

GENERAL DESCRIPTION

Automatic Transmission

1. General Description SS10001

A: SPECIFICATIONS SS10001E49

1. DRIVE PLATE AND DRIVEN PLATE SS10001E4901

Plate number of high clutch	1.6 L	3
	2.0 L	4
	2.0 L TURBO	5
	2.5 L	4
	3.0 L	5
Plate number of reverse clutch	1.6 L	1
	2.0 L	2
	2.0 L TURBO	2
	2.5 L	2
	3.0 L	2
Plate number of 2-4 brake	1.6 L	2
	2.0 L	3
	2.0 L TURBO	4
	2.5 L	3
	3.0 L	4
Plate number of low clutch	1.6 L	4
	2.0 L	4
	2.0 L TURBO	7
	2.5 L	6
	3.0 L	7
Plate number of low and reverse brake	1.6 L	4
	2.0 L	4
	2.0 L TURBO	7
	2.5 L	6
	3.0 L	7
Plate number of transfer clutch	2.0 L	4
	2.0 L TURBO (Without VTD)	6
	2.0 L TURBO (With VTD)	3
	2.5 L (Without VTD)	5
	2.5 L (With VTD)	3
	3.0 L (Without VTD)	6
	3.0 L (With VTD)	3

2. AUTOMATIC TRANSMISSION FLUID CAPACITY SS10001E4902

Dexron III type Automatic transmission fluid	
1.6 L	8.0 — 8.3 L (8.5 — 8.8 US qt, 7.0 — 7.3 Imp qt)
2.0 L	8.4 — 8.7 L (8.9 — 9.2 US qt, 7.4 — 7.7 Imp qt)
2.0 L TURBO, 2.5 L, 3.0 L	9.3 — 9.6 L (9.8 — 10.1 US qt, 8.2 — 8.4 Imp qt)

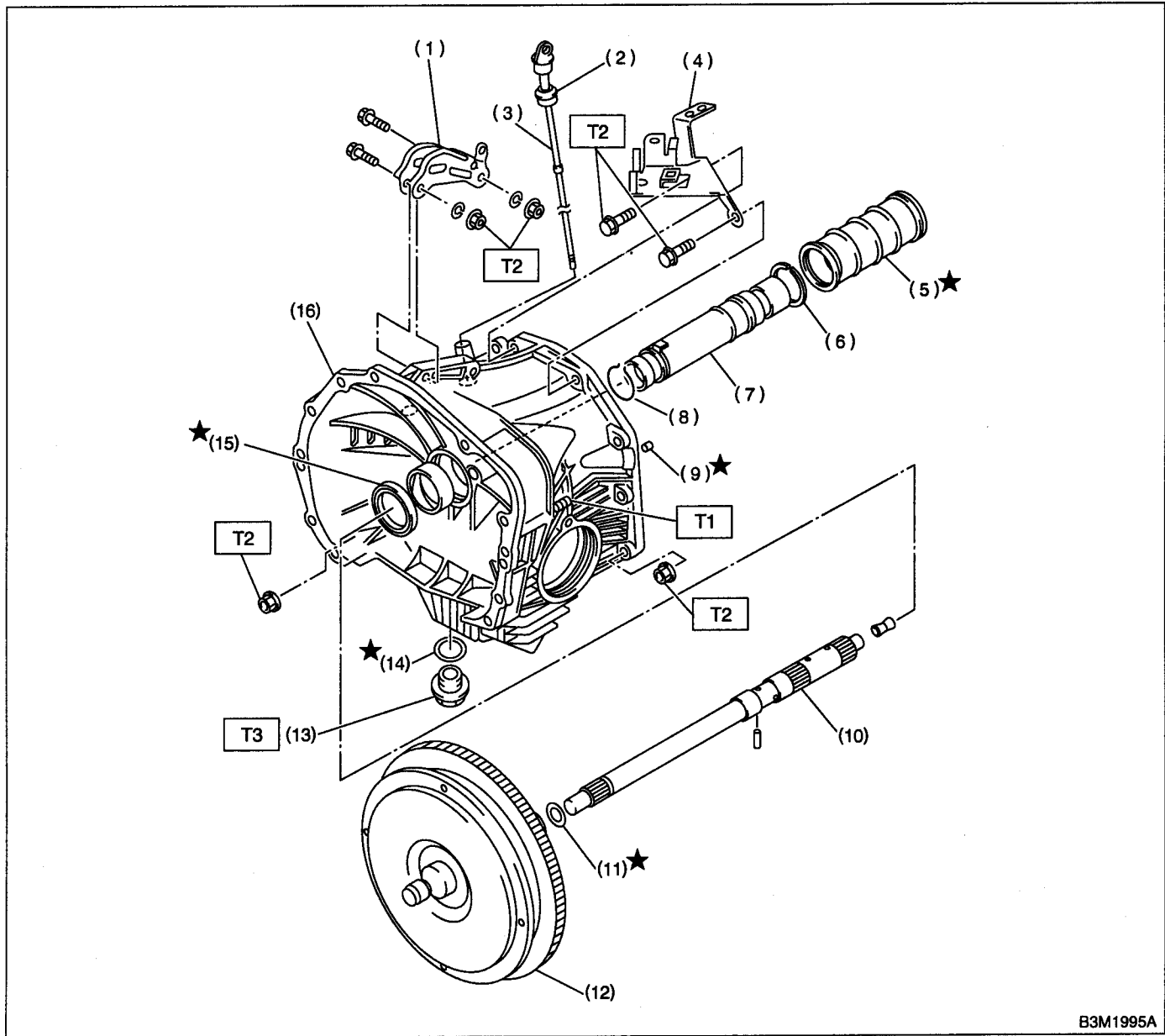
GENERAL DESCRIPTION

Automatic Transmission

B: COMPONENT SS10001A05

1. TORQUE CONVERTER CLUTCH AND CASE

SS10001A0501



B3M1995A

- | | |
|----------------------------------|-----------------------------------|
| (1) Pitching stopper bracket | (9) Oil drain pipe |
| (2) O-ring | (10) Input shaft |
| (3) Differential oil level gauge | (11) O-ring |
| (4) Stay | (12) Torque converter clutch ASSY |
| (5) Seal pipe | (13) Drain plug |
| (6) Seal ring | (14) Gasket |
| (7) Oil pump shaft | (15) Oil seal |
| (8) Clip | (16) Torque converter clutch case |

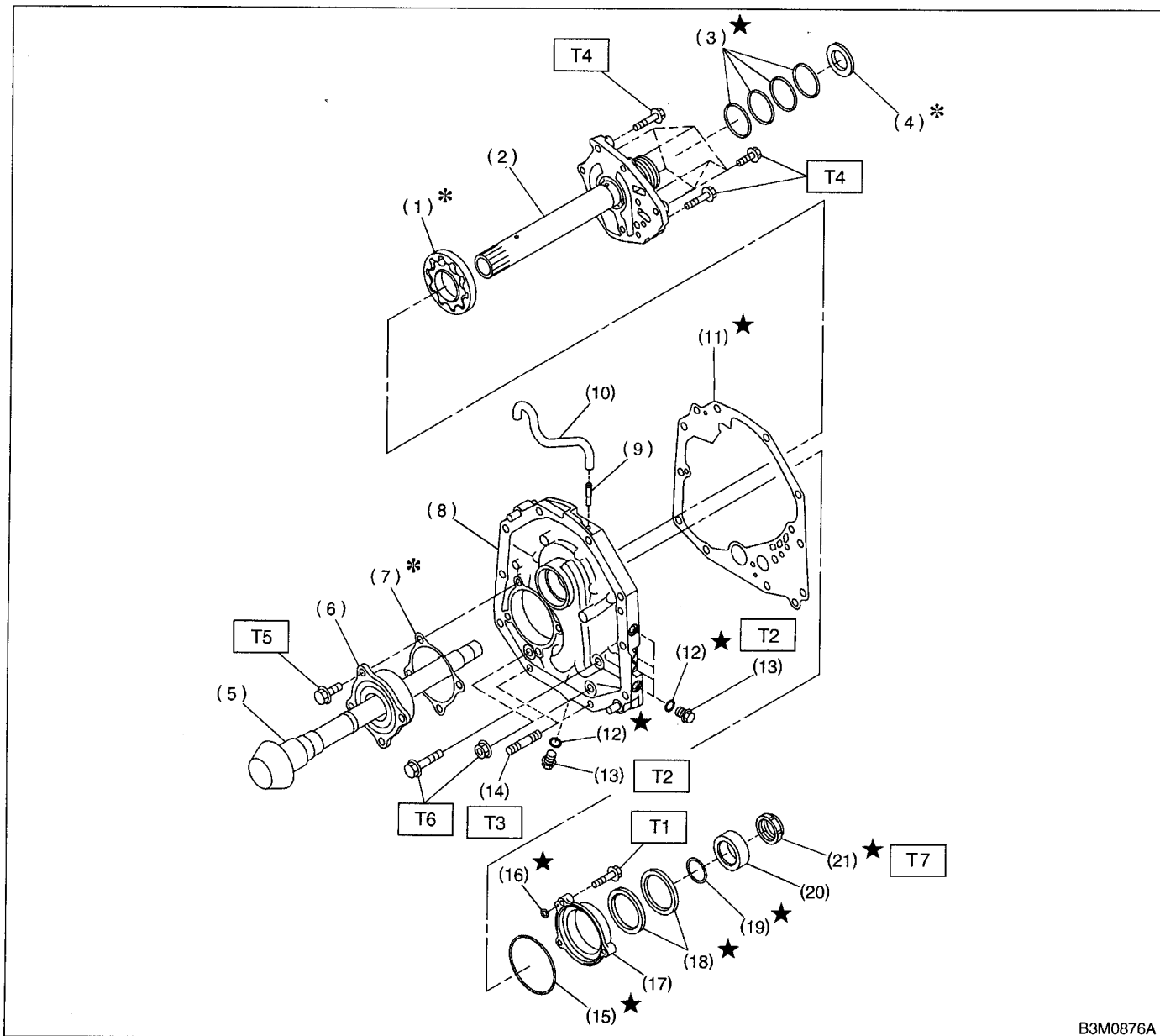
Tightening torque: N·m (kgf·m, ft·lb)

