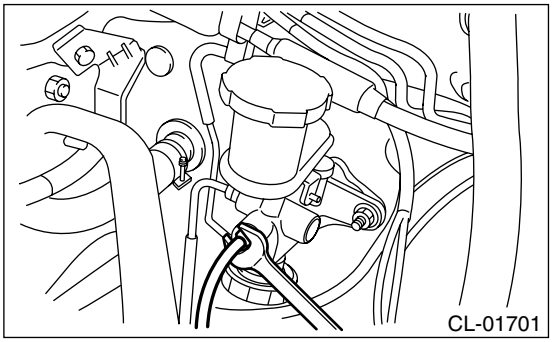
9. Clutch Fluid Air Bleeding

A: PROCEDURE

1. NON-TURBO MODEL

NOTE:
Bleed air from the oil line with help of co-worker.

1) Remove the air cleaner case and air intake duct. (Except U5 model) <Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.> and <Ref. to IN(H4SO)-6, REMOVAL, Air Intake Duct.>
2) Remove the air intake chamber and air intake duct. (U5 model) <Ref. to IN(H4SO U5)-6, REMOVAL, Air Intake Chamber.> and <Ref. to IN(H4SO U5)-7, REMOVAL, Air Intake Duct.>
3) Attach one end of a vinyl tube into the air bleeder of master cylinder and put the other end into a brake fluid container.
4) Slowly depress the clutch pedal and keep it. Then open the air bleeder to discharge air together with the fluid.
Release the air bleeder for 1 or 2 seconds. Next, with the bleeder closed, slowly release the brake pedal.



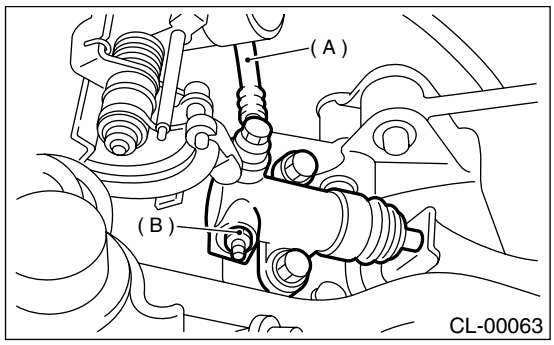
5) Repeat the above steps until there are no more air bubbles in the vinyl tube.

CAUTION:
Cover the bleeder with waste cloth when loosening it, to prevent brake fluid from being splashed over surrounding parts.

6) Tighten the air bleeder.

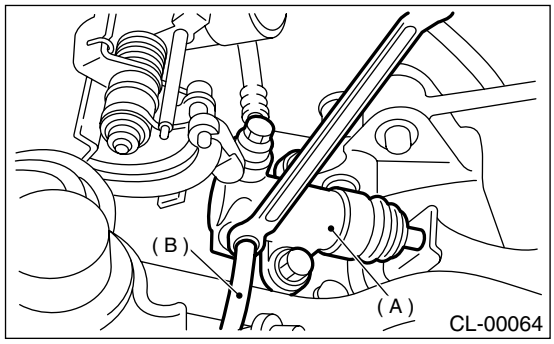
Tightening torque:
8 N·m (0.8 kgf-m, 5.8 ft-lb)

7) Fit one end of a vinyl tube into the air bleeder of operating cylinder and put the other end into a brake fluid container.



(A) Clutch hose
(B) Air bleeder

8) Slowly depress the clutch pedal and keep it depressed. Then open the air bleeder to discharge air together with the fluid.
Release the air bleeder for 1 or 2 seconds. Next, with the bleeder closed, slowly release the clutch pedal.



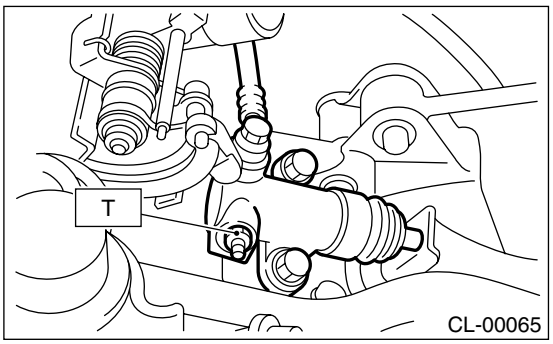
(A) Operating cylinder
(B) Vinyl tube

9) Repeat these steps until there are no more air bubbles in the vinyl tube.

CAUTION:
Cover the bleeder with waste cloth when loosening it, to prevent brake fluid from being splashed over surrounding parts.

10) Tighten the air bleeder.

Tightening torque:
T: 8 N·m (0.8 kgf-m, 5.8 ft-lb)



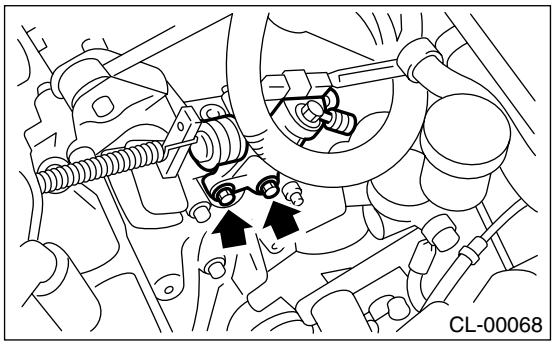
11) After depressing the clutch pedal, make sure that there are no leaks evident in the entire system.
12) After bleeding air from the system, ensure that clutch operates properly.

2. TURBO MODEL

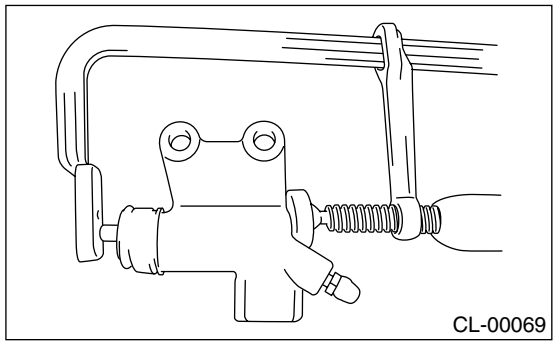
NOTE:
Bleed air from the oil line with help of a co-worker.

1) Remove the intercooler. <Ref. to IN(H4DOTC)-10, REMOVAL, Intercooler.>
2) Remove the operating cylinder.

NOTE:
Do not remove the clutch hose.

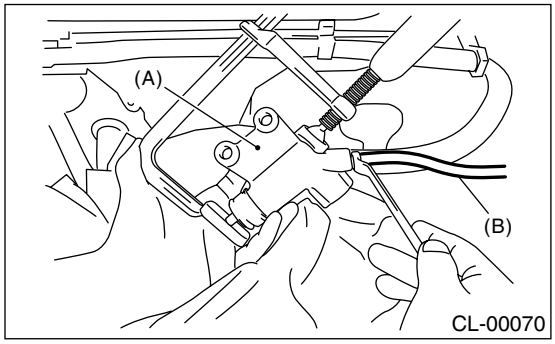


3) Fix the piston with clamp to avoid the piston from jumping out of cylinder.



4) Fit one end of a vinyl tube into the air bleeder of operating cylinder and put the other end into a brake fluid container.
5) Slowly depress the clutch pedal and keep it depressed. Then open the air bleeder to discharge air together with the fluid.
Release the air bleeder for 1 or 2 seconds. Next, with the bleeder closed, slowly release the clutch pedal.

NOTE:
Set the air breather part higher than tip of operating cylinder when performing this procedure.



(A) Operating cylinder
(B) Vinyl tube

6) Repeat these steps until there are no more air bubbles in the vinyl tube.

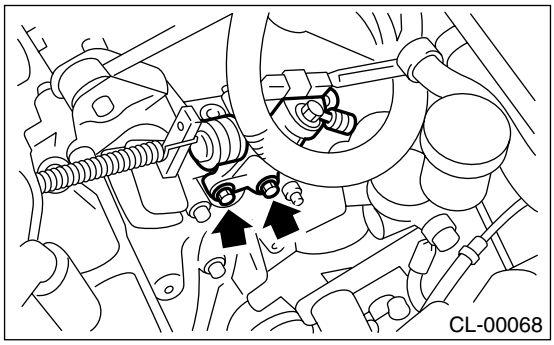
CAUTION:
Cover the bleeder with waste cloth when loosening it, to prevent brake fluid from being splashed over surrounding parts.

7) Tighten the air bleeder.

Tightening torque:
T: 8 N·m (0.8 kgf-m, 5.8 ft-lb)

8) Install the operation clylinder.

Tightening torque:
T: 37 N·m (3.8 kgf-m, 27.5 ft-lb)



9) After depressing the clutch pedal, make sure that there are no leaks evident in the entire system.
10) After bleeding air from the system, ensure that the clutch operates properly.
11) Install the intercooler. <Ref. to IN(H4DOTC)-11, INSTALLATION, Intercooler.>

11.Clutch Switch

A: REMOVAL

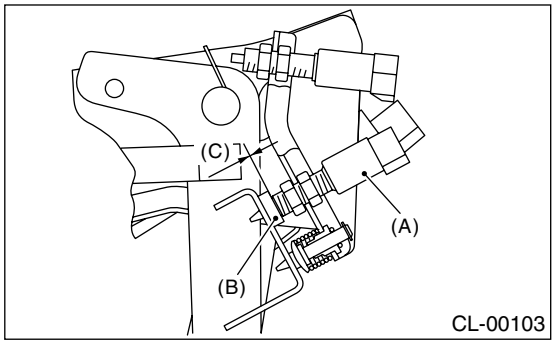
1) Disconnect the ground cable from battery.
2) Remove the instrument panel lower cover.
3) Disconnect the connector from clutch switch.
4) Remove the clutch switch.

B: INSTALLATION

1. CLUTCH SWITCH (WITH CRUISE CONTROL)

1) Install the clutch switch and clutch pedal stopper so that the gap between them is 0 mm (0 in).

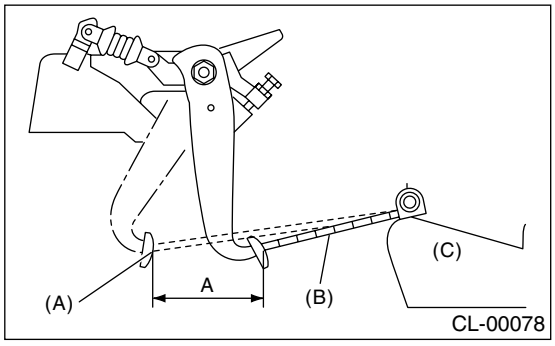
Tightening torque:
8 N·m (0.8 kgf-m, 5.8 ft-lb)



(A) Clutch swsitch
(B) Stopper
(C) 0 mm (0 in)

2) Measure stroke of clutch pedal.

Specified clutch pedal full stroke: A
130 — 135 mm (5.12 — 5.31 in)



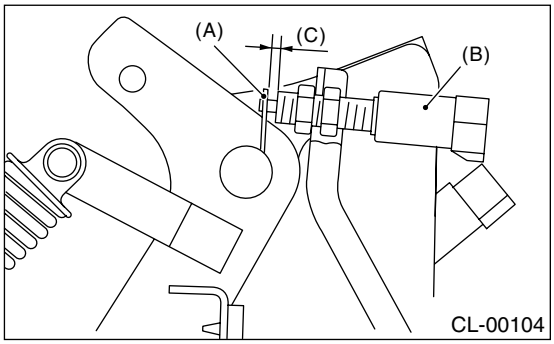
(A) Clutch (Full stroke condition)
(B) Scale
(C) Seat

3) If the clutch pedal stroke is out of specification, adjust the stroke. <Ref. to CL-29, ADJUSTMENT, Clutch Pedal.>
4) Connect clutch switch connector.

2. CLUTCH SWITCH (STARTER INTERLOCK)

1) Fully depress the clutch pedal.
2) Install the clutch pedal plate and clutch pedal so that the gap between them is 3 — 3.5 mm (0.12 — 0.14 in), and then tighten the lock nut.

Tightening torque:
8 N·m (0.8 kgf-m, 13.0 ft-lb)



(A) Plate
(B) Clutch pedal
(C) 3 — 3.5 mm (0.12 — 0.14 in)

3) Connect the clutch switch connector.
4) Confirm that the engine does not start when the clutch pedal is released.
5) Confirm that the engine starts when the clutch pedal is fully depressed.

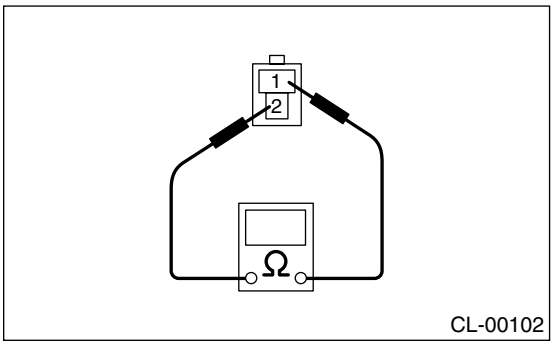
C: INSPECTION

1) Confirm that the engine does not start when the clutch pedal is released. If the engine starts, adjust the clutch switch and inspect the starter interlock circuit.
2) Confirm that the engine starts when the clutch pedal is fully depressed. If the engine does not start, adjust the clutch switch and inspect the starter interlock circuit.
3) Check the clutch switch continuity. If continuity is not as specified, replace the switch.
   (1) Disconnect the clutch switch connector.
   (2) Measure the resistance between 1 and 2 of switch terminal.

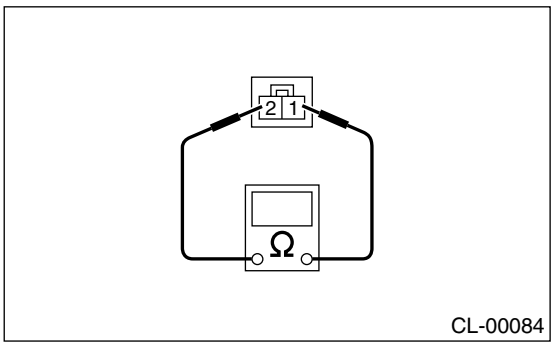
Terminals/Specified resistance
When clutch pedal depressed:
1 — 2/Less than 1 Ω

Terminals/Specified resistance
When clutch pedal not depressed:
1 — 2/More than 1 MΩ

Clutch switch (Starter interlock)

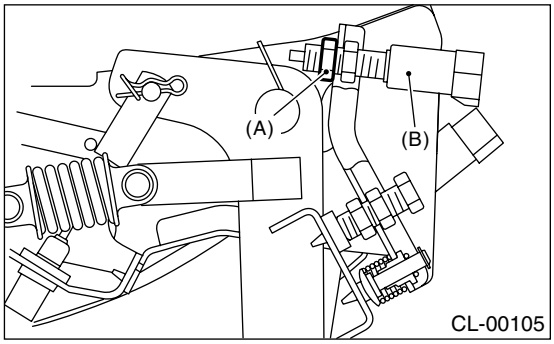


Clutch switch (Cruise control)



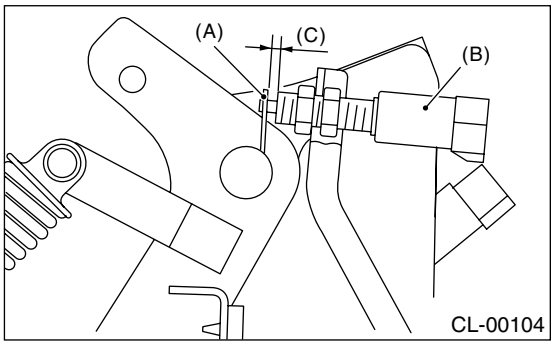
D: ADJUSTMENT

1) Loosen the clutch switch mounting lock nut (Starter interlock).



(A) Lock nut
(B) Clutch switch (Starter interlock)

2) Fully depress the clutch pedal.
3) Adjust the clutch pedal plate and clutch switch so that the gap between them is 3 — 3.5 mm (0.12 — 0.14 in).



(A) Plate
(B) Clutch switch (Starter interlock)
(C) 3 — 3.5 mm (0.12 — 0.14 in)

4) Tighten the lock nut.

