WARNING

Servicing a vehicle can be dangerous. If you have not received service-related training, the risks of injury, property damage, and failure of servicing increase. The recommended servicing procedures for the vehicle in this workshop manual were developed with Mazda-trained technicians in mind. This manual may be useful to non-Mazda trained technicians, but a technician with our service-related training and experience will be at less risk when performing service operations. However, all users of this manual are excepted at least to know general safety procedures.

This manual contains "Warnings" and "Cautions" applicable to risks not normally encountered in a general technician's experience. They should be followed to reduce the risk of injury and the risk that improper service or repair may damage the vehicle or render it unsafe. It is also important to understand that the "Warnings" and "Cautions" are not exhaustive. It is impossible to warn of all the hazardous consequences that might result from failure to follow the procedures.

The procedures recommended and described in this manual are effective methods of performing service and repair. Some require tools specifically designed for a specific purpose. Persons using procedures and tools which are not recommended by Mazda Motor Corporation must satisfy themselves thoroughly that neither personal safety nor safety of the vehicle will be jeopardized.

The contents of this manual, including drawings and specifications, are the latest available at the time of printing, and Mazda Motor Corporation reserves the right to change the vehicle designs and alter the contents of this manual without notice and without incurring obligation.

Parts should be replaced with genuine Mazda replacement parts or with parts which match the quality of genuine Mazda replacement parts. Persons using replacement parts of lesser quality than that of genuine Mazda replacement parts must satisfy themselves thoroughly that neither personal safety nor safety of the vehicle will be jeopardized.

Mazda Motor Corporation is not responsible for any problems which may arise from the use of this manual. The cause of such problems includes but is not limited to insufficient service-related training, use of improper tools, use of replacement parts of lesser quality than that of genuine Mazda replacement parts, or not being aware of any revision of this manual.

Mazda5

Wiring Diagram

FOREWORD

This wiring diagram incorporates the wiring schematics of the Mazda5 and available optional equipment. Actual vehicle wiring may vary slightly depending on optional equipment or local specifications, or both.

For proper repair and maintenance, a thorough familiarization with this manual is important, and it should always be kept in a handy place for quick and easy reference.

All the contents of this manual, including drawings and specifications, are the latest available at the time of printing.
As modifications affecting repair or maintenance occur, relevant information supplementary to this volume will be made available at Mazda dealers. This manual should be kept up-to-date.

Mazda Motor Corporation reserves the right to alter the specifications and contents of this manual without obligation or advance notice.

Mazda Motor Corporation
HIROSHIMA, JAPAN

APPLICATION:
This manual is applicable to vehicles beginning with the Vehicle Identification Numbers (VIN) shown on the following page.

CONTENTS

~~PRINTED IN THE NETHERLANDS. FEBRUARY 2005~~
~~5632-1E-05B~~

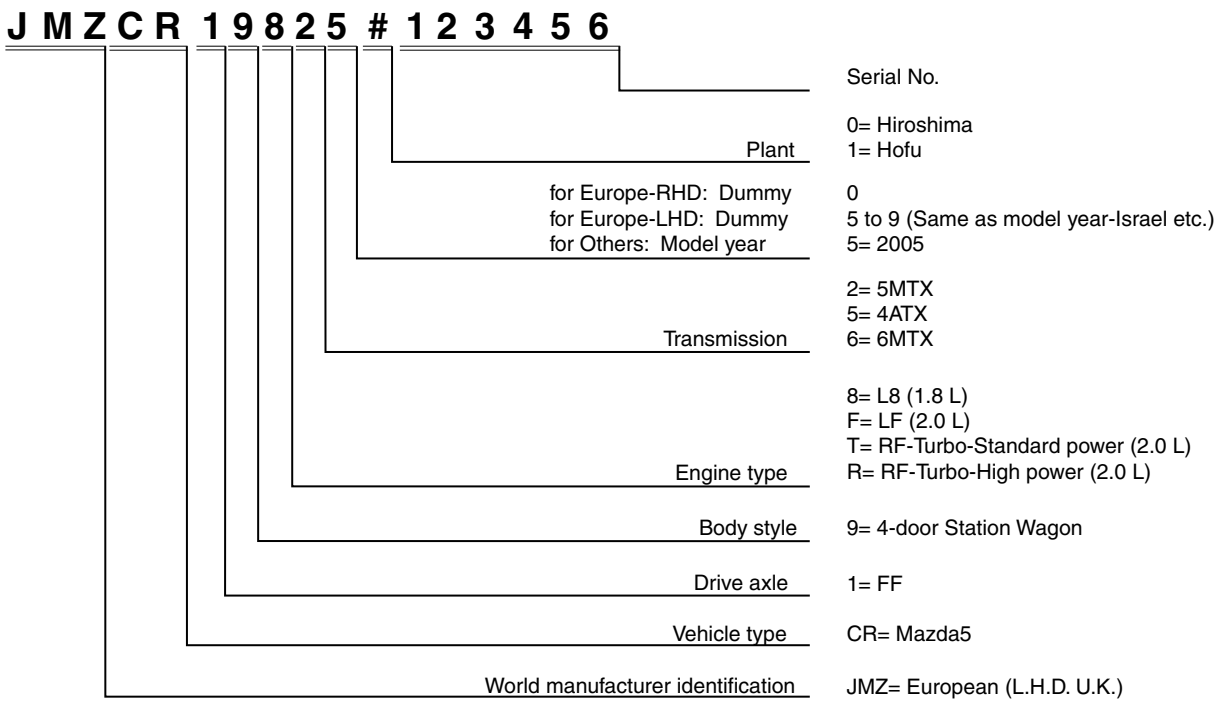
VEHICLE IDENTIFICATION NUMBERS (VIN)
(CHASSIS NUMBERS)

~~JMZ CR1982*# 100001-~~
~~JMZ CR19F2*# 100001-~~
JMZ CR19F5*# 100001-

SYSTEM INDEX

Two digits (section ID) indicated in front of each title are commonly used with the Workshop Manual.

VEHICLE IDENTIFICATION NUMBER (VIN) CODE

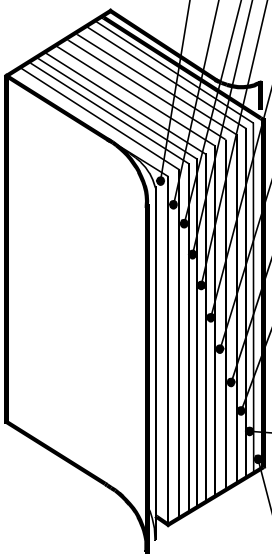


VEHICLE IDENTIFICATION NUMBERS (VIN)

~~JMZ CR1982*# 100001-~~
~~JMZ CR19F2*# 100001-~~
JMZ CR19F5*# 100001-

CONTENTS OF WIRING DIAGRAMS

- This manual comprises the sections shown below.



