

2 stroke Crank Angle/Piston Displacement Tables.

We have now offered a small program that will provide the display of one, two or three Crank Angle/Piston Displacement tables for a 2 stroke engine on the same screen. [Click here](#) to download the .zip file

Each table provides values over a Crank Angle range of 4 degrees commencing at a user defined angle. Whilst the basic increment in Crank Angle is 0.1 degrees, a 0.25 degree increment is superimposed within the table.

The table displayed may be printed. The output will comprise a single A4 page.

The User input includes an Engine Name, the engine Stroke, the engine Connecting Rod Length and the Offset of the gudgeon pin in the piston.

When the offset of the gudgeon pin is non-zero, two columns of piston displacement values are displayed. These are the Before Top Dead Centre (BTDC) values and the After Top Dead Centre (ATDC) values which will differ in this situation; the Crank Angle at Bottom Dead Centre (BDC) is also displayed.

Whilst the values of the Stroke, Connecting Rod Length and Gudgeon Pin Offset will vary within their manufacturing tolerance limits, the **difference** between the piston displacement for two angles of reasonably close proximity is essentially unchanged by such variations in manufacture and accurately provided by the values tabulated.

The tables constructed can be useful when setting the port timing of an engine. Examples are when estimating the change in crankcase/barrel gasket thickness to obtain desired EPO/EPC values and when estimating the amount to shorten a piston skirt to provide the desired IPO / IPC values in a piston port induction engine.

When attaching a Degree Wheel to an engine with a non-zero piston offset, the knowledge of the difference in the displacements at angles such as 90 degrees BTDC and ATDC can allow the accurate location of Top Dead Centre (TDC).

It is recognised, however, that the accurate measurement of port open duration angle is independent of the accuracy of the degree wheel setting to TDC.

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