

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

1. General Description

A: SPECIFICATION

1. MANUAL TRANSMISSION AND DIFFERENTIAL

Model		2.5 L non-turbo model		2.5 L turbo model		
		Except for OUTBACK	OUTBACK	Except for OUTBACK	OUTBACK	
Type		5-forward speeds and 1-reverse				
Transmission gear ratio		1st	3.454		3.166	
		2nd	2.062		1.882	
		3rd	1.448		1.296	
		4th	1.088		0.972	
		5th	0.780	0.871	0.738	
		Reverse	3.333			
Front reduction gear	Final	Type of gear	Hypoid			
		Gear ratio	3.900	4.111	4.111	4.444
Rear reduction gear	Transfer	Type of gear	Helical			
		Gear ratio	1.000			
	Final	Type of gear	Hypoid			
		Gear ratio	3.900	4.111	4.111	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 gear oil capacity		Single-range model 3.5 ℓ (3.7 US qt, 3.1 Imp qt)				

2. TRANSMISSION GEAR OIL

Recommended oil:

(1)	
(2)	
(3)	
(4)	GL-5
(°C)	-30 -26 -15 -5 0 15 25 30
(°F)	-22 -15 5 23 32 59 77 86

MT-00001

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

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 number	Thickness mm (in)	Part number	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 number	Mark
4.00 — 4.13 (0.1575 — 0.1626)	32294AA041	1
3.87 — 3.99 (0.1524 — 0.1571)	32294AA051	2

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4. DRIVE PINION ASSEMBLY

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 number	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 number	Thickness mm (in)
803025059	3.850 (0.1516)
803025054	4.000 (0.1575)
803025058	4.150 (0.1634)

5. 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 number	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 clearance using washers.

Reverse idler gear to transmission case wall clearance:

0 — 0.5 mm (0 — 0.020 in)

Washer (20.5 × 26 × t)			
Part number	Thickness mm (in)	Part number	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)	—	—

6. SHIFTER FORK AND ROD

Select a suitable shifter fork so that both the 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 number	Mark	Remarks
32804AA060	1	Approaches 1st gear by 0.2 mm (0.008 in).
32804AA070	No mark	Standard
32804AA080	3	Approaches 2nd gear by 0.2 mm (0.008 in)

3rd-4th shifter fork		
Part number	Mark	Remarks
32810AA061	1	Approaches 4th gear by 0.2 mm (0.008 in).
32810AA071	No mark	Standard
32810AA101	3	Approaches 3rd gear by 0.2 mm (0.008 in)

5th shifter fork (Non-turbo model)		
Part number	Mark	Remarks
32812AA201	7	Approaches 5th gear by 0.2 mm (0.008 in).
32812AA211	No mark	Standard
32812AA221	9	Moves away from 5th gear by 0.2 mm (0.008 in).

5th shifter fork (Turbo model)		
Part number	Mark	Remarks
32812AA231	7	Approaches 5th gear by 0.2 mm (0.008 in).
32812AA241	No mark	Standard
32812AA251	9	Moves away from 5th gear by 0.2 mm (0.008 in).

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7. TRANSFER CASE OR REAR CASE

Neutral position adjustment

Adjusting shim	
Part number	Thickness mm (in)
32190AA000	0.15 (0.0059)
32190AA010	0.30 (0.0118)

Reverse accent shaft		
Part number	Mark	Remarks
32188AA130	S	Neutral position is closer to 1st.
32188AA140	T	Standard
32188AA150	U	Neutral position is closer to reverse gear.

Reverse check plate adjustment

Reverse check plate			
Part number	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.

8. EXTENSION ASSEMBLY

Preload of the taper roller bearing (amount of standard protrusion):

0.15 — 0.20 mm (0.006 — 0.008 in)

NOTE:

Be sure that the amount of preload is within the standard value.

Thrust washer (50 × 61 × t)	
Part number	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 number	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

9. FRONT DIFFERENTIAL

Bevel gear to pinion backlash:

0.13 — 0.18 mm (0.0051 — 0.0071 in)

Washer (38.1 × 50 × t)			
Part number	Thickness mm (in)	Part number	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)	—	—

10. TRANSFER DRIVE GEAR

Snap ring (Outer-30) to ball bearing clearance:

0.01 — 0.15 mm (0.0004 — 0.0059 in)

