

# PUMPS

HIGH PERFORMANCE PUMPS

PUMPS



Page  
**...44-47**  
**PUMP SELECTION**



Page  
**VALVES...48-57**



Page  
**P SERIES...58-60**  
Hand Pumps



Page  
**RPS SERIES...61**  
Cylinder and Pump Sets



Page  
**PA6...62-63**  
Air Hydraulic



Page  
**PA6D...64-65**  
Air Hydraulic



Page  
**PA9...66**  
Air Hydraulic



Page  
**PA60...68**  
Air Hydraulic



Page  
**PA50...70**  
Air Hydraulic



Page  
**PA17...72**  
Air Hydraulic



Page  
**PA46/55...74**  
Air Hydraulic



Page  
**PUA, PMA...76-79**  
Air Operated Pump



Page  
**PE10...80**  
Electric Battery



Page  
**PE17...82**  
Electric Hydraulic



Page  
**PE18...84**  
Vanguard Jr.  
Electric Hydraulic



Page  
**PE21...86**  
Electric Hydraulic



Page  
**PED...88**  
Electric Hydraulic



Page  
**PE30...90**  
Vanguard  
Electric Hydraulic



Page  
**PE46...92**  
Electric Hydraulic



Page  
**PE55...94**  
Vanguard® Electric Hydraulic



Page  
**PE60...96**  
Air Hydraulic



Page  
**PQ60...98**  
Quiet Electric Hydraulic



Page  
**PQ120...100**  
Quiet Electric Hydraulic



Page  
**PE400...102**  
Electric Hydraulic



Page  
**PE-NUT...104**  
Electric Hydraulic



Page  
**PG120...105**  
Gasoline Driven



Page  
**PG30/55...106**  
Gasoline Driven



Page  
**PG120-PG400...108**  
Gasoline Driven



Page  
**INTENSIFIER...110**



Page  
**POWER TEAM  
PUSHES BRIDGE  
CONSTRUCTION...111**



Page  
**ASSEMBLE TO ORDER...112**  
Page  
**PUMP ACCESSORIES...116**



# Pump Selection

## HIGH PERFORMANCE

### Choosing the Right Pump



- 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 44-50. 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 36-41.

#### CONSIDERATIONS:

What maximum system operating pressure (bar) is required?

What volume of oil delivery is required? (For manual pumps, cm<sup>3</sup> of oil per handle stroke; for powered pumps, l./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 58.

**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 59-60.

**P157D, P159D, P300D, P460D** – These 2-speed pumps are used with double-acting cylinders. See page 60.



### 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 62-65.

**PA9 Series** – These new single-speed pumps drive single-acting cylinders and are ideal for powering portable hydraulic tools. See pages 66-67.

**PA50 Series** – These single-speed pumps drive single- or double-acting low pressure (225 bar) cylinders. See pages 70-71.

**PA60** – This 2-speed pump is equipped with a manifold to operate multiple cylinders, and provides a 7,6 liter reservoir capacity. See pages 68-69.

**PA64** – Similar to PA60, this 2-speed pump drives single- or double-acting cylinders. See pages 68-70.

**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 72-73.

**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 74-75.

**PA554** – This 2-speed pump drives single- or double-acting cylinders, delivering a high volume of oil. See pages 72-74.



### 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 0,18Kw ( $\frac{1}{4}$  hp) electric motor. A battery-powered version is available. Having a low noise level and weighing just 9 kg, they are ideal for powering portable hydraulic spreaders, nut splitters, pipe flange spreaders and other tools. See pages 80-81.

**PE17 Series** – CSA rated for intermittent duty, these feature a 0,37Kw ( $\frac{1}{2}$  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 82-83.

**PE46 Series** – Powered by a 1,1Kw ( $1\frac{1}{2}$  hp), single phase induction motor, operate at a moderate noise level of 77-81 dBA. CSA rated for intermittent duty. See pages 92-93.

**PE18 Series** – CSA rated for intermittent duty, these feature a 0,37Kw ( $\frac{1}{2}$  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 84-85.

**PE30 Series** – Equipped with a 0,75Kw (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 90-91.

**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 0,83Kw ( $1\frac{1}{8}$  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 1,1Kw ( $1\frac{1}{2}$  hp) induction motor.

See pages 88-89, 94-95.





# Pump Selection

## HIGH PERFORMANCE

### Choosing the Right Pump

#### PUMPS



**PE60 Series** – The Vanguard® Supreme® pumps provide trouble-free service in the most severe working environments. Powered by a 0,82Kw ( $1\frac{1}{8}$  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 96-97.

**“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 112-115.

**PE21 Series** – Ideal for heavy-duty, extended-cycle applications. Powered by a 0,75Kw (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 86-87. “Quiet” Pumps. Our PQ60 and PQ120 series operate at a very low noise level of between 73-78 dBA. The PQ60 has a 1,5Kw (2 hp) (single phase) motor; the PQ120 has a 2,2Kw (3 hp) (3-phase) motor. These pumps are designed for heavy-duty, extended cycle operations. CSA rated for intermittent duty. See page 86.

**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 7,5Kw (10 hp), 3-phase motor. Low noise rating of 73-80 dBA. See pages 102-103.

#### 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, 1,5Kw (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 106-107.

**PG55 Series** – With a 4-cycle, 3Kw (4 hp) Briggs & Stratton engine, this pump is based on our popular Vanguard® Series. It has a generous five gallon reservoir capacity. See pages 106-107.

**PG120 Series** – Powered by a 4-cycle, 4,1Kw (5.5 hp) Honda engine. Has a 19 liter reservoir; capable of handling multiple-cylinder lifting tasks. Ideal for the structure moving, pier setting, bridge lifting and concrete contracting industries. See pages 108-109.

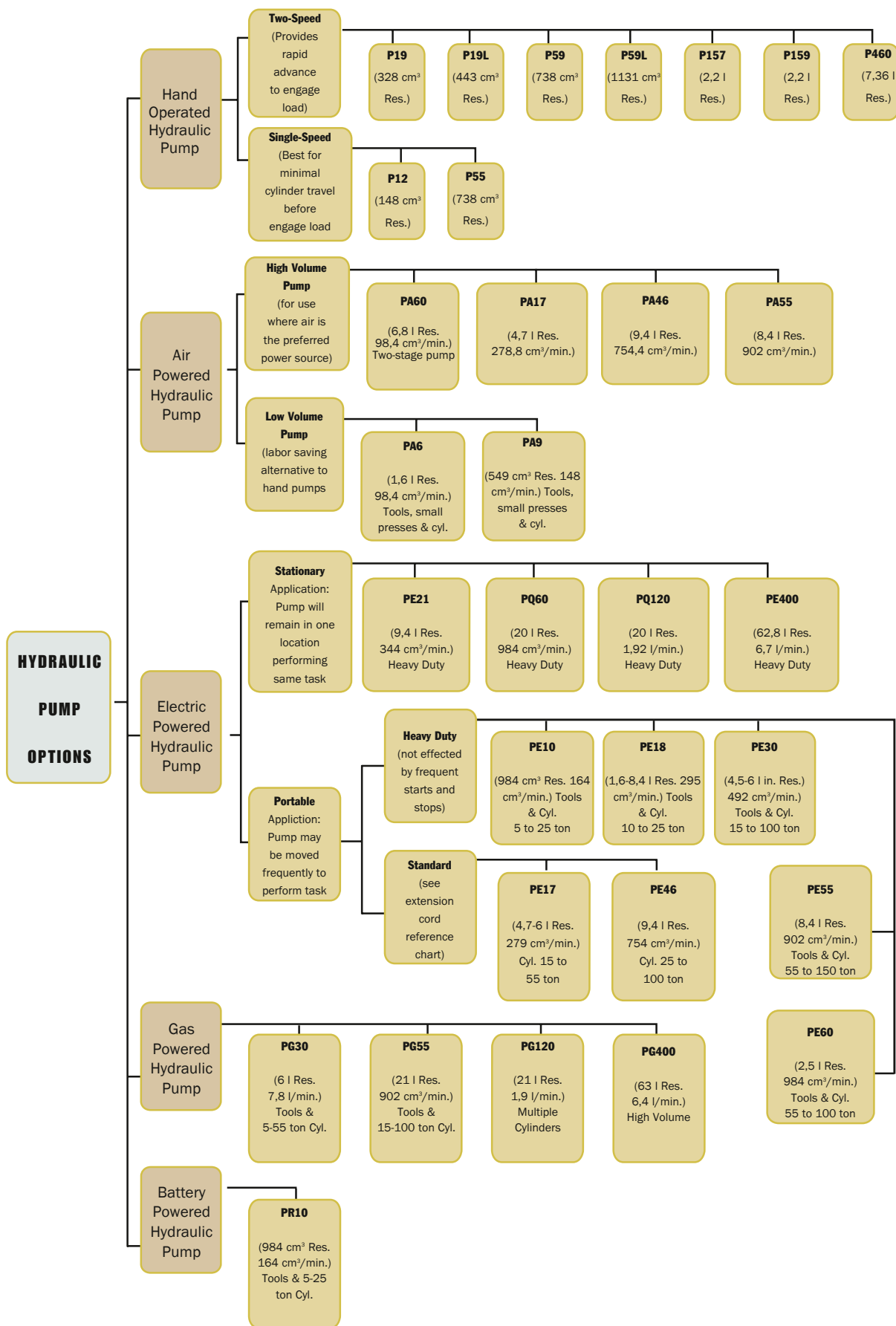
**PG4004** – Featuring a 4-cycle, 13,5Kw (18 hp) Briggs & Stratton engine, this unit has a big 76 liter reservoir. Rugged steel “roll cage” has a hook on top and swivel casters for ease of mobility. Popular for concrete stressing applications. See pages 108-109.

#### 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 110.



## PUMP SELECTION



# Valve Selection

## Choosing the Right Valve

### CONSIDERATIONS:

- Will the valve be used with single or double-acting cylinders?
- Will the valve be mounted on the pump, away from the pump or directly into the hydraulic lines?



- Will the valve be manually operated or is remote control preferred?
- Is independent control of multiple cylinders, or hydraulic tools preferred?
- What directional control and pressure control valve functions are needed for the application?

Basic valve types include manually operated, air or solenoid operated and pilot operated. Special application valves for pre-stressing and post-tensioning are also offered. Consult selection chart on page 50 for listings of all Power Team valves.

## DIRECTIONAL CONTROL VALVES



### 2-WAY, 2-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS):

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes from pump to cylinder; pressure is held from valve to cylinder when pump is shut off.</p>	None	 <p>Oil goes from cylinder to pump; pressure is released to reservoir when motor is turned off.</p>




### 3-WAY, 2-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS)

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes from pump to cylinder and holds when pump is shut off. Return line to reservoir is blocked.</p>	None	 <p>Cylinder retracts, oil returns to reservoir.</p>

### 3-WAY, 3-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS)

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes from pump to cylinder and holds when pump is shut off. Return line to reservoir is blocked.</p>	 <p>Cylinder pressure is held; pump can remain running and oil returns to reservoir.</p>	 <p>All oil is open to reservoir through return line.</p>

## IN-LINE HYDRAULIC VALVES

**Load Lowering Valve** – Provides precision metering for controlled return of the cylinder piston.

**Sequence Valve** – Used when a cylinder in a multiple cylinder application must advance before any other.

**Pressure Reducing Valve** – Permits independent pressure control to two or more clamping systems operated by a single power source.

**Shut-off Valve** – For fine metering of hydraulic oil. Several may be used to control multiple single-acting cylinders.

**Check Valve** – Permits flow of hydraulic oil in one direction only.

**Pressure Relief Valve** – Used at remote locations in a hydraulic circuit where maximum pressure requirements are less than the setting of the basic overload valve in the pump. Protects a hydraulic system against over pressurization.

**Metering Valve** – Restricts surges by restricting flow to a certain level; when flow subsides, valve reopens automatically. For systems using large cylinders or extended lengths of hose.

**Pressure Regulator Valve** – Permits external adjustment of operating pressures at various values below the internal relief valve setting of the pump.

## DIRECTIONAL CONTROL VALVES




### 4-WAY, 2-POSITION

(FOR CONTROL OF SINGLE OR DOUBLE-ACTING CYLINDERS):




POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes to the “extend” side of the cylinder. The oil from the “retract” side returns to reservoir. Cylinder holds with pump shut off.</p>	<p>None</p>	 <p>Oil goes to the “retract” side of the cylinder, oil from the “extend” side returns to reservoir.</p>

### 4-WAY, 3-POSITION

(FOR CONTROL OF DOUBLE-ACTING CYLINDERS)

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes to the “extend” side of the cylinder, oil from the “retract” side returns to reservoir. Cylinder holds with pump shut off.</p>	 <p>Holds pressure even if pump is running. Oil from pump goes through valve, back to reservoir.</p>	 <p>Oil goes to “retract” side of cylinder. Oil from “extend” side returns to the reservoir.</p>

## TYPICAL CENTERS

TANDEM CENTER	CLOSED CENTER	OPEN CENTER
 <p>Cylinder ports are blocked, oil from pump goes to reservoir. Used when pump remains running. Example: gasoline-driven pumps.</p>	 <p>Generally used when running multiple valves in series from one pump.</p>	 <p>Open Center used when holding is not a requirement, as when running two separate hydraulic tools such as cutters and crimpers.</p>

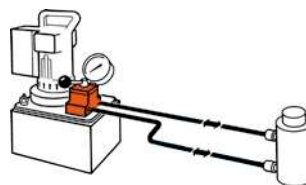




# Valves

## SELECTION INFORMATION

### Pump Mounted Valves



#### PUMP MOUNTED VALVES

## PUMPS/VALVES

Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/Return	Advance/Hold Return	Posi-Check Feature
9500	53	S.A. & D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	no
9501	53	S.A. & D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	no
9502	52	S.A.	Manual	3-way, 3 Pos. Closed Ctr.	—	no	yes	yes
9504	51	S.A. & D.A.	Manual	3/4-way, 2 Pos.	—	yes	yes	no
9506	53	D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9507	53	D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	yes
9511	53	S.A. & D.A.	Manual	4-way, 3 Pos. Open Center	—	yes	yes	no
9512	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9513	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
9516	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	12DC	no	yes	yes
9517	51	S.A.	Manual	2-way, 2 Pos.	—	no	yes	no
9519	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9520	52	S.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9522	56	D.A.	Solenoid	4-way, 3 Pos. Open Center	230	yes	no	no
9523	56	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	230	yes	no	no
9552	55	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	yes	no	no
9553	56	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	24	yes	no	no
9569	56	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9570	56	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9572	56	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	yes	no	no
9576	52	S.A.	Manual	3-way, 3 Pos. Metering Tandem Ctr.	—	no	yes	no
9579	55	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9582	51	S.A.	Manual	3-way, 2 Pos.	—	no	yes	no
9584	51	S.A.	Manual	3-way, 2 Pos.	—	no	yes	no
9589	56	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	115	yes	no	no
9590	56	D.A.	Solenoid	4-way, 3 Pos. Open Center	115	yes	no	no
9592	55	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	yes	no	no
9594	55	S.A. & D.A.	Air	3/4-way, 2 Pos.	—	no	yes	yes
9599	54	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	24	no	yes	yes
9605	54	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	115	no	yes	yes
9609	54	S.A.	Manual	3-way, 3 Pos. Tandem Center	—	no	yes	no
9610	51	S.A.	Auto Pilot Operated	3-way, 2 Pos.	—	yes	no	no
9610A	51	S.A.	Manual	2/3-way, 2 Pos.	—	no	yes	no
9615	56	D.A.	Solenoid	4-way, 3 Pos. Open Center	24	yes	no	no
9628	57	S.A. & D.A.	Manual	Post Tensioning	—	special	no	no
9632	57	S.A. & D.A.	Manual	Post Tensioning	—	special	no	no

\* "S.A." represents single-acting cylinders, "D.A." represents double-acting cylinders

CYLINDER/PUMP MATCHING

Page 6

CYLINDERS

Page 14

PUMP/CYLINDER SETS

Page 61

PUMP ACCESSORIES

Page 116

HYDRAULIC ACCESSORIES

Page 120



## Valves

### HYDRAULIC PUMP MOUNTED

Manual and  
Pilot Operated

700 bar,  $\frac{3}{8}$ " ports, 19 l/min  
max flow rate.

### 3-WAY/2-POSITION MANUAL VALVES

**Applications** – Single-acting cylinders.

**Actuation** – Lever operated.

**Functions** – Cylinder piston “advance”, “hold” and “return”.

**Used on these pumps** – P460, PE17, PE21, PE30, PE46, PE55, PE84, PE90, and PE120 series.

**No. 9582** – 3-way/2-position manual valve. Wt. 1,13 kg.

**No. 9584** – Same as 9582, but has “flipper” control. Wt., 0,8 kg.

### 3-WAY/2-POSITION, PILOT OPERATED AUTOMATIC VALVE

**Application** – Single-acting cylinders. Actuation: Pilot oil.

**Functions** – When pump is started, pilot oil automatically closes valve and directs oil to cylinder; when pump is stopped, valve automatically opens and oil returns to reservoir.

**Used on these pumps** – Furnished with pilot lines and adapters for PA55, PA90, PE30, PE55, PE90 and PE120 series.

**No. 9610** – 3-way/2-position pilot operated automatic valve. Wt., 1,9 kg.

### 2/3-WAY/2-POSITION MANUAL/PILOT OPERATED AUTOMATIC VALVE

**Application** – Manual operation for load lifting and holding with single-acting cylinders; automatic “dump” for operating hydraulic tools.

**Actuation** – Flipper lever/pilot oil.

**Functions** – With lever in closed position, valve will hold the load. When lever is “open”, valve functions as a true automatic “dump” valve.

**Used on these pumps** – Furnished with pilot lines and adapters for PA55, PA90, PE30, PE55, PE90 and PE120 series. For application on other pumps, consult factory.

**No. 9610A** – 2/3-way/2-position manual/pilot operated automatic valve.

Wt., 2 kg.

### 2-WAY/2-POSITION MANUAL VALVE

**Application** – Single-acting cylinders.

**Actuation** – Flipper lever operated.

**Functions** – Cylinder piston “advance”, “hold” and “retract”.

**Used on these pumps** – PE172, PA172 and PE84 series.

**No. 9517** – 2-way/2-position manual valve. Wt., 1,45 kg.

### 3/4-WAY/2-POSITION MANUAL VALVE

**Application** – Single- or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – Pos. 1 – Oil is directed to “advance” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Pos. 2 – Oil goes to “retract” side of cylinder; cylinder “holds” with pump shut off. When using as a 3-way valve for single-acting cylinders, port “A” or “B” is plugged. See note on page 52 regarding plugging of ports and resulting heat build-up.

**Used on these pumps** – P460, PA6D, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**No. 9504** – 3/4-way/2-position manual valve. Wt., 1,9 kg.

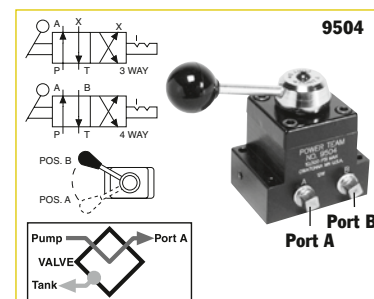
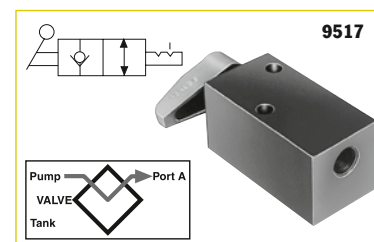
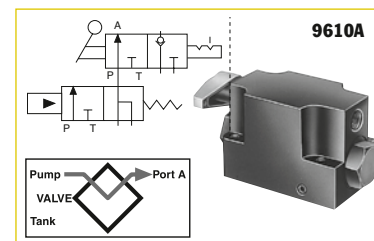
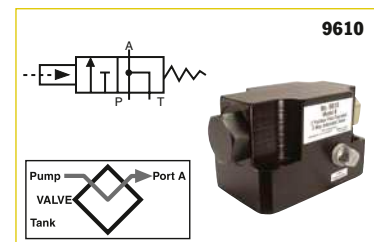
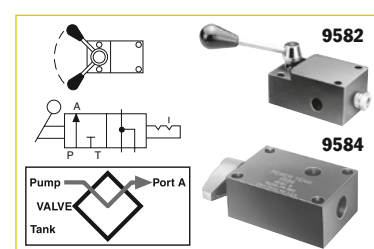
**NOTE:** 9504 can be remote mounted with a 9510 subplate (see page 107).

**NOTE:** A pressure switch and/or gauge may be attached to any valve on this page. (refer to pages 117, 124-125)

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump,  $\frac{1}{2}$ " longer mounting screws are required. For valves 9504, 9584, 9610 and 9610A, order four 12001 cap screws. For valve 9582, order two 12001 and two 10856 cap screws.



PUMPS/VALVES



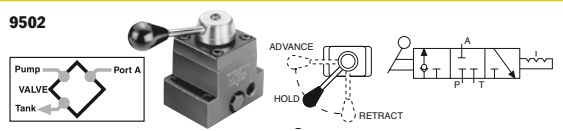
# Valves

## HYDRAULIC PUMP MOUNTED

### 3 Way/3 Position Manual

700 bar, 3/8" ports, 19 l/min max flow rate.

9502



#### 3-WAY/3-POSITION (CLOSED CENTER) NON-INTERFLOW MANUAL VALVE WITH "POSI-CHECK®"

**Application** – Single-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – Pos. 1 – Oil is directed from pump to cylinder and "holds" with pump shut off; line to reservoir is blocked. Pos. 2 – All oil is open to reservoir through tank line.

**Center pos.** – Cylinder pressure is held; pump should be shut off.

**Used on these pumps** – P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 124-125, 117). Also, the 9502 can be remote mounted if a 9510 subplate is used (see page 117).

**No. 9502** – 3-way/3-position (closed center) manual valve. Wt., 1,9 kg.

9520



#### 3-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE WITH "POSI-CHECK®"

**Application** – Single-acting cylinders.

**Actuation** – Lever operated, detent positioned.

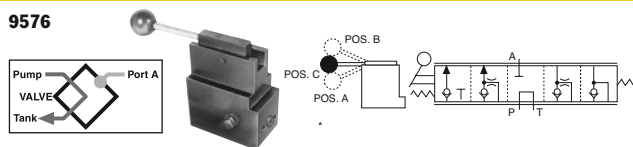
**Functions** – "Advance" "hold" and "return". When shifted to "return" position, pump and cylinder return oil through their own separate return lines, allowing faster retraction of piston. The "Posi-Check" feature guards against pressure loss when shifting from "advance" to "hold" position.

**Used on these pumps** – P460, PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ60, PQ120, PE200, PE400, PG30, PG55, PG120 and PG400 series.

**No. 9520** – 3-way/3-position (tandem center) manual valve. Wt., 2,3 kg.

#### 3-WAY/3-POSITION (TANDEM CENTER) METERING VALVE

9576



**Application** – Single-acting cylinders.

**Actuation** – Lever operated.

**Functions** – Cylinder piston metered "advance", "hold" and metered "return".

**Used on these pumps** – PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ60, PQ120, PE200, PE400, PG30, PG55, PG120 and PG400 series.

**NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 124-125, 117). Also, the 9576 can be remote mounted with a 9510 subplate (see page 117).

**No. 9576** – 3-way/3-position (tandem center) metering valve. Wt., 3,9 kg.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

**NOTE:** Valves 9501, 9502, 9504 and 9507 can have a port blocked or have a closed center position. When a port is blocked and the valve is shifted to the blocked port, the pump will generate excessive heat. An electric or rotary air pump can either be turned off manually or with a pressure switch. Reciprocating air pumps may be adjusted to stall out and stop.

**NOTE:** Gauge ports monitor pump pressure only, not pressure to the hydraulic cylinder(s).

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9502 and 9520, order four 12001 cap screws. For valve 9576, order four 17428 cap screws.



## Valves

### HYDRAULIC PUMP MOUNTED

#### 4 Way/3 Position Manual

700 bar, 3/8" ports, 19 l/min max flow rate.

#### 4-WAY/3-POSITION (TANDEM CENTER) VALVE WITH "POSI-CHECK®"

**Application** – Double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – "Advance", "hold" and "return". The "Posi-Check®" feature guards against pressure loss when shifting from "advance" to "hold" position.

**Used on these pumps** – P460, PA6D, PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PED, PG30, PG55, PG120, PG400, PQ60 and PQ120 series

**No. 9506** – 4-way/3-position (tandem center) manual valve. Wt., 2,3 kg.

#### 4-WAY/3-POSITION (TANDEM CENTER) AND (OPEN-CENTER) MANUAL VALVES

**Application** – Single- or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – The 9500 provides "advance", "hold" and "return". The 9511 (open center) valve can be used if holding is not a requirement, as when running two separate hydraulic tools. Provides "advance" and "return" only.

**Used on these pumps** – P460, PA17, PA46, PA55, PE17\*, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PG30, PG55, PG120, PG400, PQ60 and PQ120 series. \*Does not mount without 251528

**No. 9500** – 4-way/3-position (tandem center) manual valve. Wt., 1,9 kg.

**No. 9511** – Same as 9500, except has an open center.

#### 4-WAY/3-POSITION (CLOSED CENTER) MANUAL VALVE WITH "POSI-CHECK®"

"POSI-CHECK®"

**Application** – Single- or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – Similar to 9506, but is a closed center valve with "Posi-Check®". Generally used to operate multiple cylinders with a single pump. Provides "advance", "hold" and "return". The "Posi-Check®" feature guards against pressure loss when shifting from the "advance" to "hold" position. See note on page 46 regarding plugging of ports and resulting heat build-up.

