

# Pump Selection

HIGH PERFORMANCE

## Choosing the Right Pump



### PUMPS

**Step 1** – Select the hydraulic cylinder that best suits the application. See pages 6-8.

**Step 2** – Select the series of hydraulic pump with adequate oil output and reservoir capacity to power cylinder. See page 41. Check speed/selection chart on page 6.

**Step 3** – Select pump within series with the valve option that is best suited to the cylinder and application. See pages 42-43.

#### CONSIDERATIONS:

What maximum system operating pressure (psi) is required?

What volume of oil delivery is required? (For manual pumps, cu. in. of oil per handle stroke; for powered pumps, cu. in./min. of oil).

Is a single- or 2-speed pump required? (2-speed pumps deliver high oil volume at low pressure for rapid cylinder piston advance, then shift to the high pressure, low volume stage under load).

What is the preferred source of power?

- Manual (hand or foot operated). Provides portability, can be used where electricity or shop air are not available.
- Air/Hydraulic. Uses shop air or a portable air compressor.
- Electric /Hydraulic. What voltage is available? Is a battery operated pump preferred?
- Gasoline Engine/Hydraulic. Powers high-output pumps at remote job sites where air or electricity are unavailable.

Is portability of the pump a factor to consider?

Will the pump be used intermittently, or will it need to provide high-cycle operation? Does the application require that the pump be capable of starting under load?

Is fluid heat build-up a factor in your application? High cycle applications may require a larger capacity oil reservoir for cooling. Also, if you are using large

displacement cylinders, the reservoir capacity must be sufficient to fully extend the piston of the cylinder.

Will the application require large displacement or multiple cylinders? Reservoir size and pump output levels will be factors to consider.

Does the working environment require a pump having a low operating noise (dBA) level?

Must the pump operate in a spark-free environment?

#### MANUALLY-OPERATED HYDRAULIC PUMPS:

**P12, P23, P55** – These single-speed pumps are for use with single-acting cylinders. See page 52.

**P19, P59, P59F, P157, P159, P300, P460** – These 2-speed pumps are used with single-acting cylinders. The 2-speed feature provides high oil volume for fast cylinder piston approach to the work; pump automatically shifts to the high pressure stage. This reduces the number of pump handle strokes required. See pages 53-54.

**P157D, P159D, P300D, P460D** – These 2-speed pumps are used with double-acting cylinders. See page 54.



## AIR/HYDRAULIC PUMPS

Used where air is the preferred energy source or where electricity is not available. Ideal for use in petrochemical, mines or other inflammable or explosive environments.

**PA6 Series** – These single-speed pumps drive single- or double-acting cylinders. See pages 56-59.

**PA9 Series** – These new single-speed pumps drive single-acting cylinders and are ideal for powering portable hydraulic tools. See pages 60-61.

**PA50 Series** – These single-speed pumps drive single- or double-acting low pressure (3,200 psi) cylinders. See pages 64-65.

**PA60** – This 2-speed pump is equipped with a manifold to operate multiple cylinders, and provides a 2-gallon reservoir capacity. See pages 62-63.

**PA64** – Similar to PA60, this 2-speed pump drives single- or double-acting cylinders. See pages 62-63.

**PA172 and PA174** – These “economy” 2-speed pumps drive single- or double-acting cylinders, depending on the model chosen. Provide a low weight to output ratio. See pages 66-67.

**PA462 and PA464 Series** – These 2-speed pumps drive single or double-acting cylinders, depending on the model selected. They offer high speed cylinder piston advance. See pages 68-69.

**PA554** – This 2-speed pump drives single- or double-acting cylinders, delivering a high volume of oil. See pages 68-69.



## ELECTRIC/HYDRAULIC PUMPS

All of the following pumps are 2-speed models, and can be used to drive single- or double-acting cylinders.

**“Quarter Horse” Series** – As their name implies, these pumps feature a  $\frac{1}{4}$  hp electric motor. A battery-powered version is available. Having a low noise level and weighing just 20 lbs., they are ideal for powering portable hydraulic spreaders, nut splitters, pipe flange spreaders and other tools. See pages 70-71.

**PE17 Series** – CSA rated for intermittent duty, these feature a  $\frac{1}{2}$  hp, single phase induction motor with a low noise level (67-81 dBA). Smaller generators and low amperage circuits can be used as a power source. See pages 72-73.

