SECTION 12 . . ROAD WHEEL BRAKE SERVO DRIVE

It is unlikely that removal of the servo drive shaft will be necessary, except during complete overhaul. It can be removed without disturbing the gearbox, after first taking off the brake servo motor (Section 1) and the ride control unit (Section 10).

REMOVAL FROM GEARBOX

Remove the four setscrews securing the servo drive end cover and withdraw the cover (fig 1). The outer race of the large taper bearing will usually remain in the rear case but is easily removed by tapping the shaft from the opposite end ; use a hollow drift which will pass over the end of the shaft and bear up against the inner race of the small taper bearing. After removal of the outer race, the complete drive shaft assembly can be withdrawn from the rear case.

DISMANTLING

Before dismantling the servo drive, examine the assembly as described under ' INSPECTION ' as it is not advisable to remove any of the parts, except when they require renewing due to wear or damage. If a taper bearing is removed other than for renewal, it must be carefully examined before refitting as damage may have been caused during extraction.

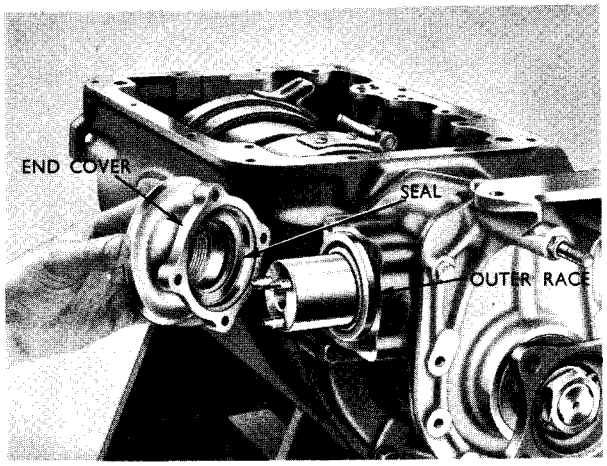

Fig. 1 Removing end cover

Using a press or suitable bearing extractor, remove the small taper bearing ; care must be taken to protect the ride pump driving lugs at the end of the shaft as they are easily damaged.

Next remove the circlip, and slide off the washer, the servo drive gear and the locating sleeve (fig. 2).

Finally remove the large taper bearing. This can be done by supporting the bearing by its outer race and pressing out the shaft similar to the manner illustrated for assembly in fig. 3.

INSPECTION

Without dismantling the shaft examine the gear for signs of excessive wear, usually identifiable by the teeth becoming ridged, thin and sharp.

Check the inner races of the taper bearings for security on the shaft, the rollers for damage and their cages for cracks and wear. Check the outer races for condition and their respective housings for signs of excessive creep. If the small bearing outer race is satisfactory it can be refitted after inspection of the housing.

Check the three driving pins in the end of the shaft for wear and security.

Any burrs on either the end cover or shaft should be removed with a fine oil stone.

Examine the oil seal in the end cover (fig. 1) for wear and if worn tap out with a hammer and soft drift taking care to support the cover so that the joint face is not damaged.

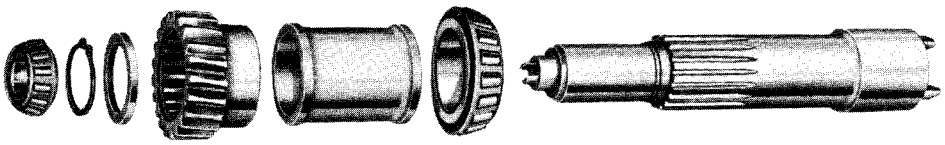

Fig. 2 Servo driveshaft assembly dismantled

ASSEMBLING

Slide the large taper bearing on to the shaft as far as it will go, then using a sleeve which will pass over the shaft and bear up against the inner race, tap or press the bearing along the shaft until it is approximately $\frac{1}{16}$ in. in from the shoulder. Care should be taken not to press the race any closer than this, as it will tend to bind on to the radius of the shoulder and make final positioning extremely difficult.

In the following order fit, the sleeve, the gear (plain extension towards the sleeve) the abutment washer and the circlip making sure that it beds correctly in its groove.

Position the small bearing on to the end of the shaft and mount the assembly in a press in the manner illustrated in fig. 3. Support the assembly by the outer race of the large bearing and with a suitable sleeve, press against the inner race of the small bearing until it butts against its locating shoulder, then continue the pressure until the larger bearing has moved firmly up against the locating sleeve, holding the gear and abutment washer hard against the circlip. Check that the sleeve cannot be revolved by hand before removing the assembly from the press.

When fitting a new end cover oil seal, care should be taken to see that the raised section or lip of the rubber, is towards the gearbox side of the cover and also that the seal casing butts firmly up against the locating shoulder in the bore of the end cover. To avoid damage the seal should be pressed into position using a sleeve only slightly less in outside diameter.

REFITTING TO THE GEARBOX

Before installing the drive shaft assembly into the gearbox, lubricate the two roller bearings and drive gear with clean gearbox fluid and ensure that the small bearing outer race is in position in its housing. Slide the shaft into the gearbox and then introduce the outer race of the large bearing into its housing. Coat the joint face of the end cover with jointing compound and with the drain hole to the bottom of the gearbox fit it over the outer race by tapping evenly with a plastic hammer. Position finally by tightening up the four securing setscrews at the same time checking the assembly for freedom of rotation by turning the output shaft.

Refit the ride control unit as described in Section 10 and fit the brake servo motor as described in Section 1.

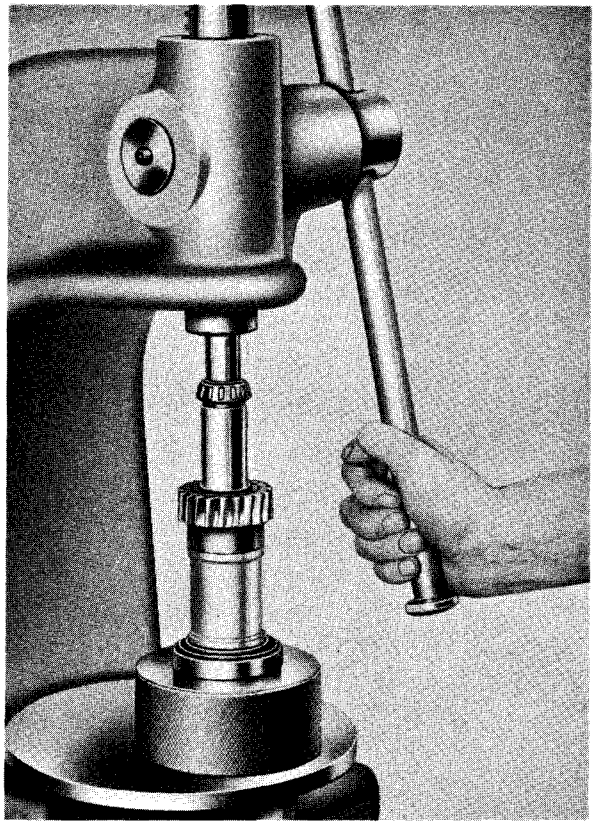

Fig. 3 Pressing bearings into position