

# GENERAL DESCRIPTION

## AUTOMATIC TRANSMISSION

### 1. General Description

#### A: SPECIFICATIONS

##### 1. TORQUE CONVERTER CLUTCH

Model	Non-turbo	Turbo
Type	Symmetric, 3 element, single stage, 2 phase torque converter	
Stall torque ratio	1.85 — 2.15	2.05 — 2.35
Nominal diameter	246 mm (9.69 in)	
Stall speed (at sea level)	2,100 — 2,600 rpm	2,600 — 3,400 rpm
One-way clutch	Sprague type one-way clutch	

##### 2. OIL PUMP

Type	Parachoid constant-displacement pump	
Driving method	Driven by engine	
Number of teeth	Inner rotor	9
	Outer rotor	10

##### 3. TRANSMISSION CONTROL ELEMENT

Type	4-forward, 1-reverse, double-row planetary gears
Multi-plate clutch	3 sets
Multi-plate brake	2 sets
One-way clutch (sprague type)	1 set

##### 4. TRANSMISSION GEAR RATIO

Model	Sedan (non-turbo)	Except sedan (non-turbo)
1st	3.027	2.785
2nd	1.619	1.545
3rd	1.000	
4th	0.694	
Rev	2.272	

##### 5. PLANETARY GEAR AND PLATE

Model	Non-turbo		Turbo
	Sedan	Wagon	
Front sun gear, number of teeth	33		
Front pinion, number of teeth	21		
Front internal gear, number of teeth	75		
Rear sun gear, number of teeth	37	42	
Rear pinion, number of teeth	19	17	
Rear internal gear, number of teeth	75		
Drive plate number of high clutch	4		5
Drive plate number of low clutch	6		7
Drive plate number of reverse clutch	2		
Drive plate number of 2-4 brake	3		4
Drive plate number of low & reverse brake	6		7

##### 6. SELECTOR POSITION

P (Park)	Transmission in neutral, output member immovable, and engine start possible
R (Reverse)	Transmission in reverse for backing up
N (Neutral)	Transmission in neutral and engine start possible
D (Drive)	Automatic gear change 1st $\leftarrow$ 2nd $\leftarrow$ 3rd $\leftarrow$ 4th
3 (3rd)	Automatic gear change 1st $\leftarrow$ 2nd $\leftarrow$ 3rd $\leftarrow$ 4th
2 (2nd)	2nd gear locked (deceleration possible 2nd $\leftarrow$ 3rd $\leftarrow$ 4th)
1 (1st)	1st gear locked (deceleration possible 1st $\leftarrow$ 2nd $\leftarrow$ 3rd $\leftarrow$ 4th)
Control method	Wire cable

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## 7. HYDRAULIC CONTROL AND LUBRICATION

Type	Electronic-hydraulic control [four forward speeds change by electrical signals of vehicle speed and accelerator (throttle) opening]
Fluid	Dexron III type automatic transmission fluid
Fluid capacity:	9.3 — 9.6 ℓ (9.8 — 10.1 US qt, 7.4 — 7.7 Imp qt)
Lubrication system	Forced feed lubrication with oil pump
Oil	Automatic transmission fluid (above mentioned)

## 8. COOLING AND HARNESS

Cooling system	Liquid-cooled cooler incorporated in radiator
Inhibitor switch	12 poles
Transmission harness	20 poles

## 9. TRANSFER

Model	Non-turbo	Turbo
Transfer type	Multi-plate transfer (MPT)	Variable torque distribution (VTD)
Number of drive & driven plates in transfer clutch	5	3
Control method	Electronic, hydraulic type	
Lubricant	The same automatic transmission fluid as used in automatic transmission	
1st reduction gear ratio	1.000 (53/53)	

## 10.FINAL REDUCTION

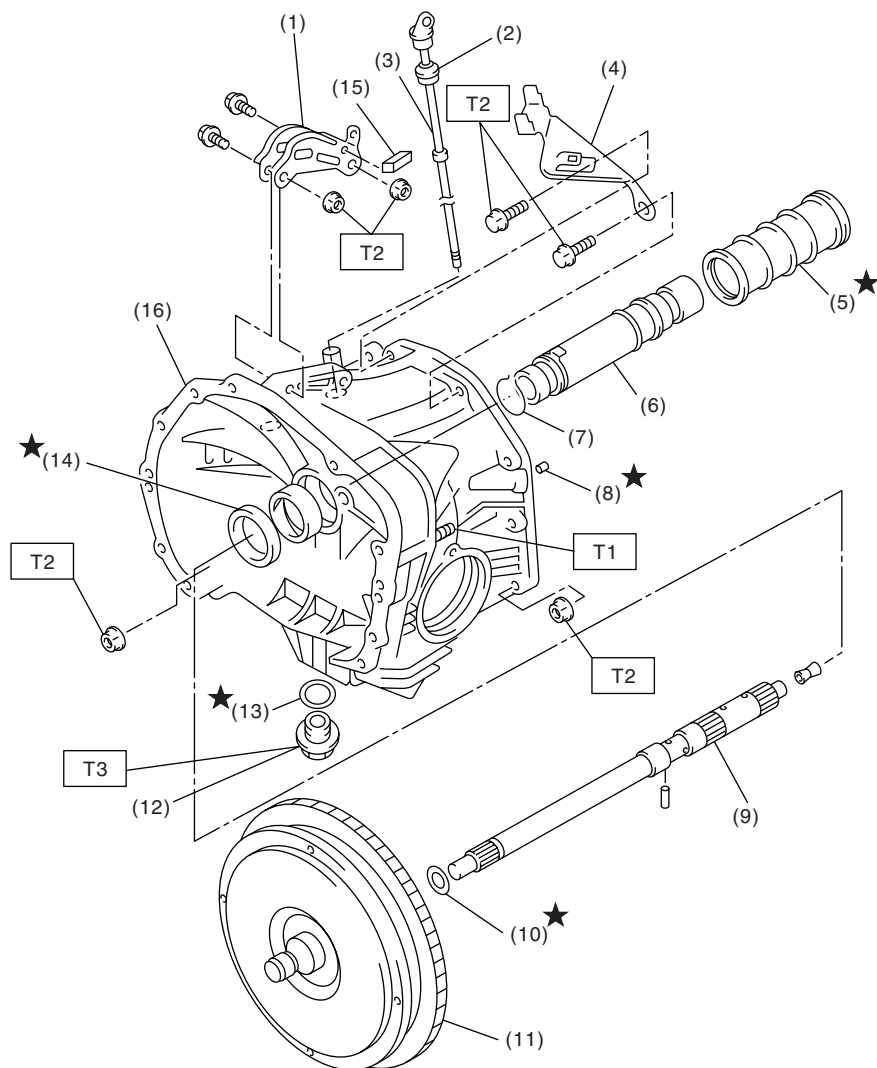
Model	Sedan (non-turbo)	Except sedan (non-turbo)																		
Front final gear ratio	4.444 (40/9)	4.111 (37/9)																		
Lubrication oil	<div><div>ITEM</div><div>• Front differential gear oil</div><div>API Classification</div><div>GL-5</div><div>SAE Viscosity No. and Applicable Temperature</div><table><tr><td>(°C)</td><td>-30</td><td>-26</td><td>-15</td><td>-5</td><td>0</td><td>15</td><td>25</td><td>30</td></tr><tr><td>(°F)</td><td>-22</td><td>-15</td><td>5</td><td>23</td><td>32</td><td>59</td><td>77</td><td>86</td></tr></table><div><div><div>90</div><div>85W</div><div>80W</div><div>75W-90</div></div><div>AT-00001</div></div></div>		(°C)	-30	-26	-15	-5	0	15	25	30	(°F)	-22	-15	5	23	32	59	77	86
(°C)	-30	-26	-15	-5	0	15	25	30												
(°F)	-22	-15	5	23	32	59	77	86												
Front differential oil capacity	1.1 — 1.3 ℓ (1.2 — 1.4 US qt, 1.0 — 1.1 Imp qt)																			

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### B: COMPONENT

#### 1. TORQUE CONVERTER CLUTCH AND CASE



AT-00002

- (1) Pitching stopper bracket
- (2) O-ring
- (3) Differential oil level gauge
- (4) Stay
- (5) Seal pipe
- (6) Oil pump shaft
- (7) Clip

- (8) Oil drain pipe
- (9) Input shaft
- (10) O-ring
- (11) Torque converter clutch assembly
- (12) Drain plug
- (13) Gasket
- (14) Oil seal