Tightening torque (Clutch stopper nut):
8 N·m (0.8 kgf-m, 13.0 ft-lb)

12.General Diagnostic Table

A: INSPECTION

1. CLUTCH

Symptom	Possible cause	Corrective action
1. Clutch slippage. It is hard to perceive clutch slippage in the early stage, but pay attention to the following symptoms • Engine speed up when shifting. • High speed driving is impossible; especially rapid acceleration impossible and vehicle speed does not increase in proportion to an increase in engine speed. • Power falls, particularly when ascending a slope, and there is a smell of burning of the clutch facing. • Method of testing: Put the vehicle in stationary condition with parking brake fully applied. Disengage the clutch and shift the transmission gear into the first. Gradually allow the clutch to engage while gradually increasing the engine speed. The clutch function is satisfactory if the engine stalls. However, the clutch is slipping if the vehicle does not start off and the engine does not stall.	(a) Clutch facing smeared by oil	Replace.
	(b) Worn clutch facing	Replace.
	(c) Deteriorated diaphragm spring	Replace.
	(d) Distorted pressure plate or flywheel	Correct or replace.
	(e) Defective release bearing holder	Correct or replace.
2. Clutch drags. As a symptom of this trouble, a harsh scratching noise develops and control becomes quite difficult when shifting gears. The symptom becomes more apparent when shifting into the first gear. However, because much trouble of this sort is due to defective synchronization mechanism, carry out the test as described after. • Method of testing: <Ref. to CL-35, DIAGNOSTIC DIAGRAM OF CLUTCH DRAG, INSPECTION, General Diagnostic Table.> It may be judged as insufficient disengagement of clutch if any noise occurs during this test.	(a) Worn or rusty clutch disc hub spline	Replace the clutch disc.
	(b) Excessive deflection of clutch disc facing	Replace.
	(c) Malfunction of crankshaft pilot bearing	Replace.
	(d) Cracked clutch disc facing	Replace.
	(e) Sticked clutch disc (smeared by oil or water)	Replace.
3. Clutch chatters. Clutch chattering is an unpleasant vibration to the whole body when the vehicle is just started with clutch partially engaged.	(a) Adhesion of oil on the facing	Replace the clutch disc.
	(b) Weak or broken torsion spring	Replace the clutch disc.
	(c) Defective facing contact or excessive disc worn	Replace the clutch disc defection.
	(d) Warped pressure plate or flywheel	Correct or replace.
	(e) Loose disc rivets	Replace the clutch disc.
	(f) Loose engine mounting	Retighten or replace the mounting.
	(g) Improper adjustment of pitching stopper	Adjustment.
4. Noisy clutch Examine whether the noise is generated when the clutch is disengaged, engaged, or partially engaged.	(a) Broken, worn or unlubricated release bearing	Replace the release bearing.
	(b) Insufficient lubrication of pilot bearing	Replace the clutch disc.
	(c) Loose clutch disc hub	Replace the clutch disc.
	(d) Loose torsion spring retainer	Replace the clutch disc.
	(e) Deteriorated or broken torsion spring	Replace the clutch disc.

Symptom	Possible cause	Corrective action
5. Clutch grabs. When starting the vehicle with the clutch partially engaged, the clutch engages suddenly and the vehicle jumps instead of making a smooth start.	(a) Grease or oil on facing	Replace the clutch disc.
	(b) Deteriorated cushioning spring	Replace the clutch disc.
	(c) Worn or rusted spline of clutch disc or main shaft	Take off rust, apply grease or replace the clutch disc or main shaft.
	(d) Deteriorated or broken torsion spring	Replace the clutch disc.
	(e) Loose engine mounting	Retighten or replace the mounting.
	(f) Deteriorated diaphragm spring	Replace.

2. CLUTCH PEDAL

Trouble	Corrective action
Insufficient pedal play	Adjust pedal play.
Clutch pedal free play insufficient	Adjust pedal free play.
Excessively worn and damaged pedal shaft and/or bushing	Replace the bushing and/or shaft with a new one.

3. DIAGNOSTIC DIAGRAM OF CLUTCH DRAG

	Step	Check	Yes	No
1	**CHECK GEAR NOISE.** 1) Start the engine. 2) Disengage the clutch and shift quickly from neutral to reverse in idling condition.	Is there any abnormal noise from the transmission gear?	Go to step **2.**	Clutch is normal.
2	**CHECK GEAR NOISE.** Disengage the clutch at idle and shift from neutral to reverse within 0.5 — 1.0 seconds.	Is there any abnormal noise from the transmission gear?	Go to step **3.**	Defective transmission or excessive clutch drag torque. Inspect the pilot bearing, clutch disc, transmission and clutch disc hub spline.
3	**CHECK GEAR NOISE.** 1) Disengage the clutch at idle and shift from neutral to reverse within 0.5 — 1.0 seconds. 2) With the clutch disengaged, shift from N to R, R to N several times.	Is there any abnormal noise from the transmission gear?	Defect in clutch disengaging. Inspect the clutch disc, clutch cover, clutch release, and clutch pedal free play.	Clutch and flywheel seizure. Inspect the clutch disc, spline of clutch disc hub.

MEMO:

1. General Description

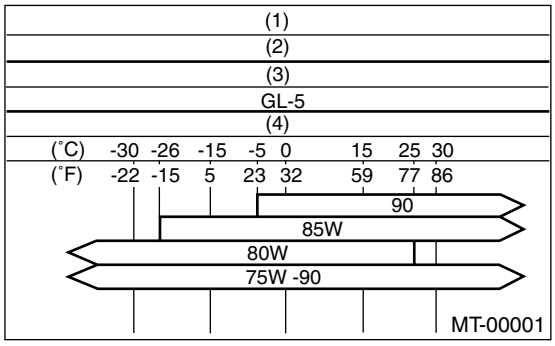
A: SPECIFICATIONS

1. Manual Transmission and Differential

Item Type			Model			
			L, L-S	GT, GTLO	OUTBACK, BAJA (Non-TURBO model)	BAJA (TURBO model)
Type			5-forward speeds with synchromesh and 1 reverse			
Transmission gear ratio		1st	3.454			
		2nd	2.062			1.947
		3rd	1.448			1.366
		4th	1.088			0.972
		5th	0.780		0.871	0.738
		Reverse	3.333			
Front reduction gear	Final	Type of gear	Hypoid			
		Gear ratio	3.900	4.111		4.444
Rear reduction gear	Transfer	Type of gear	Helical			
		Gear ratio	1.000			
	Final	Type of gear	Hypoid			
		Gear ratio	3.900	4.111		4.444
Front differential	Type and number of gear		Straight bevel gear (Bevel pinion: 2, Bevel gear: 2)			
Center differential	Type and number of gear		Straight bevel gear (Bevel pinion: 2, Bevel gear: 2 and viscous coupling)			
Transmission gear oil			GL-5			
Transmission gear oil capacity			3.5 ℓ (3.7 US qt, 3.1 Imp qt)			

2. TRANSMISSION GEAR OIL

Recommended oil



(1) Item
(2) Transmission gear oil
(3) API classification
(4) SAE viscosity No. and applicable temperature

3. TRANSMISSION CASE ASSEMBLY

Drive pinion shim adjustment
Hypoid gear backlash
0.13 — 0.18 mm (0.0051 — 0.0071 in)

Drive pinion shim			
Part No.	Thickness mm (in)	Part No.	Thickness mm (in)
32295AA031	0.150 (0.0059)	32295AA071	0.250 (0.0098)
32295AA041	0.175 (0.0069)	32295AA081	0.275 (0.0108)
32295AA051	0.200 (0.0079)	32295AA091	0.300 (0.0118)
32295AA061	0.225 (0.0089)	32295AA101	0.500 (0.0197)

Selection of main shaft rear plate

Main shaft rear plate		
Dimension “A” mm (in)	Part No.	Mark
4.00 — 4.13 (0.1575 — 0.1626)	32294AA041	1
3.87 — 3.99 (0.1524 — 0.1571)	32294AA051	2

4. DRIVE PINION ASSEMBLY

Preload adjustment of thrust bearing
Starting torque
0.3 — 0.8 N·m (0.03 — 0.08 kgf-m, 0.2 — 0.6 ft-lb)

Adjusting washer No. 1	
Part No.	Thickness mm (in)
803025051	3.925 (0.1545)
803025052	3.950 (0.1555)
803025053	3.975 (0.1565)
803025054	4.000 (0.1575)
803025055	4.025 (0.1585)
803025056	4.050 (0.1594)
803025057	4.075 (0.1604)

Adjusting washer No. 2	
Part No.	Thickness mm (in)
803025059	3.850 (0.1516)
803025054	4.000 (0.1575)
803025058	4.150 (0.1634)

5. MAIN SHAFT

Snap ring (Outer-25) to synchronizer hub clearance
0.060 — 0.100 mm (0.0024 — 0.0039 in)

Snap ring (Outer-25)			
Part No.	Thickness mm (in)	Part No.	Thickness mm (in)
805025051	2.42 (0.0953)	805025055	2.62 (0.1031)
805025052	2.47 (0.0972)	805025056	2.67 (0.1051)
805025053	2.52 (0.0992)	805025057	2.72 (0.1071)
805025054	2.57 (0.1012)	805025058	2.37 (0.0933)

6. REVERSE IDLER GEAR

Adjustment of reverse idler gear position
Reverse idler gear to transmission case (LH) wall clearance
6.0 — 7.5 mm (0.236 — 0.295 in)

Reverse shifter lever		
Part No.	Mark	Remarks
32820AA070	7	Further from case wall
32820AA080	8	Standard
32820AA090	9	Closer to the case wall

After installing a suitable reverse shifter lever, adjust the reverse idler gear to transmission case wall clearance to within 0 to 0.5 mm (0 to 0.020 in) using washers.

Washer (20.5 × 26 × t)			
Part No.	Thickness mm (in)	Part No.	Thickness mm (in)
803020151	0.4 (0.016)	803020154	1.9 (0.075)
803020152	1.1 (0.043)	803020155	2.3 (0.091)
803020153	1.5 (0.059)	—	—

7. SHIFTER FORK AND ROD

Select the suitable shifter forks so that both coupling sleeve and reverse driven gear are positioned in the center of their synchromesh mechanisms.
Rod end clearance
A: 1st-2nd — 3rd-4th
0.4 — 1.4 mm (0.016 — 0.055 in)
B: 3rd-4th — 5th
0.5 — 1.3 mm (0.020 — 0.051 in)

1st-2nd shifter fork		
Part No.	Mark	Remarks
32804AA060	1	Approach to 1st gear by 0.2 mm (0.008 in)
32804AA070	No mark	Standard
32804AA080	3	Approach to 2nd gear by 0.2 mm (0.008 in)

3rd-4th shifter fork		
Part No.	Mark	Remarks
32810AA061	1	Approach to 4th gear by 0.2 mm (0.008 in)
32810AA071	No mark	Standard
32810AA101	3	Approach to 3rd gear by 0.2 mm (0.008 in)

5th shifter fork (Non-TURBO model)		
Part No.	Mark	Remarks
32812AA201	7	Approach to 5th gear by 0.2 mm (0.008 in)
32812AA211	No mark	Standard
32812AA221	9	Become distant from 5th gear by 0.2 mm (0.008 in)

5th shifter fork (Turbo model)		
Part No.	Mark	Remarks
32812AA231	7	Approach to 5th gear by 0.2 mm (0.008 in)
32812AA241	No mark	Standard
32812AA251	9	Become distant from 5th gear by 0.2 mm (0.008 in)

8. TRANSFER CASE OR REAR CASE

Neutral position adjustment

Adjustment shim	
Part No.	Thickness mm (in)
32190AA000	0.15 (0.0059)
32190AA010	0.30 (0.0118)

Reverse accent shaft		
Part No.	Mark	Remarks
32188AA090	3	Neutral position is closer to 1st.
32188AA100	0	Standard
32188AA110	1	Neutral position is closer to reverse gear.

Reverse check plate adjustment

Reverse check plate			
Part No.	Mark	Angle θ	Remarks
32189AA000	0	28°	Arm stops closer to 5th gear.
32189AA010	1	31°	Arm stops closer to 5th gear.
33189AA020	2	34°	Arm stops in the center.
32189AA030	3	37°	Arm stops closer to reverse gear.
32189AA040	4	40°	Arm stops closer to reverse gear.

9. EXTENSION ASSEMBLY

Thrust washer (50 × 61 × t) to taper roller bearing table outer race side clearance
0.2 — 0.3 mm (0.0008 — 0.012 in)

NOTE:
Be sure to keep the clearance within specifications.

Thrust washer (50 × 61 × t)	
Part No.	Thickness mm (in)
803050060	0.50 (0.0197)
803050061	0.55 (0.0217)
803050062	0.60 (0.0236)
803050063	0.65 (0.0256)
803050064	0.70 (0.0276)
803050065	0.75 (0.0295)
803050066	0.80 (0.0315)
803050067	0.85 (0.0335)
803050068	0.90 (0.0354)
803050069	0.95 (0.0374)
803050070	1.00 (0.0394)
803050071	1.05 (0.0413)
803050072	1.10 (0.0433)
803050073	1.15 (0.0453)
803050074	1.20 (0.0472)
803050075	1.25 (0.0492)
803050076	1.30 (0.0512)
803050077	1.35 (0.0531)
803050078	1.40 (0.0551)
803050079	1.45 (0.0571)

Thrust washer to center differential side clearance
0.15 — 0.35 mm (0.0059 — 0.0138 in)

Thrust washer	
Part No.	Thickness mm (in)
803036050	0.9 (0.035)
803036054	1.0 (0.039)
803036051	1.1 (0.043)
803036055	1.2 (0.047)
803036052	1.3 (0.051)
803036056	1.4 (0.055)
803036053	1.5 (0.059)
803036057	1.6 (0.063)
803036058	1.7 (0.067)

10.FRONT DIFFERENTIAL

Bevel gear to pinion backlash
0.13 — 0.18 mm (0.0051 — 0.0071 in)

Washer (38.1 × 50 × t)			
Part No.	Thickness mm (in)	Part No.	Thickness mm (in)
803038021	0.925 — 0.950 (0.0364 — 0.0374)	803038023	1.025 — 1.050 (0.0404 — 0.0413)
803038022	0.975 — 1.000 (0.0384 — 0.0394)	—	—

Pinion shaft to axle drive shaft clearance
0 — 0.2 mm (0 — 0.008 in)

Snap ring (Outer-28)			
Part No.	Thickness mm (in)	Part No.	Thickness mm (in)
805028011	1.05 (0.0413)	805028012	1.20 (0.0472)

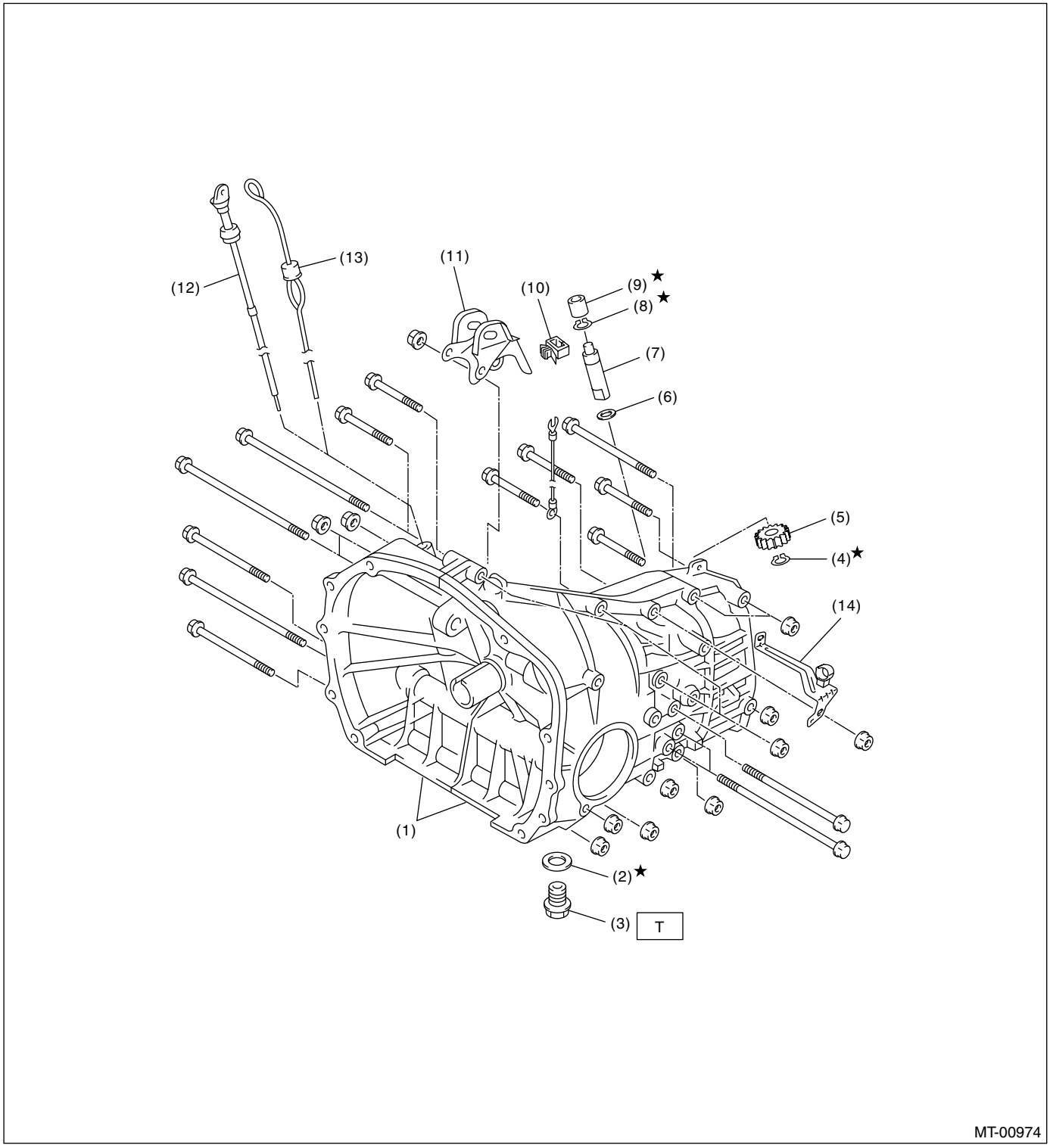
11.TRANSFER DRIVE GEAR

Snap ring (Outer-30) to ball bearing clearance
0.01 — 0.15 mm (0.0004 — 0.0059 in)

