Crank Case Assembly

Dry fit with bearing spacers[i] AND ET77, the main bearing distance piece (oil thrower), in place and ESA firmly installed then check for the conrod(s) being central. It/they MUST be either exactly in the centre or closer to the drive side of the liner opening(s) without any shims in place. If this is not the case then you need to stop now, disassemble everything and have some material removed from the drive side flywheel to get to that state.

Assuming all is well deduct the smaller value, being the drive side, from the larger then divide result by 2 and the result is the thickness of shim you need to put between the flywheel and the drive side bearing in order to centralise the con rod. Note – the shim MUST go directly against the flywheel.

Disassemble and fit the shim on the drive side between the flywheel and the bearing spacer then reassemble, again using the bearing spacers, and measure again. Remember ET77 MUST be in place. Of course equal measurement on both sides is the perfect result, though variance up to 0.010" is acceptable.

Once you are happy with the rod centralisation, dissemble all again, then reassemble, this time fitting the actual main bearings in place of the bearing spacers. Remember – the shim MUST go directly against the flywheel on the drive side.

If there is ANY tendency for the inner race of either main bearing to slip or rotate on the main shaft it MUST be secured to the main shaft with a product like Loctite 680.

Ideally the bearings should be an interference fit onto the drive shafts; In order to install them, place the bearings into a small container (a discarded saucepan is ideal) of engine oil then heat till the oil is smoking and the bearings well heated. Taking care not to burn yourself, you can then drop the bearings onto the main shafts being sure to keep them firmly up against the flywheel face till they have cooled sufficiently to lock onto the main shafts. Remember – any shims MUST go on between the flywheel and the bearing on the drive side.

Only now can you proceed to install the crank assembly, complete with bearings in place, into the case halves and then bolt the case halves together using a case sealant such as Loctite 510 to provide an oil tight seal on the case faces.

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[i] Bearing "spacers" can be easily made from a pair of old, discarded main bearings. Using whatever means at your disposal, dismantle the old bearings then open up the internal diameter of the inner race so that they are an easy slide fit on the main shafts and Vola! You have a set of spacers. You may need some professional assistance to open up the ID but once you have done so – you have a spacer set for life.