



ESCAPE Repair Manual

FOREWORD

This manual contains on-vehicle service and diagnosis for the ESCAPE.

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 Ford dealers. This manual should be kept up-to-date.

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APPLICATION:

This manual is applicable to vehicles beginning with the Vehicle Identification Numbers (VIN), and related materials shown on the following page.

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GENERAL INFORMATION

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SECTION

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GENERAL INFORMATION . . . 00-00

00-00 GENERAL INFORMATION

VEHICLE IDENTIFICATION		VEHICLE LIFT (2 SUPPORTS) AND
NUMBER (VIN) CODE	00-00-1	SAFETY STAND (RIGID RACK)
VEHICLE IDENTIFICATION		POSITION
NUMBER (VIN)	00-00-1	TOWING
HOW TO USE THIS MANUAL	00-00-2	TIEDOWN HOOK
UNITS	00-00-11	IDENTIFICATION NUMBER
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SYSTEM	00-00-18	ABBREVIATIONS
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VEHICLE IDENTIFICATION NUMBER (VIN) CODE

id000000100200

L F A C K Z T N X 6 2 1 2 3 4 5 6	
Serial No.	
Assemble Plant	2= FLH FAP2 Plant
Model year	6= 2006, 7= 2007, 8= 2008
Constant	X
Engine type	N= L3 (2.3 L) V= AJ (3.0L Duratec)
Model	KZT= 4x4, Export 2.3L, XLS, 4ATX, ABS LZT= 4x4, Export 2.3L, XLT, 4ATX, ABS MZT= 4x4, Export 3.0L, 4ATX, ABS NZT= 4x4, Export 3.0L, 4ATX, ABS, SUNROOF
Gross vehicle weight and Air bags	C= 1814—2268 kg (4001—5000 lbs), with Driver, Passenger and Side air bag Y= 1814—2268 kg (4001—5000 lbs), with Driver and Passenger air bag
World manufacturer identification	LFA= Ford Lio Ho Motor Company Ltd.

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VEHICLE IDENTIFICATION NUMBER (VIN)

id000000100300

LFA CKZTNX*2 000001—
LFA CLZTNX*2 000001—
LFA CMZTVX*2 000001—
LFA CNZTVX*2 000001—
LFA YKZTNX*2 000001—
LFA YLZTNX*2 000001—
LFA YMZTVX*2 000001—
LFA YNZTVX*2 000001—

00-00-1

GENERAL INFORMATION

HOW TO USE THIS MANUAL

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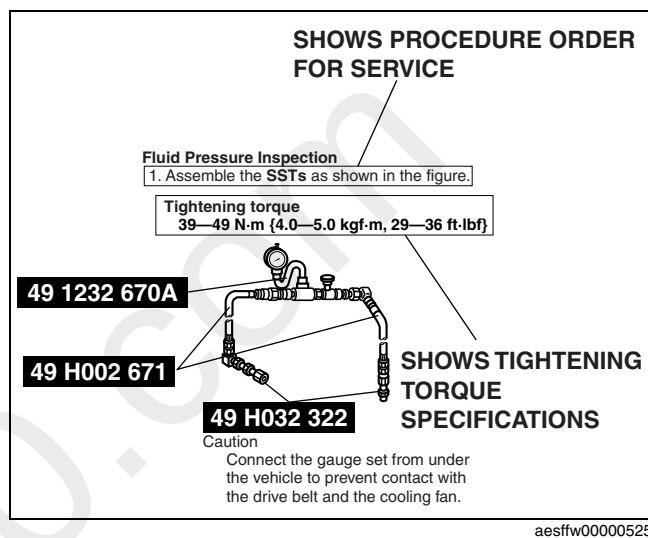
Range of Topics

- 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

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.



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.
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.

GENERAL INFORMATION

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Procedure

"Removal/Installation" Portion

"Inspection After Installation" Portion

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

SHOWS SERVICE ITEM (S)

INDICATES RELEVANT REFERENCES THAT 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 TIGHTENING TORQUE SPECIFICATIONS

SHOWS PROCEDURE ORDER FOR SERVICE

SHOWS REFERRAL NOTES 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 01-10-4 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.

44—60 (4.4—6.2, 32—44)

94—116 (9.5—11.9, 69—86)

43—56 (4.3—5.8, 32—41)

118—156 (12.0—16.0, 87—115)

N·m (kgf·m, ft·lbf)

1	Split pin
2	Nut
3	Lower trailing link ball joint (See 02-14-5 Lower Trailing Link Ball Joint Removal Note)
4	Bolt
5	Lower trailing link
6	Dust boot (lower trailing link)

7	Split pin
8	Nut
9	Upper trailing link ball joint (See 02-14-5 Upper Trailing Link Ball Joint Removal Note)
10	Nut
11	Upper 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.

49 T028 304 UPPER TRAILING LINK

49 T028 305 LOWER TRAILING LINK

49 T028 303

KNUCKLE

SHOWS REFERRAL NOTES FOR SERVICE

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GENERAL INFORMATION

Symbols

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

Symbol	Meaning	Kind
	Apply oil	New appropriate engine oil or gear oil
	Apply brake fluid	New appropriate brake fluid
	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 will find several **Warnings**, **Cautions**, **Notes**, **Specifications** and **Upper and Lower Limits** in this manual.

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.

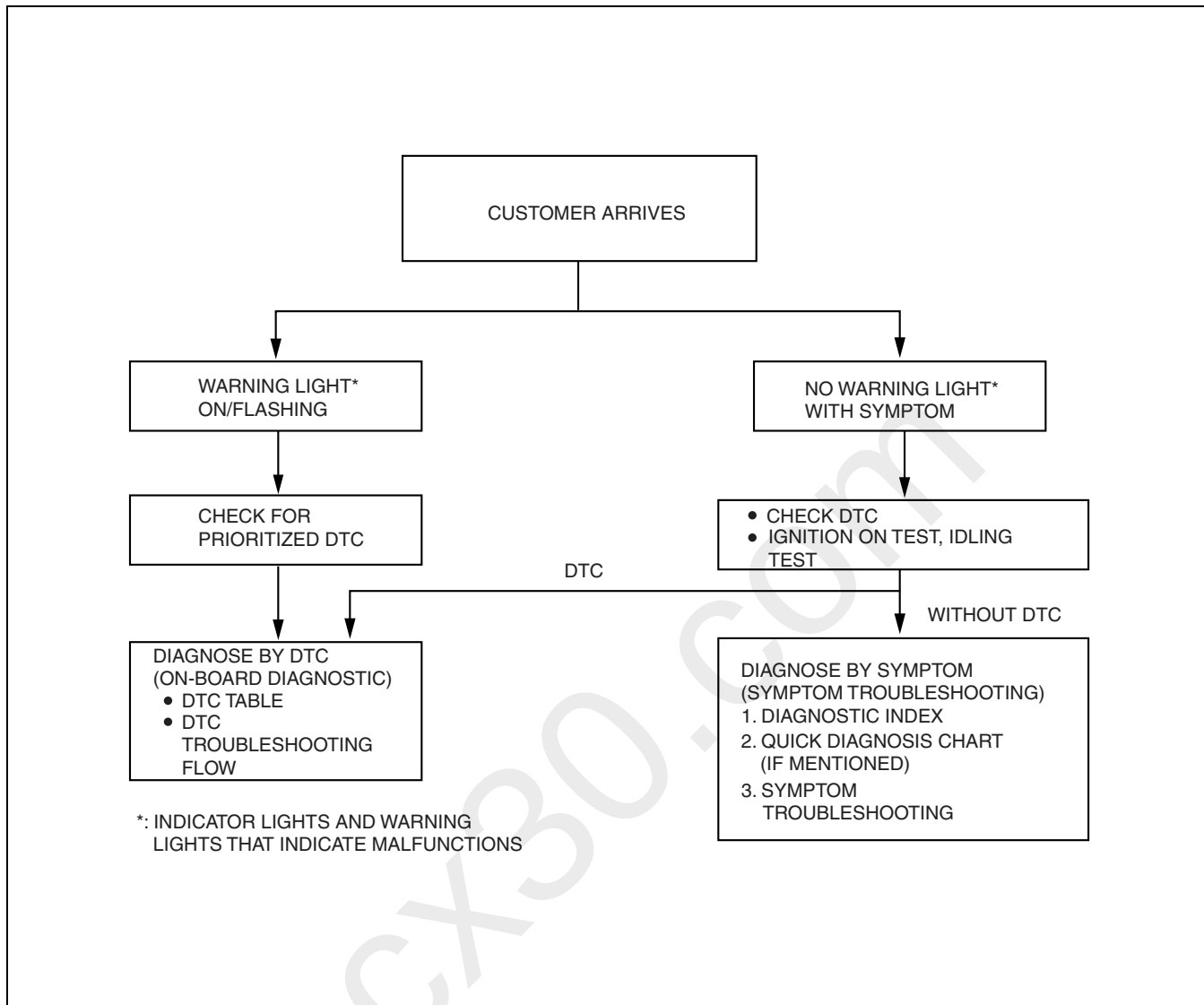
Upper and lower limits

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

GENERAL INFORMATION

Troubleshooting Procedure Basic flow of troubleshooting

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DTC troubleshooting flow (on-board diagnostic)

- Diagnostic trouble codes (DTCs) are important hints for repairing malfunctions that are difficult to simulate. Perform the specific DTC diagnostic inspection to quickly and accurately diagnose the malfunction.
- The on-board diagnostic function is used during inspection. When a DTC is shown specifying the cause of a malfunction, continue the diagnostic inspection according to the items indicated by the on-board diagnostic function.

Diagnostic index

- The diagnostic index lists the symptoms of specific malfunctions. Select the symptoms related or most closely relating to the malfunction.

Quick diagnosis chart (If mentioned)

- The quick diagnosis chart lists diagnosis and inspection procedures to be performed specifically relating to the cause of the malfunction.

Symptom troubleshooting

- Symptom troubleshooting quickly determines the location of the malfunction according to symptom type.

00-00-5

GENERAL INFORMATION

Procedures for Use

Using the basic inspection (section 05)

- Perform the basic inspection procedure before symptom troubleshooting.
- Perform each step in the order shown.
- The reference column lists the location of the detailed procedure for each basic inspection.
- Although inspections and adjustments are performed according to the reference column procedures, if the cause of the malfunction is discovered during basic inspection, continue the procedures as indicated in the action column.

SHOWS INSPECTION ORDER		SHOWS ITEM NAMES FOR DETAILED PROCEDURES		SHOW POINTS REQUIRING ATTENTION BASED ON INSPECTION RESULTS
BASIC INSPECTION				
STEP	INSPECTION		ACTION	
1	Perform the mechanical system test. (See 05-13-3 MECHANICAL SYSTEM TEST.) Is mechanical system normal?	Yes	Go to the next step.	
		No	Repair or replace any malfunctioning parts according to the inspection result.	
2	Turn the ignition switch to the ON position. When the selector lever is moved, does the selector illumination indicate synchronized position to the lever location? Also, when other ranges are selected from N or P during idling, does the vehicle move within 1—2 s?	Yes	Go to next step.	
		No	Inspect the selector lever and TR switch. Repair or replace malfunctioning parts. (See 05-14-5 SELECTOR LEVER INSPECTION.) (See 05-13-10 TRANSMISSION RANGE (TR) SWITCH INSPECTION.) If the selector lever and TR switch are normal, go to the next step.	
3	Inspect the ATF color condition. (See 05-13-8 AUTOMATIC TRANSMISSION FLUID (ATF) INSPECTION.) Are ATF color and odor normal?	Yes	Go to the next step.	
		No	Repair or replace any malfunctioning parts according to the inspection result. Flush ATX and cooler line as necessary.	
4	Perform the line pressure test. (See 05-13-3 Line Pressure Test.) Is the line pressure normal?	Yes	Go to the next step.	
		No	Repair or replace any malfunctioning parts according to the inspection result.	
5	Perform the stall test. (See 05-13-4 Stall Speed Test.) Is the stall speed normal?	Yes	Go to the next step.	
		No	Repair or replace any malfunctioning parts according to the inspection result.	
REFERENCE COLUMN	Inspect the voltage at the following TCM terminals. (See 05-13-29 TCM INSPECTION.) • Terminal 2J (TFT sensor) • Terminals 1D, 2B, 2C, 2E (TR switch) • Terminal 2G (turbine sensor) • Terminal 2D (down switch) • Terminal 2I (up switch) • Terminal 1E (M range switch) • Terminal 1W (steering shift switch) Is the voltage normal?	Yes	Go to the next step.	
		No	Repair or replace any malfunctioning parts according to the inspection result.	

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GENERAL INFORMATION

Using the DTC troubleshooting flow

- DTC troubleshooting flow shows diagnostic procedures, inspection methods, and proper action to take for each DTC.

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POSSIBLE CAUSE
describes possible point(s) of malfunction

Indicates the inspection step No. to be performed (01 and 05 section)

STEP shows the order of troubleshooting

INSPECTION describes the method to quickly determine the malfunctioning part(s).

TRouble CONDITION

DTC P0103

DETECTION CONDITION
describes the condition under which the DTC is detected.

POSSIBLE CAUSE

Indicates the circuit to be inspected (01 and 05 section)

Indicates the connector related to the inspection

ACTION
describes the appropriate action to be taken according to the result (Yes/No) of the INSPECTION.

Reference item(s) to perform ACTION.

DTC P0103

MAF circuit high input

PCM monitors input voltage from TP sensor after ignition key is turned on. If input voltage at PCM terminal 68 is above 8.25 V, PCM determines that TP circuit has malfunction.

Diagnostic support note

- This is a continuous monitor (CCM).
- MIL illuminates if PCM detects the above malfunction during first drive cycle. Therefore, PENDING CODE is not available.
- FREEZE FRAME DATE is available.
- DTC is stored in the PCM memory.

POSSIBLE CAUSE

- MAF sensor malfunction
- Connector or terminal malfunction
- Open circuit in wiring between MAF sensor terminal D and PCM terminal 36
- Open circuit in MAF sensor ground circuit

Wiring Diagram:

MAF SENSOR HARNESS SIDE CONNECTOR: Terminals B, E, D, A

PCM HARNESS SIDE CONNECTOR: Terminals 88, 36, 1P

Connections: B to 88, E to 88, D to 36, A to 1P. Grounds are shown at 88 and 36.

Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has FREEZE FRAME DATA been recorded?	Yes	Go to next step.
		No	Record FREEZE FRAME DATA on repair order, then go to next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY Are related Service Bulletins and/or on-line repair information available?	Yes	Perform repair or diagnosis according to available repair information. If vehicle is not repaired, then go to next step.
		No	Go to next step.
3	VERIFY CURRENT INPUT SIGNAL STATUS IS CONCERN INTERMITTENT OR CONSTANT - Connect diagnostic tool to DLC-2. - Start engine. - Access MAF V PID using diagnostic tool. - Is MAF V PID within 0.2 - 8.3 V?	Yes	Intermittent concern is existing. Go to INTERMITTENT CONCERNS TROUBLESHOOTING procedure. (See 01-03-33 INTERMITTENT CONCERN TROUBLESHOOTING)
		No	Go to next step.
4	INSPECT POOR CONNECTION OF MAF SENSOR CONNECTOR - Turn ignition key to OFF. - Disconnect MAF sensor connector. - Check for poor connection (damaged, pulled-out terminals, corrosion etc.). - Are there any malfunctions?	Yes	Repair or replace terminals, then go to Step 8.

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GENERAL INFORMATION

Using the diagnostic index

- Malfunction symptoms are listed in the diagnostic index under symptom troubleshooting.
- The exact malfunction symptoms can be selected by following the index.

No.	TROUBLESHOOTING ITEM		DESCRIPTION	Page
1	Melting of main or other fuses		—	(See 01-03-6 MELT NO.1 MAIN OR OTHER FUSE)
2	MIL comes on		MIL is illuminated incorrectly.	(See 01-03-7 NO.2 MIL COMES ON)
3	Will not crank		Starter does not work.	(See 01-03-8 NO. 3 WILL NOT CRANK)
4	Hard start/long crank/erratic start/erratic crank		Starter cranks engine at normal speed but engine requires excessive cranking time before starting.	(See 01-03-9 NO. 4 HARD START/ LONG CRANK/ERRATIC CRANK)
5	Engine stalls.	After start/at idle	Engine stops unexpectedly at idle and/or after start.	(See 01-03-11 NO. 5 ENGINE-STALLS AFTER START/AT IDLE)
6	Cranks normally but will not start		Starter cranks engine at normal speed but engine will not run.	(See 01-03-15 NO.6 CRANKS NORMALLY BUT WILL NOT START)
7	Slow return to idle		Engine takes more time than normal to return to idle speed.	(See 01-03-19 NO. 7 SLOW RERUN TO IDLE)
8	Engine runs rough/rotling		Engine speed fluctuates between specified idle speed and lower speed and engine shakes excessively.	(See 01-03-20 NO. 8 ENGINE RUNS ROUGH/ROLLING IDLE)
9	Fast idle/runs on		Engine speed continues at fast idle after warm-up. Engine runs after ignition key is turned to OFF.	(See 01-03-23 NO. 9 FAST IDLE/RUNS ON)
10	Low idle/stalls during deceleration		Engine stops unexpectedly at beginning of deceleration or recovery from deceleration.	(See 01-03-24 NO. 10 LOW IDLE/ STALLS DURING DECELERATION)

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GENERAL INFORMATION

Using the quick diagnosis chart

- The chart lists the relation between the symptom and the cause of the malfunction.
- The chart is effective in quickly narrowing down the relation between symptom and cause of the malfunction. It also specifies a range of common causes when multiple malfunction symptoms occur.
- The appropriate diagnostic inspection relating to a malfunction cause as specified by the symptoms can be selected by looking down the diagnostic inspection column of the chart.

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PART WHICH MAY BE THE SYMPTOM		PARTS WHICH MAY BE THE CAUSE OF PROBLEMS																								X: Applied
		Possible factor	Starter motor malfunction (Mechanical or electrical)	Starter circuit including ignition switch is open.	Starter interlock switch malfunction (MTX)	Improper engine oil level	Low or dead battery	Charging system malfunction	Improper engine compression	Improper valve timing	Hydrolocked engine	Improper engine oil viscosity	Improper dipstick	Base engine malfunction	Drive plate or flywheel are seized.	Improper tension or damaged drive belts	Improper engine coolant level	Water and anti-freeze mixture is improper.	Cooling system malfunction (Radiator, hoses, overflow system, thermostat, etc.)	Cooling fan system malfunction	Engine or transaxle mounts are improperly installed.	Cooling fan or condenser fan seat are improper.	Accelerator position sensor misadjustment	Cruise control system operation improperly	Fuel quality	
Troubleshooting item																										
1	Melting of main or other fuses																									
2	MIL illuminates																									
3	Will not crank	x	x	x		x	x			x					x											
4	Hard to start/long crank/erratic start/erratic crank	x																							x	
5	Engine stalls. After start/at idle								x	x															x	
6	Cranks normally but will not start								x	x															x	
7	Slow return to idle																		x							
8	Engine runs rough/rolling idle								x	x															x	
9	Fast idle/runs on																						x	x		
10	Low idle/stalls during deceleration																						x	x		
11	Engine stalls/quits. Acceleration/cruise								x	x													x		x	
	Engine runs rough. Acceleration/cruise								x	x															x	
	Misses. Acceleration/cruise								x	x															x	
	Buck/jerk. Acceleration/cruise/ deceleration								x	x															x	
	Hesitation/stumble. Acceleration								x	x															x	
	Surges. Acceleration/cruise								x	x															x	
12	Lack/loss of power. Acceleration/cruise								x	x															x	
13	Knocking/pinging. Acceleration/cruise								x										x							
14	Poor fuel economy								x	x									x	x					x	
15	Emission compliance								x	x									x							
16	High oil consumption/leakage											x	x	x												
17	Cooling system concerns Overheating														x	x	x		x	x						
18	Cooling system concerns Runs cold																		x	x						
19	Exhaust smoke								x					x					x							
20	Fuel odor (in engine compartment)																									
21	Engine noise						x							x		x										
22	Vibration concerns (engine)														x							x	x			
23	A/C does not work sufficiently.																									
24	A/C is always on or A/C compressor runs continuously.																									
25	A/C is not cut off under WOT conditions.																									
26	Exhaust sulfur smell																									
27	Fuel refill concerns																									
28	Fuel filling shut off issues																									
29	Constant voltage																									
30	Spark plug condition										x															
31	ATX concerns Upshift/downshift engagement																									

See Section 05-03A, TROUBLESHOOTING

See Section 05-03A, TROUBLESHOOTING

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00-00-9

GENERAL INFORMATION

Using the symptom troubleshooting

- Symptom troubleshooting shows diagnostic procedures, inspection methods, and proper action to be taken for each trouble symptom.

DESCRIPTION describes what kind of TROUBLE SYMPTOM	14	Engine flares up or slips when upshifting or down shifting					
	DESCRIPTION	- When accelerator pedal is depressed for driveway, engine speed increase but vehicle speed increase slowly. - When accelerator is depressed while driving, engine speed increases but vehicle not. - There is clutch slip because clutch is stuck or line pressure is low. - Clutch stuck, slippage (forward clutch, 3-4 clutch, 2-4 brake band, one-way clutch 1, one-way clutch 2) - Line pressure low - Malfunction or mis-adjustment of TP sensor - Malfunction of VSS - Malfunction of input/turbine speed sensor - Malfunction of sensor ground - Malfunction of shift solenoid A, B or C - Malfunction of TCC solenoid valve - Malfunction of body ground - Malfunction of throttle cable - Malfunction of throttle valve body - Poor operating of mechanical pressure - Selector lever position disparity - TR switch position disparity					
POSSIBLE CAUSE describes possible point of malfunction	POSSIBLE CAUSE	Note Before following troubleshooting steps, make sure that Automatic Transaxle On-board Diagnostic and Automatic Transaxle Basic Inspection are conducted.					
STEP shows the order of troubleshooting.	Diagnostic procedure						
	STEP	INSPECTION	ACTION				
Reference item(s) for additional information to perform INSPECTION.	1	Is line pressure okay?	<table><tr><td>Yes</td><td>Go to next step.</td></tr><tr><td>No</td><td>Repair or replace any defective parts according to inspection results.</td></tr></table>	Yes	Go to next step.	No	Repair or replace any defective parts according to inspection results.
	Yes	Go to next step.					
No	Repair or replace any defective parts according to inspection results.						
INSPECTION describes the method to quickly determine the malfunctioning part(s).	2	Is shift point okay? (See 05-17-5 ROAD TEST)	<table><tr><td>Yes</td><td>Go to next step</td></tr><tr><td>No</td><td>Go to symptom troubleshooting No.9 "Abnormal shift".</td></tr></table>	Yes	Go to next step	No	Go to symptom troubleshooting No.9 "Abnormal shift".
	Yes	Go to next step					
No	Go to symptom troubleshooting No.9 "Abnormal shift".						
	3	- Stop engine and turn ignition switch on. - Connect diagnostic tool to DLC-2. - Simulate SHIFT A, SHIFT B and SHIFT C PIDs for ON. - Is operating sound of shift solenoids heard?	<table><tr><td>Yes</td><td> - Overhaul control valve body and repair or replace any defective parts. (See ATX Workshop Manual GF4A-EL (1666-1A-99F)) - If problem remains, replace or overhaul transaxle and repair or replace defective parts. (See 05-17-15 AUTOMATIC TRANSAXLE REMOVEVAL/INSTALLATION) </td></tr><tr><td>No</td><td> - Inspect for bend, damage, corrosion or loose connection if shift solenoid A, B, or C terminal on ATX. - Inspect for shift solenoid mechanical stuck. (See 05-17-14 Inspection of Operation) - If shift solenoids are okay, inspect for open or short circuit between PCM connector terminal A, B or C. </td></tr></table>	Yes	- Overhaul control valve body and repair or replace any defective parts. (See ATX Workshop Manual GF4A-EL (1666-1A-99F)) - If problem remains, replace or overhaul transaxle and repair or replace defective parts. (See 05-17-15 AUTOMATIC TRANSAXLE REMOVEVAL/INSTALLATION)	No	- Inspect for bend, damage, corrosion or loose connection if shift solenoid A, B, or C terminal on ATX. - Inspect for shift solenoid mechanical stuck. (See 05-17-14 Inspection of Operation) - If shift solenoids are okay, inspect for open or short circuit between PCM connector terminal A, B or C.
			Yes	- Overhaul control valve body and repair or replace any defective parts. (See ATX Workshop Manual GF4A-EL (1666-1A-99F)) - If problem remains, replace or overhaul transaxle and repair or replace defective parts. (See 05-17-15 AUTOMATIC TRANSAXLE REMOVEVAL/INSTALLATION)			
No	- Inspect for bend, damage, corrosion or loose connection if shift solenoid A, B, or C terminal on ATX. - Inspect for shift solenoid mechanical stuck. (See 05-17-14 Inspection of Operation) - If shift solenoids are okay, inspect for open or short circuit between PCM connector terminal A, B or C.						
4	- Verify test results. - If okay, return to diagnostic index to service any additional symptoms. - If malfunction remains, inspect related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. - If vehicle is repaired, troubleshooting completed. - If vehicle is not repaired or additional diagnostic information is not available, replace or reprogram PCM.						

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GENERAL INFORMATION

UNITS

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Electric 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)
Number of revolutions	rpm (revolutions per minute)
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 265 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.

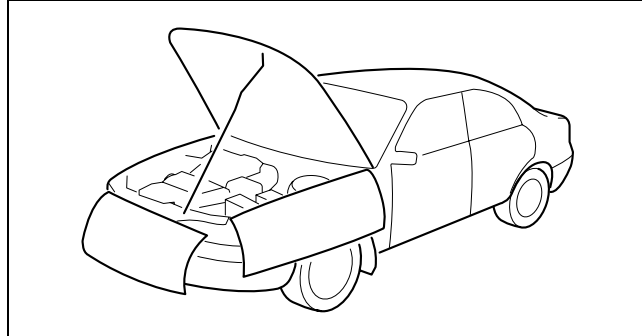
GENERAL INFORMATION

SERVICE CAUTIONS

id000000800200

Protection of the Vehicle

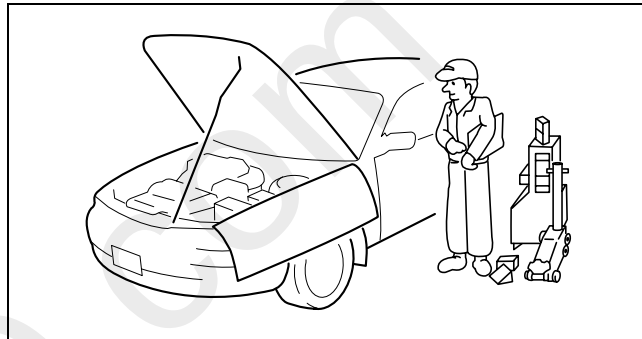
- Always be sure to cover fenders, seats and floor areas before starting work.



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Preparation of Tools and Measuring Equipment

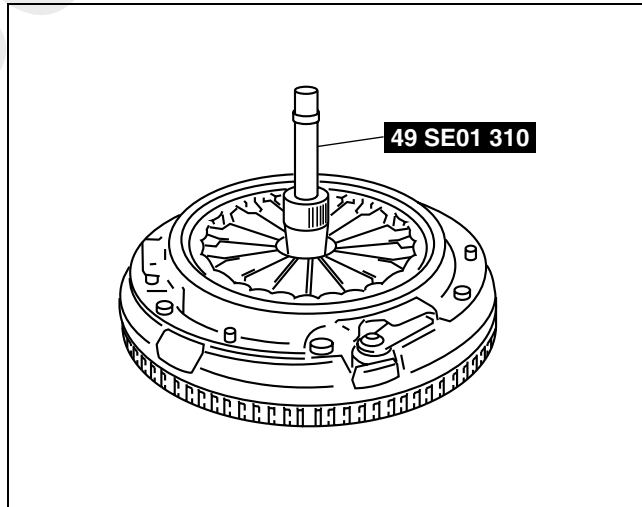
- Be sure that all necessary tools and measuring equipment are available before starting any work.



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Special Service Tools

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



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Malfunction Diagnosis System

- Use the Mazda modular diagnostic system (current diagnostic tool) for malfunction diagnosis.

Disconnection of the Negative Battery Cable

- When working with the negative battery cable disconnected, wait for 1 min or more to allow the back up power supply of the SAS control module to deplete its stored power after the cable is disconnected.
- Disconnecting the battery cable will delete the memories of the clock, audio, and DTCs, etc. Therefore, it is necessary to note down the information stored in those memories before disconnecting the cable.

Oil Leakage Inspection

- Use either of the following procedures to identify the type of oil that is leaking.

00-00-12

GENERAL INFORMATION

Using UV light (black light)

1. Remove any oil on the engine or transaxle/transmission.

Note

- Referring to the fluorescent dye instruction manual, mix the specified amount of dye into the engine oil or ATF (or transaxle/transmission oil).

