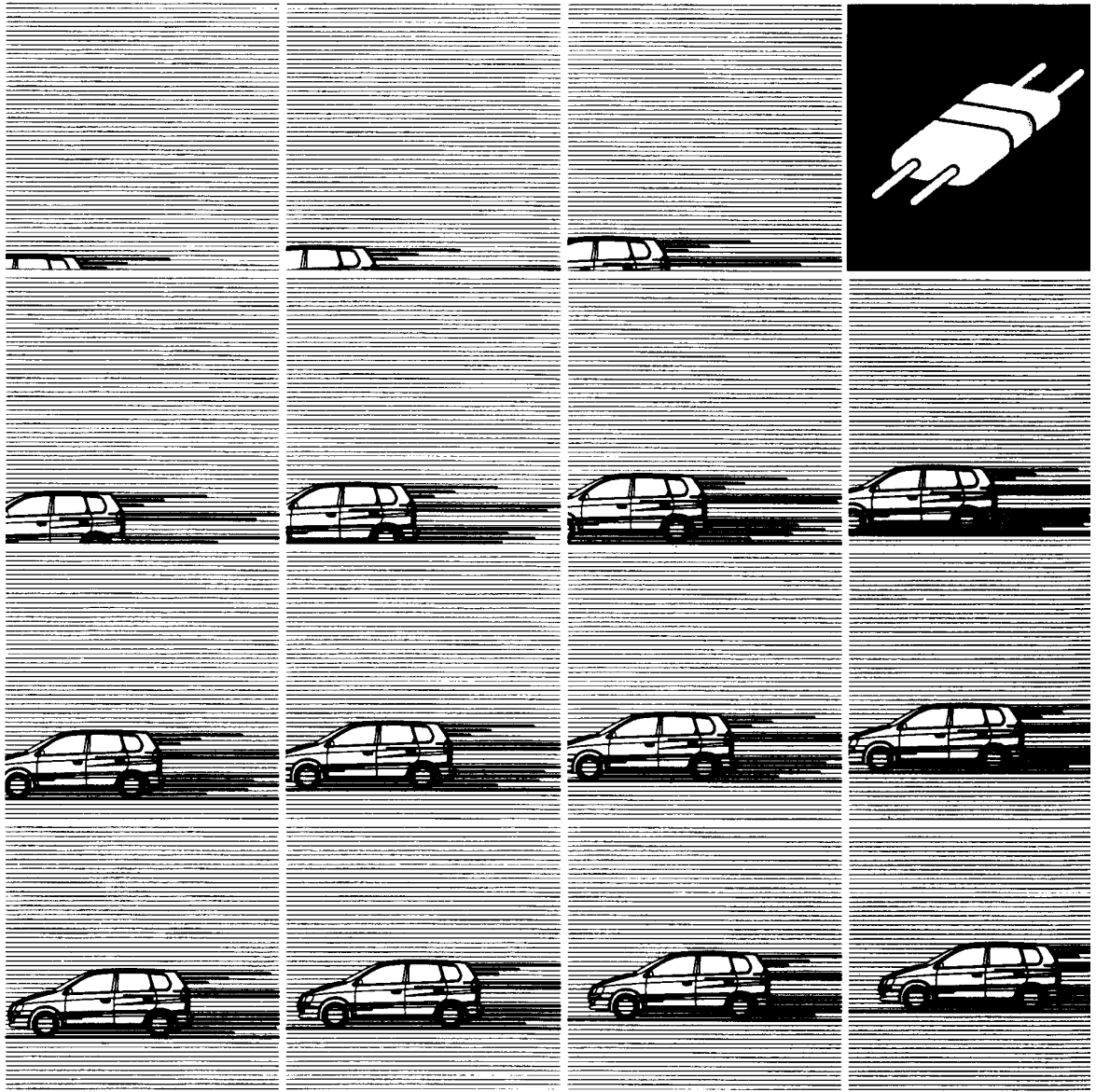




# Workshop Manual

electrical wiring

## SPACE STAR '99



Pub. No. EMXE99E1

# SPACE STAR

## ELECTRICAL WIRING

### FOREWORD

This Electrical Wiring Manual contains information necessary for inspection and servicing of electrical wiring of Mitsubishi SPACE STAR edited in the form of wiring harness configuration diagrams and function-separated circuit diagrams.

It is recommended that all service mechanics engaged in the servicing of the vehicle refer to the following publications as well as this manual.

TECHNICAL INFORMATION MANUAL  
IMXE99E1

WORKSHOP MANUAL

CHASSIS GROUP

CMXE99E1

BODY REPAIR MANUAL

BMXE99E1

ENGINE GROUP

PWEE□□□□

(Looseleaf edition)

PARTS CATALOGUE

N606H509D□

All information, illustrations and product descriptions contained in this manual are current as of time of publication. We, however, reserve the right to make changes at any time without prior notice or obligation.



**MITSUBISHI MOTOR SALES**

Europe B.V.

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September 1998

# **HOW TO USE THIS MANUAL**

00100010241

## **CONTENTS**

The preceding page contains GROUP INDEX that 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 number can be found on the top left or right of each page.

## **OPERATION AND TROUBLESHOOTING HINTS**

In the GROUP 4 circuit diagrams, the operation and troubleshooting hints are given on the previous page or following page for each circuit where necessary.

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# HOW TO READ THE WIRING DIAGRAMS

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00109001387

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**MODELS**

00100030308

Model code		Engine model	Transmission model	Fuel supply system
DG1A	LNDEL6/R6	4G13-SOHC (1,299 ml)	F5MR1 (2WD-5M/T)	MPI
	LNDJL6			
	LNJEL6/R6			
	LNJJL6			
DG5A	LNDCL6/R6	4G93-DOHC-GDI (1,834 ml)	F5M42 (2WD-5M/T)	GDI
	LNDGL6			
	LNJCL6/R6			
	LNJGL6			

**COMPOSITION AND CONTENTS OF WIRING DIAGRAMS**

00100010388

- (1) This manual consists of wiring harness diagrams, installation locations of individual parts, circuits diagrams and index.
- (2) In each section, all specifications are listed, including optional specifications. Accordingly, some specifications may not be applicable for individual vehicles.