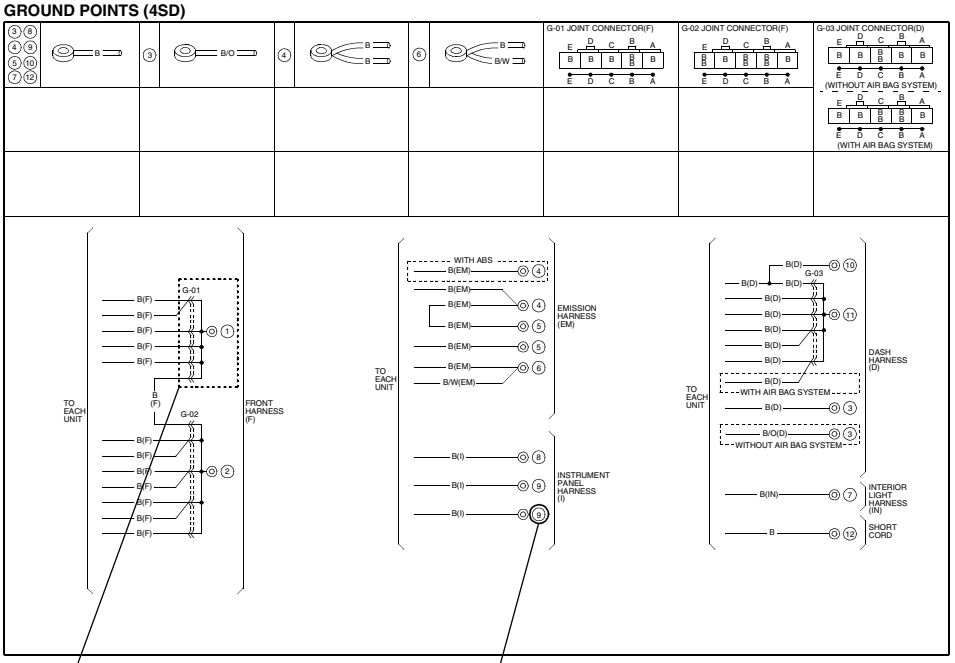
NEW					PREVIOUS	
GENERAL INFORMATION	00	R	Reading wiring diagrams	A how-to on using and reading wiring diagrams, using test equipment, checking harness and connectors, and finding trouble spots	GI	General information of wiring diagrams
		P	Electrical system general procedures			
		E	Electrical wiring schematic	Shows main fuses and other fuses for each system	W	Electrical wiring schematic
		F	Fuse box complete wiring system	Shows internal circuits and connectors	FB	Fuse block complete wiring system
		J	Joint box/Junction box complete wiring system		JB	Joint box complete wiring system
		C	Common connector list	Shows connectors common throughout system	X	Common connector list
		G	Ground point	Ground routes from and to the battery	Y	Ground point
		D	Data link connector	Shows circuit and connector diagrams and component and connector location diagrams	U	Data link connector
ENGINE	01	12	Cooling system		A	Charging system/Starting system
		14	Fuel system			
		17	Charging system		B	Engine control system
		18	Ignition system		C	Gauge control system
		19	Starting system		D	Wiper system
		20	Cruise control system		E	Lighting system
		40	Control system		F	Signal system
SUSPENSION	02	12	Wheel and tires		G	Air-conditioning system
DRIVELINE/AXLE	03	18	4-Wheel drive			
BRAKES	04	13	Antilock brake system		H	Transmission control/Key interlock/Shift-lock system
		14	Traction control system			
		15	Dynamic stability control			
TRANSMISSION/ TRANSAXLE	05	13	Automatic transmission		I	Interior light system
		14	Automatic transmission shift mechanism		J	Audio/Radio system
		17	Automatic transaxle			
		18	Automatic transaxle shift mechanism		K	Power window/Power door lock system
STEERING	06	13	Electric power steering (EPS)			
		14	Power steering			
HEATER, VENTILATION & AIR CONDITIONING (HVAC)	07	40	Control system		L	Remote control mirror system
RESTRAINTS	08	10	Air bag system			
		11	Seat belt		M	Sliding sunroof system
BODY & ACCESSORIES	09	12	Glass/Windows/Mirrors		O	Anti-lock brake system
		13	Seats			
		14	Security and locks		N	Electric power steering (EPS)
		15	Sunroof			
		18	Lighting systems		P	Power seat/Seat warmer system
		19	Wiper/Washer system			
		20	Entertainment		Q	Auto cruise control system
		21	Power systems			
		22	Instrumentation/Driver info.		S	Air bag system
		40	Control system		T	Others
AI			Alphabetical Index	Gives page number of circuit diagram for each component	AI	Alphabetical Index

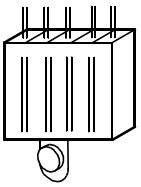
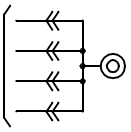
Depending on the vehicle model, the actual sections may be different.

GROUND POINTS

- This shows ground points of the harness.

GROUND POINTS (4SD)

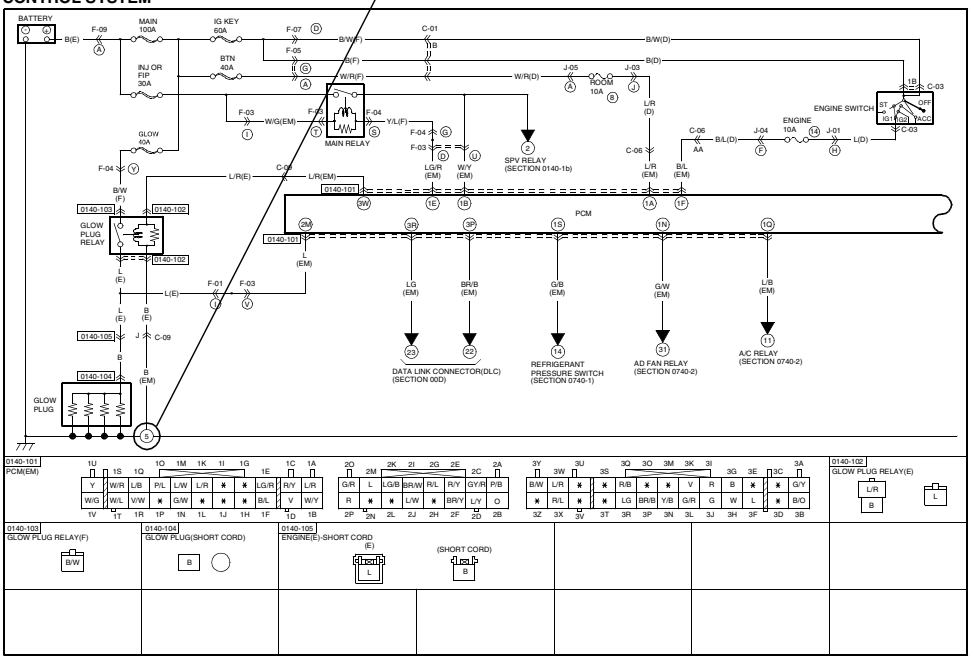


Ground indication	
On vehide	Indication
	To circuit 

On circuit diagrams and ground points

The ground connection numbers in system circuit diagrams correspond to those in the ground point diagram.