**Used on these pumps** – P460, PA17, PA46, PA55, PA60, PA6D, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**No. 9507** – 4-way/3-position (closed center) manual valve. Wt., 2,3 kg.

#### 4-WAY/3-POSITION (CLOSED CENTER) MANUAL VALVE

**Application** – Single- or double-acting cylinders.

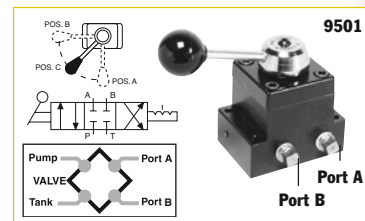
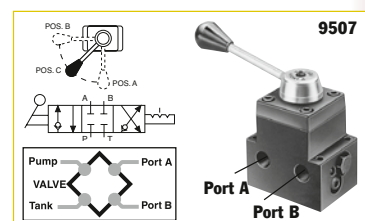
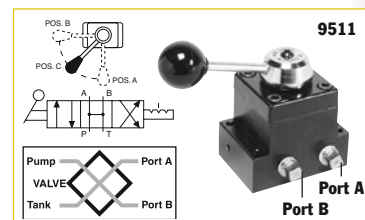
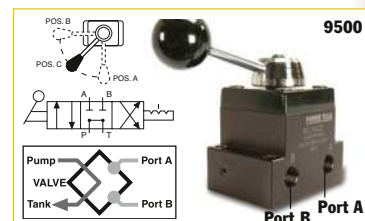
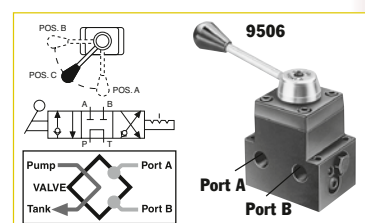
**Actuation** – Lever operated, detent positioned.

**Functions** – "Advance", "hold" and "return". Closed center design makes valve suitable for operating multiple cylinders from a single pump. See note on page 52 regarding plugging of ports and resulting heat build-up.

**Used on these pumps** – P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and P120 series.

**No. 9501** – 4-way/3-position (closed center) valve. Wt., 1,9 kg.

**NOTE:** A pressure switch and/or gauge may be attached to valves 9500, 9501, 9506, 9511 if desired (see pages 124-125, 117). Also, all valves on this page may be remote mounted with a 9510 subplate (see page 117).



PUMPS/VALVES





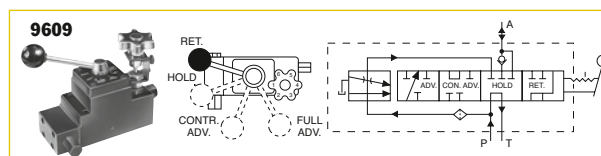


# Valves

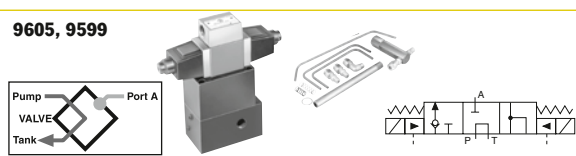
## HYDRAULIC PUMP MOUNTED

Manual and  
Pilot Operated

700 bar, 3/8" ports, 19 l/min  
max flow rate.



9605, 9599



### 3-WAY/3-POSITION (TANDEM CENTER) SOLENOID VALVES WITH "POSI-CHECK®"

**Application** – Single-acting cylinders.

**Actuation** – Solenoid operated: 9605 is 115 volt, 50/60 Hz; 9599 is 24 volt, 50 Hz.

**Functions** – "Advance", "hold" and "return" positions. When in "advance", solenoid "B" is energized and oil goes from pump to cylinder through pressure port. In "return" position, solenoid "A" is energized and oil is directed from cylinder and pump to reservoir. With both solenoids de-energized, in "hold" position, oil from pump is directed back to reservoir while oil is checked in cylinder. The "Posi-Check®" feature holds load when shifting from "advance" to "hold" position.

**Used on these pumps** – Furnished with pilot lines and adapters for PE55, PE30 (carrying handles must be removed) and PE120 series. For application on other models, consult factory.

**No. 9605** – 3-way/3-position (tandem center) solenoid valve, 115 volt, 50 Hz. Wt., 6,4 kg.

**No. 9599** – Same as 9605 except for 24 volt, 50 Hz circuits.

**NOTE:** Valves above are shipped without controls. Use 202777 remote hand control (see page 116). Consult factory for field installation.

### 3-WAY/4-POSITION MANUAL PRESSURE COMPENSATED VALVE

**Application** – Single-acting cylinders. Primarily for use in testing soil, rock, concrete, asphalt and related engineering materials.

**Actuation** – Lever and adjustable, pressure compensated flow control valve.

**Functions** – Cylinder piston "return", "hold", "controlled advance" (pressure compensated) and "advance" (full flow). Will deliver a relatively constant flow regardless of pressure between 70 and 700 bar.

**Used on these pumps** – PA17, PA46, PA55, PE17, PE21, PE30\*, PE46, PE55, PE90, PE200, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.

\* **NOTE:** Adapter kit 252161 is required for mounting this valve to a PE30 or PG30 series pump.

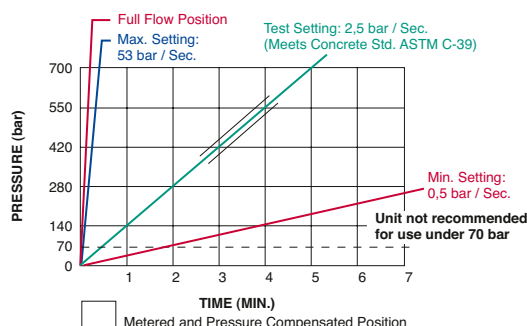
**NOTE:** This valve can be remote mounted with a 9510 subplate (see page 117).

**No. 9609** – 3-way/4-position manual pressure compensated valve. Wt., 4 kg.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting the 9609 valve on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9500, 9501 and 9511, order four 12001 cap screws. For valve 9552, 9506, and 9507, order four 11956 cap screws. For valves 9599 and 9605, order four 251078 cap screws. For valve 9609, order four 10855 cap screws.



### FLOW

Full flow position - 19 l (Ref.)  
Metered advance position  
1 l/min. (Max.)

### PRESSURE

Min. working pressure - 70 bar.  
Max. working pressure - 700 bar.  
Max. valve case pressure - 35 bar.





### 3-WAY/2-POSITION SOLENOID VALVE

**Application** – Single-acting cylinders.

**Actuation** – Solenoid operated, 115 volt, 50 Hz.

**Functions** – Cylinder piston advances when solenoid is de-energized and pump is running. When solenoid is energized, oil is directed to reservoir, and piston returns. For “hold” position, pump is stopped with solenoid de-energized.

**Used on these pumps** – PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**No. 9579** – 3-way/2-position solenoid valve, 115 volt, 50 Hz. Wt., 4,4 kg.

**No. 9569** – Same as 9579, except with 24 volt, 50 Hz solenoid.

**No. 9570** – Same as 9579 except with 230 volt, 50 Hz solenoid.

**NOTES:** Valves above are shipped without control switch. Use 202777 remote hand switch (see page 116). When this valve is mounted, the pump must be equipped with an outlet check valve.

### 3/4-WAY/2-POSITION SOLENOID VALVES

**Application** – Single- or double-acting cylinders. When used with single-acting cylinders, one port should be plugged.

**Actuation** – Solenoid operated.

**Functions** – Oil is directed to “extend” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Oil is directed to “retract” side of cylinder; oil from “extend” side goes to reservoir.

**NOTE:** Cylinder will not “hold” in the “return” position with motor running or shut off.

**Used on these pumps** – 9552, 9572 and 9592 are used with PE17, PE30 (with carrying handles removed), PE46, PE55, PE84, PE90, PE200, PE400, PQ60 and PQ120 series.

**No. 9592** – 3/4-way/2-position solenoid valve, 115 volt, 50 Hz. Wt., 6,6 kg.

**No. 9552** – Same as 9592, except with 230 volt, 50 Hz solenoid.

**No. 9572** – Same as 9592, except with 24 volt, 50 Hz solenoid.

**NOTE:** Valves above are shipped without controls. The 9552, 9572 and 9592 can be used with the 304718 remote hand control. (see page 116)

Note: Ports are  $\frac{1}{4}$ " NPTF.

### AIR ACTUATED VALVE

**Application** – Single- or double-acting cylinders. When used with single-acting cylinders, one port should be plugged.

**Actuation** – Air operated.

**Functions** – Oil is directed to “extend” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Oil is directed to “retract” side of cylinder; oil from “extend” side goes to reservoir.

**NOTE:** Cylinder will not “hold” in the “return” position with motor running or shut off.

**Used on these pumps** – PA17, PA46 and PA55 series.

**No. 9594** – 3/4-way/2-position solenoid valve, air operated (minimum of 4 bar air pressure required). Wt., 5 kg.

**NOTES:** Valve above is shipped without controls. 9594 can be used with the 209593 remote hand control (see page 116). See page 132 for remote mounted models of this valve.



**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump,  $\frac{1}{2}$ " longer mounting screws are required. For valves 9569, 9570 and 9579, order four 10856 cap screws. For valves 9552, 9572 and 9592, order four 12001 cap screws.

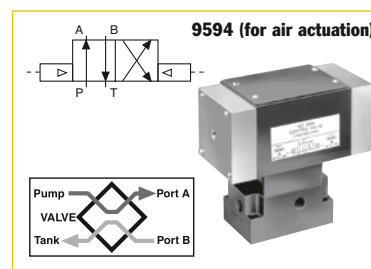
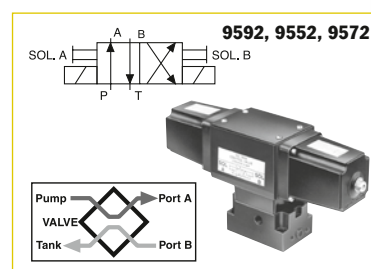
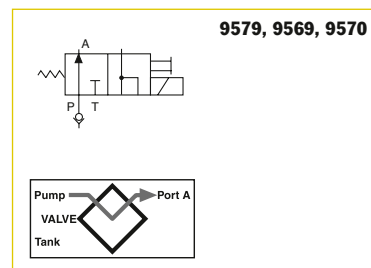
## Valves

### HYDRAULIC PUMP MOUNTED

Solenoid or  
Air Operated

700 bar,  $\frac{3}{8}$ " ports, 19 l/min  
max flow rate.

PUMPS/VALVES





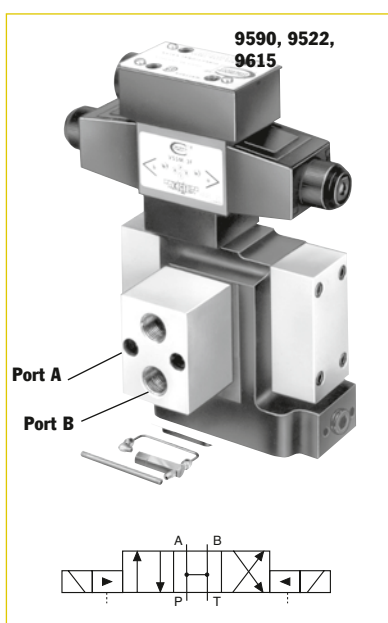
# Valves

## HYDRAULIC PUMP MOUNTED

Solenoid or Air Operated

700 bar, 3/8" ports, 19 l/min max flow rate.

PUMPS/VALVES



### 4-WAY/3-POSITION (OPEN CENTER) SOLENOID VALVE

**Application** – Double-acting cylinders.

**Actuation** – Solenoid operated, 115 volt, 50 Hz.

**Functions** – “Advance”, open center and “return” positions. Cylinder ports and pump port are open to reservoir in “neutral”.

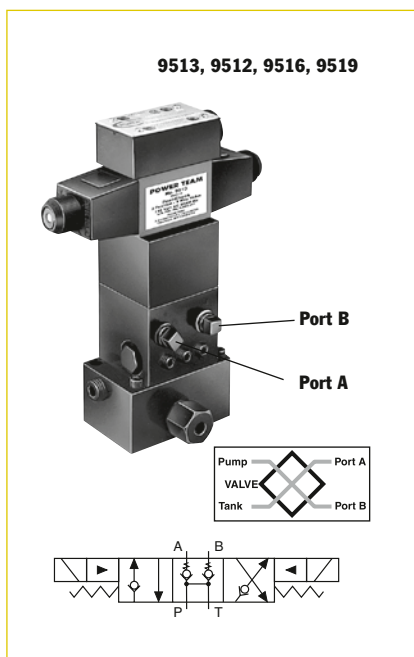
**Used on these pumps** – Furnished with pilot lines and adapters for PE30 (with carrying handles removed), PE55, PE90 and PE120 series. For other pump models, consult factory.

**NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 117, 124-125).

**No. 9590** – 4-way/3-position (open center) solenoid valve, 115 volt, 50 Hz. Wt., 7 kg.

**No. 9522** – Same as 9590 except for 230 volt, 50 Hz.

**No. 9615** – Same as 9590 except for 24 volt, 50 Hz.



### 4-WAY/3-POSITION (TANDEM CENTER) PILOT OPERATED SOLENOID VALVE

**Application** – Double-acting cylinders.

**Actuation** – Solenoid operated, 115 volt, 50 Hz.

**Functions** – “Advance”, “hold” and “return”. The “Posi-Check®” feature holds the load when shifting from the “advance” to the “hold” position.

**Used on these pumps** – PE17, PE21, PE30 (with carrying handles removed), PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**NOTE:** A gauge may be attached if desired (see pages 124-125).

**No. 9513** – 4-way/3-position (tandem center) solenoid valve, 115 volt, 50 Hz. Wt., 8,2 kg.

**No. 9512** – Same as 9513 except for 24 volt, 50 Hz circuits.

**No. 9516** – Same as 9513 except for 12 volt DC. For use on the PG1204S and PG400 series pumps only.

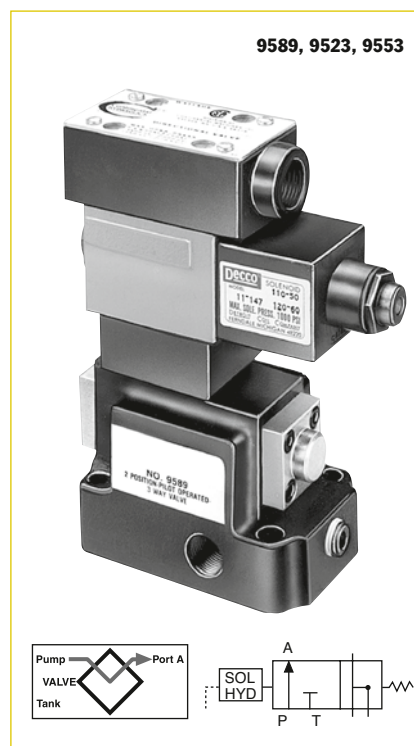
**No. 9519** – Same as 9513 except for 230 volt, 50 Hz circuits. Consult factory for field installation.

**NOTE:** Valves above are shipped without control switch. Use 202777 remote hand switch (see page 116).

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting the 9609 valve on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9513 and 9519, order four 11956 cap screws. For valves 9523, 9553 and 9589, order four 10855 cap screws. For valves 9522, 9590 and 9615, order four 10854 cap screws.



### 3-WAY/2-POSITION (PILOT OPERATED) SOLENOID VALVE

**Application:** Single-acting cylinders.

**Actuation:** Solenoid operated, 115 volt, 50 Hz.

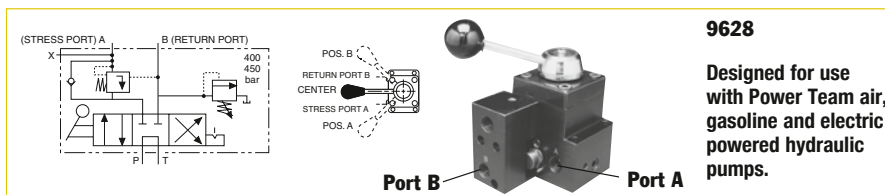
**Function:** “Advance” and “return”.

**Used on these pumps:** Furnished with pilot lines and adapters for PE30 (with carrying handles removed), PE55, PE90 and PE120 series. For other pump models, consult factory. **NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 117, 124-125).

**No. 9589** – 3-way/2-position (pilot operated) solenoid valve, 115 volt, 50 Hz. Wt., 3,7 kg.

**No. 9523** – Same as 9589 except for 230 volt, 50 Hz.

**No. 9553** – Same as 9589 except for 24 volt, 50 Hz.



**9628**

Designed for use with Power Team air, gasoline and electric powered hydraulic pumps.

#### 4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE

**Application** – Single strand, double-acting stressing jacks with Power Wedge seater.

**Actuation** – Lever operated, detent positioned.

**Operation** –

1. With valve in center position, pump is started.
2. Cable is inserted into stressing tool, valve is placed in “A” position. “Pull” portion of stressing tool is pressurized to specified level for proper cable tensioning (“A” port is checked internally, can only be released by building pressure in “B” position).

3. Valve is placed in “B” position, which is pressure controlled and will not exceed 440 bar. “Return” portion of stressing tool is pressurized and will release “A” port when pressure reaches approximately one-half the “A” port pressure. “A” port remains open as long as this pressure differential is maintained.

4. Pump is stopped, valve is placed in “A” position, releasing “B” port pressure.

**Used on these pumps:** PA17\*, PA46\*, PA55, PE17\*, PE21\*, PE30, PE46\*, PE55, PE60, PE84, PE120, PE200, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.

## Valves

### HYDRAULIC PUMP MOUNTED

#### Manual

700 bar, 3/8" ports, 19 l/min max flow rate.

\* These pumps may have reduced first flow stage characteristics due to internal valve restrictions.

**No. 9628** – Post tensioning valve for 700 bar (max.) single-acting/Power Wedge seater.  
Wt., 2,5 kg.

#### “TWIN” 4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE

**Application** – Multi-strand, double-acting stressing jacks with an auxiliary seating cylinder.

**Actuation** – Dual lever operated, detent positioned.

**Operation** –

1. With valves “A” and “B” in center position, pump is started; cable is inserted into stressing tool.
2. Valve “A” is placed in “Stress” position; cylinder extends to tension cable. Pump pressure controls force exerted by tensioning cylinder in this position. “Stress” port is checked internally, and can only be released by building pressure in the valve “B” return position.
3. When desired cable tension is achieved, valve “A” is placed in valve “B” position and valve “B” in “Seat” position. Seating portion of cylinder will be pressurized to seating pressure

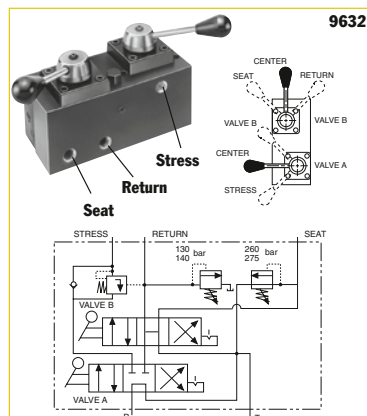
controlled by “Seat” relief valve (factory set to 275 bar).

4. Valve “B” is shifted to “Return” position, which is pressure controlled and will not exceed 155 bar. “Return” portion of stressing tool should be pressurized and will release “Stress” port when pressure reaches 15% of “Stress” port pressure.
5. “Stress” port will remain open and cylinder will return as long as pressure differential is maintained. “Stress” and “Seat” ports are open to reservoir.
6. When cylinder has fully returned, both valves are shifted to “Center” position and oil will be directed to reservoir. Maximum pressure setting for the “Seat” relief valve is 420 bar.

**Used on these pumps:** PA17\*, PA46\*, PA55, PE17\*, PE21\*, PE30, PE46\*, PE55, PE84, PE120, PE200, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.\*

\* These pumps may have reduced first flow stage characteristics due to internal valve restrictions.

**No. 9632** – Post tensioning valve for 700 bar (max.) double-acting systems.  
Wt., 6,2 kg.



**Pump mounted, 6-position detented 5-way manual dual valve. Rated pressure to valve “A” is 700 bar and valve “B” is 420 bar. Case pressure is 35 bar max.**

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9569, 9570 and 9579, order four 10856 cap screws. For valves 9552, 9572 and 9592, order four 12001 cap screws.



# Hand Pump

## HYDRAULIC P SERIES

**197 to 738 cm<sup>3</sup> reservoir**  
Single-Speed  
Single-Acting

Best suited for applications where there is little or no free travel.

- All metal construction, won't burn through in welding environments.
- Formed metal handle provides less flex, and reduces operator fatigue.
- Convenient fill port on P23 and P55 allows pumps to be filled in a horizontal or vertical position.
- Fill cap seal acts as safety valve preventing over-pressurizing of reservoir.
- Relief valve inboard of check valve prevents loads from drifting down.
- Large valve knob gives added control for slowly metering loads down.



P12

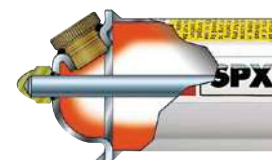
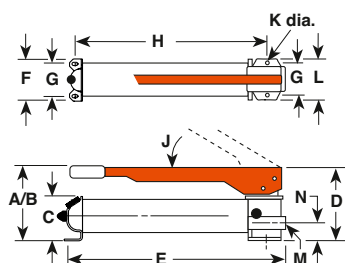


P23



700 bar

P55



Power Team hand pumps, with the angled fill port, have a built in "relief valve" protection system. This system is designed to protect over-pressurization of the reservoir from sudden back pressure. This system also works as a seal to prevent oil leaks.

Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (deg.)	K (mm)	L (mm)	M (in)	N (mm)
P12	101,6	—	—	101,6	342,9	85,7	55,6	—	45°	4,8	85,7	3/8-NPTF	28,6
* P23	158,8	330,2	88,9	141,3	346,1	108,0	82,6	261,6	38°	7,9	120,7	3/8-NPTF	41,3
* The P23 pump maximum pressure is 210 bar only.													
P55	165,1	533,4	88,9	141,3	584,2	108,0	82,6	501,7	38°	7,9	120,7	3/8-NPTF	41,3

For Use With	Order No.	Volume & Pressure					Handle Effort (kg)	Reservoir		Oil Port (in)	Product Weight (kg)
		Speed	Volume per Stroke (cm³)		Maximum Pressure (bar)			Oil Capacity (cm³)	Usable Oil Capacity (cm³)		
			LP	HP	LP	HP					
Single Acting Cylinders*	P12	1	—	1,1	—	700	34	197	148	3/8-NPTF	2,6
	P23	1	—	2,6	—	210	32	390	333	3/8-NPTF	5,5
	P55	1	—	2,6	—	700	66	902	738	3/8-NPTF	7,2

LP = Low Pressure  
HP = High Pressure

\* Pump includes 2-Way Valve





700 bar

P59L

## Hand Pump HYDRAULIC P SERIES

**400 to 1131 cm<sup>3</sup>  
reservoir**  
Two-Speed  
Single-Acting

Pump automatically shifts into the high pressure lift stage upon contact with the load.

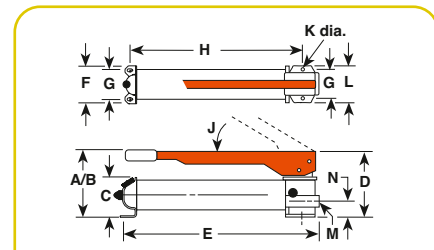
- All metal construction won't burn through in welding environments.
- Two-speed reduces handle strokes so you work faster and easier.
- Formed metal handle provides less flex, and reduces operator fatigue.
- Convenient fill port allows pumps to be filled in a horizontal or vertical position.
- Relief valve inboard of check valve prevents loads from drifting down.
- Large valve knob gives added control for slowly metering loads down.

### P19L/P59L

- More usable oil volume — use with larger or longer stroke cylinders.
- True unloading valve set for 850 PSI (59 Bar) provides more efficiency and lower handle force.
- Link design reduces handle effort by 40%.
- Durable aluminum reservoir, manifold, and end cap.
- Ergonomic non-slip handle grip provides more comfort.
- Spring loaded handle lock incorporated into handle.



P19



Pump No..	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (deg.)	K (mm)	L (mm)	M (in)	N (mm)
P19	139,7	371,5	73,0	115,9	347,7	101,6	82,6	281,0	53°	7,9	101,6	3/8-NPTF	35,7
P19L	141,5	—	—	—	347,7	104,1	82,6	281,0	40°	7,9	104,1	3/8-NPTF	—
P59	177,8	533,4	88,9	127,0	584,2	108,0	82,6	501,7	38°	7,9	120,7	3/8-NPTF	41,3
P59L	177,8	—	—	—	533,4	120,7	82,6	501,7	50°	7,9	120,7	3/8-NPTF	—
P59F	88,9	425,5	88,9	152,4	590,6	108,0	82,6	514,4	—	7,9	114,3	3/8-NPTF	42,9

For Use With	Order No.	Volume & Pressure					Handle Effort (kg)	Reservoir		Oil Port (in)	Product Weight (kg)
		Volume per Stroke (cm³)			Maximum Pressure (bar)			Oil Capacity (cm³)	Usable Oil Capacity (cm³)		
		Speed	LP	HP	LP	HP					
Single Acting Cylinders*	P19	2	5,0	1,2	22	700	45	400	328	<sup>3</sup> / <sub>8</sub> -NPTF	3,0
	P19L	2	4,1	0,9	59	700	37	475	443	<sup>3</sup> / <sub>8</sub> -NPTF	2,3
	P59	2	10,9	2,6	22	700	66	902	738	<sup>3</sup> / <sub>8</sub> -NPTF	7,8
	P59L	2	12	2,6	59	700	44	1131	1082	<sup>3</sup> / <sub>8</sub> -NPTF	4,1
	P59F	2	9,0	2,1	22	700	55	902	738	<sup>3</sup> / <sub>8</sub> -NPTF	6,4

LP = Low Pressure  
HP = High Pressure

\*Pump includes 2-Way Valve





# Hand Pump

## HYDRAULIC P SERIES

**9,5 liter reservoir**  
Two-Speed Single-  
and Double-Acting

Best suited for applications  
where there is little or  
no free travel.

