

GENERAL DESCRIPTION

Automatic Transmission

1. General Description S502001

A: SPECIFICATIONS S502001E49

1. TORQUE CONVERTER CLUTCH S502001E4901

Model	EXCEPT OUTBACK	OUTBACK	
		2.5 ℓ model	3.0 ℓ model
Type	Symmetric, 3 element, single stage, 2 phase torque converter		
Stall torque ratio	1.9 — 2.1	2.1 — 2.3	1.8 — 2.0
Nominal diameter	246 mm (9.69 in)		
Stall speed (at sea level)	2,100 — 2,600 rpm	2,200 — 2,700 rpm	2,000 — 2,500
One-way clutch	Sprague type one-way clutch		

2. OIL PUMP S502001E4902

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

3. TRANSMISSION CONTROL ELEMENT S502001E4903

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 sets

4. TRANSMISSION GEAR RATIO S502001E4904

Model	BRIGHTON, L, OUTBACK (3.0ℓ model)	GT, OUTBACK (2.5ℓ model)
1st	2.785	3.027
2nd	1.545	1.619
3rd	1.000	
4th	0.694	
Rev	2.272	

5. PLANETARY GEAR AND PLATE S502001E4905

	BRIGHTON, L	GT, OUTBACK (2.5ℓ model)	OUTBACK (3.0ℓ model)
Tooth number of front sun gear	33		
Tooth number of front pinion	21		
Tooth number of front internal gear	75		
Tooth number of rear sun gear	42	37	42
Tooth number of rear pinion	17	19	17
Tooth number of rear internal gear	75		
Drive & driven plate number of high clutch	4		5
Drive & driven plate number of low clutch	6		7
Drive & driven plate number of reverse clutch	2		
Drive & driven plate number of 2-4 brake	3		4
Drive & driven plate number of low & reverse brake	6		7

6. SELECTOR POSITION S502001E4906

P (Park)	Transmission in neutral, output member immovable, and engine start possible
R (Reverse)	Transmission in reverse for backing
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	Hydraulic remote control

7. HYDRAULIC CONTROL AND LUBRICATION S502001E4907

Type	Electronic/hydraulic control [Four forward speed changes by electrical signals of vehicle speed and accelerator (throttle) opening]
Fluid	Dexron IIE or exron III type Automatic transmission fluid
Fluid capacity	9.3 — 9.6 ℓ (9.8 — 10.1 US qt, 8.2 — 8.4 Imp qt)
Lubrication system	Forced feed lubrication with oil pump
Oil	Automatic transmission fluid (above mentioned)

8. COOLING AND HARNESS S502001E4908

	2.5ℓ model	3.0ℓ model
Cooling system	Liquid-cooled cooler incorporated in radiator	
ATF cooling system (Radiation capacity)	4.630 kW (3,981 kcal/h, 15,797 BTU/h)	2.09 kW (1,797 kcal/h, 7,130 BTU/h)
Inhibitor switch	12 poles	
Transmission harness	20 poles	

9. TRANSFER S502001E4909

	Except VTD model		VTD model
	2.5ℓ model	3.0ℓ model	
Transfer clutch	Hydraulic multi-plate clutch		
Drive & driven plate number of transfer clutch	5	6	3
Control method	Electronic, hydraulic type		
Lubricant	The same Automatic transmission fluid used in automatic transmission		
1st reduction gear ratio	1.000 (53/53)		

10. FINAL REDUCTION S502001E4910

Model	BRIGHTON, L	GT, OUTBACK																		
Front final gear ratio	4.111 (37/9)	4.444 (40/9)																		
Lubrication oil	<p style="text-align: center;">ITEM</p> <ul style="list-style-type: none"> • Front differential gear oil <p style="text-align: center;">API Classification</p> <p style="text-align: center;">GL - 5</p> <p style="text-align: center;">SAE Viscosity No. and Applicable Temperature</p> <table style="margin: auto; border-collapse: collapse;"> <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> <p style="text-align: right;">H3M1235A</p>		(°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	1.2 ℓ (1.3 US qt, 1.1 Imp qt)																			

