

MANUAL TRANSAXLE

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1 BASIC CHECK

1-1 GEAR OIL

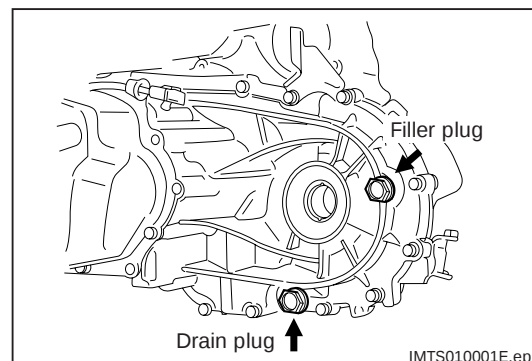
1-1-1 INSPECTION

(1) CONDITION

1. Inspect the condition of transmission oil.
SPECIFIED VALUE: No contamination, burnt smell and mixing impurity.

(2) LEVEL

1. Park the vehicle on a level, flat place.
2. Remove the filler plug.



3. Check the transmission oil level.
SPECIFIED VALUE: 5mm or less below lower edge of filler plug hole
4. Install the filler plug.
TIGHTENING TORQUE: $39.2 \pm 9.8\text{N}\cdot\text{m}$

CAUTION

- Never reuse the removed gasket.

MT-BI-X-C-00011

1-1-2 REPLACE

1. Park the vehicle on a level, flat place.
2. Remove the drain plug, and drain the transmission oil.
3. Install the drain plug.
TIGHTENING TORQUE: $39.2 \pm 9.8\text{N}\cdot\text{m}$

CAUTION

- Never reuse the removed gasket.

4. Remove the filler plug, and fill the transmission oil.
LUBRICANT: SAE75W-85 or SAE 75W-90,
API GL-3 or GL-4
Filling Amount 2.1 ℓ
SPECIFIED VALUE: 5mm or less below lower edge of filler plug hole

5. Install the filler plug.
TIGHTENING TORQUE: $39.2 \pm 9.8\text{N}\cdot\text{m}$

CAUTION

- Never reuse the removed gasket.

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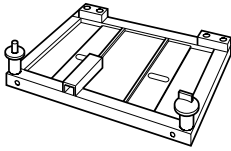
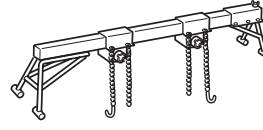
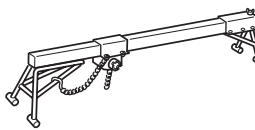
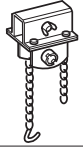
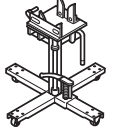
2 TRANSAXLE

2-1 REMOVAL AND INSTALLATION

2-1-1 INSTRUCTIONS

- This section explains the removal/installation procedures for the transaxle Ay from or to the vehicle.
For disassembling, checking and assembling procedures for the transaxle Ay, refer to the separate Service Manual for Type 5HA or 5MH Series Manual Transmission.
Service Manual: Type 5MH Series Manual Transmission No.9728

2-1-2 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09994-87201-000 Holder, engine frame	For removal/installation of engine frame
Tool		Engine support bridge	For suspending engine and transaxle
		Engine support bridge	For suspending engine and transaxle
		Chain block	For suspending engine and transaxle (for addition to engine support bridge)
		High-transmission jack	For removal/installation of transaxle
Interment	Torque wrench		
Lubricant	MP grease, Gear oil(For transaxle) SAE75W-85 or 75W-90(API GL-3 or GL-4), Gear oil(For transfer) SAE 80W-90(API GL-5)		

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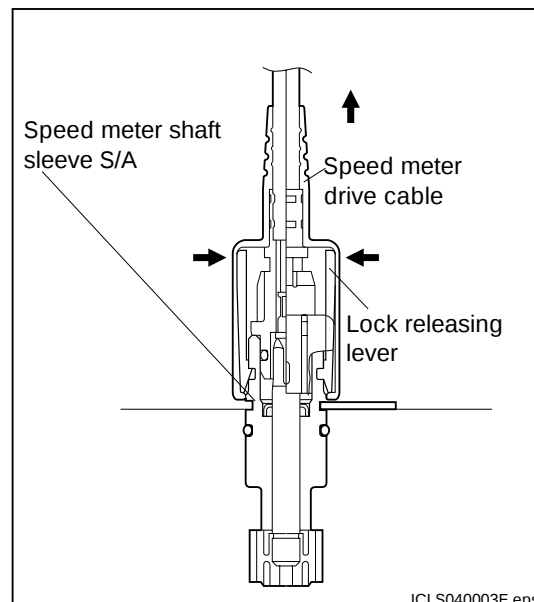
2-1-3 OPERATION BEFORE REMOVAL

- Disconnect the battery ground cable from the negative terminal.

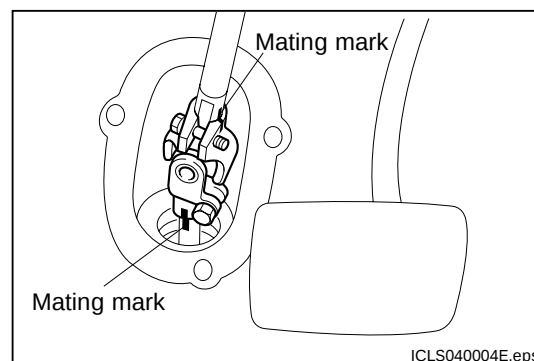
NOTE

- Memory such as troubleshooting code or radio shall be recorded to avoid being erased before disconnect the battery ground cable from the negative terminal .
- Disconnect the bond cable.
 - Remove the air cleaner case.
 - Separation of radiator.
 - Remove the radiator bracket.
 - Fix the radiator together with the radiator fan to upper support with string etc .

5. Disengagement of the clutch cable (For MT vehicles)
(1) Separate the clutch cable at transaxle side.
6. Separation of speedometer cable Ay (For the vehicle equipped the mechanical speedometer)
(1) Take off the lock which locate in the boot on the transaxle fitting portion by means of picking from out side.
(2) Pull out the cable.



7. Separation of universal joint.
(1) Attach mating marks to universal joint and steering gear, and separate the joint portion.



8. Support the engine and the transaxle.
(1) Install the engine hanger No.1, No.2.

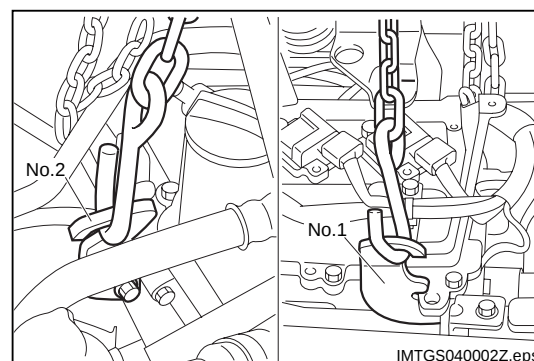
WARNING

- Do not work while the exhaust manifold is still hot to avoid getting burn.

NOTE

- The engine hanger No.1, No.2 and the installation bolts are supplies as replacement parts.

TIGHTENING TORQUE: $20.0 \pm 6.0\text{N}\cdot\text{m}$



(2) Using engine support bridge, hold engine Ay and transaxle Ay in direct coupling condition.

TOOL: Engine support bridge

9. Jack up the vehicle.

WARNING

- Keep the position of the jackup point to avoid causing serious accident due to inclining of the vehicle.

10. Remove the wheel.

11. Drain the transmission oil.

Refer to MT-2.

12. Remove the lower arm bracket connecting rod.

Refer to MTG-5.

13. Remove the stabilizer bar.

Refer to FS-25.

14. Remove the exhaust pipe.

WARNING

- Do not work while the exhaust pipe is still hot to avoid getting burn .

