

GENERAL INFORMATION

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HOW TO USE THIS MANUAL

HOW TO USE THIS MANUAL

RANGE OF TOPICS

AME20100001101

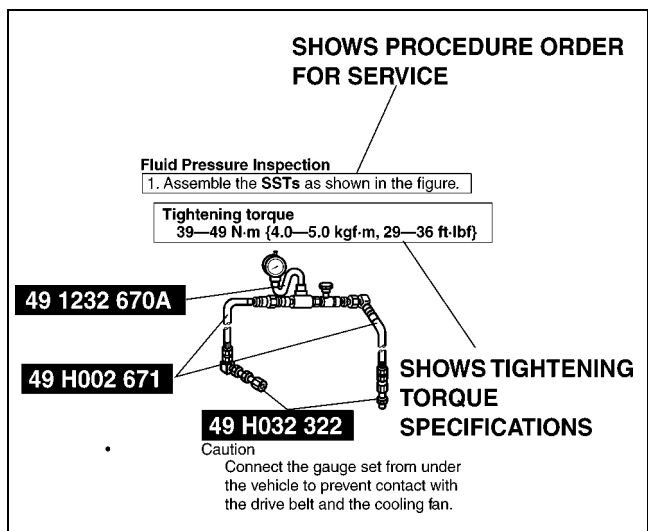
- This manual contains procedures for performing all required service operations. The procedures are divided into the following five basic operations:
 - Removal/Installation
 - Disassembly/Assembly
 - Replacement
 - Inspection
 - Adjustment
- Simple operations which can be performed easily just by looking at the vehicle (i.e., removal/installation of parts, jacking, vehicle lifting, cleaning of parts and visual inspection) have been omitted.

SERVICE PROCEDURE

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Inspection, adjustment

- Inspection and adjustment procedures are divided into steps. Important points regarding the location and contents of the procedures are explained in detail and shown in the illustrations.



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Repair procedure

1. Most repair operations begin with an overview illustration. It identifies the components, shows how the parts fit together and describes visual part inspection. However, only removal/installation procedures that need to be performed methodically have written instructions.
2. Expendable parts, tightening torques and symbols for oil, grease, and sealant are shown in the overview illustration. In addition, symbols indicating parts requiring the use of special service tools or equivalent are also shown.

HOW TO USE THIS MANUAL

3. Procedure steps are numbered and the part that is the main point of that procedure is shown in the illustration with the corresponding number. Occasionally, there are important points or additional information concerning a procedure. Refer to this information when servicing the related part.

Procedure

↓

"Removal/Installation" Portion

↑

"Inspection After Installation" Portion

↓

INSTALL THE PARTS BY PERFORMING STEPS 1—3 IN REVERSE ORDER

SHOWS SERVICE ITEM (S)

INDICATES ANY RELEVANT REFERENCES WHICH NEED TO BE FOLLOWED DURING INSTALLATION

SHOWS SPECIAL SERVICE TOOL (SST) FOR SERVICE OPERATION

SHOWS APPLICATION POINTS OF GREASE, ETC.

SHOWS EXPENDABLE PARTS

SHOWS DETAILS

SHOWS TIGHTENING TORQUE UNITS

SHOWS THERE ARE REFERRAL NOTES FOR SERVICE

SHOWS TIGHTENING TORQUE SPECIFICATIONS

SHOWS PROCEDURE ORDER FOR SERVICE

LOWER TRAILING LINK, UPPER TRAILING LINK REMOVAL/INSTALLATION

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove the undercover. (See N-5 Undercover Removal)
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.
5. Inspect the rear wheel alignment and adjust it if necessary.

SHOWS THERE ARE REFERRAL NOTES FOR SERVICE

1	Split pin	7	Split pin
2	Nut	8	Nut
3	Lower trailing link ball joint (See R-6 Lower Trailing Link Ball Joint Removal Note)	9	Upper trailing link ball joint (See R-6 Upper Trailing Link Ball Joint Removal Note)
4	Bolt	10	Nut
5	Lower trailing link	11	Upper trailing link
6	Dust boot (lower trailing link)	12	Dust boot (upper trailing link)

Lower Trailing Link Ball Joint, Upper Trailing Link Ball Joint Removal Note

- Remove the ball joint using the SSTs.

SHOWS SPECIAL SERVICE TOOL (SST) NO.

UPPER TRAILING LINK

LOWER TRAILING LINK

KNUCKLE

49 T028 304

49 T028 305

49 T028 303

N.m. (kgf·cm, ft·lbf)

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SYMBOLS

- There are eight symbols indicating oil, grease, fluids, sealant, and **SST** or equivalent use. These symbols show application points or use of these materials during service.

