
PROPELLER SHAFT

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120000377

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GENERAL INFORMATION

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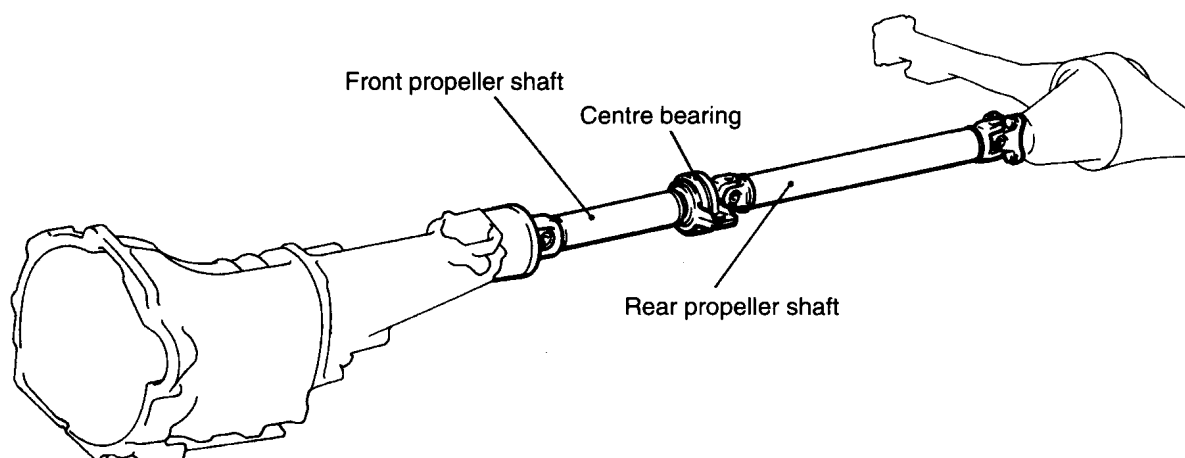
2WD vehicles have a double-construction 3-joint-type propeller shaft with a centre bearing. 4WD vehicles have a front and rear two-joint propeller

shafts. The front propeller shaft has a B.J.-type joint on the transfer side.

CONSTRUCTION DIAGRAM

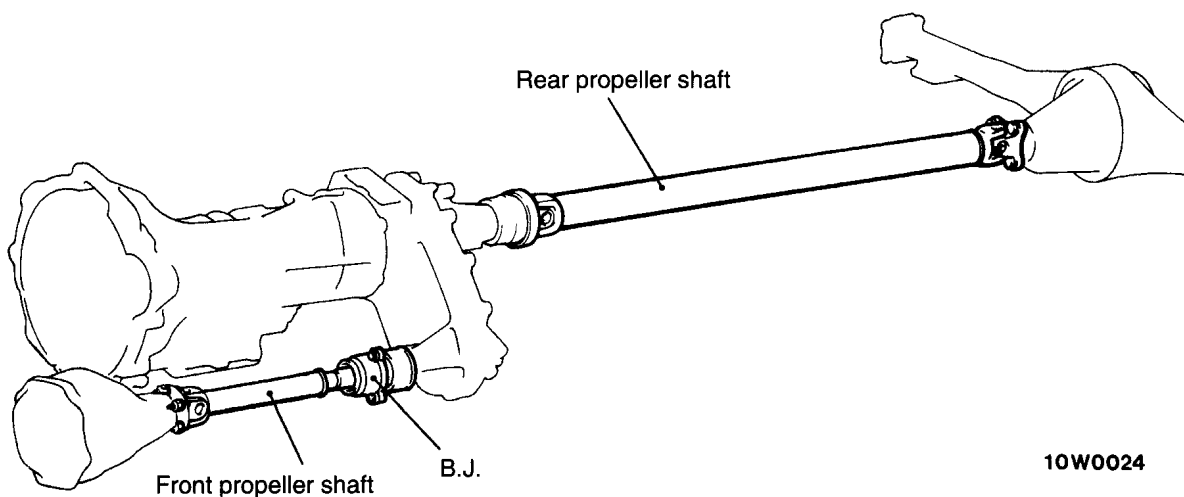
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<2WD>



10W0023

<4WD>



10W0024

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SERVICE SPECIFICATIONS

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Items	Standard value	Limit
Clearance between snap ring and groove wall of yoke mm	0.03 or less	–
Front propeller shaft runout mm	–	0.6
Rear propeller shaft runout mm	–	0.6

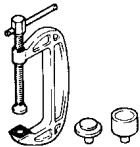
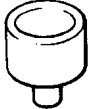
LUBRICANT

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Item	Specified lubricant	Quantity
Sleeve yoke	Hypoid gear oil SAE 75W-85W conforming to API GL-4 or higher	As required

SPECIAL TOOLS

120000381

Tool	Number	Name	Use
	MB990840	Universal joint re-mover and installer	Disassembly and reassembly of the universal joint
	MB991410	Collar	

