
PROPELLER SHAFT

TROUBLESHOOTING	PR-1
PROPELLER SHAFT ASSEMBLY	PR-2



TROUBLESHOOTING

PR00H-02

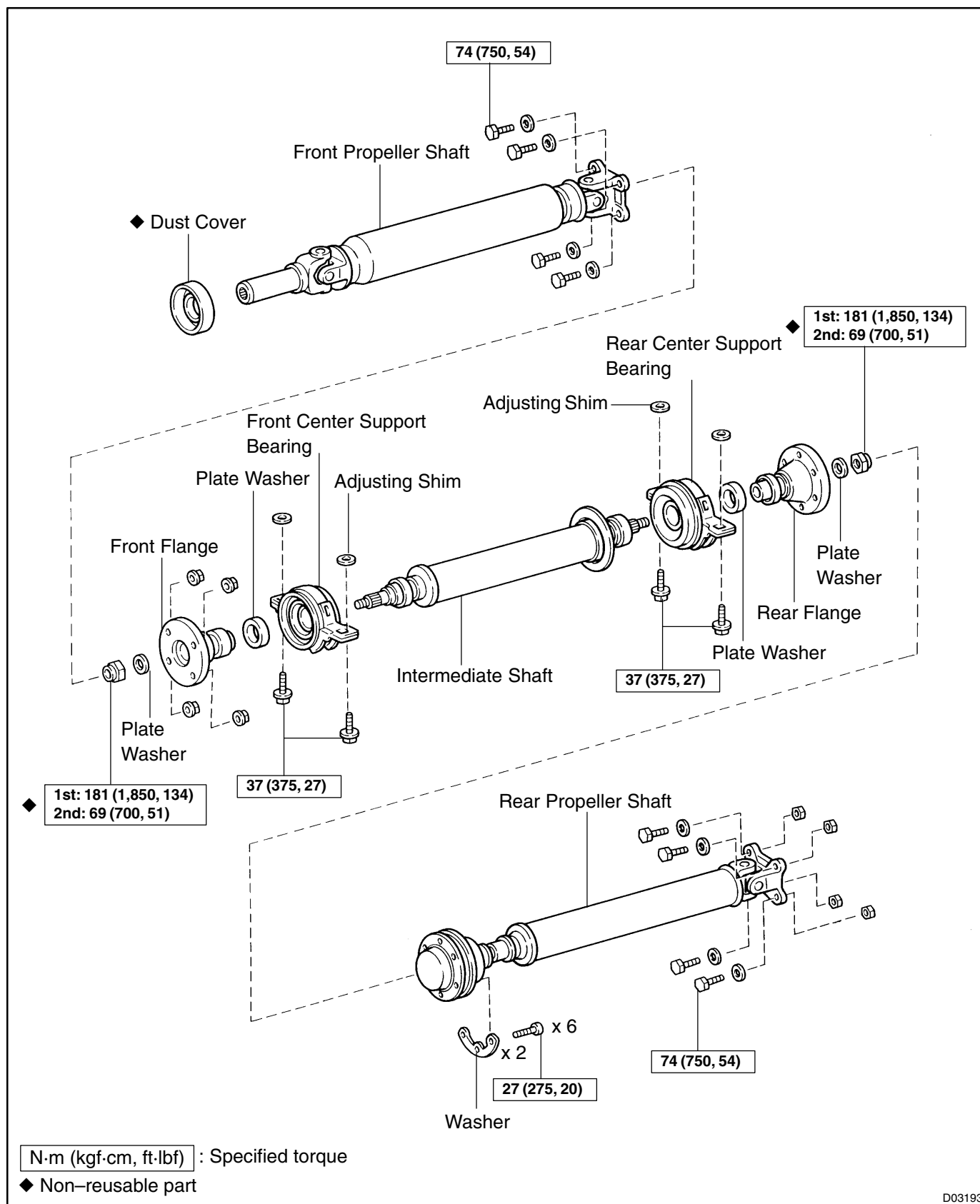
PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

