PROPELLER W/CENTER BEARING SHAFT ASSY

300NL–01

OVERHAUL

HINT:

COMPONENTS: SEE PAGE 30–4

1. REMOVE INSTRUMENT PANEL UNDER COVER SUB–ASSY NO.2

2. REMOVE INSTRUMENT PANEL GARNISH SUB–ASSY LH (SEE PAGE 71–6)

3. REMOVE INSTRUMENT PANEL FINISH PANEL (SEE PAGE 71–6)

4. REMOVE INSTRUMENT PANEL UNDER COVER SUB–ASSY NO.1 (SEE PAGE 71–6)

5. REMOVE INSTRUMENT PANEL SAFETY PAD SUB–ASSY NO.1 (SEE PAGE 71–6)

6. REMOVE CONSOLE PANEL SUB–ASSY UPPER (SEE PAGE 71–6)

7. REMOVE CONSOLE UPPER REAR PANEL SUB–ASSY (SEE PAGE 71–6)

8. REMOVE CONSOLE BOX CARPET (SEE PAGE 71–6)

9. REMOVE REAR CONSOLE ARMREST ASSY (SEE PAGE 71–6)

10. REMOVE INSTRUMENT PANEL FINISH PANEL LOWER CENTER (SEE PAGE 71–6)

11. REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB–ASSY CENTER (SEE PAGE 71–6)

12. REMOVE CONSOLE BOX (SEE PAGE 71–6)

13. SEPARATE OXYGEN SENSOR (SEE PAGE 15–4)

14. REMOVE EXHAUST PIPE ASSY

(a) Remove the 4 bolts, nuts and 2 gaskets from the exhaust manifold.

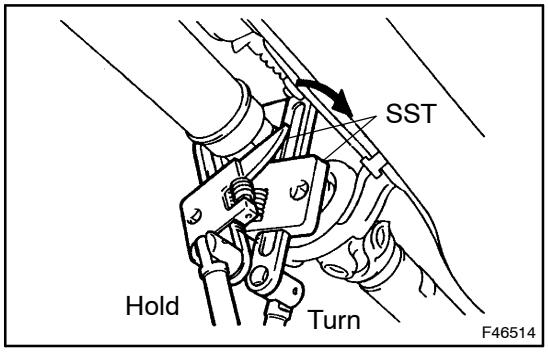
(b) Remove the exhaust pipe assy.

15. REMOVE FRONT FLOOR HEAT INSULATOR NO.1

(a) Remove the 4 bolts and heat insulator No.1.

16. REMOVE PROPELLER SHAFT HEAT INSULATOR

(a) Remove the 2 bolts and heat insulator.



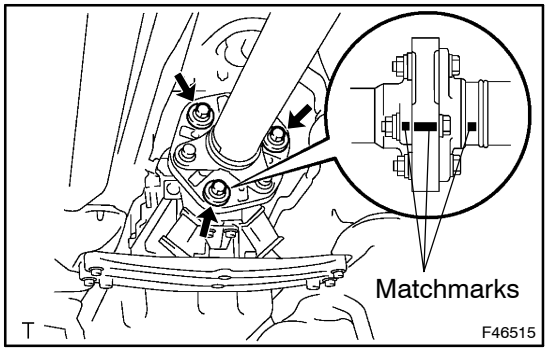
17. REMOVE PROPELLER W/CENTER BEARING SHAFT ASSY

(a) Using SST, loosen the adjusting nut until it can be turned by hand.

SST 09922–10010

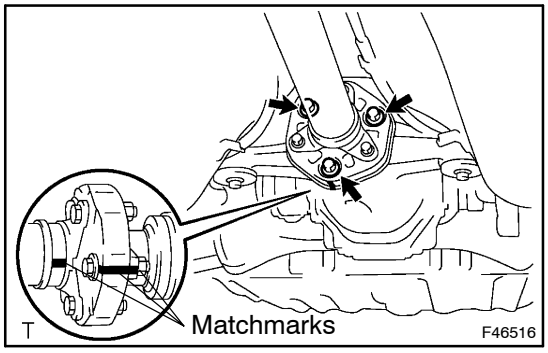
HINT:

Use 2 of the same type of SST.

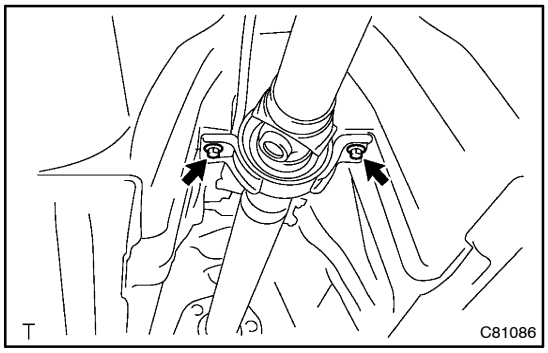


(b) Place matchmarks on the transmission companion flange and flexible coupling.