Section	Basic contents
Wiring harness configuration diagrams	Connector locations and harness wiring configurations on actual vehicles are illustrated.
Single part installation position	Locations are shown for each point of relays, electronic control units, sensors, solenoids, solenoid valves, diodes, inspection connectors, fusible links, fuses, etc. In the part's lists, parts are listed in alphabetical order.
Circuit diagrams	<p>Circuits from power supply to earth are shown completely, classified according to system. There is a main division into power circuits, and circuits classified by system. The circuits classified by system also include operation and troubleshooting hints.</p> <ul style="list-style-type: none"> <li>● Junction block The entire circuit for the junction block is described, because only the part of the junction block needed is normally shown in each circuit diagram.</li> <li>● Joint connectors The internal circuits for all joint connectors are described, because only the part needed is shown in each circuit diagram.</li> <li>● Power supply circuits Circuits from the battery to fusible link, dedicated fuses, ignition switch, general purpose fuses, etc.</li> <li>● Circuits classified by system For each system, the circuits are shown from fuse to earth, excluding the power supply sections.</li> <li>● Operation The standard operation of each system is briefly described, following the route of current flow.</li> <li>● Troubleshooting hints This is a brief explanation of the inspection points that serve as hints when troubleshooting. Explanations of the circuits controlled by the electronic control unit are omitted. Refer to the related publications as required.</li> </ul>
Index	All components used are listed by connector number and component name.

# HOW TO READ CONFIGURATION DIAGRAMS

00100640075

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.  
Example: A-12      Number specific to connector (serial number)

Connector location site symbol  
A: Engine compartment  
B: Dash panel  
C: Instrument panel  
D: Floor and roof  
E: Door  
F: Luggage compartment

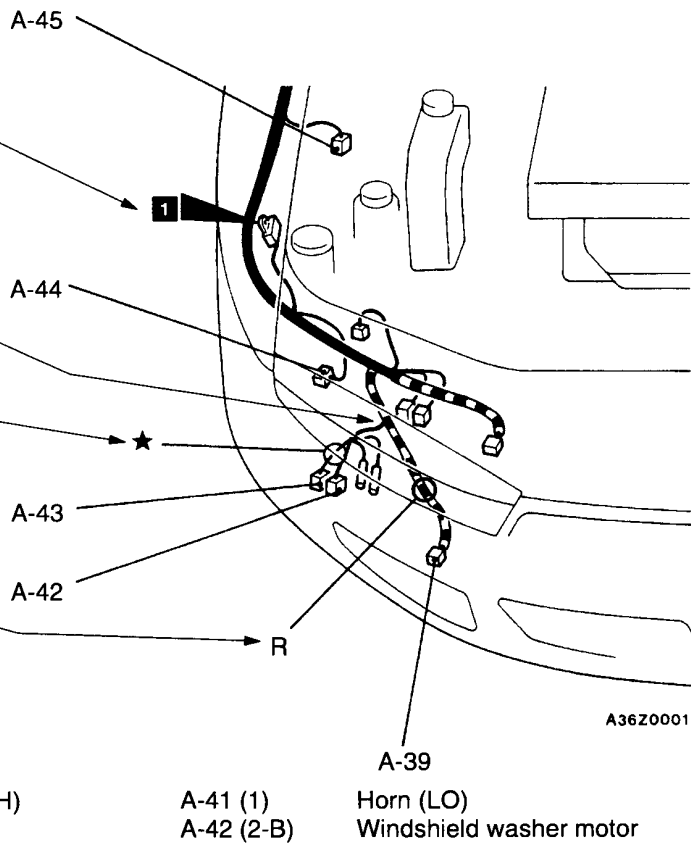
Denotes earth point.  
Same earth number is used throughout circuit diagrams to facilitate search of earth point. Refer to GROUP 3 SINGLE PART INSTALLATION POSITION – EARTH MOUNTING LOCATIONS for details of earth points.

Denotes a section covered by a corrugated tube.

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

Indicates the color of the colgate tube. (If no color is recorded, it indicates that the color is black.)  
R: Red  
Y: Yellow

Indicates the device to which the connector is to be connected.



A-39 (2-B)      Front fog lamp (LH)  
A-40 (1)      Horn (LO)

