

TRANSMISSION SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

CONTROL SYSTEMS**CS****AUTOMATIC TRANSMISSION****4AT****AUTOMATIC TRANSMISSION
(DIAGNOSTICS)****4AT(diag)****MANUAL TRANSMISSION AND
DIFFERENTIAL****5MT****MANUAL TRANSMISSION AND
DIFFERENTIAL****6MT****MANUAL TRANSMISSION AND
DIFFERENTIAL (DIAGNOSTICS)****6MT(diag)****CLUTCH SYSTEM****CL**

MANUAL TRANSMISSION AND DIFFERENTIAL

5MT

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General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

1. General Description

A: SPECIFICATIONS

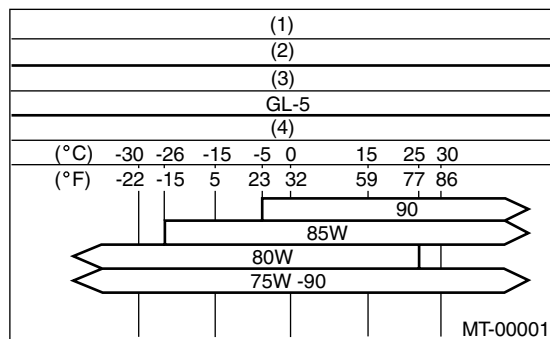
1. MANUAL TRANSMISSION AND DIFFERENTIAL

| Model | | 1.6 L | | 2.0 L Non-turbo | 2.0 L Turbo | | 2.5 L Non-turbo |
|------------------------------------|-------------------------|---|--|---|---------------------|-----------|--------------------|
| | | FWD | AWD | | Except Australia | Australia | |
| Type | | 5-forward speeds with synchromesh and 1-reverse 5×2-forward speeds with synchromesh and 2-reverse* | | | | | |
| Transmission gear ratio | | 1st | 3.454 | | 3.454 | 3.166 | 3.454 |
| | | 2nd | 2.062 | | 1.947 | 1.882 | 2.062 |
| | | 3rd | 1.448 | | 1.366 | 1.296 | 1.448 |
| | | 4th | 1.088 | | 0.972 | | 1.088 |
| | | 5th | 0.825 | | 0.738 | | 0.780 |
| | | Reverse | 3.333 | | | | |
| Auxiliary transmission gear ratio* | | High | — | 1.000 | — | | |
| | | Low | — | 1.447 | — | | |
| Front reduction gear | Final | Type of gear | Hypoid | | | | |
| | | Gear ratio | 4.111 | | 3.900 | 3.900 | 4.444 |
| Rear reduction gear | Transfer | Type of gear | — | Helical | | | |
| | | Gear ratio | — | 1.000 | 1.100 | 1.000 | |
| | Final | Type of gear | — | Hypoid | | | |
| | | Gear ratio | — | 4.111 | 3.900 | 3.545 | 4.444 |
| Front differential | Type and number of gear | | Straight bevel gear (Bevel pinion: 2, Bevel gear: 2) | | | | |
| Center differential | Type and number of gear | | — | Straight bevel gear (Bevel pinion: 2, Bevel gear: 2 and viscous coupling) | | | |
| Transmission gear oil | | GL-5 | | | | | |
| Transmission oil capacity | | 3.3 ℓ (3.5 US qt, 2.9 Imp qt) | | 3.5 ℓ (3.7 US qt, 3.1 Imp qt) 4.0 ℓ (4.2 US qt, 3.5 Imp qt)* | | | |

*: Dual-range model only

2. TRANSMISSION GEAR OIL

Recommended oil



- (1) Item
- (2) Transmission gear oil
- (3) API classification
- (4) SAE viscosity No. and applicable temperature

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

3. TRANSMISSION CASE ASSEMBLY

Drive pinion shim adjustment

Hypoid gear backlash

0.13 — 0.18 mm (0.0051 — 0.0071 in)

| Drive pinion shim | | | |
|-------------------|-------------------|------------|-------------------|
| Part No. | Thickness mm (in) | Part No. | Thickness mm (in) |
| 32295AA031 | 0.150 (0.0059) | 32295AA071 | 0.250 (0.0098) |
| 32295AA041 | 0.175 (0.0069) | 32295AA081 | 0.275 (0.0108) |
| 32295AA051 | 0.200 (0.0079) | 32295AA091 | 0.300 (0.0118) |
| 32295AA061 | 0.225 (0.0089) | 32295AA101 | 0.500 (0.0197) |

Selection of main shaft rear plate

| Main shaft rear plate | | |
|----------------------------------|------------|------|
| Dimension "A" mm (in) | Part No. | Mark |
| 4.00 — 4.13 (0.1575 — 0.1626) | 32294AA041 | 1 |
| 3.87 — 3.99 (0.1524 — 0.1571) | 32294AA051 | 2 |

Snap ring to counter washer clearance

0.05 — 0.35 mm (0.0020 — 0.0138 in)

| Snap ring (Outer-19) | |
|----------------------|-------------------|
| Part No. | Thickness mm (in) |
| 031319000 | 1.50 (0.0591) |
| 805019010 | 1.72 (0.0677) |

Input shaft holder adjustment

| Dimension "D" mm (in) | Number of shim |
|------------------------------------|----------------|
| 52.50 — 53.11 (2.0669 — 2.0909) | — |
| 52.00 — 52.49 (2.0472 — 2.0665) | 1 |
| 51.26 — 51.99 (2.0181 — 2.0468) | 2 |

4. DRIVE PINION ASSEMBLY

• AWD model

Preload adjustment of thrust bearing

Starting torque

0.3 — 0.8 N·m (0.03 — 0.08 kgf-m, 0.2 — 0.6 ft-lb)

| Adjusting washer No. 1 | |
|------------------------|-------------------|
| Part No. | Thickness mm (in) |
| 803025051 | 3.925 (0.1545) |
| 803025052 | 3.950 (0.1555) |
| 803025053 | 3.975 (0.1565) |
| 803025054 | 4.000 (0.1575) |
| 803025055 | 4.025 (0.1585) |
| 803025056 | 4.050 (0.1594) |
| 803025057 | 4.075 (0.1604) |

| Adjusting washer No. 2 | |
|------------------------|-------------------|
| Part No. | Thickness mm (in) |
| 803025059 | 3.850 (0.1516) |
| 803025054 | 4.000 (0.1575) |
| 803025058 | 4.150 (0.1634) |

• FWD model

Selection of 1st driven gear

| 1st driven gear | |
|-----------------|--------------------------------------|
| Part No. | Outer diameter of bushing mm (in) |
| 32231AA840 | 42.019 — 42.033 (1.6543 — 1.6548) |
| 32231AA850 | 42.005 — 42.018 (1.6537 — 1.6543) |
| 32231AA860 | 41.990 — 42.004 (1.6531 — 1.6537) |

5. INPUT SHAFT ASSEMBLY

Snap ring (Outer-28) to ball bearing clearance

0 — 0.12 mm (0 — 0.0047 in)

| Snap ring (Outer-28) | |
|----------------------|-------------------|
| Part No. | Thickness mm (in) |
| 805028050 | 2.48 (0.0976) |
| 805028060 | 2.56 (0.1008) |
| 805028070 | 2.64 (0.1039) |

Snap ring (Inner-68) to bearing clearance

0 — 0.12 mm (0 — 0.0047 in)

| Snap ring (Inner-68) | |
|----------------------|-------------------|
| Part No. | Thickness mm (in) |
| 805168020 | 1.84 (0.0724) |
| 805168030 | 1.92 (0.0756) |
| 805168040 | 2.00 (0.0787) |

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

6. MAIN SHAFT

Snap ring (Outer-25) to synchronizer hub clearance

0.060 — 0.100 mm (0.0024 — 0.0039 in)

| Snap ring (Outer-25) | | | |
|----------------------|-------------------|-----------|-------------------|
| Part No. | Thickness mm (in) | Part No. | Thickness mm (in) |
| 805025051 | 2.42 (0.0953) | 805025055 | 2.62 (0.1031) |
| 805025052 | 2.47 (0.0972) | 805025056 | 2.67 (0.1051) |
| 805025053 | 2.52 (0.0992) | 805025057 | 2.72 (0.1071) |
| 805025054 | 2.57 (0.1012) | 805025058 | 2.37 (0.0933) |

7. REVERSE IDLER GEAR

Adjustment of reverse idler gear position

Reverse idler gear to transmission case (LH) wall clearance

6.0 — 7.5 mm (0.236 — 0.295 in)

| Reverse shifter lever | | |
|-----------------------|------|-------------------------|
| Part No. | Mark | Remarks |
| 32820AA070 | 7 | Further from case wall |
| 32820AA080 | 8 | Standard |
| 32820AA090 | 9 | Closer to the case wall |

After installing a suitable reverse shifter lever, adjust the reverse idler gear to transmission case wall clearance to within 0 to 0.5 mm (0 to 0.020 in) using washers.

| Washer (20.5 × 26 × t) | | | |
|------------------------|-------------------|-----------|-------------------|
| Part No. | Thickness mm (in) | Part No. | Thickness mm (in) |
| 803020151 | 0.4 (0.016) | 803020154 | 1.9 (0.075) |
| 803020152 | 1.1 (0.043) | 803020155 | 2.3 (0.091) |
| 803020153 | 1.5 (0.059) | — | — |

8. SHIFTER FORK AND ROD

Select the suitable shifter forks so that both coupling sleeve and reverse driven gear are positioned in the center of their synchromesh mechanisms.

Rod end clearance

A: 3rd-4th — 5th

0.5 — 1.3 mm (0.020 — 0.051 in)

B: 1st-2nd — 3rd-4th

0.4 — 1.4 mm (0.016 — 0.055 in)

| 1st-2nd shifter fork | | |
|----------------------|------|---|
| Part No. | Mark | Remarks |
| 32804AA060 | 1 | Approach to 1st gear by 0.2 mm (0.008 in) |
| 32804AA070 | — | Standard |
| 32804AA080 | 3 | Approach to 2nd gear by 0.2 mm (0.008 in) |

| 3rd-4th shifter fork | | |
|----------------------|------|---|
| Part No. | Mark | Remarks |
| 32810AA061 | 1 | Approach to 4th gear by 0.2 mm (0.008 in) |
| 32810AA071 | — | Standard |
| 32810AA101 | 3 | Approach to 3rd gear by 0.2 mm (0.008 in) |

| 5th shifter fork (Non-turbo model) | | |
|------------------------------------|------|---|
| Part No. | Mark | Remarks |
| 32812AA201 | 7 | Approach to 5th gear by 0.2 mm (0.008 in) |
| 32812AA211 | — | Standard |
| 32812AA221 | 9 | Become distant from 5th gear by 0.2 mm (0.008 in) |

| 5th shifter fork (Turbo model) | | |
|--------------------------------|------|---|
| Part No. | Mark | Remarks |
| 32812AA231 | 7 | Approach to 5th gear by 0.2 mm (0.008 in) |
| 32812AA241 | — | Standard |
| 32812AA251 | 9 | Become distant from 5th gear by 0.2 mm (0.008 in) |

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

9. TRANSFER CASE OR REAR CASE

Neutral position adjustment

| Adjustment shim | |
|-----------------|-------------------|
| Part No. | Thickness mm (in) |
| 32190AA000 | 0.15 (0.0059) |
| 32190AA010 | 0.30 (0.0118) |

| Reverse accent shaft | | |
|----------------------|------|---|
| Part No. | Mark | Remarks |
| 32188AA130 | S | Neutral position is closer to 1st. |
| 32188AA140 | T | Standard |
| 32188AA150 | V | Neutral position is closer to reverse gear. |

Reverse check plate adjustment

| Reverse check plate | | | |
|---------------------|------|----------------|-----------------------------------|
| Part No. | Mark | Angle θ | Remarks |
| 32189AA000 | 0 | 28° | Arm stops closer to 5th gear. |
| 32189AA010 | 1 | 31° | Arm stops closer to 5th gear. |
| 33189AA020 | 2 | 34° | Arm stops in the center. |
| 32189AA030 | 3 | 37° | Arm stops closer to reverse gear. |
| 32189AA040 | 4 | 40° | Arm stops closer to reverse gear. |

10. EXTENSION ASSEMBLY

Thrust washer (50 × 61 × t) to taper roller bearing table outer race side preload

0.2 — 0.3 mm T (0.0008 — 0.012 in T)

NOTE:

T: Tight

| Thrust washer (50 × 61 × t) | |
|-----------------------------|-------------------|
| Part No. | Thickness mm (in) |
| 803050060 | 0.50 (0.0197) |
| 803050061 | 0.55 (0.0217) |
| 803050062 | 0.60 (0.0236) |
| 803050063 | 0.65 (0.0256) |
| 803050064 | 0.70 (0.0276) |
| 803050065 | 0.75 (0.0295) |
| 803050066 | 0.80 (0.0315) |
| 803050067 | 0.85 (0.0335) |
| 803050068 | 0.90 (0.0354) |
| 803050069 | 0.95 (0.0374) |
| 803050070 | 1.00 (0.0394) |
| 803050071 | 1.05 (0.0413) |
| 803050072 | 1.10 (0.0433) |
| 803050073 | 1.15 (0.0453) |
| 803050074 | 1.20 (0.0472) |
| 803050075 | 1.25 (0.0492) |
| 803050076 | 1.30 (0.0512) |
| 803050077 | 1.35 (0.0531) |
| 803050078 | 1.40 (0.0551) |
| 803050079 | 1.45 (0.0571) |

Thrust washer to center differential side clearance

0.15 — 0.35 mm (0.0059 — 0.0138 in)

| Thrust washer | |
|---------------|-------------------|
| Part No. | Thickness mm (in) |
| 803036050 | 0.9 (0.035) |
| 803036054 | 1.0 (0.039) |
| 803036051 | 1.1 (0.043) |
| 803036055 | 1.2 (0.047) |
| 803036052 | 1.3 (0.051) |
| 803036056 | 1.4 (0.055) |
| 803036053 | 1.5 (0.059) |
| 803036057 | 1.6 (0.063) |
| 803036058 | 1.7 (0.067) |

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

11.FRONT DIFFERENTIAL

Bevel gear to pinion backlash

0.13 — 0.18 mm (0.0051 — 0.0071 in)

| Washer (38.1 × 50 × t) | | | |
|------------------------|--|-----------|--|
| Part No. | Thickness mm (in) | Part No. | Thickness mm (in) |
| 803038021 | 0.925 — 0.950 (0.0364 — 0.0374) | 803038023 | 1.025 — 1.050 (0.0404 — 0.0413) |
| 803038022 | 0.975 — 1.000 (0.0384 — 0.0394) | — | — |

Pinion shaft to axle drive shaft clearance

0 — 0.2 mm (0 — 0.008 in)

| Snap ring (Outer-28) | | | |
|----------------------|----------------------|-----------|----------------------|
| Part No. | Thickness mm (in) | Part No. | Thickness mm (in) |
| 805028011 | 1.05 (0.0413) | 805028012 | 1.20 (0.0472) |

12.TRANSFER DRIVE GEAR

Snap ring (Outer-30) to ball bearing clearance

0.01 — 0.15 mm (0.0004 — 0.0059 in)

