FRONT DRIVE SHAFT

3006P–01

OVERHAUL

NOTICE:

Do not disassemble the outboard joint.

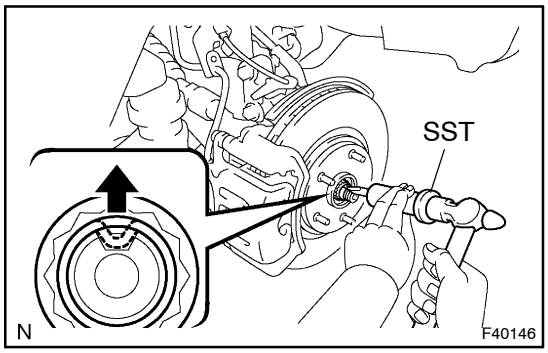
HINT:

- COMPONENT: See page 30–4
- Overhaul the RH side by the same procedures with LH side.

1. DRAIN AUTOMATIC TRANSAXLE FLUID(A/T TRANSAXLE)

2. DRAIN MANUAL TRANSAXLE OIL(M/T TRANSAXLE)

3. REMOVE FRONT WHEEL



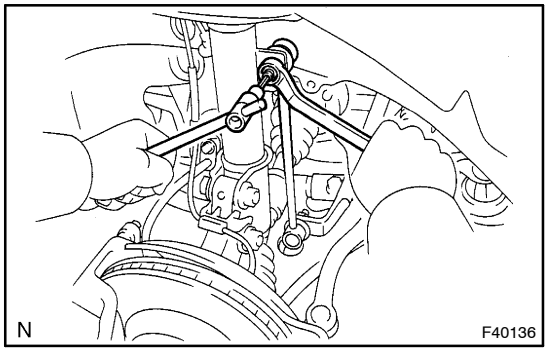
4. REMOVE FRONT AXLE HUB LH NUT

(a) Using SST and a hammer, unstake the staked part of the front axle hub LH nut.
SST 09930–00010

NOTICE:

Loosen the staked part of the lock nut completely, otherwise the screw of the drive shaft may be damaged.

(b) While applying the brakes, remove the front axle hub LH nut.

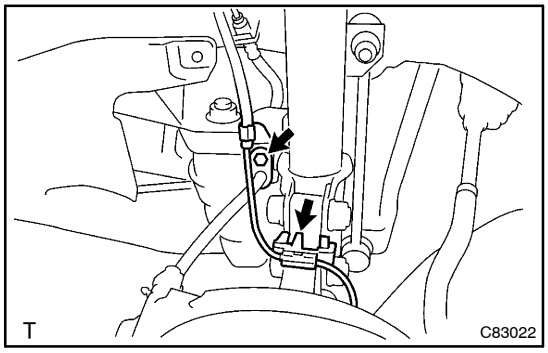


5. DISCONNECT FRONT STABILIZER LINK ASSY LH

(a) Remove the nut, disconnect the front stabilizer link assy LH from the shock absorber assy front LH.

HINT:

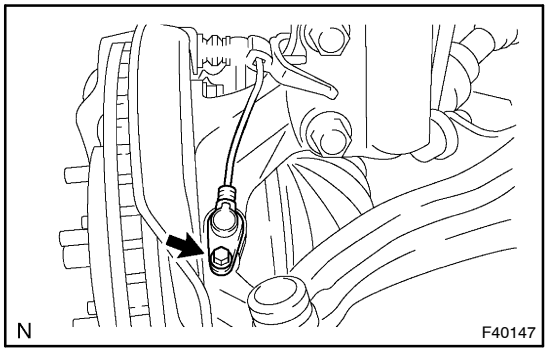
If the ball joint turns together with the nut, use a hexagon wrench (6 mm) to hold the stud.



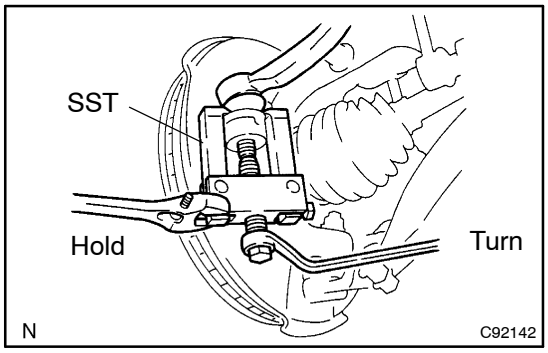
6. DISCONNECT SPEED SENSOR FRONT LH

(a) Remove the sensor wire clamp.

(b) Remove the bolt, disconnect the sensor wire and front flexible hose No. 1 from the shock absorber assy front LH.

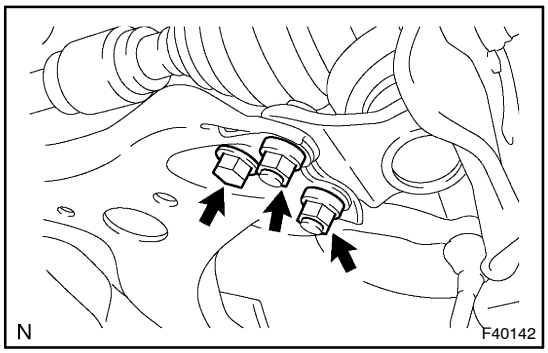


(c) Remove the bolt, disconnect the speed sensor front LH from the steering knuckle LH.



