

PROPELLER SHAFT

OUTLINE OF CONSTRUCTION

The propeller shaft is a three-piece, four-joint type with two center bearings for support.

96EOLX-001

SPECIFICATIONS

PROPELLER SHAFT

Item	Unit	Value
Length	(in)	250 (53.35)
Length	(mm)	6350 (250.00)
Outer diameter	(in)	2.50 (63.50)
Outer diameter	(mm)	63.50 (2.50)

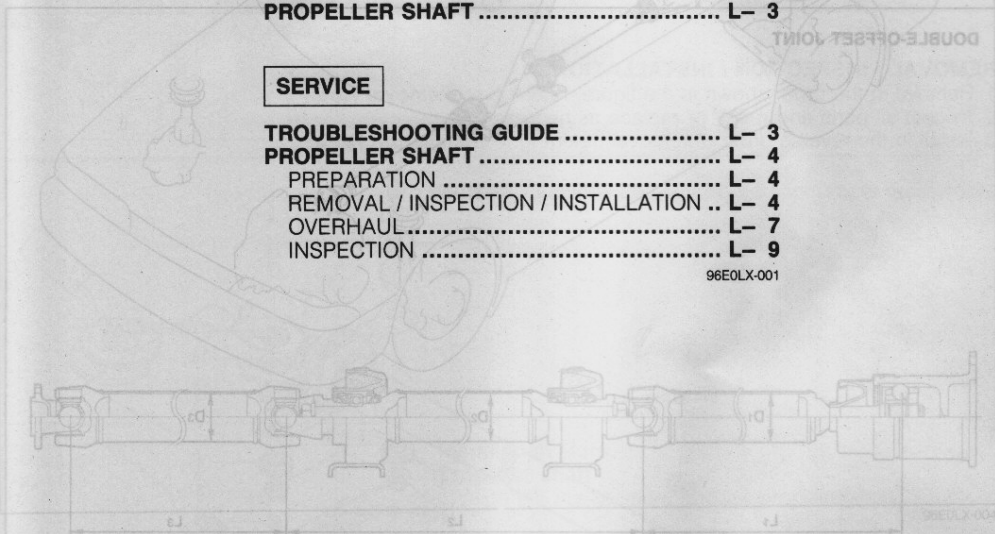
FEATURES

OUTLINE L- 2
OUTLINE OF CONSTRUCTION..... L- 2
SPECIFICATIONS L- 2
PROPELLER SHAFT L- 3

SERVICE

TROUBLESHOOTING GUIDE L- 3
PROPELLER SHAFT L- 4
 PREPARATION L- 4
 REMOVAL / INSPECTION / INSTALLATION .. L- 4
 OVERHAUL L- 7
 INSPECTION L- 9

96EOLX-001



A three-piece, four-joint type propeller shaft is used. By employing two center bearings for support of the propeller shaft assembly, the shaft's flexibility is increased, thus reducing the amount of vibration and noise at high speed. A double-offset joint, with low thrust resistance, is used for the front joint to reduce idle vibrations.

TROUBLESHOOTING GUIDE

Problem	Possible cause	Action	Page
Vibration	Bent propeller shaft	Replace	L- 4
	Improperly installed universal joint snap ring	Repair	L- 7
	Worn or damaged center bearing	Replace	L- 7
	Loose center bearing mounting bolts	Tighten	L- 4
	Loose yoke mounting bolts	Tighten	L- 4
	Improperly assembled center bearing yoke	Repair	L- 7
Abnormal noise	Worn or damaged bearing cap	Replace	L- 7
	Improperly installed universal joint snap ring	Repair	L- 7
	Worn or damaged center bearing	Replace	L- 7
	Loose yoke mounting bolts	Tighten	L- 4
	Incorrect propeller shaft alignment angle	Adjust	L- 4