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Symbol	Meaning	Kind
	Apply oil	New appropriate engine oil or gear oil
	Apply brake fluid	New appropriate brake fluid

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Symbol	Meaning	Kind
	Apply automatic transaxle/transmission fluid	New appropriate automatic transaxle/transmission fluid
	Apply grease	Appropriate grease
	Apply sealant	Appropriate sealant
	Apply petroleum jelly	Appropriate petroleum jelly
	Replace part	O-ring, gasket, etc.
	Use SST or equivalent	Appropriate tools

ADVISORY MESSAGES

- You'll find several **Warnings**, **Cautions**, **Notes**, **Specifications** and **Upper and Lower Limits** in this manual.

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Warning

- A Warning indicates a situation in which serious injury or death could result if the warning is ignored.

Caution

- A Caution indicates a situation in which damage to the vehicle or parts could result if the caution is ignored.

Note

- A Note provides added information that will help you to complete a particular procedure.

Specification

- The values indicate the allowable range when performing inspections or adjustments.

Upper and lower limits

- The values indicate the upper and lower limits that must not be exceeded when performing inspections or adjustments.

UNITS

UNITS

UNITS

AME201200002101

Electrical current	A (ampere)
Electric power	W (watt)
Electric resistance	ohm
Electric voltage	V (volt)
Length	mm (millimeter)
	in (inch)
Negative pressure	kPa (kilo pascal)
	mmHg (millimeters of mercury)
	inHg (inches of mercury)
Positive pressure	kPa (kilo pascal)
	kgf/cm ² (kilogram force per square centimeter)
	psi (pounds per square inch)
Torque	N·m (Newton meter)
	kgf·m (kilogram force meter)
	kgf·cm (kilogram force centimeter)
	ft·lbf (foot pound force)
	in·lbf (inch pound force)
Volume	L (liter)
	US qt (U.S. quart)
	Imp qt (Imperial quart)
	ml (milliliter)
	cc (cubic centimeter)
	cu in (cubic inch)
	fl oz (fluid ounce)
Weight	g (gram)
	oz (ounce)

Conversion to SI Units (Système International d'Unités)

- All numerical values in this manual are based on SI units. Numbers shown in conventional units are converted from these values.

Rounding Off

- Converted values are rounded off to the same number of places as the SI unit value. For example, if the SI unit value is 17.2 and the value after conversion is 37.84, the converted value will be rounded off to 37.8.

Upper and Lower Limits

- When the data indicates upper and lower limits, the converted values are rounded down if the SI unit value is an upper limit and rounded up if the SI unit value is a lower limit. Therefore, converted values for the same SI unit value may differ after conversion. For example, consider 2.7 kgf/cm² in the following specifications:

210—260 kPa {2.1—2.7 kgf/cm², 30—38 psi}

270—310 kPa {2.7—3.2 kgf/cm², 39—45 psi}

- The actual converted values for 2.7 kgf/cm² are 264 kPa and 38.4 psi. In the first specification, 2.7 is used as an upper limit, so the converted values are rounded down to 260 and 38. In the second specification, 2.7 is used as a lower limit, so the converted values are rounded up to 270 and 39.

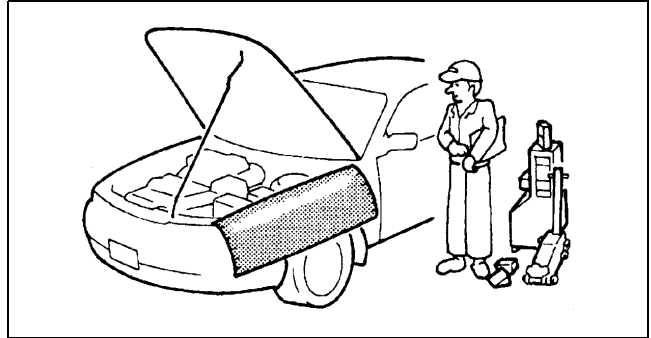
FUNDAMENTAL PROCEDURES

FUNDAMENTAL PROCEDURES

PREPARATION OF TOOLS AND MEASURING EQUIPMENT

- Be sure that all necessary tools and measuring equipment are available before starting any work.

