

MANUAL TRANSMISSION

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MMT00001-00000

SPECIFICATIONS

Driving method		2WD	4WD
Item		Specifications	
TRANSMISSION TYPE		5HA	
Engine type		EJ-DE	
Type	Forward gears	Constant-mesh type	
	Reverse gear	Selective sliding type	
Gear ratio	1st gear	3.181	←
	2nd gear	1.842	←
	3rd gear	1.250	←
	4th gear	0.916	←
	5th gear	0.750	←
	Reverse gear	3.142	←
Final reduction gear ratio		4.500	4.642
Number of differential side gear teeth		16	
Number of differential pinion teeth		10	
Speedometer gear ratio (driven/drive)		16/4	21/5
Oil used	Type	SAE 75W-85 or 75W-90, API GL-3 or GL-4	
	Capacity	liter	2.1 - 2.25

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INSTRUCTIONS

This section explains the removal/installation procedures for the transmission assembly from or to the vehicle.

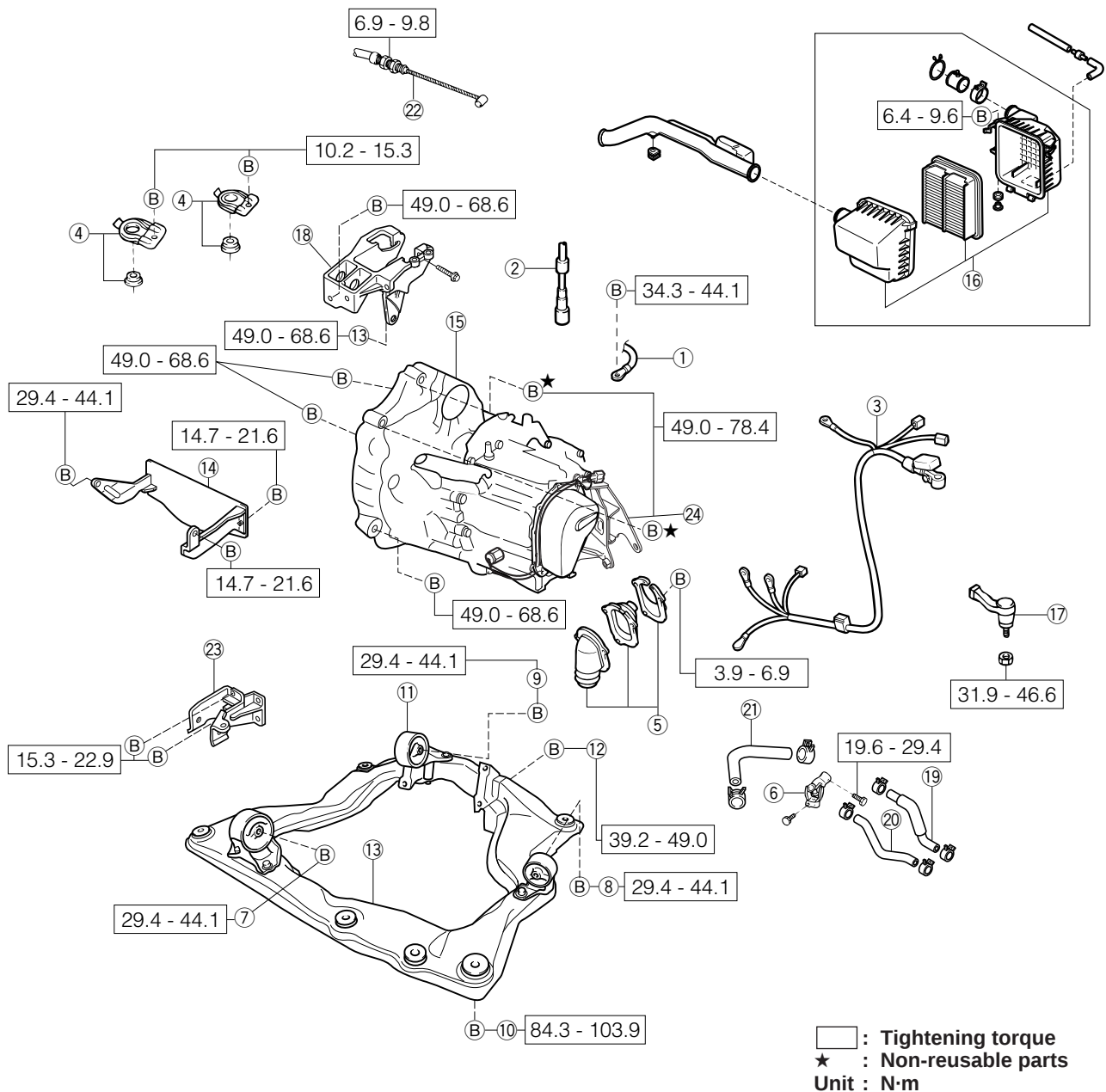
For disassembling, checking and assembling procedures for the transmission assembly, refer to the separate Service Manual for Type M5H Series Manual Transmission.