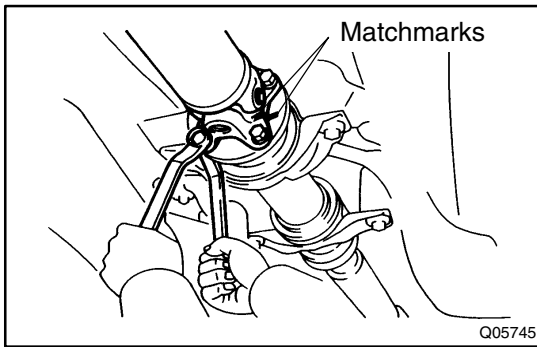
Symptom	Suspect Area	See page
Noise	4. Sleeve yoke spline (Worn)	PR-5
	5. Center support bearing (Worn)	PR-5
	6. Spider bearing (Worn or stuck)	PR-5
Vibration	1. Propeller and intermediate shafts (Runout)	PR-5
	2. Propeller shafts (Imbalance)	PR-5
	3. Front flange (Runout)	PR-5
	4. Rear flange (Runout)	PR-5
	5. Cross groove joint (Stuck or damaged)	PR-5
	6. Sleeve yoke spline (Stuck)	PR-5

PROPELLER SHAFT ASSEMBLY COMPONENTS

PR001-02



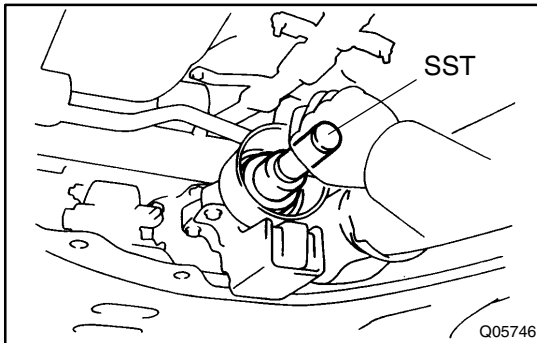
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REMOVAL

1. REMOVE FRONT PROPELLER SHAFT

- Place the matchmarks on both the flanges.
- Remove the 4 nuts, bolts and washers.

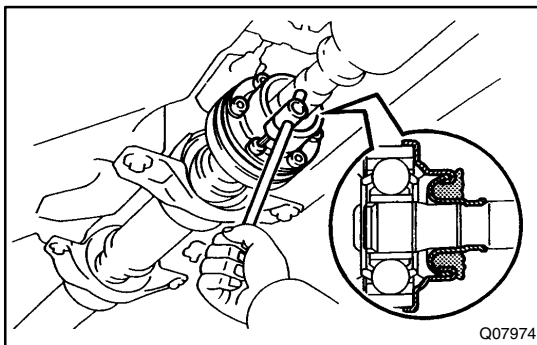


- Remove the front propeller shaft assembly.

NOTICE:

Be careful not to damage the oil seal.

- Insert SST in the transfer to prevent oil leakage.
SST 09325-20010

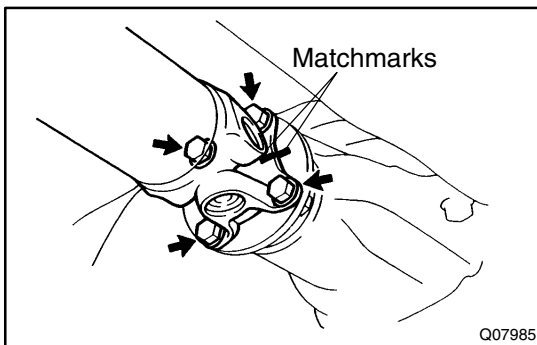


2. LOOSEN CROSS GROOVE JOINT SET BOLT

- Depress the brake pedal and hold it.
- Using a hexagon wrench, loosen the cross groove joint set bolts 1/2 turn.