PROPELLER SHAFT

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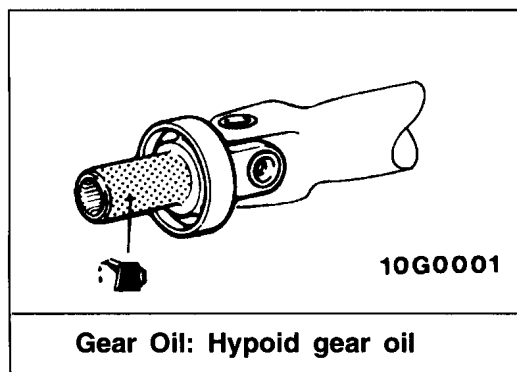
REMOVAL AND INSTALLATION

Pre-removal Operation <4WD>

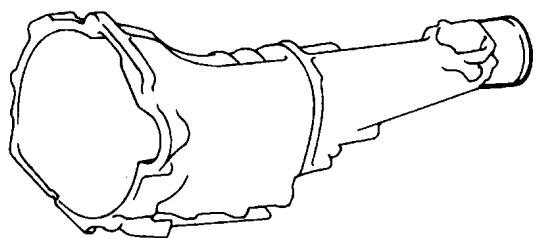
1. Set the Transfer Shift Lever to "2H"
2. Draining of the Transfer Gear Oil
(M/T: Refer to GROUP 22 – Service Adjustment Procedures.)
(A/T: Refer to GROUP 23 – Service Adjustment Procedures.)

Post-installation Operation <4WD>

- Supplying of the Transfer Gear Oil
(M/T: Refer to GROUP 22 – Service Adjustment Procedures.)
(A/T: Refer to GROUP 23 – Service Adjustment Procedures.)

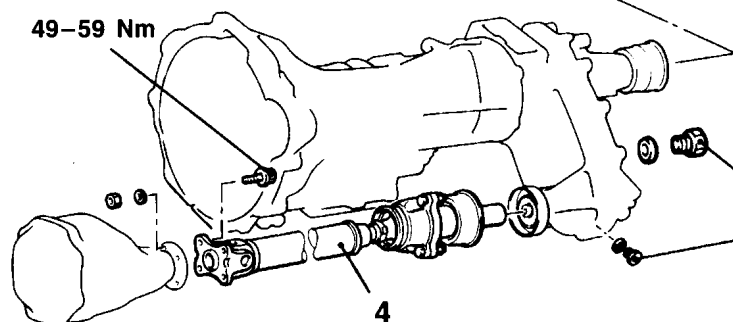


<2WD>



29 Nm

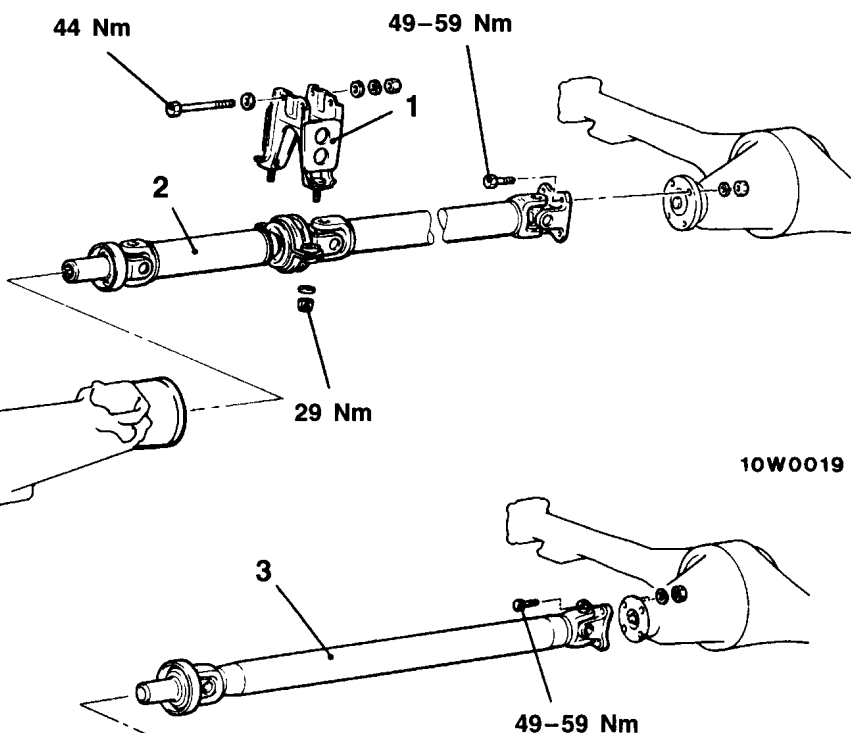
<4WD>



49–59 Nm

29–34 Nm

4



49–59 Nm

10W0019

49–59 Nm

10W0017

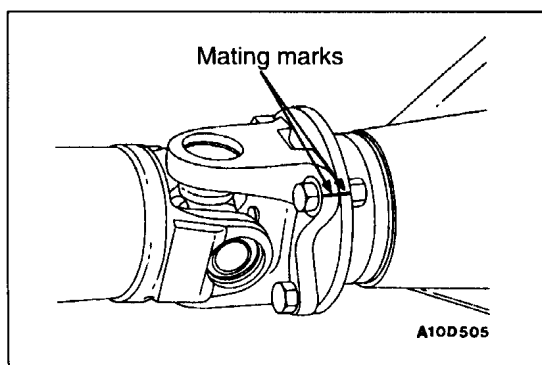
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Removal steps

