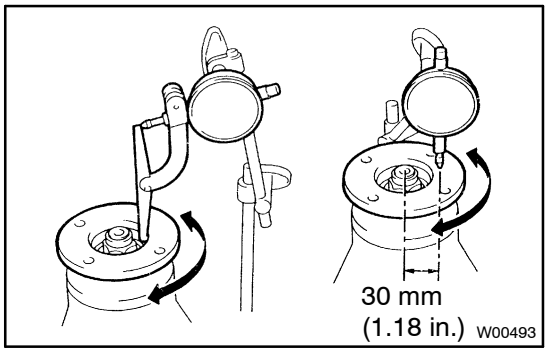
SA15U–10

DISASSEMBLY

1. SET DIFFERENTIAL CARRIER TO OVERHAUL STAND, ETC.

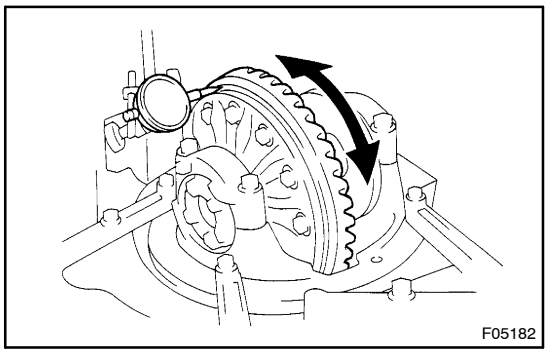


2. CHECK RUNOUT OF COMPANION FLANGE

Using a dial indicator, measure the vertical and lateral runout of the companion flange.

Maximum runout: 0.10 mm (0.0039 in.)

If the runout is not within the specification, replace the companion flange.

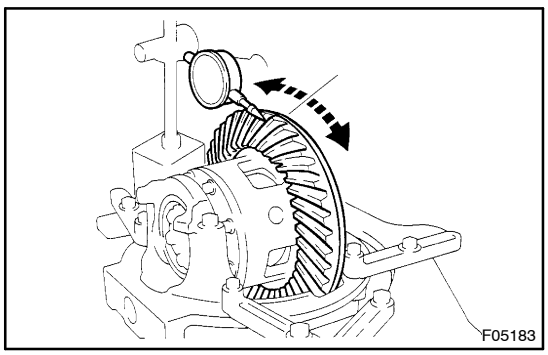


3. CHECK RING GEAR RUNOUT

Using a dial indicator, measure the ring gear runout.

Maximum runout: 0.05 mm (0.0020 in.)

If the runout is greater than the maximum, replace the ring gear.



4. CHECK RING GEAR BACKLASH

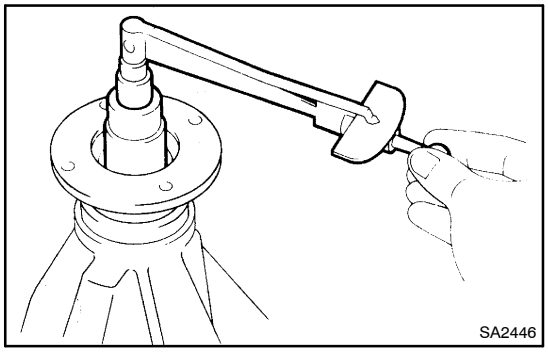
Using a dial indicator, measure the ring gear backlash.

Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)

HINT:

Perform the measurements at 3 or more positions around the circumference of the ring gear.

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



5. MEASURE DRIVE PINION PRELOAD

Using a torque wrench, measure the preload of the drive pinion using the backlash between the drive pinion and ring gear.

Preload (at starting):
0.64 – 0.92 N·m (6.5 – 9.4 kgf·cm, 5.6 – 8.2 in.·lbf)

6. CHECK TOTAL PRELOAD

Using a torque wrench, measure the preload with the teeth of the drive pinion and ring gear in contact.

Total preload (at starting):
Drive pinion preload plus
0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in.·lbf)

If necessary, disassemble and inspect the differential.

7. CHECK TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION (See page SA–79)

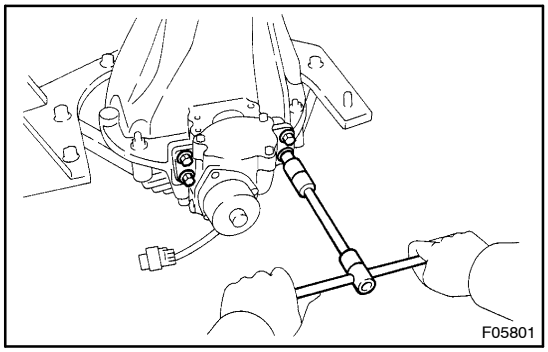
8. REMOVE REAR DIFF. LOCK POSITION SWITCH

Remove the rear diff. lock position switch and gasket.