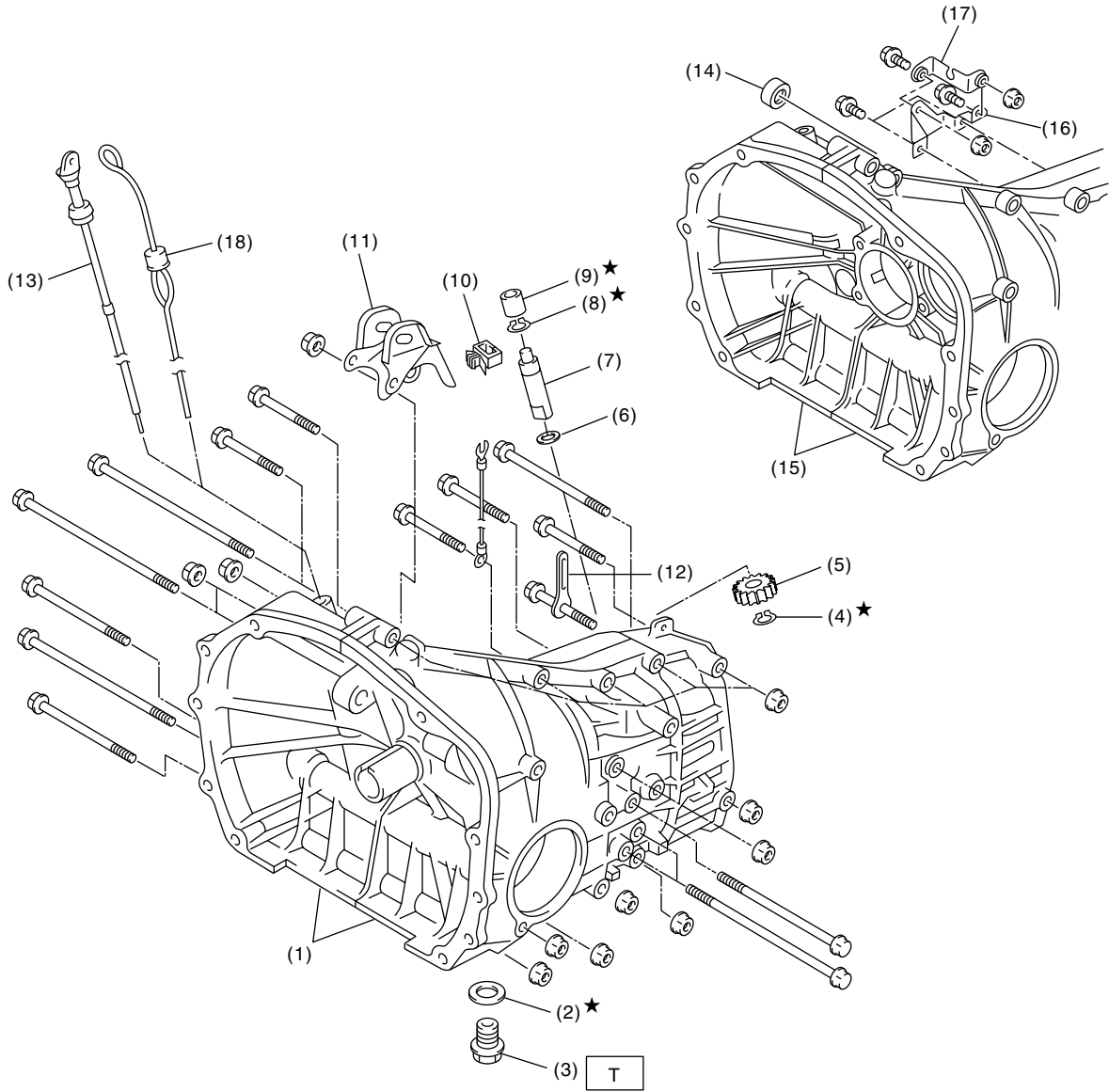
| Snap ring (Outer-30) | |
|----------------------|-------------------|
| Part No. | Thickness mm (in) |
| 805030041 | 1.53 (0.0602) |
| 805030042 | 1.65 (0.0650) |
| 805030043 | 1.77 (0.0697) |

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

B: COMPONENT

1. TRANSMISSION CASE



MT-00002

5MT-7

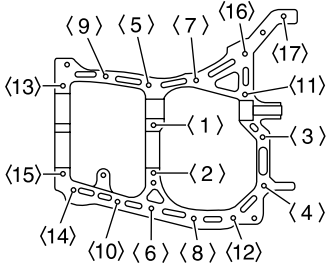
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

- | | | |
|-----------------------------|--|--|
| (1) Transmission case ASSY | (9) Oil seal | (16) High-low cable bracket A (Dual-range) |
| (2) Gasket | (10) Clamp | (17) High-low cable bracket B (Dual-range) |
| (3) Drain plug | (11) Pitching stopper bracket | (18) Oil level gauge (Turbo model) |
| (4) Snap ring (Outer) | (12) Clip | |
| (5) Speedometer driven gear | (13) Oil level gauge (Non-turbo model) | |
| (6) Washer | (14) Oil seal (Dual-range) | |
| (7) Speedometer shaft | (15) Transmission case ASSY (Dual-range) | |
| (8) Snap ring (Outer) | | |

Tightening torque: N·m (kgf·m, ft·lb)
T: 69 (7.0, 50.6)

• Transmission case tightening torque

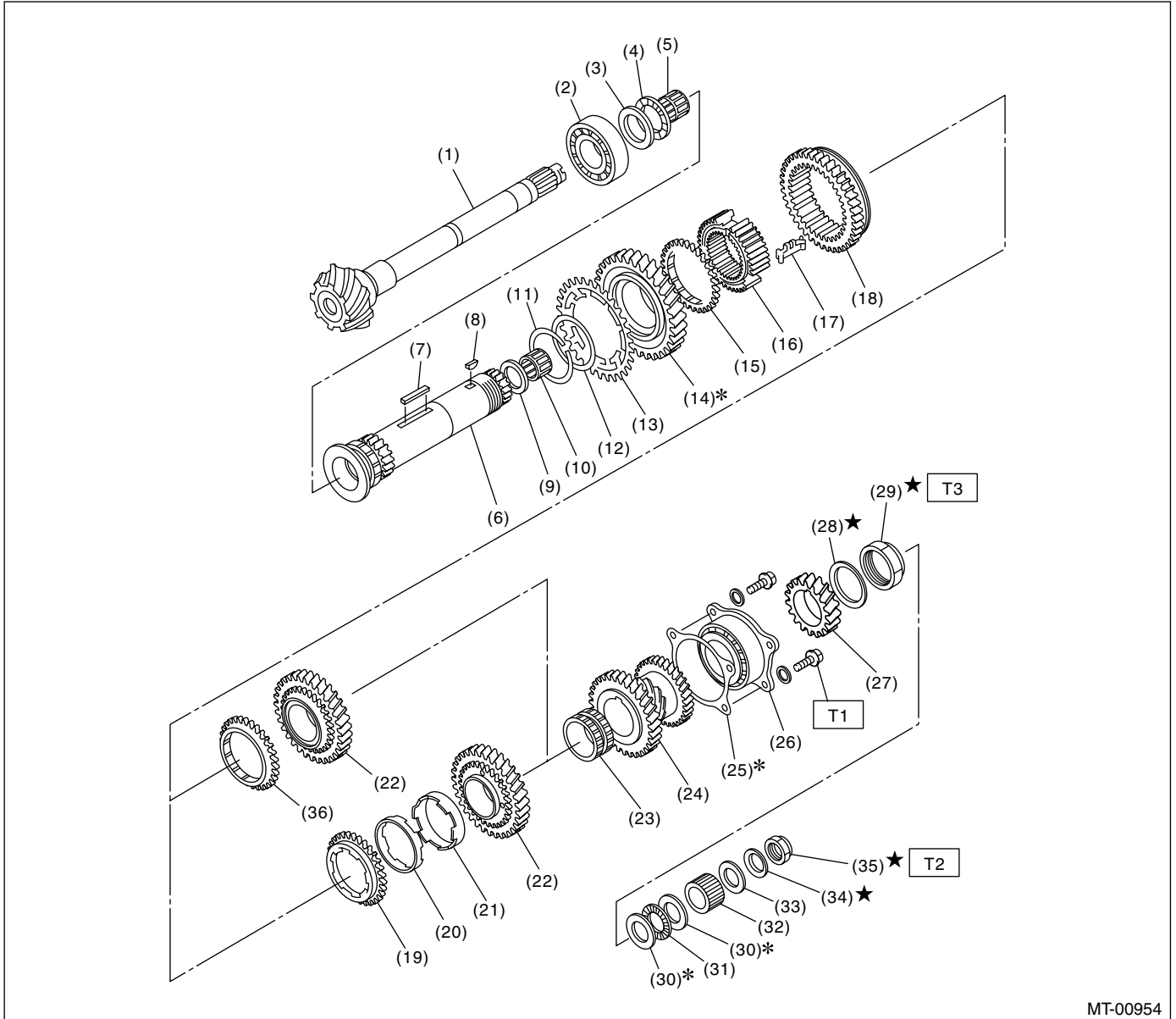
| | | | |
|---|--------------------------|-----------|---------------------------------------|
|  <p>MT-00003</p> | Bolt No. | Bolt size | Tightening torque: N·m (kgf·m, ft·lb) |
| | <5> to <15> | 8 mm | 25 (2.5, 18.1) |
| | <1> to <4> <16>, <17> | 10 mm | 39 (4.0, 28.9) |

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

2. DRIVE PINION ASSEMBLY

• AWD MODEL



MT-00954

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

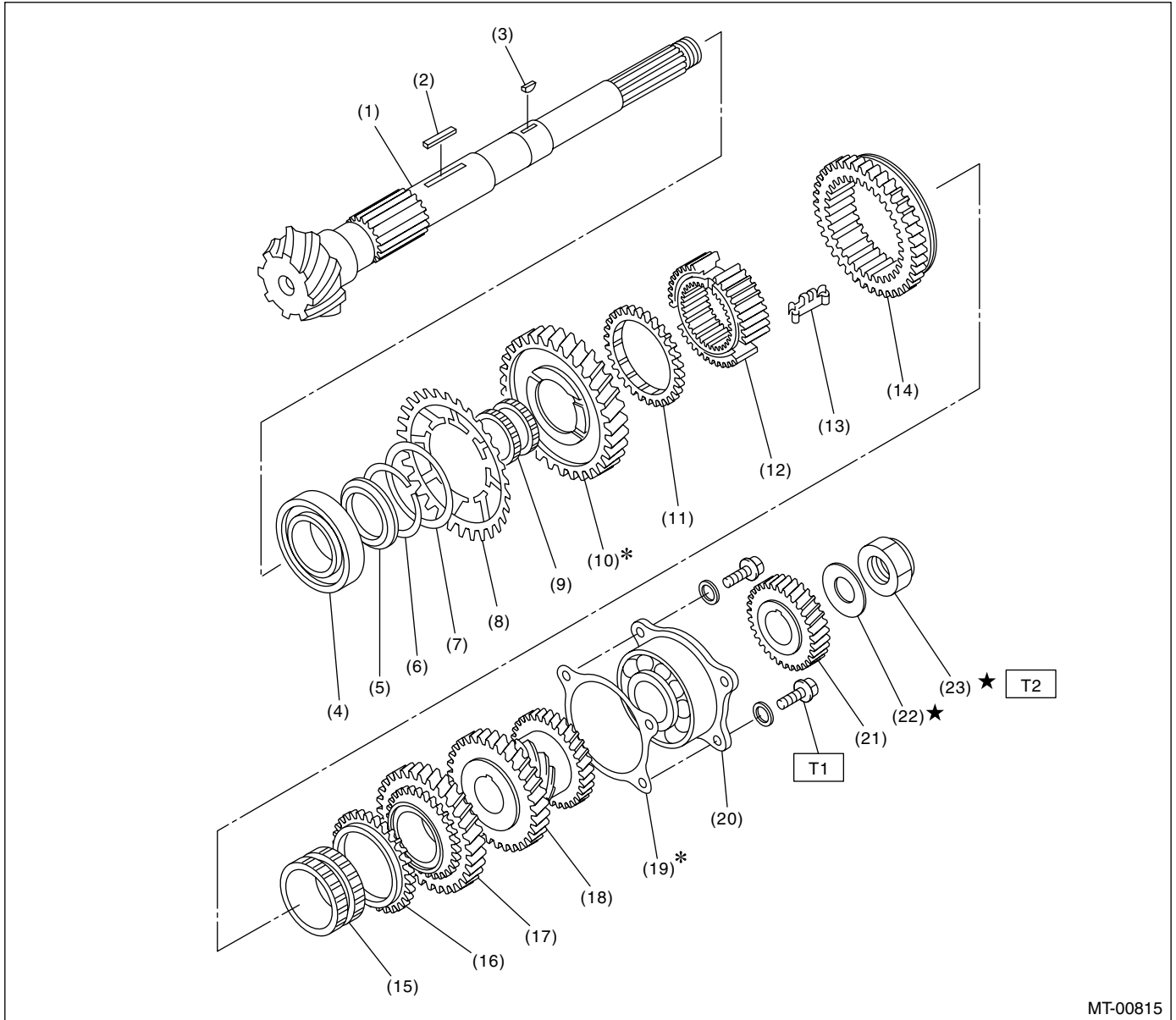
| | | |
|-------------------------|--|-------------------------------------|
| (1) Drive pinion shaft | (16) 1st-2nd synchronizer hub | (28) Lock washer |
| (2) Roller bearing | (17) Insert key | (29) Lock nut |
| (3) Washer | (18) Reverse driven gear | (30) Washer |
| (4) Thrust bearing | (19) Outer baulk ring (Except 1.6 L model) | (31) Thrust bearing |
| (5) Needle bearing | (20) Synchro cone (Except 1.6 L model) | (32) Differential bevel gear sleeve |
| (6) Driven shaft | (21) Inner baulk ring (Except 1.6 L model) | (33) Washer |
| (7) Key | (22) 2nd driven gear | (34) Lock washer |
| (8) Woodruff key | (23) 2nd driven gear bush | (35) Lock nut |
| (9) Drive pinion collar | (24) 3rd-4th driven gear | (36) 2nd baulk ring (1.6 L model) |
| (10) Needle bearing | (25) Driven pinion shim | |
| (11) Snap ring (Outer) | (26) Roller bearing | |
| (12) Washer | (27) 5th driven gear | |
| (13) Sub gear | | |
| (14) 1st driven gear | | |
| (15) Baulk ring | | |

Tightening torque: N·m (kgf-m, ft-lb)**T1: 30 (3.1, 22.1)****T2: 120 (12.2, 88.5)****T3: 260 (26.5, 191.7)**

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

• FWD MODEL



MT-00815

- (1) Drive pinion shaft
- (2) Key
- (3) Woodruff key
- (4) Roller bearing
- (5) 1st gear trust plate
- (6) Outer snap ring
- (7) Washer
- (8) 1st sub gear
- (9) 1st gear bushing
- (10) 1st driven gear

- (11) 1st baulk ring
- (12) 1st-2nd synchronizer hub
- (13) Insert key
- (14) Reverse driven gear
- (15) 2nd gear bushing
- (16) 2nd baulk ring
- (17) 2nd driven gear
- (18) 3rd-4th driven gear
- (19) Driven pinion shim
- (20) Ball bearing

- (21) 5th driven gear
- (22) Lock washer
- (23) Lock nut

Tightening torque: N·m (kgf·m, ft·lb)

T1: 29.4 (3.0, 21.7)

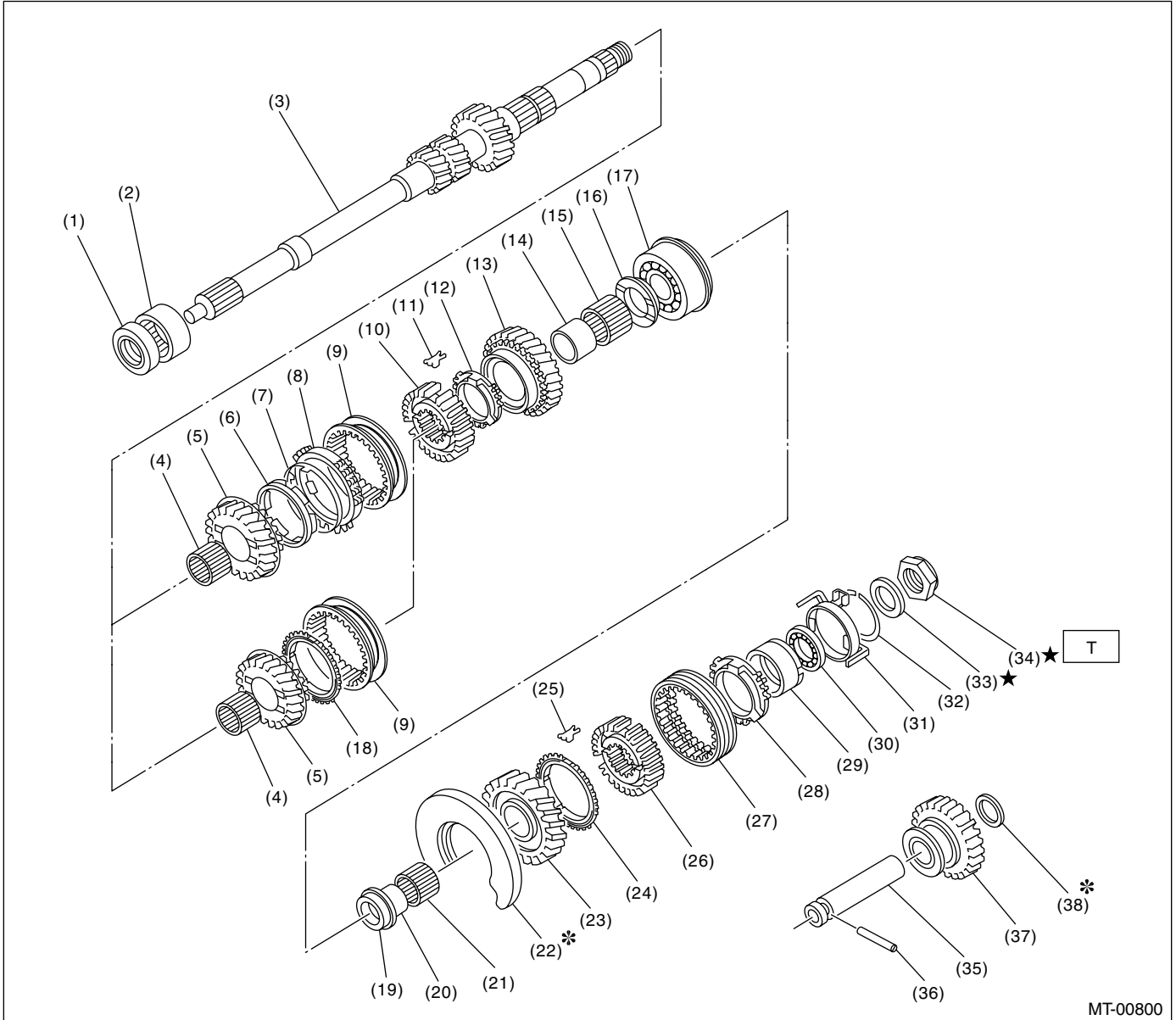
T2: 120 (12.2, 88.5)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