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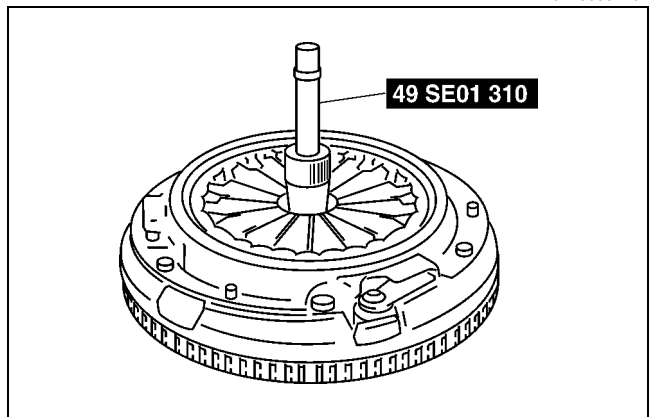


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SPECIAL SERVICE TOOLS

- Use special service tools or equivalent when they are required.

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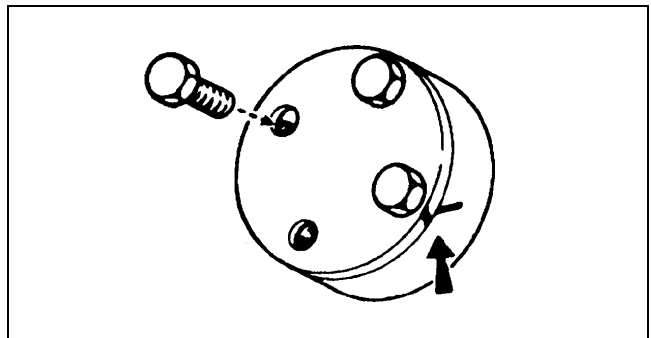


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DISASSEMBLY

- If the disassembly procedure is complex, requiring many parts to be disassembled, all parts should be marked in a place that will not affect their performance or external appearance and identified so that reassembly can be performed easily and efficiently.

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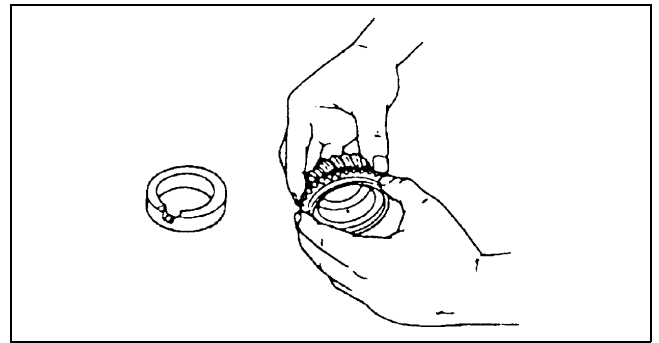


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FUNDAMENTAL PROCEDURES

INSPECTION DURING REMOVAL, DISASSEMBLY

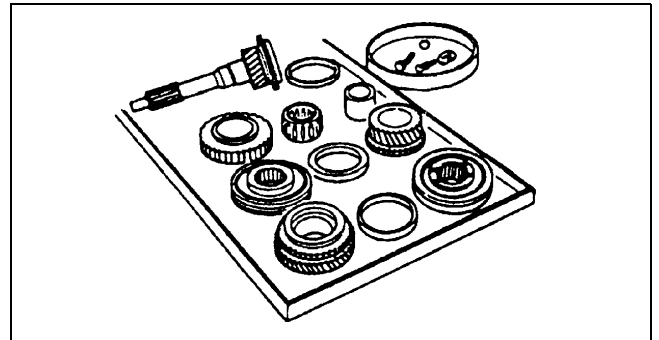
- When removed, each part should be carefully inspected for malfunction, deformation, damage, and other problems.



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ARRANGEMENT OF PARTS

- All disassembled parts should be carefully arranged for reassembly.
- Be sure to separate or otherwise identify the parts to be replaced from those that will be reused.



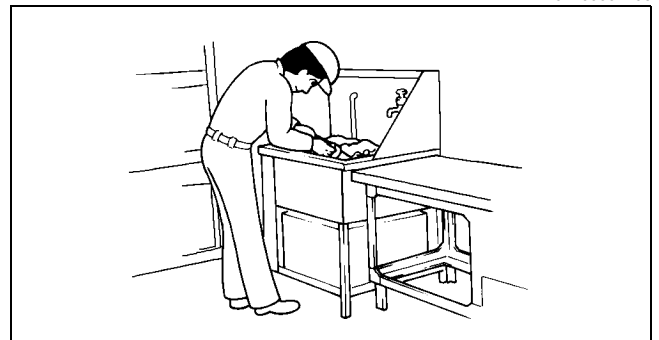
X3U000WAN

CLEANING OF PARTS

- All parts to be reused should be carefully and thoroughly cleaned in the appropriate method.

