

General Description

DIFFERENTIAL

1. SERVICE DATA

Front and rear bearing preload at companion flange bolt hole N (kgf, lb)	For new bearings	17.7 — 38.8 (1.8 — 4.0, 4.1 — 8.7)
Side gear backlash	mm (in)	0.10 — 0.20 (0.0039 — 0.0079)
Side bearing standard width	mm (in)	20.00 (0.7874)
Hypoid driven gear to drive pinion backlash	mm (in)	0.10 — 0.20 (0.0039 — 0.0079)
Hypoid driven gear back surface runout	mm (in)	0.05 (0.0020) or less

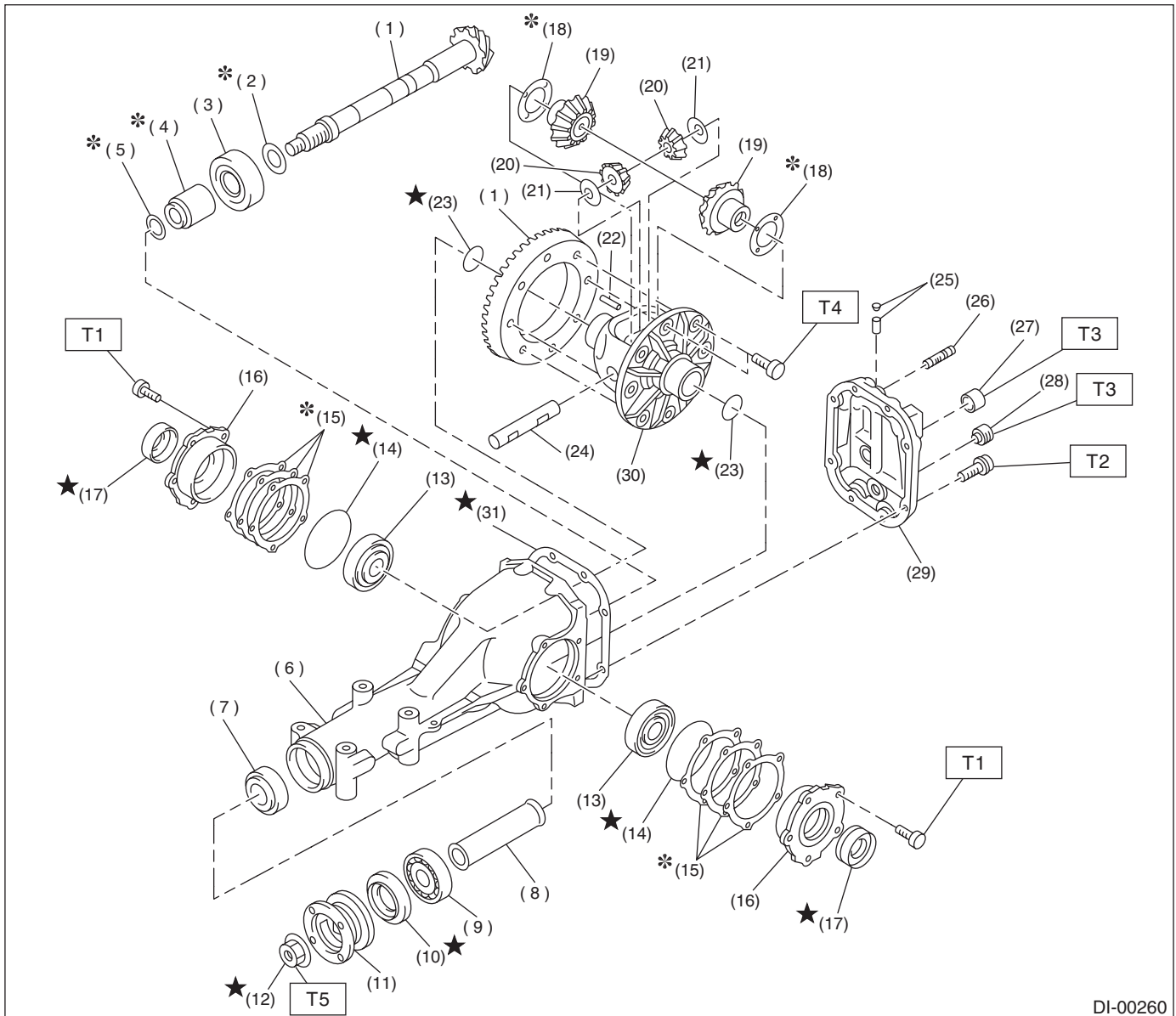
2. ADJUSTING PARTS

Bearing preload N (kgf, lb)	For new bearings	17.7 — 38.8 (1.8 — 4.0, 4.1 — 8.7)
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)