9. REMOVE COVER

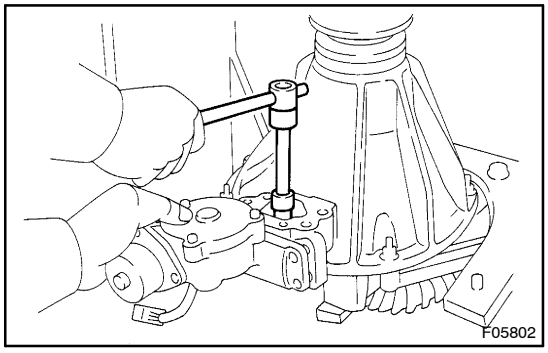
(a) Remove the 3 bolts.

(b) Using a brass bar and hammer, tap on the cover to remove it.



10. REMOVE ACTUATOR, SHIFT FORK AND SLEEVE

(a) Remove the 4 bolts.

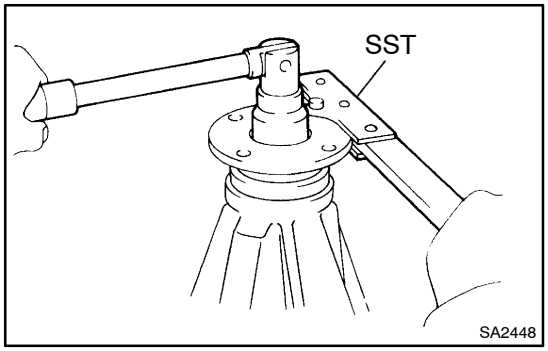


(b) Remove the shift fork shaft bolt.

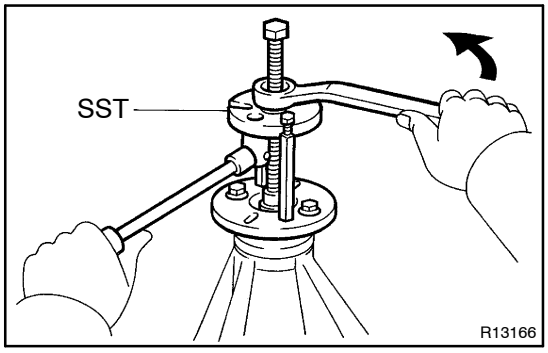
(c) Using a screwdriver, pull out the actuator and remove the sleeve and shift fork.

11. REMOVE COMPANION FLANGE

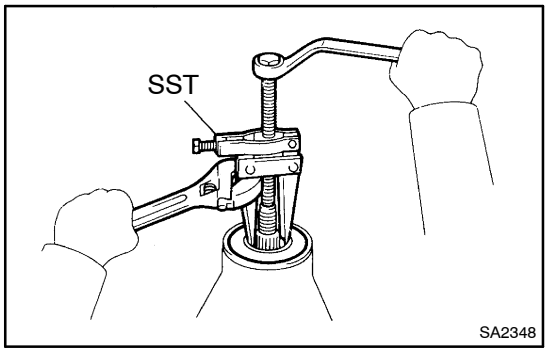
(a) Using a chisel and hammer, unstake the nut.



(b) Using SST to hold the flange, remove the nut.
SST 09330–00021



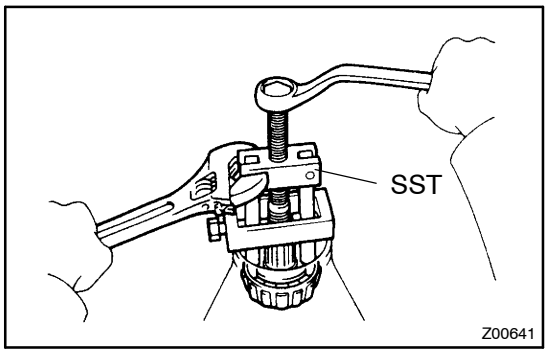
(c) Using SST, remove the companion flange.
SST 09950–30011 (09951–03010, 09953–03010, 09954–03010, 09955–03030, 09956–03040)



12. REMOVE OIL SEAL AND OIL SLINGER

(a) Using SST, remove the oil seal from the differential carrier.
SST 09308–10010

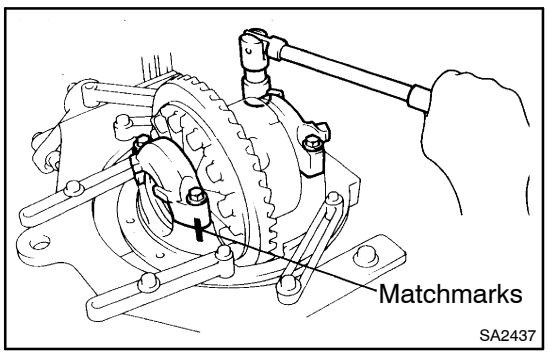
(b) Remove the oil slinger.