96EOLX-001

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OUTLINE

OUTLINE

OUTLINE OF CONSTRUCTION

1. The propeller shaft is a three-piece, four-joint type with two center bearings for support.

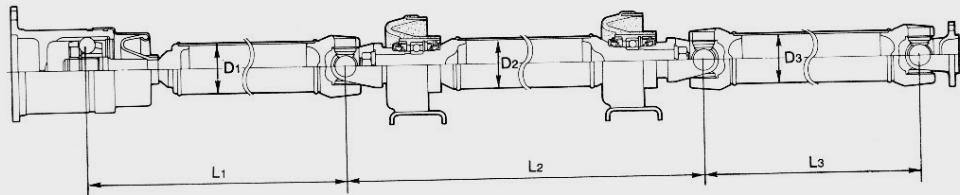
96EOLX-002

SPECIFICATIONS

Item	Engine/Transaxle Model		F2
			G5MX-R
Length	mm (in)	L ₁	750.5 (29.54)
		L ₂	590 (23.22)
		L ₃	679 (26.73)
Outer diameter	mm (in)	D ₁	75.0 (2.95)
		D ₂	57.0 (2.24)
		D ₃	57.0 (2.24)

96EOLX-003

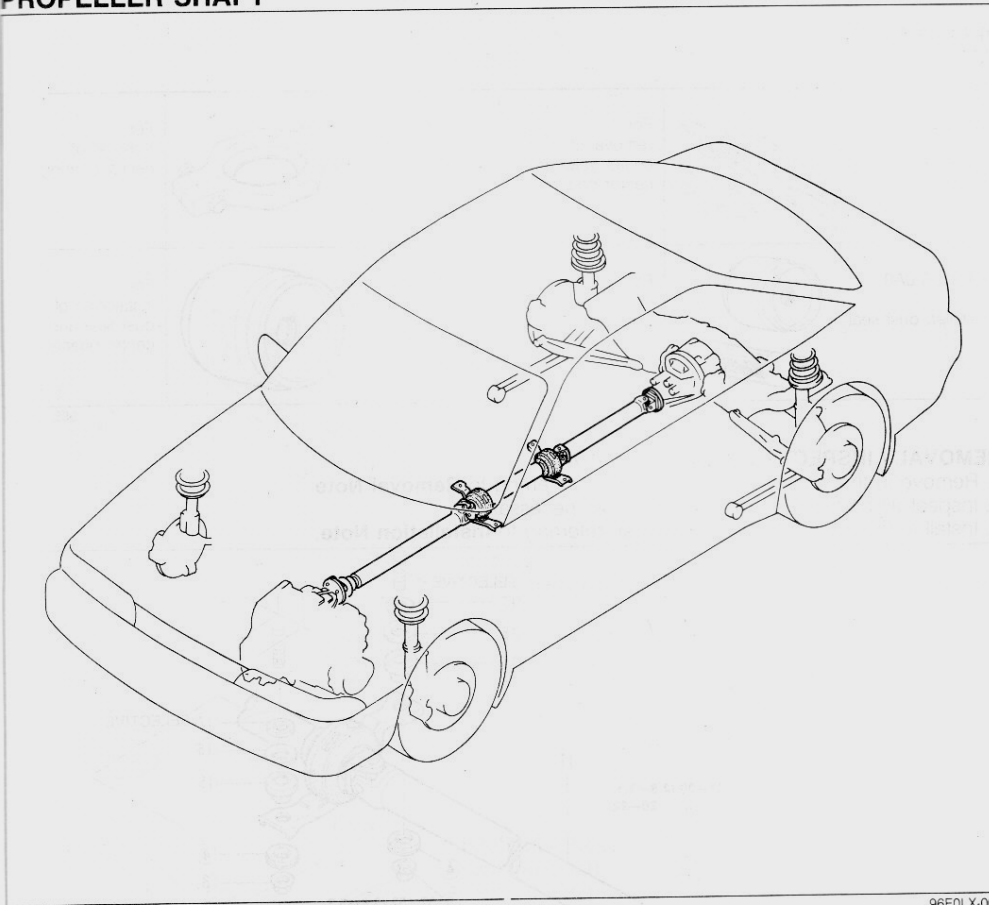
DOUBLE-OFFSET JOINT



PROPELLER SHAFT, TROUBLESHOOTING GUIDE

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PROPELLER SHAFT



96EOLX-004

A three-piece, four-joint type propeller shaft is used. By employing two center bearings for support of the propeller shaft assembly, the shaft's flexibility is increased, thus reducing the amount of vibration and noise at high speed. A double-offset joint, with low thrust resistance, is used for the front joint to reduce idle vibrations.