- (15) Clip (turbo model)
- (16) Torque converter clutch case

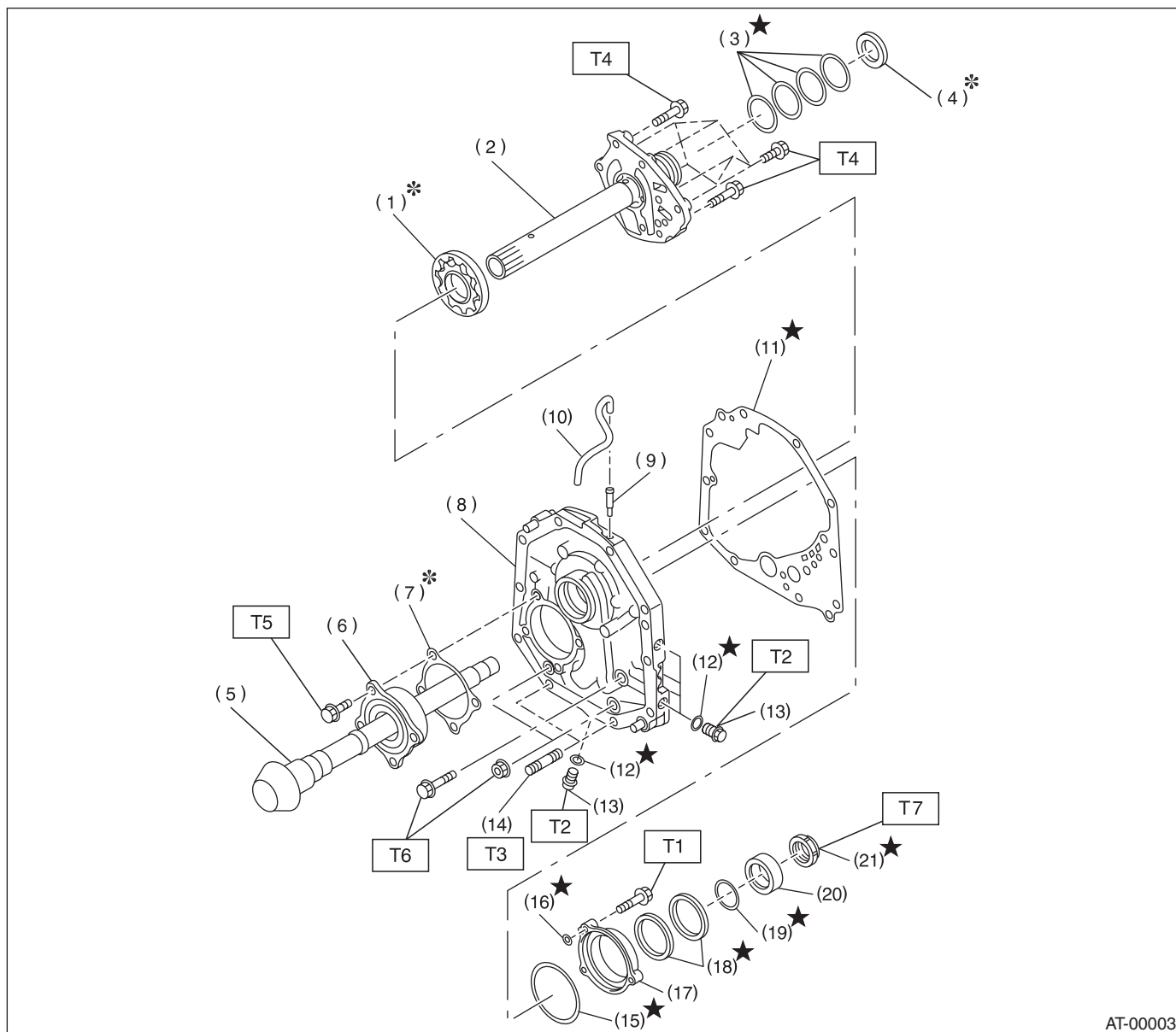
**Tightening torque: N·m (kgf-m, ft-lb)**

**T1: 18 (1.8, 13.0)**

**T2: 41 (4.2, 30.4)**

**T3: 44 (4.5, 32.5)**

### 2. OIL PUMP



AT-00003

- (1) Oil pump rotor
- (2) Oil pump cover
- (3) Seal ring
- (4) Thrust needle bearing
- (5) Drive pinion shaft
- (6) Roller bearing
- (7) Shim
- (8) Oil pump housing
- (9) Nipple
- (10) Air breather hose

- (11) Gasket
- (12) O-ring
- (13) Test plug
- (14) Stud bolt
- (15) O-ring
- (16) O-ring
- (17) Oil seal retainer
- (18) Oil seal
- (19) O-ring
- (20) Drive pinion collar

- (21) Lock nut

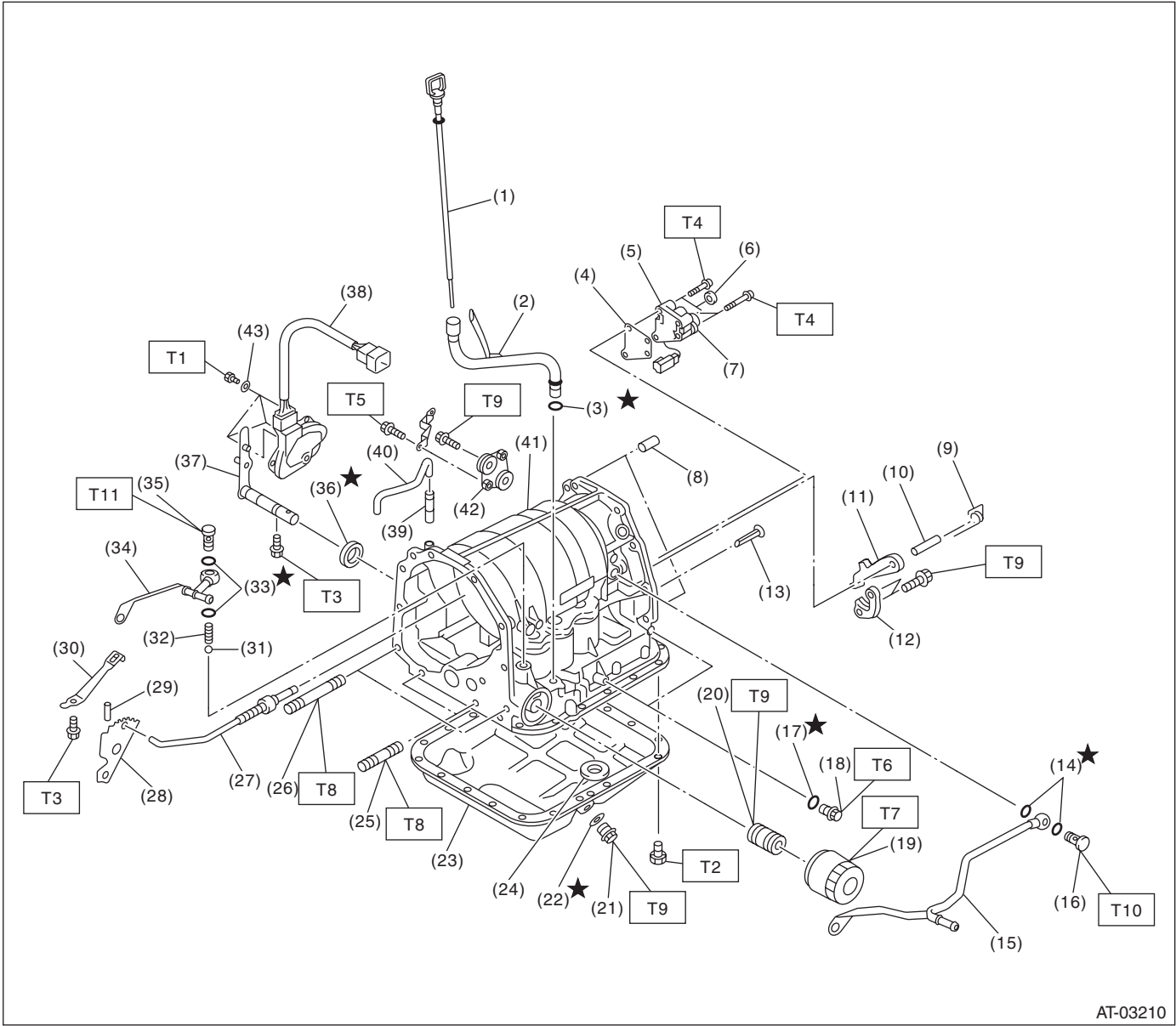
#### **Tightening torque: N·m (kgf-m, ft-lb)**

- T1: 7 (0.7, 5.1)**
- T2: 13 (1.3, 9.4)**
- T3: 18 (1.8, 13.0)**
- T4: 25 (2.5, 18.1)**
- T5: 40 (4.1, 30)**
- T6: 42 (4.3, 31)**
- T7: 116 (11.8, 85)**

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### 3. TRANSMISSION CASE AND CONTROL DEVICE



AT-03210

## GENERAL DESCRIPTION

### AUTOMATIC TRANSMISSION

(1) ATF level gauge	(20) Oil filter stud bolt
(2) ATF charger pipe	(21) Drain plug
(3) O-ring	(22) Gasket
(4) Transfer valve plate	(23) Oil pan
(5) Transfer valve assembly	(24) Magnet
(6) Transfer clutch seal	(25) Stud bolt (short)
(7) Transfer duty solenoid	(26) Stud bolt (long)
(8) Straight pin	(27) Parking rod
(9) Return spring	(28) Manual plate
(10) Shaft	(29) Spring pin
(11) Parking pawl	(30) Detention spring
(12) Parking support	(31) Ball
(13) Inlet filter	(32) Spring
(14) Gasket	(33) Gasket
(15) Inlet pipe	(34) Outlet pipe
(16) Union screw	(35) Union screw
(17) O-ring	(36) Oil seal
(18) Test plug	(37) Select lever
(19) Oil filter	(38) Inhibitor switch assembly

(39) Nipple
(40) Air breather hose
(41) Transmission case
(42) Plate assembly
(43) Washer

