

4. Rear Differential

A: REMOVAL

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

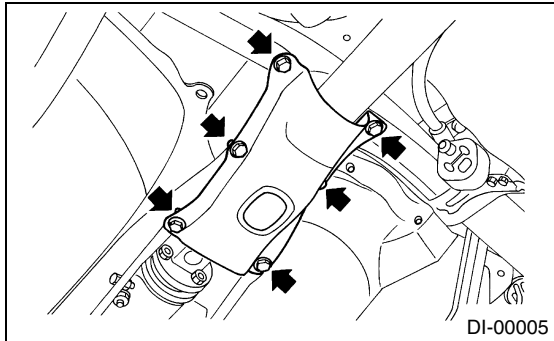
Non-turbo model:

<Ref. to EX(H4SO)-9, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-10, REMOVAL, Muffler.>

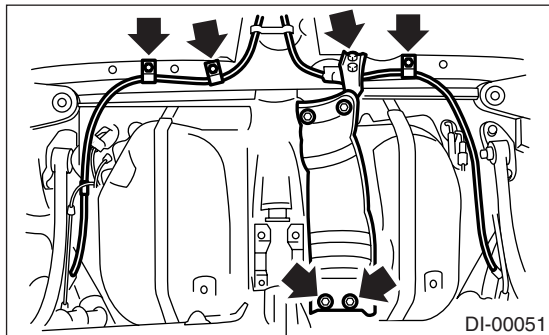
Turbo model:

<Ref. to EX(H4DOTC)-13, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-14, REMOVAL, Muffler.>

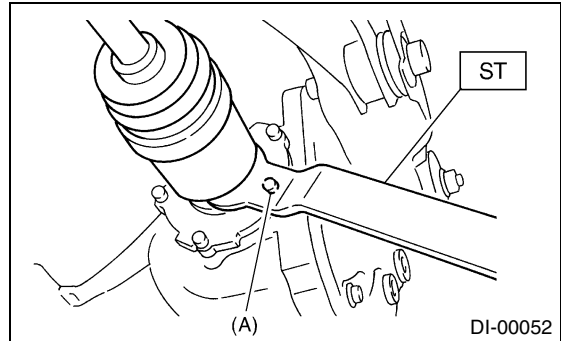
- 9) Remove the rear differential protector. (If equipped)
- 10) Remove the front cover of rear differential mount.



- 11) Remove the propeller shaft. <Ref. to DS-14, REMOVAL, Propeller Shaft.>
- 12) Remove the heat shield cover.
- 13) Remove the clamps and bracket of parking brake cable.

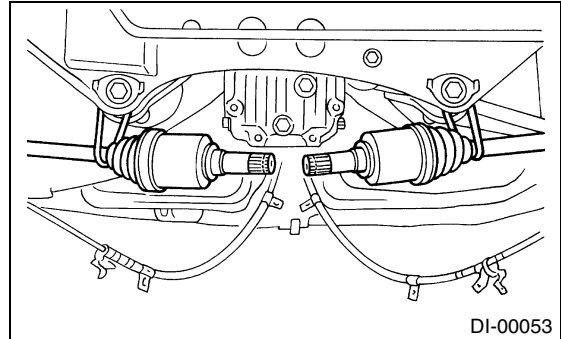


- 14) Remove the DOJ of rear drive shaft from rear differential using ST. <Ref. to DI-38, REPLACEMENT, Rear Differential Side Oil Seal.>
ST 28099PA100 DRIVE SHAFT REMOVER

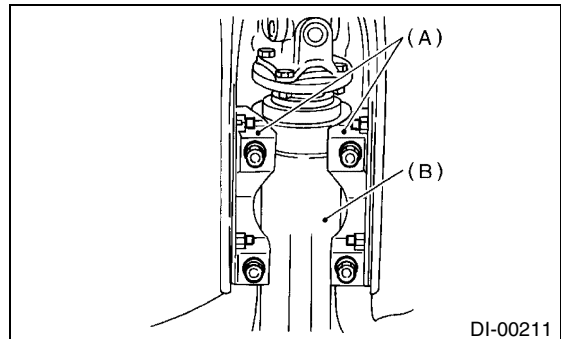


(A) Bolt

- 15) Secure the rear drive shaft to rear crossmember using wire.

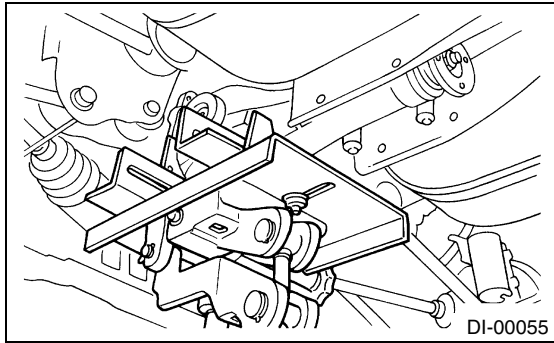


- 16) Remove the lower bracket.

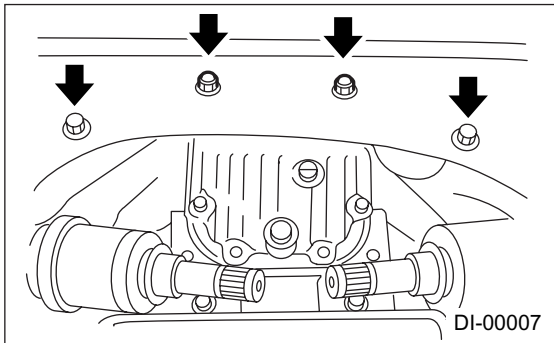


(A) Lower bracket
(B) Rear differential

17) Support the rear differential with transmission jack.



18) Remove the self-locking nuts and bolts.

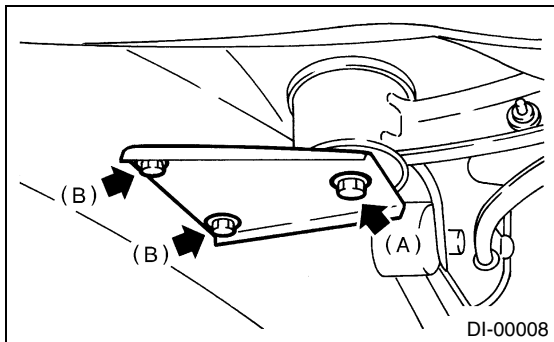


19) Remove the bolts which secure rear differential front member to body.

Loosen bolt A first, then remove bolts B.

NOTE:

Support the front member with the use of a helper to prevent it from dropping.

