

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.

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

“Example”

24.5 - 34.3 N·m

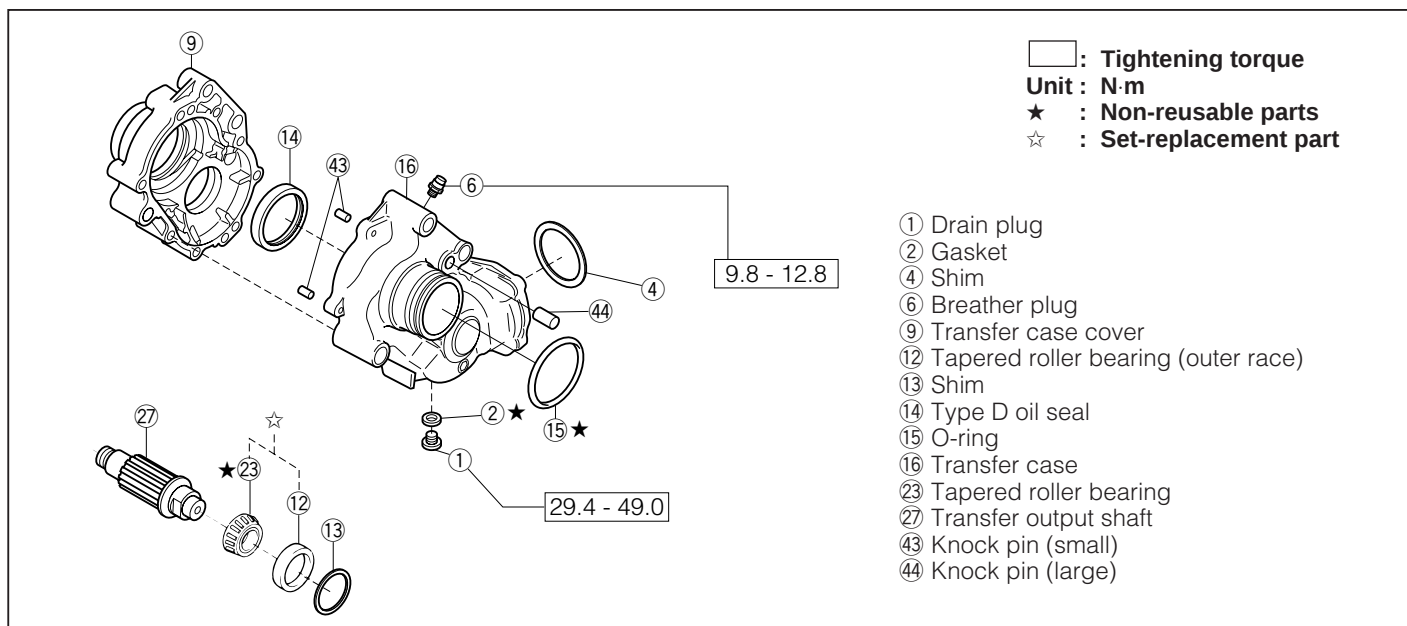
HOW TO USE THIS MANUAL

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) The parts bear a "☆" represent the set-replacement parts. Hence, make sure to replace them as a set.
- (4) During the assembly, be sure to apply grease to those parts indicated by the mark in the figure.

(Example)



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2. Servicing Procedure

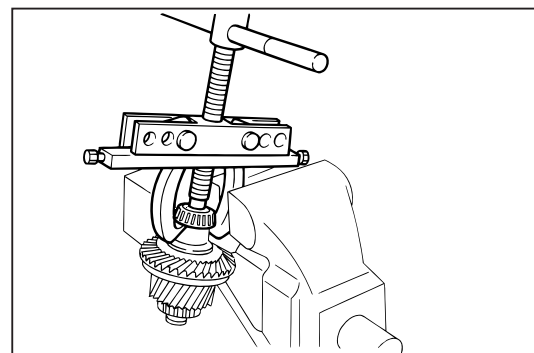
- (1) In principle, the servicing procedure is described in the following sequence given below:
Preliminary inspection → Removal → Inspection → Disassembly, and Installation → Inspection → Assembly → Inspection.
- (2) The explanation covers detailed servicing methods, specifications and notes.
- (3)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

(Example)

4. Remove the tapered roller bearing, using a vice in combination with the following SST.
SST: 09950-20017-000

NOTE:

- Be very careful not to drop the output gear.



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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.

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-DE	EJ-D EFI	EJ engine equipped with EFI system
IGN, IG	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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SERVICE INSTRUCTIONS

1. Keep your job site always clean. As for disassembled parts, first clean them before you proceed to the next operation. (Be very careful not to wash aluminum and rubber parts with alkaline chemicals.) As regards rubber parts, such as O-rings and oil seals, do not wash them with washing oil (white gasoline, etc.).
2. Prior to the disassembling, be sure to wipe sand and mud off the external section of the transfer so that sand and mud may not admit into the inside during the disassembling and assembling.
3. During the disassembly, make sure not to lose any parts.
4. Since some parts resemble in shape, identify each part by referring to parts catalogs. Furthermore, take precautionary measures, such as putting tags on the parts during disassembly so that no wrong assembly may occur.
5. Be very careful not to damage the lip section of an oil seal during operation.
6. Never reuse oil seals and bearings removed.
7. Care must be exercised to ensure that no pressing force is applied to the balls during the press-fitting of a ball bearing.
8. When securing a part in a vice, be sure to interpose aluminum sheets.
9. Be sure to replace any snap ring exhibiting scores or deformation with a new one.
10. During the assembly, apply the designated gear oil to the rotating and sliding sections of gears and oil seals.

Designated Oil: SAE 80W-90, API GL-5

11. After completion of assembling, make sure that the rotation of the shafts is smooth.
12. After completion of assembling, make sure that no oil leakage or oozing is present at each of the mating surfaces and plug sections.
13. After completion of assembling, fill the transfer with the specified amount of the designated oil.

Designated Oil: SAE 80W-90, API GL-5

Specified Amount: 0.4 liter

14. After completion of assembling the oil seal section, be sure to leave it for at least one hour. Never fill oil or drive the vehicle right away.