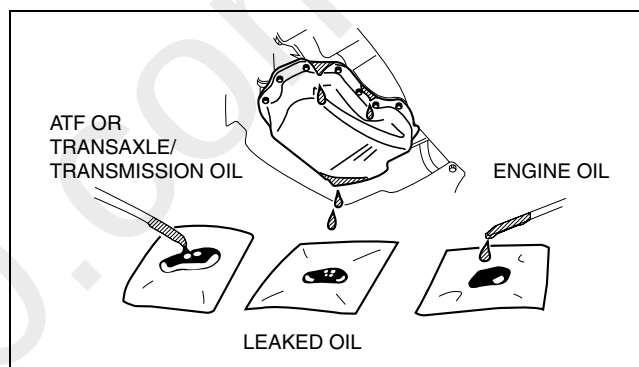
2. Pour the fluorescent dye into the engine oil or ATF (or transaxle/transmission oil).
3. Allow the engine to run for 30 min.
4. Inspect for dye leakage by irradiating with UV light (black light), and identify the type of oil that is leaking.
5. If no dye leakage is found, allow the engine to run for another 30 min. or drive the vehicle then reinspect.
6. Find where the oil is leaking from, then make necessary repairs.

Note

- To determine whether it is necessary to replace the oil after adding the fluorescent dye, refer to the fluorescent dye instruction manual.

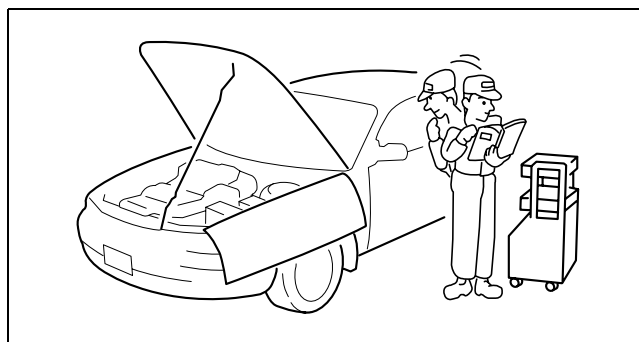
Not using UV light (black light)

1. Gather some of the leaking oil using an absorbent white tissue.
2. Take samples of engine oil and ATF (or transaxle/transmission oil), both from the dipstick, and place them next to the leaked oil already on the tissue.
3. Compare the appearance and smell, and identify the type of oil that is leaking.
4. Remove any oil on the engine or transaxle/transmission.
5. Allow the engine to run for 30 min.
6. Check the area where the oil is leaking, then make necessary repairs.



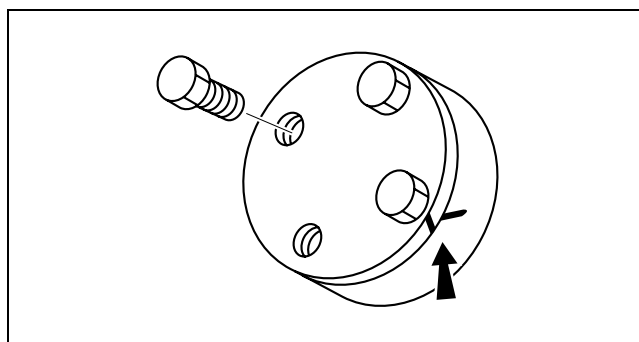
Removal of Parts

- While correcting a problem, also try to determine its cause. Begin work only after first learning which parts and sub-components must be removed and disassembled for replacement or repair. After removing the part, plug all holes and ports to prevent foreign material from entering.



Disassembly

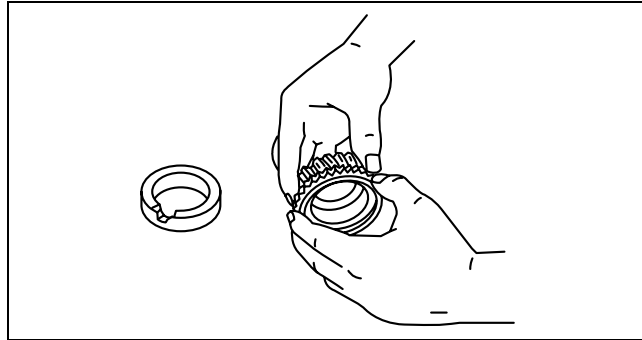
- If the disassembly procedure is complex, requiring many parts to be disassembled, all parts should be marked in a place that will not affect their performance or external appearance, and identified so that reassembly can be performed easily and efficiently.



GENERAL INFORMATION

Inspection During Removal, Disassembly

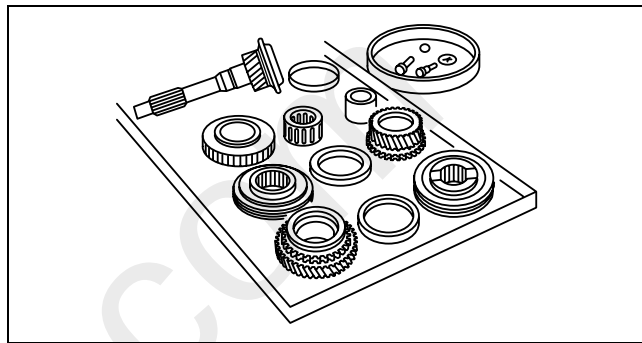
- When removed, each part should be carefully inspected for malfunction, deformation, damage and other problems.



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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.



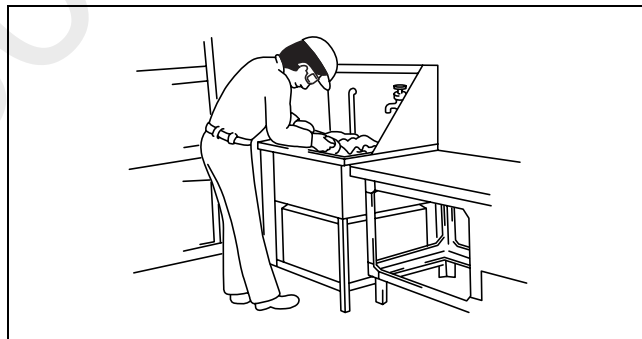
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Cleaning of Parts

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

Warning

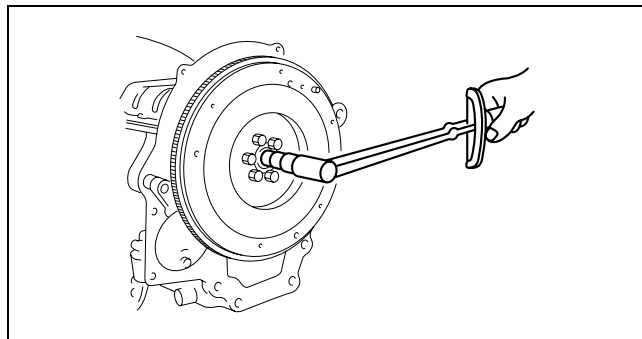
- Using compressed air can cause dirt and other particles to fly out causing injury to the eyes. Wear protective eye wear whenever using compressed air.



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Reassembly

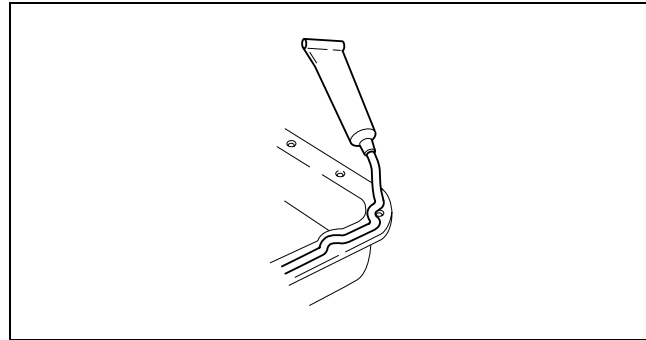
- Standard values, such as torques and certain adjustments, must be strictly observed in the reassembly of all parts.
- If removed, these parts should be replaced with new ones:
 - Oil seals
 - Gaskets
 - O-rings
 - Lock washers
 - Cotter pins
 - Nylon nuts



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GENERAL INFORMATION

- 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

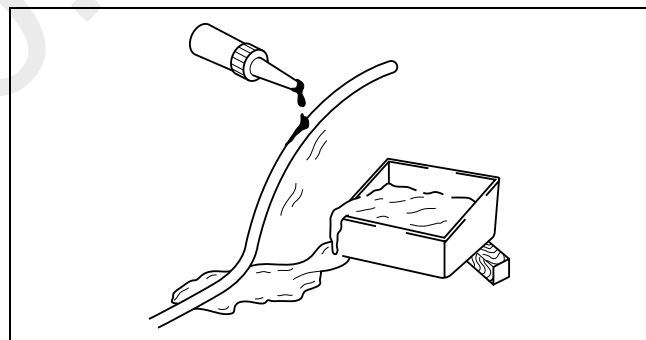
- Use suitable gauges and testers when making adjustments.



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Rubber Parts and Tubing

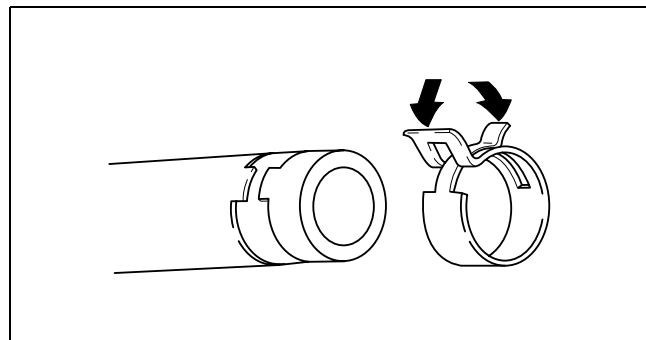
- Prevent gasoline or oil from getting on rubber parts or tubing.



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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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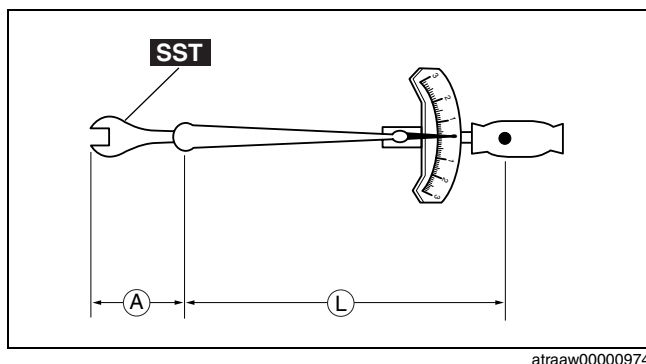
GENERAL INFORMATION

Torque Formulas

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

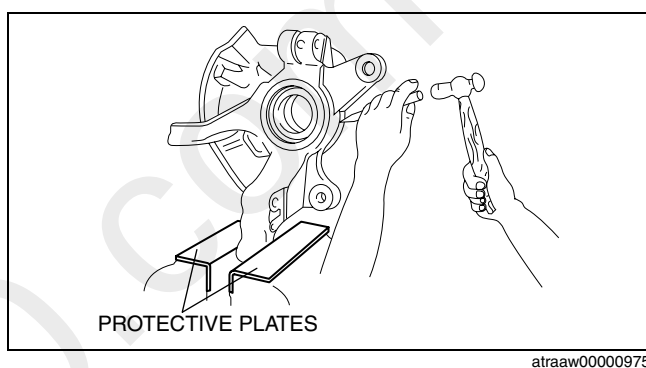
Torque Unit	Formula
N·m	$N \cdot m \times [L/(L+A)]$
kgf·m	$kgf \cdot m \times [L/(L+A)]$
kgf·cm	$kgf \cdot cm \times [L/(L+A)]$
ft·lbf	$ft \cdot lbf \times [L/(L+A)]$
in·lbf	$in \cdot lbf \times [L/(L+A)]$

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



Vise

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



Dynamometer

- When inspecting and servicing the power train on the dynamometer or speedometer tester, pay attention to the following:
 - Place a fan, preferably a vehicle-speed proportional type, in front of the vehicle.
 - Make sure the vehicle is in a facility with an exhaust gas ventilation system.
 - Since the rear bumper might deform from the heat, cool the rear with a fan. (Surface of the bumper must be below **70°C {158°F} degrees**.)
 - Keep the area around the vehicle uncluttered so that heat does not build up.
 - Watch the water temperature gauge and do not overheat the engine.
 - Avoid added load to the engine and maintain normal driving conditions as much as possible.

Note

- When only the front or rear wheels are rotated on a chassis dynamometer or equivalent, the ABS CM determines that there is a malfunction in the ABS and illuminates the following lights:
 - ABS warning light
 - Brake system warning light
- If the above lights are illuminated, dismount the vehicle from the chassis dynamometer and turn the ignition switch to the LOCK position. Then, turn the ignition switch back to the ON position, run the vehicle at 10 km/h or more and verify that the warning lights go out. In this case, a DTC will be stored in the memory. Clear the DTC from the memory by following the memory clearing procedure [ABS] in the on-board diagnostic system. (See 04-02A-2 ON-BOARD DIAGNOSIS[L3].) (See 04-02B-2 ON-BOARD DIAGNOSIS[AJ (3.0L Duratec)].)

4×4 inspection/service

Speedometer tester measurement

Caution

- Install the tension bar (chain wire) to the tie down hook and secure the vehicle to prevent it from rolling and running off.
- Do not accelerate suddenly from a standstill or accelerate/decelerate rapidly.

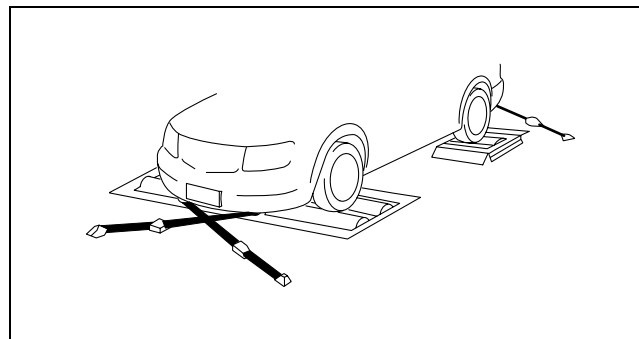
GENERAL INFORMATION

Free roller type

1. Align the free rollers with the wheel base and tread, then set them on the floor properly.
2. Drive the vehicle slowly onto the tester roller and free rollers.
3. Start the engine and accelerate gradually to inspect the speedometer.
4. After inspection, decelerate gradually with gentle braking.

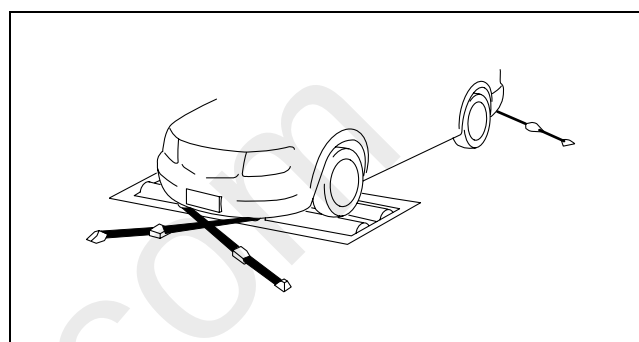
Propeller shaft removal type

1. Remove the propeller shaft. (See 03-15-4 PROPELLER SHAFT REMOVAL/INSTALLATION.)



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2. Place the front wheels on the tester roller.
3. Accelerate gradually and inspect the speedometer.
4. After inspection, decelerate gradually with gentle braking.
5. Install the propeller shaft.