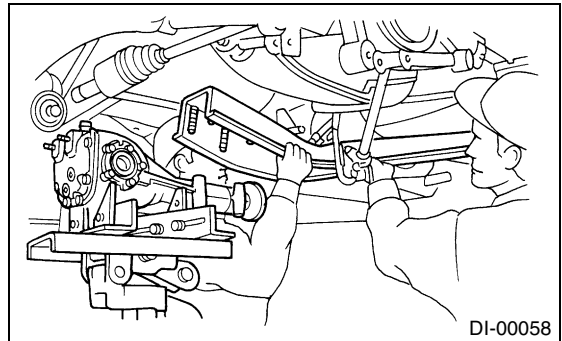


(A) Bolt A

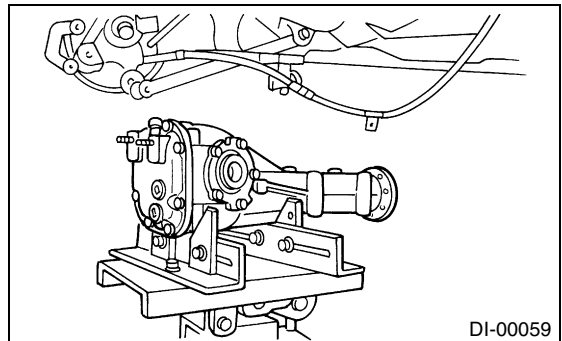
(B) Bolt B

20) Remove bolt A.

21) While slowly lowering the transmission jack, move rear differential forward and remove front member and rear differential from body.



22) Remove the rear differential from front member, and remove rear member.



B: INSTALLATION

To install, reverse the removal sequence.

1) Position the front member on body by passing it under parking brake cable and securing to rear differential.

NOTE:

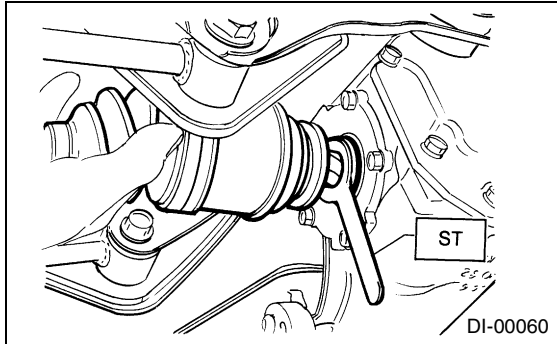
When installing the rear differential front member, do not confuse the installation sequence of the upper and lower stoppers.

REAR DIFFERENTIAL

DIFFERENTIALS

2) Install the DOJ of drive shaft into rear differential.<Ref. to DI-38, REPLACEMENT, Rear Differential Side Oil Seal.>

ST 28099PA090 SIDE OIL SEAL PROTECTOR



3) Install in the reverse order of removal.

4) After installation, fill the differential carrier with gear oil to the filler plug level. <Ref. to DI-18, Differential Gear Oil.>

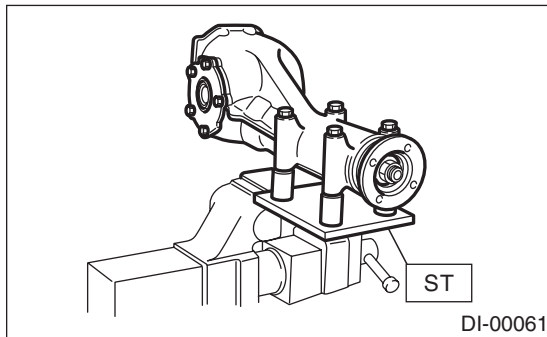
C: DISASSEMBLY

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

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

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

ST 398217700 ATTACHMENT

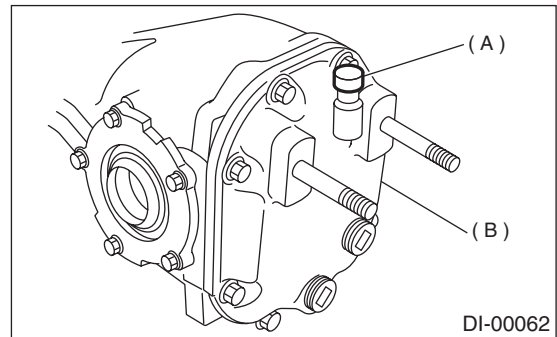


2) Drain the gear oil by removing plug.

3) Remove the air breather cap.

NOTE:

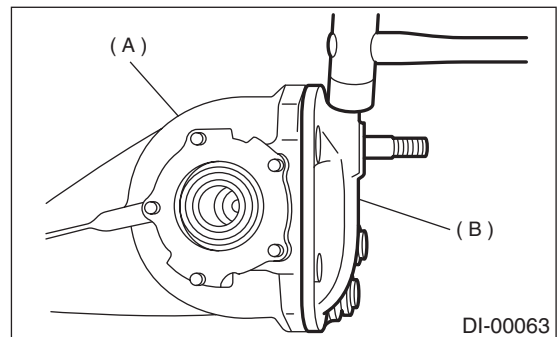
Do not attempt to replace the air breather cap unless necessary.



(A) Air breather cap

(B) Rear cover

4) Remove the rear cover by loosening retaining bolts.



(A) Rear cover

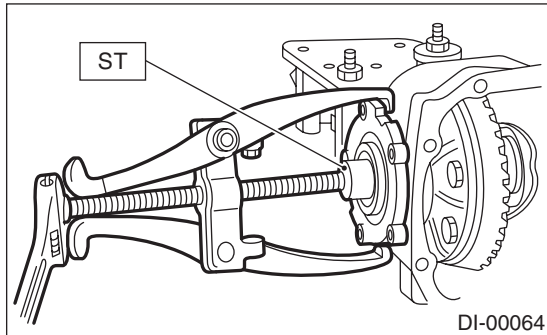
(B) Differential carrier

5) Make right and left side bearing retainers in order to identify them at reassembly. Remove the side bearing retainer attaching bolts, set the 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.

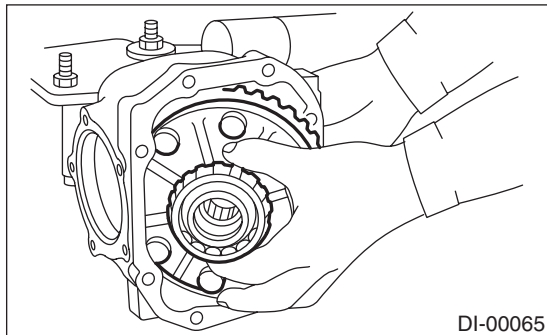
ST 398457700 ATTACHMENT



6) Pull out the differential case assembly from differential carrier.

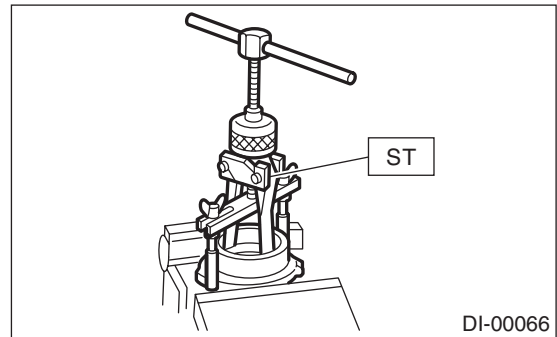
CAUTION:

Be careful not to hit the teeth against the case.