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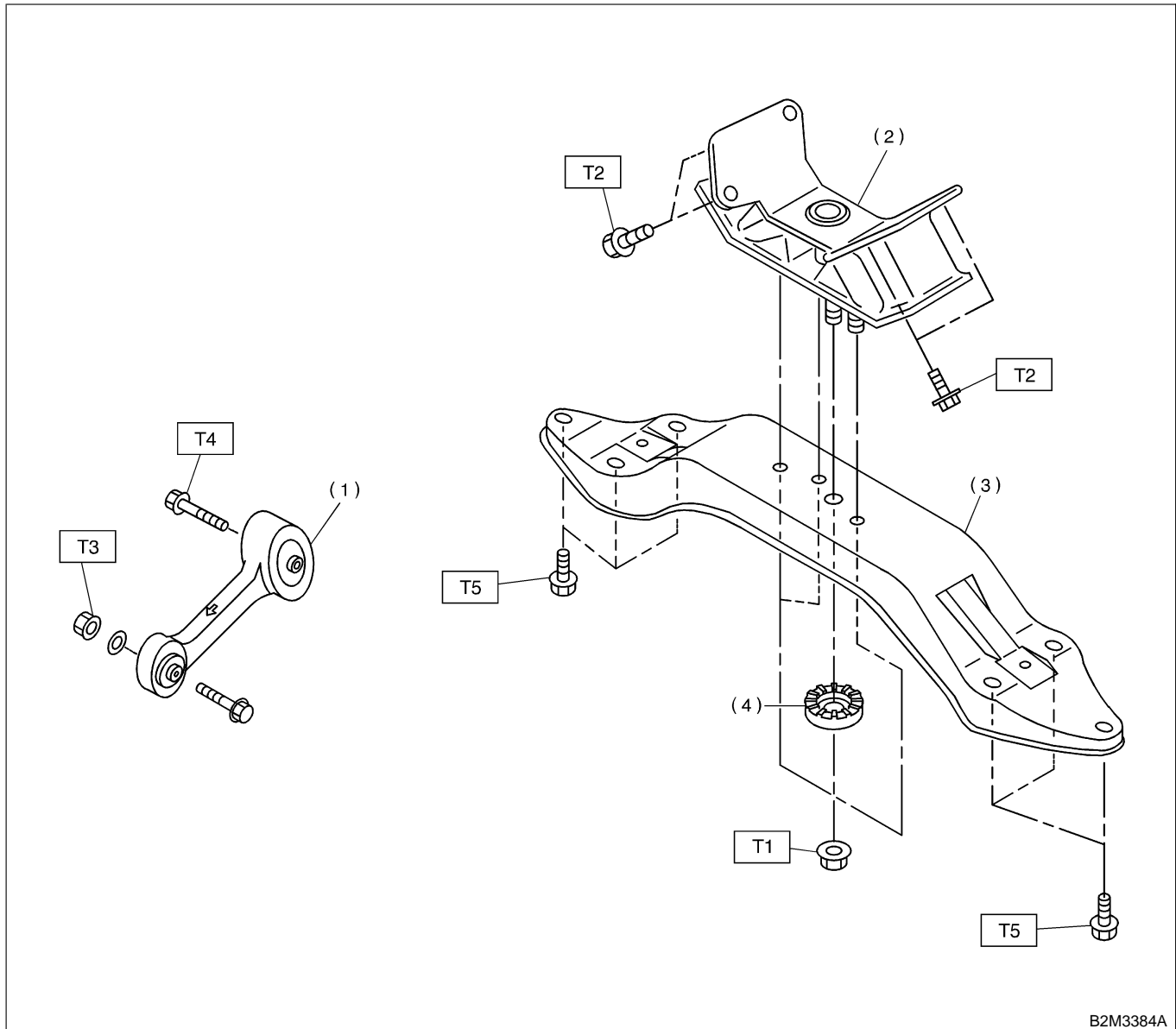
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B: COMPONENT S502001A05

NOTE:

For information about other transmission mounting components, refer to "AUTOMATIC TRANSMISSION" <Pub. No. G0853ZE> a separate publication.