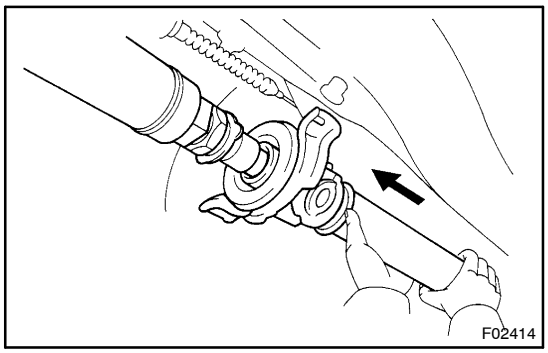
(c) Remove the 3 bolts from the transmission side.



(d) Place matchmarks on the differential companion flange and flexible coupling.
(e) Remove the 3 bolts from the differential side.



(f) Remove the 2 bolts and adjusting washers.
HINT:
Some vehicles are not equipped with adjusting washers.

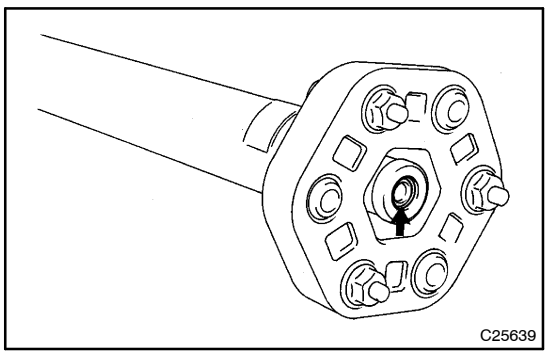


(g) Push the rear propeller shaft straight forward to compress the propeller shaft and pull out the propeller shaft from the centering pin of the differential.

NOTICE:
Press the propeller shaft straight ahead to keep the transmission and intermediate shaft aligned straight.

(h) Pull the propeller shaft outward from the vehicle's rear.

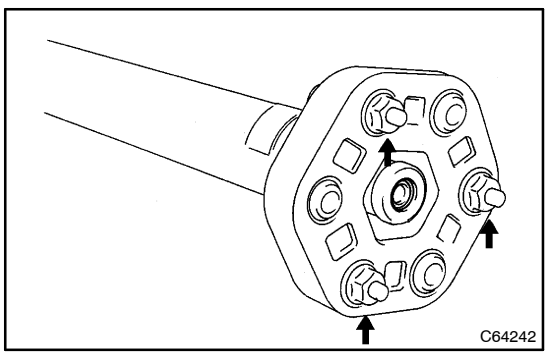
NOTICE:
The intermediate shaft and propeller shaft should not be separated.



18. INSPECT FLEXIBLE COUPLING

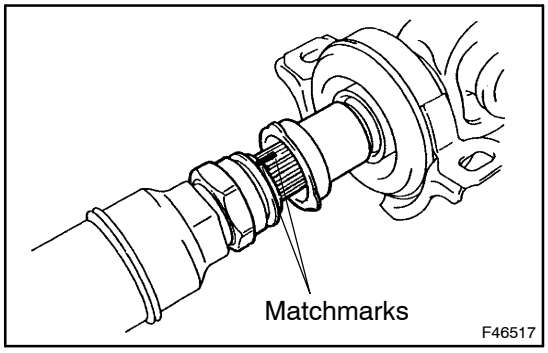
(a) Check for cracks in or damage to the front and rear flexible couplings.
(b) Inspect the flexible coupling centering bushing.

HINT:
If the bushing is damaged, replace the propeller shaft assembly.



19. REMOVE FLEXIBLE COUPLING

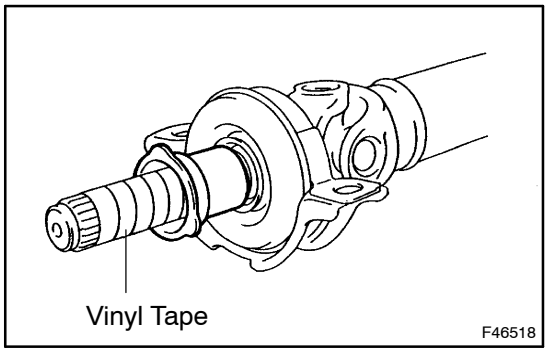
(a) Remove the 3 bolts from the flexible coupling.