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

ST 398527700 PULLER ASSY



8) Extract the bearing cone with ST.

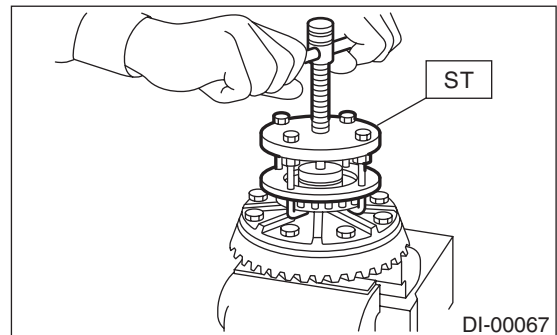
CAUTION:

Do not attempt to disassemble the parts unless necessary.

NOTE:

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

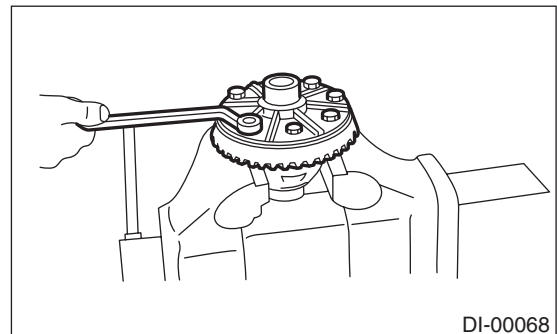
ST 398527700 PULLER SET



9) Remove the crown gear by loosening crown gear bolts.

CAUTION:

Further disassembling is not allowed.



REAR DIFFERENTIAL

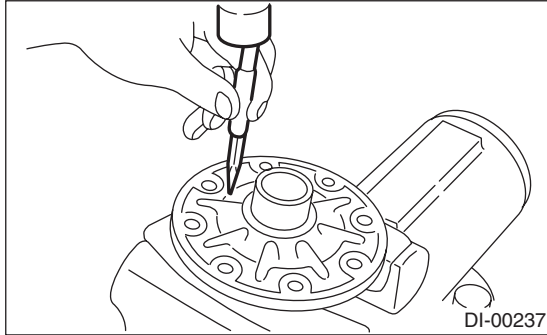
DIFFERENTIALS

10) Drive out the 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.

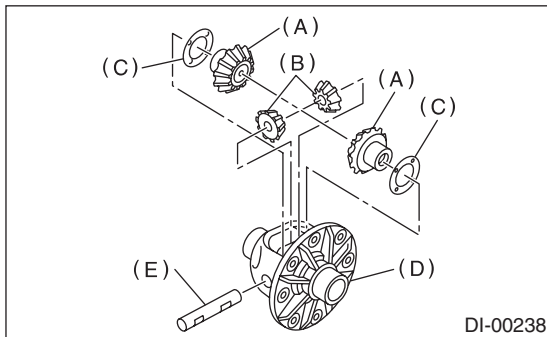
ST 899904100 STRAIGHT PIN REMOVER



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

NOTE:

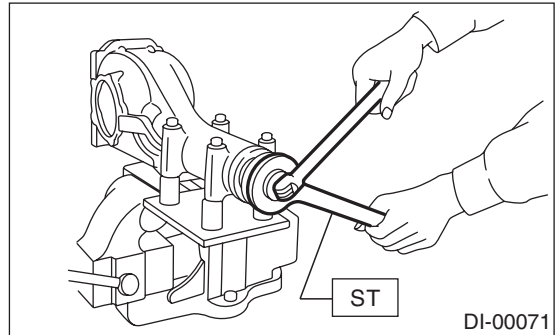
The gears as well as thrust washers should be marked or kept separated right and left, and front and rear.



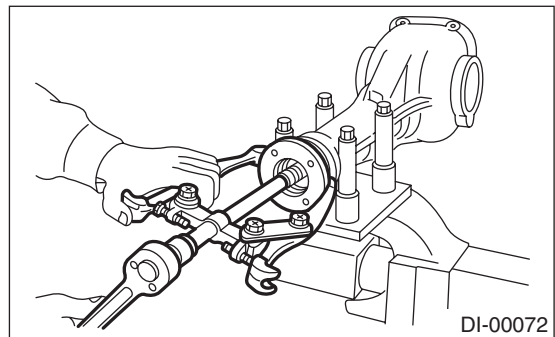
- (A) Side gear
- (B) Pinion mate gear
- (C) Thrust washer
- (D) Differential case
- (E) Pinion mate shaft

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

ST 498427200 FLANGE WRENCH



13) Extract the companion flange with a puller.

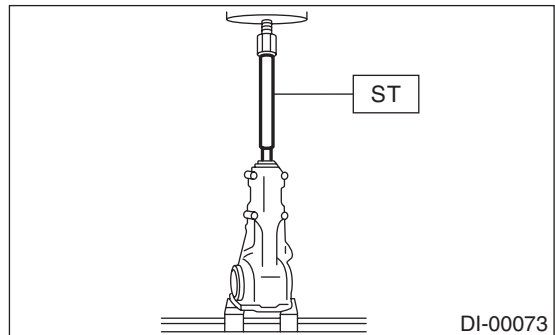


14) Press the end of drive pinion shaft and extract it together with rear bearing cone, preload adjusting spacer and washer.

NOTE:

Hold the drive pinion so as not to drop it.

ST 398467700 DRIFT

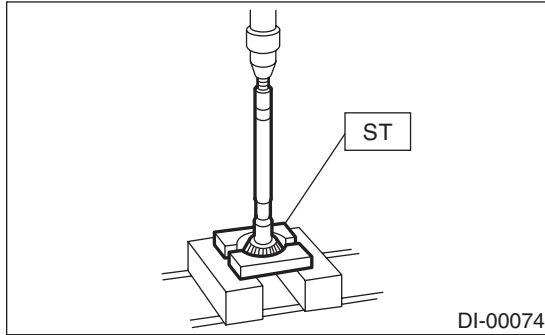


15) Remove the rear bearing cone from drive pinion by supporting cone with ST.

NOTE:

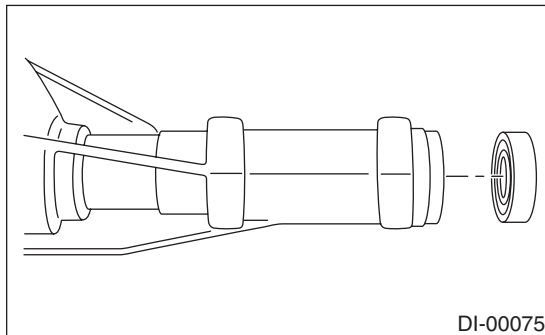
Place the replacer so that its center-recessed side faces the pinion gear.