TROUBLESHOOTING GUIDE

Problem	Possible cause	Action	Page
Vibration	Bent propeller shaft	Replace	L- 4
	Improperly installed universal joint snap ring	Repair	L- 7
	Worn or damaged center bearing	Replace	L- 7
	Loose center bearing mounting bolts	Tighten	L- 4
	Loose yoke mounting bolts	Tighten	L- 4
	Improperly assembled center bearing yoke	Repair	L- 7
Abnormal noise	Worn or damaged bearing cup	Replace	L- 7
	Improperly installed universal joint snap ring	Repair	L- 7
	Worn or damaged center bearing	Replace	L- 7
	Loose yoke mounting bolts	Tighten	L- 4
	Incorrect propeller shaft alignment angle	Adjust	L- 4

96EOLX-005

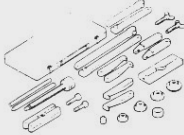
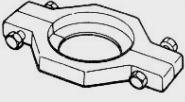
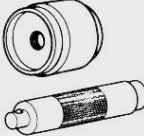

L-3

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PROPELLER SHAFT

PROPELLER SHAFT

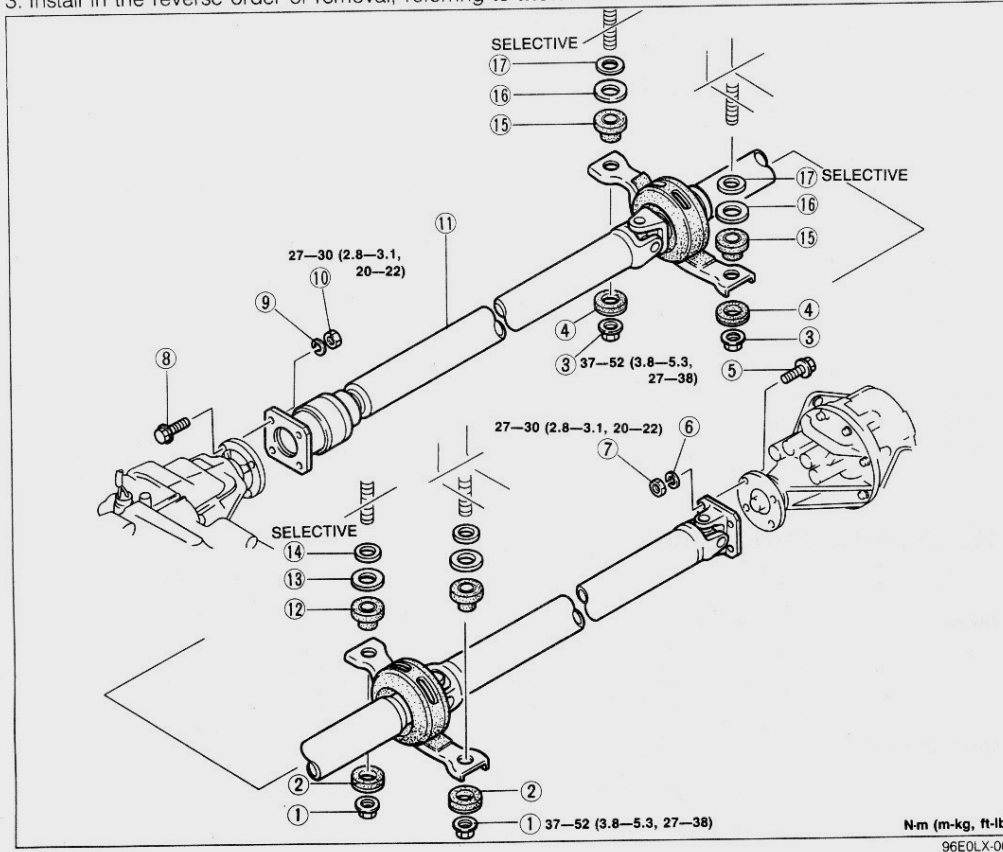
PREPARATION SST

<p>49 0839 425C</p> <p>Puller set, bearing</p> 	<p>For removal of center yoke and center bearing</p>	<p>49 0636 145</p> <p>Puller, fan pulley boss</p> 	<p>For removal of center bearing</p>
<p>49 B025 0A0</p> <p>Installer, dust seal</p> 	<p>For installation of dust seal and center bearing</p>	<p>49 B025 001</p> <p>Body (Part of 49 B025 0A0)</p> 	<p>For installation of dust seal and center bearing</p>