Warning

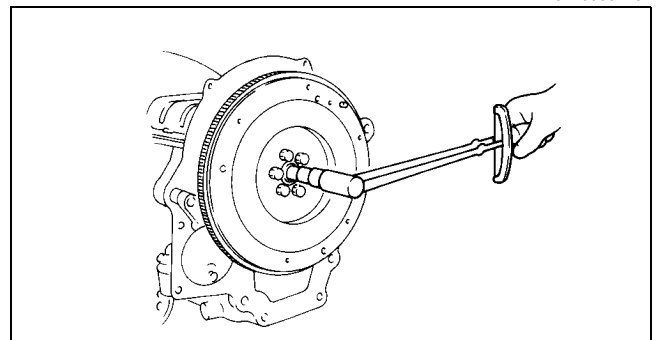
- Using compressed air can cause dirt and other particles to fly out causing injury to the eyes. Wear protective eye wear whenever using compressed air.



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REASSEMBLY

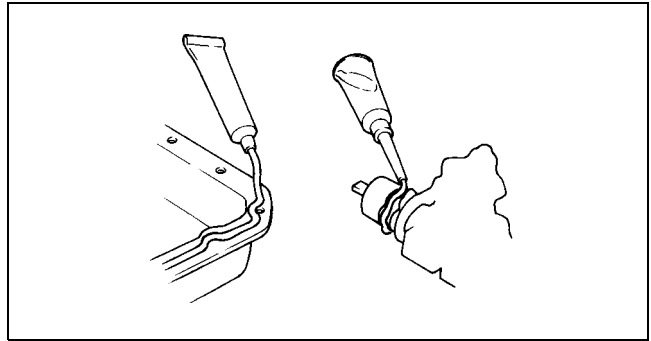
- Standard values, such as torques and certain adjustments, must be strictly observed in the reassembly of all parts.
- If removed, these parts should be replaced with new ones:
 - Oil seals
 - Gaskets
 - O-rings
 - Lockwashers
 - Cotter pins
 - Nylon nuts



WGIWXX0031J

FUNDAMENTAL PROCEDURES

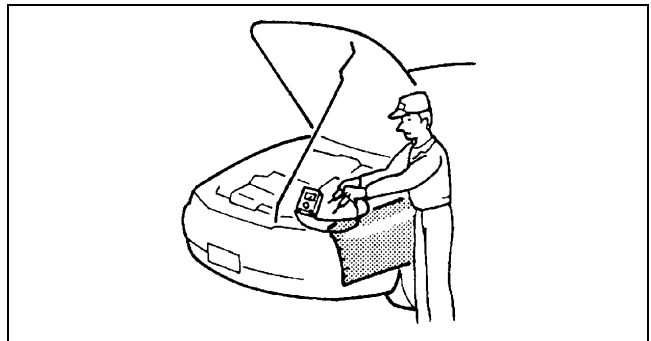
- Depending on location:
 - Sealant and gaskets, or both, should be applied to specified locations. When sealant is applied, parts should be installed before sealant hardens to prevent leakage.
 - Oil should be applied to the moving components of parts.
 - Specified oil or grease should be applied at the prescribed locations (such as oil seals) before reassembly.



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ADJUSTMENT

- Use suitable gauges and/or testers when making adjustments.

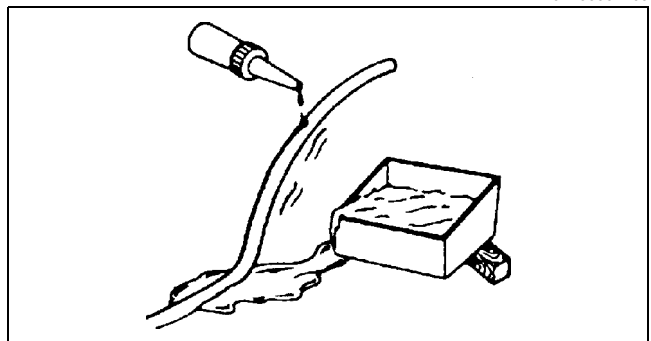


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X3U000WAS

RUBBER PARTS AND TUBING

- Prevent gasoline or oil from getting on rubber parts or tubing.

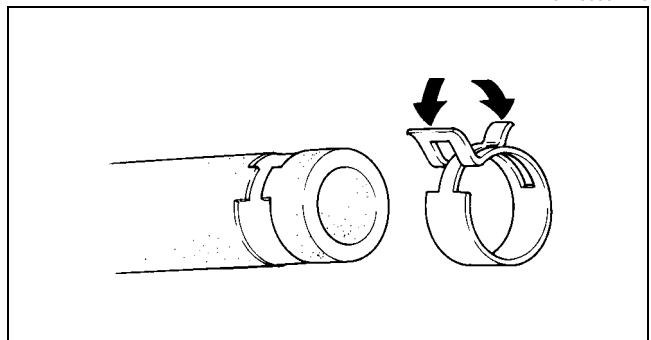


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HOSE CLAMPS

- When reinstalling, position the hose clamp in the original location on the hose and squeeze the clamp lightly with large pliers to ensure a good fit.