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

B: COMPONENT

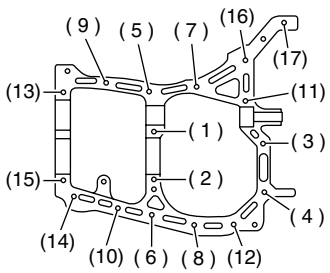
1. TRANSMISSION CASE



(1) Transmission case ASSY
(2) Gasket
(3) Drain plug
(4) Snap ring (Outer)
(5) Speedometer driven gear
(6) Washer
(7) Speedometer shaft
(8) Snap ring (Outer)
(9) Oil seal
(10) Clamp
(11) Pitching stopper bracket
(12) Oil level gauge (Non-TURBO model)
(13) Oil level gauge (Turbo model)
(14) Harness bracket (Non-TURBO model)

Tightening torque: N·m (kgf-m, ft-lb)
T: 70 (7.1, 51)

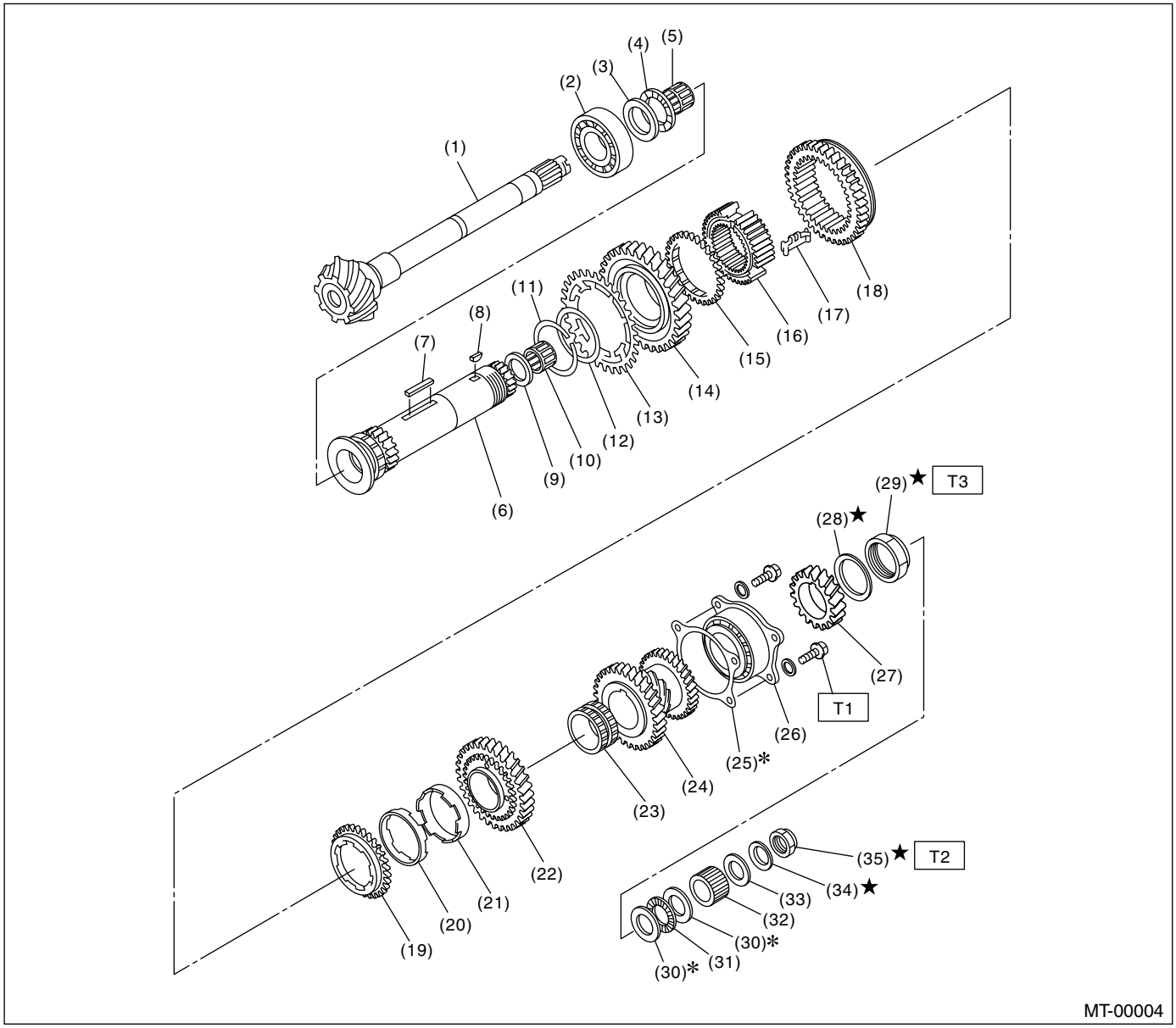
• Transmission case tightening torque



MT-00003

Bolt No.	Bolt size	Tightening torque: N·m (kgf-m, ft-lb)
<5> to <15>	8 mm	25 (2.5, 18.1)
<1> to <4> <16>, <17>	10 mm	39 (4.0, 28.9)

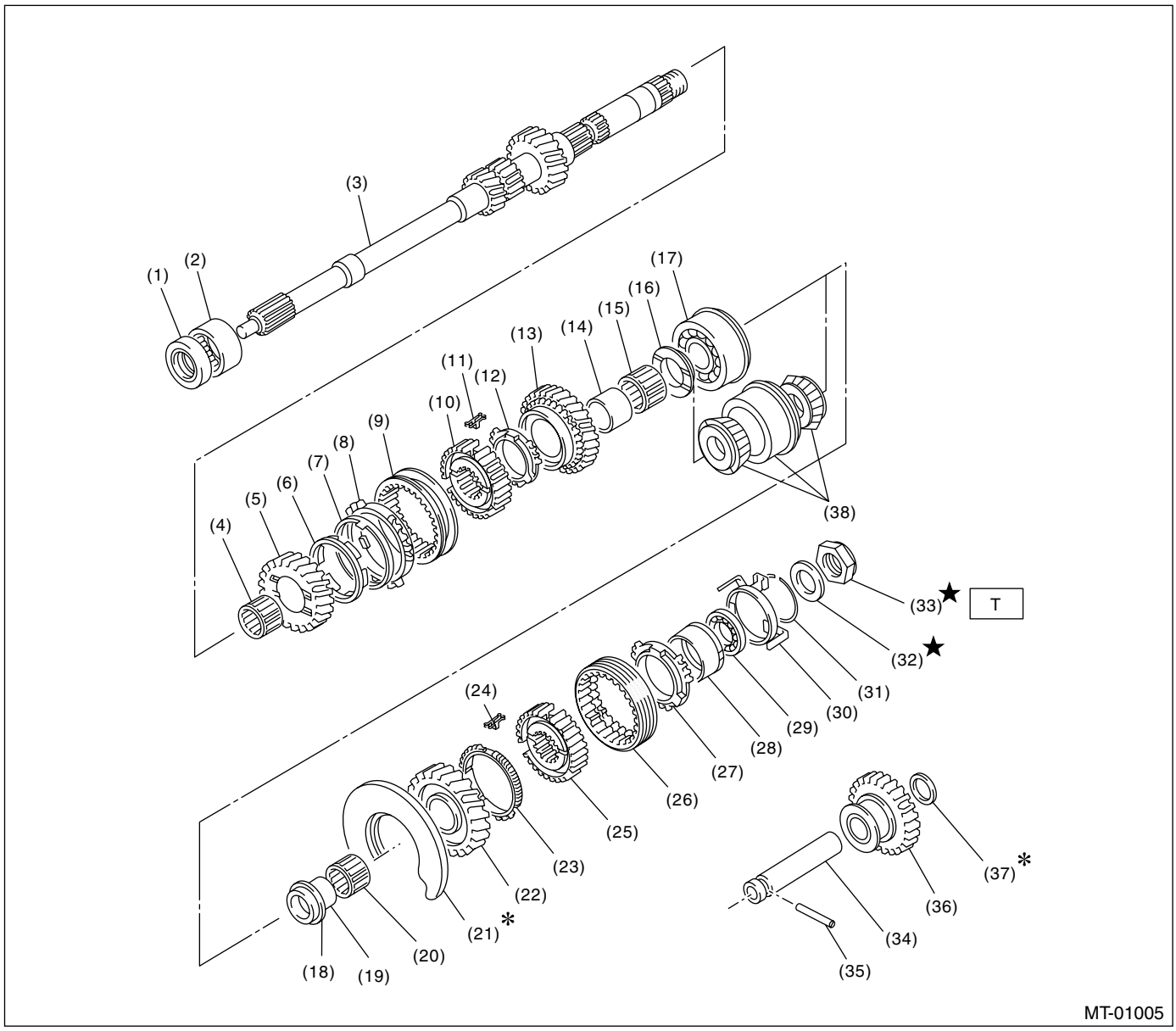
2. DRIVE PINION ASSEMBLY



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

Tightening torque: N·m (kgf-m, ft-lb)
T1: 30 (3.1, 22.4)
T2: 120 (12.2, 88.5)
T3: 260 (26.5, 191.7)

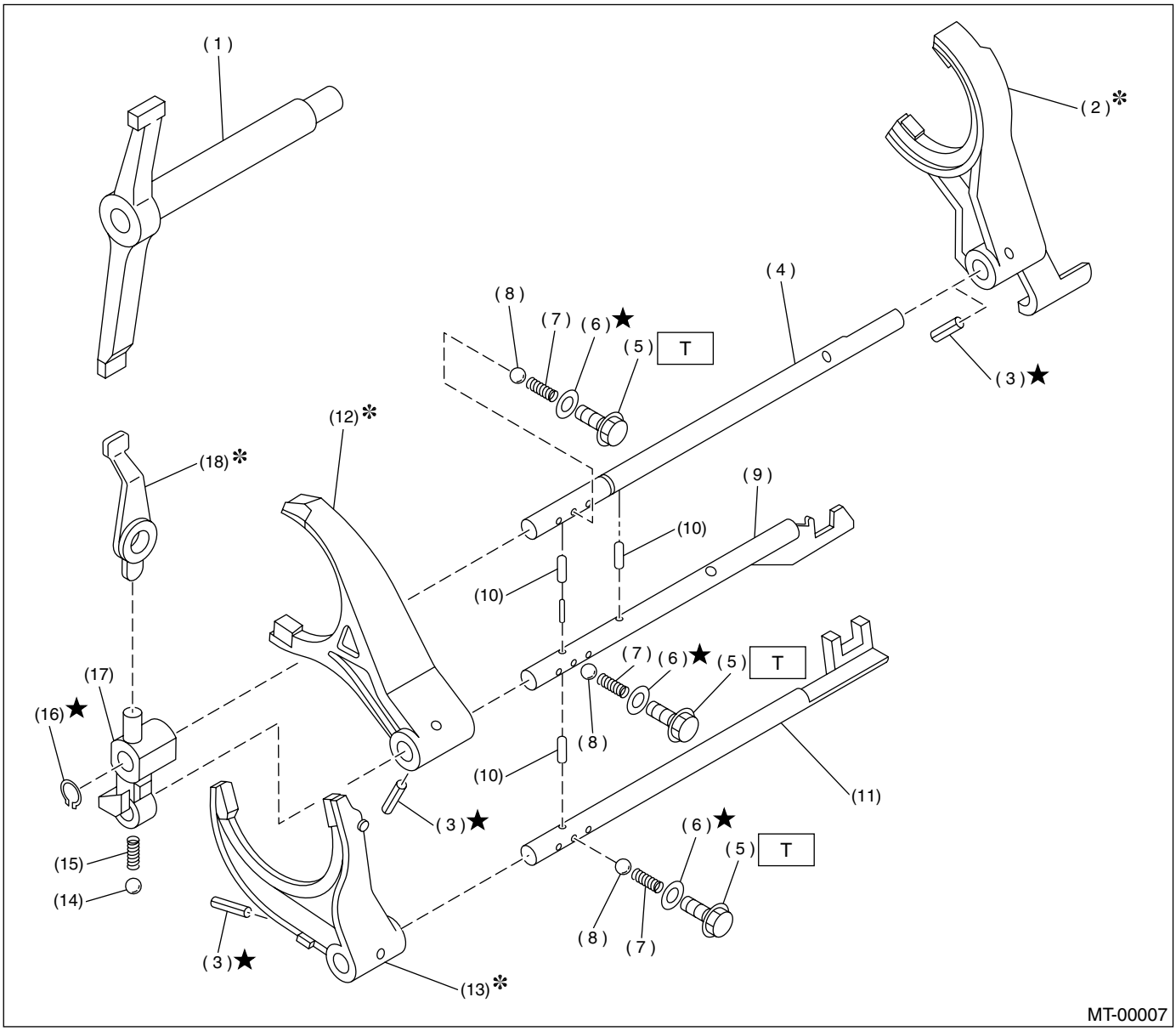
3. MAIN SHAFT ASSEMBLY



(1) Oil seal
(2) Needle bearing
(3) Transmission main shaft
(4) Needle bearing
(5) 3rd drive gear
(6) Inner baulk ring
(7) 3rd synchro cone
(8) Outer baulk ring
(9) 3rd-4th coupling sleeve
(10) 3rd-4th synchronizer hub
(11) 3rd-4th shifting insert key
(12) 4th baulk ring
(13) 4th drive gear
(14) 4th needle bearing race
(15) Needle bearing
(16) 4th gear thrust washer
(17) Ball bearing (Non-TURBO model)
(18) 5th gear thrust washer (Non-TURBO model)
(19) 5th needle bearing race
(20) Needle bearing
(21) Main shaft rear plate
(22) 5th drive gear
(23) 5th baulk ring
(24) 5th-Rev shifting insert key
(25) 5th-Rev synchronizer hub
(26) 5th-Rev coupling sleeve
(27) Rev baulk ring
(28) Rev synchro cone
(29) Ball bearing
(30) Synchro cone stopper
(31) Snap ring
(32) Lock washer
(33) Lock nut
(34) Reverse idler gear shaft
(35) Straight pin
(36) Reverse idler gear
(37) Washer
(38) Taper roller bearing (Turbo model)

Tightening torque: N·m (kgf-m, ft-lb)
T: 120 (12.2, 88.5)

