Flow Formulas

$1\ gal = 231\ in^3$

$\text{Cylinder } (in^3) = \text{Stroke} \times \text{Effective Area}$

$$\text{Cylinder speed (ft/min)} = \frac{\text{gpm} \times 19.25}{\text{Effective Area } (in^2)}$$

$$\text{gpm (theoretical)} = \frac{\text{Pump rpm} \times (in^3/rev)}{231}$$

$$\text{Volume required (gpm)} = \frac{\text{Volume Displaced} \times 60}{\text{Time (s)} \times 231}$$

$$\text{Volume required (by motor)} = \frac{\text{rpm} \times \text{disp.} (in^3)}{231}$$