T1: 18 (1.8, 13.0)

T2: 41 (4.2, 30.4)

T3: 44 (4.5, 32.5)

2. OIL PUMP SS10001A0502



B3M0876A

- | | |
|---------------------------|--------------------------|
| (1) Oil pump rotor | (12) O-ring |
| (2) Oil pump cover | (13) Test plug |
| (3) Seal ring | (14) Stud bolt |
| (4) Thrust needle bearing | (15) O-ring |
| (5) Drive pinion shaft | (16) O-ring |
| (6) Roller bearing | (17) Oil seal retainer |
| (7) Shim | (18) Oil seal |
| (8) Oil pump housing | (19) O-ring |
| (9) Nipple | (20) Drive pinion collar |
| (10) Air breather hose | (21) Lock nut |
| (11) Gasket | |

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

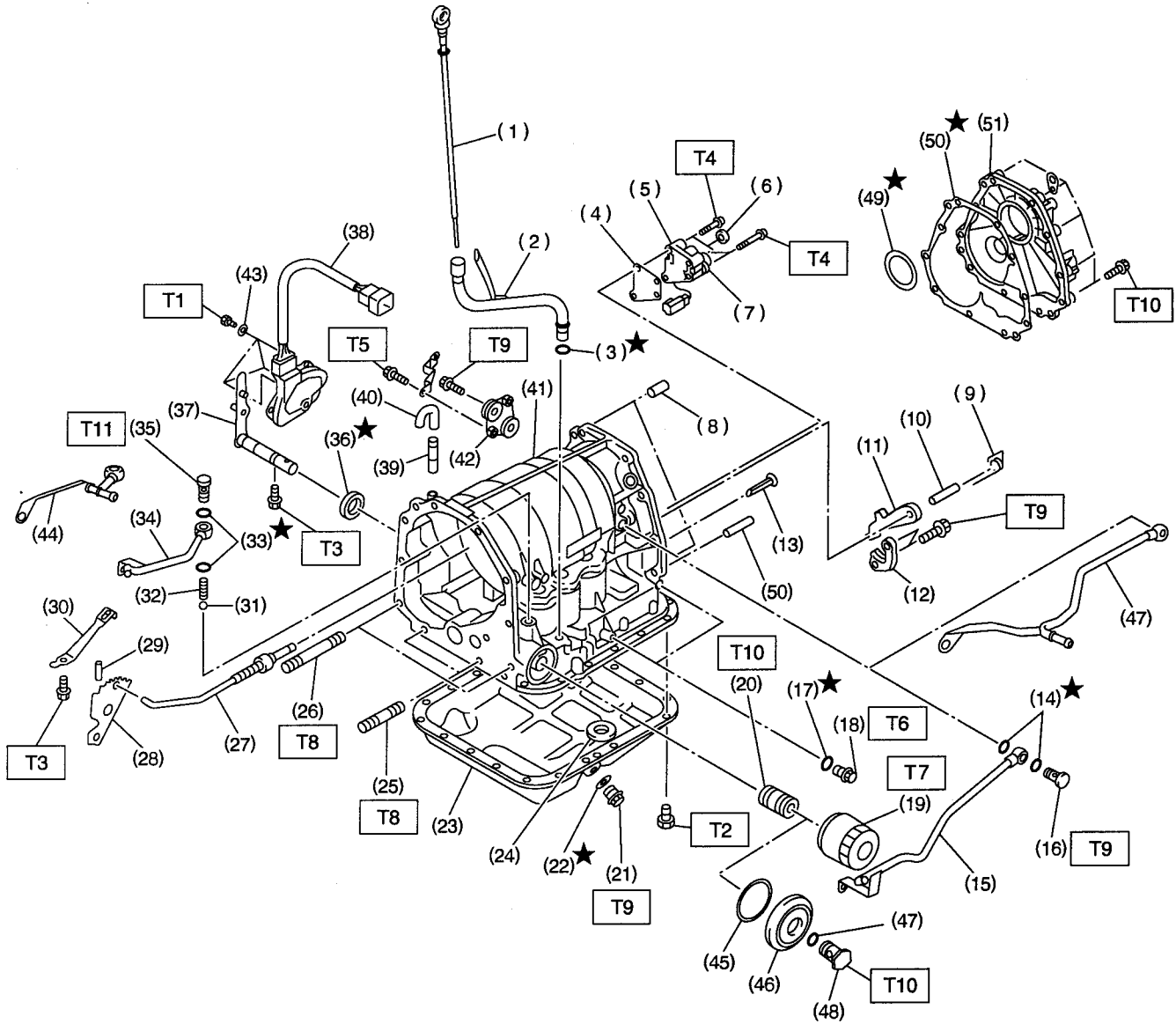
- T1: 7 (0.7, 5.1)**
T2: 13 (1.3, 9.4)
T3: 18 (1.8, 13.0)
T4: 25 (2.5, 18.1)
T5: 39 (4.0, 28.9)
T6: 41 (4.2, 30.4)
T7: 121 (12.3, 89.0)

