

# How to Identify and Specify Hydraulic Pumps



## REPLACING AN EXISTING PUMP

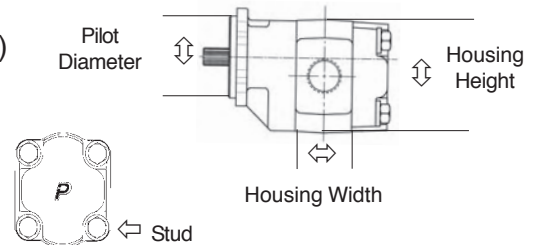
- Identify Series, use chart below if necessary.

SERIES	STUDS	HOUSING HEIGHT	HOUSING WIDTH =	THREADED BEARING
	No. & Diam.		Gear Width + Thrust Plates:	
P1200	10 - 1/2"	7"	1/2"	NO
P1500	4 - 1/2"	5.5"	3/4"	NO
P2100	4 - 9/16"	5.00"	3/4"	NO
P2500	4 - 5/8"	6.25"	3/4"	YES
P3700	8 - 1/2"	7.3125"	1"	YES
P3000/3100	4 - 5/8"	5.5"	3/4"	NO
P5000/5100	4 - 5/8"	6.25"	3/4"	NO
P7500/7600	8 - 5/8"	8.00"	1"	NO

- Gear Width: Housing Width minus Thrust Plates (see chart above)

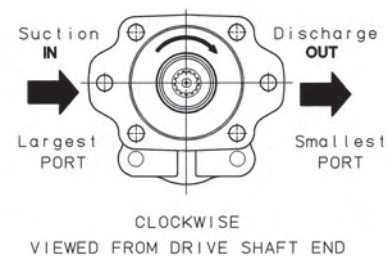
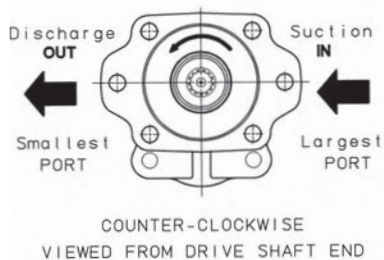
- Shaft Diameter and Configuration (# splines or key size if round)

- Mounting Flange: Bolt Circle Diameter \_\_\_\_\_  
Pilot Diameter \_\_\_\_\_ Number Studs \_\_\_\_\_



- Porting: Inlet NPT \_\_\_\_\_ ODT \_\_\_\_\_ Split Flange \_\_\_\_\_ Location \_\_\_\_\_  
Outlet NPT \_\_\_\_\_ ODT \_\_\_\_\_ Split Flange \_\_\_\_\_ Location \_\_\_\_\_

- Rotation: Looking at the shaft end, belly down, inlet on the left = Clockwise  
Looking at the shaft end, belly down, inlet on the right = Counterclockwise  
Bi-rotation Pumps usually have equal size ports but still must be plumbed correctly.



### Helpful Formulas

- PUMP INPUT HORSEPOWER
- PUMP INPUT TORQUE
- PUMP OUTPUT FLOW RATE
- DISPLACEMENT OF PUMP
- PUMP INPUT SPEED
- GPM USING PTO

$$HP = GPM \times PSI / 1714 / E$$

E = Efficiency

$$T = GPM \times PSI \times 3.06 / RPM / E$$

D = Displacement

$$GPM = D \times RPM \times E / 231$$

$$D = GPM \times 231 / RPM / E$$

$$RPM = GPM \times 231 / D / E$$

$$GPM = Eng \text{ RPM} \times \%PTO \times D \times E / 231$$