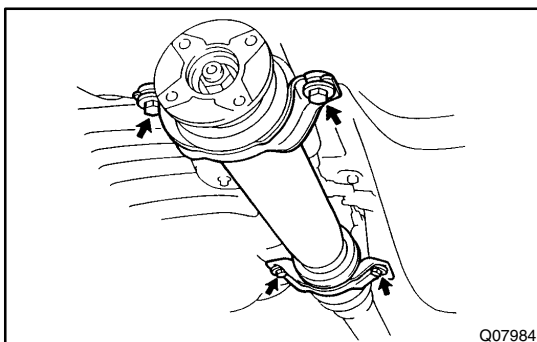
HINT:

Put a piece of cloth or equivalent into the inside of the universal joint cover so that the boot does not touch the inside of the universal joint cover.

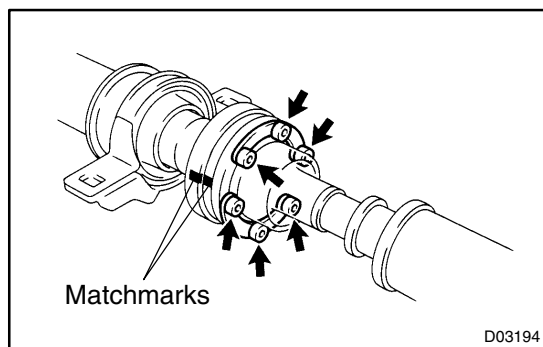


3. REMOVE INTERMEDIATE SHAFT AND REAR PROPELLER SHAFT

- Place the matchmarks on both the flanges.
- Remove the 4 nuts, bolts and washers.



- Remove the 4 bolts, shims and intermediate shaft with the rear propeller shaft assembly.



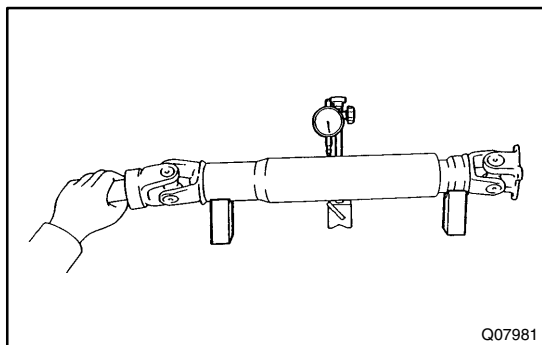
4. SEPARATE INTERMEDIATE SHAFT AND REAR PROPELLER SHAFT

- (a) Place the matchmarks on the joint and flange.

NOTICE:

Do not make matchmarks with a punch.

- (b) Using a hexagon wrench, remove the 6 bolts and 2 washers and separate the intermediate shaft from the rear propeller shaft.



INSPECTION

NOTICE:

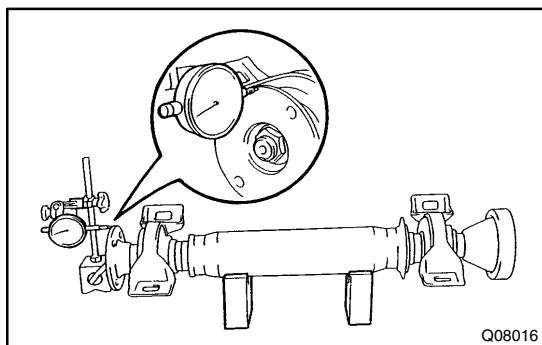
Be careful not to grip the propeller shaft tube too tightly in a vise as this will cause deformation.

1. INSPECT PROPELLER SHAFT AND INTERMEDIATE SHAFT RUNOUT

Using a dial indicator, inspect the runout of each shaft.

Maximum runout: 0.8 mm (0.031 in.)

