# Chapter 7 Propeller shaft

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**Specifications**

| | |
|---|---|
| Type | Two section, tubular with intermediate (centre) bearing, needle roller and flexible universal joints |

**Torque wrench settings**

| | lb f ft | Nm |
|---|---|---|
| Intermediate bearing carrier bolts | 15 | 21 |
| Sliding sleeve nut | 22 to 28 | 30 to 39 |
| Flexible coupling plate self-locking nuts | 30 | 41 |
| Coupling flange bolts to rear axle drive pinion | 32 | 44 |

## 1 General description

The propeller shaft used on all models is of a two-section tubular type (Figs. 7.1 and 7.2).

At its rear end the shaft is connected to the rear axle pinion coupling flange through the medium of a sealed universal joint or flexible coupling according to date of production of the car.

The propeller shaft is supported at its centre by an intermediate bearing which is attached to the floor pan of the car.

At the front end of the shaft, the connection to the output shaft of the transmission unit is by means of a flexible coupling.

## 2 Maintenance

1 The maintenance for all types of shaft consists mainly of inspection at the specified intervals. First check the condition of the flexible couplings for deterioration. Where a needle roller type rear universal joint is fitted, test for wear as described in Section 6. In the same way test the universal joint at the front end of the rear section of the propeller shaft.

2 Periodically, check the torque wrench setting of all propeller shaft connecting and mounting nuts and bolts.

## 3 Propeller shaft - removal and refitting

1 Place the car over an inspection pit or raise the rear and support it securely on axle stands.

2 Support the base of the transmission on a jack and unbolt and remove the rear mounting complete.

3 Using two large open-ended spanners, unscrew the sleeve nut (about two turns) which is located on the front section of the shaft.

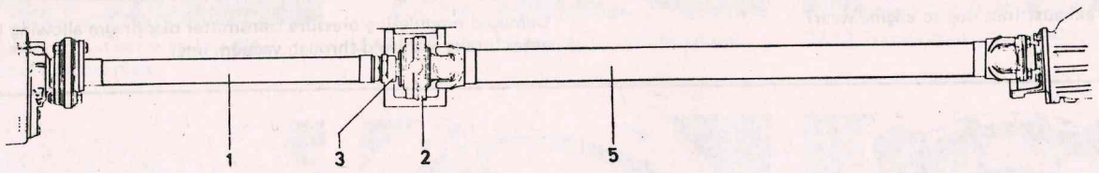


**Fig. 7.1. Propeller shaft up to 1971 (Sec. 1)**

*1 Front section*
*2 Intermediate (centre) bearing*
*3 Sleeve nut*
*5 Rear section*

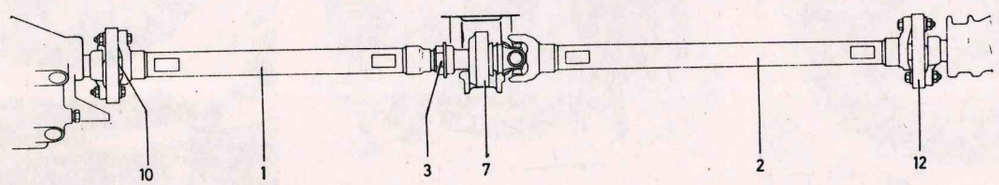


**Fig. 7.2. Propeller shaft 1972 (Sec. 1)**

*1 Front section*
*2 Rear section*
*3 Sleeve nut*
*7 Intermediate (centre) bearing*
*10 Centring sleeve*
*12 Flexible coupling plate (to rear axle)*

This will permit the shaft to be slightly compressed to simplify removal (Fig. 7.3).

4 Disconnect the front end of the propeller shaft from the output flange of the transmission unit. Do this by removing the bolts from the propeller shaft flange and not the transmission output flange.

5 Unscrew and remove the bolts which connect the intermediate bearing to the bodyframe.

6 Extract the bolts which connect the propeller shaft rear flange to the drive flange of the rear axle pinion.

7 Slightly compress the two sections of the shaft together so that the rear flange can be disconnected, and then withdraw the complete shaft assembly to the rear and remove it from the car. Take care while removing the shaft that the two sections are not separated at the sleeve nut.

8 To refit the propeller shaft, first fill the recesses in the centring sleeve of the connecting flange of the front section of the shaft with the specified grease (Fig. 7.4).