20. REMOVE PROPELLER INTERMEDIATE SHAFT ASSY

(a) Place matchmarks on the intermediate shaft and propeller shaft.

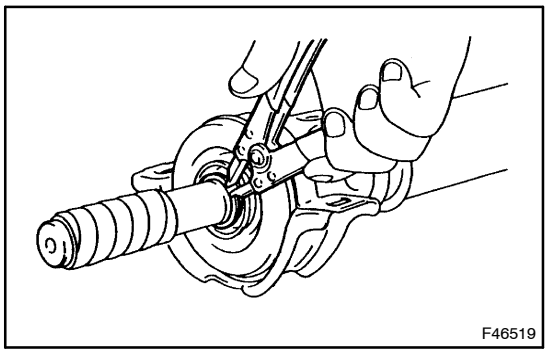
(b) Separate the intermediate shaft and propeller shaft.



(c) Remove the dust boot from the propeller shaft.

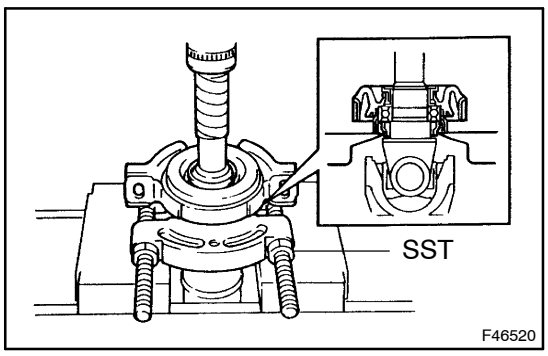
HINT:

If the dust boot is reused, remove it after wrapping vinyl tape around the spline, so it will not be damaged.



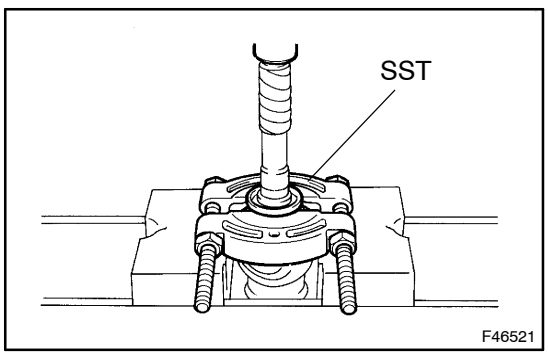
21. REMOVE CENTER SUPPORT BEARING ASSY NO.1

(a) Using a snap ring expander, remove the snap ring.



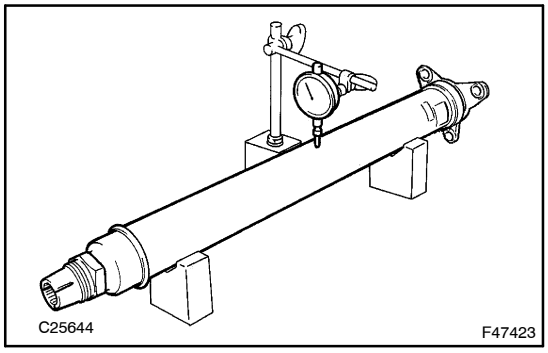
(b) Using SST and a press, remove the center support bearing assy No.1.

SST 09950–00020



(c) Using SST and a press, remove the dust deflector No.1.

SST 09950–00020



22. INSPECT PROPELLER INTERMEDIATE SHAFT ASSY

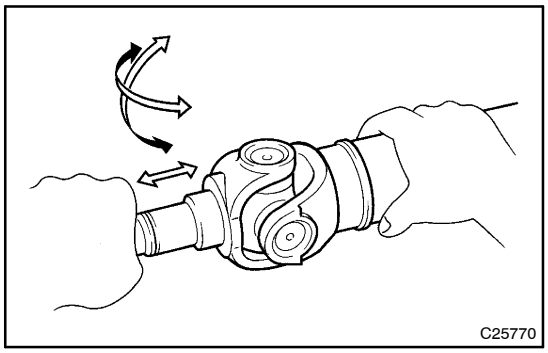
(a) Using a dial indicator, check the runout of the shaft.
Maximum runout: 0.8 mm (0.031 in.)

HINT:
If the runout exceeds the maximum, replace the intermediate shaft assy.

23. INSPECT PROPELLER SHAFT ASSY

(a) Using a dial indicator, check the runout of the shaft.
Maximum runout: 0.8 mm (0.031 in.)

