1. General Description

A: SPECIFICATION

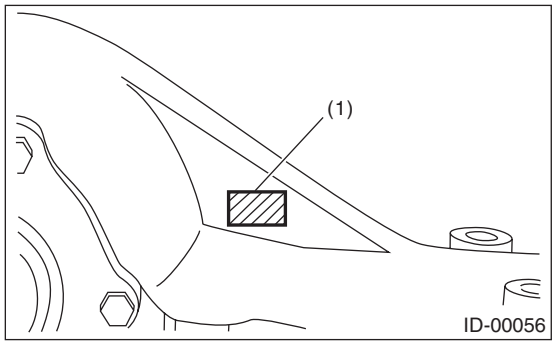
When replacing a rear differential assembly, select the correct assembly according to the following table.

NOTE:
Using a different rear differential assembly will cause the drive train and tires to drag or emit abnormal noise.

Model	Non-turbo, rear drum brake		Non-turbo, rear disc brake		Turbo	
	MT	AT	MT	AT	MT	AT
Rear differential type	T type (Model without LSD)		T type (Model with LSD)			
LSD type	—		Viscous coupling			
Identification	T2	TP	JP	CF	CF	JP
Type of gear	Hypoid gear					
Gear ratio (Number of gear teeth)	4.111 (37/9)	4.444 (40/9)	4.111 (37/9)	4.444 (40/9)	4.444 (40/9)	4.111 (37/9)
Oil capacity	0.8 ℓ (0.8 US qt, 0.7 Imp qt)					
Rear differential gear oil	GL-5					

- **Identification**

Identification label positions are shown in the following figures. For details concerning identification, refer to the “ID” section.

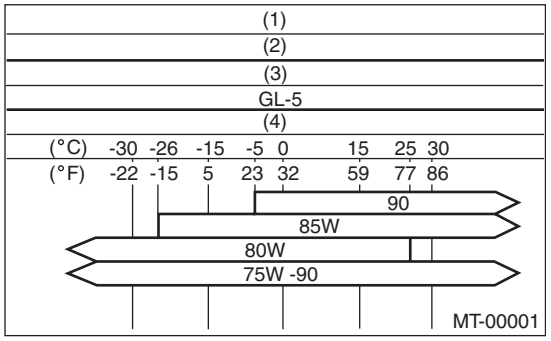


(1) Identification

- **Rear differential gear oil**

Recommended oil

CAUTION:
Each oil manufacturer uses different base oil and additives. Thus, do not mix two or more brands.



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

1. SERVICE DATA

Drive pinion bearing preload (for new bearing)	Measure with spring measurement (Measured from the companion flange bolt hole) N (kgf, lbf)	17.7 — 38.8 (1.8 — 4.0, 4.0 — 8.7)
	Measure with torque wrench N·m (kgf-m, ft-lb)	0.67 — 1.47 (0.07 — 0.15, 0.49 — 1.08)
Side gear backlash	mm (in)	0.10 — 0.20 (0.004 — 0.008)
Side bearing standard width	mm (in)	20.00 (0.7874)
Hypoid driven gear to drive pinion backlash	mm (in)	0.10 — 0.20 (0.004 — 0.008)
Hypoid driven gear runout on its back surface	mm (in)	0.05 (0.002) or less