**PE46 Series** – Powered by a  $1\frac{1}{2}$  hp, single phase induction motor, operate at a moderate noise level of 77-81 dBA. CSA rated for intermittent duty. See pages 82-83.

**PE18 Series** – CSA rated for intermittent duty, these feature a  $\frac{1}{2}$  hp, single phase universal motor with a noise level of 85-90 dBA. Provide high performance at a low price. Has low amperage draw. See pages 74-75.

**PE30 Series** – Equipped with a 1 hp, single phase permanent magnet motor, have a noise level of only 82-87 dBA. CSA rated for intermittent duty, and require a relatively low voltage; ideal for use in general construction applications. Roll cage/handle protects the motor and controls. See pages 80-81.

**PE55 and PED25 Series** – The famous Vanguard® pumps have been continually upgraded for 40 years; some of the originals are still in service! Equipped with a  $1\frac{1}{8}$  hp, single phase universal motor, have a high noise level (90-95 dBA). Offer the best weight to performance ratio of any Power Team electric/hydraulic pump. CSA rated for intermittent duty. The PED25 versions are “dual flow” pumps which deliver the same low and high pressures to both valves, and have a noise level of 80-85 dBA. They have a  $1\frac{1}{2}$  hp induction motor. See pages 78-79, 84-85.



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**PE60 Series** – The Vanguard® Supreme® pumps provide trouble-free service in the most severe working environments. Powered by a 1<sup>1</sup>/<sub>8</sub> hp, single phase motor, has a moderate noise level of 80-85 dBA. Start well under load even at the reduced voltages encountered on construction sites. High-output pumps, ideal for use with post-tensioning/pre-stressing jacks and other high-pressure hydraulic tools. See pages 86-87.

**“Custom-built” pumps** – Power Team offers you “assemble to order” electric/hydraulic pumps to suit unique applications. You can choose from pre-engineered, off the-shelf components to customize your pump. See pages 102-105.

**PE21 Series** – Ideal for heavy-duty, extended-cycle applications. Powered by a 1 hp, single phase motor, pump operates a very low noise level of 70 dBA. Pump automatically shuts down in the event of a power failure. CSA rated for intermittent duty. See pages 76-77. “Quiet” Pumps. Our PQ60 and PQ120 series operate at a very low noise level of between 73-78 dBA. The PQ60 has a 2 hp (single phase) motor; the PQ120 has a 3 hp (3-phase) motor. These pumps are designed for heavy-duty, extended cycle operations. CSA rated for intermittent duty. See page 76.

**PE400 Series** – High-flow units deliver a large volume of high pressure oil for heavy construction and maintenance operations employing high tonnage cylinders. The PE400 is powered by a 10 hp, 3-phase motor. Low noise rating of 73-80 dBA. See pages 92-93.



### GASOLINE-DRIVEN HYDRAULIC PUMPS

These two-speed pumps are ideal for use in remote applications, such as construction sites. May be used with single- or double-acting cylinders.

**PG30 Series** – Powered by a 2-cycle, 2 hp Tecumseh engine, these have an integral, protective “roll cage” and adequate reservoir capacity for cylinders up to 100 tons capacity or more. Readily portable; popular in the railroad, rescue and construction markets. See pages 96-97.

**PG55 Series** – With a 4-cycle, 4 hp Briggs & Stratton engine, this pump is based on our popular Vanguard® Series. It has a generous five gallon reservoir capacity. See pages 96-97.

**PG120 Series** – Powered by a 4-cycle, 5.5 hp Honda engine. Has a five gallon reservoir; capable of handling multiple-cylinder lifting tasks. Ideal for the structure moving, pier setting, bridge lifting and concrete contracting industries. See pages 98-99.

**PG4004** – Featuring a 4-cycle, 18 hp Briggs & Stratton engine, this unit has a big 20 gallon reservoir. Rugged steel “roll cage” has a hook on top and swivel casters for ease of mobility. Popular for concrete stressing applications. See pages 98-99.



### HYDRAULIC INTENSIFIER

**HB Series** – Turns low pressure hydraulic pumps into high pressure power sources to operate single-acting or double-acting cylinders and tools such as crimpers, spreaders, cutters, etc. Compact and portable for use inside a utility vehicle aerial bucket or stowing in a vehicle. See page 100.