

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

1. General Description

A: SPECIFICATION

1. MANUAL TRANSMISSION AND DIFFERENTIAL

Model			Non-turbo		Turbo	
Type			5-forward speeds with synchromesh and 1-reverse			
Transmission gear ratio		1st	3.454			
		2nd	2.062		1.947	
		3rd	1.448		1.366	
		4th	1.088		0.972	
		5th	0.780		0.738	
		Rev.	3.333			
Front reduction gear	Final	Type of gear	Hypoid			
		Gear ratio	4.111		4.444	
Rear reduction gear	Transfer	Type of gear	Helical			
		Gear ratio	1.000			
	Final	Type of gear	Hypoid			
		Gear ratio	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			3.5 ℓ (3.7 US qt, 3.1 Imp qt)			

2. TRANSMISSION GEAR OIL

Recommended oil:

GL-5 (75W-90) or equivalent

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 — 4.00 (0.1524 — 0.1575)	32294AA051	2

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

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 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)

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 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 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 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)	—	—

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 No.	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 No.	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) / Identifying paint (pink)		
Part No.	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) / Identifying paint (blue)		
Part No.	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).

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

7. TRANSFER CASE

Neutral position adjustment

Adjusting 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	U	Neutral position is closer to reverse gear.

Reverse check plate adjustment

Reverse check plate			
Part No.	Mark	Angle θ	Remarks
32189AA001	0	28°	Arm stops closer to 5th gear.
32189AA011	1	31°	Arm stops closer to 5th gear.
33189AA021	2	34°	Arm stops in the center.
32189AA031	3	37°	Arm stops closer to reverse gear.
32189AA041	4	40°	Arm stops closer to reverse gear.

8. EXTENSION ASSEMBLY

Tapered roller bearing preload (amount of standard protrusion):

0.15 — 0.20 mm (0.006 — 0.008 in)

NOTE:

Make sure to set between the preload range.

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

9. 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)	—	—

10. TRANSFER DRIVE GEAR

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

0.01 — 0.15 mm (0.0004 — 0.0059 in)

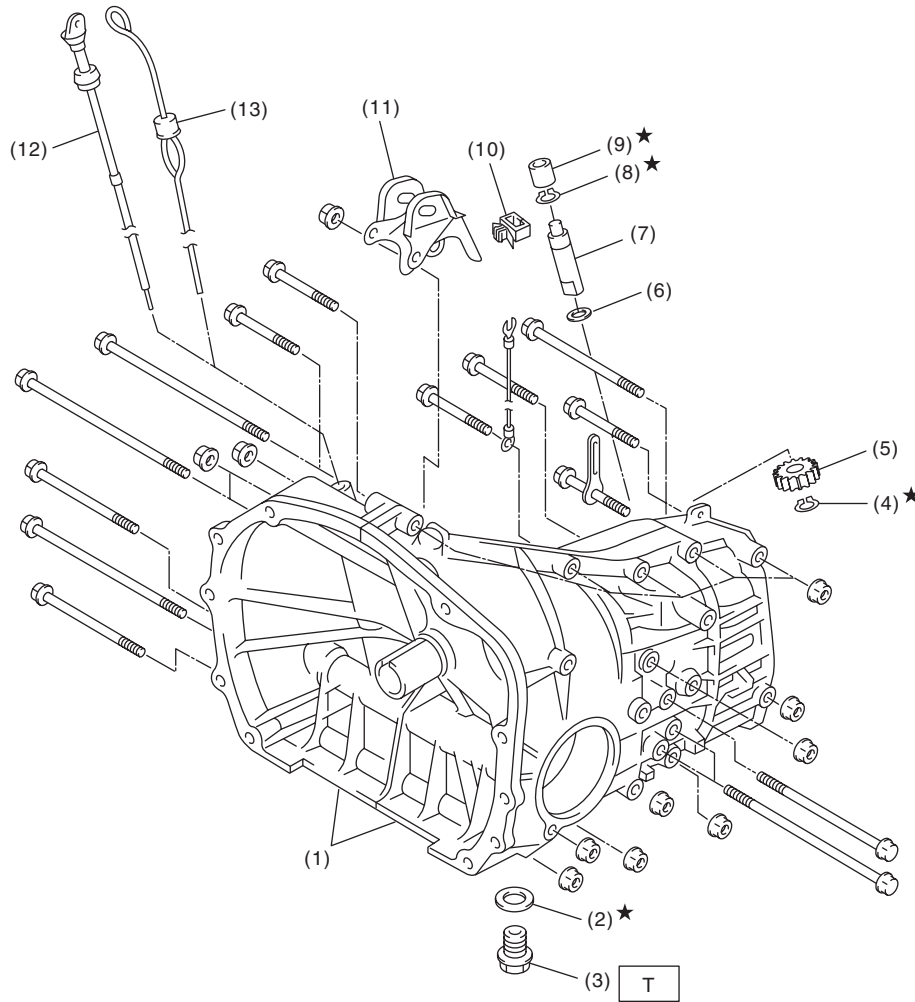
Snap ring (Outer-30)	
Part No.	Thickness mm (in)
805030041	1.53 (0.0602)
805030042	1.65 (0.0650)
805030043	1.77 (0.0697)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

B: COMPONENT

1. TRANSMISSION CASE



MT-01395

- (1) Transmission case ASSY
- (2) Gasket
- (3) Drain plug
- (4) Snap ring (Outer)
- (5) Speedometer driven gear
- (6) Washer

- (7) Speedometer shaft
- (8) Snap ring (Outer)
- (9) Oil seal
- (10) Clamp
- (11) Pitching stopper bracket
- (12) Oil level gauge (Non-turbo model)

- (13) Oil level gauge (Turbo model)

Tightening torque: N·m (kgf-m, ft-lb)

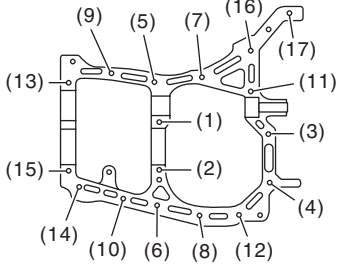
T: 44 (4.5, 32.5) (Aluminum gasket)