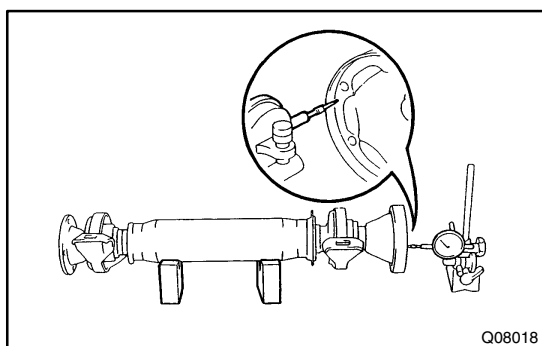
If the shaft runout exceeds the maximum, replace the shaft.



2. INSPECT INTERMEDIATE SHAFT FLANGE RUNOUT

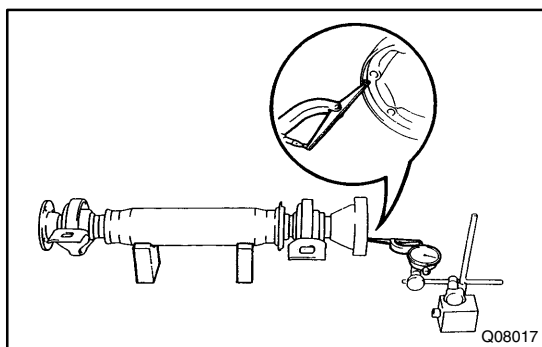
(a) Using a dial indicator, inspect the front side of the intermediate shaft flange runout.

Maximum runout: 0.1 mm (0.004 in.)



(b) Using a dial indicator, inspect the rear side of the intermediate shaft flange runout in the horizontal direction.

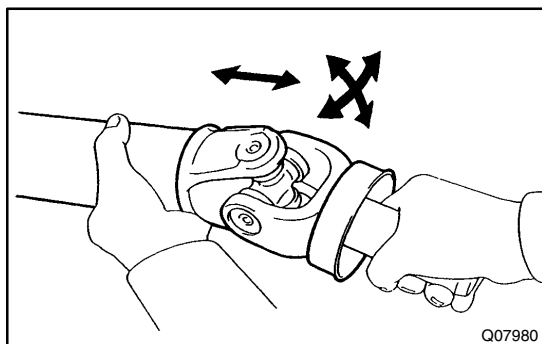
Maximum runout: 0.1 mm (0.004 in.)



(c) Using a dial indicator, inspect the rear side of the intermediate shaft flange runout in the vertical direction.

Maximum runout: 0.1 mm (0.004 in.)

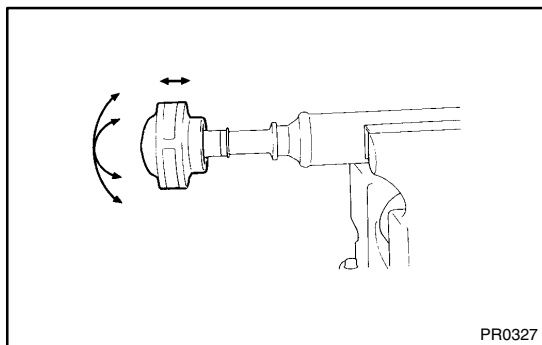
If the intermediate shaft flange runout exceeds the maximum, replace the intermediate shaft.



3. INSPECT SPIDER BEARINGS

Check the spider bearing axial play by turning the flange while holding the shaft tightly.

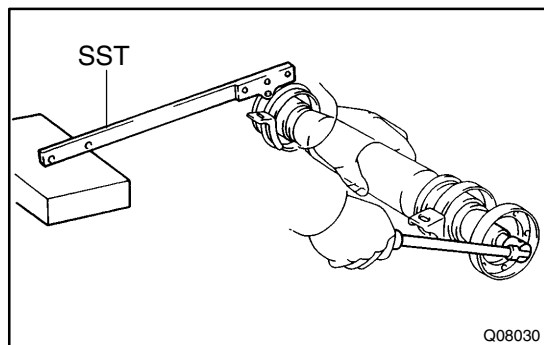
If necessary, replace the shaft.



4. INSPECT CROSS GROOVE JOINT

- Check that the joint turns smoothly in all directions, as shown in the illustration.
- Check for cracks, damage and grease leaking from the boot.

