POWER CYLINDER

Power Cylinder consists basically of a double acting pneumatic cylinder with positioner, Filter + Regulator Fitting Accessories. Power Cylinder has been designed to operate as an actuator in a pneumatic control system, to position the final control element in accordance with the controller signal (3 to 15 psi or 0.2 to 1.0 Kg/cm2 or 4 to 20 mAmp.) Examples Dampers, Butterfly valves, Furnace burner nozzles, ID & FD Fans, etc.

Design Features

- Wide range of sizes & strokes
- Trunnion mounting or end mounting option
- Easy reversal of action
- Linear or special characterised can available
- Choices of rod ends, ball socket joint or fork end with knuckle rod joint
- Low air consumption
- Various accessories option available
- Materials of construction selected to ensure long life

Associated Benefits

- Proven Design
- Reduced Maintenance
- Assured Product Quality

Consumption of Cylinders

Theoretical consumption of cylinders in litres

$$\frac{P \times \frac{\pi}{4}(2D^2-d^2)\times 10^{-6} \times \text{Stroke}}{}$$

• D = Diameter of cycle in mm • d = Diameter of piston rod in mm • p = Gauge pressure in bar

To Convert litres to CFM divided litres by 28.32

$$\text{e.g.} = \frac{500 \text{ litres.}}{28.32}$$

$$= 17.7 \text{ CFM}$$

Thrusts of Cylinders

Theoretical thrust and pulls of cylinders

The thrust which may be obtained from an air cylinder is a function of both the area of the piston and the pressure.

$$\text{Thrust} = \left(\frac{\pi D^2}{40} \times P\right) \text{ Newtons}$$

where • D = Diameter of piston in mm • P = Guage pressure in bar

The Pull obtained will be less than the thrust due to the area occupied by the piston rod, and

$$\text{Pull} = \left(\frac{\pi}{40} D^2 - d^2\right) \times P \text{ Newtons}$$

Where d = Diameter of piston rod in mm

In practice an allowance should be made the frictional losses,
etc., and therefore the figures shown should only be taken as a guide.

To convert Newtons to Kg/cm^2 divide Thrust N by 10

$$\text{e.g.} = \frac{100 \text{ N}}{10} = 10 \text{ Kg / cm}^2$$