Service Manual: TYPE M5H Series Manual Transmission No. 9728 (Published in October, 1998)

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TRANSMISSION ASSEMBLY

COMPONENTS



- ① Ground wire
- ② Speedometer drive cable (Transmission side)
- ③ Engine No. 2 wire
- ④ Radiator upper bracket
- ⑤ Steering shaft dust cover
- ⑥ Steering shaft universal joint
- ⑦ Bolt (Engine mounting front bracket × insulator)
- ⑧ Bolt (Engine mounting left bracket × insulator)
- ⑨ Bolt (Engine mounting rear bracket × insulator)
- ⑩ Bolt (Front frame × body)

- ⑪ Engine mounting rear insulator S/A
- ⑫ Bolt (Steering gear bracket × front frame)
- ⑬ Front frame S/A
- ⑭ Power train stiffener
- ⑮ Transaxle Ay
- ⑯ Air cleaner Ay
- ⑰ Tie-rod end S/A
- ⑱ Engine mounting rear bracket
- ⑲ Heater hose No. 1
- ⑳ Heater hose No. 2
- ㉑ Fuel hose
- ㉒ Throttle cable
- ㉓ Engine mounting front bracket
- ㉔ Left mount bracket

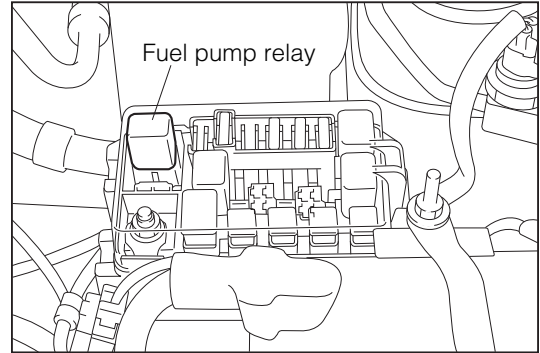
REMOVAL

CAUTION:

- When working on the fuel system, never allow any open flame to be brought near the working site.
- When disconnecting the fuel hose, take appropriate measures to prevent fuel from splashing.
- When the cooling water is still hot, never open the radiator cap and drain plug nor disconnect the water hose.
- When the oil is still hot, never remove the drain plug of the transmission.

MMT00006-00000

1. Release the fuel pressure, following the procedure given below.
 - (1) Turn OFF the ignition switch.
 - (2) Remove the fuel pump relay.
 - (3) Start the engine. Keep the engine idling, until it dies out.
 - (4) Turn OFF the ignition switch. Then, install the fuel pump relay.
 - (5) Leave the engine, until it cools down.



MMT00007-00003

2. Disconnect the cable from the negative (–) terminal of the battery.

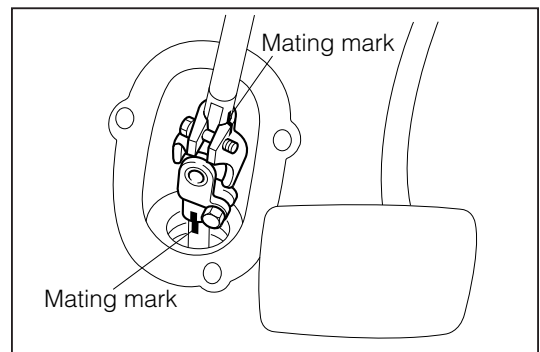
NOTE:

- It should be noted that the diagnosis results and the memory of the radio, etc. will be erased when the cable is disconnected from the negative (–) terminal of the battery.