3. MAIN SHAFT ASSEMBLY

• SINGLE RANGE AWD MODEL



MT-00800

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| | | |
|--|--|-------------------------------|
| (1) Oil seal | (13) 4th drive gear | (27) 5th-Rev coupling sleeve |
| (2) Needle bearing | (14) 4th needle bearing race | (28) Rev baulk ring |
| (3) Transmission main shaft | (15) Needle bearing | (29) Rev synchro cone |
| (4) Needle bearing | (16) 4th gear thrust washer | (30) Ball bearing |
| (5) 3rd drive gear | (17) Ball bearing | (31) Synchro cone stopper |
| (6) Inner baulk ring (Turbo and 2.5 L model) | (18) Baulk ring (Except turbo and 2.5 L model) | (32) Snap ring |
| (7) 3rd synchro cone (Turbo and 2.5 L model) | (19) 5th gear thrust washer | (33) Lock washer |
| (8) Outer baulk ring (Turbo and 2.5 L model) | (20) 5th needle bearing race | (34) Lock nut |
| (9) 3rd-4th coupling sleeve | (21) Needle bearing | (35) Reverse idler gear shaft |
| (10) 3rd-4th synchronizer hub | (22) Main shaft rear plate | (36) Straight pin |
| (11) 3rd-4th shifting insert key | (23) 5th drive gear | (37) Reverse idler gear |
| (12) 4th baulk ring | (24) 5th baulk ring | (38) Washer |
| | (25) 5th-Rev shifting insert key | |
| | (26) 5th-Rev synchronizer hub | |

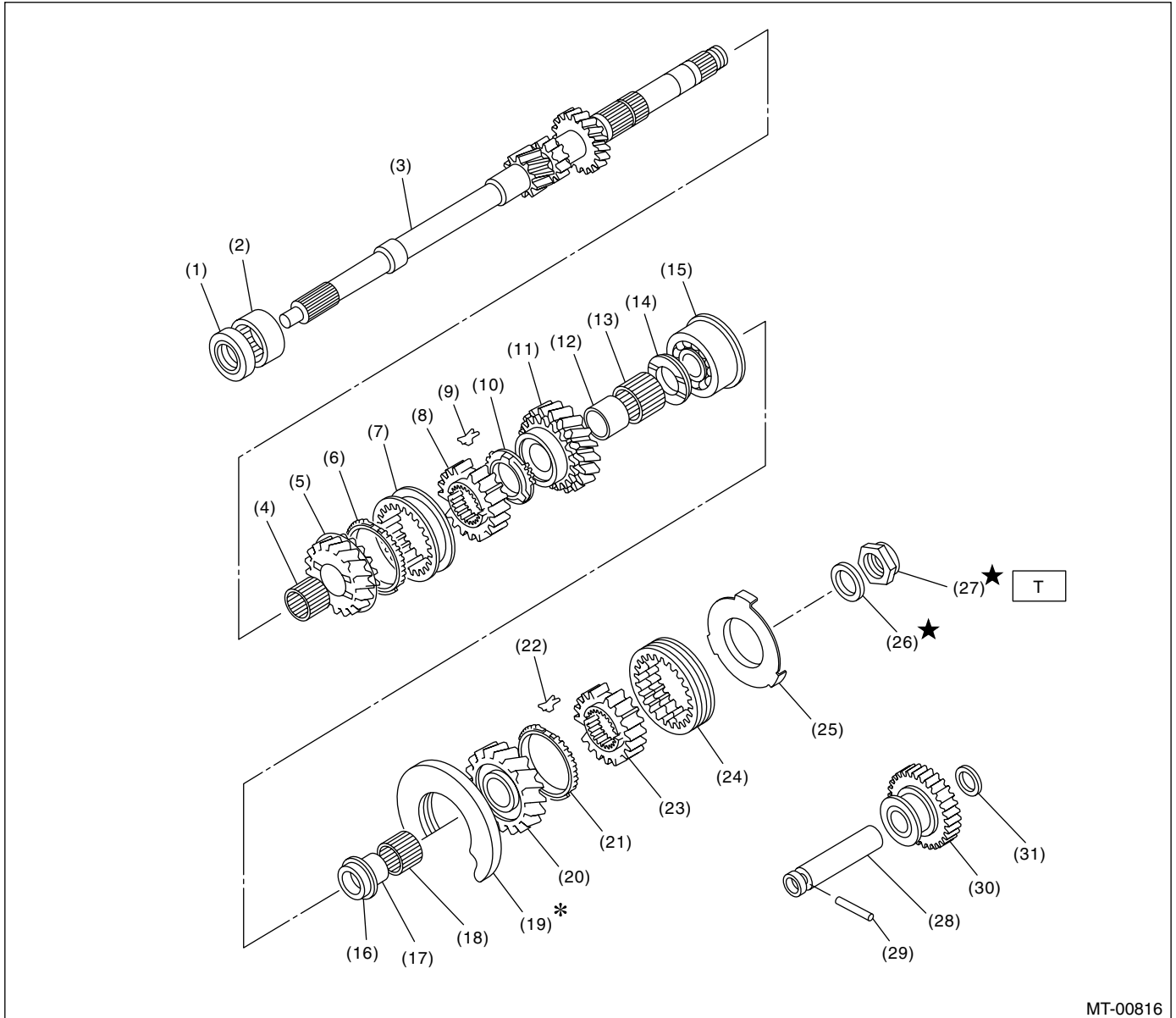
Tightening torque: N-m (kgf-m, ft-lb)

T: 120 (12.2, 88.5)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

• FWD MODEL



MT-00816

- | | | |
|------------------------------|----------------------------------|-------------------------------|
| (1) Oil seal | (13) Needle bearing | (25) Insert stopper plate |
| (2) Needle bearing | (14) 4th gear thrust washer | (26) Lock washer |
| (3) Transmission main shaft | (15) Ball bearing | (27) Lock nut |
| (4) Needle bearing | (16) 5th gear thrust washer | (28) Straight pin |
| (5) 3rd drive gear | (17) 5th needle bearing race | (29) Reverse idler gear shaft |
| (6) 3rd baulk ring | (18) Needle bearing | (30) Reverse idler gear |
| (7) Coupling sleeve | (19) Main shaft rear plate | (31) Washer |
| (8) Synchronizer hub | (20) 5th drive gear | |
| (9) Shifting insert key | (21) 5th baulk ring | |
| (10) 4th baulk ring | (22) 5th-Rev shifting insert key | |
| (11) 4th drive gear | (23) 5th-Rev synchronizer hub | |
| (12) 4th needle bearing race | (24) 5th-Rev coupling sleeve | |

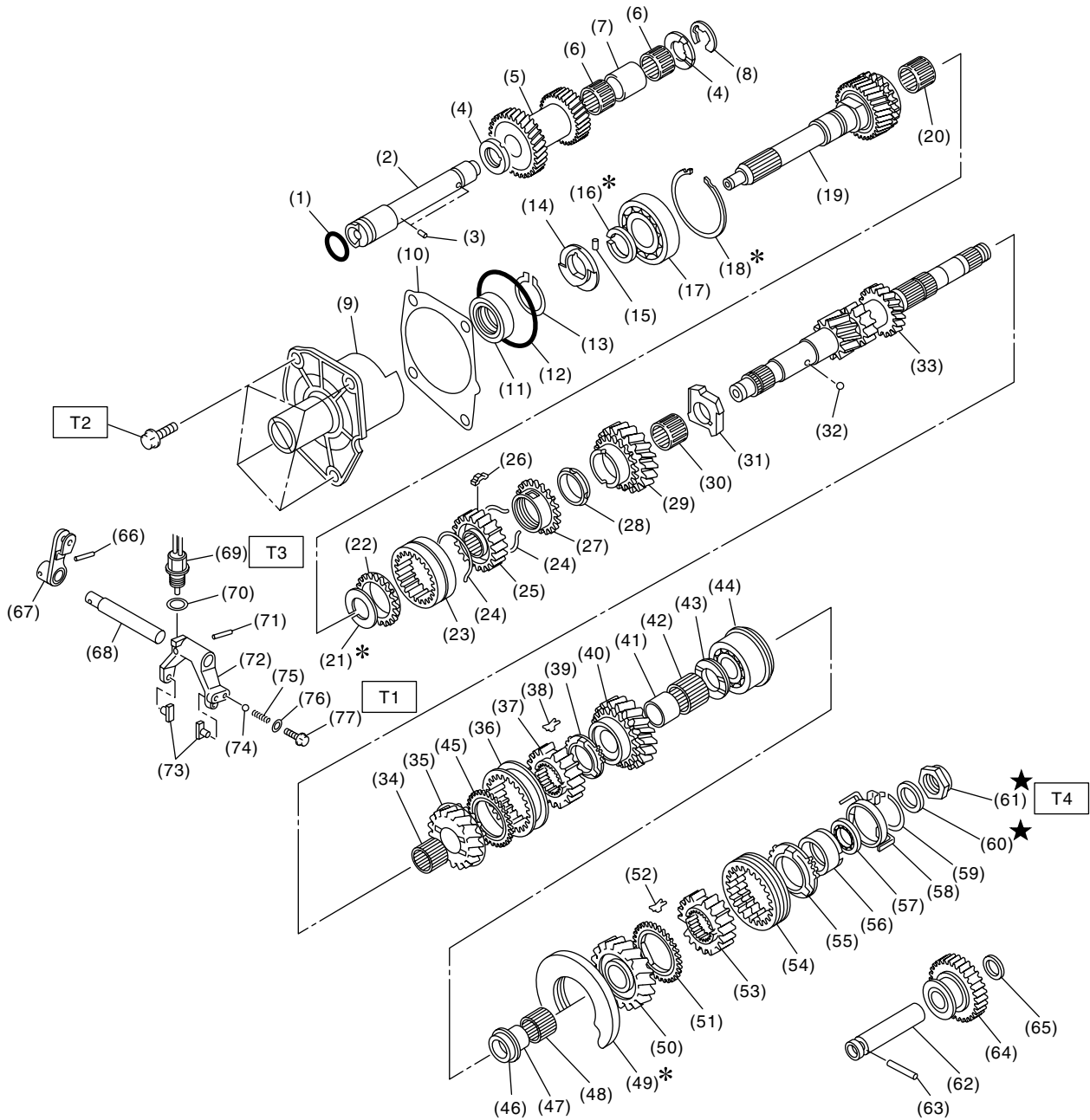
Tightening torque: N-m (kgf-m, ft-lb)

T: 120 (12.2, 88.5)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

• DUAL RANGE AWD MODEL



MT-00006

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

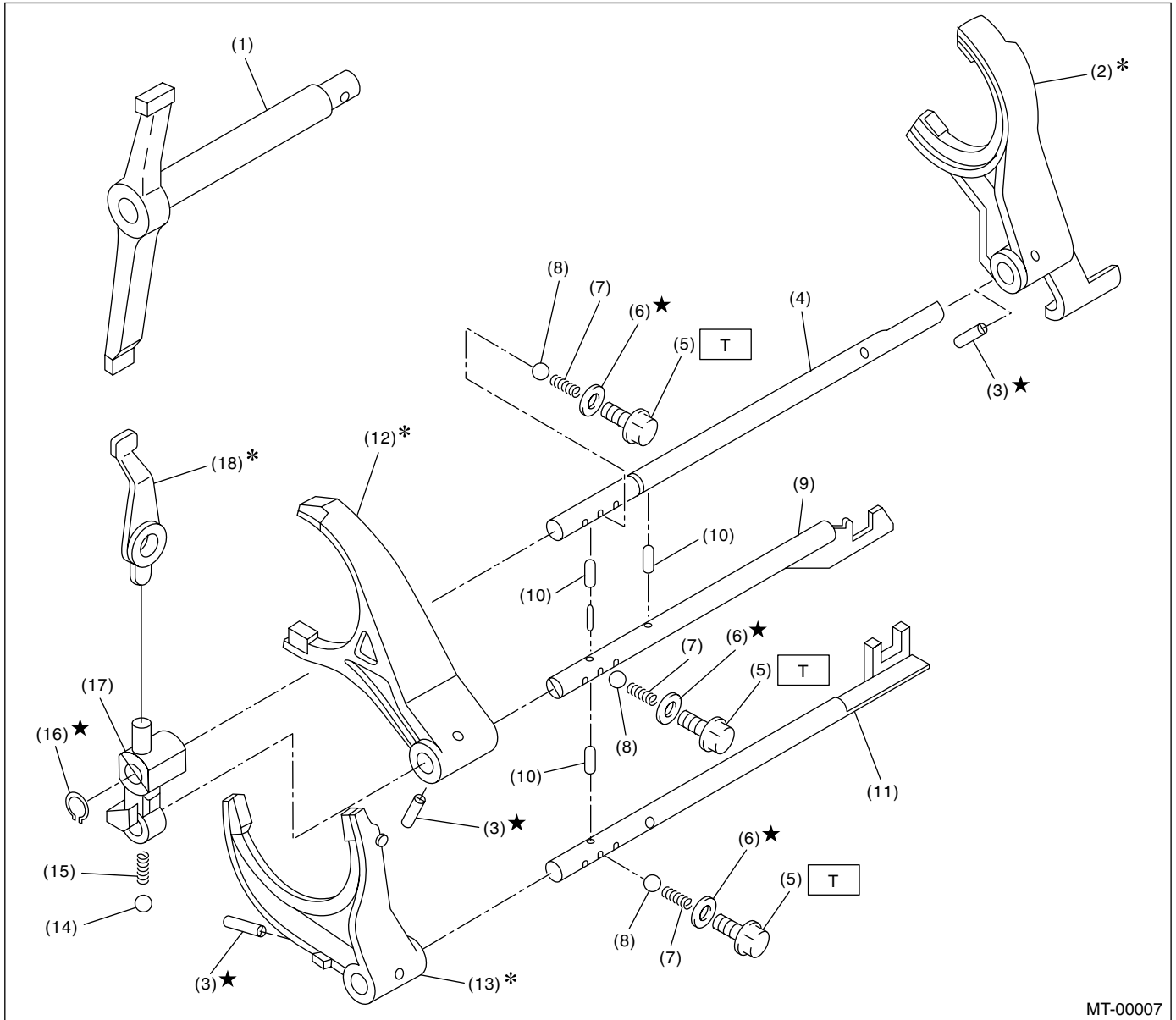
| | | |
|-----------------------------------|----------------------------------|-------------------------------|
| (1) O-ring | (29) Input low gear | (57) Ball bearing |
| (2) High-low counter shaft | (30) Needle bearing | (58) Synchro cone stopper |
| (3) Knock pin | (31) Input low gear spacer | (59) Snap ring |
| (4) High-low counter washer | (32) Ball | (60) Lock washer |
| (5) Counter gear | (33) Main shaft | (61) Lock nut |
| (6) Needle bearing | (34) Needle bearing | (62) Reverse idler gear shaft |
| (7) Counter gear collar | (35) 3rd drive gear | (63) Straight pin |
| (8) Snap ring (Outer-19) | (36) 3rd-4th coupling sleeve | (64) Reverse idler gear |
| (9) Input shaft holder | (37) 3rd-4th synchronizer hub | (65) Washer |
| (10) Input shaft shim | (38) 3rd-4th shifting insert key | (66) Straight pin |
| (11) Oil seal | (39) 4th baulk ring | (67) High-low shifter lever |
| (12) O-ring | (40) 4th drive gear | (68) High-low shifter shaft |
| (13) Snap ring (Outer-28) | (41) 4th needle bearing race | (69) Low switch |
| (14) Oil squeeze | (42) Needle bearing | (70) Gasket |
| (15) Straight pin | (43) 4th gear thrust washer | (71) Straight pin |
| (16) Snap ring (Outer-28) | (44) Ball bearing | (72) High-low shifter fork |
| (17) Ball bearing | (45) Baulk ring | (73) High-low shifter piece |
| (18) Snap ring (Inner-68) | (46) 5th gear thrust washer | (74) Ball |
| (19) Input shaft | (47) 5th needle bearing race | (75) Spring |
| (20) Needle bearing | (48) Needle bearing | (76) Gasket |
| (21) Snap ring (Outer-25) | (49) Main shaft rear plate | (77) Plug |
| (22) High-low baulk ring | (50) 5th drive gear | |
| (23) High-low coupling sleeve | (51) 5th baulk ring | |
| (24) High-low synchronizer spring | (52) 5th-Rev shifting insert key | |
| (25) High-low synchronizer hub | (53) 5th-Rev synchronizer hub | |
| (26) Shifting insert key | (54) 5th-Rev coupling sleeve | |
| (27) High-low baulk ring | (55) Rev baulk ring | |
| (28) Friction damper | (56) Rev synchro cone | |