15. Separation of the suspension lower arm S/A

- (1) Separate the suspension lower arm from the steering knuckle.

Refer to FS-20.

16. Separation of drive shaft

- (1) Pull out a drive shaft from transaxle, and hang it with the wire.

Refer to DPS-3.

17. Separation of propeller shaft Ay (For 4WD vehicles)

- (1) Separate the propeller shaft Ay at transfer side, and hang it on a vehicle.

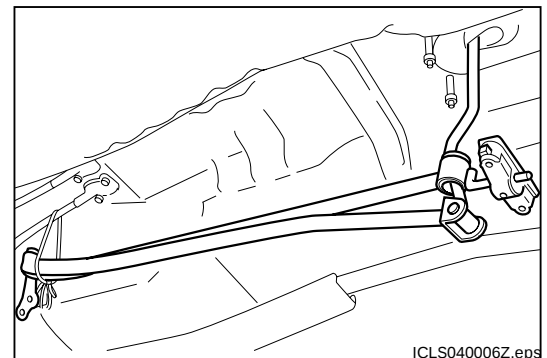
CAUTION

- Be very careful not to apply load to the center support bearing and second joint section.

Refer to DPS-26.

18. Separation of shift & select rod (For MT vehicles)

- (1) Separate the shift & select control rod and the extension rod at transmission side, and hang it on a vehicle.

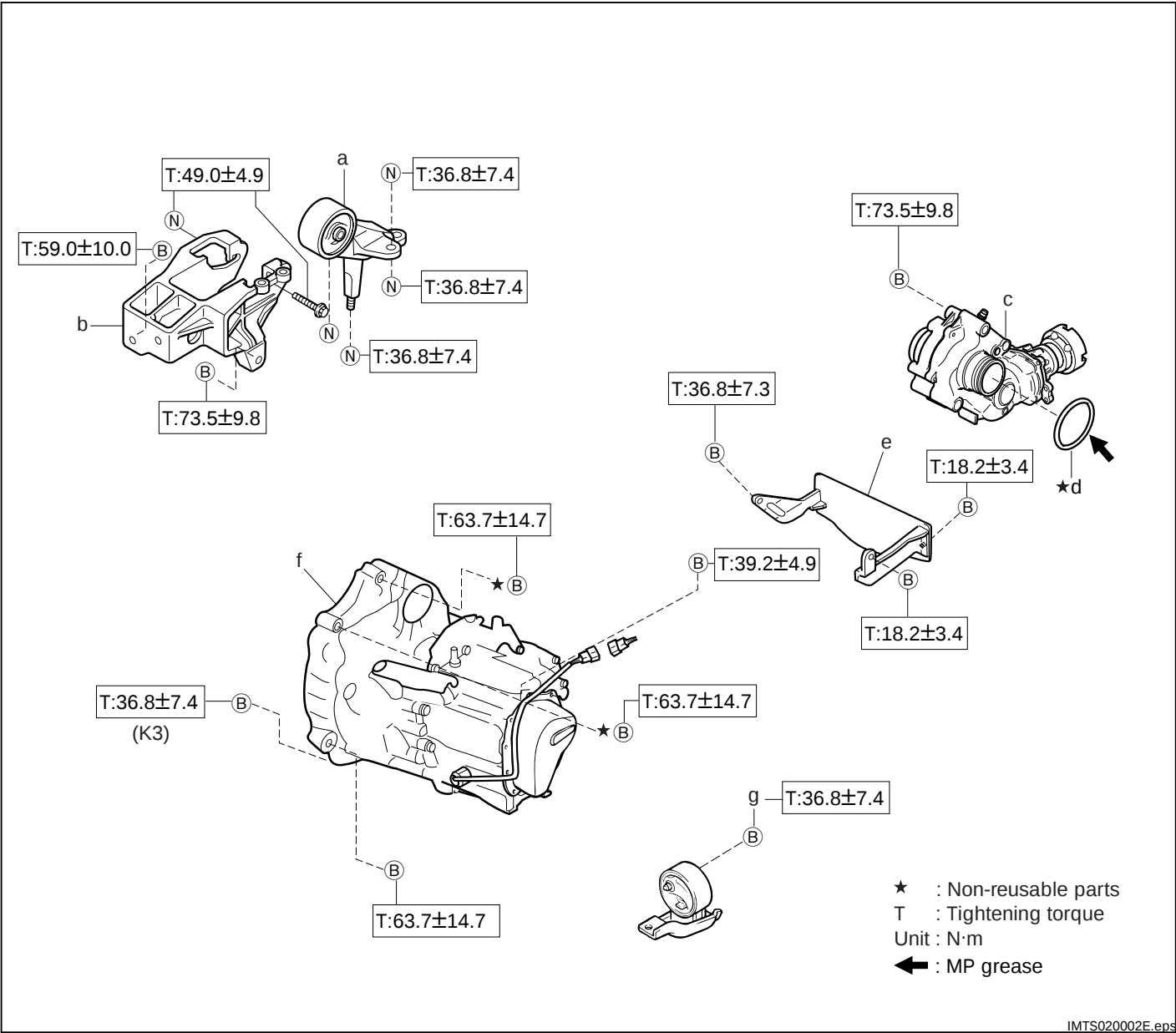


19. Removal of frame and suspension lower arm S/A

- (1) Remove the frame and the suspension lower arm S/A together.

Refer to MTG-5.

2-1-4 REMOVAL AND INSTALLATION PROCEDURES
(1) COMPONENTS



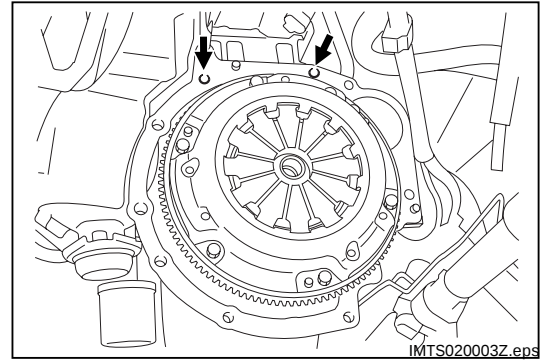
(2) REMOVAL AND INSTALLATION PROCEDURES

- | | | | | | | | |
|---|---|---|---|---|---|---|---------------------------------------|
| 1 | 7 | a | Insulator, engine mounting rear | 6 | 2 | f | Transaxle Ay |
| 2 | ⑥ | b | Bracket, engine mounting, rear right | 7 | 1 | g | Insulator, engine mounting lower left |
| 3 | ⑤ | c | Transfer Ay(For 4WD vehicles) | | | | |
| 4 | 4 | d | Ring, "O" (For 4WD vehicles) | | | | |
| 5 | 3 | e | Stiffener, power train(For EJ engine vehicles) | | | | |

2-1-5 POINTS OF INSTALLATION

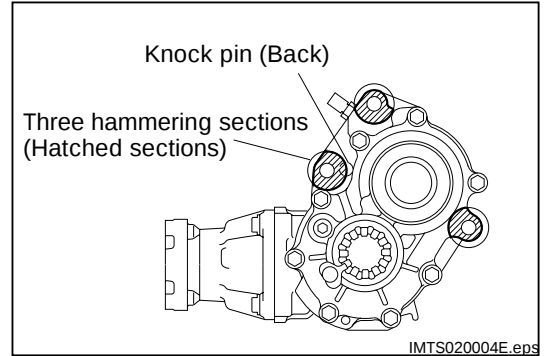
1. Installation of transaxle Ay

- (1) Clean the seal bolt holes of the engine side.
- (2) Install the transaxle Ay.