3. Disconnect the clutch release control cable.
4. Remove the front bumper.
5. Drain the cooling water from the radiator.
6. Remove the radiator assembly.
7. Drain the transmission oil by removing the drain plug and gasket of the transmission.
8. Remove the front wheels.
9. Remove the stabilizer bar.
10. Remove the front exhaust pipe assembly.
11. Remove the transfer in the case of 4WD vehicles. (Refer to the TR section.)
12. Pull out the drive shafts at the transmission side.
13. Remove the shift selecting rod.

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14. Removal of steering shaft universal joint assembly
 - (1) Put mating marks on the steering gear assembly, steering main shaft assembly and steering shaft universal joint assembly, respectively.
 - (2) Remove the steering shaft universal joint assembly.



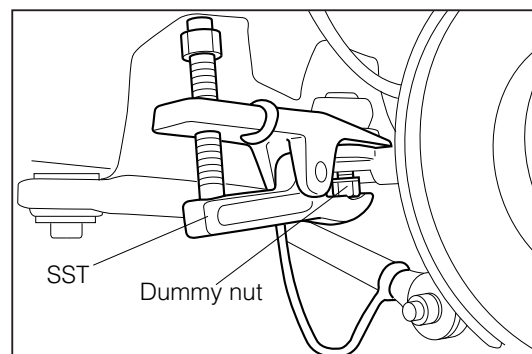
MMT00009-00004

15. Separate the steering knuckles from the tie-rod end sub-assemblies, using the following SSTs.

SST: 09661-87701-000

NOTE:

- Be sure to install a dummy nut when setting the SST so that the threaded portion of the tie-rod end may not be damaged.
- Be sure to suspend the SST by means of a cord.

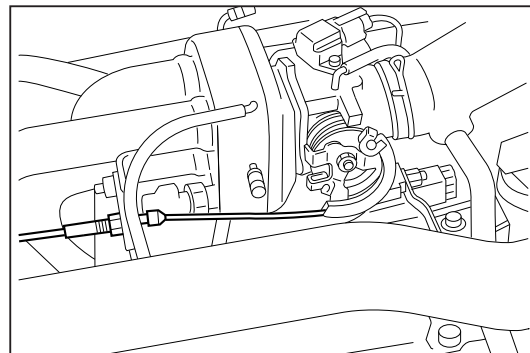


MMT00010-00005

16. Remove the acceleration control cable assembly.
17. Remove the power steering oil reservoir.

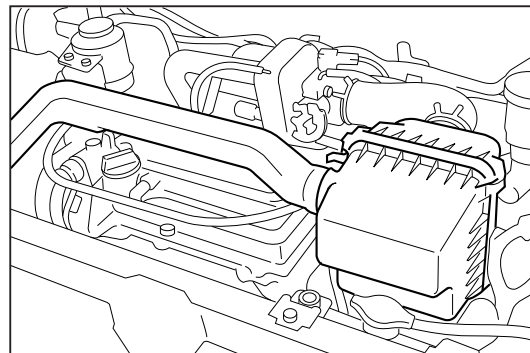
NOTE:

- Be very careful not to cut the pipe.



MMT00011-00006

18. Remove the air cleaner assembly.

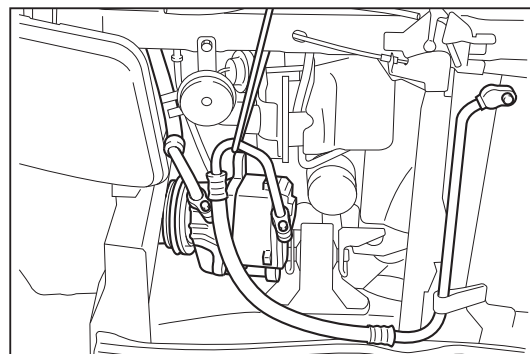


MMT00012-00007

19. Remove the magnet clutch compressor. Then, suspend the compressor, using a cord, etc.

NOTE:

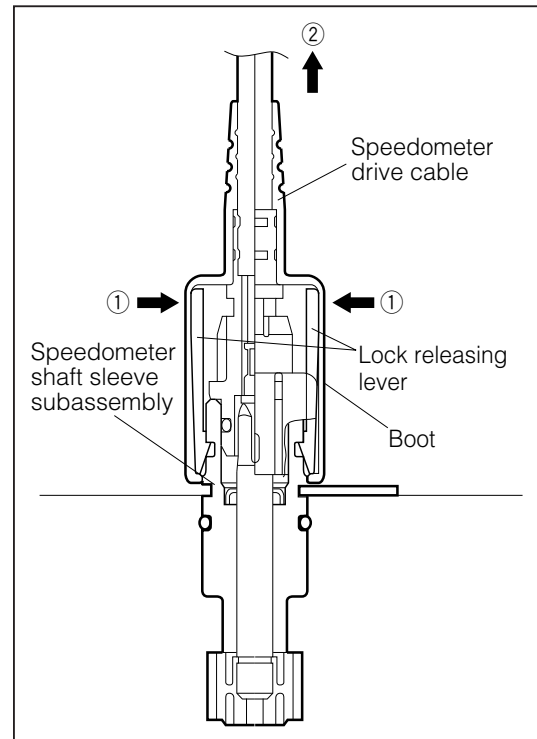
- Be very careful not to cut the pipe.



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20. Removal of speedometer drive cable assembly

- (1) Hold the lever over the boot ①, then, pull the lock releasing lever inside the boot toward the cable side ②.

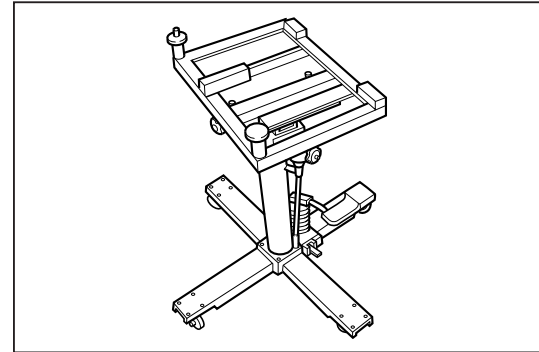


MMT00014-00009

21. Removal of front frame subassembly

- (1) Disconnect the connector of the engine wire harness from the engine control computer and pull the connector toward the engine compartment.
- (2) Separate the engine wires from the vehicle by detaching the connectors, clamps, etc.
- (3) Disconnect the ground wires of each harness, engine section and transmission section.
- (4) Positively secure the following SST on a high-transmission jack.

SST: 09994-87201-000



MMT00015-00010

NOTE:

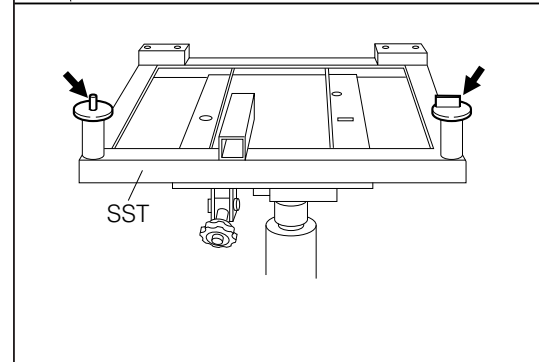
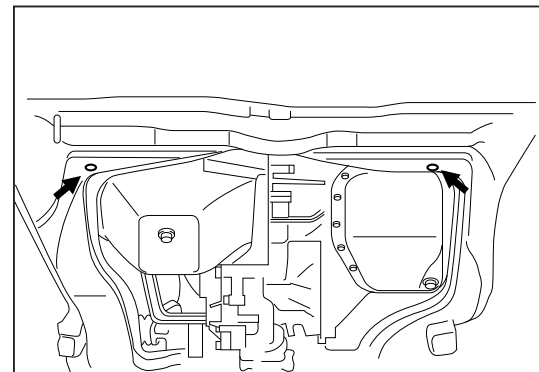
- In cases where no high-transmission jack is used, be sure to positively secure the SST on a rigid rack, etc. Then, the following operations should be carried out by moving the vehicle (two-post lift) up and down.

- (5) Operate the high-transmission jack so that the SST may be set to the front frame subassembly. (Set the protruding section of the SST to the bolt hole (the hole located at the vehicle rear side among the two holes) for attaching the stabilizer bar bracket (right side).)

NOTE:

- Be sure to wind a vinyl tape, etc. around the protruding section of the SST so as to prevent the bolt hole from being damaged.

- (6) Remove the attaching bolts and nuts of the front frame subassembly.



MMT00016-00011

- (7) Remove the front frame subassembly together with the engine assembly and transmission assembly from the vehicle by operating the high-transmission jack.

