

3  $\Delta P = 16 \text{ psi to } 2 \text{ atm}$   
 Power = 29046 Btu/hr  
 Rate = 55061 US gal/hr

$$\eta = 55061 \text{ US gal/hr} \times \theta$$

$$\eta = \frac{\text{Rate} \times \Delta P}{\text{Power}} \quad \therefore \eta =$$

### Conversion

\*  $1 \text{ psi} = 6.894757 \text{ kPa}$

$16 \text{ psi} = x$

$x = 110.316 \text{ kPa}$

\*  $1 \text{ atm} = 101.325 \text{ kPa}$

$x = 110.316 \text{ kPa}$

$x = 1.08 \text{ atm}$

\*  $\Delta \text{Pressure} = 2 - 1.08$

$= 0.92 \text{ atm}$

\*  $1 \text{ Hp} = 2545 \text{ Btu/hr}$

$x = 29046$

$x = 11.412966 \text{ Hp}$

\*  $1 \text{ Hp} = 550 \text{ lbf} \cdot \text{ft/s}$

$11.412966 \times x$

$x = 6,277.131 \text{ lbf} \cdot \text{ft/s}$

\*  $1 \text{ US gal} = 0.0037854 \text{ m}^3$

$55061 \text{ US gal} = x$

$x = 208.4279094 \text{ m}^3$

\*  $1 \text{ m}^3 = 35.315 \text{ ft}^3$

$208.4279 \times x = x$

$x = 7,360.631 \text{ ft}^3$

\*  $1 \text{ atm} = 101.325 \text{ kPa}$

$0.92 \text{ atm} = 93.219 \text{ kPa} \times 1000$

$x = 93219 \text{ Pa}$