GENERAL DESCRIPTION

Automatic Transmission

3. TRANSMISSION CASE AND CONTROL DEVICE

SS10001A0503



B3M1996A

AT-6

GENERAL DESCRIPTION

Automatic Transmission

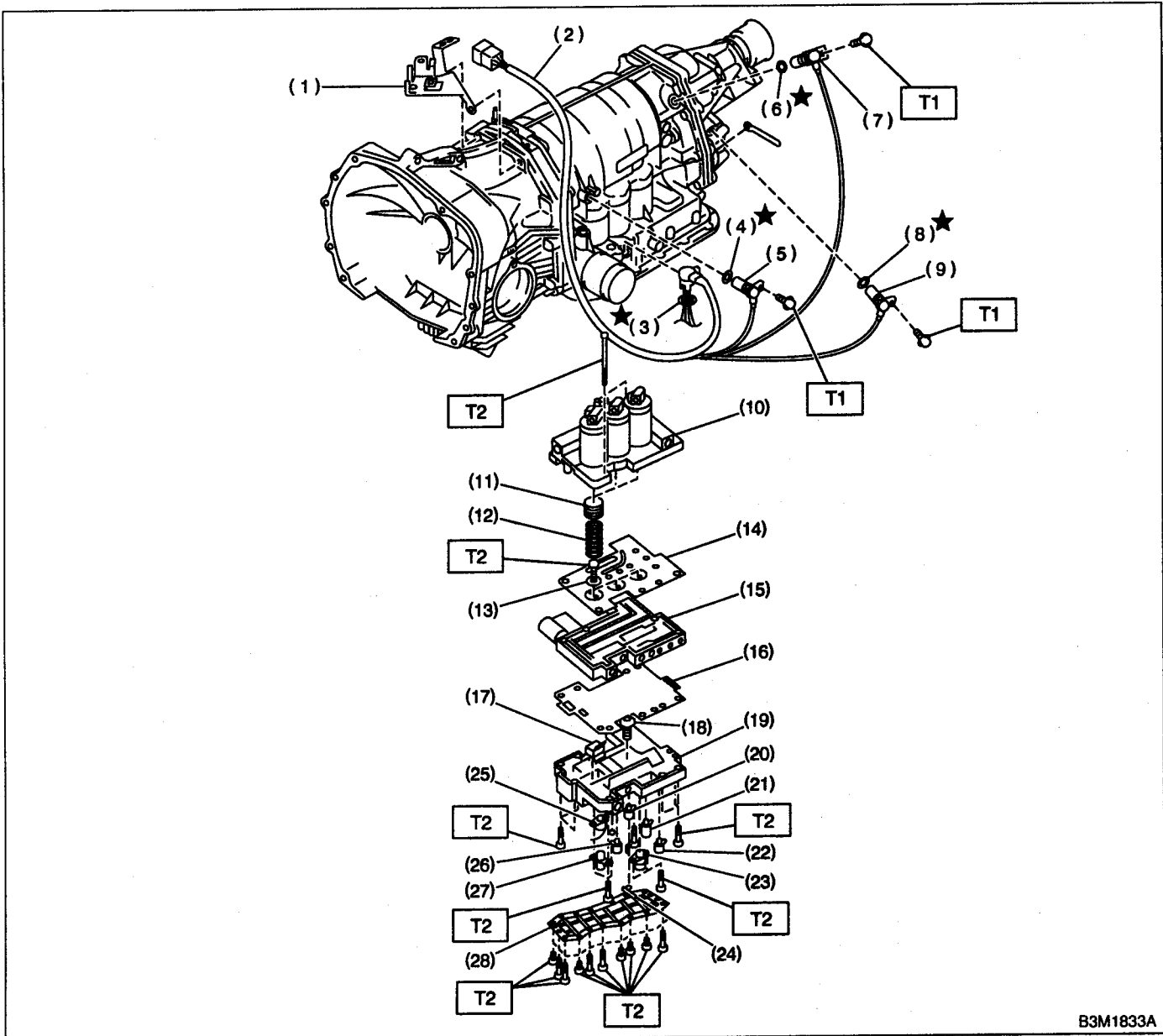
(1) Oil level gauge	(24) Magnet	(47) Gasket
(2) Oil charger pipe	(25) Stud bolt (Short)	(48) Union screw
(3) O-ring	(26) Stud bolt (Long)	(49) Inlet pipe (3.0 L model)
(4) Transfer valve plate	(27) Parking rod	(50) Plug
(5) Transfer valve ASSY	(28) Manual plate	(51) Shim (FWD)
(6) Transfer clutch seal	(29) Spring pin	(52) Gasket (FWD)
(7) Transfer duty solenoid	(30) Detention spring	(53) Transmission cover (FWD)
(8) Straight pin	(31) Ball	
(9) Return spring	(32) Spring	<hr/> Tightening torque: N-m (kgf-m, ft-lb)
(10) Shaft	(33) Gasket	T1: 3.4 (0.35, 2.5)
(11) Parking pawl	(34) Outlet pipe (Except 3.0 L model)	T2: 4.9 (0.50, 3.6)
(12) Parking support	(35) Union screw	T3: 5.9 (0.60, 4.3)
(13) Inlet filter	(36) Oil seal	T4: 7.8 (0.80, 5.8)
(14) Gasket	(37) Select lever	T5: 12 (1.2, 8.7)
(15) Inlet pipe (Except 3.0 L model)	(38) Inhibitor switch ASSY	T6: 12.7 (1.30, 9.4)
(16) Union screw	(39) Nipple	T7: 13.7 (1.4, 10.1)
(17) O-ring	(40) Air breather hose	T8: 17.7 (1.80, 13.0)
(18) Test plug	(41) Transmission case	T9: 24.5 (2.50, 18.1)
(19) Oil filter (Except 3.0 L model)	(42) Plate ASSY	T10: 24.5 (2.5, 18.1)
(20) Oil filter stud bolt	(43) Washer	T11: 45 (4.5, 32.5)
(21) Drain plug	(44) Outlet pipe (3.0 L model)	<hr/>
(22) Gasket	(45) O-ring	
(23) Oil pan	(46) Cover	

GENERAL DESCRIPTION

Automatic Transmission

4. CONTROL VALVE AND HARNESS ROUTING

SS10001A0504



B3M1833A

- | | | |
|---|--------------------------------|----------------------------------|
| (1) Stay | (12) Accumulator spring | (24) ATF temperature sensor |
| (2) Transmission harness | (13) Side plate | (25) Line pressure duty solenoid |
| (3) O-ring | (14) Separate plate | (26) Low clutch timing solenoid |
| (4) O-ring | (15) Middle valve body | (27) Lock-up duty solenoid |
| (5) Torque converter turbine speed sensor | (16) Separate plate | (28) Oil strainer |
| (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 piston | (22) 2-4 brake timing solenoid | |
| | (23) 2-4 brake duty solenoid | |

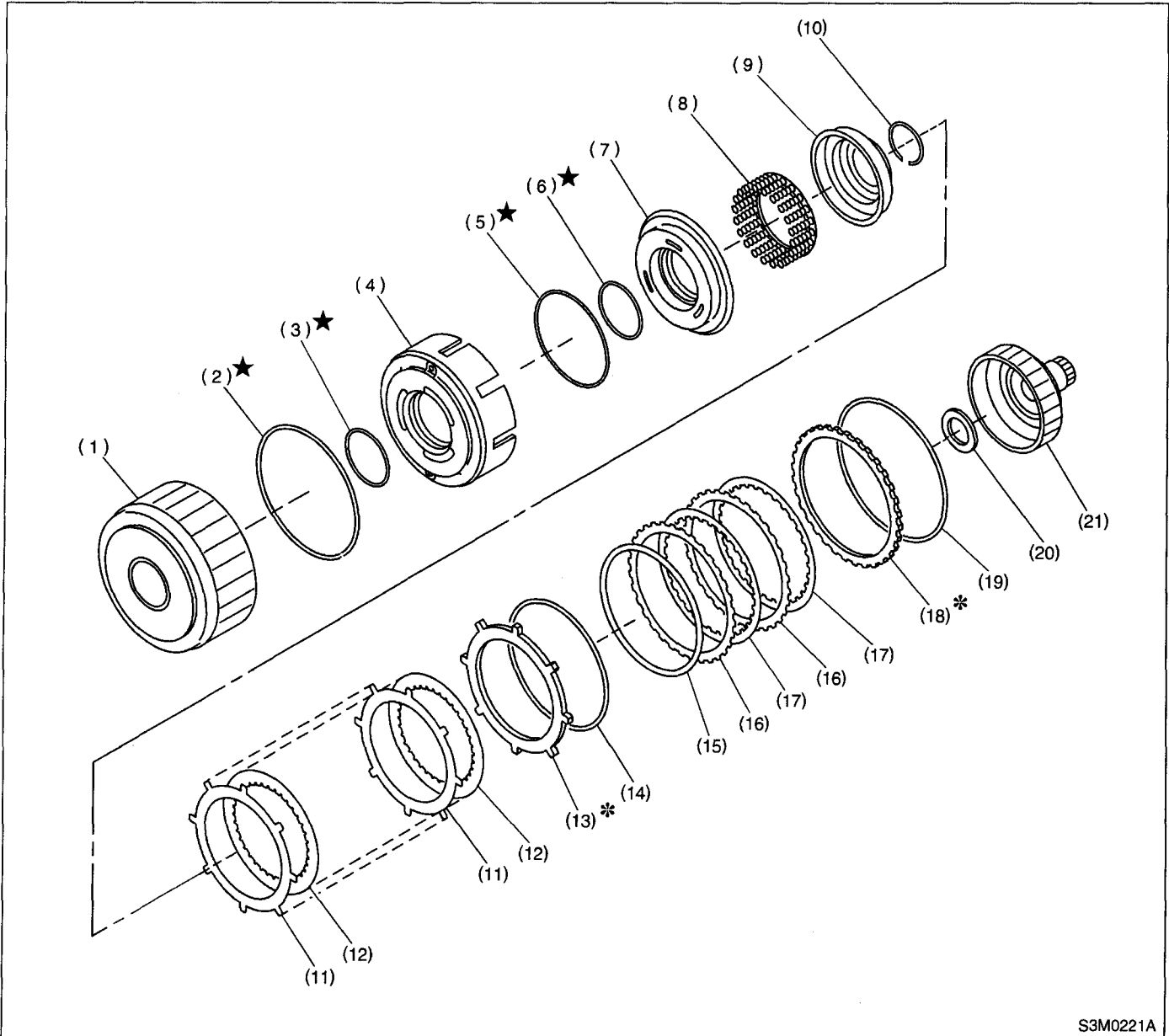
Tightening torque: N-m (kgf-m, ft-lb)

T1: 7 (0.7, 5.1)

T2: 8 (0.8, 5.8)

