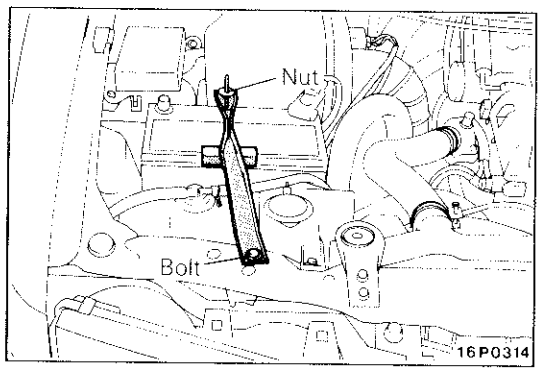
(1) With the washer motor installed to the washer tank, fill the washer tank with water.
(2) Connect battery (+) and (–) cables to terminals respectively to see that the washer motor runs and water is injected.

NOTE
Perform the same procedures for the rear washer motor also.



WASHER FLUID LEVEL SWITCH

(1) Disconnect the harness connector of the washer fluid level switch from the front wiring harness.
(2) Connect at ohmmeter to the connector of the washer fluid level switch.
(3) Check whether the switch is switched ON (continuity) when the float is pressed down (to the position indicated in the figure) by the bar.



SERVICE POINT OF INSTALLATION

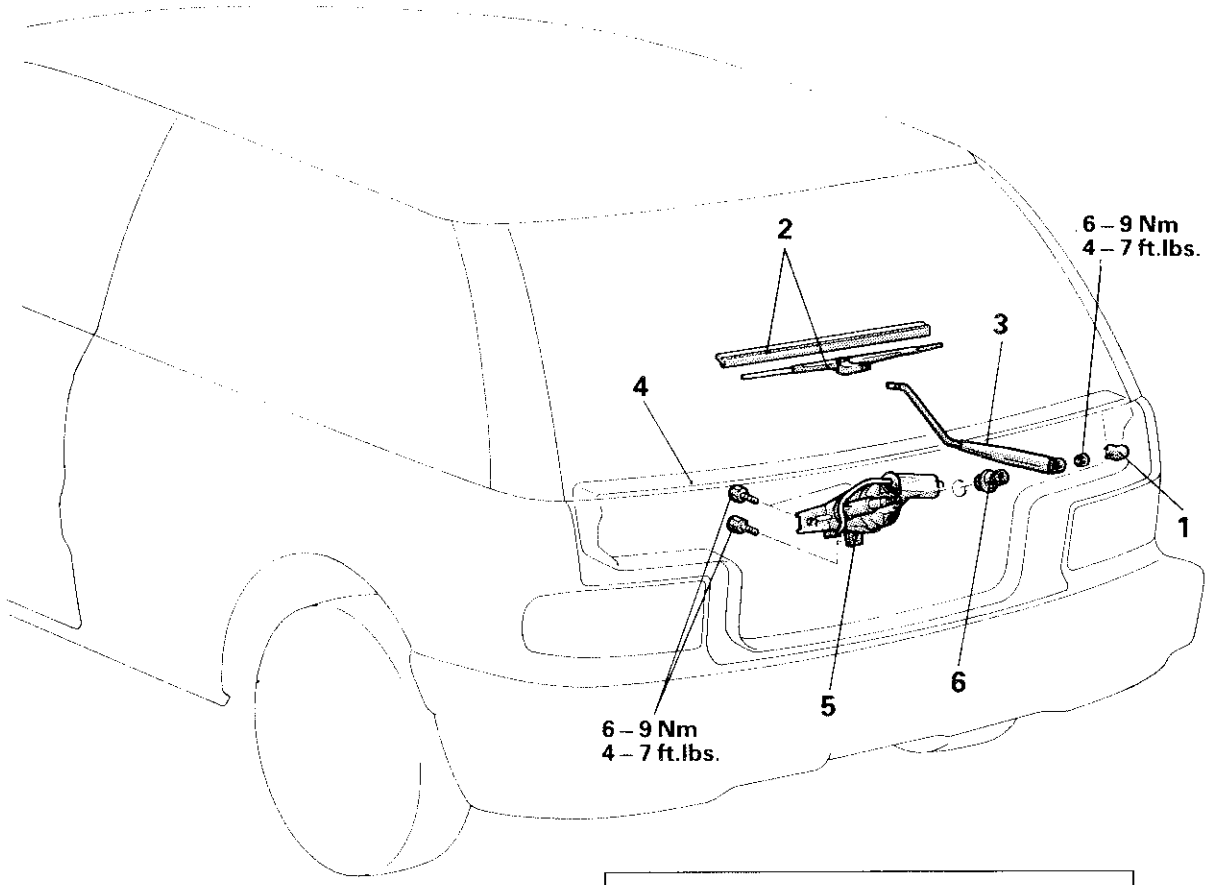
1. INSTALLATION OF BATTERY HOLDER

After the front retaining bolt of the battery holder has been tightened to the specified torque, tighten the rear retaining nut to the specified torque.

REAR WIPER <HATCHBACK>

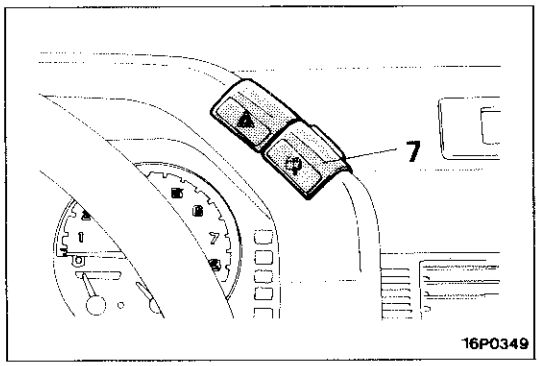
N08KKAG

REMOVAL AND INSTALLATION



Removal steps

1. Cover
2. Wiper blade
3. Wiper arm
4. ◆◆ ◆◆ Liftgate trim
5. Rear wiper motor assembly
6. ◆◆ Grommet
7. ◆◆ Rear wiper and washer switch



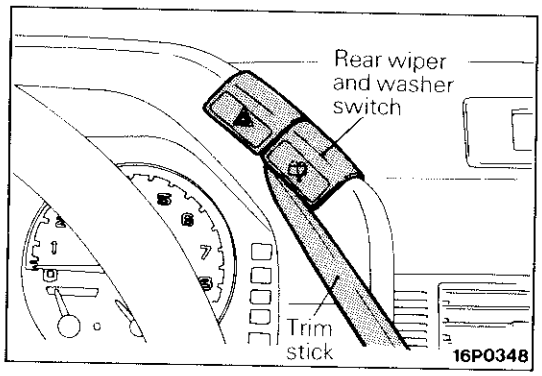
NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆: Refer to "Service Points of Removal".
(3) ◆◆: Refer to "Service Points of Installation".

16P0335

SERVICE POINTS OF REMOVAL

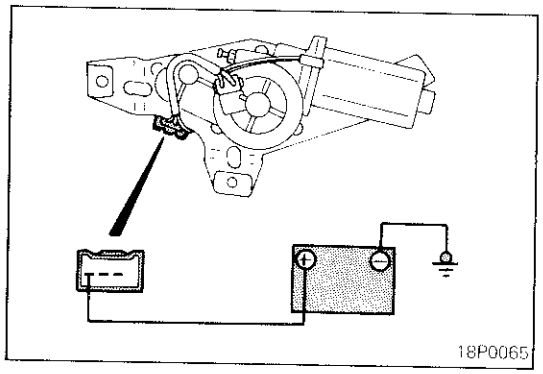
4. REMOVAL OF LIFTGATE TRIM

Refer to GROUP 23 – Liftgate Trim.



7. REAR WIPER AND WASHER SWITCH

Using a trim stick, remove the rear wiper and rear washer switch.



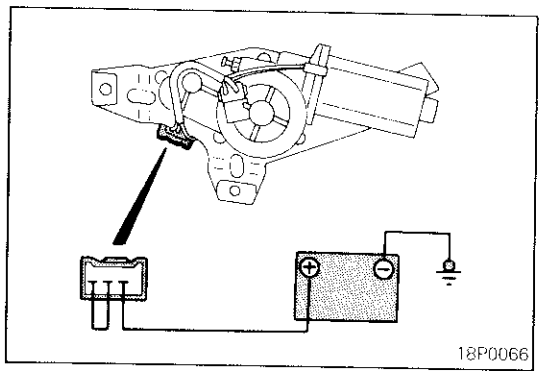
INSPECTION

WIPER MOTOR

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

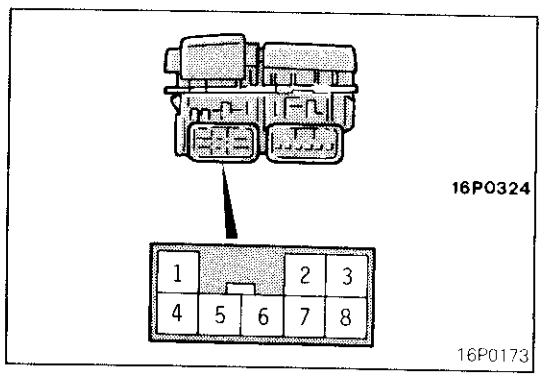
Operation of Wiper Motor at LOW speed

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



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.