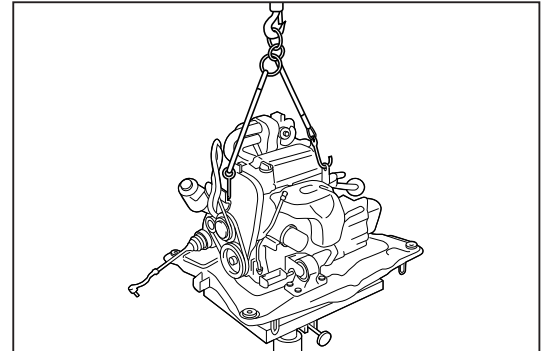
NOTE:

- Be sure to perform the removal operation slowly while making sure that no connector, hose, etc. remains connected and there is no binding, etc.
- Care must be exercised so that the front frame assembly may not interfere with the drive shaft and lower arm.

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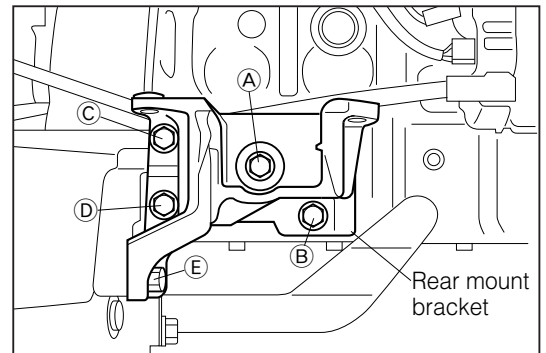
22. Removal of rear mount bracket

- (1) Support the engine, using a chain block.
(2) Remove the bolts connecting the insulator to the rear mount bracket.



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- (3) Remove the bolts (A) - (E).
(4) Remove the rear mount bracket.

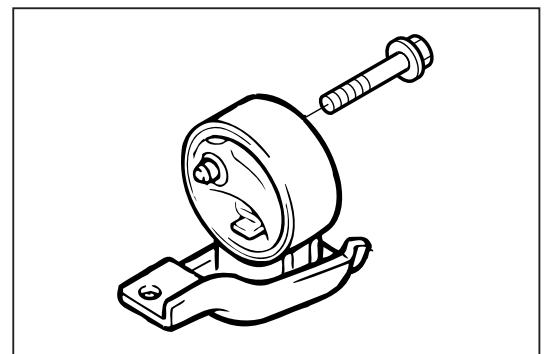


MMT00019-00013

23. Remove the bolts connecting the insulator to the left mount bracket.
24. Remove the four bolts connecting the engine assembly to the transmission assembly.
25. Remove the power train stiffener.
26. Remove the transmission assembly.
27. Remove the clutch.

NOTE:

- For the removal procedure for the clutch, refer to the separate Service Manual (No. 9728) for Type M5H Series Manual Transmission.



MMT00020-00014

28. Remove the clutch release bearing.

NOTE:

- For the removal procedure for the clutch release bearing, refer to the separate Service Manual (No. 9728) for Type M5H Series Manual Transmission.