CONTROL SYSTEM

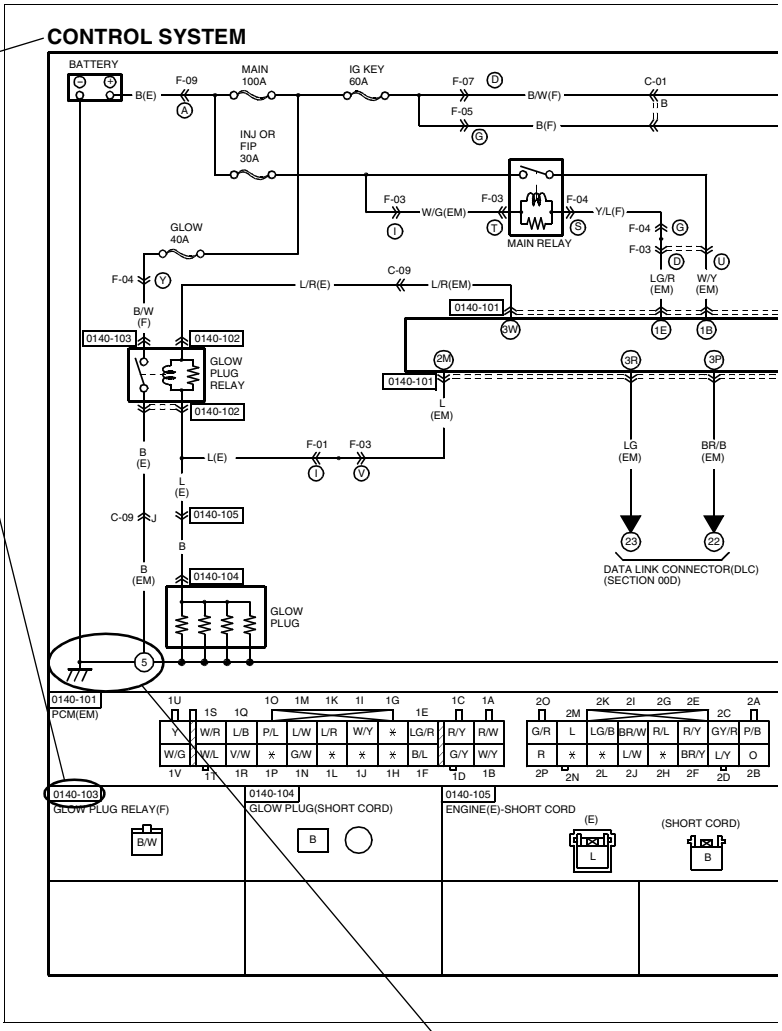


SYSTEM CIRCUIT DIAGRAM/CONNECTOR DIAGRAM

- These diagrams show the circuits for each system, from the power supply to the ground. The power supply side is on the upper part of the page, the ground side on the lower part. The diagrams describe circuits with the ignition switch off.

  Below is an explanation of the various points in the diagram.

System name



Connector code

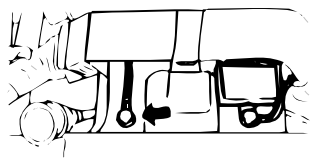
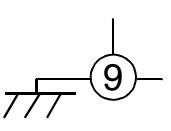
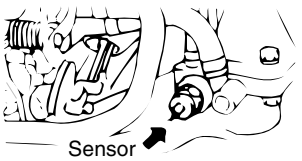
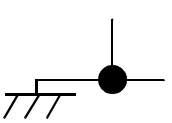
The prefix letter indicates the system in which the connector is used.

- **F**: Fuse box connectors
- **J**: Joint box/Junction box connectors
- **C**: Common connectors
- **G**: Ground point connectors
- **D**: Data link connector

0112: Cooling system connectors
0114: Fuel system connectors
0117: Charging system connectors
0118: Ignition system connectors
0119: Starting system connectors
0120: Cruise control system connectors
0140: Engine control system connectors
0212: Wheel and tires connectors
0318: 4-Wheel drive connectors
0413: Antilock brake system connectors
0414: Traction control system connectors
0415: Dynamic stability control connectors
0513: Automatic transmission connectors
0514: Automatic transmission shift mechanism connectors
0517: Automatic transaxle connectors
0518: Automatic transaxle shift mechanism connectors
0613: Electric power steering (EPS) connectors
0614: Power steering connectors
0740: Heater, ventilation & air conditioning (HVAC) control system connectors
0810: Air bag system connectors
0811: Seat belt connectors
0912: Glass/Windows/Mirrors connectors
0913: Seats connectors
0914: Security and locks connectors
0915: Sunroof connectors
0918: Lighting systems connectors
0919: Wiper/Washer system connectors
0920: Entertainment connectors
0921: Power systems
0922: Instrumentation/Driver info. Connectors
0940: Control system

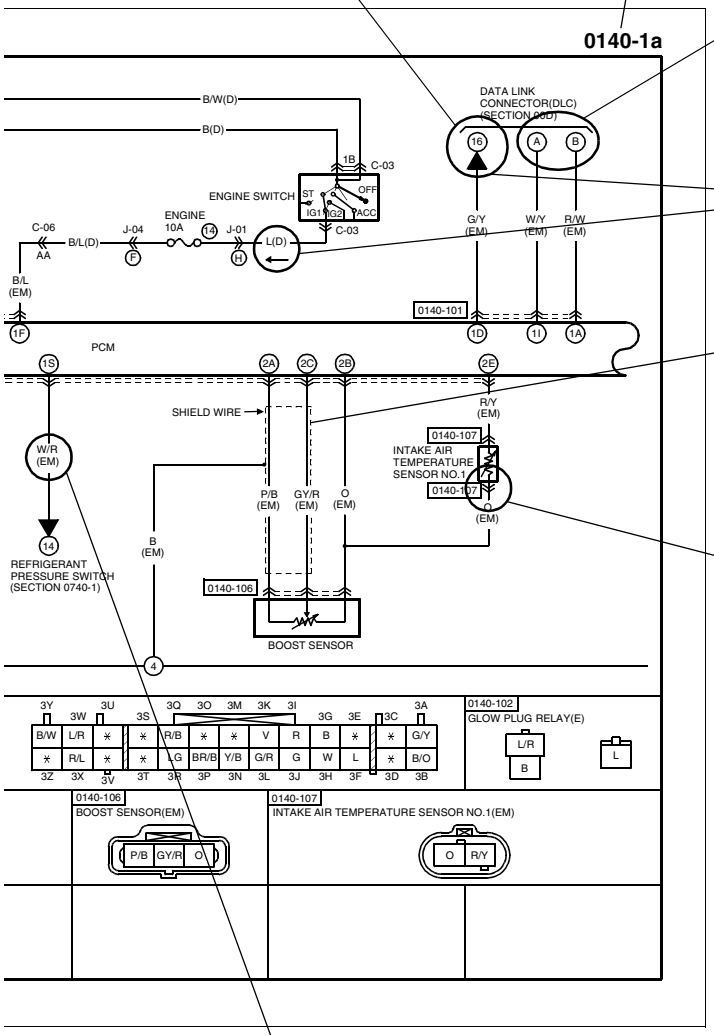
Ground numbers

A harness ground is represented differently than a unit ground.

Types of grounds	Symbol
Harness 	
Unit 	

The number indicates that the circuit continues to the related system diagram.

System code



Multiplex communication

Indicates communication with connected parts. Signals are transmitted back and forth between connected parts.

Current symbol

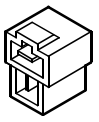
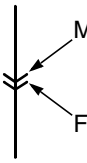
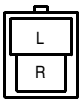
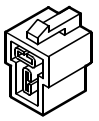
Current flows in the direction of the arrow.

Indicates shielded wire.*

* Shielded wire :
Prevents signal disturbances from electrical interference.
Wire is covered by a metal meshing for grounding.

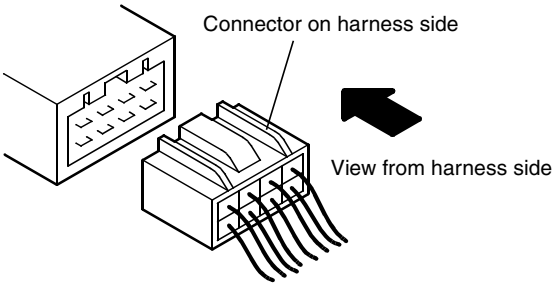
Connector symbols

- Male and female connectors are represented as follows in the circuit and connector diagrams.

