GENERAL INFORMATION

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IMPORTANT SAFETY NOTICE

The vehicle is a machine comprising a great number of parts. Basically speaking, the vehicle is potentially hazard. However, one can handle it safely if he has the required knowledge.

Correct service methods and repair procedures are very vital for assuring not only the safety and reliability of a vehicle, but also the safety of service personnel concerned.

The methods and procedures contained in this manual describe in a general way the techniques which the manufacturer has recommended. Thus, they will contribute to ensuring the reliability of the products. The contents of the servicing operations come in a wide variety of ways. Moreover, techniques, tools and parts necessary for each operation are different widely from each other.

This manual does not cover all details of techniques, procedures, parts, tools and handling instructions which are necessary for these operations, for such coverage is impossible. Hence, any one who obtains this manual is expected first to make his responsible selection as to techniques, tools and parts which are necessary for servicing the vehicle concerned properly. Furthermore, he must assume responsibility for his actions in connection with his own safety.

Therefore, one should not perform any service if he is not capable of making responsible selection and/or if he can not understand the contents herein described, for this manual has been prepared for experienced service personnel.

WARNINGS, CAUTIONS AND NOTES

All these symbols have their specific purposes, respectively.

WARNING:

- This symbol means that there is the possibility of personal injury of the operator himself or the nearby workers if the operator fails to follow the operating procedure prescribed in this manual.

CAUTION:

- This symbol means that there is the possibility of damage to the component being repaired if the operator fails to follow the operating procedure prescribed in this manual.

NOTE:

- To accomplish the operation in an efficient manner, additional instructions concerning the operation are given in this section.

The following list describes general WARNINGS:

- Always wear safety glasses for eye protection.
- Use safety stands whenever a procedure requires you to be under the vehicle.
- Be sure that the ignition switch is always in the OFF position, unless otherwise required by the procedure.
- Set the parking brake when working on the vehicle.
- Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide.
- Keep yourself and your clothing away from moving parts, when the engine is running, especially from the fan and belts.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter and muffler.
- Do not smoke while working on a vehicle.
- To avoid injury, always remove rings, watches, loose hanging jewelry, and loose clothing before beginning to work on a vehicle.
- Keep hands and other objects clear of the radiator fan blades! The electric cooling fan is mounted on the radiator and can start to operate at anytime by a rise in coolant temperature

or turning ON of the air conditioner switch in the case of vehicles equipped with an air conditioner. The electric cooling fan is also mounted on the condenser for air conditioner and starts to operate anytime when the air conditioner switch is turned “ON”. For this reason care should be taken to ensure that the electric cooling fan motor is completely disconnected when working under the hood.

The UNITS used in this manual are showed as the SI UNIT (International System of Unit).

“Example”