ST 398517700 REPLACER



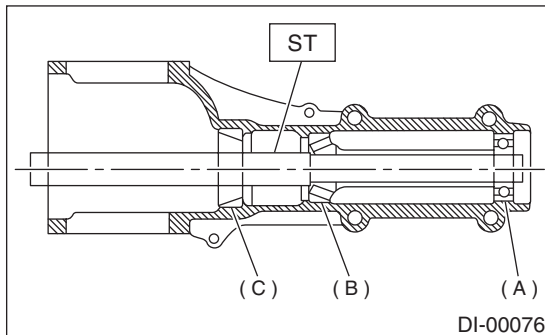
16) Remove the front oil seal from differential carrier using ST.

ST 398527700 PULLER ASSY



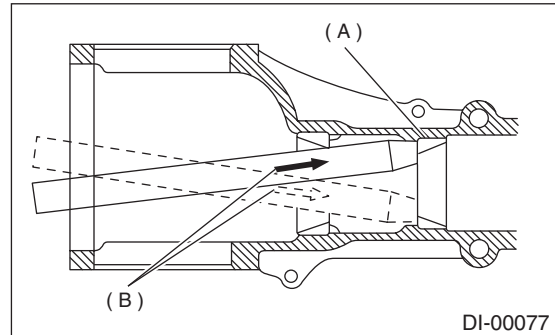
17) Remove the pilot bearing together with front bearing cone using ST.

ST 398467700 DRIFT



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

18) When replacing the 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.

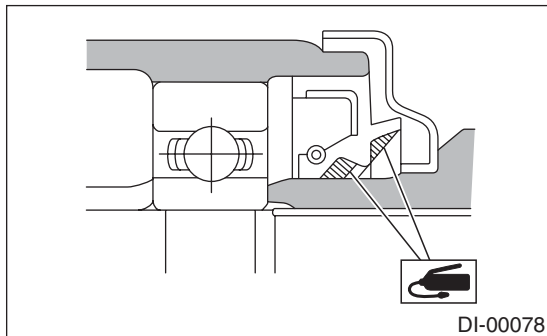
REAR DIFFERENTIAL

DIFFERENTIALS

D: ASSEMBLY

NOTE:

- 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 a new one at every disassembly. Apply chassis grease between the lips when installing the oil seal.
- Be careful not to mix up right and left oil seals.



1) If the air breather cap was removed, install it by tapping with a plastic hammer.

CAUTION:

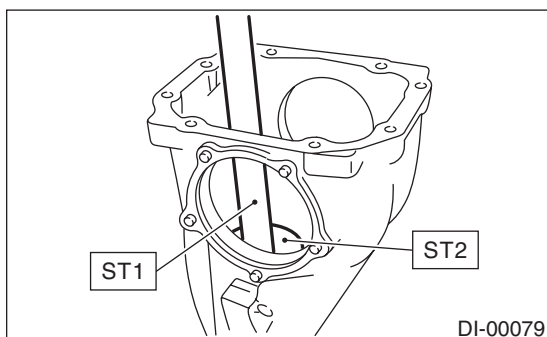
Use a new air breather cap.

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 the rear bearing race (rear) into differential carrier with ST1 and ST2.

ST1 398477701 HANDLE

ST2 398477703 DRIFT 2



(2) Install the rear bearing race (front) into differential carrier with ST1 and ST2.

ST1 398477701 HANDLE

ST2 398477702 DRIFT

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

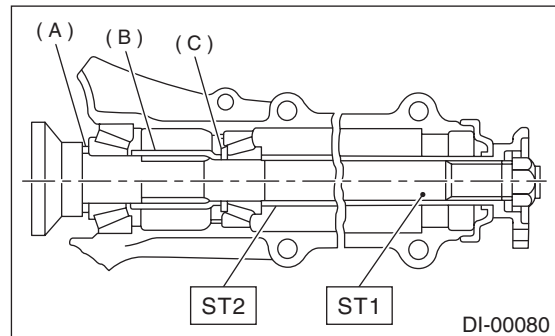
CAUTION:

- If the tooth contact (between drive pinion and crown gear) was normal at the check prior to disassembly, check that the used washer is not deformed and reuse it.
- Use a new rear bearing cone.

(4) Then install the 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

(5) Turn the ST1 with hand to make it seated, and tighten the drive pinion nut while measuring the preload with spring balance. Select the 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:

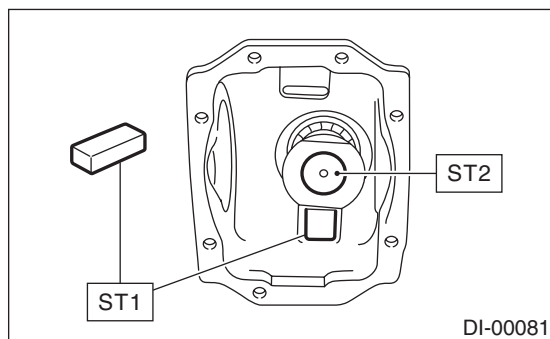
- Be careful not to give excessive preload.
- Take measurement in a tangential line to the flange.
- When tightening the drive pinion nut, lock ST1 with ST2 as shown in the figure.

ST1 398507704 BLOCK

ST2 398507702 DUMMY SHAFT

Tightening torque:

181 N·m (18.5 kgf-m, 134 ft-lb)



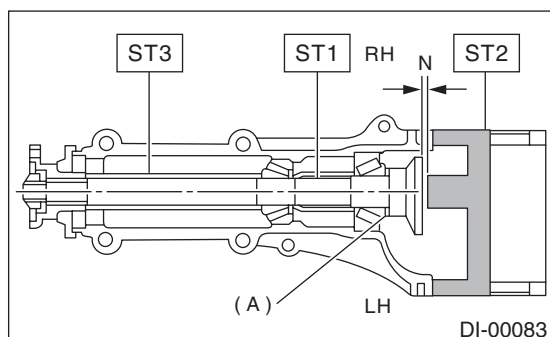
Front and rear bearing preload

For new bearing:

19.6 — 28.4 N (2.0 — 2.9 kgf, 4.4 — 6.4 lb)
at companion flange bolt hole

For used bearing:

8.34 — 16.67 N (0.85 — 1.7 kgf, 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 the drive pinion height with shim installed between rear bearing cone and the back of pinion gear.

- (1) Leave ST1, ST2 and ST3 as they were when the preload adjustment has been completed.