		Circuit diagram symbol	Connector diagram symbol
Male			
Female			

- Like connectors are linked by dashed lines between the connector symbols.
- Connector diagrams show connectors on the harness side. The terminal indicates the view from the harness side.

(Example)

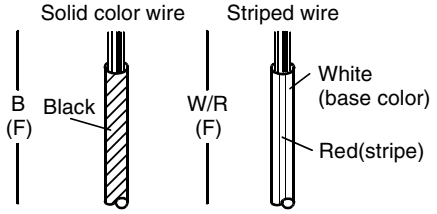


- Colors for connectors except white are given in locations.
- Unused terminals are indicated by ∗.

Wire color code (harness symbol)

- Two-color wires are indicated by a two-letter symbol.The first indicates the base color of the wire, the second the color of the stripe.
  For example:
  W/R is a white wire with a red strip
  BR/Y is a brown wire with a yellow strip

Symbol
(Example)



- The harness symbol is in ( ) following the harness symbols (refer to P-9.).

ROUTING DIAGRAM

- The routing diagram shows where electrical components are on the system circuit diagram by call out line and connector symbols.

Connector symbol

Shows the system that uses the connector.

(Example)

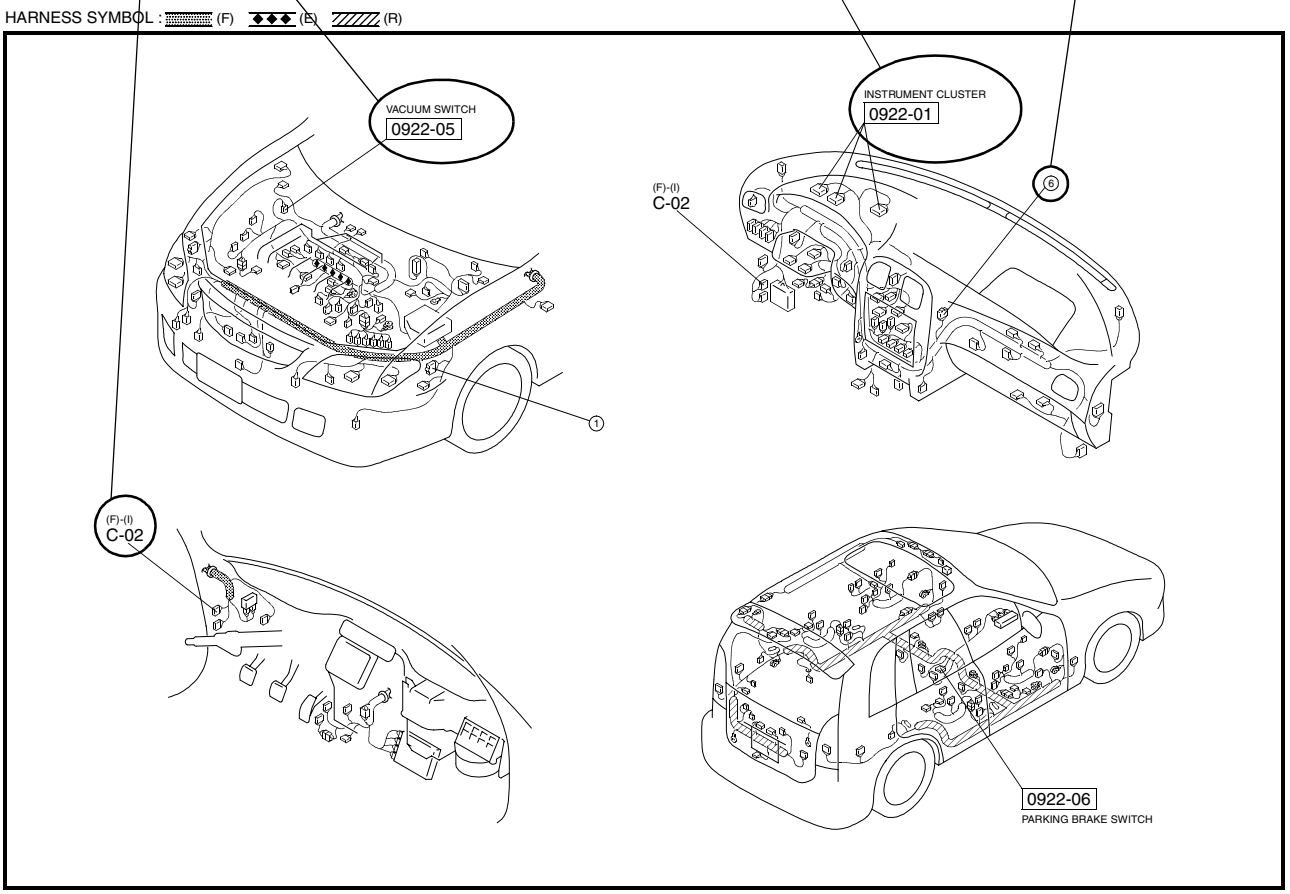
Connector	Symbol
Common connectors	C-02
System connectors	0922-05

Component name

Shows the names of components in routing diagrams.

Ground symbol

Shows the ground in system diagrams.



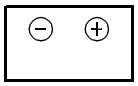
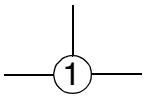
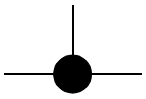
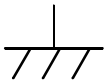
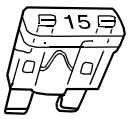
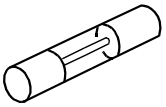
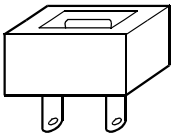
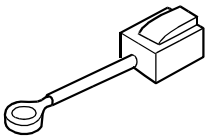
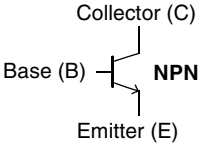
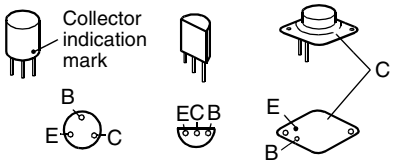
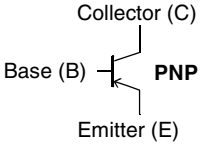
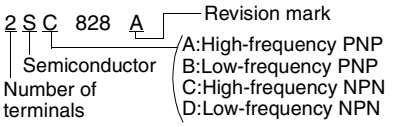
HARNESS SYMBOLS

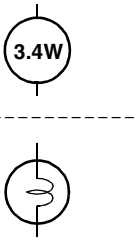
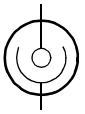
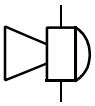
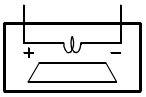
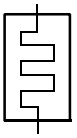
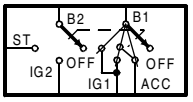
DESCRIPTION OF HARNESS	SYMBOL		DESCRIPTION OF HARNESS	SYMBOL	
FRONT HARNESS	(F)		DOOR No. 1 HARNESS	(DR1)	—
FRONT No. 2 HARNESS	(F2)		DOOR No. 2 HARNESS	(DR2)	
ENGINE HARNESS	(E)		DOOR No. 3 HARNESS	(DR3)	
DASH HARNESS	(D)		DOOR No. 4 HARNESS	(DR4)	
REAR HARNESS	(R)		FLOOR HARNESS	(FR)	—
REAR No. 2 HARNESS	(R2)		INTERIOR LIGHT HARNESS	(IN)	—
REAR No. 3 HARNESS	(R3)		A/C HARNESS	(AC)	—
INSTRUMENT PANEL HARNESS	(I)	—	INJECTION HARNESS	(INJ)	—
EMISSION HARNESS	(EM)		HAND BRAKE HARNESS	(HB)	—
EMISSION No. 2 HARNESS	(EM2)	—			
EMISSION No. 3 HARNESS	(EM3)				