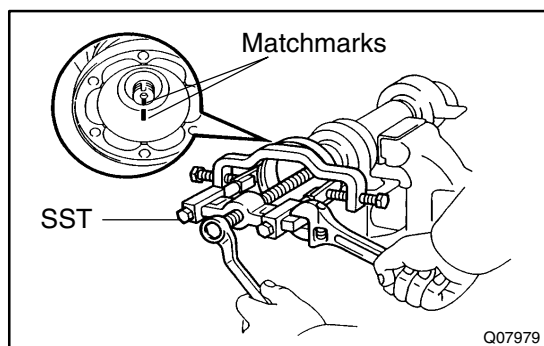
If a problem is found, replace the rear propeller shaft.



5. INSPECT CENTER SUPPORT BEARING

- Remove the rear center support bearing.
 - Using a hammer and chisel, loosen the staked part of the nut.
 - Using SST to hold the front flange, remove the nut and plate washer.

SST 09330-00021

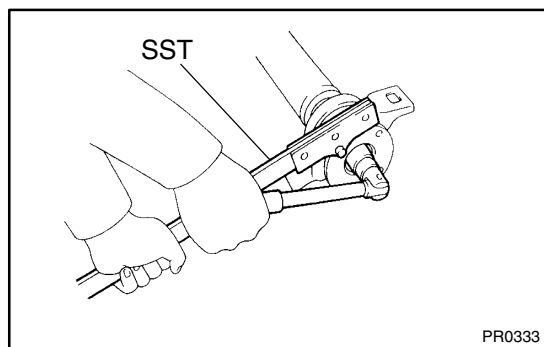


- Place the matchmarks on the rear flange and shaft.

- Using SST, remove the rear flange.

SST 09950-40011 (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04061, 09957-04010, 09958-04011)

- Remove the rear center support bearing and plate washer.

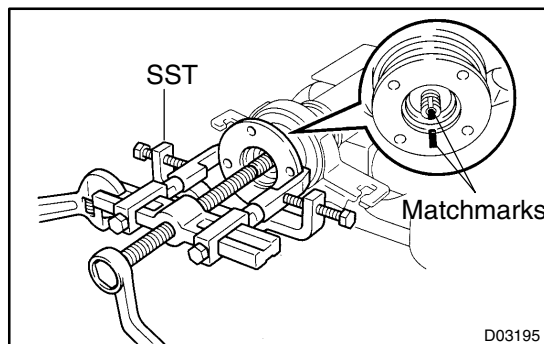


- Remove the front support bearing.

- Using a hammer and chisel, loosen the staked part of the nut.

- Using SST to hold the flange, remove the nut and plate washer.

SST 09330-00021

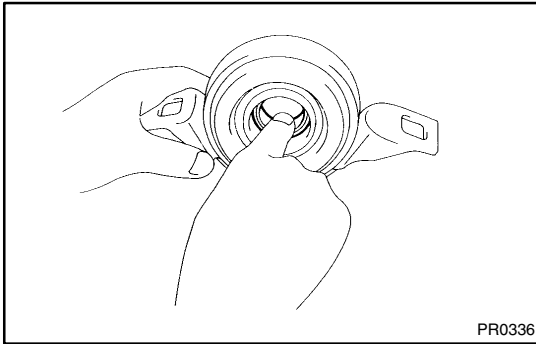


- Place the matchmarks on the flange and shaft.

- Using SST, remove the flange.

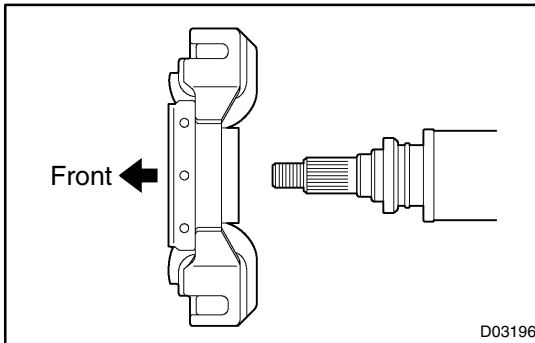
SST 09950-40011 (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04061, 09957-04010, 09958-04011)

- Remove the front center support bearing and plate washer.