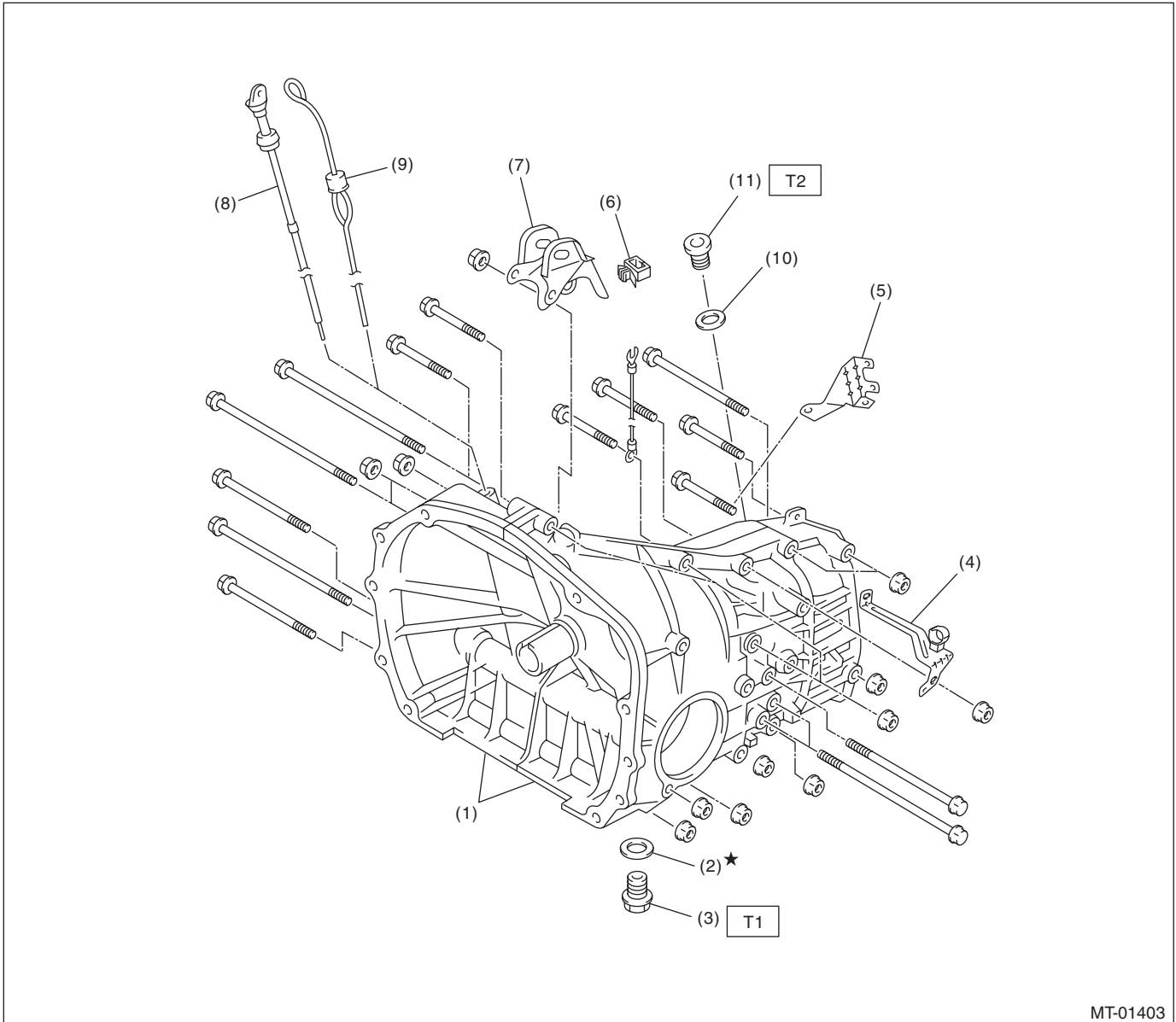
Snap ring (Outer-30)	
Part number	Thickness mm (in)
805030041	1.53 (0.0602)
805030042	1.65 (0.0650)
805030043	1.77 (0.0697)

General Description

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B: COMPONENT

1. TRANSMISSION CASE



- | | |
|---------------------------------------|---------------------------------------|
| (1) Transmission case ASSY | (6) Clamp |
| (2) Gasket | (7) Pitching stopper bracket |
| (3) Drain plug | (8) Oil level gauge (Non-turbo model) |
| (4) Harness bracket (Non-turbo model) | (9) Oil level gauge (Turbo model) |
| (5) Harness bracket (Turbo model) | (10) Gasket |
| | (11) Plug |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 44 (4.5, 33) (Aluminum gasket)

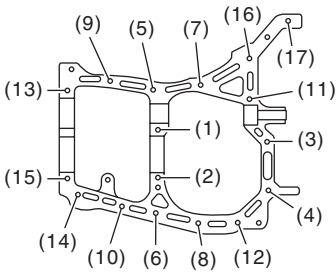
70 (7.1, 51) (Copper gasket)

T2: 60 (6.1, 43.7)

General Description

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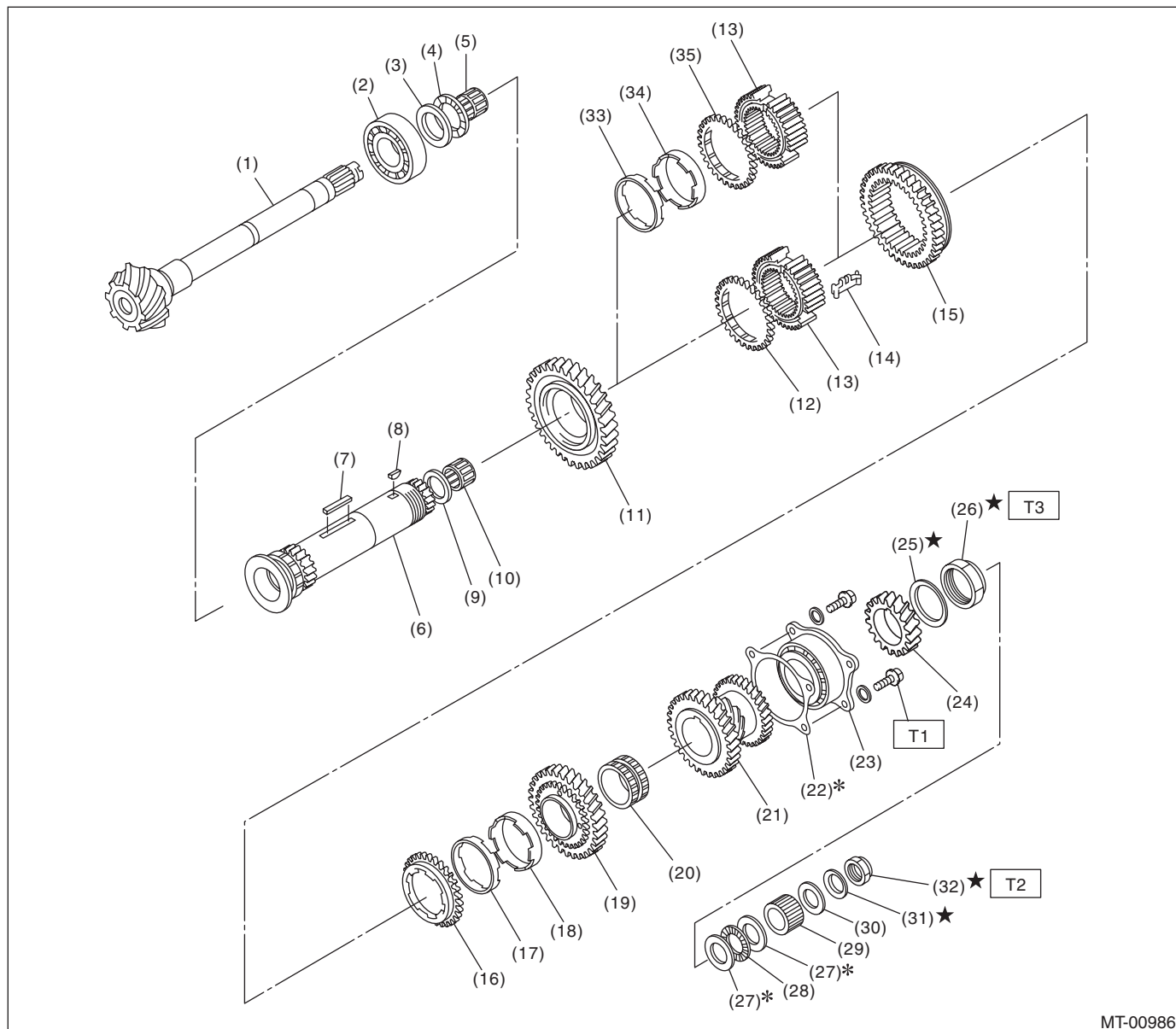
- Transmission case tightening torque