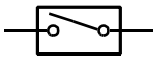
WIRING COLOR CODE

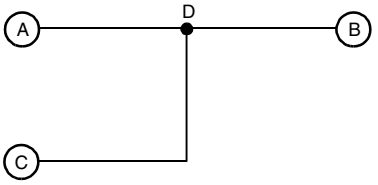
COLOR	CODE	COLOR	CODE
BLACK	B	ORANGE	O
BLUE	L	PINK	P
BROWN	BR	RED	R
DARK BLUE	DL	SKY BLUE	SB
DARK GREEN	DG	TAN	T
GRAY	GY	VIOLET	V
GREEN	G	WHITE	W
LIGHT BLUE	LB	YELLOW	Y
LIGHT GREEN	LG		

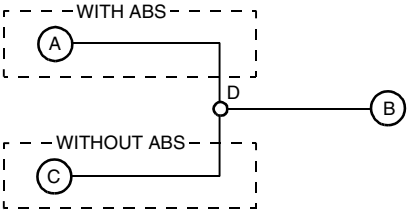
SYMBOLS

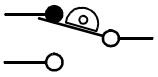
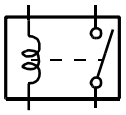
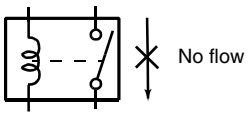
Symbol	Meaning
Battery 	• Generates electricity through chemical reaction. • Supplies direct current to circuits.
Ground (1) 	• Connecting point to vehicle body or other ground wire where current flows from positive to negative terminal of battery. • Ground (1) indicates a ground point to body through wire harness. • Ground (2) indicates point where component is grounded directly to body. Remarks • Current will not flow through a circuit if ground is faulty.
Ground (2) 	
Ground (3) 	
Fuse 	• Melts when current flow exceeds that specified for circuit, interrupts current flow. Precautions • Do not replace with fuses exceeding specified capacity. <Blade type>  <Tube type>  <Cartridge type>  <Fusible link> 
Fuse (For high current fuse)/ Fusible link 	
Transistor (1) 	• Electrical switching component. • Turns on when voltage is applied to the base (B). 
Transistor (2) 	• Reading code. 

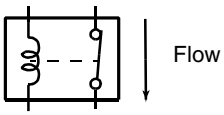
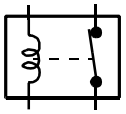
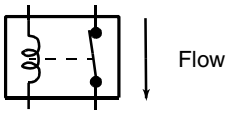
Symbol	Meaning
Light 	• Emits light and generates heat when current flows through filament.
Resistance	• A resistor with a constant value. • Mainly used to protect electrical components in circuits by maintaining rated voltage.
Motor 	• Converts electrical energy into mechanical energy.
Pump 	• Pulls in and discharges gases and liquids.
Cigarette lighter 	• Electrical coil that generates heat.
Accessory socket 	• Interior power supply.
Horn 	• Generates sound when current flows.
Speaker 	
Heater 	• Generates heat when current flows.
Ignition switch 	• Turning ignition key switches circuit to operate various component. (NOTE) Ignition switch is called engine switch on diesel vehicles.

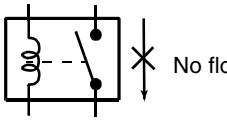
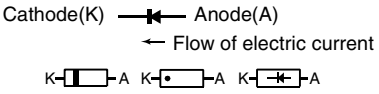
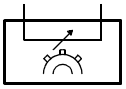
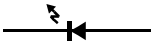
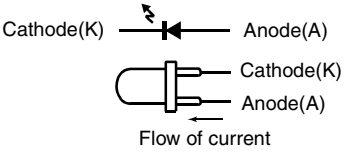
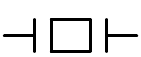
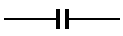
<table>
<tr><th>Symbol</th><th>Meaning</th><th>Symbol</th><th>Meaning</th></tr>
<tr><td>Switch (1)
 
Normally open</td><td rowspan="2">• Allows or breaks current flow by opening and closing curcuits.</td><td rowspan="2">Harness
Connection
 
When circuit C-D is connected to circuit A-B, the connection D is indicated by a black dot.

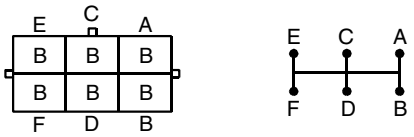
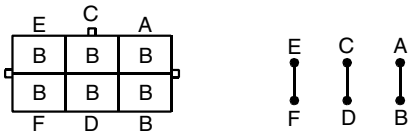
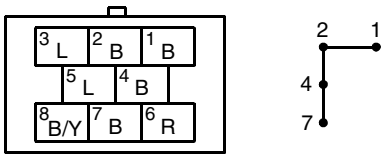
Selection
 
Diversion point D for the different circuits according to the vehicle's specification is indicated by a white dot.</td><td rowspan="2"> 

For vehicles with ABS, use the A-B circuit.
 

For vehicles without ABS, use the C-B circuit.</td></tr>
<tr><td>Switch (2)
 
Normally closed</td></tr>
<tr><td>Autostop switch
  </td><td>• Automatically shuts off circuit when certain conditions are met.</td></tr>
<tr><td>Relay (1)
 
Normally open</td><td colspan="3">• Current flowing through coil produces electromagnetic force causing contact to open or close.
No current to coil
 

Current to coil
 
</td></tr>
<tr><td>Relay (2)
 
Normally closed</td><td colspan="3">• Current flowing through coil produces electromagnetic force causing contact to close.
No current to coil
 

Current to coil
 
</td></tr>
<tr><td>Sensor (1)
  </td><td>• Detects characteristics such as intake manifold vacuum and airflow amount according to resistance variation.</td><td>Solenoid
  </td><td>• Current flowing through coil generates electromagnetic force to operate plungers.</td></tr>
<tr><td>Sensor (2)
  </td><td>• Detects resistance variation according to operation of other parts.</td><td rowspan="2">Diode
  </td><td rowspan="2">• Known as a semiconductor rectifier, the diode allows current flow in one direction only.
 
</td></tr>
<tr><td>Sensor (3)
  </td><td>• A resistor whose resistance variation according to temperature variation.
• When temperature increases, resistance decreases.</td></tr>
<tr><td>Sensor (4)
  </td><td>• Detects pulse signals from rotating object.</td><td rowspan="2">Light-emitting diode (LED)
  </td><td rowspan="2">• A diode that lights when current flows.
• Unlike ordinary bulbs, the diode does not generate heat when lit.
 
</td></tr>
<tr><td>Sensor (5)
  </td><td>• Generates potential difference when tension or pressure is applied.</td></tr>
<tr><td>Capacitor
  </td><td>• Component that temporarily stores electrical charge.</td><td>Reference diode (Zener diode)
  </td><td>• Allows current to flow in one direction up to a certain voltage; allows current to flow in the other direction once that voltage is exceeded.</td></tr>
</table>

Symbol	Meaning
Extent of the change in the wiring position (1) 	• The wiring position can be exchanged freely within the connector.
Extent of the change in the wiring position (2) 	• The wiring position can be exchanged according to the following combinations only. Between A and B, Between C and D, Between E and F
Extent of the change in the wiring position (3) 	• The wiring position can be exchanged according to the following combinations only. Between 1, 2, 4 and 7. • The wiring positions may be indicated by numbers for some connectors.