7. DISCONNECT TIE ROD ASSY LH

(a) Remove the cotter pin and nut.
(b) Using SST, disconnect the tie rod assy LH from the steering knuckle LH.
SST 09628–62011



8. DISCONNECT FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 LH

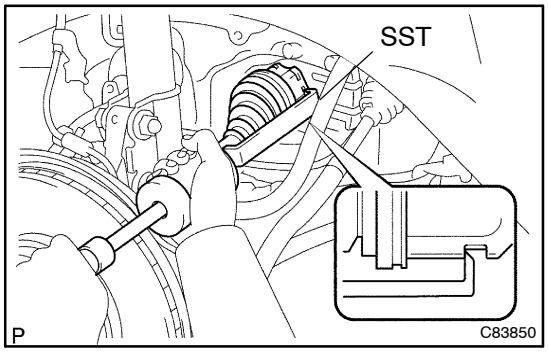
(a) Remove the bolt and 2 nuts, and separate the front suspension arm sub–assy lower No.1 LH from the lower ball joint assy front LH.

9. DISCONNECT FRONT AXLE ASSY LH

(a) Using a plastic hammer, disconnect the front drive shaft assy LH from the front axle hub sub–assy LH.

NOTICE:

Be careful not to damage the boot and speed sensor rotor.

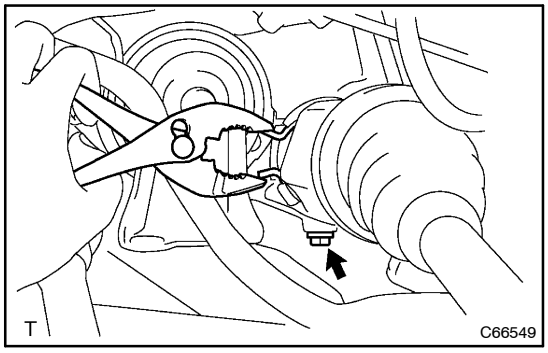


10. REMOVE FRONT DRIVE SHAFT ASSY LH

(a) Using SST, remove the front drive shaft assy LH.
SST 09520–01010, 09520–24010 (09520–32040)

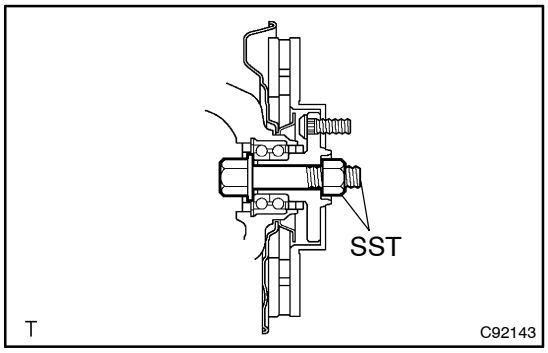
NOTICE:

Be careful not to damage the oil seal.



11. REMOVE FRONT DRIVE SHAFT ASSY RH

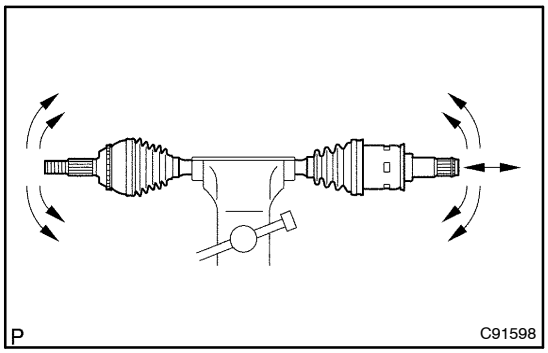
(a) Using a pliers, remove the drive shaft bearing bracket hole snap ring.
(b) Remove the bolt and front drive shaft assy RH from the drive shaft bearing bracket.



12. FIX FRONT AXLE ASSY LH

NOTICE:
The hub bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft removed.
Therefore, if it is absolutely necessary to place the vehicle weight on the hub bearing, first support it with SST.

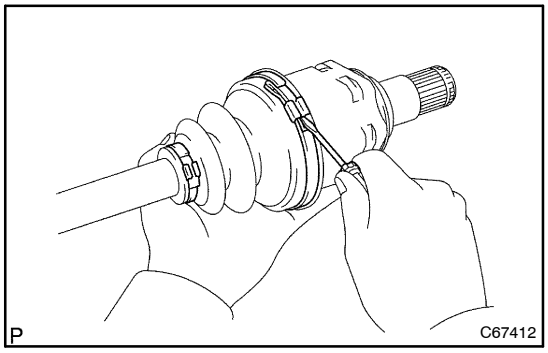
SST 09608–16042 (09608–02021, 09608–02041)



13. INSPECT FRONT DRIVE SHAFT ASSY LH

(a) Check to see that there is no remarkable play in the outboard joint.
(b) Check to see that the inboard joint slides smoothly in the thrust direction.
(c) Check to see that there is no remarkable play in the radial direction of the inboard joint.
(d) Check the boots for damage.

