

## SECTION J

# Flywheel and Flywheel Housing

### To Remove the Flywheel

1. Remove the gearbox, clutch assembly and any linkage as detailed in the service literature applicable to the particular vehicle or application.
2. Knock back the locking tabs from the flywheel securing setscrews.
3. Remove the securing setscrews and carefully remove the flywheel from the crankshaft flange.

### To Renew the Flywheel Ring Gear

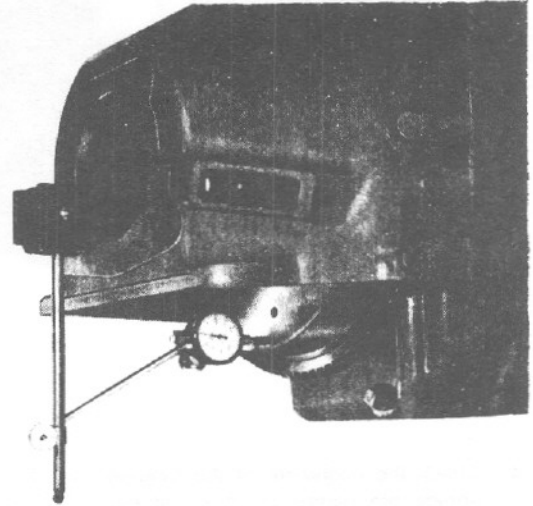
1. The flywheel ring gear is a shrunk fit on the flywheel, its removal is carried out by partially cutting through the gear and chisel cutting it from the flywheel. An alternative method is to apply localised heat to the ring gear to expand it sufficiently to enable it to be tapped evenly from the flywheel.
2. The locating faces of the flywheel should be thoroughly cleaned to ensure a positive location when the new ring gear is fitted.
3. Clean, then heat the new ring gear to a temperature not exceeding 480°F (250°C).
4. Fit the ring gear over the flywheel with the lead on the teeth facing uppermost, i.e., facing away from the engine when the flywheel is fitted. Rotate the gear quickly on its location immediately it is fitted to ensure it is laying flat, then allow to cool.

### To Refit the Flywheel

It is most essential to ensure that the crankshaft flange face and periphery are perfectly clean and free from burrs, similarly the mating face of the flywheel itself before refitting of the flywheel is attempted. Failure to ensure this may make it impossible to fit the flywheel satisfactory within the various limits quoted hereafter. It will be noted that there is a sixth (untapped) hole in the crankshaft flange which will be at B.D.C. when Nos. 1 and 4 pistons are at T.D.C.

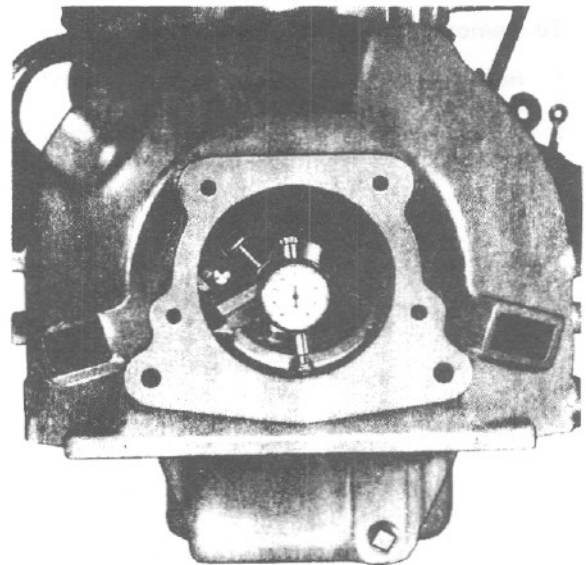
The flywheel can only be fitted in one position due to the irregular spacing of the setscrew holes.

1. It is advisable to screw a short stud into the crankshaft flange just finger tight, so that when the flywheel is offered up this stud can take the weight of the flywheel whilst the securing setscrews are fitted, this stud can then be removed and replaced by the fifth setscrew.
2. Tighten the securing setscrews to the torque given on Page B.2 but do not lock with the tab washers at this stage.