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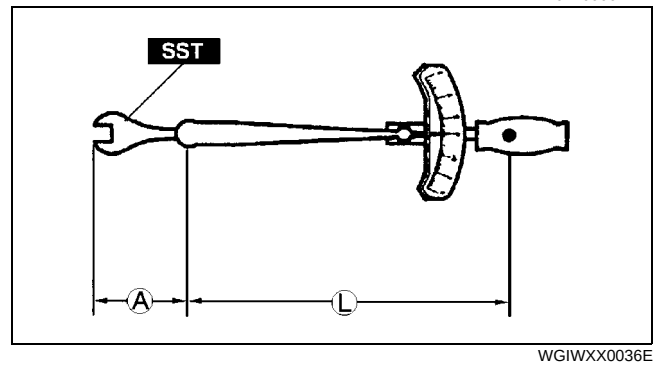
FUNDAMENTAL PROCEDURES

TORQUE FORMULAS

- When using a torque wrench-SST or equivalent combination, the written torque must be recalculated due to the extra length that the **SST** or equivalent adds to the torque wrench. Recalculate the torque using the following formulas. Choose the formula that applies to you.

Torque Unit	Formula
N·m	$N \cdot m \times [L/(L+A)]$
kgf·m	$kgf \cdot m \times [L/(L+A)]$
kgf·cm	$kgf \cdot cm \times [L/(L+A)]$
ft·lbf	$ft \cdot lbf \times [L/(L+A)]$
in·lbf	$in \cdot lbf \times [L/(L+A)]$

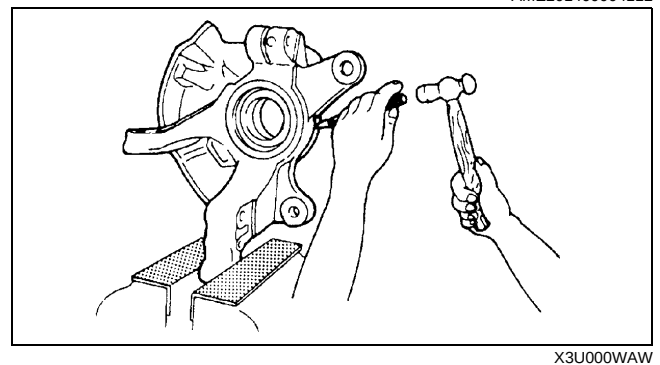
A : The length of the **SST** past the torque wrench drive
L : The length of the torque wrench



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WISE

- When using a vise, put protective plates in the jaws of the vise to prevent damage to parts.



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ELECTRICAL SYSTEM

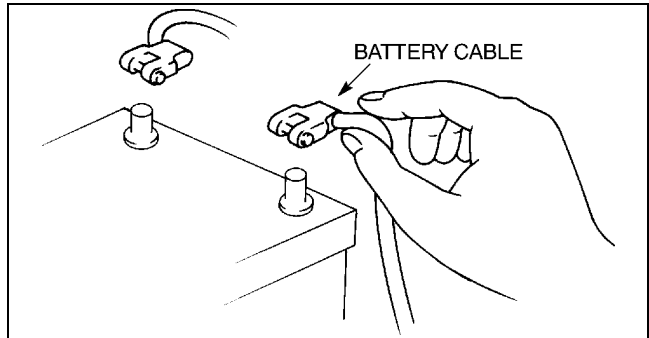
ELECTRICAL SYSTEM

ELECTRICAL PARTS

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Battery cable

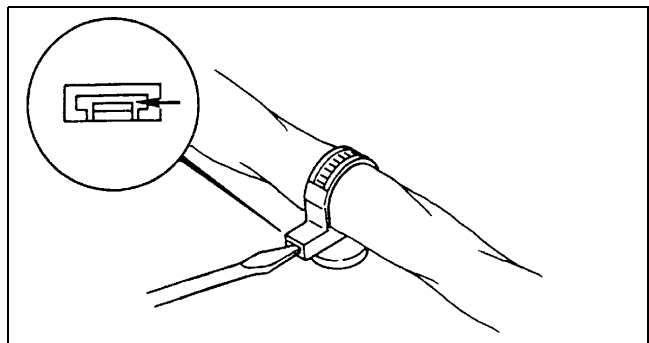
- Before disconnecting connectors or removing electrical parts, disconnect the negative battery cable.