Tightening torque: N-m (kgf-m, ft-lb)**T1: 9.75 (1.0, 7.2)****T2: 20 (2.0, 14.5)****T3: 25 (2.5, 18.1)****T4: 120 (12.2, 88.5)**

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

4. SHIFTER FORK AND SHIFTER ROD



MT-00007

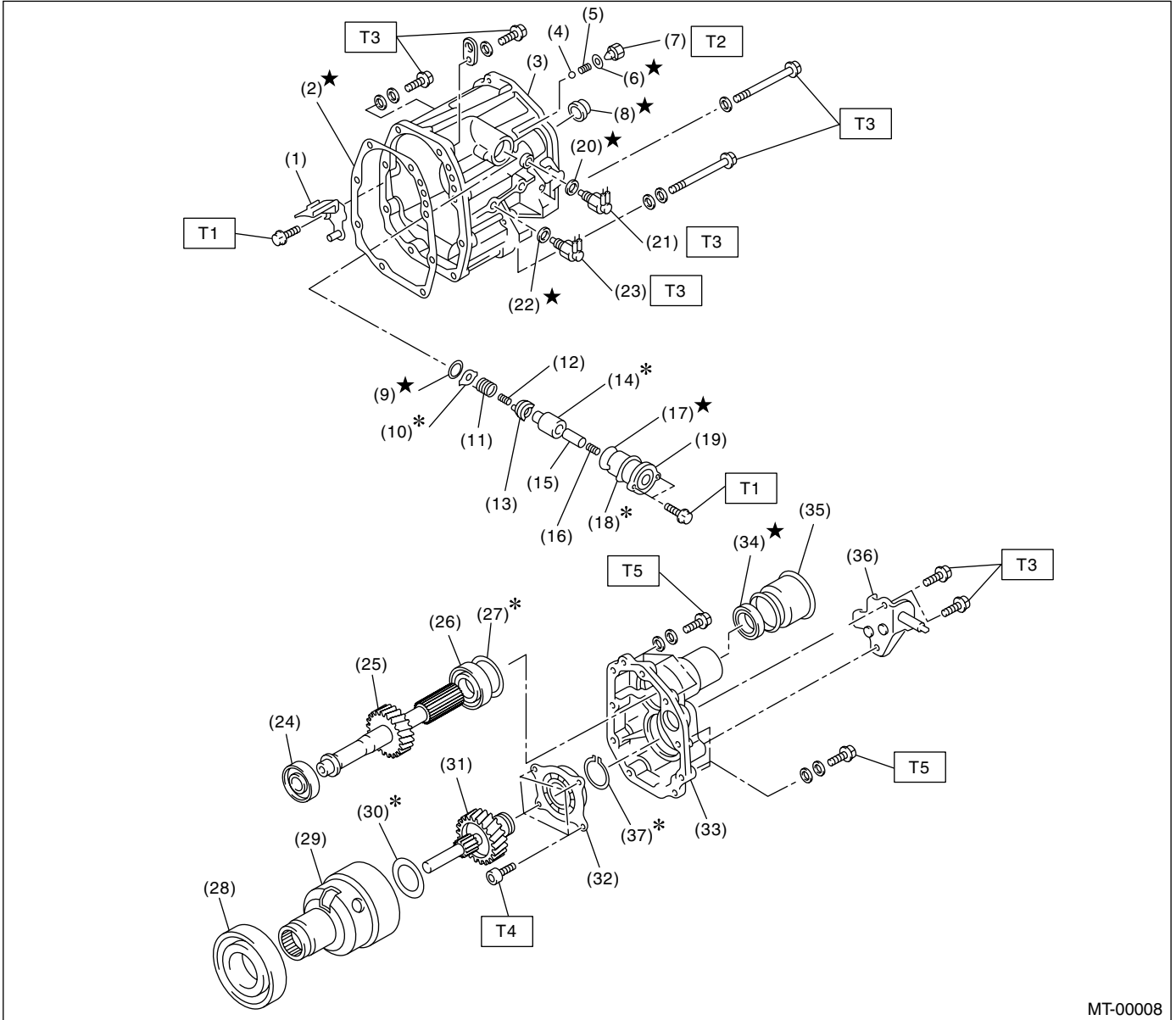
- | | | |
|--------------------------|---------------------------|----------------------------|
| (1) Shifter arm | (9) 3rd-4th fork rod | (17) Reverse fork rod arm |
| (2) 5th shifter fork | (10) Interlock plunger | (18) Reverse shifter lever |
| (3) Straight pin | (11) 1st-2nd fork rod | |
| (4) Reverse fork rod | (12) 3rd-4th shifter fork | |
| (5) Checking ball plug | (13) 1st-2nd shifter fork | |
| (6) Gasket | (14) Ball | |
| (7) Checking ball spring | (15) Spring | |
| (8) Ball | (16) Snap ring (Outer) | |

Tightening torque: N·m (kgf·m, ft·lb)
T: 20 (2.0, 14.5)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

5. TRANSFER CASE AND EXTENSION



- | | | |
|----------------------------|----------------------------|--------------------------|
| (1) Oil guide | (16) Return spring | (31) Transfer drive gear |
| (2) Gasket | (17) O-ring | (32) Ball bearing |
| (3) Transfer case | (18) Adjusting select shim | (33) Extension case |
| (4) Ball | (19) Reverse check sleeve | (34) Oil seal |
| (5) Reverse accent spring | (20) Gasket | (35) Dust cover |
| (6) Gasket | (21) Neutral switch | (36) Shift bracket |
| (7) Plug | (22) Gasket | (37) Snap ring |
| (8) Oil seal | (23) Back-up light switch | |
| (9) Snap ring (Inner) | (24) Roller bearing | |
| (10) Reverse check plate | (25) Transfer driven gear | |
| (11) Reverse check spring | (26) Roller bearing | |
| (12) Reverse return spring | (27) Adjusting washer | |
| (13) Reverse check cam | (28) Ball bearing | |
| (14) Reverse accent shaft | (29) Center differential | |
| (15) Return spring cap | (30) Adjusting washer | |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 6.4 (0.65, 4.7)

T2: 10 (1.0, 7.2)

T3: 25 (2.5, 18.1)

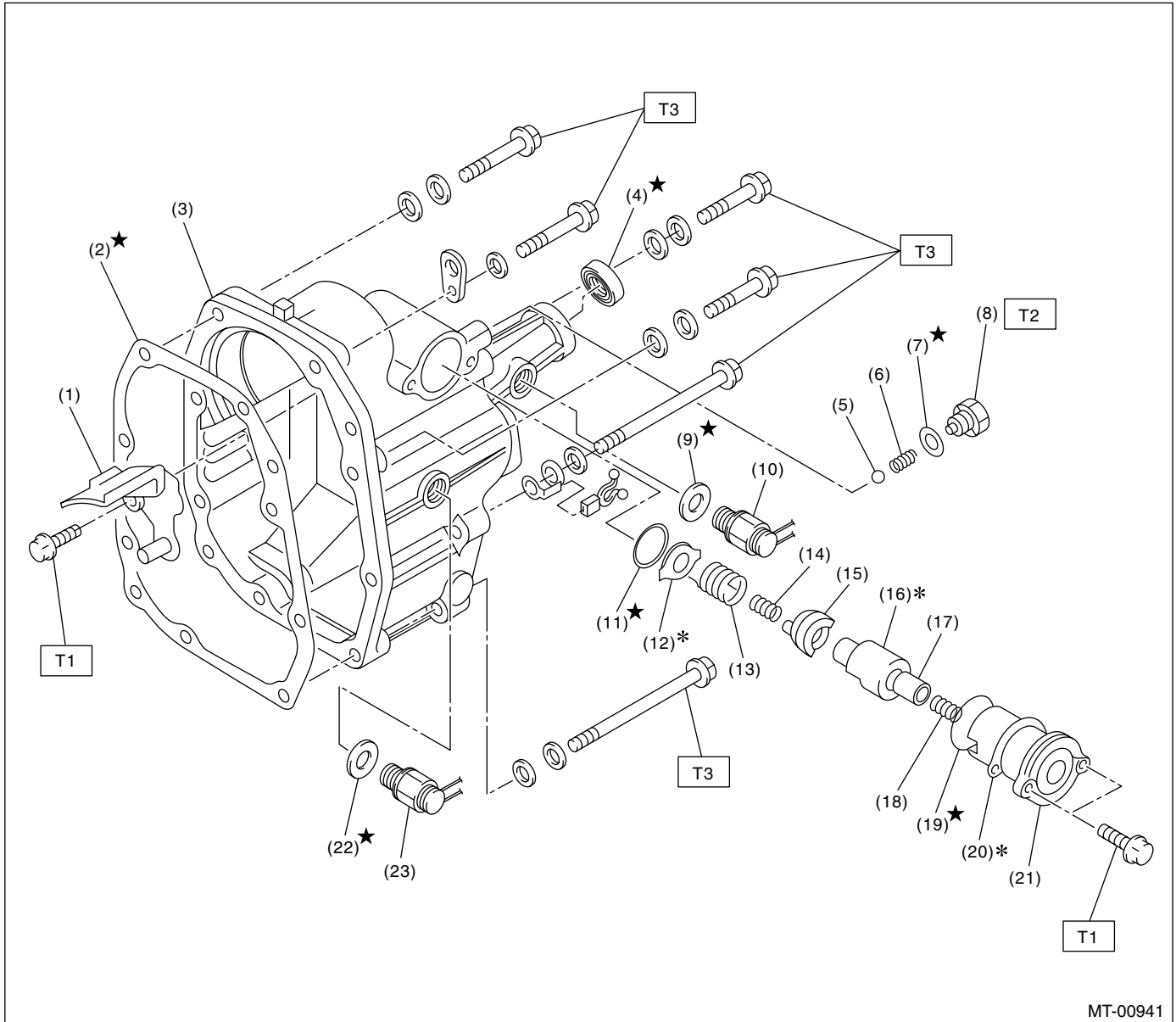
T4: 26 (2.7, 20)

T5: 40 (4.1, 29.7)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

6. REAR CASE



MT-00941

- | | | |
|---------------------------|----------------------------|---------------------------|
| (1) Oil guide | (11) Snap ring | (21) Reverse check sleeve |
| (2) Case gasket | (12) Reverse check plate | (22) Gasket |
| (3) Rear case | (13) Reverse check spring | (23) Back-up light switch |
| (4) Oil seal | (14) Reverse return spring | |
| (5) Ball | (15) Reverse check cam | |
| (6) Reverse accent spring | (16) Reverse accent shaft | |
| (7) Washer | (17) Return spring cap | |
| (8) Plug | (18) Return spring | |
| (9) Gasket | (19) O-ring | |
| (10) Neutral switch | (20) Adjusting select shim | |

Tightening torque: N-m (kgf-m, ft-lb)

T1: 6.4 (0.65, 4.7)

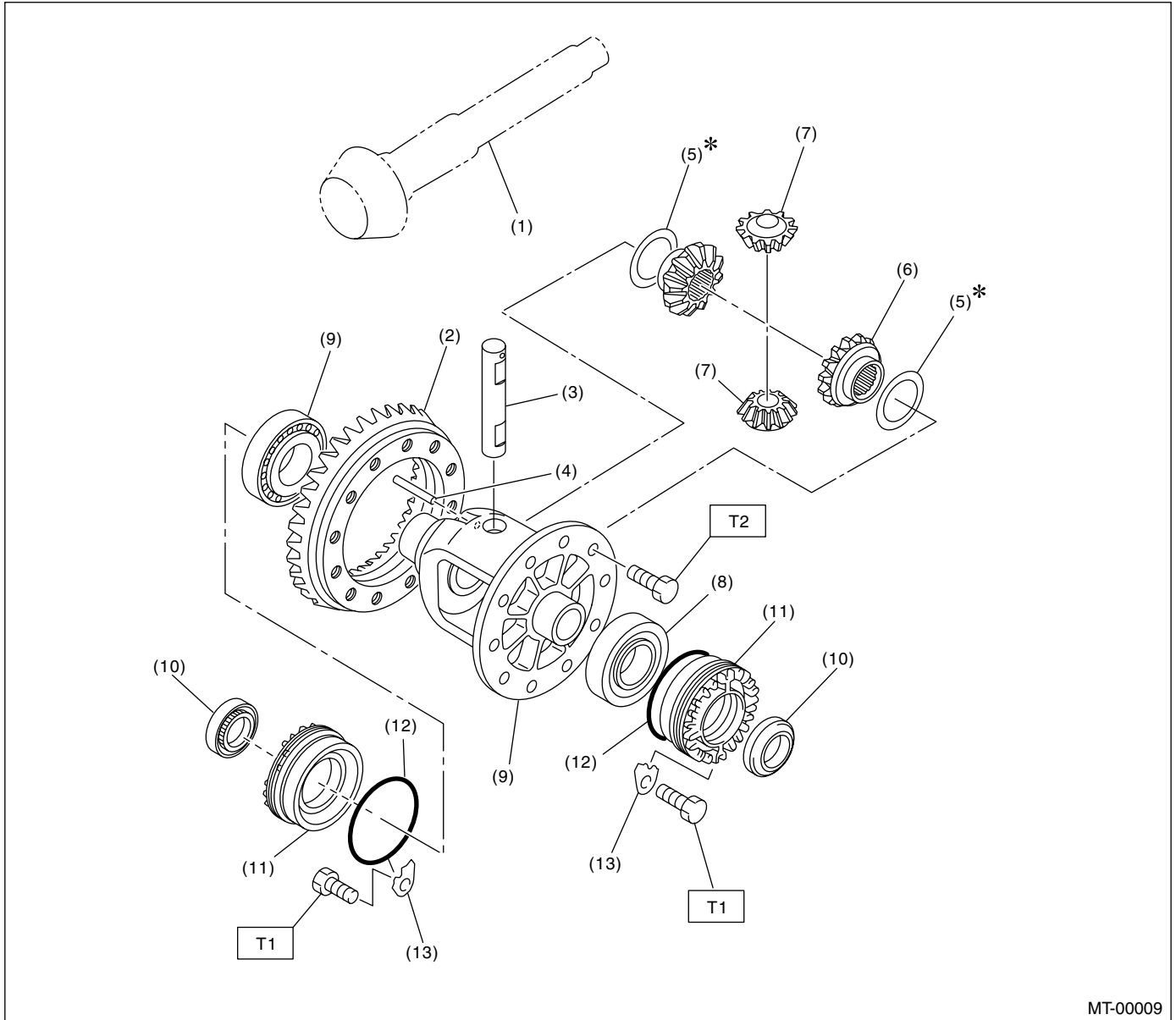
T2: 10 (1.0, 7.2)