A-41 (1)      Horn (LO)  
A-42 (2-B)      Windshield washer motor

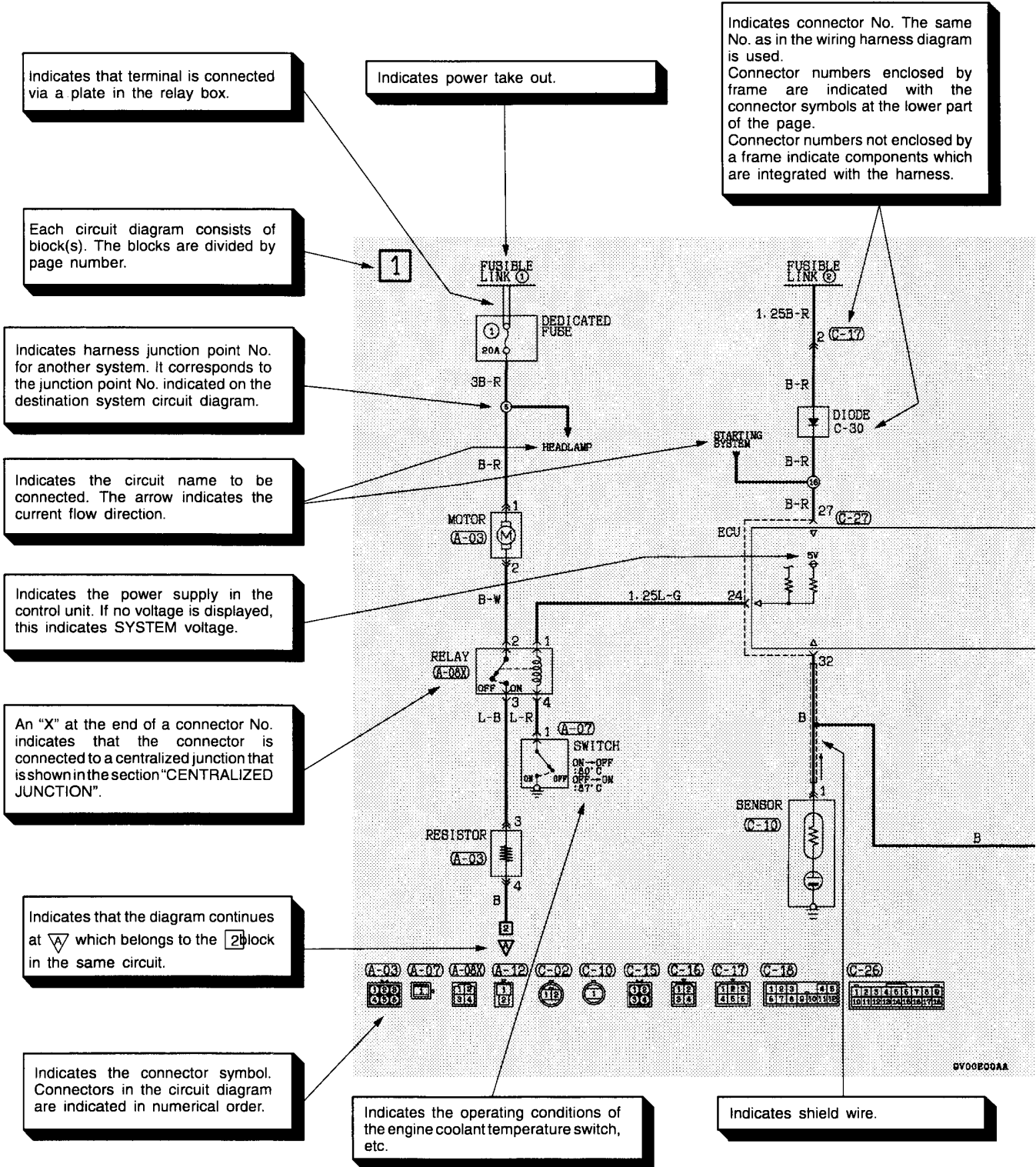
The number of connector pins and the connector colour (except milk white)\* are shown for ease of retrieval.  
Example: (2-B)      Connector colour (milk white if no colour is indicated)  
Number of connector pins

\*: Typical connector colours  
B: Black  
Y: Yellow  
L: Blue  
G: Green  
R: Red  
BR: Brown  
V: Violet  
O: Orange  
GR: Gray

HOW TO READ CIRCUIT DIAGRAMS

00100650122

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



Indicates that terminal is connected via a plate in the relay box.

Indicates power take out.

Indicates connector No. The same No. as in the wiring harness diagram is used. Connector numbers enclosed by frame are indicated with the connector symbols at the lower part of the page. Connector numbers not enclosed by a frame indicate components which are integrated with the harness.

Each circuit diagram consists of block(s). The blocks are divided by page number.

Indicates harness junction point No. for another system. It corresponds to the junction point No. indicated on the destination system circuit diagram.

Indicates the circuit name to be connected. The arrow indicates the current flow direction.

Indicates the power supply in the control unit. If no voltage is displayed, this indicates SYSTEM voltage.

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 that the diagram continues at ▽ which belongs to the 2 block in the same circuit.

Indicates the connector symbol. Connectors in the circuit diagram are indicated in numerical order.

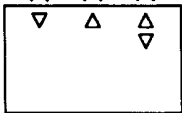
Indicates the operating conditions of the engine coolant temperature switch, etc.

Indicates shield wire.