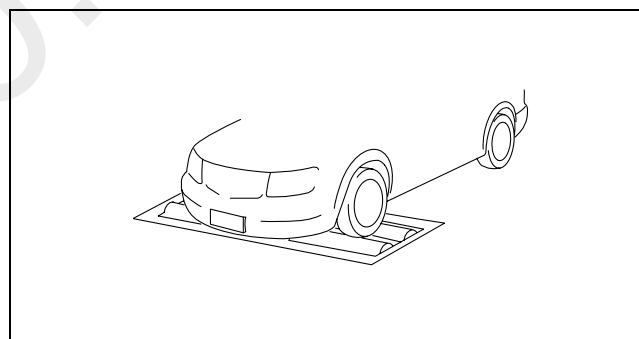


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Brake tester measurement

1. Place the wheels (front or rear) to be measured on the tester roller.
2. Shift to the N position/neutral.
3. Activate the tester roller and measure braking force.

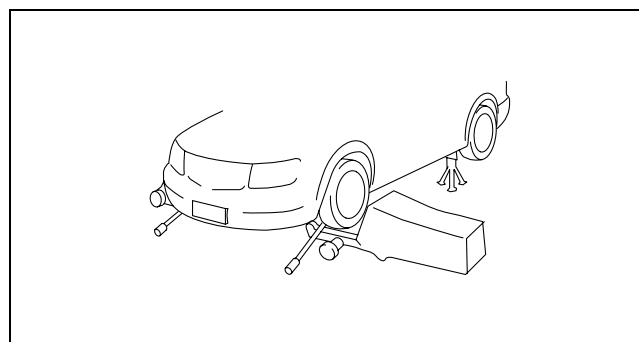
If there is a large amount of brake drag force, the electronic control system coupling may be affected. Jack up all four wheels to eliminate the effect of the coupling and rotate each wheel by hand to verify the rotation condition.



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Wheel balancer (on the vehicle balancer)

1. Jack up all four wheels.
2. Support the wheels (front or rear) on the side to be measured (near the wheels) using a wheel balancer sensor stand.
3. Support the wheels on the side not to be measured (near the wheels) using safety stands.
4. Set up the wheel balancer and rotate the wheels using engine drive to measure the wheel balance.



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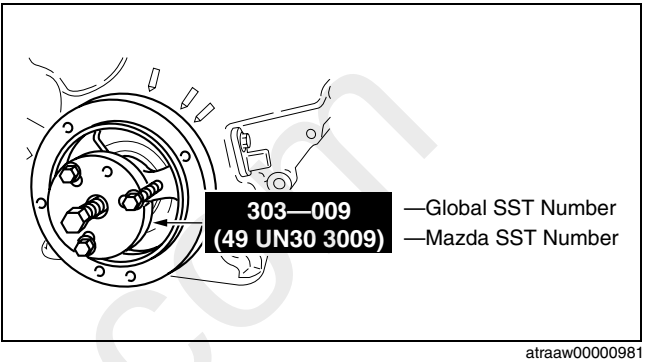
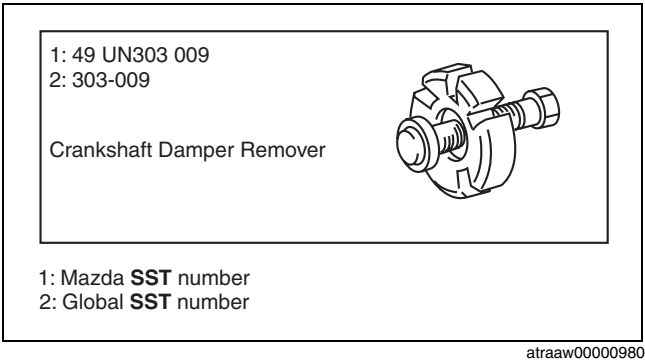
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GENERAL INFORMATION

SST

Example (SERVICE TOOLS)

Example (Except SERVICE TOOLS)



INSTALLATION OF RADIO SYSTEM

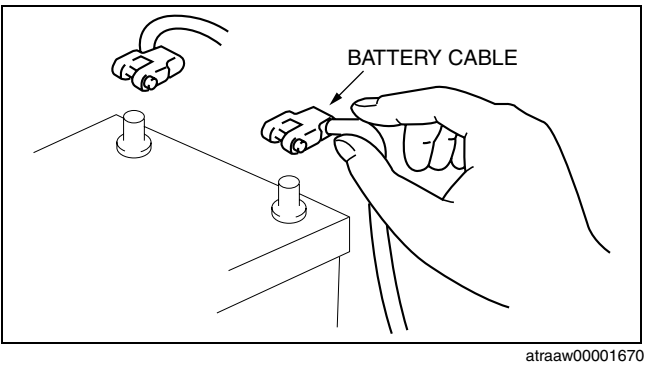
- If a radio system is installed improperly or if a high-powered type system is used, the CIS and other systems may be affected. When the vehicle is to be equipped with a radio, observe the following precautions:
 - Install the antenna at the farthest point from control modules.
 - Install the antenna feeder as far as possible from the control module wiring harnesses.
 - Ensure that the antenna and feeder are properly adjusted.
 - Do not install a high-powered radio system.

ELECTRICAL SYSTEM

Electrical Parts

Battery cable

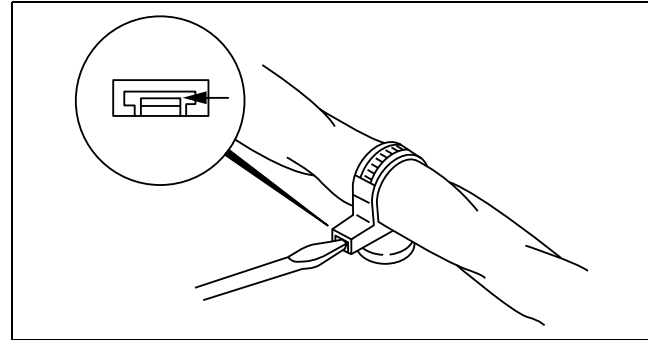
- Before disconnecting connectors or removing electrical parts, disconnect the negative battery cable.



GENERAL INFORMATION

Wiring Harness

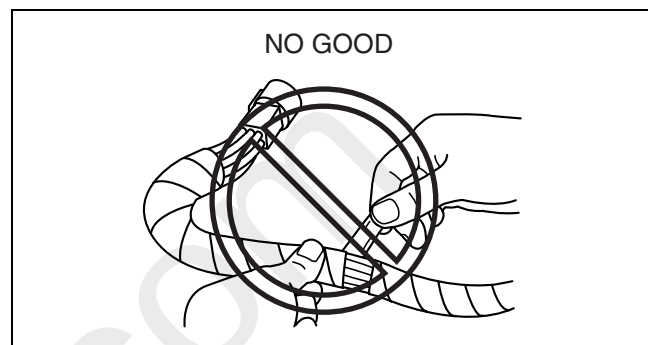
- To remove the wiring harness from the clip in the engine room, pry up the hook of the clip using a flathead screwdriver.



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Caution

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

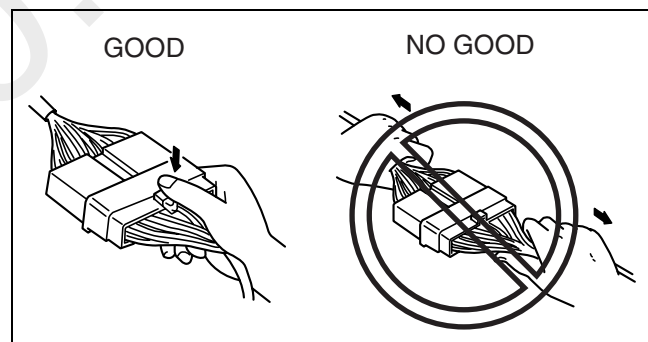


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Connectors

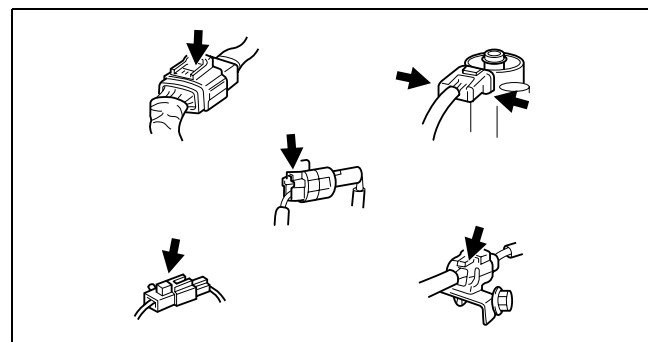
Disconnecting connectors

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



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

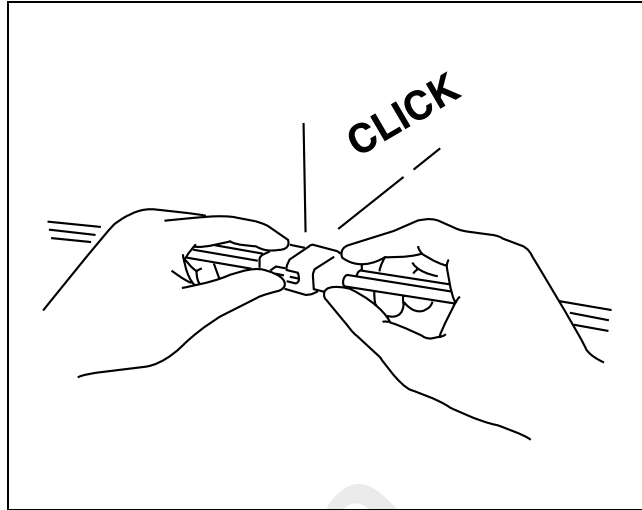


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GENERAL INFORMATION

Locking connector

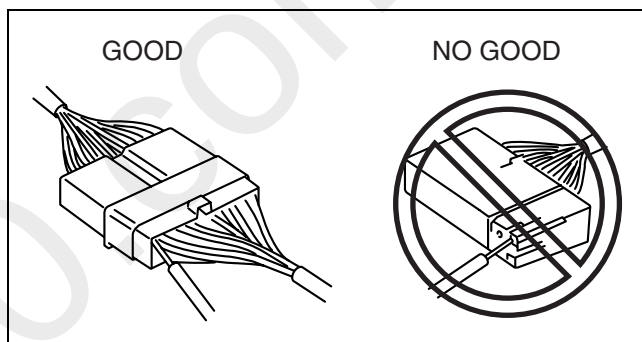
- When locking connectors, listen for a click indicating they are securely locked.



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Inspection

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

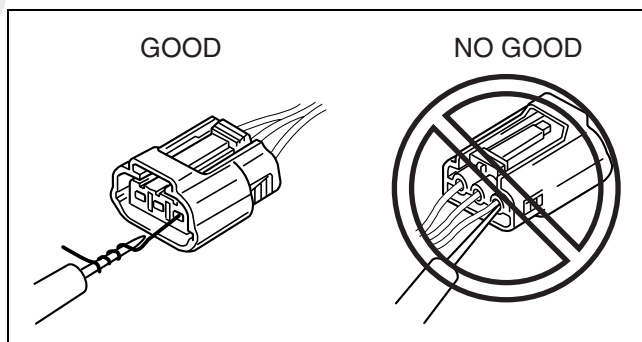


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- Inspect the terminals of waterproof connectors from the connector side since they cannot be accessed from the wiring harness side.

Caution

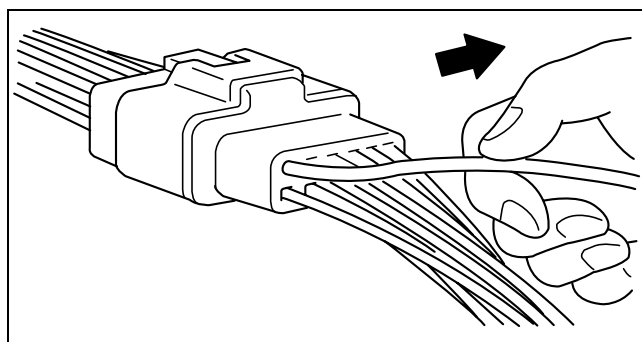
- To prevent damage to the terminal, wrap a thin wire around the tester probe before inserting into terminal.



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Terminals Inspection

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

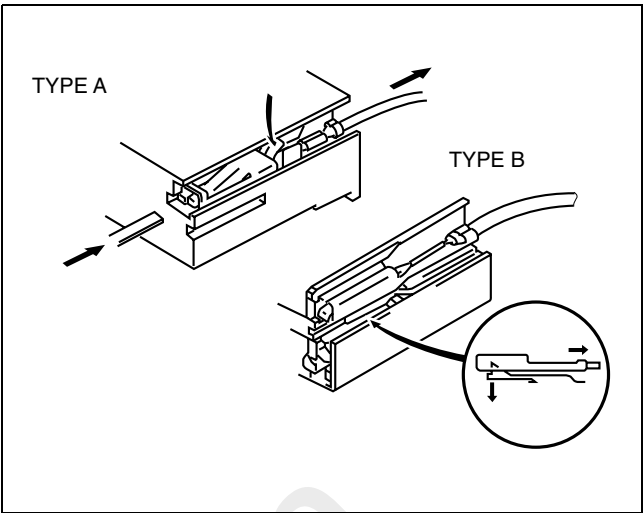


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GENERAL INFORMATION

Replacement

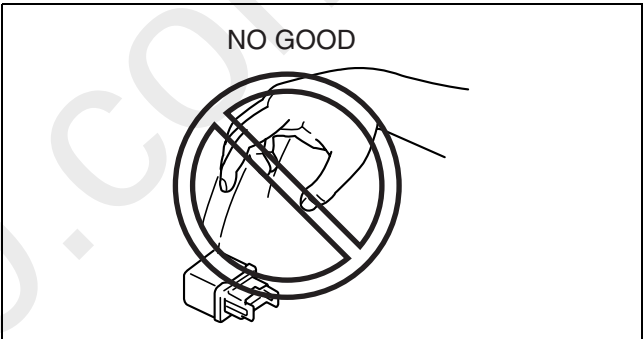
- Use the appropriate tools to remove a terminal as shown. When installing a terminal, be sure to insert it until it locks securely.
- Insert a thin piece of metal from the terminal side of the connector and with the terminal locking tab pressed down, pull the terminal out from the connector.



