

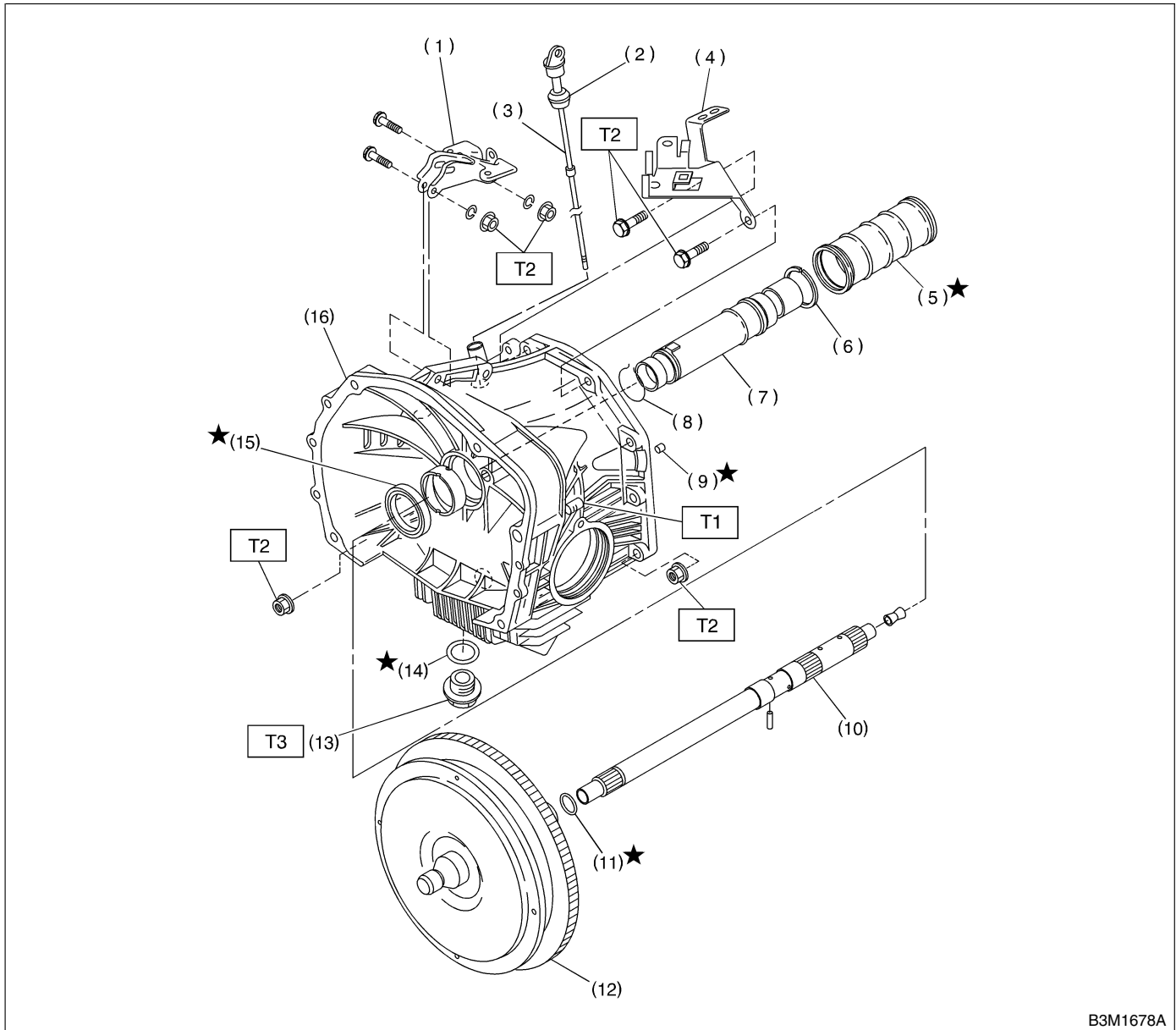
GENERAL DESCRIPTION

Automatic Transmission

1. General Description SS10001

A: COMPONENT SS10001A05

1. TORQUE CONVERTER CLUTCH AND CASE SS10001A0501



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

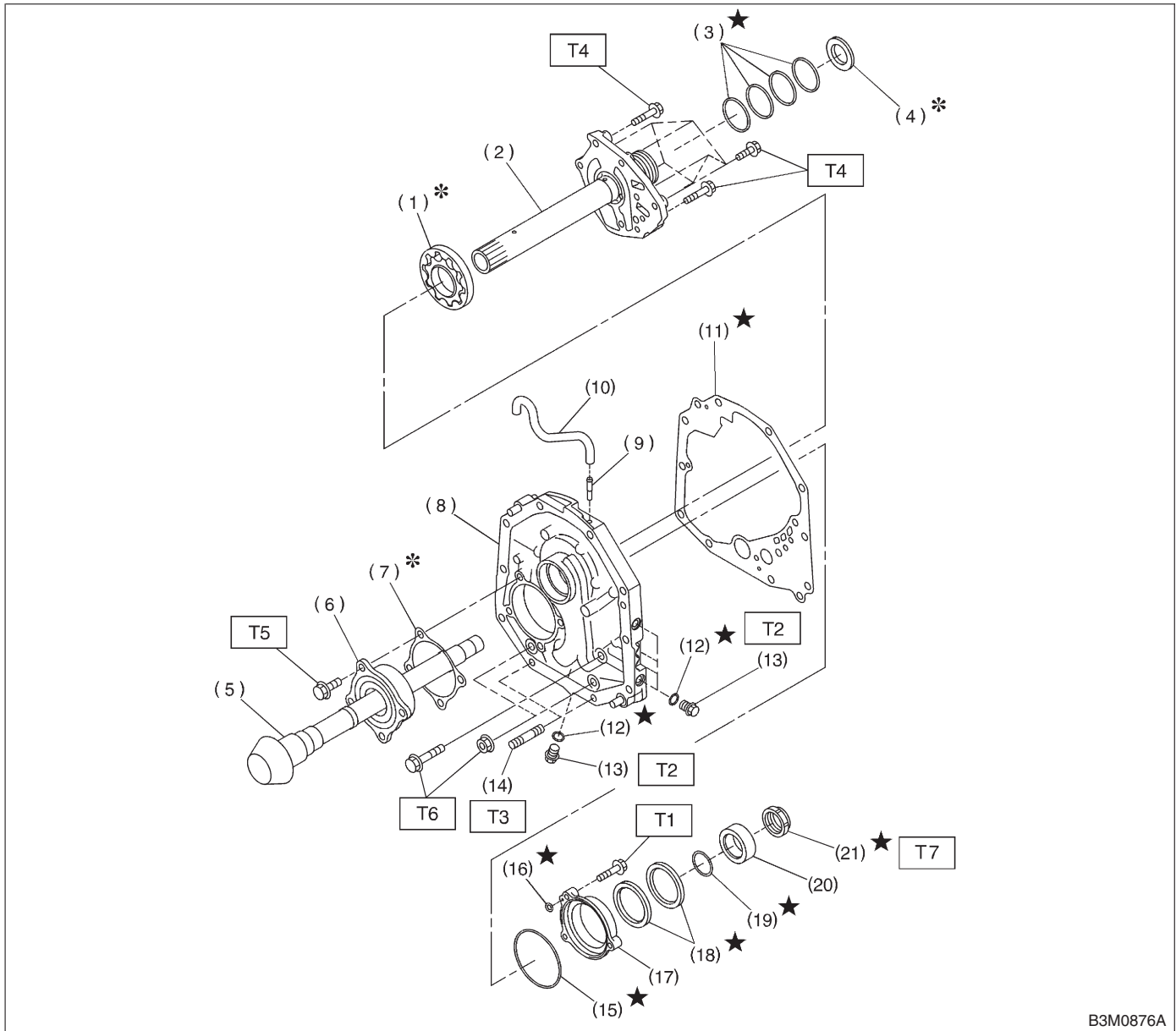
Tightening torque: N·m (kgf·m, ft·lb)