2. Installation of transfer Ay(For 4WD vehicles)

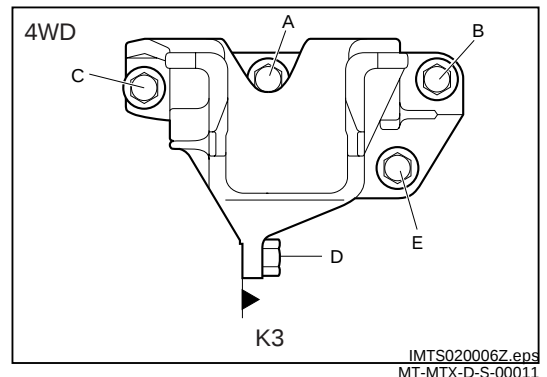
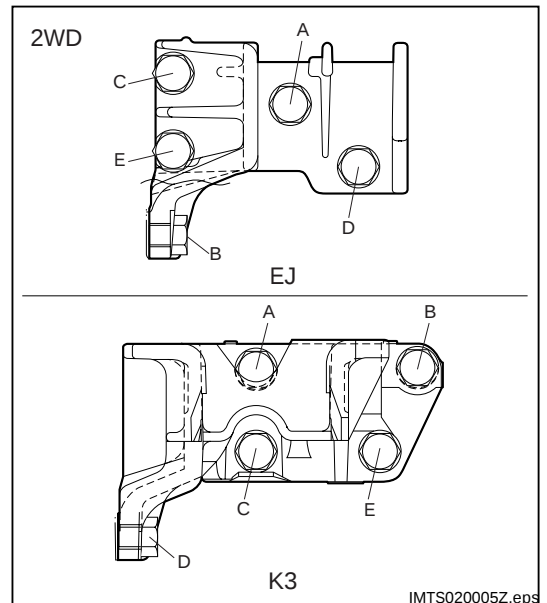
- (1) Apply MP grease to the entire periphery of the O-ring.
- (2) While aligning the transfer with the splined section of the transaxle, push the transfer, until the knock pin contacts the case.
- (3) Align the knock pin position to the knock pin hole on the transaxle side.



- (4) Tighten the connection bolts to the specified torque.

3. Installation of engine mounting rear right bracket

- (1) Temporarily tighten the bolt A.
- (2) Tighten the bolt C, while pressing the engine mounting rear right bracket and transaxle Ay or transfer Ay.
- (3) Tighten the bolt B and E to the specified torque.
- (4) Tighten the bolt A to the specified torque.
- (5) Tighten the bolt D to the specified torque.



2-1-6 OPERATION AFTER INSTALLATION

1. Install the frame and suspension lower arm S/A.
Refer to MTG-5.

2. Install the shift & select rod.(For MT vehicles)
Refer to MT-15.

3. Install the propeller shaft.(For 4WD vehicles)

CAUTION

- Be very careful not to apply load to the center support bearing and second joint section.

Refer to DPS-26.

4. Install the suspension lower arm S/A.
Refer to FS-20.

5. Install the drive shaft.
Refer to DPS-3.

6. Install the exhaust pipe.

7. Install the stabilizer bar.
Refer to FS-25.

8. Install the lower arm bracket connecting rod.
Refer to MTG-5.

9. Fill the transmission oil.
Refer to MT-2.

10. Install the wheels.
TIGHTENING TORQUE: $103.0 \pm 14.7\text{N}\cdot\text{m}$

11. Jack down the vehicle.

12. Remove the engine support bridge.

13. Remove the engine hunger.

14. Connection of universal joint.

(1) Fit the mating marks together, and connect the joint portion.

CAUTION

- Align the position of roll connector when fit wheel centre together, in case mating mark is disappeared (For the vehicle equipped with the air bag) .

15. Connect the speedometer cable (For the vehicles equipped with the mechanical speedometer)

16. Connect the clutch cable. (For MT vehicles)

17. Install the radiator.

18. Install the air cleaner case.

19. Connect the bond cable.

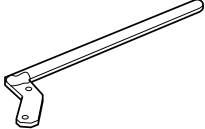
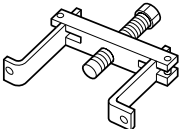
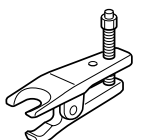
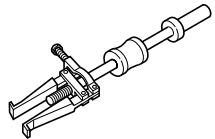
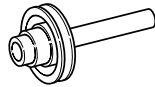
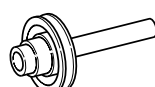
20. Connect the battery negative terminal.

21. Perform the basic inspection of clutch pedal.
Refer to CL-3.

3 DIFFERENTIAL SIDE OIL SEAL

3-1 REMOVAL AND INSTALLATION

3-1-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09511-87202-000 Stopper, brake drum	For prevention from turning of hub
		09510-87301-000 Puller, front hub & drum	For separation of hub and drive shaft
		09611-87701-000 Puller, Tie-rod end	For separation of tie-rod end / lower arm and steering knuckle
		09308-00010-000 Puller, oil seal	For removal of oil seal
		09517-87705-000 Replacer, oil seal	For installation of oil seal
		09517-87706-000 Replacer, oil seal	For installation of oil seal
Tool	Slide hammer		
Instrument	Torque wrench		
Lubricant	MP grease, Gear oil SAE75W-85 or 75W-90(GL-3 or GL-4)		

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3-1-2 OPERATION BEFORE REMOVAL

1. Jack up the vehicle.

WARNING

- Keep the position of the jackup point to avoid causing serious accident due to inclining of the vehicle.

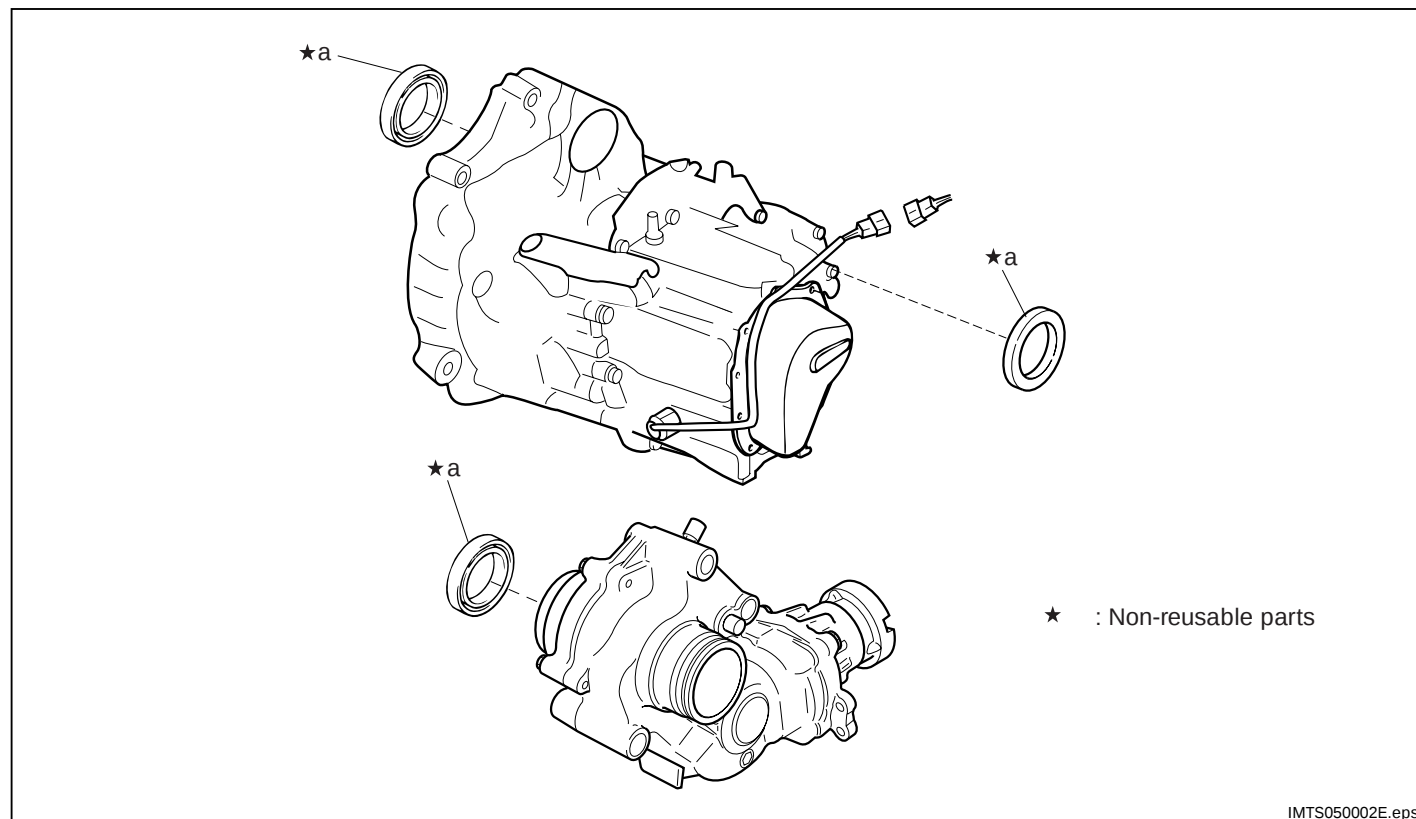
2. Remove the wheels.
3. Drain the transmission oil.
Refer to MT-2.
4. Remove the drive shaft.
Refer to DPS-3.