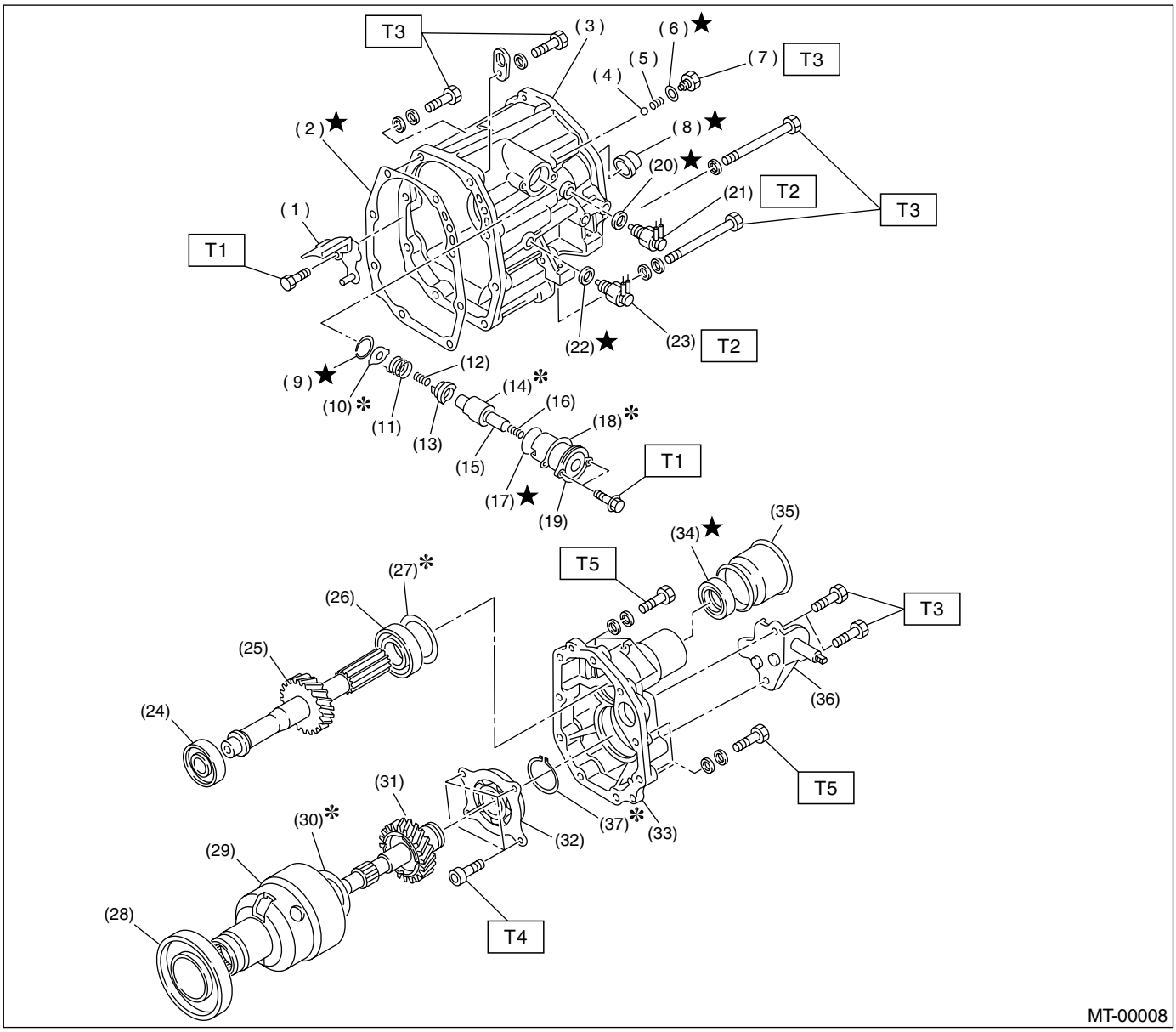
4. SHIFTER FORK AND SHIFTER ROD



(1) Shifter arm
(2) 5th shifter fork
(3) Straight pin
(4) Reverse fork rod
(5) Checking ball plug
(6) Gasket
(7) Checking ball spring
(8) Ball
(9) 3rd-4th fork rod
(10) Interlock plunger
(11) 1st-2nd fork rod
(12) 3rd-4th shifter fork
(13) 1st-2nd shifter fork
(14) Ball
(15) Spring
(16) Snap ring (Outer)
(17) Reverse fork rod arm
(18) Reverse shifter lever

Tightening torque: N·m (kgf-m, ft-lb)
T: 20 (2.0, 14.4)

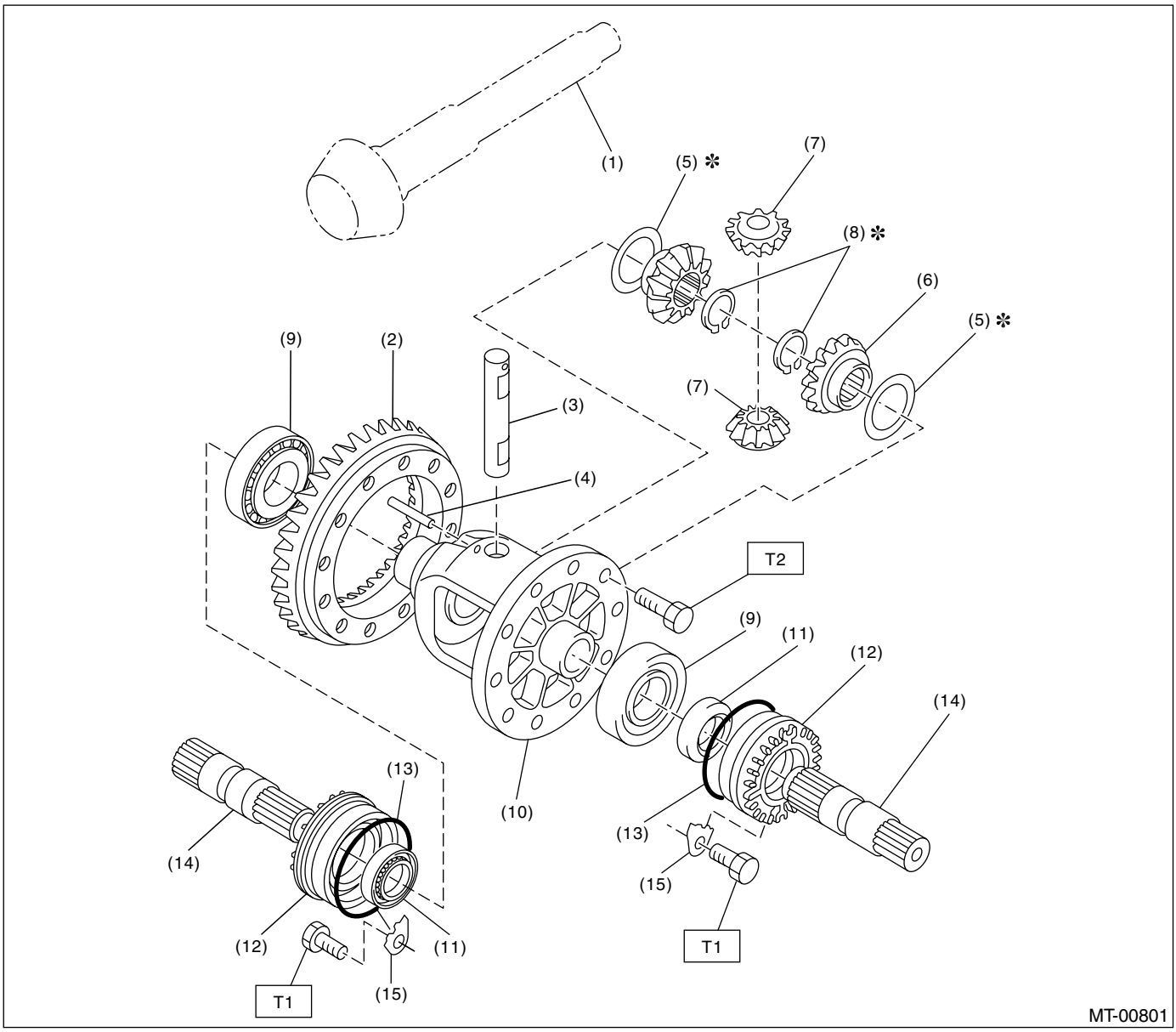
5. TRANSFER CASE AND EXTENSION



(1) Oil guide
(2) Gasket
(3) Transfer case
(4) Ball
(5) Reverse accent spring
(6) Gasket
(7) Plug
(8) Oil seal
(9) Snap ring (Inner)
(10) Reverse check plate
(11) Reverse check spring
(12) Reverse return spring
(13) Reverse check cam
(14) Reverse accent shaft
(15) Return spring cap
(16) Return spring
(17) O-ring
(18) Adjusting select shim
(19) Reverse check sleeve
(20) Gasket
(21) Neutral switch
(22) Gasket
(23) Back-up light switch
(24) Roller bearing
(25) Transfer driven gear
(26) Roller bearing
(27) Adjusting washer
(28) Ball bearing
(29) Center differential
(30) Adjusting washer
(31) Transfer drive gear
(32) Ball bearing
(33) Extension case
(34) Oil seal
(35) Dust cover
(36) Shift bracket
(37) Snap ring

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 9.75 (1.0, 7.2)
T3: 24.5 (2.5, 18.1)
T4: 26 (2.7, 20)
T5: 40 (4.1, 29.7)

6. FRONT DIFFERENTIAL

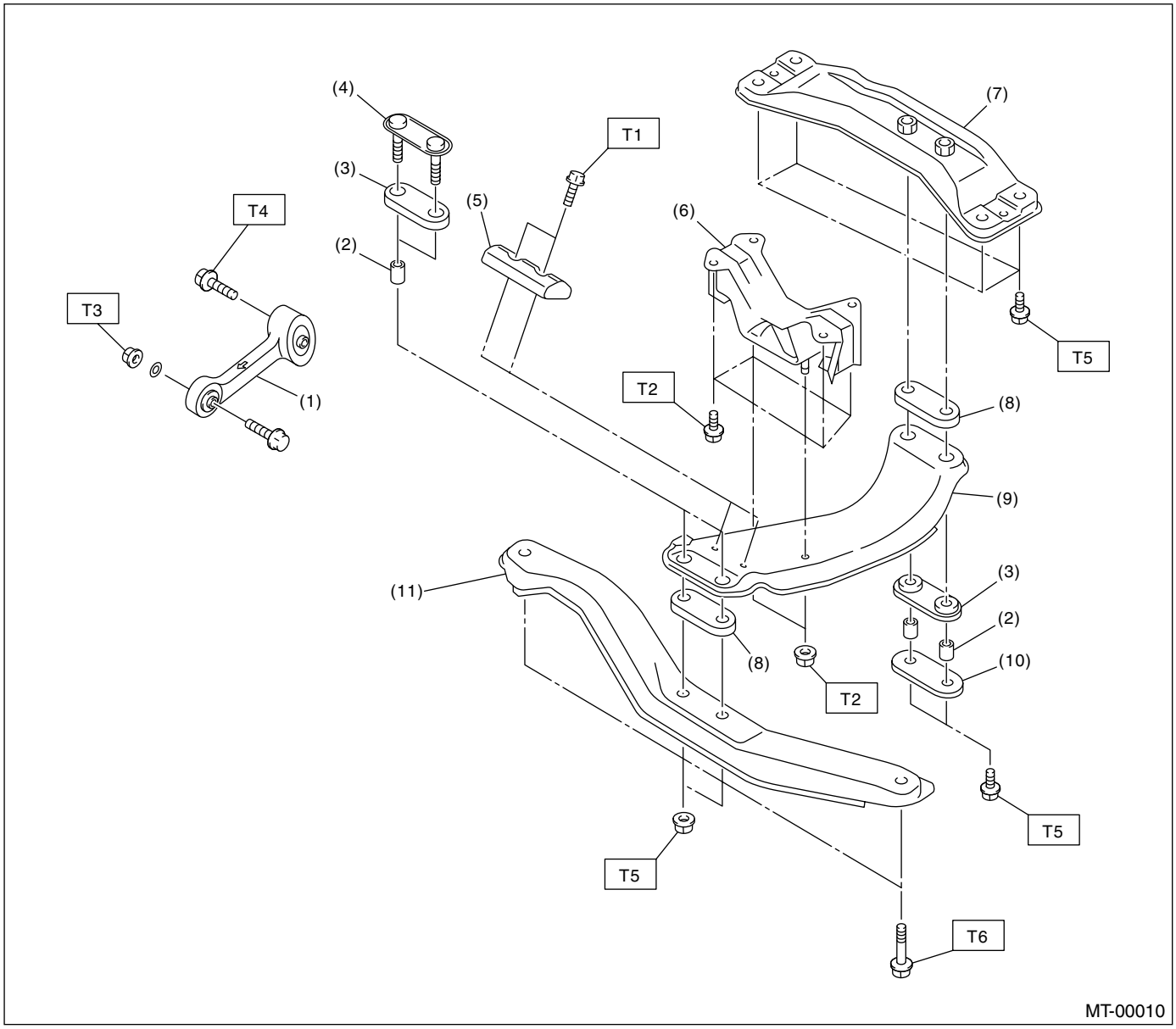


(1) Drive pinion shaft
(2) Hypoid driven gear
(3) Pinion shaft
(4) Straight pin
(5) Washer
(6) Differential bevel gear
(7) Differential bevel pinion
(8) Snap ring (Non-TURBO model)
(9) Roller bearing
(10) Differential case
(11) Oil seal
(12) Differential side retainer
(13) O-ring
(14) Axle drive shaft (Non-TURBO model)
(15) Retainer lock plate

Tightening torque: N·m (kgf-m, ft-lb)
T1: 25 (2.5, 18.1)
T2: 62 (6.3, 45.6)

7. TRANSMISSION MOUNTING

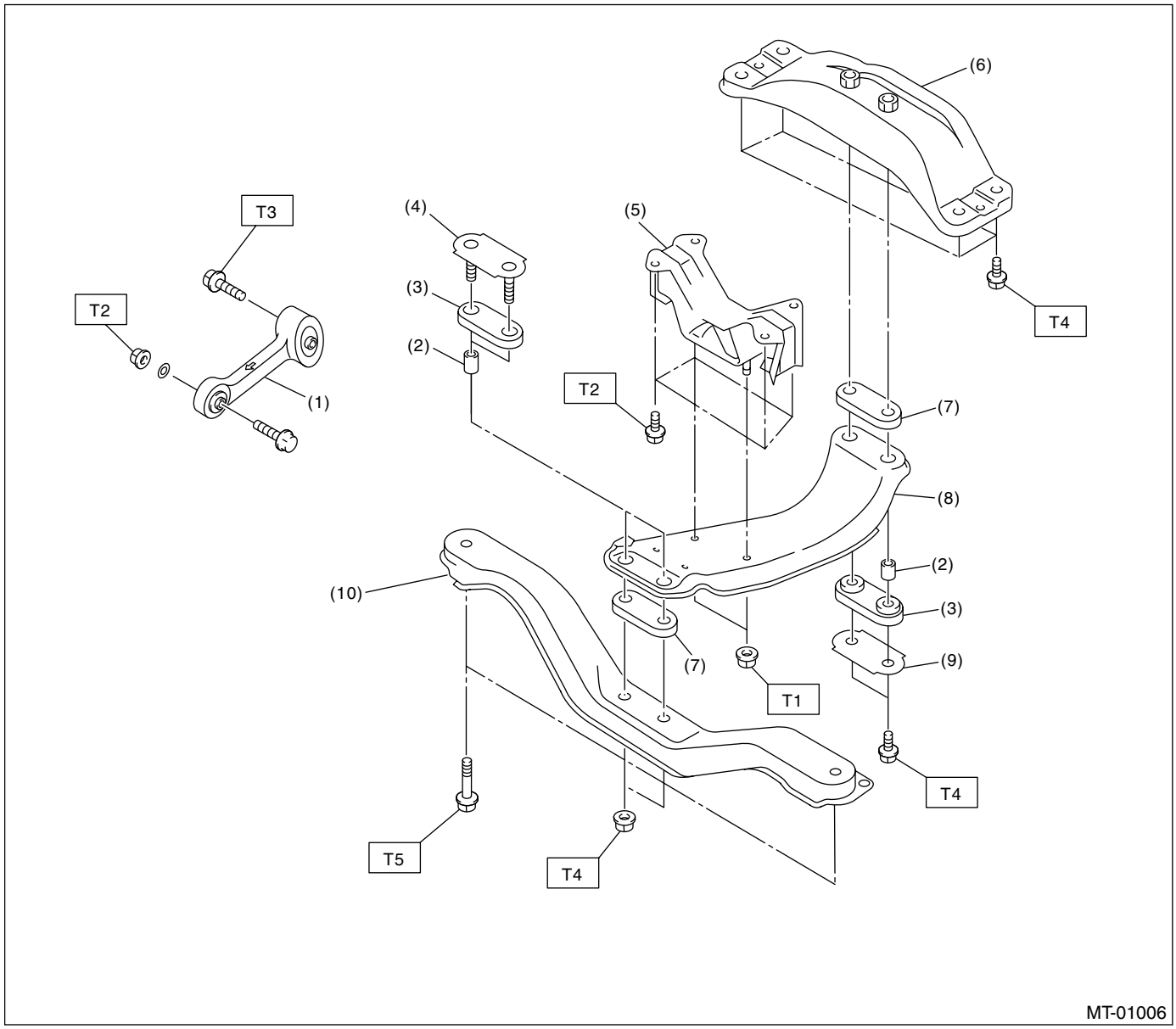
• Except U5 model



(1) Pitching stopper
(2) Spacer
(3) Cushion C
(4) Front plate
(5) Dynamic damper (Outback model)
(6) Rear cushion rubber
(7) Rear crossmember
(8) Cushion D
(9) Center crossmember
(10) Rear plate
(11) Front crossmember

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 35 (3.6, 26)
T3: 50 (5.1, 37)
T4: 58 (5.9, 43)
T5: 70 (7.1, 51)
T6: 140 (14.3, 103)

• U5 model



(1) Pitching stopper
(2) Spacer
(3) Cushion C
(4) Front plate
(5) Rear cushion rubber
(6) Rear crossmember
(7) Cushion D
(8) Center crossmember
(9) Rear plate
(10) Front crossmember

Tightening torque: N·m (kgf-m, ft-lb)
T1: 35 (3.6, 26)
T2: 50 (5.1, 37)
T3: 58 (5.9, 43)
T4: 70 (7.1, 51)
T5: 140 (14.3, 103)

C: CAUTION

• 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.
• 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 gear oil to avoid damage and deformation.
• Be careful not to incorrectly install or fail to install O-rings, snap rings and other such parts.
• Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vise.
• Avoid damaging the mating surface of the case.
• Before applying sealant, completely remove the old seal.