5. HIGH CLUTCH AND REVERSE CLUTCH

S510001A0505



S3M0221A

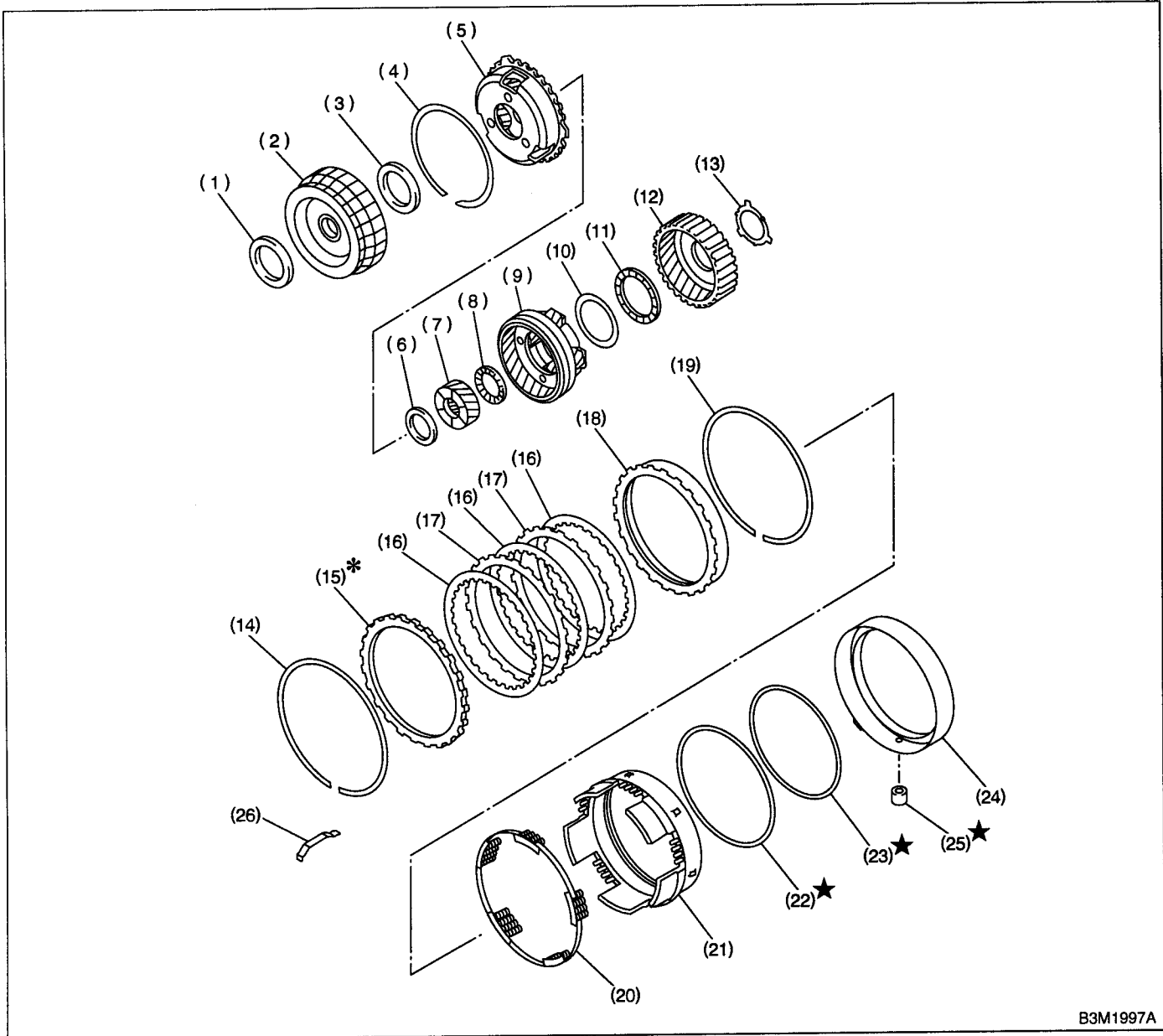
- | | | |
|---------------------------|----------------------|----------------------------|
| (1) High clutch drum | (8) Spring retainer | (15) Dish plate |
| (2) Lip seal | (9) Cover | (16) Driven plate |
| (3) Lathe cut seal ring | (10) Snap ring | (17) Drive plate |
| (4) Reverse clutch piston | (11)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

GENERAL DESCRIPTION

Automatic Transmission

6. PLANETARY GEAR AND 2-4 BRAKE

SS10001A0506



B3M1997A

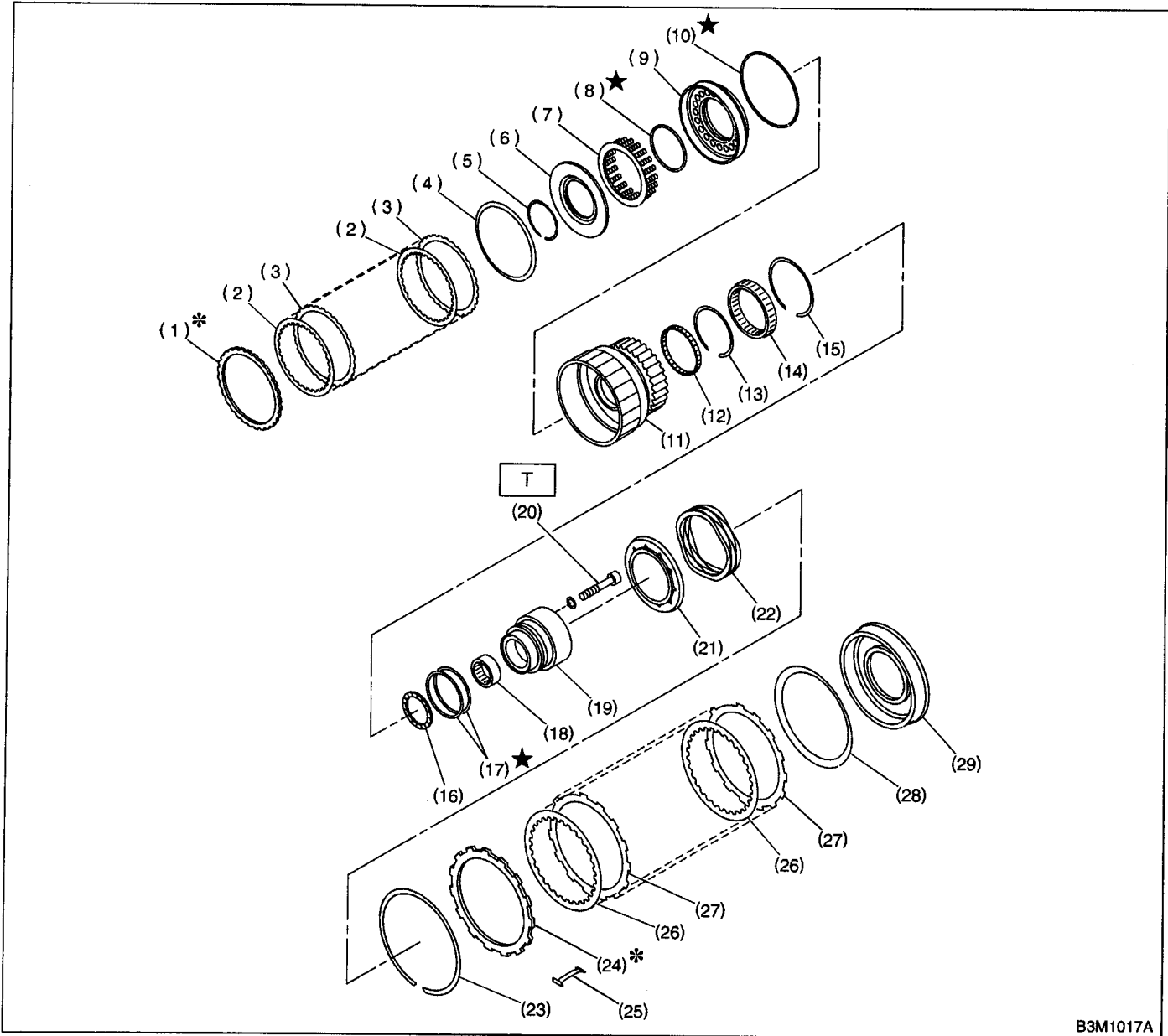
- (1) Thrust needle bearing
- (2) Front sun gear
- (3) Thrust needle bearing
- (4) Snap ring
- (5) Front planetary carrier
- (6) Thrust needle bearing
- (7) Rear sun gear
- (8) Thrust needle bearing
- (9) Rear planetary carrier

- (10) Washer
- (11) Thrust needle bearing
- (12) Rear internal gear
- (13) Washer
- (14) Snap ring
- (15) Retaining plate
- (16) Drive plate
- (17) Driven plate
- (18) Pressure rear plate

- (19) Snap ring
- (20) Spring retainer
- (21) 2-4 brake piston
- (22) Lathe cut seal ring
- (23) Lathe cut seal ring
- (24) 2-4 brake piston retainer
- (25) 2-4 brake seal
- (26) Leaf spring

7. LOW CLUTCH AND LOW & REVERSE BRAKE

SS10001A0507



B3M1017A

- | | | |
|--------------------------|--------------------------------|-----------------------------------|
| (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) Lathe cut seal ring | (19) One-way clutch inner race | |
| (9) Low clutch piston | (20) Socket bolt | |
| (10) Lathe cut seal ring | (21) Spring retainer | |
| (11) Low clutch drum | (22) Return spring | |

