

Chapter F

Propeller shaft

Section

F1 Propeller shaft

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Chapter F

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Section	F1											
Page No.												
1	Dec 77											
2	Dec 77											
3												
4												
5												
6												
7												
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47												
48												

Section F1

Propeller shaft

Introduction

The single piece propeller shaft incorporates resonance dampers. A universal joint is fitted to each end of the shaft and the whole assembly is dynamically balanced to 9,00 gm. cm. (0.125 oz. in.) at a speed of 3000 r.p.m.

If the propeller shaft is dismantled and new universal joints fitted the propeller shaft should be balanced after assembly.

When balancing is not possible all parts should be correlated before dismantling so that on assembly any change to propeller shaft balance is kept to a minimum.

If required a fully balanced assembly can be obtained as a service exchange unit.

Propeller shaft - To remove

1. Drive the car onto a ramp. Securely chock the road wheels and raise the ramp to a convenient height.
2. On cars with grass fire shields fitted to the exhaust system, remove the shields from the area around 'A' bank front and intermediate silencers (see Chapter Q Exhaust systems).
3. Remove the two mounting bolts securing the front vibrashock mounting bracket to the centre body member (see Figs.1 and 2).
4. Detach the 'A' bank exhaust system front and intermediate silencers at the joints situated forward of the front silencer and at the rear of the intermediate silencer. Also detach the clamp on the intermediate balance pipe (see Chapter Q Exhaust system).
5. Withdraw this section from the remainder of the exhaust system.
6. Ensure that the parking brake is in the off position.
7. Unhook the parking brake return spring from the operating lever. Remove the split pin and clevis pin from the pivot point in the end of the operating lever.
8. On left-hand drive cars, remove the front cable mounting bracket situated on the front face of the centre body crossmember (see Fig. F2).
9. Disconnect the front exhaust silencer heat shield stay from the centre body member.
10. Remove the bolts securing the rear brake cable abutment bracket to the body.
11. On cars fitted with catalytic converters, remove the small heat shield protecting the brake cable end rubbers.
12. On Convertible cars, remove the closing plate from the propeller shaft tunnel.

13. Remove the securing bolts from both sides of the centre body crossmember section and free the assembly. The centre section, together with the parking brake pivot mounting brackets and lever should be moved to the side of the car, but must be suitably supported to avoid any strain or kinking of the parking brake cables. Under no circumstances should the centre crossmember be allowed to hang on the parking brake cables.

14. Switch on the ignition and engage the 'N' neutral position on the gear range selector lever. Switch off the ignition.

15. Raise a rear wheel of the car to enable the propeller shaft to be revolved.

16. Correlate the propeller shaft flanges to the final drive pinion flange and the automatic transmission output flange.

17. Support the propeller shaft and remove the bolts and nuts from the front and rear propeller shaft flanges.

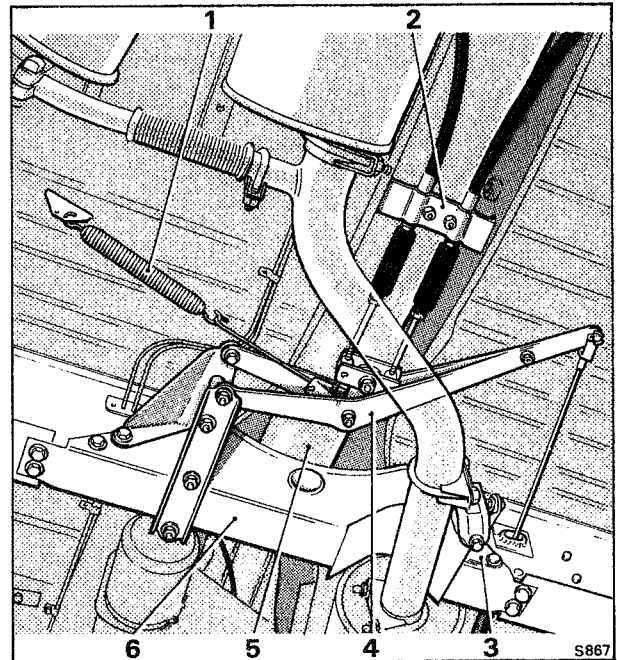


Fig. F1 Centre crossmember and parking brake linkage. Right hand drive car.

- 1 Return spring
- 2 Abutment bracket
- 3 Vibrashock mounting bracket
- 4 Operating lever
- 5 Propeller shaft
- 6 Removable centre body crossmember

18. Lower the propeller shaft front end; remove it by moving the shaft forward and downward through the rear crossmember aperture.