96E0LX-006

REMOVAL / INSPECTION / INSTALLATION

1. Remove in the order shown in the figure, referring to **Removal Note**.
2. Inspect all parts and repair or replace as necessary.
3. Install in the reverse order of removal, referring to **Installation Note**.



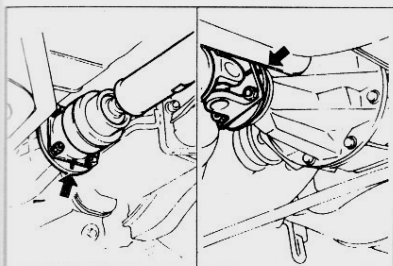
N-m (m·kg, ft·lb)
96E0LX-007

PROPELLER SHAFT

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- | | | |
|--------------------------------------|---|---|
| 1. Nut
Removal Note page L-5 | 8. Bolt
9. Spring washer
10. Nut
11. Propeller shaft
Inspection..... page L-9
Installation Note.. page L-5 | 13. Washer
14. Spacer
Removal Note page L-5
15. Bushing and pipe
16. Washer
17. Spacer
Removal Note..... below |
| 2. Bushing and washer | | |
| 3. Nut | | |
| 4. Bushing and washer | | |
| 5. Bolt | | |
| 6. Lock washer | | |
| 7. Nut | | |

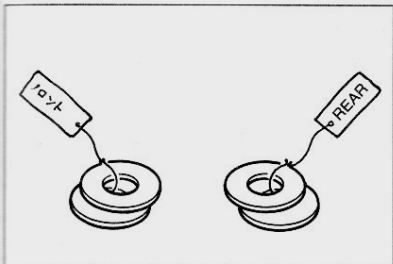
96EOLX-008



03UOLX-808

Removal Note Nuts

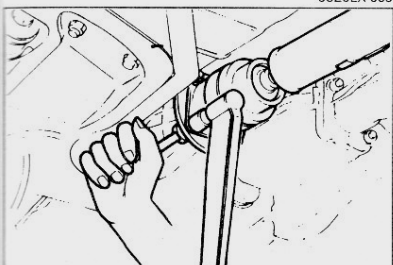
1. Before removing the propeller shaft, mark the flanges for proper reassembly.



96EOLX-009

Spacers

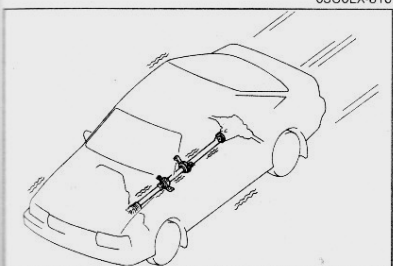
1. Identify the front and rear spacers for proper reassembly.



03UOLX-810

Installation Note Propeller shaft

1. Align the marks and install the propeller shaft.

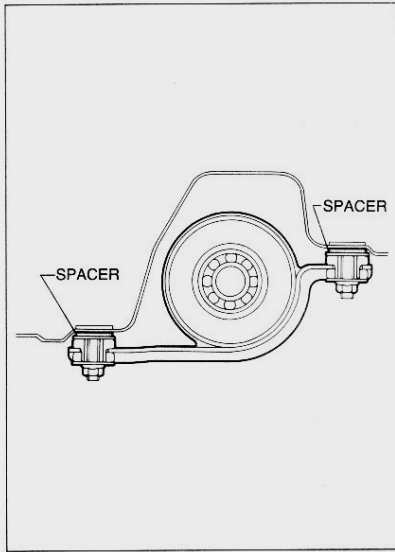


9MUOLX-650

2. Verify that there is no abnormal noise or vibration when driving the vehicle.

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PROPELLER SHAFT



96EOLX-010

Caution

- The spacer on each side must be the same size.