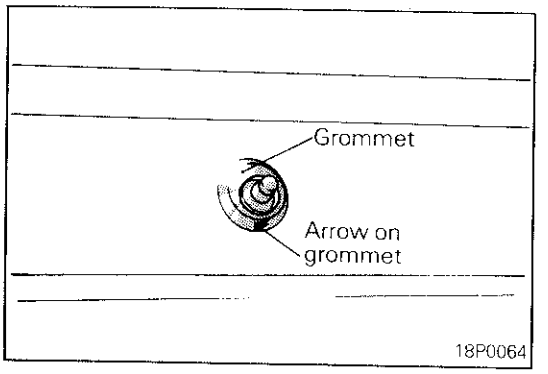


REAR WIPER AND WASHER SWITCH

Operate the switch, and check the continuity between the terminals.

Switch position		Terminal 1	2	3	8	5	6
Wiper switch	OFF			○—○			
	ON		○—○				
Washer switch ON		○—○				Illumination light	

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



SERVICE POINTS OF INSTALLATION

6. INSTALLATION OF GROMMET

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

4. INSTALLATION OF LIFTGATE TRIM

Refer to GROUP 23 – Liftgate Trim.

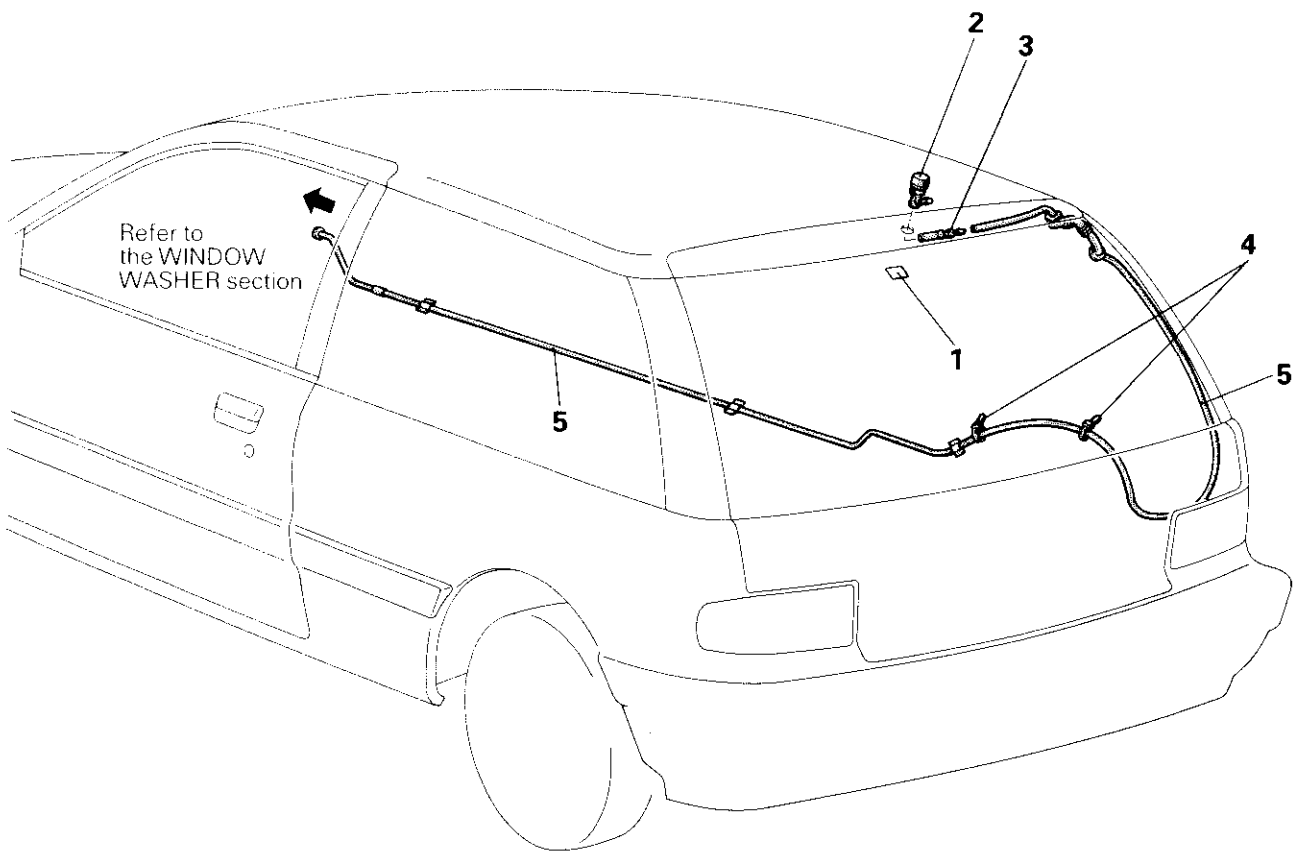
REAR WASHER <HATCHBACK>

N08KLCE

REMOVAL AND INSTALLATION

Pre-removal Operation
- Removal of Cargo Room Side Trim, Quarter Trim and Scuff Plate (Refer to GROUP 23 – Trims)
- Removal of Rear Ventilator Duct (Refer to GROUP 24 – Ventilators)
- Removal of Roof Spoiler (Refer to GROUP 23 – Aero Parts)

Post-installation Operation
- Installation of Cargo Room Side Trim, Quarter Trim and Scuff Plate (Refer to GROUP 23 – Trims)
- Installation of Rear Ventilator Duct (Refer to GROUP 24 – Ventilators)
- Installation of Roof Spoiler (Refer to GROUP 23 – Aero Parts)



Removal steps

1. Tape
2. Washer nozzle
3. Joint assembly
4. Cable band
5. Washer tube

NOTE
(1) Reverse the removal procedures to reinstall.
(2) For the rear washer switch, refer to the REAR WIPER section. (P.8-278)
(3) The front washer tank supplies washer fluid for the rear window as well.

16P0120

HORN SYSTEM

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

TORQUE SPECIFICATIONS

N08LD- -

Items	Nm	ft.lbs.
Steering wheel installation nut	35 – 45	25 – 33

HORN

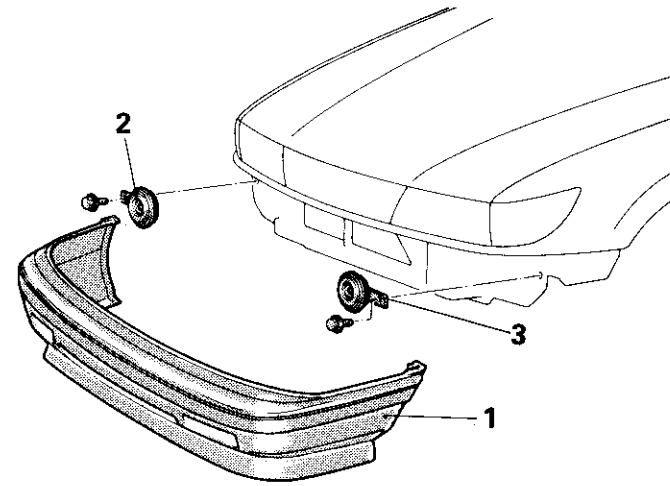
N08LJAJ

REMOVAL AND INSTALLATION

Removal steps

◆◆ 1. Front bumper
2. Horn (Low)
3. Horn (High)

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



16P0331

SERVICE POINT OF REMOVAL

1. REMOVAL OF FRONT BUMPER

Refer to GROUP 23 – Bumpers.