- Rugged all metal construction for strength and durability that won't burn through in welding environments.
- Heavy-duty, formed metal handle provides less flex, and less operator fatigue than round or composite handles.
- Convenient fill port on P23 and P55 allows pumps to be filled in a horizontal or vertical position.
- Fill cap seal acts as safety valve to prevent over-pressurizing of reservoir.
- Relief valve inboard of check valve prevents loads from drifting down.
- Large valve knob gives added control for slowly metering loads down.



P157/P159



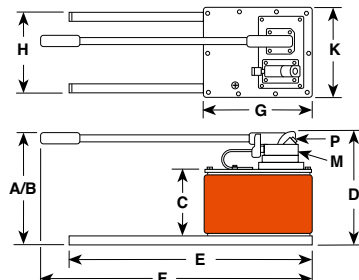
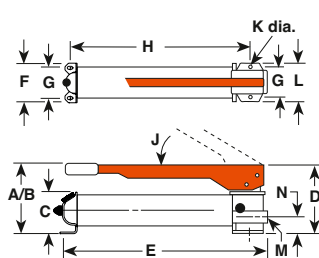
P300



P460



P300 hand pump and 10 ton cylinders used for a vehicle lift.



FK59  
FK159B

**Foot pump conversion kit**  
**No. FK59** - Foot pump conversion kit for use on P55/P59 pumps. Wt., 2,7 kg.  
**No. FK159B** - Foot pump conversion kit for use on P157/P159 and P300/P300D pumps. Wt., 2,7 kg.

Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (deg.)	K (mm)	L (mm)	M (in)	N (mm)	P
<b>P157/P159</b>	197	521	123,8	175	578	98,4	76,2	502	39°	7,9	95,3	3/8-NPTF	57,2	—
<b>P300</b>	210	533	114,3	175	575	215,9	190,5	526	39°	7,9	95,3	3/8-NPTF	57,2	—
<b>P460</b>	283	787	171,5	289	610	743	279,4	229	80°	241,3	—	3/8-NPTF	—	1/4 NPTF

For Use With	Order No.	Speed	Volume & Pressure		Maximum Pressure (bar)		Handle Effort (kg)	Reservoir		Oil Port (in)	Product Weight (kg)
			Volume per Stroke (cm³)	HP	LP	HP		Oil Capacity (cm³)	Usable Oil Capacity (cm³)		
Single-Acting	<b>P157</b>	2	10,7	2,6	97	700	64	2491	2245	3/8-NPTF	11,8
	<b>P159</b>	2	42,6	2,6	22	700	64	2491	2245	3/8-NPTF	11,8
Cylinders*	<b>P300</b>	2	42,6	2,6	22	700	64	5.700	5081	3/8-NPTF	25,1
	<b>P460</b>	2	120,5	4,6	22	700	41	9.500	7539	3/8-NPTF	24,9
Double-Acting	<b>P157D</b>	2	10,7	2,6	97	700	64	2491	2245	3/8-NPTF	13,1
	<b>P159D</b>	2	42,6	2,6	22	700	64	2491	2245	3/8-NPTF	12,7
Cylinders**	<b>P300D</b>	2	42,6	2,6	22	700	64	5.700	5081	3/8-NPTF	25,9
	<b>P460D</b>	2	120,5	4,6	22	700	41	9.500	7539	3/8-NPTF	26,3

LP = Low Pressure  
HP = High Pressure

\* Pump includes 2-Way Valve  
\*\* Pump includes 4-Way Valve

## Cylinder/Pump HYDRAULIC RPS SERIES

### Cylinder and pump combinations

Precision-matched cylinder and pump combinations for wide range of applications.



Note: Actual product may differ from photo.

PUMPS

- Four styles of cylinders to choose from.
  - Sets feature single- or two-speed hydraulic hand pumps.
  - Cylinders of various tonnages with long, medium or short stroke.
  - Includes necessary fittings, couplers and 1,8m hose.
  - Gauge and gauge mounting adapter is recommended.
- (See pages 124-125)



**Optional Storage Box** Storage box for hydraulic cylinder and pump sets. Rugged industrial strength material, strong as steel, never needs painting, won't rust, dent or chip. Weatherproof lid is self sealing and lockable. Molded-in handles, water-tight, one piece bottom and side construction. Strong enough to stand on.  
**No. 350722** – 890mmL x 356mmH x 343mmW, storage box.

Style Of Cyl.	Cyl. Cap. (Tons)	Stroke (mm)	Order No.	Retracted Height (mm)	Handle Strokes Required to Fully Extended Cylinder	Cyl.-No.	Pump No.	Hose No.	Coupler No.	Pump Speed	Prod. Wt. (kg)
	5	133,4	<b>RPS55</b>	216	75	C55C	P12	9756	9798	Single	5,4
	10	54,0	<b>RPS102**</b>	121	32	C102C	P55	9756	9798	Single	11,8
	10	155,6	<b>RPS106**</b>	248	93	C106C	P55	9756	9798	Single	14,5
	10	257,2	<b>RPS1010**</b>	349	154	C1010C	P55	9756	9798	Single	16,1
"C"-	15	104,8	<b>RPS154**</b>	200	81	C154C	P55	9756	9798	Single	13,1
Series	15	155,6	<b>RPS156**</b>	271	118	C156C	P55	9756	9798	Single	15,4
	25	158,8	<b>RPS256**</b>	273	219	C256C	P55	9756	9798	Single	19,3
	25	362,0	<b>RPS2514**</b>	476	285*	C2514C	P159	9756	9798	Two	28,4
	55	158,8	<b>RPS556**</b>	283	268*	C556C	P159	9756	9798	Two	37,5
	100	168,3	<b>RPS1006</b>	337	428*	C1006C	P460	9756	9798	Two	58,3
"Shorty"	30	61,9	<b>RPS302**</b>	117	61*	RSS302	P59	9756	9798	Two	18,1
	50	60,3	<b>RPS552**</b>	127	89*	RSS502	P59	9756	9798	Two	22,7
	100	57,2	<b>RPS1002**</b>	140	172*	RSS1002	P59	9756	9798	Two	36,7
"Center-Hole"	20	76,2	<b>RPS203H**</b>	154	80	RH203	P55	9756	9798	Single	18,3
Alum.	55	155,6	<b>RPS556A**</b>	273	262*	RA556	P159	9756	9798	Two	21,3

\* Base on 50% if the stroke being made at low-pressure and 50% of the strokes at high pressure.

\*\* Add suffix "B" (example: RPS102B, RPS203HB, etc.) to order set with optional storage box shown above.





# Air Pump

## HYDRAULIC PA6 SERIES

90 cm<sup>3</sup>/ min  
Single-Acting

Compact, lightweight  
and portable. Single-Speed  
pumps designed to drive  
single-acting cylinders.

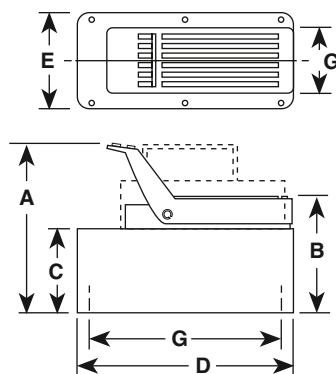
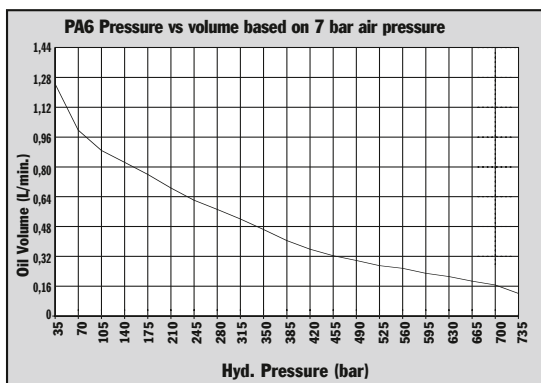


- Usable in hazardous areas:  
per ATEX II, 2 GDc T5
- The power unit of choice for major  
manufacturers of auto body, frame  
straighteners and other equipment.
- Operate at 3-8 bar shop air  
pressure at the pump.
- dBA 85 at 700 bar.
- Serviceable pump motor is  
not a “throw away”, providing  
economical repair.
- Permanently vented reservoir cap.
- Internal relief valve protects  
circuit components, air inlet filter  
protects motor.

PA6



700 bar



Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)
PA6	197	149	111	241	127	102 x 229
PA6A	197	149	111	241	127	102 x 229
PA6AM	197	149	111	241	127	102 x 229
PA6M	197	149	111	241	127	102 x 229
PA6R	197	149	111	241	127	102 x 229
PA6RM	197	149	111	241	127	102 x 229
PA6M-1	200	152	111	321	187	—
PA6AM-2	254	197	171	292	241	203 x 254
PA6-2	260	203	178	292	241	130 x 181

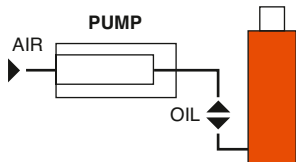


PA6M-1



PA6-2

#### Typical Set-up Hook-up for single-acting cylinders



Description	Order No.	Air Supply Req'd (bar)	Reservoir Cap. (l)	Reservoir Usable (l)	Oil Port (in)	Prod. Wt. (kg)
Base model pump with high density polyethylene reservoir.	PA6	3-8	1,7	1,6	$\frac{3}{8}$ -NPTF	6,3
PA6 with externally adjustable relief valve.	PA6A	3-8	1,7	1,6	$\frac{3}{8}$ -NPTF	6,8
PA6A with metal reservoir.	PA6AM	3-8	1,7	1,6	$\frac{3}{8}$ -NPTF	7,7
PA6, except has metal reservoir.	PA6M	3-8	1,7	1,6	$\frac{3}{8}$ -NPTF	8,2
PA6 with 3,7m remote control.	PA6R	3-8	1,7	1,6	$\frac{3}{8}$ -NPTF	9,3
PA6R, except has metal reservoir.	PA6RM	3-8	1,7	1,6	$\frac{3}{8}$ -NPTF	9,8
PA6, except has 3,8 l metal reservoir.	PA6M-1	3-8	3,8	3,0	$\frac{3}{8}$ -NPTF	10,7
PA6, except has 7,6 l high density polyethylene reservoir.	PA6-2	3-8	7,6	7,3	$\frac{3}{8}$ -NPTF	11,1
PA6, except has 9,5 l metal reservoir.	PA6M-2	3-8	9,5	9,1	$\frac{3}{8}$ -NPTF	14,5







# Air Pump

## HYDRAULIC PA6D SERIES

**98 cm³/min.**  
Double-Acting

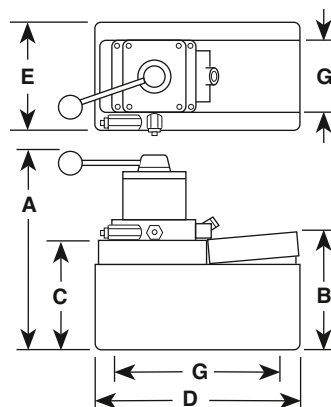
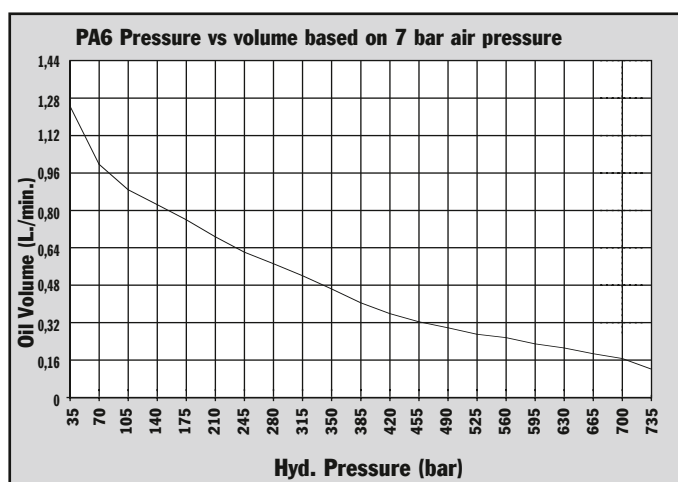
Compact, lightweight and portable single-speed pump for driving double-acting cylinders.

- Usable in hazardous areas: per ATEX II, 2 GDc T5
  - Operate at 3-8 bar shop air pressure at the pump.
  - Internal relief valve protects circuit components, air inlet filter protects motor.
  - Serviceable pump motor is not a “throw away”, providing economical repair.
  - Permanently vented reservoir cap.
  - dBA 85 at 700 bar for all PA6 pumps.
- \* input air port inside thread size 1/4"NPT



PA6D

700 bar

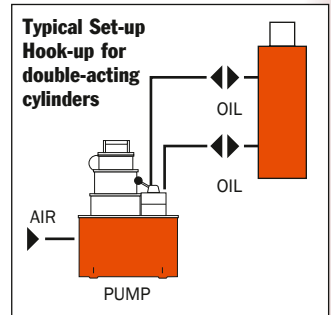


Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)
PA6D	264	149	111	241	127	102 x 229
PA6DM	264	149	111	241	127	102 x 229
PA6DM-1	279	146	111	321	187	—
PA6D2	324	203	178	287	235	130 x 181
PA6DM-2	318	197	171	292	241	203 x 254





PA6D pump, DG100 digital pressure gauge and 25 ton cylinder used in a test fixture.



Description	Order No.	Valve No.	Air Supply Req'd (bar)	Reservoir Cap. (l)	Usable (l)	Oil Port (in)	Prod. Wt (kg)
Base model pump with high density polyethylene reservoir.	<b>PA6D</b>	9504, 3-way/4-way	3 - 8	1,7	1,6	$\frac{3}{8}$ -NPTF	8,3
PA6D, except has metal reservoir.	<b>PA6DM</b>	9504, 3-way/4-way	3 - 8	1,7	1,6	$\frac{3}{8}$ -NPTF	9,2
PA6D, except has 3,8 l metal reservoir.	<b>PA6DM-1</b>	9504, 3-way/4-way	3 - 8	3,8	3,0	$\frac{3}{8}$ -NPTF	12,7
PA6D, except has 7,6 l, high density polyethylene reservoir.	<b>PA6D2</b>	9504, 3-way/4-way	3 - 8	7,6	7,3	$\frac{3}{8}$ -NPTF	13,0
PA6D, except has 9,5 l metal reservoir.	<b>PA6DM-2</b>	9504, 3-way/4-way	3 - 8	9,5	9,1	$\frac{3}{8}$ -NPTF	16,4

CYLINDER/PUMP MATCHING

Page 6

CYLINDERS

Page 12

PUMP/CYLINDER SETS

Page 61

PUMP ACCESSORIES

Page 116

HYDRAULIC ACCESSORIES

Page 120



# Air Pump

## HYDRAULIC PA9 SERIES

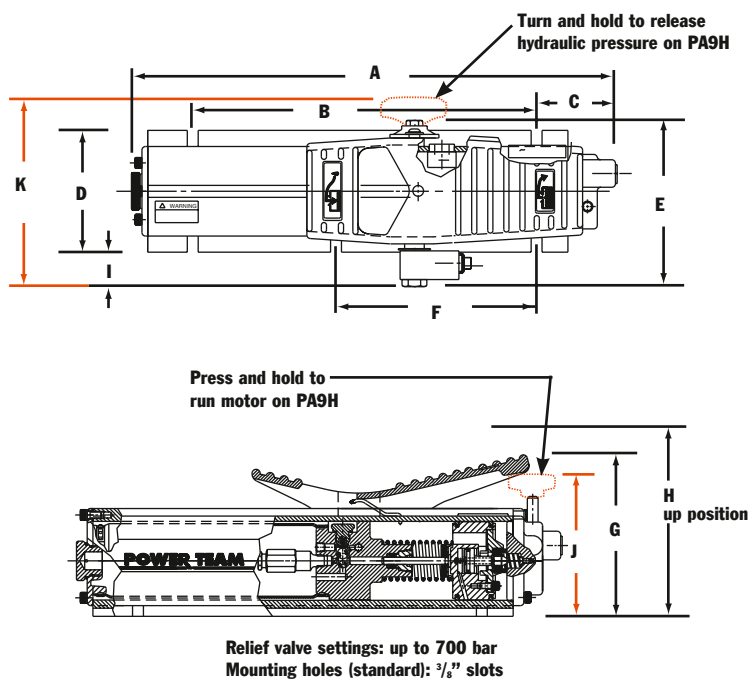
**148 cm³/min.**  
Single-Acting

Ideal for powering single-acting cylinders and portable hydraulic tools.

PUMPS

- Easier to operate than a hand pump, giving you the speed you need at an affordable price.
  - Easy and economical to service; not a “throw away” unit.
  - Unique bladder design for all-position operation and storage.
  - Operates on 3-8 bar shop air, at 570 l.
  - Hard-coat anodized aluminum housing.
  - Oil filler with integral safety relief minimizes chance of damage to reservoir bladder if overfilling occurs.
- \* input air port inside thread size 1/4”NPT

**PA9 Foot Control**



Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)
PA9	432	305	71,4	108	149	178	142	178	28,2	—	—
PA9H	432	305	71,4	108	—	178	—	178	28,2	122	170



PA9  
Foot Control



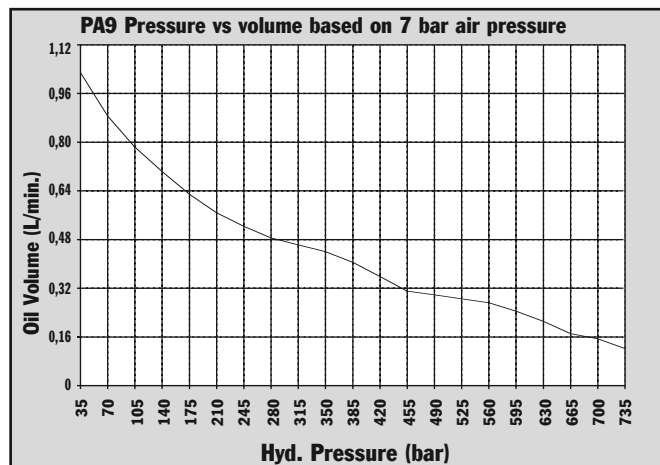
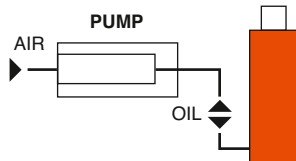
PA9H  
Hand Control

700 bar



PA9H Hand Control Pump as used in a straightening press.

Typical Set-up  
Hook-up for single-acting cylinders



For Use with Cyl. Type	Order No.	Air Supply Req'd (bar)	Reservoir Cap. (cm³)	Usable (cm³)	Oil Port (in)	Max. Pressure Output (bar)	Prod. Wt. (kg)
Single-Acting	PA9	3 - 8	574	549	3/8-NPTF	700	6,8
Single-Acting	PA9H	3 - 8	574	549	3/8-NPTF	700	6,8

CYLINDER/PUMP MATCHING

Page 6

CYLINDERS

Page 12

PUMP/CYLINDER SETS

Page 61

PUMP ACCESSORIES

Page 116

HYDRAULIC ACCESSORIES

Page 120



# Air Pump

## HYDRAULIC PA60 SERIES

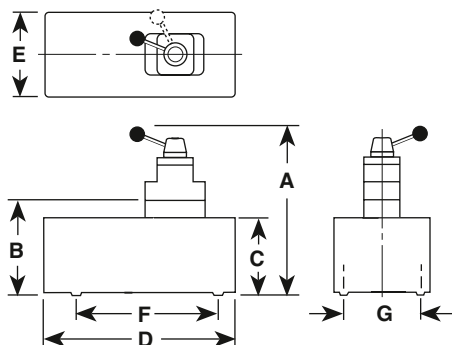
**98 cm³/min.**  
Two-Speed

Two-speed pump for rapid oil delivery at low pressure quickly advances cylinder or tool.

- Equipped with air pressure regulator, air filter and lubricator.
- Serviceable air motor for economical repair.
- Internal relief valve protects circuit components.
- Permanently vented reservoir cap.



PUMPS

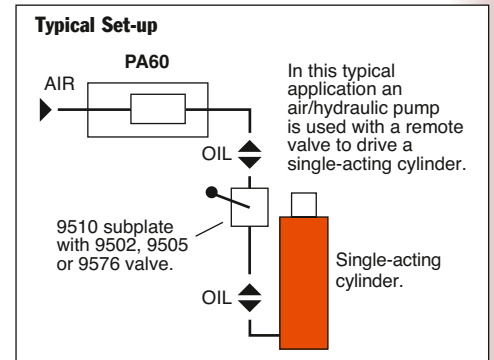
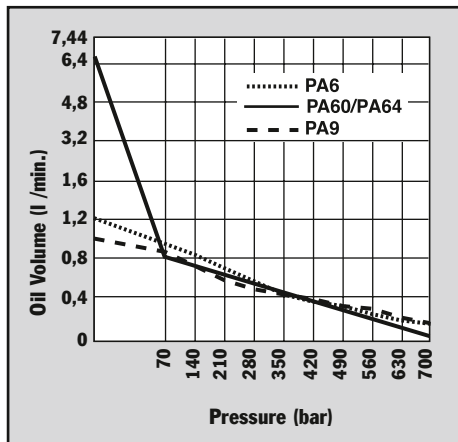


The PA60 used in a workholding environment.

Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Max. Pressure Output bar	Oil Del. * (l/min)				
									0 bar	7 bar	70 bar	350 bar	700 bar
PA60	—	240	206	362	244	181	130	700	6,24	5,6	0,8	0,19	0,1
PA64	362	—	206	362	244	181	130	700	6,24	5,6	0,8	0,19	0,1

\* Typical delivery. Actual flow will vary with field conditions.





Description	Order No.	Valve No.	Valve Function	Air Supply Req'd bar	Reservoir Cap. (l)	Usable (l)	Oil Port (in)	Prod. Wt (kg)
For use with remote valves.	<b>PA60</b>	Manifold	—	3 - 8	7,6	6,8	3/8-NPTF	24,5
For use with single- or double-acting cylinders.	<b>PA64</b>	9507, 3-way/4-way	Advance Hold Return	3 - 8	7,6	6,8	3/8-NPTF	24,5

**Notes:** Air inlet port 1/4" NPTF. Requires 570 l at 7 bar shop air pressure at the pump.







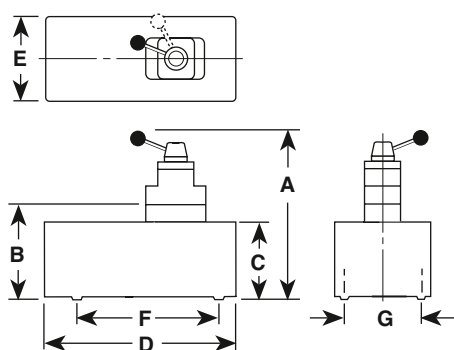
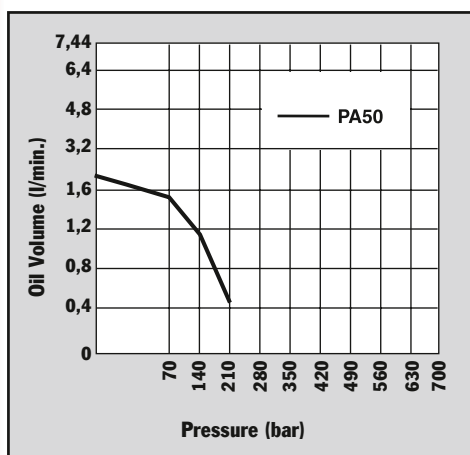
# Air Pump

## HYDRAULIC PA50 SERIES

**460 cm<sup>3</sup>/min.**  
Low Pressure

Single-speed, low pressure  
(220 bar) output pumps.

PUMPS

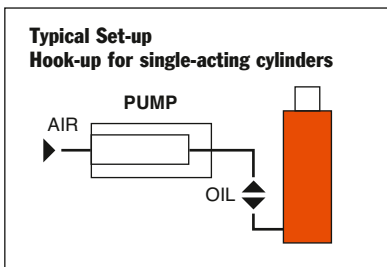


Pump No.								Max. Pressure Output bar	Oil Del. * (l/min)				
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)		0 bar	7 bar	70 bar	220 bar	
PA50, PS50R													
PA50M, PA50RM	197	149	111	241	127	—	102 x 229	220	2,05	1,76	1,41	0,45 †	
PA50R2	260	203	178	292	241	—	130 x 181	220	2,05	1,76	1,41	0,45 †	
PA50D	264	149	111	241	127	229	102	220	2,05	1,76	1,41	0,45 †	

\* Typical delivery. Actual flow will vary with field conditions.

† PA50 Series measured at 220 bar.