MT-DSO-D-B-00011

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3-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



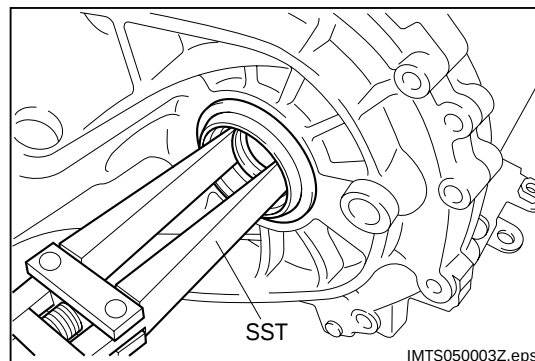
(2) REMOVAL AND INSTALLATION PROCEDURES

- ① ① a Seal, type T oil

MT-DSO-D-T-00011

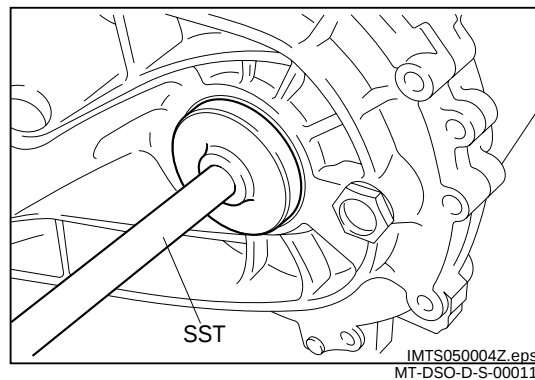
3-1-4 POINTS OF REMOVAL

1. Remove the type T oil seal
SST: 09308-00010-000



3-1-5 POINTS OF INSTALLATION

1. Install the T type oil seal.
SST: 09517-87705-000
09517-87706-000



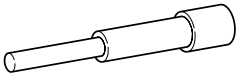
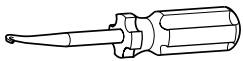
3-1-6 OPERATION AFTER INSTALLATION

1. Install the drive shaft.
Refer to DPS-3.
2. Fill the transmission oil.
Refer to MT-2.
3. Install the wheels.
TIGHTENING TORQUE: $103.0 \pm 14.7\text{N}\cdot\text{m}$
4. Jack down the vehicle.

4 SPEEDOMETER DRIVEN GEAR

4-1 REMOVAL AND INSTALLATION

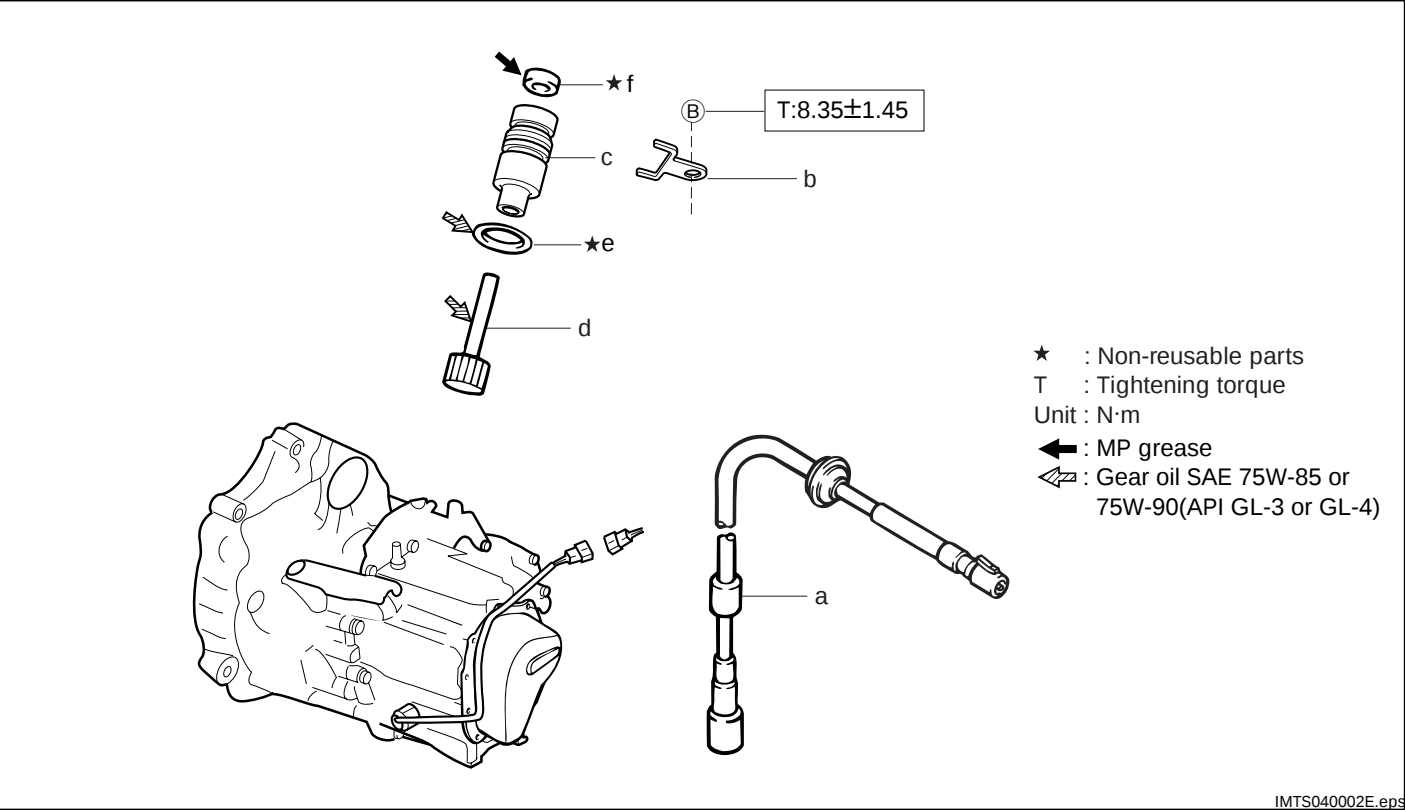
4-1-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09201-01080-000 Remover & replacer, valve guide bush	For installation of oil seal
		09921-00010-000 Tool, spring tension	For removal of oil seal
Lubricant	MP grease, Gear oil SAE75W-85 or 75W-90(GL-3 or GL-4)		