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Sensors, Switches, and Relays

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

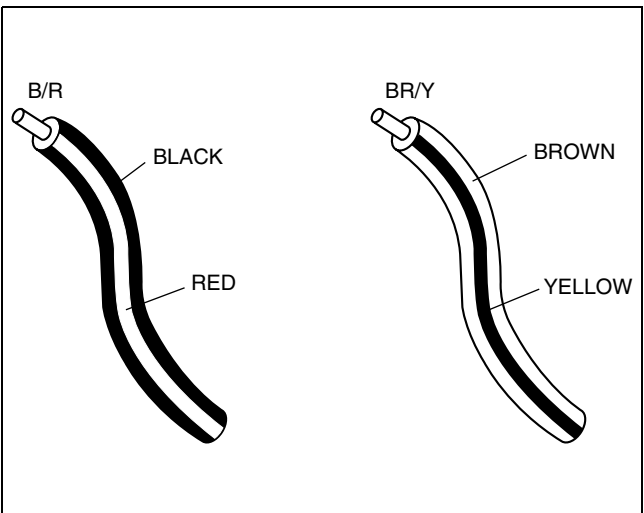


Wiring Harness

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 is 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		

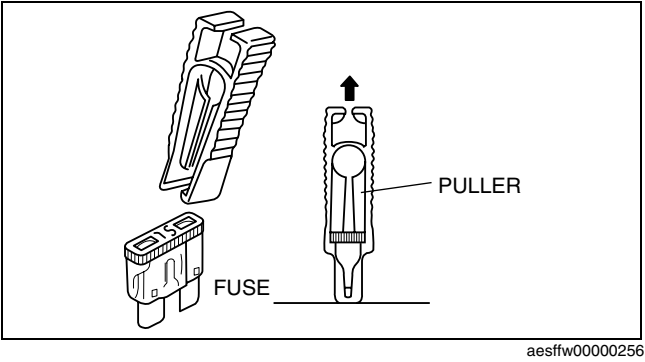


GENERAL INFORMATION

Fuse

Replacement

- When replacing a fuse, be sure to replace it with one of the same capacity. If a fuse malfunctions 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.
- When replacing a pullout fuse, use the fuse puller.



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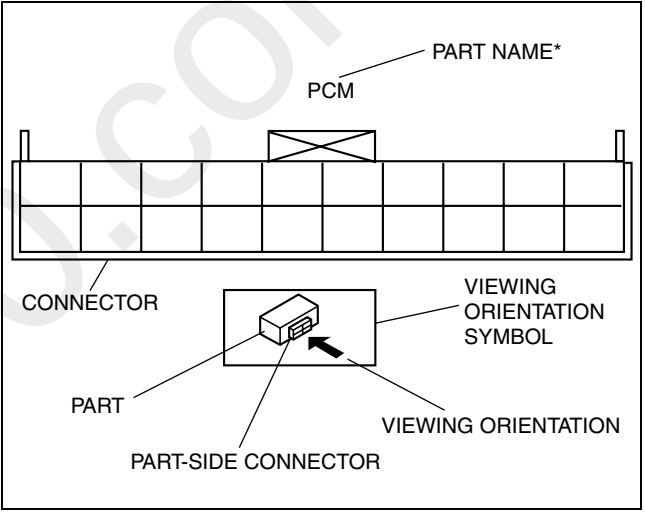
Viewing Orientation for Connectors

- The viewing orientation for connectors is indicated with a symbol.
- The figures showing the viewing orientation are the same as those used in Wiring Diagrams.
- The viewing orientations are shown in the following three ways:

Part-side connector

The viewing orientation for part-side connectors is from the terminal side.

* : Part names are shown only when there are multiple connector drawings.

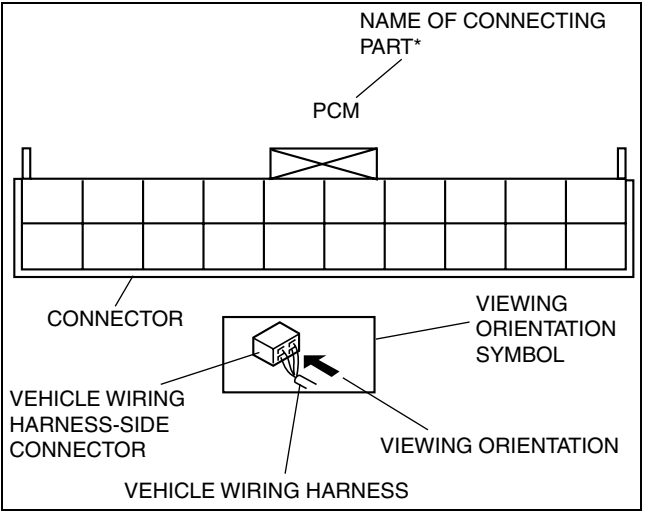


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Vehicle harness-side connector

The viewing orientation for vehicle wiring harness-side connectors is from the wiring harness side.

* : Part names are shown only when there are multiple connector drawings.



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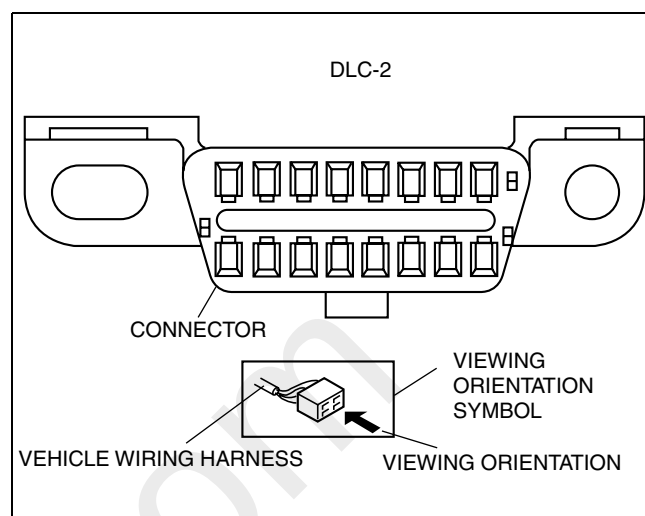
GENERAL INFORMATION

Other

When it is necessary to show the terminal side of the vehicle wiring harness-side connectors, such as the following connectors, the viewing orientation is from the terminal side.

- Main fuse block and the main fuse block relays
- Data link connector
- Check connector
- Relay box

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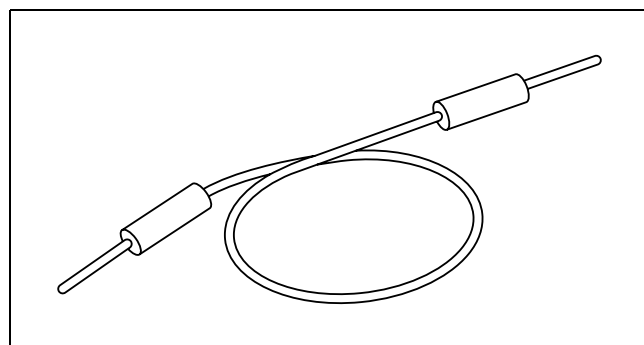


Electrical Troubleshooting Tools

Jumper wire

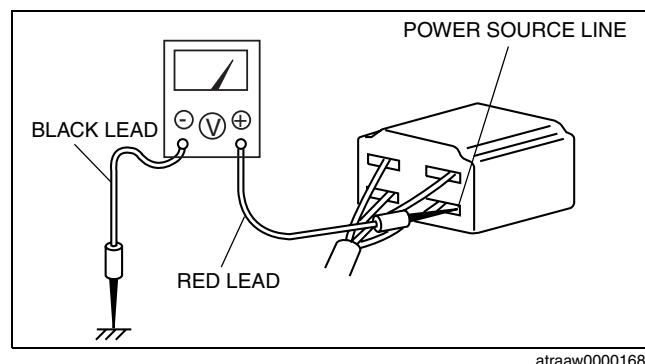
Caution

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



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.

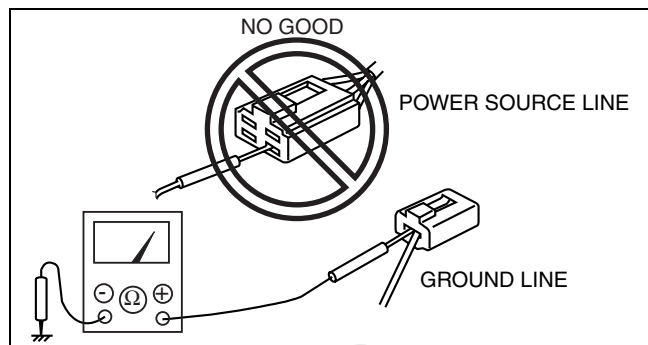


GENERAL INFORMATION

Ohmmeter

Caution

- Do not connect the ohmmeter to any circuit where voltage is applied. This will damage the ohmmeter.
- The ohmmeter is used to measure the resistance between two points in a circuit and to inspect for continuity and short circuits.

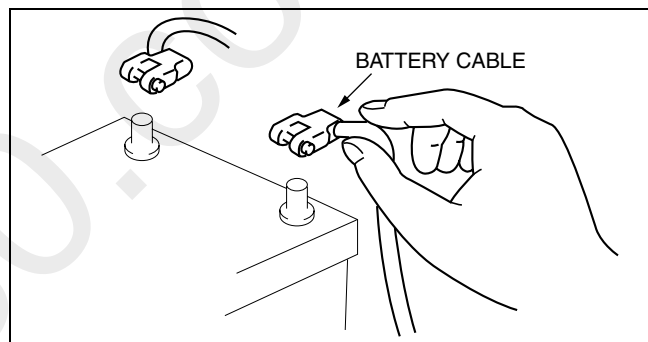


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Precautions Before Welding

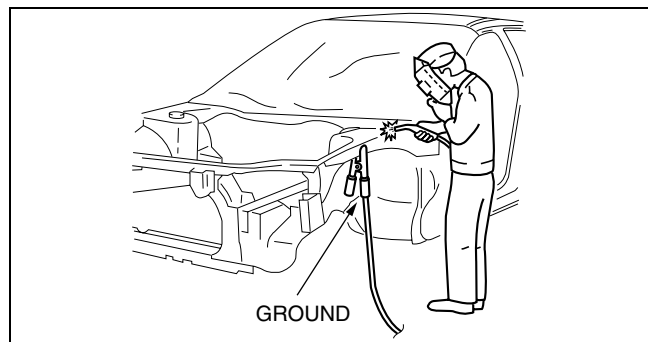
A vehicle has various electrical parts. To protect the parts from excessive current generated when welding, be sure to perform the following procedure.

1. Turn the ignition switch to the LOCK position.
2. Disconnect the battery cables.



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3. Securely connect the welding machine ground near the welding area.
4. Cover the peripheral parts of the welding area to protect them from weld spatter.



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GENERAL INFORMATION

JACKING POSITIONS

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Warning

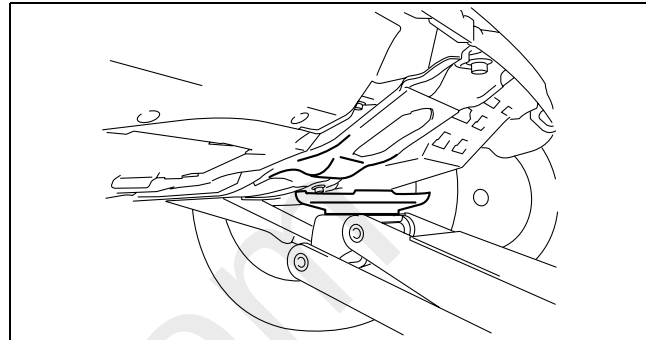
- Lifting a vehicle that is not stabilized is dangerous. The vehicle can slip off the lift and cause serious injury and/or vehicle damage. Make sure that the vehicle is on the lift horizontally by adjusting the height of the support at the end of the arm of the lift.

Caution

- Use safety stands to support the vehicle after it has been lifted.

Front

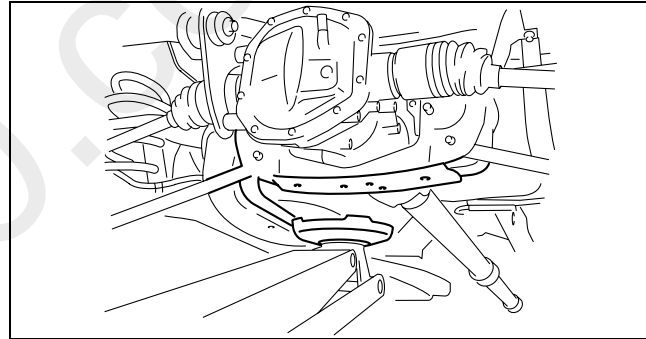
- At the bolt head of the lower control arm.



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Rear

- At the rear trailing arm.



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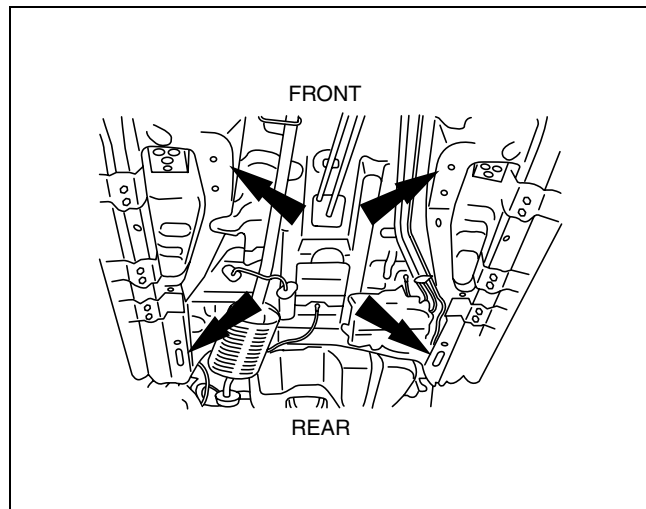
VEHICLE LIFT (2 SUPPORTS) AND SAFETY STAND (RIGID RACK) POSITION

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Vehicle Lift Positions

Warning

- Unstably lifting a vehicle is dangerous. The vehicle can slip off the lift and cause serious injury and/or vehicle damage. Make sure that the vehicle is on the lift horizontally by adjusting the height of support at the end of the arm of the lift.