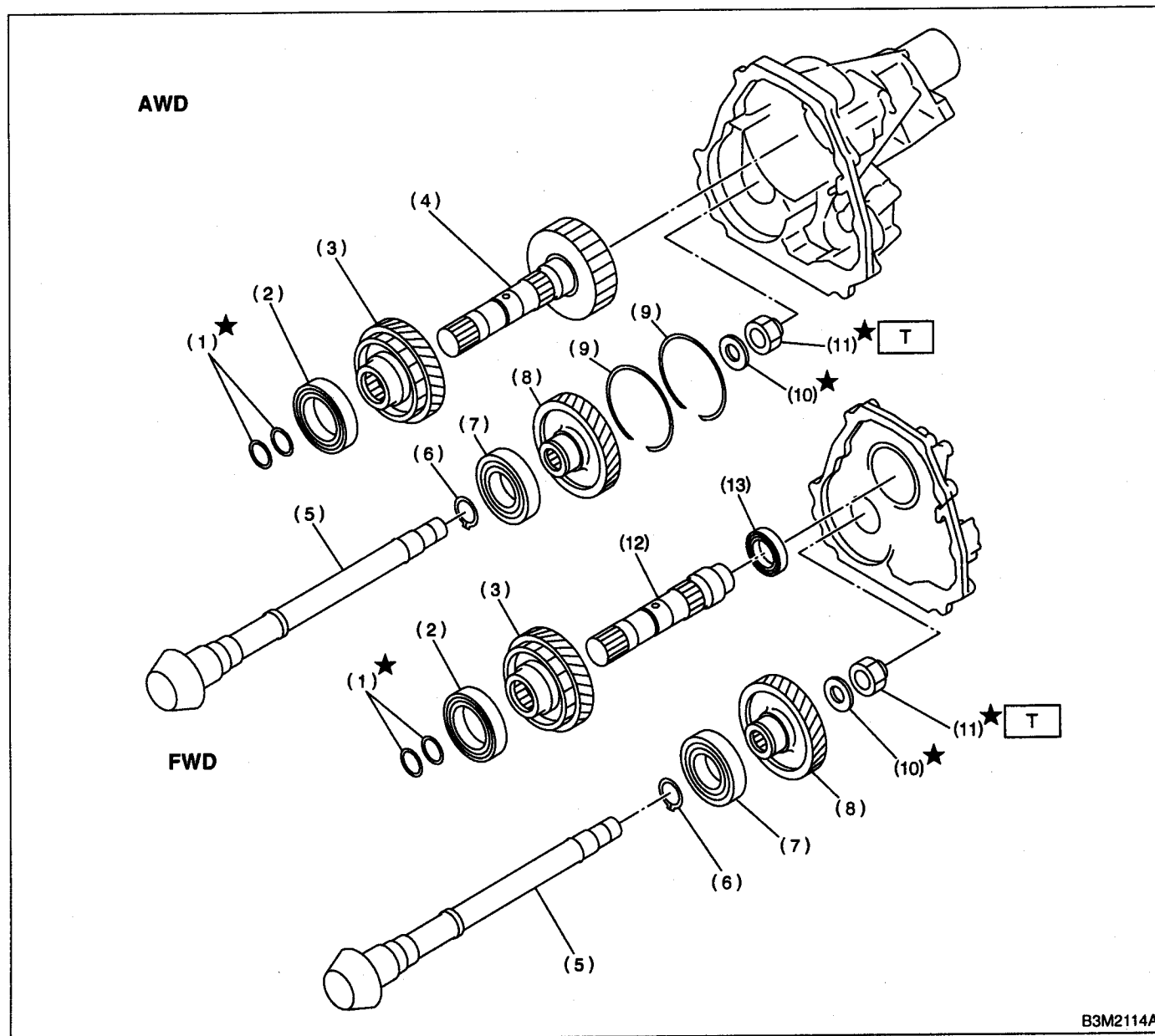
Tightening torque: N·m (kgf·m, ft·lb)
T: 25 (2.5, 18.1)

GENERAL DESCRIPTION

Automatic Transmission

8. REDUCTION GEAR WITHOUT VTD

SS10001A0508



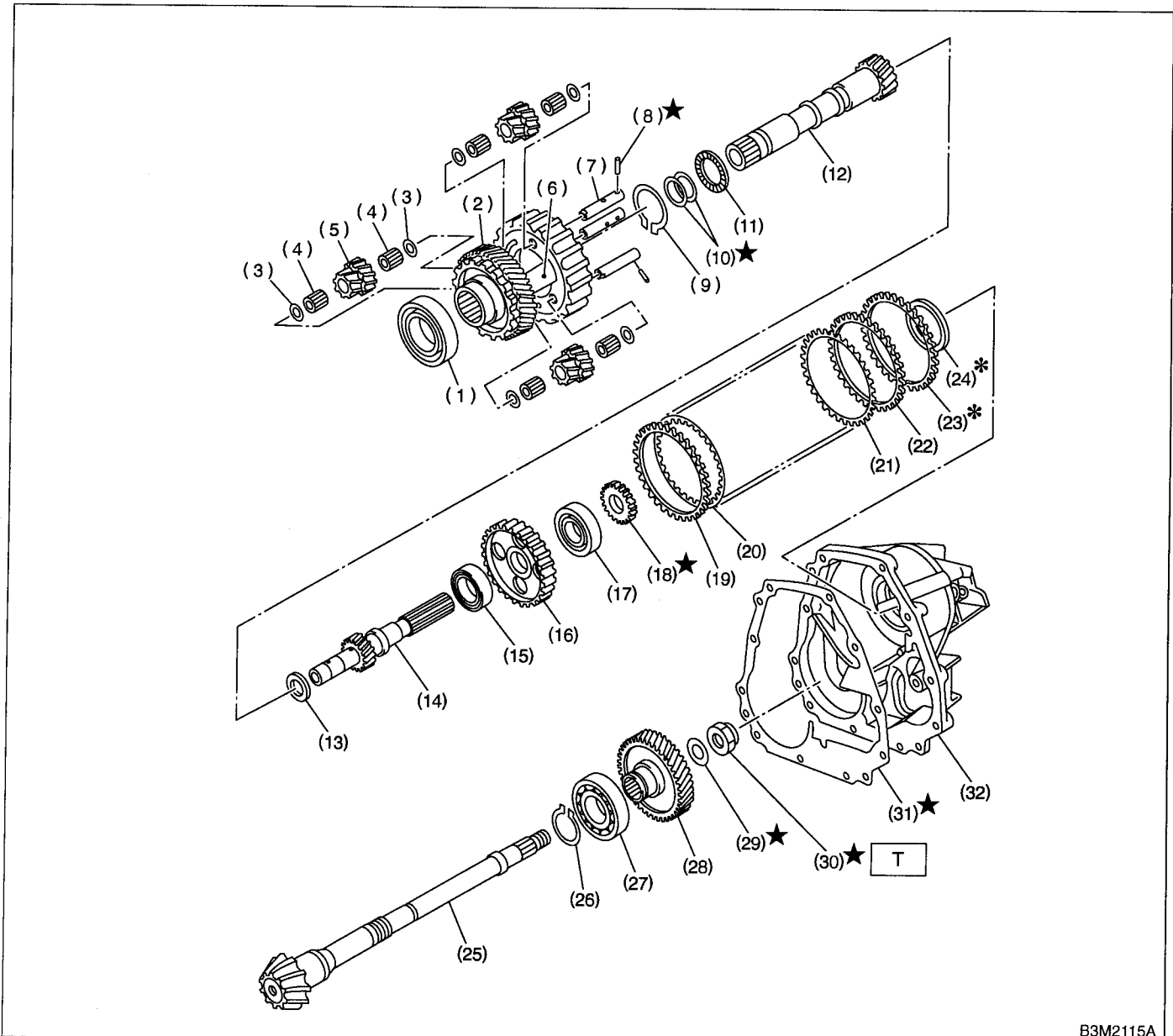
- (1) Seal ring
- (2) Ball bearing
- (3) Reduction drive gear
- (4) Reduction drive shaft
- (5) Drive pinion shaft
- (6) Snap ring

- (7) Ball bearing
- (8) Reduction driven gear
- (9) Snap ring
- (10) Washer
- (11) Lock nut
- (12) Reduction drive shaft

- (13) Ball bearing

Tightening torque: N-m (kgf-m, ft-lb)
T: 100 (10.2, 73.8)