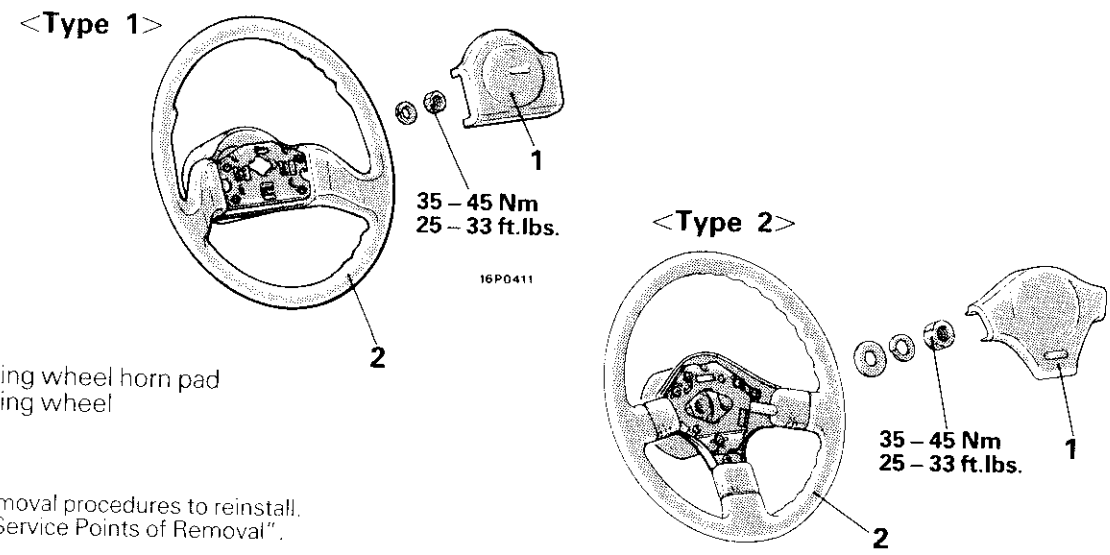
INSPECTION

- Check horn adjustment screw for looseness.
- Check the inside of the horn for lodged water, dirt or other foreign matter.

HORN SWITCH

N08LKAN

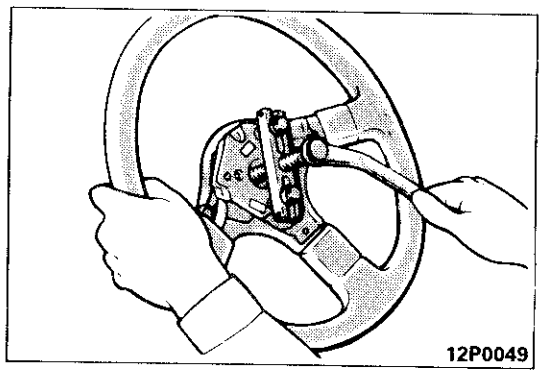
REMOVAL AND INSTALLATION



Removal steps

1. Steering wheel horn pad
◆◆ 2. Steering wheel

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



SERVICE POINT OF REMOVAL

2. REMOVAL OF STEERING WHEEL

(1) Make mating marks on the steering wheel and the steering wheel shaft.
(2) Use a steering wheel puller to remove the steering wheel.

Caution
Do not hammer on the steering wheel to remove it; doing so may damage the collapsible mechanism.

INSPECTION

- Check for burned-out or short-circuited horn switch contact.
- Check for broken or damaged horn switch spring.
- Check horn switch harness for damage.

CIGARETTE LIGHTER

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08MB-A

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

CIGARETTE LIGHTER

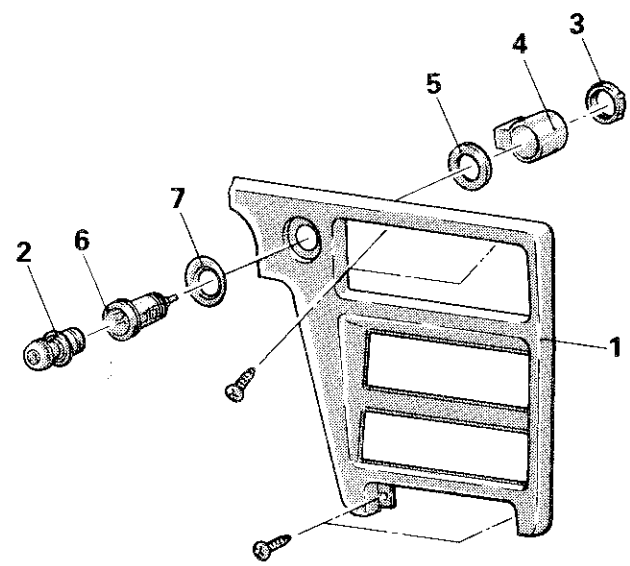
N08MJAJ

REMOVAL AND INSTALLATION

Removal steps

1. Center panel
2. Plug
3. Fixing ring
4. Socket case
5. Plate
6. Socket
7. Protector

NOTE
Reverse the removal procedures to reinstall.



16P0367

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 accesories 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.

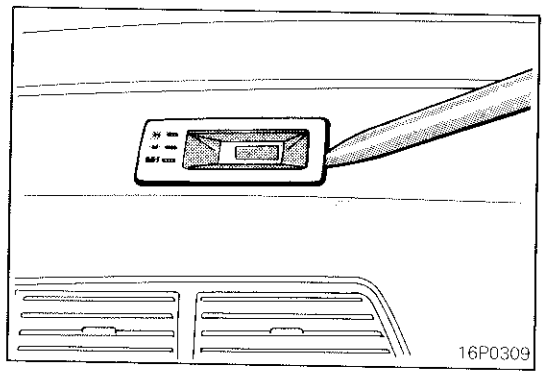
CLOCK

SPECIFICATIONS

GENERAL SPECIFICATIONS

N08MB-B

Items	Specifications
Type	Crystal oscillator
Display method	Fluorescent digital display
Standard error (seconds/day)	±2 [at 20°C (68°F)]



CLOCK

N08MKAI

REMOVAL AND INSTALLATION

Using a trim stick, remove the clock.

AUDIO SYSTEM

SPECIFICATIONS

N08NB-

GENERAL SPECIFICATIONS

Items	AM/FM, MPX radio	AM/FM, MPX radio with tape player	AM/FM, MPX radio with tape player and graphic equalizer
Radio			
Model	AR – 4377	RX – 330	RX – 321Y
Tuning system	Auto search tuning, electronic memory tuning	Auto search tuning, electronic memory tuning	Auto search tuning, electronic memory tuning
Frequency display	Digital display by liquid crystal display	Digital display by liquid crystal display	Digital display by liquid crystal display
Graphic equalizer			
Variable frequency Hz	–	–	60, 125, 250, 500, 1K 2K, 4K, 8K, 16K
Variation dB	–	–	±12
Speaker			
Instrument panel			
Type 1			
Model	SR-10WZ8-2-DK	SR-10WZ8-2-DK	SR-10WZ8-2-DK
Rated input power W	15 (Max. 20)	15 (Max. 20)	15 (Max. 20)
Rated impedance Ω	8	8	8
*1Type 2			
Model	SR-10WZ4-2-DK	–	–
Rated input power W	15 (Max. 20)	–	–
Rated impedance Ω	4	–	–
Door trim			
Model	SR-13SZ8-W2K	SR-13SZ8-W2K	SR-13SZ8-W2K
Rated input power W	15 (Max. 30)	15 (Max. 30)	15 (Max. 30)
Rated impedance Ω	8	8	8
Rear shelf			
Type 1			
Model	SR-16SZ4-2-DK	SR-16SZ4-2-DK	*2SR-16SZ4-2-DK
Rated input power W	15 (Max. 30)	15 (Max. 30)	15 (Max. 30)
Rated impedance Ω	4	4	4
Type 2			
Model	–	–	*3SR-69SA4-WJ
Rated input power W	–	–	15 (Max. 30)
Rated impedance Ω	–	–	4
Antenna			
Type	Pole antenna	Pole antenna	Pole antenna

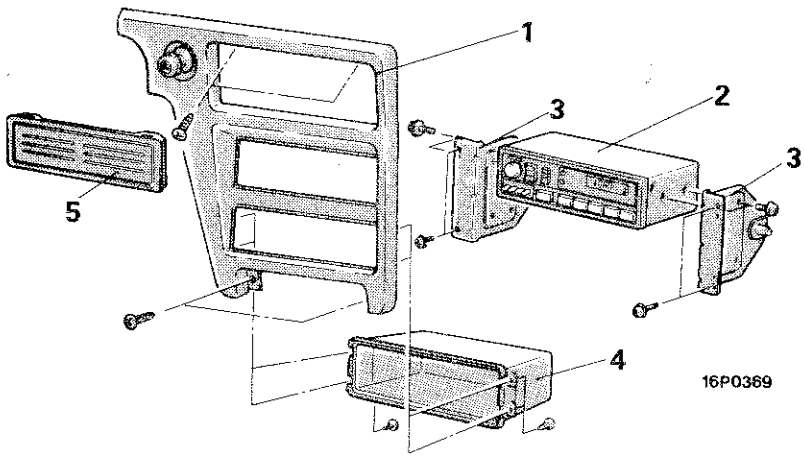
NOTE
*1: 4 speaker configuration (instrument panel and rear shelf)
*2: <Sedan>
*3: <Hatchback>

RADIO AND TAPE PLAYER

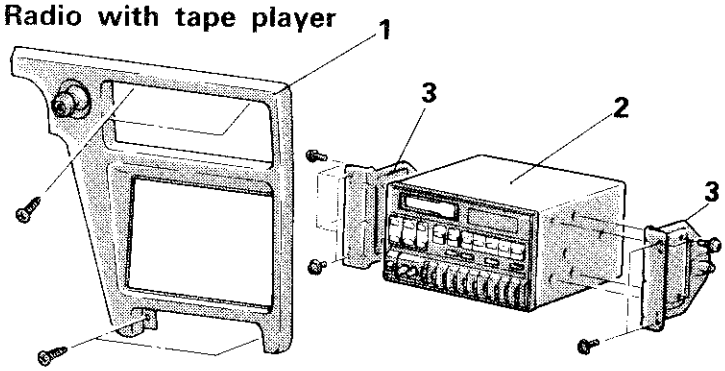
N08NJAM

REMOVAL AND INSTALLATION

Radio



Radio with tape player



Removal steps

1. Center panel
2. Radio or radio with tape player
3. Radio bracket
4. Box
5. Radio plug <vehicles without radio>

NOTE
Reverse the removal procedures to reinstall.