24.5 - 34.3 N·m

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HOW TO USE THIS MANUAL

CONTENTS OF EXPLANATION

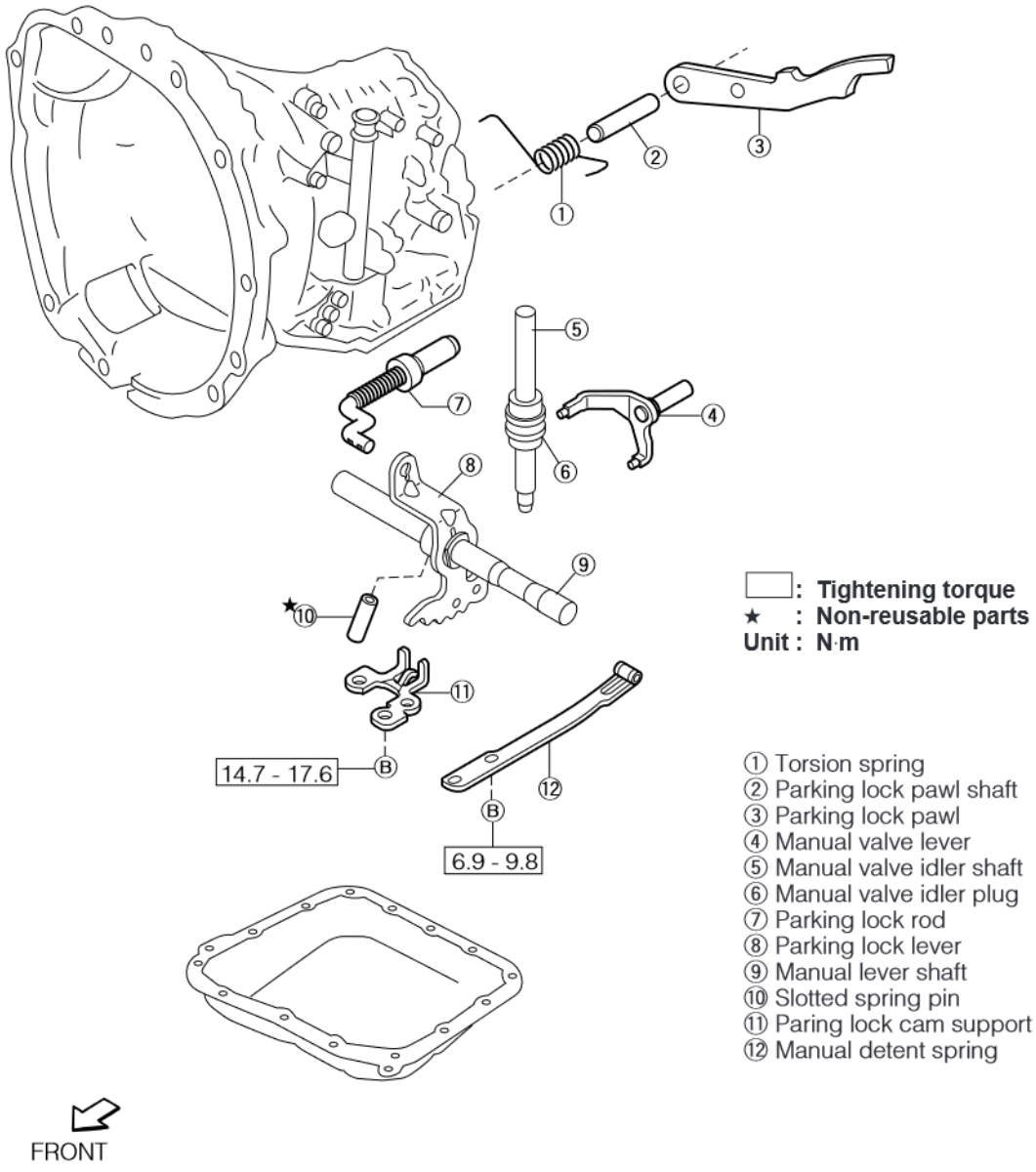
1. Schematic Diagram of Components

(1) The schematic diagram of components that appears at the beginning of each section describes the nomenclature and installed conditions of each component. Furthermore the tightening torque is posted in the figure.

(2) Those parts whose reuse is not permitted bear a "★" mark for an identification purpose. Be certain to replace these parts with new ones during the assembly.

(3) During the assembly, be sure to apply grease to those parts indicated by the mark in the figure.

(Example)



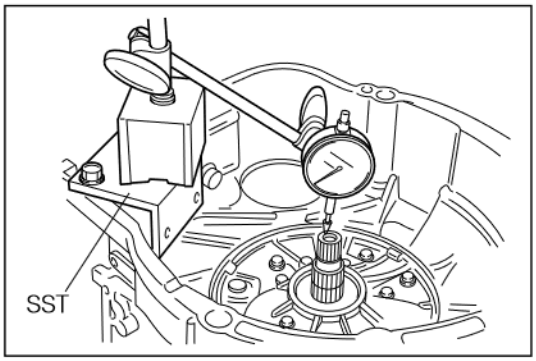
2. Servicing Procedure

(1) In principle, the servicing procedure is described in the following sequence given below: Removal → Inspection → Installation, and Disassembly → Inspection → Assembly.
(2) The explanation covers detailed servicing methods, specifications and notes.
(3) The main point of each item explains the servicing section and servicing procedure, using illustrations.

(Example)

15. Remove the stator shaft & oil pump assembly.
    (1) Measure the input shaft end play, using a dial gauge and following SST.
    SST: 09350-87202-000 (09351-87210-000)
    Specified Value: 0.26 - 0.88 mm

    NOTE:
    • Be sure to record the measured value for a guide during the assembly.



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(4) The inspection in this manual describes only checking operation. Therefore, if you find any malfunction, replace any defective parts with new ones.

3. SST

For those operations which require the use of any SST, the SST numbers concerned are given in bold letters.

4. Service Specifications

Service specifications are indicated in bold letters or enclosed by heavy lines. Be certain to confirm the specifications concerned.