9. REDUCTION GEAR WITH VTD SS10001A0509



B3M2115A

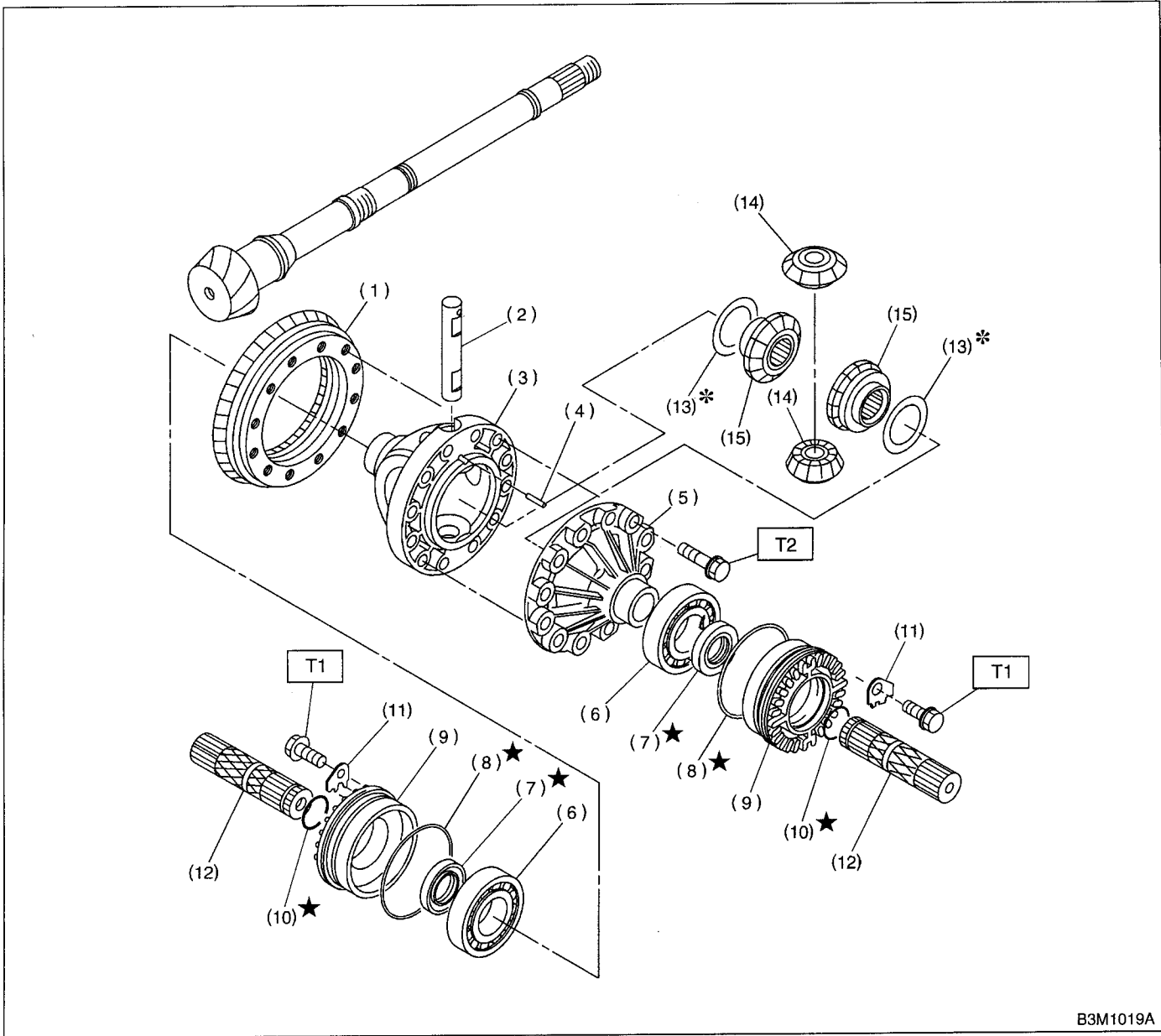
- | | | |
|----------------------------|-----------------------------------|----------------------------|
| (1) Ball bearing | (13) Thrust washer | (25) Drive pinion shaft |
| (2) Reduction drive gear | (14) Rear drive shaft | (26) Snap ring |
| (3) Washer | (15) Ball bearing | (27) Ball bearing |
| (4) Needle bearing | (16) Multi-plate clutch (LSD) hub | (28) Reduction driven gear |
| (5) Pinion gear | (17) Ball bearing | (29) Lock washer |
| (6) Carrier | (18) Revolution gear | (30) Lock nut |
| (7) Planetary pinion shaft | (19) Driven plate (Thicker) | (31) Gasket |
| (8) Straight pin | (20) Drive plate | (32) Extension case |
| (9) Snap ring | (21) Driven plate (Thinner) | |
| (10) Seal ring | (22) Driven plate (Thicker) | |
| (11) Thrust needle bearing | (23) Adjust plate | |
| (12) Intermediate shaft | (24) Rear drive shaft shim | |

Tightening torque: N-m (kgf-m, ft-lb)
T: 100 (10.2, 73.8)

GENERAL DESCRIPTION

Automatic Transmission

10. DIFFERENTIAL GEAR SS10001A0510



B3M1019A

- | | |
|----------------------------|--------------------------------|
| (1) Crown gear | (8) O-ring |
| (2) Pinion shaft | (9) Differential side retainer |
| (3) Differential case (RH) | (10) Circlip |
| (4) Straight pin | (11) Lock plate |
| (5) Differential case (LH) | (12) Axle shaft |
| (6) Taper roller bearing | (13) Washer |
| (7) Oil seal | (14) Differential bevel pinion |

- (15) Differential bevel gear

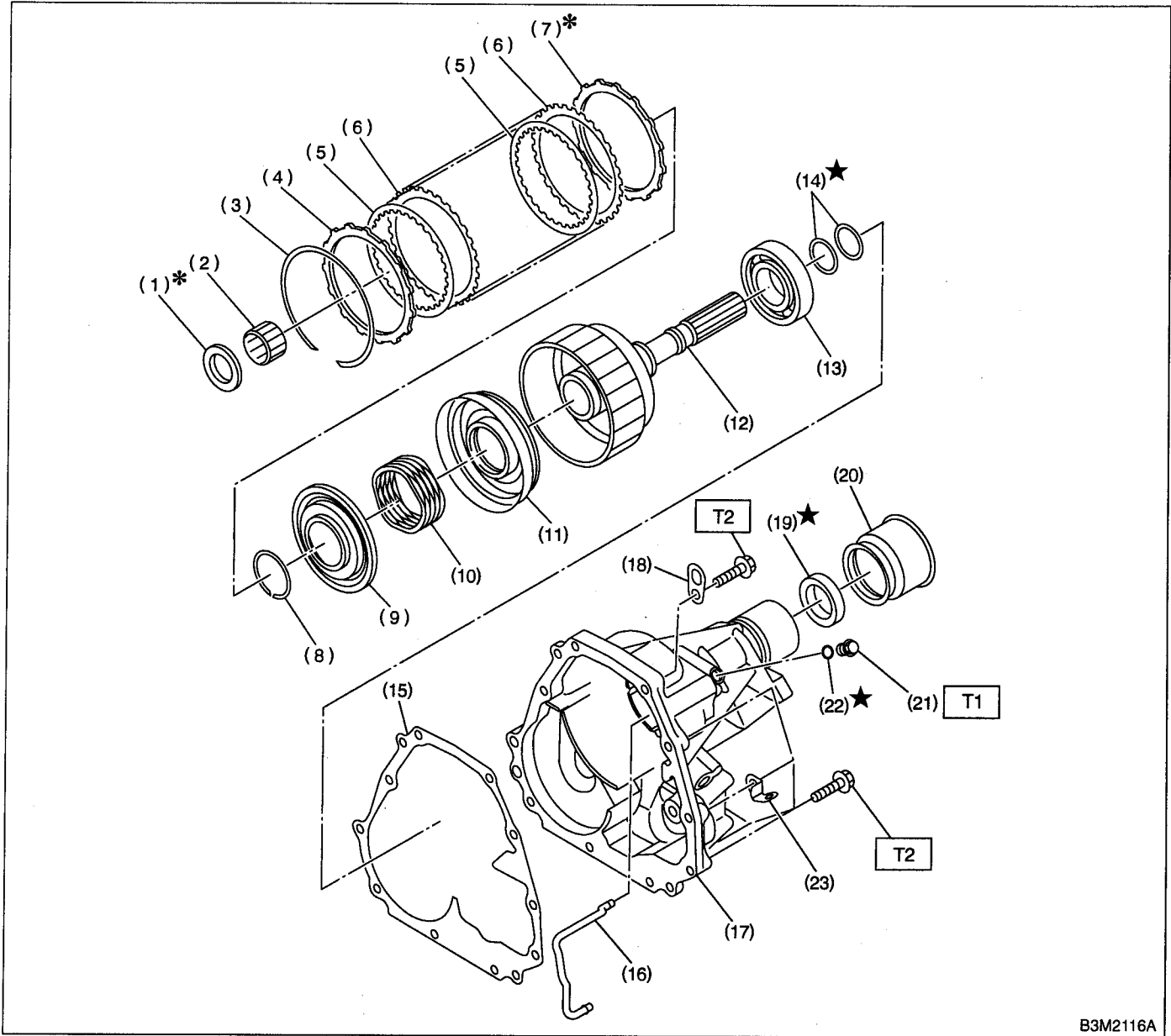
Tightening torque: N·m (kgf·m, ft·lb)

T1: 25 (2.5, 18.1)

T2: 62 (6.3, 45.6)

11. TRANSFER AND EXTENSION CASE WITHOUT VTD

SS10001A0511



B3M2116A

- | | | |
|---------------------------|-----------------------------|----------------|
| (1) Thrust needle bearing | (11) Transfer clutch piston | (21) Test plug |
| (2) Needle bearing | (12) Rear drive shaft | (22) O-ring |
| (3) Snap ring | (13) Ball bearing | (23) Clip |
| (4) Pressure plate | (14) Seal ring | |
| (5) Drive plate | (15) Gasket | |
| (6) Driven plate | (16) Transfer clutch pipe | |
| (7) Pressrue plate | (17) Extension case | |
| (8) Snap ring | (18) Transmission hanger | |
| (9) Transfer piston seal | (19) Oil seal | |
| (10) Return spring | (20) Dust cover | |