ABBREVIATIONS USED IN THIS MANUAL

3GR	THIRD GEAR
4GR	FOURTH GEAR
A	AMPERE
A/C	AIR CONDITIONING
A/F	AIR FUEL
AAS	AUTO ADJUSTING SUSPENSION
ABS	ANTI-LOCK BRAKING SYSTEM
ACC	ACCESSORIES
ACV	AIR CONTROL VALVE
ADD	ADDITIONAL
AIS	AIR INJECTION SYSTEM
ALL	AUTOMATIC LOAD LEVELING
AM	AMPLITUDE MODULATION
AMP	AMPLIFIER
ANT	ANTENNA
ASV	AIR SUPPLY VALVE
AT	AUTOMATIC TRANSMISSION
ATX	AUTOMATIC TRANSAXLE
B+	BATTERY POSITIVE VOLTAGE
BAC	BYPASS AIR CONTROL
CAN	CONTROLLER AREA NETWORK
CIGAR	CIGARETTE
CIS	CONTINUOUS FUEL INJECTION SYSTEM
CKP	CRANKSHAFT POSITION SENSOR
CM	CONTROL MODULE
CMP	CAMSHAFT POSITION SENSOR
COMBI	COMBINATION

CON	CONDITIONER
CONT	CONTROL
CPU	CENTRAL PROCESSING UNIT
DEF	DEFROSTER
DI	DISTRIBUTOR IGNITION
DLC	DATA LINK CONNECTOR
DLI	DISTRIBUTORLESS IGNITION
DOHC	DOUBLE-OVERHEAD CAMSHAFT
DRL	DAYTIME RUNNING LIGHT
DTC	DIAGNOSTIC TROUBLE CODE(S)
DTM	DIAGNOSTIC TEST MODE
ECPS	ELECTRONICALLY CONTROLLED POWER STEERING
ECT	ENGINE CONTROL TEMPERATURE
EGR	EXHAUST GAS RECIRCULATION
EHPAS	ELECTRO HYDRAULIC POWER ASSIST STEERING
EI	ELECTRONIC IGNITION
ELEC	ELECTRIC
ELR	EMERGENCY LOCKING RETRACTOR
ET	ELECTRONIC THROTTLE
EPS	ELECTRIC POWER STEERING
EVAP	EVAPORATIVE EMISSION
F	FRONT
F/I	FUEL INJECTOR
FICB	FAST-IDLE CAM BREAKER
FM	FREQUENCY MODULATION
FP	FUEL PUMP

FPR	FUEL PUMP RELAY
GEN	GENERATOR
GND	GROUND
H/D	HEATER/DEFROSTER
HEAT	HEATER
HI	HIGH
HO2S	HEATED OXYGEN SENSOR
HS	HIGH SPEED
HU	HYDRAULIC UNIT
IAC	IDLE AIR CONTROL
IAT	INTAKE AIR TEMPERATURE
IG	IGNITION
ILLUMI	ILLUMINATION
INT	INTERMITTENT
JB	JOINT BOX
KS	KNOCK SENSOR
LCD	LIQUID CRYSTAL DISPLAY
LF	LEFT FRONT
LH	LEFT HAND
LO	LOW
LR	LEFT REAR
M	MOTOR
MAF	MASS AIR FLOW
MAP	MANIFOLD ABSOLUTE PRESSURE
MFI	MULTIPORT FUEL INJECTION
MID	MIDDLE
MIL	MALFUNCTION INDICATOR LAMP
MIN	MINUTE
MIX	MIXTURE
MPX	MULTIPLEX
MS	MIDDLE SPEED
MT	MANUAL TRANSMISSION
MTX	MANUAL TRANSAXLE
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
O2S	OXYGEN SENSOR
OBD	ON-BOARD DIAGNOSTIC
O/D	OVER DRIVE
OFF	SWITCH OFF
ON	SWITCH ON
OSC	OSCILLATOR
P	POWER
P/S	POWER STEERING
PCM	POWERTRAIN CONTROL MODULE
PJB	PASSENGER JUNCTION BOX
PNP	PARK/NEUTRAL POSITION
PRC	PRESSURE REGULATOR CONTROL
PRG	PURGE SOLENOID VALVE

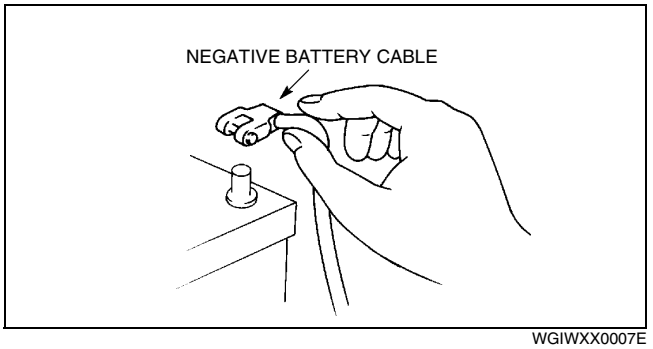
PSP	POWER STEERING PRESSURE
PTC	POSITIVE TEMPERATURE COEFFICIENT HEATER
PWM	PULSE WIDTH MODULATION
QSS	QUICK-START SYSTEM
R	REAR
REC	RECIRCULATION
RES	REAR ENTERTAINMENT SYSTEM
RF	RIGHT FRONT
RH	RIGHT HAND
RPM	REVOLUTIONS PER MINUTE
RR	RIGHT REAR
SAS	SOPHISTICATED AIR BAG SENSOR
SFI	SEQUENTIAL MULTIPOINT FUEL INJECTION
SOL	SOLENOID
SPV	SPILL VALVE
ST	START
SW	SWITCH
TC	TURBOCHARGER
TCC	TORQUE CONVERTER CLUTCH
TCM	TRANSMISSION(TRANSAXLE) CONTROL MODULE
TCS	TRACTION CONTROL SYSTEM
TEMP	TEMPERATURE
TFT	TRANSAXLE FLUID TEMPERATURE
TICS	TRIPLE INDUCTION CONTROL SYSTEM
TNS	TAIL NUMBER SIDE LIGHTS
TP	THROTTLE POSITION SENSOR
TR	TRANSMISSION(TRANSAXLE) RANGE
TWS	TOTAL WIRING SYSTEM
V	VOLT
VAF	VOLUME AIR FLOW SENSOR
VENT	VENTILATION
VICS	VARIABLE INERTIA CHARGING SYSTEM
VOL	VOLUME
VR	VOLTAGE REGULATOR
VRIS	VARIABLE RESONANCE INDUCTION SYSTEM
VSS	VEHICLE SPEED SENSOR
VTCS	VARIABLE TUMBLE CONTROL SYSTEM
W	WATT(S)
WOT	WIDE OPEN THROTTLE

ELECTRICAL PARTS

B6U000000006W03

Battery Cable

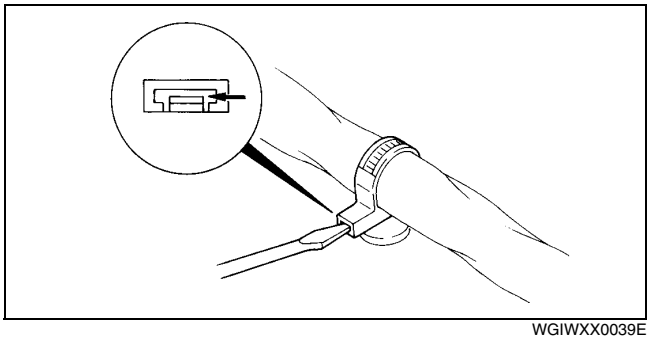
- Before disconnecting connectors or removing electrical parts, disconnect the negative battery cable.



