

## Section E11

## Hydraulic systems pumps

The two pumps are attached to the tappet chest cover and are activated by camshaft operated push rods. The pumps are fed from the hydraulic reservoirs and in turn supply the fluid under pressure to the braking and height control systems of the car.

**Hydraulic pumps and push rod guides - To remove**

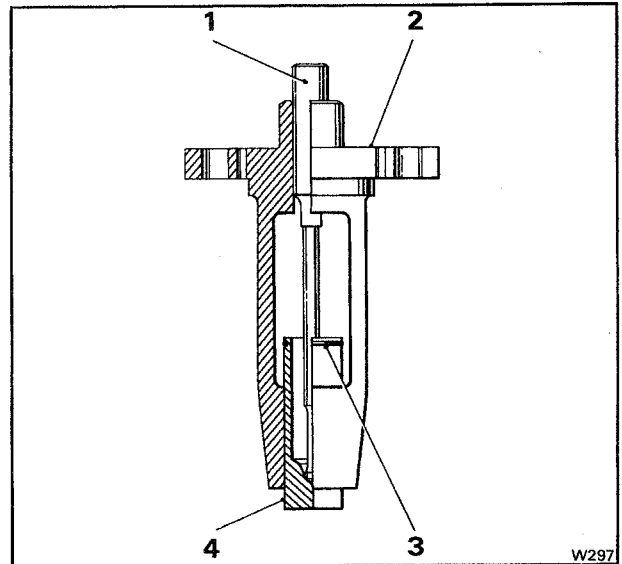
1. Carry out the usual workshop safety precautions.
2. Remove the carburetters and induction manifold (see Section E8, Cylinder heads - To remove).
3. Progressively unscrew the setscrews securing the tappet chest cover to the crankcase. The setscrews must be removed in this manner to lift the cover evenly. If the hydraulic pump operating cam is on its peak, distortion of the tappet chest cover could occur if the setscrews are not unscrewed evenly.
4. Remove the hydraulic pumps (see Chapter G).
5. From the underside of the tappet chest cover tap back the tabs of the lock washers.
6. Unscrew the setscrews securing the push rod guides. Collect the lock washers.
7. Remove the guides. Collect the shims (if fitted) as the pump flange is detached.

**Push rod guides - To dismantle and assemble (see Fig. E48)**

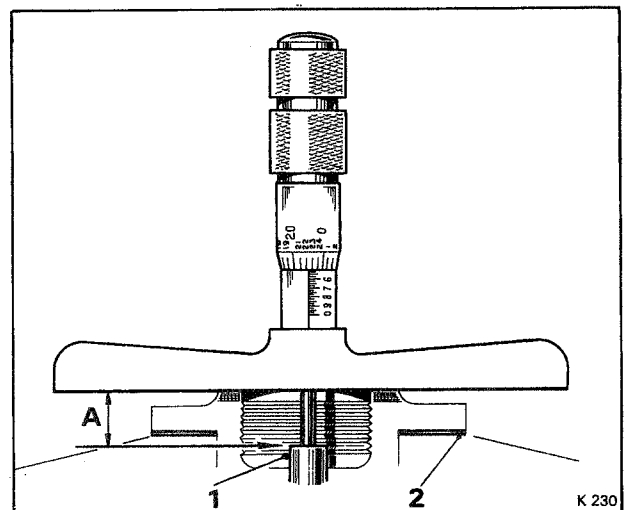
1. Slide the push rod through the hole in the guide flange.
2. Press the cam follower into the centre chamber of the guide and lift out.
3. Discard the 'O' ring.
4. Examine the components for wear.
5. Clean the groove in the cam follower and fit a new 'O' ring.
6. Wash all components in clean paraffin.
7. Assemble the components by reversing the dismantling procedure.

**Hydraulic pumps and push rod guides - To fit and adjust**

1. Clean the mating faces of the tappet chest cover and crankcase.
2. Fit the push rod guide assemblies to the underside of the cover.
3. Fit the pump flange and shims. Secure into position.
4. To check that the push rods are set correctly, carry out the following operations.
5. Rotate the camshaft until the hydraulic pump eccentrics are at approximately B.D.C.

**Fig. E48 Hydraulic pump push rod assembly**

- 1 Push rod (mineral oil rod)
- 2 Guide
- 3 'O' ring
- 4 Cam follower

**Fig. E49 Checking the position of the hydraulic pump push rod**

- 1 Push rod
- 2 Shims
- A Depth micrometer measurement

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6. Temporarily fit the tappet cover and progressively tighten the setscrews.
7. Rotate the engine to find the exact B.D.C. position of the hydraulic pump push rod.
8. Using the depth micrometer placed across the pump flange measure the dimension to the top of the push rod (see Fig. E49). This dimension should be between the figures quoted in Section E3, Dimensional data.
9. If the dimension is incorrect it will be necessary to alter the shims under the pump mounting flange (see Fig. E49). The shims are available in two sizes, refer to Section E3, Dimensional data.
10. To alter the number of shims, carry out the following operations.
  11. Remove the tappet cover.
  12. Unscrew the two setscrews which secure the push rod guide to the hydraulic pump flange. Remove the guide and flange together with the shims.
  13. Care should be taken to ensure that no dirt or any other foreign matter is allowed to come into contact with the exposed components, especially the eccentrics or the cam face of the follower.
  14. Add or subtract the necessary shim washers.
  15. Secure the push rod guide, shims and pump flange to the tappet cover.
  16. Fit the assembled tappet cover to the engine and progressively tighten the setscrews. A flat washer is fitted under the head of each setscrew.
  17. Using a depth micrometer confirm that the dimension from the pump flange to the top face of the push rod is correct (see Fig. E49).
  18. Fit the brake pump into position (see Chapter G, Section G6).
  19. Fit the tappet chest cover (see Section E7, Camshaft and Valve mechanism).