70 (7.1, 51.6) (Copper gasket)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

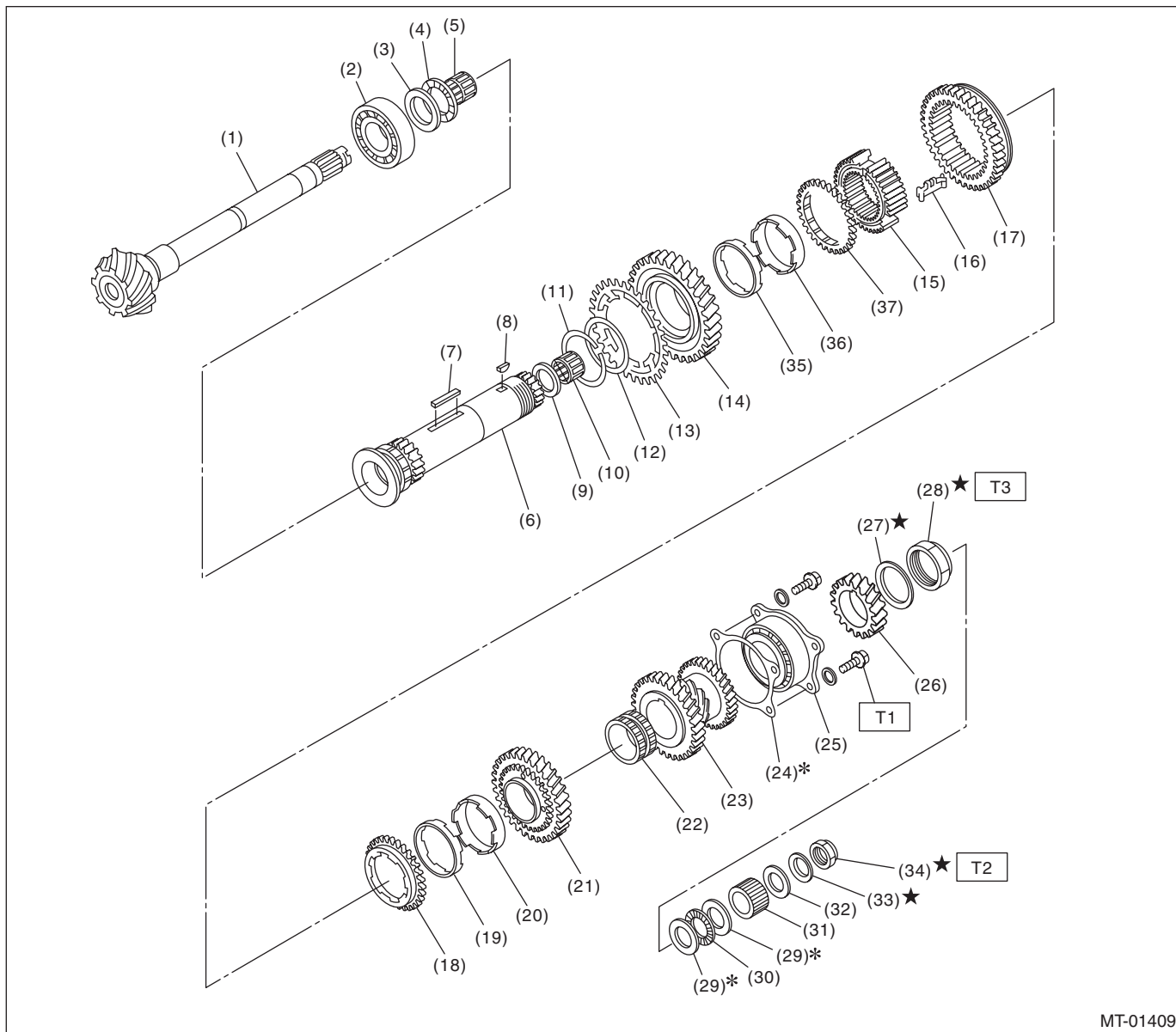
TRANSMISSION CASE TIGHTENING TORQUE

 <p>MT-00003</p>	Bolt No.	Bolt size mm	Tightening torque: N·m (kgf-m, ft-lb)
	(5) — (15)	8	25 (2.5, 18.4)
	(1) — (4) (16), (17)	10	39 (4.0, 28.9)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

2. DRIVE PINION ASSEMBLY



MT-01409

(1) Drive pinion shaft	(15) 1st-2nd synchronizer hub	(29) Washer
(2) Roller bearing	(16) Insert key	(30) Thrust bearing
(3) Washer	(17) Reverse driven gear	(31) Differential bevel gear sleeve
(4) Thrust bearing	(18) Outer baulk ring	(32) Washer
(5) Needle bearing	(19) Synchro cone	(33) Lock washer
(6) Driven shaft	(20) Inner baulk ring	(34) Lock nut
(7) Key	(21) 2nd driven gear	(35) Inner baulk ring
(8) Woodruff key	(22) 2nd driven gear bushing	(36) Synchro cone
(9) Drive pinion collar	(23) 3rd-4th driven gear	(37) Outer baulk ring
(10) Needle bearing	(24) Driven pinion shim	
(11) Snap ring (Outer) (Non-turbo model)	(25) Roller bearing	
(12) Washer (Non-turbo model)	(26) 5th driven gear	
(13) Sub-gear (Non-turbo model)	(27) Lock washer	
(14) 1st driven gear	(28) Lock nut	

Tightening torque: N·m (kgf-m, ft-lb)

T1: 30 (3.1, 22.1)