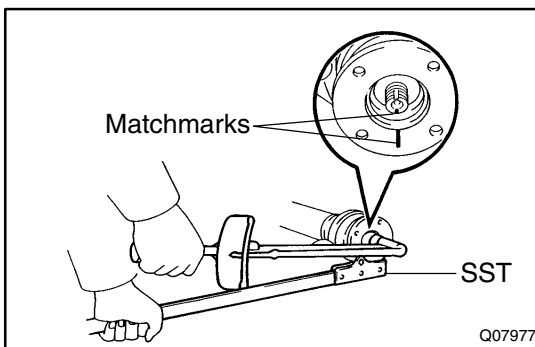


- (c) Inspect the front and rear center support bearings.
- (1) Turn the bearing by hand. Check that it turns smoothly.
 - (2) Check that there are no cracks and no damage to the seals.

If the bearing is damaged, worn, or does not turn freely, replace it.



- (d) Install the front center support bearing.
- (1) Set the front center support bearing on the intermediate shaft, as shown in the illustration.



- (2) Install the plate washer to the intermediate shaft.
- (3) Align the matchmarks on the flange and shaft and place the flange on the shaft.
- (4) Using SST to hold the flange, press the center support bearing into position by tightening down a new nut and washer.

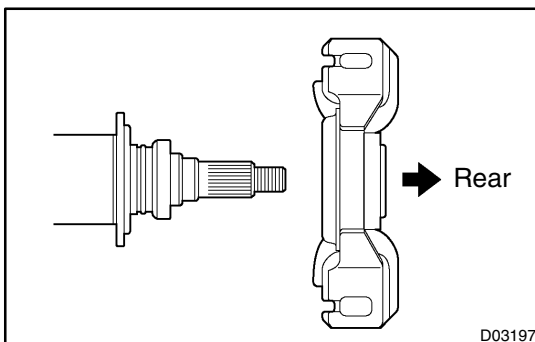
SST 09330-00021

Torque: 181 N·m (1,850 kgf·cm, 134 ft·lbf)

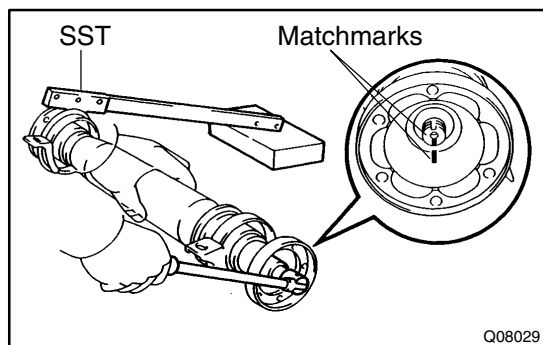
- (5) Loosen the nut.
- (6) Torque the nut again.

Torque: 69 N·m (700 kgf·cm, 51 ft·lbf)

- (7) Using a hammer and chisel, stake the nut.



- (e) Install the rear center support bearing.
- (1) Set the rear center support bearing on the intermediate shaft, as shown in the illustration.



- (2) Install the plate washer to the intermediate shaft.
- (3) Align the matchmarks on the flange and shaft and place the flange on the shaft.
- (4) Using SST to hold the flange, press the center support bearing into position by tightening down a new nut and washer.

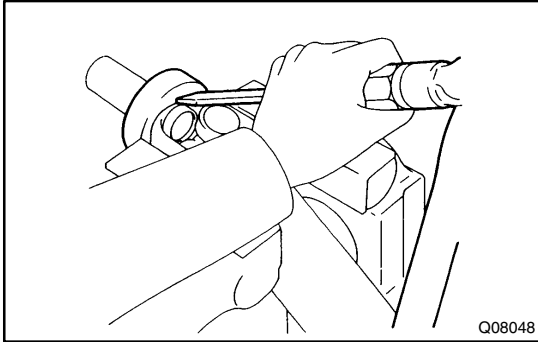
SST 09330-00021

Torque: 181 N·m (1,850 kgf·cm, 134 ft·lbf)

- (5) Loosen the nut.
- (6) Torque the nut again.

