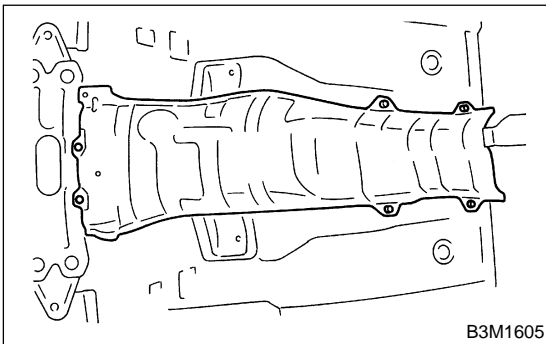


4. Rear Differential for T-type

S303145

A: REMOVAL S303145A18

- 1) Disconnect ground terminal from battery.
- 2) Move select lever or gear shift lever to "N".
- 3) Loosen wheel nuts.
- 4) Release the parking brake.
- 5) Jack-up vehicle and support it with sturdy racks.
- 6) Remove wheels.
- 7) Remove rear exhaust pipe and muffler.
- 8) Remove heat shield cover.



- 9) Remove propeller shaft.
<Ref. to DS-13 REMOVAL, Propeller Shaft.>

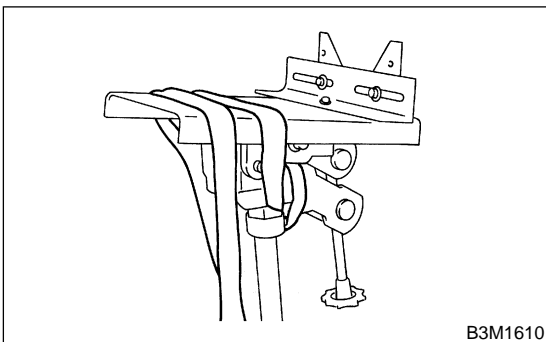
CAUTION:

When removing propeller shaft, pay attention not to damage the sliding surfaces of rear drive shaft (extension) spline, oil seal and sleeve yoke.

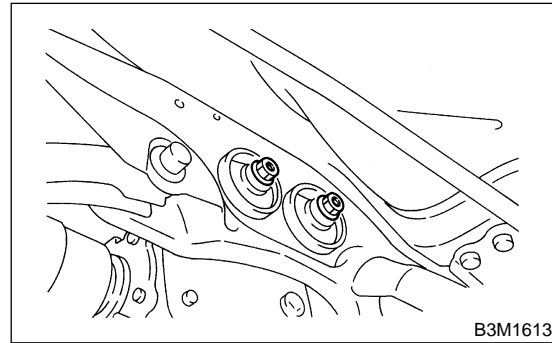
NOTE:

- Prepare an oil can and cap since the transmission oil flows out from the extension at removing propeller shaft.
- Insert the cap into the extension to prevent transmission oil from flowing out immediately after removing the propeller shaft.

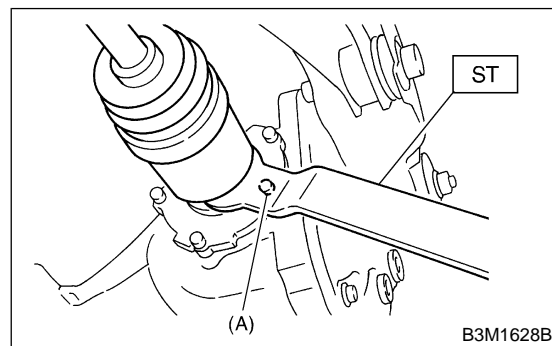
- 10) Remove rear differential protector. (if equipped)
- 11) Prepare a transmission jack and a band.



- 12) Loosen self-locking nuts connecting rear differential to rear crossmember.

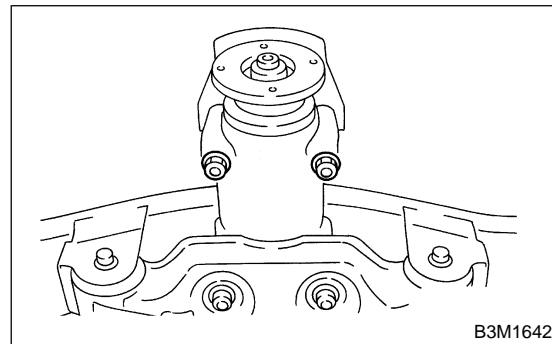


- 13) Remove DOJ of rear drive shaft from rear differential using ST.
ST 28099PA100 DRIVE SHAFT REMOVER

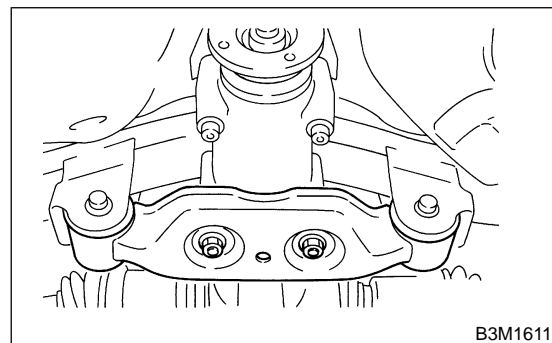


(A) Bolt

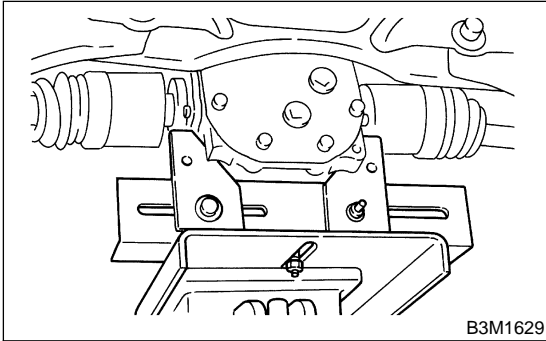
- 14) Remove protector nut.



- 15) Remove differential member.



16) Support rear differential with transmission jack.



17) Remove differential member.
18) Fix rear differential at band.

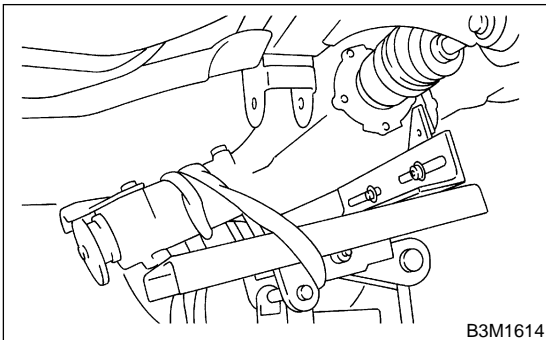
CAUTION:

Be sure to secure the rear differential on the transmission jack.

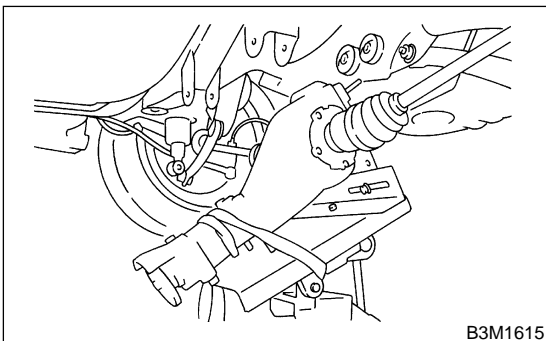
19) Remove self-locking nuts connecting rear differential to crossmember.
20) Remove rear differential stud bolt from rear crossmember bushing.

NOTE:

Carefully adjust angle and position of transmission jack and jack stand as required during stud bolt removal.



21) After removing rear differential stud bolt from rear crossmember, lower transmission jack stand. Do not allow rear drive shaft to strike lateral link bolt.

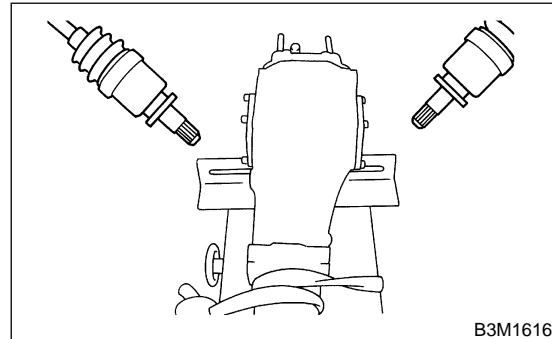


22) Pull out axle shaft from rear differential.

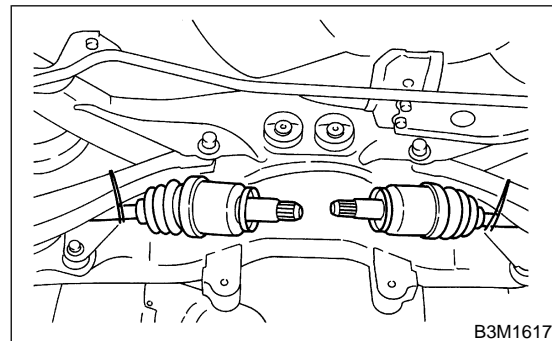
NOTE:

If axle shaft is difficult to remove from rear differential, use ST to remove it.