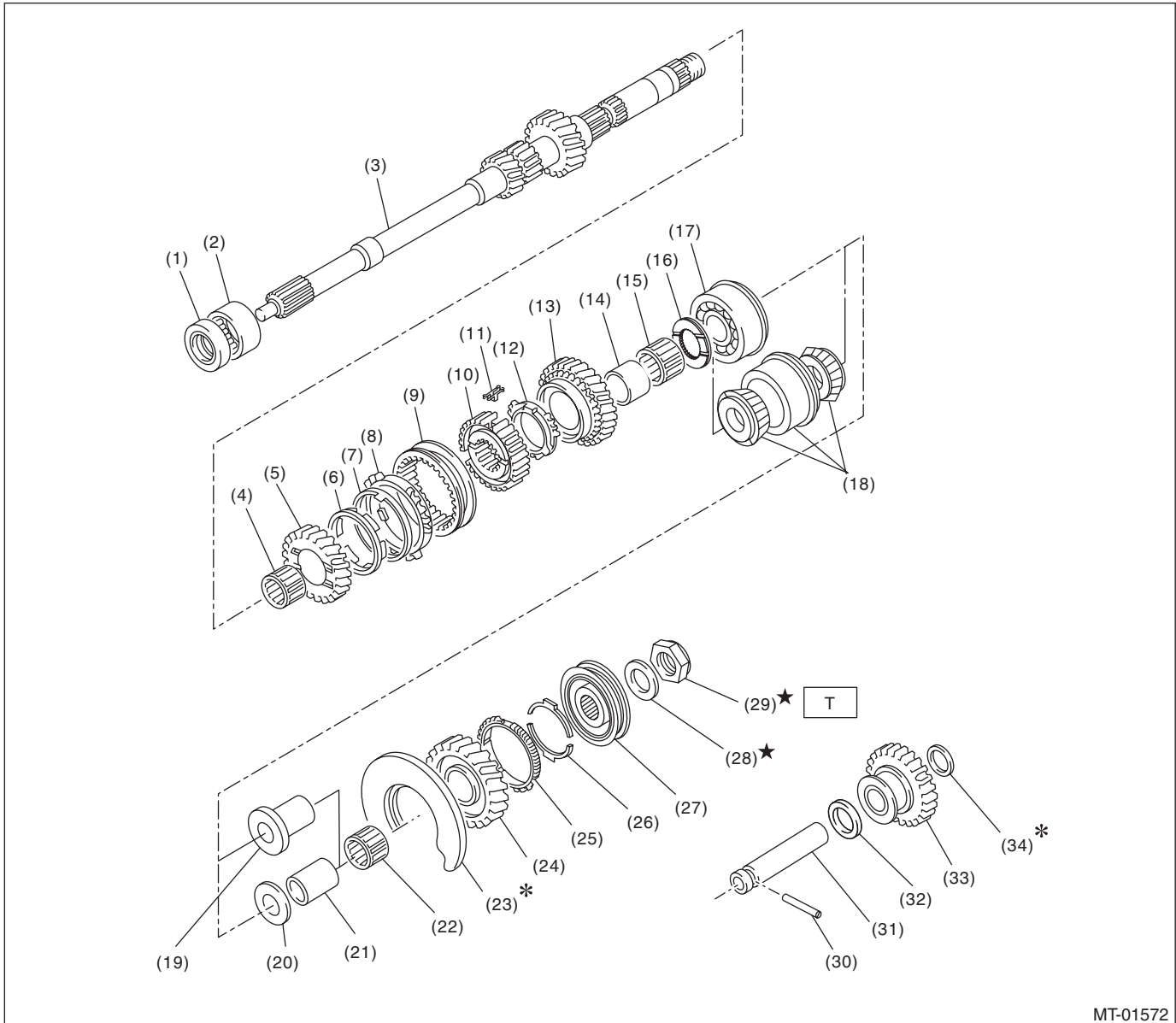
T2: 120 (12.2, 88.5)

T3: 260 (26.5, 191.8)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

3. MAIN SHAFT ASSEMBLY (SINGLE-RANGE)



MT-01572

- | | | |
|-------------------------------|--|-------------------------------|
| (1) Oil seal | (15) Needle bearing | (25) 5th baulk ring |
| (2) Needle bearing | (16) 4th gear thrust washer | (26) Baulk lever |
| (3) Transmission main shaft | (17) Ball bearing (Non-turbo model) | (27) 5th hub & sleeve No. 2 |
| (4) Needle bearing | (18) Taper roller bearing (Turbo model) | (28) Lock washer |
| (5) 3rd drive gear | (19) 5th needle bearing race (Turbo model) | (29) Lock nut |
| (6) Inner baulk ring | (20) 5th gear thrust washer (Non-turbo model) | (30) Straight pin |
| (7) 3rd synchro cone | (21) 5th needle bearing race (Non-turbo model) | (31) Reverse idler gear shaft |
| (8) Outer baulk ring | (22) Needle bearing | (32) Washer |
| (9) 3rd-4th coupling sleeve | (23) Main shaft rear plate | (33) Reverse idler gear |
| (10) 3rd-4th synchronizer hub | (24) 5th drive gear | (34) Washer |