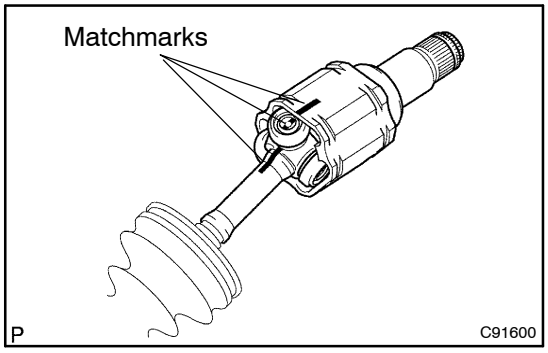
NOTICE:
Move the drive shaft assy keeping it level.

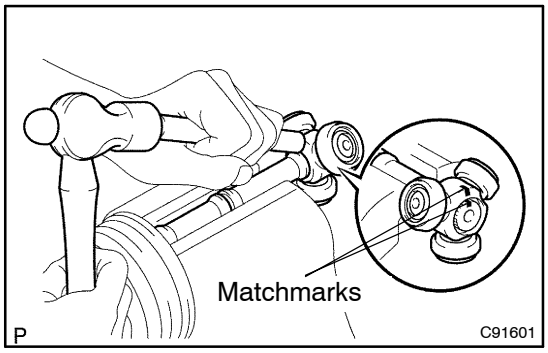


14. REMOVE FRONT AXLE INBOARD JOINT BOOT CLAMP

(a) Using a screwdriver, disclamp the front axle inboard joint boot LH clamp and front axle inboard joint boot LH No.2 clamp.

15. DISCONNECT FR AXLE INBOARD JOINT BOOT





16. REMOVE FRONT DRIVE INBOARD JOINT ASSY LH

(a) Place matchmarks on the tripod, inboard and outboard joint shafts.

NOTICE:

Do not punch the marks.

(b) Remove the front drive inboard joint assy LH from the front drive outboard joint shaft assy LH.

(c) Using a snap ring expander, remove the front drive inner shaft inner RH shaft snap ring.

(d) Place matchmarks on the front drive outboard joint shaft assy LH and tripod.

NOTICE:

Do not punch the marks.

(e) Using a brass bar and hammer, remove the tripod from the front drive shaft assy LH.

NOTICE:

Do not tap the roller.

17. REMOVE FRONT DRIVE SHAFT DAMPER LH(M/T TRANSAXLE)

(a) Using a screwdriver, disclamp the front drive shaft damper LH clamp.

(b) Remove the front drive shaft damper LH.

18. REMOVE FRONT DRIVE SHAFT DAMPER RH(EXCEPT 1MZ–FE ENGINE TYPE)

(a) Using a screwdriver, disclamp the front drive shaft damper RH clamp.

(b) Remove the front drive shaft damper RH.

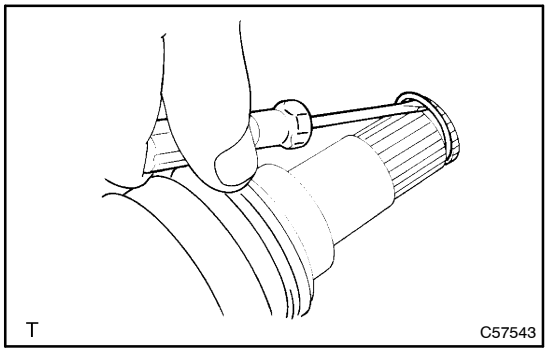
19. REMOVE FRONT AXLE OUTBOARD JOINT BOOT CLAMP

(a) Using a screwdriver, disclamp the front axle outboard joint boot LH clamp and outboard joint boot LH No.2 clamp.

HINT:

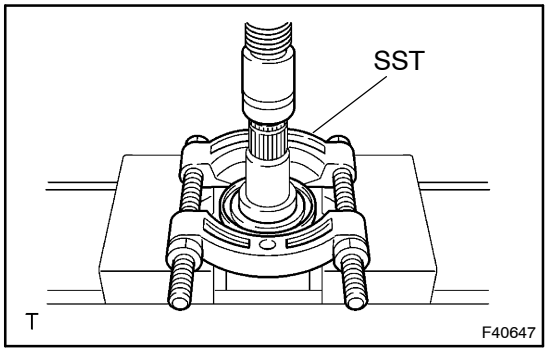
If the outboard joint boot clamps that have been replaced are installed to the drive shaft, use a side cutter or pliers to remove then.