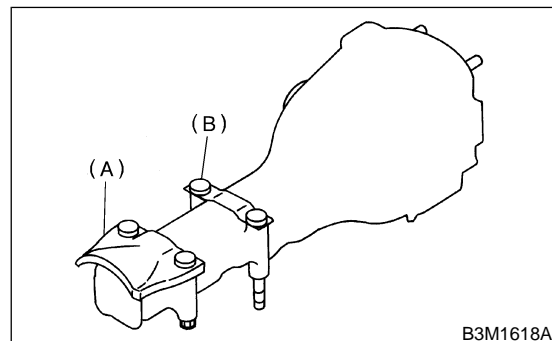
ST 28099PA100 DRIVE SHAFT REMOVER



23) Take down transmission jack.
24) Secure rear drive shaft to lateral link use wire.



25) Remove protector and plate from rear differential.



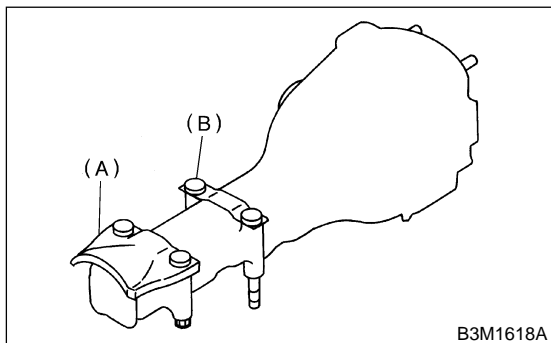
(A) Protector
(B) Rear differential member plate

REAR DIFFERENTIAL FOR T-TYPE

Differentials

B: INSTALLATION S303145A11

- 1) Install protector and plate to rear differential.



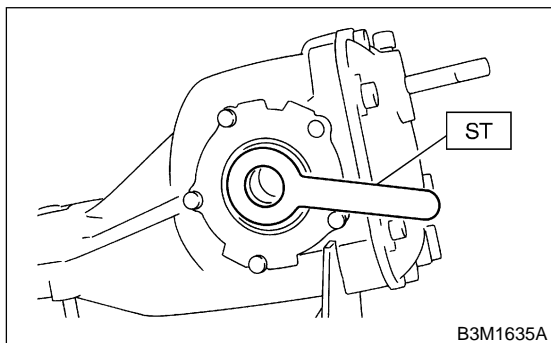
- (A) Protector
(B) Rear differential member plate

- 2) Set rear differential to transmission jack.

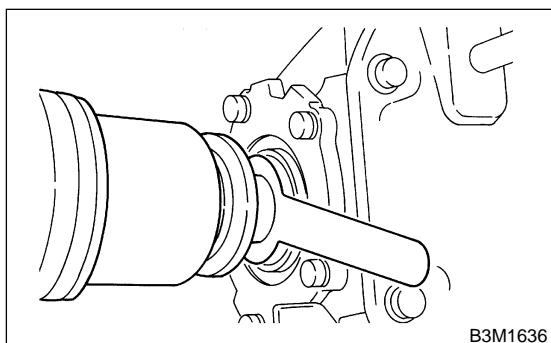
NOTE:

Secure rear differential to transmission jack using a band.

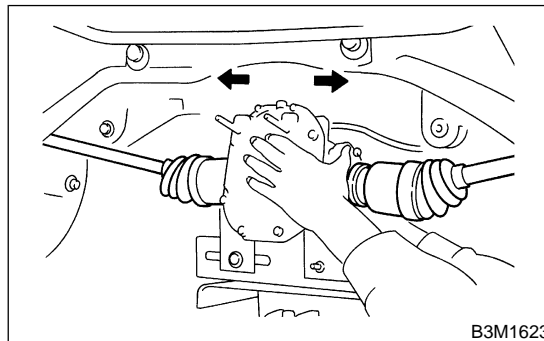
- 3) Install ST to rear differential.
ST 28099PA090 OIL SEAL PROTECTOR



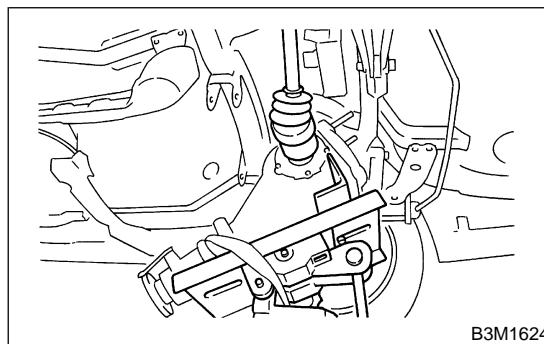
- 4) Insert the spline shaft until the spline portion is inside the side oil seal.



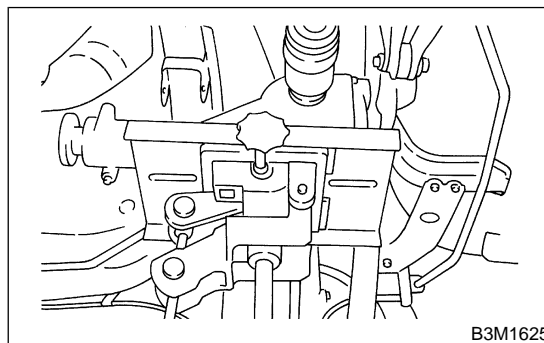
- 5) Remove ST from rear differential.
ST 28099PA090 OIL SEAL PROTECTOR
6) Completely insert axle shaft into rear differential by pressing rear differential.



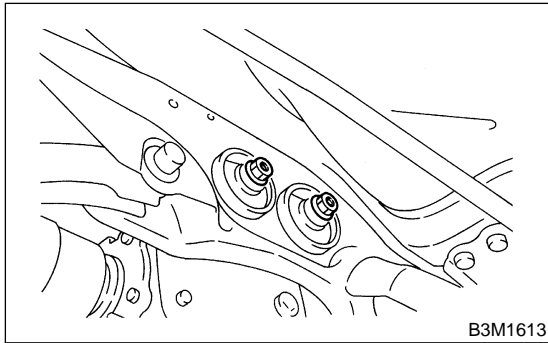
- 7) Adjust transmission jack as required so rear differential stud bolt is properly inserted into rear crossmember bushing.



- 8) After rear differential stud bolt has been inserted into rear crossmember bushing, raise transmission jack to make jack rear differential level.



9) Temporarily tighten rear crossmember self-locking nuts.



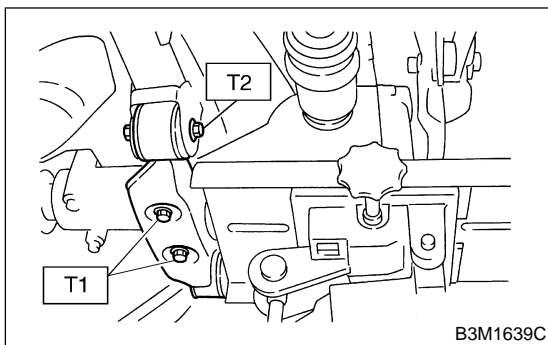
10) Remove band from rear differential. Raise rear differential just enough to move transmission jack away from it.

11) Install differential member.

Tightening torque:

T1: 65 N·m (6.6 kgf-m, 48 ft-lb)

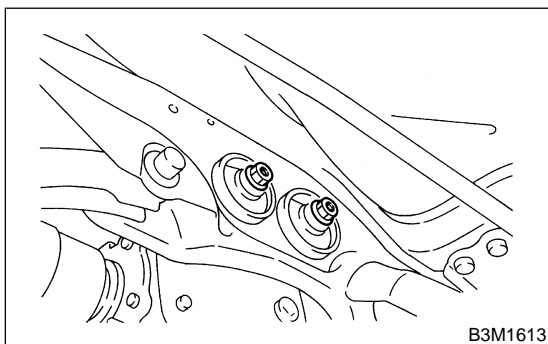
T2: 110 N·m (11.2 kgf-m, 81 ft-lb)



12) Tighten self-locking nut.

Tightening torque:

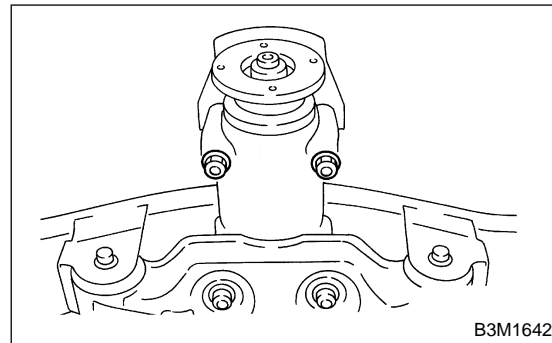
70 N·m (7.1 kgf-m, 51 ft-lb)



13) Tighten protector nut.

Tightening torque:

64 N·m (6.5 kgf-m, 47.0 ft-lb)



14) Take down transmission jack.

15) Install propeller shaft.