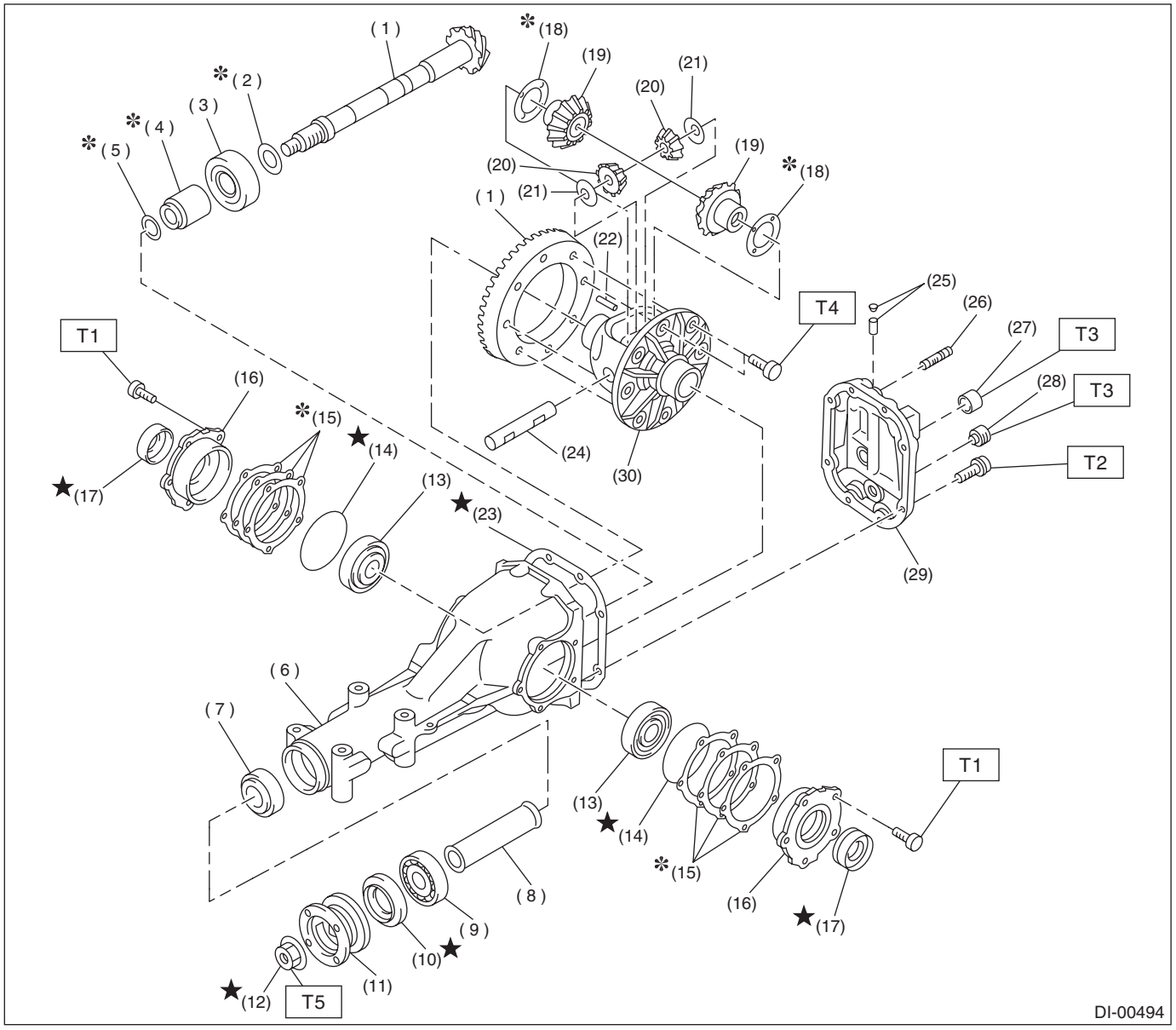
2. ADJUSTING PARTS

Drive pinion bearing preload (for new bearing)	Measure with spring measurement (Measured from the companion flange bolt hole) N (kgf, lbf)	17.7 — 38.8 (1.8 — 4.0, 4.0 — 8.7)
	Measure with torque wrench N·m (kgf-m, ft-lb)	0.67 — 1.47 (0.07 — 0.15, 0.49 — 1.08)
Preload adjusting collar	Part No.	Length mm (in)
	383695201	56.2 (2.213)
	383695202	56.4 (2.220)
	383695203	56.6 (2.228)
	383695204	56.8 (2.236)
	383695205	57.0 (2.244)
	383695206	57.2 (2.252)
Preload adjusting washer	Part No.	Thickness mm (in)
	383705200	2.59 (0.1020)
	383715200	2.57 (0.1012)
	383725200	2.55 (0.1004)
	383735200	2.53 (0.0996)
	383745200	2.51 (0.0988)
	383755200	2.49 (0.0980)
	383765200	2.47 (0.0972)
	383775200	2.45 (0.0965)
	383785200	2.43 (0.0957)
	383795200	2.41 (0.0949)
	383805200	2.39 (0.0941)
	383815200	2.37 (0.0933)
	383825200	2.35 (0.0925)
	383835200	2.33 (0.0917)
	383845200	2.31 (0.0909)
Pinion height adjusting washer	Part No.	Thickness mm (in)
	383495200	3.09 (0.1217)
	383505200	3.12 (0.1228)
	383515200	3.15 (0.1240)
	383525200	3.18 (0.1252)
	383535200	3.21 (0.1264)
	383545200	3.24 (0.1276)
	383555200	3.27 (0.1287)
	383565200	3.30 (0.1299)
	383575200	3.33 (0.1311)
	383585200	3.36 (0.1323)
	383595200	3.39 (0.1335)
	383605200	3.42 (0.1346)
	383615200	3.45 (0.1358)
	383625200	3.48 (0.1370)
	383635200	3.51 (0.1382)
	383645200	3.54 (0.1394)
	383655200	3.57 (0.1406)
	383665200	3.60 (0.1417)
	383675200	3.63 (0.1429)
	383685200	3.66 (0.1441)
Side gear backlash mm (in)	0.10 — 0.20 (0.004 — 0.008)	