HINT:
If the runout exceeds the maximum, replace the propeller shaft assy.

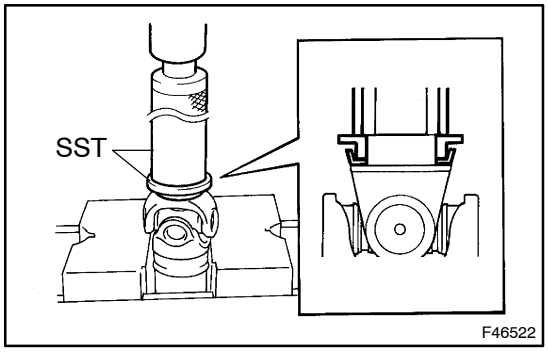


24. INSPECT SPIDER BEARING

(a) Check if the spider bearing rotates smoothly.

(b) Check if there is any play in the spider bearing.

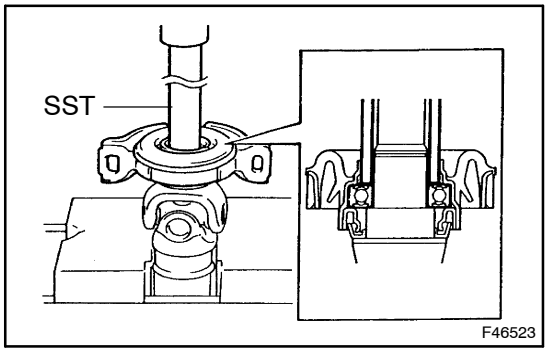
HINT:
If necessary, replace the propeller shaft.



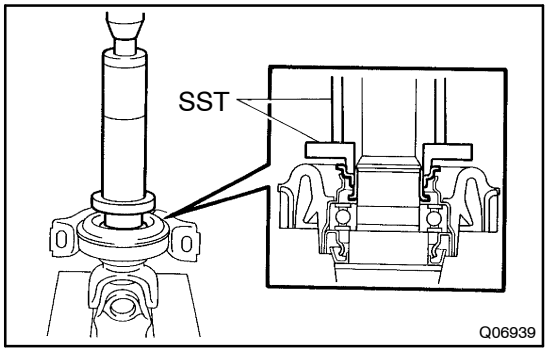
25. INSTALL CENTER SUPPORT BEARING ASSY NO.1

NOTICE:
Be careful not to grip the propeller shaft tube too tightly in a vise as this will cause deformation.

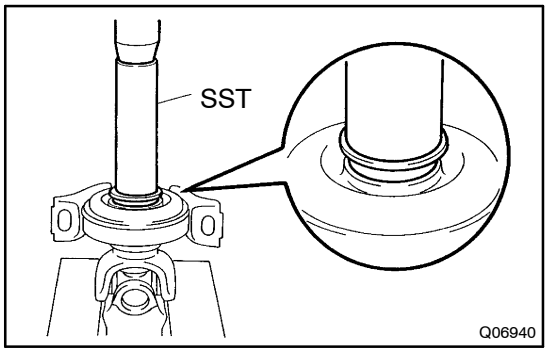
(a) Using SST and a press, install a new dust deflector No.1.
SST 09506–35010, 09316–60011 (09316–00011)



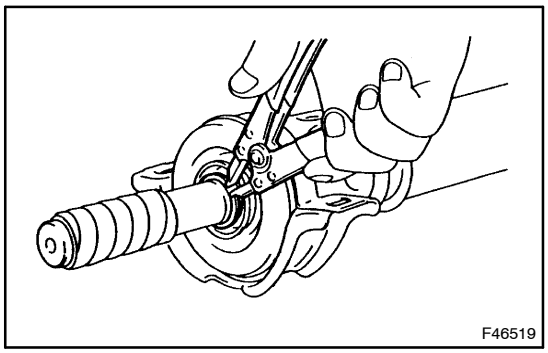
(b) Using SST and a press, install the center support bearing assy No.1.
SST 09330–50010



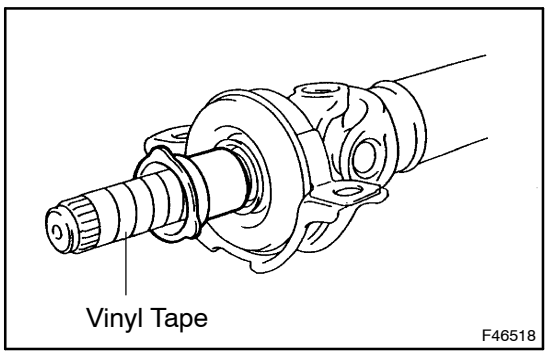
(c) Using SST and a press, insert a new dust deflector until it almost touches the rubber of the center support bearing assy No.1.
SST 09608–00071, 09608–06041



(d) Using SST and a press, install a new dust deflector No.2.
SST 09330–50010



(e) Using a snap ring expander, install a new snap ring.



