



BOTTOM END OVERHAUL KITS, NOTES AND CONTENTS

We supply four bottom end overhaul kits for the Norton twins....

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050106 Pre MK3 Commando can also be used on all pre MK3 twins from 650SS onwards.

Contains 2 FAG superbend main bearings, 4 forged big end bolts, 4 self lock big end nuts. 1 set of big end shells (state size required) and 1 crankshaft fixing kit.

050208 Identical to the above except the timing side main bearing is a ball race instead of a roller bearing, this was used on all twins prior to the introduction of the 750 Combat in 1972. Initially the Combat also used the ball race on the timing side but flexing of the crankshaft caused premature bearing failure after a few thousand miles of hard use. Bikes ridden gently with normal compression ratios do not need the roller bearing but often it is used on all twins for the peace of mind it gives. That said I have known people even on highly tuned racing bikes who prefer the ball race for the lower rolling resistance it provides, but of course they will change them regularly.

050358 Used on all the pre 650 twins, these have a smaller big end journal (1.5") and are supplied with 1 roller and 1 ball race bearing. Big end bolts and nuts are 5/16". From the 650 onwards this was increased to 3/8".

050359 Is for the MK3 Commando, identical to kit 050106 except it has a different set of fixings for bolting the crankshaft together (on the MK3 these are 3/8" diameter not 5/16")

Torque settings and assembly notes. Firstly on the subject of torque settings great care must be taken whilst tightening the big end nuts, over tightening will not stretch or harm the bolts but will very easily distort the big end caps, even the heavy steel Commando big end caps are easily distorted. The caps will move in at the ends and this can be established by examining the old big end shells, theoretically the load should be applied roughly in line with the con rod, i.e. maximum wear should be visible roughly central in each shell, any wear shown at the end of the shell generally implies that distortion has occurred, it can be corrected by careful work on the shell or con rod. I use a ground steel mandrel to test them on. In any event it is better to resist the temptation to apply a little extra torque and instead apply a little loctite. Further the tab washer on all the pre MK3 crankshafts is there to hold the dowel in place, there is no need to knock the tabs over if a little loctite retainer is used. Crankshaft flywheel and cheeks should be flat and free from burs, it is worth while lapping the components together with a little fine grinding paste, of course great care must be taken to clean the components including the sludge trap and oil ways prior to assembly.

Big end bolts can be re-used providing there is no sign of stretching or nicks/marks. Big end nuts should not be re-used.

To avoid distortion the following should be considered the maximum torque figures....

3/8" Big end nuts (all twins 650 onwards) 25 lbs/ft.

5/16" Big end nuts (pre 650 twins with steel caps) 20 lbs/ft

5/16" Big end nuts (all twins with alloy big end caps) 15 lbs/ft

3/8" Crankshaft studs (Mk3 Commando) 30 lbs/ft

5/16" Crankshaft studs or bolts (all pre MK3 twins) 20 lbs/ft

As mentioned above a loctite type retaining compound should be used.

Also use an anti scuffing compound, colloidal graphite or Molybdenum Disulphide should be lightly applied between the crankshaft components and on the big end journals.

Once correctly assembled the rod should fall by its own weight.

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