Side gear thrust washer (Model without LSD)	Part No.	Thickness mm (in)
	383445201	0.75 — 0.80 (0.0295 — 0.0315)
	383445202	0.80 — 0.85 (0.0315 — 0.0335)
	383445203	0.85 — 0.90 (0.0335 — 0.0354)
Side bearing standard width mm (in)	—	20.00 (0.7874)
Side bearing retainer shim	Part No.	Thickness mm (in)
	383475201	0.20 (0.0079)
	383475202	0.25 (0.0098)
	383475203	0.30 (0.0118)
	383475204	0.40 (0.0157)
	383475205	0.50 (0.0197)
Hypoid driven gear to drive pinion backlash	Allowable limit mm (in)	0.10 — 0.20 (0.004 — 0.008)
Hypoid driven gear runout on its back surface		0.05 (0.002)

B: COMPONENT

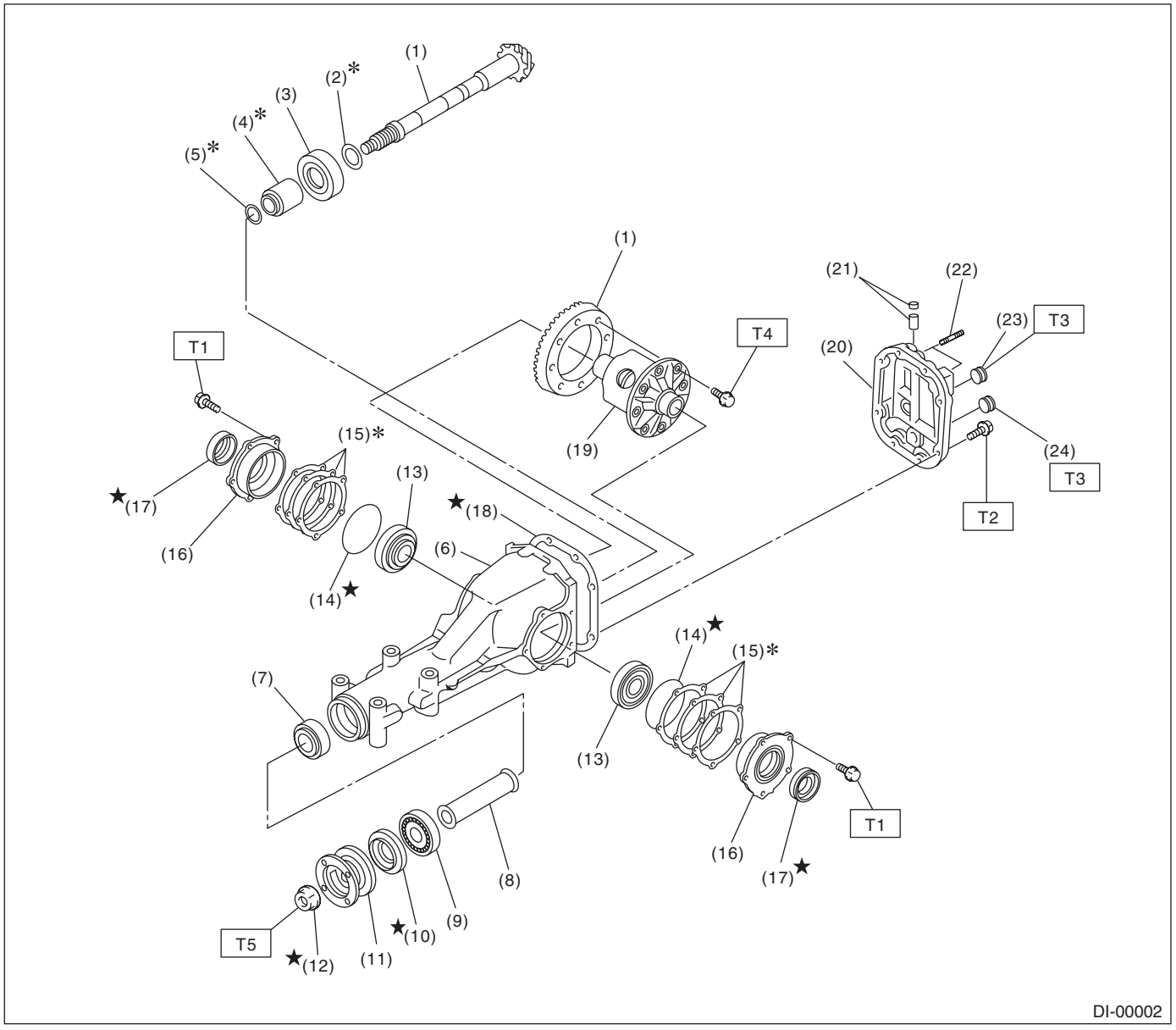
1. REAR DIFFERENTIAL WITHOUT LSD



(1) Hypoid driven gear and drive pinion set
(2) Pinion height adjusting washer
(3) Rear bearing
(4) Bearing preload adjusting collar
(5) Bearing preload adjusting washer
(6) Differential carrier
(7) Front bearing
(8) Collar
(9) Pilot bearing
(10) Front oil seal
(11) Companion flange
(12) Self-locking nut
(13) Side bearing
(14) O-ring
(15) Side bearing retainer shim
(16) Side bearing retainer
(17) Side oil seal
(18) Side gear thrust washer
(19) Side gear
(20) Pinion mate gear
(21) Pinion mate gear washer
(22) Pinion shaft lock pin
(23) Gasket
(24) Pinion mate shaft
(25) Air breather cap
(26) Stud bolt
(27) Oil filler plug
(28) Oil drain plug
(29) Rear cover
(30) Differential case

Tightening torque:N·m (kgf-m, ft-lb)
T1: 10.5 (1.1, 7.7)
T2: 29.5 (3.0, 21.8)
T3: 49 (5.0, 36.2)
T4: 103 (10.5, 76.0)
T5: 181.5 (18.5, 134.0)