General Description

DIFFERENTIAL

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)	0.1 — 0.2 (0.0039 — 0.0079)	
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 (0.0039 — 0.0079)
Hypoid driven gear runout on its back surface			0.05 (0.0020)

B: COMPONENT**1. REAR DIFFERENTIAL WITHOUT LSD**

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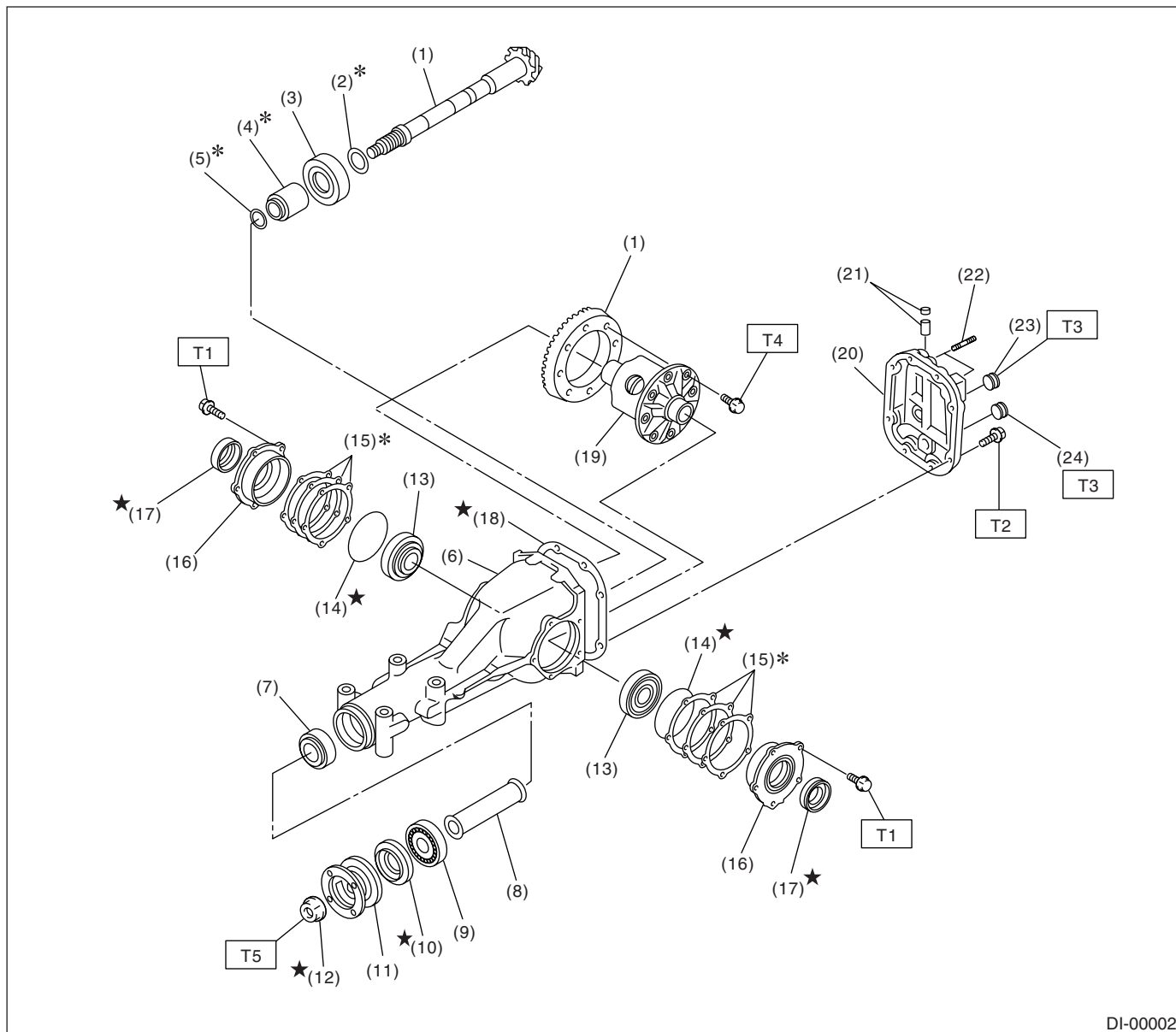
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|---|---------------------------------|------------------------|
| (1) Hypoid driven gear and drive pinion set | (13) Side bearing | (26) Stud bolt |
| (2) Pinion height adjusting washer | (14) O-ring | (27) Oil filler plug |
| (3) Rear bearing | (15) Side bearing retainer shim | (28) Oil drain plug |
| (4) Bearing preload adjusting collar | (16) Side bearing retainer | (29) Rear cover |
| (5) Bearing preload adjusting washer | (17) Side oil seal | (30) Differential case |
| (6) Differential carrier | (18) Side gear thrust washer | (31) Gasket |
| (7) Front bearing | (19) Side gear | |
| (8) Collar | (20) Pinion mate gear | |
| (9) Pilot bearing | (21) Pinion mate gear washer | |
| (10) Front oil seal | (22) Pinion shaft lock pin | |
| (11) Companion flange | (23) Snap ring | |
| (12) Self-locking nut | (24) Pinion mate shaft | |
| | (25) Air breather cap | |