3. If noise or vibration seems to be the result of incorrect propeller shaft alignment angle, substitute different spacers at the center bearing support assembly to realign the propeller shaft.

Spacer size mm (in)		
—	1.6 (0.06)	3.2 (0.13)
4.5 (0.18)	6.0 (0.24)	8.0 (0.31)
10.0 (0.39)	13.0 (0.51)	

PROPELLER SHAFT

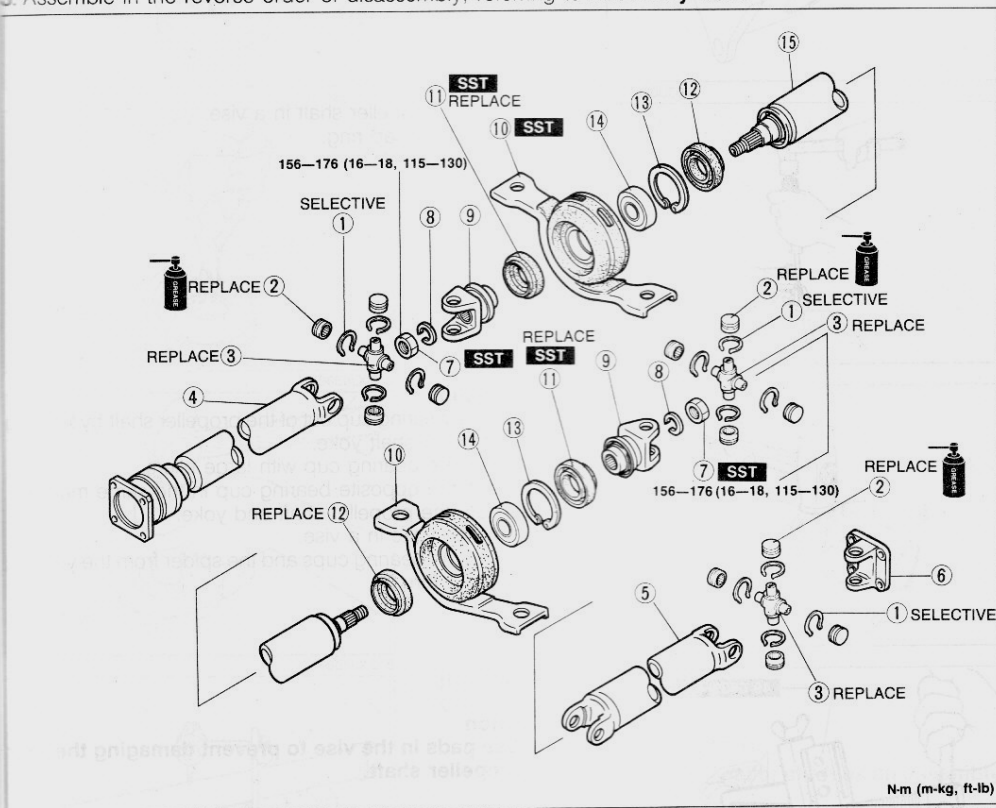
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OVERHAUL

Caution

- Use pads in the vise to prevent damaging the part.