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 | |

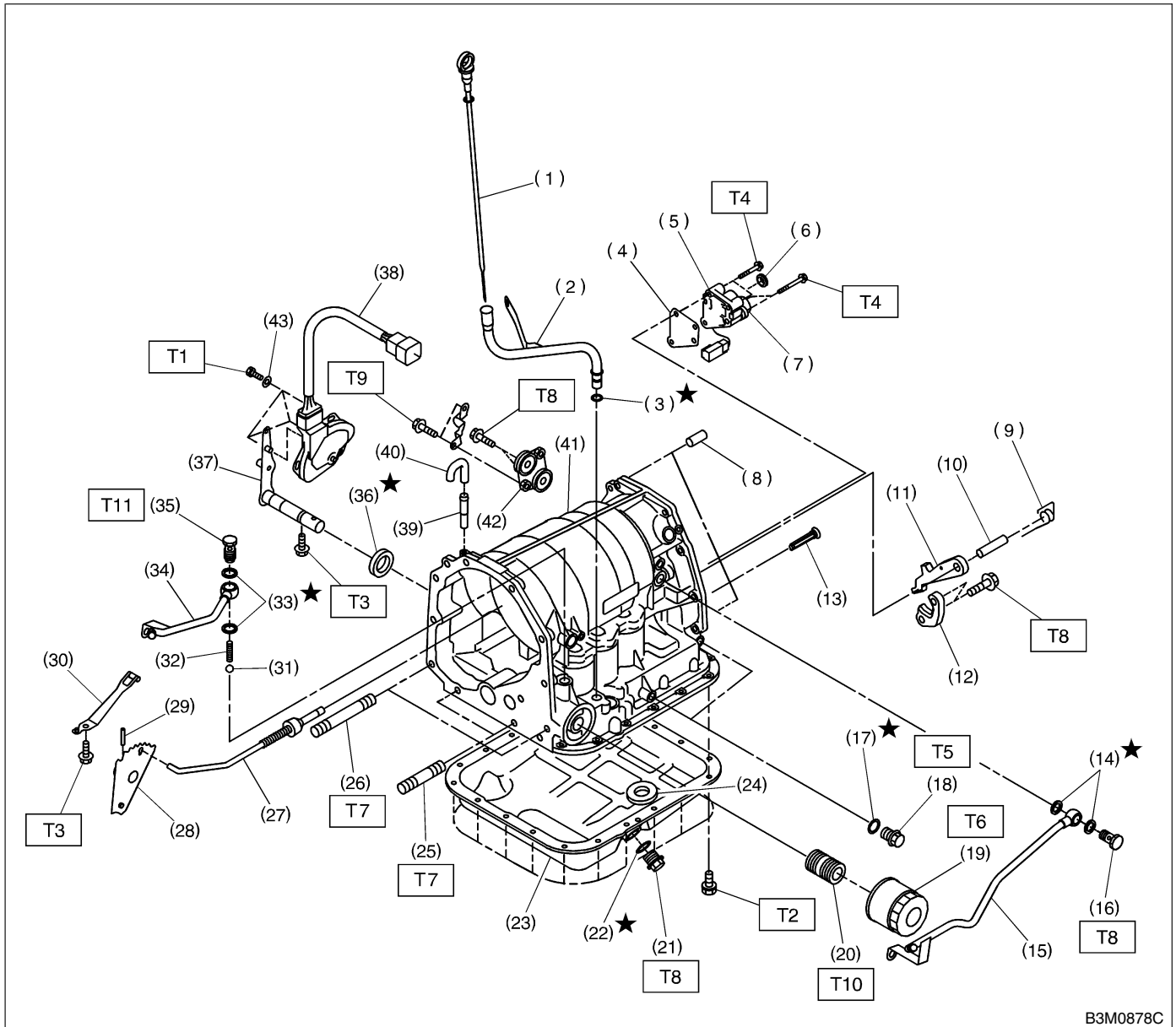
Tightening torque: N·m (kgf·m, ft·lb)