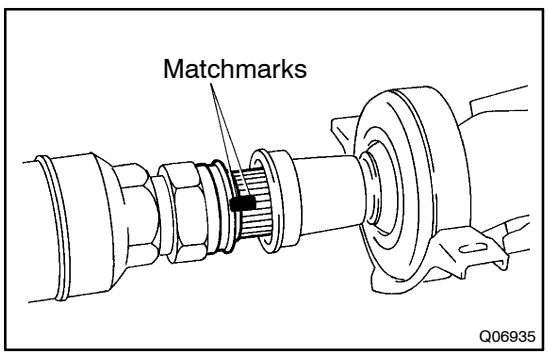
26. INSTALL PROPELLER INTERMEDIATE SHAFT ASSY

(a) Install the dust boot.

NOTICE:

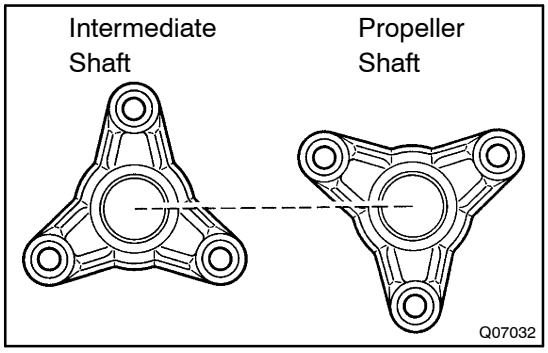
Assemble propeller intermediate shaft assy after wrapping vinyl tape around the spline so that it will not damage the boot.

(b) Apply grease to the spline.
Grease:
Molybdenum disulphide lithium base, NLGI No.2



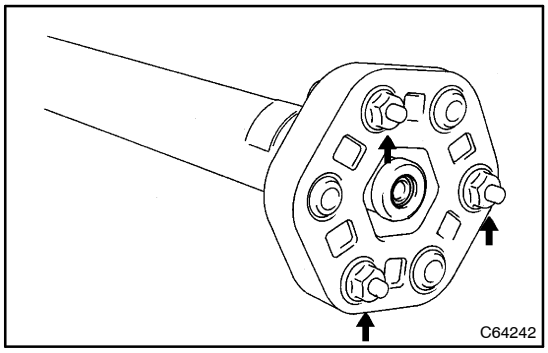
(c) Align the matchmarks and assemble the intermediate shaft and propeller shaft.

(d) Cover the adjusting nut with the dust boot.



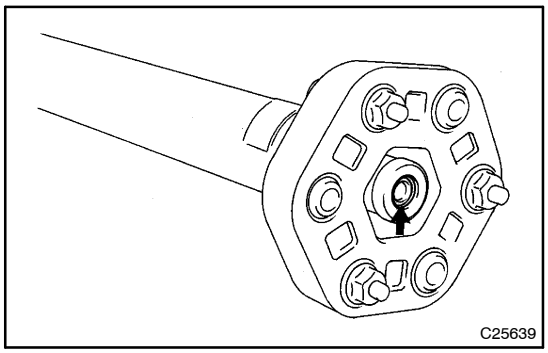
NOTICE:
The directions of the intermediate shaft companion flange and the propeller shaft companion flange should differ by 180°.

(e) Fully tighten the adjusting nut by hand.



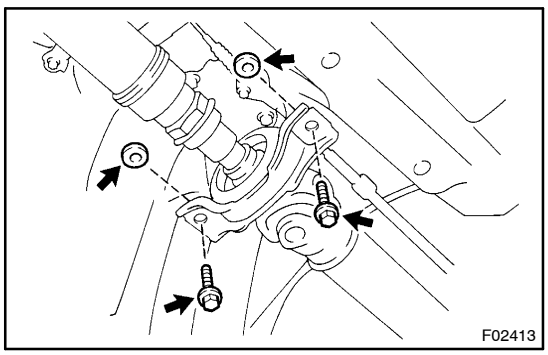
27. INSTALL FLEXIBLE COUPLING

(a) Install and torque the 3 bolts, washers and nuts.
Torque: 79 N·m (805 kgf·cm, 58 ft·lbf)