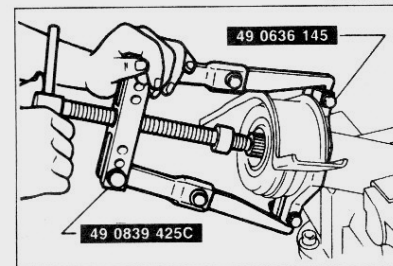
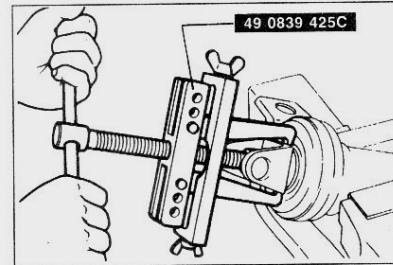
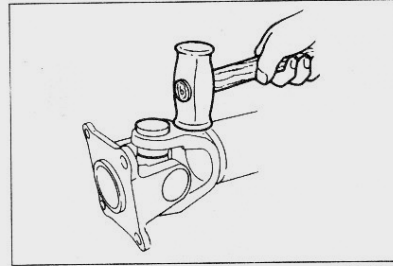
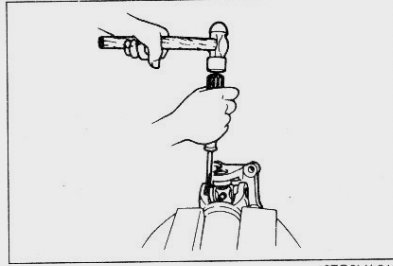
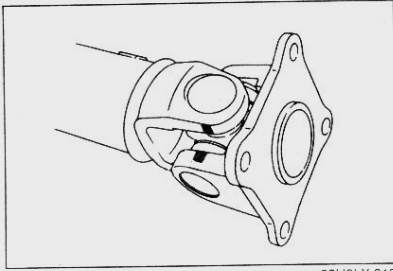
1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all parts and repair or replace as necessary.
3. Assemble in the reverse order of disassembly, referring to **Assembly Note**.



- | | |
|---|--|
| 1. Snap ring
Disassembly Note..... page L- 8
Assembly Note page L-12 | 8. Lock washer |
| 2. Bearing cup
Disassembly Note..... page L- 8
Inspect for damage, wear and rough rotation
Assembly Note page L-11 | 9. Yoke |
| 3. Spider | 10. Center bearing support
Disassembly Note..... page L- 8
Assembly Note page L-10 |
| 4. Front propeller shaft
Inspection page L- 9 | 11. Front dust seal
Assembly Note page L-10 |
| 5. Rear propeller shaft
Inspection page L- 9 | 12. Rear dust seal
Assembly Note page L-10 |
| 6. Yoke (Differential side) | 13. Snap ring |
| 7. Locknut
Disassembly Note..... page L- 8
Assembly Note page L-11 | 14. Bearing
Inspection page L- 9
Assembly Note page L-11 |
| | 15. Center propeller shaft
Inspection page L- 9 |

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PROPELLER SHAFT



Disassembly Note

Snap ring

1. Mark the yoke and propeller shaft for proper reassembly.

2. Clamp the propeller shaft in a vise.
3. Remove the snap ring.

Bearing cup

1. Push one bearing cup out of the propeller shaft by tapping the propeller shaft yoke.
2. Remove the bearing cup with large pliers.
3. Remove the opposite bearing cup in the same manner.
4. Separate the propeller shaft and yoke.
5. Clamp the yoke in a vise.
6. Remove the bearing cups and the spider from the yoke as in Steps 1 thru 3.

Locknut

Caution

- Use pads in the vise to prevent damaging the rear propeller shaft.

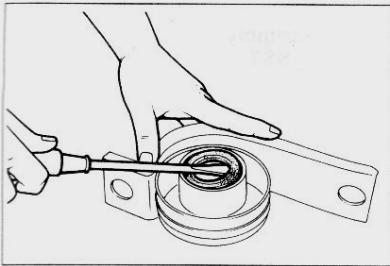
1. Mark the center propeller shaft and yoke.
2. Remove the locknut and lock washer.
3. Remove the yoke with the **SST**.

Center bearing support assembly

1. Remove the center bearing support assembly with the **SST**.

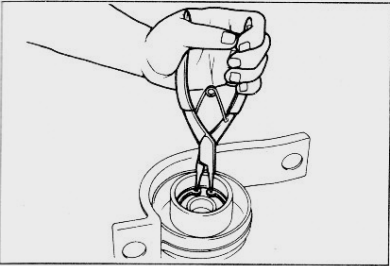
PROPELLER SHAFT

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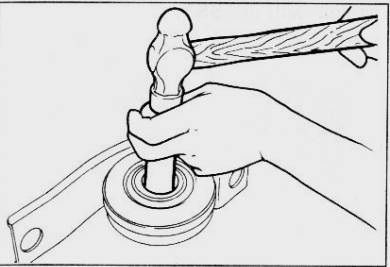
96E0LX-014