- 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 S510001A0503



B3M0878C

GENERAL DESCRIPTION

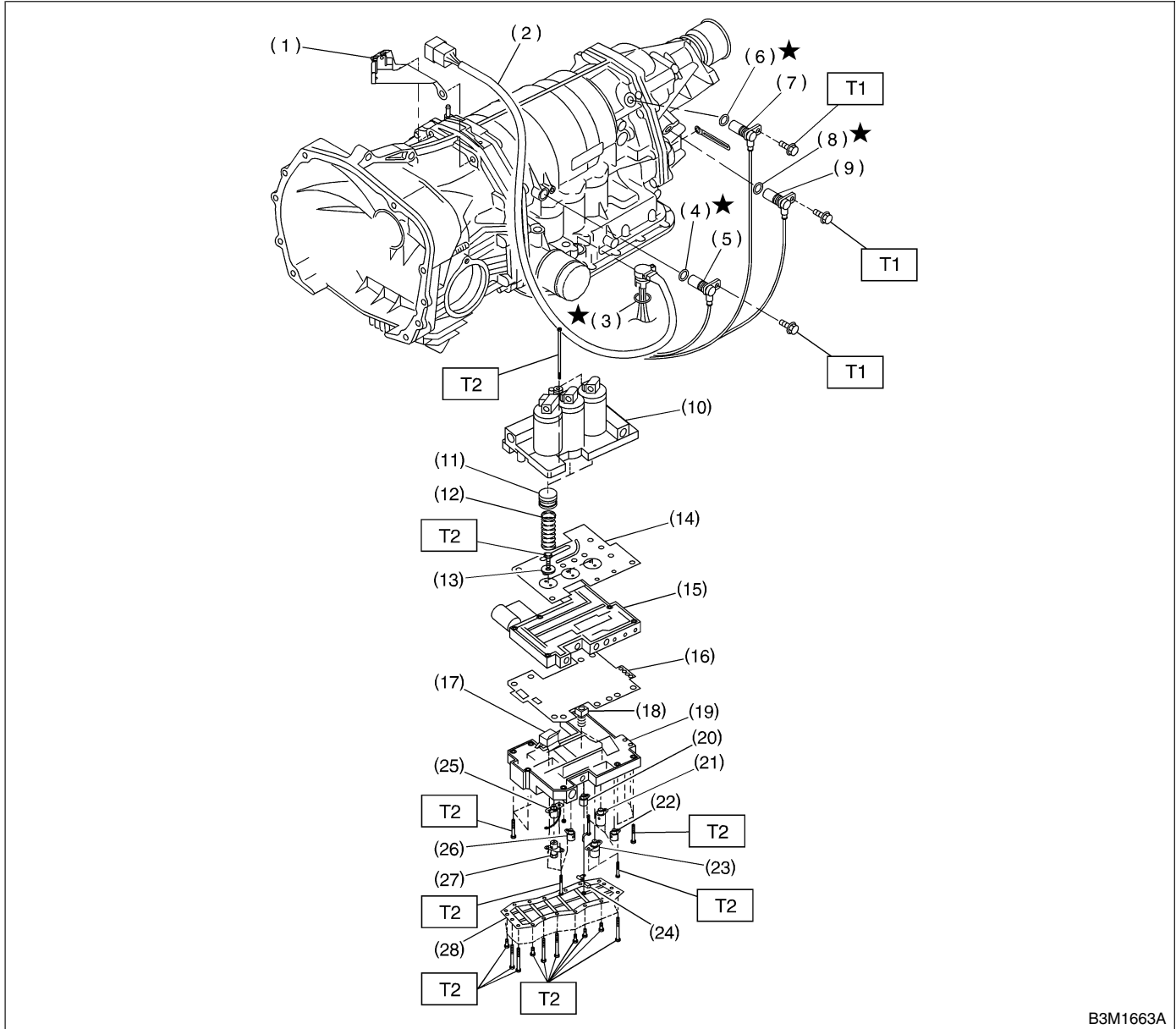
Automatic Transmission

(1) Oil level gauge	(20) Oil filter stud bolt	(39) Nipple
(2) Oil charger pipe	(21) Drain plug	(40) Air breather hose
(3) O-ring	(22) Gasket	(41) Transmission case
(4) Transfer valve plate	(23) Oil pan	(42) Plate ASSY
(5) Transfer valve ASSY	(24) Magnet	(43) Washer
(6) Transfer clutch seal	(25) Stud bolt (Short)	
(7) Transfer duty solenoid	(26) Stud bolt (Long)	<hr/> Tightening torque: N-m (kgf-m, ft-lb)
(8) Straight pin	(27) Parking rod	T1: 3.4 (0.35, 2.5)
(9) Return spring	(28) Manual plate	T2: 4.9 (0.50, 3.6)
(10) Shaft	(29) Spring pin	T3: 6 (0.6, 4.3)
(11) Parking pawl	(30) Detention spring	T4: 8 (0.8, 5.8)
(12) Parking support	(31) Ball	T5: 13 (1.3, 9.4)
(13) Inlet filter	(32) Spring	T6: 13.7 (1.4, 10.1)
(14) Gasket	(33) Gasket	T7: 18 (1.8, 13.0)
(15) Inlet pipe	(34) Outlet pipe	T8: 25 (2.5, 18.1)
(16) Union screw	(35) Union screw	T9: 32 (3.3, 24)
(17) O-ring	(36) Oil seal	T10: 25 (2.5, 18.1)
(18) Test plug	(37) Select lever	T11: 44 (4.5, 32.5)
(19) Oil filter	(38) Inhibitor switch ASSY	<hr/>

GENERAL DESCRIPTION

Automatic Transmission

4. CONTROL VALVE AND HARNESS ROUTING SS10001A0504



B3M1663A

- (1) Stay
- (2) Transmission harness
- (3) O-ring
- (4) O-ring
- (5) Torque converter turbine speed sensor
- (6) O-ring
- (7) Vehicle speed sensor 2 (Front)
- (8) O-ring
- (9) Vehicle speed sensor 1 (Rear)
- (10) Upper valve body
- (11) Accumulator piston

- (12) Accumulator spring
- (13) Side plate
- (14) Separate plate
- (15) Middle valve body
- (16) Separate plate
- (17) Fluid filter
- (18) Fluid filter
- (19) Lower valve body
- (20) Shift solenoid 2
- (21) Shift solenoid 1
- (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

