

INSTALLATION GUIDELINES



The guidelines below are not a substitute for a professional engine builders experience with particular applications. Always seek advice from a professional engine builder if in doubt.

GENERAL PISTON INSTALLATION

The following guidelines are for those who have purchased Wössner pistons.

General Guidelines.

- Check piston dimensions are correct for your application. This is especially important if modifications are to be carried out as we cannot accept modified pistons for return.
- Always check valve to piston clearance with a dummy engine build. Wossner cannot give advice on which camshafts can be used with our pistons. Valve to piston clearance should be checked at approximately $\pm 10^\circ$ before and after TDC. Clearance should be 1.5mm – 2.0mm for intake and 2.0mm – 2.5mm for exhaust. If machining is required do not use a cutter with sharp corners. A minimum corner radius of 1.0mm is required. Remove any sharp edges or burrs, etc.
- Check pistons are installed correctly. Most pistons have either an arrow or dimple to indicate exhaust or accessory drive side of engine. Valve pocket size will also be an indicator.
- Always observe good race engine build practices during installation of this product.
- For initial start up and running in the engine should be filled with either a professional running in oil or non-detergent mineral oil. Semi-synthetic or fully synthetic oils must be avoided or proper break in will not occur. After running in the oil should be flushed and drained out. Remove the oil filter and cut open. Examine for any debris. If excessive debris is observed this may indicate a strip down to investigate the cause. Fit new filter and your choice of quality engine oil.
- Always remember that correct piston installation is the responsibility of the customer.

Piston To Wall Clearance.

- In general piston clearances will either be on the piston packaging or included with the pistons. If no clearance information is available use the table below as a guideline for clearances. For pistons that have coated skirts the coating thickness needs to be deducted from the piston measurement. This is approximately 0.020mm – 0.025mm in total. Pistons are measured at the widest diameter of the skirt 90° to the pin centreline. Add an additional 0.010mm clearance for highly turbocharged or heavy nitrous oxide use. Always remember that larger clearances may cause piston noise upon start up and during cold running. This will disappear once the engine has reached operating temperature.

Bore Size	Clearance
70	0.074
75	0.078
80	0.081
85	0.085
90	0.089
95	0.093
100	0.097

(Sizes above are in mm. For English units divide by 25.4.)

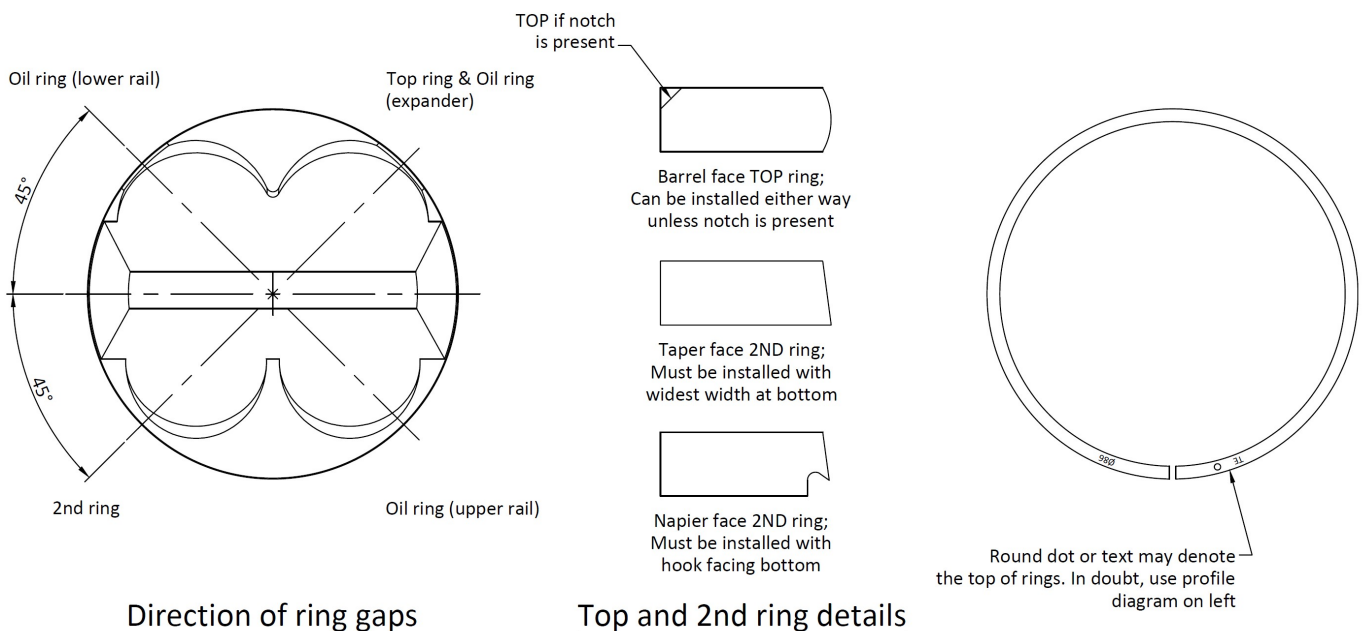
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Ring Guidelines.

- For ring gaps multiply the bore diameter by the factors below. Oil control rings should have a minimum gap between 0.35mm – 1.00mm.

Top Ring	
N/A Fast Road	0.004
N/A Race	0.0045
Turbocharged/Nitrous Oxide	0.0055
Second Ring	
N/A Fast Road	0.005
N/A Race	0.0055
Turbocharged/Nitrous Oxide	0.0065

- Ring vertical clearance for top and second rings should be between 0.030mm – 0.040mm.
- Always check rings for back clearance with a straight edge held against the ring lands.
- With three-piece oil control rings ensure that the expander ends are butted together and not overlapped. On two-piece oil control rings ensure that the coil expander joint is opposite to the rail gap.



TERMS & CONDITIONS

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