 <p>MT-00003</p>	Bolt No.	Bolt size mm	Tightening torque: N·m (kgf-m, ft-lb)
	(5) — (15)	8	25 (2.6, 18.5)
	(1) — (4) (16) — (17)	10	39 (4.0, 28.9)

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2. DRIVE PINION ASSEMBLY



MT-00986

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

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

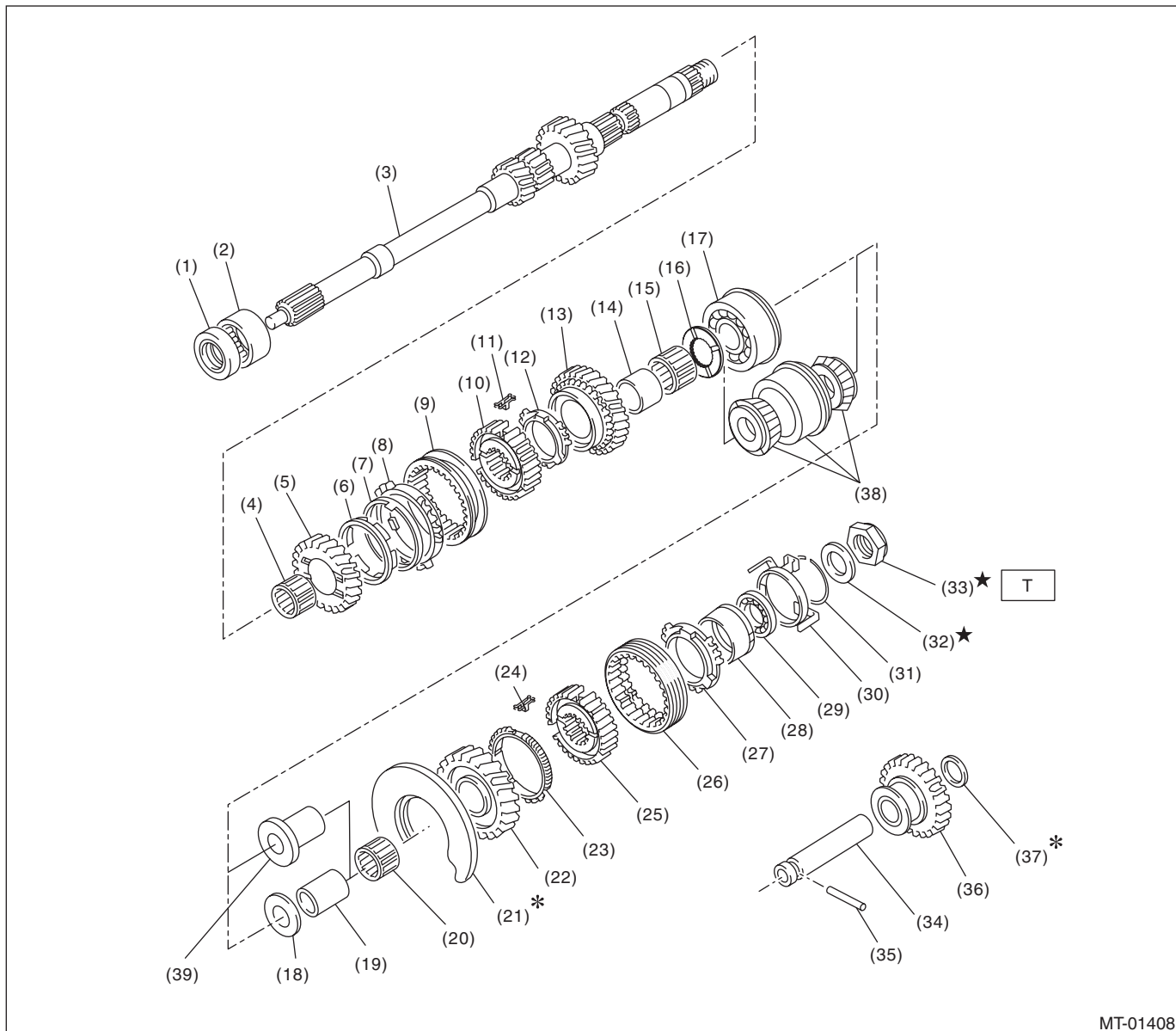
T1: 30 (3.1, 22.1)

T2: 120 (12.2, 88.5)

T3: 260 (26.5, 191.7)