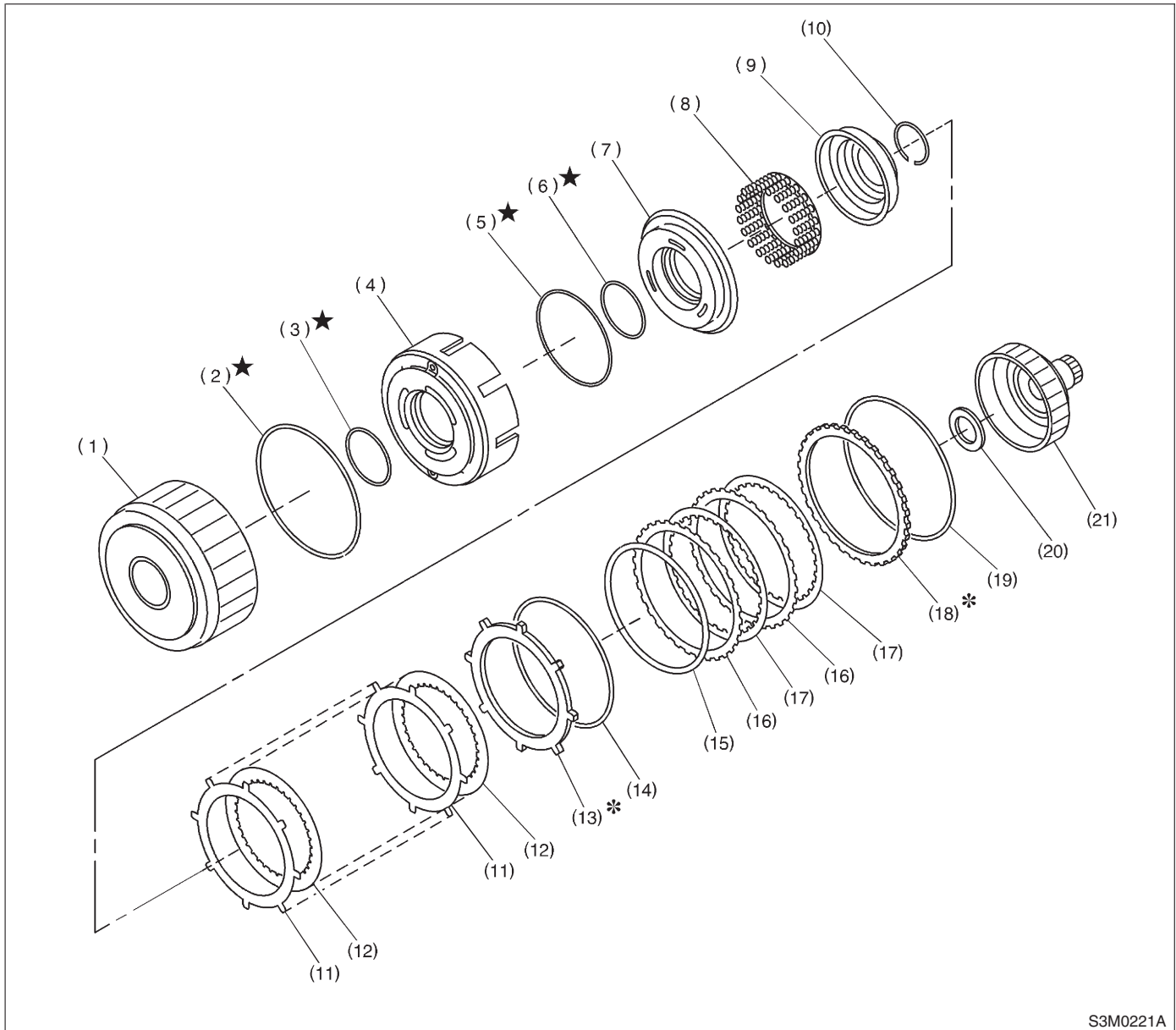
- (24) ATF temperature sensor
- (25) Line pressure duty solenoid
- (26) Low clutch timing solenoid
- (27) Lock-up duty solenoid
- (28) Oil strainer