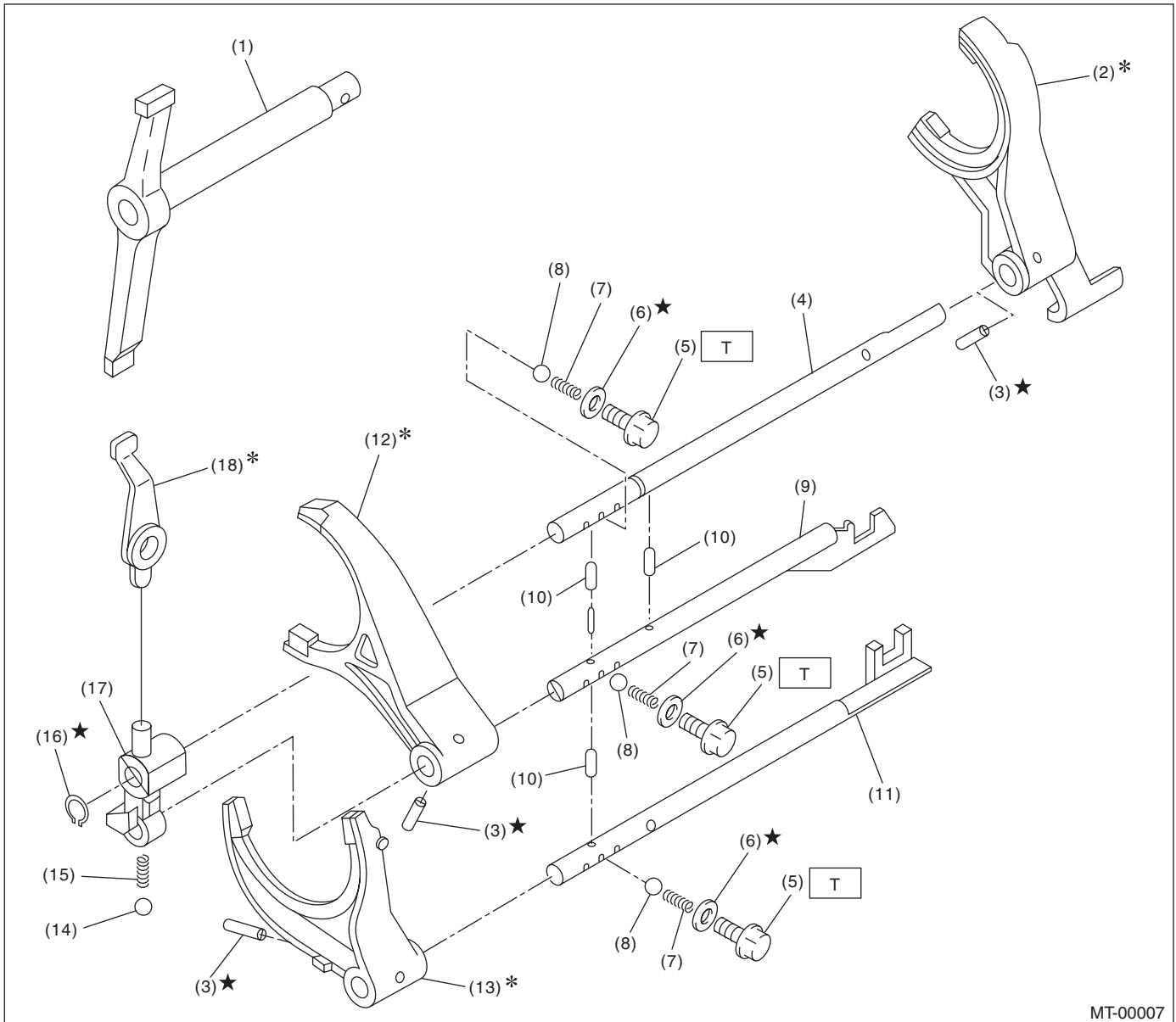
Tightening torque: N·m (kgf-m, ft-lb)

T: 120 (12.2, 88.5)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

4. SHIFTER FORK AND SHIFTER ROD



MT-00007

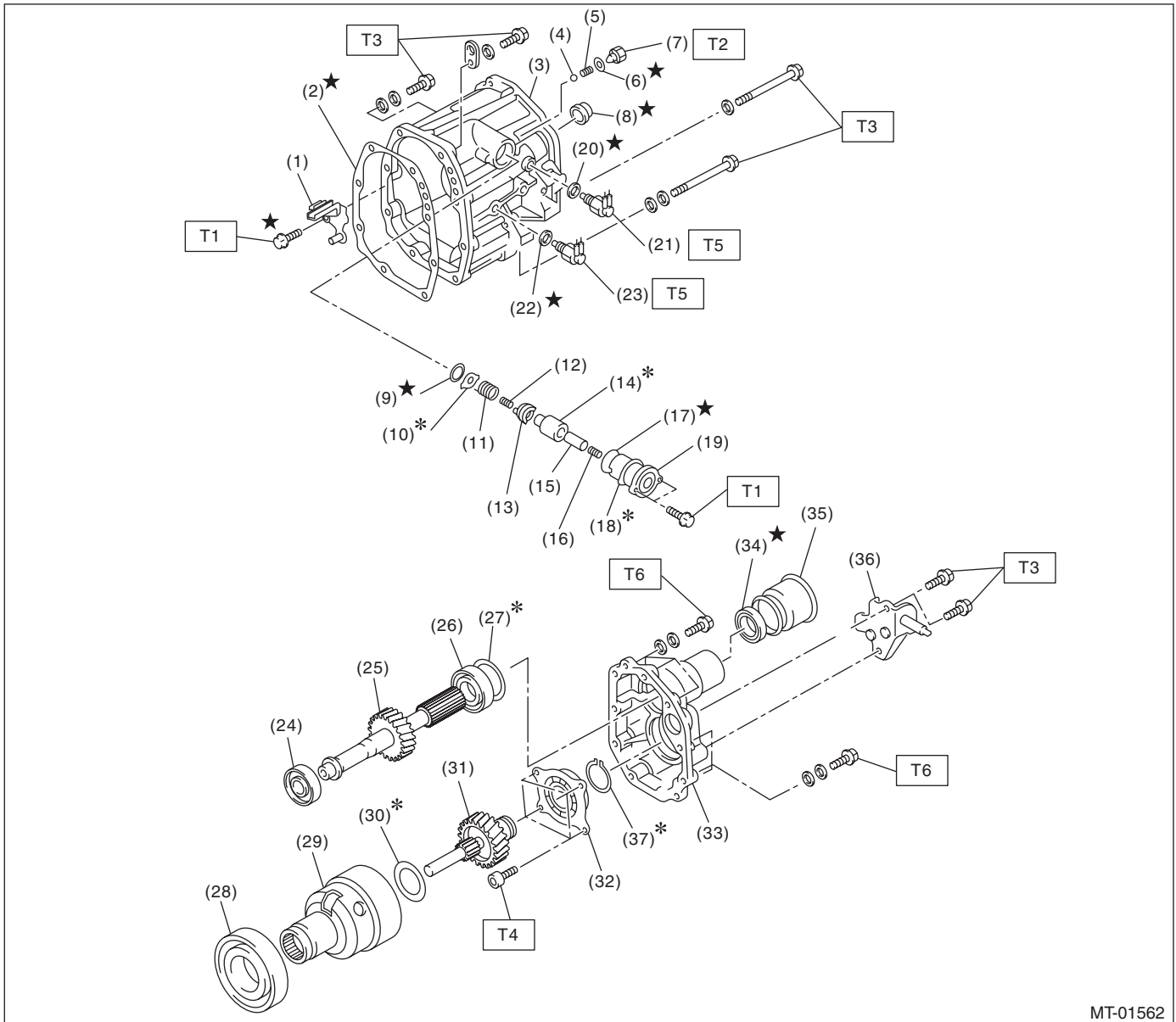
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| (1) Shifter arm | (8) Ball | (15) Spring |
| (2) 5th shifter fork | (9) 3rd-4th fork rod | (16) Snap ring (Outer) |
| (3) Straight pin | (10) Interlock plunger | (17) Reverse fork rod arm |
| (4) Reverse fork rod | (11) 1st-2nd fork rod | (18) Reverse 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: 20 (2.0, 14.8)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