- ◀A▶ ▶A◀
1. Centre bearing bracket
 2. Propeller shaft assembly



3. Rear propeller shaft assembly
4. Front propeller shaft assembly



REMOVAL SERVICE POINT

◀A▶ PROPELLER SHAFT ASSEMBLY/REAR PROPELLER SHAFT ASSEMBLY/FRONT PROPELLER SHAFT ASSEMBLY REMOVAL

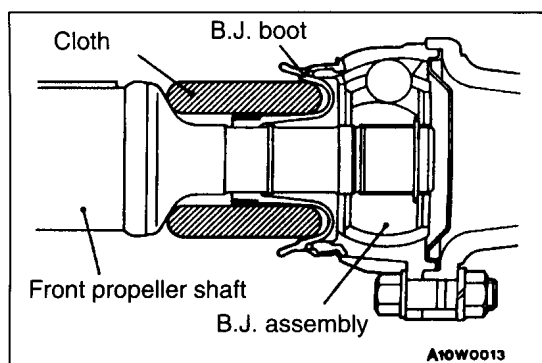
- (1) Make mating marks on the differential companion flange and flange yoke and remove the propeller shaft.

Caution

Remove the front propeller shaft assembly <4WD> in a straight and level manner so as to ensure that the boot is not damaged through pinching.

Damage to the boot can be avoided, and the work will be easier, if a piece of cloth or similar material is inserted in the boot.

- (2) Use the plug as a cover so that no foreign material gets into the transmission or transfer.

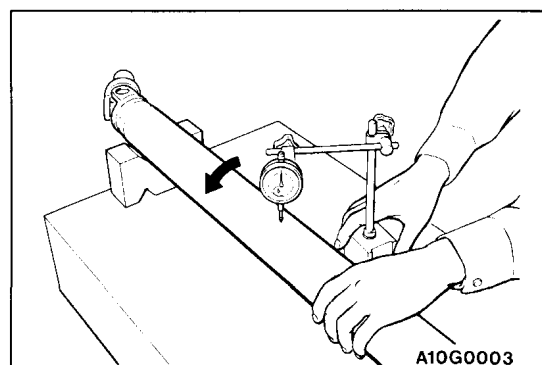
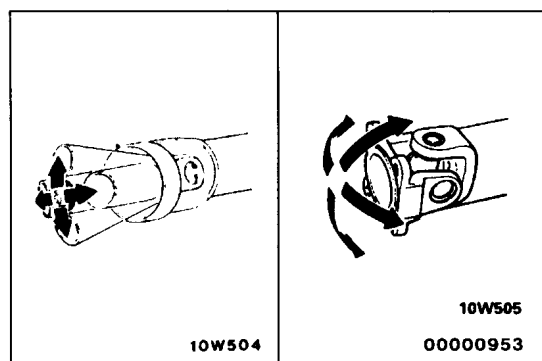


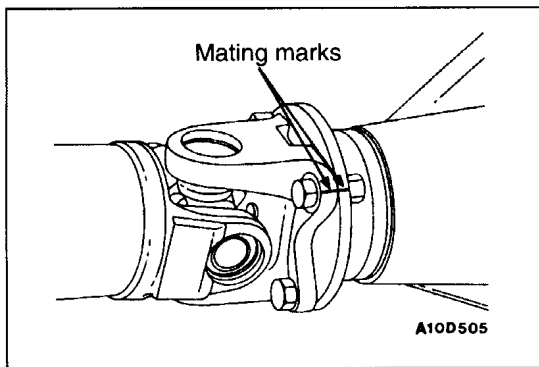
INSPECTION

- Check the sleeve yoke, centre yoke and flange yoke for wear, damage or cracks.
- Check the propeller shaft yokes for wear, damage or cracks.
- Check the propeller shaft for bends, twisting or damage.
- Check the universal joints for smooth operation in all directions.
- Check the centre bearing for smooth movement.
- Check the centre bearing mounting rubber for damage or deterioration.