1. TRANSMISSION MOUNTING S502001A0501



- (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: 75 (7.6, 55)

AT-4

C: CAUTION S502001A03

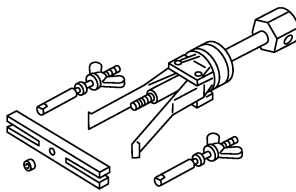
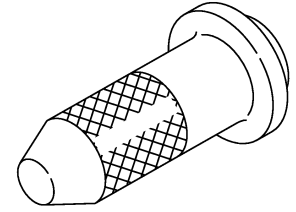
- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation, and disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Until the oil pan is removed, 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 vice, place cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vice.
- Avoid damaging the mating surface of the case.
- Before applying sealant, completely remove the old seal.

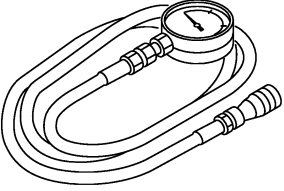
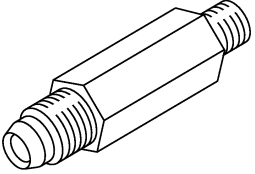
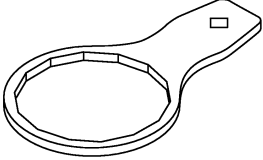
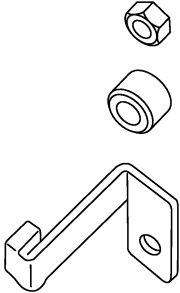
D: PREPARATION TOOL S502001A17

1. SPECIAL TOOLS S502001A1701

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.

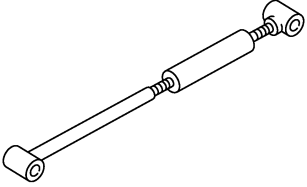
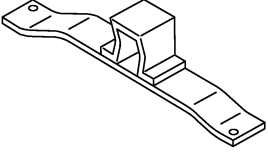
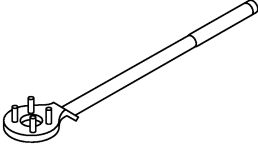
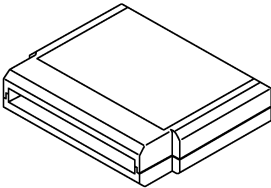
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B3M2040</p>	498575400	OIL PRESSURE GAUGE ASSY	Used for measuring oil pressure.
 <p style="text-align: center;">B3M2041</p>	498897200	ADAPTER	Used oil pump housing when measuring reverse clutch pressure and line pressure.
 <p style="text-align: center;">B3M2042</p>	498545400	FILTER WRENCH	Used for removing and installing ATF filter.
 <p style="text-align: center;">B3M2043</p>	498277200	STOPPER SET	Used for installing automatic transmission assembly to engine.


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 <p style="text-align: center;">B3M1976</p>	41099AA020	ENGINE SUPPORT	Used for supporting engine.
 <p style="text-align: center;">B3M1975</p>	41099AA010	ENGINE SUPPORT BRACKET	Used for supporting engine.
 <p style="text-align: center;">B2M3870</p>	499977100	CRANK PULLEY WRENCH	Used for stopping rotating of crankshaft pulley when loosening and tightening crankshaft pulley bolts.
 <p style="text-align: center;">B2M3876</p>	24082AA150	CARTRIDGE	Troubleshooting for electrical systems.

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: right; margin-right: 10px;">B2M3877</p>	22771AA030	SELECT MONITOR KIT	Troubleshooting for electrical systems. <ul style="list-style-type: none"> ● English: 22771AA030 (Without printer) ● German: 22771AA070 (Without printer) ● French: 22771AA080 (Without printer) ● Spanish: 22771AA090 (Without printer)

2. GENERAL PURPOSE TOOLS S502001A1702

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance, voltage and ampere.