5. Tightening Torque

For those operations which require the control of tightening torque, the relevant tightening torque is given in bold letters. Be certain to confirm the tightening torque concerned.

6. Definitions of Terms

Specified Value..... A value which represents the allowable range during the inspection and adjustment.
Limit ..... A maximum or a minimum limit which the value should not exceed or fall below.

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ABBREVIATION CODES

The abbreviation codes that appear in this service manual stand for the following, respectively.

Abbreviation code	Original word	Meaning
API	American Petroleum Institute	The standards set forth by the American Petroleum Institute (abbreviated as API Classification) have been employed to evaluate and classify properties of various oils. Engine oils for gasoline engines are classified as SD, SE, SF and so on, whereas engine oils for diesel engines are classified as CC, CD and so on.
Assy, A/Y or Ay	Assembly	Refers to an assembled component comprising more than two single parts or sub-assembly parts.
A/T, AT	Automatic Transmission	Refers to automatic transmission
EFI	Electronic Fuel Injection	Refers to electronic fuel injection.
EJ-BE	EJ-D EFI	EJ engine equipped with EFI system
IGN	Ignition	Refers to ignition
ISC	Idle Speed Control	Refers to idle speed control
LH	Left Hand	Refers to left side.
LHD, L.H.D.	Left-Hand Drive	Left-hand drive vehicle.
MP	Multipurpose	Means that the following item has multi-purposes.
RH	Right Hand	Refers to right side.
RHD, R.H.D.	Right-Hand Drive	Right hand drive vehicle
S/A	Sub-Assembly	Refers to a component comprising more than two single parts which are welded, staked, or studded to each other to form a single component.
SAE	Society of Automotive Engineers	For example, automotive oils are designated as SAE so and so number. These designation numbers have been set forth by the Society of Automotive Engineers in the United States of America (SAE). The larger the SAE number, the higher the oil viscosity. Conversely, the smaller the SAE number, the lower the oil viscosity.
SST	Special Service Tool	Refers to a tool designed for a specific purpose.
STD	Standard	When referring to automotive parts, “standard” represents those parts which have been installed originally by the manufacturer and which have standard dimensions.
T	Torque	Refers to tightening torque.
VSV	Vacuum Switching Valve	Refers to vacuum switching valve.
W/	With	Denotes that the following part is attached.

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The abbreviation codes that appear in the figure stand for the following, respectively.

Ⓑ	Bolt	Ⓢ	Screw
Ⓝ	Nut	Ⓦ	Washer

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GENERAL SERVICE INSTRUCTION

1. Use fender covers, seat covers and floor sheets so that the vehicle may not get dirty or be scratched.

2. Jacking up
   (1) When only the front section or rear section of the vehicle is jacked up, be sure to place chocks at the wheels so as to insure safe operations.
   (2) When the vehicle has been jacked up, be sure to support the vehicle at the specified section using the safety stands. (Refer to the relevant Chassis section in the manual for the vehicle concerned.)

3. Handling instructions related to battery.
   (1) Before you start performing the electrical works, make certain to disconnect the battery ground cable terminal from the negative (–) terminal of the battery.
   NOTE:
   - Before disconnecting the battery ground cable terminal from the negative (–) terminal of the battery, be sure to read out the diagnosis code of the EFI systems if it equipped.
   - After reconnect the battery ground cable terminal to the negative terminal of the battery, be sure to reset the watch or radio, if vehicle equipped with such equipments.

   (2) When it becomes necessary to disconnect the battery power supply for the purpose of carrying out checks or repairs, always disconnect the negative (–) terminal of the battery ground cable from negative terminal of the battery first.
   (3) To avoid damaging battery plates, after the terminal nut has been loosened, pull out the battery ground cable terminal straight upward, rather than turning or prying the terminal.
   NOTE:
   - Be sure to employ the battery terminal puller (commercially available) to remove battery ground cable terminal from the negative terminal of the battery, if encountered any difficulty.

   (4) Clean the battery terminal posts or battery ground terminals, using a cloth. Never use a file or other adhesive agents.
   (5) When connecting the battery ground cable terminal to the battery, first the battery ground cable terminal should be fitted onto the battery post with the attaching nut in a loose state.
   Then, tighten the nut. Never tap the terminal onto the battery post, using the hammer or spanner wrench or the like.
   (6) As for the cover at the positive (+) terminal side, be sure to install it at the correct position.

4. For increased work efficiency and improved accuracy, be sure to utilize the SSTs (Special Service Tools) effectively.

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