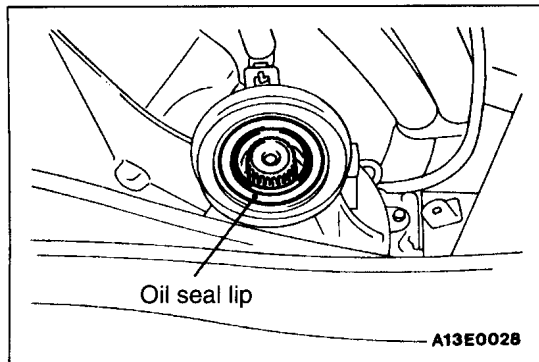
PROPELLER SHAFT RUNOUT

Limit: 0.6 mm



**INSTALLATION SERVICE POINT****►A◄ PROPELLER SHAFT ASSEMBLY/FRONT
PROPELLER SHAFT ASSEMBLY/REAR
PROPELLER SHAFT ASSEMBLY INSTALLATION**

To reuse the propeller shaft, align the mating marks that were made during removal, and then install the propeller shaft assembly to the companion flange.

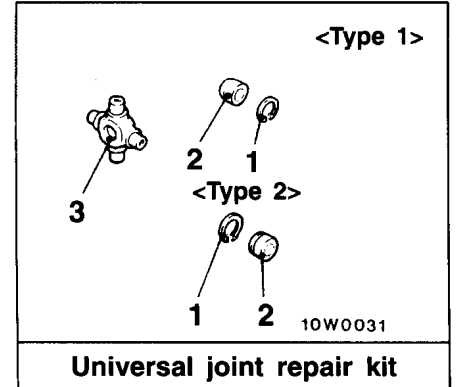
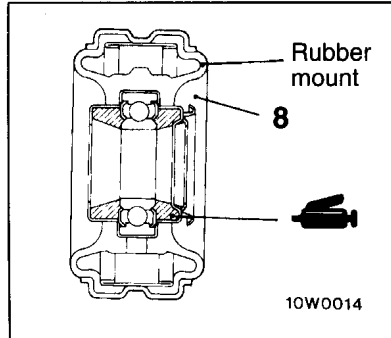
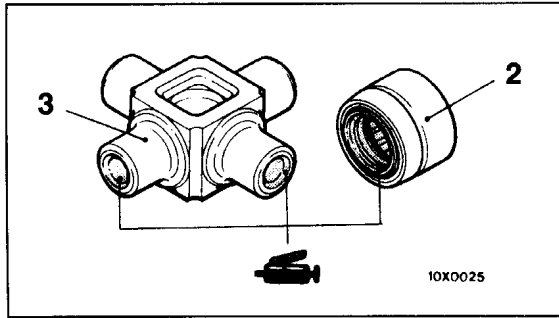
**Caution**

- (1) Tighten installation bolts after removing oil and grease from threads to prevent them from loosening due to lubrication.
- (2) Be careful not to damage the lip section of the transfer case oil seal when installing the propeller shaft.