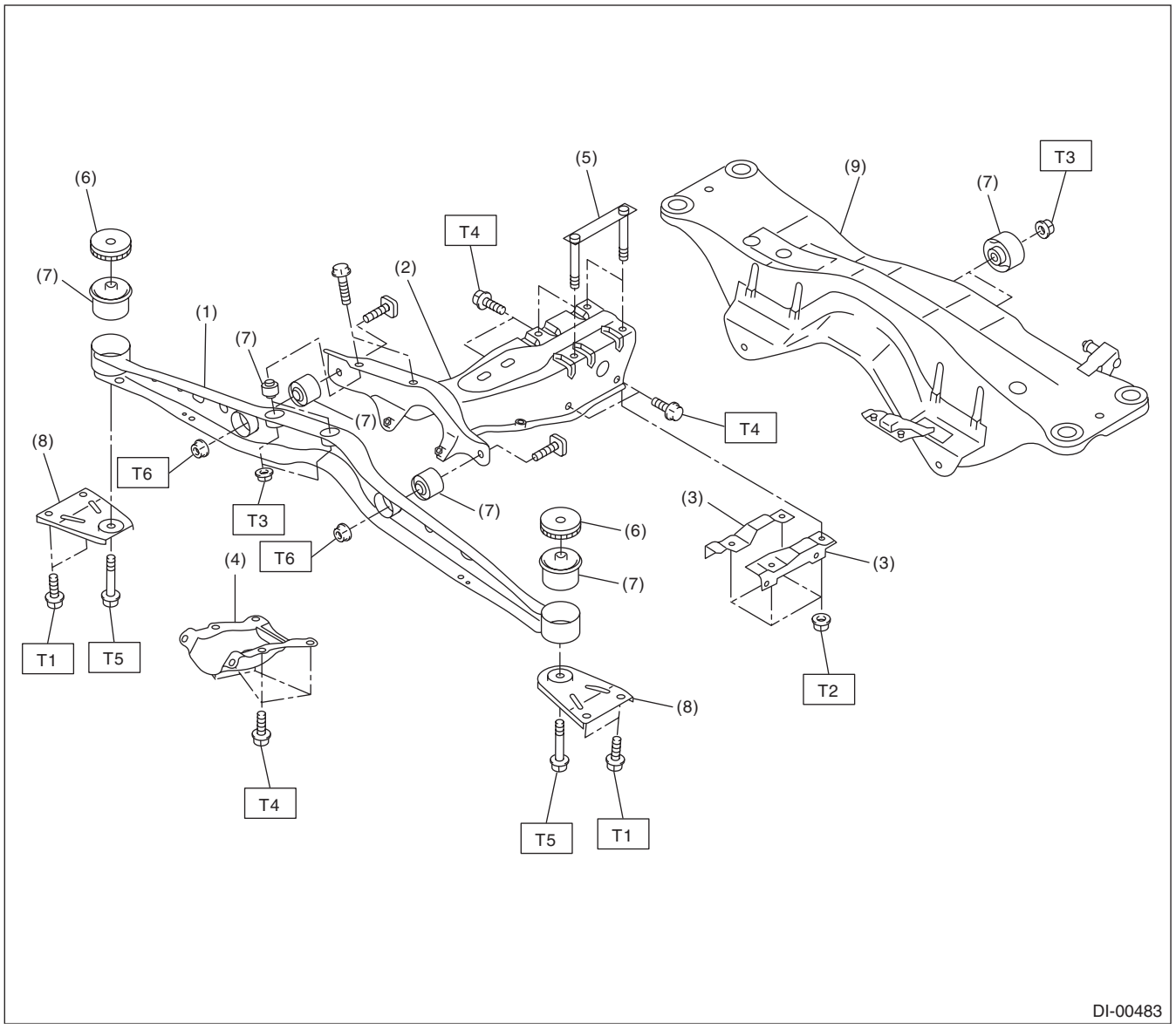
2. REAR DIFFERENTIAL WITH LSD



(1) Hypoid driven gear and drive pinion set
(2) Pinion height adjusting washer
(3) Rear bearing
(4) Bearing preload adjusting collar
(5) Bearing preload adjusting washer
(6) Differential carrier
(7) Front bearing
(8) Spacer
(9) Pilot bearing
(10) Front oil seal
(11) Companion flange
(12) Self-locking nut
(13) Side bearing
(14) O-ring
(15) Side bearing retainer shim
(16) Side bearing retainer
(17) Side oil seal
(18) Gasket
(19) Differential case ASSY (Viscous coupling type)
(20) Rear cover
(21) Air breather cap
(22) Stud bolt
(23) Oil filler plug
(24) Oil drain plug

Tightening torque:N·m (kgf-m, ft-lb)
T1: 10.5 (1.1, 7.7)
T2: 29.5 (3.0, 21.8)
T3: 49 (5.0, 36.2)
T4: 103 (10.5, 76.0)
T5: 181.5 (18.5, 134.0)

3. REAR DIFFERENTIAL MOUNTING SYSTEM



(1) Front differential member
(2) Differential bracket
(3) Differential mount lower bracket
(4) Differential mount front cover
(5) Plate
(6) Stopper
(7) Bushing
(8) Differential mount bracket
(9) Crossmember

Tightening torque:N·m (kgf-m, ft-lb)
T1: 33 (3.4, 24.3)
T2: 50 (5.1, 36.9)
T3: 70 (7.1, 51.6)
T4: 90 (9.2, 66.4)
T5: 100 (10.2, 73.8)
T6: 128 (13.1, 94.4)

C: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Use SUBARU genuine gear oil, grease or the equivalent. Do not mix gear oil, grease, etc. with those of different grades or from other manufacturers.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Apply gear oil onto sliding or revolving surfaces before installation.
- Before installing the O-ring or snap ring, apply a sufficient amount of gear oil to avoid damage and deformation.
- 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.