T3: 24.5 (2.5, 18.1)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

7. FRONT DIFFERENTIAL



- | | | |
|-----------------------------|---------------------------------|--------------------------|
| (1) Drive pinion shaft | (7) Differential bevel pinion | (13) Retainer lock plate |
| (2) Hypoid driven gear | (8) Roller bearing | |
| (3) Pinion shaft | (9) Differential case | |
| (4) Straight pin | (10) Oil seal | |
| (5) Washer | (11) Differential side retainer | |
| (6) Differential bevel gear | (12) O-ring | |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 25 (2.5, 18.1)

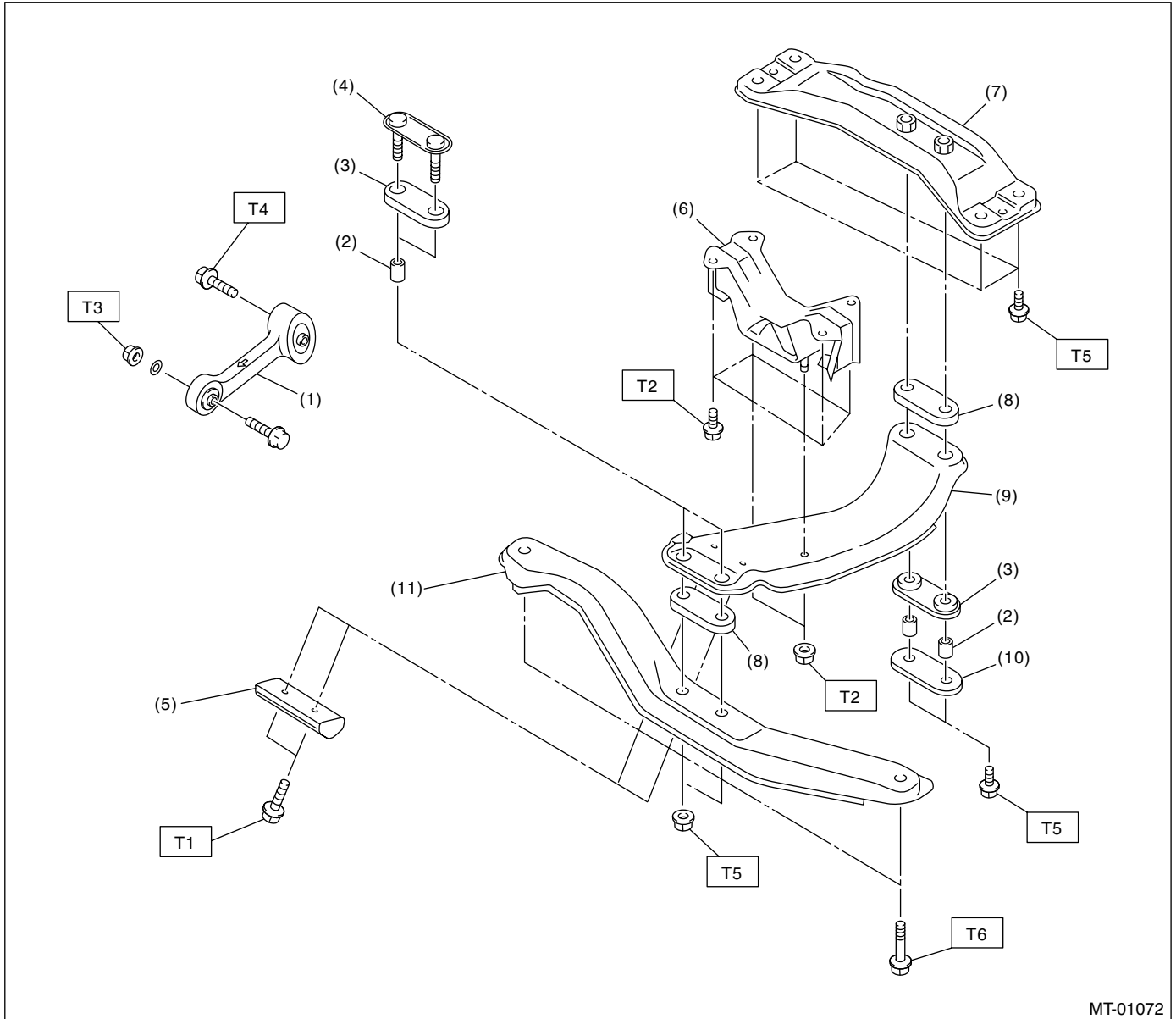
T2: 62 (6.3, 45.6)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

8. TRANSMISSION MOUNTING

• Except 1.6 L FWD MODEL



MT-01072

- | | |
|---|------------------------|
| (1) Pitching stopper | (7) Rear crossmember |
| (2) Spacer | (8) Cushion D |
| (3) Cushion C | (9) Center crossmember |
| (4) Front plate | (10) Rear plate |
| (5) Dynamic damper (Except for Australia 2.5 L model) | (11) Front crossmember |
| (6) Rear cushion rubber | |

Tightening torque: N-m (kgf-m, ft-lb)

T1: 7.5 (0.76, 5.5)

T2: 35 (3.6, 26)

T3: 50 (5.1, 37)

T4: 58 (5.9, 43)

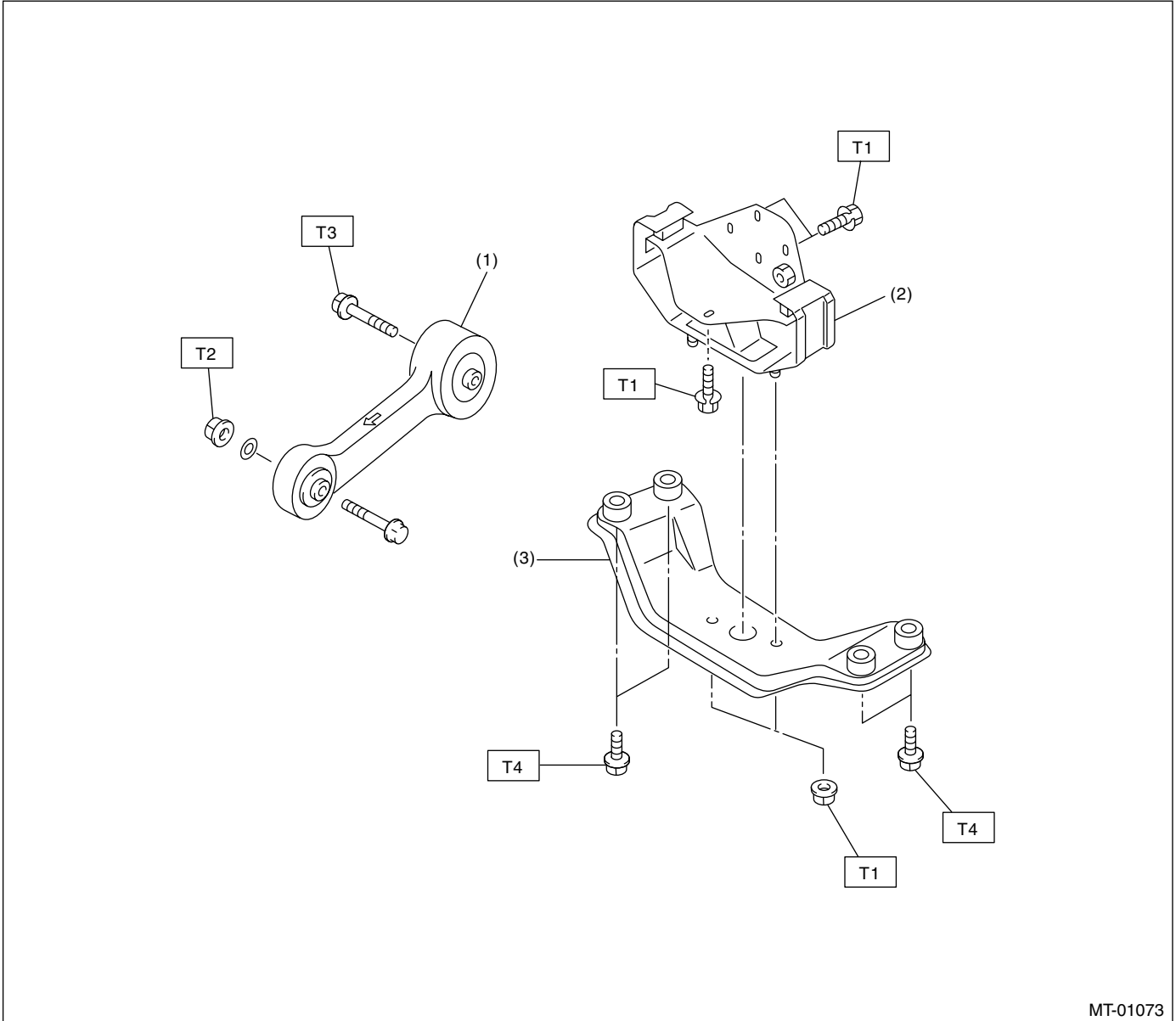
T5: 70 (7.1, 51)

T6: 140 (14.3, 103)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

• 1.6 L FWD MODEL



MT-01073

- (1) Pitching stopper
- (2) Rear cushion rubber

- (3) Rear crossmember

Tightening torque: N·m (kgf·m, ft·lb)

T1: 35 (3.57, 25.8)

T2: 50 (5.1, 36.9)

T3: 58 (5.9, 42.8)

T4: 70 (7.1, 51.6)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

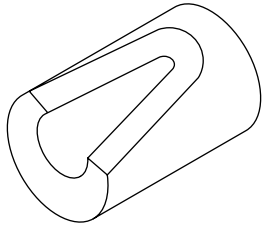
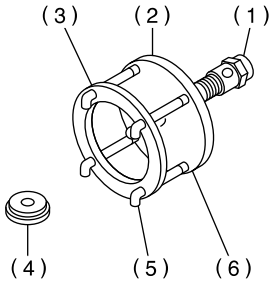
C: CAUTION

- Wear working clothing, including a cap, protective goggles and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation, and disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- When disassembling the case and other light alloy parts, use a plastic hammer to force it apart. Do not pry it apart with a screwdriver or other tool.
- Be careful not to burn your hands, because each part on the vehicle is hot after running.
- Use SUBARU genuine gear oil, grease etc. or the equivalent. Do not mix gear oil, grease etc. with that of another grade or from other manufacturers.

- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Apply gear oil onto sliding or revolution surfaces before installation.
- Replace deformed or otherwise damaged snap rings with new ones.
- Before installing O-rings or oil seals, apply sufficient amount of gear oil to avoid damage and deformation.
- Be careful not to incorrectly install or fail to install O-rings, snap rings and other such parts.
- Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vise.
- Avoid damaging the mating surface of the case.
- Before applying sealant, completely remove the old seal.

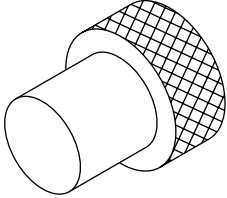
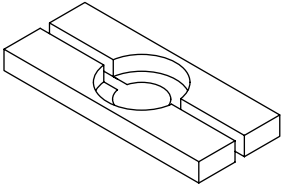
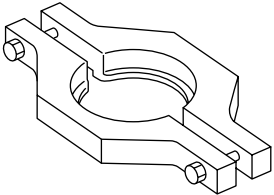
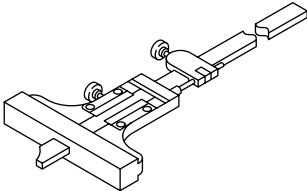
D: PREPARATION TOOL

1. SPECIAL TOOLS

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|-----------------------|---|
|  <p>ST-399411700</p> | 399411700 | ACCENT BALL INSTALLER | Used for installing reverse shifter rail arm. |
|  <p>ST-399527700</p> | 399527700 | PULLER SET | Used for removing and installing roller bearing (Differential). (1) BOLT (899521412) (2) PULLER (399527702) (3) HOLDER (399527703) (4) ADAPTER (398497701) (5) BOLT (899520107) (6) NUT (021008000) |

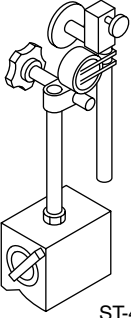
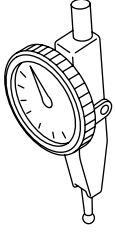
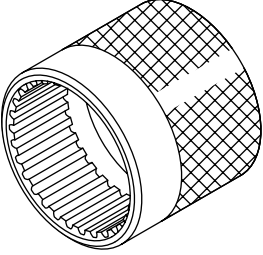
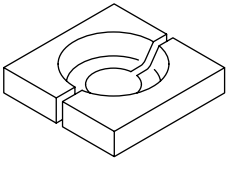
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|--|--|--|
|  <p style="text-align: center;">ST-399780104</p> | <p style="text-align: center;">399780104</p> | <p style="text-align: center;">WEIGHT</p> | <p>Used for measuring preload on roller bearing.</p> |
|  <p style="text-align: center;">ST-498077000</p> | <p style="text-align: center;">498077000</p> | <p style="text-align: center;">REMOVER</p> | <p>Used for removing roller bearing of drive pinion shaft.</p> |
|  <p style="text-align: center;">ST-498077300</p> | <p style="text-align: center;">498077300</p> | <p style="text-align: center;">CENTER DIFFERENTIAL BEARING REMOVER</p> | <p>Used for removing the center differential cover ball bearing.</p> |
|  <p style="text-align: center;">ST-498147000</p> | <p style="text-align: center;">498147000</p> | <p style="text-align: center;">DEPTH GAUGE</p> | <p>Used for adjusting main shaft axial end play.</p> |

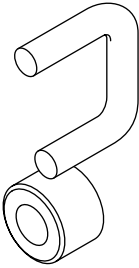
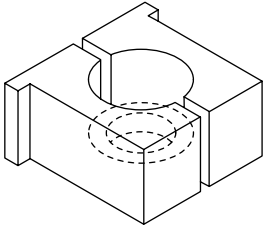
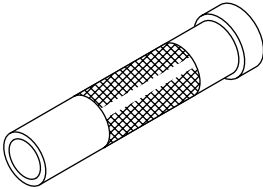
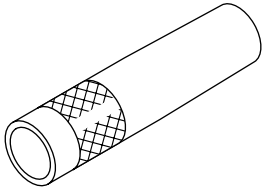
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|-------------|--|
|  <p>ST-498247001</p> | 498247001 | MAGNET BASE | <ul style="list-style-type: none"> • Used for measuring backlash between side gear and pinion, and hypoid gear. • Used with DIAL GAUGE (498247100). |
|  <p>ST-498247100</p> | 498247100 | DIAL GAUGE | <ul style="list-style-type: none"> • Used for measuring backlash between side gear and pinion, and hypoid gear. • Used with MAGNET BASE (498247001). |
|  <p>ST-498427100</p> | 498427100 | STOPPER | Used for securing the drive pinion shaft assembly and driven gear assembly when removing the drive pinion shaft assembly lock nut. |
|  <p>ST-498517000</p> | 498517000 | REPLACER | <ul style="list-style-type: none"> • Used for removing drive pinion thrust plate and roller bearing race. • For FWD. |