5. TRANSFER CASE AND EXTENSION



MT-01562

- | | | |
|----------------------------|------------------------------|--------------------------|
| (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, 19.2)

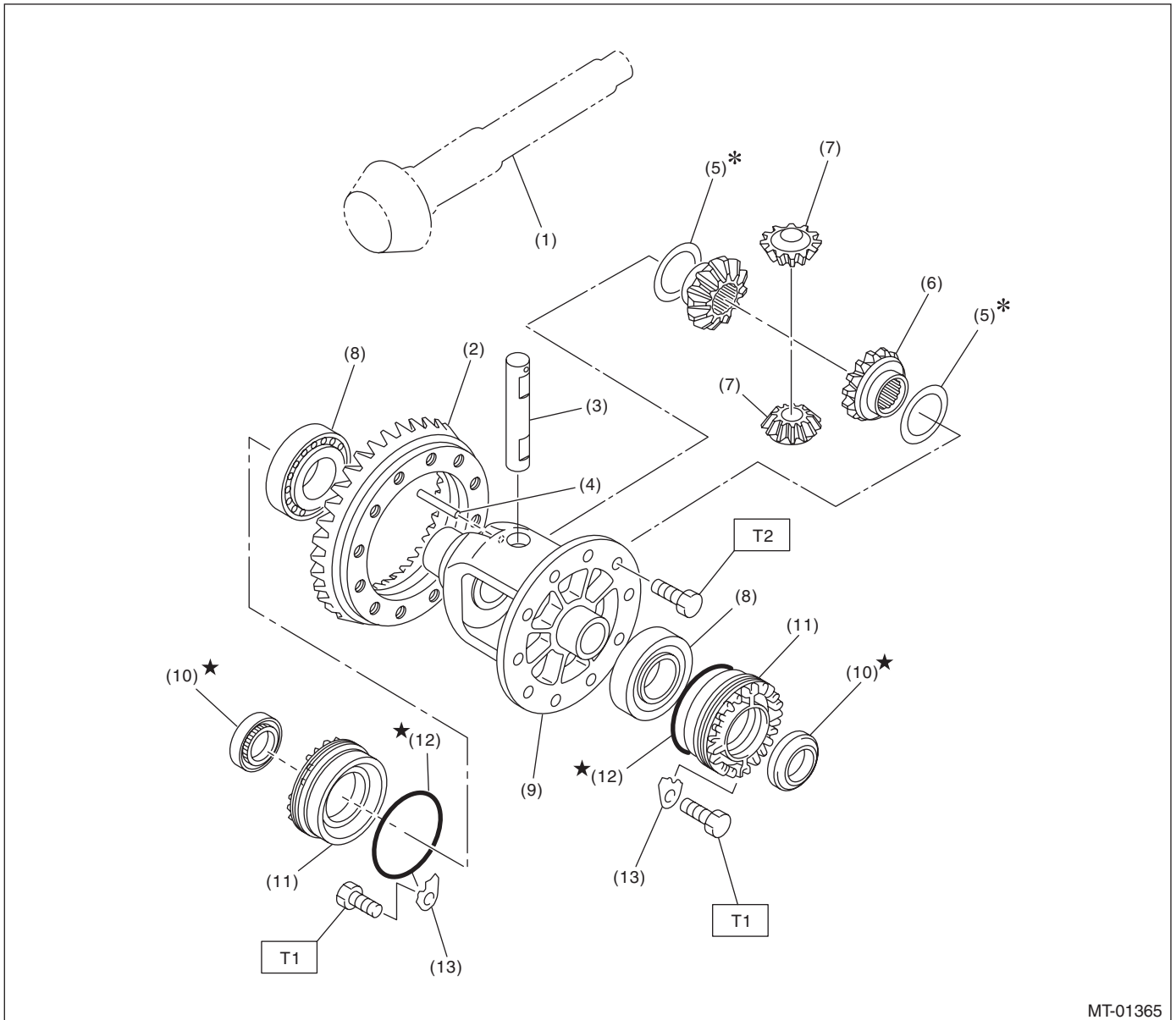
T5: 32.3 (3.3, 23.8)

T6: 40 (4.1, 29.5)