Torque: 69 N·m (700 kgf·cm, 51 ft·lbf)

- (7) Using a hammer and chisel, stake the nut.
- (f) Inspect the cross groove joint (See step 4).



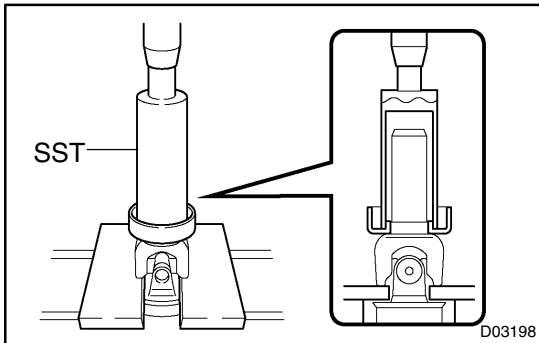
REPLACEMENT

NOTICE:

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

REPLACE DUST COVER

- (a) Using a screwdriver and hammer, remove the dust cover.

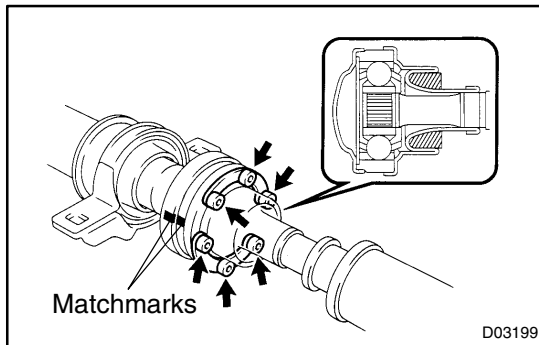


- (b) Using SST and a press, press in a new dust cover.

SST 09316-60011 (09316-00011)

NOTICE:

Be careful not to damage the dust cover.



INSTALLATION

1. CONNECT INTERMEDIATE SHAFT WITH REAR PROPELLER SHAFT

- Align the matchmarks on the intermediate shaft rear flange and cross groove joint, then install the 2 washers and 6 bolts.
- Using a hexagon wrench, tighten the 6 bolts temporarily.

HINT:

Put a piece of cloth or equivalent into the inside of the universal joint cover.

2. INSTALL CENTER SUPPORT BEARING TEMPORARILY

3. INSTALL REAR PROPELLER SHAFT

- Align the matchmarks on both the flanges of the rear propeller shaft and rear differential, and connect the shaft with the 4 bolts, washers and nuts.
- Torque the bolts and nuts.

Torque: 74 N·m (750 kgf·cm, 54 ft·lbf)

4. INSTALL FRONT PROPELLER SHAFT

- Remove SST from the transfer.
SST 09325-20010
- Insert the yoke into the transfer.
- Align the matchmarks on both the flanges of the front propeller shaft and intermediate shaft, then install and torque the 4 bolts, washers and nuts.