MT-SMG-D-P-00011

4-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



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(2) REMOVAL AND INSTALLATION PROCEDURES

- ① 6

a Cable Ay, speedometer drive
- ② 5

b Plate, speedometer sleeve lock
- ③ 4

c Sleeve Ay, speedometer shaft
- ④ 3

d Gear, speedometer driven
- ⑤ 2

e Ring, O
- ⑥ 1

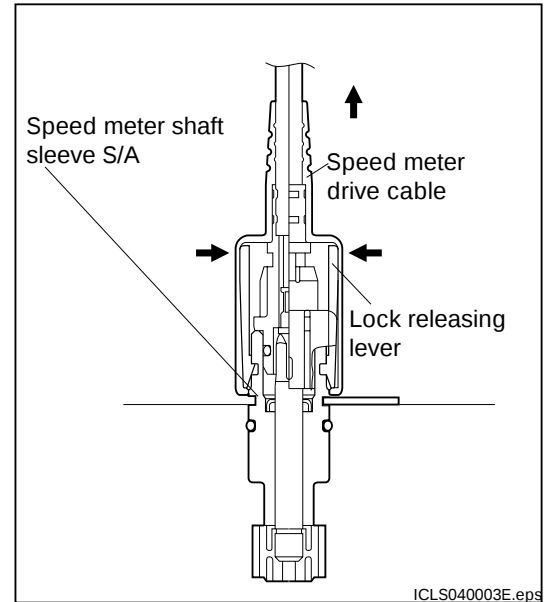
f Seal, type K oil

MT-SMG-D-T-00011

4-1-3 POINTS OF REMOVAL

1. Separation of speedometer cable Ay

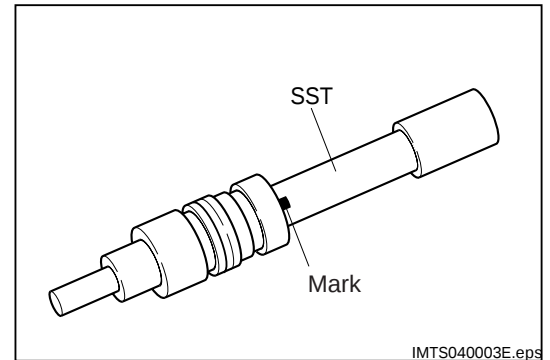
- (1) Take off the lock which locate in the boot on the transaxle fitting portion by means of picking from out side.
- (2) Pull out the cable.



2. Removal of K type oil seal

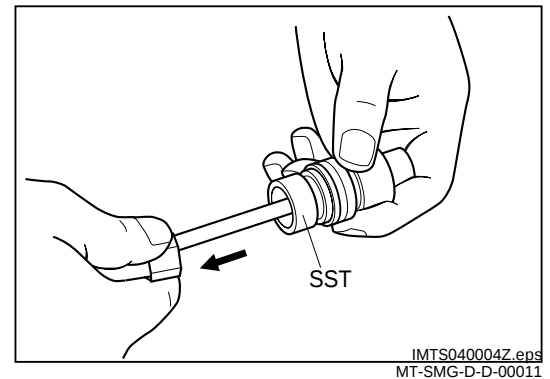
- (1) Insert the SST into the speedometer shaft, until attach with the K type oil seal.
- (2) Put the mark on the SST, so as to make sure the insert value.

SST: 09201-01080-000



- (3) Remove the K type oil seal from the speedometer shaft sleeve S/A.

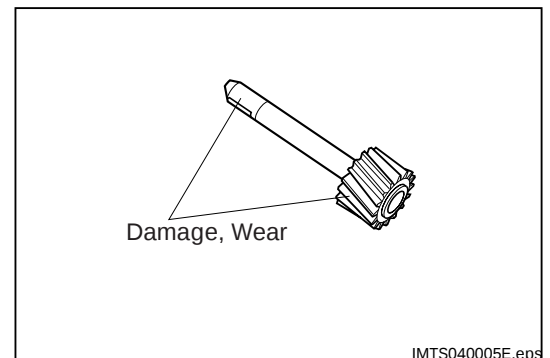
SST: 09921-00010-000



4-1-4 INSPECTION

(1) Speedometer driven gear S/A

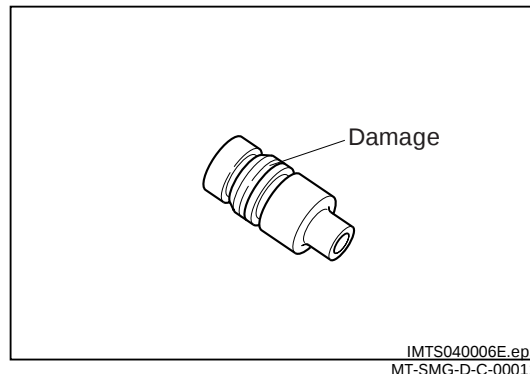
1. Check each portion for no abnormal condition.



MT-14

(2) Speedometer shaft sleeve S/A

1. Check each portion for no abnormal condition.



4-1-5 POINTS OF INSTALLATION

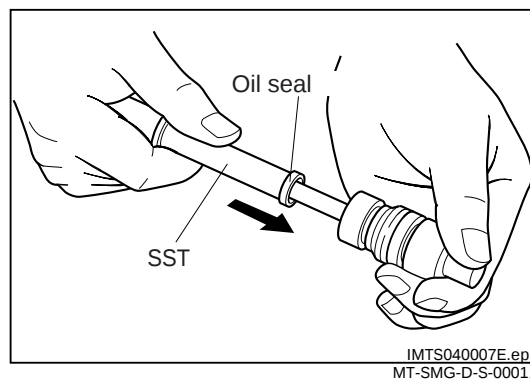
1. Installation of K type oil seal

(1) Set the K type oil seal to the SST.

(2) Insert the SST and K type oil seal to the speedometer shaft sleeve S/A, until the mark put while removal.

SST: 09201-01080-000

(3) Remove the SST.