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

6. FRONT DIFFERENTIAL



MT-01365

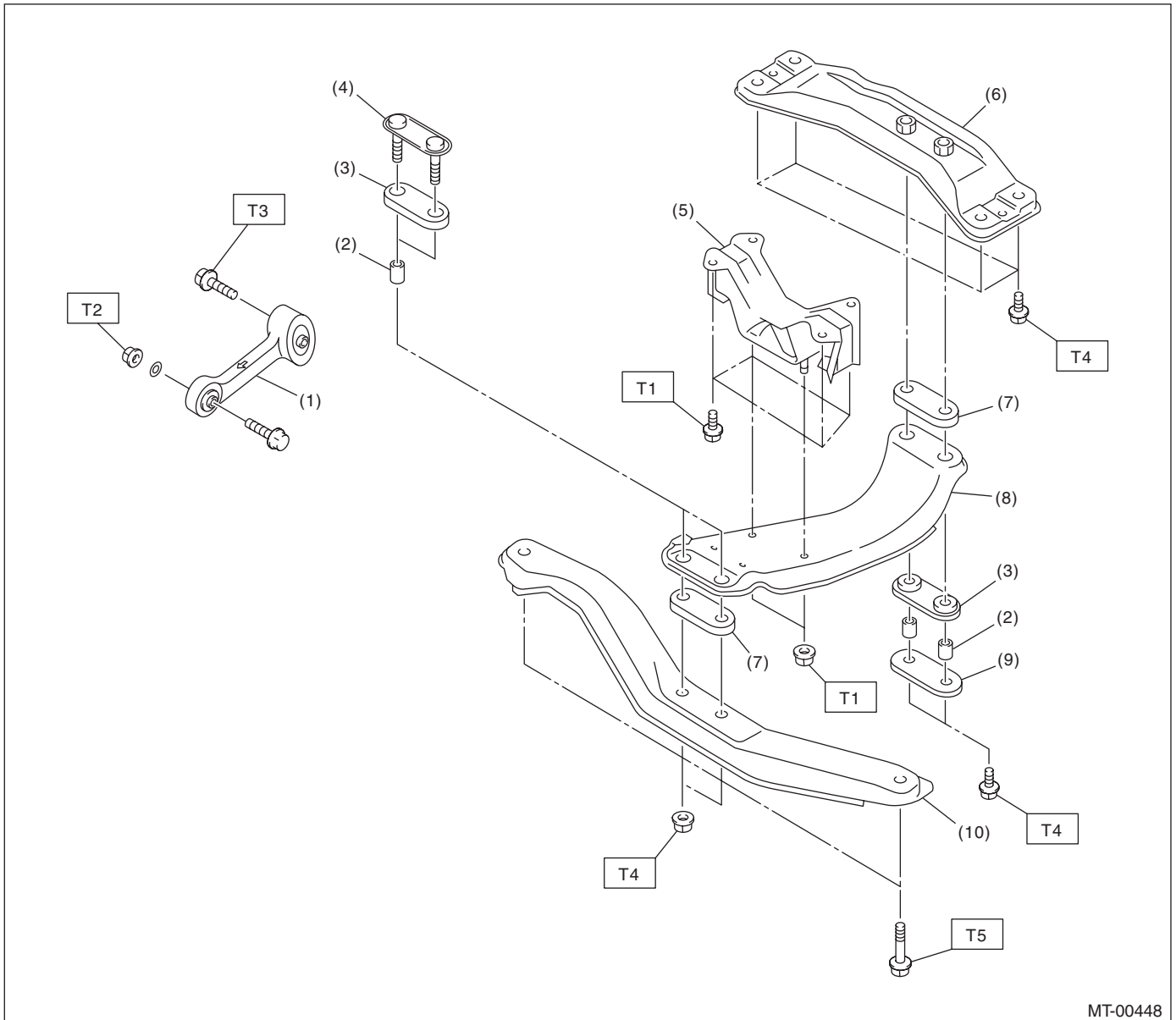
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|-----------------------------|---------------------------------|--------------------------|
| (1) Drive pinion shaft | (7) Differential bevel pinion | (13) Retainer lock plate |
| (2) Hypoid driven gear | (8) Roller bearing | |
| (3) Pinion shaft | (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, 18.4)

T2: 62 (6.3, 45.6)

7. TRANSMISSION MOUNTING



MT-00448

- | | |
|---------------------------------|--------------------------|
| (1) Pitching stopper | (7) Upper cushion rubber |
| (2) Spacer | (8) Center crossmember |
| (3) Lower cushion rubber | (9) Rear plate |
| (4) Front plate | (10) Front crossmember |
| (5) Transmission cushion rubber | |
| (6) Rear crossmember | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 35 (3.6, 25.8)

T2: 50 (5.1, 36.9)

T3: 58 (5.9, 42.8)

T4: 70 (7.1, 51.6)

T5: 140 (14.3, 103.3)

C: CAUTION

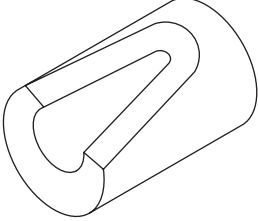
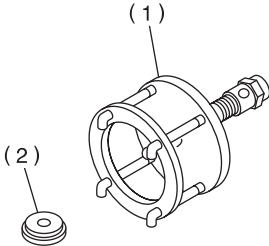
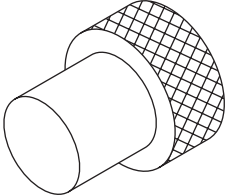
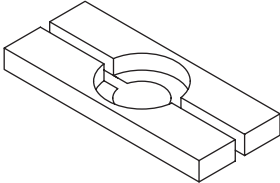
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the problem. 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 gear oil, grease, etc. with those of different grades 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 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 shop cloth between the part and the vise.
- Avoid damaging the mating surface of the case.
- Before applying liquid gasket, completely remove the liquid gasket.

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

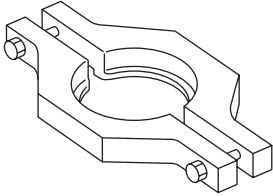
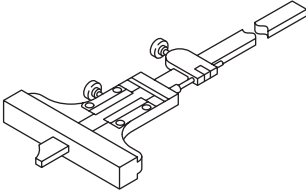
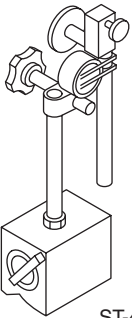
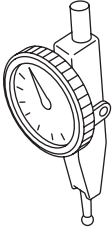
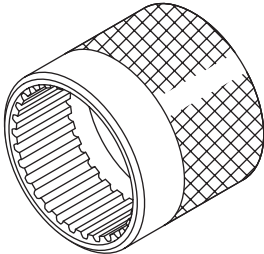
D: PREPARATION TOOL

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
 <p>ST-399780104</p>	399780104	WEIGHT	Used for measuring preload on the roller bearing.
 <p>ST-498077000</p>	498077000	REMOVER	Used for removing the roller bearing of the drive pinion shaft.