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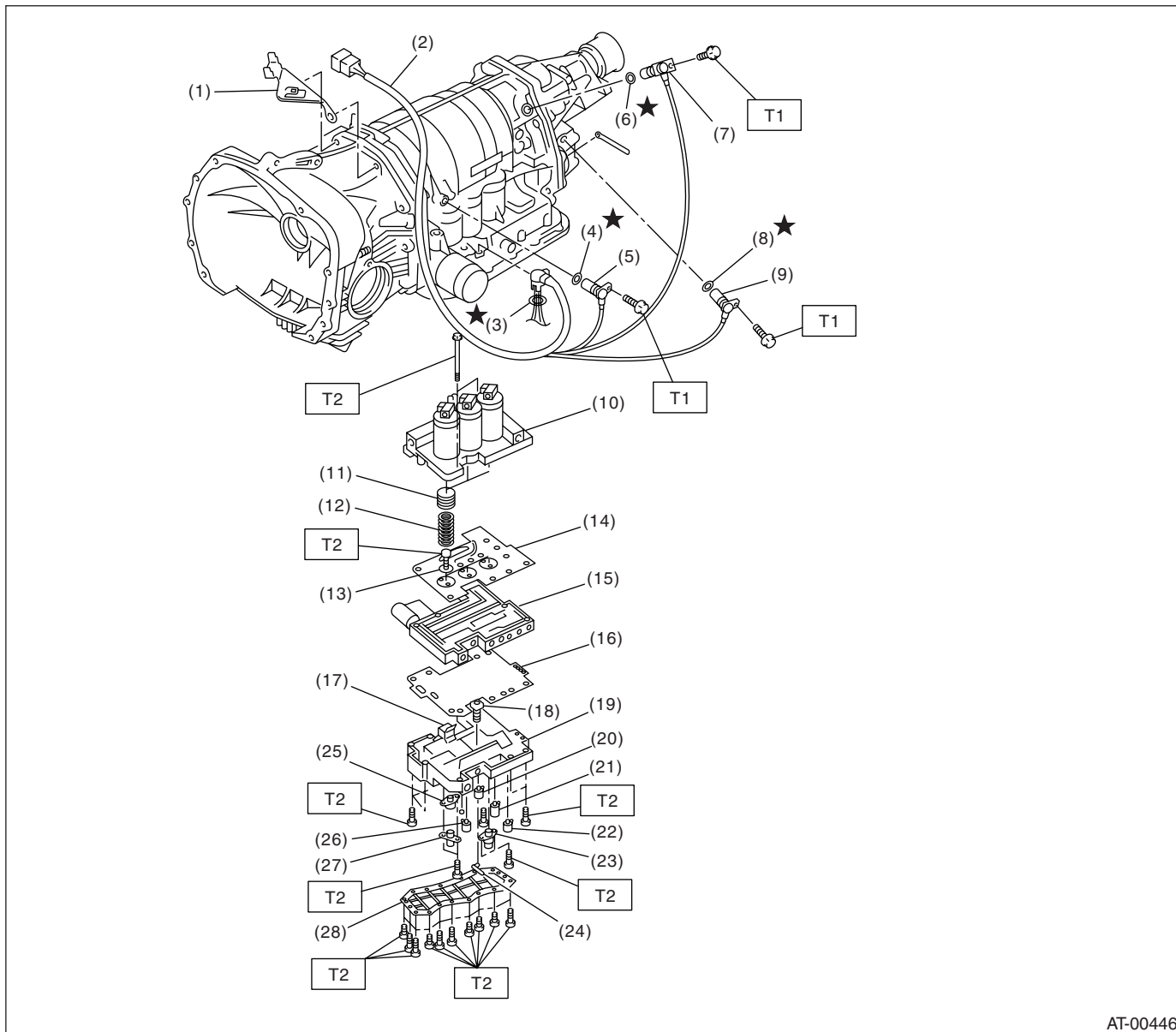
***Tightening torque: N·m (kgf-m, ft-lb)******T1: 3.4 (0.35, 2.5)******T2: 5 (0.5, 3.6)******T3: 6 (0.6, 4)******T4: 8 (0.8, 6)******T5: 12 (1.2, 8.7)******T6: 13 (1.3, 10)******T7: 14 (1.4, 10)******T8: 18 (1.8, 13)******T9: 25 (2.6, 18)******T10: 40 (4.1, 30)******T11: 44 (4.5, 32)***

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# GENERAL DESCRIPTION

## AUTOMATIC TRANSMISSION

### 4. CONTROL VALVE AND HARNESS ROUTING



- |   |                                |
|---|--------------------------------|
| (1) Stay                                  | (12) Accumulator spring        |
| (2) Transmission harness                  | (13) Side plate                |
| (3) O-ring                                | (14) Separate plate            |
| (4) O-ring                                | (15) Middle valve body         |
| (5) Torque converter turbine speed sensor | (16) Separate plate            |
| (6) O-ring                                | (17) Fluid filter              |
| (7) Front vehicle speed sensor            | (18) Fluid filter              |
| (8) O-ring                                | (19) Lower valve body          |
| (9) Rear vehicle speed sensor             | (20) Shift solenoid 2          |
| (10) Upper valve body                     | (21) Shift solenoid 1          |
| (11) Accumulator spring                   | (22) 2-4 brake timing solenoid |
|   | (23) 2-4 brake duty solenoid   |

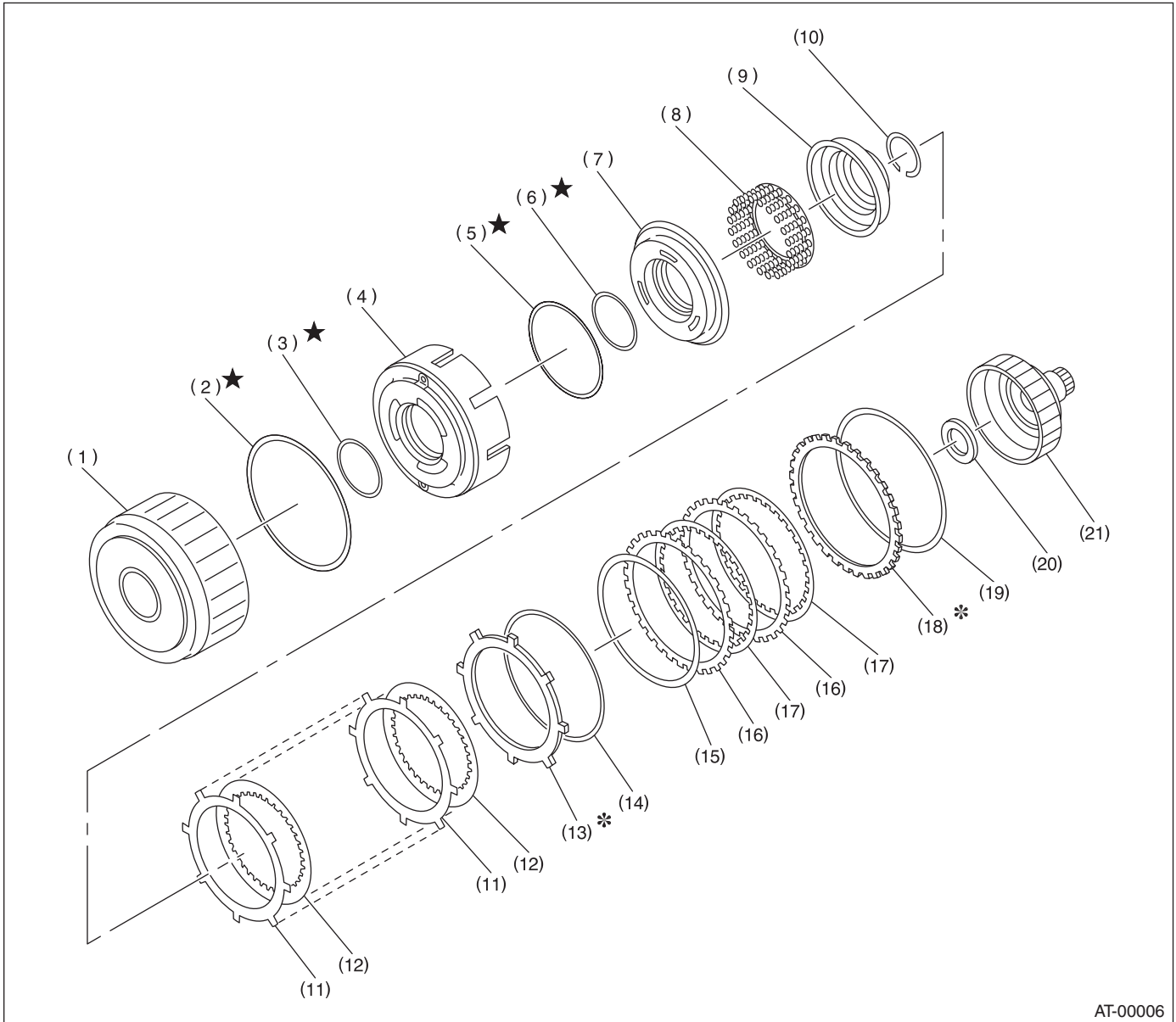
- |                                  |
|----------------------------------|
| (24) ATF temperature sensor      |
| (25) Line pressure duty solenoid |
| (26) Low clutch timing solenoid  |
| (27) Lock-up duty solenoid       |
| (28) Oil strainer                |