Front and rear bearing preload

For new bearing:

19.6 — 28.4 N (2.0 — 2.9 kgf, 4.4 — 6.4 lb)
at companion flange bolt hole

For used bearing:

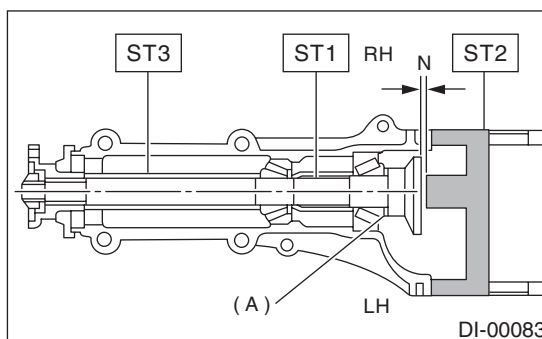
8.34 — 16.67 N (0.85 — 1.7 kgf, 1.87 — 3.75 lb)
at companion flange bolt hole

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



REAR DIFFERENTIAL

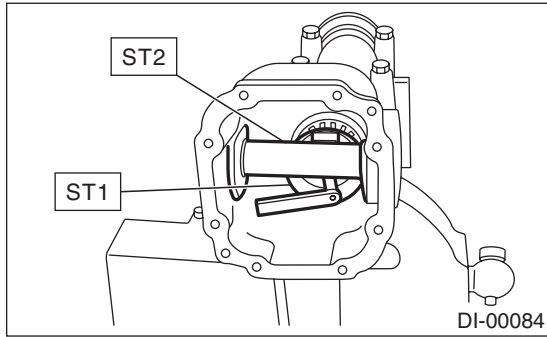
DIFFERENTIALS

- (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.

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

NOTE:

Use copies of this page.

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

(Example of calculation)

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

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

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

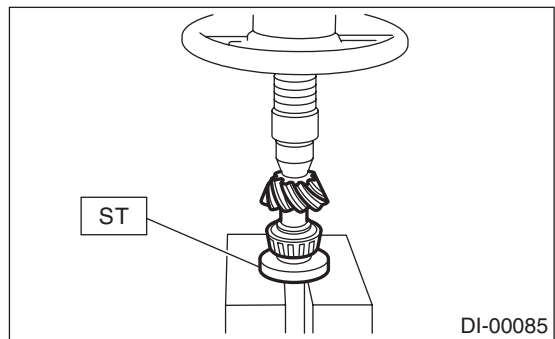
Result: Thickness = 3.42 mm

Therefore use the shim 383605200.

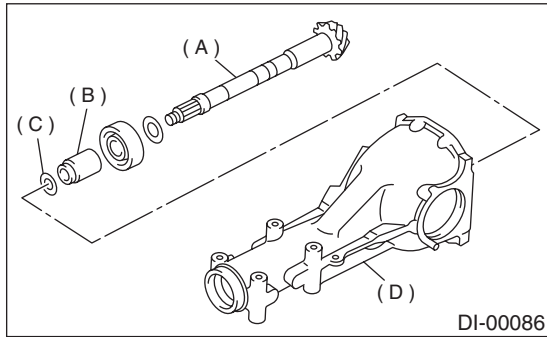
Pinion height adjusting shim	
Part No.	Thickness mm (in)
383495200	3.09 (0.1217)
383505200	3.12 (0.1228)
383515200	3.15 (0.1240)
383525200	3.18 (0.1252)
383535200	3.21 (0.1264)
383545200	3.24 (0.1276)
383555200	3.27 (0.1287)
383565200	3.30 (0.1299)
383575200	3.33 (0.1311)
383585200	3.36 (0.1323)
383595200	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



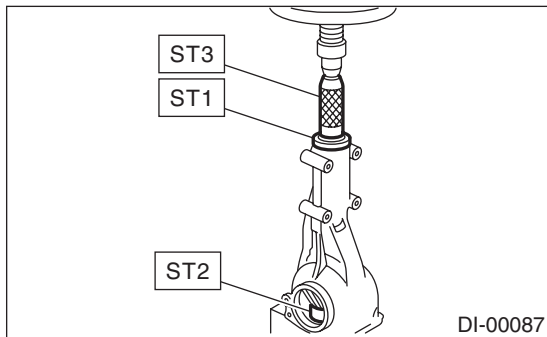
5) Insert the drive pinion into differential carrier, install the previously selected bearing preload adjusting spacer and washer.



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

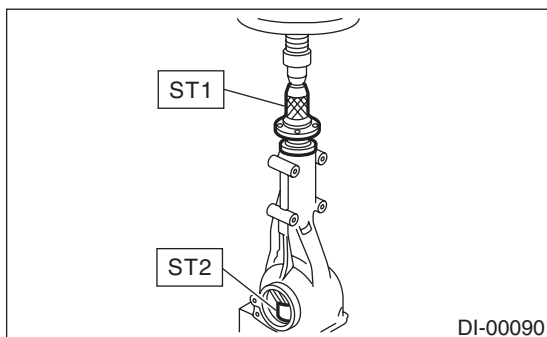
6) Press-fit the front bearing cone into case with ST1, ST2 and ST3.

ST1 398507703 DUMMY COLLAR
ST2 399780104 WEIGHT
ST3 899580100 INSTALLER



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

ST1 399780104 WEIGHT
ST2 899580100 INSTALLER

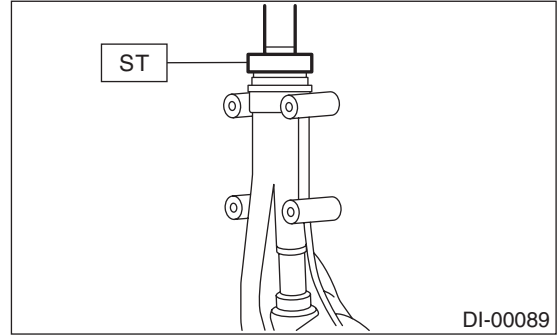


8) Fit a new oil seal with ST.

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 INSTALLER

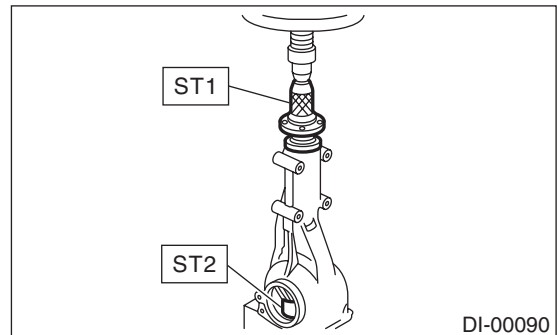


9) Press-fit the companion flange with ST1 and ST2.

CAUTION:

Be careful not to damage the bearing.

ST1 899874100 INSTALLER
ST2 399780104 WEIGHT



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

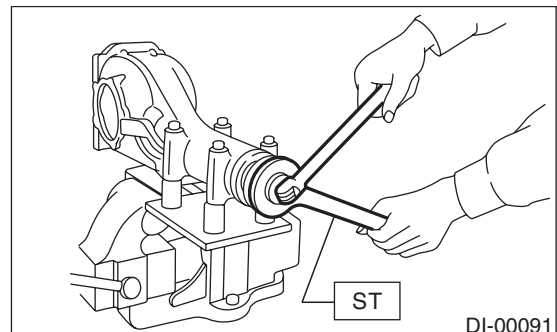
ST 498427200 FLANGE WRENCH

CAUTION:

Use new lock nut.