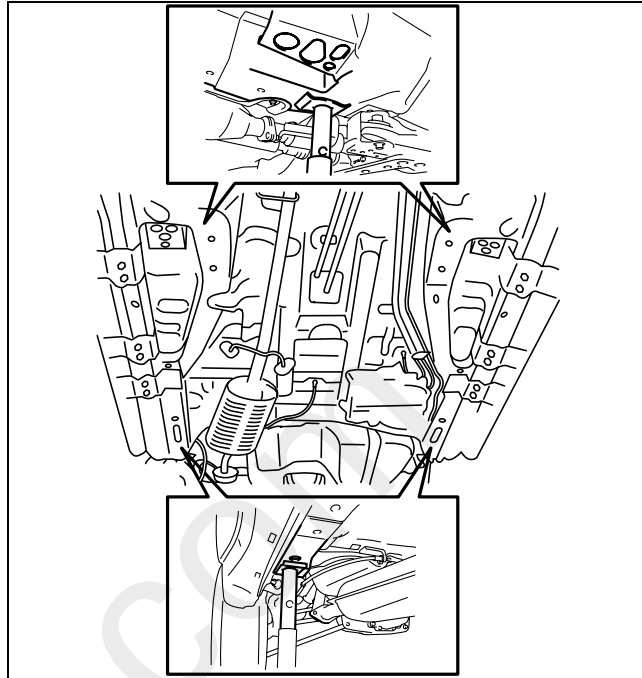


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GENERAL INFORMATION

Safety Stand Positions

- Front
 - At the torque box.
- Rear
 - At the trailing front frame.



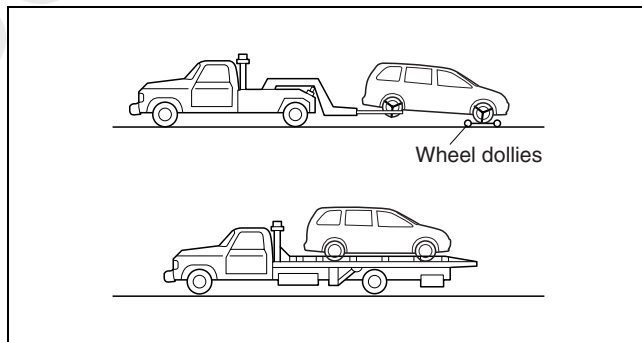
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TOWING

Towing

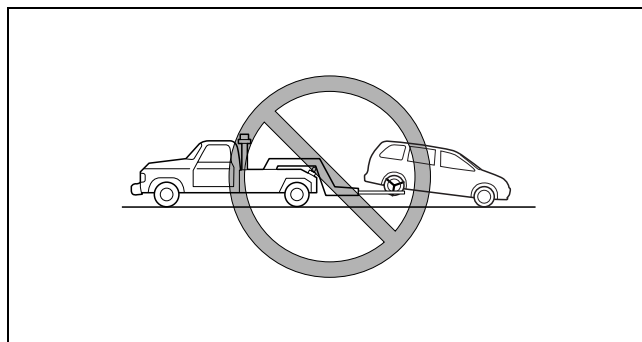
- Proper lifting and towing are necessary to prevent damage to the vehicle.
- Particularly when towing a 4×4 vehicle, where all the wheels are connected to the drive train, proper transporting of the vehicle is absolutely essential to avoid damaging the drive system. Government and local laws must be followed.
- A towed 4×4 vehicle must have all its wheels off the ground.



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Caution

- Don't tow the vehicle pointed backward with driving wheel on the ground. This may cause internal damage to the transaxle.

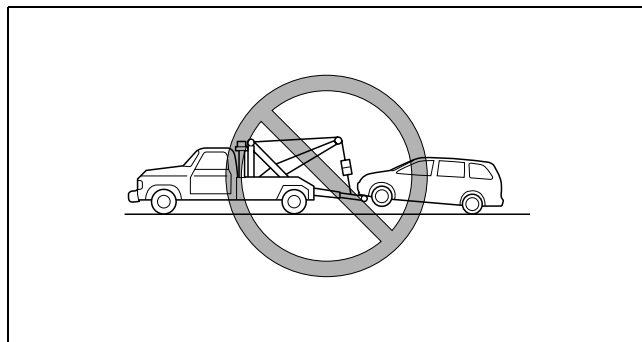


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GENERAL INFORMATION

Caution

- Don't tow with sling-type equipment. This could damage the vehicle. Use wheel-lift or flatbed equipment.

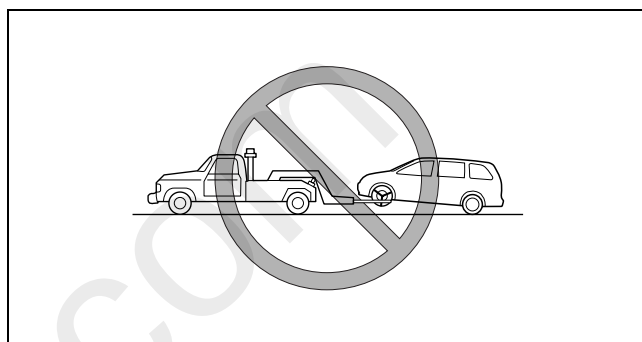


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Warning

- **Towing a 4×4 Vehicle:**
Towing a 4×4 vehicle with either the front or rear wheels on the ground is dangerous as the drive train could be damaged, or the vehicle could trail away from the tow track and cause an accident. Always tow a 4×4 vehicle with all four wheels off the ground. If the drive train has been damaged, transport the vehicle on a flatbed track.



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- If towing service is not available in an emergency, the vehicle may be towed with all four wheels on the ground using the towing hook at the front of the vehicle.
- Only tow the vehicle on paved surfaces for short distances at low speeds.

Caution

- Follow these instructions when towing the vehicle with all wheels on the ground.
 1. Shift to neutral.
 2. Turn the ignition switch to the ACC position.
 3. Release the parking brake.
- Remember that power assist for the brakes and steering will not be available when the engine is not running.

Towing Hooks

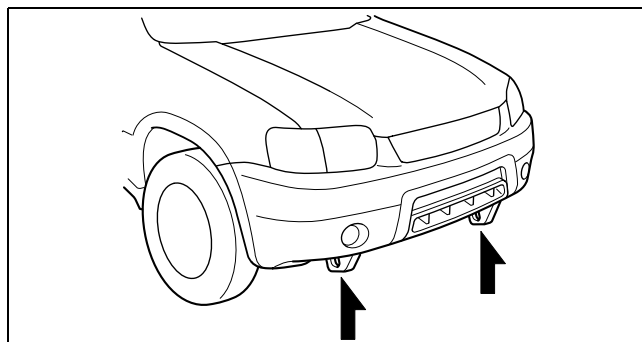
Caution

- The towing hooks should be used only in an emergency (to get the vehicle out of a ditch or a snow bank, for example).
- When using the towing hooks, always pull the cable or chain in a straight direction with respect to the hook. Apply no sideways force.

Note

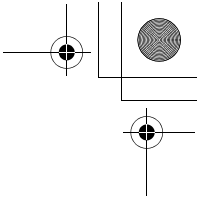
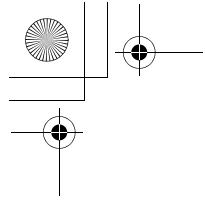
- When towing with chain or cable, wrap the chain or cable with a soft cloth near the bumper to prevent damage to the bumper.

Front



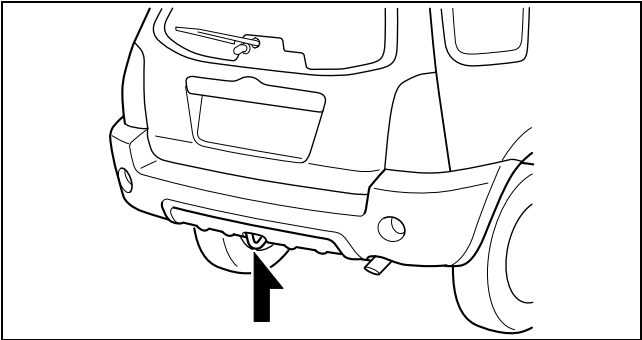
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GENERAL INFORMATION

Rear

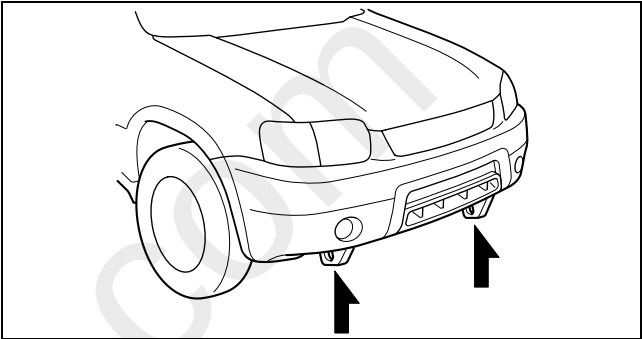


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TIEDOWN HOOK

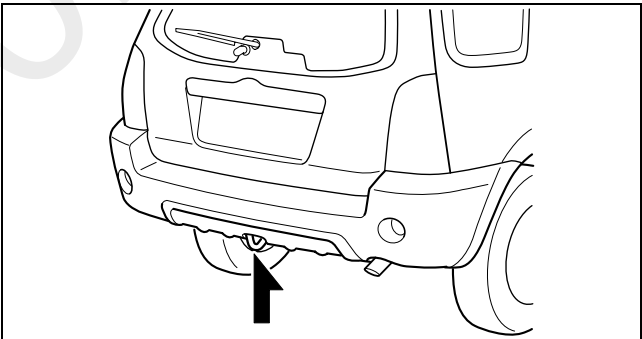
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Front



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Rear

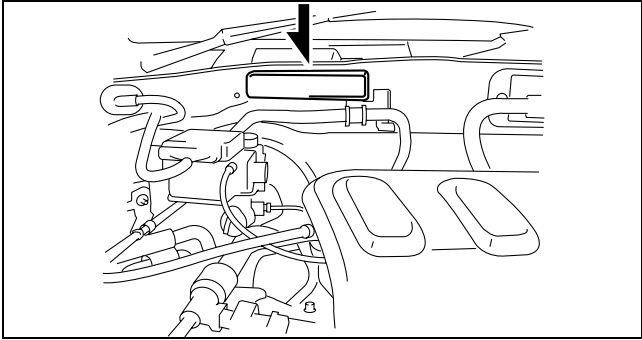


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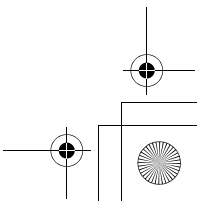
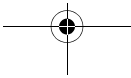
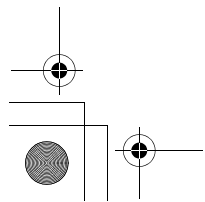
IDENTIFICATION NUMBER LOCATIONS

id000000800800

Vehicle Identification Number (VIN)

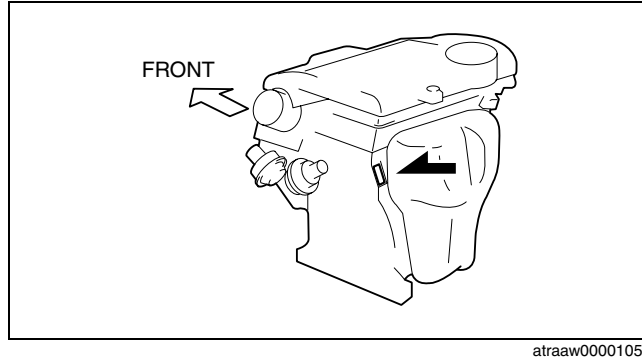


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GENERAL INFORMATION

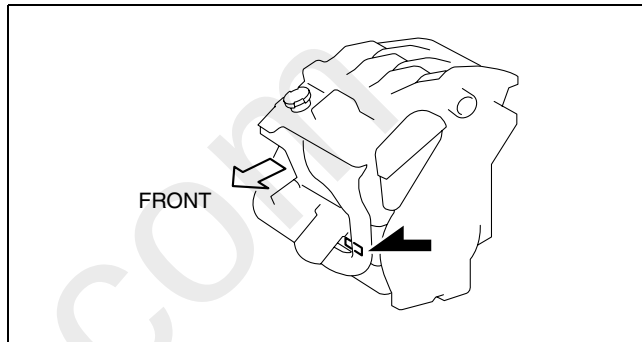
Engine Identification Number
L3



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AJ (3.0L Duratec)



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NEW STANDARDS

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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	
APP	Accelerator Pedal Position	—	Accelerator Pedal Position	
ACL	Air Cleaner	—	Air Cleaner	
A/C	Air Conditioning	—	Air Conditioning	
BARO	Barometric Pressure	—	Atmospheric Pressure	
B+	Battery Positive Voltage	V _B	Battery Voltage	
—	Brake Switch	—	Stoplight Switch	
—	Calibration Resistor	—	Corrected Resistance	#6
CMP sensor	Camshaft Position Sensor	—	Crank Angle Sensor	
LOAD	Calculated Load Voltage	—	—	
CAC	Charge Air Cooler	—	Intercooler	
CLS	Closed Loop System	—	Feedback System	
CTP	Closed Throttle Position	—	Fully Closed	
CPP	Clutch Pedal Position	—	Clutch Position	
CIS	Continuous Fuel Injection System	EGL	Electronic Gasoline Injection System	
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	

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GENERAL INFORMATION

New Standard		Previous Standard		Remark
Abbrevi- ation	Name	Abbrevi- ation	Name	
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	Mass Air Flow	—	Mass Air Flow	
MAF sensor	Mass Air Flow Sensor	—	Airflow Sensor	
MFL	Multiport Fuel Injection	—	Multiport Fuel Injection	
OBD	On-Board Diagnostic	—	Diagnosis/Self Diagnosis	
OL	Open Loop	—	Open Loop	
—	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	
PID	Parameter Identification	—	Parameter Identification	
—	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
RAM	Random Access Memory	—	—	
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 Solenoid B	—	Shift A Solenoid Valve	
—	Shift Solenoid C	—	2-3 Shift Solenoid Valve	
—	Shift Solenoid C	—	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	Throttle Position	—	—	
TP sensor	Throttle Position Sensor	—	Throttle Sensor	
TCV	Timer Control Valve	TCV	Timing Control Valve	#6

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GENERAL INFORMATION

New Standard		Previous Standard		Remark
Abbreviation	Name	Abbreviation	Name	
TCC	Torque Converter Clutch	—	Lockup Position	
TCM	Transmission (Transaxle) Control Module	—	EC-AT 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

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ABS	Antilock Brake System
ACC	Accessories
ALR	Automatic Locking Retractor
AMB	Ambient
ATF	Automatic Transaxle Fluid
ATX	Automatic Transaxle
BJB	Battery Junction Box
CAN	Controller Area Network
CCM	Comprehensive Component Monitor
CJB	Central Junction Box
CM	Control Module
CV	Constant Velocity
D.P.F.	Differential Pressure Feedback
EBD	Electronic Brakeforce Distribution
ELR	Emergency Locking Retractor
EPC	Electronic Pressure Control
GEM	Generic Electronic Module
HI	High
HLA	Hydraulic Lash Adjuster
HU	Hydraulic Unit
IDS	Integrated Diagnostic Software
IG	Ignition
INT	Intermittent
KOEO	Key On Engine Off
KOER	Key On Engine Running
LCD	Liquid Crystal Display
LF	Left Front
LH	Left Hand
LO	Low
LR	Left Rear
M	Motor