20. REMOVE OUTBOARD JOINT BOOT



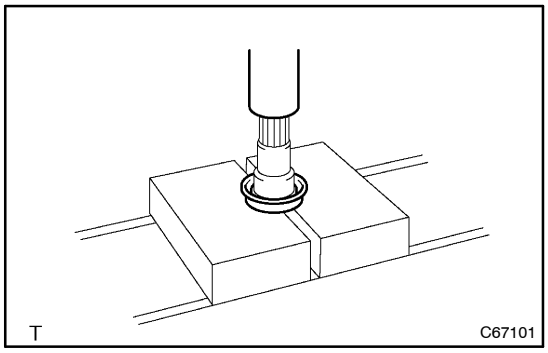
21. REMOVE FRONT DRIVE SHAFT LH HOLE SNAP RING

(a) Using a screwdriver, remove the front drive shaft LH hole snap ring.



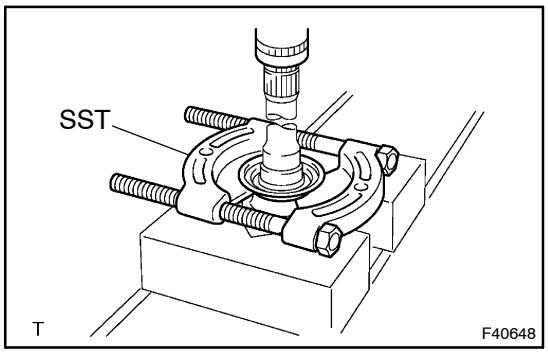
22. REMOVE FRONT DRIVE SHAFT DUST COVER LH

(a) Using SST and a press, remove the front drive shaft dust cover LH.
SST 09950–00020



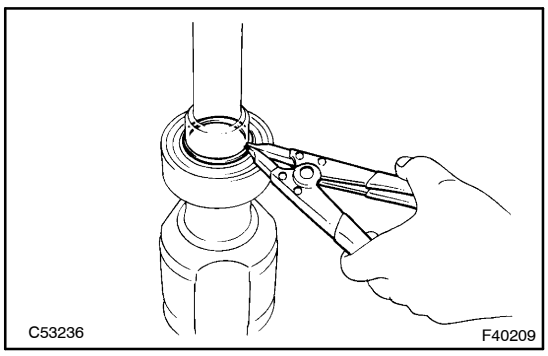
23. REMOVE FRONT DRIVE SHAFT DUST COVER RH

(a) Using a press, remove the front drive shaft dust cover RH.



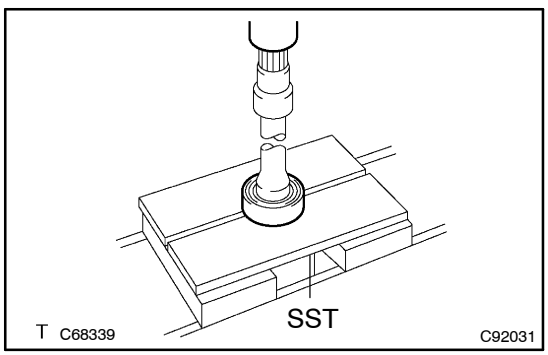
24. REMOVE FRONT DRIVE SHAFT DUST COVER

(a) Using SST and a press, remove the front drive shaft dust cover.
SST 09950–00020

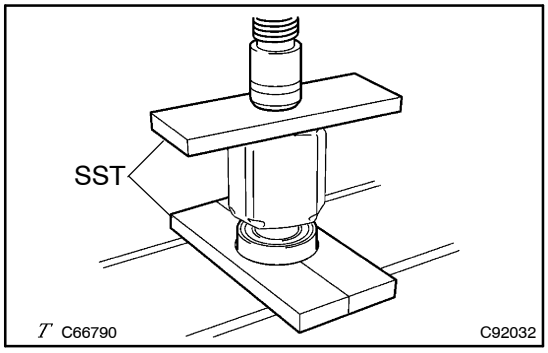


25. REMOVE FRONT DRIVE SHAFT BEARING

(a) Using a snap ring pliers, remove the front drive shaft hole snap ring RH.

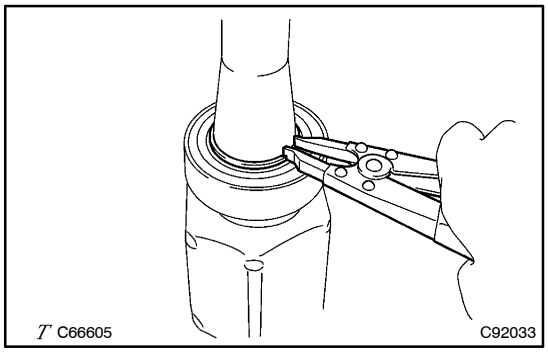


(b) Using SST and a press, remove the front drive shaft bearing.
SST 09527–10011

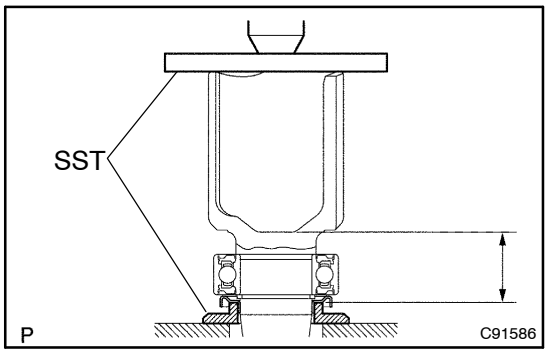


26. INSTALL FRONT DRIVE SHAFT BEARING

(a) Using SST and a press, install a new front drive shaft bearing.
SST 09527–30010, 09527–10011