D: PREPARATION TOOL

1. SPECIAL TOOLS

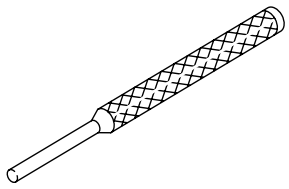
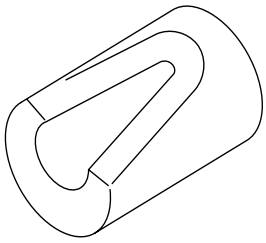
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398791700	398791700	REMOVER	Used for removing and installing spring pin (6 mm).
 ST-399411700	399411700	ACCENT BALL INSTALLER	Used for installing reverse shifter rail arm.

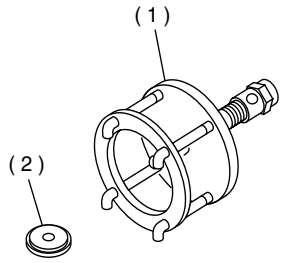
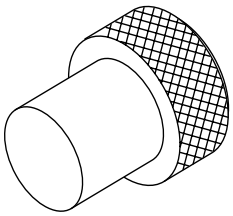
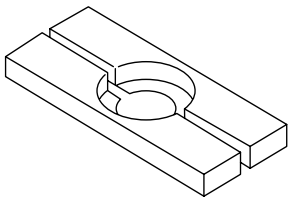
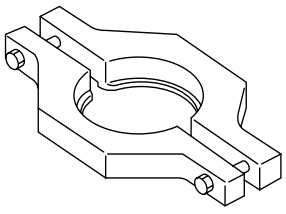
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-899524100	899524100	PULLER SET	Used for removing and installing roller bearing (Differential). (1) PULLER (2) CAP
 ST-399780104	399780104	WEIGHT	Used for measuring preload on roller bearing.
 ST-498077000	498077000	REMOVER	Used for removing roller bearing of drive pinion shaft.
 ST-498077300	498077300	CENTER DIFFERENTIAL BEARING REMOVER	Used for removing the center differential cover ball bearing.

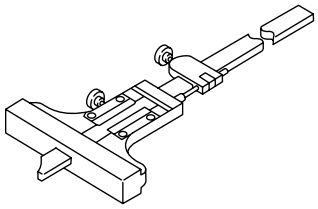
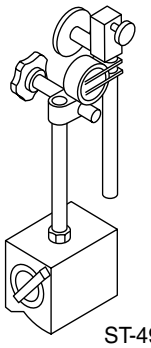
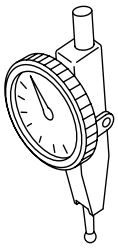
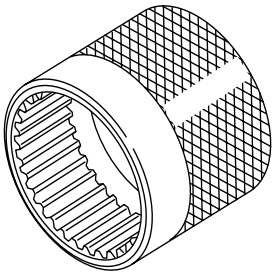
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-498147000	498147000	DEPTH GAUGE	Used for adjusting main shaft axial end play.
 ST-498247001	498247001	MAGNET BASE	• Used for measuring backlash between side gear and pinion, and hypoid gear. • Used with DIAL GAUGE (498247100).
 ST-498247100	498247100	DIAL GAUGE	• Used for measuring backlash between side gear and pinion, and hypoid gear. • Used with MAGNET BASE (498247001).
 ST-498427100	498427100	STOPPER	Used for securing the drive pinion shaft assembly and driven gear assembly when removing the drive pinion shaft assembly lock nut.

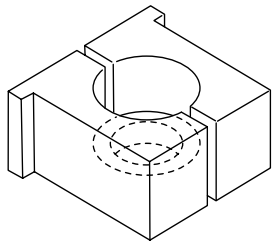
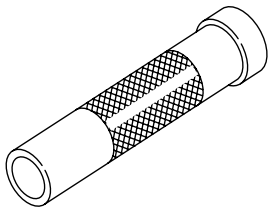
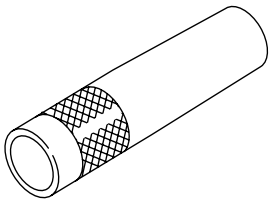
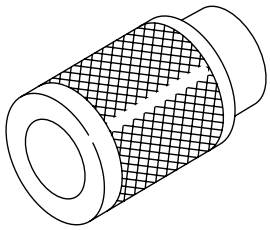
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-498937000	498937000	TRANSMISSION HOLDER	Used for removing and installing transmission main shaft lock nut.
 ST-499277100	499277100	BUSH 1-2 INSTALLER	• Used for installing 1st driven gear thrust plate and 1st-2nd driven gear bush. • Used for installing roller bearing outer races to differential case.
 ST-499277200	499277200	INSTALLER	Used for press-fitting the 2nd driven gear, roller bearings and 5th driven gear onto the driven shaft.
 ST-499757002	499757002	INSTALLER	• Used for installing snap ring (OUT 25) and ball bearing ($25 \times 26 \times 17$). • Used for installing bearing cone of transfer driven gear (extension core side).

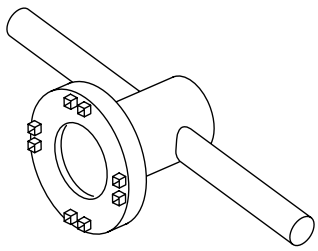
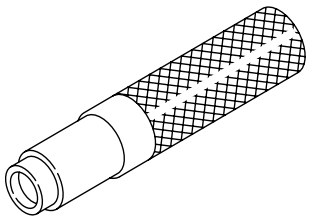
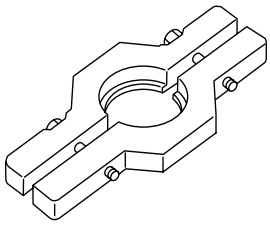
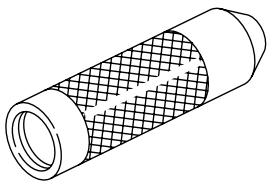
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499787000	499787000	WRENCH ASSY	Used for removing and installing differential side retainer.
 ST-499827000	499827000	PRESS	Used for installing speedometer oil seal when installing speedometer cable to transmission.
 ST-499857000	499857000	5TH DRIVEN GEAR REMOVER	Used for removing 5th driven gear.
 ST-499877000	499877000	RACE 4-5 INSTALLER	• Used for installing 4th needle bearing race and ball bearing onto transmission main shaft. • Used with REMOVER (899714110).

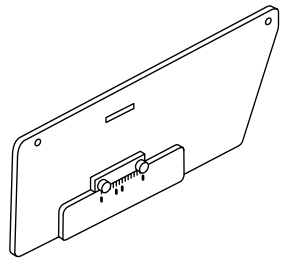
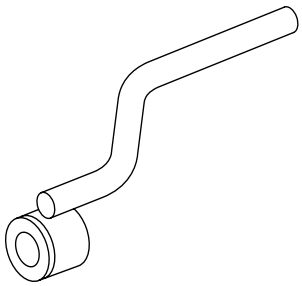
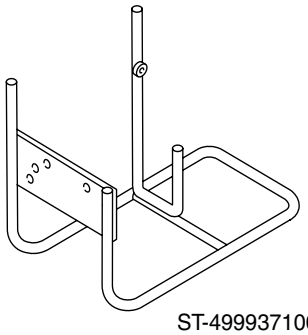
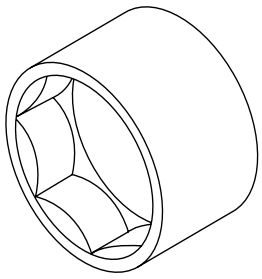
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499917500	499917500	DRIVE PINION GAUGE ASSY	Used for adjusting drive pinion shim.
 ST-499927100	499927100	HANDLE	Used for fitting transmission main shaft.
 ST-499937100	499937100	TRANSMISSION STAND SET	Stand used for transmission disassembly and assembly.
 ST-499987003	499987003	SOCKET WRENCH (35)	Used for removing and installing driven pinion lock nut and main shaft lock nut.

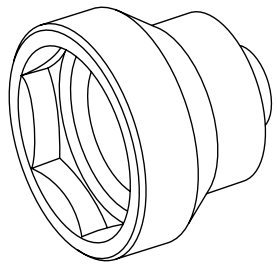
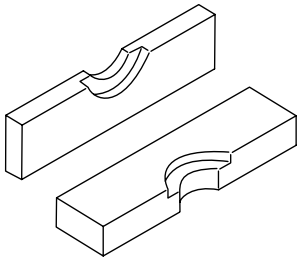
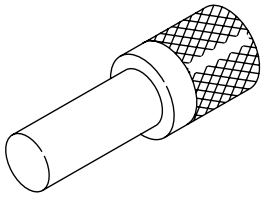
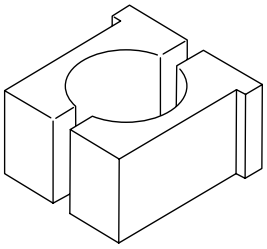
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499987300	499987300	SOCKET WRENCH (50)	Used for removing and installing driven gear assembly lock nut.
 ST-899714110	899714110	REMOVER	Used for fixing transmission main shaft, drive pinion and rear drive shaft.
 ST-899864100	899864100	REMOVER	Used for removing parts on transmission main shaft and drive pinion.
 ST-899884100	899884100	HOLDER	Used for tightening lock nut on sleeve.

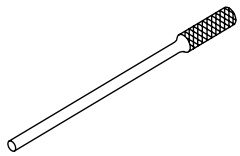
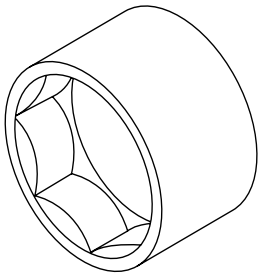
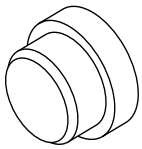
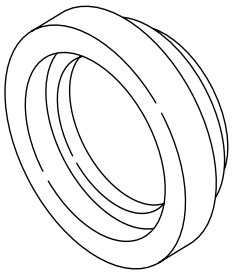
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-899904100	899904100	REMOVER	Used for removing and installing straight pin.
 ST-899988608	899988608	SOCKET WRENCH (27)	Used for removing and installing drive pinion lock nut.
 ST-398497701	398497701	ADAPTER	• Used for installing roller bearing onto differential case. • Used with INSTALLER (499277100).
 ST-499587000	499587000	INSTALLER	Used for installing driven gears to driven shaft.

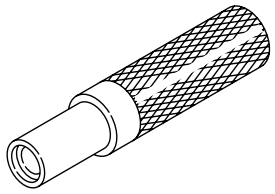
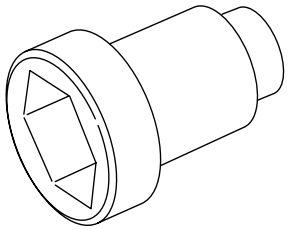
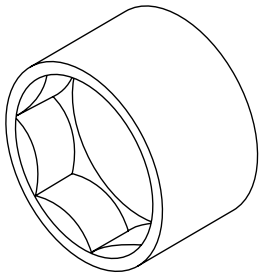
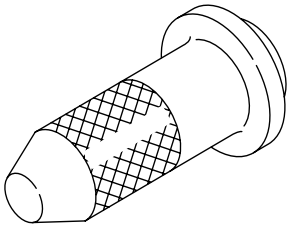
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-899824100	899824100	PRESS	Used for installing speedometer shaft oil seal.
 ST-499987100	499987100	SOCKET WRENCH (35)	Used for removing and installing drive pinion lock nut.
 ST-899984103	899984103	SOCKET WRENCH (35)	Used for removing and installing drive pinion lock nut.
 ST-498057300	498057300	INSTALLER	Used for installing extension oil seal.

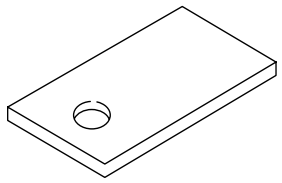
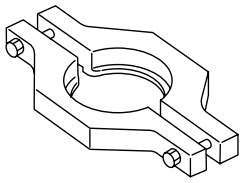
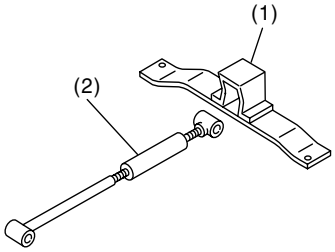
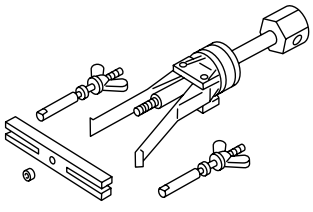
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-498255400	498255400	PLATE	Used for measuring backlash.
 ST-498077400	498077400	SYNCHRONIZER CONE REMOVER	• Used for removing synchronizer cone of main shaft. • Used for removing 5th driven gear of drive pinion shaft.
 ST41099AA000	41099AA000	ENGINE SUPPORT BRACKET	Used for supporting engine. (1) Engine support bracket (41099AA010) (2) Engine support (41099AA020)
 ST-398527700	398527700	PULLER ASSY	Used for removing extension case roller bearing.

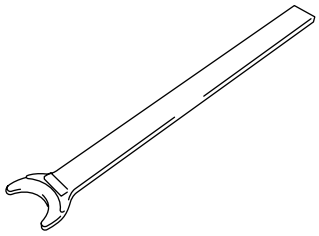
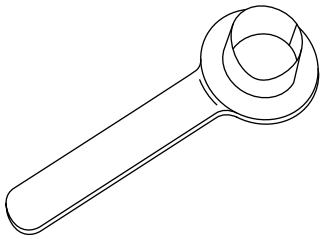
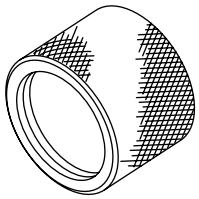
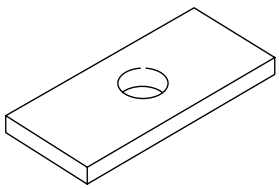
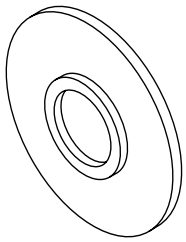
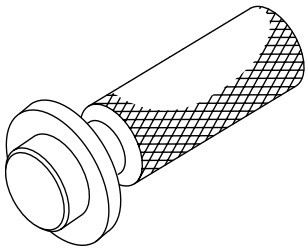
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST28399SA000	28399SA000	FRONT DRIVE SHAFT REMOVER	• Used for removing front drive shaft (AT and MT vehicle). • TURBO model
 ST28399SA010	28399SA010	FRONT DRIVE SHAFT OIL SEAL PROTECTOR	• Used for protecting oil seal from scratches while installing front drive shaft. • TURBO model
 ST18675AA000	18675AA000	DIFFERENTIAL SIDE OIL SEAL INSTALLER	• Used for installing differential side retainer oil seal. • TURBO model
 ST-398643600	398643600	GAUGE	Used for measuring total end play, extension end play and drive pinion height.