16P0370

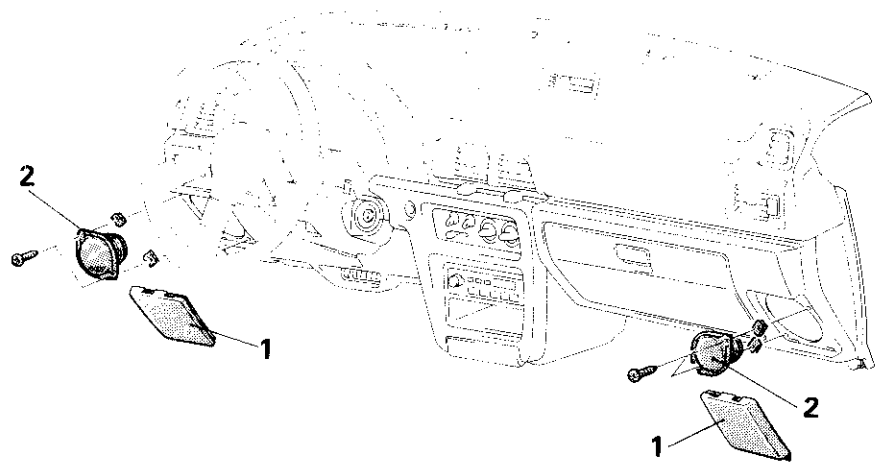
SPEAKER

Front speaker

N08NMAI

REMOVAL AND INSTALLATION

<Vehicles for U.S.>

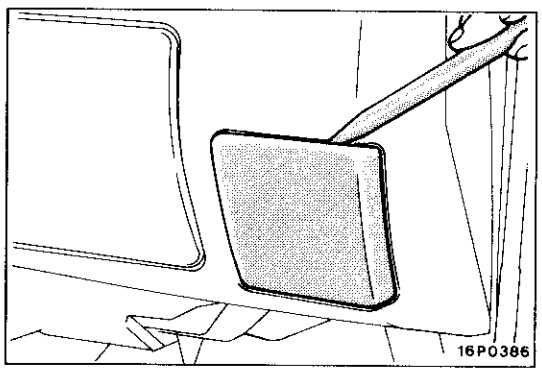


Removal steps

◆◆ 1. Speaker garnish
2. Speaker

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

16P0383



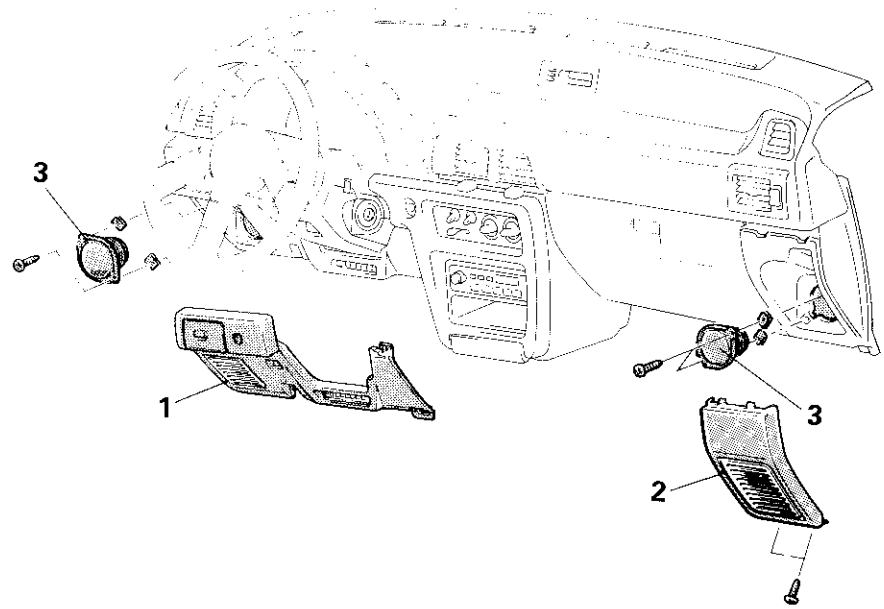
SERVICE POINT OF REMOVAL

1. REMOVAL OF SPEAKER GARNISH

Using a trim stick, remove the speaker garnish.

REMOVAL AND INSTALLATION

<Vehicles for Canada>



Removal steps

◆◆ 1. Lower panel assembly
2. Corner panel
3. Speaker

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

16P0384

SERVICE POINT OF REMOVAL

1. REMOVAL OF LOWER PANEL ASSEMBLY

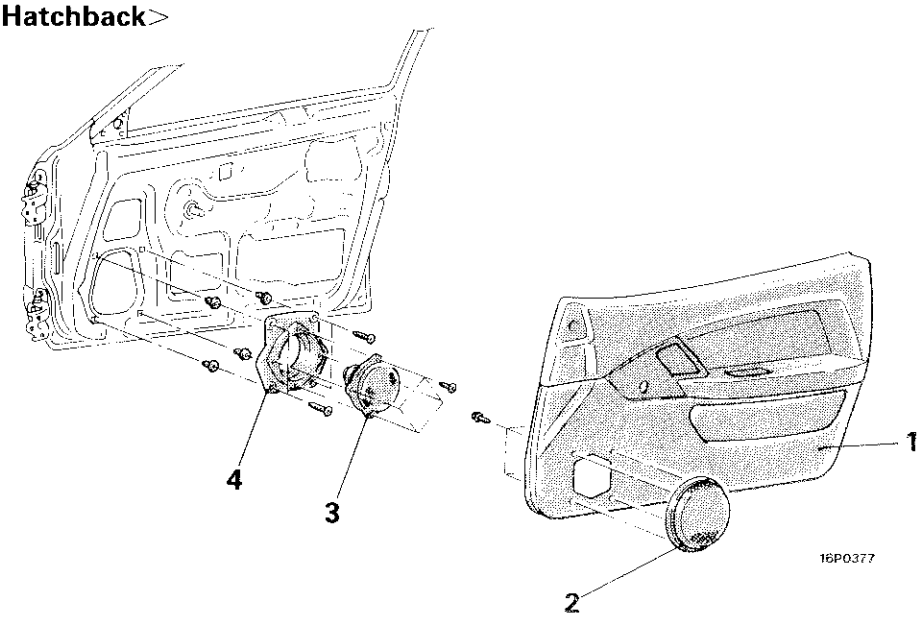
Refer to GROUP 23 – Instrument Panel.

