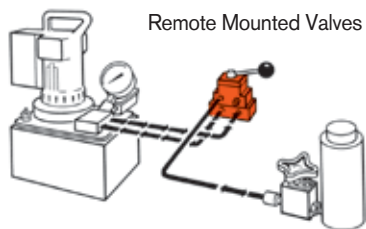


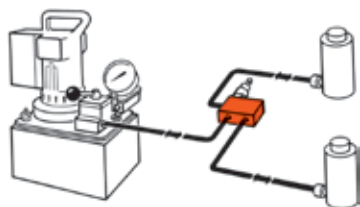
VALVES

Remote/In-Line Valve Selection Chart



Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/ Return	Advance/ Hold Return	Posi-Check® Feature
9508	117	S.A. & D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	yes
9509	117	S.A. & D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9514	117	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
9524	116	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	no	yes	no
9525	117	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9526	117	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9554	116	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	no	yes	no
9555	117	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9556	117	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9559	117	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9593	116	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	no	yes	no
9595	116	S.A. & D.A.	Air	3/4-way, 2 Pos.	—	no	yes	no

In-Line Valves



Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/ Return	Advance/ Hold Return	Posi-Check® Feature
9575	119	S.A.	Manual	Shut-Off Valve	—	—	—	—
9580	119	S.A.	Automatic	One-way Check Valve	—	—	—	—
9581	119	S.A. & D.A.	Automatic	Pilot Op. Check Valve	—	—	—	—
9596	118	S.A.	Manual	Load Lowering Valve	—	—	—	—
9597	118	S.A. & D.A.	Automatic	Sequence Valve	—	—	—	—
9608	118	S.A. & D.A.	Automatic	Pressure Reducing Valve	—	—	—	—
9623	119	S.A. & D.A.	Automatic	Pressure Relief Valve	—	—	—	—
9631	119	S.A. & D.A.	Automatic	Metering Valve	—	—	—	—
9633	119	S.A. & D.A.	Automatic	Pressure Regulator Valve	—	—	—	—
9720	118	S.A. & D.A.	Automatic	Counter Balance Valve	—	special	—	—
9721	118	S.A. & D.A.	Automatic	Counter Balance Valve	—	special	—	—
RV21278	119	—	Automatic	Relief Valve	—	—	—	—

"S.A." represents single-acting cylinders, "D.A." represents double-acting cylinders.
For pump-mounted valves, see pages 122–129.

ACCESSORIES



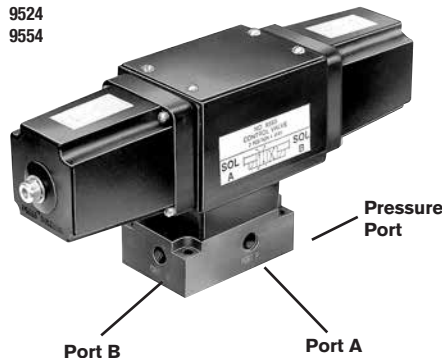
VALVES

Remote Mounted

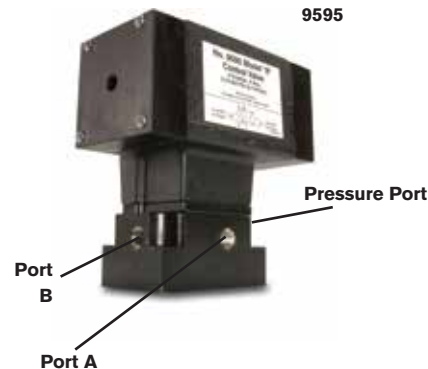
10,000 PSI,

1/4" Ports 5 GPM Max Flow

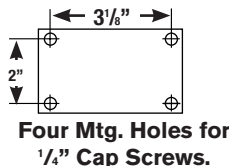
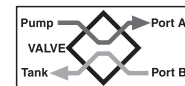
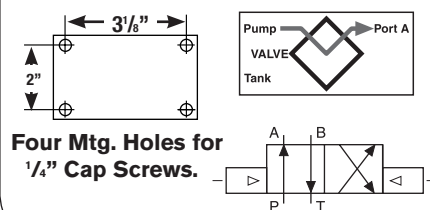
9593
9524
9554



9595



3/4-WAY/2-POSITION SOLENOID AND AIR ACTUATED VALVES



Application: Single or double-acting cylinders.

Actuation: 9593, 9524 and 9554 are solenoid operated, 9595 is air operated.