<Ref. to DS-14 INSTALLATION, Propeller Shaft.>

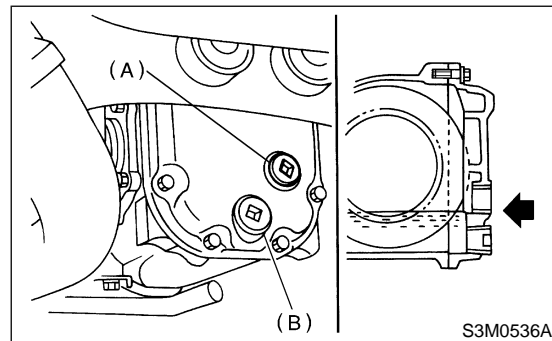
16) Install heat shield cover.

17) Install rear exhaust pipe and muffler.

18) After installing rear differential carrier on vehicle, remove filler plug and replenish gear oil up to upper level mark.

Oil capacity:

0.8 l (0.8 US qt, 0.7 Imp qt)



(A) Filler plug

(B) Drain plug

19) Tighten filler plug.

CAUTION:

Apply fluid packing to plug.

Fluid packing:

THREE BOND 1205 or equivalent

Tightening torque:

49.0 N·m (5.0 kgf-m, 36.2 ft-lb)

20) Install rear differential protector. (if equipped)

C: DISASSEMBLY S303145A06

To detect real cause of trouble, inspect the following items before disassembling.

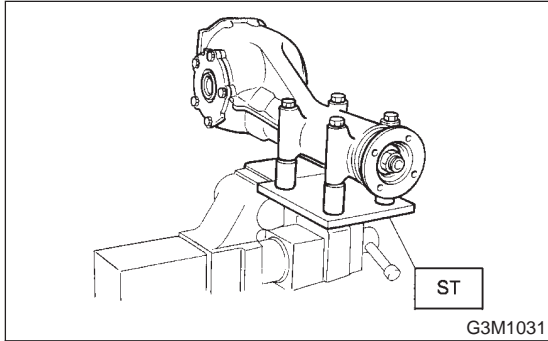
REAR DIFFERENTIAL FOR T-TYPE

Differentials

- Tooth contact of crown gear and pinion, and backlash
- Runout of crown gear at its back surface
- Turning resistance of drive pinion

1) Set ST on vise and install the differential assembly to ST.

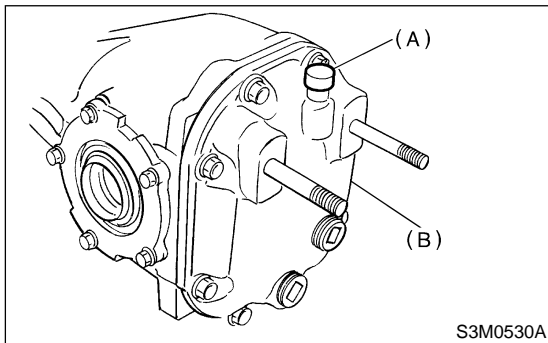
ST 398217700 ATTACHMENT



- 2) Drain gear oil by removing plug.
3) Remove the air breather cap.

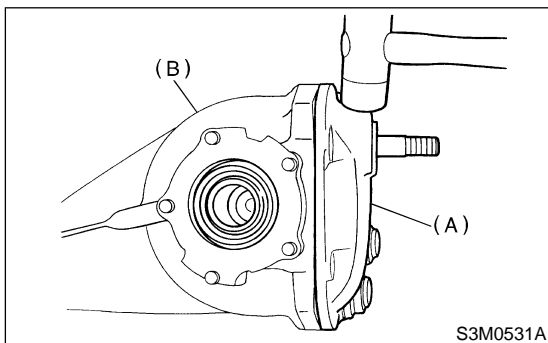
NOTE:

Do not attempt to replace the air breather cap unless necessary.



- (A) Air breather cap
(B) Rear cover

4) Remove rear cover by loosening retaining bolts.



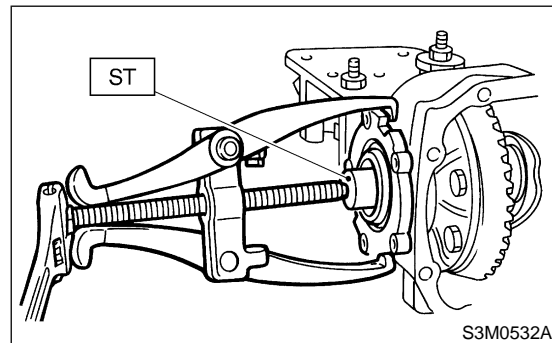
- (A) Rear cover
(B) Differential carrier

5) Make right and left side bearing retainers in order to identify them at reassembly. Remove side bearing retainer attaching bolts, set ST to differential case, and extract right and left side bearing retainers with a puller.

CAUTION:

Each shim, which is installed to adjust the side bearing preload, should be kept together with its mating retainer.

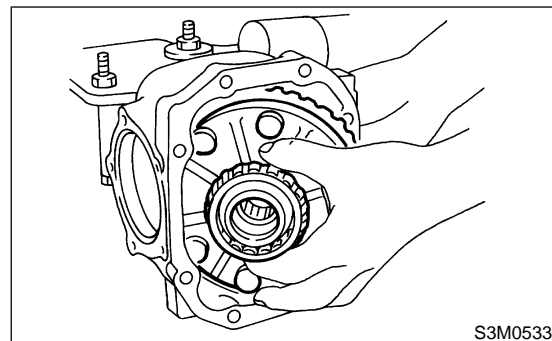
ST 398457700 ATTACHMENT



6) Pull out differential case assembly from differential carrier.

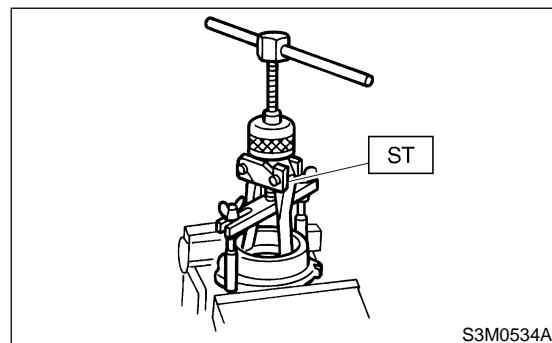
CAUTION:

Be careful not to hit the teeth against the case.



7) When replacing side bearing, pull bearing cup from side bearing retainer using ST.

ST 398527700 PULLER ASSY



8) Extract bearing cone with ST.

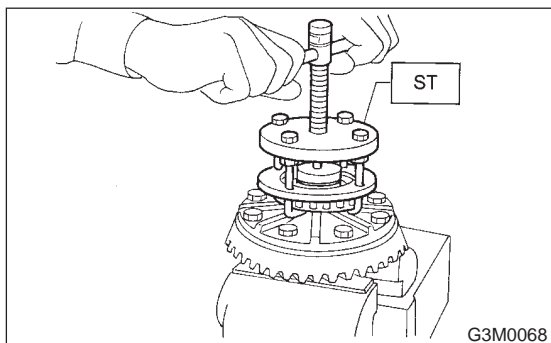
CAUTION:

Do not attempt to disassemble the parts unless necessary.

NOTE:

- Set puller so that its claws catch the edge of the bearing cone.
- Never mix up the right and left hand bearing races and cones.

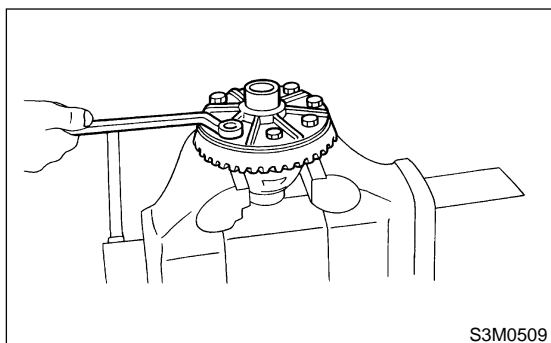
ST 399527700 PULLER SET



9) Remove crown gear by loosening crown gear bolts.

CAUTION:

Further disassembling is not allowed.

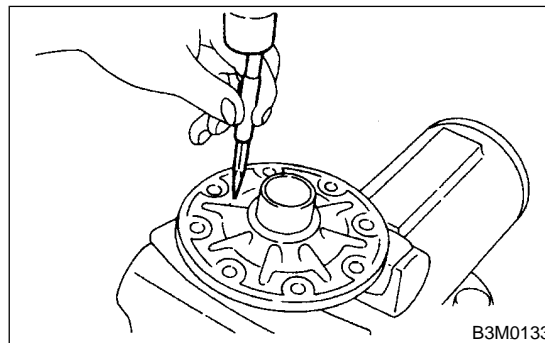


10) Drive out pinion shaft lock pin from crown gear side. (Without LSD)

NOTE:

The lock pin is staked at the pin hole end on the differential carrier; do not drive it out forcibly before unstaking it.