Door speaker

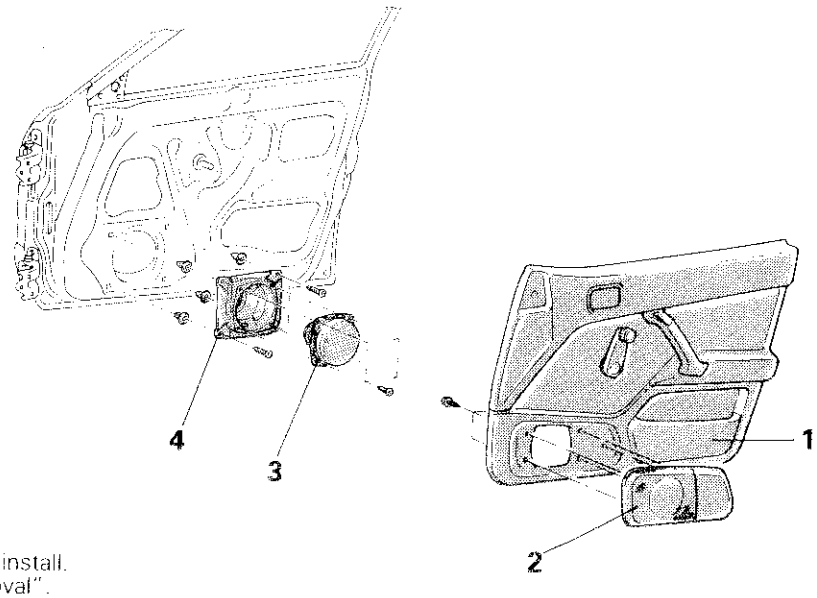
N08NNAC

REMOVAL AND INSTALLATION

<Hatchback>



<Sedan>



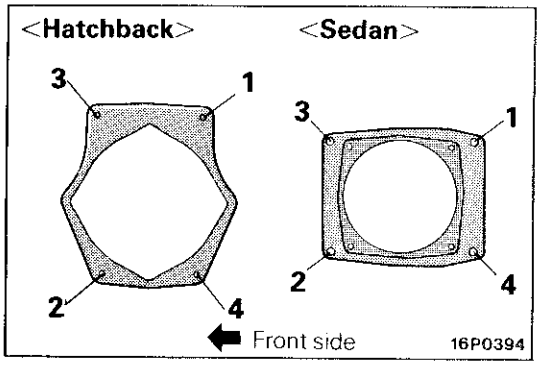
Removal steps

◆◆ 1. Door trim
2. Speaker garnish
3. Door speaker
◆◆ 4. Speaker cover

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

16P0376

<Hatchback> <Sedan>



SERVICE POINT OF REMOVAL

1. REMOVAL OF DOOR TRIM

Refer to GROUP 23 – Door Trim.

SERVICE POINT OF INSTALLATION

4. INSTALLATION OF SPEAKER COVER

Secure the speaker cover to the door panel by tightening the screws in the numbered sequence shown in the illustration.

Rear speaker

N08NOAI

REMOVAL AND INSTALLATION

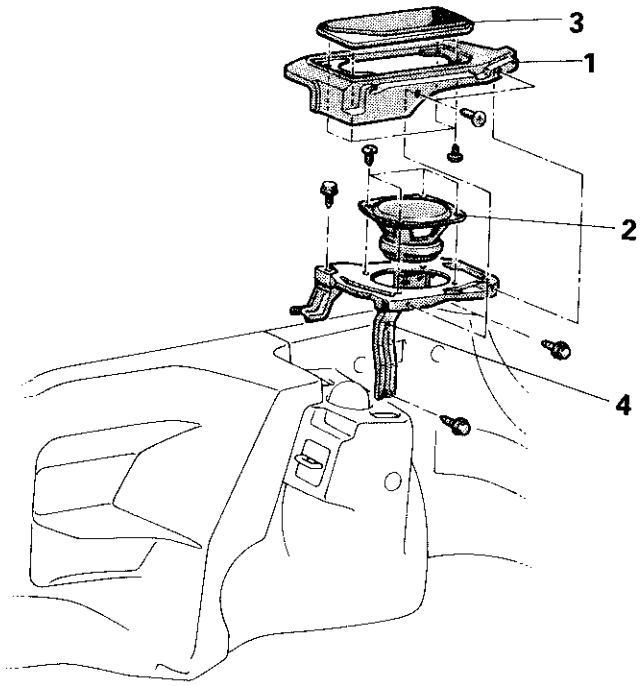
<Hatchback>

Pre-removal Operation
<Hatchback>
- Removal of Center Shelf
(Refer to GROUP 23 BODY – Trims)

Post-installation Operation
<Hatchback>
- Installation of Center Shelf
(Refer to GROUP 23 BODY – Trims)

Removal steps

1. Side shelf
2. Speaker
3. Speaker garnish
4. Side shelf bracket



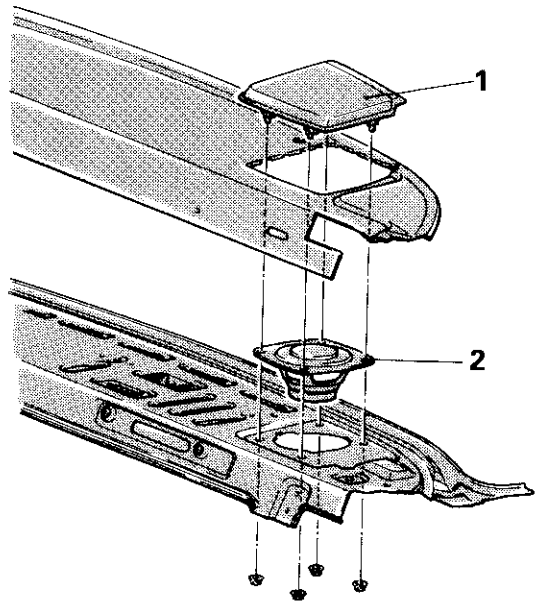
16P0191

<Sedan>

Removal steps

◆◆ 1. Speaker garnish
2. Rear speaker

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



16P0267

SERVICE POINT OF REMOVAL

<Sedan>

1. REMOVAL OF SPEAKER GARNISH

Remove (from the luggage compartment side) the garnish installation nut.

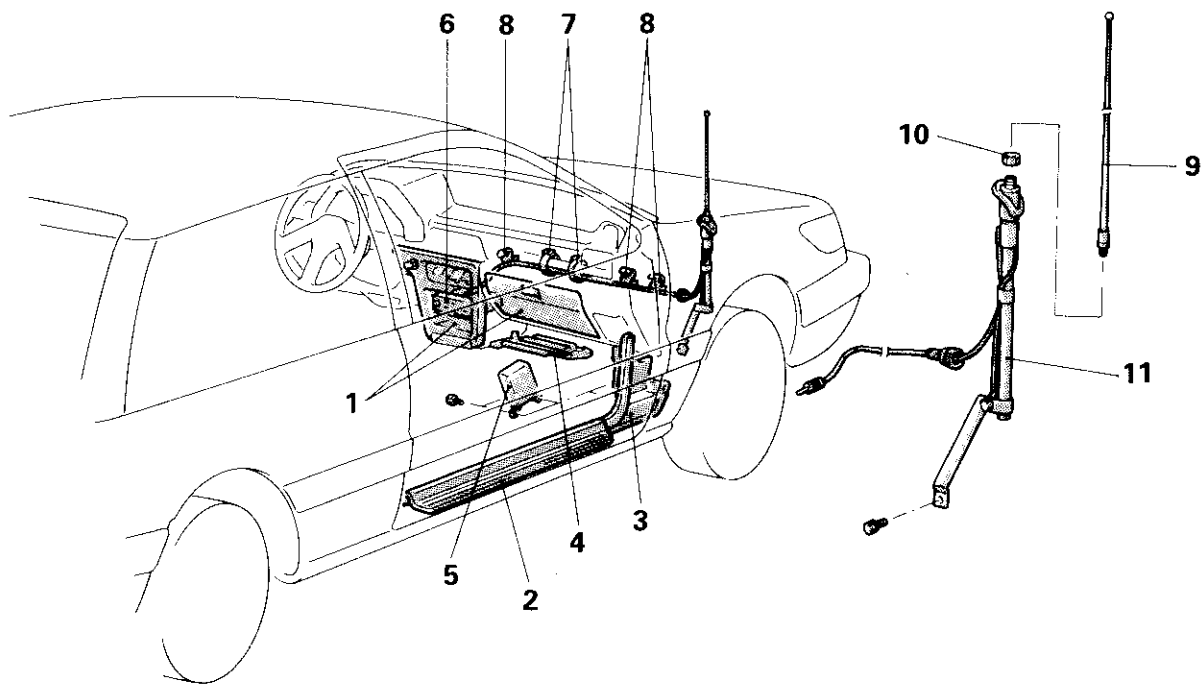
ANTENNA

N08NPAG

REMOVAL AND INSTALLATION

Pre-removal Operation
- Removal of Splash Shield (Refer to GROUP 23 – Fender)

Post-installation Operation
- Installation of Splash Shield (Refer to GROUP 23 – Fender)



Removal steps

◆◆ 1. Center panel and glove box
2. Scuff plate
3. Cowl side trim
4. Washer duct <Vehicles with rear heater>
5. MPI control unit
6. Radio
7. Cable band
8. Clip
9. Antenna mast
10. Antenna base mounting nut
11. Antenna base

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

16P0380

SERVICE POINT OF REMOVAL

1. REMOVAL OF CENTER PANEL AND GLOVE BOX

Refer to GROUP 23 – Instrument Panel.