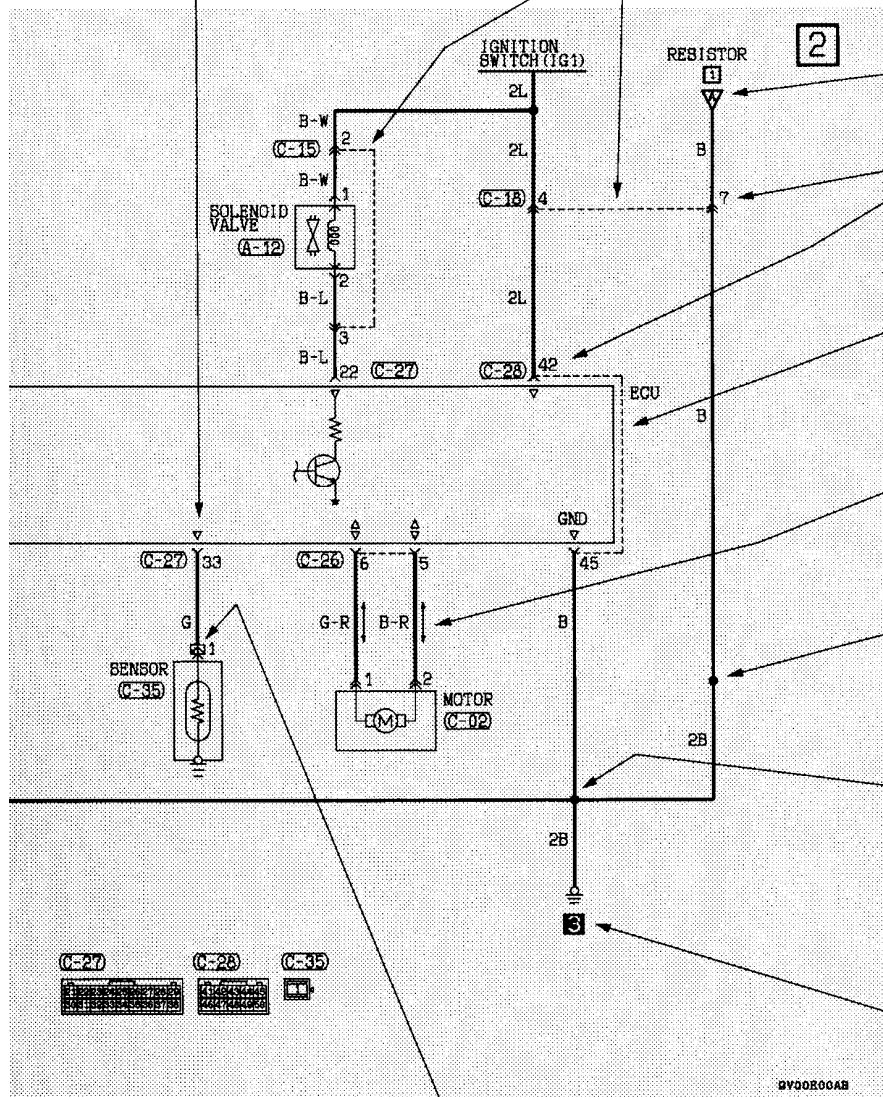
8V00E00AA

Indicates input/output to/from control unit (current flow direction).

Input    Output    Input/output



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



Indicates that the diagram comes from which belongs to the block in the same circuit.

Indicates terminal No.

In case two or more connectors are connected to the same device, markings indicating the same connectors are connected by a broken line.

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

Indicates harness junction where wire diameter or colour changes.

Indicates intersections at which the lead wire are not connected.

Indicates intersections at which the lead wires are connected.

Indicates vehicle body earth point. (Same No. as that of earth point in wiring harness diagram and installation locations of individual parts.)

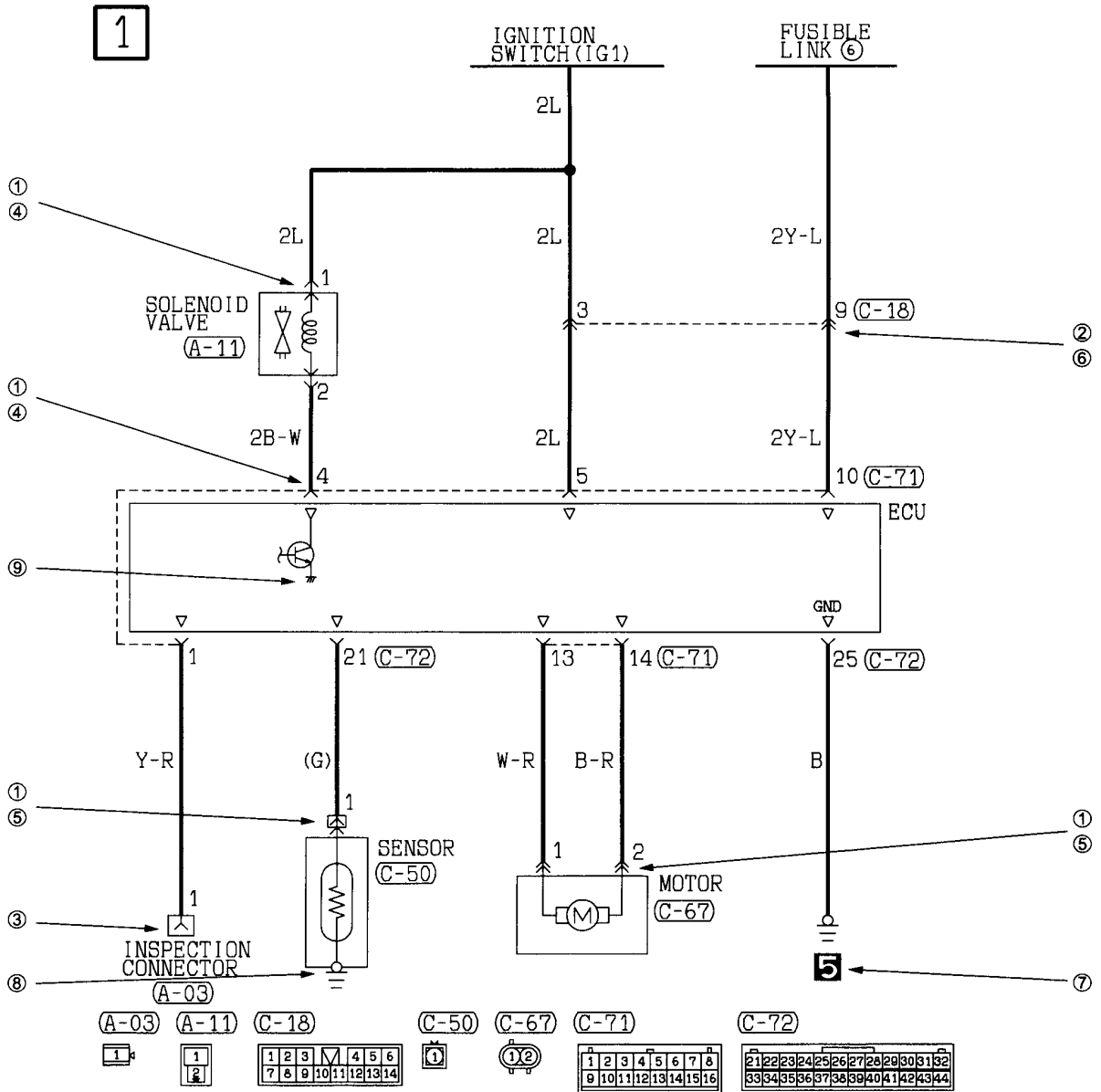
Indicates that the terminal is a spare one if the device (sensors in this case) is not provided.