13. REMOVE FRONT BEARING

Using SST, remove the front bearing from the drive pinion.
SST 09556–22010

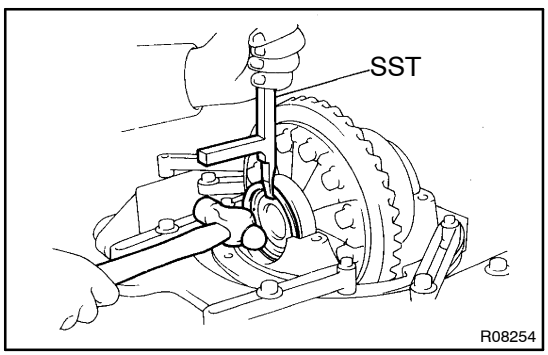
If the front bearing is damaged or worn, replace the bearing.



14. REMOVE DIFFERENTIAL CASE ASSEMBLY

(a) Place matchmarks on the bearing cap and differential carrier.

(b) Remove the 4 bolts and 2 bearing caps.



(c) Using SST and a hammer, remove the plate washers.
SST 09504–22011

HINT:
Measure the plate washer thickness and note down it.

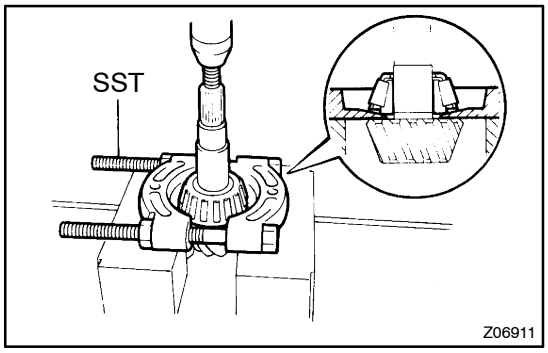
(d) Remove the differential case with the side bearing outer races from the differential carrier.

HINT:
Tag the bearing outer races to show the location for reassembly.

15. REMOVE DRIVE PINION AND BEARING SPACER FROM DIFFERENTIAL CARRIER

(a) Remove the drive pinion with the rear bearing.

(b) Remove the bearing spacer.



16. REMOVE DRIVE PINION REAR BEARING

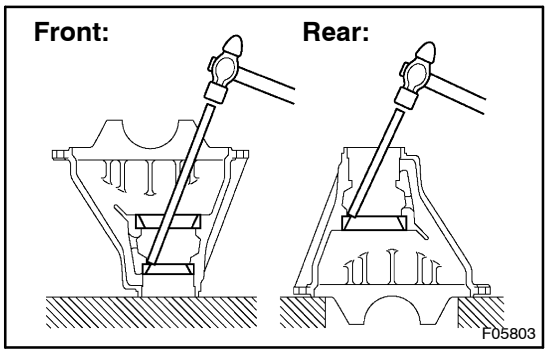
(a) Using SST and a press, remove the rear bearing from the drive pinion.

SST 09950–00020

HINT:

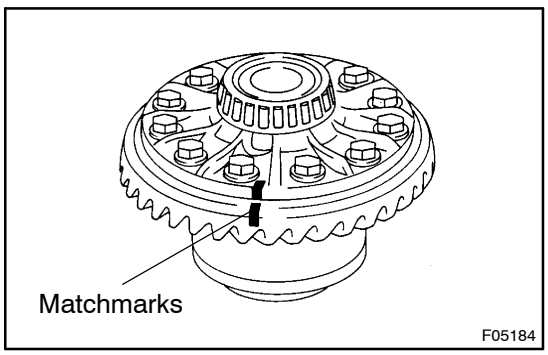
If the drive pinion or ring gear is damaged, replace them as a set.

(b) Remove the plate washer from the drive pinion.



17. REMOVE FRONT AND REAR BEARING OUTER RACES

Using a brass bar and hammer, remove the outer races.



18. REMOVE RING GEAR

(a) Place matchmarks on the ring gear and differential case.