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398177700	38177700	INSTALLER	• Used for installing bearing cone of transfer driven gear (transfer case side). • Used for installing ball bearing of transfer drive gear.
 ST-499797000	499797000	INSTALLER	• Used for installing differential side retainer oil seal. • Non-TURBO model

2. GENERAL PURPOSE TOOLS

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

22.General Diagnostic

A: INSPECTION

1. MANUAL TRANSMISSION

Symptom	Possible cause	Remedy
1. Gears are difficult to intermesh. NOTE: The cause for difficulty in shifting gears can be classified into two kinds: one is malfunction of the gear shift system and the other is malfunction of the transmission. However, if the operation is heavy and engagement of the gears is difficult, defective clutch disengagement may also be responsible. Check whether the clutch is correctly functioning, before checking the gear shift system and transmission.	(a) Worn, damaged or burred chamfer of internal spline of sleeve and reverse driven gear	Replace.
	(b) Worn, damaged or burred chamfer of spline of gears	Replace.
	(c) Worn or scratched bushings	Replace.
	(d) Incorrect contact between synchronizer ring and gear cone or wear	Correct or replace.
2. Gear slips out. • Gear slips out when coasting on rough road. • Gear slips out during acceleration.	(a) Defective pitching stopper adjustment	Adjust.
	(b) Loose engine mounting bolts	Tighten or replace.
	(c) Worn fork shifter, broken shifter fork rail spring	Replace.
	(d) Worn or damaged ball bearing	Replace.
	(e) Excessive clearance between splines of synchronizer hub and synchronizer sleeve	Replace.
	(f) Worn tooth step of synchronizer hub (responsible for slip-out of 3rd gear)	Replace.
	(g) Worn 1st driven gear and driven shaft	Replace.
	(h) Worn 2nd driven gear and bushing	Replace.
	(i) Worn 3rd drive gear and needle bearing	Replace.
	(j) Worn 4th drive gear and needle bearing	Replace.
	(k) Worn reverse idler gear and bushing	Replace.
3. Unusual noise comes from transmission. NOTE: If an unusual noise is heard when the vehicle is parked with its engine idling and if the noise ceases when the clutch is disengaged, it may be considered that the noise comes from the transmission.	(a) Insufficient or improper lubrication	Lubricate or replace with specified oil.
	(b) Worn or damaged gears and bearings NOTE: If the trouble is only wear of the tooth surfaces, merely a high roaring noise will occur at high speeds, but if any part is broken, rhythmical knocking sound will be heard even at low speeds.	Replace.

2. DIFFERENTIAL

Symptom	Possible cause	Remedy
1. Broken differential (case, gear, bearing, etc.) NOTE: Abnormal noise will develop and finally it will become impossible to continue to run due to broken pieces obstructing the gear revolution.	(a) Insufficient or improper oil	Disassemble the differential and replace broken components and at the same time check other components for any trouble, and replace if necessary.
	(b) Use of vehicle under severe conditions such as excessive load and improper use of clutch	Readjust the bearing preload and backlash and face contact of gears.
	(c) Improper adjustment of taper roller bearing	Adjust.
	(d) Improper adjustment of drive pinion and hypoid driven gear	Adjust.
	(e) Excessive backlash due to worn differential side gear, washer or differential pinion vehicle under severe operating conditions.	Add recommended oil to specified level. Do not use the vehicle under severe operating conditions.
	(f) Loose hypoid driven gear clamping bolts	Tighten.
2. Differential and hypoid gear noises Troubles of the differential and hypoid gear always appear as noise problems. Therefore noise is the first indication of the trouble. However noises from the engine, muffler, tire, exhaust gas, bearing, body, etc. are easily mistaken for the differential noise. Pay special attention to the hypoid gear noise because it is easily confused with other gear noises. There are the following four kinds of noises. • Gear noise when driving: If noise increases as vehicle speed increases it may be due to insufficient gear oil, incorrect gear engagement, damaged gears, etc. • Gear noise when coasting: Damaged gears due to maladjusted bearings and incorrect shim adjustment • Bearing noise when driving or when coasting: Cracked, broken or damaged bearings • Noise which mainly occurs when turning: Unusual noise from differential side gear, differential pinion, differential pinion shaft, etc.	(a) Insufficient oil	Lubricate.
	(b) Improper adjustment of hypoid driven gear and drive pinion	Check tooth contact.
	(c) Worn teeth of hypoid driven gear and drive pinion	Replace as a set. Readjust the bearing preload.
	(d) Loose roller bearing	Readjust the hypoid driven gear to drive pinion backlash and check tooth contact.
	(e) Distorted hypoid driven gear or differential case	Replace.
	(f) Worn washer and differential pinion shaft	Replace.

MEMO:

3. Manual Transmission Assembly

A: REMOVAL

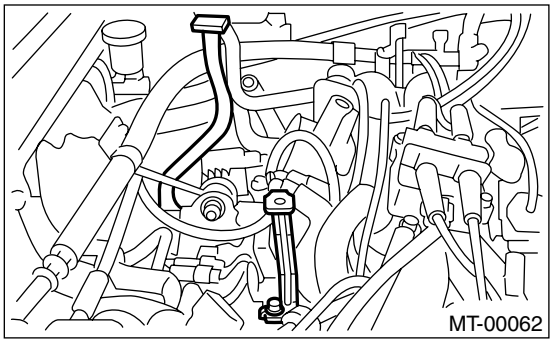
1) Open the front hood fully, and support with stay or the air intake chamber.
2) Disconnect ground cable from battery.
3) Remove the air intake duct and cleaner case or the air intake chamber. (Non-TURBO model)

U5 model

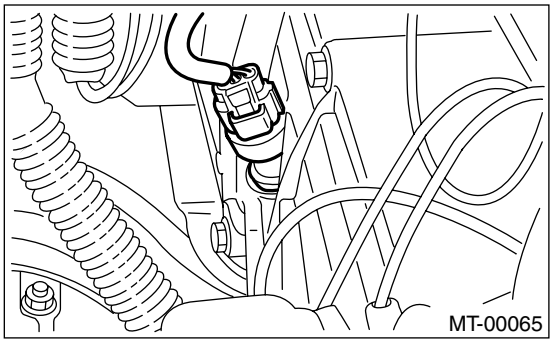
<Ref. to IN(H4SO U5)-6, REMOVAL, Air Intake Chamber.>
<Ref. to IN(H4SO U5)-7, REMOVAL, Air Intake Duct.>

Except U5 model

<Ref. to IN(H4SO)-6, REMOVAL, Air Intake Duct.>
<Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.>
4) Remove the air cleaner case stay. (Non-TURBO model)

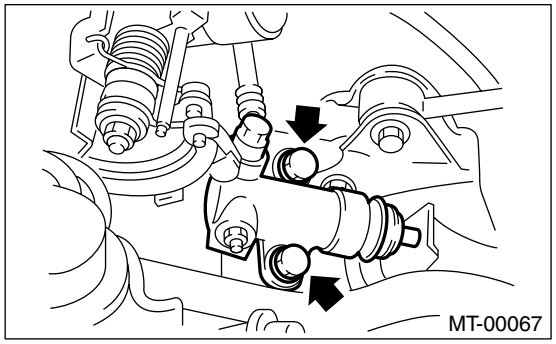

MT-00062

5) Remove the intercooler. (Turbo model) <Ref. to IN(H4DOTC)-10, REMOVAL, Intercooler.>
6) Disconnect the following connectors:
   (1) Neutral position switch connector
   (2) Back-up light switch connector
   (3) Vehicle speed sensor

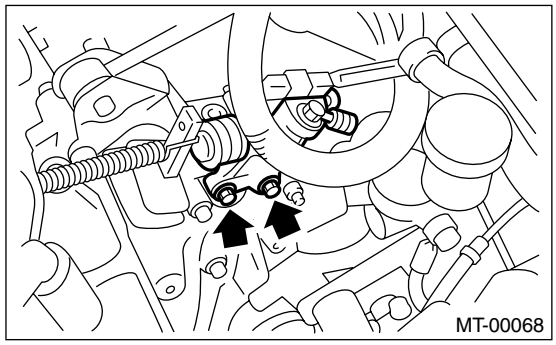

MT-00065

7) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>
8) Remove the operating cylinder from transmission.

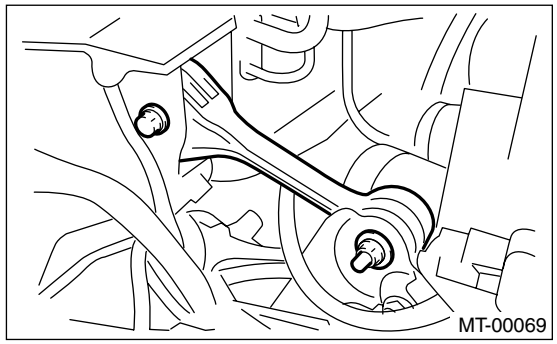
- NON-TURBO MODEL


MT-00067

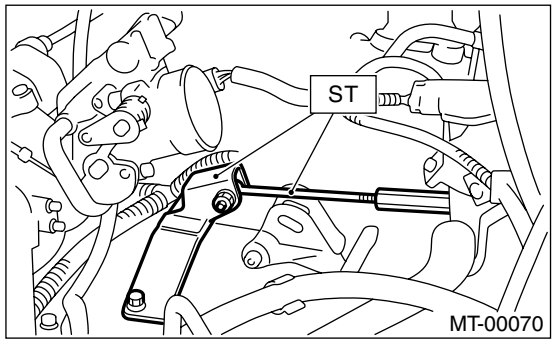
- TURBO MODEL


MT-00068

9) Remove the pitching stopper.


MT-00069

10) Set the ST.
ST 41099AA000 ENGINE SUPPORT ASSY

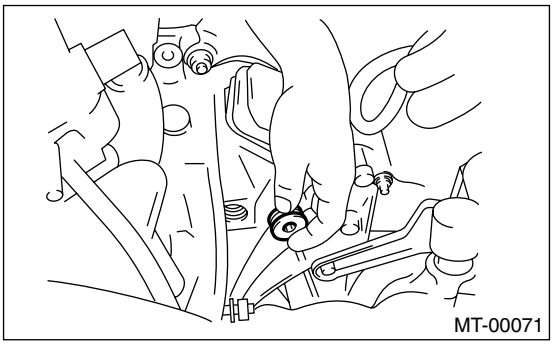


MT-00070

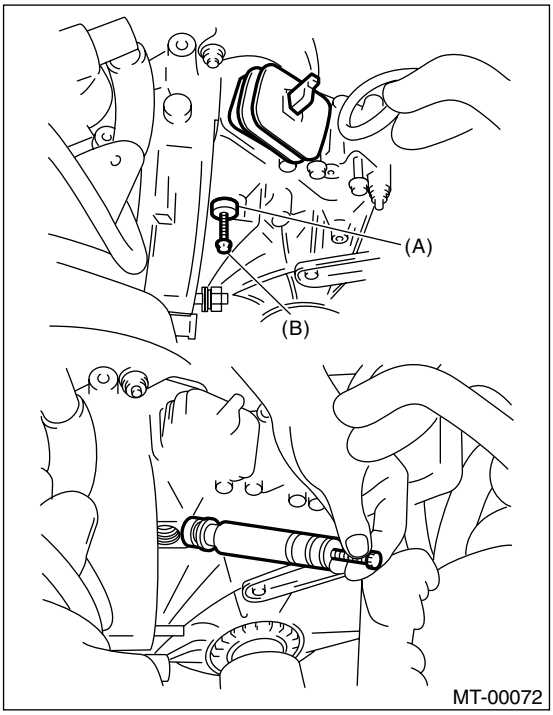
11) Separate the clutch release fork from release bearing. (Turbo model)

(1) Remove the clutch operating cylinder from transmission.

(2) Remove the plug using 10 mm hexagon wrench.


MT-00071

(3) Screw the 6 mm dia. bolt into release fork shaft, and then remove it.



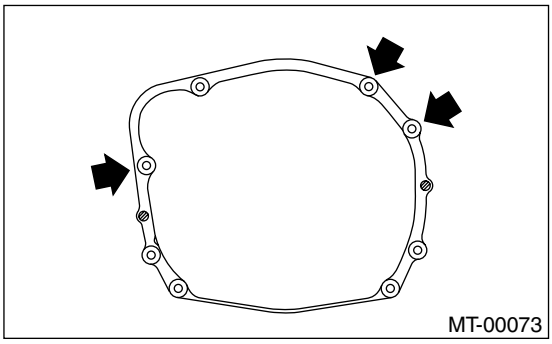
MT-00072

(A) Shaft
(B) Bolt

(4) Raise the release fork and unfasten the release bearing tabs to free release fork.

NOTE:
Step (4) is required to prevent interference with engine when removing the engine from transmission.

12) Remove the bolt which holds the right upper side of transmission to engine.


MT-00073

13) Remove the front and center exhaust pipes. (Non-TURBO model) <Ref. to EX(H4SO)-5, REMOVAL, Front Exhaust Pipe.>

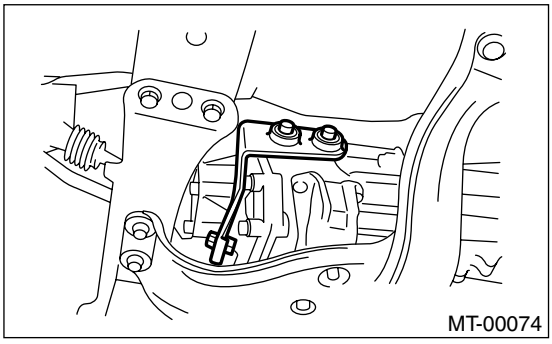
14) Remove the center exhaust pipe. (Turbo model). <Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.>

15) Remove the rear exhaust pipe and muffler.

CAUTION:
When removing the exhaust pipes, be careful each exhaust pipe does not drop out.

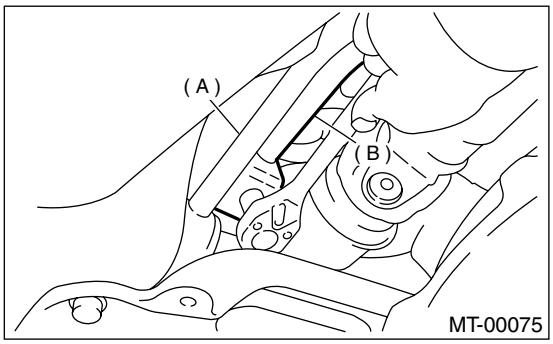
16) Remove the heat shield cover. (If equipped)

17) Remove the hanger bracket from right side of transmission.


MT-00074

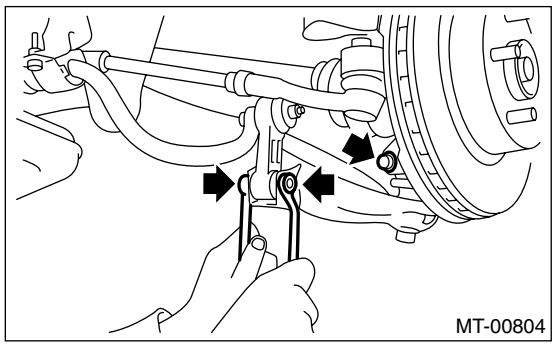
18) Remove the propeller shaft. <Ref. to DS-15, REMOVAL, Propeller Shaft.>

19) Remove the gear shift rod and stay from transmission.
(1) Disconnect the stay from transmission.
(2) Disconnect the rod from transmission.



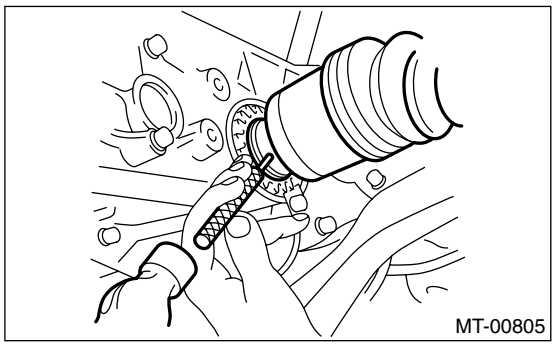
(A) Stay
(B) Rod

20) Disconnect the stabilizer link from transverse link.



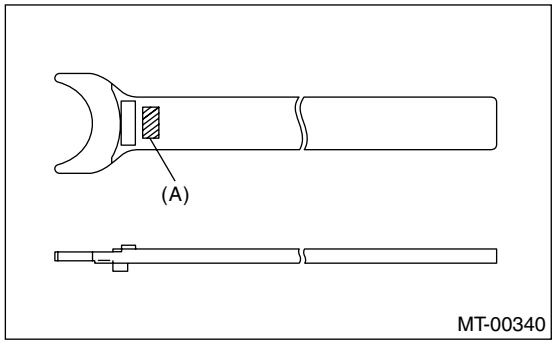
21) Remove the bolt securing ball joint of transverse link to housing.
22) Remove the spring pins and separate the front drive shafts from each side of transmission (Non-TURBO model).

NOTE:
Discard the removing spring pin. Replace with a new one.



23) Pull out the front drive shaft from transmission (TURBO model).
(1) Face the “MT” mark on ST toward transmission side.

ST 28399SA000 DRIVE SHAFT REMOVER

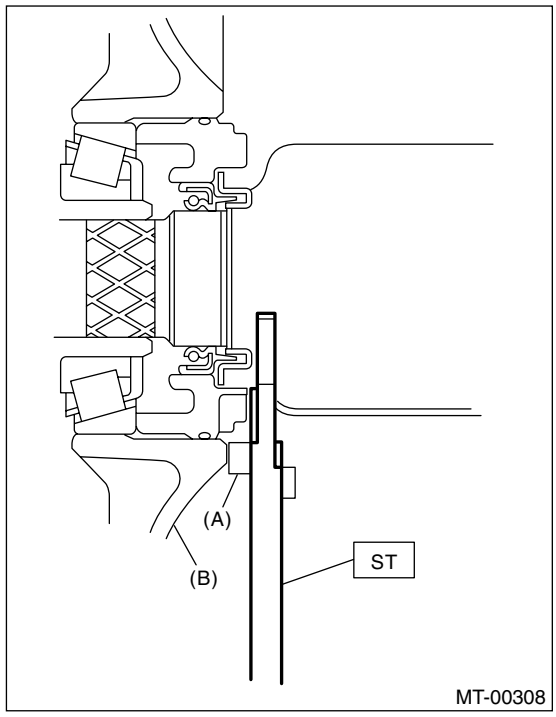


(A) “MT” mark

(2) Insert the ST into between transmission and front drive shaft.