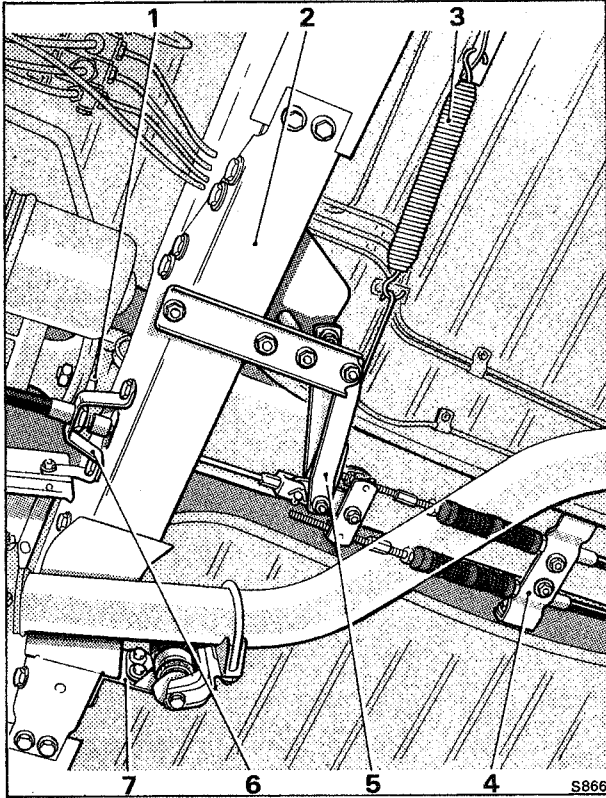


Fig. F2 Centre crossmember and parking brake linkage. Left hand drive car

- 1 Propeller shaft flange bolts
- 2 Removable centre body crossmember
- 3 Return spring
- 4 Abutment bracket
- 5 Operating lever
- 6 Mounting bracket - Front brake cable
- 7 Vibrashock mounting bracket

Universal joint - To dismantle

If a universal joint becomes unserviceable it must be dismantled and a new joint fitted.

1. Clean and remove any paint from the yoke eyes.
2. Correlate the flanged yokes to the shaft.
3. Remove the circlips retaining the needle roller bearings.

Note

Due to circlips of varying thickness having been fitted, care should be taken to ensure that the circlips are refitted to their original locations. If new circlips are fitted they should be of the same thickness as those they replace.

4. Using a nylon mallet, tap the yoke until the bearing races are driven out of the yoke eyes.

Universal joint - To assemble

1. Insert the cross-piece and seals into the yoke eyes. Hold the cross-piece centrally and carefully press the needle roller bearing assemblies into the yoke eyes until it is possible to fit the circlips. If this is found difficult to accomplish due to pressurisation, release the grease nipple situated between two of the cross-piece trunnions thus allowing the trapped air to bleed.
2. Fit the circlips.
3. If necessary tighten the grease nipple.

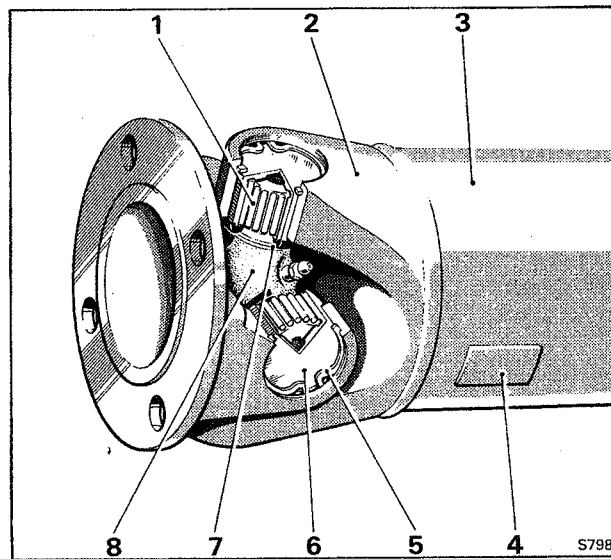


Fig. F3 Propeller shaft universal joint

- 1 Needle roller bearings
- 2 Yoke
- 3 Centre tube
- 4 Balance weight
- 5 Circlip
- 6 Bearing retainer
- 7 Rubber seal
- 8 Cruciform

Propeller shaft - To fit

Reverse the procedure given for removal noting the following points.

1. The joint faces must be clean and free from damage. The tightness for the flange bolts must be between 5,80 kgf.m. and 6,22 kgf.m. (42 lbf.ft. and 45 lbf.ft.).

All other nuts and bolts must be torque tightened in accordance with the figures quoted in Chapter P Torque tightening figures.

2. Before refitting the exhaust system reference should be made to Chapter Q Exhaust system.

3. Check the parking brake operation and adjust if necessary.