

Delta Pump Systems has been delivering high performance pumps for moving fluids of every description for over 33 years.

Our reputation is built on our professional approach, engineering expertise and high levels of customer service.

### Engineering

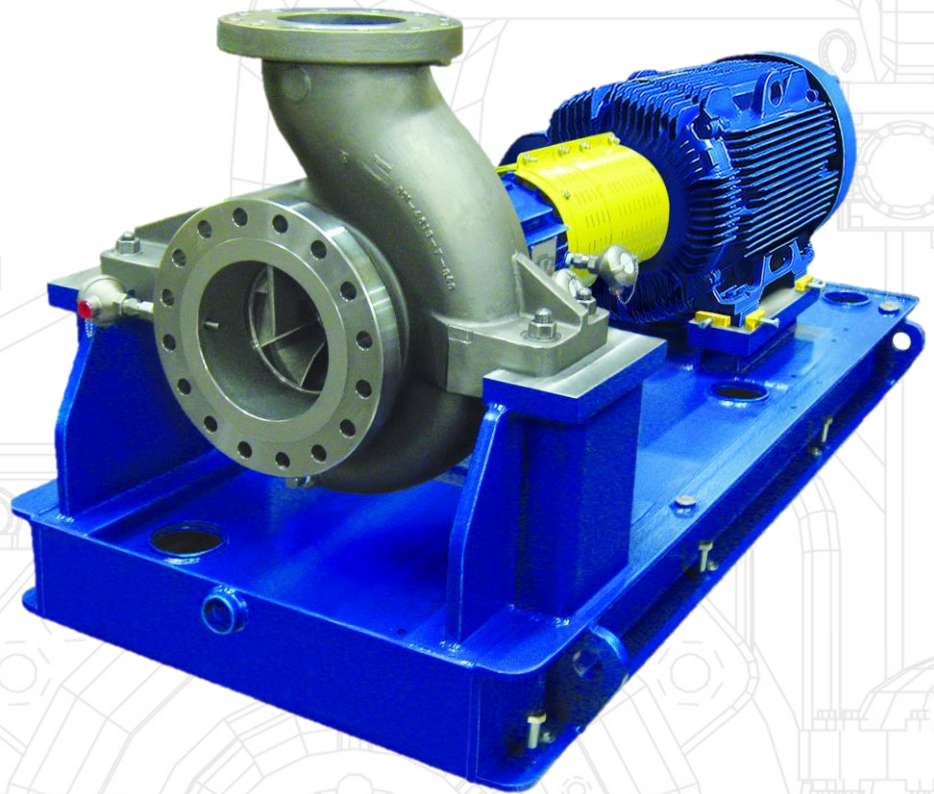
Design and specification assistance with emphasis on efficient engineered solutions.

### Supervision

Installation, start-up and field repairs.

### Parts and Repair Services

Careful evaluation of cost effectiveness.



### Delta Represents Some of the Best Brands in the Industry



### Delta Pump solutions for moving fluid include:

- IMO Screw Pumps
- Houttuin Twin Screw Pumps
- Warren Twin Screw Pumps
- Allweiler Progressing Cavity
- Allweiler Allheat Centrifugal Water Pumps
- API-610 Process Pumps
- RS Diffuser Type Multi-stage Pumps
- Plunger & Piston Pumps
- Mechanical Seals
- Lemco Seal Support Systems
- Safematic Flush Controllers
- Couplings-Power Transmission
- CR Multistage Centrifugal
- Submersible Well Pumps & Motors
- SL & SLV Sump Pumps
- Dosing Chemical Injection Pumps & Systems
- Peerless Centrifugal Pumps
- ANSI Pumps
- Split-Case Centrifugal Pump Vertical Turbine Pumps
- Fire pumps & Systems
- Yeomans - Chicago Solids Handling
- Morris Dry Pit, Solids Handling
- Gear Pumps
- Progressing Cavity Pumps

## Formulas For Reciprocating Pumps

**I know what maximum PSI and maximum GPM I need. What size pump do I need?**

$$\text{Minimum Horsepower Required} = \text{Max GPM} \times \text{Max PSI} \div 1550$$

**I have a pump with no tags or specifications. How do I find out what Gallons Per Minute (GPM) this pump is capable of?**

NOTE: Max RPM in the above equation varies according to type of pump, size of stroke, and other variables. Duplex pumps often run about 100 RPM Max. while triplex pumps will run somewhere between 100 RPM Max and 400 RPM Max.

$$\begin{aligned} &(\text{Plunger Radius} \times \text{Plunger Radius} \times 3.142) = \text{Sq. Inches of Circle} \\ &(\text{Sq. Inches of Circle}) \times (\text{Stroke Length}) \times (\text{Number of Plungers}) \\ &= \text{Cubic Inches of Liquid Per Revolution} \\ &\text{Cubic Inches of Liquid Per Revolution} \div 231 = \text{Gallons Per Revolution} \\ &(\text{Gallons Per Revolution}) \times (\text{Max RPM}) = \text{Gallons Per Minute} \end{aligned}$$

**I have a reciprocating pump and I know what my max rated rod load is (in foot pounds). I also know what size plunger size my pump has. What PSI will my pump produce?**

$$\text{Max. PSI} = \text{Rod Load Rating of Pump} \div (\text{Plunger Radius} \times \text{Plunger Radius} \times 3.142)$$

**I have a reciprocating pump and I know what my max rated rod load is (in foot pounds). I also know what PSI I need. What size plungers do I need?**

$$\text{Min. Plunger Size Needed} = \text{Square Root of } (\text{Rod Load Rating of Pump} \div \text{Max. PSI} \div 3.142)$$

## Formulas For Centrifugal Pumps

**I know what maximum PSI and maximum GPM I need. What size pump do I need?**

$$\text{Minimum Horsepower Required} = ((\text{Max GPM}) \times (\text{Max PSI}) \div 1710) \div (\text{Efficiency in Percentage}) \times (\text{specific gravity of material})$$

**How do I calculate PSI (Pressure in Pounds Per Square Inch) or TDH (Total Dynamic Head)?**

Assuming you have one measurement for your pump but not the other:

$$\begin{aligned} \text{PSI} &= \text{TDH} \div 2.31 \\ \text{TDH} &= \text{PSI} \times 2.31 \end{aligned}$$

**How do I calculate Brake Horsepower Required for a centrifugal pump?**

$$\text{Brake Horsepower Required} = \text{GPM Required} \times (\text{Total Dynamic Head}) \div 3940 \div \text{Efficiency}$$