NOTE:
Contact the protrusion part of ST to transmission case.

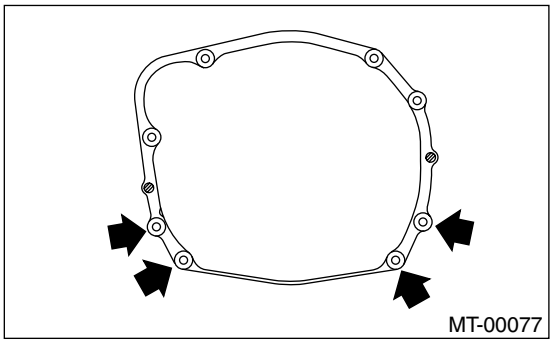
ST 28399SA000 DRIVE SHAFT REMOVER



(A) Protrusion part of ST
(B) Transmission case

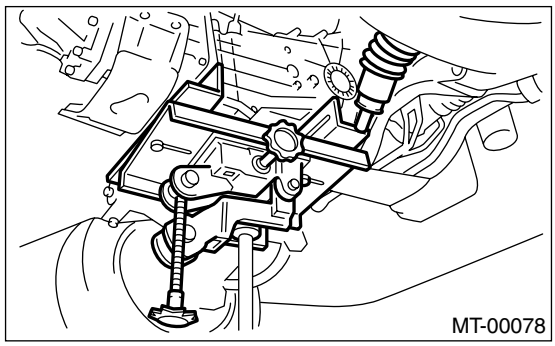
(3) While holding the joint portion (AAR) of front drive shaft with your hand, push the housing outside to remove from transmission.

24) Remove the nuts which hold the lower side of transmission to engine.

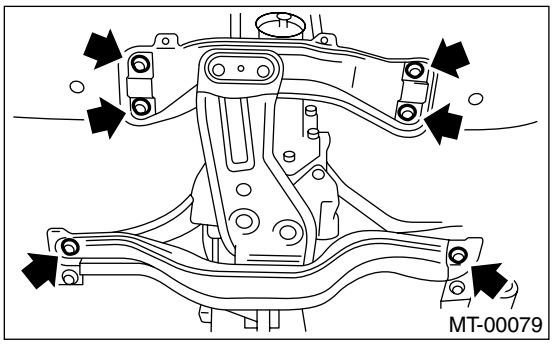


25) Place the transmission jack under transmission.

CAUTION:
Always support the transmission case with a transmission jack.



26) Remove the transmission rear crossmember from vehicle.



27) Remove the transmission.

NOTE:
Move the transmission jack toward rear until main shaft is withdrawn from clutch cover.

28) Separate the transmission assembly and rear cushion rubber.
29) Remove the clutch release bearing from engine side. (Turbo model) <Ref. to CL-15, REMOVAL, Release Bearing and Lever.>

B: INSTALLATION

1) Replace the differential side oil seal with a new one. <Ref. to 5MT-38, REPLACEMENT, Differential Side Retainer Oil Seal.>

NOTE:
It is not necessary to replace the oil seal if a new one installed.

2) Install the rear cushion rubber to transmission assembly.

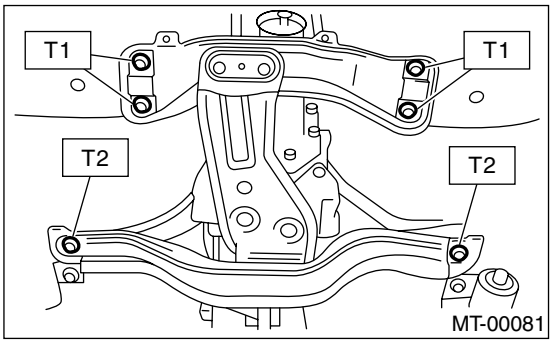
Tightening torque:
35 N·m (3.57 kgf-m, 25.8 ft-lb)

3) Install the clutch release lever and bearing onto transmission. (Turbo model) <Ref. to CL-15, INSTALLATION, Release Bearing and Lever.>
4) Install the transmission onto engine.
(1) Gradually raise the transmission with transmission jack.
(2) Engage them at splines.

NOTE:
Be careful not to strike the main shaft against clutch cover.

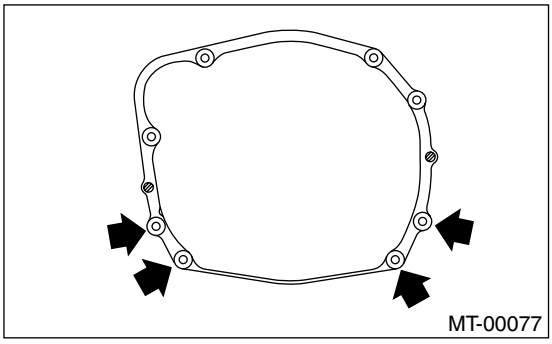
5) Install the transmission rear crossmember.

Tightening torque:
T1: 70 N·m (7.1 kgf-m, 51 ft-lb)
T2: 140 N·m (14.3 kgf-m, 103 ft-lb)



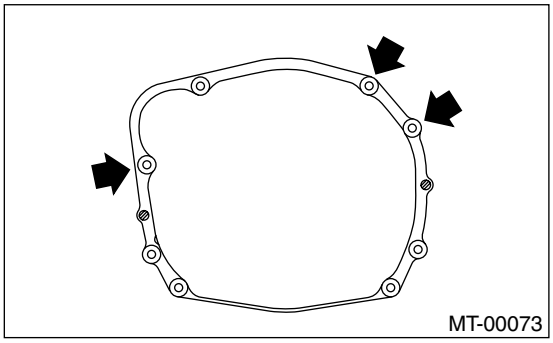
6) Take off the transmission jack.
7) Tighten the nuts which hold the lower side of transmission to engine.

Tightening torque:
50 N·m (5.1 kgf-m, 36.9 ft-lb)

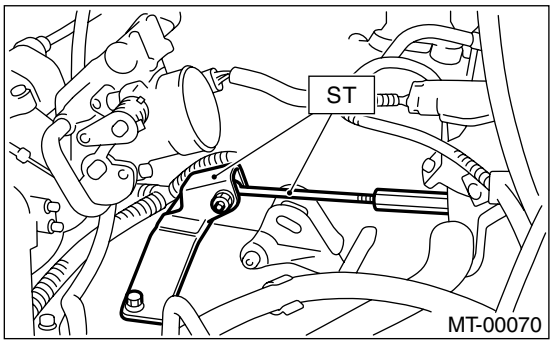


8) Connect the engine and transmission.
(1) Install the starter.
<Ref. to SC(H4SO)-7, INSTALLATION, Starter.>
(2) Tighten the bolt which holds right upper side of transmission to engine.

Tightening torque:
50 N·m (5.1 kgf-m, 36.9 ft-lb)

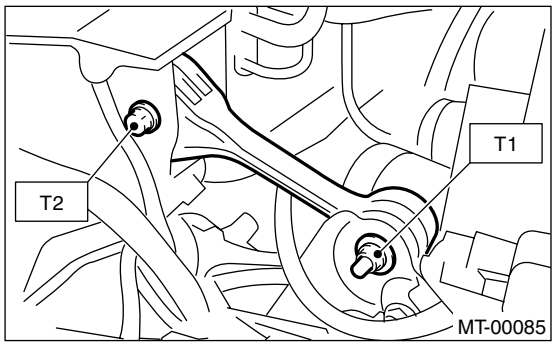


9) Remove the ST.



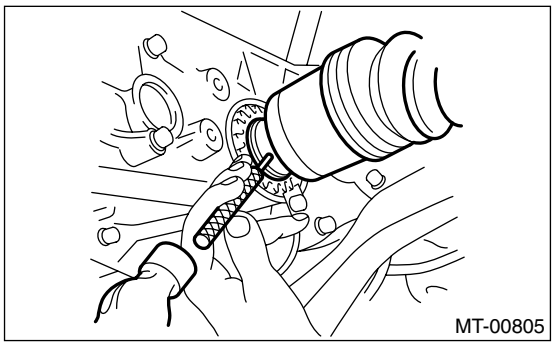
10) Install the pitching stopper.

Tightening torque:
T1: 50 N·m (5.1 kgf-m, 37 ft-lb)
T2: 58 N·m (5.9 kgf-m, 43 ft-lb)



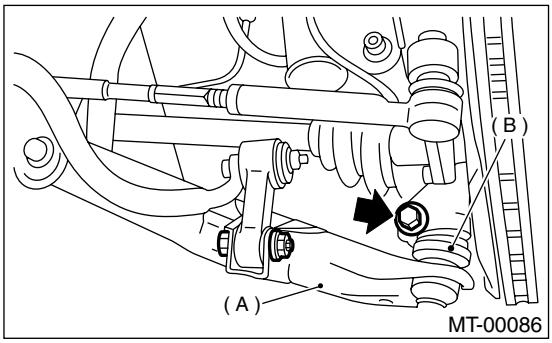
11) Lift-up the vehicle.
12) Install the front drive shaft into transmission.
13) Drive the spring pin into chamfered hole of drive shaft. (Non-TURBO model)

NOTE:
Always use a new spring pin.



14) Replace the circlip with a new one, and insert the front drive shaft to transmission. (TURBO model) <Ref. to DS-29, REMOVAL, Front Drive Shaft.>
ST 28399SA010 FRONT DRIVE SHAFT OIL SEAL PROTECTOR
15) Install the ball joints of lower arm into knuckle arm of housing, and tighten the installing bolts.

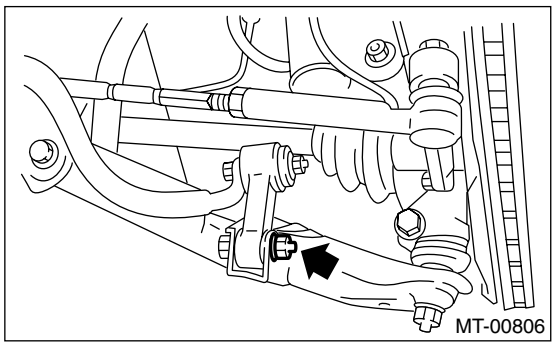
Tightening torque:
49 N·m (5.0 kgf-m, 36 ft-lb)



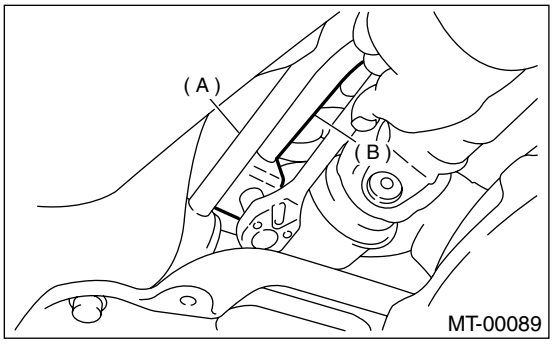
(A) Transverse link
(B) Ball joint

16) Install the stabilizer link from transverse link.

Tightening torque:
30 N·m (3.1 kgf-m, 22.1 ft-lb)

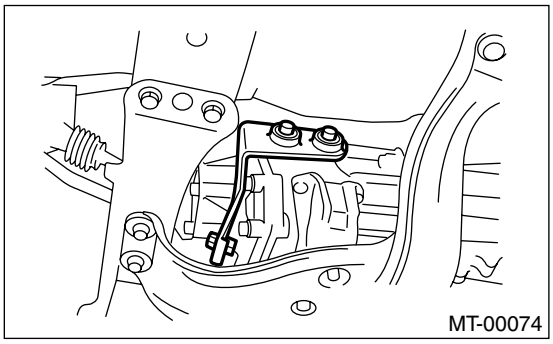


17) Install the gear shift rod and stay.
(1) Install the gear shift rod onto transmission.

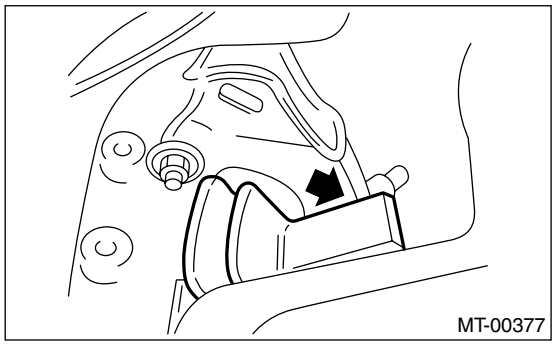


(A) Stay
(B) Rod

(2) Install the stay onto transmission.
18) Install the propeller shaft. <Ref. to DS-16, INSTALLATION, Propeller Shaft.>
19) Install the heat shield cover. (If equipped)
20) Install the hanger bracket on right side of transmission.



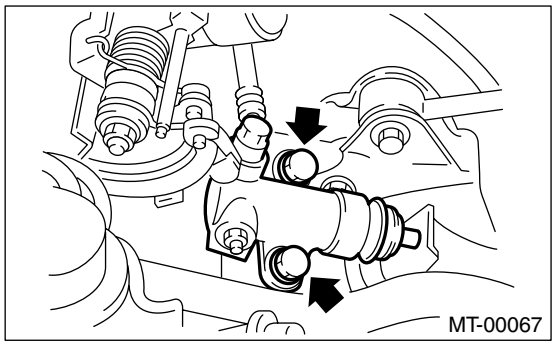
21) Install the rear exhaust pipe and muffler.
22) Install the front exhaust pipe and center exhaust pipe. (Non-TURBO model)
Except U5 model
<Ref. to EX(H4SO)-6, INSTALLATION, Front Exhaust Pipe.>
U5 model
<Ref. to EX(H4DOTC)-7, INSTALLATION, Front Exhaust Pipe.>
23) Install the center exhaust pipe. (TURBO model)<Ref. to EX(H4DOTC)-7, INSTALLATION, Front Exhaust Pipe.>
24) Install the under cover.
25) Push the clutch release lever to fit the bearing into clutch cover. (TURBO model)



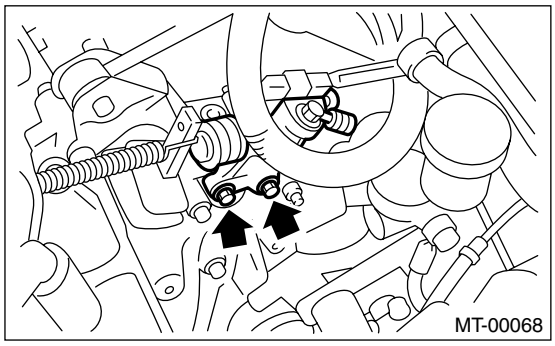
26) Install the operating cylinder.

Tightening torque:
37 N·m (3.8 kgf-m, 27.5 ft-lb)

- Non-TURBO MODEL



- TURBO MODEL



27) Connect the following connectors:
(1) Transmission ground cable

Tightening torque:
13 N·m (1.3 kgf-m, 9.4 ft-lb)

(2) Vehicle speed sensor connector
(3) Neutral position switch connector
(4) Back-up light switch connector

28) Install the air cleaner case stay. (Non-TURBO model)

Tightening torque:
16 N·m (1.6 kgf-m, 11.6 ft-lb)

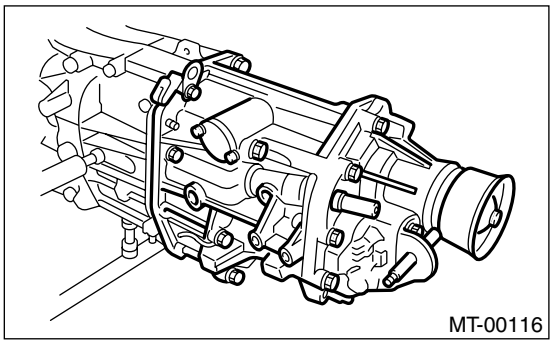
29) Install the air cleaner case or the air intake chamber and duct. (Non-TURBO model)

30) Install the intercooler. (TURBO model)

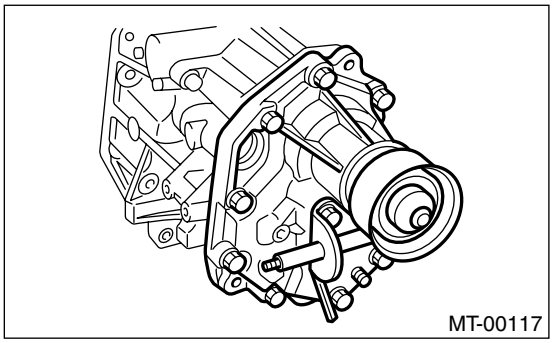
10. Transfer Case and Extension Case Assembly

A: REMOVAL

1) Remove the manual transmission assembly from vehicle. <Ref. to 5MT-28, REMOVAL, Manual Transmission Assembly.>
2) Remove the back-up light switch and neutral position switch. <Ref. to 5MT-39, REMOVAL, Switches and Harness.>
3) Remove the transfer case with extension case assembly.