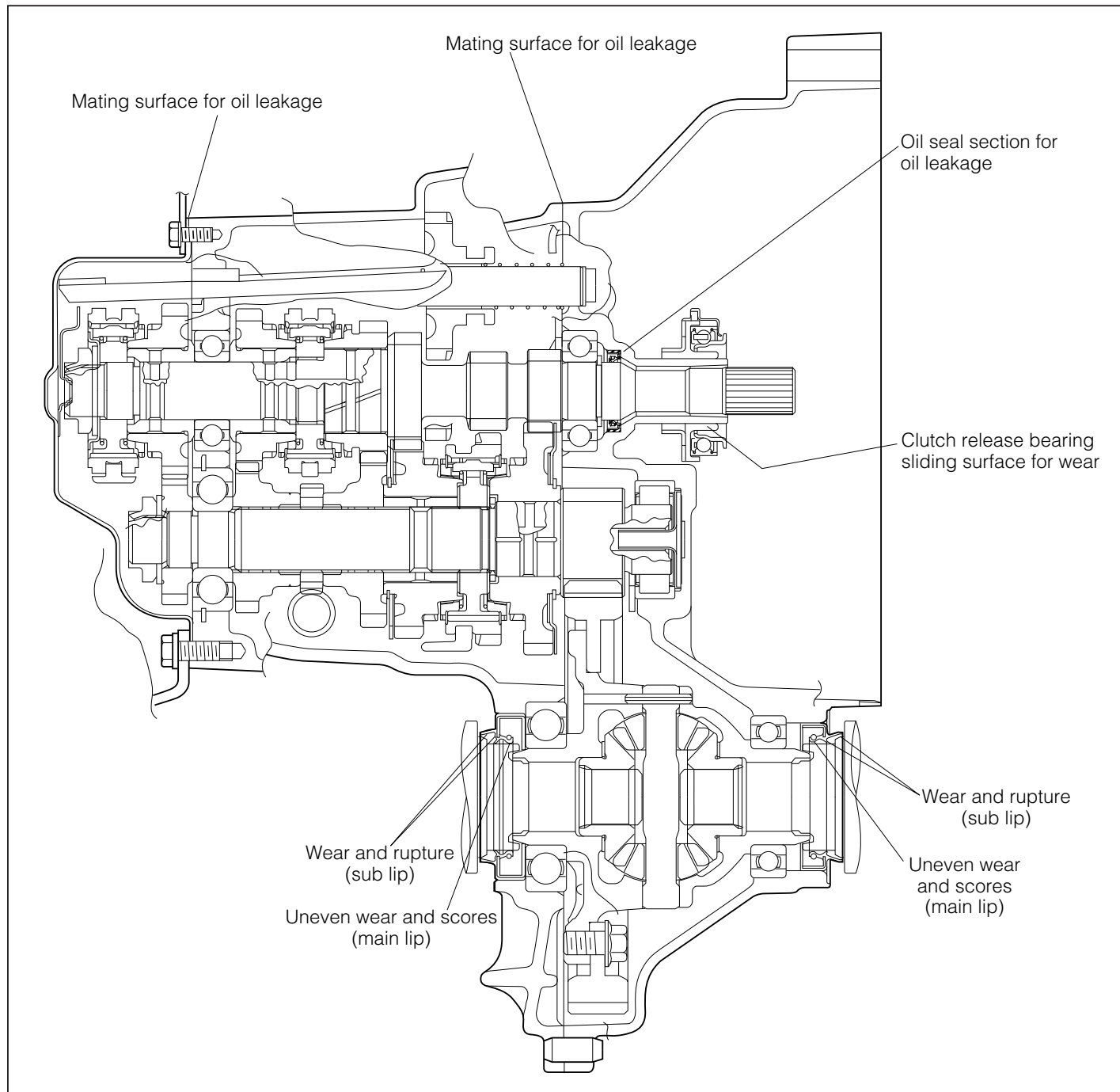
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INSPECTION

1. Ensure that the following sections exhibit no oil leakage.
 - (1) Oil seal section of input shaft
 - (2) Mating surface between clutch housing and transmission case
 - (3) Mating surface between transmission case and transmission rear cover
2. Check the clutch release section.
 - (1) Check that the clutch release bearing sliding section of the clutch housing exhibits no abnormal wear and scores.
3. Check the oil seal at the drive shaft attaching section.
 - (1) Main lip section for uneven wear and scores
 - (2) Sub-lip section for wear and rupture

NOTE:

- In cases where any abnormality is found in the steps 1 to 3 above, refer to the separate Service Manual (No. 9728) for Type M5H Series Manual Transmission.



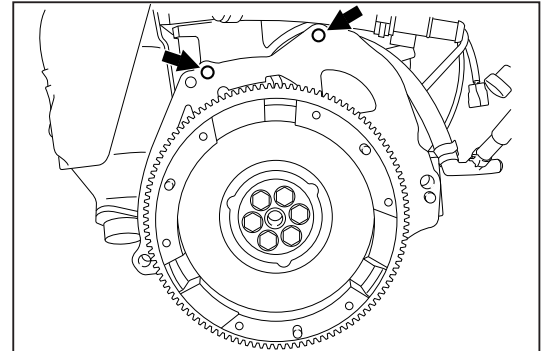
INSTALLATION

In principle, reverse the disassembling procedure to perform the installation.

The following shows the main points of the installation.