Tightening torque: N·m (kgf·m, ft·lb)**T1: 10.3 (1.05, 7.6)****T2: 29 (3.0, 21.7)****T3: 49 (5.0, 36.2)****T4: 105 (10.7, 77.4)****T5: 181 (18.5, 134)**

General Description

DIFFERENTIAL

2. REAR DIFFERENTIAL WITH LSD



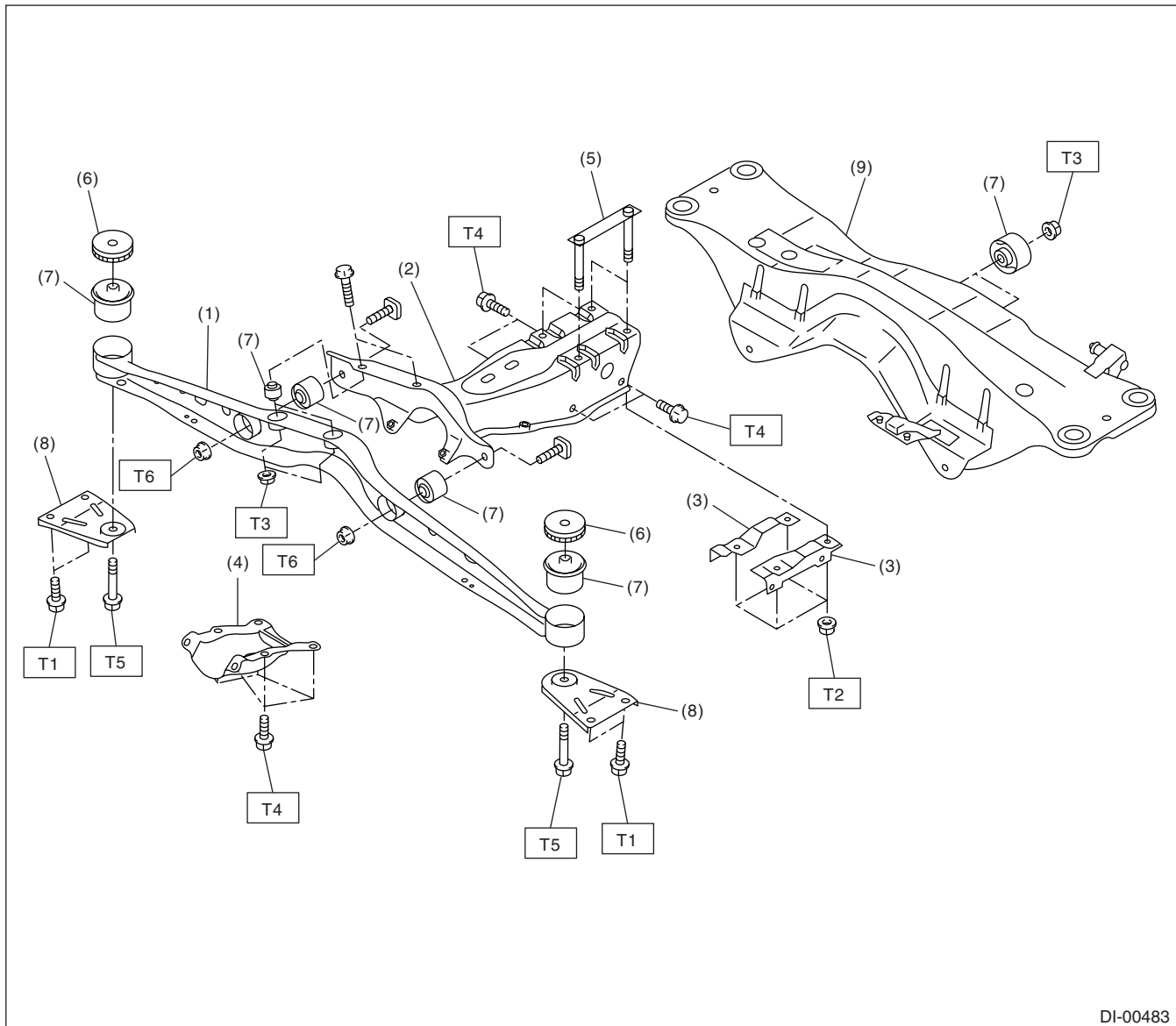
- (1) Hypoid driven gear and drive pinion set
- (2) Pinion height adjusting washer
- (3) Rear bearing
- (4) Bearing preload adjusting collar
- (5) Bearing preload adjusting washer
- (6) Differential carrier
- (7) Front bearing
- (8) Spacer
- (9) Pilot bearing
- (10) Front oil seal