Tightening torque:

181 N·m (18.5 kgf-m, 134 ft-lb)



REAR DIFFERENTIAL

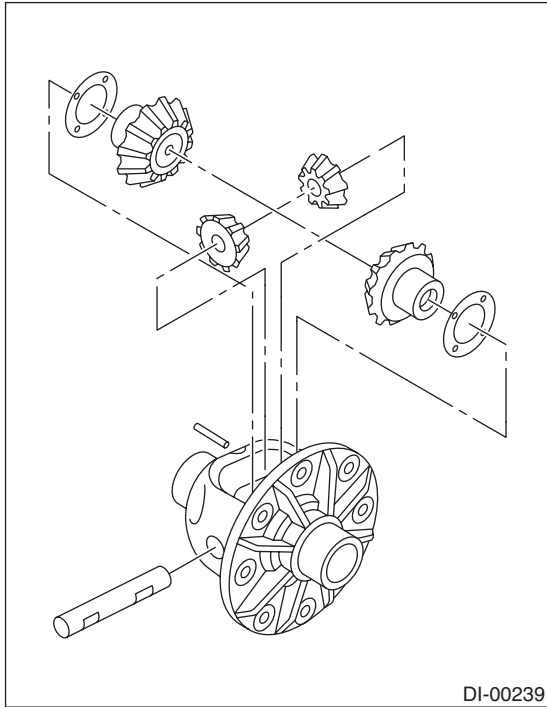
DIFFERENTIALS

11) Assembling differential case:

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

CAUTION:

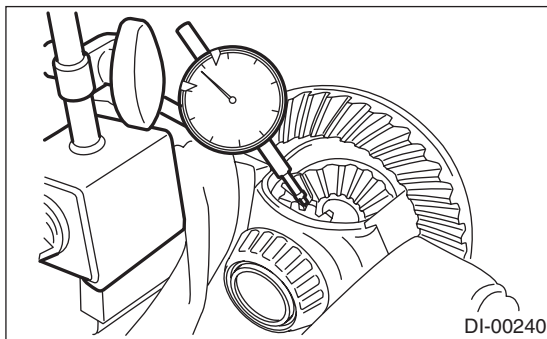
- Apply gear oil on both sides of the washer and on the side gear shaft before installing.
- Insert the pinion mate shaft into the differential case by aligning the lock pin holes.



(1) Measure the side gear backlash.

Side gear back clearance:

0.10 — 0.20 mm (0.0039 — 0.0079 in)



(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)

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

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

12) Install the crown gear on differential case.

CAUTION:

Before installing bolts, apply thread lock to bolt threads.

Lock Tite:

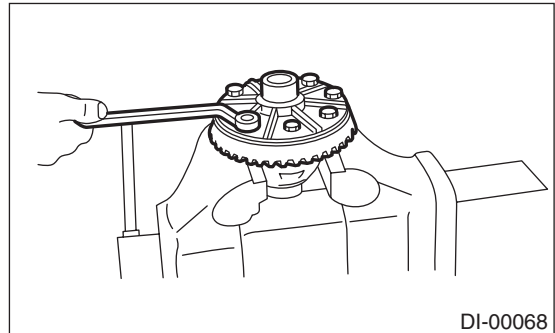
THREE BOND 1324 (Part No. 004403042) or equivalent

NOTE:

Tighten diagonally while tapping the bolt heads.

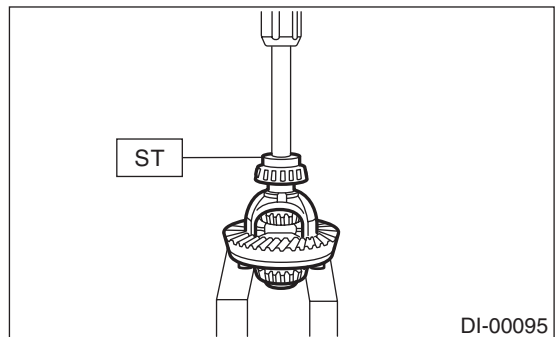
Tightening torque:

103 N·m (10.5 kgf-m, 76 ft-lb)



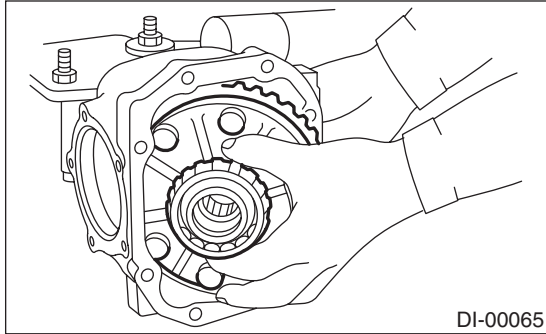
13) Press the side bearing cone onto differential case with ST.

ST 398487700 DRIFT



14) Adjusting the 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 the side retainer shims and O-rings to the left and right retainers from which they were removed.

NOTE:

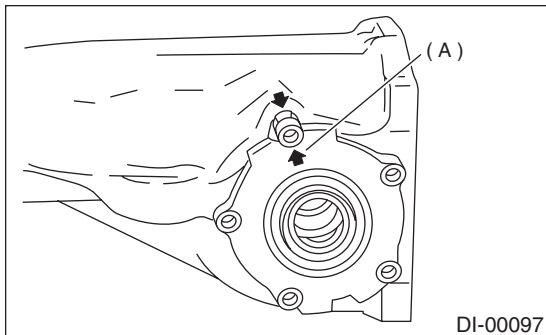
- Replace the broken or cracked O-ring with a new one.
- Replace the broken or corroded side retainer shim with a new one of same thickness.

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 the arrow mark 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 the side bearing retainer bolts.

CAUTION:

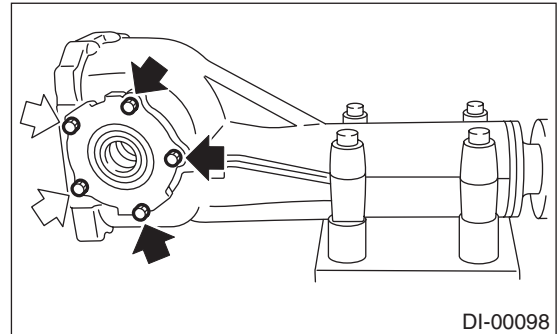
Before tightening the two side bearing retainer bolts, apply thread lock to bolt threads.