General Description

3. MAIN SHAFT FOR SINGLE-RANGE



MT-01408

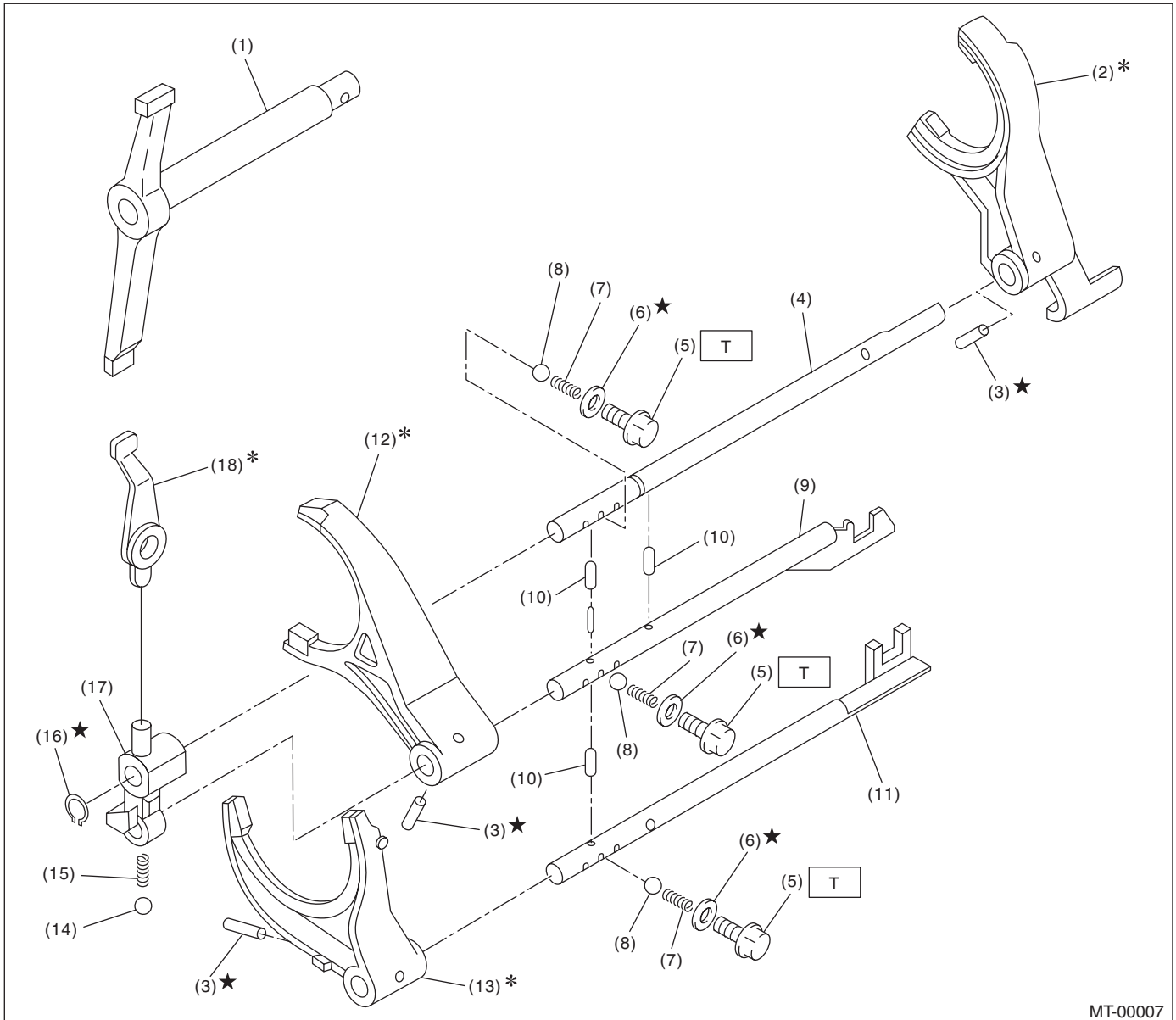
(1) Oil seal	(16) 4th gear thrust washer	(29) Ball bearing
(2) Needle bearing	(17) Ball bearing (Non-turbo model)	(30) Synchro cone stopper
(3) Transmission main shaft	(18) 5th gear thrust washer (Non-turbo model)	(31) Snap ring
(4) Needle bearing	(19) 5th needle bearing race (Non-turbo model)	(32) Lock washer
(5) 3rd drive gear	(20) Needle bearing	(33) Lock nut
(6) Inner baulk ring	(21) Main shaft rear plate	(34) Reverse idler gear shaft
(7) 3rd synchro cone	(22) 5th drive gear	(35) Straight pin
(8) Outer baulk ring	(23) 5th baulk ring	(36) Reverse idler gear
(9) 3rd-4th coupling sleeve	(24) 5th-Rev shifting insert key	(37) Washer
(10) 3rd-4th synchronizer hub	(25) 5th-Rev synchronizer hub	(38) Taper roller bearing (Turbo model)
(11) 3rd-4th shifting insert key	(26) 5th-Rev coupling sleeve	(39) 5th needle bearing race (Turbo model)
(12) 4th baulk ring	(27) Reverse baulk ring	
(13) 4th drive gear	(28) Reverse synchro cone	
(14) 4th needle bearing race		
(15) Needle bearing		

Tightening torque: N-m (kgf-m, ft-lb)
T: 120 (12.2, 88.5)

General Description

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4. SHIFTER FORK AND SHIFTER ROD