- (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 (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: 10.3 (1.05, 7.6)****T2: 29 (3.0, 21.7)****T3: 49 (5.0, 36.2)****T4: 105 (10.7, 77.4)****T5: 181 (18.5, 134)**

3. REAR DIFFERENTIAL MOUNTING SYSTEM



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

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 (13.8, 97.6) |

General Description

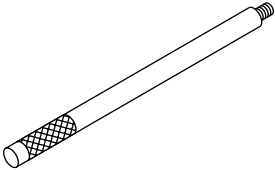
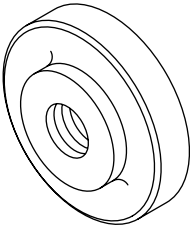
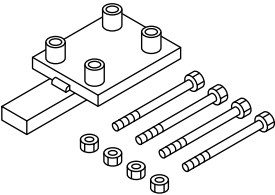
DIFFERENTIAL

C: CAUTION

- Wear work clothing, including a cap, protective goggles and protective shoes during operation.
- 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.
- Be careful not to burn yourself, because each part on the vehicle is hot after running.
- 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 revolution 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.

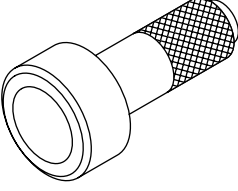
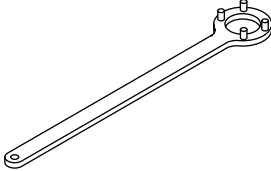
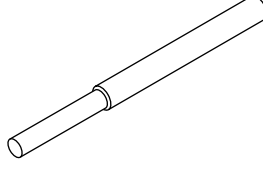
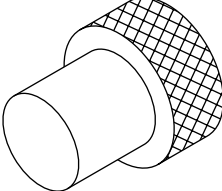
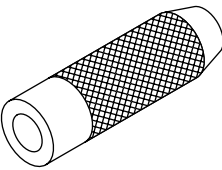
D: PREPARATION TOOL

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.

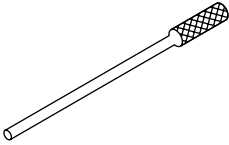
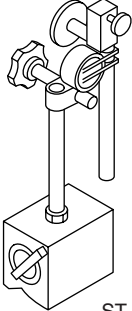
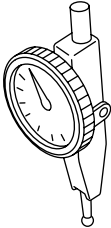
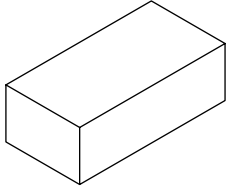
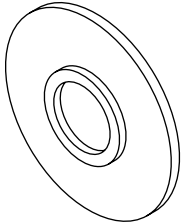
General Description

DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-498447120	498447120	INSTALLER	Used for installing the front oil seal.
 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.