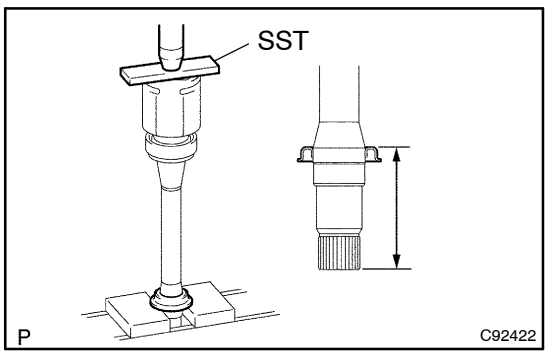


(b) Using a snap ring expander, install a new front drive shaft hole snap ring RH.



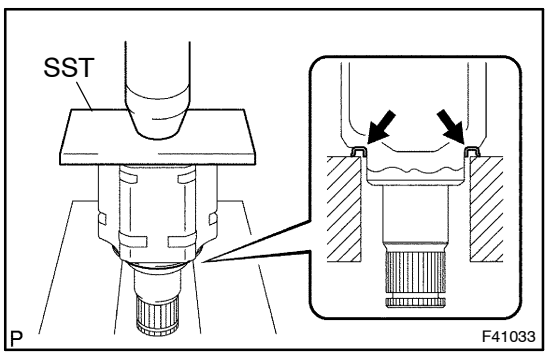
27. INSTALL FRONT DRIVE SHAFT DUST COVER

(a) Using SST and a press, install a new front drive shaft dust cover until the distance from the tip of center drive shaft to the front drive shaft dust cover reaches the specification, as shown in the illustration.
SST 09527–10011, 09726–40010
Distance: 42.1 ± 0.5 mm (1.7 ± 0.02 in.)



28. INSTALL FRONT DRIVE SHAFT DUST COVER RH

(a) Using SST and a press, install a new front drive shaft dust cover RH until the distance from the tip of center drive shaft to the front drive shaft dust cover RH reaches the specification, as shown in the illustration.
SST 09527–10011
Distance:
1AZ–FE, 2AZ–FE: 91.5 ± 0.5 mm (3.6 ± 0.02 in.)
1MZ–FE: 110.5 ± 0.5 mm (4.4 ± 0.02 in.)

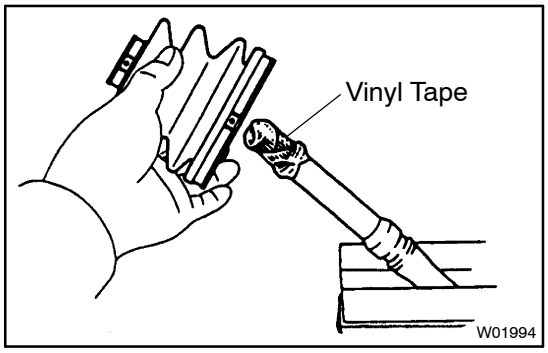


29. INSTALL FRONT DRIVE SHAFT DUST COVER LH

(a) Using SST and a press, install a new front drive shaft dust cover LH.
SST 09527–10011

30. INSTALL FRONT DRIVE SHAFT LH HOLE SNAP RING

(a) Install a new front drive shaft LH hole snap ring.



31. INSTALL OUTBOARD JOINT BOOT

HINT:

Before installing the boots, wrap the spline of the drive shaft with vinyl tape to prevent the boots from being damaged.

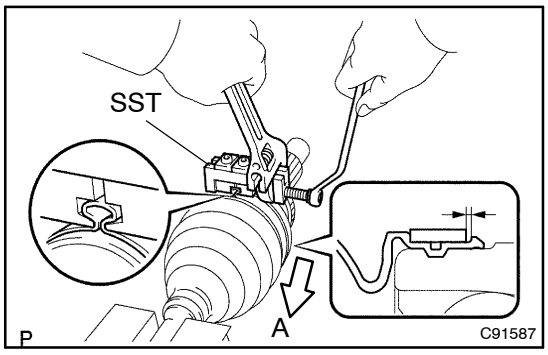
(a) Temporarily install a new outboard joint boot with 2 clamps to the drive shaft.

(b) Pack the inboard joint shaft and boot with grease in the boot kit.

Grease capacity:

1AZ–FE, 2AZ–FE: 190 – 200 g (6.7 – 7.1 oz.)

1MZ–FE: 205 – 215 g (7.2 – 7.6 oz.)



32. INSTALL FRONT AXLE OUTBOARD JOINT BOOT CLAMP

(a) Mount drive shaft in a soft vise.

(b) Secure the 2 outboard joint boot clamps onto the boot.

(c) Place SST onto the outboard joint large boot clamp.