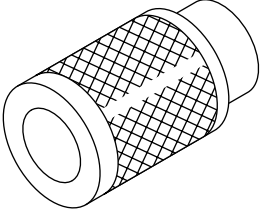
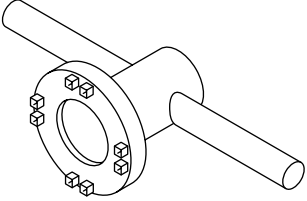
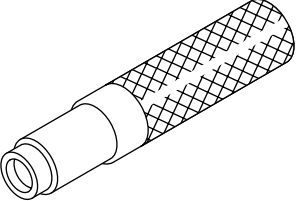
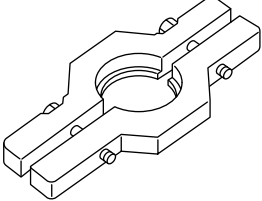
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|---------------------|--|
|  <p style="text-align: center;">ST-498787100</p> | 498787100 | MAIN SHAFT STOPPER | Used for removing and installing transmission main shaft lock nut. |
|  <p style="text-align: center;">ST-498937000</p> | 498937000 | TRANSMISSION HOLDER | Used for removing and installing transmission main shaft lock nut. |
|  <p style="text-align: center;">ST-499277100</p> | 499277100 | BUSH 1-2 INSTALLER | <ul style="list-style-type: none"> • Used for installing 1st driven gear thrust plate and 1st-2nd driven gear bush. • Used for installing roller bearing outer races to differential case. |
|  <p style="text-align: center;">ST-499277200</p> | 499277200 | INSTALLER | Used for press-fitting the 2nd driven gear, roller bearings and 5th driven gear onto the driven shaft. |

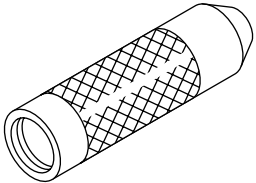
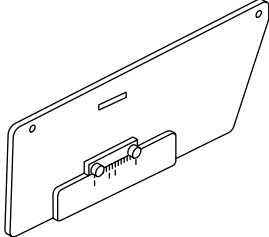
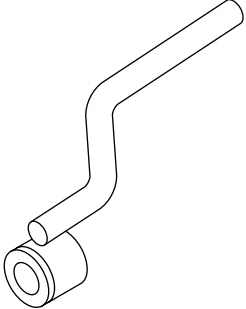
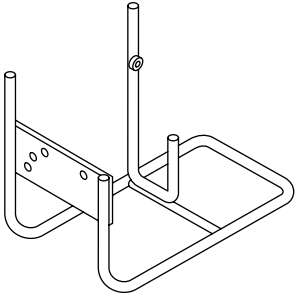
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|--|--|--|
|  <p style="text-align: center;">ST-499757002</p> | <p style="text-align: center;">499757002</p> | <p style="text-align: center;">INSTALLER</p> | <ul style="list-style-type: none"> • Used for installing snap ring (OUT 25) and ball bearing (25 × 26 × 17). • Used for installing bearing cone of transfer driven gear (extension core side). |
|  <p style="text-align: center;">ST-499787000</p> | <p style="text-align: center;">499787000</p> | <p style="text-align: center;">WRENCH ASSY</p> | <p>Used for removing and installing differential side retainer.</p> |
|  <p style="text-align: center;">ST-499827000</p> | <p style="text-align: center;">499827000</p> | <p style="text-align: center;">PRESS</p> | <p>Used for installing speedometer oil seal when installing speedometer cable to transmission.</p> |
|  <p style="text-align: center;">ST-499857000</p> | <p style="text-align: center;">499857000</p> | <p style="text-align: center;">5TH DRIVEN GEAR REMOVER</p> | <p>Used for removing 5th driven gear.</p> |

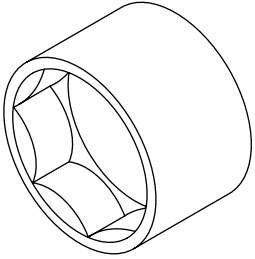
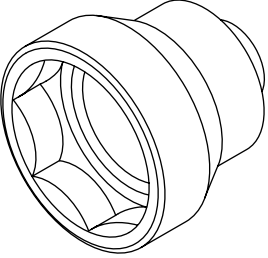
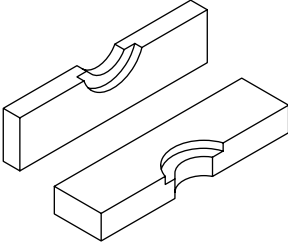
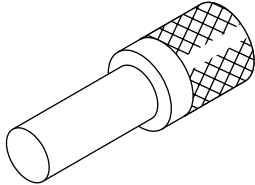
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|--|------------------------------------|--|
|  <p style="text-align: center;">ST-499877000</p> | <p style="text-align: center;">499877000</p> | <p>RACE 4-5 INSTALLER</p> | <ul style="list-style-type: none"> • Used for installing 4th needle bearing race and ball bearing onto transmission main shaft. • Used with REMOVER (899714110). |
|  <p style="text-align: center;">ST-499917500</p> | <p style="text-align: center;">499917500</p> | <p>DRIVE PINION GAUGE ASSY</p> | <p>Used for adjusting drive pinion shim.</p> |
|  <p style="text-align: center;">ST-499927100</p> | <p style="text-align: center;">499927100</p> | <p>HANDLE</p> | <p>Used for fitting transmission main shaft.</p> |
|  <p style="text-align: center;">ST-499937100</p> | <p style="text-align: center;">499937100</p> | <p>TRANSMISSION STAND SET</p> | <p>Stand used for transmission disassembly and assembly.</p> |

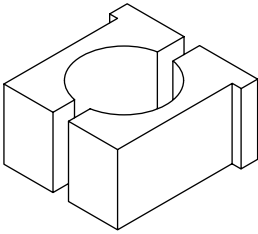
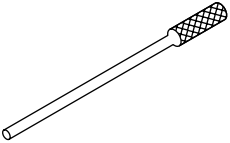
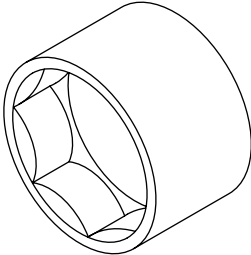
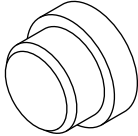
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|-----------------------|--|
|  <p style="text-align: center;">ST-499987003</p> | 499987003 | SOCKET WRENCH (35) | Used for removing and installing driven pinion lock nut and main shaft lock nut. |
|  <p style="text-align: center;">ST-499987300</p> | 499987300 | SOCKET WRENCH (50) | Used for removing and installing driven gear assembly lock nut. |
|  <p style="text-align: center;">ST-899714110</p> | 899714110 | REMOVER | Used for fixing transmission main shaft, drive pinion and rear drive shaft. |
|  <p style="text-align: center;">ST-899864100</p> | 899864100 | REMOVER | Used for removing parts on transmission main shaft and drive pinion. |

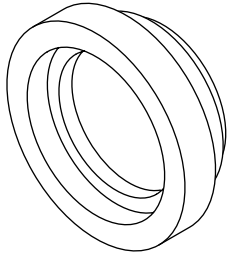
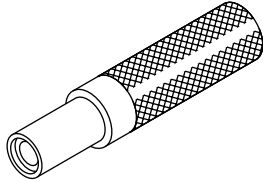
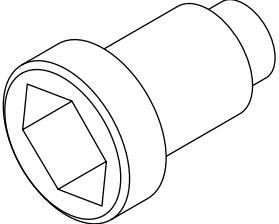
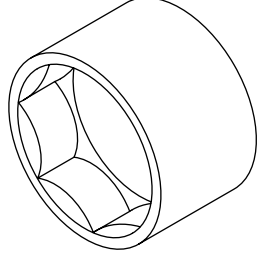
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|-----------------------|--|
|  <p style="text-align: center;">ST-899884100</p> | 899884100 | HOLDER | Used for tightening lock nut on sleeve. |
|  <p style="text-align: center;">ST-899904100</p> | 899904100 | REMOVER | Used for removing and installing straight pin. |
|  <p style="text-align: center;">ST-899988608</p> | 899988608 | SOCKET WRENCH (27) | Used for removing and installing drive pinion lock nut. |
|  <p style="text-align: center;">ST-398497701</p> | 398497701 | ADAPTER | <ul style="list-style-type: none"> • Used for installing roller bearing onto differential case. • Used with INSTALLER (499277100). |

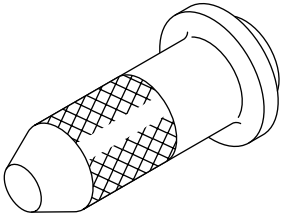
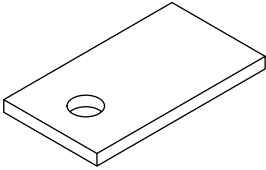
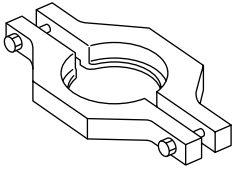
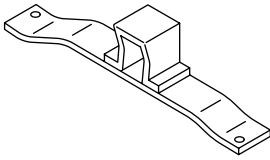
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|-----------------------|---|
|  ST-499587000 | 499587000 | INSTALLER | Used for installing driven gears to driven shaft. |
|  ST-899824100 | 899824100 | PRESS | Used for installing speedometer shaft oil seal. |
|  ST-499987100 | 499987100 | SOCKET WRENCH (35) | Used for removing and installing drive pinion lock nut. |
|  ST-899984103 | 899984103 | SOCKET WRENCH (35) | Used for removing and installing drive pinion lock nut. |

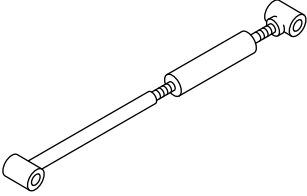
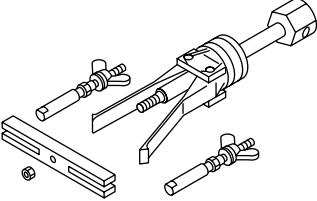
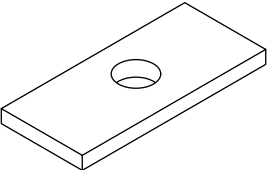
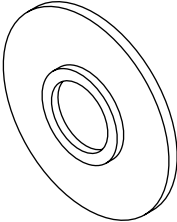
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|------------------------------|--|
|  <p style="text-align: center;">ST-498057300</p> | 498057300 | INSTALLER | Used for installing extension oil seal. |
|  <p style="text-align: center;">ST-498255400</p> | 498255400 | PLATE | Used for measuring backlash. |
|  <p style="text-align: center;">ST-498077400</p> | 498077400 | SYNCHRONIZER CONE REMOVER | <ul style="list-style-type: none"> • Used for removing synchronizer cone of main shaft. • Used for removing 5th driven gear of drive pinion shaft. |
|  <p style="text-align: center;">ST41099AA010</p> | 41099AA010 | ENGINE SUPPORT BRACKET | Used for supporting engine. |

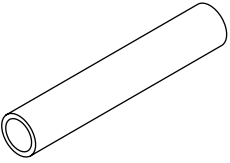
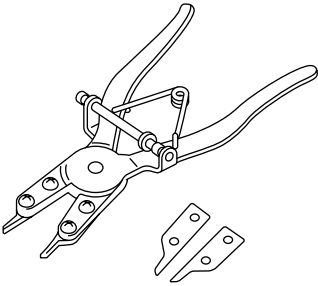
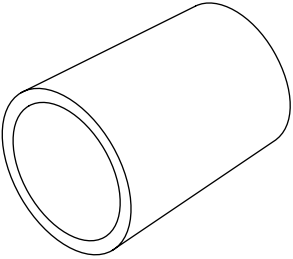
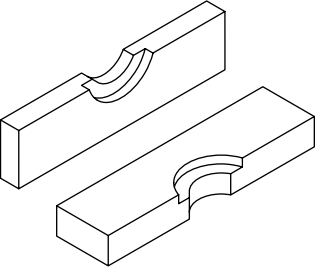
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|---|-----------------------|--|
|  <p style="text-align: center;">ST41099AA020</p> | <p style="text-align: center;">41099AA020</p> | <p>ENGINE SUPPORT</p> | <p>Used for supporting engine.</p> |
|  <p style="text-align: center;">ST-398527700</p> | <p style="text-align: center;">398527700</p> | <p>PULLER ASSY</p> | <p>Used for removing extension case roller bearing.</p> |
|  <p style="text-align: center;">ST-398643600</p> | <p style="text-align: center;">398643600</p> | <p>GAUGE</p> | <p>Used for measuring total end play, extension end play and drive pinion height.</p> |
|  <p style="text-align: center;">ST-398177700</p> | <p style="text-align: center;">38177700</p> | <p>INSTALLER</p> | <ul style="list-style-type: none"> • Used for installing bearing cone of transfer driven gear (transfer case side). • Used for installing ball bearing of transfer drive gear. |

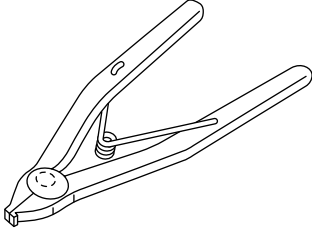
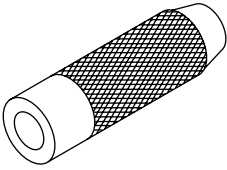
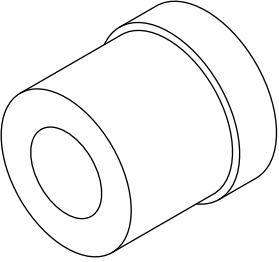
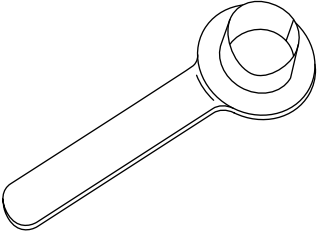
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|--|------------------------|--|
|  <p style="text-align: center;">ST-398507703</p> | <p style="text-align: center;">398507703</p> | <p>DUMMY COLLAR</p> | <ul style="list-style-type: none"> • Used for installing input shaft holder oil seal. • For dual-range model. |
|  <p style="text-align: center;">ST-398663600</p> | <p style="text-align: center;">398663600</p> | <p>PLIERS</p> | <ul style="list-style-type: none"> • Used for removing and installing input shaft snap ring. • For dual-range model. |
|  <p style="text-align: center;">ST-499757001</p> | <p style="text-align: center;">499757001</p> | <p>SNAP RING GUIDE</p> | <ul style="list-style-type: none"> • Used for installing snap ring (OUT 25). • For dual-range model. |
|  <p style="text-align: center;">ST-899858600</p> | <p style="text-align: center;">899858600</p> | <p>RETAINER</p> | <ul style="list-style-type: none"> • Used for removing ball bearing. • For dual-range model. |

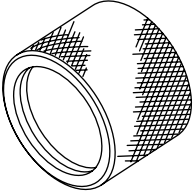
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|--|---|
|  <p style="text-align: center;">ST-899474100</p> | 899474100 | EXPANDER | <ul style="list-style-type: none"> • Used for removing and installing snap ring. • For dual-range model. |
|  <p style="text-align: center;">ST-899580100</p> | 899580100 | INSTALLER | <ul style="list-style-type: none"> • Used when pressing ball bearings into input shaft. • For dual-range model. |
|  <p style="text-align: center;">ST-399513600</p> | 399513600 | INSTALLER | <ul style="list-style-type: none"> • Used when pressing ball bearings into input shaft. • For dual-range model. |
|  <p style="text-align: center;">ST28399SA010</p> | 28399SA010 | FRONT DRIVE SHAFT OIL SEAL PROTECTOR | Used for protecting oil seal from damage when inserting front drive shaft. |

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|--|--|
|  ST18675AA000 | 18675AA000 | DIFFERENTIAL SIDE OIL SEAL INSTALLER | Used for installing differential side retainer oil seal. |

2. GENERAL PURPOSE TOOLS

| TOOL NAME | REMARKS |
|----------------|--|
| Circuit Tester | Used for measuring resistance, voltage and ampere. |

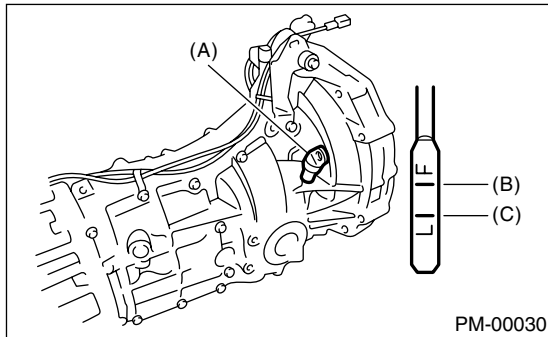
Transmission Gear Oil

MANUAL TRANSMISSION AND DIFFERENTIAL

2. Transmission Gear Oil

A: INSPECTION

- 1) Park the vehicle on a level surface.
- 2) Turn the ignition switch to OFF, and then wait until the engine cools.
- 3) Remove the oil level gauge and wipe it clean.
- 4) Reinsert the level gauge all the way. Be sure the level gauge is correctly inserted and in the proper direction.
- 5) Pull out the oil level gauge again and check the oil level on it. If it is below the lower level, add oil through the oil level gauge hole to bring the level up to the upper level.