Thread lock:

THREE BOND 1105 (Part No. 004403010) or equivalent

Tightening torque:

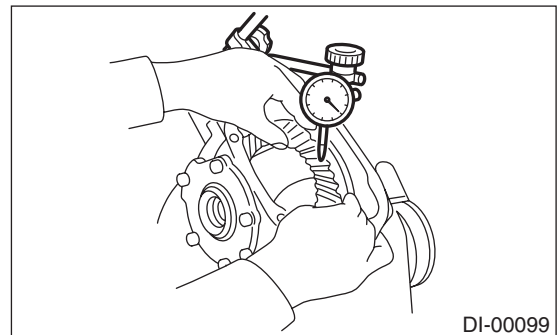
10.3 N·m (1.05 kgf-m, 7.6 ft-lb)



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

Backlash:

0.10 — 0.20 mm (0.0039 — 0.0079 in)



If the backlash is not within the specified range, adjust the side retainer shims as follows:

Backlash over 0.2 mm (0.0079 in):

Lessen thickness of shims at crown gear back side and add thickness of shims at crown gear teeth side.

Backlash under 0.1 mm (0.0039 in):

Add thickness of shims at crown gear back side and lessen thickness of shims at crown gear teeth side.

REAR DIFFERENTIAL

DIFFERENTIALS

(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 by adding/removing same amount of shims at both sides.

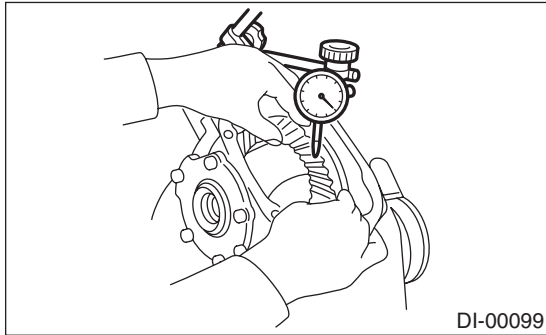
Turning resistance increase:

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

15) Recheck the crown gear-to-pinion backlash.

Backlash:

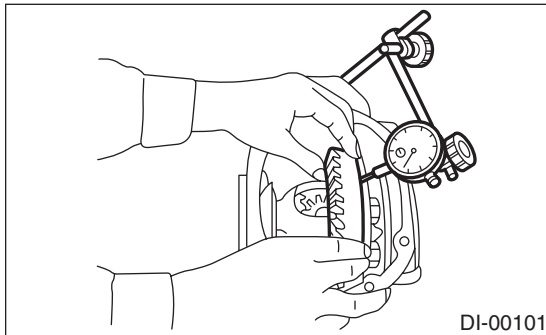
0.10 — 0.20 mm (0.0039 — 0.0079 in)



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

Limit of runout:

Less than 0.05 mm (0.0020 in)



17) Checking and adjusting the 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 the 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:

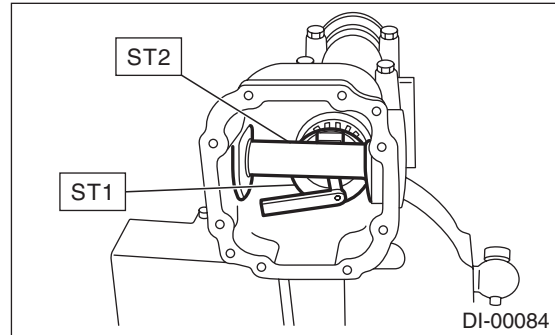
Be sure to wipe off red lead completely after adjustment is completed.

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



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

Where:

T = Thickness of pinion height adjusting shim (mm)

T_o = Thickness of shim temporarily inserted (mm)

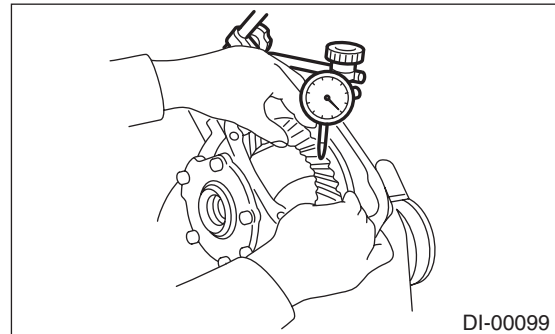
N = Reading of thickness gauge (mm)

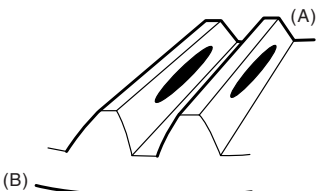
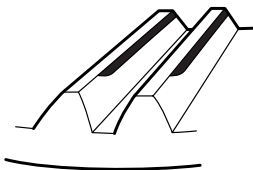
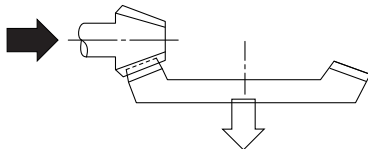
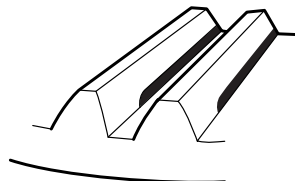
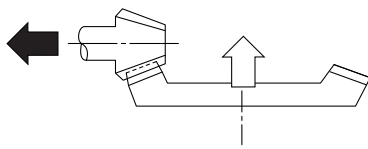
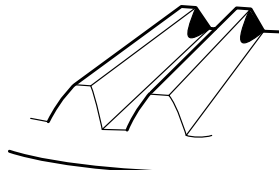
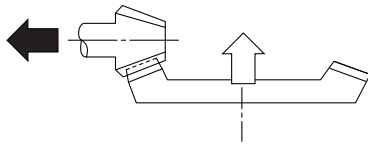

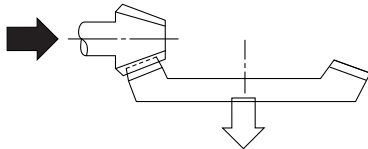
H = Figure marked on drive pinion head



(2) Hypoid gear backlash

Backlash:

0.10 — 0.20 mm (0.0039 — 0.0079 in)