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

**T1: 7 (0.7, 5.1)**

**T2: 8 (0.8, 5.8)**

### 5. HIGH CLUTCH AND REVERSE CLUTCH



AT-00006

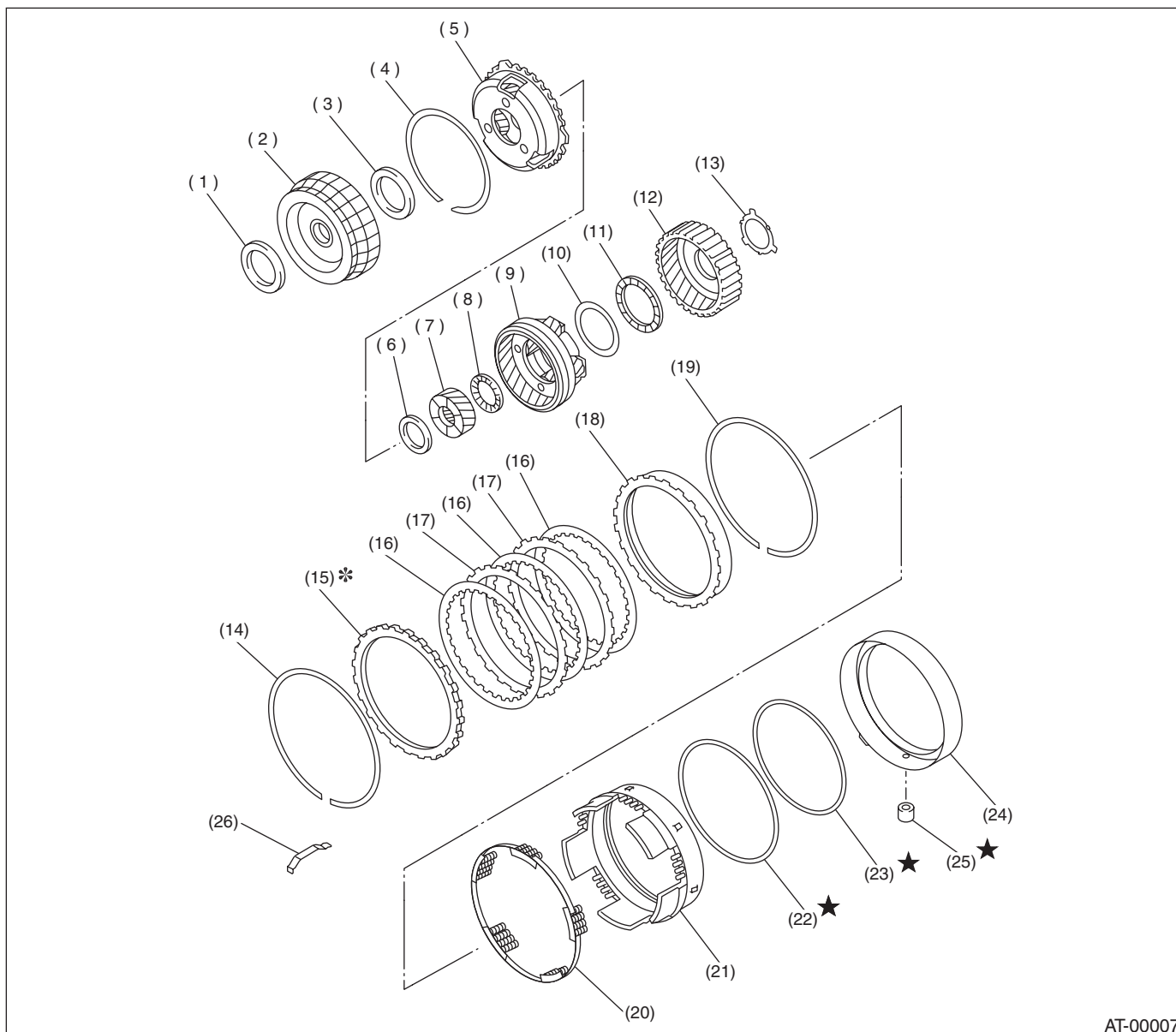
- |                           |                      |                            |
|---------------------------|----------------------|----------------------------|
| (1) High clutch drum      | (8) Spring retainer  | (15) Dish plate            |
| (2) Lip seal              | (9) Cover            | (16) Driven plate          |
| (3) D ring                | (10) Snap ring       | (17) Drive plate           |
| (4) Reverse clutch piston | (11) Driven plate    | (18) Retaining plate       |
| (5) D ring                | (12) Drive plate     | (19) Snap ring             |
| (6) D ring                | (13) Retaining plate | (20) Thrust needle bearing |
| (7) High clutch piston    | (14) Snap ring       | (21) High clutch hub       |



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## AUTOMATIC TRANSMISSION

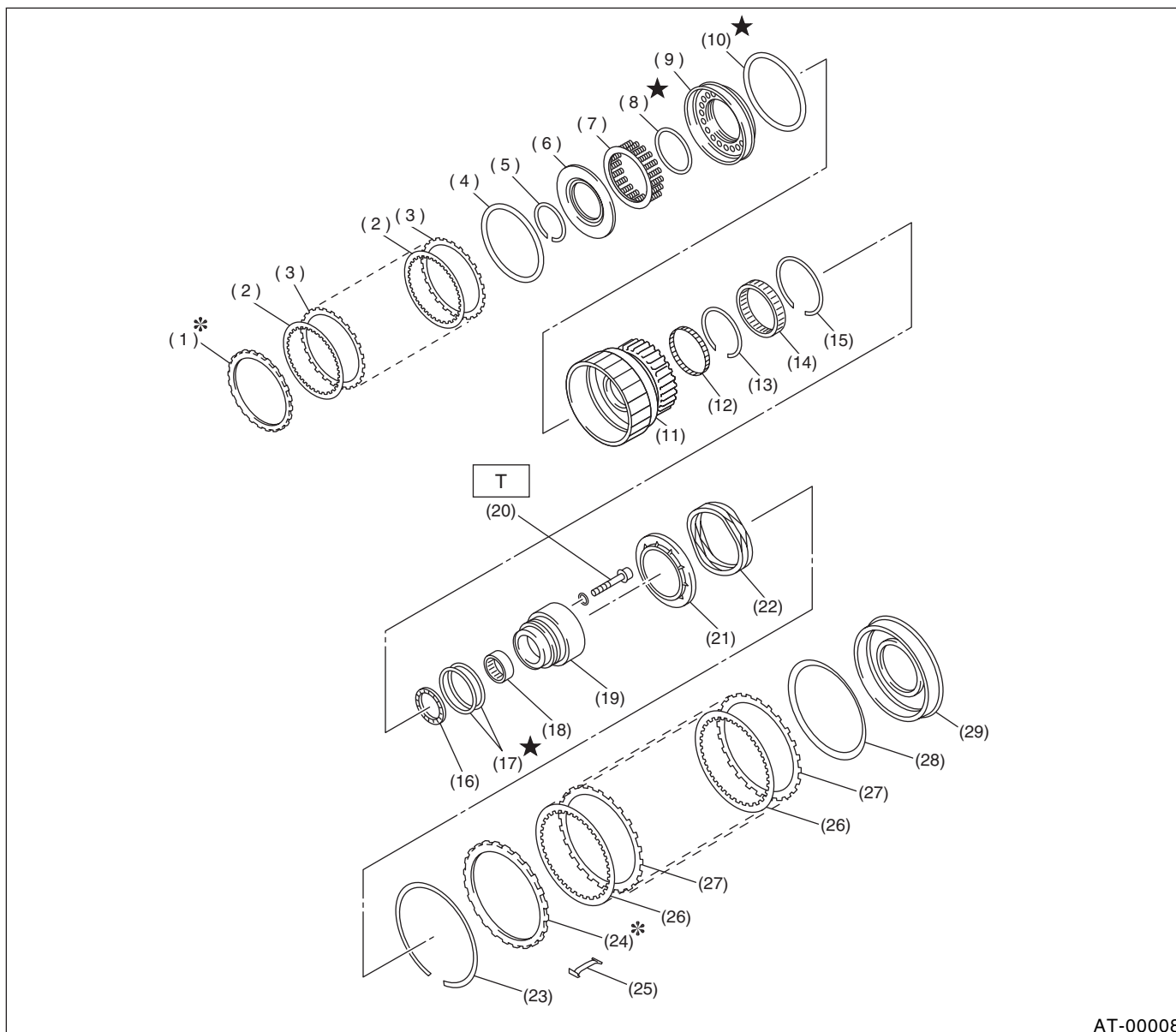
### 6. PLANETARY GEAR AND 2-4 BRAKE



AT-00007

- |                             |                            |                                |
|-----------------------------|----------------------------|--------------------------------|
| (1) Thrust needle bearing   | (10) Washer                | (19) Snap ring                 |
| (2) Front sun gear          | (11) Thrust needle bearing | (20) Spring retainer           |
| (3) Thrust needle bearing   | (12) Rear internal gear    | (21) 2-4 brake piston          |
| (4) Snap ring               | (13) Washer                | (22) D ring                    |
| (5) Front planetary carrier | (14) Snap ring             | (23) D ring                    |
| (6) Thrust needle bearing   | (15) Retaining plate       | (24) 2-4 brake piston retainer |
| (7) Rear sun gear           | (16) Drive plate           | (25) 2-4 brake seal            |
| (8) Thrust needle bearing   | (17) Driven plate          | (26) Leaf spring               |
| (9) Rear planetary carrier  | (18) Pressure rear plate   |                                |

### 7. LOW CLUTCH AND LOW & REVERSE BRAKE



AT-00008

- |                       |                                |                                   |
|-----------------------|--------------------------------|-----------------------------------|
| (1) Retaining plate   | (12) Needle bearing            | (23) Snap ring                    |
| (2) Drive plate       | (13) Inner snap ring           | (24) Retaining plate              |
| (3) Driven plate      | (14) One-way clutch            | (25) Leaf spring                  |
| (4) Dish plate        | (15) Outer snap ring           | (26) Drive plate                  |
| (5) Snap ring         | (16) Thrust needle bearing     | (27) Driven plate                 |
| (6) Cover             | (17) Seal ring                 | (28) Dish plate                   |
| (7) Spring retainer   | (18) Needle bearing            | (29) Low and reverse brake piston |
| (8) D ring            | (19) One-way clutch inner race |                                   |
| (9) Low clutch piston | (20) Socket bolt               |                                   |
| (10) D ring           | (21) Spring retainer           |                                   |
| (11) Low clutch drum  | (22) Return spring             |                                   |