NOISE SUPPRESSION

N08NQAE

1. Noise interfering with radio reception may be roughly classified as follows:
   (1) Noise produced by the vehicle itself
   Noise from the ignition circuit, alternator circuit, etc.
   (2) Noise generated in the radio itself
   Thermal noise from transistors, IC, resistor, etc.
   (3) Atmospheric noise
   Noise from other cars, neon signs, etc.
2. The radio has devices to suppress noise of the radio itself and atmospheric noise, but it is difficult to eliminate them completely. Noise produced by the vehicle includes whining from the alternator system, and a strong, impulsive, fast popping noise from the ignition system.

PREVENTION OF IGNITION CIRCUIT NOISE

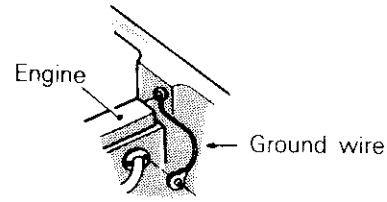
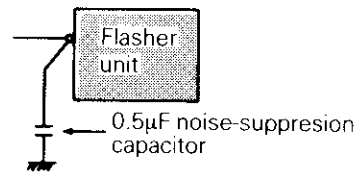
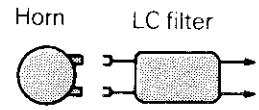
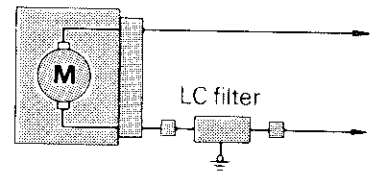
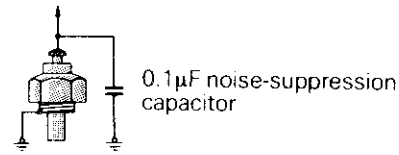
A resistance-equipped cable is used for the high-tension cable in order to prevent noise; however, if any noise from the ignition circuit does occur, check the tightness and ground connection of the positive (+) terminal of the noise filter, and, if necessary, check the noise filter.

Caution
Be careful not to connect the noise filter to the high-tension cable; doing so could damage the noise filter.

PREVENTION OF OTHER CIRCUIT NOISE

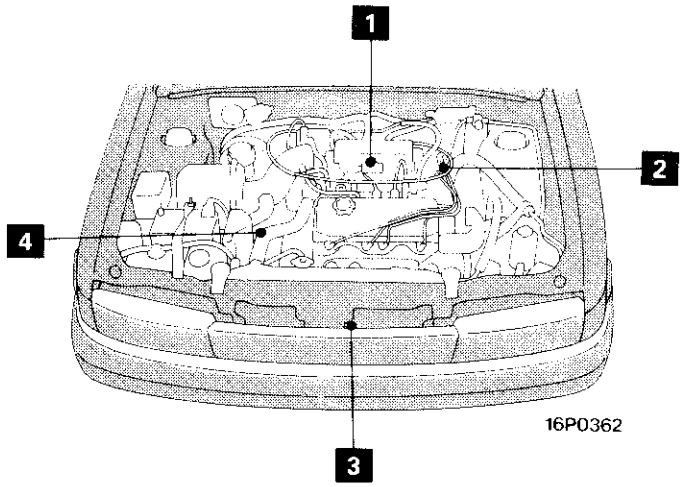
1. For other noises, take necessary corrective actions in accordance with the following items and the NOISE SUPPRESSION CHART.
2. Polish the grounding cable terminal, and connect it properly.
3. Polish the pillar antenna ground terminal, and connect it properly.
4. Ground electric parts completely.
5. Keep the antenna cable and speaker lead wire away from other electric wiring.

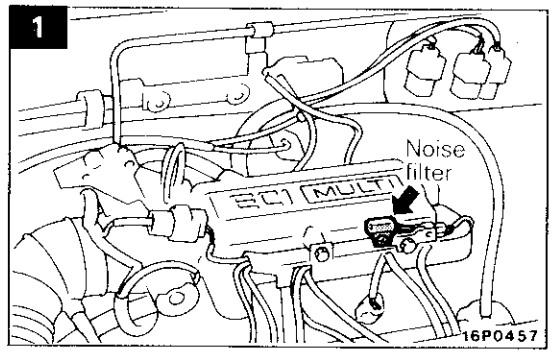
NOISE SUPPRESSION CHART

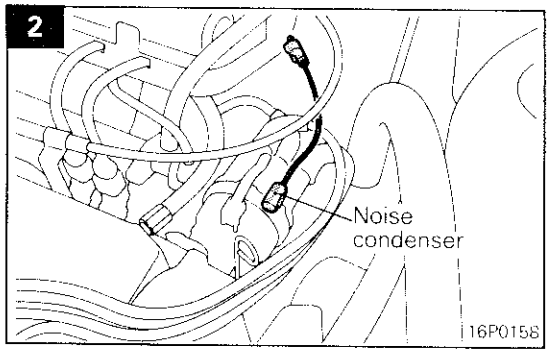
Symptom	Noise source	Remedy
Unusual noise related to engine speed.	Engine	Securely ground the engine, frame and/or body and engine hood.  16E710
"Clatter" noise related to the flashing of turn signal lights.	Turn signals	Connect a 0.5μF noise-suppression capacitor to the B terminal of the flasher unit.  16E712
Abnormal noise when the horn is operated.	Horn	1. Connect a 0.5μF noise-suppression capacitor to the + B terminal of the horn. 2. For an FM radio, connect an LC filter to the horn terminals.  16E713
Noise when the windshield washer operates.	Washer motor	1. Connect a 0.5μF noise-suppression capacitor between the terminal of the washer motor and the power source wire. 2. For an FM radio, connect an LC filter between the terminal of the washer motor and the power source wire.  16F671
Unusual noise when the engine is started.	Coolant temperature gauge unit	Connect a 0.1μF noise-suppression capacitor to the terminal of the coolant temperature gauge unit.  16F672