5 SHIFT LEVER

5-1 REMOVAL AND INSTALLATION

5-1-1 PREPARATION TOOLS

Tool	Snap ring plier
Instrument	Torque wrench
Lubricant	MP grease

MT-SL-D-P-00011

5-1-2 OPERATION BEFORE REMOVAL

1. Jack up the vehicle.

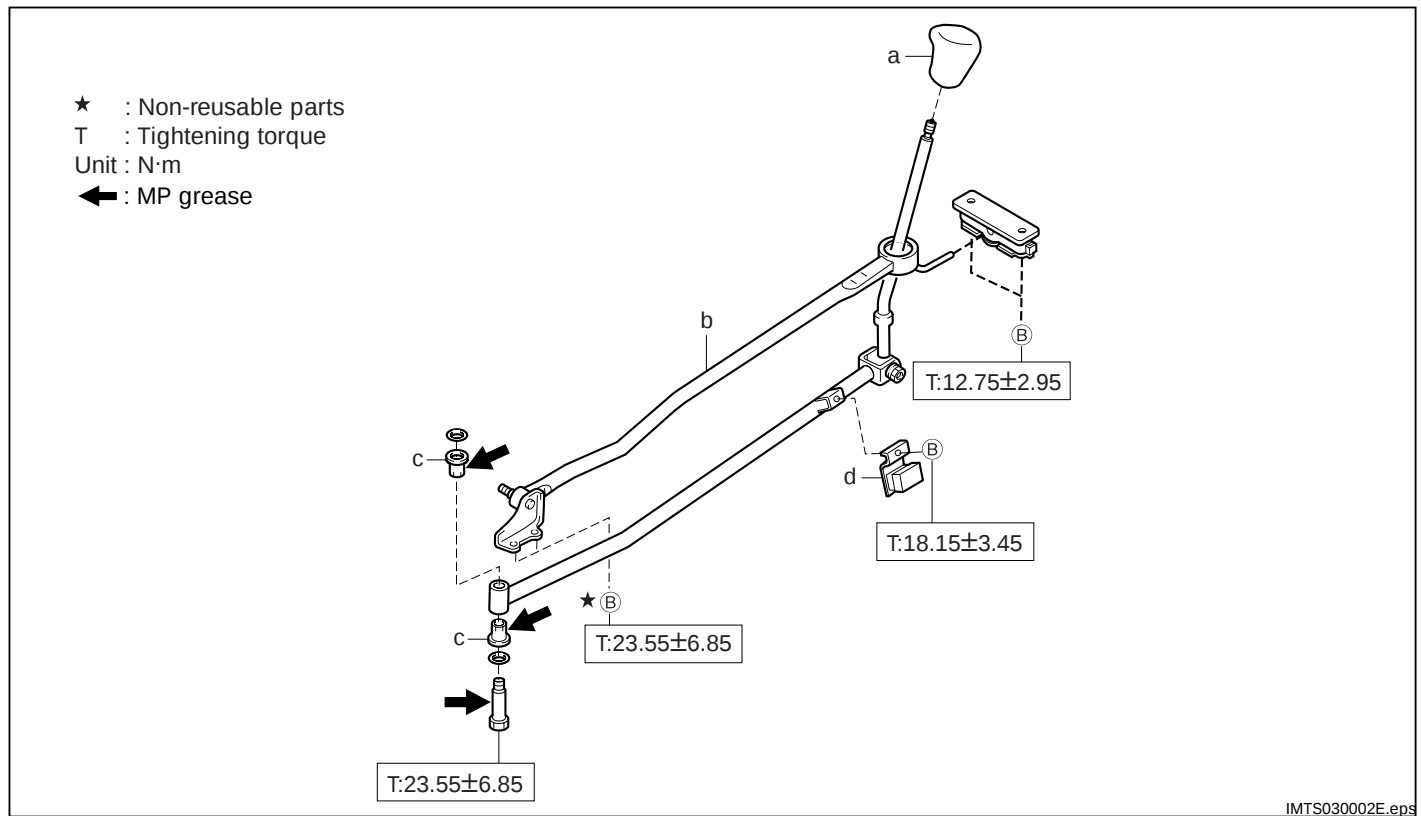
WARNING

- Keep the position of the jackup point to avoid causing serious accident due to inclining of the vehicle.

MT-SL-D-B-00011

5-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



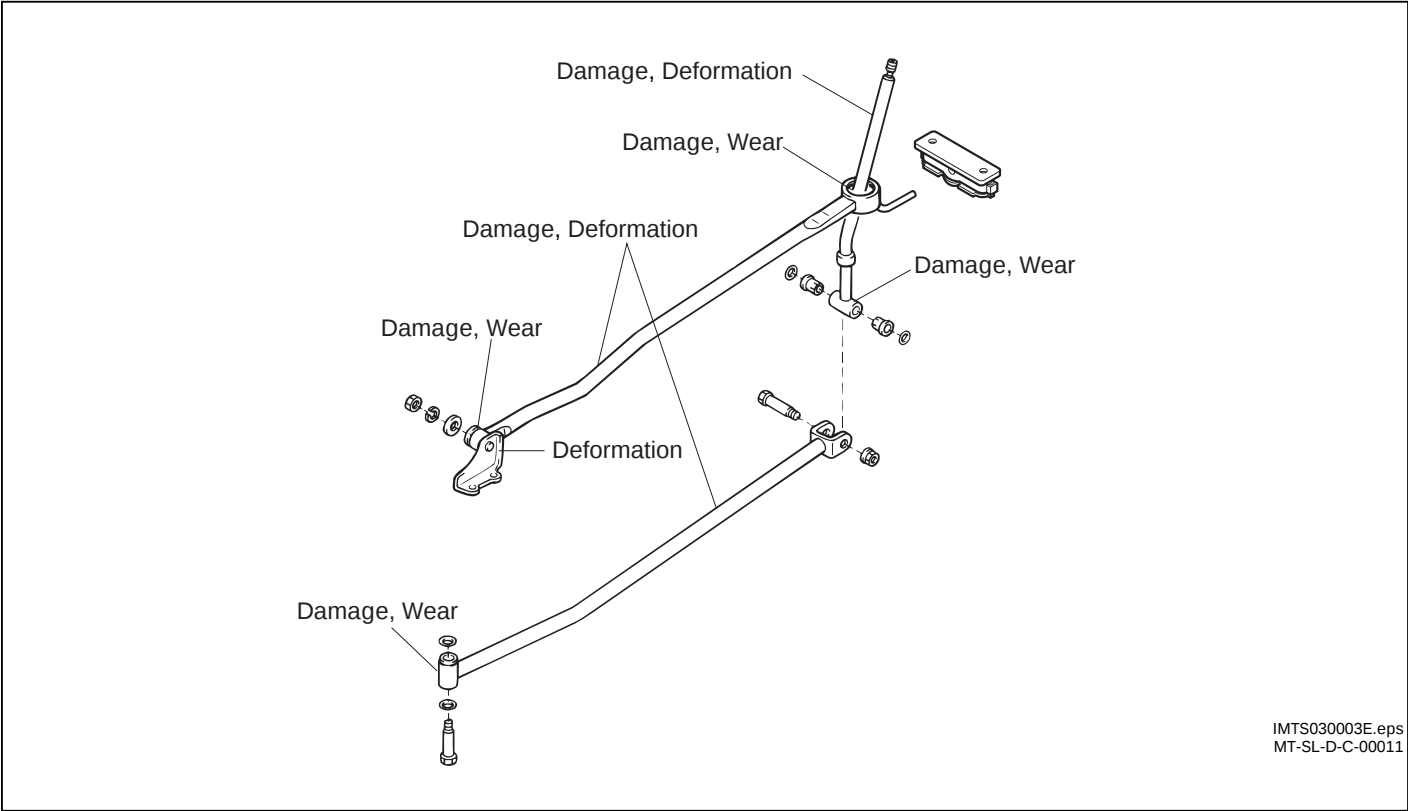
(2) REMOVAL AND INSTALLATION PROCEDURES

- 1 4 a Knob, shift lever
- 2 3 b Shift Ay, transmission floor
- 3 2 c Bush
- 4 1 d Damper

MT-SL-D-T-00011

5-1-4 INSPECTION

- 1. Check each portion for no abnormal condition.



5-1-5 OPERATION AFTER INSTALLATION

MT-SL-D-A-00011

- 1. Jack down the vehicle.