2. Remove the dust seal (front and rear) from the bearing support assembly with a screwdriver.



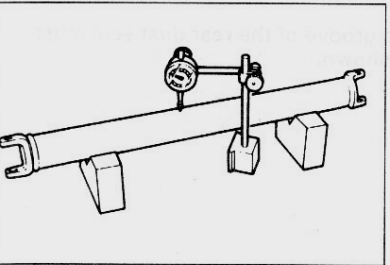
96E0LX-015

3. Remove the snap ring.



96E0LX-016

4. Remove the bearing with a suitable pipe.



96E0LX-027

INSPECTION Center propeller shaft

Caution

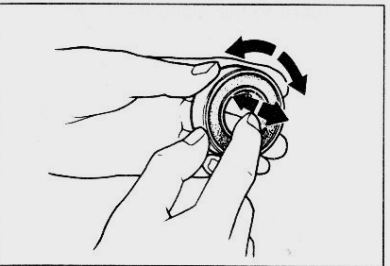
- Replace the center propeller shaft as an assembly if runout is excessive.

1. Measure the center propeller shaft runout with a dial indicator.

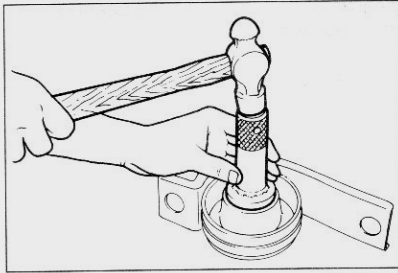
Runout: 0.4mm (0.0157 in) max.

Bearing

Turn the bearing while applying force in the axial direction. If the bearing sticks or has excessive resistance, replace it.

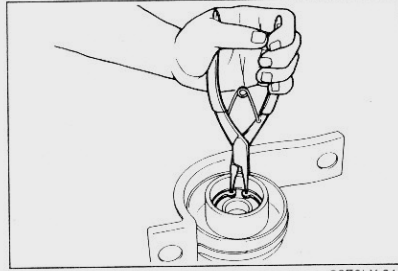


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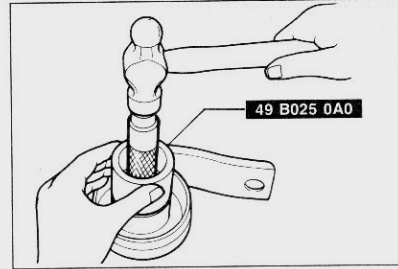
96EOLX-017

- Assembly Note**
Center bearing support assembly
 1. Install the bearing with the **SST**.



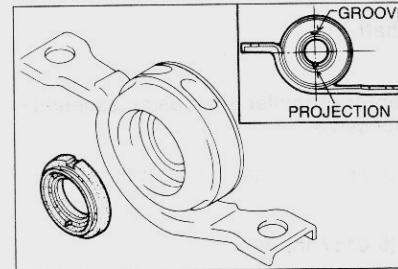
96EOLX-018

2. Install the snap ring.



96EOLX-019

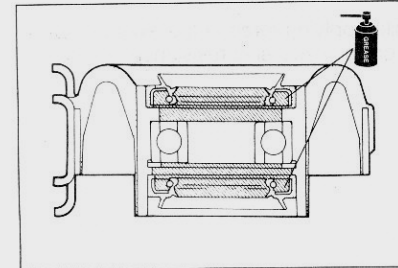
3. Install the new dust seal with the **SST**.



96EOLX-020

Caution

- The air bleed groove of the rear dust seal must be installed as shown.

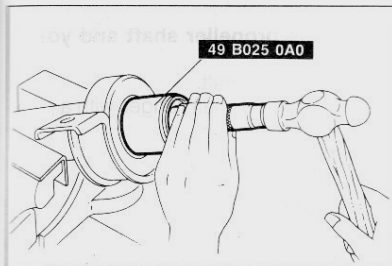


96EOLX-021

4. Apply lithium-based grease to the place as shown.

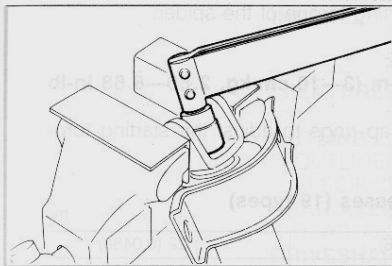
PROPELLER SHAFT

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5. Install the center bearing support assembly with the **SST**.