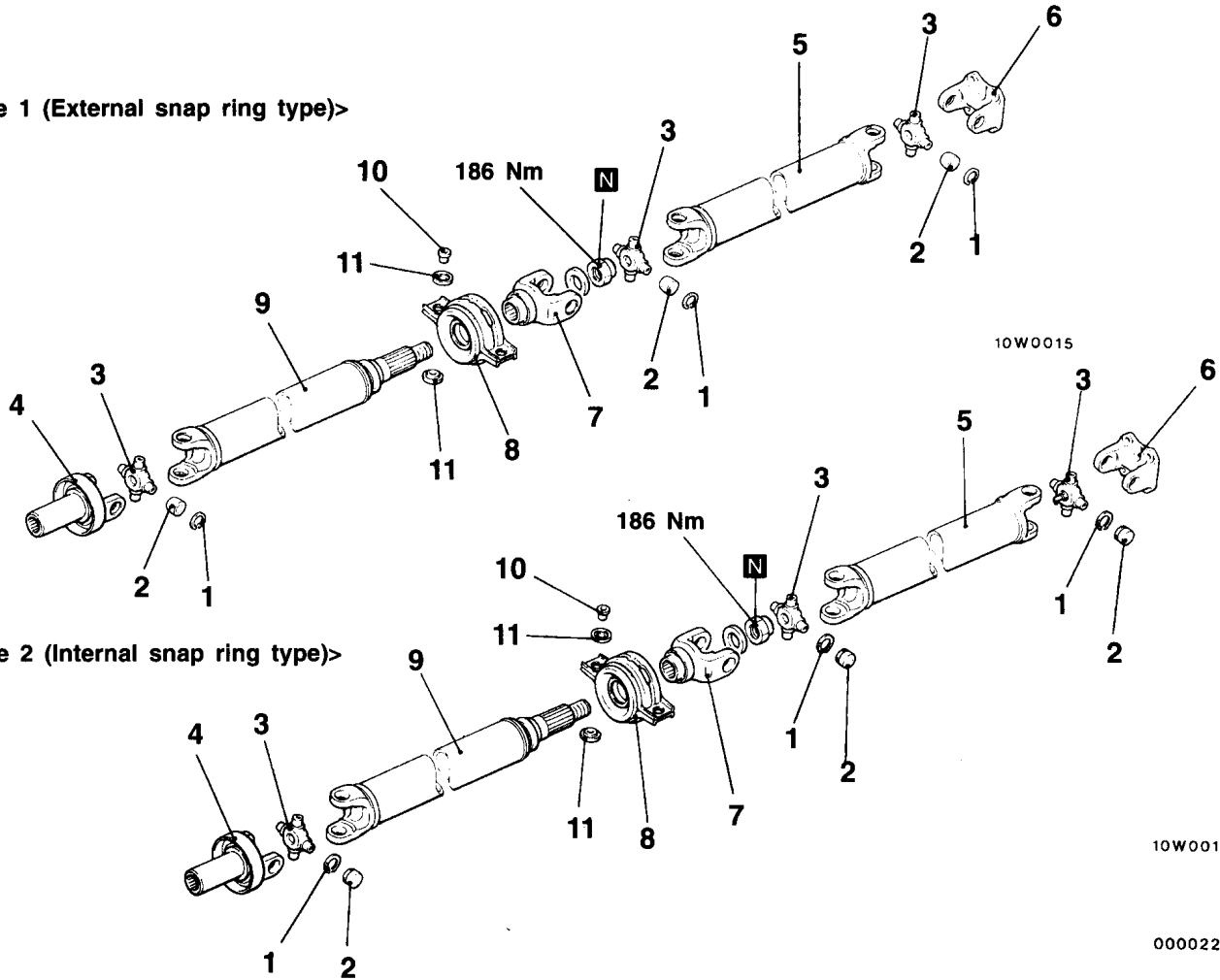
DISASSEMBLY AND REASSEMBLY

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<2WD>



<Type 1 (External snap ring type)>



<Type 2 (Internal snap ring type)>

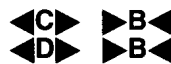
10W0016

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Disassembly steps



1. Snap ring
2. Journal bearing
3. Journal
4. Sleeve yoke
5. Propeller shaft (rear)
6. Flange yoke

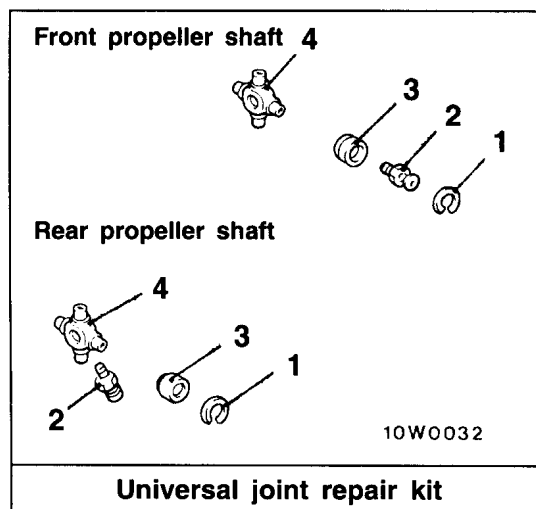
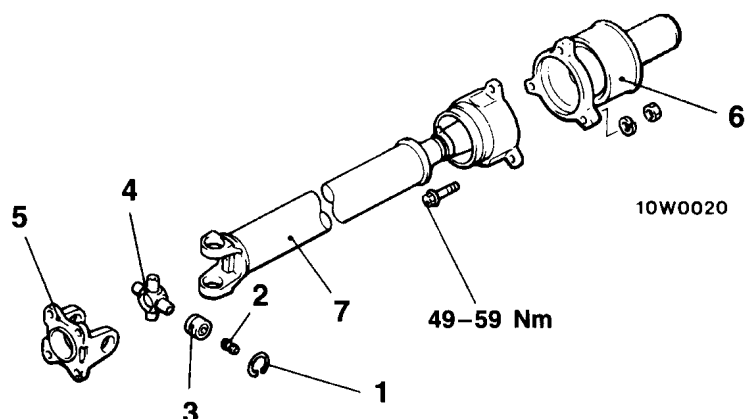