5-2 DISASSEMBLY AND ASSEMBLY

5-2-1 PREPARATION TOOLS

Tool	Snap ring plier, Hand grinder
Instrument	Torque wrench
Lubricant	MP grease

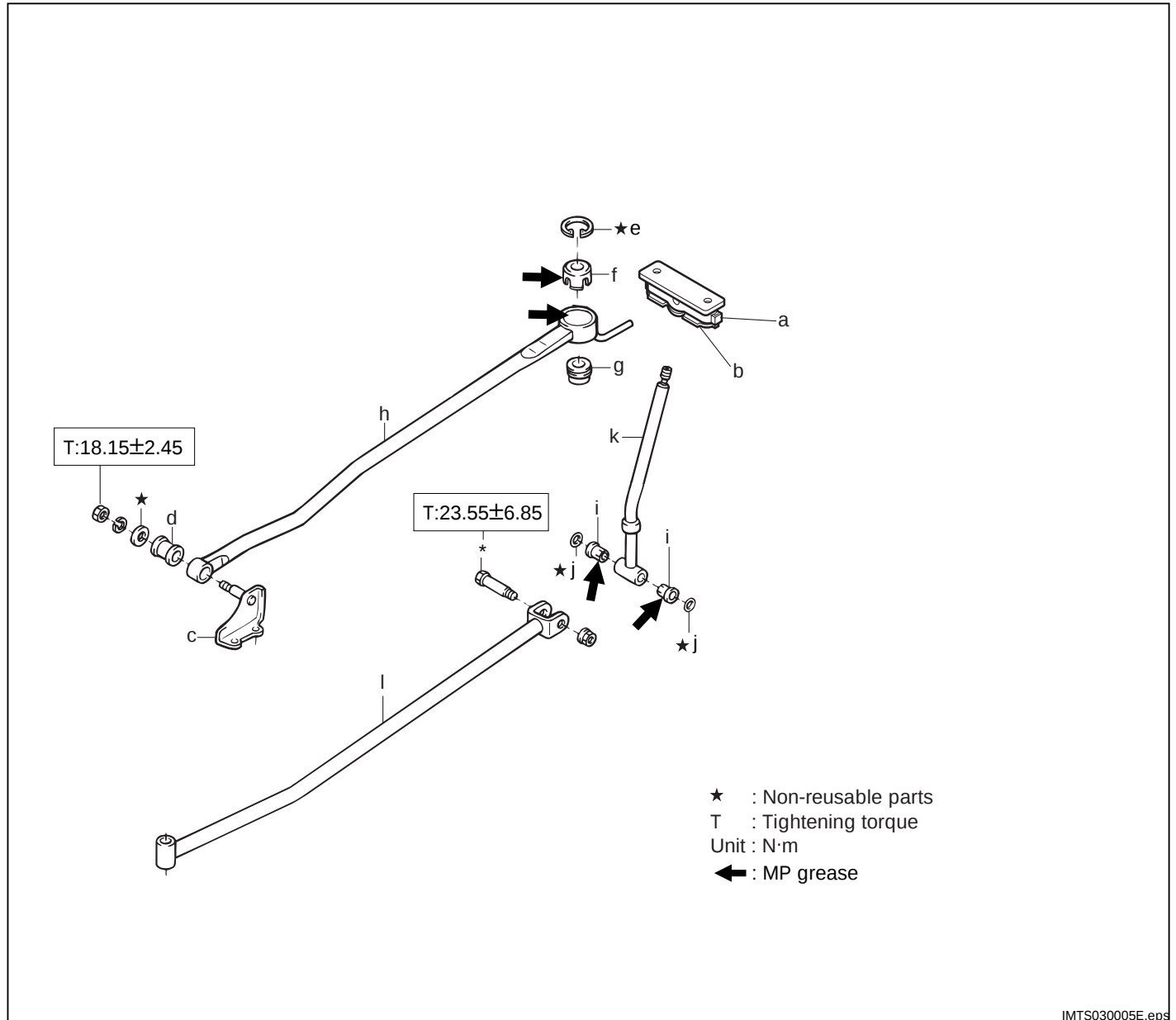
MT-SL-B-P-00011

5-2-2 DISASSEMBLY AND ASSEMBLY PROCEDURE

NOTE

- In case of the spare part, as the connecting method of the shift & select shaft and shift lever is bolt connecting.

(1) COMPONENTS



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(2) DISASSEMBLY AND ASSEMBLY PROCEDURE

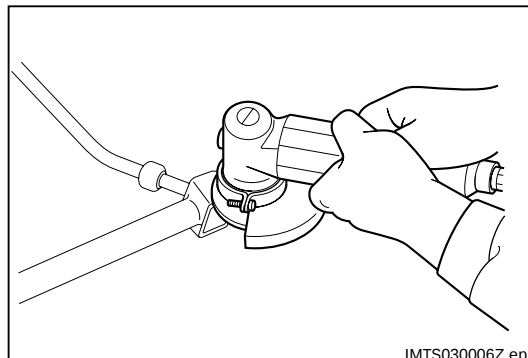
- | | | | | | | | |
|---|----|---|------------------------------|----|---|---|---------------------------------|
| 1 | 12 | a | Support, floor shift No.2 | 7 | 6 | g | Boot, shift lever retainer dust |
| 2 | 11 | b | Bracket, floor shift support | 8 | 5 | h | rod S/A, extension |
| 3 | 10 | c | Support, floor shift No.1 | 9 | 4 | i | Bush |
| 4 | 9 | d | Bush | 10 | 3 | j | Ring, O |
| 5 | 8 | e | Ring, shaft snap | 11 | 2 | k | Lever S/A, shift |
| 6 | 7 | f | Sheet, shift lever | ⑫ | 1 | l | Shaft, shift & select |

MT-SL-B-T-00011

MT-18

5-2-3 POINTS OF DISASSEMBLY

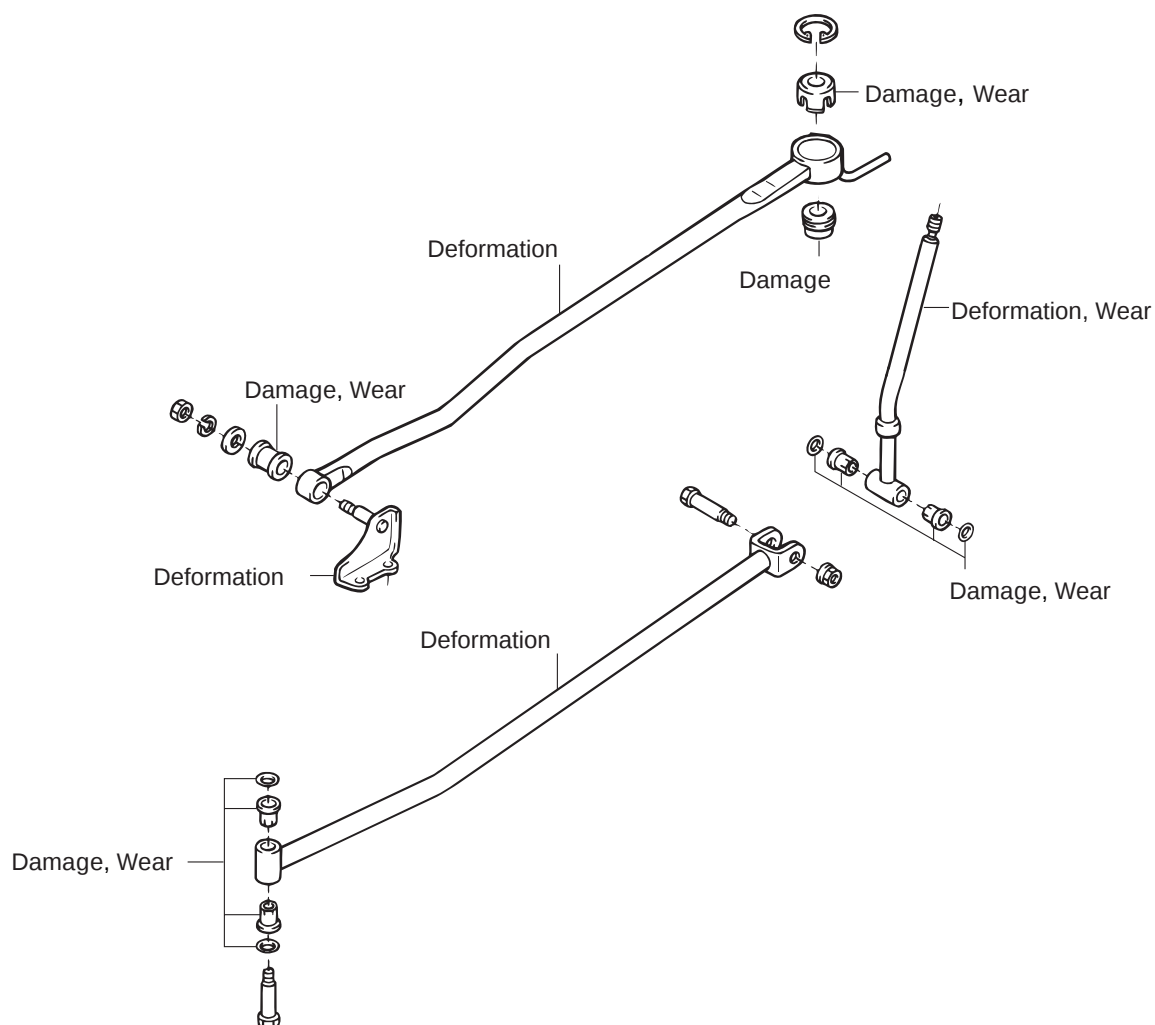
1. Removal of shift & select shaft S/A
(1) Separate the shift & select shaft S/A and shift lever S/A by using the grinder.



