Miscellaneous Formulae

Contributed By: Joe Schaefer

Displacement/cu.in/mm

Cubic inches:

cu.in = 0.7853982 x bore squared x stroke x numzber of cylinders

For metric(mm) use conversion factor of: 2.54 for bore and stroke.

mm = 0.785 x (bore squared x 2.54) x (stroke x 2.54) x # of cyl

HP/Torque

$$hp = \frac{rpm \times torque}{5252}$$

$$torque = \frac{5252 \times hp}{hp}$$

Horsepower loss at altitude:
Note: elevation in feet.

$$hp\ loss = \frac{elevation \times 0.03 \times hp\ @\ sea\ level}{1000}$$

Air Flow

Air capacity:

$$cfm = \frac{rpm \times displacement}{3456}$$

Volumetric Efficiency:

$$VE\ in\ \% = \frac{airflow\ cfm \times 100}{rated\ cfm}$$