GENERAL INFORMATION

MAX	Maximum
MID	Medium
MIN	Minimum
O/D	Overdrive
OSS	Output Shaft Speed
PDS	Portable Diagnostic Software
POWER MOS FET	POWER Metal Oxide Semiconductor Field Effect Transistor
P/S	Power Steering
PTO	Power Take Off
P/W	Power Window
RF	Right Front
RH	Right Hand
RR	Right Rear
SAS	Sophisticated Air Bag Sensor
SCP	Standard Corporate Protocol
SRS	Supplemental Restraint System
SST	Special Service Tool
SS1	Shift Solenoid No.1
SS2	Shift Solenoid No.2
SW	Switch
TDC	Top Dead Center
TFT	Transaxle Fluid Temperature
TNS	Tail Number Side Lights
TSS	Turbine Shaft Speed
1GR	First Gear
2GR	Second Gear
3GR	Third Gear
3-2T/CCS	3-2 Timing/Coasting Clutch Solenoid
4GR	Fourth Gear
4×4	4-wheel 4-drive

PRE-DELIVERY INSPECTION

Pre-Delivery Inspection

Exterior

INSPECT and **ADJUST**, if necessary, the following items to specification:

- ☐ Glass, exterior bright metal and paint for damage
- ☐ Wheel lug nuts
- ☐ All weatherstrips for damage or detachment
- ☐ Tire pressures
- ☐ Headlight cleaner and fluid level (if equipped)
- ☐ Operation of bonnet release and lock
- ☐ Operation of liftgate window glass and fuel-filler lid opener
- ☐ Door operation and alignment including side door and back door
- ☐ Headlight aiming

INSTALL the following parts:

- ☐ Flap (front)
- ☐ Wheel caps or rings (if equipped)

Under bonnet—engine off

INSPECT and **ADJUST**, if necessary, the following items to specification:

- ☐ Fuel, engine coolant, and hydraulic lines, fittings, connections, and components for leaks
- ☐ Engine oil level
- ☐ Brake fluid level
- ☐ Windshield washer reservoir fluid level
- ☐ Radiator coolant level and specific gravity
- ☐ Tightness of water hose clamps
- ☐ Tightness of battery terminals, electrolyte level and specific gravity
- ☐ Differential oil level
- ☐ Accelerator cable and linkage for free movement (if equipped)

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GENERAL INFORMATION

Interior

INSTALL the following items:

☐ Fuse for accessories

INSPECT the operations of the following items:

☐ Seat controls (slide and recline) and headrests

☐ Folding rear seat

☐ Door locks, including childproof door locks

☐ Seat belts and warning system

☐ Ignition switch and steering lock

☐ Transmission/Transaxle range switch

☐ Warning buzzers

☐ Ignition key reminder alarm

☐ Air bag system using warning light

☐ Cruise control system (if equipped)

☐ Power door lock

☐ Shift-lock system (if equipped)

☐ Starter interlock

☐ All lights including warning, and indicator lights

☐ Horn, wipers, and washers

☐ Wiper blades performance

Clean wiper blades and windshield, if necessary

☐ Antenna

☐ Audio system

☐ Cigarette lighter and clock

☐ Power windows (if equipped)

☐ Heater, defroster, and air conditioner at various mode selections (if equipped)

INSPECT the following items:

☐ Presence of spare fuse

☐ Upholstery and interior finish

INSPECT and **ADJUST**, if necessary, the following items:

☐ Operation and fit of windows

☐ Parking brake

Under bonnet—engine running at operating temperature

INSPECT the following items:

☐ Automatic transmission/Transaxle fluid level

☐ Operation of idle-up system for electrical load, air conditioner or power steering (if equipped)

☐ Ignition timing

☐ Idle speed

☐ Operation of throttle position sensor

On hoist

INSPECT the following items:

☐ Underside fuel, coolant and hydraulic lines, fittings, connections, and components for leaks

☐ Tires for cuts or bruises

☐ Steering linkage, suspension, exhaust system, and all underside hardware for looseness or damage

Road test

INSPECT the following items:

☐ Brake operation

☐ Steering control

☐ Operation of gauges

☐ Squeaks, rattles, and unusual noises

☐ Engine general performance

☐ Emergency locking retractors and automatic locking retractors

☐ Cruise control system (if equipped)

☐ Operation of meters and gauges, squeaks, rattles, and abnormal noises

After road test

INSPECT for necessary owner information materials, tools, and spare tire in vehicle

The following items must be completed just before delivery to your customer.

☐ Load test battery and charge if necessary (Load test result: Volts)

☐ Adjust tire pressure to specification (Specified tire pressure is indicated on the door label.)

☐ Clean outside of vehicle

☐ Install fuses for accessories

☐ Remove seat and cabin carpet protective covers

☐ Vacuum inside of vehicle

GENERAL INFORMATION

SCHEDULED MAINTENANCE

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Scheduled Maintenance Table for Australia, New Zealand

Maintenance Interval	Number of months or kilometers, whichever comes first																	
	Months	3	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
	×1000 km	3	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
ENGINE																		
Engine valve clearance (for L3 engine)		Audible inspect every 120,000 km, if noisy, adjust																
Drive belts* ¹		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Engine oil* ²		I	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Engine oil filter* ²			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
COOLING SYSTEM																		
Cooling system		I		I		I		I		I		I		I		I		I
Engine coolant	FL22 type* ³	Replace at first 200,000 km or 10 years; after that, every 100,000 km or 5 years																
	Others	Replace at first 80,000 km or 4 years; after that, every 2 years																
FUEL SYSTEM																		
Air cleaner element* ⁴	for L3 engine	I			C			R			C			R			C	
	for AJ (3.0L Duratec) engine	I		I		R		I		R		I		R		I		R
Fuel filter						R				R				R				R
Fuel lines and hoses		I		I		I		I		I		I		I		I		I
IGNITION SYSTEM																		
Spark plugs	for L3 engine	Replace every 100,000 km																
	for AJ (3.0L Duratec) engine					R				R				R				R
EMISSION CONTROL SYSTEM																		
Evaporative system (if installed)				I		I		I		I		I		I		I		I
ELECTRICAL SYSTEM																		
Battery (for leakage and corrosion)		I		I		I		I		I		I		I		I		I
All electrical system* ⁸				I		I		I		I		I		I		I		I
CHASSIS and BODY																		
Brake fluid* ⁵		I	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R
Brake lines, hoses and connections		I		I		I		I		I		I		I		I		I
Parking brake			I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Power brake unit (Brake booster) and hoses				I		I		I		I		I		I		I		I
Disc brakes			I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Power steering fluid, lines, hoses and connections		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Steering operation and linkages		I		I		I		I		I		I		I		I		I
Front and rear suspension, ball joints and wheel bearing axial play				I		I		I		I		I		I		I		I
Automatic transaxle fluid level		I		I		I		I		I		I		I		I		I
Automatic transaxle fluid (for AJ (3.0L Duratec) engine)		*6																
Rear differential oil		Replace every 160,000 km *6*7																
Transfer oil		*6*7																
Drive shaft dust boots						I				I				I				I
Bolts and nuts on chassis and body		I		T		T		T		T		T		T		T		T
Exhaust system and heat shields		I	Inspect every 80,000 km															
Tire rotation		Rotate every 10,000 km																

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GENERAL INFORMATION

Maintenance Interval	Number of months or kilometers, whichever comes first																	
	Months	3	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
	×1000 km	3	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
Tires (including spare tire) (with inflation pressure adjustment)			I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I

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Chart symbols

I: Inspect: Inspect and clean, repair, adjust, or replace if necessary.

R: Replace

T: Tighten

C: Clean

Remarks

Emission control and related systems

- The ignition and fuel systems are highly important to the emission control system and to efficient engine operation.

All inspections and adjustments must be made by an Authorized Mazda Dealer.

- After the prescribed period, continue to follow the described maintenance at the recommended intervals.
- Refer below for a description of items marked* in the maintenance chart.

*1: Also inspect and adjust the power steering and air conditioner drive belts, if installed.

*2: If the vehicle is operated primarily under any of the following conditions, replace the engine oil and oil filter more often than the recommended intervals.

- Driving in dusty conditions
- Extended periods of idling or low speed operation
- Driving for long period in cold temperatures or driving regularly at short distance only

*3: Use FL22 type coolant in vehicles with the inscription "FL22" on the radiator cap itself or the surrounding area. Use FL22 when replacing the coolant.

*4: If the vehicle is operated in very dusty or sandy areas, clean and if necessary, replace the air cleaner element more often than the recommended intervals.

*5: If the brakes are used extensively (for example, continuous hard driving or mountain driving) or if the vehicle is operated in extremely humid climates, replace the brake fluid annually.

*6: If the vehicle is operated primarily under any of the following conditions, replace the automatic transaxle fluid, rear differential oil, and transfer oil every 50,000 km.

- Towing a trailer or using a car-top carrier
- Driving in dusty sandy, wet conditions
- Extended periods of idling or low speed operation
- Repeated short trips of less than 16 km

Otherwise, no replacement is necessary.

*7: If this component has been submerged in water, the oil should be replaced.

*8: This is a full function check of electrical systems such as lights, wiper and washer systems (including wiper blades), and power windows.

Scheduled Maintenance Table for General (L.H.D. R.H.D.)

Maintenance Interval	Number of months or kilometers (miles), whichever comes first																
	Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
	×1000 km	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
	×1000 miles	6.2 5	12. 5	18. 75	25	31. 25	37. 5	43. 75	50	56. 25	62. 5	68. 75	75	81. 25	87. 5	93. 75	100
ENGINE																	
Engine valve clearance (for L3 engine)	Audible inspect every 120,000 km (75,000 miles), if noisy, adjust																
Drive belts* ¹		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Engine oil* ²		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Engine oil filter* ²		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
COOLING SYSTEM																	
Cooling system			I		I		I		I		I		I		I		I
Engine coolant	FL22 type* ³										R						
	Others	Replace every 2 years															

GENERAL INFORMATION

Maintenance Interval	Number of months or kilometers (miles), whichever comes first																
	Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
	×1000 km	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
	×1000 miles	6.2 5	12. 5	18. 75	25	31. 25	37. 5	43. 75	50	56. 25	62. 5	68. 75	75	81. 25	87. 5	93. 75	100
FUEL SYSTEM																	
Air cleaner element* ⁴	for L3 engine		C		C		R		C		C		R		C		C
	for AJ (3.0L Duratec) engine (Thailand/Indonesia)	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R
	for AJ (3.0L Duratec) engine (Others)		I		R		I		R		I		R		I		R
Fuel filter					R				R				R				R
Fuel lines and hoses			I		I		I		I		I		I		I		I
IGNITION SYSTEM																	
Spark plugs	for L3 engine	Replace every 100,000 km (62,500 miles)															
	for AJ (3.0L Duratec) engine				R				R				R				R
EMISSION CONTROL SYSTEM																	
Evaporative system (if installed)			I		I		I		I		I		I		I		I
ELECTRICAL SYSTEM																	
Battery (for leakage and corrosion)			I		I		I		I		I		I		I		I
All electrical system* ⁸			I		I		I		I		I		I		I		I
CHASSIS and BODY																	
Brake fluid* ⁵		I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R
Brake lines, hoses and connections			I		I		I		I		I		I		I		I
Parking brake		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Power brake unit (Brake booster) and hoses			I		I		I		I		I		I		I		I
Disc brakes		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Power steering fluid, lines, hoses and connections		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Steering operation and linkages			I		I		I		I		I		I		I		I
Front and rear suspension, ball joints and wheel bearing axial play			I		I		I		I		I		I		I		I
Automatic transaxle fluid level			I		I		I		I		I		I		I		I
Automatic transaxle fluid (for AJ (3.0L Duratec) engine)		* ⁶															
Rear differential oil (for 4WD)		Replace every 160,000 km (100,000 miles) * ⁶ * ⁷															
Transfer oil (for 4WD)		* ⁶ * ⁷															
Drive shaft dust boots					I				I				I				I
Bolts and nuts on chassis and body			T		T		T		T		T		T		T		T
Body condition (for rust, corrosion and perforation)		Inspect annually															
Exhaust system and heat shields		Inspect every 80,000 km (50,000 miles)															
Tire rotation		Rotate every 10,000 km (6,250 miles)															
Tires (including spare tire) (with inflation pressure adjustment)		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
AIR CONDITIONER SYSTEM																	
Air filter (if installed)			R		R		R		R		R		R		R		R

Chart symbols

I: Inspect: Inspect and clean, repair, adjust, or replace if necessary.

R: Replace

T: Tighten

C: Clean

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GENERAL INFORMATION

Remarks

Emission control and related systems

- The ignition and fuel systems are highly important to the emission control system and to efficient engine operation.
All inspections and adjustments must be made by an Authorized Mazda Dealer.
 - After the prescribed period, continue to follow the described maintenance at the recommended intervals.
 - Refer below for a description of items marked* in the maintenance chart.
- *1: Also inspect and adjust the power steering and air conditioner drive belts, if installed.
- *2: If the vehicle is operated primarily under any of the following conditions, replace the engine oil and oil filter more often than the recommended intervals.
- Driving in dusty conditions
 - Extended periods of idling or low speed operation
 - Driving for long period in cold temperatures or driving regularly at short distance only
- *3: Use FL22 type coolant in vehicles with the inscription "FL22" on the radiator cap itself or the surrounding area. Use FL22 when replacing the coolant.
- *4: If the vehicle is operated in very dusty or sandy areas, clean and if necessary, replace the air cleaner element more often than the recommended intervals.
- *5: If the brakes are used extensively (for example, continuous hard driving or mountain driving) or if the vehicle is operated in extremely humid climates, replace the brake fluid annually.
- *6: If the vehicle is operated primarily under any of the following conditions, replace the automatic transaxle fluid, rear differential oil, and transfer oil every 50,000 km (31,250 miles).
- Towing a trailer or using a car-top carrier
 - Driving in dusty sandy, wet conditions
 - Extended periods of idling or low speed operation
 - Repeated short trips of less than 16 km (10 miles)
 - Otherwise, no replacement is necessary
- *7: If this component has been submerged in water, the oil should be replaced.
- *8: This is a full function check of electrical systems such as lights, wiper and washer systems (including wiper blades), and power windows.