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 SS10001A0505



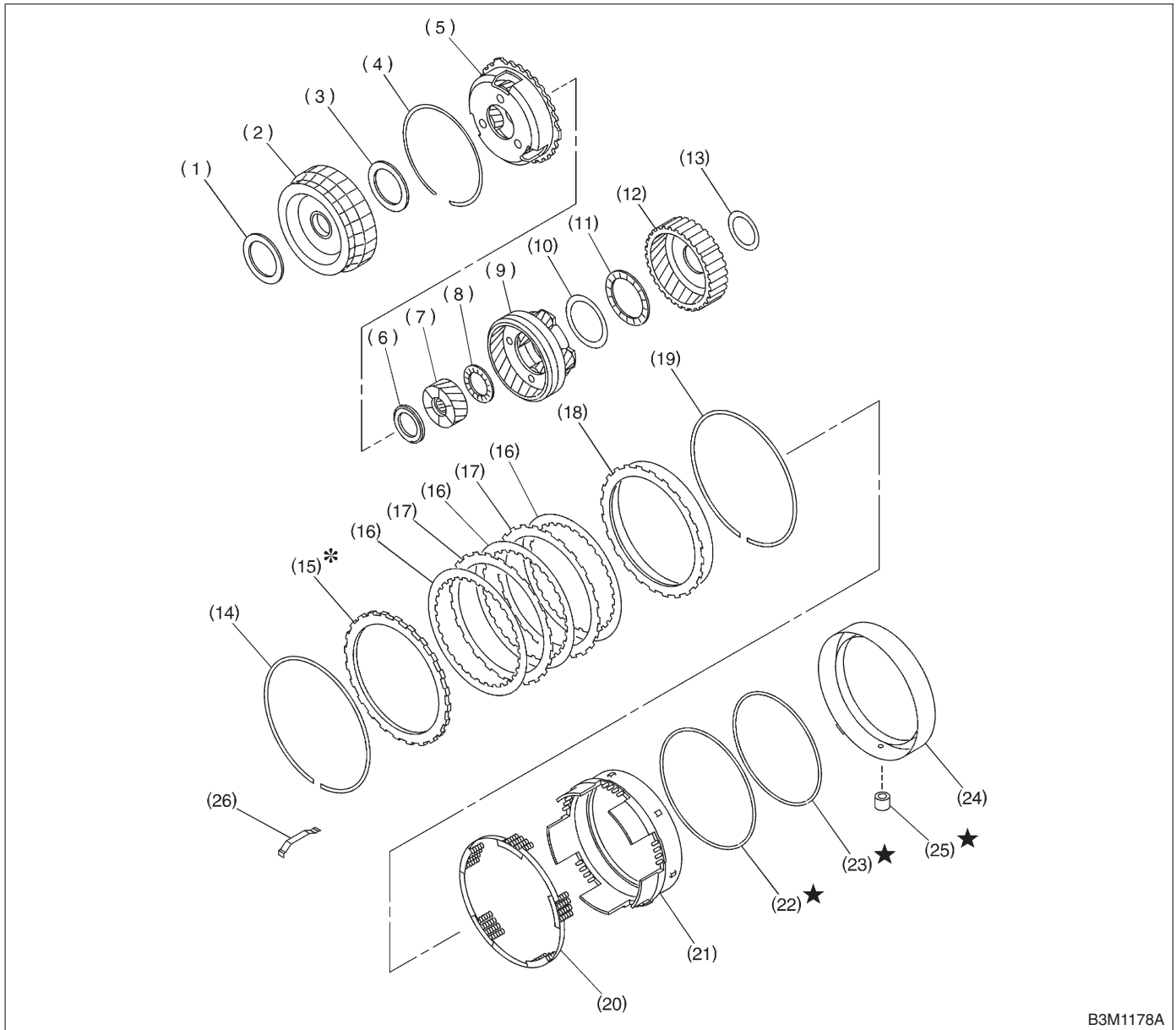
S3M0221A

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

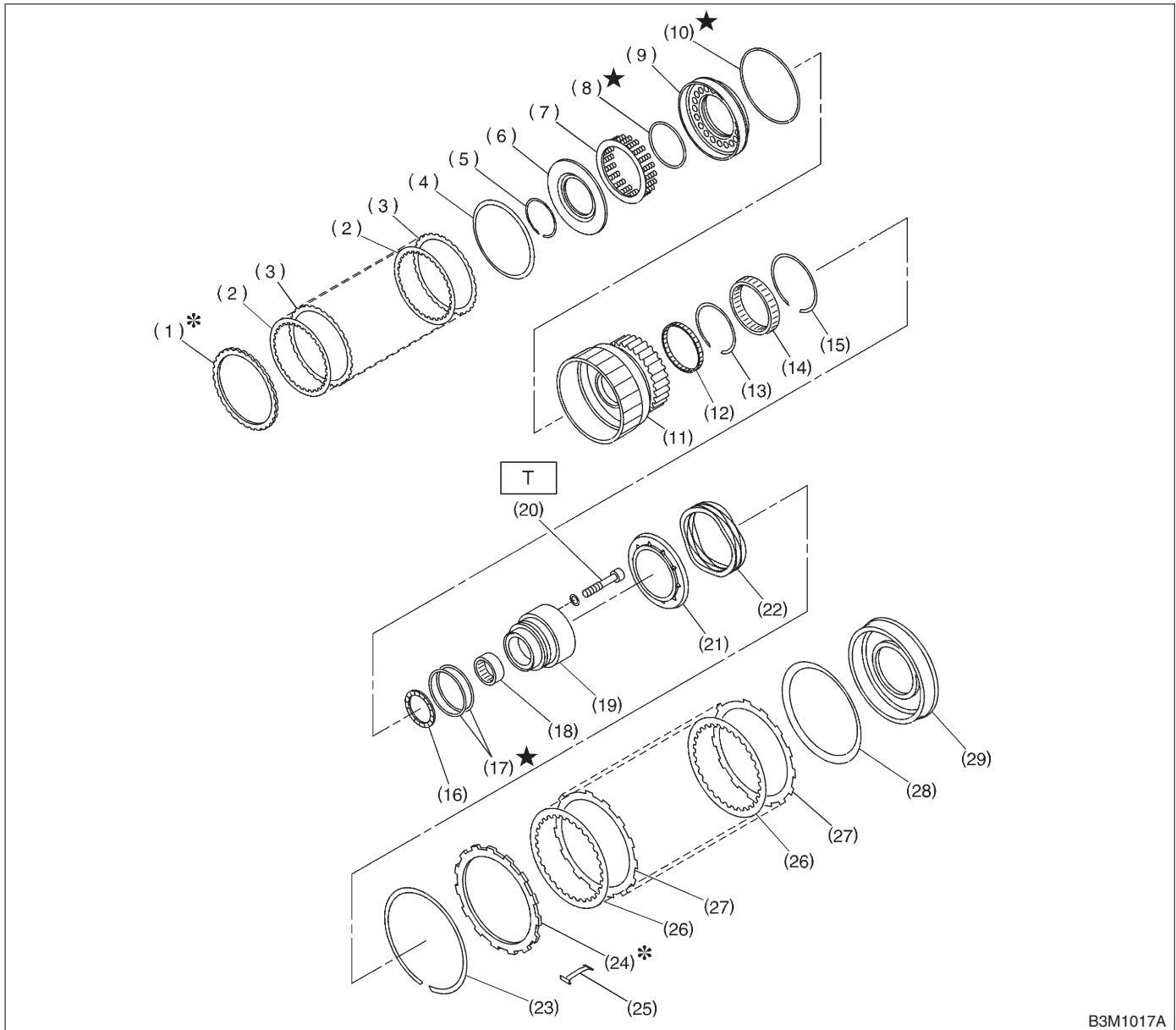
6. PLANETARY GEAR AND 2-4 BRAKE SS10001A0506



B3M1178A

- | | | |
|-----------------------------|----------------------------|--------------------------------|
| (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) Lathe cut seal ring |
| (5) Front planetary carrier | (14) Snap ring | (23) Lathe cut seal 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 SS10001A0507



