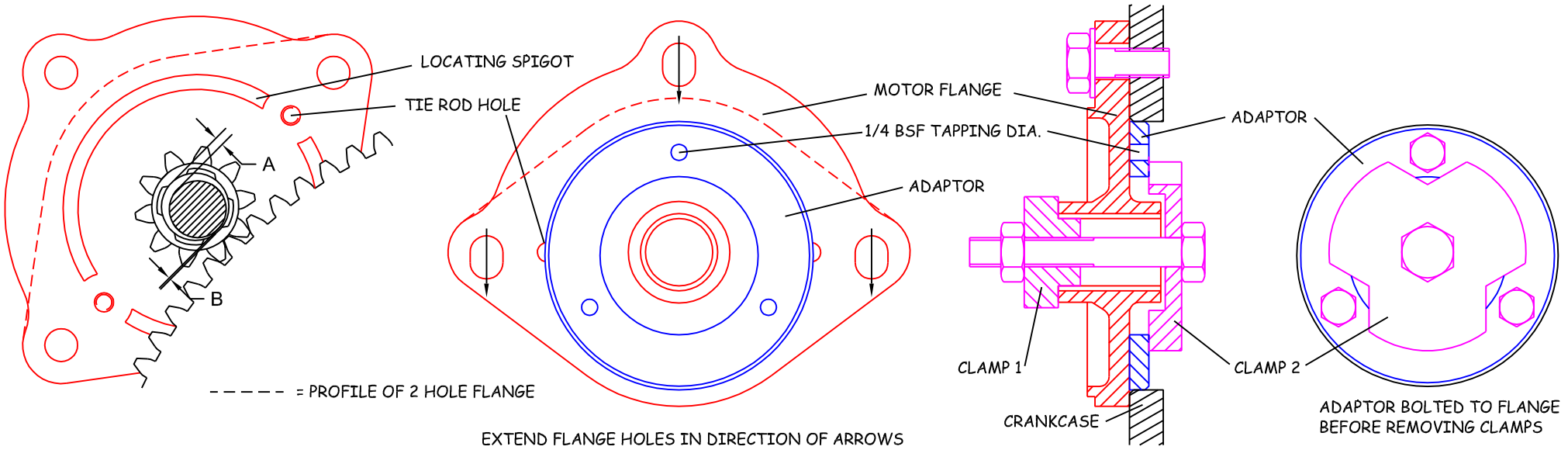

This is based on fitting a Lucas M418G starter. Apparently there many varieties of the 418G including pre-engaged types (which are not suitable). Mine had a three bolt flange which matched the hole centres of the 4ED with a 10 tooth pinion of 1.56" OD: that required the centre of the motor shaft to be offset with respect to the bore in the crankcase. Although the motor can be fitted by simply removing the spigot that locates it in the crankcase and extending the bolt holes, it remains a fiddly job to fit the starter with the correct mesh.

Dimensions in square brackets are what applied in my case.

Estimate the amount of offset [0.040"] needed. Remove the Bendix drive, bolt the motor in position and slide just the pinion over the shaft so that it is meshed with the starter ring. Use feeler gauges to measure gaps A & B in the drawing. The offset is (A-B)/2.

Dismantle the motor. You will need to remove the back end-plate from the body later on, so the brushes have to be pulled from their holders and the main terminal fixings have to be undone. Turn off the locating spigot and skim the front face of the motor flange. Extend the boltholes in the flange by [0.050"] at least the amount of the estimated offset.

Make an adaptor with OD a snug fit in the bore of the crankcase [3.495"]. The bore [2.05"] and thickness [1/4"] are not critical. Drill 3 1/4" BSF tapping size holes in it as shown [2.68" PCD]. Also make two temporary clamping pieces as shown. The OD of the larger one needs three notches hacked out to leave room for the bolts (and spanner) fixing the adaptor to the flange in due course.

Re-assemble the motor but don't bother about fitting the Bendix springs or the carbon brushes.

Insert the adaptor in the housing and bolt the motor in position to give what seems to be the correct mesh between pinion and starter ring.

Unscrew the tie rods of the motor, pull off the backplate, pull out the armature and then remove the casing.

Orientate the adaptor so that the three holes are well clear of the tie rod holes in the flange. Clamp the adaptor to the flange as shown - leave them clamped until they have been bolted together. Unbolt and remove the flange etc. from the crankcase.

Drill the flange, 1/4" BSF tapping, through the three holes in the adaptor. Open out the holes in the adaptor to 1/4" clearance after you have carefully set up the depth stop. Tap the holes in the flange and bolt the adaptor to it using Loctite on the threads.

Remove the clamp, reassemble the motor, fit it to the engine and check that the gears mesh correctly.

Bob kellock

FITTING A STARTER MOTOR TO A MEADOWS 4ED

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