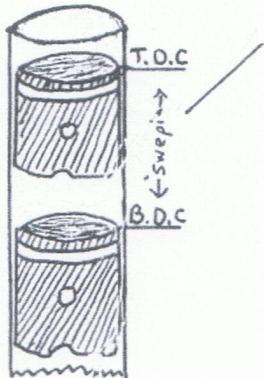


### ENGINE DISPLACEMENT: SWEPT VOLUME

Engine displacement is measured as the section or volume of the cylinder "swept" by the piston.



"swept" section from **Top Dead Centre** to **Bottom Dead Centre**.

Bore 3.75" (93.75mm)

Stroke 4.00" (100mm)

Vol. of motor =  $\pi r^2 h \times 4$  cylinders

$$= \frac{22}{7} \times \frac{1.875}{1} \times \frac{1.875}{1} \times \frac{4}{1} \times \frac{4}{1}$$

$$= 176.784 \text{ cu. ins}$$

To convert cubic inches to c.c.'s multiply by 16.4

e.g. 176.784 cu ins x 16.4 = 2699.2576 c.c. (1 litre = 60.98 cu ins)

*(Early Auto 1970's)*

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### USEFUL INFORMATION

The unit of **WORK** is the foot-pound. A foot-pound means one pound raised one foot in one minute.

one **HORSE POWER** (mechanical unit of power) is 33000 pounds raised one foot high it minute,

**INDICATED HORSE POWER** is the total power developed by the engine. A portion of this is used to overcome the internal friction of the moving parts of the engine, the balance is effective or useful power.

**BRAKE HORSE-POWER (B.H.P.)** is the effective power available at the engine crankshaft, that is, the indicated horse-power minus the power absorbed by the engine friction.

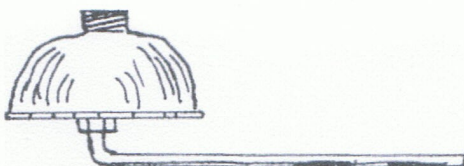
**MECHANICAL EFFICIENCY** is the ratio of brake horse-power to indicated horse-power.

*Extract From Crankhandle News - Gold Coast Antique Auto Club - December 1979.*

(Some of us still work with the old system; Ed)

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No doubt you have all had that horrible experience of a noise in the motor, and have not been able to locate it satisfactorily. To help in your diagnosis we illustrate a simple home made stethoscope, utilising an old oil can as an amplifier, with a length of 3/16" rod fixed to it.



### Simple Homemade Stethoscope