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.



X3U000WBU

CONNECTORS

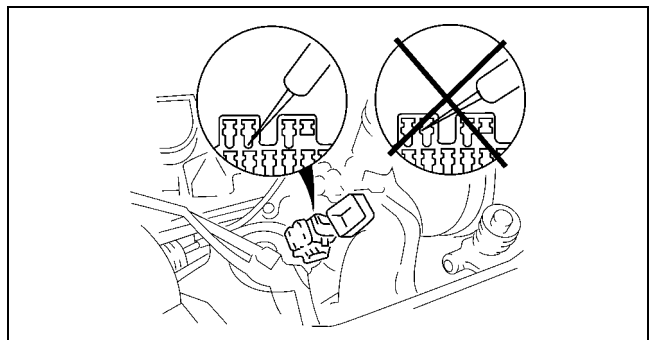
Data link connector

AME201700006102

- 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.

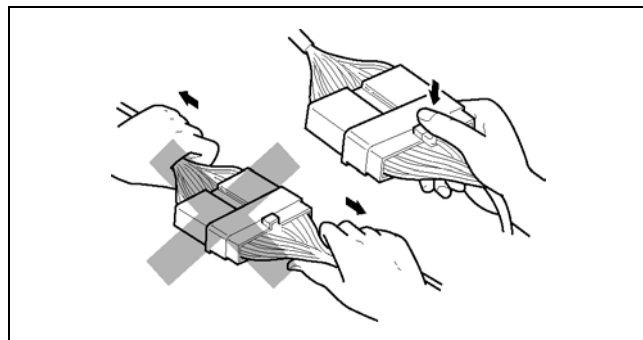


X3U000WAY

ELECTRICAL SYSTEM

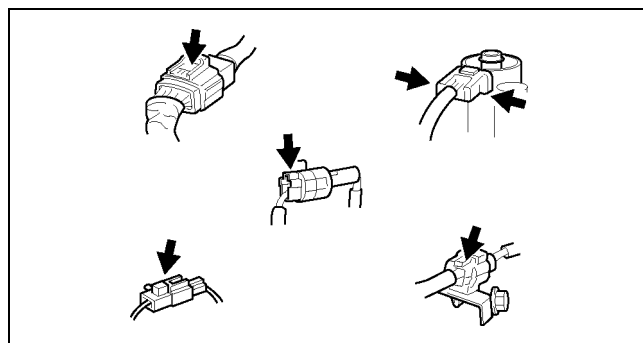
Disconnecting connectors

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



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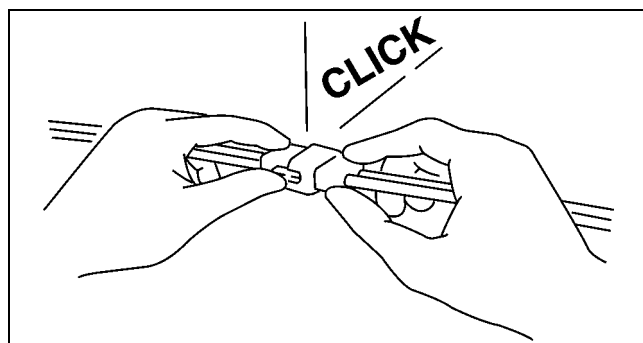
- Connectors can be disconnected by pressing or pulling the lock lever as shown.



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Locking connector

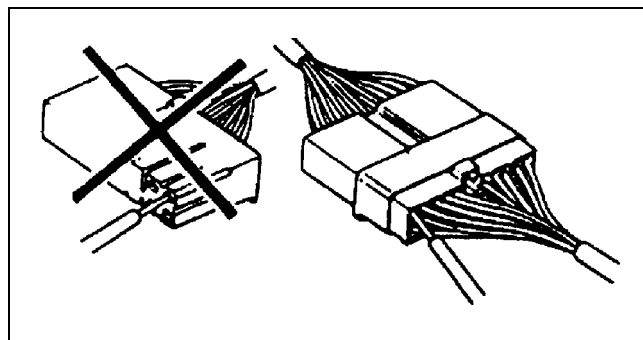
- When locking connectors, listen for a click indicating they are securely locked.