28. INSTALL PROPELLER W/CENTER BEARING SHAFT ASSY

(a) Apply grease to the flexible coupling centering bushings.
Grease:
Molybdenum disulphide lithium base, NLGI No.2

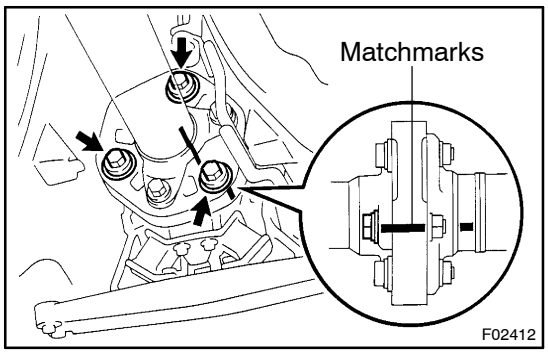


(b) Install the propeller shaft from the vehicle's rear and connect the transmission and differential.

NOTICE:
Support the center support bearing by hand so that the transmission and intermediate shaft, and propeller shaft and differential, remain in a straight line.

(c) Temporarily install the 2 center support bearing set bolts with the adjusting washers.

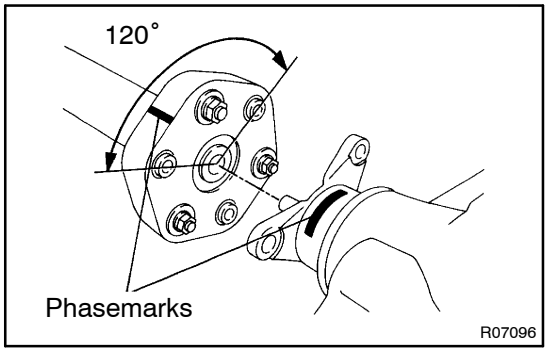
HINT:
Use the adjusting washers which were removed.



(d) Align the matchmarks and connect the propeller shaft to the transmission/differential.

(e) Install and torque the 6 bolts, washers and nuts.
Torque: 79 N·m (805 kgf·cm, 58 ft·lbf)

NOTICE:
The bolts should be installed from the propeller shaft side.



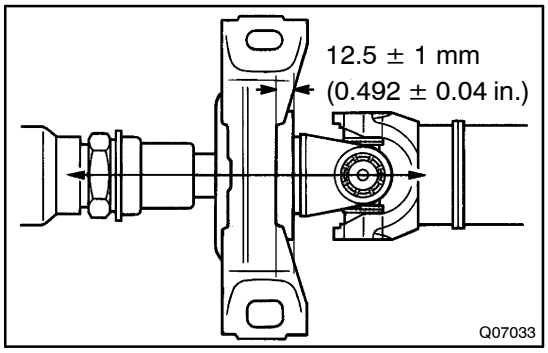
(f) If using a new propeller shaft (w/ phasemarks):
Install the propeller shaft phasemarks and differential/transmission phasemarks so that their respective alignment phasemarks match.
If the propeller shaft phasemarks and differential/transmission phasemarks do not align, install the propeller shaft and differential alignment phasemarks as close together as possible.

(g) If using a new propeller shaft (w/o phasemarks):
Install the propeller shaft.

29. FULLY TIGHTEN CENTER SUPPORT BEARING ASSY NO.1

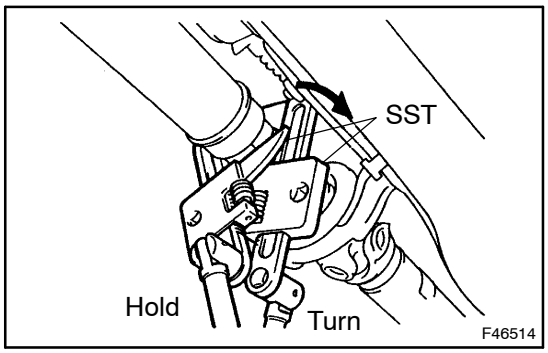
(a) Torque the 2 center support bearing set bolts.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)

HINT:
Adjust the center support bearing to keep the intervals as shown in the illustration with the vehicle in the unladen condition.
Under the same condition, check if the center line of the center support bearing is at right angles to the shaft axial direction.