- Serviceable air motor for economical repair.
  - Air inlet filter protects motor. Filter in outlet port protects against contaminated systems.
  - Assorted reservoirs to suit your application's requirements.
- \* input air port inside thread size 1/4"NPT



For use with Cyl. Type	Description	Order No.	Valve No.	Air Supply Req'd bar	Reservoir Cap. (l)	Usable (l)	Oil Port (in)	Prod. Wt (kg)
Single-Acting	Base model pump with high density polyethylene reservoir.	<b>PA50</b>	—	3 - 8	1,7	1,6	<sup>3</sup> / <sub>8</sub> -NPTF	6,4
Single-Acting	PA50, except has metal reservoir.	<b>PA50M</b>	—	3 - 8	1,7	1,6	<sup>3</sup> / <sub>8</sub> -NPTF	7,3
Single-Acting	PA50, except has 3.7 meter 12 foot remote control.	<b>PA50R</b>	—	3 - 8	1,7	1,6	<sup>3</sup> / <sub>8</sub> -NPTF	8,4
Single-Acting	PA50R, except has metal reservoir.	<b>PA50RM</b>	—	3 - 8	1,7	1,6	<sup>3</sup> / <sub>8</sub> -NPTF	9,3
Single-Acting	PA50R, except has 7.6 liter reservoir 2 gallon reservoir.	<b>PA50R2</b>	—	3 - 8	7,6	7,3	<sup>3</sup> / <sub>8</sub> -NPTF	12,9
Single- and Double Acting	PA50, except designed to operate either single- or double-acting systems. Valve function: Advance/Return.	<b>PA50D</b>	9504, 3-way/ 4-way	3 - 8	1,7	1,6	<sup>3</sup> / <sub>8</sub> -NPTF	8,3

**Notes:** Air inlet port <sup>1</sup>/<sub>4</sub>" NPTF. Requires 570 l at 7 bar shop air pressure at the pump.





## Air Pump

### HYDRAULIC PA17 SERIES

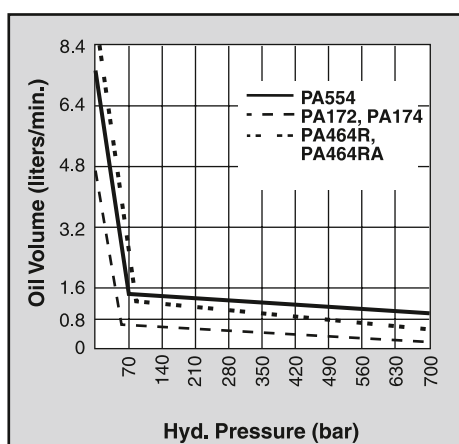
**279 cm<sup>3</sup>/min.**  
Two Speed

Rotary-style air motor. Use where air is preferred source of energy, where electricity is unavailable or sparks are a concern.

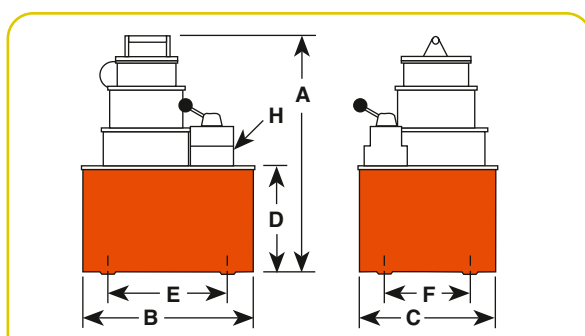
- Two-speed operation for high speed cylinder advance.
- Durable 7,6 liter thermoplastic reservoir. (Metal reservoir conversion kits are available.)
- Features air motor capable of starting under full load.



The PA17 used with a flange spreader

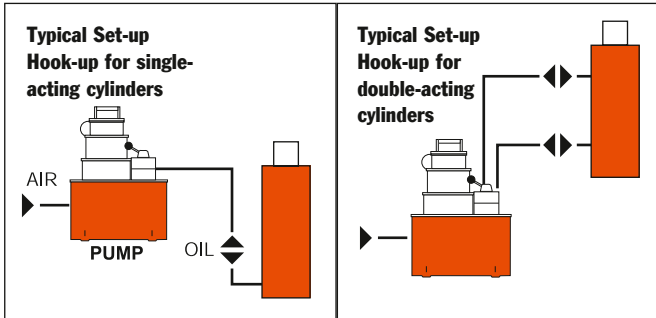


PA172



Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	H (mm)	Max. Pressure Output bar	Oil Del. * (l/min)				
									0 bar	7 bar	70 bar	350 bar	700 bar
<b>PA172</b>	359	289	235	178	181	130	3/8-NPTF	700	4,6	3,8	0,4	0,4	0,3
<b>PA174</b>	359	289	235	178	181	130	3/8-NPTF	700	4,6	3,8	0,4	0,4	0,3

\* Typical delivery. Actual flow will vary with field conditions.



For use with Cyl. Type	Description	Order No.	Valve No.	Valve Function	Air Supply Req'd bar	Reservoir Cap. (l)	Usable (l)	Prod. Wt (kg)
Single-Acting	Base model pump with 7.6 liter 2 gallon thermoplastic reservoir.	<b>PA172</b>	9517, 2-way	Advance/Return*	3 - 8	7,6	4,7	18,1
Single- and Double Acting	PA172, except has 9500 valve for use with single- or double-acting cylinders.	<b>PA174</b>	9500, 4-way	Advance Hold Return*	3 - 8	7,6	4,7	18,6

**Note:** Requires 570 l at 6 bar shop air pressure at the pump. dBA 85/90 at 700 bar.

\* Holds pressure in advance position when valve motor is shut off, in return position with motor running. Pump will build pressure when motor is shut off, oil returns to reservoir.





# Air Pump

HYDRAULIC PA46/55 SERIES

Up to 150 ton Cylinders  
754-902 cm<sup>3</sup>/min.  
Two Speed

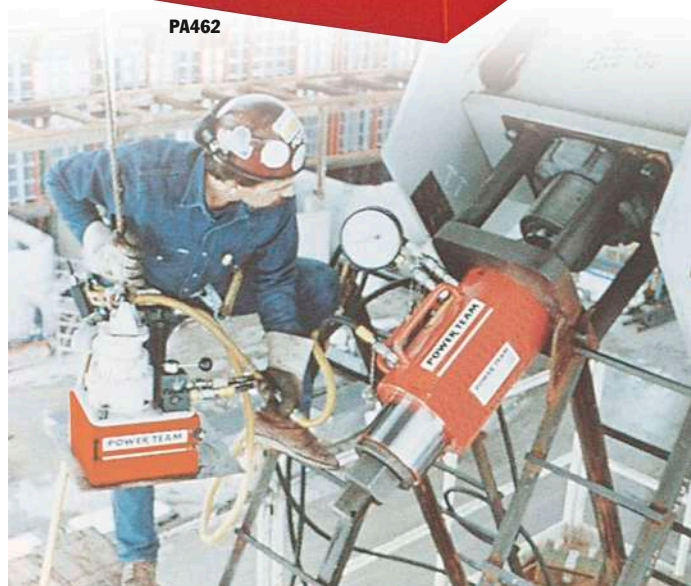
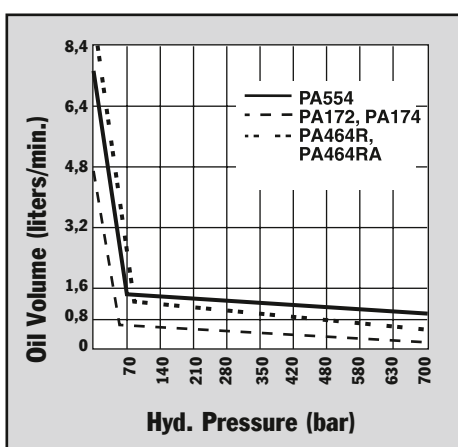
Rotary-style air motor.  
Use where air is the preferred  
source of energy.

- 2,2 kW motor starting under full load.
- Two-speed operation for rapid cylinder advance.
- Models available with full remote control over advance and return, (except PA554).
- Tandem center valve holds the load when pump is shut off.

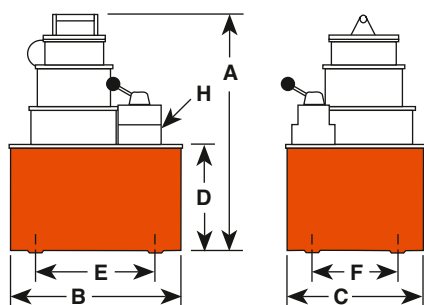


700 bar

PUMPS



PA554 pump and RH2008 Center Hole cylinder used to tension cables.



Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	H (mm)	Max. Pressure Output bar	Oil Del. * (l/min)				
									0 bar	7 bar	70 bar	350 bar	700 bar
PA462	381	292	241	178	254	203	3/8 NPTF	700	7,4	7,2	0,8	0,8	0,7
PA464	381	292	241	178	254	203	3/8 NPTF	700	7,4	7,2	0,8	0,8	0,7
PA464R	381	292	241	178	254	203	3/8 NPTF	700	7,4	7,2	0,8	0,8	0,7
PA464RA	381	292	241	178	254	203	3/8 NPTF	700	7,4	7,2	0,8	0,8	0,7
PA554	483	292	241	178	254	203	3/8 NPTF	700	7,4	7,2	1,3	1,1	0,7

\* Typical delivery. Actual flow will vary with field conditions.

**Note:** Four mounting holes 1/2" - 20

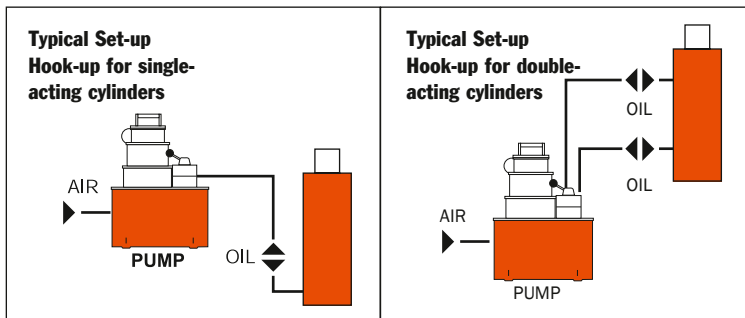




PA464R



PA554



For use with Cyl. Type	Description	Order No.	Valve No.	Valve Function	Air Supply Req'd bar	Reservoir Cap. (l)	Usable (l)	Prod. Wt (kg)
Single-Acting	Base model pump with 9,5 l steel reservoir.	<b>PA462</b>	9584, 2-way	Advance/Hold/ Return	3 – 8	9,5	9,4	27,2
Single- and Double Acting	PA462, except has 9500 valve capable of running 2 single-acting cylinders or one double-acting cylinder.	<b>PA464</b>	9500, 4-way	Advance/Hold/ Return*	3 – 8	9,5	9,4	27,6
Single- and Double Acting	PA462 with air actuated valve for full remote control over advance and return. Includes 3,7m remote control.	<b>PA464R†</b>	9594, 4-way	Advance/Hold/ Return	3 – 8	9,5	9,4	35,3
Single- and Double Acting	PA464R except, has automatic dump feature. 7,6 m remote control.	<b>PA464RA</b>	**† 4-way	9594, Return*	Advance/Hold/	3 – 8 9,5	9,4	35,8
Single- and Double Acting	High performance pump with 9,5 l steel reservoir.	<b>PA554</b>	9500, 4-way	Advance/Hold/ Return*	3 - 8	9,5	8,4	32,0

**Note:** Requires 570 l at 6 bar shop air pressure at the pump. dBA 85/90 at 700 bar.

\* Holds when motor is shut-off and valve is in “advance” position.

† The PA464RA has an “automatic dump” feature. Pressure is not held when operator releases “advance” or “return” button. PA464R will “hold” only in the “advance” position with the motor shut off.

\*\* Not to be used for lifting.

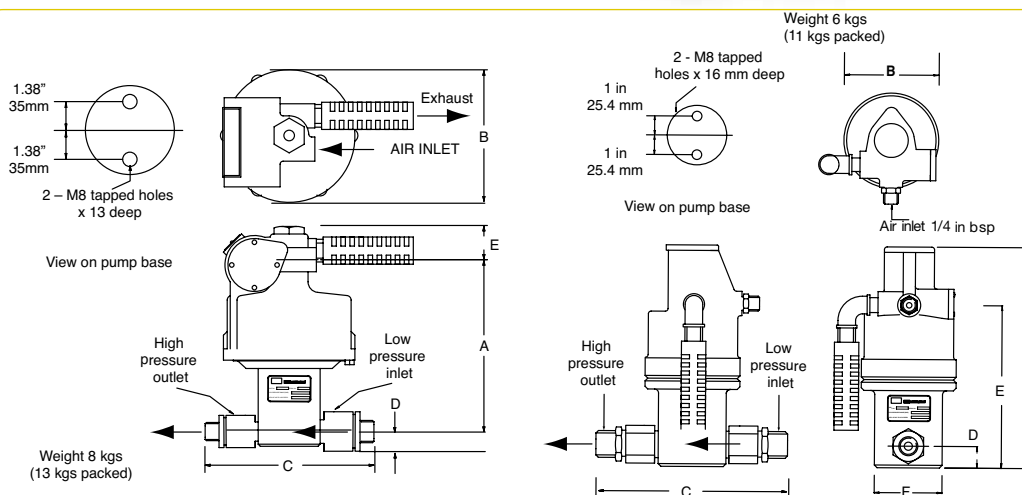




# Air Operated PUA & PMA SERIES

## 2410 bar

Suitable for pumping a wide range of fluids at pressures up to 35,000 psi (2,410 bar).



CAT #	RAM/DIAMETER			A	B	C	D	E	F
	(mm)	(in)							
PUA26(B/U)	31.75	1 1/4	in mm	9.17 233	4.02 102	6.61 168	.87 22.2	6.69 170	2.87 73
PUA70(B/U)	19	3/4	in mm	8.74 222	4.02 102	6.61 168	.87 22.2	6.22 158	2.87 73
PUA157(B/U)	12.7	1/2	in mm	8.74 222	4.02 102	6.61 168	.87 22.2	6.22 158	2.87 73
PUA275(B/U)	9.53	3/8	in mm	8.74 222	4.02 102	6.61 168	.87 22.2	6.22 158	2.87 73
PUA430(B/U)	7.94	5/16	in mm	8.74 222	4.02 102	6.61 168	.87 22.2	6.22 158	2.87 73
PUA655(B/U)	6.35	1/4	in mm	8.74 222	4.02 102	6.61 168	.87 22.2	6.22 158	2.87 73
PUA982(B/U)	5.13	.202	in mm	8.74 222	4.02 102	6.61 168	.87 22.2	6.22 158	2.87 73
PMA27(B/U)	76.2	3	in mm	8.66 220	7.01 178	9.06 230	1.5 38	1.89 48	
PMA60(B/U)	50.8	2	in mm	8.27 210	7.01 178	9.06 230	1.5 38	1.89 48	
PMA90(B/U)	41.3	1 5/8	in mm	8.27 210	7.01 178	9.06 230	1.5 38	1.89 48	

CAT #	RAM/DIAMETER			A	B	C	D	E	F
	(mm)	(in)							
PMA130(B/U)	35	1 3/8	in mm	7.99 203	7.01 178	7.68 195	.87 22	1.89 48	
PMA190(B/U)	28.5	1 1/8	in mm	7.99 203	7.01 178	7.68 195	.87 22	1.89 48	
PMA240(B/U)	25.4	1	in mm	7.99 203	7.01 178	7.68 195	.87 22	1.89 48	
PMA370(B/U)	20.6	13/16	in mm	7.99 203	7.01 178	7.01 178	.87 22	1.89 48	
PMA520(B/U)	17.5	11/16	in mm	7.99 203	7.01 178	7.01 178	.87 22	1.89 48	
PMA770(B/U)	14.3	9/16	in mm	7.99 203	7.01 178	7.01 178	.87 22	1.89 48	
PMA980(B/U)	12.7	1/2	in mm	7.99 203	7.01 178	7.01 178	.87 22	1.89 48	
PMA1740(B/U)	9.5	3/8	in mm	7.99 203	7.01 178	10.08 256	.87 22	1.89 48	
PMA2410(B/U)	8	5/16	in mm	7.99 203	7.01 178	10.08 256	.87 22	1.89 48	

- Provides infinitely variable capacity and discharge pressure
- Suitable for continuous start/stop applications
- Pumps oil, water, and other fluids
- Stainless steel pump and check valves standard
- Maintains pressure with minimal power consumption (Non-load holding)
- Usable in hazardous areas: per ATEX II, CAT. 2 GDcT5
- Quiet operation
- Can operate on gases other than air
- Simple to install and maintain
- Compact, rugged design
- Only 15psi (1bar) air pressure required to start pump



BSP FITTINGS	NPT FITTINGS	RATIO 1:	OUTLET PRESSURE		OUTPUT PER CYCLE		MAXIMUM FLOW AT ZERO PRESSURE		INLET	OUTLET
			(BAR)	(PSI)	(LITRES)	(IN <sup>3</sup> )	(LITRES/MIN)	(IN <sup>3</sup> /MIN)		
<b>PUA26B</b>	<b>PUA26U</b>	4.3	26	380	0.028	1.68	14	850	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA70B</b>	<b>PUA70U</b>	11.9	70	1,010	0.01	0.607	5	305	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA157B</b>	<b>PUA157U</b>	26.7	157	2,280	0.004	5.269	2.4	146	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA275B</b>	<b>PUA275U</b>	47.5	275	3,990	0.0025	0.151	1.4	85	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA430B</b>	<b>PUA430U</b>	68.4	430	6,230	0.0017	0.105	0.9	55	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA655B</b>	<b>PUA655U</b>	107	655	9,500	0.0011	0.67	0.6	36	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA982B</b>	<b>PUA982U</b>	163.8	982	14,250	0.0007	0.044	0.4	24	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA27B</b>	<b>PMA27U</b>	4	27	390	0.16	9.72	37	2260	1" BSP/NPT	3/4" BSP/NPT
<b>PMA60B</b>	<b>PMA60U</b>	9	60	870	0.07	4.32	23	1400	1" BSP/NPT	3/4" BSP/NPT
<b>PMA90B</b>	<b>PMA90U</b>	13.6	90	1,300	0.05	2.85	15	915	1" BSP/NPT	3/4" BSP/NPT
<b>PMA130B</b>	<b>PMA130U</b>	19	130	1,880	0.034	2.04	11	670	3/4" BSP/NPT	1/2" BSP/NPT
<b>PMA190B</b>	<b>PMA190U</b>	28.4	190	2,750	0.023	1.37	7.3	455	3/4" BSP/NPT	1/2" BSP/NPT
<b>PMA240B</b>	<b>PMA240U</b>	36	240	3,480	0.018	1.08	5.8	354	3/4" BSP/NPT	1/2" BSP/NPT
<b>PMA370B</b>	<b>PMA370U</b>	54.5	370	5,360	0.012	0.71	3.8	230	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA520B</b>	<b>PMA520U</b>	76.5	520	7,540	0.008	.51	2.8	170	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA770B</b>	<b>PMA770U</b>	113	770	11,160	0.006	0.34	1.8	110	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA980B</b>	<b>PMA980U</b>	145	980	14,210	0.004	0.27	1.5	91	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA1740B</b>	<b>PMA1740U</b>	256	1,740	25,230	0.0025	0.15	0.84	51	1/2" BSP/NPT	1/2" HP
<b>PMA2410B</b>	<b>PMA2410U</b>	368	2,410	35,000	0.0017	0.104	0.58	35	1/2" BSP/NPT	1/2" HP



# START-UP KITS

## SK SERIES

# 10 TON

# TURNKEY SETS

## PUMPS



- 10 Ton Start-Up Kit covers a range of lifting, shifting, and positioning needs
- Broad range of cylinder types and strokes to fit many applications
- Neatly packaged in a durable, molded storage case to securely house your equipment and is ready to use upon opening
- All sets include a t-adaptor (**No. 9670**) and a complete coupler set (**No. 9795**)
- SK10TE kit is CE Compliant



### ► Ordering Information Order No.: SK10TE

Kit Contents			
Hand Pump	Usable Oil Cap. cc	Volume Per Stroke Low / High Press. cc	Weight kg
P19L	443	4.1 / 0.9	2.3
Gauge	Type	Primary Units	Face Diameter mm
9040E	analog	bar	63.5
Hose	Length m	Burst Rating	I.D. mm
9754E	1.8	4:1	6.5
Cylinders	Capacity Short Tons	Stroke mm	Collapsed Height mm
C106C	10	155.6	247.7
RSS101	10	38.1	88.9
RH123	12	76.2	184.2
RLS100	10	11.1	44.5
Spreader	Min. Clearance mm	Max Spread mm	Weight kg
HS2000	14.2	101.6	2.2
Case	Material	L x H x W mm	Weight w/o Product kg
2008632	Heavy Duty Plastic	800 x 520 x 292	5.8

Values shown in short tons (2,000 lb). To convert to long tons, multiply by 0.893. To convert to metric tons, multiply by 0.907.







## START-UP KITS SK SERIES

### 25 TON TURNKEY SETS



Note: Storage cases are **not included** with the 25 ton startup kits, they must be ordered separately.



- 25 Ton Start-Up Kit covers a range of lifting, shifting, and positioning needs
- Broad range of cylinder types and strokes to fit many applications
- All sets include a t-adaptor (No. 9670) and a complete coupler set (No. 9795)
- SK25TE kit is CE Compliant

PUMPS

#### ► Ordering Information Order No.: SK25TE

Kit Contents			
Hand Pump	Usable Oil Cap. cc	Volume Per Stroke Low / High Press. cc	Weight kg
P59L	1082	12 / 2.6	4.1
Gauge	Type	Primary Units	Face Diameter mm
9040E	analog	bar	63.5
Hose	Length m	Burst Rating	I.D. mm
9754E	1.8	4:1	6.5
Cylinders	Capacity Short Tons	Stroke mm	Collapsed Height mm
C256C	25	158.8	273
RSS302	30	61.9	117.5
RH302	30	63.5	158.8
RLS300	30	12.7	58.7
Spreader	Min. Clearance mm	Max Spread mm	Weight kg
HS2000	14.2	101.6	2.2

Values shown in short tons (2,000 lb). To convert to long tons, multiply by 0.893. To convert to metric tons, multiply by 0.907.

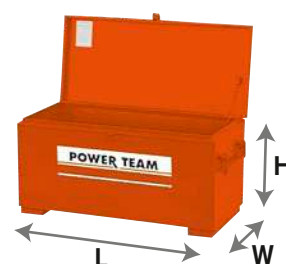


#### Optional 25 Ton Storage Cases

Power Team offers two different storage boxes to house your SK25T.

Order No.:

**MB5**



Metal Box Construction,  
813mm (L) x 483mm (W) x 356mm (H)

Order No.:

**308435OR9**



Wooden Box Construction,  
914mm (L) x 445mm (W) x 356mm (H)



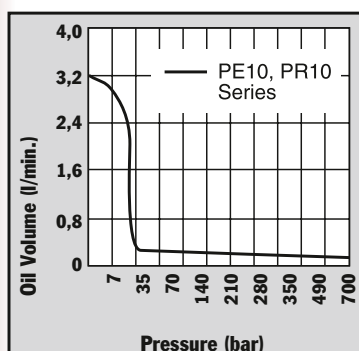


## Electric/Battery Pump HYDRAULIC PE10 SERIES

### Up to 25 Ton Quarter Horse® Two Speed

High performance in compact package. Electric and battery powered models for powering tools and cylinders up to 25 ton.

## PUMPS



LR19814



- Portable power source for hydraulic cylinders, and tools.
- Permanent magnet motor starts easily under load, even with reduced voltage conditions.
- Battery-operated models have 2,4 m power cord with alligator clips to connect to any 12 volt battery.
- Optional rechargeable battery pack with shoulder strap for maximum portability.
- Pump typically delivers 15 minutes of continuous operation at 700 bar on a single battery.
- Pump can be operated in any position.
- 24 volt hand and foot switches available for all AC powered models.
- High-impact housing with flame-retardant construction.
- Base mounting holes for fixed installations.

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable Cap. (l)
Single-Acting	Base model pump with 0,19 KW motor. Bladder type reservoir, 220 volt power required.	<b>PE102 -E220</b>	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	0,19 KW, 220/230V 50/60 Hz, Single Phase	1
Single-Acting	PE102, except has automatic dump valve.	<b>PE102A -E220</b>	Auto. Dump	9562	Advance* Return**	Rocker Type off, Momentary on	0,19 KW, 220/230V 50/60 Hz, Single Phase	1
Single-Acting/ Double-Acting	Base model pump has 4-way valve for operating double-acting systems. 220 volt power required.	<b>PE104 -E220</b>	4-Way	9563	Advance Hold Return*	Rocker Type off, Momentary on	0,19 KW, 220/230V 50/60 Hz, Single Phase	1
Single-Acting	PE102, except requires 12 volt DC.	<b>PR102</b>	2-Way/ Auto. Dump	9561	Advance Return (Auto.)	Rocker Type off, Momentary on	0,19 KW, 12V†	1
Single-Acting	PE102A, except requires 12 volt DC.	<b>PR102A</b>	Auto. Dump	9562	Advance Return**	Rocker Type off, Momentary on	0,19 KW, 12V†	1
Single-Acting/ Double-Acting	PE104, except requires 12 volt DC.	<b>PR104</b>	4-Way	9563	Advance Hold Return	Rocker Type off, Momentary on	0,19 KW, 12V†	1

\* "Advance" position holds pressure with motor shut off. "Return" position advances cylinder with motor running and returns cylinder with motor shut off. Also available in CE / E 110

\*\* Cylinder advances with motor running and automatically returns with motor shut off.