- (A) Oil level gauge
- (B) Upper level
- (C) Lower level

B: REPLACEMENT

- 1) Pull out the oil level gauge.
- 2) Lift-up the vehicle.
- 3) Drain the transmission gear oil completely.

CAUTION:

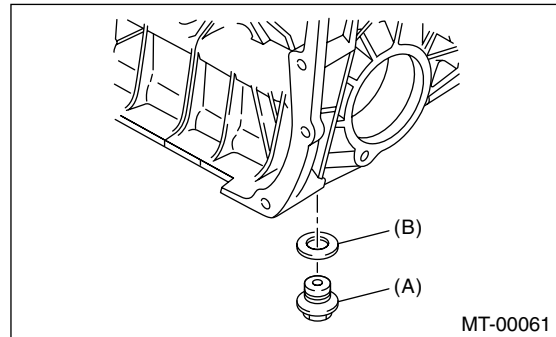
Directly after the engine has been running, the transmission gear oil is hot. Be careful not to burn yourself.

NOTE:

Tighten the transmission gear oil drain plug after draining the transmission gear oil.

Tightening torque:

69 N·m (7.0 kgf-m, 50.6 ft-lb)



- (A) Drain plug
- (B) Gasket

- 4) Lower the vehicle.
- 5) Pour gear oil into the gauge hole.

Recommended gear oil:

Use GL-5 or equivalent.

Gear oil capacity:

FWD model

3.3 ℓ (3.5 US qt, 2.9 Imp qt)

AWD model

Single-range model;

3.5 ℓ (3.7 US qt, 3.1 Imp qt)

Dual-range model;

4.0 ℓ (4.2 US qt, 3.5 Imp qt)

- 6) Check the level of the transmission gear oil.

NOTE:

The level should be within the specified range marked on the gauge.

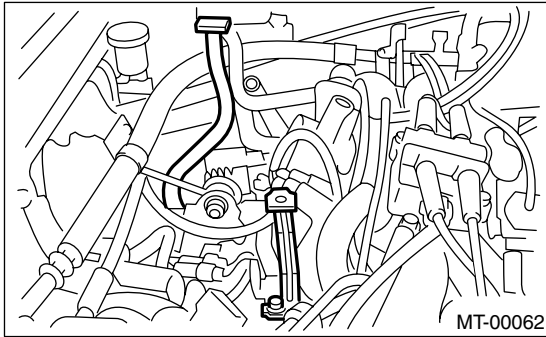
Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

3. Manual Transmission Assembly

A: REMOVAL

- 1) Open the front hood fully, and support with stay.
- 2) Disconnect the ground cable from battery.
- 3) Remove the air intake duct and cleaner case. (Non-turbo model) <Ref. to IN(H4SO)-6, REMOVAL, Air Intake Duct.> and <Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.>
- 4) Remove the air cleaner case stay. (Non-turbo model)

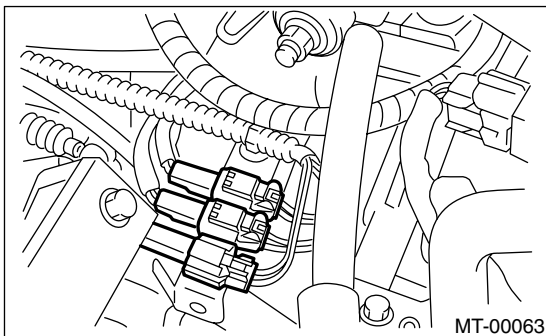


- 5) Remove the intercooler (Turbo model) <Ref. to IN(H4DOTC)-10, REMOVAL, Intercooler.>

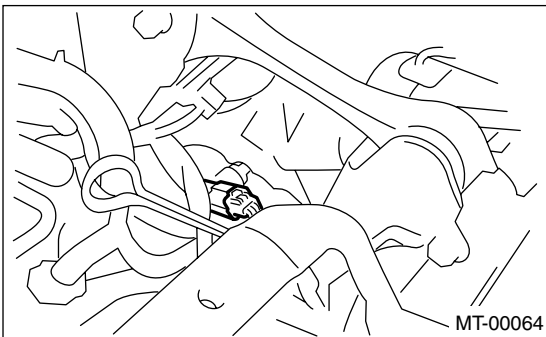
- 6) Disconnect the following connectors:

- (1) Neutral position switch connector
- (2) Back-up light switch connector
- (3) High-low switch connector (Dual-range model)

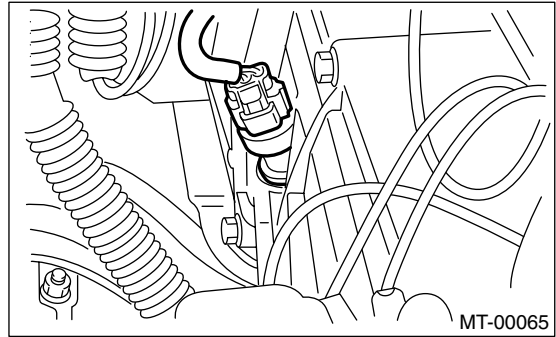
• NON-TURBO MODEL



• TURBO MODEL

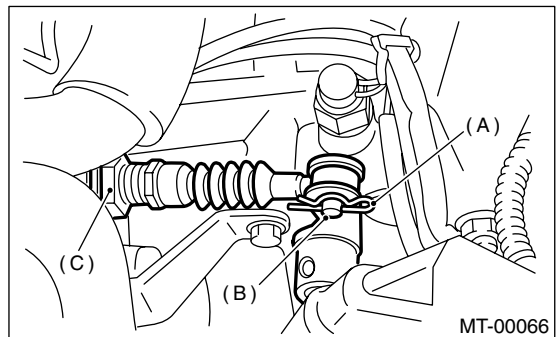


- (4) Vehicle speed sensor



- 7) Remove the snap pin and clevis pin from drive select cable.

- 8) Remove the drive select cable on transmission. (Dual-range model)

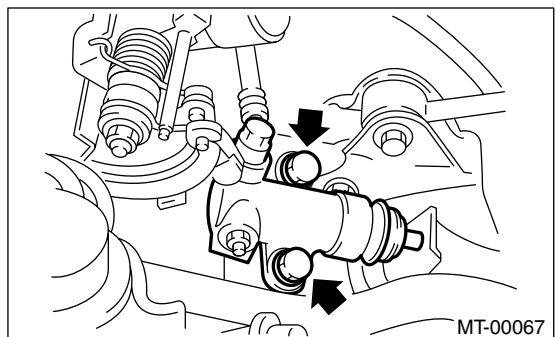


- (A) Snap pin
- (B) Clevis pin
- (C) Drive select cable

- 9) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>

- 10) Remove the operating cylinder from transmission. (2.0 L and 2.5 L model)

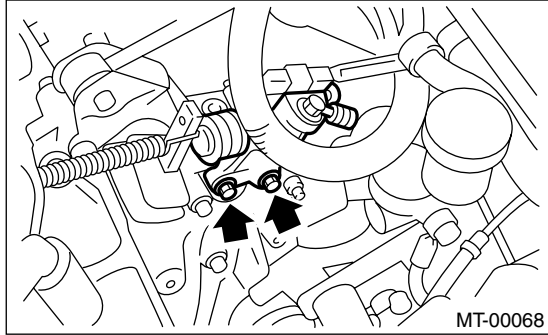
• Non-turbo MODEL



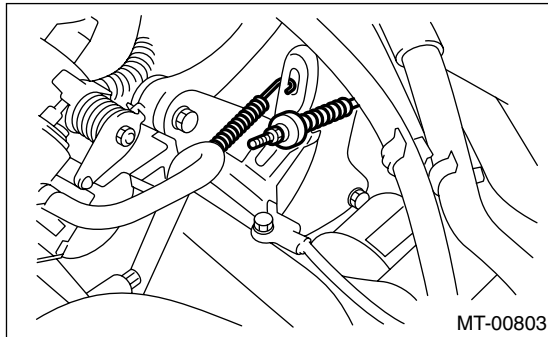
Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

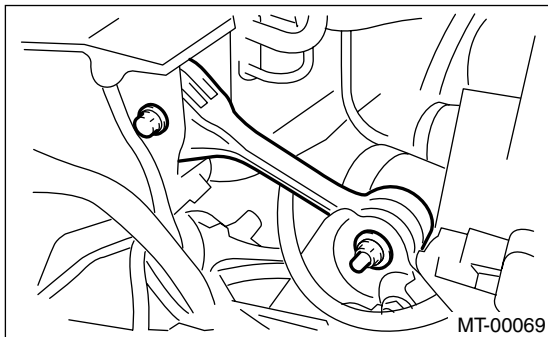
• Turbo MODEL



11) Disconnect the return spring and clutch cable.
(1.6 L model)



12) Remove the pitching stopper.

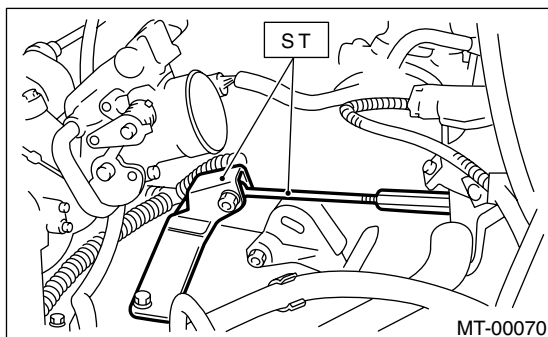


13) Set the ST.

NOTE:

Also Part No. 41099AA010 can be used.

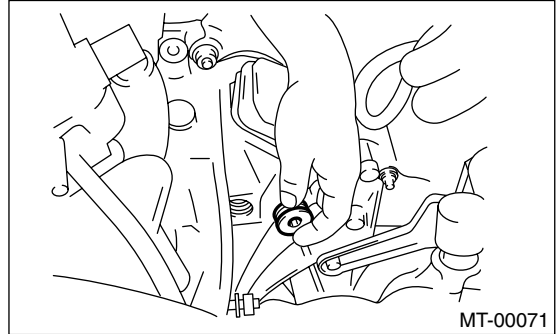
ST 41099AA020 ENGINE SUPPORT ASSY



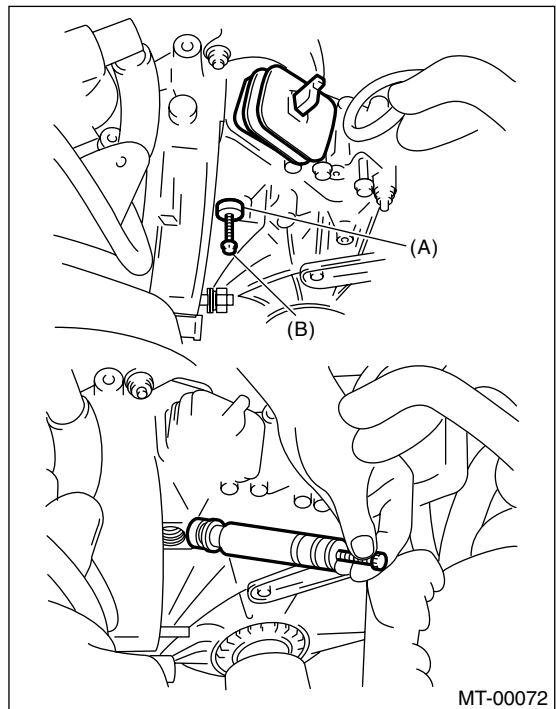
14) Separate the clutch release fork from release bearing. (Turbo model)

(1) Remove the clutch operating cylinder from transmission.

(2) Remove the plug using 10 mm hexagon wrench.



(3) Screw the 6 mm dia. bolt into release fork shaft, and then remove it.



(A) Shaft

(B) Bolt

(4) Raise the release fork and unfasten the release bearing tabs to free release fork.

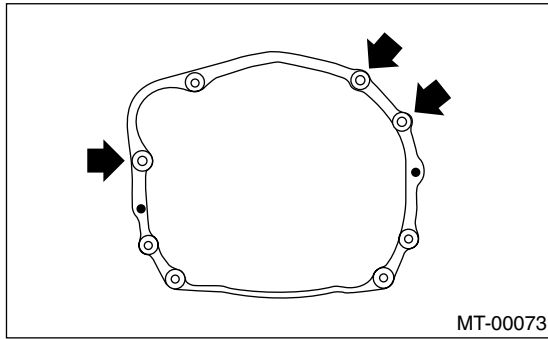
NOTE:

Step (4) is required to prevent interference with engine when removing the engine from transmission.

Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

15) Remove the bolt which holds the right upper side of transmission to engine.



16) Remove the front and center exhaust pipes. (Non-turbo model) <Ref. to EX(H4SO)-6, REMOVAL, Front Exhaust Pipe.>

17) Remove the center exhaust pipe. (Turbo model). <Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.>

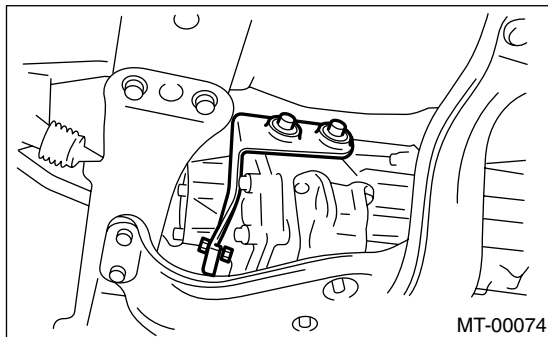
18) Remove the rear exhaust pipe and muffler.

CAUTION:

When removing the exhaust pipes, be careful each exhaust pipe does not drop out.

19) Remove the heat shield cover. (If equipped)

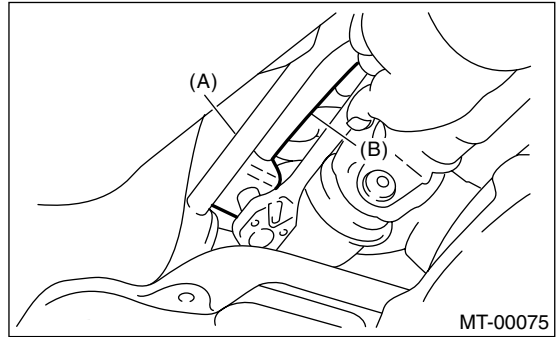
20) Remove the hanger bracket from right side of transmission.



21) Remove the propeller shaft. <Ref. to DS-16, REMOVAL, Propeller Shaft.>

22) Remove the gear shift rod and stay from transmission.

- (1) Disconnect the stay from transmission.
- (2) Disconnect the rod from transmission.



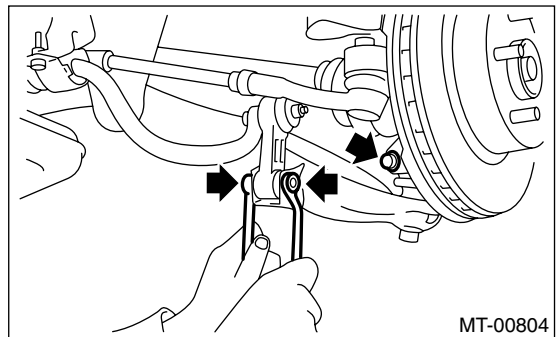
(A) Stay

(B) Rod

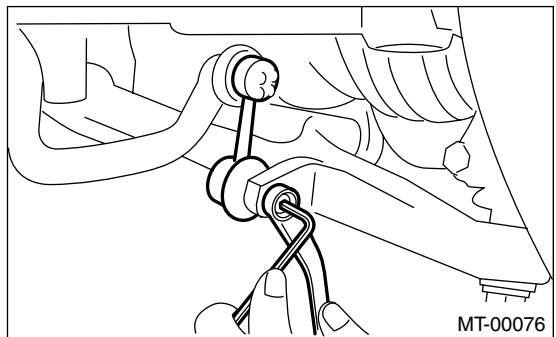
23) Disconnect the stabilizer link from transverse link.

24) Remove the bolt securing ball joint of transverse link to housing.