D: PREPARATION TOOL

1. SPECIAL TOOL

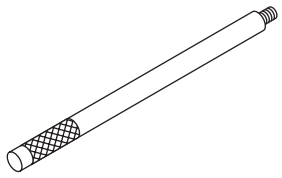
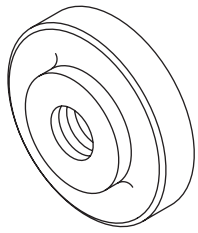
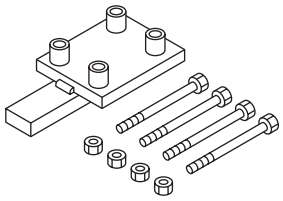
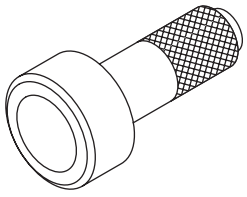
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398477701	398477701	HANDLE	Used for installing the front and rear bearing cones.
 ST-398477702	398477702	DRIFT	Used for press-fitting the bearing cone of differential carrier (front).
 ST-398217700	398217700	ATTACHMENT SET	Stand for rear differential carrier disassembly and assembly.
 ST-498447120	498447120	INSTALLER	Used for installing the front oil seal.

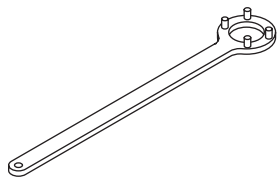
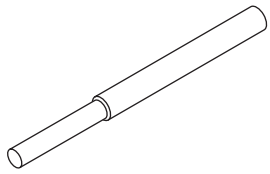
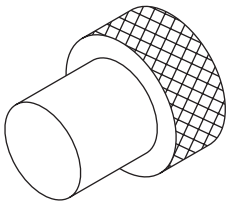
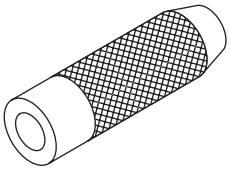
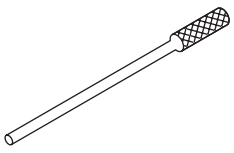
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-498427200	498427200	FLANGE WRENCH	Used for preventing rotation of companion flange when loosening and tightening self-lock nut.
 ST-398467700	398467700	DRIFT	Used for removing pinion, pilot bearing and front bearing cone.
 ST-399780104	399780104	WEIGHT	Used for installing the front bearing cone and the pilot bearing companion flange.
 ST-899580100	899580100	INSTALLER	Used for press-fitting the front bearing cone and pilot bearing.
 ST-899904100	899904100	STRAIGHT PIN REMOVER	Used for driving out differential pinion shaft lock pin.

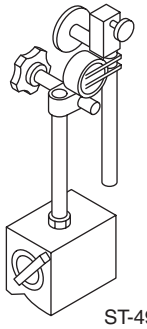
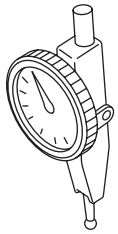
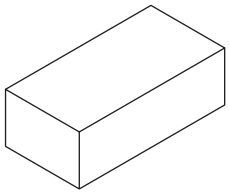
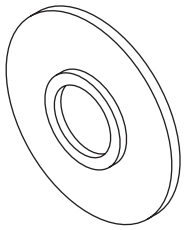
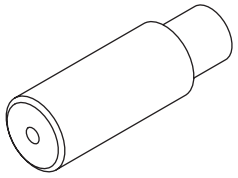
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-498247001	498247001	MAGNET BASE	• Used for measuring backlash between side gear and pinion, and hypoid driven gear. • Used together with DIAL GAUGE (498247100).
 ST-498247100	498247100	DIAL GAUGE	• Used for measuring backlash between side gear and pinion, and hypoid driven gear. • Used together with MAGNET BASE (498247001).
 ST-398507704	398507704	BLOCK	Used for adjusting pinion height and preload.
 ST-398177700	398177700	INSTALLER	Used for installing the rear bearing cone.
 ST-398457700	398457700	ATTACHMENT	Used for removing the side bearing retainer.

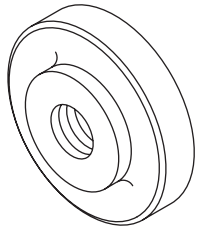
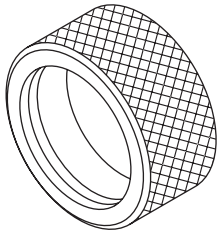
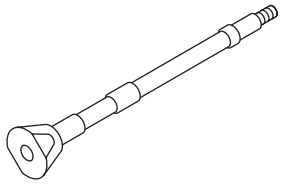
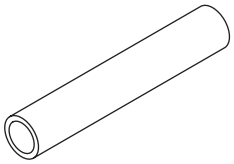
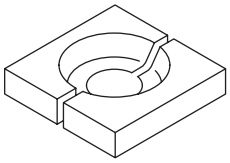
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398477703	398477703	DRIFT 2	Used for press-fitting bearing race (rear) of differential carrier.
 ST-398437700	398437700	DRIFT	Used for installing the side oil seal.
 ST-398507702	398507702	DUMMY SHAFT	Used for adjusting pinion height and preload.
 ST-398507703	398507703	DUMMY COLLAR	Used for adjusting pinion height and preload.
 ST-398517700	398517700	REPLACER	Used for removing rear bearing cone.