† Comes with an 2,4 m. alligator clip cord for 12 volt DC use.



PR104

700 bar



The Quarter Horse pump has a maximum operating pressure of 700 bar, which handles a wide variety of hand held hydraulic tools.

## Accessories

BP212VQ



**BP212VQ** – Optional 12 volt battery pack. Includes sealed lead acid battery, 115V charger, 1,2 m cord, carrying case and shoulder strap. Wt., 8 kg.

**RB12V** – Battery only.

**BP12INT** – Battery with cord and carrying case. Wt., 5 kg.

**RC12V** – Replacement 1,2 m battery cord only. Wt., 0,2 kg.



BC 212

**BC212** – Battery charger for U.S.A. Wt., 3 kg.

**BC212EUR** – Battery charger for Europe. Wt., 3 kg.

**25017** – Remote hand control with 3 m cord. Wt., 0,4 kg.

Max. Pump No.	Pressure Output (bar)	dBa @ Idle and 700 (bar)	Oil Del. (l/min at..)		Overall Dimensions (mm)	Prod. Wt. with Oil (kg)
0	700					
PE10 Series PR10 Series	700	68-74*	1,9	0,16	330 L x 197 W x 203 H	9,1

\* Measured at 0,9 m distance, all sides.

**NOTE:** PR10 rechargeable model is equipped with 2,4 m cord with alligator clips. Order optional battery pack (No. BP212VQ) or use with any 12 volt battery.

**NOTE:** Amp draw at 700 bar; 6 amp at 115 volt, 3 amp at 230 volt, and 35 amp at 12 volt.



**9560** – Pressure regulator. Adjustable from 70 to 700 bar. All mounting hardware included. Wt., 1,4 kg.



**251660** – Foot switch with 3 m cord. Single pole, double throw, 15 amp @ 125-250 VAC. Wt., 0,45 kg.

CYLINDER/PUMP MATCHING

Page 6

CYLINDERS

Page 12

PUMP/CYLINDER SETS

Page 61

PUMP ACCESSORIES

Page 116

HYDRAULIC ACCESSORIES

Page 120



# Electric Pump

## HYDRAULIC PE17 SERIES

**Up to 55 Ton**  
**279 cm<sup>3</sup>/min.**  
**2 Speed**

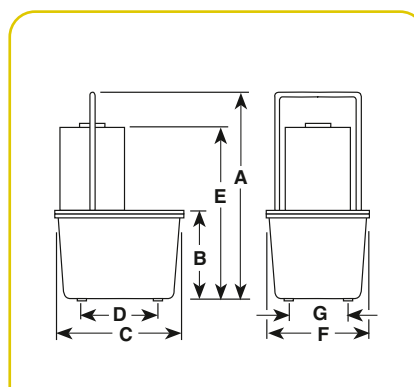
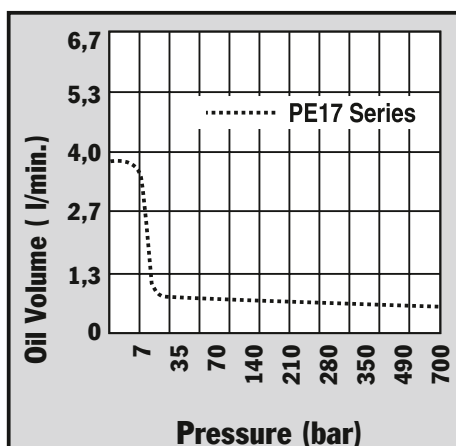
For maintenance and construction applications.

- For use with single-acting or double-acting cylinders at operating pressures to 700 bar.
- For intermittent duty; starts under full load.
- Equipped with 0,37Kw ( $\frac{1}{2}$  hp), 3,450 rpm, single-phase, thermal protected induction motor; 3 m remote control cord (PE172S has 7,6 m cord)
- Low amperage draw; small generators and low amperage circuits can be used as power source.
- Extremely quiet noise level (67-81 dBA).



PE172

700 bar  
  
 LR19814



Pump No.	Max. Pressure Output		dBA at Idle and 700 bar	Amp Draw 220 V – at 700 bar	Oil Del. (liters./min. @) †											Prod. Wt. with Oil (kg)
	bar	rpm			0 bar	7 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	
PE17 Series	700	2850	67/81*	5	3,9	2,5	0,3	0,2	470	178	289	181	378	235	130	20,4
PE17M Series	700	2850	67/81*	5	3,9	2,5	0,3	0,2	460	168	292	–	368	241	–	24,0

\* Measured at 0,9 m distance, all sides.

† Typical delivery. Actual flow will vary with field conditions.



PE172SM



PE172-E220



Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch ††	Motor	Reservoir Usable (l)
Base model pump with 0,37 KW pump with 7,6 l thermoplastic reservoir.	<b>PE172-50-220</b>	2-Way	9517	Advance Return (Auto+)	Remote Motor Control (3,1m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	4,72
PE172-50-220, except has 9,5 l aluminum reservoir.	<b>PE172M-50-220</b>	2-Way	9517	Advance Return (Auto+)	Remote Motor Control (3,1m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	6
PE172-50-220, except has solenoid operated valve.	<b>PE172S-50-220</b>	3-Way	9570	Advance Hold Return	Remote Motor & Valve (7,6 m)	0,37 kW, 220 V* 50/60 Hz, Single Phase	4,72
PE172S-50-220, except has aluminum reservoir.	<b>PE172SM-50-220</b>	3-Way	9570	Advance Hold Return	Remote Motor & Valve (7,6 m)	0,37 kW, 220 V* 50/60 Hz, Single Phase	6
Best suited for crimping, punching, pressing. Not for lifting. Thermoplastic reservoir.	<b>PE172A-50-2208</b>	Auto./Dump Manifold	45554	Advance Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	4,72
PE172A, except has aluminum reservoir.	<b>PE172AM-50-2208</b>	Auto./Dump Manifold	45554	Advance Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	6
0,37 KW pump with 7,6 l thermoplastic reservoir. Meets CE requirements.	<b>PE172-E220</b>	2-Way	9517	Advance Return (Auto+)	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50 Hz, Single Phase	4,72
PE172-50-220, except has 9,5l aluminium reservoir. Meets CE requirements	<b>PE172M-E220</b>	2-Way	9517	Advance Return (Auto+)	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50 Hz, Single Phase	6
PE172-50-220, except has solenoid operated valve. Meets CE requirements	<b>PE172S-E220</b>	3-Way	9570	Advance Hold Return	Remote Motor & Valve (3,1m)	0,37 kW, 220 V* 50 Hz, Single Phase	4,72
PE172S-50-220 except has aluminium reservoir. Meets CE requirement	<b>PE172SM-E220</b>	3-Way	9570	Advance Hold Return	Remote Motor & Valve (3,1m)	0,37 kW, 220 V* 50 Hz, Single Phase	6
Best suited for crimping, punching, pressing. Thermoplastic res. Meets CE requirement	<b>PE172A-E220∞</b>	Auto./Dump Manifold	45554	Advance/Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50 Hz, Single Phase	4,72
PE172A, except has aluminium reservoir. Meets CE requirements	<b>PE172AM-E220∞</b>	Auto./Dump Manifold	45554	Advance/Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50 Hz, Single Phase	6
PE172-50-220, except has 9500 double-acting valve.	<b>PE174-50-220</b>	4-Way	9500	Advance Hold Return**	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	4,72
Same as PE174-50-220, except has aluminium reservoir.	<b>PE174M-50-220</b>	4-Way	9500	Advance Hold Return**	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	6
PE172-50-220, except has 9500 double-acting Valve. Meets CE requirements	<b>PE174-E220</b>	4-Way	9500	Advance Hold Return**	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50 Hz, Single Phase	4,72
Same as PE174-50-220, except has aluminium Reservoir. Meets CE requirements	<b>PE174M-E220</b>	4-Way	9500	Advance Hold Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50 Hz, Single Phase	6

- \* Available with 115V., 60 Hz motor (to order , remove suffix "50-220" behind pump order number).
- \*\* "Advance" position holds pressure with motor shut off.
- † "Advance" position holds pressure with motor shut off. "Return" position advances cylinder with motor running and returns cylinder with motor shut off.
- ∞ Not to be used for lifting.

**NOTE:** Usable oil is calculated with the oil fill at the recommended maximum level of 38 mm below reservoir cover plate.

‡ Some Power Team pumps are available in special configurations not listed in this catalog. Power Team can "Assemble to Order" pumps with special seals, voltages, valves, relief valve settings, etc. For your special requirements please consult your local distributor or the Power Team factory.

Also available in CEE 110





# Electric Pump

## HYDRAULIC PE18 SERIES

**Up to 55 Ton**  
**295 cm<sup>3</sup>/min.**  
**Vanguard Jr. Series®**

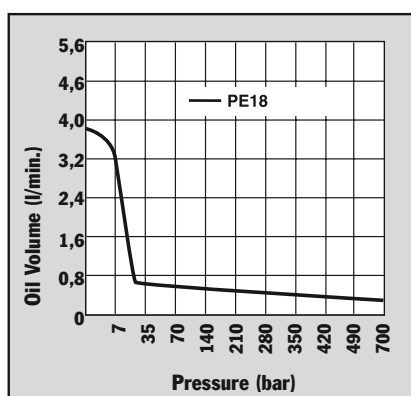
Ideal for use with small hydraulically powered tools.

PUMPS

- Vanguard Jr.® pumps provide two-speed high performance in a light-weight, compact package.
- Gauge port provided on pump. Metal reservoir on all models.
- Equipped with a 0,37Kw (1/2 hp), 220 volt, 50 Hz single phase motor that starts under load, even at reduced voltage.
- Low amperage draw permits use with smaller generators and low amperage circuits.
- All pumps have a 3 m remote control (PE183C has 7,6 m remote control).
- CSA rated for intermittent duty. Noise level of 85-90 dBA.

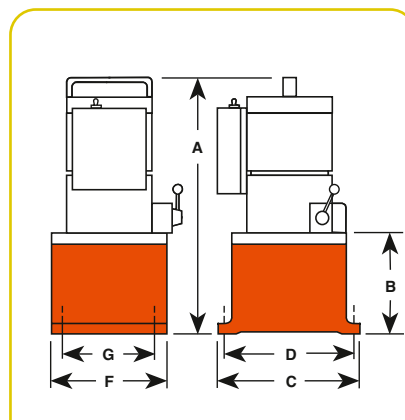


PE182



For operating hydraulic crimping, cutting or other tools:

- **No. PE183C** - For crimping or pressing applications. Has special electrical circuitry to pulse/advance, hold at full pressure, build to a predetermined pressure, release and reset circuit. Features separate emergency return switch.
- **No. PE184C** - Allows you to alternately operate a spring-return cutting and/or crimping tool without disconnecting either tool. Select port connection with manual 4-way valve, start pump with remote control hand switch and extend connected tool. When hand switch is switched to off, pump stops and automatic valve opens, allowing tool to return. In center (neutral) position, manual control valve holds tool in position at time valve is shifted.



700 bar



Pump No.	Max. Pressure Output bar	rpm	dBA at Idle and 700 bar	Amp Draw 220 V at 700 bar	Oil Del. (liters./min. @) †										Prod. Wt. with Oil (kg)
					0 bar	7 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	F (mm)	G (mm)	
PE182	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE183	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE183A	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE184	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE183-2*	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	470	184	292	254	241	203	19,0
PE184-2*	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	470	184	292	254	241	203	19,0
PE183C ††	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE184C ††	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6

\* 9,5 l reservoir.

\*\* Measured at 0,9 m distance, all sides.

† Typical delivery. Actual flow will vary with field conditions.

†† Special application pumps for cutting, crimping or pressing.





PE183-2



PE183C

For use with cyl. type	Description	Order No.	Valve Type	Valve Function	Control Switch	Motor	Reservoir Usable (l)
Single-acting	Base model pump has 0,37 KW pump with 2-Way valve and 1,9 l reservoir.	<b>PE182-50-220</b>	2-Way	Advance Return†	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	1,7
Single-acting	PE182-50-220, except has 3-way valve.	<b>PE183-50-220</b>	3-Way	Advance Hold Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	1,7
Single-acting	PE183-50-220, except has 9,5 l reservoir.	<b>PE183-2-50-220</b>	3-Way	Advance Hold Return	Remote Control (3,1 m)	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	8,4††
Single-acting	PE183-50-220, except has "dump valve".	<b>PE183A-50-220∞</b>	Auto./Dump Pump	Advance Return	Remote (3,1 m)	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	1,7
Single-acting	Special crimping pump. See details on page 84.	<b>PE183C-50-220∞</b>	Special, for crimping only	Advance Hold Return	Remote Motor Control (7,6 m) on/off	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	1,7
Single-acting/ double-acting	Base model pump has 0,37 KW pump for double-acting systems with 1,9 l reservoir.	<b>PE184-50-220</b>	4-Way	Advance Hold Return†	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	1,7
Single-acting/ double-acting	PE184, except with 9,5 l reservoir.	<b>PE184-2-50-220</b>	4-Way	Advance Hold Return†	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	8,4††
Single-acting/ double-acting	Special crimping pump. See details on page 84.	<b>PE184C-50-220*</b>	4-Way	Advance Return	Remote Control (3,1 m) on/off	0,37 kW, 220 V** 50 Hz, A.C., Single Phase	1,7

- \* Also for use with special single-acting cylinder applications.  
 \*\* Available with 115 Volt, 50 Hz motor (to order, remove suffix "50-220" behind pump order number). Specify voltage when ordering.

- † Holds when motor is shut off and valve is in "advance" position.  
 †† Pumps supplied with 7,6 l oil (usable oil is 5,7 l), will hold 9,5 l when filled to within 13 mm below reservoir cover plate.  
 ∞ Not to be used for lifting.





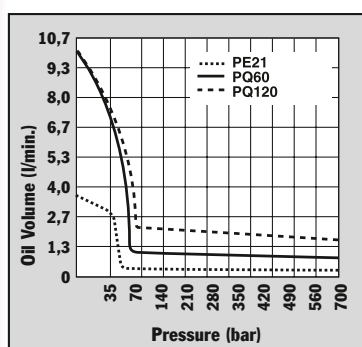
# Electric Pump

PE21 SERIES

Up to 75 Ton  
361 cm<sup>3</sup>/min.  
Two-Speed

Low-speed, high-torque for heavy-duty, extended-cycle operations.

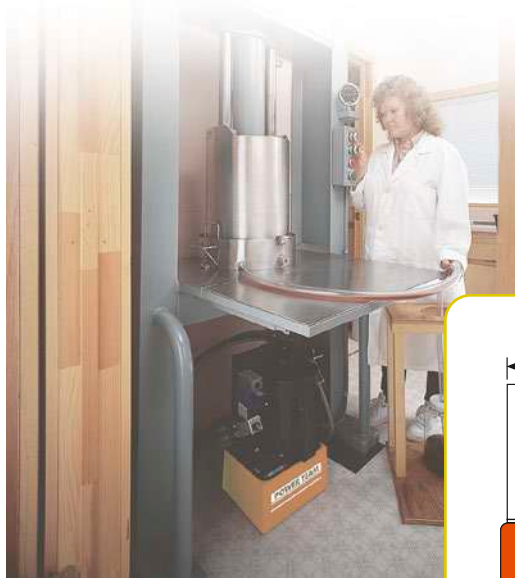
PUMPS



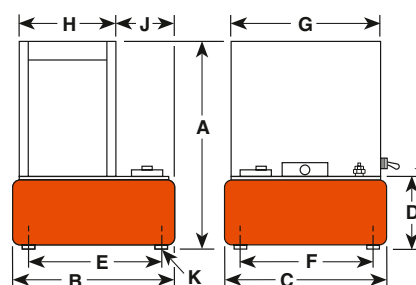
- Totally enclosed, fan cooled induction motor: 0,75Kw (1 hp), 1,725 rpm, 60 Hz, single phase. Thermal overload protection.
- Remote control, with 3,1 m cord is standard on pumps with solenoid valves. Manual valve pumps have “Stop”, “Start” and “Run/Off/Pulse” switches. Pump controls are moisture and dust resistant.
- Motor drip cover with carrying handles and lifting lug.
- Low noise level of 70 dBA<sup>®</sup> 700 bar.
- In the event of electrical interruption, pump shuts off and will not start up until operator presses the pump start button.
- 24 volt control circuits on units with remote controls provide additional user/operator safety.



PE213



PE21 series pump and RD5513 cylinder used in a special press that produces pharmaceutical-grade extracts for herbal medicines.



Pump No.	Max. Pressure Output		dBA at Idle and 700 bar	Oil Del. (l/min. at.)														Prod. Wt. w/Oil (kg)
	bar	rpm		7 bar	70 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K*** (in)	
PE21 Series	700	1.437	70*	3,6	0,4	0,4	0,3	543	292	241	165	254	203	359	241	82,6	1/2-20 UNF	44,4†

\* Measured at a 0,9 m distance, all sides.

\*\*\* For 50,8 mm dia. swivel casters, order (4) No. 10494.

† Shipping weight with manual valve; add 6,4 kg for pump with solenoid valve.



PE214

700 bar



PE214S

For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw at 700 bar	Motor	Reservoir Usable (l)
Single-acting	0,75 KW pump with 9,5 l Reservoir and manual valve.	<b>PE213-50-220</b>	3-Way	9520*	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	9,4
Single-acting	PE213, except has solenoid operated remote valve.	<b>PE213S-50-220</b>	3-Way	9599†	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	9,4
Double-acting	0,75 KW pump with 9,5 l Reservoir and manual valve.	<b>PE214-50-220</b>	4-Way	9506*	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	9,4
Double-acting	PE214, except has solenoid operated remote valve.	<b>PE214S-50-220</b>	4-Way	9512†	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	9,4

\* Manual valve. Pump is equipped with RUN/OFF/PULSE switch for control of motor.

† Solenoid valve. Pump is equipped with a remote control switch with 3,1 m cord.





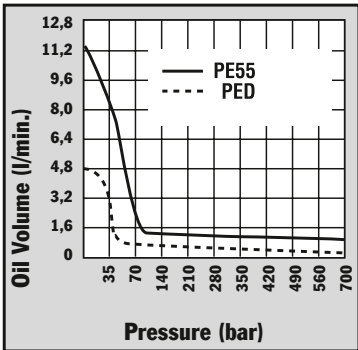
# Electric Pump

## HYDRAULIC PED SERIES

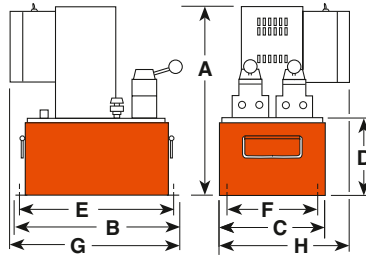
**410 cm<sup>3</sup>/min.**  
**Two-Speed**

Ideal for running multiple tools or cylinders from one power unit. Recommended for cylinders up to 75 tons.

**PUMPS**



- Two-speed pumps have the same low pressure and high pressure flows from both valves.
- Flows and pressures of each pump are independent.
- Delivers 4,8 l/min. of oil at 7 and 0,4 l/min. at 700 bar from each pump.
- 1,12 KW, 220 volt, 50 Hz induction motor, 3,1 m remote control and 19 l steel reservoir.
- Models available for operating single-acting or double-acting cylinders.
- Each power unit contains two separate pumps and two separate valves allowing operator to control multiple processes with one power unit.
- Both pumps on each power unit are equipped with an externally adjustable pressure relief valve.
- Not recommended for frequent starting and stopping.



Pump No.	Max. Pressure Output		dBA at Idle and 700 bar	(220 V)** Amp Draw At 700 bar	Oil Del. (l/min at..)				A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	Prod. Wt. w/Oil (kg)
	bar	rpm			7 bar	50 bar	350 bar	700 bar									
PED-Series	700	2.874	87/85*	11	4,8	0,6	0,6	0,4	527	457	292	216	419	229	457	330	77

\* Noise level reading (dBA) measured at a 0,9 m distance, all sides.      \*\* Amp draw at 700 bar, 230 Volts 50 Hz is 15 Amps.





For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch ††	Motor	Reservoir Usable (l)
Single-acting	1,12 KW pump with 19 l reservoir. Valve has "Posi-Check®" feature.	<b>PED253-50-220</b>	3-Way	9520	Advance Hold Return	Remote Motor	1,12 KW, 220 VAC 50 Hz††, Single Phase	16
Double-acting	1,12 KW pump with 19 l reservoir. Valve has "Posi-Check®" feature.	<b>PED254-50-220</b>	4-Way	9506	Advance Hold Return	Remote Motor	1,12 KW, 220 VAC 50 Hz††, Single Phase	16
Double-acting	PED254, except has solenoid operated remote valve.	<b>PED254S-50-220</b>	4-Way	9513	Advance Hold Return	Remote Valve	1,12 KW, 220 VAC 50 Hz††, Single Phase	16

†† Control switch wired with line voltage. All remotes are 3,1 m long.





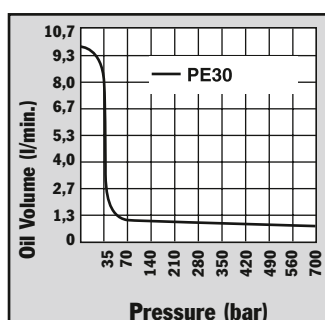
## Electric Pump

### HYDRAULIC PE30 SERIES

**0,48 l/min.**  
Two-Speed  
Vanguard® Series

Ideal for maintenance and construction applications

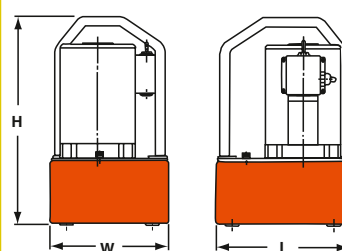
PUMPS



- Deliver a powerful punch to operate single-acting or double-acting cylinders.
- Integral roll cage protects pump from abuse.
- 0,75Kw (1 hp), single phase, permanent magnet motor.
- High performance to weight ratio.
- Starts under full load even when voltage is reduced to 50% of nominal rating.
- Quiet operation: 87 dBA @ 700 bar and 82 dBA @ 0 bar. CSA rated for intermittent duty.
- Remote controls and/or solenoid valves feature 24 volt controls.



PE302



Pump No.	Max Pressure Output bar	Noise level at 700 bar (dBA)	Amp. Draw 220V at 700 bar (A)	Oil Del. ( l/min at..)					Overall Dimensions (mm)	Prod. Wt. With Oil (kg)
				7 bar	35 bar	70 bar	350 bar	700 bar		
<b>PE30 Series</b> with 4,7 l res.	700	87/82	7	4,8	3,2	0,7	0,6	0,5	254L x 229W x 406H	18,6
<b>PE30 Series</b> with 7,6 l res.	700	87/82	7	4,8	3,2	0,7	0,6	0,5	343L x 241W x 419H	22,2

**PE30TWP**  
Torque Wrench  
Applications  
See page 171



700 bar



For use with Usable			Order	Valve	Valve	Valve	Control	Reservoir Motor
Single-act.	Base model 0,75 KW pump with 4,7 l Reservoir & 2 position valve.	<b>PE302-220<sup>∞</sup></b>	3-Way, 2 Pos.	9584	Advance Return	On/Off/Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE302-220, except has 6,6 l reservoir.	<b>PE302-2-220</b>	3-Way, 2 Pos.	9584	Advance Return	On/Off/Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE302-220, except has remote motor control.	<b>PE302R-220</b>	3-Way, 2 Pos.	9584	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE302R-220, except has 6,6 l reservoir.	<b>PE302R-2-220</b>	3-Way, 2 Pos.	9584	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE302R-220, except also has solenoid operated remote valve.	<b>PE302S-220†</b>	3-Way, 2 Pos.	9570	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE302S-220, except has 6,6 l reservoir.	<b>PE302S-2-220†</b>	3-Way, 2 Pos.	9570	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE302-220, except has "Auto Dump" valve	<b>PE302A-220</b>	Auto Dump	9610	Automatic Pilot Operation	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	Base model 0,75 KW pump with 4,7 l Reservoir & 3 position valve.	<b>PE303-220</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	On/Off/Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE303-220, except has 6,6 l reservoir.	<b>PE303-2-220</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	On/Off/Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE303-220, except has remote motor control.	<b>PE303R-220</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE303R, except has 6,6 l reservoir.	<b>PE303R-2-220</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Double-act.	Base model 0,75 KW pump with 4,7 l Reservoir & 4-way valve for double-acting systems	<b>PE304-220</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	On/Off/Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Double-act.	PE304-220, except has 6,6 l reservoir.	<b>PE304-2-220</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	On/Off/Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Double-act.	PE304-220, except has remote motor control.	<b>PE304R-220</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Double-act.	PE304R-220, except has 6,6 l reservoir.	<b>PE304R-2-220</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***

\* "Posi-Check<sup>®</sup>" valve design, "Posi-Check<sup>®</sup>" guards against pressure loss when valve is shifted from "advance" to "hold" position.

\*\* Shipped with 3,8 l of oil (3,4 l usable).

\*\*\* Shipped with 7,6 l of oil.

∞ Not to be used for lifting. Best suited for crimping, pressing & punching applications.





# Electric Pump

## HYDRAULIC PE46 SERIES

**0,6 l/min**  
**Two-speed**

Best suited for under the roof maintenance and production applications.