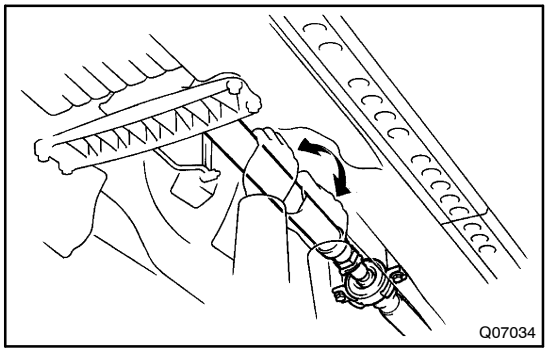
(b) Using SST, tighten the adjusting nut.
SST 09922–10010
Torque: 69 N·m (700 kgf·cm, 51 ft·lbf)

HINT:
Use a torque wrench with a fulcrum length of 34.5 cm (13.6 in.).

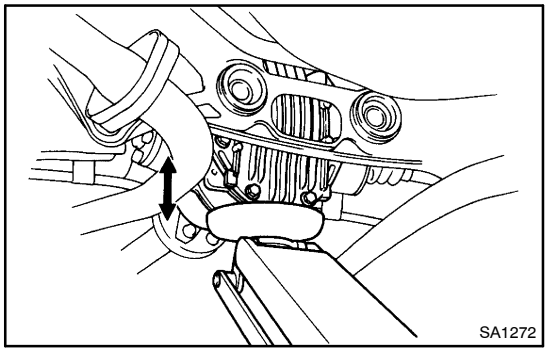


30. INSPECT AND ADJUST NO.2 AND NO.3 JOINT ANGLE

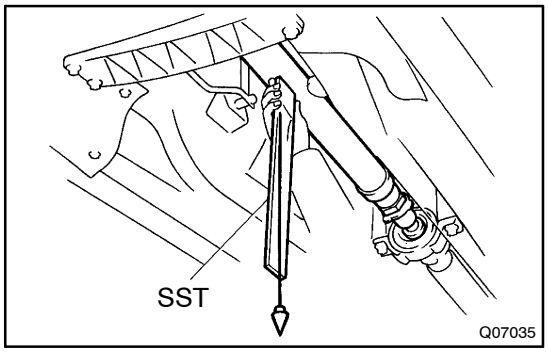
NOTICE:
When performing operations which involve the removal and installation of the propeller shaft, always check the joint angle. Make adjustments if necessary.



(a) Stabilize the propeller shaft and differential.
(1) Turn the propeller shaft several times by hand to stabilize the center support bearing and flexible couplings.



(2) Using a jack, raise and lower the differential to stabilize the differential mounting cushion.



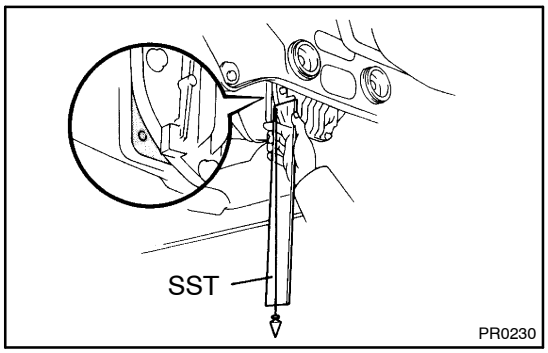
(b) Check the No.2 and No.3 joint angle.

(1) Using SST, measure the installation angle of the intermediate shaft and propeller shaft.

HINT:

The SST should be directly underneath the shaft.

SST 09370–50010



(2) Using SST, measure the installation angle of the differential.

SST 09370–50010

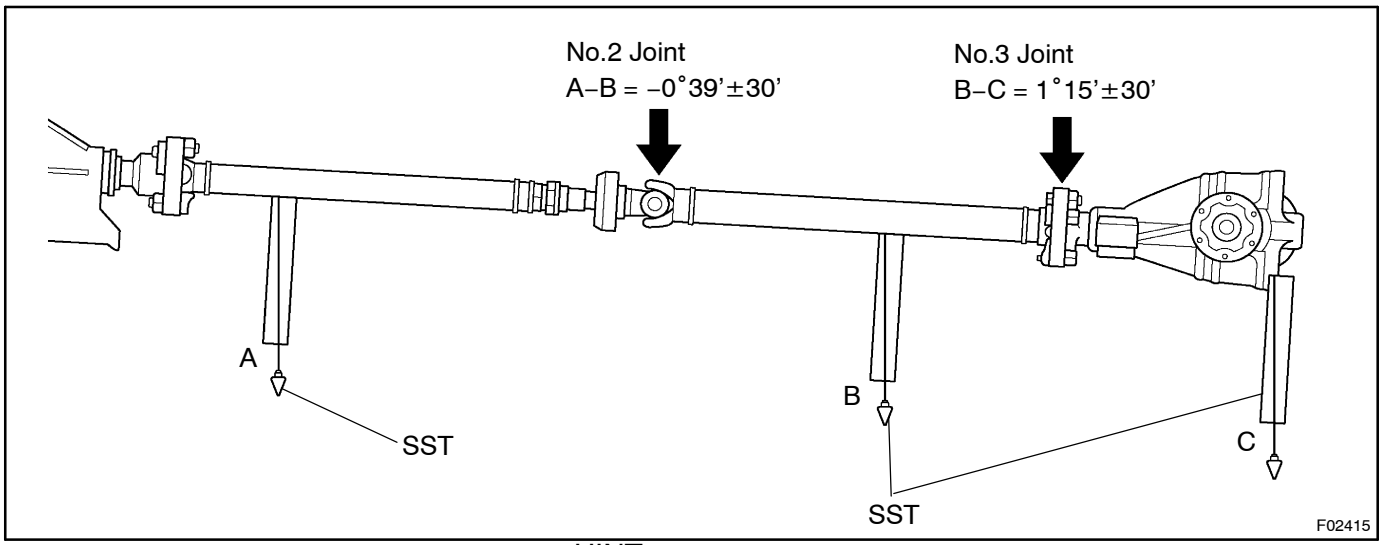
HINT:
Measure the installation angle by placing the SST in the position, as shown in the illustration.

