



## Maximum Plunger Diameter

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$DP = 2 \times \sqrt{\{FL / (P \times \pi)\}}$  Where: DP = Maximum Diameter of Plunger in inches  
 FL = Rod Load Rating in pounds  
 P = Operating Pressure in pounds per square inch  
 $\pi = \text{Pi} = 3.14159$   
 Maximum Diameter of Plunger [in] =  $2 \times \sqrt{\{\text{Rod Load [lbs]} / (\text{Operating Pressure [PSI]} \times 3.14159)\}}$ ...

## Maximum Operating Pressure from Rod Load

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$PMAX = FRL \times 4 / (DP^2 \times \pi)$  Where: PMAX = Maximum Operating Pressure\* in pounds per square inch  
 FRL = Rated Maximum Rod Load in pounds  
 DP = Plunger Diameter in inches  
 $\pi = \text{Pi} = 3.14159$   
 Maximum Operating Pressure [PSI] = Rated Rod Load [Lbs]  $\times 4 / \{(Plunger Diameter \dots$

## PD Pump Flow Rate

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$BHP = Q \times P / (1714 \times n)$  Where: BHP = Brake Horsepower in Horsepower  
 Q = Flow Rate in gallons per minute  
 P = Pressure in pounds per square inch  
 n = Efficiency expressed as a decimal value\*  
 \*Many positive displacement pumps are assumed to operate at 90% efficiency. A...

## Positive Displacement Pump Brake Horsepower

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$BHP = Q \times P / (1714 \times n)$  Where: BHP = Brake Horsepower in Horsepower  
 Q = Flow Rate in gallons per minute  
 P = Pressure in pounds per square inch  
 n =



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