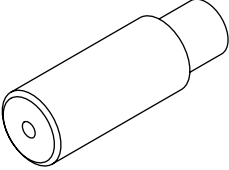
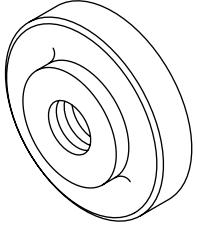
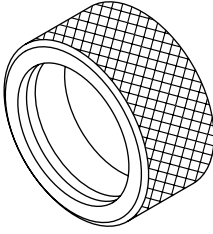
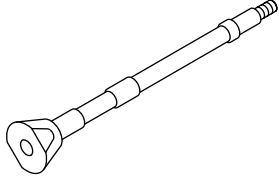
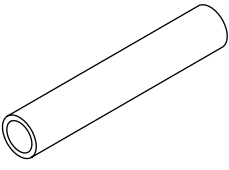
General Description

DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-899904100	899904100	STRAIGHT PIN REMOVER	Used for driving out differential pinion shaft lock pin.
 ST-498247001	498247001	MAGNET BASE	- Used for measuring backlash between side gear and pinion, and hypoid driven gear. - Used with the DIAL GAUGE (498247100).
 ST-498247100	498247100	DIAL GAUGE	- Used for measuring backlash between side gear and pinion, and hypoid driven gear. - Used with the 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.

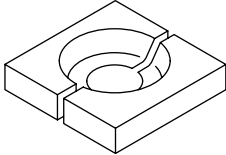
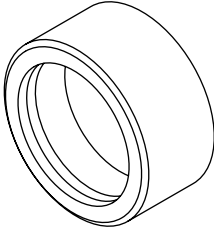
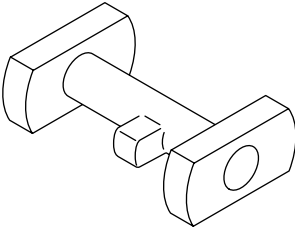
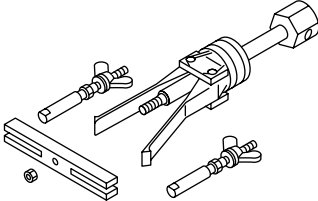
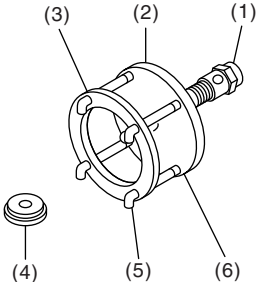
General Description

DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398457700	398457700	ATTACHMENT	Used for removing the side bearing retainer.
 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.

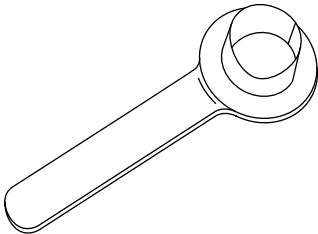
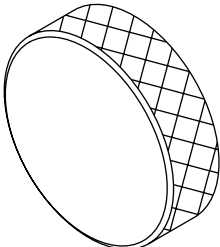
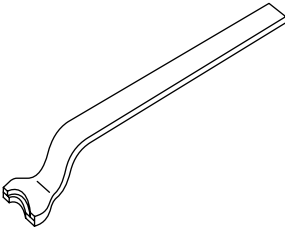
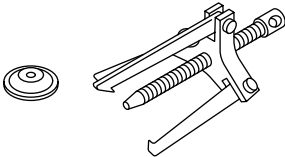
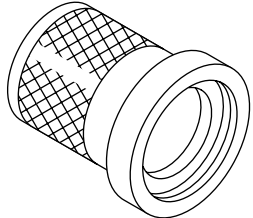
General Description

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398517700	398517700	REPLACER	Used for removing rear bearing cone.
 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)

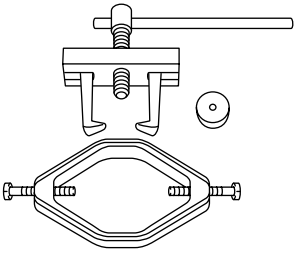
General Description

DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST28099PA090	28099PA090	OIL SEAL PROTECTOR	- Used for installing the rear drive shaft to the rear differential. - For oil seal protection
 ST-398237700	398237700	DRIFT	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.

General Description

DIFFERENTIAL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 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.