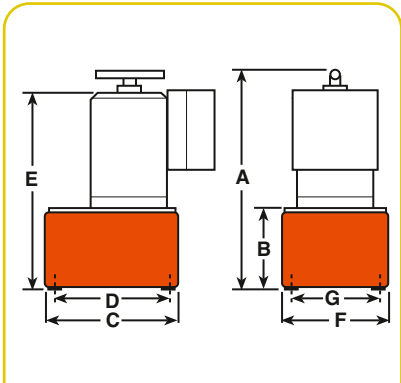
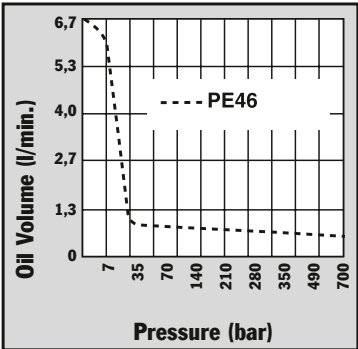
**PUMPS**

- Two-speed high performance pump.
- For use with single- or double-acting cylinders at operating pressures to 700 bar.
- Equipped with a 1.12 KW, 2.875 rpm single-phase, 50 Hz thermal protected induction motor that starts under full load. Noise level of 77-81 dBA.
- All equipped with a 3,1 m remote control except PE462S which has a 7,6 m remote control.
- 24 volt control circuit on all units with remote control.
- CSA rated for intermittent duty.



PE462A

700 bar



Pump No.	Max. Pressure Output bar	rpm	Noise level at Idle and 700 bar (dBA)	Amp Draw 220 V - at 700 bar (A)	Oil Del. (l/min. at.)†											Prod. Wt. w/Oil (kg)
					0 bar	7 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	
PE46-Series	700	2.875	77/81	13	6,7	6,0	0,7	0,6	499	173	292	254	378	241	203	35,8
PE46-E220	700	2.875	77/81*	13	6,7	6,0	0,7	0,6	499	173	292	254	378	241	203	41,3

\* Measured at 0,9 m distance, all sides.  
† Typical delivery. Actual flow will vary with field conditions.





PE462S



PE464-E220



For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch†††	Motor	Reservoir Usable*** (l)
Single-acting	Base model 1,12 KW pump with 9,5 l metal reservoir.	<b>PE462-50-220</b>	3-Way	<b>9584</b>	Advance Return†	Remote Motor Control (3,1 m) on/off	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Single-acting	PE462-50-220, except has solenoid valve.	<b>PE462S-50-220</b>	3-Way	<b>9570</b>	Advance Return**	Remote Motor alve (7,6 m)	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Single-acting	PE462-50-220, except has "dump valve"	<b>PE462A-50-220∞</b>	Auto/Dump 3-Way	<b>9610</b>	Advance Return	Remote Motor Control (3,1 m) on/off	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Single-acting	1,12 KW pump with 9,5l metal reservoir. <b>Meets CE requirement</b>	<b>PE462-E220</b>	3-Way	<b>9584</b>	Advance Return +	Remote Motor Control (3,1 m) on/off	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Single-acting	PE462-50-220, except has solenoid valve. <b>Meets CE requirement</b>	<b>PE462S-E220</b>	3-Way	<b>9570</b>	Advance Return**	Remote Motor/ Valve (7,6 m)	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Single-acting	PE462-50-220, Except has "dump valve". <b>Meets CE requirement</b>	<b>PE462A-E220∞</b>	Auto/Dump 3-Way	<b>9610</b>	Advance Return	Remote Motor Control (3,1 m) on/off	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Double-acting/ multi-single-act.	PE462-50-220, except has 9500 double-acting valve.	<b>PE464-50-220</b>	4-Way	<b>9500</b>	Advance Hold Return†	Remote Motor Control (3,1 m) on/off	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Double-acting/ multi-single-act.	Same as PE464-50-220 <b>Meets CE requirement</b>	<b>PE464-E220</b>	4-Way	<b>9500</b>	Advance Hold Return +	Remote Motor Control (3,1 m) on/off	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Double-acting/ multi-single-act.	Same as PE464S-50-220 <b>Meets CE requirement</b>	<b>PE464S-E220</b>	3/4-Way	<b>9552</b>	Advance Return**	Remote Motor/ Valve (3,1m)	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4
Double-acting/ multi-single-act.	PE462S-50-220, except has 9592 double-acting valve.	<b>PE464S-50-220</b>	3/4-Way	<b>9552</b>	Advance Return**	Remote Motor/ Valve (3,1m)	1,12 KW, 220 VAC* 50 Hz, Single Phase	9,4

- \* Available with 115 V., 60 Hz motor (to order, remove suffix "50-220" behind pump order number). Specify voltage when ordering.
- \*\* "Advance" position holds pressure with motor shut off.
- \*\*\* Usable oil is calculated with the oil fill at the recommended level of 13 mm below reservoir cover plate.

- † "Advance" position holds pressure with motor shut off.  
"Return" position returns cylinder.
- ††† The remote motor control switch on PE46 series pumps is 24 volt.
- ∞ Not to be used for lifting. When pump is shut off, oil returns to reservoir.





# Electric Pump

## HYDRAULIC PE55 VANGUARD®

0,9 l/min

For cylinders up to 200 tons.

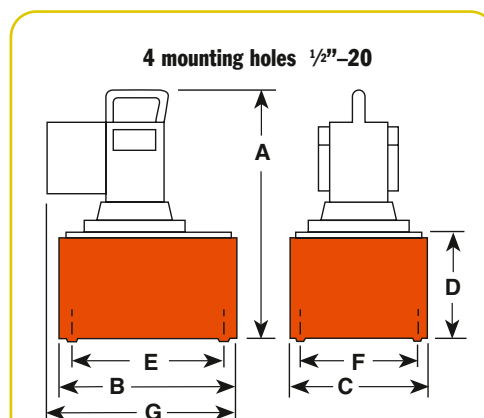
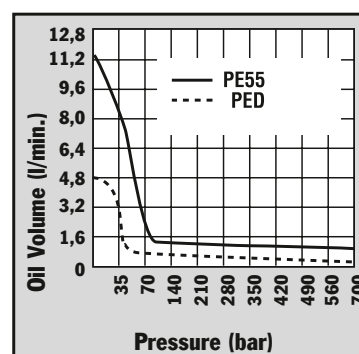
Heavy duty multiple-applications pump. Heavy construction and concrete stressing. Low voltage starting possible.

PUMPS

**PE55TWP**  
Torque  
Wrench  
Applications  
See page 172



**PE554W**  
The new pump;  
weather-resistant.



Pump No.	Max. Pressure Output bar	rpm	Noise level Idle and at 700 bar (dBA)	Amp Draw at 700 bar (220 V.)** (A)	Oil Del. (l/min at..)				w/Oil (kg)
					0 bar	50 bar	350 bar	700 bar	
PE55-Series	700	12,000	90/89*	13	11,3	7,1	1,2	0,9	29,4
PE55-E220									

A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
464	292	241	178	254	203	356
520						391

\*Noise level reading (dBA) measured at a 0,9 m distance, all sides.

\*\* Amp draw at 700 bar, 230 Volts 60 Hz is 15 Amps.



PE554-E220



700 bar



PE554PT



PE552

PUMPS

For use with cyl.-type	Description	Order No.***	Reservoir Valve Type	Valve No.	Valve Function	Control Switch ††	Motor	Usable (l)
Single-acting	Base model 0,84 KW pump with 9,5 l reservoir, remote motor control & 3-way valve.	PE552-50-220	3-Way	9582	Advance Return**	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	PE552-50-220, except also has solenoid operated remote valve.	PE552S-50-220	3-Way	9570	Advance Hold Return	Remote Motor & Valve	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	PE552-50-220, except has "Auto Dump" valve.	PE552A-50-220	Auto/Dump	9610	Advance Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	0,84 KW pump with 9,5 l reservoir. Valve has "Posi-check" feature.	PE553-50-220	3-Way†	9520	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	Same as PE552-50-220, but meets also CE requirement	PE552-E220	3-Way	9584	Advance Return**	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	Same as PE552S-50-220, but meets also CE requirement	PE552S-E220	3-Way	9570	Advance Return	Remote Motor & Valve	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	Same as PE552A-50-220, but meets also CE requirements	PE552A-E220∞	Auto/Dump	9610	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	Same as PE553-50-220 but needs also CE Requirement	PE553-E220	3-Way	9520	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Base model 0,84 KW pump with 9,5 l res. and 4-way valve for double-acting systems.	PE554-50-220	4-Way†	9506	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Same as PE554-50-220 but needs also CE Requirement	PE554-E220	4-Way†	9506	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	PE554-50-220, except has 9500 tandem center valve.	PE554T-50-220	4-Way	9500	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	For use with single-acting Spring Seat, Stressing Jack or double-acting cylinder.	PE554P-50-220	4-Way	9500	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	For use with single- or double-acting Power Seat, Stressing Jacks ONLY.	PE554PT-50-220	4-Way	9628	Advance Hold Sequenced Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump suitable to run multiple . spring return tools	PE554C-50-220	4-Way	9511†††	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump equipped with 3/4-way solenoid valve.	PE554S-50-220	3/4-Way	9552	Advance Hold Return	Remote Motor & Valve	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump suitable to run multiple Spring return cylinder	PE554C-E220	4-Way	9511+++	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump equipped with 3/4 -way solenoid valve	PE554S-E220	3/4-Way	9552	Advance Hold Return	Remote Motor & Valve	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4

\* Pumps available with 115 volt, 50 Hz motors. (to order remove the -50-220 suffix from the order code). See "Assemble to Order" pump options on pages 102-105.

\*\* Holds with motor shut off.

\*\*\* To order PE55 series pumps with CSA approval, add "-C" to the Order No.

† Valves have "Posi-Check®" feature.

††† Valving allows alternate and independent operation of two different spring return tools. Valve holds pressure only while valve is in "A" or "B" port position with pump motor shut off.

∞ Not to be used for lifting.

Also available in E 110 C €





# Electric Pump

## HYDRAULIC PE60 SERIES

# Post Tensioning

## 0,9 l/min

## Two-Speed

Compact, light weight pump.  
Excellent choice for rugged  
applications and low voltage  
starting.

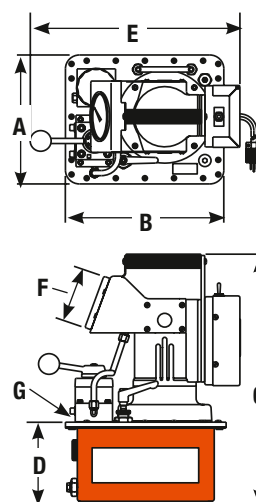
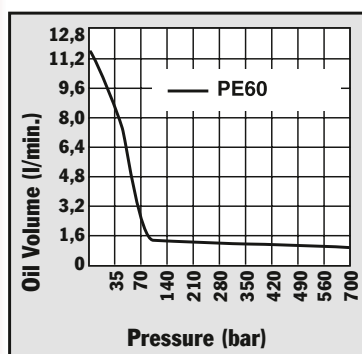
PUMPS

- Long, trouble free life in the most demanding work environments. For operating single- or double-acting cylinders, or stressing jacks.
- Powered by 0,84 KW, 220 volt, 60/50 Hz single phase motor. Starts under load, even at the reduced voltages at construction sites.
- Optional fan-driven external oil cooler includes rollover guard.
- Insulated carrying handle.
- Integral 102 mm fluid-filled pressure gauge with steel bezel complies with ASME B40.1 Grade A. With 0 to 700 bar pressure range in 7 bar increments.
- Sealed 4,34 l (usable) reservoir. Reservoir drain port is standard.
- Standard oil level sight gauge for accurate oil level monitoring.



**PE604T**  
w/cooler

- External spin-on filter removes contaminants from circulating oil to maximize pump, valve and cylinder/tool life.



Pump No.	Max. Pressure Output bar	rpm	Noise level Idle and 700 bar (dBA)	Amp Draw at 700 bar (A)	Oil Del. (l/min at...)				A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (in)	Prod. Wt. w/Oil (kg)
					0 bar	50 (50)	350 bar	700 bar								
<b>PE604T -220</b>	700	12.000	80/85	13	11,3	7,1	1,2	0,9	263,5	301,6	457,2	152,4	381	101,6	<sup>3</sup> / <sub>8</sub> NPTF	27,2
<b>PE604PT -220</b>	700	12.000	80/85	13	11,3	7,1	1,2	0,9	263,5	301,6	457,2	152,4	381	101,6	<sup>3</sup> / <sub>8</sub> NPTF	27,7

**NOTE:** Unloading pressure is 70 bar.  
Consult factory for PE60 pump models with other control and valve options.





700 bar



The PE60 used for pre-stressing.



Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable (l)
Single-Acting, Spring Seat, Stressing Jack or Double-Acting	<b>PE604T</b>	4-Way 3-position	9500	Advance Hold Return	On/Off/Pulse	0,84 kW, 220 VAC 50 Hz, Single Phase	4,34
Single-Acting or Double-Acting Power Seat, Stressing Jacks Only	<b>PE604PT</b>	4-Way 3-position	9628 Model C	Advance Hold Sequenced Return	On/Off/Pulse	0,84 kW, 220 VAC 50 Hz, Single Phase	4,34
<b>OPTIONAL</b>							
<b>252511:</b> Oil cooler kit for PE604T or PE604PT, 115 VAC. Weight 2,7 kg.				<b>252512:</b> Oil cooler kit for PE604T or PE604PT, 220 VAC. Weight 2,7 kg.			





# Electric Pump

## HYDRAULIC PQ60 SERIES

Up to 200 ton  
0,8 l/min

Pump designed specifically  
for heavy duty, extended cycle  
operation.

PUMPS

- For operating single- or double-acting cylinders.
- Metal shroud keeps dirt and moisture out of motor and electrical components.
- Electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption.
- Internal relief valve limits pressure to 700 bar. External relief valve is adjustable from 70 to 700 bar.
- Pumps operate below maximum OSHA noise limitation (74-76 dBA).
- Start and operate under full load, even with voltage reduced 10%.

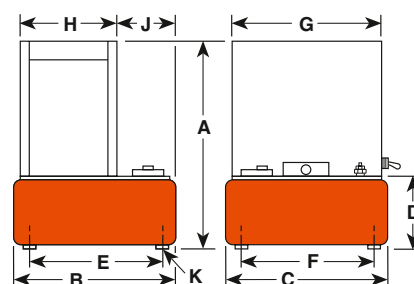
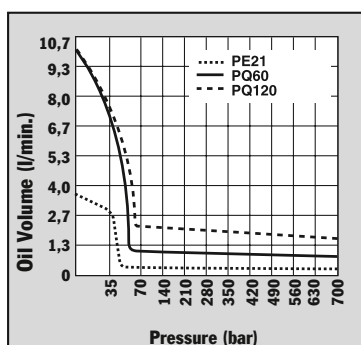


PQ603

700 bar



LR19814



Pump No.	Max. Pressure Output bar	rpm	Noise level at Idle and 700 bar (dBA)	Amp Draw at 700 bar (A)	Oil Del. (l/min at..)														Prod. Wt. w/Oil (kg)
					7 bar	70 bar	350 bar	700 bar	A	B	C	D	E	F	G	H	J	K***	
PQ60 Series	700	1.437	74/76*	See Chart (following page)	9,7	0,9	0,9	0,8	638	362	394	184	308	338	373	237	122,2	1/2-20 UNF	76,6**

\* Measured at a 0,9 m distance, all sides.

\*\* Total weight with oil and 3-way solenoid valve.

Subtract 4,5 kg to obtain weight of pump with manual valve.

\*\*\* For 50,8 mm dia. swivel casters, order (4) No. 10494.



PQ604



Hydraulic Machine Press Operation.



PQ604S

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw at 700 bar (A)	Motor	Reservoir Usable (l)
Single-Acting	1,49 KW pump with 21,6 l reservoir and manual valve,	<b>PQ603-50-220</b>	3-Way	9520*	Advance Hold Return	115V - 22 amps 230V - 11 amps	1,49 KW, 220 Volt 50 Hz, Single	20
Single-Acting	PQ603-50-220, except has solenoid operated remote valve.	<b>PQ603S-50-220</b>	3-Way	9599†	Advance Hold Return	115V - 22 amps 230V - 11 amps	1,49 KW, 220 Volt 50 Hz, Single	20
Double-Acting	1,49 KW pump with 21,6 l reservoir and manual valve.	<b>PQ604-50-220</b>	4-Way	9506*	Advance Hold Return	115V - 22 amps 230V - 11 amps	1,49 KW, 220 Volt 50 Hz, Single	20
Double-Acting	PQ604-50-220, except has solenoid operated remote valve.	<b>PQ604S-50-220</b>	4-Way	9512†	Advance Hold Return	115V - 22 amps 230V - 11 amps	1,49 KW, 220 Volt 50 Hz, Single	20

\* Manual valve. Pump is equipped with RUN/OFF/PULSE switch for control of motor.

† Solenoid valve. Pump is equipped with a remote control switch with 3,1 m cord.

‡ Some Power Team pumps are available in special configurations not listed in this catalog. Power Team can "Assemble to Order" pumps with special seals, voltages, valves, relief valve settings, etc. For your special requirements please consult your local distributor or the Power Team factory.





# Electric Pump HYDRAULIC PQ120 SERIES

Up to 400 Ton  
1,6 l/min

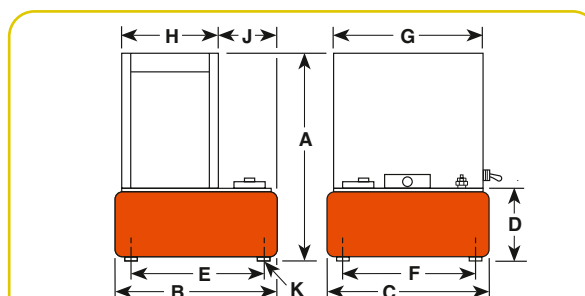
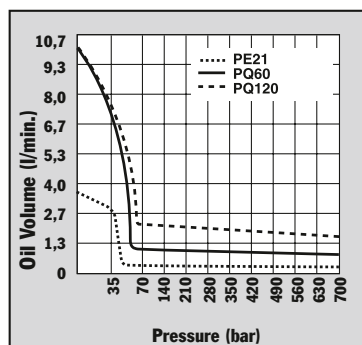
Low speed, high torque pump  
designed specifically for heavy  
duty, extended cycle operation.  
Ideal for press operation.

PUMPS

- Start and operate under full load, even with voltage reduced 10%.
- Electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption.
- Internal relief valve limits pressure to 700 bar. External relief valve is adjustable from 70 to 700 bar.
- Pump prewired at factory with a 2,24 KW, 380 volt, 50 Hz. 3 Phase motor. Other electrical configurations are available. See ordering information on the following page.
- 24 volt control circuits on units with remote controls for added user/operator safety.
- 2,24 KW(3 phase) motor with thermal overload protection. Motor starter and heater element supplied as standard equipment; no hidden charges!
- Metal shroud keeps dirt and moisture out of motor and electrical components.
- Pumps operate below maximum OSHA noise limitation.



PQ1203



Pump No.	Max. Pressure Output bar	rpm	Noise level at Idle and 700 bar (dBA)	Amp Draw at 700 bar (A)	Oil Del. (l/min at..)				A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K*** (in)	Prod. Wt. w/Oil (kg)
					7 bar	70 bar	350 bar	700 bar											
PQ120-Series	700	1.437	73/78*	See Chart Above	9,7	2,1	1,7	1,6	638	362	394	184	308	338	373	237	122,2	1/2-20 UNF	74,3**

\* Measured at a 0,9 m distance, all sides.

\*\* Total weight with oil and 3-way solenoid valve.

Subtract 4,5 kg to obtain weight of pump with manual valve.

\*\*\* For 50,8 mm dia. swivel casters, order (4) No. 10494.



PQ1204



PQ1204S-E380

700 bar



For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Motor	Reservoir Usable (l)
Single-acting	2,24 KW pump with 21,6 l reservoir and manual valve.	<b>PQ1203-E380</b>	3-Way	9520*	Advance Hold Return	2,24 KW, 400 Volt 50 Hz, 3 Phase	20
Single-acting	PQ1203-50-380, except has solenoid operated remote valve.	<b>PQ1203S-E380</b>	3-Way	9599†	Advance Hold Return	2,24 KW, 400 Volt 50 Hz, 3 Phase	20
Double-acting	2,24 KW pump with 21,6 l reservoir and manual valve.	<b>PQ1204-E380</b>	4-Way	9506*	Advance Hold Return	2,24 KW, 400 Volt 50 Hz, 3 Phase	20
Double-acting	PQ1204-50-380, except has solenoid operated remote valve.	<b>PQ1204S-E380</b>	4-Way	9512†	Advance Hold Return	2,24 KW, 400 Volt 50 Hz, 3 Phase	20

\* Manual valve. Pump is equipped with RUN/OFF/PULSE switch for control of motor.

† Solenoid valve. Pump is equipped with a remote control switch with 3,1 m cord.

‡ Some Power Team pumps are available in special configurations not listed in this catalog. Power Team can "Assemble to Order" pumps with special seals, voltages, valves, relief valve settings, etc. For your special requirements please consult your local distributor or the Power Team factory.







# Electric Pump

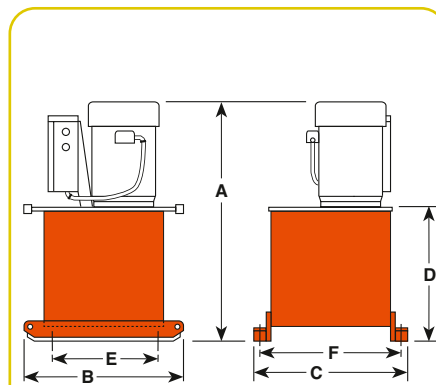
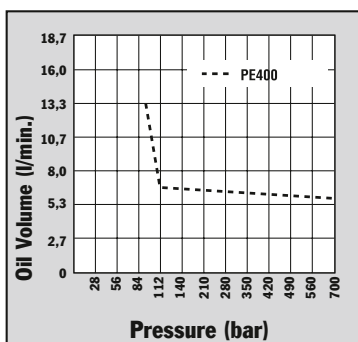
## HYDRAULIC PE400 SERIES

**Up to 1,000 Ton**  
**5,6 l/min**

High tonnage double-acting cylinders, Single or multiple cylinder applications. Up to 1,000 Tons

**PUMPS**

- Two-speed high output pump delivers up to 16 l/min of oil.
- Low noise level of 73-80 dBA.
- Integral electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption. Over-current protection prevents damage to motor as a result of overheating.
- "Stop" and "Start" control buttons are 24 volt. PE4004 has a 4-way/3-position manual valve. The PE4004S has a 4-way/3-position solenoid valve with a 24 volt remote hand switch.
- External pressure relief valve is adjustable from 100 to 700 bar.
- Heavy duty 50,8 mm dia. casters assure easy maneuvering.
- 75,7 l (62,8 l usable) reservoir has a low oil level sight gauge.
- Powered by a dual voltage 7,46 KW, 3 phase, 1,437 rpm motor.
- 3 phase motor has all the electrical components necessary to operate the pump. The customer has no hidden charges when making purchase.
- Deliver 16 l/min. of oil at 15 bar, 5,6 l/min. of oil at 700 bar.



Pump No.	Max. Pressure Output		Noise level at Idle and 700 bar (dBA)	Amp Draw at 700 bar (A)	Oil Del. (l/min at..)				E				F	Prod. Wt. w/Oil (kg)
	bar	rpm			15 bar	90 bar	350 bar	700 bar	A* (mm)	B (mm)	C (mm)	D (mm)	Caster Mfg. (mm)	
PE4004-E380	700	1.437	73/80	6	16	14	6	5,6	924	635	610	540	394	223
PE4004S-E380	700	1.437	73/80	6	16	14	6	5,6	924	635	610	540	394	229

\* Add 127 mm and 3,6 kg when casters are mounted. (Units are supplied with four 102 mm dia. swivel casters.)



**PE4004S pump and RD3006 cylinder used in a special press which repairs damaged chain links for the shipping industry.**



CE

PE4004S



700 bar

PUMPS

For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Motor††	Reservoir Usable (l)
Double-acting	7,46 KW pump with 75,5 l reservoir and manual valve.	<b>PE4004-E380</b>	4-Way	9506	Advance Hold Return	7,46 KW, 400 volt 50 Hz, 3 Phase	62,8†
Double-acting	PE4004, except has solenoid operated remote valve.	<b>PE4004S-E380</b>	4-Way	9512**	Advance Hold Return	7,46 KW, 400 volt 50 Hz, 3 Phase	62,8†

\*\* Solenoid valve with remote control.

† Usable oil is calculated with oil fill at recommended level at 57 mm below cover plate.

†† PE400 series available in 220/380V, 50Hz and 460V, 50Hz. Please specify when ordering. Example: PE4004-50-380 or for 460 V PE4004-460.

**NOTE:** Valves for spring return cylinders are available upon request. Consult the factory.





# Crimping Pump

ELECTRIC HYDRAULIC PE-NUT

0,49 l/min  
Two-Speed

Extremely durable yet lightweight and operate under low-line voltage conditions.

