

9 Automatic transmission

Fault diagnosis

- 1 It is possible that a condition known as 'tie-up' (more than one gear selected) on light throttle 3rd to 4th upshifts with D selected will be experienced. This problem will be due to pressure loss between the top/reverse clutch feed pipe and governor housing.
- 2 Should this fault occur, it will be necessary to remove the governor assembly and check the feed pipe end-to-transmission casing clearance. The pipe must also be examined for signs of damage or distortion and renewed if necessary.
- 3 Consult your BL dealer if you think it necessary to carry out these checks; the operation is beyond the scope of this manual. For information, the pipe diameter and end clearance are shown in the accompanying figure (Fig. 14.7). If end clearance is not sufficient, remove the transmission front cover and carefully lever the pipe towards the governor. Take great care not to distort the pipe when refitting the governor; retain the pipe in position with a suitable lever to prevent it from being pushed back into the casing.
- 4 If, with N or P selected and the engine at idle, a buzzing noise is heard from the transmission casing, then suspect a faulty torque converter feed pipe valve and renew the problem to your BL dealer who will have the relevant information on modified valves.

Torque converter removal – special tool

- 5 The instructions given in Chapter 1, Section 13 for removing the torque converter include the use of a special tool.
- 6 A suitable puller may be made up as follows:
- 7 Cut a disc 96 mm (3.78 in) in diameter from a mild steel sheet 15mm (0.59 in) thick.
- 8 Drill and tap a hole in the centre of the disc which will accept a suitable size bolt, which will enter the threaded crankshaft and is long enough to bottom in the crankshaft when in use, but will not engage in the thread.
- 9 A shorter bolt and suitable spacer may be used. Ensure it is possible to remove the spacer before inserting it into the crankshaft.
- 10 Drill a further three holes equidistant from the centre, which will line up with the three bolt holes in the torque converter.
- 11 By using three bolts of the same size as the torque converter bolts, but approximately 12mm (0.5in) longer, the 'puller' can be bolted to the torque converter and the taper seat 'broken' by screwing in the central bolt.
- 12 The internal threaded portion of the crankshaft should be protected during this operation.

10 Driveshafts and universal joints

Driveshaft fitting – Mini GT and Cooper S

- 1 The following procedure must be observed during fitting of the driveshafts to Mini GT and Cooper S models, otherwise it is possible that the split collar fitted beneath the shaft to hub retaining nut will become clamped to the shaft before the shaft is fully home in the hub bearings, resulting in noise and excessive wear of the bearing spacer, shaft splines and associated component parts.
- 2 Insert the driveshaft through the swivel hub, but do not fit the split collar. Obtain a plain washer of the dimensions shown in the accompanying figure (Fig. 14.9). If necessary, make the washer from mild steel.
- 3 Fit the plain washer over the driveshaft end. Fit the shaft retaining nut and tighten it to 150 lbf ft (203 Nm) to seat the shaft in the hub bearings. Remove the nut and washer. Smear engine oil over the driveshaft threads.
- 4 Examine the split collar and renew it if damaged or worn. Fit the collar. Fit the shaft retaining nut and retighten it to 150 lbf ft (203 Nm). Fit a new split pin to lock the nut in position. If necessary, tighten the nut further to allow fitting of the pin.

CV joint rubber boot

- 5 When ordering a replacement rubber boot for a CV joint, if possible take along the old item for comparison and check that the mouldings around the inner circumference of both old and new items are identical.
- 6 Later boots have a V-section rib around their inner circumference which fits into a corresponding groove in the joint body. *Under no circumstances fit a new type of boot to an old type joint.*

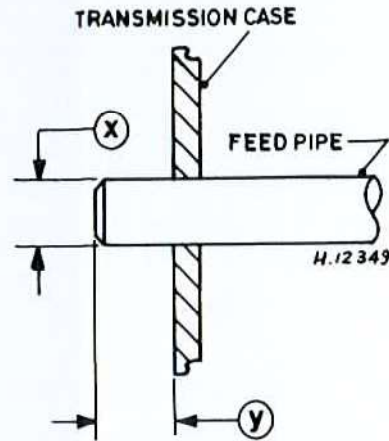


Fig. 14.7 Automatic transmission feed pipe dimensions (Sec 9)

X = Pipe diameter 0.3422 to 0.3432 in (8.692 to 8.717 mm)
 Y = End clearance 0.3750 to 0.4370 in (9.525 to 11.099 mm)

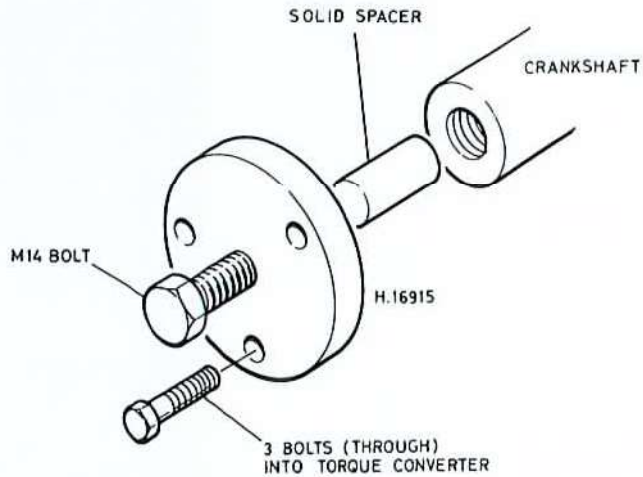


Fig. 14.8 Showing locally manufactured puller for removing the torque converter (Sec 9)

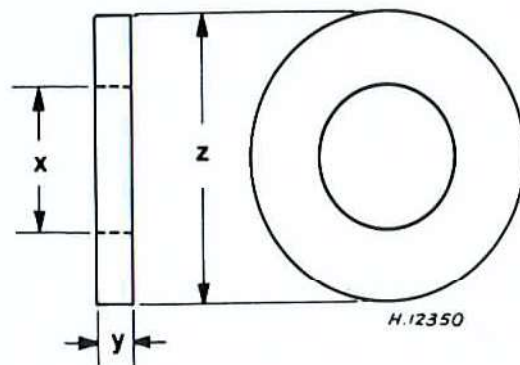


Fig. 14.9 Driveshaft fitting special washer (Sec 10)

X = 0.98 in (25 mm) Z = 1.97 in (50 mm)
 Y = 0.26 in (6.5 mm)