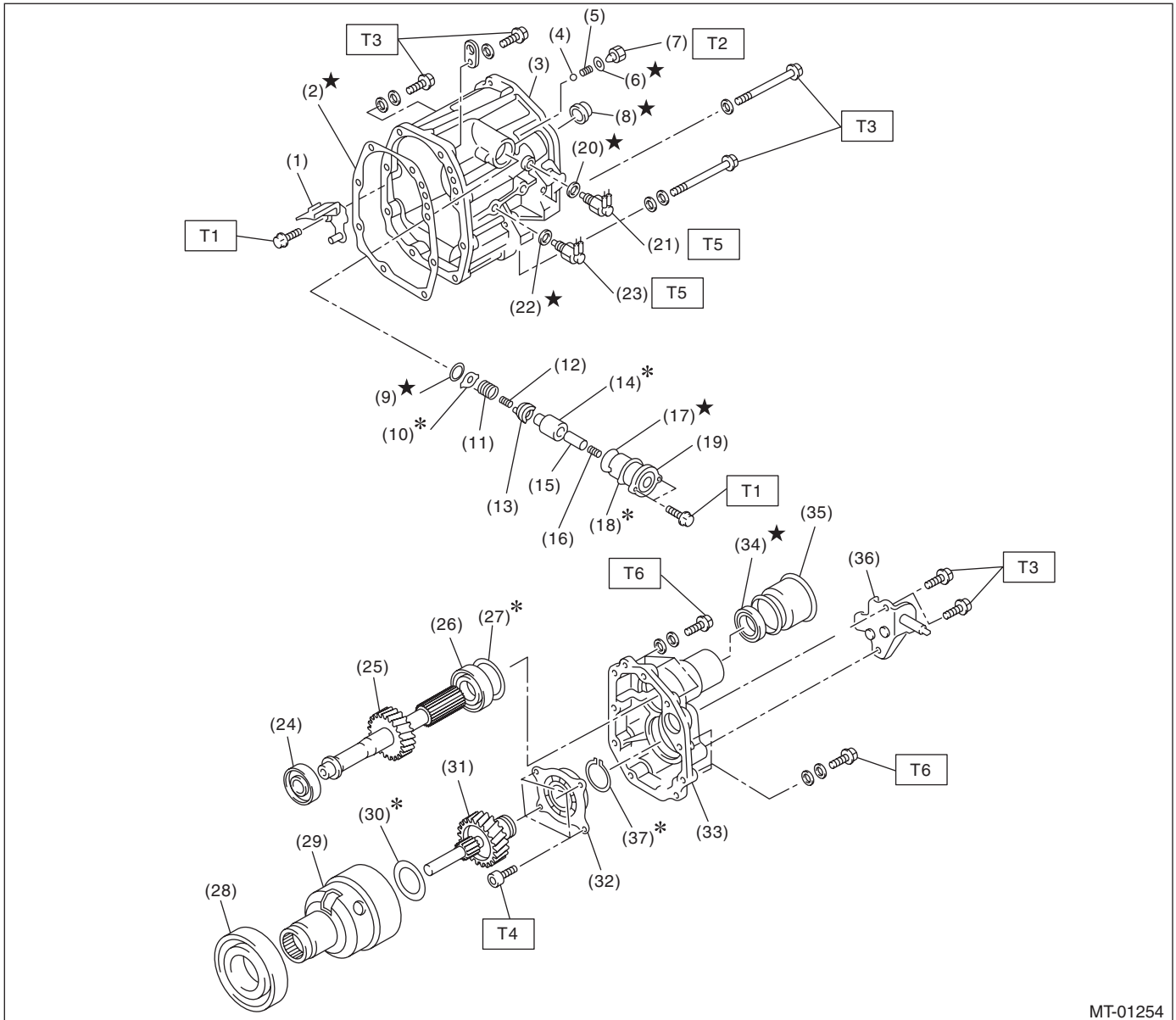
MT-00007

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

Tightening torque: N·m (kgf·m, ft·lb)
T: 19.5 (2.0, 14.4)

General Description

5. TRANSFER CASE AND EXTENSION



MT-01254

- | | | |
|----------------------------|------------------------------|--------------------------|
| (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 position 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: 9.75 (1.0, 7.2)

T3: 24.5 (2.5, 18.1)

T4: 26 (2.7, 20)

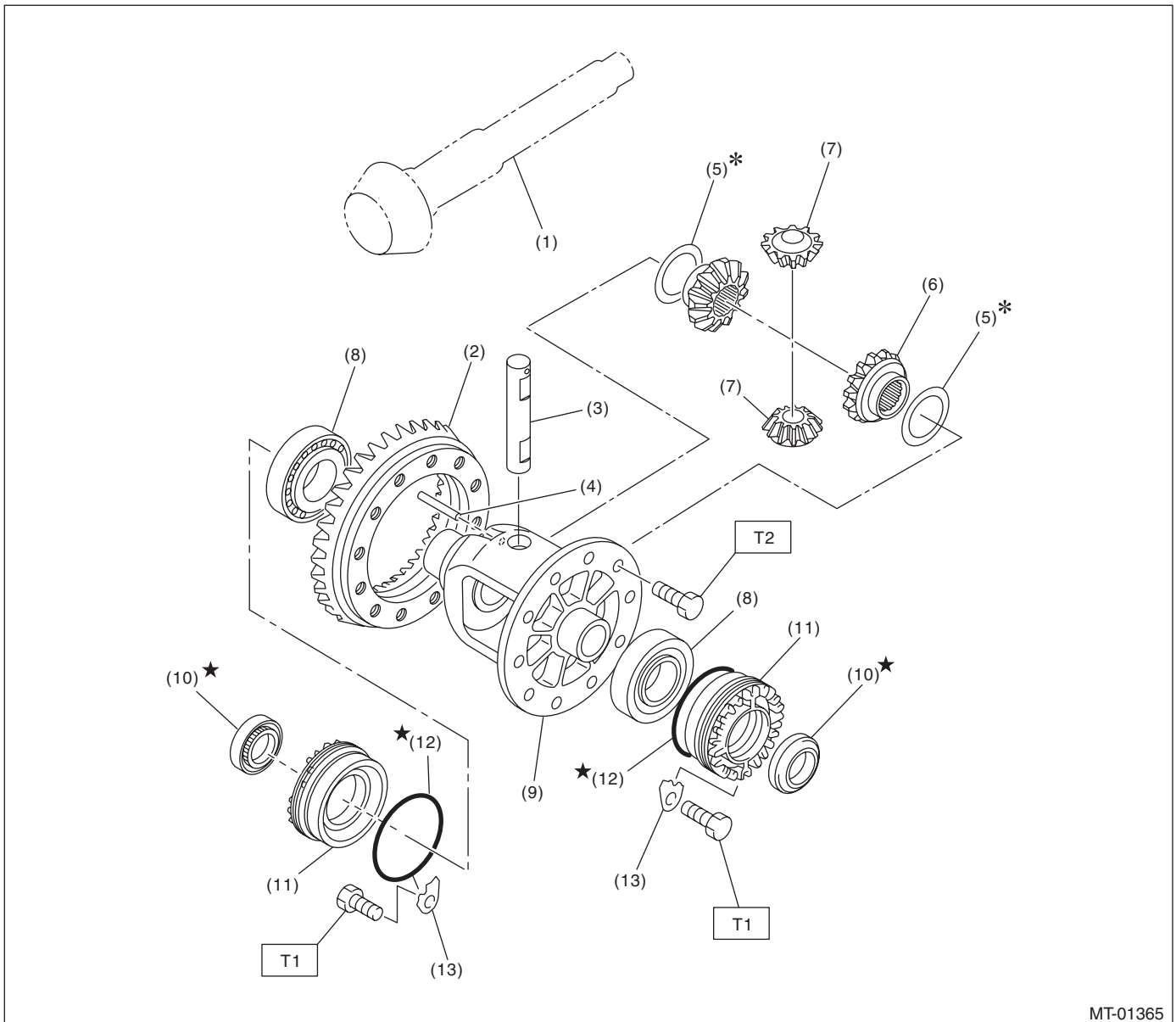
T5: 32.3 (3.3, 23.8)

T6: 40 (4.1, 29.7)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

6. FRONT DIFFERENTIAL



MT-01365

- | | | |
|-----------------------------|---------------------------------|--------------------------|
| (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 | |