- WAGON MODEL



- SEDAN MODEL

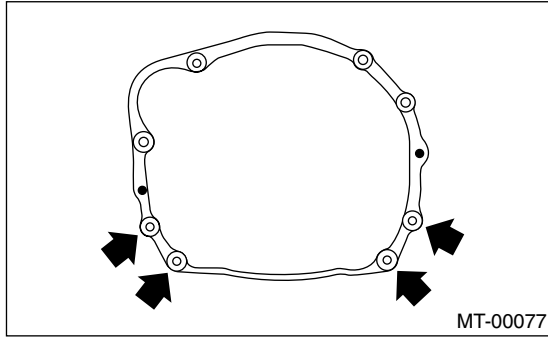


25) Remove the drive shafts. <Ref. to DS-36, REMOVAL, Front Drive Shaft.>

Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

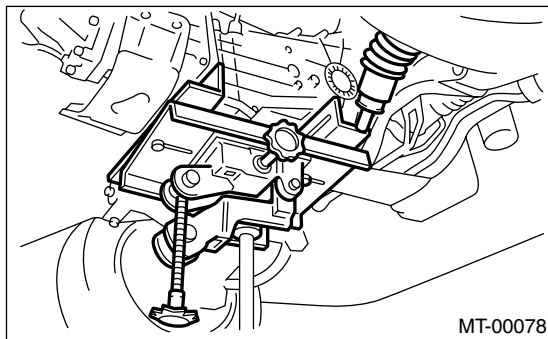
26) Remove the nuts which hold the lower side of transmission to engine.



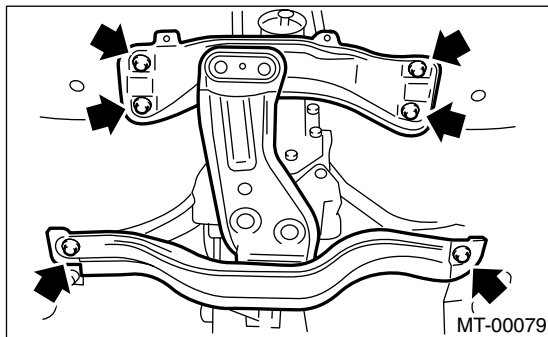
27) Place the transmission jack under transmission.

CAUTION:

Always support the transmission case with a transmission jack.



28) Remove the transmission rear crossmember from vehicle.



29) Remove the transmission.

NOTE:

Move the transmission jack toward rear until main shaft is withdrawn from clutch cover.

30) Separate the transmission assembly and rear cushion rubber.

B: INSTALLATION

1) Install the rear cushion rubber to transmission assembly.

Tightening torque:

35 N·m (3.57 kgf-m, 25.8 ft-lb)

2) Install the clutch release lever and bearing onto transmission. (Turbo model) <Ref. to CL-26, INSTALLATION, Release Bearing and Lever.>

3) Install the transmission onto engine.

(1) Gradually raise the transmission with transmission jack.

(2) Engage them at splines.

NOTE:

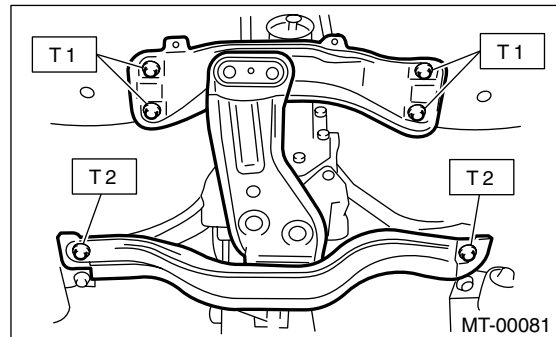
Be careful not to strike the main shaft against clutch cover.

4) Install the transmission rear crossmember.

Tightening torque:

T1: 70 N·m (7.1 kgf-m, 51 ft-lb)

T2: 140 N·m (14.3 kgf-m, 103 ft-lb)

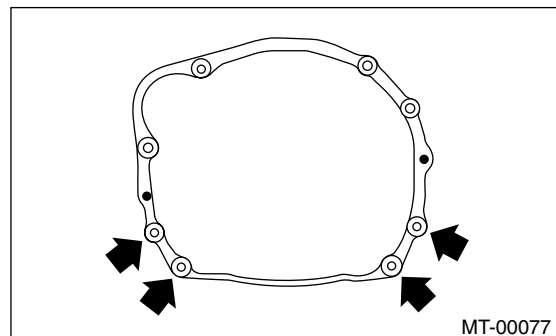


5) Take off the transmission jack.

6) Tighten the nuts which hold the lower side of transmission to engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



7) Connect the engine and transmission.

(1) Install the starter.

<Ref. to SC(H4SO)-7, INSTALLATION, Starter.>

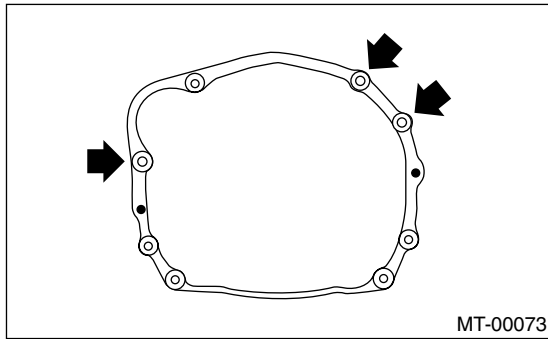
(2) Tighten the bolt which holds right upper side of transmission to engine.

Manual Transmission Assembly

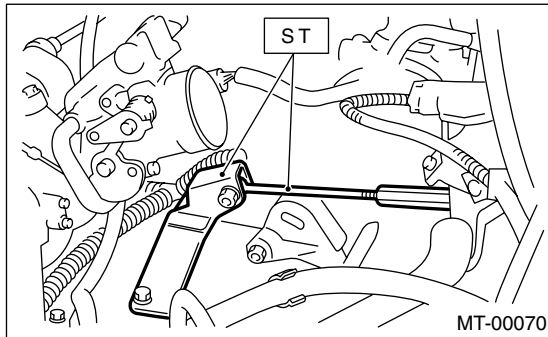
MANUAL TRANSMISSION AND DIFFERENTIAL

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



8) Remove the ST.

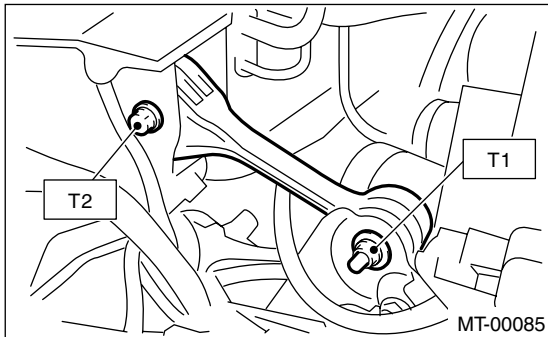


9) Install the pitching stopper.

Tightening torque:

T1: 50 N·m (5.1 kgf-m, 37 ft-lb)

T2: 58 N·m (5.9 kgf-m, 43 ft-lb)

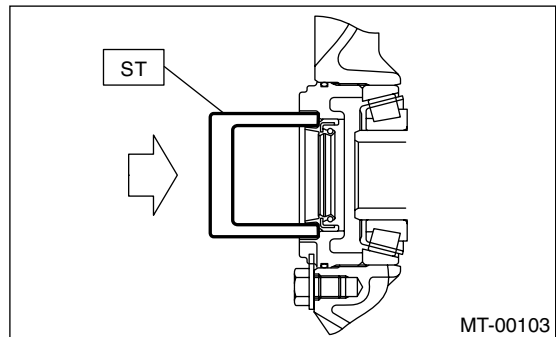


10) Lift-up the vehicle.

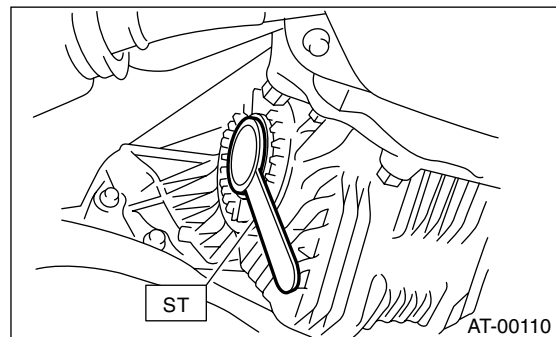
11) Replace the differential side retainer oil seal.

NOTE:

Be sure to replace the differential side retainer oil seal after the procedure of removing the front drive shaft.



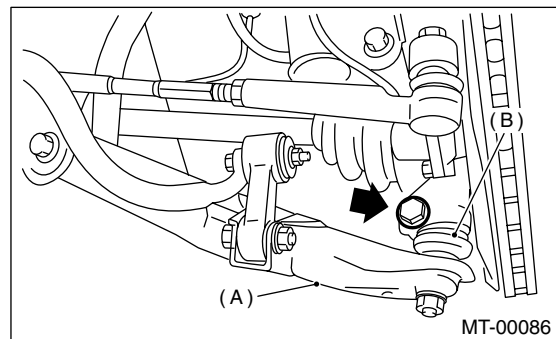
12) Install the front drive shaft into transmission.
ST 28399SA010 FRONT DRIVE SHAFT OIL SEAL PROTECTOR



13) Install the ball joints of lower arm into knuckle arm of housing, and tighten the installing bolts.

Tightening torque:

49 N·m (5.0 kgf-m, 36 ft-lb)



(A) Transverse link

(B) Ball joint

Manual Transmission Assembly

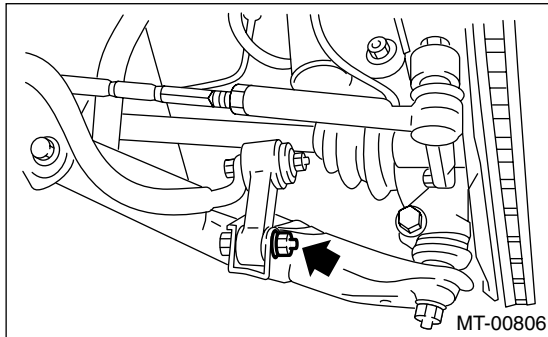
MANUAL TRANSMISSION AND DIFFERENTIAL

14) Install the stabilizer link from transverse link.

- WAGON MODEL

Tightening torque:

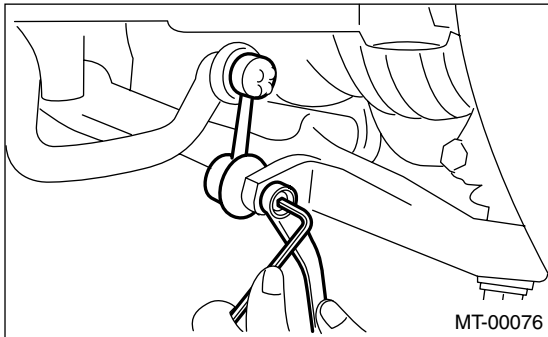
30 N·m (3.1 kgf·m, 22.1 ft·lb)



- SEDAN MODEL

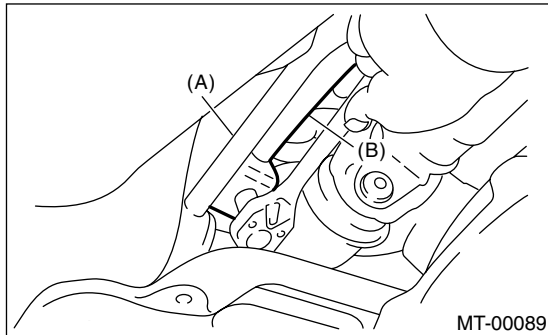
Tightening torque:

45 N·m (4.6 kgf·m, 33.2 ft·lb)



15) Install the gear shift rod and stay.

- (1) Install the gear shift rod onto transmission.



(A) Stay

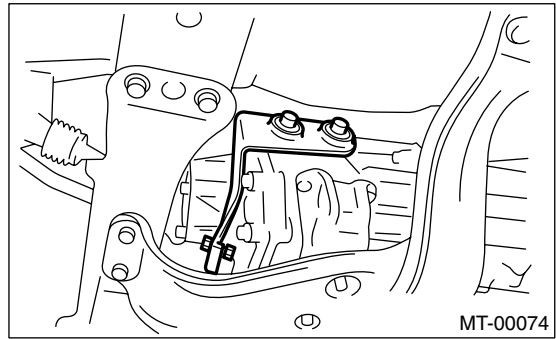
(B) Rod

- (2) Install the stay onto transmission.

16) Install the propeller shaft. <Ref. to DS-17, INSTALLATION, Propeller Shaft.>

17) Install the heat shield cover. (If equipped)

18) Install the hanger bracket on right side of transmission.



19) Install the rear exhaust pipe and muffler.

20) Install the front exhaust pipe and center exhaust pipe. (Non-turbo model)

<Ref. to EX(H4S0w/oOBD)-7, INSTALLATION, Front Exhaust Pipe.>

21) Install the center exhaust pipe. (Turbo model)

<Ref. to EX(H4DOTC)-10, INSTALLATION, Center Exhaust Pipe.>

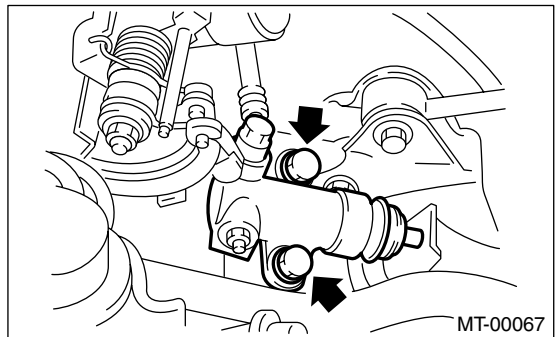
22) Install the under cover.

23) Install the operating cylinder. (2.0 L and 2.5 L model)

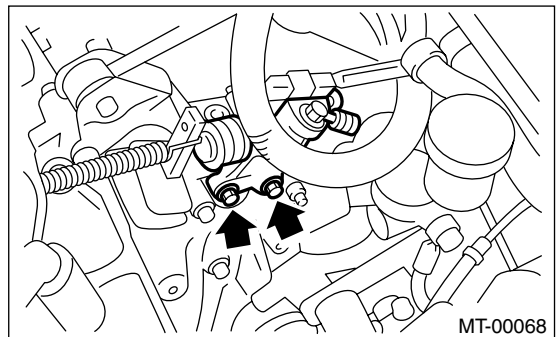
Tightening torque:

37 N·m (3.8 kgf·m, 27.5 ft·lb)

- NON-TURBO MODEL



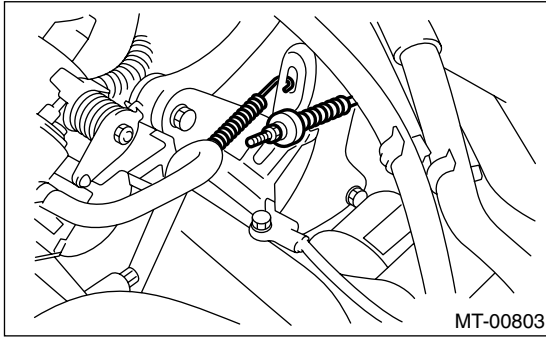
- TURBO MODEL



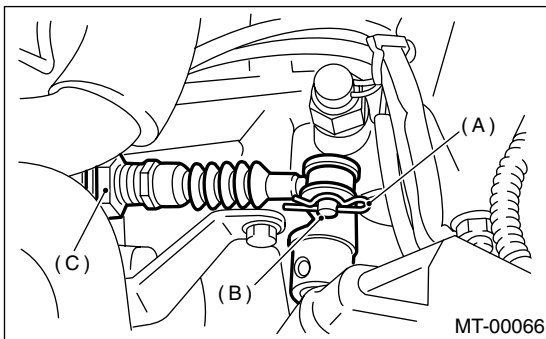
Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

- 24) Connect the return spring and clutch cable.
(1.6 L model)



- 25) Install the drive select cable on transmission.
(Dual-range model)



- (A) Snap pin
- (B) Clevis pin
- (C) Drive select cable

- 26) Connect the following connectors:
(1) Transmission ground cable

Tightening torque:

13 N·m (1.3 kgf·m, 9.4 ft·lb)

- (2) Vehicle speed sensor connector
 - (3) Neutral position switch connector
 - (4) Back-up light switch connector
 - (5) High-low switch connector (Dual-range model)
- 27) Install the air cleaner case stay.
- Tightening torque:**
16 N·m (1.6 kgf·m, 11.6 ft·lb)
- 28) Install the air cleaner case and duct.
29) Connect the battery ground cable to battery.
30) Take off the vehicle from lift arms.