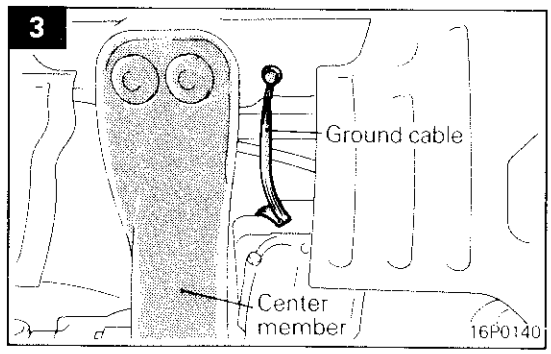
NOISE SUPPRESSOR LOCATION

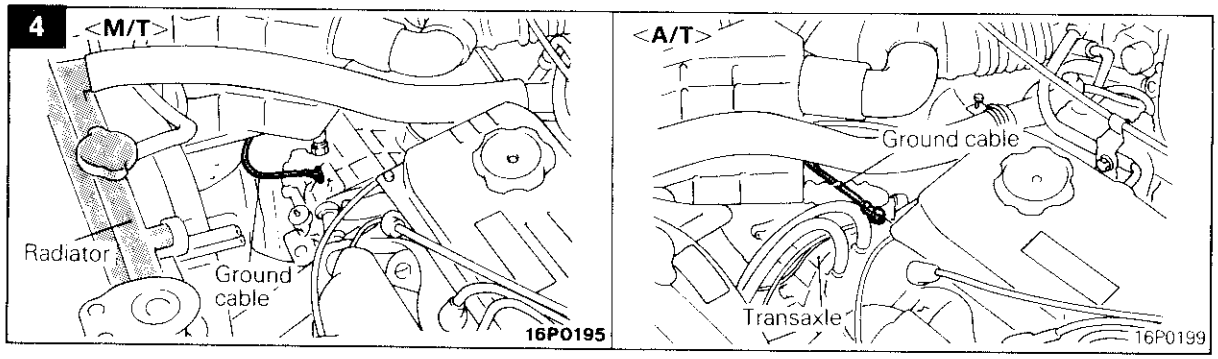
<1.5L Engine>



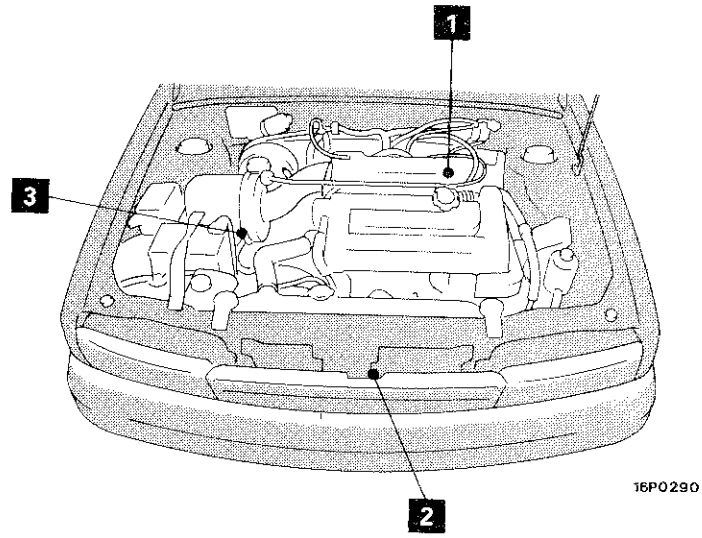


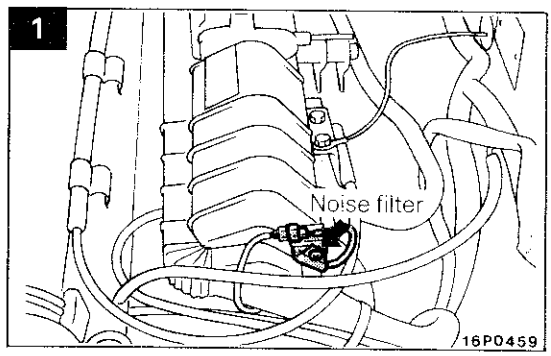


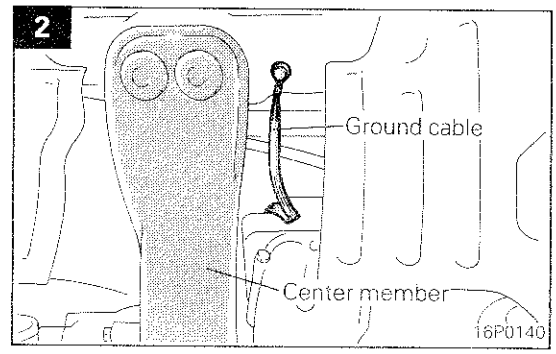


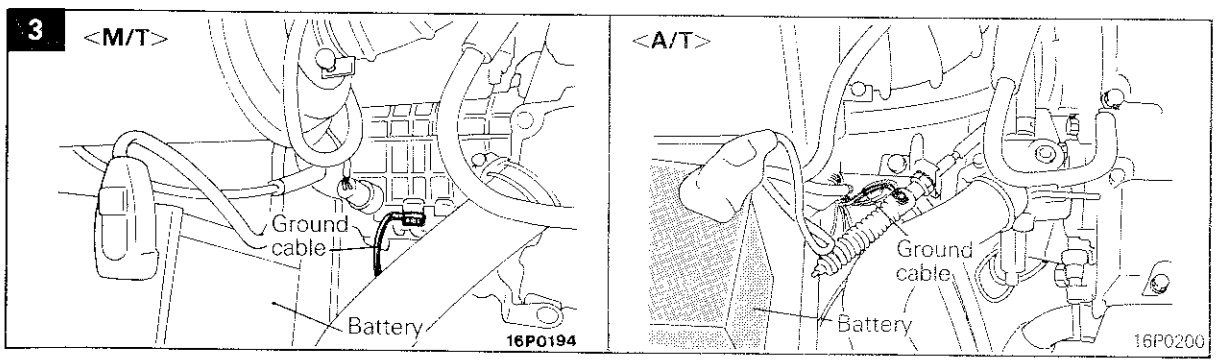


<1.6L Engine>


1
3
2
16P0290


1
Noise filter
16P0459


2
Ground cable
Center member
16P0140

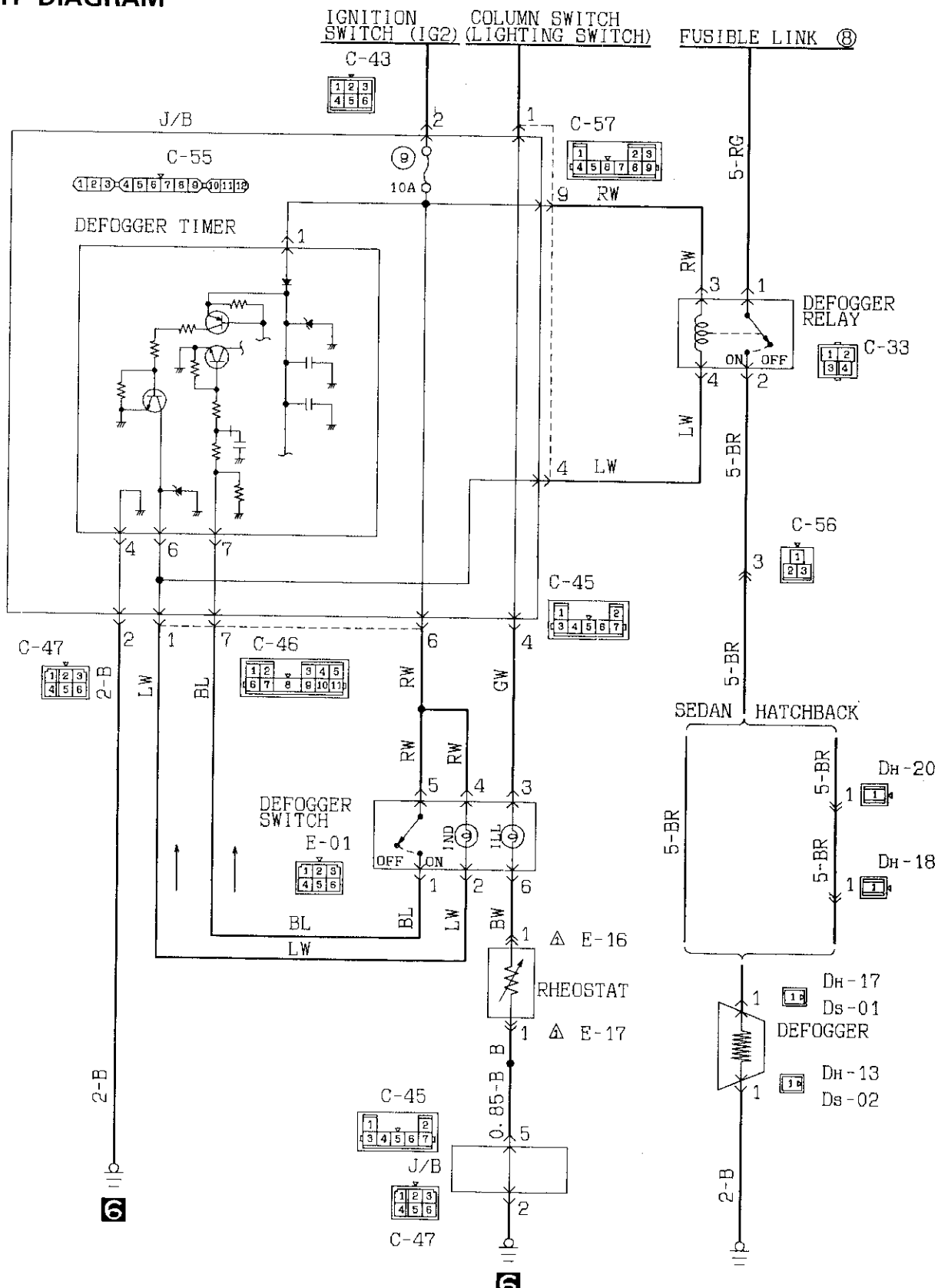

3
<M/T>
Ground cable
Battery
16P0194
<A/T>
Ground cable
Battery
16P0200

REAR WINDOW DEFOGGER

TROUBLESHOOTING

N08KHBH

CIRCUIT DIAGRAM



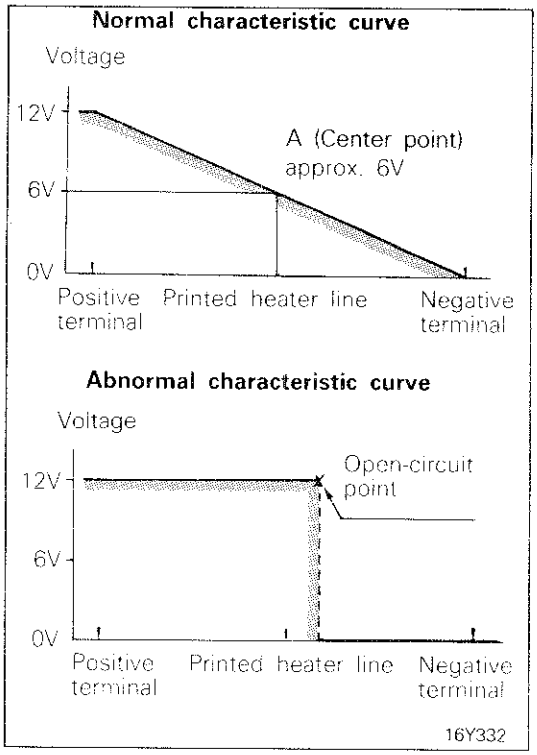
KX35-AC-C1304-N

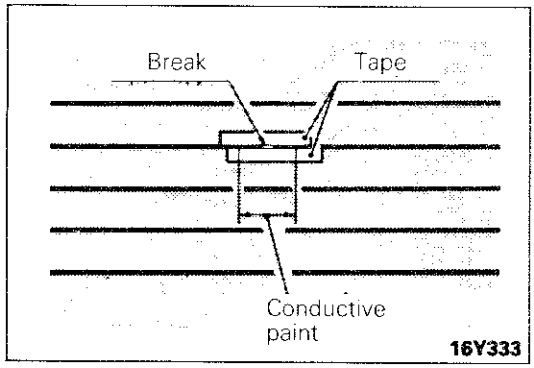
OPERATION

- 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 10 minutes after the defogger switch has been turned ON. If the defogger switch is pushed a second time during this 10-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. ⑨.
      - Check defogger relay or defogger timer.
   2) Indicator comes on.
      - Check defogger.
2. Defogger timer is inoperative.
   - Check defogger timer.