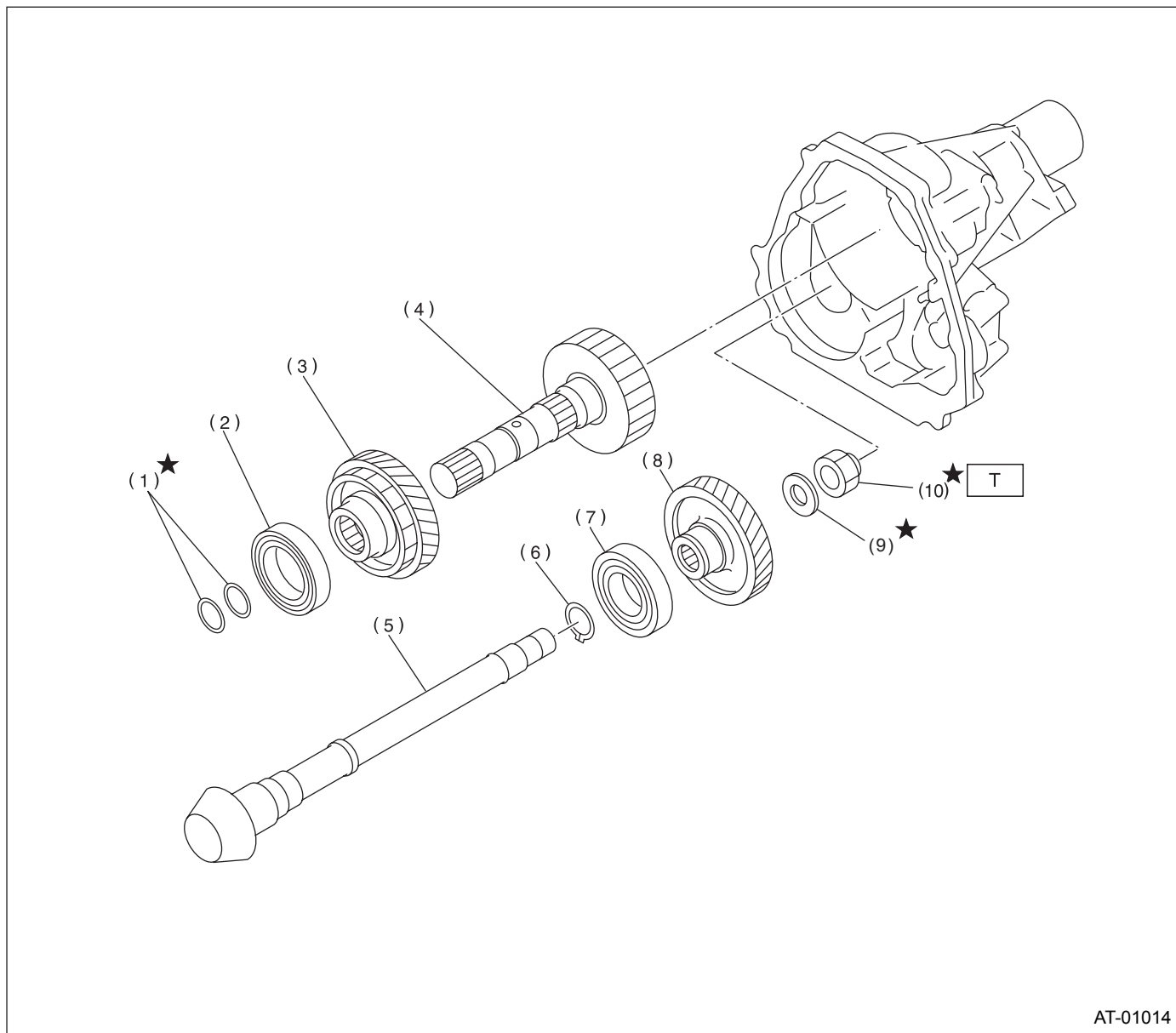
**Tightening torque: N·m (kgf-m, ft-lb)**

**T: 25 (2.5, 18.1)**

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### AUTOMATIC TRANSMISSION

#### 8. REDUCTION GEAR (MPT)



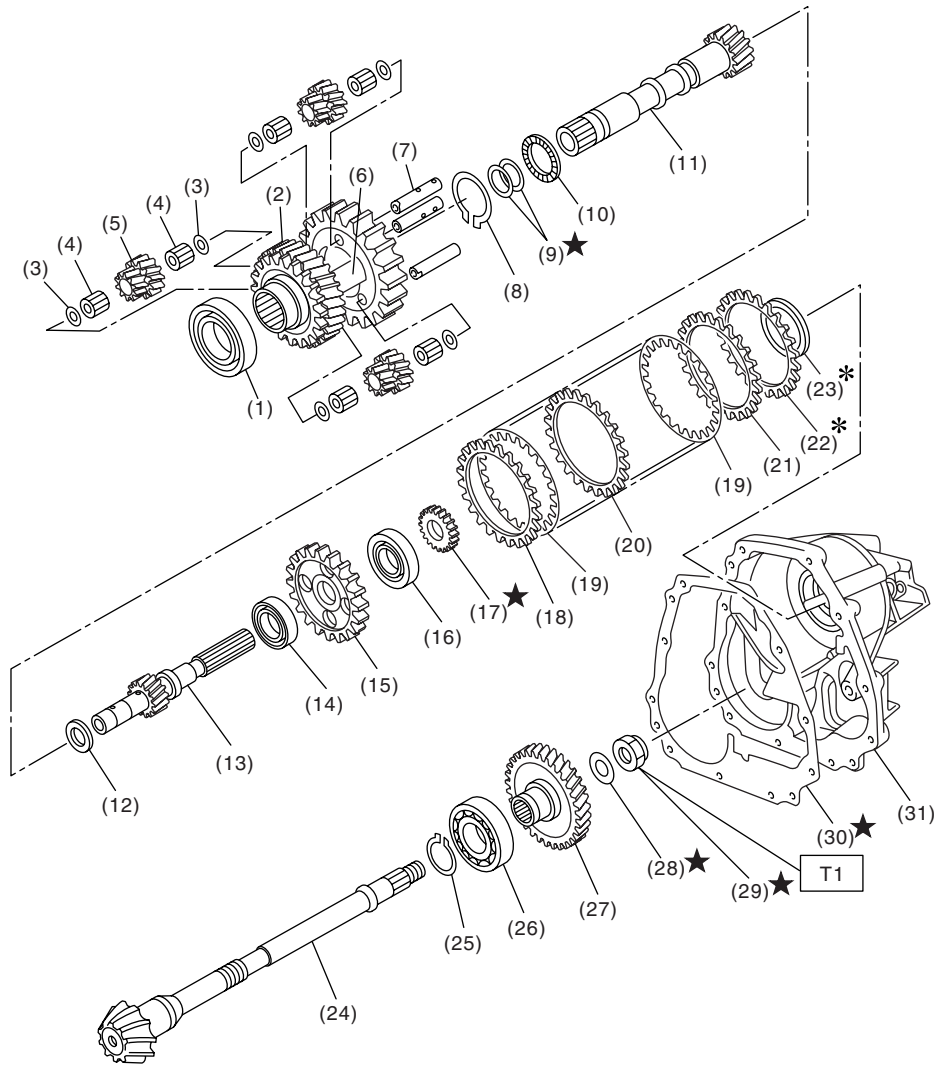
AT-01014

- |                           |                           |
|---------------------------|---------------------------|
| (1) Seal ring             | (6) Snap ring             |
| (2) Ball bearing          | (7) Ball bearing          |
| (3) Reduction drive gear  | (8) Reduction driven gear |
| (4) Reduction drive shaft | (9) Washer                |
| (5) Drive pinion shaft    | (10) Lock nut             |

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

**T: 100 (10.2, 73.8)**

### 9. REDUCTION GEAR (VTD)



AT-00010

- |                            |                                   |                            |
|----------------------------|-----------------------------------|----------------------------|
| (1) Ball bearing           | (13) Rear drive shaft             | (25) Snap ring             |
| (2) Reduction drive gear   | (14) Ball bearing                 | (26) Ball bearing          |
| (3) Washer                 | (15) Multi-plate clutch (LSD) hub | (27) Reduction driven gear |
| (4) Needle bearing         | (16) Ball bearing                 | (28) Lock washer           |
| (5) Pinion gear            | (17) Revolution gear              | (29) Lock nut              |
| (6) Carrier                | (18) Driven plate (thick)         | (30) Gasket                |
| (7) Planetary pinion shaft | (19) Drive plate                  | (31) Extension case        |
| (8) Snap ring              | (20) Driven plate (thin)          |                            |
| (9) Seal ring              | (21) Driven plate (thick)         |                            |
| (10) Thrust needle bearing | (22) Pressure plate               |                            |
| (11) Intermediate shaft    | (23) Rear drive shaft shim        |                            |
| (12) Thrust washer         | (24) Drive pinion shaft           |                            |

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

**T1: 100 (10.2, 73.8)**

This exploded view diagram illustrates the assembly of a mechanical component. The parts are numbered as follows:

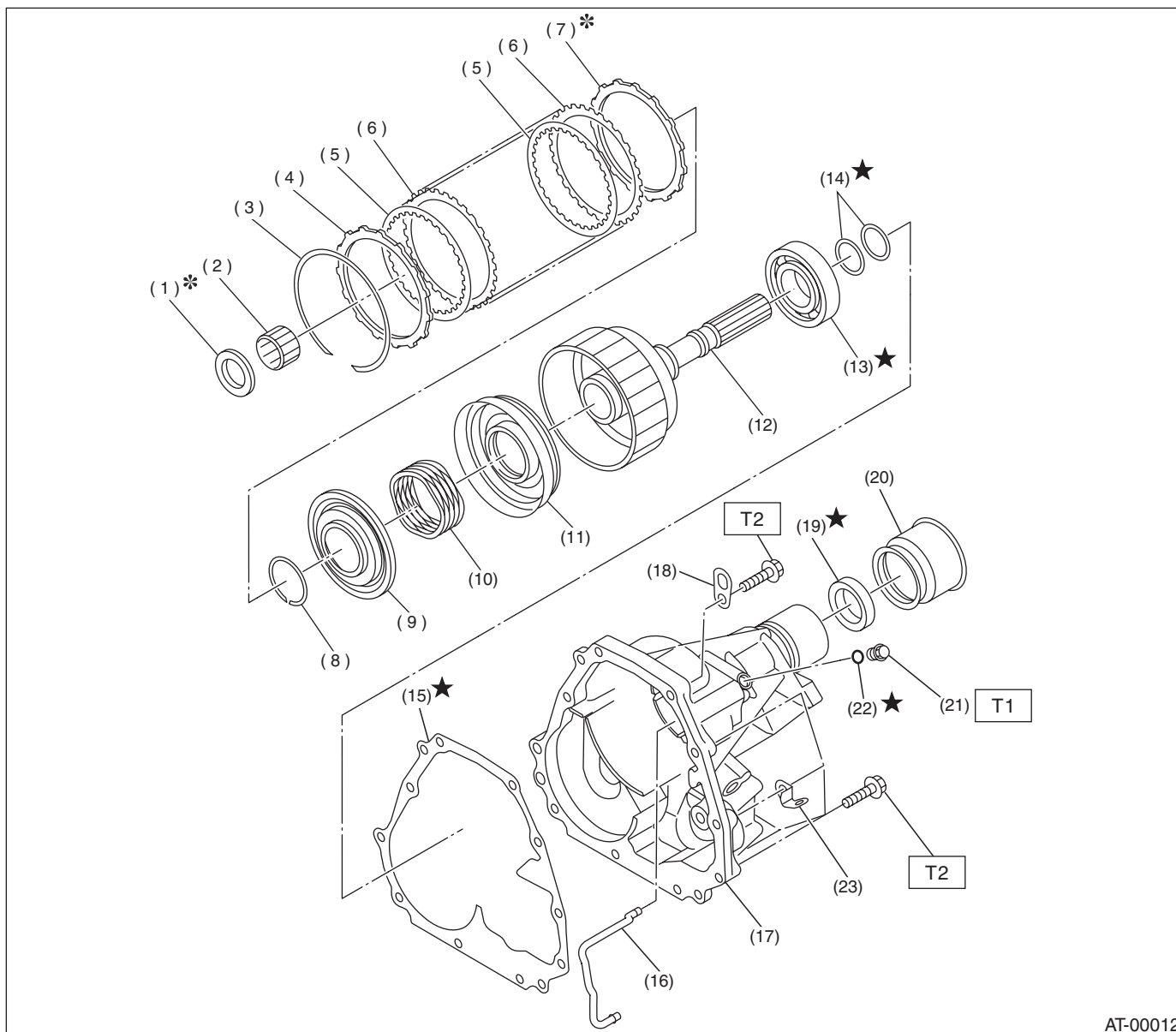
- (1) Outer housing flange
- (2) Pin
- (3) Housing body
- (4) Pin
- (5) Pin
- (6) Gear housing flange
- (7) Gear housing body
- (8) Gear housing flange
- (9) Gear housing body
- (10) Gear housing flange
- (11) Pin
- (12) Pin
- (13)\* Gear housing flange
- (14) Gear housing body
- (15) Gear housing flange

Labels T1 and T2 indicate specific torque points or assembly steps. Stars (★) are placed next to parts (8), (7), (6), and (10) in the bottom left assembly view, likely indicating critical or specific assembly points. The diagram shows the assembly sequence from the outer housing (1) down to the internal gear components (6, 7, 8, 9, 10, 11, 12).

- (15) Differential bevel gear

**T2: 62 (6.3, 45.6)**

### 11. TRANSFER AND EXTENSION CASE (MPT)



AT-00012

- (1) Thrust needle bearing
- (2) Needle bearing
- (3) Snap ring
- (4) Pressure plate
- (5) Drive plate
- (6) Driven plate
- (7) Pressure plate
- (8) Snap ring
- (9) Transfer piston seal

- (10) Return spring
- (11) Transfer clutch piston
- (12) Rear drive shaft
- (13) Ball bearing
- (14) Seal ring
- (15) Gasket
- (16) Transfer clutch pipe
- (17) Extension case
- (18) Transmission hanger

- (19) Oil seal
- (20) Dust cover
- (21) Test plug
- (22) O-ring
- (23) Clip

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

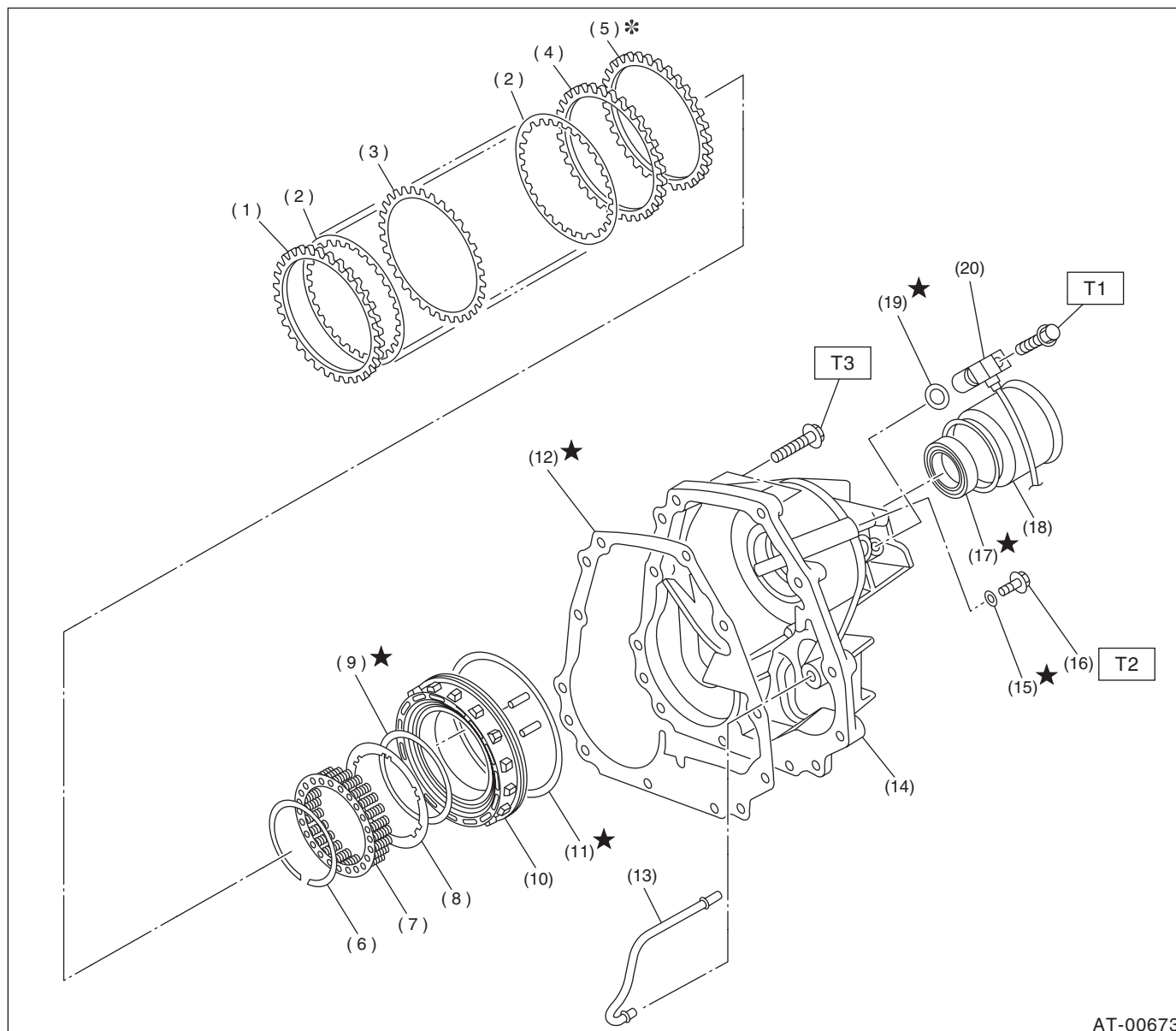
**T1: 13 (1.3, 9.4)**

**T2: 25 (2.5, 18.1)**

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## AUTOMATIC TRANSMISSION

### 12. TRANSFER AND EXTENSION CASE (VTD)



AT-00673

- (1) Driven plate (thick)
- (2) Drive plate
- (3) Driven plate (thin)
- (4) Driven plate (thick)
- (5) Adjusting plate
- (6) Snap ring
- (7) Spring retainer
- (8) Plate
- (9) O ring