(3) Calculate the No.2 joint angle.

No.2 joint angle:
A–B = –0°39'±30'
A: Intermediate shaft installation angle
B: Propeller shaft installation angle

(4) Calculate the No.3 joint angle.

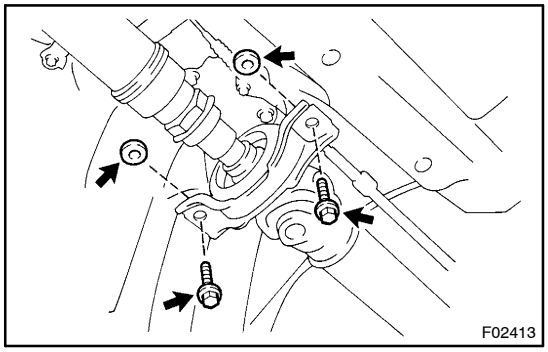
No.3 joint angle:
B–C = 1°15'±30'
B: Propeller shaft installation angle
C: Differential installation angle



HINT:
If the measured angle is not within the specification, adjust it with the center support bearing adjusting washer.

(c) Adjust the No. 2 joint angle.

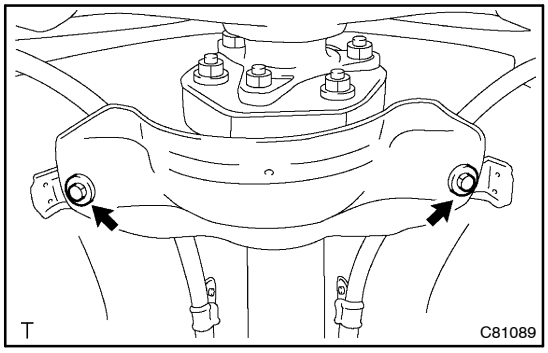
(1) Select the proper shaft center support bearing adjusting washer for adjustment.



Thickness mm (in.)	Thickness mm (in.)
2.0 (0.079)	11.0 (0.433)
4.5 (0.177)	–
6.5 (0.256)	–
9.0 (0.354)	–

NOTICE:

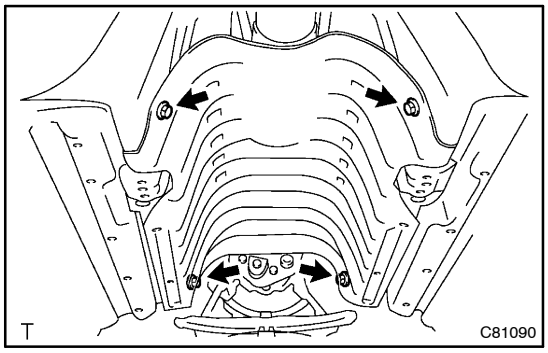
- **2 washers should be the same thickness.**



31. INSTALL PROPELLER SHAFT HEAT INSULATOR

Install the heat insulator with the 2 bolts.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



32. INSTALL FRONT FLOOR HEAT INSULATOR NO.1

Install the heat insulator No.1 with the 4 bolts.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

33. INSTALL EXHAUST PIPE ASSY (SEE PAGE 15–4)

34. INSTALL OXYGEN SENSOR (SEE PAGE 15–4)

35. CHECK FOR EXHAUST GAS LEAKS