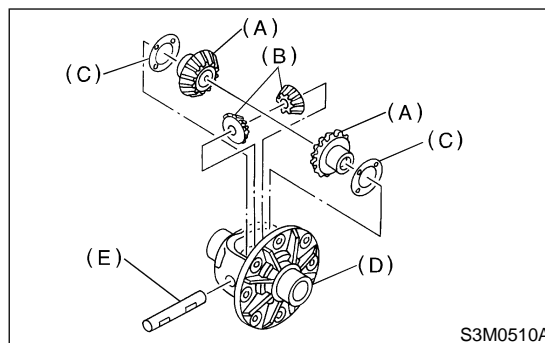
ST 899904100 STRAIGHT PIN REMOVER



11) Draw out pinion mate shaft and remove pinion mate gears, side gears and thrust washers. (Without LSD)

NOTE:

The gears as well as thrust washers should be marked or kept separated left and right, and front and rear.



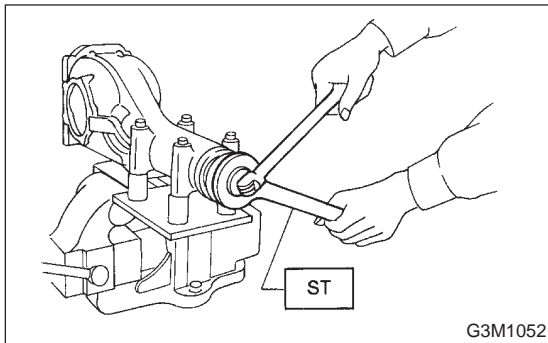
- (A) Side gear
- (B) Pinion mate gear
- (C) Thrust washer
- (D) Differential case
- (E) Pinion mate shaft

REAR DIFFERENTIAL FOR T-TYPE

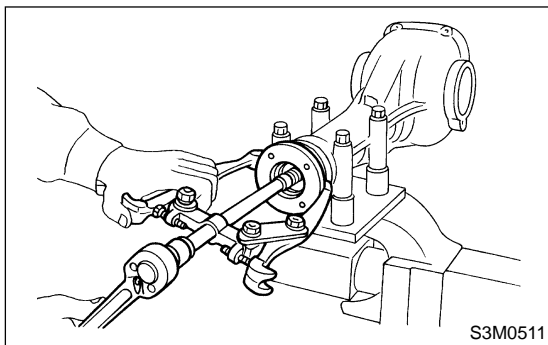
Differentials

12) Hold companion flange with ST and remove drive pinion nut.

ST 498427200 FLANGE WRENCH



13) Extract the companion flange with a puller.

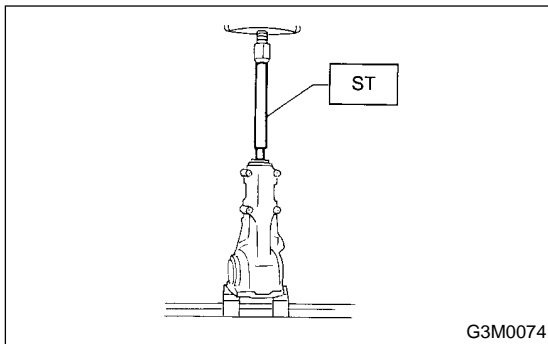


14) Press the end of drive pinion shaft and extract it together with rear bearing cone, preload adjusting spacer and washer.

NOTE:

Hold the drive pinion so as not to drop it.

ST 398467700 DRIFT

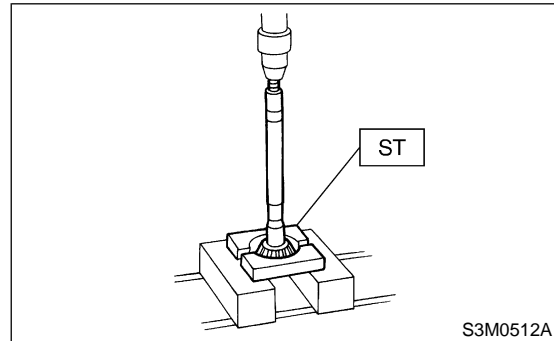


15) Remove rear bearing cone from drive pinion by supporting cone with ST.

NOTE:

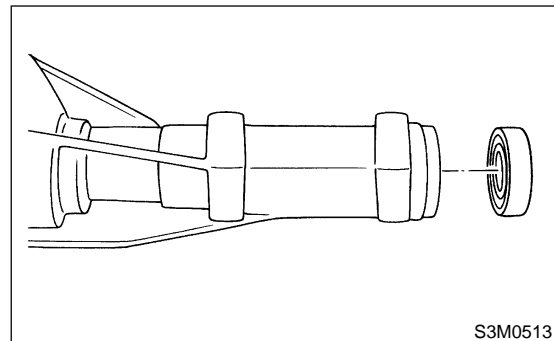
Place the replacer so that its center-recessed side faces the pinion gear.

ST 398517700 REPLACER



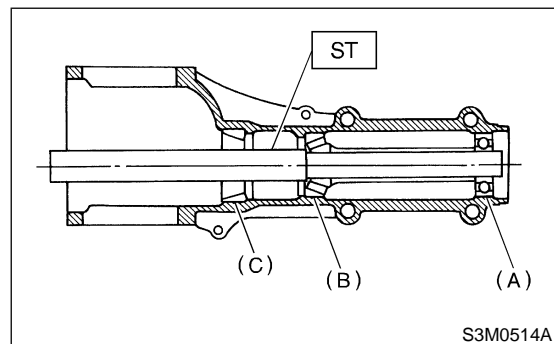
16) Remove front oil seal from differential carrier using ST.

ST 398527700 PULLER ASSY



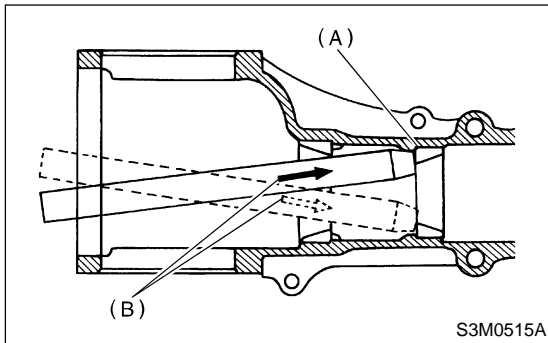
17) Remove pilot bearing together with front bearing cone using ST.

ST 398467700 DRIFT



- (A) Pinion bearing
- (B) Front bearing
- (C) Rear bearing cup

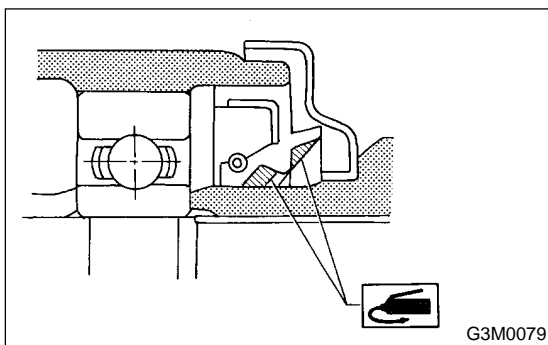
18) When replacing bearings, tap front bearing cup and rear bearing cup in this order out of case by using a brass bar.



- (A) 2 cutouts along diagonal lines
- (B) Tap alternately with brass bar.

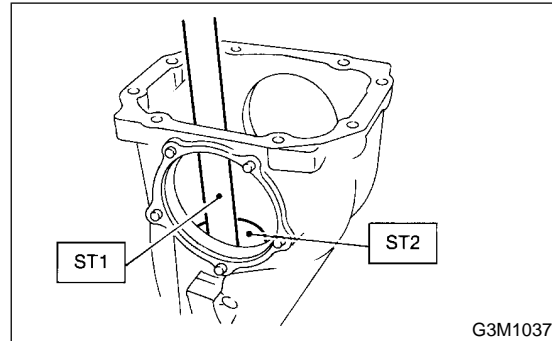
D: ASSEMBLY S303145A02

- 1) Precautions for assembling
 - Assemble in the reverse order of disassembling.
 - Check and adjust each part during assembly.
 - Keep the shims and washers in order, so that they are not misinstalled.
 - Thoroughly clean the surfaces on which the shims, washers and bearings are to be installed.
 - Apply gear oil when installing the bearings and thrust washers.
 - Be careful not to mix up the right and left hand races of the bearings.
 - Replace the oil seal with new one at every disassembly. Apply chassis grease between the lips when installing the oil seal.



2) Adjusting preload for front and rear bearings
Adjust the bearing preload with spacer and washer between front and rear bearings. Pinion height adjusting washer are not affected by this adjustment. The adjustment must be carried out without oil seal inserted.