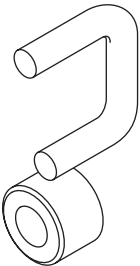
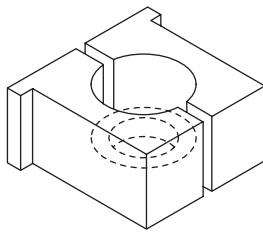
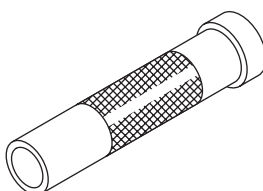
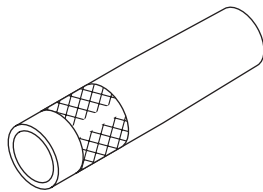
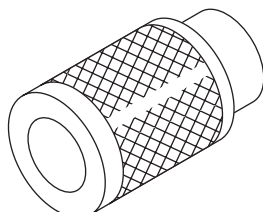
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-498077300</p>	498077300	CENTER DIFFERENTIAL BEARING REMOVER	Used for removing the center differential cover ball bearing.
 <p style="text-align: center;">ST-498147000</p>	498147000	DEPTH GAUGE	Used for adjusting the main shaft axial end play.
 <p style="text-align: center;">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 together with DIAL GAUGE (498247100).
 <p style="text-align: center;">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 together with MAGNET BASE (498247001).
 <p style="text-align: center;">ST-498247400</p>	498427400	STOPPER	Used for securing the drive pinion shaft assembly and the driven gear assembly when removing the drive pinion shaft assembly lock nut.

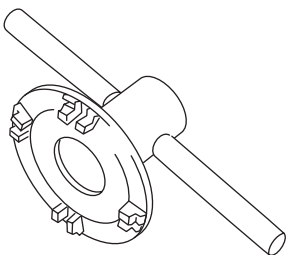
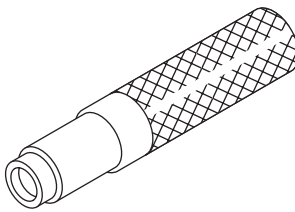
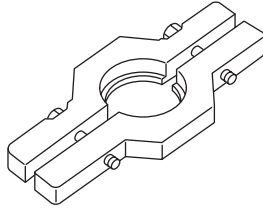
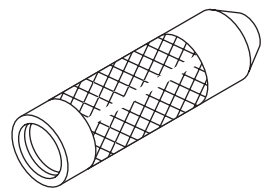
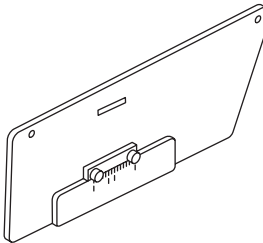
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-498787100</p>	498787100	MAIN SHAFT STOPPER	Used for removing and installing the lock nut of the transmission main shaft.
 <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.
 <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).

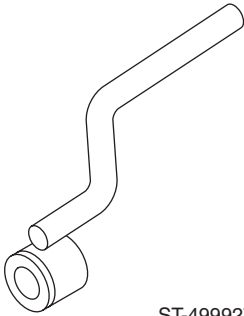
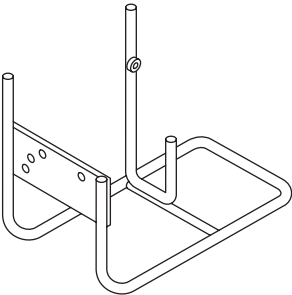
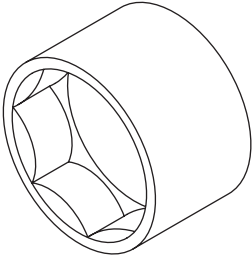
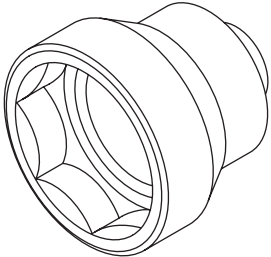
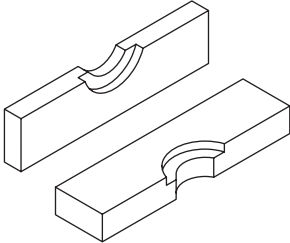
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18630AA010	18630AA010	WRENCH COMPL RETAINER	<ul style="list-style-type: none"> Used for removing and installing the differential side retainer. WRENCH ASSEMBLY (499787000) can also be used.
 ST-499827000	499827000	PRESS	Used for installing the speedometer oil seal when attaching the speedometer cable to the transmission.
 ST-499857000	499857000	5TH DRIVEN GEAR REMOVER	Used for removing the 5th driven gear.
 ST-499877000	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 together with REMOVER (899714110).
 ST-499917500	499917500	DRIVE PINION GAUGE ASSY	Used for adjusting the drive pinion shim.

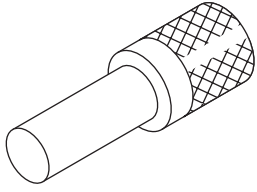
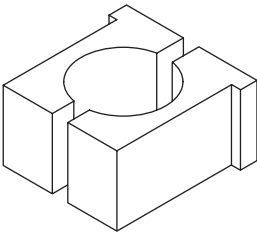
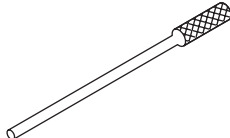
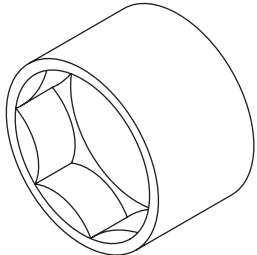
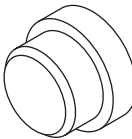
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499927100	499927100	HANDLE	Used for fitting the transmission main shaft.
 ST-499937100	499937100	TRANSMISSION STAND	Used for disassembling and assembling the transmission.
 ST-499987003	499987003	SOCKET WRENCH (35)	Used for removing and installing the driven pinion lock nut and main shaft lock nut.
 ST-499987300	499987300	SOCKET WRENCH (50)	Used for removing and installing the driven gear assembly lock nut.
 ST-899714110	899714110	REMOVER	Used for fixing the transmission main shaft, drive pinion, rear drive shaft.