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Scheduled Maintenance Table for Taiwan

Maintenance Interval	Number of months or kilometers (miles), whichever comes first																
	Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
	×1000 km	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
	×1000 miles	6.2 5	12. 5	18. 75	25	31. 25	37. 5	43. 75	50	56. 25	62. 5	68. 75	75	81. 25	87. 5	93. 75	100
ENGINE																	
Engine valve clearance (for L3 engine)		Audible inspect every 120,000 km (75,000 miles), if noisy, adjust															
Drive belts* ¹		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Engine oil* ²		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Engine oil filter* ²		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
COOLING SYSTEM																	
Cooling system			I		I		I		I		I		I		I		I
Engine coolant	FL22 type* ³	Replace at first 200,000 km (125,000 miles) or 10 years; after that, every 100,000 km (62,000 miles) or 5 years															
	Others	Replace every 2 years															
FUEL SYSTEM																	
Air cleaner element* ⁴	for L3 engine		C		C		R		C		C		R		C		C
	for AJ (3.0L Duratec) engine		I		R		I		R		I		R		I		R
Fuel filter					R				R				R				R
Fuel lines and hoses* ⁵			I		I		I		I		I		I		I		I
IGNITION SYSTEM																	
Spark plugs	for L3 engine	Replace every 100,000 km (62,500 miles)															
	for AJ (3.0L Duratec) engine					R					R					R	

GENERAL INFORMATION

Maintenance Interval	Number of months or kilometers (miles), whichever comes first																
	Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
	×1000 km	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
	×1000 miles	6.2 5	12. 5	18. 75	25	31. 25	37. 5	43. 75	50	56. 25	62. 5	68. 75	75	81. 25	87. 5	93. 75	100
EMISSION CONTROL SYSTEM																	
Evaporative system (if installed) ^{*5}		I		I		I		I		I		I		I		I	
ELECTRICAL SYSTEM																	
Battery (for leakage and corrosion)		I		I		I		I		I		I		I		I	
All electrical system ^{*9}		I		I		I		I		I		I		I		I	
CHASSIS and BODY																	
Brake fluid ^{*6}		I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R
Brake lines, hoses and connections		I		I		I		I		I		I		I		I	
Parking brake		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Power brake unit (Brake booster) and hoses		I		I		I		I		I		I		I		I	
Disc brakes		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Power steering fluid, lines, hoses and connections		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Steering operation and linkages		I		I		I		I		I		I		I		I	
Front and rear suspension, ball joints and wheel bearing axial play		I		I		I		I		I		I		I		I	
Automatic transaxle fluid level		I		I		I		I		I		I		I		I	
Automatic transaxle fluid (for AJ (3.0L Duratec) engine)		^{*7}															
Rear differential oil (for 4WD)		Replace every 160,000 km (100,000 miles) ^{*7*8}															
Transfer oil (for 4WD)		^{*7*8}															
Drive shaft dust boots				I				I				I				I	
Bolts and nuts on chassis and body		T		T		T		T		T		T		T		T	
Body condition (for rust, corrosion and perforation)		Inspect annually															
Exhaust system and heat shields		Inspect every 80,000 km (50,000 miles)															
Tire rotation		Rotate every 10,000 km (6,250 miles)															
Tires (including spare tire) (with inflation pressure adjustment)		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
AIR CONDITIONER SYSTEM																	
Air filter (if installed)		R		R		R		R		R		R		R		R	

Chart symbols

I: Inspect: Inspect and clean, repair, adjust, or replace if necessary.

R: Replace

T: Tighten

C: Clean

Remarks

Emission control and related systems

- The ignition and fuel systems are highly important to the emission control system and to efficient engine operation.
All inspections and adjustments must be made by an Authorized Mazda Dealer.
- After the prescribed period, continue to follow the described maintenance at the recommended intervals.
- Refer below for a description of items marked* in the maintenance chart.
 - ^{*1}: Also inspect and adjust the power steering and air conditioner drive belts, if installed.
 - ^{*2}: If the vehicle is operated primarily under any of the following conditions, replace the engine oil and oil filter more often than the recommended intervals.
 - Driving in dusty conditions
 - Extended periods of idling or low speed operation
 - Driving for long period in cold temperatures or driving regularly at short distance only
 - ^{*3}: Use FL22 type coolant in vehicles with the inscription "FL22" on the radiator cap itself or the surrounding area. Use FL22 when replacing the coolant.
 - ^{*4}: If the vehicle is operated in very dusty or sandy areas, clean and if necessary, replace the air cleaner element more often than the recommended intervals.

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GENERAL INFORMATION

- ^{*5}: According to regulations, failure to perform maintenance on these items will not void your emissions warranties. However, Mazda recommends that all maintenance services be performed at the recommended time or mileage/kilometer period to ensure long-term reliability.
- ^{*6}: If the brakes are used extensively (for example, continuous hard driving or mountain driving) or if the vehicle is operated in extremely humid climates, replace the brake fluid annually.
- ^{*7}: If the vehicle is operated primarily under any of the following conditions, replace the automatic transaxle fluid, rear differential oil, and transfer oil every 50,000 km (31,250 miles).
- Towing a trailer or using a car-top carrier
 - Driving in dusty sandy, wet conditions
 - Extended periods of idling or low speed operation
 - Repeated short trips of less than 16 km (10 miles)
 - Otherwise, no replacement is necessary
- ^{*8}: If this component has been submerged in water, the oil should be replaced.
- ^{*9}: This is a full function check of electrical systems such as lights, wiper and washer systems (including wiper blades), and power windows.

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Scheduled Maintenance Service (Specific Work Required)

- The specific work required for each maintenance item is listed in the following table. (Please refer to the section applicable to the model serviced.)

Maintenance Item	Specific Work Required
ENGINE	
Engine valve clearance	Inspect engine valve clearance.
Engine timing belt	Replace engine timing belt.
Engine timing belt auto tensioner	Replace engine timing belt auto tensioner.
Drive belts	Inspect for wear, cracks, fraying and tension.
Engine oil	Replace engine oil and inspect for leakage.
Engine oil filter	Replace engine oil filter and inspect for leakage.
COOLING SYSTEM	
Cooling system (Including coolant level adjustment)	Check engine coolant level and quality, and inspect for leakage.
Radiator cap	Inspect radiator cap.
Engine coolant	Replace engine coolant.
FUEL SYSTEM	
Idle speed	Check engine idle rpm.
Idle mixture	Inspect the CO and HC concentrations (see W/M).
Choke system	Check system operation.
Air cleaner element	Inspect dirt, oil and damage.
	Clean air cleaner element (by blowing air).
	Replace air cleaner element.
Fuel filter	Replace fuel filter.
Fuel injection pump inlet filter	Clean fuel injection pump inlet filter.
Fuel lines and hoses	Inspect for cracks, leakage and loose connection.
Fuel lines, hoses and connections	
Fuel injection system	Update to injection amount correction with WDS (see W/M).
Fuel system (Drain water)	Drain water in fuel system.
Diesel particulate filter	Replace diesel particulate filter.
Fuel additive for diesel particulate filter	Fill up fuel additive.
IGNITION SYSTEM	
Initial ignition timing	Check initial ignition timing.
Spark plugs	Inspect for wear, damage, carbon, plug gap and high-tension lead condition.
	Replace spark plugs.
Ignition cables condition/security	Inspect for damage, condition and connection.
EMISSION CONTROL SYSTEM	
Evaporative system	Check system operation (see W/M), vapor lines, vacuum fitting hoses and connection.
Evaporative emission control system	
Crankcase emission control system	Check system operation (see W/M), PCV valve, blow-by lines, vacuum fitting hoses and connection.

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Maintenance Item	Specific Work Required
E.G.R system	Check system operation (see W/M), vacuum fitting hoses and connection. MZR-CD (RF turbo) engine: Update to MAF correction for E.G.R control with WDS (see W/M).
Air intake system	Update to MAF correction (see W/M).
Throttle positioner system	Check the diaphragm and system operation, vacuum fitting hoses and connection.
Dash pot	Check system operation.
ELECTRICAL SYSTEM	
Battery electrolyte level and specific gravity	Check battery electrolyte level and specific gravity.
Battery condition	Check battery for corroded or loose connections and cracks.
Battery	Check battery for leakage and corrosion.
All electrical system Lighting system and windshield wipers and washer	Check function of lighting system, windshield wiper (including wiper blade condition), washer and power windows.
Head light alignment	Check head light alignment.
CHASSIS AND BODY	
Brake and clutch pedals Brake pedals	Check pedal height and free play.
Brake fluid	Check brake fluid level and for leakage. Replace brake fluid.
Clutch fluid	Check Clutch fluid level and for leakage.
Brake lines, hoses and connections	Inspect for cracks, damage, chafing, corrosion, scars, swelling and fluid leakage.
Parking brake	Check parking lever stroke.
Power brake unit and hoses Power brake unit (Brake booster) and hoses	Check vacuum lines, connections, and check valve for improper attachment, air tightness, cracks chafing and deterioration.
Disc brakes	Inspect caliper for correct operation and fluid leakage, brake pads for wear. Check disc plate condition and thickness. Test for judder and noise.
Drum brakes	Inspect brake drum for wear and scratches: brake lining for wear, peeling and cracks; wheel cylinder for fluid leakage. Test for judder and noise.
Manual steering gear oil	Check manual gear oil level.
Power steering fluid, lines, hoses and connections Power steering fluid and lines	Check power steering fluid level and lines for improper attachment, leakage, cracks, damage, loose connections, chafing and deterioration.
Steering operation and gear housing Steering linkages tie rod ends and arms Steering operation and linkages	Check that the steering wheel has the specified play. Be sure to check for changes, such as excessive play, hard steering or strange noises. Check gear housing and boots for looseness, damage and grease/gear oil leakage. Check ball joint, dust cover and other components for looseness, wear, damage and grease leakage.
Front and rear suspension and ball joints Front suspension ball joints Front and rear suspension, ball joints and wheel bearing axial play	Inspect for grease leakage, crack, damage and looseness. Inspect for grease leakage, crack, damage, looseness and wheel bearing play/noise.
Wheel bearing axial play	Inspect for wheel bearing play/noise.
Manual transmission/transaxle oil	Check manual transmission/transaxle oil level and for leakage. Replace manual transmission/transaxle oil.
Automatic transmission/transaxle fluid level	Check automatic transmission/transaxle fluid level.
Automatic transmission/transaxle fluid	Replace automatic transmission/transaxle fluid.
Front and rear differential oil Front differential oil Front axle oil Rear differential oil Rear axle oil	Check front and rear differential oil level and inspect for leakage. Replace front and rear differential oil.
Transfer oil	Check transfer oil level inspect for leakage. Replace transfer oil
Front and rear wheel bearing grease Front wheel bearing grease	Remove wheel bearing and replace wheel bearing grease.

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GENERAL INFORMATION

Maintenance Item	Specific Work Required
Wheel bearing axial play	Inspect wheel bearing play and noise.
Propeller shaft joints	Lubricate propeller shaft joints.
Drive shaft dust boots	Inspect for grease leakage, crack, damage and looseness.
Wheel nuts	Tighten wheel nuts.
Bolts and nuts on chassis and body Bolts and nuts on seats	Tighten bolts and nuts fastening suspension components, members and seat frames.
Body condition (for rust, corrosion and perforation)	Inspect body surface for paint damage, rust, corrosion and perforation.
Exhaust system and heat shields Exhaust pipe connections	Inspect for damage, corrosion, looseness of connections and gas leakage.
Tire rotation	Rotate tires.
Tires (Including spare tire) (with inflation pressure adjustment)	Check air pressure and inspect tires for tread wear, damage, cracks; and wheels for damage and corrosion.
Flat tire repair kit	Check tire repair fluid expiration date.
Hinges and catches	Lubricate hinges and catches of doors, trunk lid and hood.
Underside of vehicle	Inspect underside of vehicle (floor pans, frames, fuel lines, around exhaust system etc.) for damage and corrosion.
Road test	Check brake operation/clutch operation/steering control/operation of meters and gauges/squeaks, rattles, or unusual noises/engine general performance/emergency locking retractors.
Diagnostic trouble code by current diagnostic tool	Check diagnostic trouble code with current diagnostic tool (see W/M).
AIR CONDITIONER SYSTEM	
Air filter	Replace air filter.

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“Peace of Mind Inspection” schedule

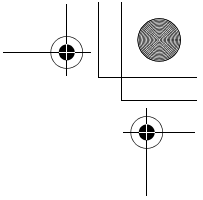
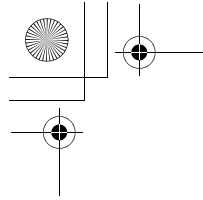
The first scheduled service for your vehicle is not due until 15,000 km or 12 months in service, whichever occurs first. Your Ford dealer offers a complimentary inspection after 3000 km, or 2 months, just to ensure that everything is as it should be. Simply contact your Authorised Ford dealer for a booking, and they will happily inspect your vehicle.

The “Peace of Mind Inspection” expires after 5,000 km or 4 months after delivery.

“Peace of Mind Inspection” Service schedule

General Inspection	
While performing the following operation:	Check for signs of leakage, wear or damage on the engine, transmission, rear axle, exhaust system/heat shields, pipes/hoses, steering/suspension linkages, drive shaft rubber couplings, door hinges and body
Also:	Clarify features of vehicles to customer. Complete customer instructions. Check Ford computer network to ensure there are no outstanding campaign or recall actions on the vehicle
Outside the vehicle	
Doors	Check door adjustment
Water entry	Check for body related water leaks
Under the bonnet	
Engine	Inspect engine oil Inspect drive belt condition Inspect cooling system condition (including clamps)
Fuel system	Inspect air cleaner, intake manifold tube and hoses
Ignition system	Inspect condition/security of ignition leads
General	Inspect deterioration/leaks in engine compartment Inspect cruise control actuator cable (where fitted) Inspect fluid levels Inspect vacuum system hoses Inspect hydraulic lines and hoses Inspect battery security and terminals Check ECU Self Test-auto trans, engine (including timing and idle speed), ABS Inspect clutch pedal travel Inspect manual transmission oil
Under the vehicle	
Exhaust	Inspect exhaust for signs of leakage, wear or damage
Heat shields	Inspect heat shields for correct fitment and signs of wear or damage
Transmission	Check transmission for leaks

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GENERAL INFORMATION

Suspension/Steering	Visually check security/installation of suspension/steering and inspect for damage/wear
Hoses and connections	Inspect brake and fuel hoses, lines and connections
Tires	Inspect tires for wear/damage
Underbody	Inspect underbody condition; report condition
Functional checks	
	Check operation of ABS indicator light (where fitted) Inspect steering column lock operation Inspect starter inhibitor switch (automatic transmission) Inspect lights, turn signals, instruments and controls Inspect service brake and dual circuit warning light Inspect park brake and warning light (including handbrake travel) Inspect automatic transmission/transmission linkage Check T-bar operation Inspect clutch operation Inspect manual transmission/transmission linkage Inspect engine driveability Inspect cruise control operation Inspect steering and suspension control Inspect squeaks, rattles, wind noise and powertrain noise. Check Climate Control system performance

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