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

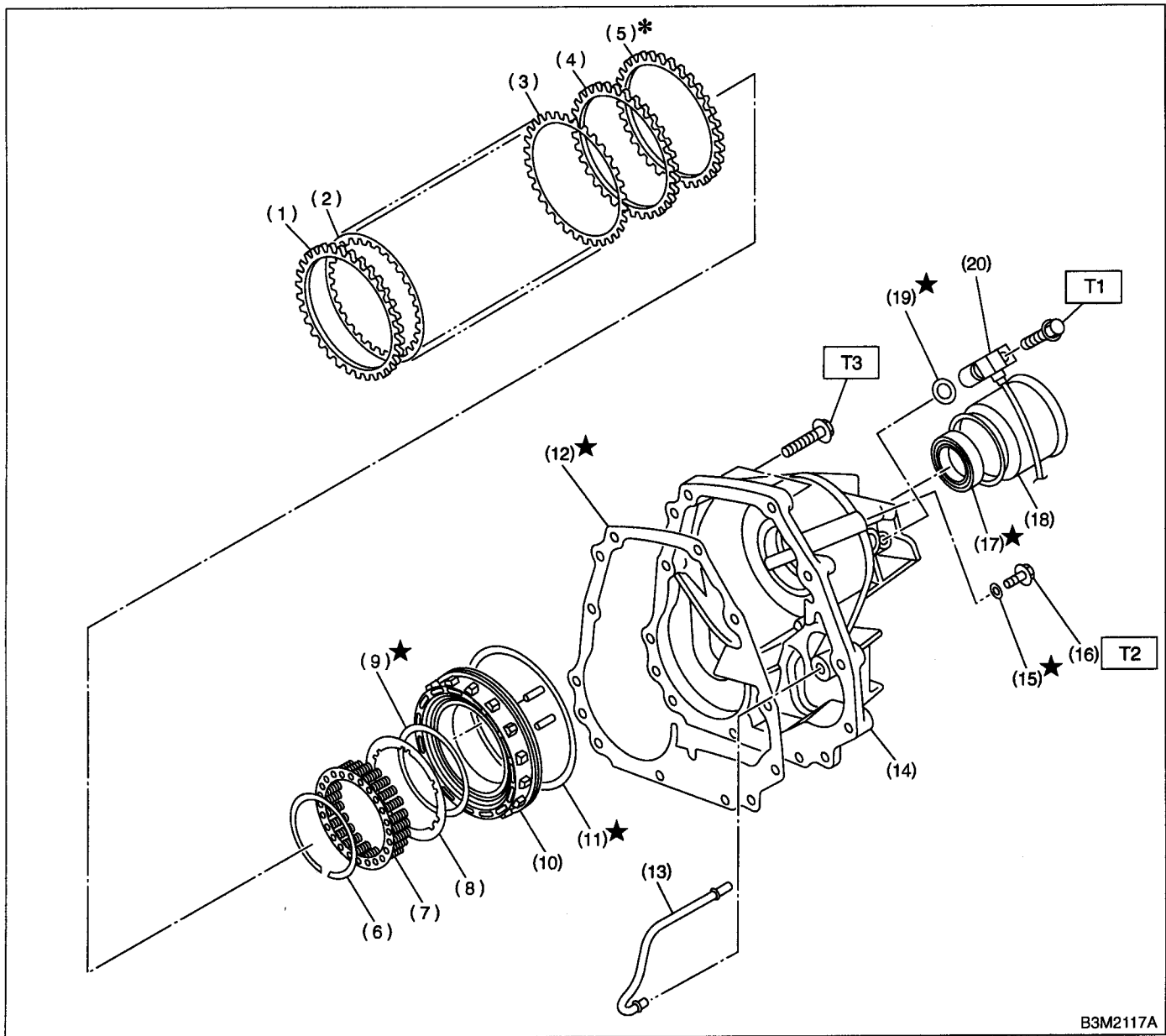
T1: 13 (1.3, 9.4)

T2: 25 (2.5, 18.1)

GENERAL DESCRIPTION

Automatic Transmission

12. TRANSFER AND EXTENSION CASE WITH VTD SS10001A0512



B3M2117A

- | | |
|---|---|
| (1) Driven plate (Thicker) | (11) Lathe cut seal ring |
| (2) Drive plate | (12) Gasket |
| (3) Driven plate (Thinner) | (13) Multi-plate clutch sensor (LSD) pipe |
| (4) Driven plate (Thicker) | (14) Extension case |
| (5) Adjust plate | (15) O-ring |
| (6) Snap ring | (16) Test plug |
| (7) Spring retainer | (17) Oil seal |
| (8) Plate | (18) Dust cover |
| (9) Lathe cut seal ring | (19) O-ring |
| (10) Multi-plate clutch (LSD) piston ASSY | (20) Vehicle speed sensor 1 |

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)

C: PRECAUTION SS10001F59

When disassembling or assembling the automatic transmission, observe the following instructions.

1) Workshop

Provide a place that is clean and free from dust. Principally the conventional workshop is suitable except for a dusty place. In a workshop where grinding work, etc. which produces fine particles is done, make independent place divided by the vinyl curtain or the equivalent.

2) Work table

The size of 1 x 1.5 m (40 x 60 in) is large enough to work, and it is more desirable that its surface be covered with flat plate like iron plate which is not rusted too much.

3) Cleaning of exterior

(1) Clean the exterior surface of transmission with steam and/or kerosene prior to disassembly, however it should be noted that vinyl tape be placed on the air breather or oil level gauge to prevent infiltration of the steam into the transmission and also the cleaning job be done away from the place of disassembly and assembly.

(2) Partial cleaning will do, depending on the extent of disassembly (such as when disassembly is limited to some certain parts).

4) Disassembly, assembly and cleaning

(1) Disassemble and assemble the transmission while inspecting the parts in accordance with the Diagnostics.

(2) During job, do not use gloves. Do not clean the parts with rags: Use chamois or nylon cloth.

(3) Pay special attention to the air to be used for cleaning. Get the moisture and the dust rid of the air as much as possible. Be careful not to scratch or dent any part while checking for proper operation with an air gun.

(4) Complete the job from cleaning to completion of assembly as continuously and speedily as possible in order to avoid occurrence of secondary troubles caused by dust. When stopping the job unavoidably cover the parts with clean chamois or nylon cloth to keep them away from any dust.

(5) Use kerosene, white gasoline or the equivalent as washing fluid. Use always new fluid for cleaning the automatic transmission parts and never reuse. The used fluid is usable in disassemble and assemble work of engine and manual transmission.

(6) Although the cleaning should be done by dipping into the washing fluid or blowing of the pressurized washing fluid, the dipping is more desirable. (Do not rub with a brush.) Assemble the parts immediately after the cleaning without exposure to the air for a while. Besides in case

of washing rubber parts, perform the job quickly not to dip them into the washing fluid for long time.

(7) Apply the automatic transmission fluid (ATF) onto the parts immediately prior to assembly, and the specified tightening torque should be observed carefully.

(8) Use vaseline if it is necessary to hold parts in the position when assembling.

(9) Drain ATF and differential gear oil into a saucer so that the conditions of fluid and oil can be inspected.

(10) Do not support axle drive shaft, stator shaft, input shaft or various pipes when moving transmission from one place to another.

(11) Always discard old oil seals and O-ring, and install new ones.

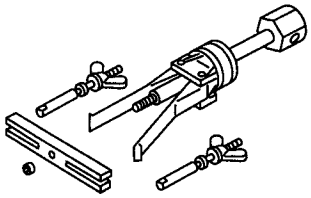
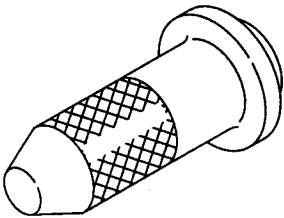
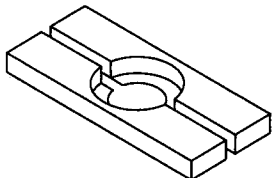
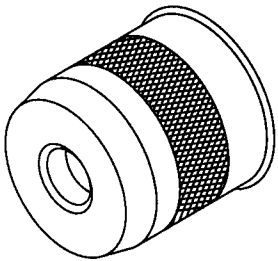
(12) Be sure to replace parts which are damaged, worn, scratched, discolored, etc.