PUMPS

## PE-NUT PUMP – 115V

- 0,46 KW universal electric motor (50 cycle)
- Two-stage pump for rapid ram advance
- Operational under low-line voltage conditions
- Optional operating pressures available; consult Power Team for details
- Designed for use with spring-returned remote tools
- High-pressure safety relief valve
- Remote hand control with 3,1 m cord
- Carrying handle
- Factory filled oil reservoir
- Pressure matched quick-coupler supplied
- Optional carrying case
- Two-stage pumping system
- Unique, intermittent duty pump
- Piston-type high-pressure pump supercharged by a low-pressure pump.



**CAUTION: DESIGNED FOR CRIMPING APPLICATIONS ONLY!** This system should not be used for lifting.

Order No.	Oil Delivery (l/min.)	Oil Reservoir qt. (l)	Usable Oil qt. (l)	Overall Width (mm)	Overall Length (mm)	Overall Depth (mm)	Pump Weight w/Oil (kg)
PE-NUT	2,62 at 7 bar	6	2,8	165	365	210	12,6
PE-NUTC*	0,49 at 700 bar						

\*Includes Case

Electric Motor	Electrical Data	Electrical Control
0,46 KW, 10,000 rpm 115V AC, 50 Hz 11 amp current draw (115V at 700 bar)		Remote control with 10-foot cord



## Crimping Pump

### GAS HYDRAULIC PG120

## Crimping Pump

### 2,1 l/min

### Two-Speed

Two-stage pump for rapid advance

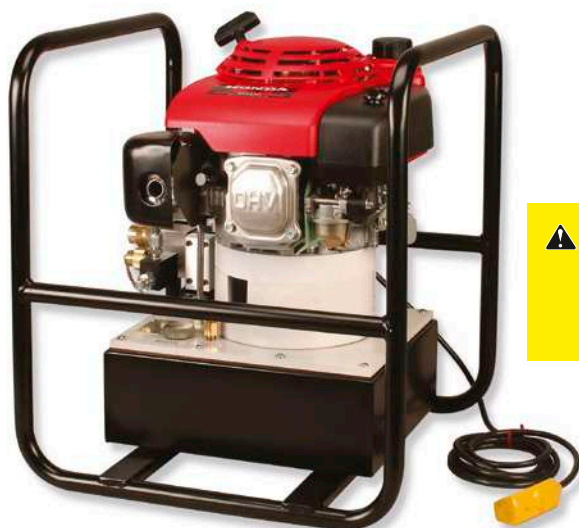
## GASOLINE POWER PUMPS

### PG1203-CP

- 4,5 Kw Briggs & Stratton engine
- Manual control valve
- High-pressure safety relief valve
- Protective roll cage
- For use with single acting tools

### PG1203/4S-CP

- 4,1 Kw Honda OHV-type engine
- Remote hand control with 3,1 m cord
- Two-stage pump for rapid advance
- High-pressure safety relief valve
- Protective roll cage
- For use with either single or double acting tools



**CAUTION: DESIGNED FOR CRIMPING APPLICATIONS ONLY!** This system should not be used for lifting.

PUMPS

Order No.	Oil Delivery (l/min.)	Oil Reservoir (l)	Usable Oil (l)	Overall Width (mm)	Overall Length (mm)	Overall Height (mm)	Pump Weight w/Oil (kg)
PG1203-CP	8 at 7 bar	11,3	7	502	552	622	80
PG1203/4S-CP	2,1 at 700 bar						





# Gasoline Pump

## HYDRAULIC PG30/55 SERIES

**0,5 - 0,9 l/min**  
Gasoline driven

Gasoline power supply ideal for remote locations. PG30 series for to 75 ton cylinders. PG55 series for up to 150 ton cylinders.

**PUMPS**

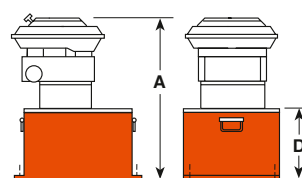
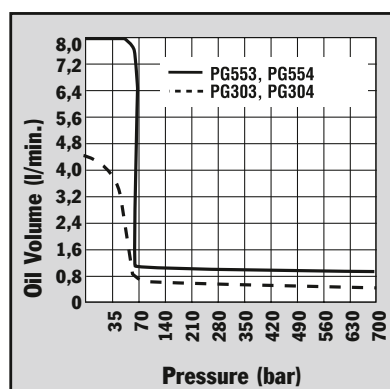
- A logical choice at work sites where electricity or compressed air are unavailable. For single- or double-acting cylinders at operating pressures to 700 bar.
- All gasoline engine/hydraulic pumps feature "Posi-Check®" valve to guard against pressure loss when valve is shifted from "advance" to "hold".



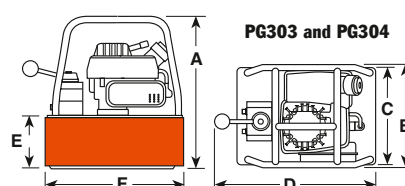
**PG303**

### PG303 and PG304

- Powered by a 2-cycle, 1,5 kW Tecumseh engine giving it the lowest weight to horsepower ratio of all gasoline driven pumps. Has an aluminum reservoir with 6 l of usable oil.
- Has same basic pump as PE30 series electric operated pumps.
- PG30 series pumps are equipped with roll cages to protect pump from damage.
- PG30 series pumps weigh in at only 14,5 kg with oil.
- PG303 is for single-acting cylinders, has a 9520 valve with separate internal return line; allows oil from running pump to return to reservoir, independently of cylinder return oil, when valve is in "return" position.
- PG304 is for double-acting cylinders, has a 9506 4-way (tandem center) valve.



**PG553 and PG554**



**PG303 and PG304**

Pump No.	Max. Pressure Output bar	rpm	Oil Del. (l/min at...)				A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Prod. Wt. w/Oil (kg)
			7 bar	0 bar	350 bar	700 bar							
<b>PG303, PG304</b>	700	6.000	4,4*	0,6	0,6	0,5	378	264	241	406	130	343	14,5
<b>PG553, PG554</b>	700	3.600	7,7	1,2	1,1	0,9	559	457	318	219	422	229	54,4

\* First stage oil delivery from 0-28 bar at 3,7 l/min minimum.



PG554



700 bar

### PG553 and PG554

- 4,5 Kw Intek "Diamond Edge" 4-cycle, by Briggs & Stratton 19 l reservoir.
- Same basic pump as PE55 series electrical Vanguard® pumps.
- PG553 has a 9520 3-way valve for single-acting cylinders.
- PG554 has a 9506 4-way valve for double-acting cylinders.

Gasoline Powered Hydraulic Pumps like this PG303 help provide hydraulic force at remote locations.



For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Reservoir Usable (l)	Kw	Cycle
Single-acting	1,5 Kw pump with 7,6 l reservoir and single-acting valve.	<b>PG303</b>	3-Way	9520	Advance Hold Return	6	1,5	2
Single-acting	4,5 Kw pump with 21,6 l Reservoir and single-acting valve.	<b>PG553</b>	3-Way	9520	Advance Hold Return	20,8**	4,5	4
Double-acting	PG303, except has double-acting valve.	<b>PG304</b>	4-Way	9506	Advance Hold Return	6	1,5	2
Double-acting	PG553, except has double-acting valve.	<b>PG554</b>	4-Way	9506	Advance Hold Return	20,8**	4,5	4

\*\* Usable oil is calculated with oil fill at recommended level at 13 mm below cover plate.





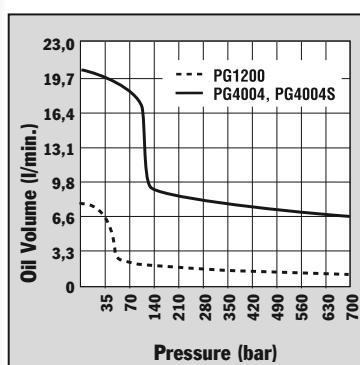
# Gasoline Pump

## PG120-PG400 SERIES

**2,1 - 6,4 l/min**  
Max.output gasoline  
powered pumps.

Large reservoir capacity roll  
cage equipped. PG120 for up  
to 300 ton cylinders. PG400 for  
up to 1,000 ton cylinders.

**PUMPS**

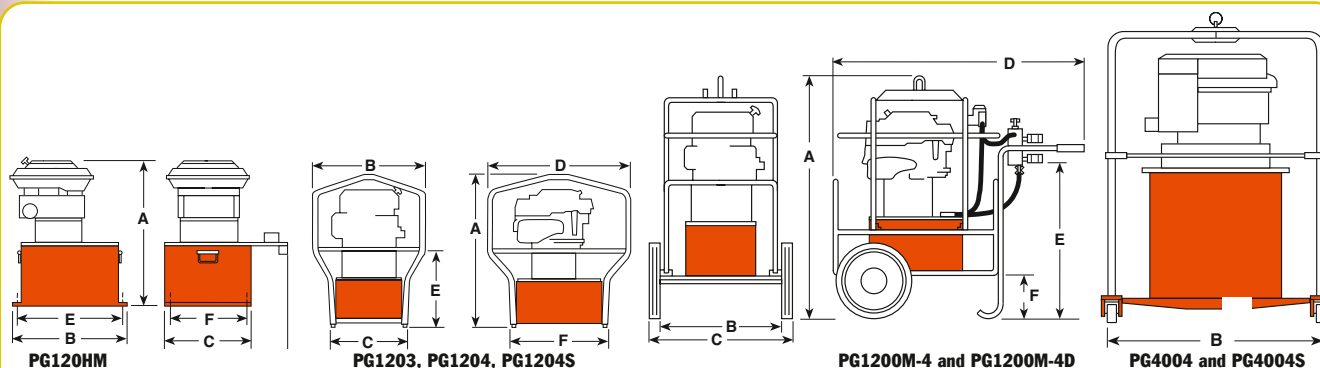


700 bar



PG4004S

- Two-speed high performance pumps ideal for construction, structure moving and rigging applications.
- A logical choice at work sites where electricity or compressed air are unavailable. For single- or double-acting cylinders at operating pressures to 700 bar.
- All gasoline engine/hydraulic pumps feature "Posi-Check®" valve to guard against pressure loss when valve is shifted from "advance" to "hold".
- PG1200 Series pumps powered by a Honda 4-cycle, 5.5 hp engine with automatic decompression and electronic ignition. Deliver over 2,1 l/min at 700 bar.
- A 19 liter reservoir means adequate capacity for multi-cylinder applications. Dual element air cleaner protects engine from dusty environments.
- Heavy duty "roll cage" provides pick-up points for lifting. Horizontal bars on PG1203, PG1204 and PG1204S protect unit, provide hand holds for carrying.
- Rubber anti-skid insulation on bottom of reservoir resists skidding and dampens vibration. PG1200M-4 and PG1200M-4D include a pump cart with 305 mm wheels.
- Adjustable external pressure regulator.



Pump No.	Max. Pressure Output bar	rpm	Oil Del. (l/min @)				Prod.						Wt. w/Oil (kg)
			7 bar	70 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	
PG120HM	700	3,600	7,7	2,8	2,4	2,1	584	394	362	483	338	308	68
PG1203	700	3,600	7,7	2,8	2,4	2,1	708	514	362	667	343	464	70
PG1204	700	3,600	7,7	2,8	2,4	2,1	708	514	362	667	343	464	70
PG1204S	700	3,600	7,7	2,8	2,4	2,1	708	514	362	667	343	464	73
PG1200M-4	700	3,600	7,7	2,8	2,4	2,1	1070	457	635	1080	667	184	118
PG1200M-4D	700	3,600	7,7	2,8	2,4	2,1	1070	457	635	1080	667	184	127
PG4004	700	3,600	19,8	17,9	7,6	6,4	1276	1321	1321	—	—	—	197
PG4004S	700	3,600	19,8	17,9	7,6	6,4	1276	1321	1321	—	—	—	200

**PG1204S****PG1200M-4D****PG1200M-4**

- For single-acting cylinders. Has 9520 3-way/3-position (tandem center) valve, 9596 load lowering valve and 9644 4-port manifold with individual needle valves at each port.
- Has a 9796 coupler and 9797 dust cap at each port. Valving permits precise individual control of up to four cylinders.
- A 9052 heavy duty, fluid filled pressure gauge (0-700 bar) is included.

4-port manifold without needle valves mounted beneath 9644 manifold for operating double-acting cylinders.

**PG400 Series Maximum output Hydraulic Power Package**

- Ideal for single or multiple cylinder applications. Has a 4-cycle, 15 kW Honda engine and 76 l reservoir (63 l usable) with low oil level sight gauge.
- Steel "roll cage" protects pump, has a lifting hook; 102 mm dia. swivel casters provide mobility.
- Delivers 6,4 l/min of oil at maximum

operating pressure.

- Has a 9506 4-way valve. On/off switch and speed control are protected by a panel. Sturdy molded case protects battery (not included).

**PG1200M-4D**

- For single- or double-acting cylinders with precise individual control of up to four cylinders possible.
- Equipped same as PG1200M-4, except has 9506 4-way/3-position (tandem center) valve, and second

For use with cyl.-type	Description	Order No.	Valve Type	Valve No.	Valve Function	Reservoir		
						Usable (l)	Kw	Cycle
Single-acting	Base model 4,1 Kw gasoline pump with 22 l reservoir.	<b>PG1203</b>	3-Way	9520	Advance Hold Return	20,8	4,1	4
Single-acting	PG1203 with cart, rollcage, load lowering valve, 4 port manifold & gauge.	<b>PG1200M-4</b>	3-Way Manifold	9520 9644	Advance Hold Return**	20,8	4,1	4
Single-acting/ double-acting	PG1200M-4D, except without "Roll Cage" and cart. Ideal for house moving industry.	<b>PG120HM</b>	4-Way Manifold	9506 9642	Advance Hold Return**	20,8	4,1	4
Double-acting	Base model 4,1 Kw gasoline pump, with 22 l reservoir and double-acting valve.	<b>PG1204</b>	4-Way	9506	Advance Hold Return	20,8	4,1	4
Double-acting	PG1204, except has roll cage, cart, solenoid valve and 7,6 m cord.	<b>PG1204S</b>	4-Way Solenoid***	9516	Advance Hold Return	20,8	4,1	4
Double-acting	PG1200M-4, except for double-acting systems.	<b>PG1200M-4D</b>	4-Way Manifold	9506 9644	Advance Hold Return**	20,8	4,1	4
Double-acting	Base model 15 Kw pump with 76 l reservoir.	<b>PG4004</b>	4-Way	9506	Advance Hold Return	62,8*	15	4
Double-acting	PG4004, except has solenoid operated remote valve.	<b>PG4004S</b>	4-Way Solenoid***	9516	Advance Hold Return	62,8*	15	4

\* Usable oil is calculated with oil fill at recommended level at 57 mm below cover plate.

\*\* Control up to 4 cylinders independently.

\*\*\* Has 7,6 m remote control cord.





# Intensifier HYDRAULIC

Pressure ratio 5:1

Converts low-pressure portable hydraulic pumps or on-board hydraulic systems, into high pressure power sources.

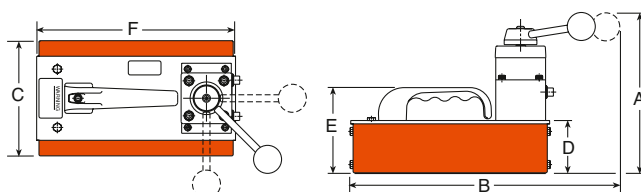
PUMPS

- Applications include utilities, railroads, construction, riggers and others.
- Operates single- or double-acting cylinders, jacks, and tools such as crimpers, spreaders, cable cutters, or tire tools.
- May be used to operate two separate, single-acting tools (with integral valves) independently, without need for additional manifold.
- Compact and rugged for use inside a utility vehicle aerial bucket or stowing in a vehicle.
- Control valve included. Other Power Team valves available as an option to suit your specific application, if needed; consult factory.
- No reservoir level to maintain; uses low pressure system as oil supply.
- Has 3/8" NPTF ports; compatible with standard fittings for low and high pressure systems.



HB443

700 bar



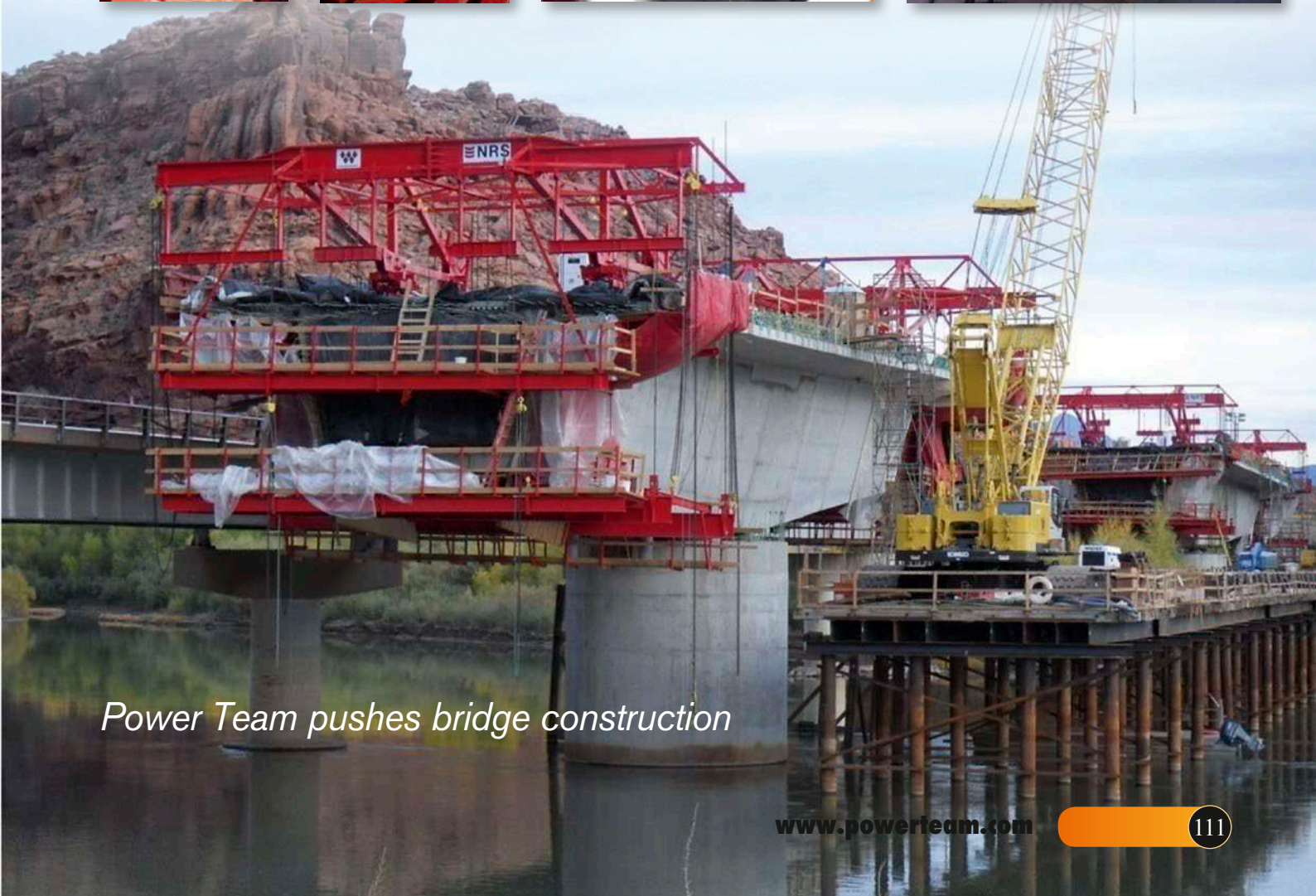
Pump No.	Output Flow at 700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Prod. Wt. (kg)
HB44-Series	0,7 l/min.	210	368	156	70	114	267	7,2

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Output Flow Valve Function	Input Flow Range (l/min)	Input Flow Pressure (bar)	Output Flow Range (l/min)
Single-Acting	Hydraulic intensifier for single-acting systems	HB443	3-Way 3-Position	9520*	Advance Hold Return	0 -38	20 - 138	0 - 9,5
Single-Acting/ Double-Acting	Hydraulic intensifier for double-acting systems	HB444	4-Way 3-Position	9506*	Advance Hold Return	0 -38	20 - 138	0 - 9,5
Double-Acting	Hydraulic intensifier for double-acting torque wrench tools	HB445-RR	4-Way 3-Position	-	Advance Hold Return	0 -38	20 - 138	0 - 9,5

† For maximum efficiency, recommended input flow is 19 l/min at a maximum pressure of 140 bar. Higher flows and/or pressures must be compensated for at the system pump (e.g., relief valve, variable flow devices, etc.).

\* Posi-Check® valve design, "Posi-Check®" guards against pressure loss when valve is shifted from "advance" position to "hold" position.





*Power Team pushes bridge construction*





# Assemble to Order Pumps

## CUSTOM BUILT HYDRAULIC PUMP

Choose your basic pump, make your selections, and we will assemble, test and ship your pump.

PUMPS



**1**  
PE55A  
PE55B  
PE90A  
PE90B



**2**  
PE55C  
PE55D  
PE55F  
PE90C  
PE90D  
PE90F



**3**  
PE120M



**4**  
PA55A  
PA90A



**5**  
PG55A

700 bar

### ORDER A "CUSTOM BUILT" HYDRAULIC PUMP

"Assemble to Order" means you can choose a basic pump with gas, air or electric motor. Then select the proper valve, gauge, pressure control, motor control and reservoir. You get a two-stage pump that gives high oil volume for fast cylinder approach (and return with double-acting cylinders) in the first stage and high pressure in the second stage.

#### **1 0,83 KW UNIVERSAL MOTOR**

These motors start under full load and are suitable for operation up to 350 or 700 bar. The motor is 0,83 KW, 12,000 rpm, 115 or 230 volt, 50 cycle A.C. single phase (25 amp draw at 115V.). With proper valve they can be used with single- or double-acting cylinders. Remote control available.

#### **2 1,1 KW JET MOTOR, SINGLE & THREE-PHASE**

Feature low noise level, moderate speed for long service and are ideal for fixed applications. Motor is 1,1 KW, 3,450 rpm, 115 or 230 volt, 50 cycle, A.C. single phase with thermal overload switch. Can be used with single- or double-acting cylinders and equipped with remote control. Also available in 230/460 volt, three-phase (specify).

**NOTE:** These do not start under full load unless valve is in "neutral" (requires open or tandem center valve) and are not recommended for frequent starting and stopping.

#### **3 2,2 KW JET MOTOR, THREE-PHASE**

Gives low noise level and long life due to its moderate operating speed. Ideal for fixed installations. Consists of basic 700 bar pump, jet pump motor: 2,2 KW, 3,450 rpm, 230/460 volt, 50 cycle. A.C. three-phase, with thermal overload switch. Equipped with internal and external relief valve. Will start under load.

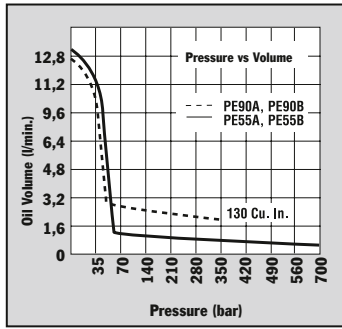
#### **4 2,3 KW AIR MOTOR**

This pump is ideal for use where electricity is unavailable or cannot be used. The 350 or 700 bar pump has a 2,3 KW air driven motor at 3,000 rpm (optimum performance based on 6 bar air pressure and 1165 l/min 1419 l/min at the pump). You can drive single- or double-acting cylinders with the correct valve.

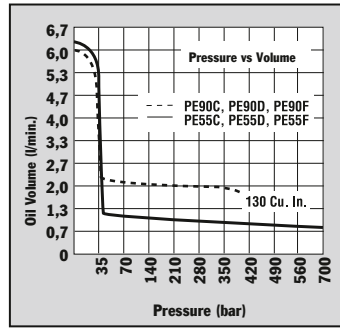
**NOTE:** 6 bar air supply required to start under full load.

#### **5 GASOLINE ENGINE**

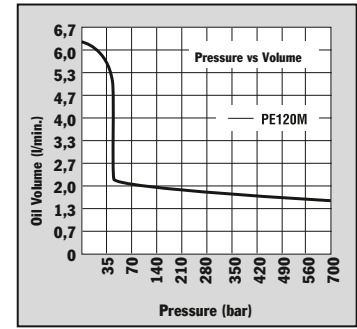
This version is perfect when electricity and air are unavailable. It is capable of continuous operation at full pressure. Consists of basic 700 bar pump, 4-cycle Briggs & Stratton "Diamond Edge" gasoline engine, developing 4,5 KW. As with all these pumps, this unit can be valved for use with either single- or double-acting cylinders.



