Listed here are some useful formulae tables that may assist you.

Engine Capacity/Displacement:
Information required: 1) Cylinder bore, 2) Crankshaft stroke, 3) Number of cylinders
Calculation: 0.7854 x bore x bore x stroke x number of cylinders.
Example: Bore = 81mm (8.1cm), Stroke = 77.6mm (7.76cm), cylinders = 4
Solution: 0.7854 x 8.1 x 8.1 x 7.76 x 4 = 1599.5cc

In the above example we have used centimetres to calculate capacity in cubic centimetres.
To find the displacement in cubic inches simply substitute measurements in inches:
8.1cm = 3.189" & 7.76cm = 3.055" giving 0.7854 x 3.189"x 3.189"x 3.055"x 4 = 97.6 cu.in.
To quickly convert from ccs to cu.ins. divide by 16.387 and from cu.in. to cc. Multiply by 16.387

Crankshaft Stroke:
Information required: 1) Bore size, 2) Engine capacity, 3) Number of cylinders
Calculation: Divide engine capacity by: (0.7854 x bore x bore x no. of cylinders)
Example: 1600cc 4 cylinder engine with an 81mm bore size
Solution: 1600 ÷ (0.7854 x 8.1 x 8.1 x 4) = 1600 ÷ 206.12 = 7.76cm (77.6mm)

Compression Ratio:
Information required: 1) Capacity of ONE cylinder
2) Compressed volume
Cylinder capacity is the total engine displacement divided by the number of cylinders.
E.g. 4 cylinder 1600cc engine = 400cc per cylinder.

Compressed volume is the area above the piston crown when the piston is at its highest point or top dead centre (TDC). This area comprises:
1) The combustion chamber (usually in the cylinder head as shown, but can also be in the piston crown),
2) The head gasket thickness,
3) The area between the cylinder block face and the piston crown, commonly referred to as the 'deck height'.

Procedure: Measure the volume of the cylinder and/or piston chambers using a suitable burette filled with paraffin. Calculate the volume of the gasket and deck height areas and add these to the chamber volume to arrive at the total compressed volume. Some engines with irregular piston crown shapes, especially raised areas, may be difficult to quantify with any degree of accuracy. In such cases it is best to measure the compressed area with the cylinder head fitted. Make sure the piston is at TDC and seal the gap between the cylinder wall and the piston with grease (this will prevent seepage past the rings giving a false reading). Refit gasket and cylinder head and measure the volume through the spark plug hole. NOTE: The spark plug hole must be at the highest point when carrying out this procedure.
Calculation: (Cylinder volume + compressed volume) ÷ compressed volume.
Example: 2000cc 4 cylinder engine with a compressed volume of 54ccs
Solution: One cylinder = 2000cc ÷ 4 = 500cc
(500cc + 54cc) ÷ 54cc = 554cc ÷ 54 = 10.26 or 10.26:1 compression ratio

Valve Size:
The maximum airflow through any valve occurs when it has been lifted 25% of its diameter. For example, a 38mm (1.5") valve will require a lift of no more than 9.5mm (.375") and a 45mm (1.770") valve a lift of 11.25mm (.443") to reach their maximum flow capabilities.