B3M1017A

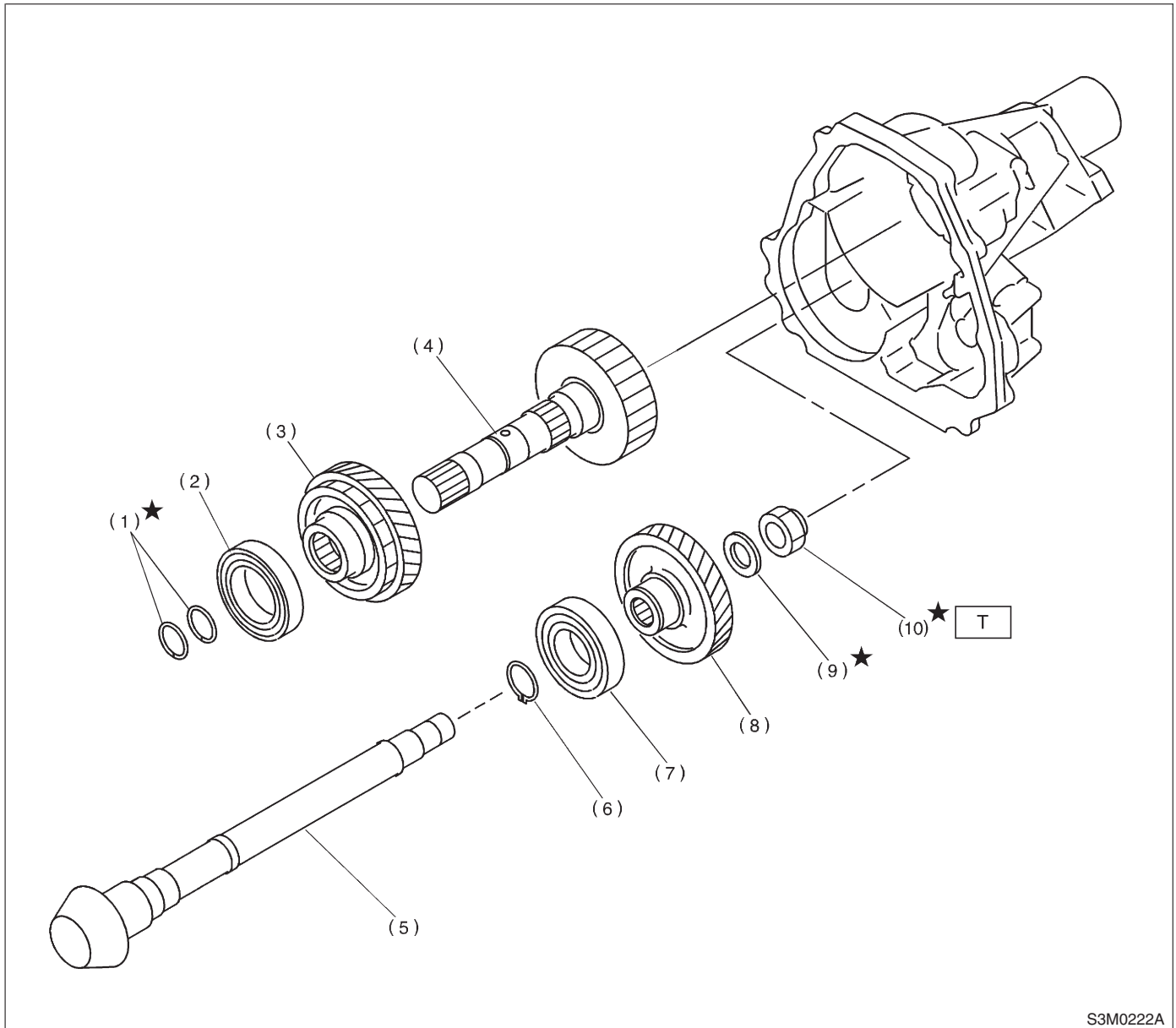
- | | | |
|--------------------------|--------------------------------|-----------------------------------|
| (1) Retaining plate | (12) Needle bearing | (23) Snap ring |
| (2) Drive plate | (13) Snap ring | (24) Retaining plate |
| (3) Driven plate | (14) One-way clutch | (25) Leaf spring |
| (4) Dish plate | (15) 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 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 SS10001A0513

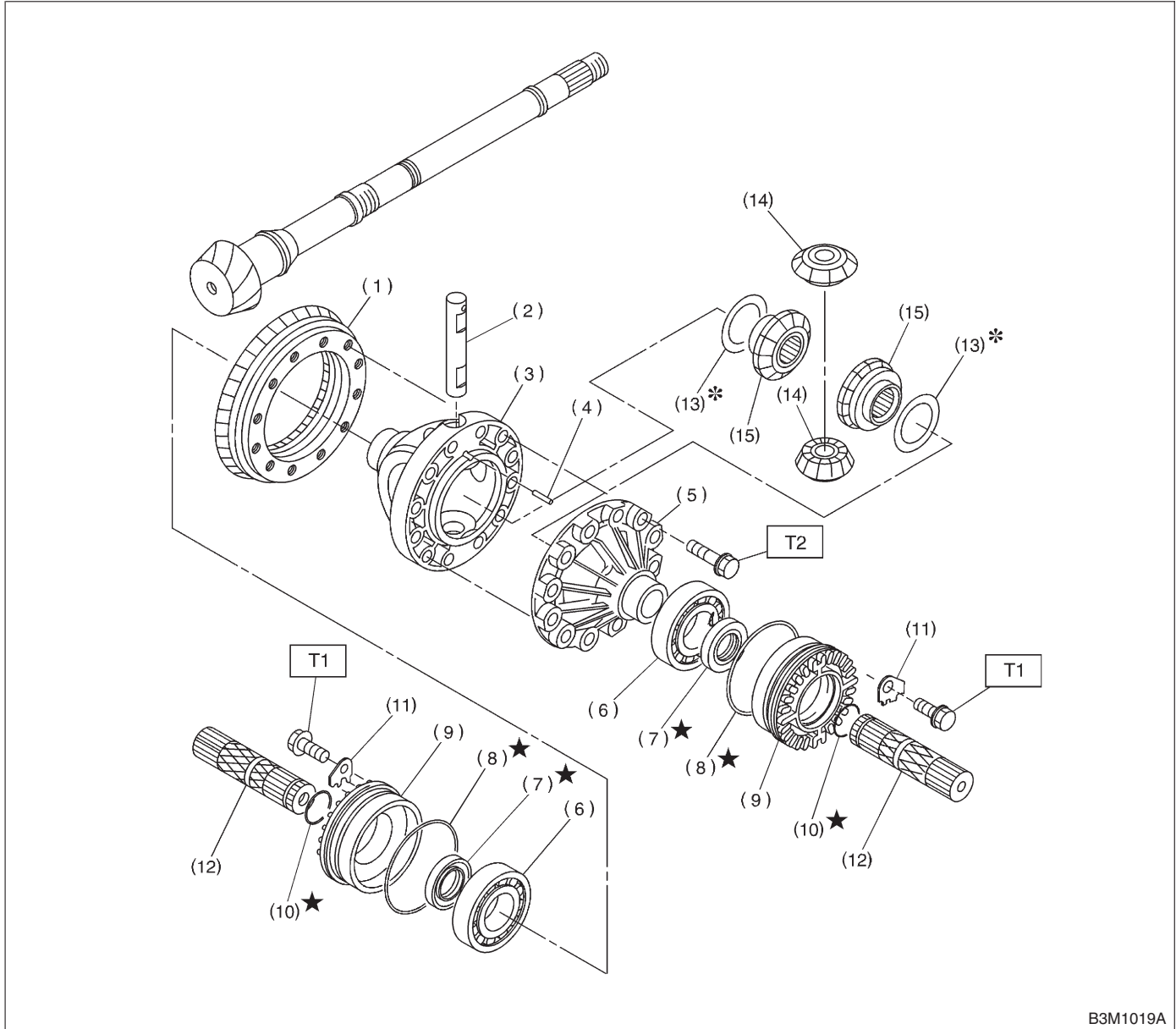


S3M0222A

- | | |
|---------------------------|---------------------------|
| (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. 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)