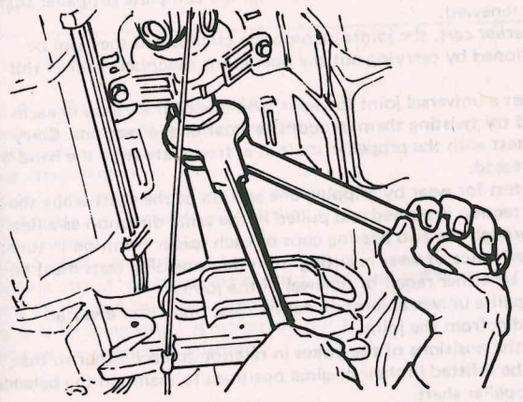

**Fig. 7.3. Releasing propeller shaft sleeve nut (Sec. 3)**

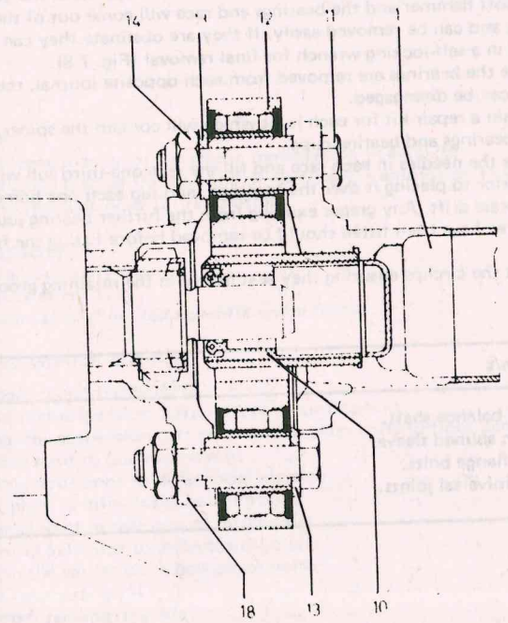


**Fig. 7.4. Propeller shaft coupling to transmission output shaft (Sec. 3)**

*1 Propeller shaft*
*10 Centring sleeve*
*11 Bolt*
*12 Flexible coupling plate*
*13 Washer*
*14 Self-locking nut*
*18 Three-legged flange*

9 Pass the propeller shaft into position from the rear having previously ensured that the sleeve nut on the shaft is loose.

10 Connect the shaft to the transmission output flange.

11 Attach the intermediate bearing carrier to the bodyframe screw up the bolts finger tight.

12 Connect the propeller shaft rear flange to the rear axle d pinion flange.

13 Refit the mounting to the rear of the transmission.

14 Remove the transmission jack and lower the car to the g

15 The car should now be pushed forward and backward tw times and the body depressed on the suspension in order to the intermediate bearing and the shaft length, which is able or decrease its length by means of the slackened sleeve nut.

16 Tighten the propeller shaft sleeve nut to the specified to wrench setting and then tighten the intermediate bearing ca

## 4 Intermediate bearing - overhaul

1 Remove the propeller shaft as described in the precedin

2 Mark the alignment of the front and rear sections of the shaft by scribing lines on them.

3 With the sleeve nut already released for removal of the the two sections of the shaft apart (Fig. 7.5).

4 Remove the bearing carrier (3), the rubber mounting (4 flexible sleeve (5), the circlip (11) and protective cap (8).

5 To renew the ball bearing (7) pull the bearing and hous from the shaft with a suitable puller.

6 Once the bearing assembly is removed, extract the circl press out the bearing.

7 Reassembly is a reversal of dismantling but it is essenti a lubricant-sealed type of bearing is used for renewal purp

8 Apply a little grease to the splines of the sliding sectio shaft.

9 Refit the propeller shaft as described in Section 3.

## 5 Centring sleeve - renewal

1 If, on removal of the propeller shaft, the sealing lip on sleeve is worn or damaged, this can be rectified without h renew the complete shaft assembly.

2 Secure the centring sleeve in the jaws of a vice and dri (0.39 in - 10.0 mm) in diameter at right angles through th hole should be located about 0.59 in (15.0 mm) from the

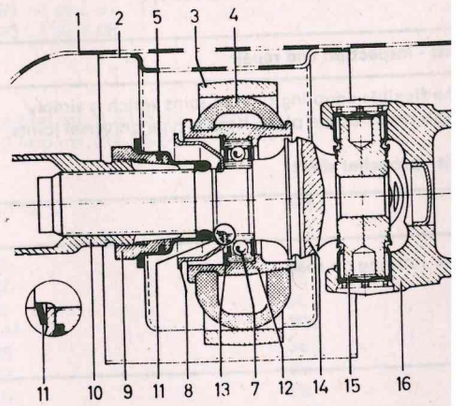


**Fig. 7.5. Intermediate (centre) bearing sectional vi**

*1 Bodyframe*
*2 Propeller shaft tunnel*
*3 Bearing mounting bracket*
*4 Flexible mounting*
*5 Rubber sleeve*
*7 Ball bearing*
*8 Protective cap*
*9 Sleeve nut*
*10 Propeller sha section*
*11 Circlip*
*12 Bearing*
*13 Circlip*
*14 Yoke*
*15 Universal jo*
*16 Propeller sh*