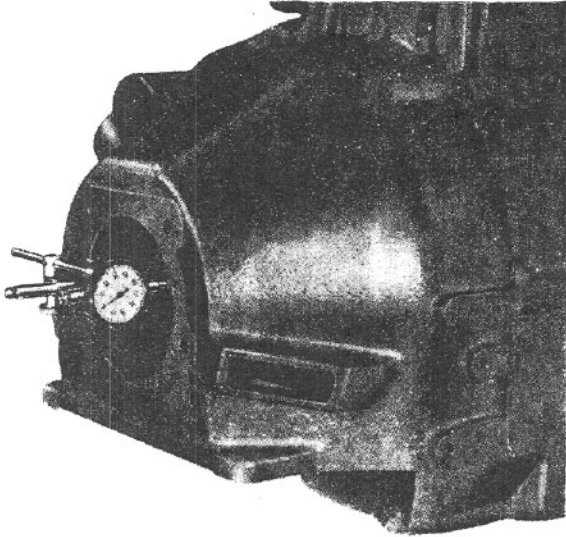
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3. Set up a dial test indicator (clock) gauge with the base secured against the rear face of the flywheel housing and the gauge stylus at right angles to the periphery of the flywheel. Turn the crankshaft and check the run out, the flywheel should run truly within 0.012 in (0,30 mm) total indicator reading



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## FLYWHEEL AND FLYWHEEL HOUSING—J.2



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4. Check the alignment of the flywheel face by positioning the gauge as shown in Fig. J.1. Turn the crankshaft and the total indicator reading for the flywheel being truly at right angles to the crankshaft axis should not exceed 0.001 in (0,025 mm) for every inch (25 mm) the gauge stylus is reading from the centre of the flywheel, i.e. if the flywheel has a diameter of approx. 20 in (500 mm) then the stylus will be approx. 10 in (250 mm) from its centre, therefore the total indicator reading should not exceed 0.010 in (0,25 mm).
5. When the flywheel is correctly aligned, lock the securing setscrews with the tabwashers.

### To Remove the Flywheel Housing

1. Remove the flywheel (Refer to previous text).
2. Remove the starter motor.
3. Unscrew the securing setscrews and carefully tap the housing clear of the locating dowels.

4. Carefully examine the housing for any signs of cracks, fretting or other damage.

### To Refit the Flywheel Housing

1. Ensure that the rear face of the cylinder block and the mating face of the flywheel housing are perfectly clean and free from burrs, etc. Check dowel location in block and housing, ream and fit oversize dowels where necessary.
2. Locate the flywheel housing carefully on the two dowels and refit the securing setscrews.
3. Mount a dial test indicator (clock) gauge with the base on the crankshaft flange and the gauge stylus on and perpendicular with the inner face of the housing aperture as shown in Fig. J.2. Rotate the crankshaft, the inner bore should be truly central with the crankshaft within the limits listed towards the end of this section.
4. With the gauge base still mounted in the same position adjust the stylus so that it is at right angles to the vertically machined rear face of the flywheel housing as shown in Fig. J.3. Turn the crankshaft and check that this face is at right angles to the crankshaft axis to within the following limits.

Diameter of Housing Bore	Max. Allowance (total indicator reading)
Up to 14½ in (362 mm)	0.006 in (0,15 mm)
14½ to 20⅞ in (362 to 511 mm)	0.008 in (0,20 mm)
20⅞ to 25½ in (511 to 648 mm)	0.010 in (0,25 mm)
25½ to 31 in (648 to 787 mm)	0.012 in (0,30 mm)

NOTE: Any adjustments which may be necessary to bring the flywheel housing within the limits quoted must be carried out on the housing, **under no circumstances may the rear face of the cylinder block be interfered with.**

5. When the housing is correctly aligned finally tighten the securing setscrews.
6. Refit the flywheel as previously described on Page J.1.