WGIWXX0007E

Wiring Harness

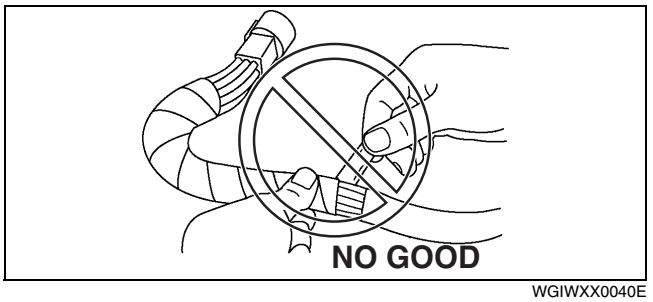
- To remove the wiring harness from the clip in the engine room, pry up the hook of the clip using a flathead screwdriver.



WGIWXX0039E

Caution

- **Do not remove the Harness protective tape. Otherwise, the wires could rub against the body, which could result in water penetration and electrical shorting.**



WGIWXX0040E

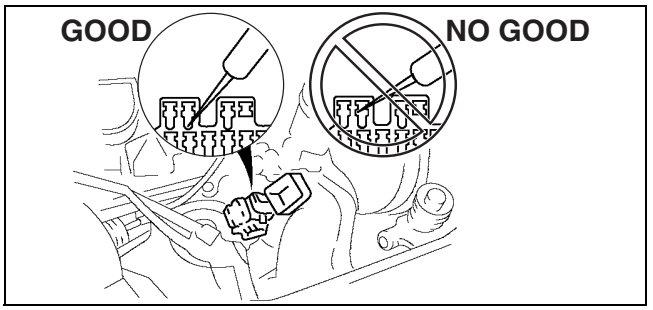
CONNECTORS

Data Link Connector

- Insert the probe into the terminal when connecting a jumper wire to the data link connector.

Caution

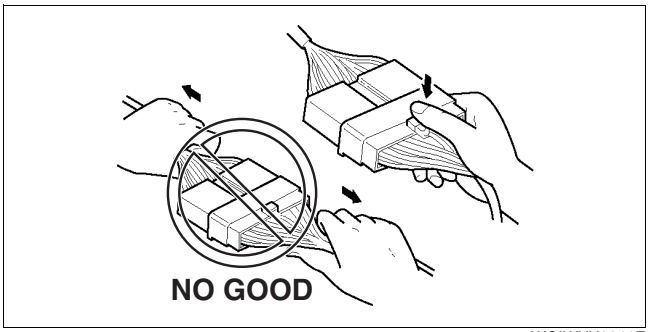
- **Inserting a jumper wire probe into the data link connector terminal may damage the terminal.**



X3U000WAY

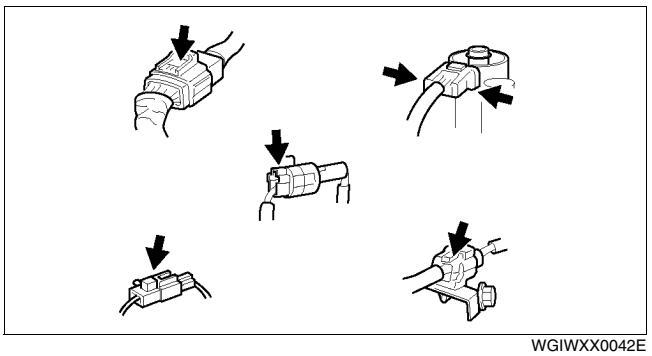
Disconnecting Connectors

- When disconnecting connector, grasp the connectors, not the wires.



WGIWXX0041E

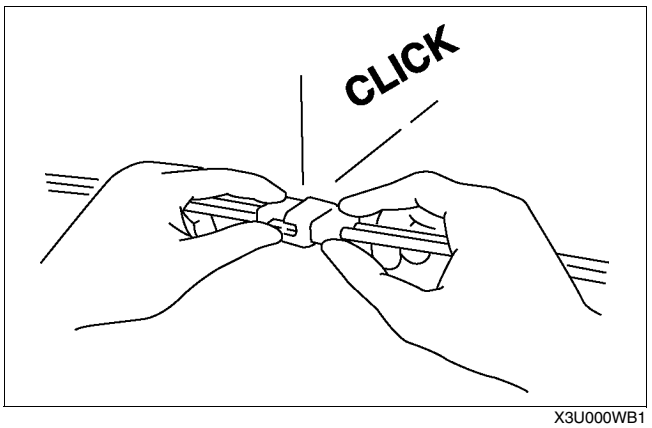
- Connectors can be disconnected by pressing or pulling the lock lever as shown.



WGIWXX0042E

Locking Connector

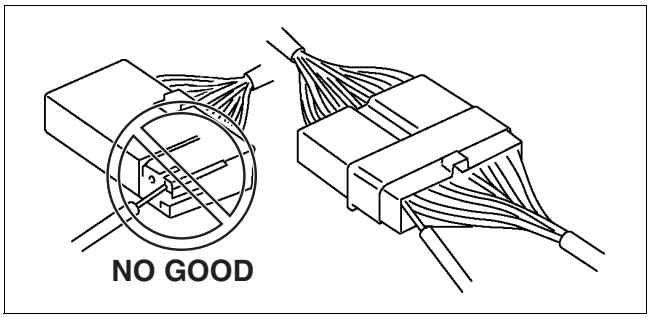
- When locking connectors, listen for a click indicating they are securely locked.



X3U000WB1

Inspection

- When a tester is used to inspect for continuity or measuring voltage, insert the tester probe from the wiring harness side.

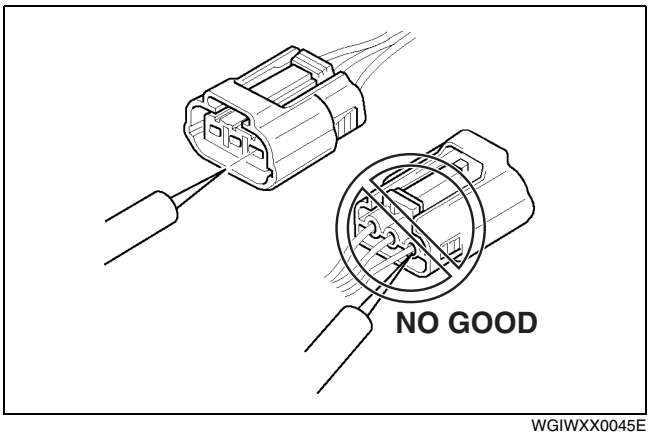


WGIWXX0044E

- Inspect the terminals of waterproof connectors from the connector side since they cannot be accessed from the wiring harness side.