SST 09521–24010

NOTICE:

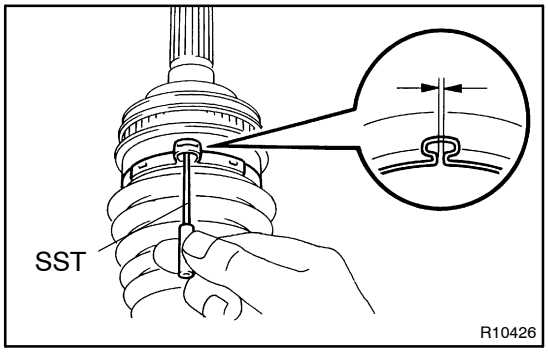
The front axle outboard joint boot RH clamp and front axle outboard joint boot LH clamp tightened position must be put aside in the A direction in the boots groove.

Crearance: 0.8 mm (0.032 in.) or over

(d) Tighten the SST so that the large clamp is pinched.

NOTICE:

Do not overtighten the SST.

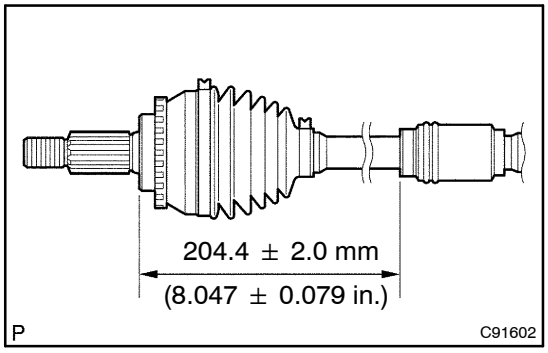


(e) Using SST, adjust the clearance of the large clamp.

SST 09240–00020

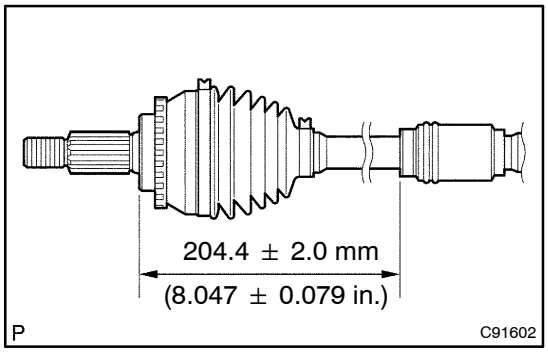
Crearance: 0.8 mm (0.032 in.) or less

(f) Employ the same manner to the outboard joint small boot clamp.



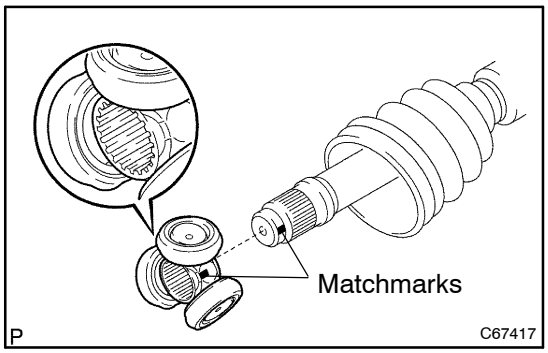
33. INSTALL FRONT DRIVE SHAFT DAMPER LH(M/T TRANSAXLE)

(a) Make sure that the front drive shaft damper LH is on the shaft groove.
(b) Set the distance, as described below.
Distance: 204.4 ± 2.0 mm (8.047 ± 0.079 in.)



34. INSTALL FRONT DRIVE SHAFT DAMPER RH(EXCEPT 1MZ–FE ENGINE TYPE)

(a) Make sure that the front drive shaft damper RH is on the shaft groove.
(b) Set the distance, as described below.
Distance: 204.4 ± 2.0 mm (8.047 ± 0.079 in.)



35. INSTALL FRONT DRIVE INBOARD JOINT ASSY LH

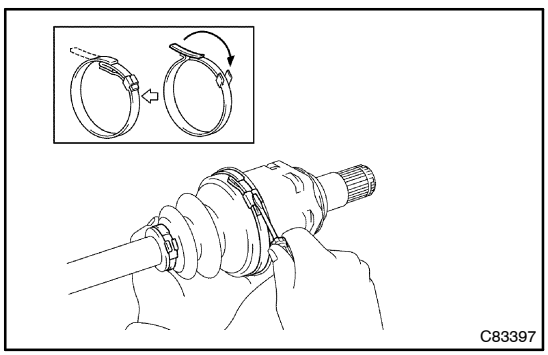
(a) Place the beveled side of the tripod axial spline toward the front drive outboard joint shaft assy LH.
(b) Align the matchmarks placed before removal.
(c) Using a brass bar and hammer, tap in the tripod to the front drive outboard joint shaft assy LH.

NOTICE:
Do not tap the roller.

(d) Using a snap ring expander, install a new front drive inner shaft inner RH shaft snap ring.
(e) Pack the front drive outboard joint shaft assy LH and front axle inboard joint boot with grease in the boot kit.
Grease capacity:
185 – 195 g (6.5 – 6.9 oz.)