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5-2-4 INSPECTION

1. Check each portion for no abnormal condition.



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MT-SL-B-C-00011

6 BACK UP LAMP SWITCH

6-1 REMOVAL AND INSTALLATION

6-1-1 PREPARATION TOOLS

Instrument	Tester, Torque wrench
Lubricant	Gear oil SAE75W-85 or 75W-90, API GL-3 or GL-4

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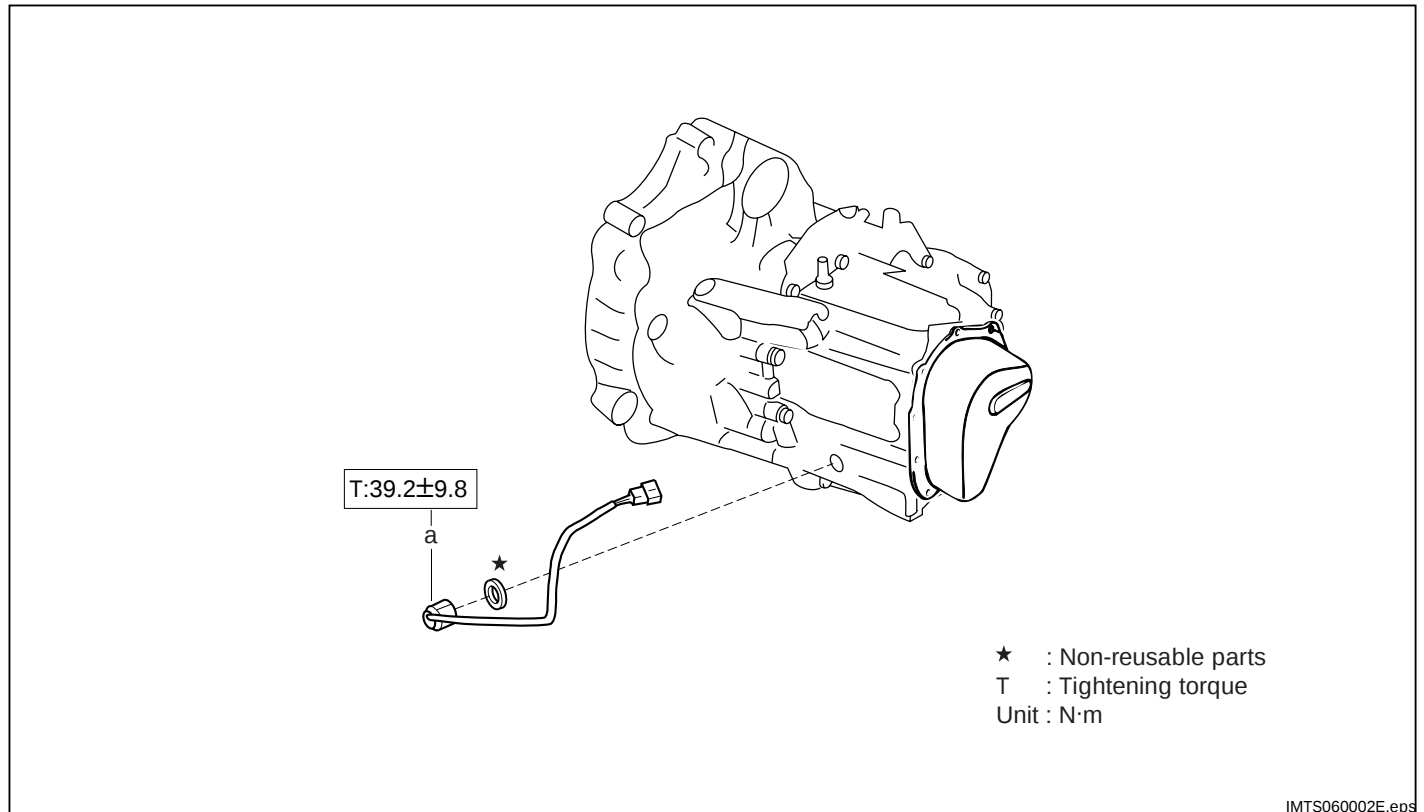
6-1-2 OPERATION BEFORE REMOVAL

1. Drain the transmission oil.
Refer to MT-2.

MT-BLS-D-B-00011

6-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

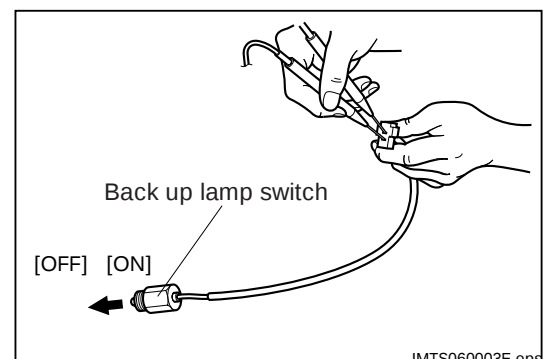
- 1 1 a Switch Ay, back up lamp

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6-1-4 INSPECTION

1. Check the continuity between terminals of the connector.
SPECIFIED VALUE: Ensure that continuity exists as following table.

Switch position	Specified condition
Push(ON)	Continuity exists
Free(OFF)	No continuity exists



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6-1-5 OPERATION AFTER INSTALLATION

1. Fill the transmission oil.
Refer to MT-2.

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7 TIGHTENING TORQUE

Tightening components		N·m	kgf·cm
Transaxle	× Cylinder block	63.7 ± 14.7	650 ± 150
Transaxle	× Oil pan (engine)	36.8 ± 7.3	375 ± 75
Transaxle	× Starter	59 ± 10	600 ± 100
Power train stiffener	× Transaxle (front)	18.2 ± 3.4	185 ± 35
Power train stiffener	× Transaxle (Rear)	59 ± 10	600 ± 100
Power train stiffener	× Cylinder block (front)	18.2 ± 3.4	185 ± 35
Power train stiffener	× Cylinder block (Rear)	36.8 ± 7.3	375 ± 75
Engine mounting rear bracket	× Transaxle	59 ± 10	600 ± 100
Cylinder block	× Engine mounting rear bracket	63.7 ± 14.7	650 ± 150
Drain plug	× Transaxle	39.2 ± 9.8	400 ± 100
Filler plug	× Transaxle	39.2 ± 9.8	400 ± 100
Speed meter sleeve lock plate	× Transaxle	8.35 ± 1.45	85 ± 13
Backup lamp switch	× Transaxle	39.2 ± 9.8	400 ± 100
Flywheel	× Crankshaft	78 ± 5.7	796 ± 58
Floor shift support N0.2	× Floor	12.75 ± 2.95	130 ± 30
Dynamic dumper	× Shift & select rod	18.15 ± 3.45	185 ± 35
Extension rod	× Floor shift support N0.1	18.15 ± 3.45	185 ± 35
Floor shift support N0.1	× Transaxle	23.55 ± 6.85	240 ± 70
Shift & select rod	× Transaxle	23.55 ± 6.85	240 ± 70

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