X3U000WB1

Inspection

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



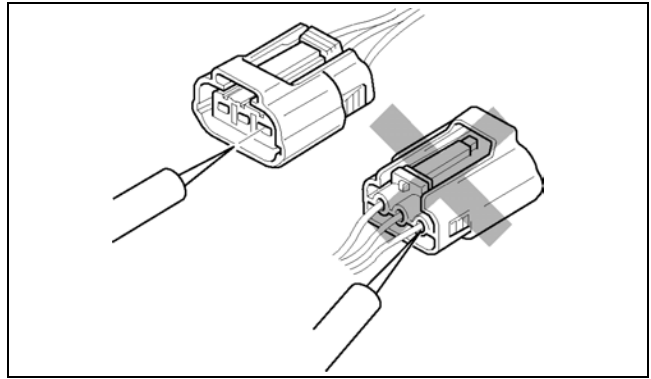
X3U000WB2

ELECTRICAL SYSTEM

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

Caution

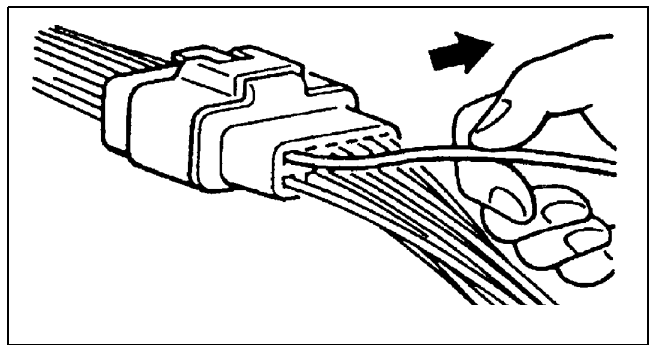
- To prevent damage to the terminal, wrap a thin wire around the tester probe before inserting into terminal.



WGIWXX0045E

Terminals Inspection

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



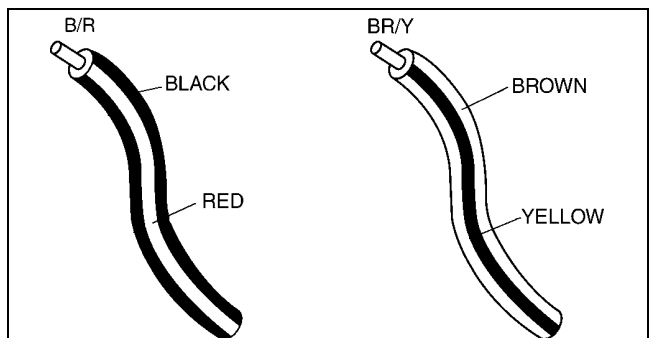
X3U000WB4

Wiring Harness

Wiring color codes

- Two-color wires are indicated by a two-color code symbol.
- The first letter indicates the base color of the wire and the second the color of the stripe.

CODE	COLOR	CODE	COLOR
B	Black	O	Orange
BR	Brown	P	Pink
G	Green	R	Red
GY	Gray	V	Violet
L	Blue	W	White
LB	Light Blue	Y	Yellow
LG	Light Green		



X3U000WB7

NEW STANDARDS

NEW STANDARDS

NEW STANDARDS

AME202800020101

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- Following is a comparison of the previous standard and the new standard.

New Standard		Previous Standard		Remark
Abbreviation	Name	Abbreviation	Name	
AP	Accelerator Pedal	—	Accelerator Pedal	
ACL	Air Cleaner	—	Air Cleaner	
A/C	Air Conditioning	—	Air Conditioning	
BARO	Barometric Pressure	—	Atmospheric Pressure	
B+	Battery Positive Voltage	Vb	Battery Voltage	
—	Brake Switch	—	Stoplight Switch	
—	Calibration Resistor	—	Corrected Resistance	#6
CMP sensor	Camshaft Position Sensor	—	Crank Angle Sensor	
CAC	Charge Air Cooler	—	Intercooler	
CLS	Closed Loop System	—	Feedback System	
CTP	Closed Throttle Position	—	Fully Closed	
CPP	Clutch Pedal Position	—	Idle Switch	
CIS	Continuous Fuel Injection System	—	Clutch Position	
CS sensor	Control Sleeve Sensor	CSP sensor	Control Sleeve Position Sensor	#6
CKP sensor	Crankshaft Position Sensor	—	Crank Angle Sensor 2	
DLC	Data Link Connector	—	Diagnosis Connector	
DTM	Diagnostic Test Mode	—	Test Mode	#1
DTC	Diagnostic Trouble Code(s)	—	Service Code(s)	
DI	Distributor Ignition	—	Spark Ignition	
DLI	Distributorless Ignition	—	Direct Ignition	
EI	Electronic Ignition	—	Electronic Spark Ignition	#2
ECT	Engine Coolant Temperature	—	Water Thermo	
EM	Engine Modification	—	Engine Modification	
—	Engine Speed Input Signal	—	Engine RPM Signal	
EVAP	Evaporative Emission	—	Evaporative Emission	
EGR	Exhaust Gas Recirculation	—	Exhaust Gas Recirculation	
FC	Fan Control	—	Fan Control	
FF	Flexible Fuel	—	Flexible Fuel	
4GR	Fourth Gear	—	Overdrive	
—	Fuel Pump Relay	—	Circuit Opening Relay	#3
FSO solenoid	Fuel Shut Off Solenoid	FCV	Fuel Cut Valve	#6
GEN	Generator	—	Alternator	
GND	Ground	—	Ground/Earth	
HO2S	Heated Oxygen Sensor	—	Oxygen Sensor	With heater
IAC	Idle Air control	—	Idle Speed Control	
—	IDM Relay	—	Spill Valve Relay	#6
—	Incorrect Gear Ratio	—	—	
—	Injection Pump	FIP	Fuel Injection Pump	#6
—	Input/Turbine Speed Sensor	—	Pulse Generator	
IAT	Intake Air Temperature	—	Intake Air Thermo	
KS	Knock Sensor	—	Knock Sensor	
MIL	Malfunction Indicator Lamp	—	Malfunction Indicator Light	
MAP	Manifold Absolute Pressure	—	Intake Air Pressure	
MAF sensor	Mass Air Flow Sensor	—	Airflow Sensor	
MFL	Multiport Fuel Injection	—	Multiport Fuel Injection	
OBD	On-Board Diagnostic	—	Diagnosis/SelfDiagnosis	
OL	Open Loop	—	Open Loop	