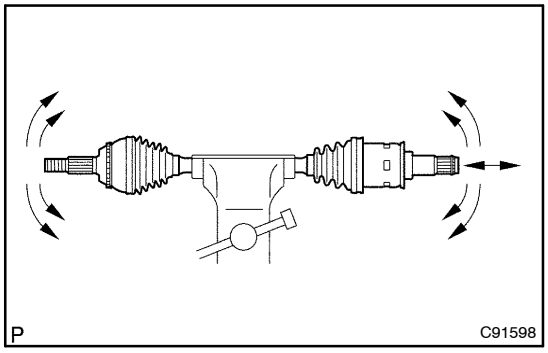
36. INSTALL FR AXLE INBOARD JOINT BOOT

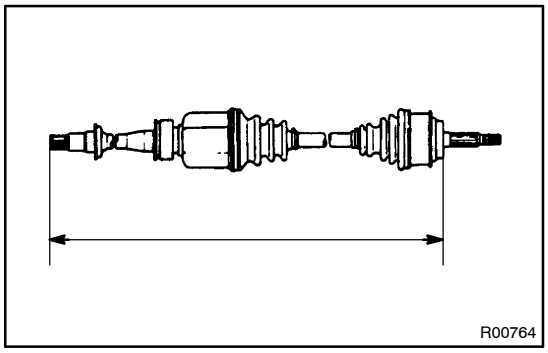
(a) Install the front axle inboard joint boot to the front drive outboard joint shaft assy LH.



37. INSTALL FRONT AXLE INBOARD JOINT BOOT CLAMP

(a) Bend the band and lock the front axle inboard joint boot clamps with a screwdriver.





38. INSPECT FRONT DRIVE SHAFT

(a) Check to see that there is no remarkable play in the outboard joint.

(b) Check to see that the inboard joint slides smoothly in the thrust direction.

(c) Check to see that there is no remarkable play in the radial direction of the inboard joint.

(d) Check the boots for damage.

NOTICE:

Move the drive shaft assy keeping it level.

(e) Make sure that the 2 boots are on the shaft groove.

(f) Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.

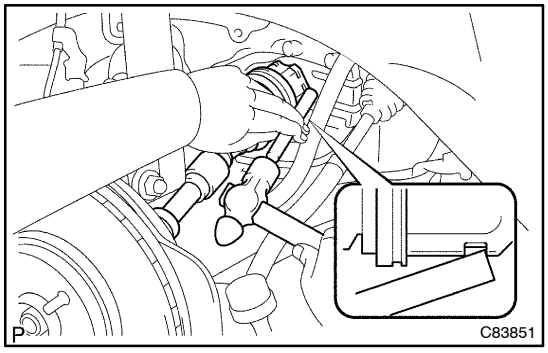
Drive shaft standard length: mm (in.)

1MZ–FE:

LH	576.9 ± 2.0 (22.713 ± 0.079)
RH	896.4 ± 2.0 (35.291 ± 0.079)

1AZ–FE, 2AZ–FE:

LH	591.2 ± 2.0 (23.276 ± 0.079)
RH	890 ± 2.0 (35.039 ± 0.079)



39. INSTALL FRONT DRIVE SHAFT ASSY LH

(a) Coat the spline of the front drive inboard joint assy LH with ATF.

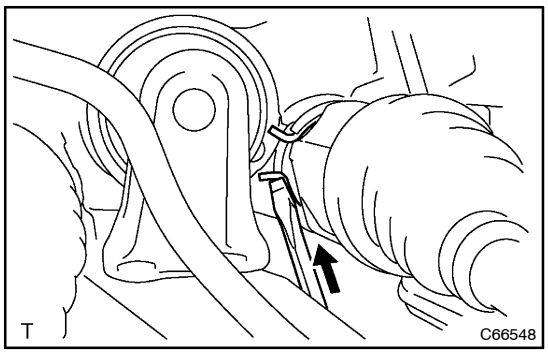
(b) Aline the shaft splines and install the front drive shaft assy LH with brass bar and hammer.

NOTICE:

- **Set the snap ring with opening side facing downward.**
- **Be careful not to damage the oil seal.**

HINT:

Whether the front drive inboard joint assy LH is in contact with the pinion shaft or not can be known from the sound or feeling when driving it.



40. INSTALL FRONT DRIVE SHAFT ASSY RH

(a) Using a screwdriver, install the drive shaft bearing bracket hole snap ring.

(b) Install the bolt.

Torque: 32.4 N·m (330 kgf·cm, 24 ft·lbf)

NOTICE:

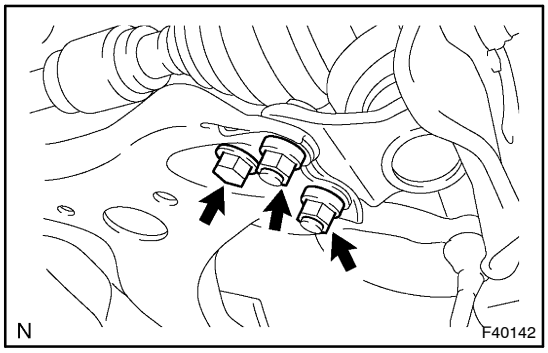
Do not damage the oil seal.

