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SECTION 10 — RIDE CONTROL UNIT

To remove the ride control unit it is unnecessary to remove the gearbox from the car or to drain the oil.

There are two types of ride control unit, both fitted to the gearbox in a similar manner, but they are not interchangeable due to the differences in internal design and the fitting of the drive-shaft key. When it becomes necessary to renew a part or a complete unit, reference should be made to the Spares Schedule for details concerning type, model and permissible interchangeability.

Ride control unit — To remove

Disconnect and remove the ride control operating lever complete with its bracket.

Disconnect the flexible outlet pipe and remove the two nuts and spring washers securing the suction pipe flange. If the gearbox is being dismantled for overhaul the suction pipe should be completely removed. On early gearboxes this pipe will have already been disconnected when removing the sump, but on later models the pipe must be disconnected at the two bolt flange where it passes through the side of the gearbox casing.

Remove the four setscrews securing the pump to the gearbox and withdraw the pump, disconnecting the suction pipe if not already removed. Care should be taken not to drop the drive key or pump gears during this operation.

Unscrew the two remaining setscrews retaining the intermediate plate; the plate will be forced out by the pressure of the three dished spring washers which preload the drive-shaft bearings. Remove the plate, distance piece and washers.

Ride control unit — To dismantle

Remove the ride control valve plunger assembly by unscrewing the retaining guide (see Fig. 87). Unscrew and remove the outlet adaptor from the opposite end; the ball valve and spring can then be removed from either end. It is unnecessary to dismantle the control valve plunger assembly further (see Fig. 88), unless damage and wear necessitates renewal; in such cases the retaining collar must be removed and a new one fitted during re-assembly.

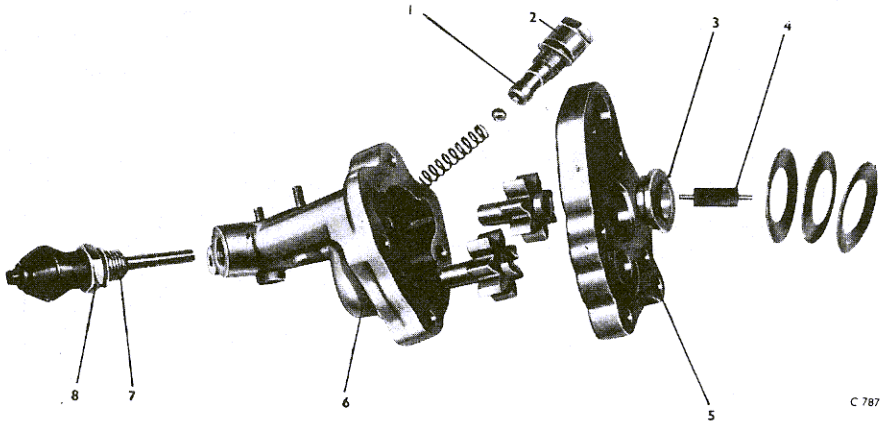

Fig. 87 Ride control unit—exploded

1 CONTROL VALVE ASSEMBLY
2 OUTLET ADAPTOR
3 DISTANCE PIECE
4 DRIVING KEY
5 INTERMEDIATE PLATE
6 PUMP CASING
7 CONTROL VALVE ASSEMBLY
8 RETAINING GUIDE

Ride control unit — To inspect

Thoroughly clean all parts and remove all traces of jointing compound, using a suitable solvent.

Check all joint faces for burrs and damage marks. If the damage is slight, remove by light scraping, if excessive, renew the unit.

Examine the gear pockets for scoring and picking up. If severe, renew the pump body.

Check the gear teeth for damage and the gear shafts and driving dogs for wear. Renew any part which is badly worn or damaged.

Examine all alloy parts for cracks, especially in the vicinity of bolt holes and drillings.

Examine the drive key for wear and damage.

Inspect the control valve ball and seating for pitting and grooving.

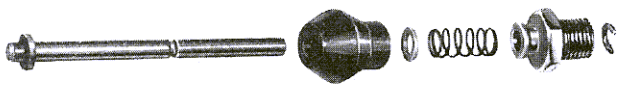

Fig. 88 Control valve plunger assembly—exploded

Check the bore size of the pump intake passage (see Fig. 89); if it is 0·250 in. it should be enlarged to 0·3437 in. as described in the following paragraph. The enlarging of this passage assists in preventing air locks.

Open out the bore with a 0·3125 in. drill, then drill to finish size with a 0·3437 in. drill. To enable the drill to enter the hole centrally it may be necessary to relieve the shoulder on the pump flange using a round file. Care must be taken to ensure that the drill does not penetrate too far beyond the end of the drilling, otherwise damage to the threads of the control valve nut may result. Clean off any swarf and blow out with compressed air.

Ride control unit — To assemble

Re-assemble the pump control valve, fitting the outlet adaptor first; followed by the ball, spring and plunger assembly from the opposite end in this order. New joint washers should be fitted under both the plunger retaining guide and the outlet adaptor.

Ride control unit — To fit

The following sequence of operations is necessary to ensure correct engagement of the driving key.

1 Temporarily refit the intermediate plate with the distance piece and dished spring washers as shown in Figure 90. Fully tighten both the securing setscrews.

2 Rotate the drive-shaft until the slot from the key is horizontal.

3 Insert the driving key, then press it fully home and measure the clearance between the end of the driving blade and the outer surface of the intermediate plate as shown in Figure 91.

This measurement should be between 0·020 in. and 0·040 in. If outside these limits, the outer face of the intermediate plate should be faced off accordingly or the plate renewed by one of suitable thickness (see Spares Schedule).