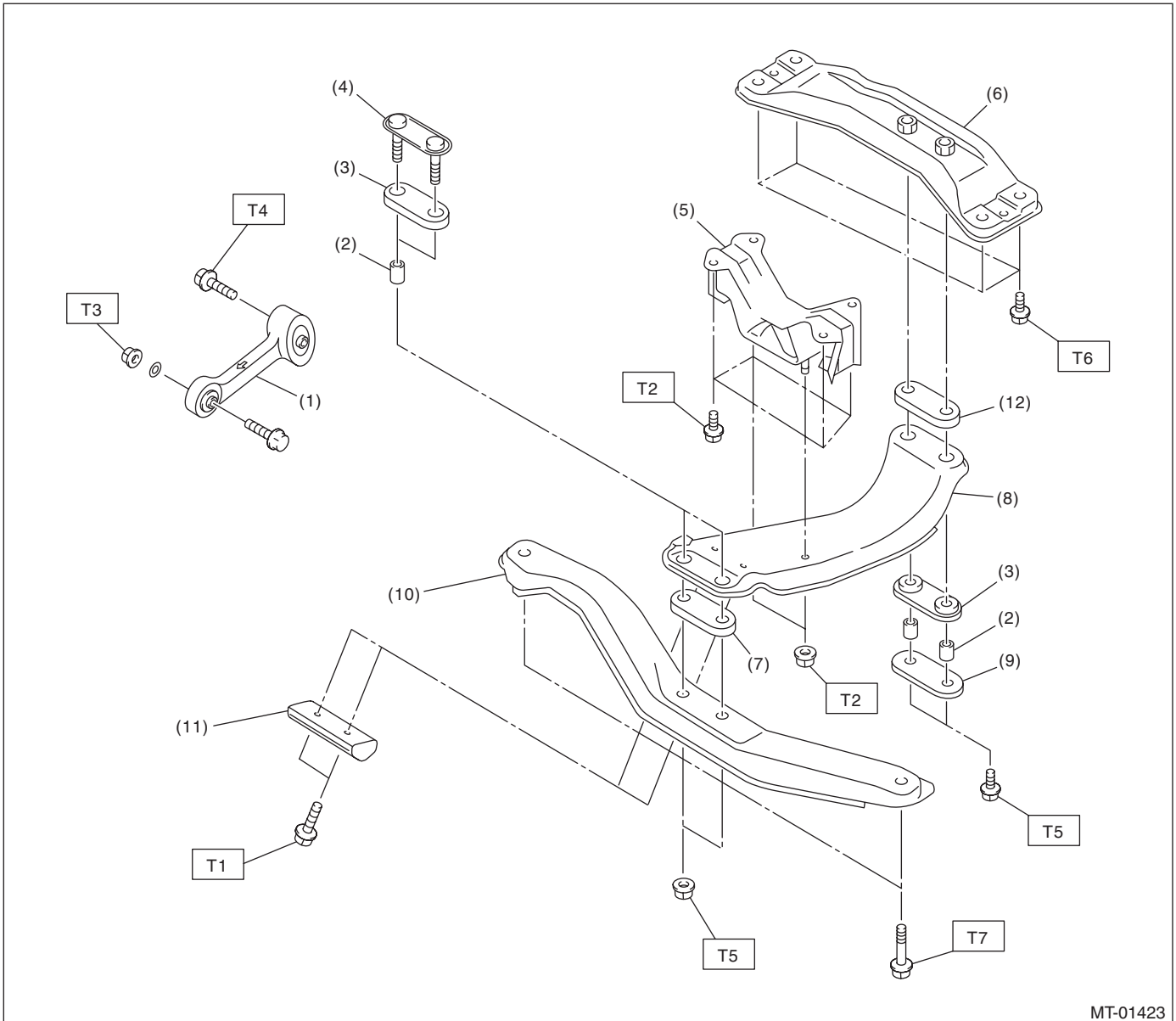
Tightening torque: N-m (kgf-m, ft-lb)

T1: 25 (2.5, 18.1)

T2: 62 (6.3, 45.6)

General Description

7. TRANSMISSION MOUNTING



MT-01423

- | | |
|-------------------------|----------------------------|
| (1) Pitching stopper | (7) Cushion D |
| (2) Spacer | (8) Center crossmember |
| (3) Cushion rubber | (9) Rear plate |
| (4) Front plate | (10) Front crossmember |
| (5) Rear cushion rubber | (11) Dynamic damper |
| (6) Rear crossmember | (12) Cushion (Crossmember) |

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: 75 (7.6, 55)

T7: 140 (14.3, 103)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

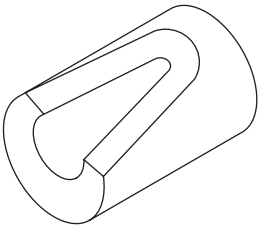
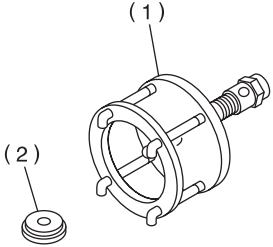
C: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and 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 apart with screwdrivers or other tools.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Use SUBARU genuine gear oil, grease or the equivalent. Do not mix fluid, grease, etc. of different grades or 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 revolving surfaces before installation.
- Replace deformed or damaged snap rings with new parts.
- 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 cloth between the part and the vise.
- Avoid damaging the mating surface of the case.
- Before applying sealant, completely remove the old sealant.