- (1) Press rear bearing race into differential carrier with ST1 and ST2.
 - ST1 398477701 HANDLE
 - ST2 398477703 DRIFT 2

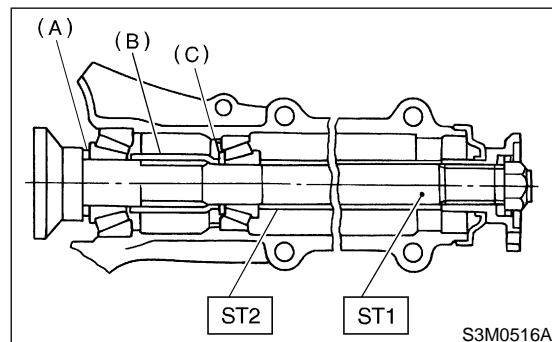


(2) Insert ST1 into carrier with pinion height adjusting washer and rear bearing cone fitted onto it.

CAUTION:

- Re-use the used washer if not deformed.
- Use a new rear bearing cone.

- (3) Then install preload adjusting spacer and washer, front bearing cone, ST2, companion flange, and washer and drive pinion nut.
 - ST1 398507702 DUMMY SHAFT
 - ST2 398507703 DUMMY COLLAR



- (A) Pinion height adjusting shim
- (B) Preload adjusting spacer
- (C) Preload adjusting washer

REAR DIFFERENTIAL FOR T-TYPE

Differentials

(4) Turn ST1 with hand to make it seated, and tighten drive pinion nut while measuring the preload with spring balance. Select preload adjusting washer and spacer so that the specified preload is obtained when nut is tightened to the specified torque.

CAUTION:

Use a new lock nut.

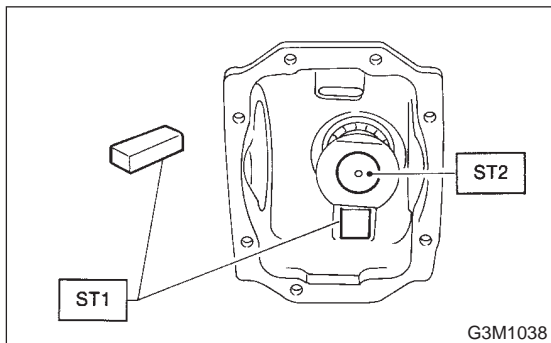
NOTE:

- Be careful not to give excessive preload.
- When tightening the drive pinion nut, lock ST1 with ST2 as shown in the figure.

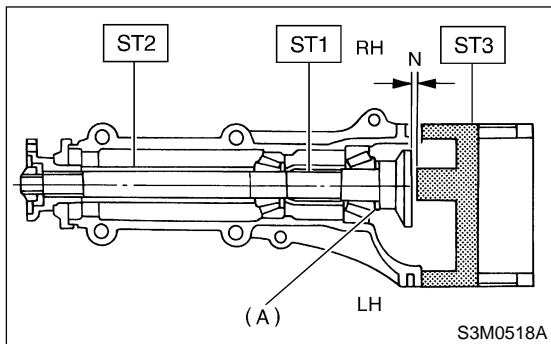
ST1 398507704 BLOCK
ST2 398507702 DUMMY SHAFT

Tightening torque:

181 N·m (18.5 kgf-m, 134 ft-lb)



| Front and rear bearing preload |
|--|
| For new bearing: 19.6 — 28.4 N (2.0 — 2.9 kg, 4.4 — 6.4 lb) at companion flange bolt hole |
| For used bearing: 8.34 — 16.67 N (0.85 — 1.7 kg, 1.87 — 3.75 lb) at companion flange bolt hole |



| 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) | |
| Preload adjusting spacer | 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) |

3) Adjusting drive pinion height

Adjust drive pinion height with shim installed between rear bearing cone and the back of pinion gear.

- (1) Install ST1, ST2 and ST3, as shown in the figure, and apply the specified preload on the bearings.

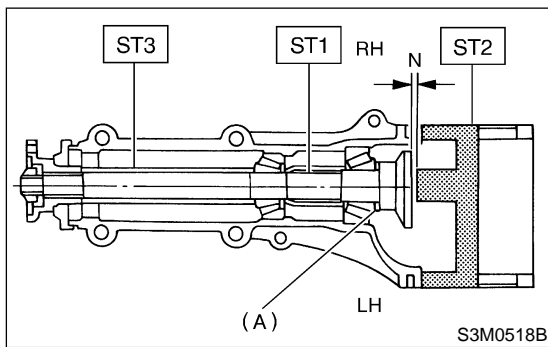
| Front and rear bearing preload |
|--|
| For new bearing: 19.6 — 28.4 N (2.0 — 2.9 kg, 4.4 — 6.4 lb) at companion flange bolt hole |
| For used bearing: 8.34 — 16.67 N (0.85 — 1.7 kg, 1.87 — 3.75 lb) at companion flange bolt hole |

Adjusting preload for front and rear bearings

NOTE:

At this time, install a pinion height adjusting shim which is temporarily selected or the same as that used before. Measure and record the thickness.

ST1 398507702 DUMMY SHAFT
ST2 398507701 DIFFERENTIAL CARRIER GAUGE
ST3 398507703 DUMMY COLLAR



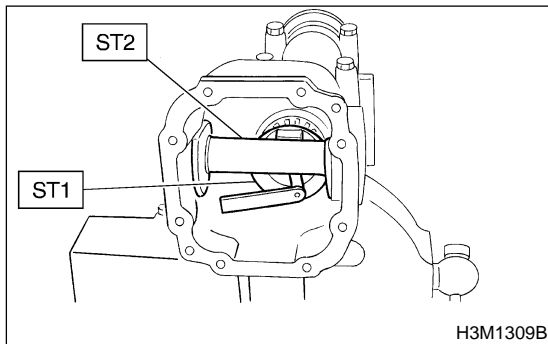
(A) Pinion height adjusting shim

(2) Measure the clearance N between the end of ST2 and the end surface of ST1 by using a thickness gauge.

NOTE:

Make sure there is no clearance between the case and ST2.

- ST1 398507702 DUMMY SHAFT
- ST2 398507701 DIFFERENTIAL CARRIER GAUGE



(3) Obtain the thickness of pinion height adjusting shim to be inserted from the following formula, and replace the temporarily installed shim with this one.

$$T = To + N - (H \times 0.01) - 0.20 \text{ mm (0.0079 in)}$$

NOTE:

Use copies of this page.

| | | |
|-------|---|--|
| T | Thickness of shim temporarily inserted mm (in) | |
| To | Thickness of pinion height adjusting shim mm (in) | |
| N | Reading of thickness gauge mm (in) | |
| H | Figure marked on drive pinion head | |
| Memo: | | |

(Example of calculation)

$$To = 2.20 + 1.20 = 3.40 \text{ mm}$$

$$N = 0.23 \text{ mm } H = + 1,$$

$$T = 3.40 + 0.23 - 0.01 - 0.20 = 3.42$$

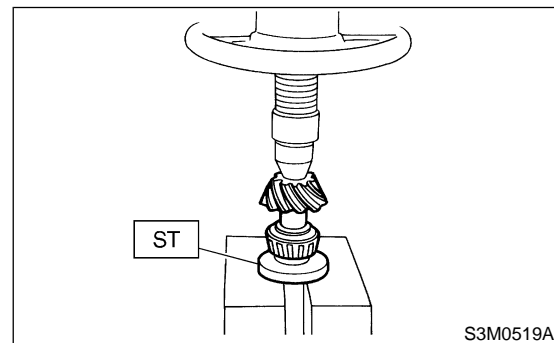
Result: Thickness = 3.42 mm

Therefore use the shim 383605200.

| Pinion height adjusting shim | |
|------------------------------|-------------------|
| 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) |

4) Install the selected pinion height adjusting shim on drive pinion, and press the rear bearing cone into position with ST.

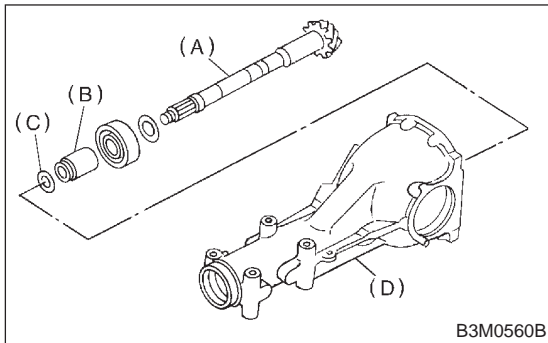
ST 398177700 INSTALLER



REAR DIFFERENTIAL FOR T-TYPE

Differentials

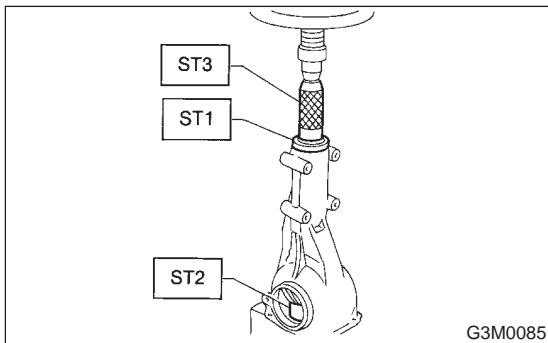
5) Insert drive pinion into differential carrier, install the previously selected bearing preload adjusting spacer and washer.