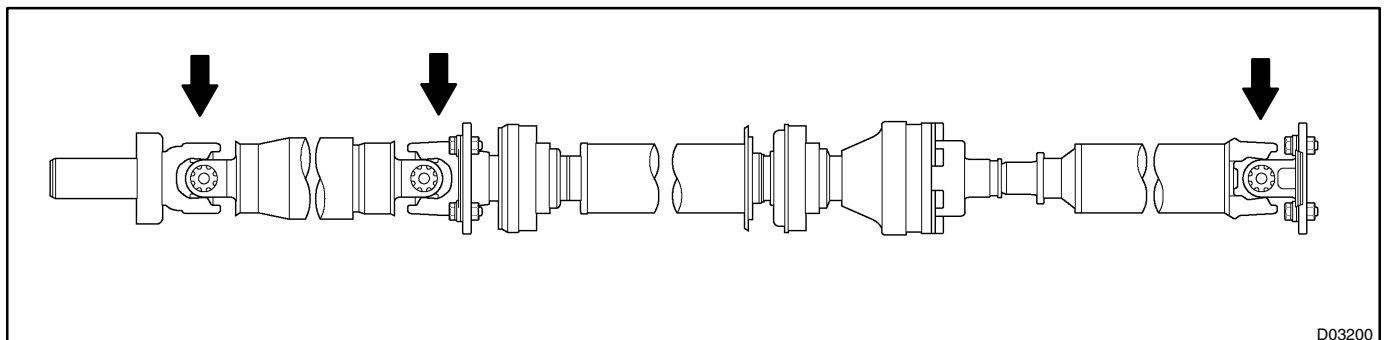
Torque: 74 N·m (750 kgf·cm, 54 ft·lbf)

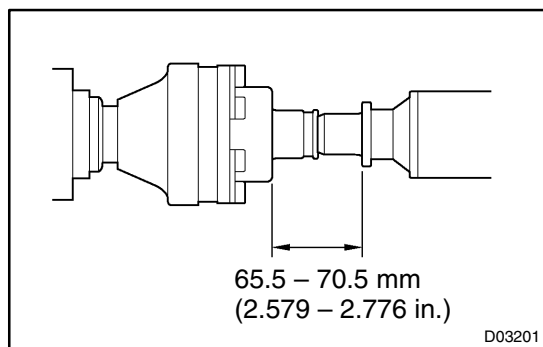
5. TIGHTEN CROSS GROOVE JOINT SET BOLT

- Depress the brake pedal and hold it.
- Using a hexagon wrench, tighten the cross groove joint set bolts.

Torque: 27 N·m (275 kgf·cm, 20 ft·lbf)

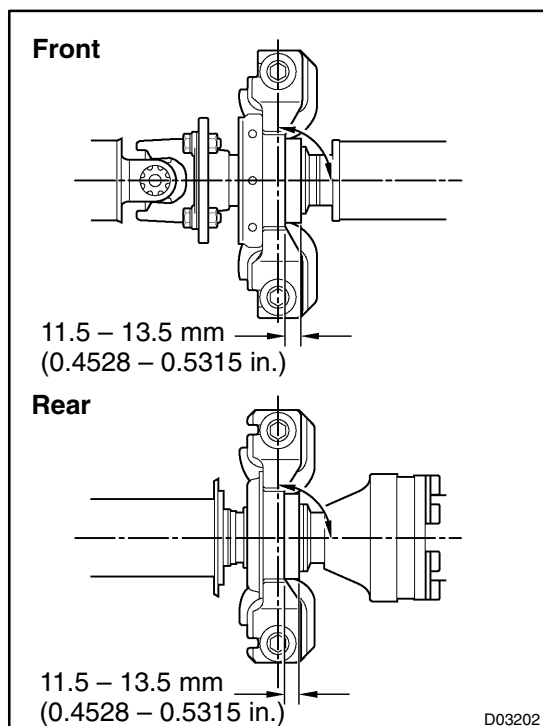
6. CHECK THAT EACH JOINT OF PROPELLER SHAFT IS FACING TO DIRECTION AS SHOWN IN BELOW ILLUSTRATION





7. INSTALL FRONT AND REAR CENTER SUPPORT BEARING

- (a) With the vehicle unloaded, adjust the dimension between the rear side of the cover and shaft, as shown in the illustration.



- (b) Under the same condition as (a), adjust the front and rear dimensions between edge surface of the center support bearing and the edge surface of the cushion to 11.5 – 13.5 mm (0.4528 – 0.5315 in.) respectively as shown, then torque the bolts.

Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)

- (c) Check that the center line of the bracket is at the right angle in the shaft axial direction.