(b) Remove the 12 ring gear set bolts.

(c) Using a plastic hammer, tap on the ring gear to remove it from the differential case.

19. CHECK DIFFERENTIAL CASE RUNOUT

(a) Place the bearing outer races on their respective bearings. Check that the left and right outer races are not interchanged.

(b) Install the assembled plate washers onto the side bearing.

(c) Install the differential case in the differential carrier.

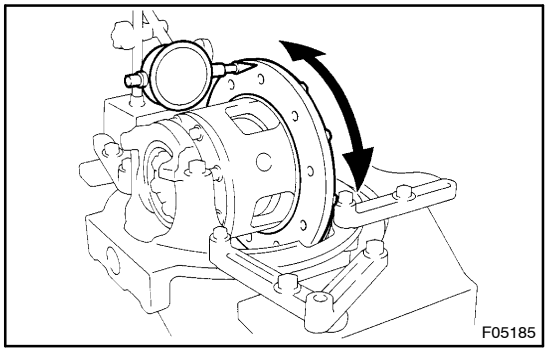
HINT:

If it is difficult to install the differential case into the carrier, replace the plate washer with a thinner one.

However, select a plate washer that allows no clearance between it and the carrier.

(d) Align matchmarks on the bearing cap and differential carrier.

(e) Install and uniformly tighten the 4 bolts a little at a time.

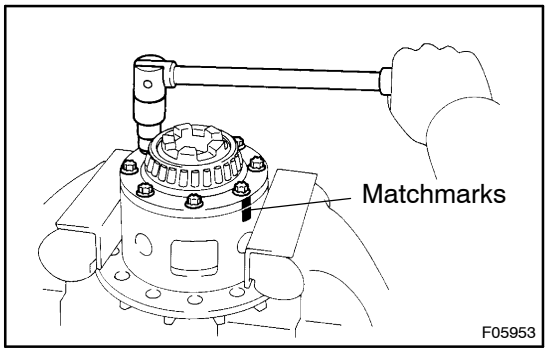


(f) Using a dial indicator, measure the differential case runout.

Maximum case runout: 0.04 mm (0.0016 in.)

If the runout is greater than the maximum, replace the differential case and side bearings as a set.

(g) Remove the differential case.



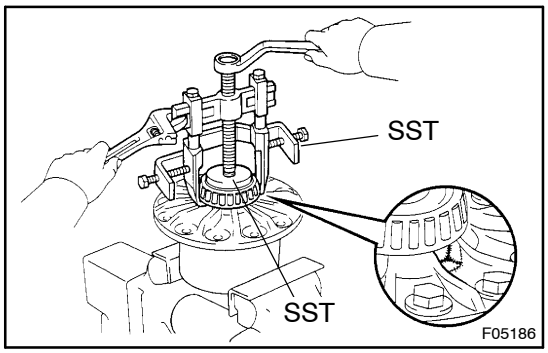
20. DISASSEMBLE DIFFERENTIAL CASE

(a) Place matchmarks on the differential case and differential cover.

(b) Using a torx socket (E10), remove the 5 set bolts and 3 pinion shaft pins.

(c) Separate the cover and case.

(d) Remove the 2 side gears, side gear thrust washers, 4 pinion gears, 4 pinion gear thrust washers, 3 pinion shafts and holder from the differential case.



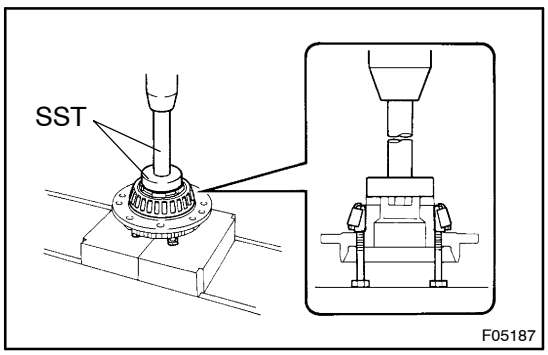
21. REMOVE SIDE BEARING FROM DIFFERENTIAL CASE

Using SST, remove the side bearing.

SST 09950–40011 (09951–04010, 09952–04010, 09953–04020, 09954–04010, 09955–04061, 09957–04010, 09958–04011), 09950–60010 (09951–00580)

HINT:

Fix the claws of SST to the notches in the differential case.



22. REMOVE SIDE BEARING FROM DIFFERENTIAL COVER

Using SST, 4 bolts and a press, remove the side bearing.

SST 09950–60010 (09951–00580), 09950–70010 (09951–07150)