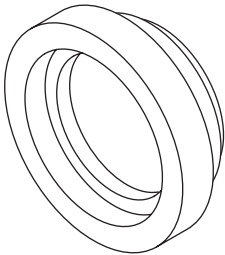
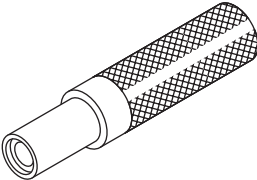
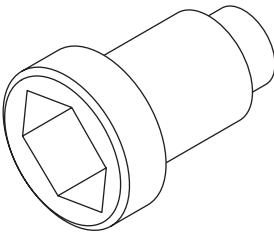
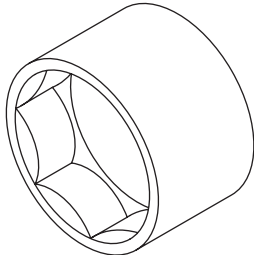
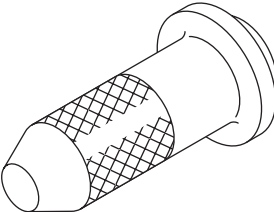
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-899864100</p>	899864100	REMOVER	Used for removing transmission main shaft and drive pinion parts.
 <p>ST-899884100</p>	899884100	HOLDER	Used for tightening the lock nut on the sleeve.
 <p>ST-899904100</p>	899904100	REMOVER	Used for removing and installing the straight pin.
 <p>ST-899988608</p>	899988608	SOCKET WRENCH (27)	Used for removing and installing the drive pinion lock nut.
 <p>ST-398497701</p>	398497701	ADAPTER	<ul style="list-style-type: none"> Used for installing roller bearing onto the differential case. Used together with INSTALLER (499277100).

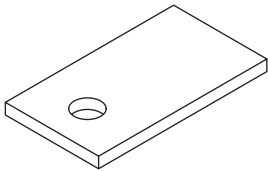
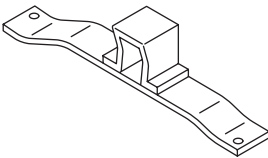
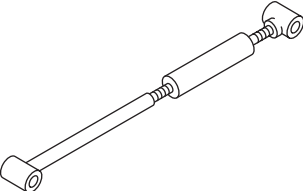
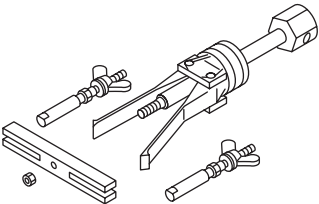
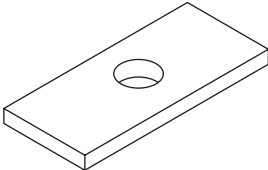
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-499587000</p>	499587000	INSTALLER	Used for installing the driven gears to the driven shaft.
 <p>ST-899824100</p>	899824100	PRESS	Used for installing the speedometer shaft oil seal.
 <p>ST-499987100</p>	499987100	SOCKET WRENCH (35)	Used for removing and installing the drive pinion lock nut.
 <p>ST-899984103</p>	899984103	SOCKET WRENCH (35)	Used for removing and installing the drive pinion lock nut.
 <p>ST-498057300</p>	498057300	INSTALLER	Used for installing the extension oil seal.

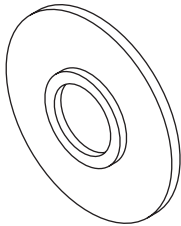
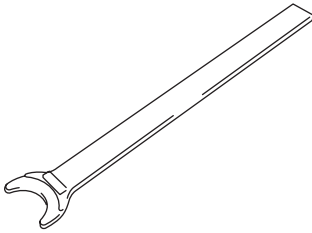
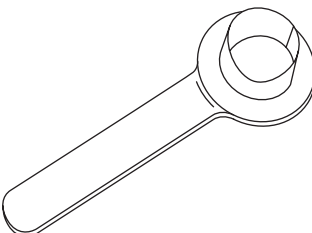
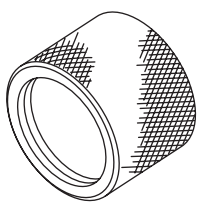
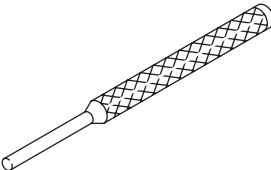
General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-498255400</p>	498255400	PLATE	Used for measuring backlash.
 <p>ST41099AA010</p>	41099AA010	ENGINE SUPPORT BRACKET	Used for supporting the engine.
 <p>ST41099AA020</p>	41099AA020	ENGINE SUPPORT	Used for supporting the engine.
 <p>ST-398527700</p>	398527700	PULLER ASSY	<ul style="list-style-type: none"> • Used for removing the extension case roller bearing. • Used for removing the front differential side retainer bearing outer race. • Used for removing the front differential side retainer oil seal.
 <p>ST-398643600</p>	398643600	GAUGE	Used for measuring the total end play, extension end play and drive pinion height.

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-398177700</p>	398177700	INSTALLER	<ul 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>ST28399SA000</p>	28399SA000	FRONT DRIVE SHAFT REMOVER	Used for removing the front drive shaft. (Common for the MT model, and the AT model)
 <p>ST28399SA010</p>	28399SA010	FRONT DRIVE SHAFT OIL SEAL PROTECTOR	Used for protecting the oil seal from damage when inserting the front drive shaft.
 <p>ST18675AA000</p>	18675AA000	DIFFERENTIAL SIDE OIL SEAL INSTALLER	Used for installing the differential side retainer oil seal.
 <p>ST-398791700</p>	398791700	STRAIGHT PIN REMOVER	Used for removing and installing the straight pin.

General Description

MANUAL TRANSMISSION AND DIFFERENTIAL

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.
TORX® bit T70	Used for installing and removing the transmission gear oil drain plug.