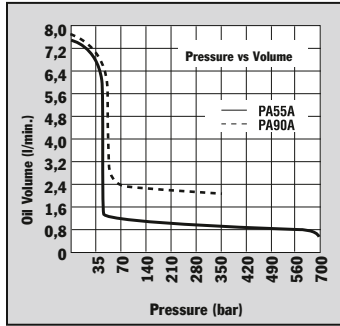
dBA @ idle and 700 bar - 90/95  
dBA @ idle and 350 bar - 90/95



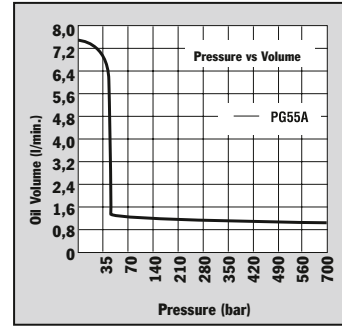
dBA @ idle and 700 bar - 80/85



dBA @ idle and 700 bar - 80/85



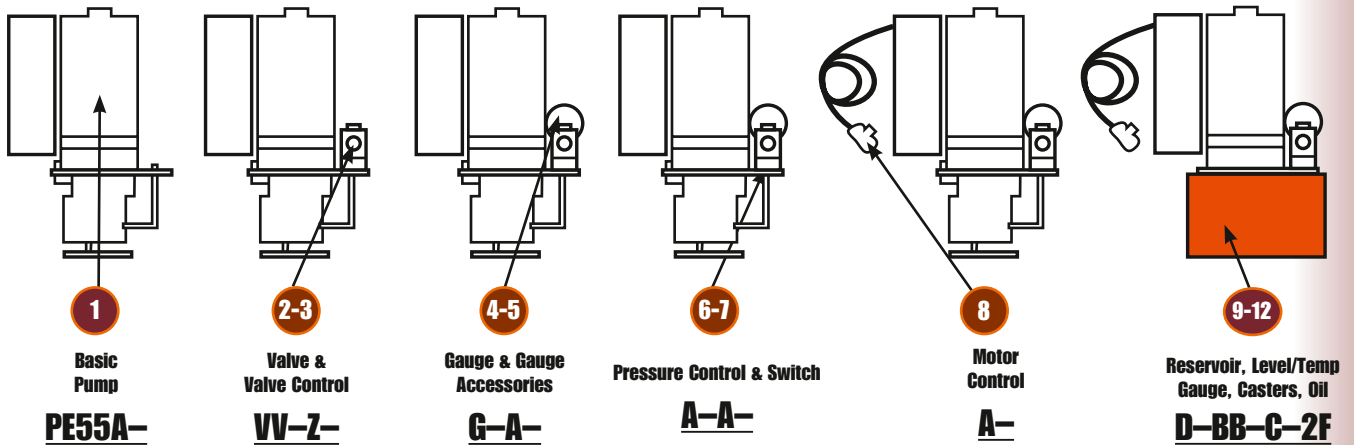
dBA @ idle and 700 bar - 83/88  
dBA @ idle and 350 bar - 83/88



## "ASSEMBLE TO ORDER" SYSTEM HOW TO ORDER YOUR "CUSTOM" HYDRAULIC PUMP. . .

You can choose from pre-engineered, off-the-shelf components to customize your pump. All the components are listed in table form, with key letters or numbers on pages 114-115. Complete instructions guide you through

so you can determine what is needed to complete a pump assembly. Shown below is an example of a custom-built pump.



Pump No. **PE55A-VV-Z-G-A-A-A-D-BB-C-2F** is a 700 bar two-speed pump with a 115 volt, 50Hz, single phase, 1,12 KW, 12,000 rpm motor;

a 9512 4-way solenoid valve with a 202778 remote hand control, a 9041 pressure gauge, no gauge accessories,

standard pressure control, standard On-Off-Pulse motor control, 400630R9 7,6 liter reservoir, a 350431 oil level/temperature gauge, 10494 casters, and 7,6 liter of standard hydraulic oil.

See next two pages for pump components





# Assemble to Order System

## PUMP COMPONENT SPECIFICATION CHART

### TO BUILD YOUR PUMP, FILL IN KEY LETTERS FROM CHARTS

<b>1</b> Basic Pump	<b>2</b> Select Valve	<b>3</b> Select Valve Control	<b>4</b> Select Gauge	<b>5</b> Select Gauge Accessories	<b>6</b> Pressure Control
<b>7</b> Pressure Switch	<b>8</b> Motor Control	<b>9</b> Reservoir	<b>10</b> Level/Temp Gauge	<b>11</b> Choose Casters	<b>12</b> Select Oil

Use the charts numbered from 1-12 below to select the pump, valve, gauge and other miscellaneous accessories to suit your needs. For the pump, fill in the basic number plus key letter in block 1 above and the key letter only in the blocks 2-12 above for any of the other items. Refer to the appropriate pages in this catalog for more specific information on the products you need.

### 1 BASIC PUMP (See pages 94-106)

BASIC PUMP NUMBERS						SPECIFICATIONS		
PE55 (700 bar)	PE90 (350 bar)	PE120 (700 bar)	PA55 (700 bar)	PA90 (350 bar)	PG55 (700 bar)	NOTE: Customer must specify voltage required.		
						Power Source	rpm	KW
A or AC*	A or AC*					115V-60 Hz, 1Ø	12,000	0,84
						110V-50 Hz, 1Ø	12,000	0,84
B or BC*	B or BC*					230V-60 Hz, 1Ø	12,000	0,84
						220V-50 Hz, 1Ø	12,000	0,84
† C or CC*	† C or CC*					115V-60 Hz, 1Ø	3,450	1,12
† C50	† C50					110V-50 Hz, 1Ø	2,850	1,12
† D or DC*	† D or DC*					230V-60 Hz, 1Ø	3,450	1,12
† D50	† D50					220V-50 Hz, 1Ø	2,850	1,12
† F60 **	† F60**					208, 230/460V-60 Hz, 3Ø	3,450	1,12
† F50 **	† F50**					220/380V-50 Hz, 3Ø	2,850	1,12
		M60 **				208, 230/460V-60 Hz, 3Ø	3,450	2,24
		M50 **				220/380V-50 Hz, 3Ø	2,850	2,24
			A	A		Air Motor	3,000	2,24
					A	Gas Engine	3,600	4,47

\*Suffixes AC, BC, CC & DC indicate pumps for Canadian orders only.

NOTE: All electric units have 24 volt secondary circuit.

\*\*Specify voltage required.

† These pumps do not start under full load unless valve is in "neutral" position (requires open or tandem center valve) and are not recommended for frequent starting and stopping.

### 2 VALVE (See pages 50-60)

Manifold/Manual/Air Operated Directional Valves		Function	Manifold/Manual/Air Operated Directional Valves		Function
AB	9628 manual, tandem center	4-way, 3 pos. valves	O	9609 manual, pressure compensated flow control	3-way, 4 pos.
AC	9632 manual “twin” tandem and open center		R	9506 manual, tandem center “Posi-Check®”	
A	None		RR	9511 manual, open center	
B	9626 manifold	Manifold 3-way, 2 pos. valves	S	9500 manual, tandem center	4-way, 3 pos. valves
C	9584 manual		T	9507 manual, closed center “Posi-Check®”	
D	9582 manual		U	9501 manual, closed center	
E	9610 automatic, pilot operated	3/4-way, 2 pos. valves	Solenoid Operated Directional Valves		Function
G	9504 manual		FF	9569 solenoid operated - 24 volt	3-way, 2 pos.
JJ	9594 air operated		HH	9572 solenoid operated - 24 volt	3/4-way, 2 pos
L	9502 manual, closed center “non-interflow”	3-way, 3 pos. valves	PP	9599 solenoid operated - 24 volt	3-way, 3 pos.
M	9520 manual, tandem center “Posi-Check®”		VV	9512 solenoid operated - 24 volt	4-way,
N	9576 manual, metering tandem center		WW	9615 solenoid operated - 24 volt	3 pos. valves

### 3 VALVE CONTROL (See page 116)

Valve Remote Control		Use with Valve	Valve Remote Control		Use with Valve
A	None	—	Z	202778 remote hand control, 3,1 m	9512 or 9615
X	304718 remote hand control, 3,1 m	9572	ZF	309653 remote foot control, 3,1 m	9512, 9615, 9569 or 9599
XF	309652 remote foot control, 3,1 m	9572			
Y	202777 remote hand control, 3,1 m	9569 or 9599	ZZ	209593 remote hand control, 3,7 m	9594

**4 GAUGE (See page 124-125)**

Pressure Gauges	
A	None
B	Other – Specify
G	9041 0-10.000 psi – 0-700 Bar (63 mm dia.)
H	9040 0-10.000 psi – 0-700 Bar (Liquid) (63 mm dia.)
J	9051 0-10.000 psi – 0-700 Bar (100 mm dia.)
M	9052 0-10.000 psi – 0-700 Bar (Liquid) (100 mm dia.)

**6 PRESSURE CONTROL (See page 133)**

Pressure Controls	
A	With standard external pressure regulator
C	Other – specify
D	350199 premium external pressure regulator. See Power Team Catalog product No. 9633 for details.

**NOTE:** Pressure controls are factory pre-set at 700 bar unless otherwise specified.

**8 MOTOR CONTROL (See page 116)**

Electric Motor Controls	
A	Standard On/Off/Pulse control (does not include remote switch) for A, B, C, D, F and M electric pumps. Also used for remote controlled solenoid valves.
B	None
C	25017 remote motor hand switch, 3,1 m.
D	203225 remote motor hand switch, 3,1 m. (heavy duty)
E	10461 remote motor foot switch, 3,1 m.
Air Motor Controls	
AA	Other
B	None
P	27876 hand motor control (for PA55 & PA90 series)
Q	27877 foot motor control (for PA55 & PA90 series)

**10 OIL LEVEL/TEMP. GAUGE (SEE PAGE 118)**

Oil Level/Temperature Gauge	
A	None
BB	350431 oil level/temperature gauge

**11 CASTERS (See page 124)**

Casters	
A	None
C	10494 caster for use with 400630R9 reservoir (Specify quantity of four)

**5 GAUGE ACCESSORY (See page 125)**

Gauge Accessories	
A	None
N	9049 pulsation dampener – All dry gauges

**7 PRESSURE SWITCH (See page 117)**

Pressure Switch	
A	None
B	9625 electric pressure switch (35-700 bar)
<b>NOTE:</b> Pressure switch is factory pre-set at 700 bar unless otherwise specified.	
C	9641 pilot operated air control valve – N.C.
D	9643 pilot operated air control valve – N.O.

**9 RESERVOIR (See page 119)**

Reservoirs	Capacity
A	None
B	Other – Specify
D	400630R9 – PE55, PE90, PE120, PA55 and PA90 series
E	61165† – PE55, PE90, PE120, PA55 and PA90 series (Oil temperatures in excess of 65.5° C. may cause permanent failure of the thermoplastic reservoir)
F	RP22‡ – PE55, PE90, PE120, PA55 and PA90 series
H	617990R9 Same as D except with drain port
J	RP50 – PE55, PE90, PE120, PA55 and PA90 series
K	401370R9 – PG55 series
P	209124 – PE55, PE90, PE120, PA55 and PA90 series
V	RP100 – PE55, PE90, PE120, PA55 and PA90 series
W	RP101 – PG55 series

**NOTE:** Includes cover adapter and misc. accessories when applicable.

†High density polyethylene.

‡Aluminum.

**12 OIL (See page 126)**

Oil	
E	Ship pump without oil
F	9637 3,8l. standard hydraulic oil
G	9638 9,5l. standard hydraulic oil
Q	9639 3,8l. Flame-Out hydraulic oil
R	9640 9,5l. Flame-Out hydraulic oil
U	9645 3,8l. biodegradable hydraulic oil
V	9646 9,5l. biodegradable hydraulic oil

**NOTE:** Select type of hydraulic oil and specify quantity.



# Hydraulic Pump ACCESSORIES

## PUMPS

25017  
202777  
202778  
304718



203225



10461



251660



309652  
309653



209593



17627  
216209



### ON/OFF MOTOR CONTROL

The following remote control switches will give you momentary "ON" control of your hydraulic pump. These switches are deadman type, spring loaded to the "OFF" position. They can be used with any Power Team electric hydraulic pumps.

**No. 25017** - Remote hand control. Has a push button switch, with a 3,1 m cord. Wt., 0,4 kg.

**No. 203225** - Remote hand control. Heavy-duty with single push button switch in a neoprene housing with 3,1 m cord. Housing seals out dust, lint and liquids (unit is not submersible). Wt., 0,4 kg.

**No. 10461** - Remote foot control, with 3,1 m cord. Wt., 1,4 kg.

**No. 251660** - Remote foot control, with 3,1 m cord.

For use with the PE10 style pumps. Wt., 0,4 kg.

### SOLENOID & MOTOR CONTROL

For use on solenoid valves that are used on single-acting cylinders:

**No. 202777** - Remote hand control. Has rocker style switch that is momentary advance, spring center hold and detented retract. It comes with a 3,1 m cord, for use with 3-way/2 or 3-position valves. Wt., 0,4 kg. For use on solenoid valves that are used on double-acting cylinders:

**No. 202778** - Remote hand control. Has rocker style switch that is momentary advance, spring center hold and momentary retract. It comes with a 3,1 m cord, for use with 4-way/3-position valves. Wt., 0,4 kg.

**No. 309653** - Remote foot control. Can be used in place of either of the above hand controls to control the same type of valves. The switch is momentary on both the advance and retract position and is spring centered to the hold position. This foot switch comes with 3,1 m cord. Wt., 1,8 kg.

**No. 17627** - Remote foot control. Same as the No. 309653 but without a cord. Wt., 0,9 kg.

**No. 304718** - Remote hand control. Has a rocker style switch that is momentary advance, spring center hold and momentary retract. The switch is wired to start and stop the motor when the valve is energized. It comes with a 3,1 m cord. To be used with 4-way/2-position valves. Wt., 0,4 kg.

**No. 309652** - Remote foot control. Has same functions as No. 304718. Supplied with a 3,1 m cord. To be used with 4-way/2-position valves. Wt., 1,8 kg.

**No. 216209** - Remote foot control. Same as the No. 309652, but without a cord. Wt., 0,9 kg.

NOTE: See valves listing to determine which remote to use. Page 44-51.

### REMOTE AIR MOTOR CONTROLS

This remote hand control has two momentary push buttons, one for advance and one for retract with spring offset to hold. To be used with 4-way/2-position air pilot valves.

**No. 209593** - Remote hand control with 3,7 m cord. Wt., 0,9 kg.



## SUBPLATES

For remote mounting of control valves. They convert pump mounted valves to remote mounted valves quickly and easily.

**No. 9510** - Subplate for remote mounting the following valves; 9500, 9501, 9502, 9504, 9506, 9507, 9511, 9552, 9572, 9575, 9576, 9592, 9594 and 9609. Wt., 1 kg.

**No. 9620** - For use with 9500, 9501, 9502, 9552, 9572, 9592 and 9594. Same as No. 9510 but has integral pressure regulating valve. Wt., 1,7 kg.

## PUMP-MOUNTED SUBPLATES

When fitted between pump cover plate valve mounting flange and control valve, provides a separate 3/8" NPTF female port, open to "return" regardless of position of valve. Also provides a separate 3/8" NPTF female pressure port. This subplate can be useful when you desire to use one pump with a deck-mounted control valve, plus a separate remote-mounted valve to control another function. For use with the following valves: 9500, 9501, 9502, 9504, 9506, 9507, 9511, 9552, 9572, 9575, 9576, 9592, 9594 and 9609.

**No. 9515** - Subplate, Wt., 0,6 kg.

**No. 9521** - Subplate for use under most pump mounted valves to provide adjustable pressure control on units not equipped with an external pressure regulator. Wt., 1,7 kg.

## AIR FILTER/REGULATOR/LUBRICATOR

Recommended for use with single-speed air/hydraulic pumps found on pages 55-69.

**No. 9531** - Filter/regulator. 1/4" NPTF inlet and outlet. Wt., 0,4kg.

## PRESSURE SWITCH

**Application:** Used in a hydraulic circuit where system pressure must be "held". Automatically (electrically) turns off pump motor when predetermined system pressure is reached. Attaches directly to control valve manifold or can be mounted "in-line" to read system pressure. Has a 1/4" NPTF male thread, and a 1/4" NPTF fitting for gauge mounting if required. Adjustable from 70 to 700 bar. Can also be used to actuate other electrical devices in the system. Wired "normally open" and held closed by spring pressure.

**IMPORTANT:** Electrical rating of switch is 5 amps at 250 volts max. To prevent permanent damage to switch, a control relay must be installed to handle currents or voltage exceeding these limits. Pressure switch should never be used to directly actuate the electrical motor.

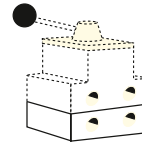
**No. 9625** - In-line pressure switch with 1/4" NPTF gauge port. Wt., 0,5 kg.

## PILOT OPERATED AIR CONTROL VALVES

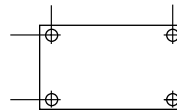
**Application:** For use when an air pilot signal is required at a set hydraulic pressure. Can be used to shift valves, and start or stop pneumatic pumps. Attaches directly to control manifold or can be mounted "in-line" to read system hydraulic pressure. Automatically turns on an air pilot signal when a predetermined system pressure is reached. Has 1/4" NPTF male thread and 1/4" NPTF fitting for gauge mounting if required. Adjustable from 35-700 bar. Maximum rating of 700 l at 7 bar.

**No. 9641** - Pilot operated control valve, normally closed, with 1/4" NPTF male thread. Wt., 0,4 kg.

**No. 9643** - Same as 9641 except normally open. Wt., 0,4 kg.



9510 and 9620 attach to the bottom of valve for remote mounting. The 9515 and 9521 mount between the pump cover plate and valve.



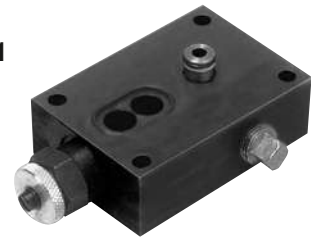
9510  
9515



9620



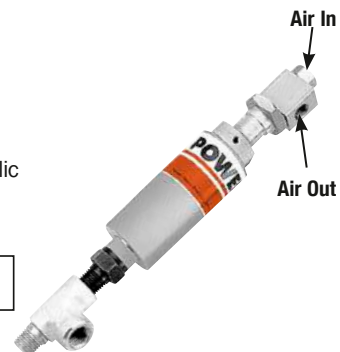
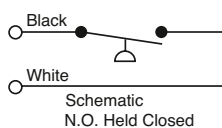
9521



9531



9625



9641  
9643



# Hydraulic Pump ACCESSORIES

## PUMPS

252511  
252512

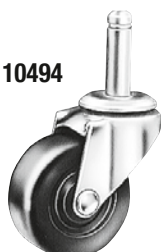


206767  
250175



350431

10494



207762



16339



### OIL COOLER KITS

**No. 252511** - Oil cooler kit designed for use with PE604T or PE604PT pumps with 115 VAC. Wt., 2,2Kg.

**No. 252512** - Oil cooler kit designed for use with PE604T or PE604PT pumps with 220 VAC. Wt., 2,2 kg.

### RESERVOIR BREATHER KITS

**No. 206767** - Reservoir breather kit designed for use on PA17, PA55, PE17, PE55, PE84, PE90, PE120, PG55, PG120, PQ60 and PQ120 series pumps. Wt., 0,6 kg.

**No. 250175** - Reservoir breather kit designed for use on PE21 and PE46 series pumps. These kits replace the reservoir filler cap when the pump is used in dusty and dirty environments. Wt., 0,6 kg.

### CASTERS

50,8 mm diameter casters attach to the bottom of large reservoir for portability. Sold individually; order the amount you need.

**No. 10494** - Single caster wheel. Wt., 0,1kg.

### FLUID LEVEL/TEMPERATURE GAUGE

Displays fluid level and temperature of hydraulic oil in reservoir. 32°-212°F, 0°-100°C. 32 mm wide and 162 mm high.

**No. 350431** - Fluid level/temperature gauge.

### FOOT CONTROL GUARD

Guard for use with 10461 and 251660 foot controls.

**No. 16339** - Wt., 2 kg.

### MAGNETIC STRIP

Magnetic strip with adhesive back can be added to No. 25017, 202777, 202778 and 304718 hand controls. Provides 2,7 kg. of holding force.

**No. 207762** - Wt., 0,1 kg.

### VITON\* SEAL KITS

(SEE PAGE 33)



Viton\* seal kits

Order Number	Use With	Model
<b>300507</b>	P12	All
<b>300472</b>	P23, P55	All
<b>300510</b>	P59	All
<b>300508</b>	P157, P159, P300	A
<b>300690</b>	P157, P159	B
<b>300696</b>	P300	B
<b>300508</b>	P157D, P159D, P300D	A
<b>300693</b>	P157D, P159D	B
<b>300699</b>	P300D	B

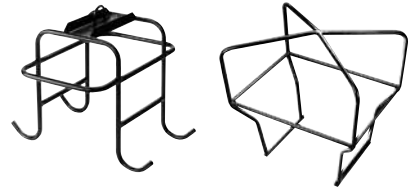
**VITON\* SEAL KITS** Can be used in all "C" and "RH" series cylinders (see pages 14-15 and 22-23), as well as the P12, P55, P59, P157/P159, P157D/P159D and P300/P300D series of hand pumps. These seals are required when fire resistant hydraulic fluids are used. For use with phosphate ester fluids. Not required with Flame-Out fluid.

\* Viton is the E.I. duPont De Nemours & Co., Inc, trade name for fluoroelastomers.

### UNIVERSAL PUMP CART

Mobilize your hydraulic pumps with the PC200. The rugged tubular frame can easily handle pumps weighing up to 90 kg. With 305 mm wheels, the cart rolls easily. Just load the pump onto the cart and wheel it right to the job. The universal mounting hole pattern lets you handle a wide variety of Power Team pumps.

**No. PC200** - Universal pump cart with 305 mm wheels. Cart can be used with the following pumps: PA60, PA64 and PA554 air/hydraulic pumps; PE55 series, PE183-2 and PE184-2 electric/hydraulic pumps; PE21, PQ60 and PQ120 series "Quiet" pumps; PG55 series gas engine/hydraulic pumps; and pumps with optional 19- and 38 l - reservoirs; Nos. RP50, RP51, RP101 and RP103. Wt., 12,3 kg (Shown with pump, pump not included)



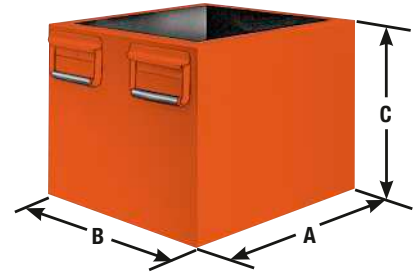
### PROTECTIVE PUMP ROLL CAGE

Safeguards pump, gas engine and valves on the job site. Horizontal bars provide convenient hand holds for carrying pump, a pick-up point permits lifting unit with an overhead crane or other device. Standard equipment on PG1203 and PG1204. Can be ordered as an option with any other gas, air, or electrically driven hydraulic pump equipped with a 38 l reservoir.

**Note:** Refer to PG1203/PG1204 specification chart (pages 108-109) for dimensions of roll cage.

**No. PC200RC** - Roll cage for use with PC200. (Cannot be used on pumps with 38 liter reservoirs.) Wt., 16 kg.

**No. RC5** - Roll cage. Wt., 9 kg.



### LARGE CAPACITY RESERVOIRS

Capacity (liter)	Order Number	Usable Oil (l/min)	Use With	Size (mm)		
				A	B	C
7,6	<b>RP20**</b>	7,1	PA6, PA50 series (models A-E)	292	241	165
7,6	<b>RP20-F**</b>	7,1	PA6 series (model F), PA 50 series (model F & G)	292	241	165
9,5	<b>RP20M*</b>	7,2	PA6, PA50 series (models A-E)	292	241	165
9,5	<b>RP20M-F*</b>	7,2	PA6 series (model F), PA50 series (model F & G)	292	241	165
9,5	<b>RP21*</b>	7,2	PE18 series	292	241	165
9,5	<b>RP22†</b>	7,1	PE55, PE90, PE120, PA55	292	241	165
19	<b>RP50</b>	18,4	PE55, PE90, PE120, PA55	381	318	203
19	<b>RP51</b>	18,4	PA46, PE46, PE21	381	318	203
37,9	<b>RP100</b>	35,1	PE55, PE90, PE120, PA55	381	318	356
37,9	<b>RP101</b>	35,1	PG55, PG120	381	318	356
37,9	<b>RP103*</b>	37,0	PQ60, PQ120	392	362	313
37,9	<b>RP104</b>	35,1	PA46, PE46, PE21	381	318	356

\* Four mounting holes: 1/2"-20, for 50.8 mm diameter swivel casters (No. 10494)

\*\* High density polyethylene reservoir. † Aluminum reservoir.

**NOTE:** All metal reservoirs are equipped with drain plugs and all necessary conversion items.

Hydraulic oil is not included with reservoir kits. Please order separately. See page 126.

### METAL RESERVOIR CONVERSION KITS FOR PUMPS \*INCLUDES GASKETS AND FASTENERS.

Metal Pump Number	Res. Order Number	Metal Reservoir Capacity (l)	Reservoir Weight (kg)	Metal Pump Number	Res. Order Number	Metal Reservoir Capacity (l)	Reservoir Weight (kg)	Metal Pump Number	Res. Order Number	Metal Reservoir Capacity (l)	Reservoir Weight (kg)
<b>PA6</b>	213896	1,7	1,4	<b>PA50</b>	213896	1,7	1,4	<b>PA174</b>	213895	9,5	4,1
<b>PA6A</b>	213896	1,7	1,4	<b>PA50R</b>	213896	1,7	1,4	<b>PE172</b>	213895	9,5	4,1
<b>PA6D</b>	213896	1,7	1,4	<b>PA6R</b>	213896	1,7	1,4	<b>PE172A</b>	213895	9,5	4,1
<b>PA6-2</b>	213895	9,5	4,1	<b>PA50R2</b>	213895	9,5	4,1	<b>PE172S</b>	213895	9,5	4,1
<b>PA6D2</b>	213895	9,5	4,1	<b>PA172</b>	213895	9,5	4,1	<b>PE174</b>	213895	9,5	4,1