- (A) Drive pinion
- (B) Bearing adjusting spacer
- (C) Washer
- (D) Differential carrier

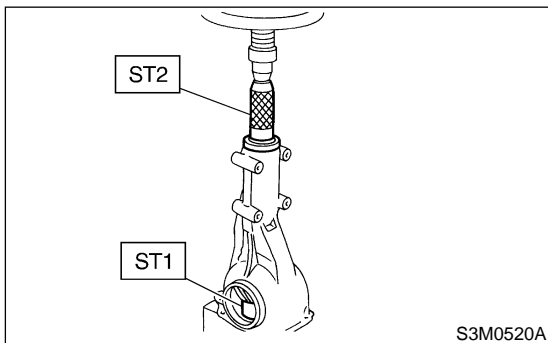
6) Press-fit front bearing cone into case with ST1, ST2 and ST3.

- ST1 398507703 DUMMY COLLAR
- ST2 399780104 WEIGHT
- ST3 899580100 INSTALLER



7) Insert spacer, then press-fit pilot bearing with ST1 and ST2.

- ST1 399780104 WEIGHT
- ST2 899580100 INSTALLER

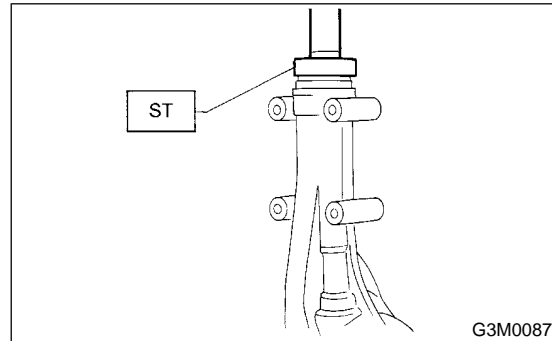


8) Fit a new oil seal with ST.

NOTE:

- Press-fit until end of oil seal is 1 mm (0.04 in) inward from end of carrier.
- Apply grease between the oil seal lips.

ST 498447120 OIL SEAL INSTALLER

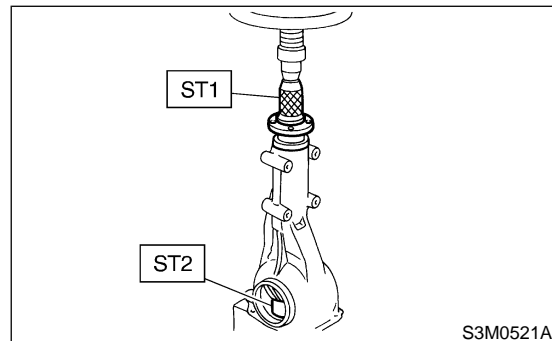


9) Press-fit companion flange with ST1 and ST2.

CAUTION:

Be careful not to damage bearing.

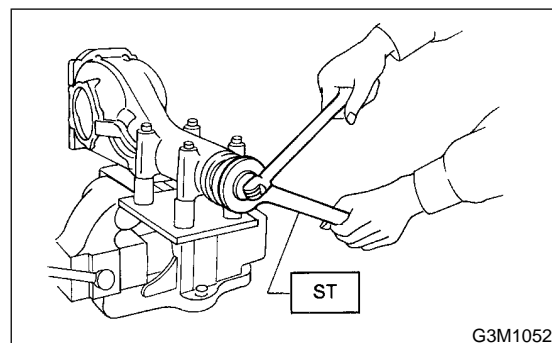
- ST1 899874100 INSTALLER
- ST2 399780104 WEIGHT



10) Install self-locking nut. Then tighten it with ST.

ST 498427200 FLANGE WRENCH

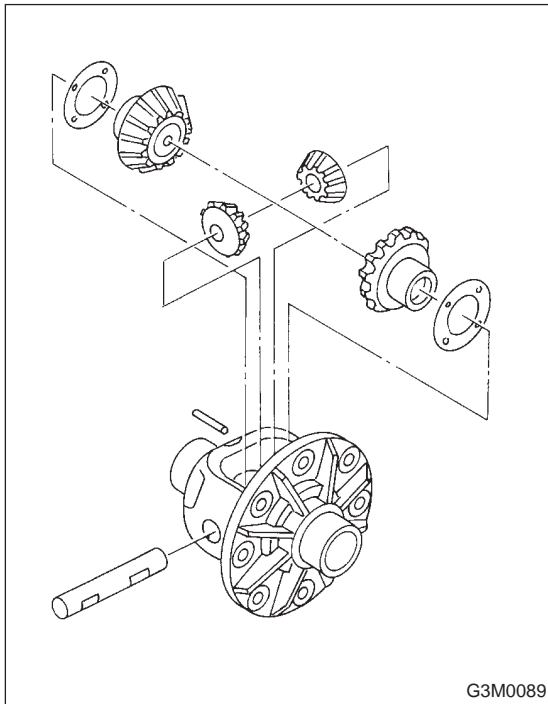
Tightening torque:
181 N·m (18.5 kgf·m, 134 ft·lb)



11) Assembling differential case
Install side gears and pinion mate gears, with their thrust washers and pinion mate shaft, into differential case. (Without LSD)

CAUTION:

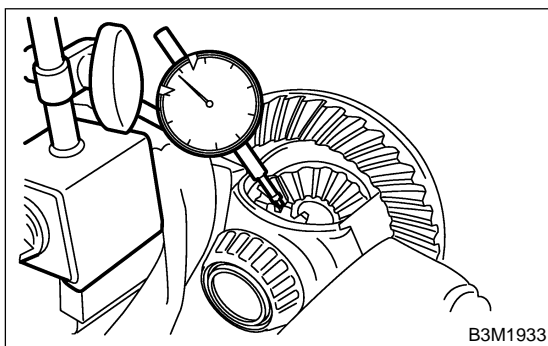
- Apply gear oil on both sides of the washer and on the side gear shaft before installing.
- Insert the pinion mate shaft into the differential case by aligning the lock pin holes.



G3M0089

(1) Measure the side gear backlash.

Side gear back clearance:
0.10 — 0.20 mm (0.0039 — 0.0079 in)



B3M1933

(2) Adjust the backlash as specified by selecting side gear thrust washer.

| Side gear thrust washer | |
|-------------------------|-------------------------------|
| 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) |
| 383445204 | 0.90 — 0.95 (0.0354 — 0.0374) |
| 383445205 | 0.95 — 1.00 (0.0374 — 0.0394) |

(3) Check the condition of rotation after applying oil to the gear tooth surfaces and thrust surfaces.

(4) After inserting pinion shaft lock pin into differential case, stake the both sides of the hole to prevent pin from falling off.

12) Install crown gear on differential case.

CAUTION:

Before installing bolts, apply Lock Tite to bolt threads.

Lock Tite:

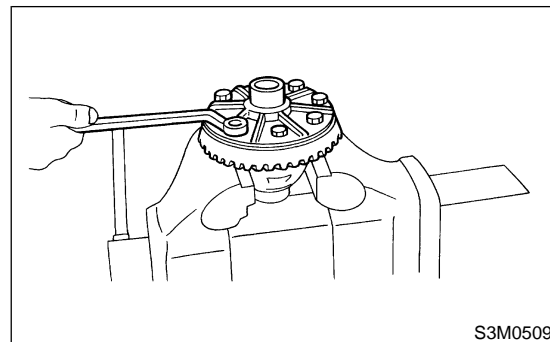
THREE BOND 1324 or equivalent

NOTE:

Tighten diagonally while tapping the bolt heads.

Tightening torque:

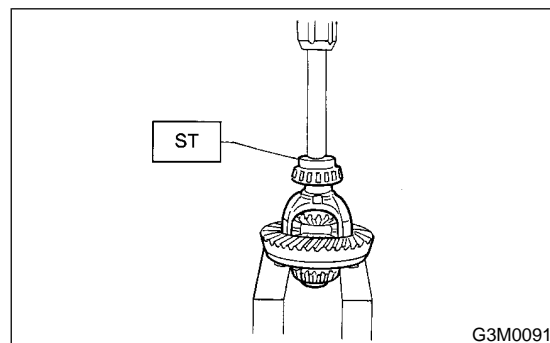
103 N·m (10.5 kgf·m, 76 ft·lb)



S3M0509

13) Press side bearing cone onto differential case with ST.

ST 398487700 DRIFT

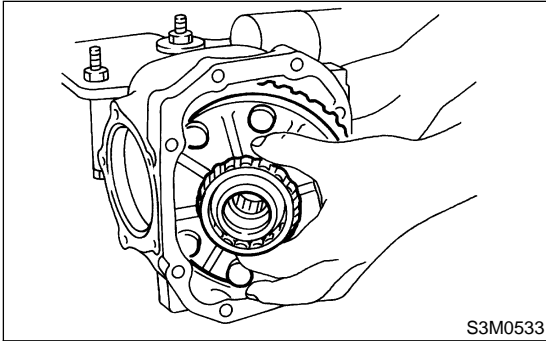


G3M0091

REAR DIFFERENTIAL FOR T-TYPE

Differentials

- 14) Adjusting side bearing retainer shims
- (1) The driven gear backlash and side bearing preload can be determined by the side bearing retainer shim thickness.
 - (2) Install the differential case assembly into differential carrier in the reverse order of disassembly.