GENERAL DESCRIPTION

Automatic Transmission

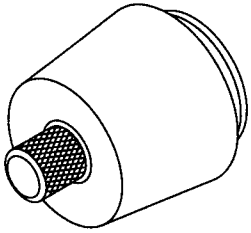
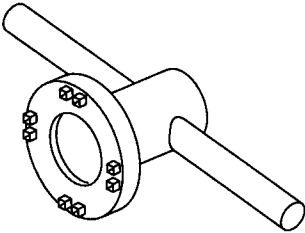
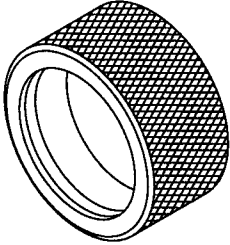
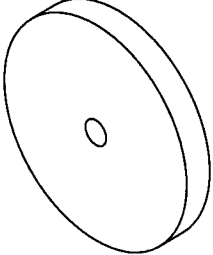
D: PREPARATION TOOL S510001A17

1. SPECIAL TOOLS S510001A1701

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M1977</p>	398527700	PULLER ASSY	Used for removing and installing extension case roller bearing.
 <p style="text-align: center;">B3M1972</p>	498057300	INSTALLER	Used for installing extension oil seal.
 <p style="text-align: center;">B3M1998</p>	498077000	REMOVER	Used for removing differential taper roller bearing.
 <p style="text-align: center;">B3M1999</p>	499247400	INSTALLER	<ul style="list-style-type: none"> ● Used for installing transfer outer snap ring. ● Used with GUIDE (499257300).

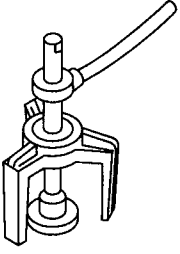
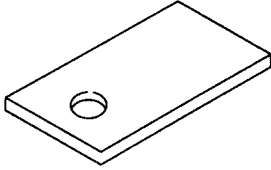
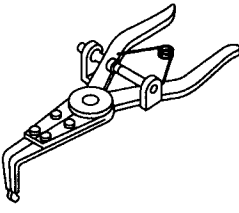
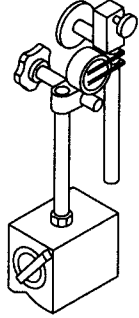
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M2000</p>	499257300	GUIDE	<ul style="list-style-type: none"> ● Used for installing transfer outer snap ring. ● Used with INSTALLER (499247400).
 <p style="text-align: center;">B3M1953</p>	499787000	WRENCH ASSY	Used for removing and installing differential side retainer.
 <p style="text-align: center;">B3M2001</p>	398437700	DRIFT	Used for installing converter case oil seal.
 <p style="text-align: center;">B3M1967</p>	398497701	INSTALLER	Used for installing converter case oil seal.

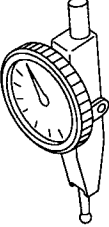
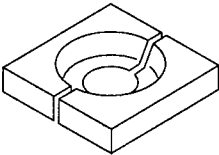
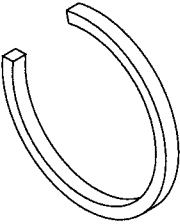
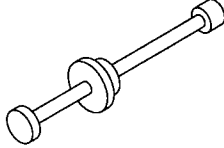
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M2002</p>	398673600	COMPRESSOR	Used for removing and installing clutch spring.
 <p style="text-align: center;">B3M1973</p>	498255400	PLATE	Used for measuring backlash of hypoid gear.
 <p style="text-align: center;">B3M2003</p>	399893600	PLIERS	Used for removing and installing clutch spring.
 <p style="text-align: center;">B3M1945</p>	498247001	MAGNET BASE	<ul style="list-style-type: none"> ● Used for measuring gear backlash. ● Used with DIAL GAUGE (498247100).

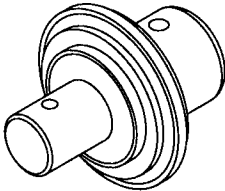
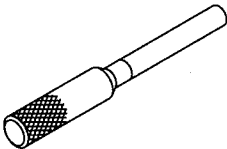
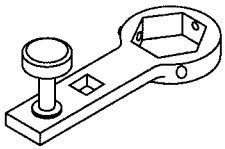
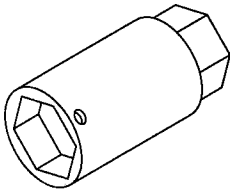
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M1946</p>	498247100	DIAL GAUGE	<ul style="list-style-type: none"> ● Used for measuring gear backlash. ● Used with MAGNET BASE (498247001).
 <p style="text-align: center;">B3M2004</p>	498517000	REPLACER	Used for removing front roller bearing.
 <p style="text-align: center;">B3M2005</p>	498627000	SEAT	Used for removing spring of transfer clutch piston.
 <p style="text-align: center;">B3M2006</p>	499095500	REMOVER ASSY	Used for removing axle shaft.

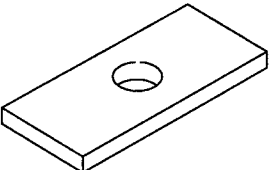
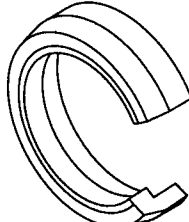
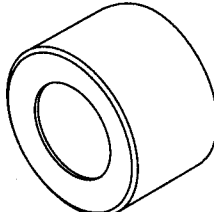
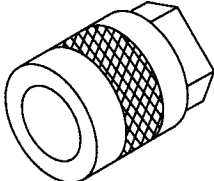
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M2007</p>	<p style="text-align: center;">499247300</p>	<p style="text-align: center;">INSTALLER</p>	<ul style="list-style-type: none"> ● Used for removing axle shaft. ● Used with REMOVER (499095500).
 <p style="text-align: center;">B3M2008</p>	<p style="text-align: center;">499267300</p>	<p style="text-align: center;">STOPPER PIN</p>	<p>Used for installing inhibitor switch.</p>
 <p style="text-align: center;">B3M2009</p>	<p style="text-align: center;">499787700</p>	<p style="text-align: center;">WRENCH ASSY</p>	<p>Used for removing and installing drive pinion lock nut.</p>
 <p style="text-align: center;">B3M2010</p>	<p style="text-align: center;">499787500</p>	<p style="text-align: center;">ADAPTER ASSY</p>	<p>Used for removing and installing drive pinion lock nut.</p>

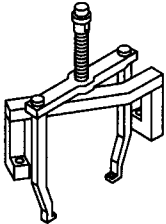
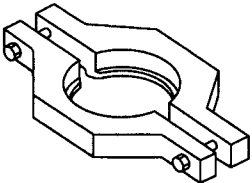
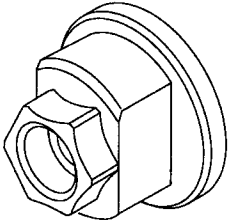
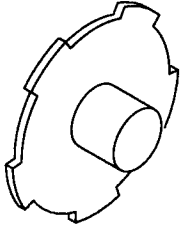
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M1978</p>	398643600	GAUGE	Used for measuring total end play, extension end play and drive pinion height.
 <p style="text-align: center;">B3M2011</p>	498627100	SEAT	Used for holding low clutch piston retainer spring when installing snap ring.
 <p style="text-align: center;">B3M2012</p>	499577000	GAUGE	Used for measuring the transmission case mating surface to the reduction gear end surface.
 <p style="text-align: center;">B3M2013</p>	499737000	PULLER	Used for removing reduction driven gear assembly.

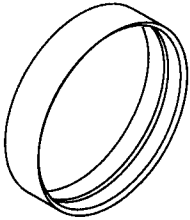
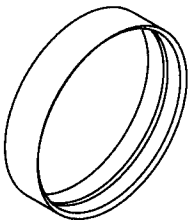
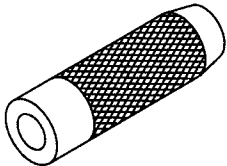
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: right;">B3M2014</p>	499737100	PULLER SET	Used for removing reduction drive gear assembly.
 <p style="text-align: right;">B3M2015</p>	498077600	REMOVER	Used for removing ball bearing.
 <p style="text-align: right;">B3M2016</p>	498937110	HOLDER	Used for removing and installing drive pinion lock nut.
 <p style="text-align: right;">B3M2017</p>	498677100	COMPRESSOR	Used for installing 2-4 brake snap ring.

GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 B3M2018	498437000	HIGH CLUTCH PISTON GUIDE	Used for installing high clutch piston.
 B3M2018	498437100	LOW CLUTCH PISTON GUIDE	Used for installing low clutch piston.
 B3M2019	899580100	INSTALLER	Used for press-fitting the ball bearing for transfer clutch.

2. GENERAL PURPOSE TOOLS S510001A1702

TOOL NAME	REMARKS
Depth gauge	Used for measuring transmission end play.
Thickness gauge	Used for measuring clearances of clutch, brake and oil pump.
Micro meter	Used for measuring thickness of drive pinion.
Spring balance	Used for measuring starting torque of drive pinion.

E: PROCEDURE S510001E45

● In this section the procedures described under each index are all connected and stated in order. It will be the complete procedure for overhauling of the automatic transmission itself when you go through all steps in the process.

Therefore, in this section, to conduct the particular procedure within the flow of a section, you need to go back and conduct the procedure described previously in order to do that particular procedure.