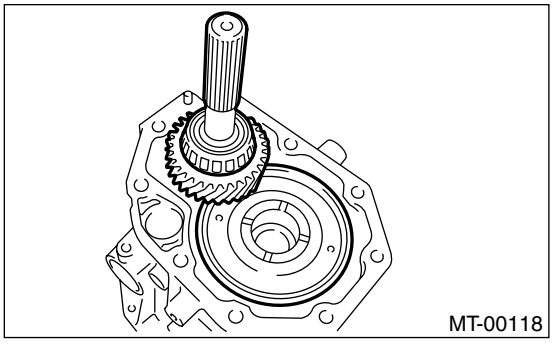

MT-00116

4) Remove the shifter arm.
5) Remove the extension case assembly.

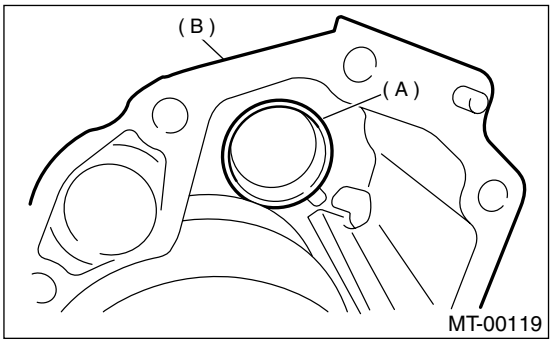

MT-00117

B: INSTALLATION

1) Install the center differential and transfer driven gear into transfer case.


MT-00118

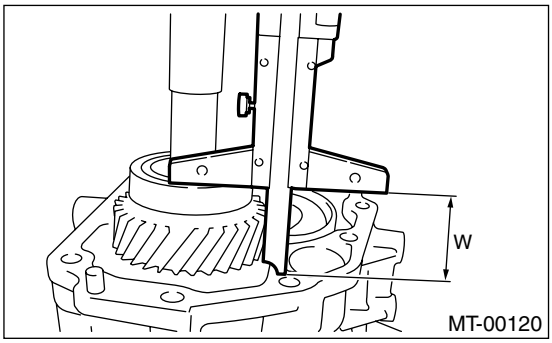
2) Remove the bearing outer race from the extension case.



MT-00119

(A) Bearing outer race
(B) Extension case

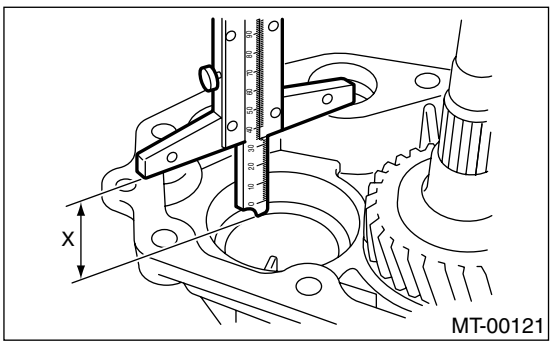
3) While pressing the bearing outer race horizontally, turn the driven shaft ten rotations.
4) Measure the height “W” between transfer case and taper roller bearing on the transfer driven gear.



MT-00120

5) Measure the depth “X”.

NOTE:
Measure with bearing cone and thrust washer removed.



MT-00121

6) Calculate the space “t” using the following equation: t = X − W + 0.2 to 0.3 mm (0.008 to 0.012 in)

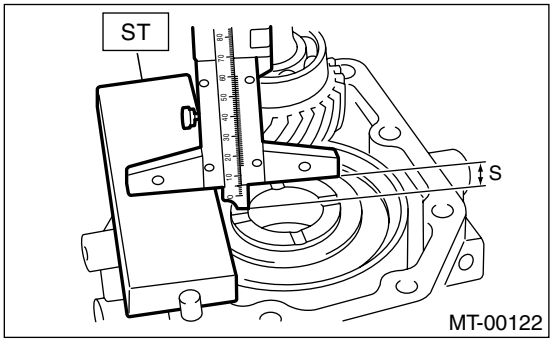
7) Select the nearest washer in the following table:

Standard clearance between thrust washer and taper roller bearing:
0.2 — 0.3 mm (0.008 — 0.012 in)

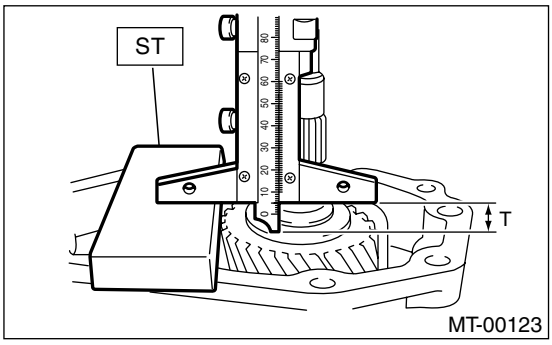
NOTE:
Be sure to keep the clearance within specifications.

Thrust washer (50 × 61 × t)	
Part No.	Thickness mm (in)
803050060	0.50 (0.0197)
803050061	0.55 (0.0217)
803050062	0.60 (0.0236)
803050063	0.65 (0.0256)
803050064	0.70 (0.0276)
803050065	0.75 (0.0295)
803050066	0.80 (0.0315)
803050067	0.85 (0.0335)
803050068	0.90 (0.0354)
803050069	0.95 (0.0374)
803050070	1.00 (0.0394)
803050071	1.05 (0.0413)
803050072	1.10 (0.0433)
803050073	1.15 (0.0453)
803050074	1.20 (0.0472)
803050075	1.25 (0.0492)
803050076	1.30 (0.0512)
803050077	1.35 (0.0531)
803050078	1.40 (0.0551)
803050079	1.45 (0.0571)

8) Fit the thrust washers on transfer drive shaft.
9) Install the bearing cone into extension case.
10) Measure the depth “S” between transfer case and center differential.
ST 398643600 GAUGE



11) Measure the depth “T” between extension case and transfer drive gear.
ST 398643600 GAUGE



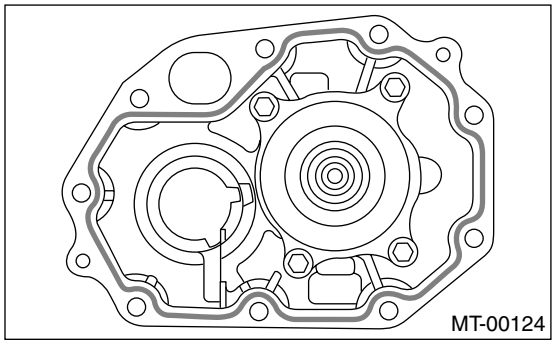
12) Calculate the space “U” using the following equation: U = S + T − 30 mm (1.18 in) [Thickness of ST]
13) Select the suitable washer in the following table:

Standard clearance:
0.15 — 0.35 mm (0.0059 — 0.0138 in)

Thrust washer	
Part No.	Thickness mm (in)
803036050	0.9 (0.035)
803036054	1.0 (0.039)
803036051	1.1 (0.043)
803036055	1.2 (0.047)
803036052	1.3 (0.051)
803036056	1.4 (0.055)
803036053	1.5 (0.059)
803036057	1.6 (0.063)
803036058	1.7 (0.067)

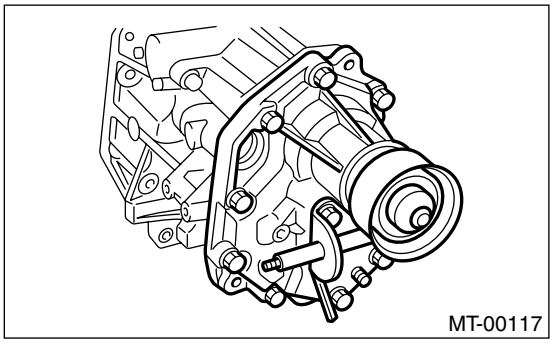
14) Fit the thrust washer on center differential.
15) Apply proper amount of liquid gasket to the transfer case mating surface.

Liquid gasket:
THREE BOND 1215 (Part No. 004403007) or equivalent

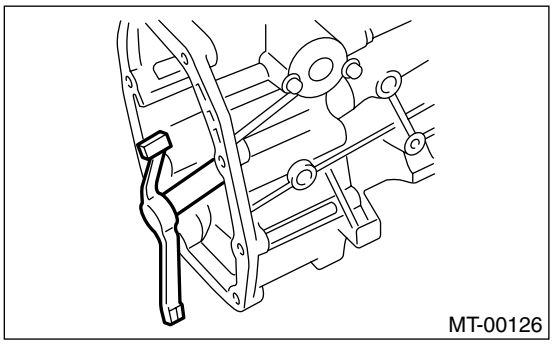


16) Install the extension assembly into transfer case.

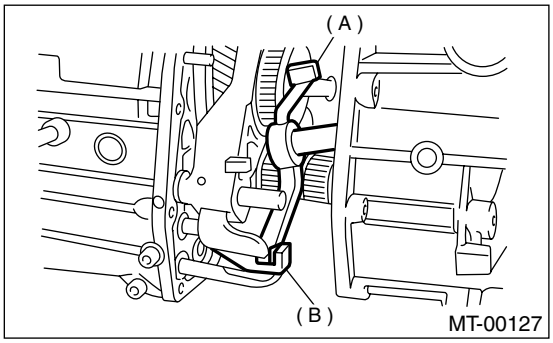
Tightening torque:
40 N·m (4.1 kgf-m, 29.7 ft-lb)


MT-00117

17) Install the shifter arm to transfer case.


MT-00126

18) Hang the shifter arm on 3rd-4th fork rod.

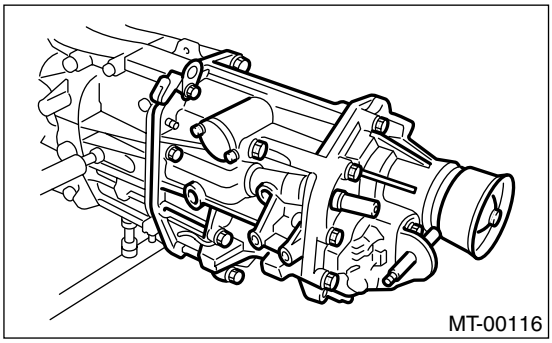


MT-00127

(A) Shifter arm
(B) 3rd-4th fork rod

19) Install the transfer case with extension case assembly to transmission case.

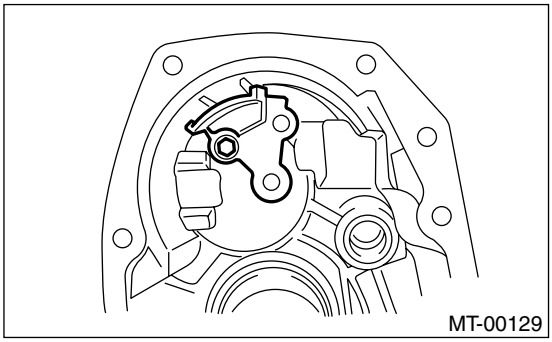
Tightening torque:
24.5 N·m (2.5 kgf-m, 18.1 ft-lb)


MT-00116

C: DISASSEMBLY

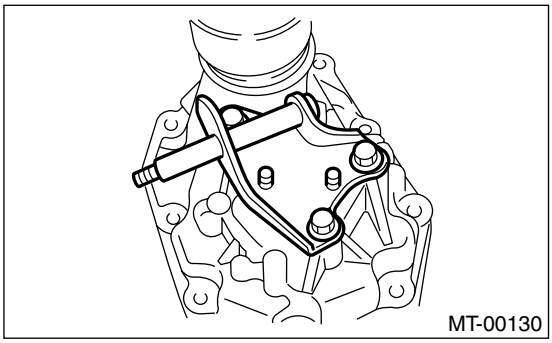
1. TRANSFER CASE

1) Remove the reverse check assembly. <Ref. to 5MT-52, REMOVAL, Reverse Check Sleeve.>
2) Remove the oil guide.


MT-00129

2. EXTENSION CASE

1) Remove the transfer drive gear assembly. <Ref. to 5MT-47, REMOVAL, Transfer Drive Gear.>
2) Remove the shift bracket.


MT-00130

3) Remove the oil seal from extension case. <Ref. to 5MT-37, Oil Seal.>

D: ASSEMBLY

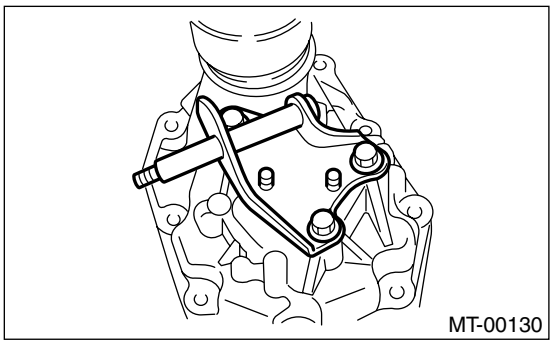
1. EXTENSION CASE

1) Using the ST, install the oil seal to extension case. <Ref. to 5MT-37, Oil Seal.>

NOTE:
Use a new oil seal.

2) Install the shift bracket to extension case.

Tightening torque:
24.5 N·m (2.5 kgf-m, 18.1 ft-lb)

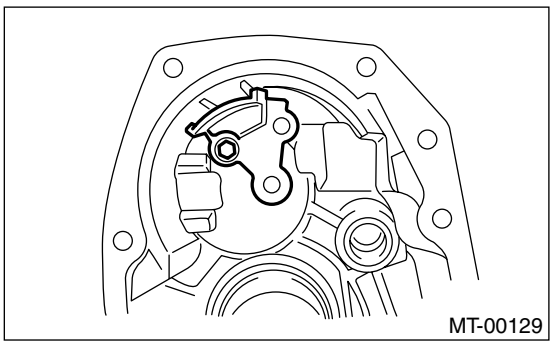

MT-00130

3) Install the transfer drive gear to extension case. <Ref. to 5MT-47, INSTALLATION, Transfer Drive Gear.>

2. TRANSFER CASE

1) Install the oil guide to transfer case.

Tightening torque:
6.4 N·m (0.65 kgf-m, 4.7 ft-lb)

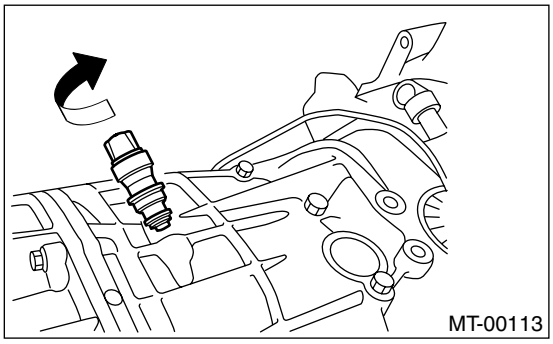

MT-00129

2) Install the reverse check sleeve assembly to transfer case. <Ref. to 5MT-52, INSTALLATION, Reverse Check Sleeve.>

8. Vehicle Speed Sensor

A: REMOVAL

1) Disconnect ground cable from battery.
2) Lift-up the vehicle.
3) Remove the front, center rear exhaust pipes and muffler.
4) Disconnect the connector from vehicle speed sensor.
5) Turn and remove the vehicle speed sensor.



B: INSTALLATION

NOTE:
• Discard the vehicle speed sensor and after removal, replace with a new one.
• Ensure the sensor mounting hole is clean and free of foreign matter.
• Align the tip end of key with key groove on end of speedometer shaft during installation.

1) Hand tighten the vehicle speed sensor.
2) Tighten the vehicle speed sensor using suitable tool.

Tightening torque:
5.9 N·m (0.6 kgf-m, 4.3 ft-lb)

3) Connect the connector to vehicle speed sensor.
4) Install the front, center exhaust pipes and muffler.
5) Lower the vehicle.
6) Connect the battery ground cable to battery.

C: INSPECTION

The vehicle speed sensor can not be inspected as a single unit. Check if speedometer operates normally. If it does not operate normally, inspect the combination meter system. <Ref. to IDI-4, INSPECTION, Combination Meter System.>