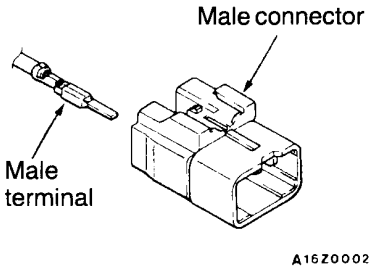

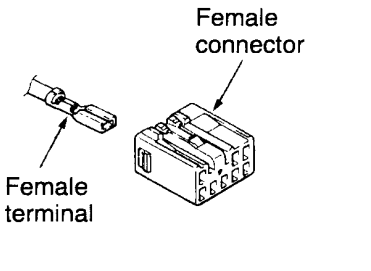
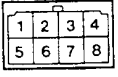

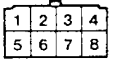
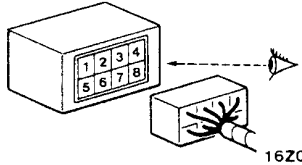
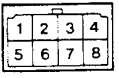
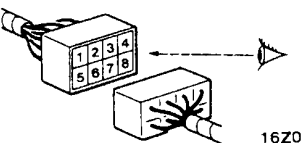
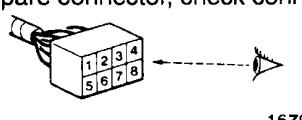
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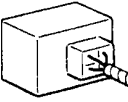
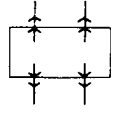
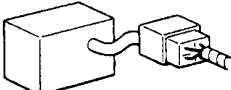
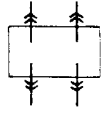
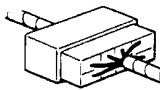

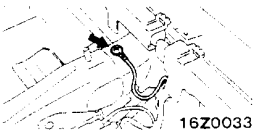

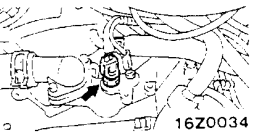

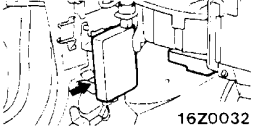



MARKINGS FOR CONNECTOR EARTHING

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Item	No.	Connector/Earthing	Symbol	Contents
<p>Connector and terminal marking</p>	<p>—</p>		<p>Male terminal</p>  16Z0021	<p>The male and female terminals are indicated as shown. The connector with male terminal(s) is called as male connector and indicated by double connector contour lines, while the connector with female terminal(s) is called as female connector and indicated by single connector contour line.</p>
			<p>Male connector</p>  16Z0016	
			<p>Female terminal</p>  16Z0022	
			<p>Female connector</p>  16Z0017	
<p>Connector symbol marking</p>	<p>① ② ③</p>	<p>Device</p> 	 16Z0016	<p>The symbol indicates the vehicle 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, a male connector symbol is shown. For spare connectors and check connectors, no device is connected, and so the harness-side connector symbol is shown for these connectors. The details for the diagnosis connector differ from the above description. For details, refer to the "MUT-II operation instructions".</p>
		<p>Intermediate connector</p> 		
		<p>Spare connector, check connector</p> 		

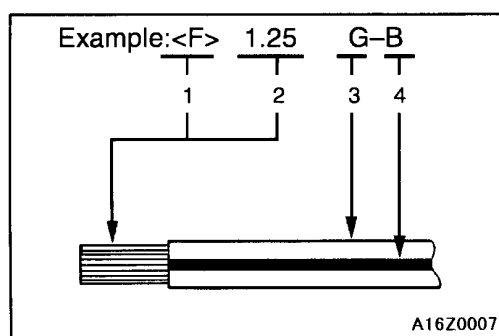
Item	No.	Connector/Earthing	Symbol	Contents
Connector connection marking	④	Direct connection type  16Z0026	 16Z0023	A connection between a device and connector on the harness side is either by direct insertion in the device (direct connection type) or by connection with a harness connector on the device side furnished (harness connection type). The two types are indicated as illustrated.
	⑤	Harness connection type  16Z0027	 16Z0024	
	⑥	Intermediate connector  16Z0028	 16Z0025	
Earth markings	⑦	Body earth  16Z0033	 16Z0018	Earth is either by body earth, device earth or control unit interior earth. These are indicated as illustrated.
	⑧	Device earth  16Z0034	 16Z0019	
	⑨	Earth in control unit  16Z0032	 16Z0020	

## WIRE COLOUR CODES

00100800053

Wire colours are identified by the follow colour codes.

Code	Wire colour	Code	Wire colour
B	Black	P	Pink
BR	Brown	R	Red
G	Green	SB	Sky blue
GR	Gray	SI	Silver
L	Blue	V	Violet
LG	Light green	W	White
O	Orange	Y	Yellow



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

No.	Meaning
1	<F>:Flexible wire
	<T>:Twisted wire
2	Wire size(mm <sup>2</sup> )*
3	Basic colour (colour of the cable coating)
4	Marking colour

### NOTE

\*: No code indicates 0.5 mm<sup>2</sup>.

Cable colour code in parentheses indicates 0.3 mm<sup>2</sup>.

## 1-10 HOW TO READ THE WIRING DIAGRAMS – Abbreviation Symbols

### ABBREVIATION SYMBOLS

00100810124

The Abbreviation symbols used in wiring diagrams are defined below.

#### 1. Abbreviation symbols used for system name

Abbreviation symbol	Meaning	Abbreviation symbol	Meaning
ABS	Anti-skid braking system	EGR	Exhaust gas recirculation
A/C	Air conditioner	M/T	Manual transmission
DRL	Daytime running lamp	MPI	Multi-point injection
		SRS	Supplemental restraint system

#### 2. Abbreviation symbols used for combination meters

Abbreviation symbol	Meaning	Abbreviation symbol	Meaning
ABS	Anti-skid braking system warning lamp	OIL	Oil pressure warning lamp
BEAM	High beam indicator lamp	R/FOG	Rear fog lamp indicator lamp
BRAKE	Brake warning lamp	SPEED	Speedometer
CHECK ENGINE	Check engine warning lamp	SRS	Supplemental restraint system warning lamp
CHG	Charging warning lamp	TACHO	Tachometer
DOOR	Door-ajar warning lamp	T/GA	Engine coolant temperature gauge
F/GA	Fuel gauge	TRIP	Tripmeter
F/FOG	Front fog lamp indicator lamp	TURN (LH)	Turn signal indicator (L.H.)
FUEL	Low fuel warning lamp	TURN (RH)	Turn signal indicator (R.H.)
ODO	Odometer	WASHER	Washer fluid level warning lamp