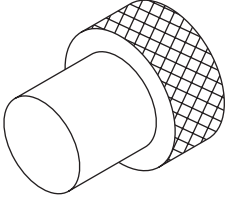
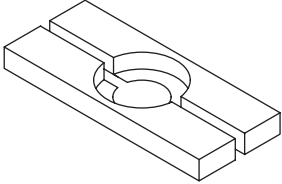
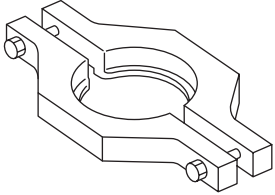
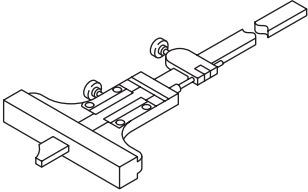
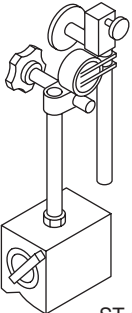
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-399411700</p>	399411700	ACCENT BALL INSTALLER	Used for installing reverse shifter rail arm.
 <p>ST-899524100</p>	899524100	PULLER SET	Used for removing and installing the roller bearing (Differential). (1) Puller (2) Cap

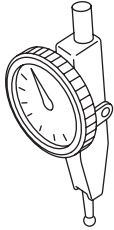
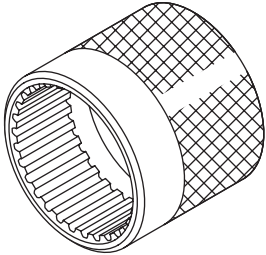
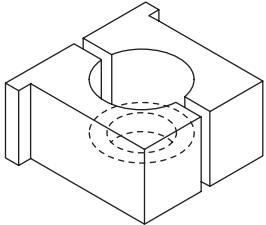
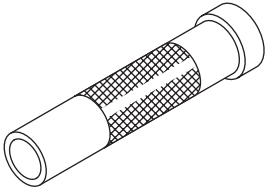
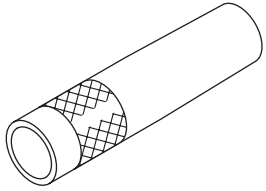
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="337 516 467 537">ST-399780104</p>	399780104	WEIGHT	Used for measuring preload on the roller bearing.
 <p data-bbox="337 867 467 888">ST-498077000</p>	498077000	REMOVER	Used for removing the roller bearing of the drive pinion shaft.
 <p data-bbox="337 1218 467 1239">ST-498077300</p>	498077300	CENTER DIFFERENTIAL BEARING REMOVER	Used for removing the center differential cover ball bearing.
 <p data-bbox="337 1568 467 1589">ST-498147001</p>	498147001	DEPTH GAUGE	Used for adjusting the main shaft axial end play.
 <p data-bbox="337 1919 467 1940">ST-498247001</p>	498247001	MAGNET BASE	<ul style="list-style-type: none"> • Used for measuring backlash between the side gear and pinion, and the hypoid gear. • Used with DIAL GAUGE (498247100).

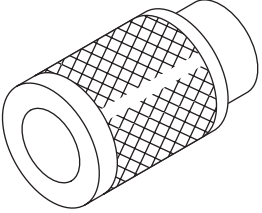
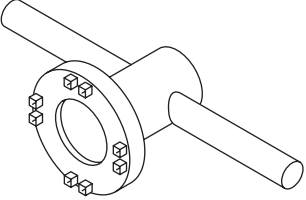
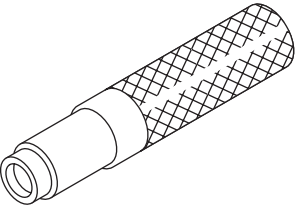
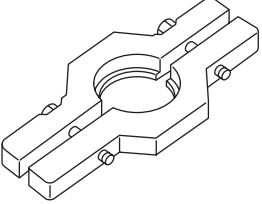
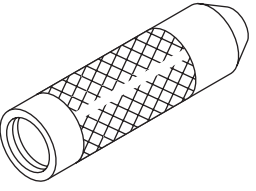
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-498247100</p>	498247100	DIAL GAUGE	<ul style="list-style-type: none"> Used for measuring backlash between the side gear and pinion, and the hypoid gear. Used with MAGNET BASE (498247001).
 <p>ST-498427100</p>	498427100	STOPPER	Used for securing the drive pinion shaft assembly and the driven gear assembly when removing the drive pinion shaft assembly lock nut.
 <p>ST-498937000</p>	498937000	TRANSMISSION HOLDER	Used for removing and installing the lock nut of the transmission main shaft.
 <p>ST-499277100</p>	499277100	BUSHING 1-2 INSTALLER	<ul style="list-style-type: none"> Used for installing the 1st driven gear thrust plate and the 1st-2nd driven gear bushing. Used for installing the roller bearing outer race to the differential case.
 <p>ST-499277200</p>	499277200	INSTALLER	Used for press-fitting the 2nd driven gear, roller bearings and the 5th driven gear onto the driven shaft.

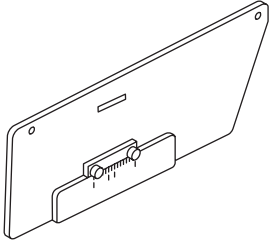
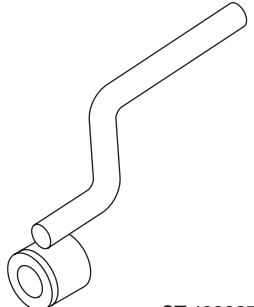
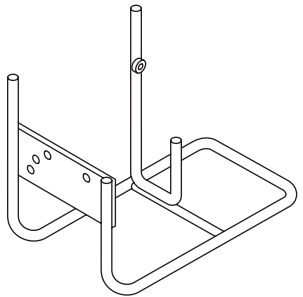
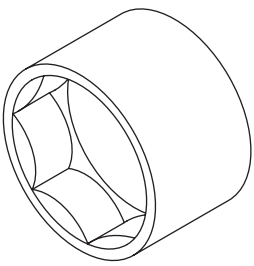
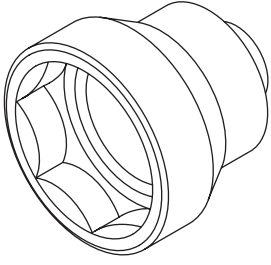
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-499757002</p>	499757002	INSTALLER	<ul style="list-style-type: none"> Used for installing the snap ring (OUT 25), and ball bearing (25 × 26 × 17). Used for installing the bearing cone of the transfer driven gear (extension core side).
 <p>ST-499787000</p>	499787000	WRENCH ASSY	Used for removing and installing the differential side retainer.
 <p>ST-499827000</p>	499827000	PRESS	Used for installing the speedometer oil seal when attaching the speedometer cable to the transmission.
 <p>ST-499857000</p>	499857000	5TH DRIVEN GEAR REMOVER	Used for removing the 5th driven gear.
 <p>ST-499877000</p>	499877000	RACE 4-5 INSTALLER	<ul style="list-style-type: none"> Used for installing the 4th needle bearing race and ball bearing onto the transmission main shaft. Used with REMOVER (899714110).