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1. Points for connecting between engine assembly and transmission assembly
 - (1) Clean the seal bolt holes of the engine block.
 - (2) Assemble the transmission to the engine straight, while aligning the knock pin positions. At this time, care must be exercised so that no excessive bending force may be applied to the input shaft of the transmission.
 - (3) Tighten the four direct-connecting bolts to the specified torque.
Tightening Torque: 49.0 - 69.0 N·m

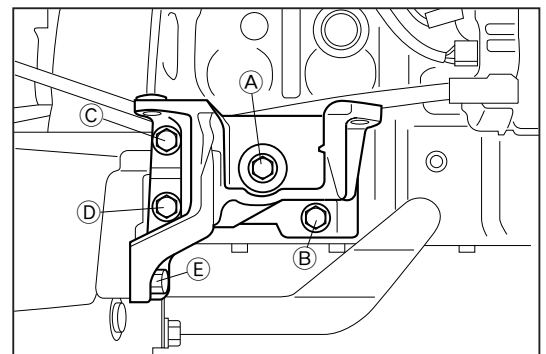


MMT00025-00016

NOTE:

- Be sure to use the two bolts with seal at the upper side.
- Be sure to use new bolts with seal.

2. Points for installation of rear mount bracket
 - (1) Temporarily tighten the bolt (A) to the engine block.
 - (2) Tighten the bolts (B), (C) and (D) to the specified torque.
 - (3) Tighten the bolts (A) and (E) to the specified torque.
Tightening Torque: 49.0 - 68.6 N·m

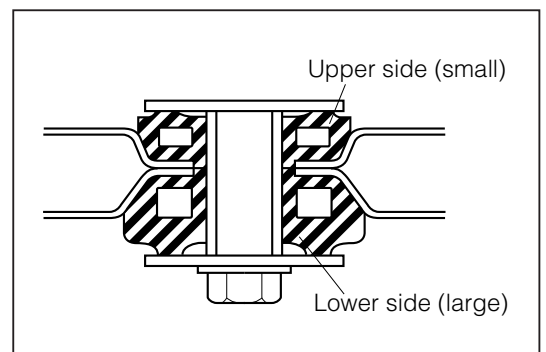


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3. Points for installation of front frame
 - (1) Attach the bolt, while facing the cushion rubber in the direction indicated in the right figure.

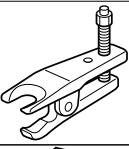
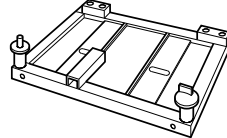
CAUTION:

- Make sure that the cushion rubber is installed in the correct direction of up and down sides as well as front and reverse sides.



MMT00027-00018

SSTs

Shape	Part No. and name	Purpose
	09611-87701-000 Tie-rod end puller	Removal of tie-rod end
	09994-87201-000 Engine frame holder	Removal and installation of engine

MMT00028-00019

TIGHTENING TORQUE

Tightening components	Tightening torque	
	N·m	kgf·m
Throttle cable × Cable bracket	6.9 - 9.8	0.7 - 1.0
Installation of air cleaner assembly	6.3 - 9.4	0.64 - 0.96
Installation of steering shaft universal joint	19.6 - 29.4	2.0 - 3.0
Connection of ground wire	34.3 - 44.1	3.5 - 4.5
Installation of radiator upper bracket	10.2 - 15.3	1.04 - 1.56
Installation of steering shaft dust cover	3.9 - 6.9	0.4 - 0.7
Installation of tie-rod end subassembly	31.9 - 46.6	3.25 - 4.75
Steering gear bracket × Front frame	39.2 - 49.0	4.0 - 5.0
Front frame × Body	84.3 - 103.9	8.6 - 10.6
Power train stiffener × Engine assembly (front side)	29.4 - 44.1	3.0 - 4.5
Power train stiffener × Engine assembly (rear side)	14.7 - 21.6	1.5 - 2.2
Power train stiffener × Transmission assembly	14.7 - 21.6	1.5 - 2.2
Engine mounting front bracket × Engine assembly	15.3 - 22.9	1.56 - 2.34
Engine mounting front bracket × Insulator	44.1 - 53.9	4.5 - 5.5
Engine mounting rear bracket × Engine assembly	49.0 - 68.6	5.0 - 7.0
Engine mounting rear bracket × Transmission assembly	49.0 - 68.6	5.0 - 7.0
Engine mounting left bracket × Insulator	44.1 - 53.9	4.5 - 5.5
Engine mounting rear bracket × Insulator	44.1 - 53.9	4.5 - 5.5
Engine assembly × Transmission assembly (bolt with seal)	49.0 - 78.4	5.0 - 8.0
Engine assembly × Transmission assembly (bolt without seal)	49.0 - 68.6	5.0 - 7.0

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