NEW STANDARDS

New Standard		Previous Standard		Remark
Abbreviation	Name	Abbreviation	Name	
—	Output Speed Sensor	—	Vehicle Speed Sensor 1	
OC	Oxidation Catalytic Converter	—	Catalytic Converter	
O2S	Oxygen Sensor	—	Oxygen Sensor	
PNP	Park/Neutral Position	—	Park/Neutral Range	
—	PCM Control Relay	—	Main Relay	#6
PSP	Power Steering Pressure	—	Power Steering Pressure	
PCM	Powertrain Control Module	ECU	Engine Control Unit	#4
—	Pressure Control Solenoid	—	Line Pressure Solenoid Valve	
PAIR	Pulsed Secondary Air Injection	—	Secondary Air Injection System	Pulsed injection
—	Pump Speed Sensor	—	NE Sensor	#6
AIR	Secondary Air Injection	—	Secondary Air Injection System	Injection with air pump
SAPV	Secondary Air Pulse Valve	—	Reed Valve	
SFI	Sequential Multipoint Fuel Injection	—	Sequential Fuel Injection	
—	Shift Solenoid A	—	1–2 Shift Solenoid Valve	
		—	Shift A Solenoid Valve	
—	Shift Solenoid B	—	2–3 Shift Solenoid Valve	
		—	Shift B Solenoid Valve	
—	Shift Solenoid C	—	3–4 Shift Solenoid Valve	
3GR	Third Gear	—	3rd Gear	
TWC	Three Way Catalytic Converter	—	Catalytic Converter	
TB	Throttle Body	—	Throttle Body	
TP sensor	Throttle Position Sensor	—	Throttle Sensor	
TCV	Timer Control Valve	TCV	Timing Control Valve	#6
TCC	Torque Converter Clutch	—	Lockup Position	
TCM	Transmission (Transaxle) Control Module	—	ECAT Control Unit	
—	Transmission (Transaxle) Fluid Temperature Sensor	—	ATF Thermosensor	
TR	Transmission (Transaxle) Range	—	Inhibitor Position	
TC	Turbocharger	—	Turbocharger	
VSS	Vehicle Speed Sensor	—	Vehicle Speed Sensor	
VR	Voltage Regulator	—	IC Regulator	
VAF sensor	Volume Air Flow Sensor	—	Air flow Sensor	
WUTWC	Warm Up Three Way Catalytic Converter	—	Catalytic Converter	#5
WOT	Wide Open Throttle	—	Fully Open	

#1 : Diagnostic trouble codes depend on the diagnostic test mode

#2 : Controlled by the PCM

#3 : In some models, there is a fuel pump relay that controls pump speed. That relay is now called the fuel pump relay (speed).

#4 : Device that controls engine and powertrain

#5 : Directly connected to exhaust manifold

#6 : Part name of diesel engine

ABBREVIATIONS

ABBREVIATIONS

ABBREVIATIONS

AME203000011101

BDC	Bottom dead center
EX	Exhaust
IN	Intake
max	Maximum
min	Minimum
SST	Special service tool
TDC	Top dead center

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