After the correct clearance is obtained remove the intermediate plate and lightly smear the gearbox joint face with jointing compound.

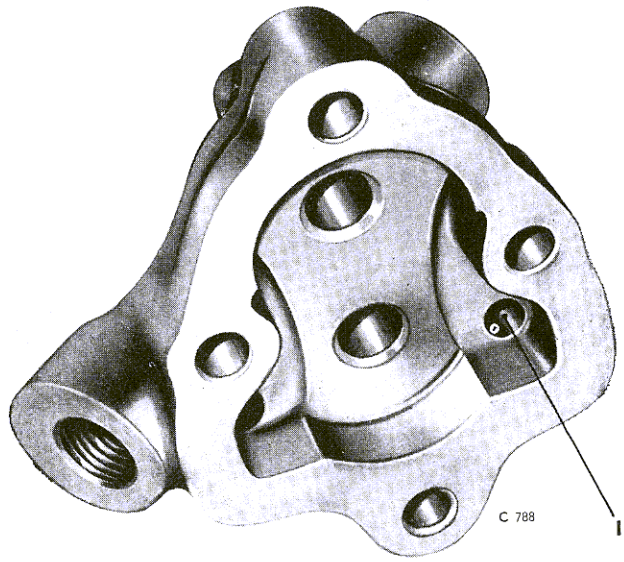

Fig. 89 Pump casing

1 INTAKE PASSAGE

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Refit the dished spring washers, using petroleum jelly to hold them in position. Fit the intermediate plate, together with the distance piece, then finger tighten the retaining setscrews. Care should be taken to ensure that the dished washers do not slip out of position and become trapped between the gearbox casing and the intermediate plate.

Lubricate the pump gears with clean gearbox fluid and refit them to the pump body, turning them so that the driving slot will mate with the key during assembly.

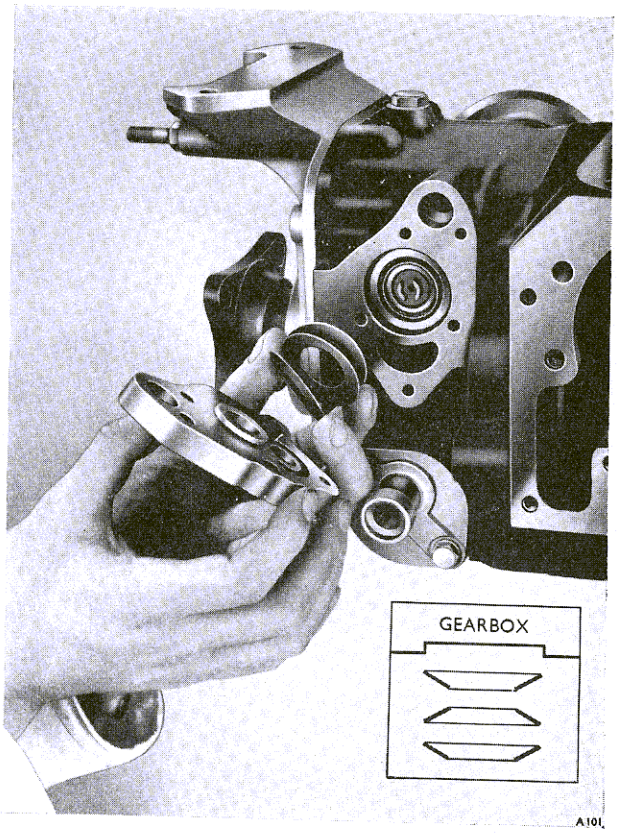

Fig. 90 Refitting intermediate plate

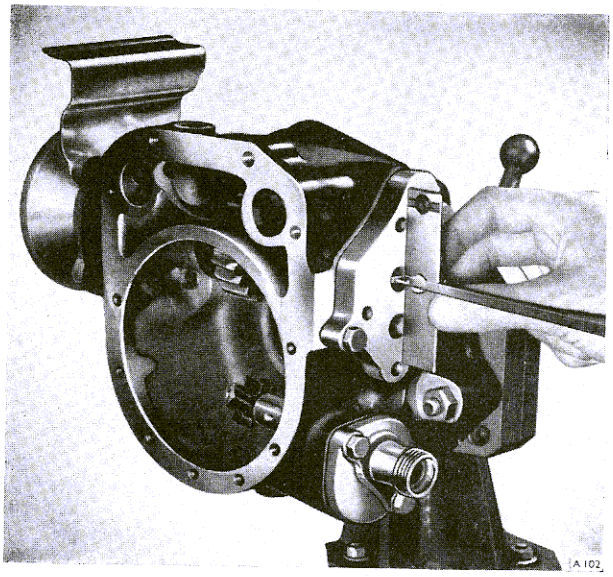

Fig. 91 Checking driving key clearance

Lightly smear the pump body joint face with jointing compound, then offer it into position, engaging the driving key and fitting the securing setscrews to finger tightness. Before finally tightening the setscrews, push the pump body toward the front of the gearbox as far as the clearance of the setscrew holes will permit. This method of positioning the pump is most important as it ensures a correct face seal between the gears and the intermediate plate.

Refit the sump-to-ride control pump oil pipe, and when in position check that the inlet end of the pipe projects one inch from the sump joint face. Reposition if necessary by bending the pipe.

Refit the ride control operating lever and bracket, also the flexible outlet pipe, ensuring that the latter is kept well clear of the exhaust pipe.

Finally, prime the pump as described in Chapter 2.