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 6 V.
(3) If 12 V 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 (0 V).
(4) If 0 V is indicated at A, there is a break in the positive terminals from A. Detect where the voltage changes suddenly (12 V) with the same method described.

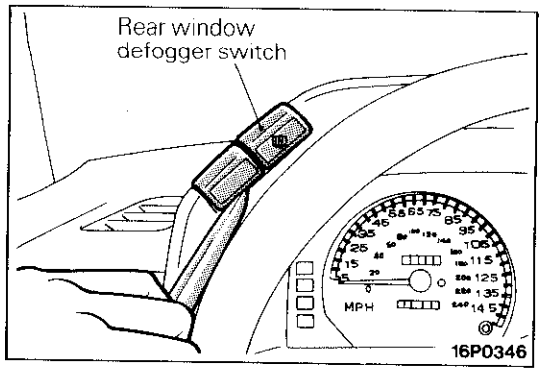
THE PRINTED-HEATER LINES REPAIR

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 minutes 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.



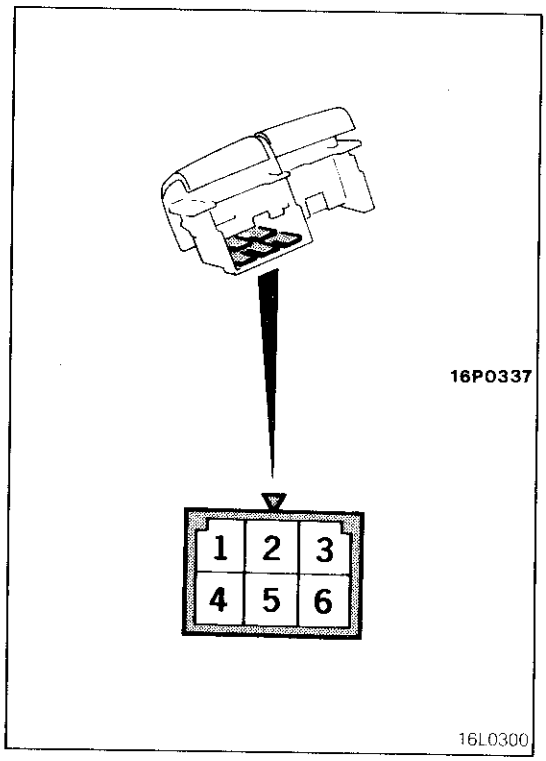
REAR WINDOW DEFOGGER SWITCH

N08PJBI

REMOVAL AND INSTALLATION

REMOVAL OF REAR WINDOW DEFOGGER SWITCH

Using a trim stick, remove the rear window defogger switch from the meter bezel.

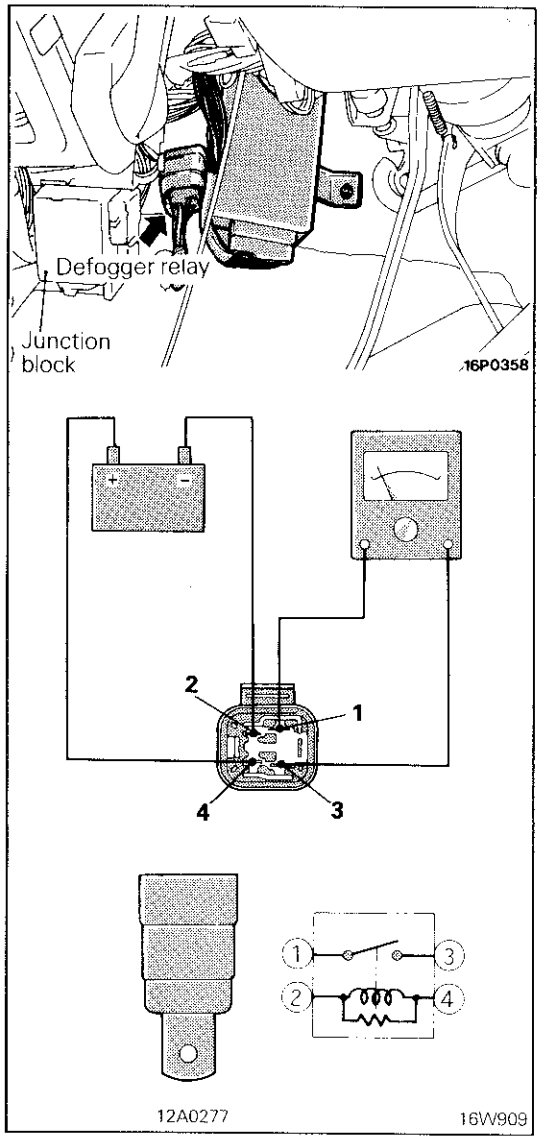


INSPECTION

Operate the switch and, check the continuity between the terminals.

	1	5	2	4	3	6
OFF						
ON	○—○		○—(ℓ)—○ Indicator light		(ℓ) Illumination light	

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



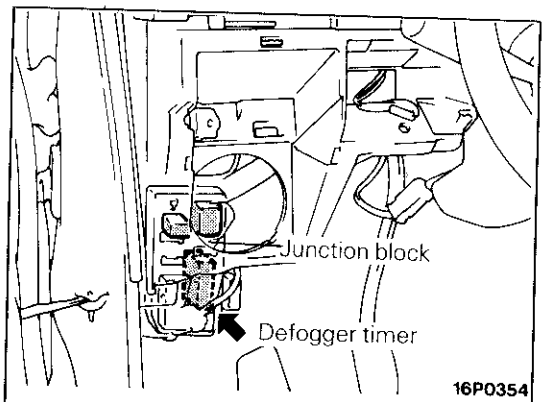
DEFOGGER RELAY

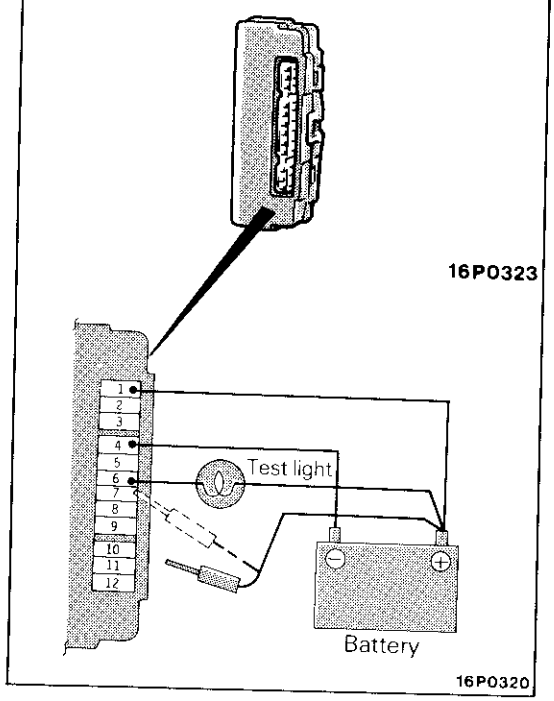
N08PLAB

INSPECTION

(1) Remove defogger relay.
(2) Connect battery power source to terminal 2. Check circuit 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





DEFOGGER TIMER

N08PPAB

INSPECTION

(1) Remove the defogger timer from junction block.
(2) Connect the battery and the test light to the timer as shown in the figure.
(3) Check to be sure that the test light illuminates for approximately ten seconds when battery voltage is applied to terminal 7 for a few seconds.
(4) Check to be sure that the test light switches OFF when battery voltage is again applied, during the test described above, to terminal 7.