- (10) Multi-plate clutch (LSD) piston assembly
- (11) D ring
- (12) Gasket
- (13) Multi-plate clutch (LSD) pipe
- (14) Extension case
- (15) O-ring
- (16) Test plug
- (17) Oil seal

- (18) Dust cover
- (19) O-ring
- (20) Rear wheel speed sensor

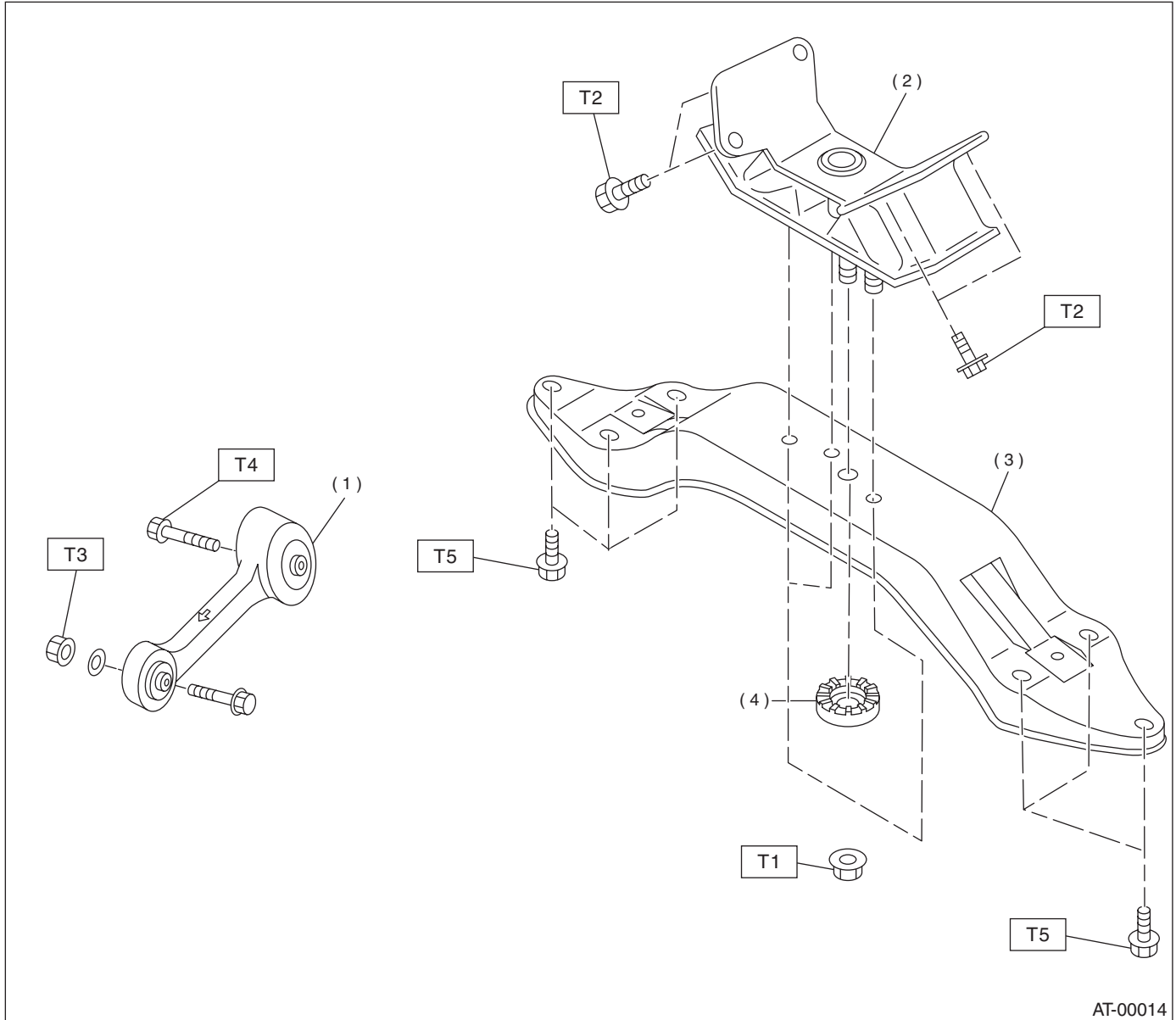
**Tightening torque: N·m (kgf-m, ft-lb)**

**T1: 7 (0.7, 5.1)**

**T2: 13 (1.3, 9.4)**

**T3: 25 (2.5, 18.1)**

### 13.TRANSMISSION MOUNTING



AT-00014

- (1) Pitching Stopper
- (2) Rear cushion rubber
- (3) Crossmember
- (4) Stopper

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

***T1: 35 (3.6, 26)***

***T2: 39 (4.0, 29)***

***T3: 50 (5.1, 37)***

***T4: 58 (5.9, 43)***

***T5: 70 (7.1, 51)***

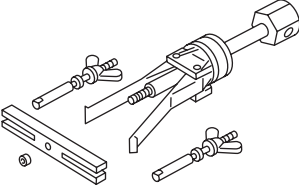
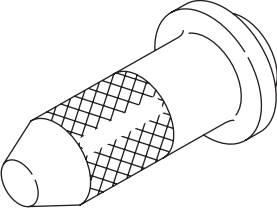
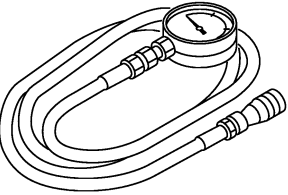
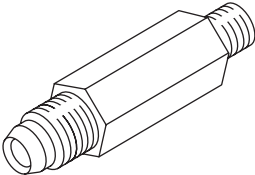


#### **C: CAUTION**

- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Until the oil pan is removed, do not place with the oil pan side facing up to prevent foreign matter from entering the valve body.
- 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 safety stands 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 ATF fluid 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 wooden 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.

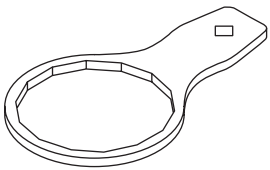
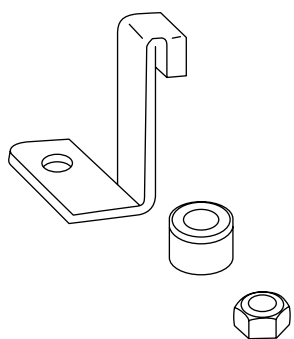
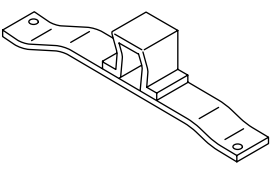
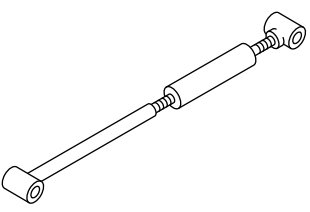
## D: PREPARATION TOOL

### 1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-398527700</p>	398527700	PULLER ASSY	Used for removing and installing extension case roller bearings.
 <p>ST-498057300</p>	498057300	INSTALLER	Used for installing extension oil seal.
 <p>ST-498575400</p>	498575400	OIL PRESSURE GAUGE ASSY	Used for measuring oil pressure.
 <p>ST-498897200</p>	498897200	ADAPTER	Used on oil pump housing when measuring reverse clutch pressure and line pressure.

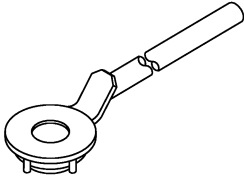
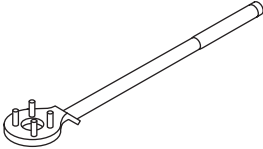
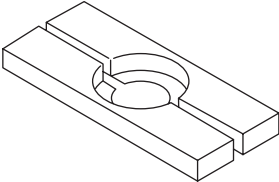
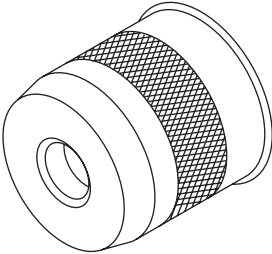
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-498545400</p>	498545400	FILTER WRENCH	Used for removing and installing ATF filter.
 <p>ST-498277200</p>	498277200	STOPPER SET	Used for removing and installing automatic transmission assembly to engine.
 <p>ST41099AA010</p>	41099AA010	ENGINE SUPPORT BRACKET	<ul style="list-style-type: none"> <li>• Used for supporting engine.</li> <li>• Used with ENGINE SUPPORT (41099AA020).</li> </ul>
 <p>ST41099AA020</p>	41099AA020	ENGINE SUPPORT	<ul style="list-style-type: none"> <li>• Used for supporting engine.</li> <li>• Used with ENGINE SUPPORT BRACKET (41099AA010).</li> </ul>

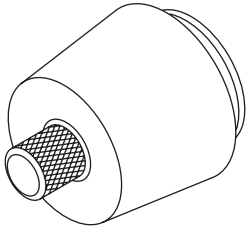
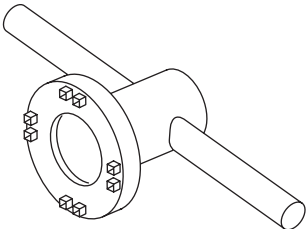
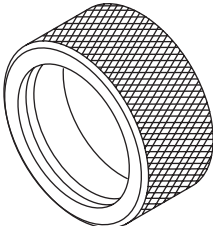
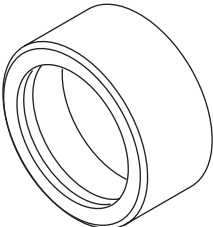
# GENERAL DESCRIPTION

AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-499977400</p>	499977400	CRANKSHAFT PULLEY WRENCH	<ul style="list-style-type: none"> <li>Used for rotating crankshaft.</li> <li>Used on turbo models.</li> </ul>
 <p>ST-499977100</p>	499977100	CRANKSHAFT PULLEY WRENCH	<ul style="list-style-type: none"> <li>Used for rotating crankshaft.</li> <li>Used on non-turbo models.</li> </ul>
 <p>ST-498077000</p>	498077000	REMOVER	Used for removing differential taper roller bearing.
 <p>ST-499247400</p>	499247400	INSTALLER	<ul style="list-style-type: none"> <li>Used for installing transfer outer snap ring.</li> <li>Used with GUIDE (499257300).</li> </ul>

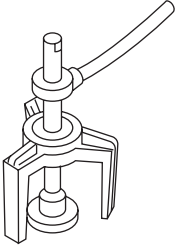
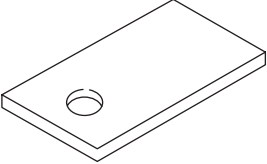
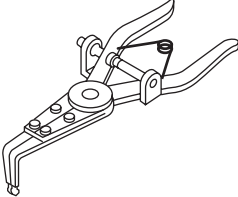
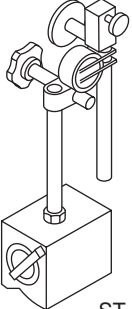
# GENERAL DESCRIPTION

## AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499257300	499257300	SNAP RING OUTER GUIDE	<ul style="list-style-type: none"> <li>Used for installing transfer outer snap ring.</li> <li>Used with INSTALLER (499247400).</li> </ul>
 ST-499787000	499787000	WRENCH ASSY	Used for removing and installing differential side retainer.
 ST-398437700	398437700	DRIFT	Used for installing converter case oil seal.
 ST-398487700	398487700	INSTALLER	Used for installing taper roller bearing of front differential.

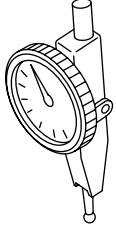
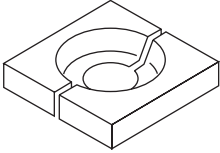
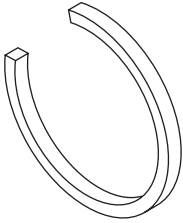
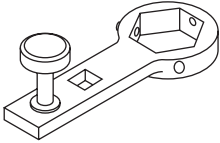
# GENERAL DESCRIPTION

AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-398673600</p>	398673600	COMPRESSOR	Used for removing and installing clutch spring.
 <p>ST-498255400</p>	498255400	Plate	Used for measuring backlash of hypoid gear.
 <p>ST-399893600</p>	399893600	PLIERS	Used for removing and installing clutch spring.
 <p>ST-498247001</p>	498247001	MAGNET BASE	<ul style="list-style-type: none"> <li>Used for measuring gear backlash.</li> <li>Used with DIAL GAUGE (498247100).</li> </ul>

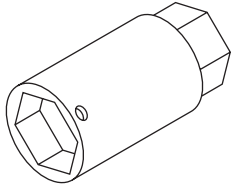
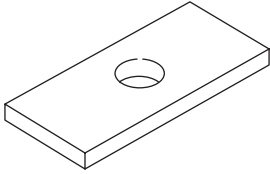
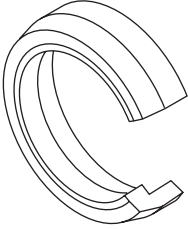
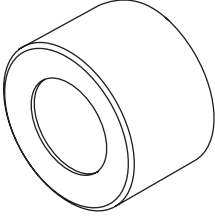
# GENERAL DESCRIPTION

## AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-498247100</p>	498247100	Dial gauge	<ul style="list-style-type: none"> <li>Used for measuring gear backlash.</li> <li>Used with MAGNET BASE (498247001).</li> </ul>
 <p>ST-498517000</p>	498517000	REPLACER	Used for removing front roller bearing.
 <p>ST-398623600</p>	398623600	Seat	Used for removing spring of transfer clutch piston.
 <p>ST-499787700</p>	499787700	WRENCH	Used for removing and installing drive pinion lock nut.

# GENERAL DESCRIPTION

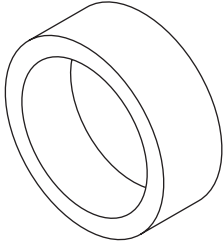
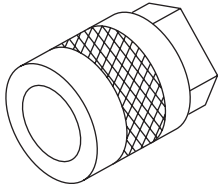
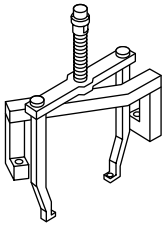
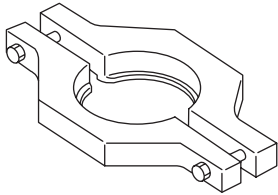
AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-499787500</p>	499787500	ADAPTER	Used for removing and installing drive pinion lock nut.
 <p>ST-398643600</p>	398643600	GAUGE	Used for measuring total end play, extension end play and drive pinion height.
 <p>ST-498627100</p>	498627100	Seat	Used for holding low clutch piston retainer spring when installing snap ring.
 <p>ST-499577000</p>	499577000	GAUGE	<ul style="list-style-type: none"> <li>Used for measuring the transmission case mating surface to the reduction gear end surface.</li> <li>For MPT model</li> </ul>



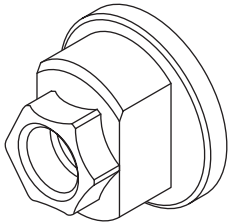
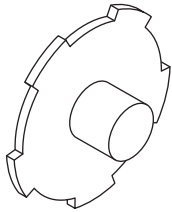
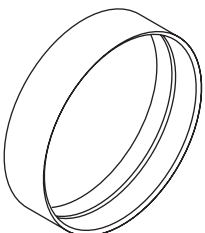
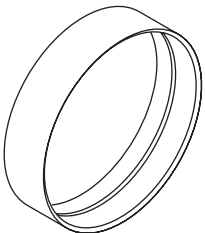
## GENERAL DESCRIPTION

### AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-398744300</p>	398744300	GAUGE	<ul style="list-style-type: none"> <li>Used for measuring the transmission case mating surface to the multi-plate clutch end surface.</li> <li>For VTD model</li> </ul>
 <p style="text-align: center;">ST-499737000</p>	499737000	PULLER	Used for removing reduction driven gear assembly.
 <p style="text-align: center;">ST-499737100</p>	499737100	PULLER SET	Used for removing reduction drive gear assembly.
 <p style="text-align: center;">ST-498077600</p>	498077600	REMOVER	Used for removing ball bearing.

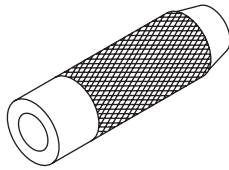
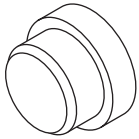
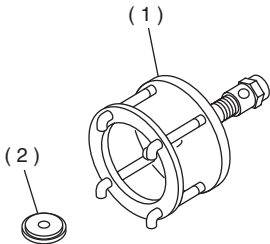
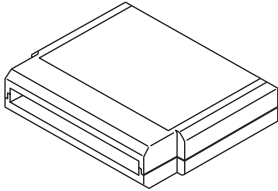
# GENERAL DESCRIPTION

AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-498937110</p>	498937110	HOLDER	Used for removing and installing drive pinion lock nut.
 <p>ST-498677100</p>	498677100	COMPRESSOR	Used for installing 2-4 brake snap ring.
 <p>ST-498437000</p>	498437000	HIGH CLUTCH PISTON GUIDE	Used for installing high clutch piston.
 <p>ST-498437100</p>	498437100	LOW CLUTCH PISTON GUIDE	Used for installing low clutch piston.


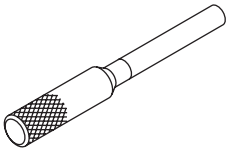
# GENERAL DESCRIPTION

## AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-899580100</p>	899580100	INSTALLER	Used for press-fitting the ball bearing for transfer clutch.
 <p>ST-398497701</p>	398497701	ADAPTER	Used for installing needle bearing.
 <p>ST-899524100</p>	899524100	PULLER SET	<ul style="list-style-type: none"> <li>Using the bolt only.</li> <li>(1) Bolt</li> <li>Used with PULLER SET (499737100).</li> <li>Used with PULLER (499737000).</li> <li>(1) Puller</li> <li>(2) Cap</li> </ul>
 <p>ST24082AA210</p>	24082AA210 (newly adopted tool)	CARTRIDGE	Troubleshooting for electrical systems.

## GENERAL DESCRIPTION

AUTOMATIC TRANSMISSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST22771AA030</p>	22771AA030	SELECT MONITOR KIT	Troubleshooting for electrical systems. <ul style="list-style-type: none"> <li>English: 22771AA030 (without printer)</li> <li>German: 22771AA070 (without printer)</li> <li>French: 22771AA080 (without printer)</li> <li>Spanish: 22771AA090 (without printer)</li> </ul>
 <p style="text-align: center;">ST-499267300</p>	499267300	STOPPER PIN	Used for installing and adjusting inhibitor switch.

## 2. GENERAL PURPOSE TOOLS

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.
Depth gauge	Used for measuring transmission end play.
Thickness gauge	Used for measuring clearances of clutch, brake and oil pump.
Micrometer	Used for measuring thickness of drive pinion.
Spring balance	Used for measuring starting torque of drive pinion.