7. Centre yoke
8. Centre bearing assembly
9. Propeller shaft (front)
10. Spacer
11. Insulator

<4WD>

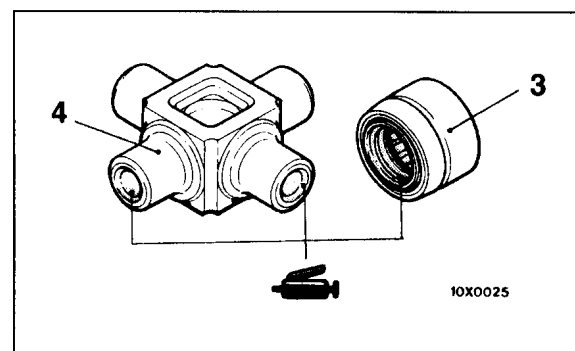
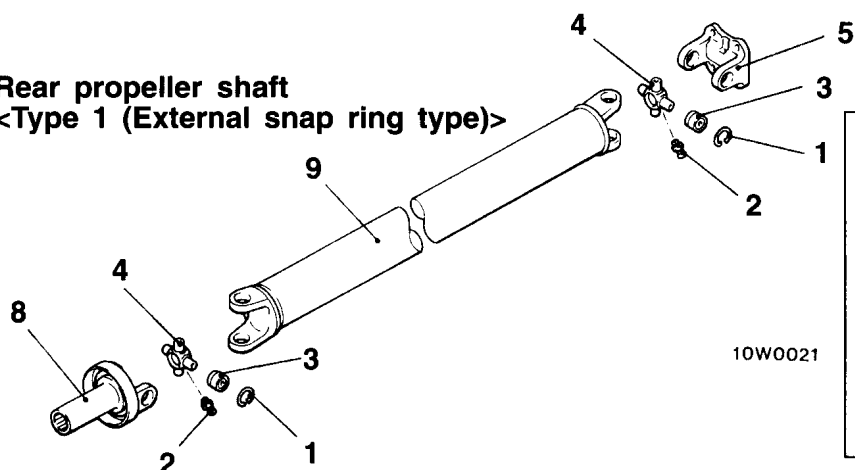
Front propeller shaft

<Type 1 (External snap ring type)>



Rear propeller shaft

<Type 1 (External snap ring type)>



00002260

Disassembly steps

<A> ▶ <D>

1. Snap ring

 ▶ <C>

2. Grease fitting

 ▶ <C>

3. Journal bearing

 ▶ <C>

4. Journal

<E>

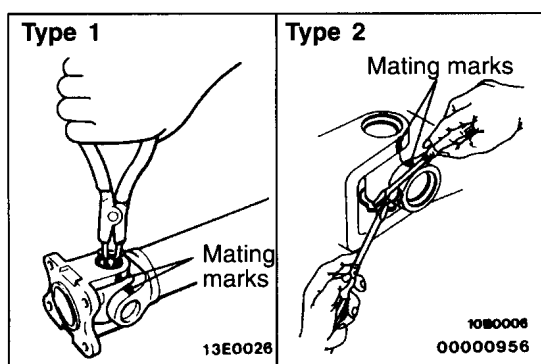
5. Flange yoke

6. Sleeve flange

7. Front propeller shaft assembly

8. Sleeve yoke

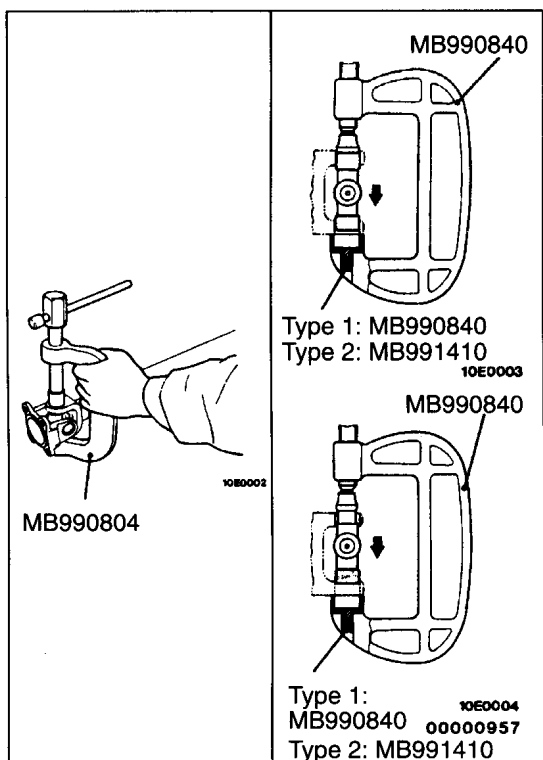
9. Rear propeller shaft



DISASSEMBLY SERVICE POINTS

<A> SNAP RING REMOVAL

Make mating marks on the yokes of the universal joint that is to be disassembled.

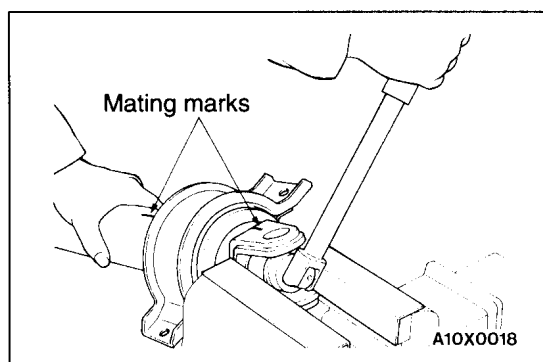


◀B▶ JOURNAL BEARING REMOVAL

- (1) Use the special tool to press in the journal bearing on one side, and take out the journal bearing on the opposite side.
- (2) Insert the special tool in the other side and press the journal to remove the first journal bearing that was pushed.