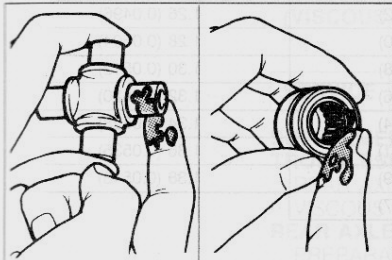
96EOLX-023

Locknut

1. Align the marks on the center propeller shaft and yoke.
2. Install the locknut.

Tightening torque:

157—177 N·m (16—18 m·kg, 116—130 ft·lb)



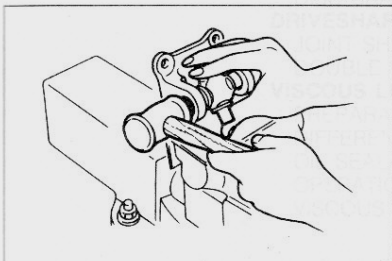
03UOLX-819

Bearing cup

Caution

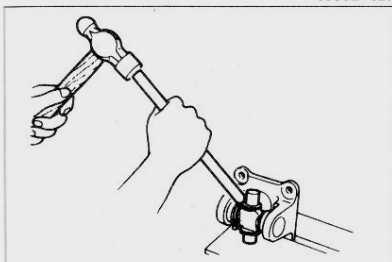
- Do not reuse the snap rings, bearing cups, or spider.

1. Apply lithium based grease to the roller bearings inside the bearing cups.
2. Clamp the yoke in a vise.



03UOLX-820

3. Set the new spider into the yoke and tap in a bearing cup using the spider to hold the rollers.
4. Slide the yoke to the opposite side and install the other bearing cup.



96EOLX-024

Snap ring

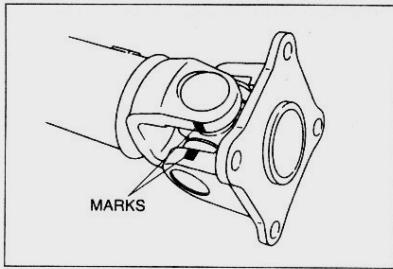
Caution

- Use only new snap rings and ones of the same thickness.

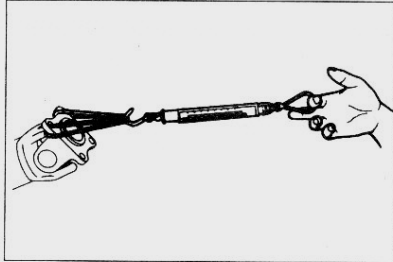
1. Install the thinnest snap rings.
2. Tap the spider on each side with a brass drift to seat the bearing cups against the snap rings.

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PROPELLER SHAFT



96EOLX-025



96EOLX-026

Caution

- Align the marks on the propeller shaft and yoke.

3. Install the yoke to the propeller shaft.
4. Lightly tap the yoke and propeller shaft flanges with a plastic hammer to seat the cups.

5. Measure the starting torque of the spider.

Starting torque:

0.29—0.98 N·m (3—10 cm·kg, 2.60—8.68 in·lb)

6. Install thicker snap rings to adjust the starting torque if necessary.

Snap ring thicknesses (19 types)

mm (in)

1.21 (0.0476)	1.22 (0.0480)
1.23 (0.0484)	1.24 (0.0488)
1.25 (0.0492)	1.26 (0.0496)
1.27 (0.0500)	1.28 (0.0504)
1.29 (0.0508)	1.30 (0.0512)
1.31 (0.0516)	1.32 (0.0520)
1.33 (0.0524)	1.34 (0.0528)
1.35 (0.0531)	1.36 (0.0535)
1.37 (0.0539)	1.38 (0.0543)
1.39 (0.0547)	