3. Abbreviation symbols used for switches and relays

Name of switches and relays	Abbreviation symbol	Operation	Name of switches and relays	Abbreviation symbol	Operation
Blower switch	LO	Blower operates at low speed	Power window switch	UP	Window closes
	ML	Blower operates at medium low speed		DOWN	Window opens
	MH	Blower operates at medium high speed		AUTO UP	Window is easily closed with one action
	HI	Blower operates at high speed		AUTO DOWN	Window is easily opened with one action
Dimmer passing switch	LO	Low beams ON	Remote controlled mirror switch	LOCK	Window locked
	HI	High beams ON		UNLOCK	Window unlocked
Door lock actuator, door lock keycylinder switch or door lock switch	LOCK	Door locked	Room lamp switch	LH	L.H. mirror operates
	UNLOCK	Door unlocked		RH	R.H. mirror operates
Heated seat switch	LO	Normal heating	Sunroof switch	DOOR	Room lamps ON when a door is open
	HI	Rapid heating		OPEN	Sunroof slides to open
Ignition switch	ACC	When turned to the ACC (ACCESSORY) or ON position, the power circuit will start	Turn signal switch	UP	Sunroof tilts up
	IG1	Even when at the ST (START) position, the power circuit will start		CLOSE/DOWN	Sunroof tilts down or slides to close
	IG2	When at the ST (START) position, the power circuit will not start functioning	Variable intermittent wiper control switch	LH	L.H. turn signal lamps ON
Lighting switch	TAIL	Position, tail, licence plate and other illumination lamps ON		RH	R.H. turn signal lamps ON
	HEAD	Headlamps ON	Windshield wiper switch or rear wiper switch	SLOW	Pause time for intermittent operation lengthen
Others	ON	Switched on		FAST	Pause time for intermittent operation shorten
	OFF	Switched off	LO	Wipers operate at low speed	
			HI	Wipers operate at high speed	
			INT	Wipers operate intermittently	

## 1-12 HOW TO READ THE WIRING DIAGRAMS – Abbreviation Symbols

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### 4. Other abbreviation symbols

Abbreviation symbol	Meaning	Abbreviation symbol	Meaning
ECU	Electronic control unit	LCD	Liquid crystal display
GND	Earth	LH	Left hand
ILL	Illumination lamp	LHD	L.H. drive vehicles
IND	Indicator lamp	RH	Right hand
J/B	Junction block	RHD	R.H. drive vehicles
J/C	Joint connector		

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# WIRING HARNESS CONFIGURATION DIAGRAMS

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80109000449

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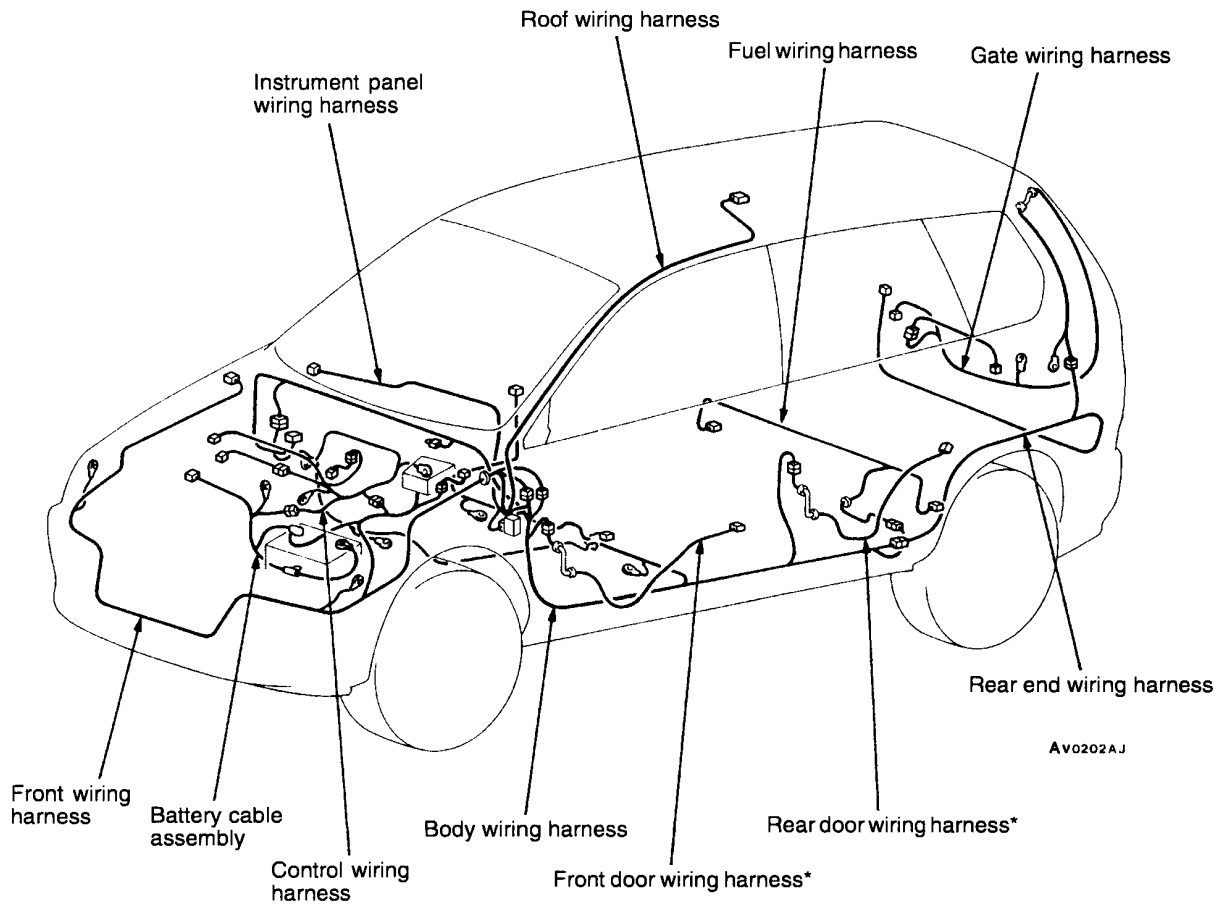
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## OVERALL WIRING DIAGRAM