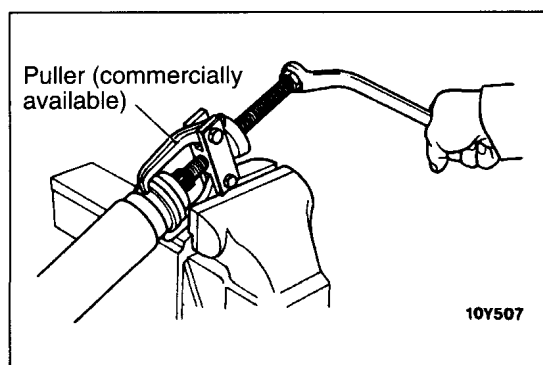
Caution

Do not tap the journal bearings to remove them, as this will upset the balance of the propeller shaft.



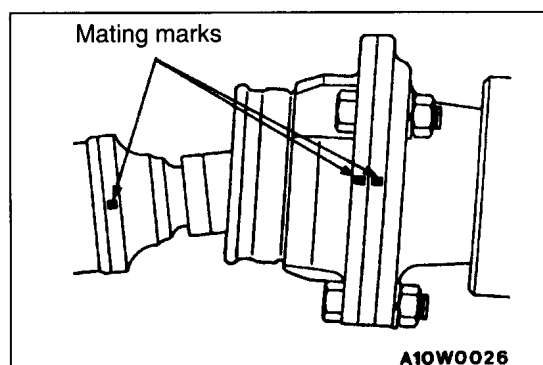
◀C▶ CENTRE YOKE REMOVAL

Make mating marks on the centre yoke and front propeller shaft, and then remove the centre yoke.



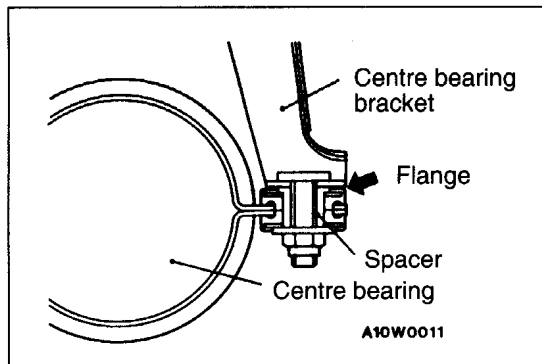
◀D▶ CENTRE BEARING ASSEMBLY REMOVAL

After removing the rubber mount, use a commercially available puller to remove the centre bearing.



◀E▶ SLEEVE FLANGE REMOVAL

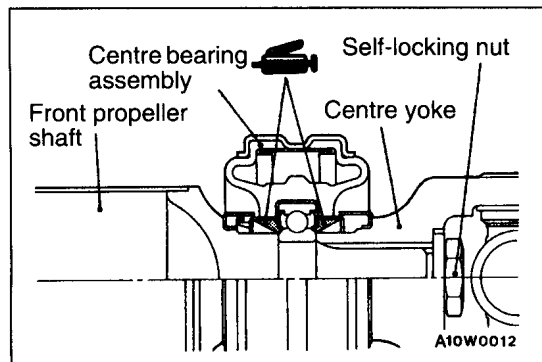
Make mating marks on the sleeve flange and front propeller shaft assembly, and then remove the sleeve flange.

**REASSEMBLY SERVICE POINTS****►A◄ SPACER INSTALLATION**

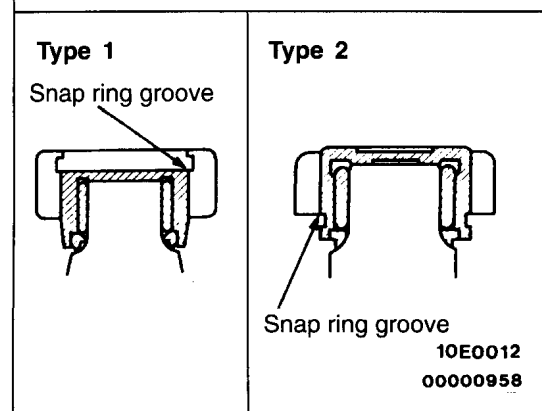
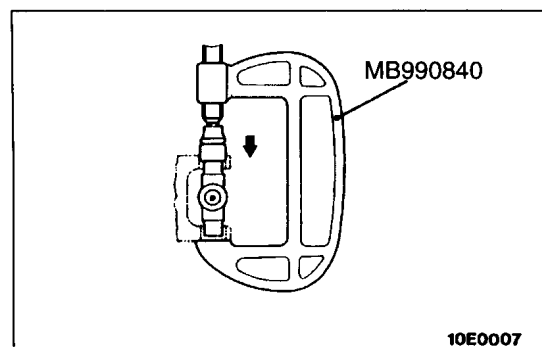
Install the spacer so that the flange faces upwards as shown in the illustration.