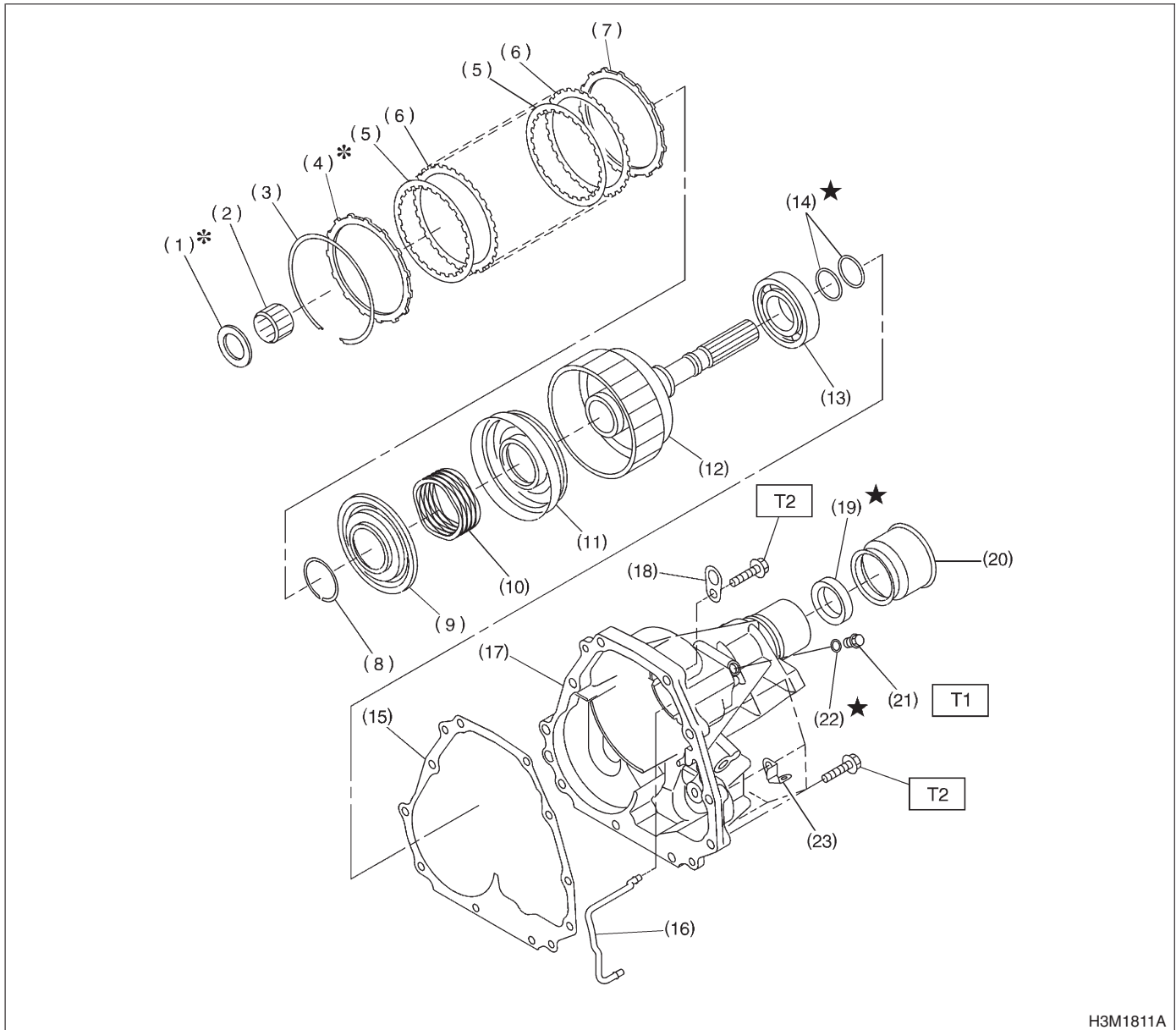
T1: 25 (2.5, 18.1)

T2: 62 (6.3, 45.6)

GENERAL DESCRIPTION

Automatic Transmission

10. TRANSFER AND EXTENSION CASE SS10001A0514



- (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)

B: 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.

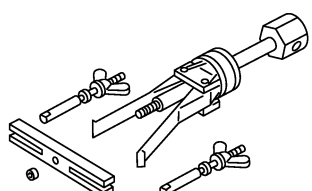
(10) Do not support axle drive shaft, stator shaft, input shaft or various pipes when moving transmission from one place to another.

(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.

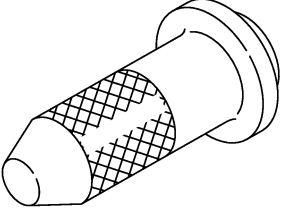
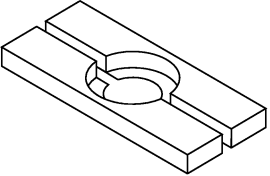
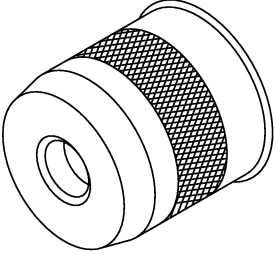
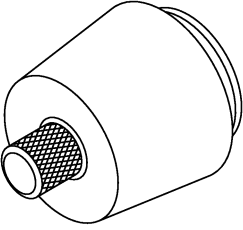
C: PREPARATION TOOL SS10001A17

1. SPECIAL TOOL SS10001A1701

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M1977</p>	398527700	PULLER ASSY	Used for removing and installing extension case roller bearing.