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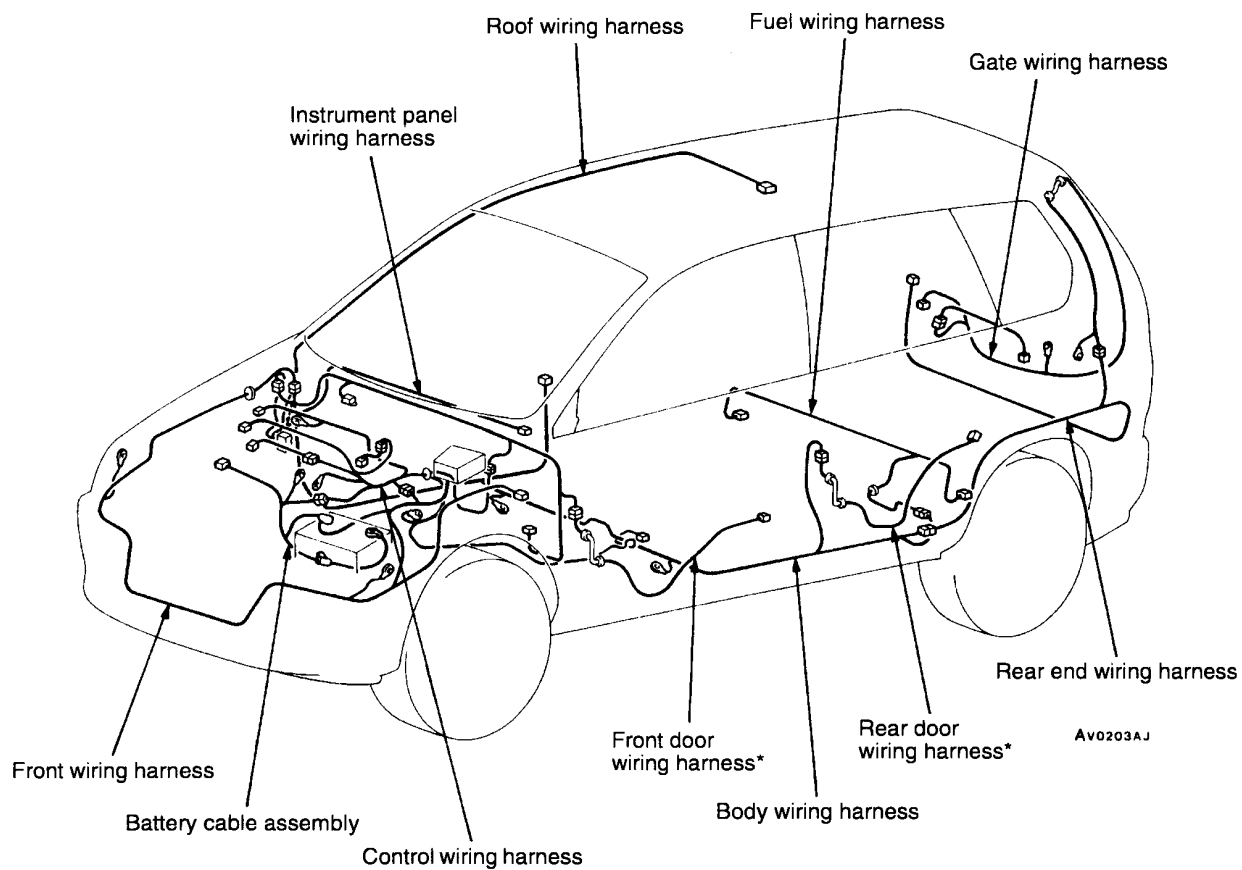
L.H. drive vehicles



## Remarks

- (1) This illustration shows only major wiring harnesses.
- (2) \*: also equipped at the right side.

R.H. drive vehicles



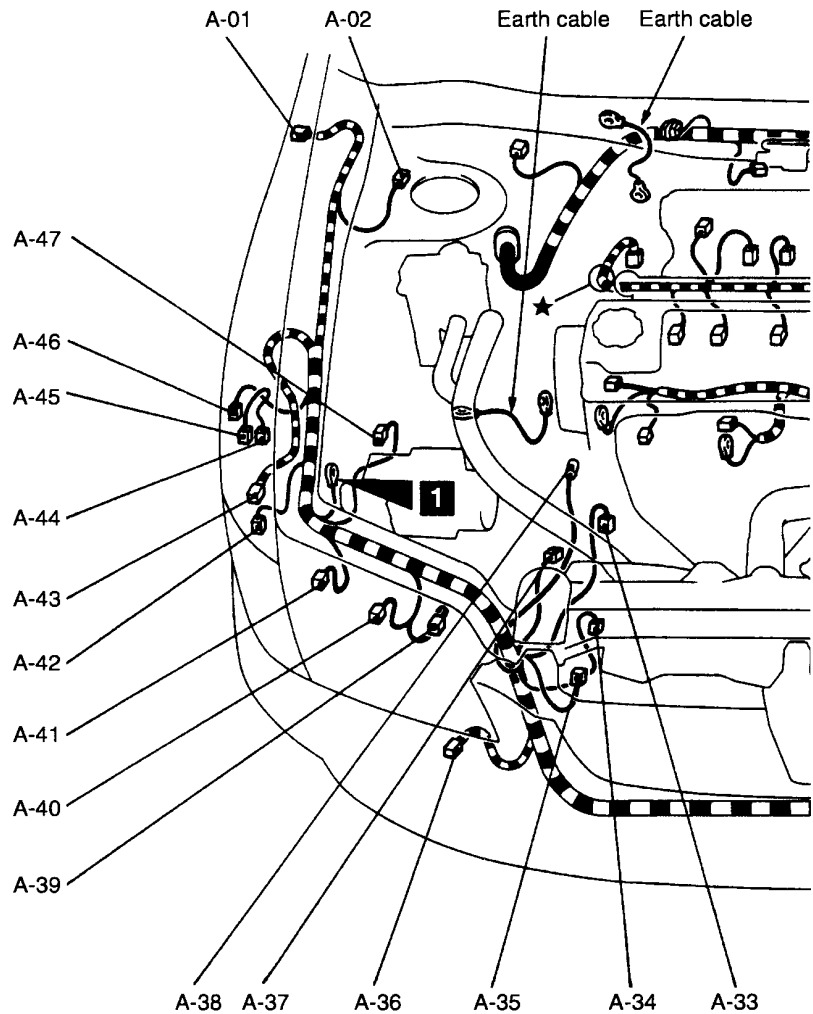
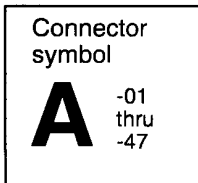
Remarks

