

## Important Notes With Recommendations For Piston Assembly

***Please take note:***

Unlike the usual 'Aston Martin' pistons, our JMB Ross 4.2 litre pistons are handed. The larger of the two valve pockets on the crown is recessed for the inlet valve and must be aligned on the inlet side of the engine, (inlet pockets should line up towards the oil pump side of the block).

**Failure to comply will result in serious valve contact with the pistons.**

The special 'Spiroloc' gudgeon pin retainers should be fitted with two at each end, i.e: four per piston.

The piston rings require gapping with the recommended gaps:-

0.016" - 0.017" for the top ring

0.018" - 0.019" for the second ring

The oil rings are supplied correct.

The oil control rings should be fitted with gaps in the rails at 180° from one another, with the gap in the spring expander at 90° to the rail gaps. Gaps in the top and second rings should be at 180° from one another and at 30° / 40° from the axis of the pin.

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The rings supplied with these pistons for the top and second grooves are oversize, therefore must be filed to obtain the correct expansion gap, this gap is directly dependent upon the amount of heat to which the top ring is subjected to.

For normally aspirated engines the correct end gap on the top ring generally relates to multiplying the bore size in inches x 0.004" whereas to determine the second ring gap size multiply the bore size x 0.005".

It is usually recommended that the second rings have more gap, to allow any top ring blow by gasses to escape into the crankcase quickly. If the second rings gaps are set smaller than the top rings, the engine may show less leak down, under static conditions, at high speed the pressure may build up under the top ring and tilt it causing a flutter and as we all know engines do not run static.

Should the top ring land be 0.180" or narrower add 0.002" total to the above calculated end gaps.

For a forced induction engine add 0.004" total to the end gaps calculations above. (6cyl only).

### Ring Installation:

Fit the oil rings first, wind on the stainless expander initially with the ends pointing down and butting, then install the upper rail followed by the lower rail, attempting the reverse with the lower rail first, the assembly will tangle as the next rail passes over the expander gap.

Install the upper rail gap about 90° counter clockwise from the expander gap, next the lower rail about 90° clockwise from the expander gap. This method of setting up avoids over stressing the expander and will cause it to break if ignored.

Next install the second ring with the 'dot' to the top of the piston, finally the top ring, as these are symmetrical they can be fitted either way up. The top two rings should have their gaps 180° apart and not directly in line with the piston thrust faces.

**Should you require any further assistance, please do not hesitate to contact us.**

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