41. INSTALL FRONT AXLE ASSY LH

(a) Install the front drive shaft assy LH to the front axle assy LH.

NOTICE:

- **Be careful not to damage the outboard joint boot.**
- **Be careful not to damage the speed sensor rotor.**



42. INSTALL FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 LH

(a) Install the lower ball joint assy front LH to the front suspension arm sub–assy lower No.1 LH with the bolt and nut.
Torque: 127 N·m (1,295 kgf·cm, 94 ft·lbf)

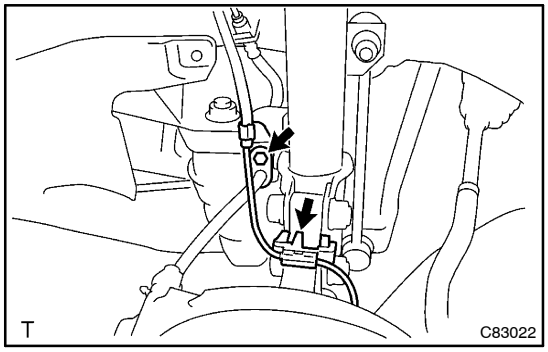
43. INSTALL TIE ROD ASSY LH

(a) Install the tie rod assy LH to the steering knuckle LH with the nut.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

(b) Install a new cotter pin.

NOTICE:

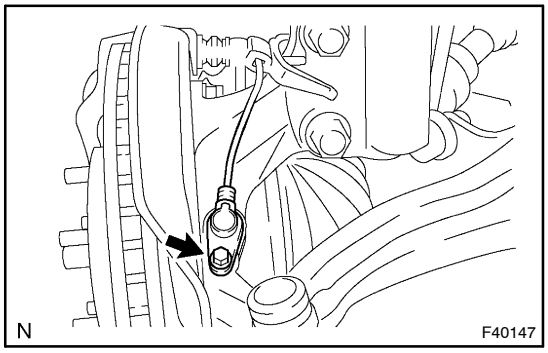
If the holes for the cotter pin are not aligned, tighten the nut further to 60°.



44. INSTALL SPEED SENSOR FRONT LH

(a) Install the sensor wire and front flexible hose to shock absorber with the bolt.
Torque: 18.8 N·m (192 kgf·cm, 14 ft·lbf)

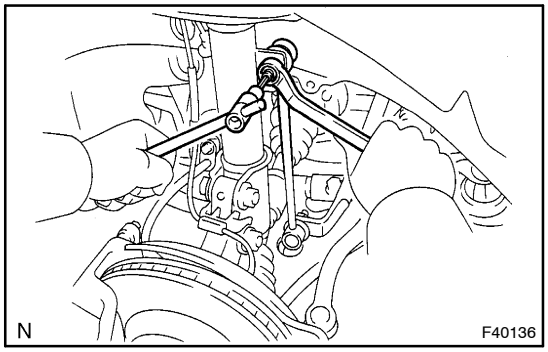
(b) Install the sensor wire clamp.



(c) Install the speed sensor front LH to the steering knuckle LH with the bolt.
Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

NOTICE:

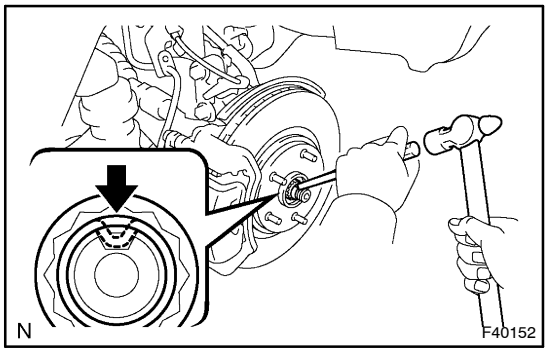
- **Be careful not to damage the speed sensor.**
- **Prevent foreign matter from being attached.**
- **Do not twist the sensor wire when installing the sensor.**



45. INSTALL FRONT STABILIZER LINK ASSY LH

(a) Install the front stabilizer link assy LH with the nut.
Torque: 74 N·m (755 kgf·cm, 55 ft·lbf)

HINT:
If the ball joint turns together with the nut, use a hexagon (6 mm) wrench to hold the stud.



46. INSTALL FRONT AXLE HUB LH NUT

(a) Install a new front axle hub LH nut.
Torque: 294 N·m (2,998 kgf·cm, 217 ft·lbf)

(b) Using chisel and hammer, stake the front axle hub LH nut.

47. INSTALL FRONT WHEEL
48. ADD AUTOMATIC TRANSAXLE FLUID(A/T TRANSAXLE)(See page 40–1)
49. INSPECT AUTOMATIC TRANSAXLE FLUID(A/T TRANSAXLE)
50. ADD MANUAL TRANSAXLE OIL(M/T TRANSAXLE)
51. INSPECT MANUAL TRANSAXLE OIL(M/T TRANSAXLE)
52. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT(See page 26–4)
53. CHECK ABS SPEED SENSOR SIGNAL
w/ VSC (See page 05–511)
w/o VSC (See page 05–451)