Caution

- **To prevent damage to the terminal, wrap a thin wire around the tester probe before inserting into terminal.**

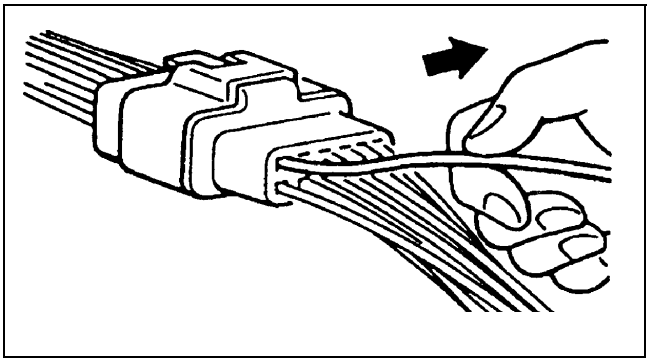


WGIWXX0045E

Terminals

Inspection

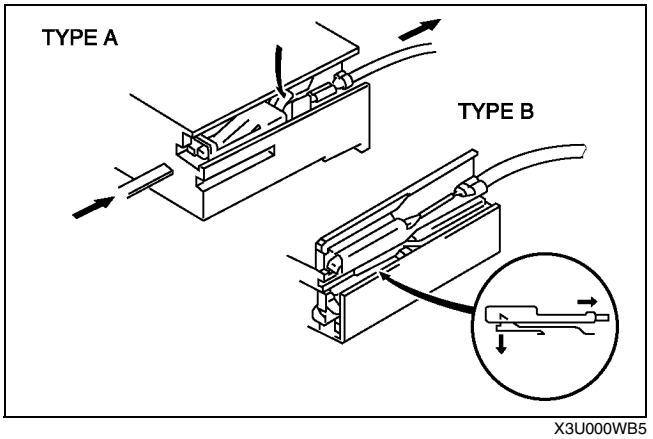
- Pull lightly on individual wires to verify that they are secured in the terminal.



X3U000WB4

Replacement

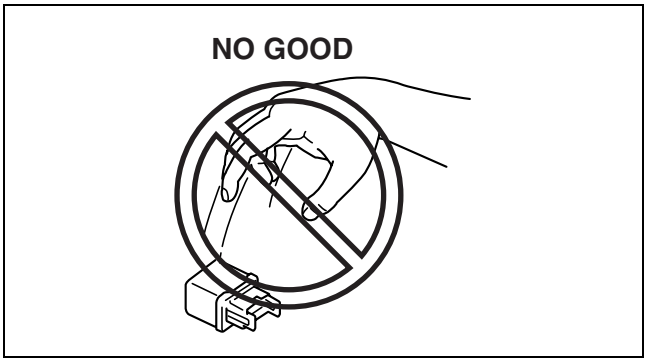
- Use the appropriate tools to remove a terminal as shown. When installing a terminal, be sure to insert it until it locks securely.
- Insert a thin piece of metal from the terminal side of the connector and with the terminal locking tab pressed down, pull the terminal out from the connector.



X3U000WB5

Sensors, Switches, And Relays

- Handle sensors, switches, and relays carefully. Do not drop them or strike them against other objects.

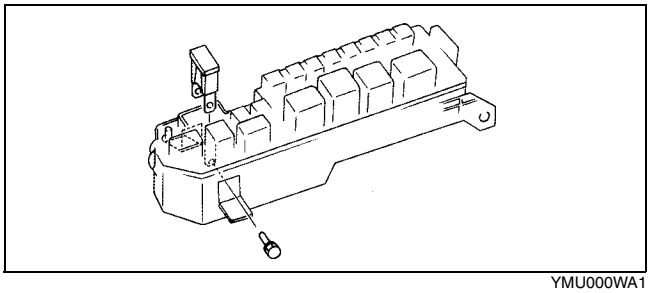


X3U000WB6

Fuse

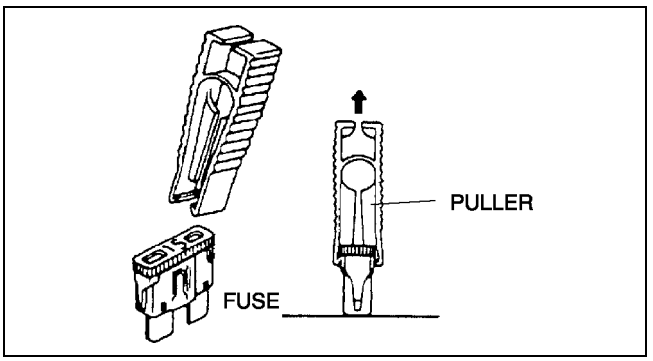
Replacement

- When replacing a fuse, be sure to replace it with one of the same capacity. If a fuse fails again, the circuit probably has a short and the wiring should be inspected.
- Be sure the negative battery terminal is disconnected before replacing a main fuse.



YMU000WA1

- When replacing a pullout fuse, use the fuse puller.



YMU000WAK

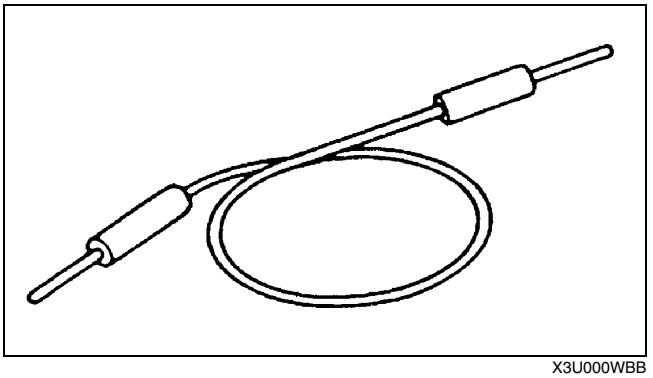
ELECTRICAL TROUBLESHOOTING TOOLS

Jumper Wire

- A jumper wire is used to create a temporary circuit. Connect the jumper wire between the terminals of a circuit to bypass a switch.

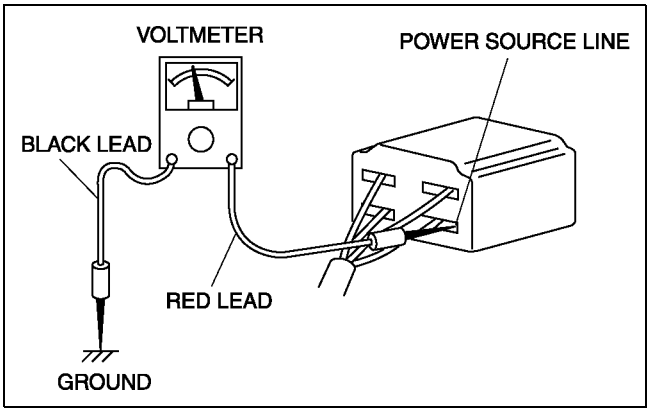
Caution

- **Do not connect a jumper wire from the power source line to a body ground. This may cause burning or other damage to wiring harnesses or electronic components.**


X3U000WBB

Voltmeter

- The DC voltmeter is used to measure circuit voltage. A voltmeter with a range of **15 V or more** is used by connecting the positive (+) probe (red lead wire) to the point where voltage will be measured and the negative (-) probe (black lead wire) to a body ground.



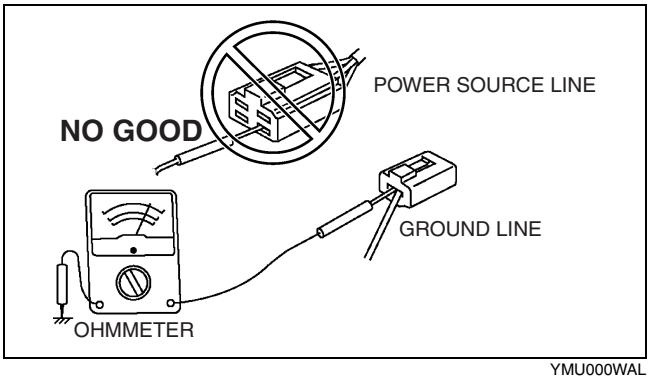
X3U000WBC

Ohmmeter

- The ohmmeter is used to measure the resistance between two points in a circuit and to inspect for continuity and short circuits.

Caution

- **Do not connect the ohmmeter to any circuit where voltage is applied. This will damage the ohmmeter.**



YMU000WAL