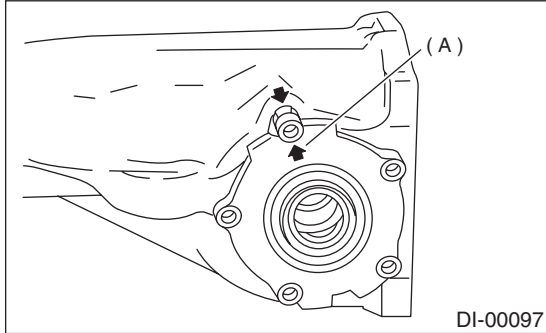
TOOTH CONTACT PATTERN		
Condition	Contact pattern	Adjustment
<p>Correct tooth contact</p> <p>Tooth contact pattern slightly shifted towards toe (A) under no load rotation. (When loaded, contact pattern moves toward heel (B).)</p>	 <p>AT-00207</p>	<p>—</p>
<p>Face contact</p> <p>Backlash is too large.</p>	<p>This may cause noise and chipping at tooth ends.</p>  <p>AT-00208</p>	<p>Increase thickness of drive pinion height adjusting shim in order to bring drive pinion closer to crown gear center.</p>  <p>AT-00212</p>
<p>Flank contact</p> <p>Backlash is too small.</p>	<p>This may cause noise and stepped wear on surfaces.</p>  <p>AT-00209</p>	<p>Reduce thickness of drive pinion height adjusting shim in order to move drive pinion away from crown gear center.</p>  <p>AT-00213</p>
<p>Toe contact</p> <p>Contact area is small.</p>	<p>This may cause chipping at toe ends.</p>  <p>AT-00210</p>	<p>Adjust as for flank contact.</p>  <p>AT-00213</p>
<p>Heel contact</p> <p>Contact area is small.</p>	<p>This may cause chipping at heel ends.</p>  <p>AT-00211</p>	<p>Adjust as for face contact.</p>  <p>AT-00212</p>

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

REAR DIFFERENTIAL

DIFFERENTIALS

- 19) Remove left and right side bearing retainers.
- 20) Install left and right bearing retainer O-rings and side bearing retainer shims.
- 21) Install oil seal on left and right side bearing retainers. <Ref. to DI-38, REPLACEMENT, Rear Differential Side Oil Seal.>
- 22) At installation, align arrow mark on differential carrier with arrow mark on side retainer.



(A) Arrow mark

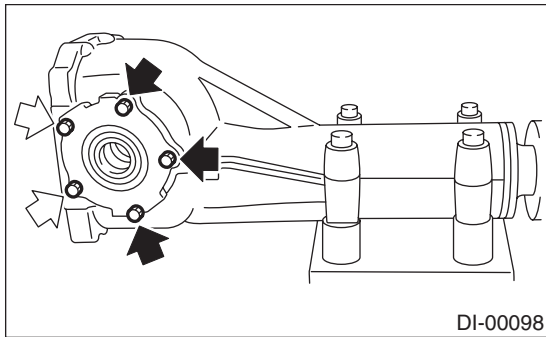
- 23) Tighten side bearing retainer bolts.

Thread lock:

THREE BOND 1105 (Part No. 004403010) or equivalent

Tightening torque:

10.3 N·m (1.05 kgf-m, 7.6 ft-lb)



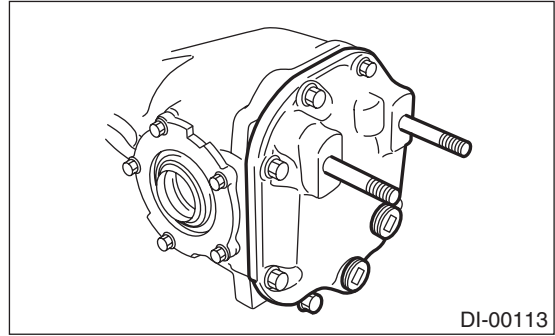
- 24) Install the rear cover and tighten bolts to specified torque.

CAUTION:

Securely connect the ground terminal of rear differential temperature sensor.

Tightening torque:

29 N·m (3.0 kgf-m, 21.7 ft-lb)



E: INSPECTION

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.

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.

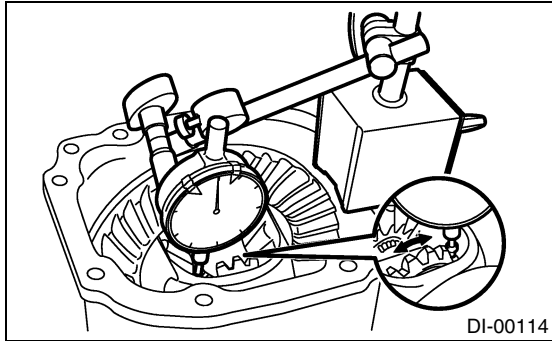
1. SIDE GEAR BACKLASH

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



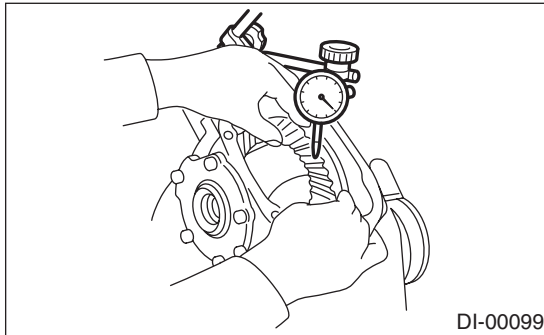
2. CROWN GEAR BACKLASH

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



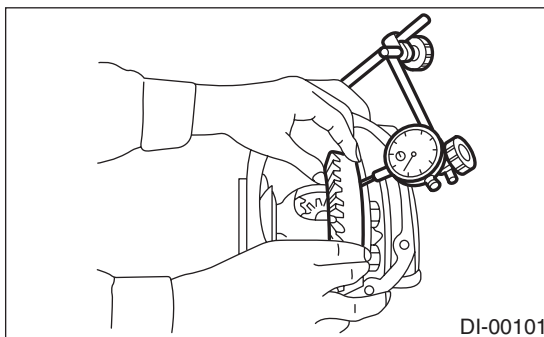
3. CROWN GEAR RUNOUT

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

Inspect the tooth contact between crown gear and driven pinion. <Ref. to DI-26, ASSEMBLY, Rear Differential.>

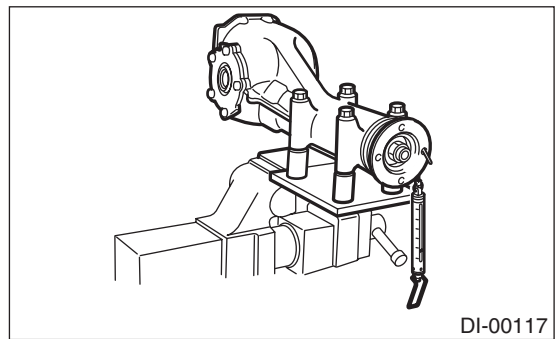
5. TOTAL PRELOAD

Using a gauge, check the turning resistance increase.

Total preload:

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

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



F: ADJUSTMENT

1. SIDE GEAR BACKLASH

Adjust the side gear backlash.

<Ref. to DI-26, ASSEMBLY, Rear Differential.>

2. CROWN GEAR BACKLASH

Adjust the crown gear backlash.

<Ref. to DI-26, ASSEMBLY, Rear Differential.>

3. TOOTH CONTACT BETWEEN CROWN GEAR AND DRIVE PINION

Adjust the tooth contact between crown gear and drive pinion gear.

<Ref. to DI-26, ASSEMBLY, Rear Differential.>

4. TOTAL PRELOAD

Adjust the side bearing shim.

<Ref. to DI-26, ASSEMBLY, Rear Differential.>