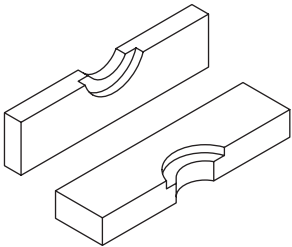
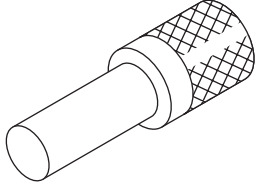
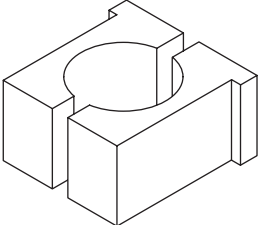
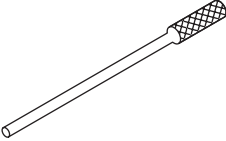
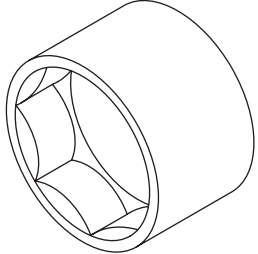
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-499917500</p>	499917500	DRIVE PINION GAUGE ASSY	Used for adjusting the drive pinion shim.
 <p style="text-align: center;">ST-499927100</p>	499927100	HANDLE	Used for fitting the transmission main shaft.
 <p style="text-align: center;">ST-499937100</p>	499937100	TRANSMISSION STAND SET	Used for disassembling and assembling the transmission.
 <p style="text-align: center;">ST-499987003</p>	499987003	SOCKET WRENCH (35)	Used for removing and installing the 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 the driven gear assembly lock nut.

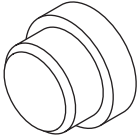
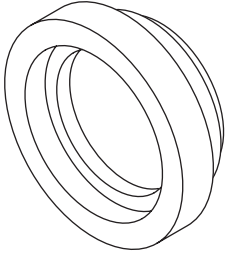
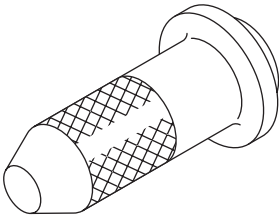
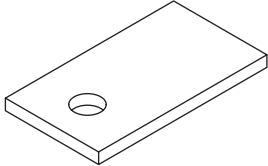
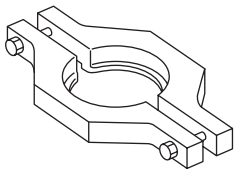
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="337 516 467 537">ST-899714110</p>	899714110	REMOVER	Used for fixing the transmission main shaft, drive pinion and rear drive shaft.
 <p data-bbox="337 867 467 888">ST-899864100</p>	899864100	REMOVER	Used for removing transmission main shaft and drive pinion parts.
 <p data-bbox="337 1218 467 1239">ST-899884100</p>	899884100	HOLDER	Used for tightening the lock nut on the sleeve.
 <p data-bbox="337 1568 467 1589">ST-899904100</p>	899904100	REMOVER	Used for removing and installing the straight pin.
 <p data-bbox="337 1919 467 1940">ST-899988608</p>	899988608	SOCKET WRENCH (27)	Used for removing and installing the drive pinion lock nut.

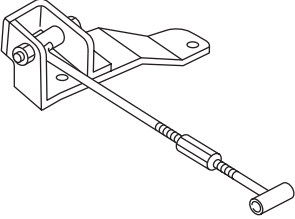
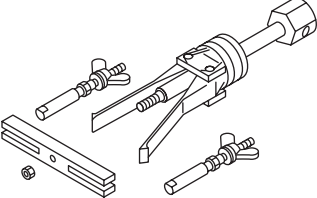
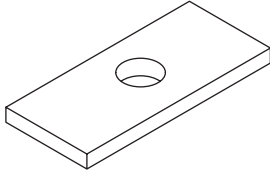
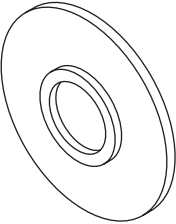
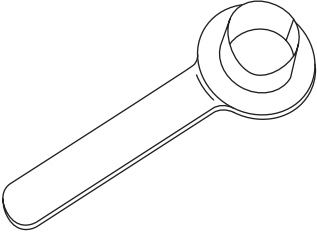
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-398497701</p>	398497701	ADAPTER	<ul style="list-style-type: none"> • Used for installing roller bearing onto the differential case. • Used with INSTALLER (499277100).
 <p style="text-align: center;">ST-499587000</p>	499587000	INSTALLER	Used for installing the driven gears to the driven shaft.
 <p style="text-align: center;">ST-498057300</p>	498057300	INSTALLER	Used for installing the 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 the synchronizer cone of the main shaft. • Used for removing 5th driven gear of the drive pinion shaft.

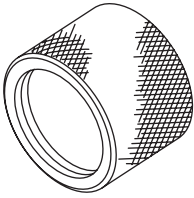
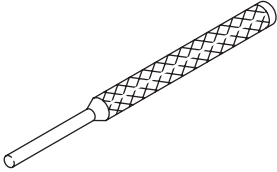
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="321 512 467 533">ST41099AC000</p>	41099AC000	ENGINE SUPPORT BRACKET	Used for supporting the engine.
 <p data-bbox="337 863 467 884">ST-398527700</p>	398527700	PULLER ASSY	Used for removing the extension case roller bearing.
 <p data-bbox="337 1220 467 1241">ST-398643600</p>	398643600	GAUGE	Used for measuring the total end play, extension end play and drive pinion height.
 <p data-bbox="337 1572 467 1593">ST-398177700</p>	398177700	INSTALLER	<ul data-bbox="976 1251 1490 1367" style="list-style-type: none"> • Used for installing the bearing cone of transfer driven gear (transfer case side). • Used for installing the ball bearing of the transfer drive gear.
 <p data-bbox="326 1923 467 1944">ST28399SA010</p>	28399SA010	FRONT DRIVE SHAFT OIL SEAL PROTECTOR	Used for protecting the oil seal from damage when inserting the front drive shaft.

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18675AA000	18675AA000	DIFFERENTIAL SIDE OIL SEAL INSTALLER	Used for installing the differential side retainer oil seal.
 ST-398791700	398791700	STRAIGHT PIN REMOVER	Used for installing and removing the straight pin.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.