- (1) This illustration shows only major wiring harnesses.
- (2) \*: also equipped at the right side.

ENGINE COMPARTMENT

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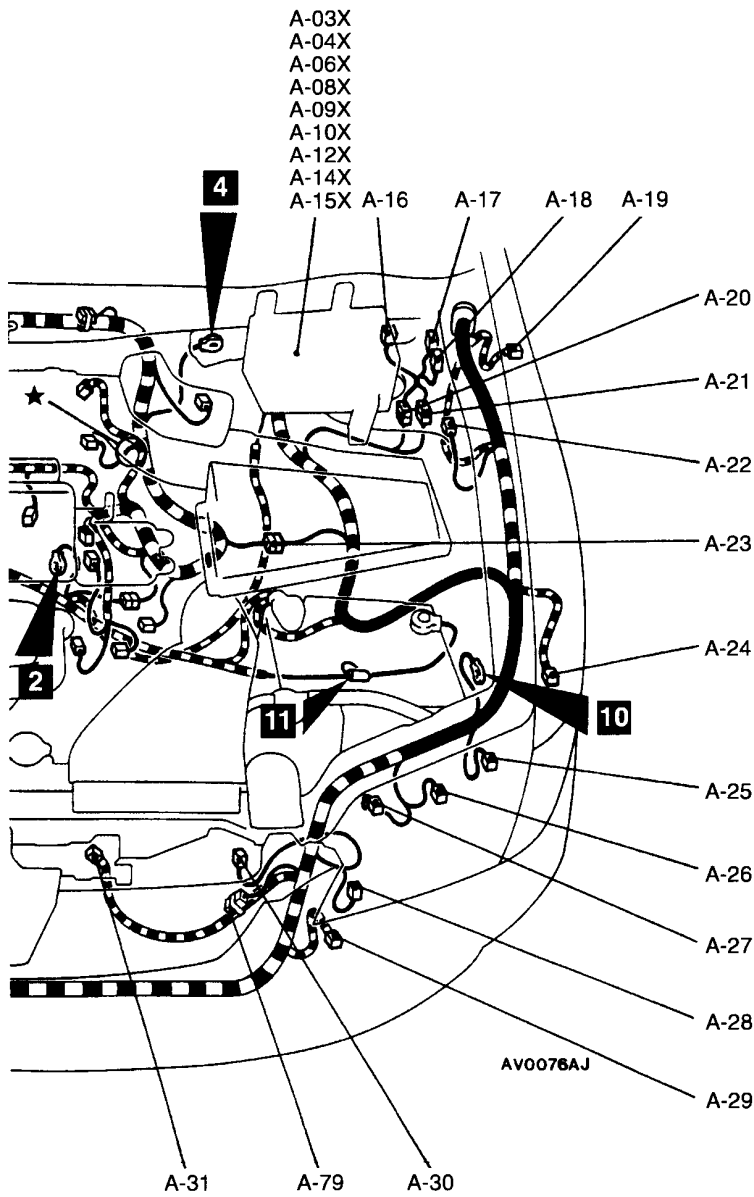
4G13 engine <L.H. drive vehicles>



- Connector color code
- B: Black
  - Y: Yellow
  - L: Blue
  - G: Green
  - R: Red
  - BR: Brown
  - V: Violet
  - O: Orange
  - GR: Gray

A-01 (2-B)	Side turn signal lamp (RH)	A-17 (5)	DRL relay 1
A-02 (2-B)	Front speed sensor (RH) <ABS>	A-18 (5)	DRL relay 2
A-03X (5)	Headlamp washer relay	A-19 (2-B)	Side turn signal lamp (LH)
A-04X (4)	Alternator relay	A-20 (10-B)	Front wiring harness and DRL wiring harness combination
A-06X (5)	Horn relay	A-21 (10-B)	Front wiring harness and DRL wiring harness combination
A-08X (5)	Condenser fan relay (HI)	A-22 (2-B)	Front speed sensor (LH) <ABS>
A-09X (5)	Condenser fan relay (LO)	A-23 (10-B)	Front wiring harness and control wiring harness combination
A-10X (5)	A/C compressor relay	A-24 (2-B)	Front turn signal lamp (LH)
A-12X (5)	Headlamp relay	A-25 (3-B)	Headlamp leveling unit (LH)
A-14X (5)	Radiator fan relay		
A-15X (5)	Tail lamp relay <DRL>		
A-16 (13)	DRL-ECU		

WIRING HARNESS CONFIGURATION DIAGRAMS



- |             |                                                        |             |                                    |
|-------------|--------------------------------------------------------|-------------|------------------------------------|
| A-26 (2-B)  | Position lamp (LH)                                     | A-38 (1)    | Power steering oil pressure switch |
| A-27 (3-B)  | Headlamp (LH)                                          | A-39 (3-B)  | Headlamp (RH)                      |
| A-28 (2)    | Outside thermo sensor                                  | A-40 (2-B)  | Position lamp (RH)                 |
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| A-30 (2-B)  | Horn (LH)                                              | A-42 (2-B)  | Headlamp washer motor              |
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| A-36 (2-GR) | Front fog lamp (RH)                                    | A-47 (31-B) | ABS-ECU                            |
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