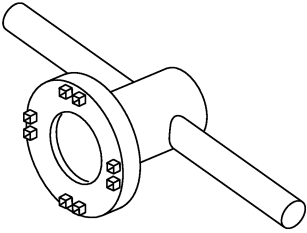
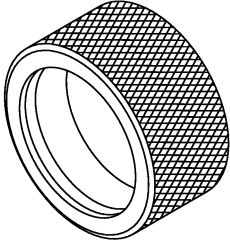
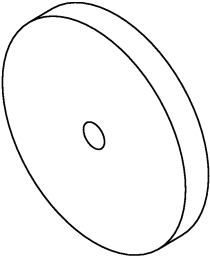
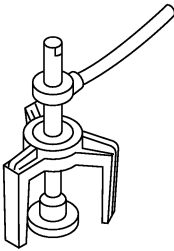
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <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).
 <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).

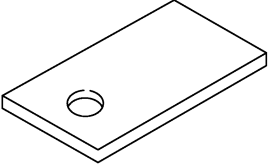
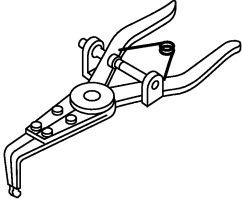
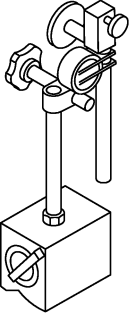
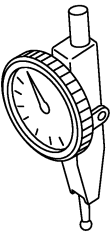
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <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.
 <p style="text-align: center;">B3M2002</p>	398673600	COMPRESSOR	Used for removing and installing clutch spring.

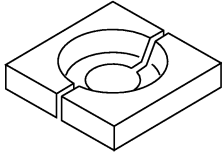
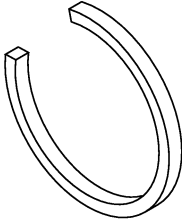
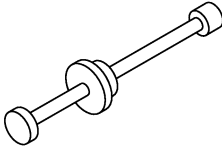
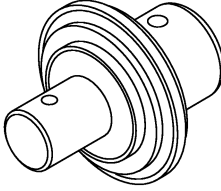
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: right;">B3M1973</p>	498255400	PLATE	Used for measuring backlash of hypoid gear.
 <p style="text-align: right;">B3M2003</p>	399893600	PLIERS	Used for removing and installing clutch spring.
 <p style="text-align: right;">B3M1945</p>	498247001	MAGNET BASE	<ul style="list-style-type: none"> ● Used for measuring gear backlash. ● Used with DIAL GAUGE (498247100).
 <p style="text-align: right;">B3M1946</p>	498247100	DIAL GAUGE	<ul style="list-style-type: none"> ● Used for measuring gear backlash. ● Used with MAGNET BASE (498247001).

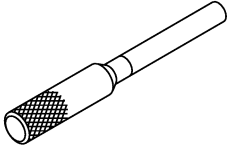
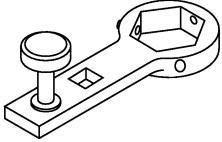
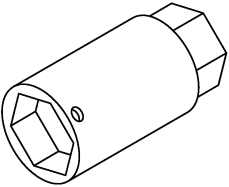
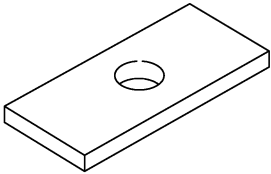
GENERAL DESCRIPTION

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="363 541 444 562">B3M2004</p>	498517000	REPLACER	Used for removing front roller bearing.
 <p data-bbox="363 926 444 947">B3M2005</p>	498627000	SEAT	Used for removing spring of transfer clutch piston.
 <p data-bbox="363 1314 444 1335">B3M2006</p>	499095500	REMOVER ASSY	Used for removing axle shaft.
 <p data-bbox="363 1703 444 1724">B3M2007</p>	499247300	INSTALLER	<ul style="list-style-type: none"> ● Used for removing axle shaft. ● Used with REMOVER (499095500).

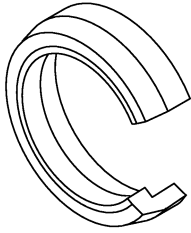
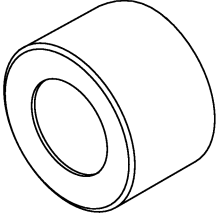
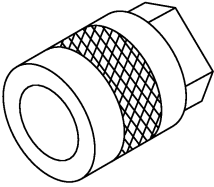
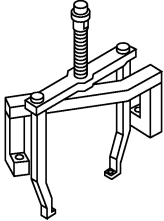
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: right;">B3M2008</p>	499267300	STOPPER PIN	Used for installing inhibitor switch.
 <p style="text-align: right;">B3M2009</p>	499787700	WRENCH ASSY	Used for removing and installing drive pinion lock nut.
 <p style="text-align: right;">B3M2010</p>	499787500	ADAPTER ASSY	Used for removing and installing drive pinion lock nut.
 <p style="text-align: right;">B3M1978</p>	398643600	GAUGE	Used for measuring total end play, extension end play and drive pinion height.

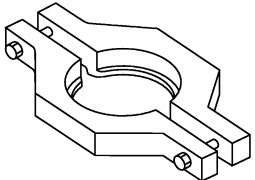
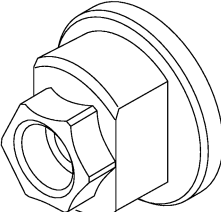
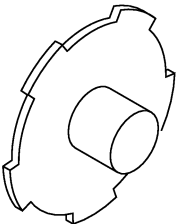
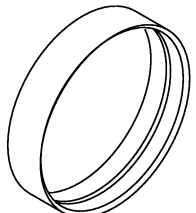
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <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.
 <p style="text-align: center;">B3M2014</p>	499737100	PULLER SET	Used for removing reduction drive gear assembly.

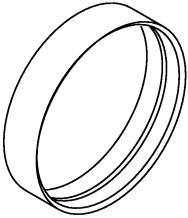
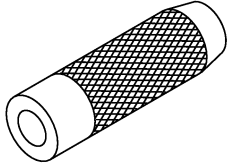
GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M2015</p>	498077600	REMOVER	Used for removing ball bearing.
 <p style="text-align: center;">B3M2016</p>	498937110	HOLDER	Used for removing and installing drive pinion lock nut.
 <p style="text-align: center;">B3M2017</p>	498677100	COMPRESSOR	Used for installing 2-4 brake snap ring.
 <p style="text-align: center;">B3M2018</p>	498437000	HIGH CLUTCH PISTON GUIDE	Used for installing high clutch piston.

GENERAL DESCRIPTION

Automatic Transmission

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 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 TOOL 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.

D: 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.