- (3) Install side retainer shims and O-rings to the left and right retainers from which they were removed.

NOTE:

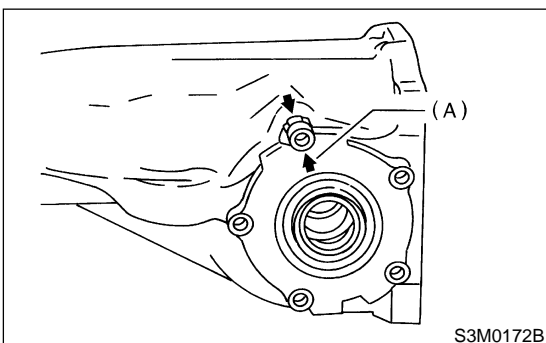
- Replace broken or cracked O-ring with new one.
- Replace broken or corroded side retainer shim with new one of same thickness.

| 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) |

- (4) Align arrow marked on differential carrier with that marked on side retainer during installation.

CAUTION:

Be careful that side bearing outer race is not damaged by bearing roller.



(A) Arrow mark

- (5) Tighten side bearing retainer bolts.

CAUTION:

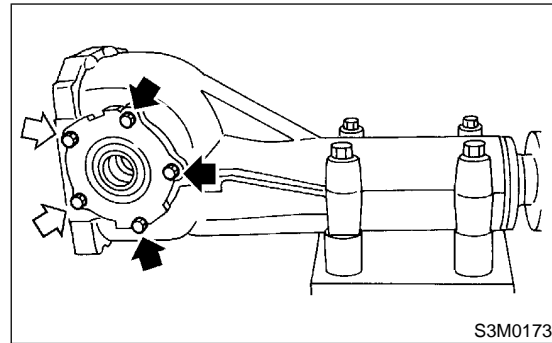
Before tightening the two side bearing retainer bolts, apply Lock Tite to bolt threads.

⇒ Lock Tite:

THREE BOND 1105 or equivalent

Tightening torque:

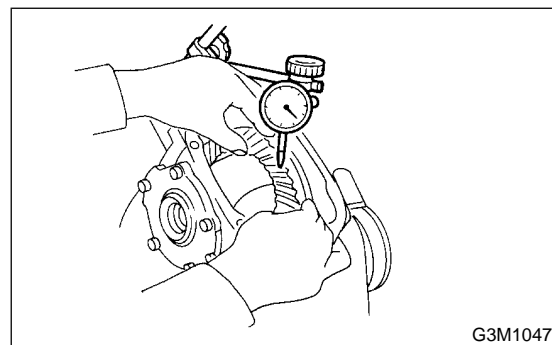
10.3 N·m (1.05 kgf-m, 7.6 ft-lb)



- (6) Measure the crown gear-to-drive pinion backlash. Set magnet base on differential carrier. Align contact point of dial gauge with tooth face of crown gear, and move crown gear while holding drive pinion still. Read value indicated on dial gauge.

Backlash:

0.10 — 0.20 mm (0.0039 — 0.0079 in)



- (7) At the same time, measure the turning resistance of drive pinion. Compared with the resistance when differential case is not installed, if the increase of the resistance is not within the specified range, readjust side bearing retainer shims.

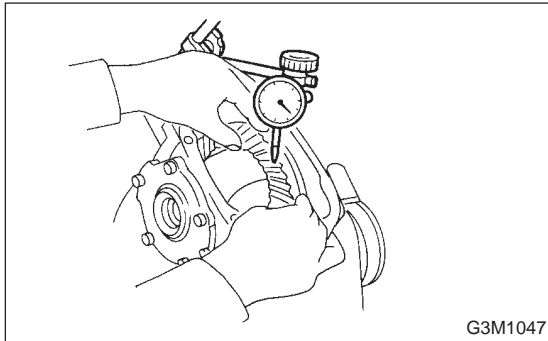
Turning resistance increase:

2.9 — 10.8 N (0.3 — 1.1 kgf, 0.7 — 2.4 lb)

15) Re-check crown gear-to-pinion backlash.

Backlash:

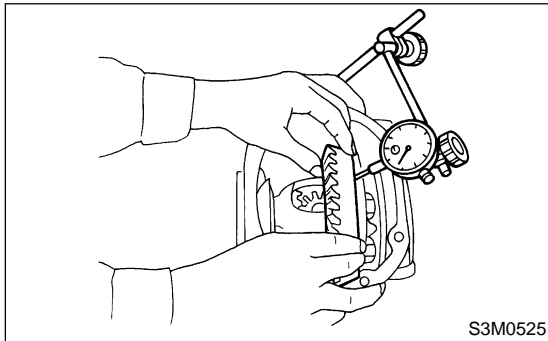
0.10 — 0.20 mm (0.0039 — 0.0079 in)



16) Check the crown gear runout on its back surface, and make sure pinion and crown gear rotate smoothly.

Limit of runout:

Less than 0.05 mm (0.0020 in)



17) Checking and adjusting tooth contact of crown gear

(1) Apply an even coat of red lead on both sides of three or four teeth on the crown gear. Check the contact pattern after rotating crown gear several revolutions back and forth until a definite contact pattern appears on the crown gear.

(2) When the contact pattern is incorrect, readjust according to the instructions given in "TOOTH CONTACT PATTERN".

NOTE:

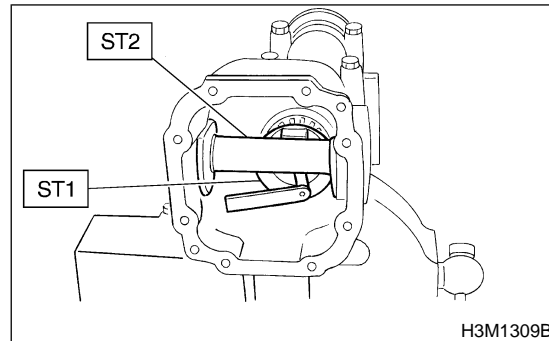
Be sure to wipe off red lead completely after adjustment is completed.

18) If proper tooth contact is not obtained, once again adjust the drive pinion height changing RH and LH side bearing retainer shims and the hypoid gear backlash.

(1) Drive pinion height

ST1 398507702 DUMMY SHAFT

ST2 398507701 DIFFERENTIAL CARRIER GAUGE



$$T = To + N - (H \times 0.01) - 0.20 \text{ (mm)}$$

Where:

T = Thickness of pinion height adjusting shim (mm)

To = Thickness of shim temporarily inserted (mm)

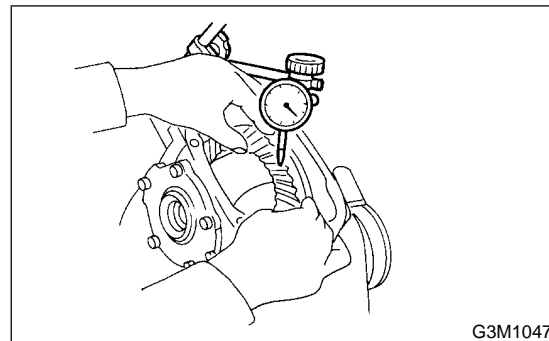
N = Reading of thickness gauge (mm)

H = Figure marked on drive pinion head

(2) Hypoid gear backlash

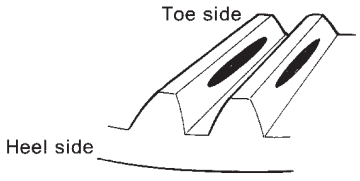
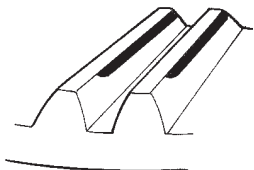
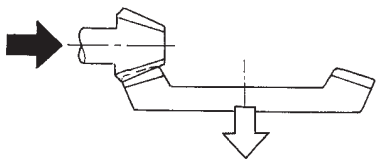
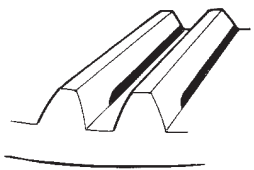
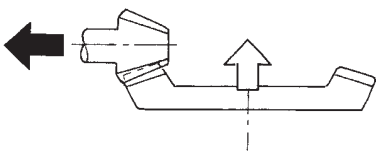
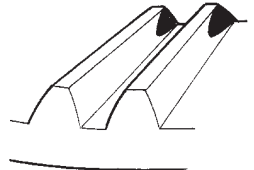
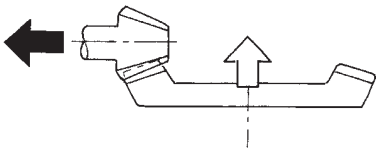
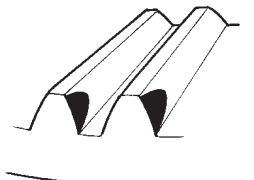
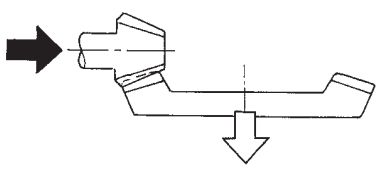
Backlash:



0.10 — 0.20 mm (0.0039 — 0.0079 in)



REAR DIFFERENTIAL FOR T-TYPE

Differentials

| TOOTH CONTACT PATTERN | | |
|--|---|---|
| Condition | Contact pattern | Adjustment |
| <p>Correct tooth contact</p> <p>Tooth contact pattern slightly shifted towards toe under no load rotation. (When loaded, contact pattern moves toward heel.)</p> | <p>Toe side</p>  <p>Heel side</p> <p>G3M0098A</p> | <p>—</p> |
| <p>Face contact</p> <p>Backlash is too large.</p> | <p>This may cause noise and chipping at tooth ends.</p>  <p>G3M0098B</p> | <p>Increase thickness of drive pinion height adjusting shim in order to bring drive pinion closer to crown gear center.</p>  <p>G3M0098F</p> |
| <p>Flank contact</p> <p>Backlash is too small.</p> | <p>This may cause noise and stepped wear on surfaces.</p>  <p>G3M0098C</p> | <p>Reduce thickness of drive pinion height adjusting shim in order to move drive pinion away from crown gear center.</p>  <p>G3M0098G</p> |
| <p>Toe contact</p> <p>Contact area is small.</p> | <p>This may cause chipping at toe ends.</p>  <p>G3M0098D</p> | <p>Adjust as for flank contact.</p>  <p>G3M0098G</p> |
| <p>Heel contact</p> <p>Contact area is small.</p> | <p>This may cause chipping at heel ends.</p>  <p>G3M0098E</p> | <p>Adjust as for face contact.</p>  <p>G3M0098F</p> |

 : Adjusting direction of drive pinion
 : Adjusting direction of crown gear

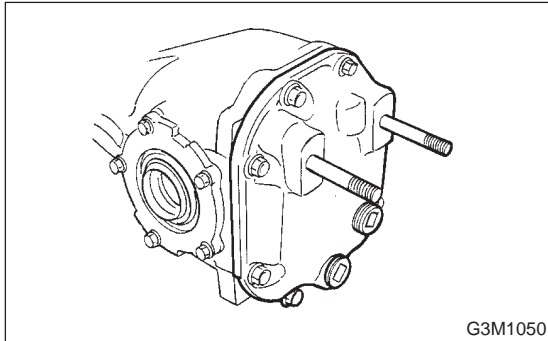
19) Install rear cover and tighten bolts to specified torque.

CAUTION:

Securely connect ground terminal of rear differential temperature sensor.

Tightening torque:

29 N·m (3.0 kgf·m, 21.7 ft·lb)



E: INSPECTION

S303145A10

Wash all the disassembled parts clean, and examine them for wear, damage, or other defects. Repair or replace defective parts as necessary.

1) Crown gear and drive pinion

- If abnormal tooth contact is evident, find out the cause and adjust to give correct tooth contact at assembly. Replace the gear if excessively worn or incapable of adjustment.
- If crack, score, or seizure is evident, replace as a set. Slight damage of tooth can be corrected by oil stone or the like.

- If crack, score, or seizure is evident, replace as a set. Slight damage of tooth can be corrected by oil stone or the like.

2) Side gear and pinion mate gear

- Replace if crack, score, or other defects are evident on tooth surface.

- Replace if thrust washer contacting surface is worn or seized. Slight damage of the surface can be corrected by oil stone or the like.

3) Bearing

Replace if seizure, peeling, wear, rust, dragging during rotation, abnormal noise or other defect is evident.

4) Thrust washers of side gear and pinion mate gear

Replace if seizure, flaw, abnormal wear or other defect is evident.

5) Oil seal

Replace if deformed or damaged, and at every disassembling.

6) Differential carrier

Replace if the bearing bores are worn or damaged.

7) Differential case

Replace if its sliding surfaces are worn or cracked.

8) Companion flange

Replace if the oil seal lip contacting surfaces have flaws.

1. SIDE GEAR BACKLASH

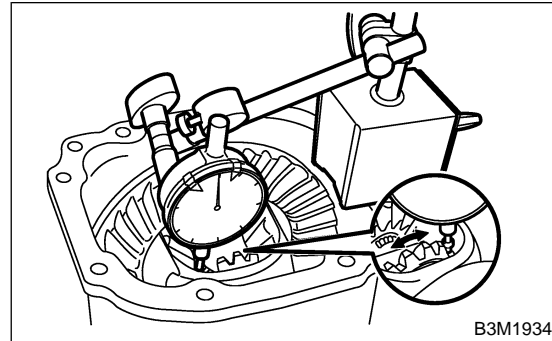
S303145A1001

Using a dial gauge, check the backlash of the side gear.

Side gear backlash:

0.1 — 0.2 mm (0.004 — 0.008 in)

If side gear backlash is not within the specification, adjust clearance as specified by selecting side gear thrust washer.



2. CROWN GEAR BACKLASH

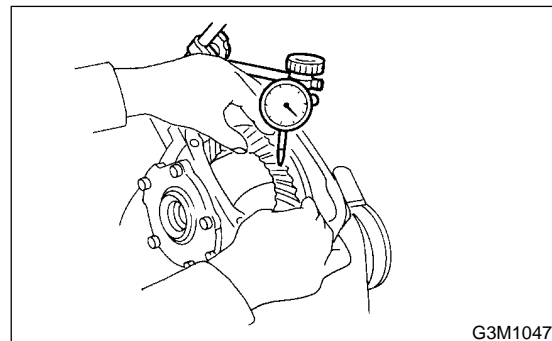
S303145A1002

Using a dial gauge, check the backlash of the crown gear.

Crown gear backlash:

0.1 — 0.2 mm (0.004 — 0.008 in)

If crown gear backlash is not within the specification, adjust the side bearing preload or repair if necessary.



REAR DIFFERENTIAL FOR T-TYPE

Differentials

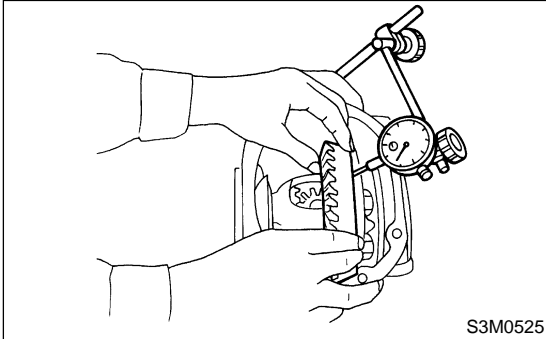
3. CROWN GEAR RUNOUT S303145A1003

Using a dial gauge, check the crown gear runout.

Crown gear runout:

Less than 0.05 mm (0.0020 in)

If the crown gear runout exceeds 0.05 mm (0.0020 in), replace the crown gear.



4. TOOTH CONTACT BETWEEN CROWN GEAR AND DRIVE PINION S303145A1004

Inspect tooth contact between crown gear and driven pinion. <Ref. to DI-31 ASSEMBLY, Differential for T-type.>

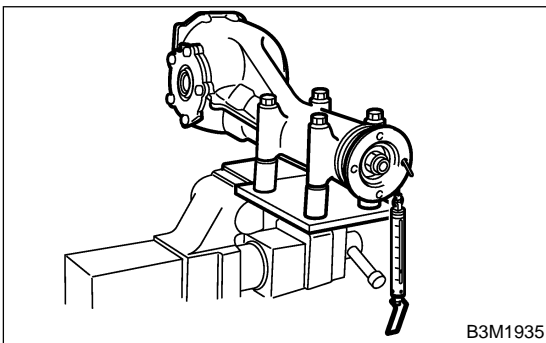
5. TOTAL PRELOAD S303145A1005

Using a gauge, check the turning resistance increase.

Total preload:

2.9 — 10.8 N (0.3 — 1.1 kg, 0.7 — 2.4 lb)

If the increase of the resistance is not within the specification, adjust the side bearing retainer shims.



F: ADJUSTMENT S303145A01

1. SIDE GEAR BACKLASH A303145A0101

Adjust side gear backlash.
<Ref. to DI-31 ASSEMBLY, Differential for T-type.>

2. CROWN GEAR BACKLASH A303145A0102

Adjust crown gear backlash.
<Ref. to DI-31 ASSEMBLY, Differential for T-type.>

3. TOOTH CONTACT BETWEEN CROWN GEAR AND DRIVE PINION A303145A0103

Adjust the tooth contact between crown gear and drive pinion gear.
<Ref. to DI-31 ASSEMBLY, Differential for T-type.>

4. TOTAL PRELOAD A303145A0104

Adjust side bearing shim.
<Ref. to DI-31 ASSEMBLY, Differential for T-type.>