►B◄ CENTRE BEARING ASSEMBLY / CENTRE YOKE INSTALLATION

- (1) Install the centre bearing assembly to the front propeller shaft as shown in the illustration.
- (2) Align the mating marks on the centre yoke and front propeller shaft.
- (3) Press-fit the center bearing assembly with the centre yoke while tightening the self-locking nut.

**►C◄ JOURNAL BEARING INSTALLATION**

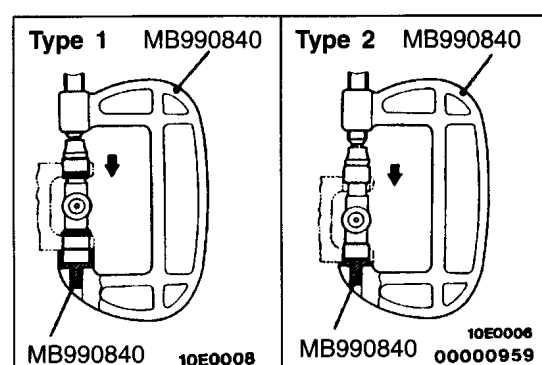
- (1) Use the special tool to press the journal bearing into the yoke until the snap ring groove is fully visible.

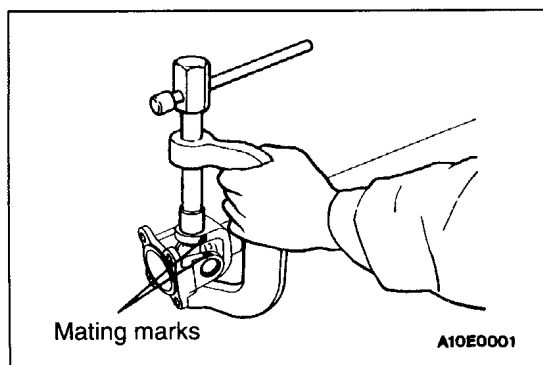


- (2) Use the special tool to press the opposite side journal bearing into the yoke.

Caution

Be careful when pressing the journal bearings, if they are pressed at an angle, the inside of the journal bearings will be damaged by the journal.

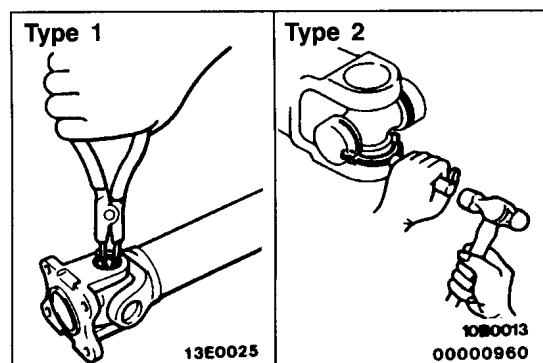




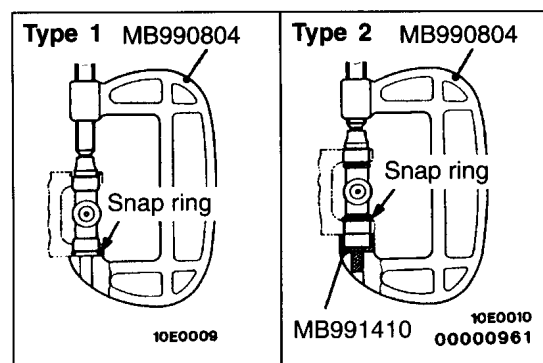
- (3) Align the mating marks on the yoke and propeller shaft, and install the propeller shaft journal bearings in the method described in (1) and (2) above.

►D◄ SNAP RING INSTALLATION

- (1) Install a snap ring to one side of the journal.



- (2) Use the special tool at the opposite side of the installed snap ring to press in the journal bearing towards the snap ring.



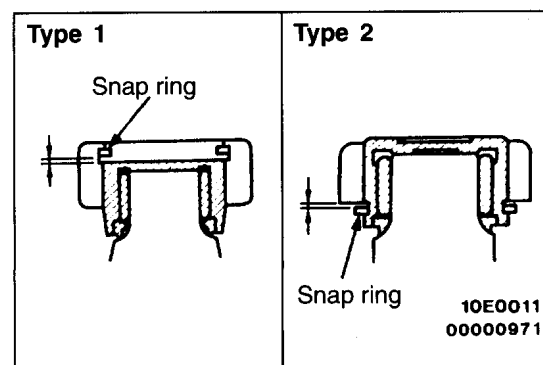
- (3) Install the snap ring on the opposite side, and measure the clearance of the snap ring groove with a thickness gauge.

Standard value: 0.03 mm or less

Caution

Always use snap rings of equal thicknesses on both sides.

- (4) If the clearance exceeds the standard value, adjust by changing the thickness of the snap ring.



Thickness mm Type 1	Thickness mm Type 2	Identification colour
1.28	1.50	–
1.31	1.55	Yellow
1.34	1.60	Blue
1.37	1.65	Purple