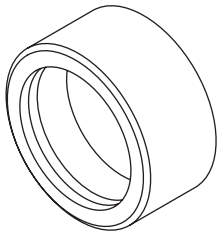
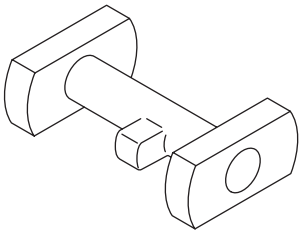
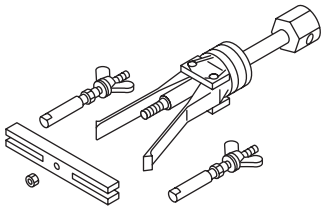
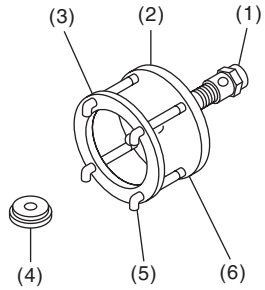
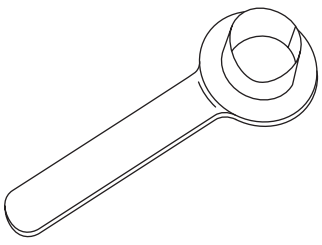
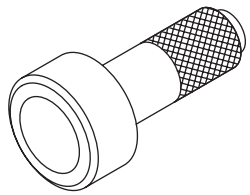
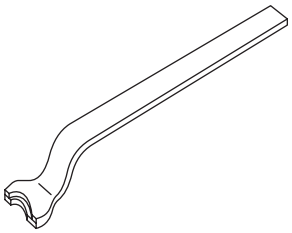
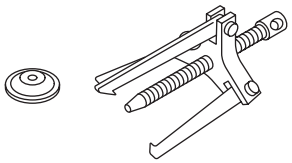
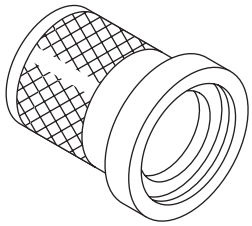
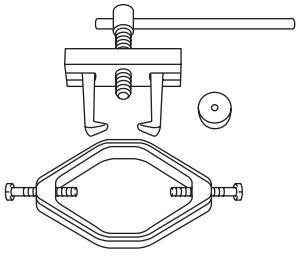
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398487700	398487700	DRIFT	Used for press-fitting side bearing cone.
 ST-398507701	398507701	DIFFERENTIAL CARRIER GAUGE	Used for adjusting pinion height.
 ST-398527700	398527700	PULLER ASSY	• Used for removing front oil seal. • Used for removing side bearing cup.
 ST-399527700	399527700	PULLER SET	Used for taking out the side bearing cone. (1) BOLT (899521412) (2) PULLER (399527702) (3) HOLDER (399527703) (4) ADAPTER (398497701) (5) BOLT (899520107) (6) NUT (021008000)
 ST28099PA090	28099PA090	OIL SEAL PROTECTOR	• Used for installing the rear drive shaft to the rear differential. • For oil seal protection

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398417700	398417700	DRIFT PUNCH	Used for installing side bearing.
 ST28099PA100	28099PA100	DRIVE SHAFT REMOVER	Used for removing the rear drive shaft from rear differential.
 ST-399703600	399703600	PULLER ASSY	Used for removing companion flange.
 ST-899874100	899874100	INSTALLER	Used for installing the companion flange.
 ST18759AA000	18759AA000	PULLER ASSY	Used for removing the differential side bearing cone.

2. GENERAL TOOL

TOOL NAME	REMARKS
Transmission jack	Used for removing and installing the rear differential.
Puller	Used for removing the side bearing retainer.
Thickness gauge	Used for measuring clearance.
Tire lever	Used for removing the rear drive shaft.