Operation with single-acting cylinder:

Either oil port "A" or "B" must be plugged on valve. With port "B" plugged, solenoid is energized to position "A," oil port "A" becomes pressurized. When solenoid is energized to position "B," oil port "A" becomes the return port.

Operation with multiple single-acting cylinders:

A pressure line from one tank can be connected to oil port "A" and the other to oil port "B" on the valve. Sequence: When energized to position "A," oil port "A" becomes pressurized and clamps the fixture connected to oil port "A"; oil port "B" becomes a "return" port for cylinder connected to oil port "B," and retracts it. The opposite happens when solenoid "B" is energized.

Operation with double-acting cylinder:

Port "A" is connected to "advance" port of cylinder, oil port "B" connects to cylinder "return" port. Solenoid is energized to position "A," oil port "A" becomes pressurized to extend cylinder piston. The opposite happens when solenoid "B" is energized. Valve does not hold in "retract" position.

NOTE: When using more than one valve on a pump, the tank port may require a check valve to permit inadvertent, momentary extension of a retracted cylinder.

NOTE: If pump is equipped with an internal outlet check, a "hold" position can be maintained with the pump shut off.

No. 9593 – 3/4-way 2-position, remote mounted solenoid valve, 115 volt, 50/60 Hz. Wt., 15.4 lbs.

No. 9524 – Same as 9593 except with 230 volt, 50/60 Hz.

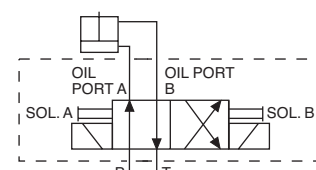
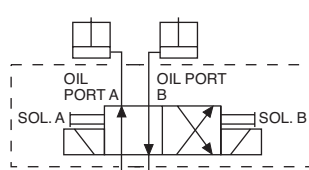
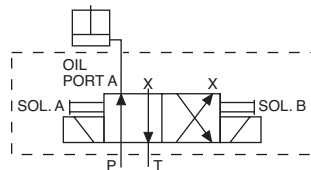
No. 9554 – Same as 9593 except with 24 volt, 50/60 Hz.

No. 9595 – Same as 9593 except is air operated (minimum of 50 psi air pressure required). Wt., 11.4 lbs.

NOTE: Valves above are shipped without controls. The 9524, 9554 and 9593 can be used with the 304718 remote hand control (see page 130). The 9595 can be used with the 209593 remote hand control (see page 130).

NOTE: Valves have 1/4" NPTF ports. 3/8" to 1/4" adapters are included.

NOTE: Maximum tank line pressure for remote mounted valves is 500 psi.



1. To actuate one single-acting cylinder.
2. To actuate two single-acting cylinders.
3. To actuate one double-acting cylinder.

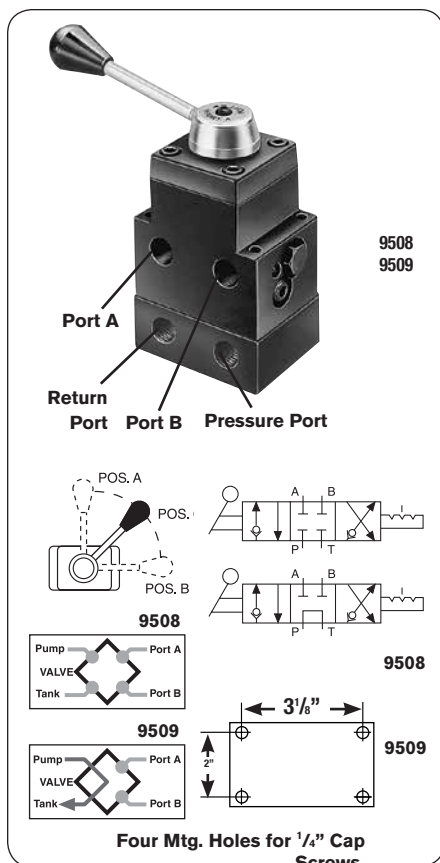
NOTE: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 130).

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 118) in conjunction with the directional valve used in your application.

VALVES

Remote Mounted

10,000 PSI,
3/8" Ports 5 GPM Max Flow



4-way 3-position (closed center) and (tandem center) manual valves with Posi-Check®

Application: Single or double-acting cylinders. When used with single-acting cylinders, one port must be plugged. For double-acting cylinders, either port can be used to "advance" or "return."

Actuation: Lever-operated, detent positioned.

Functions: The 9508 provides "advance," "hold" and "return" positions with all ports blocked (closed center) in the "hold" position. The 9509 has "advance," "hold" and "return" with tandem center (cylinder ports are blocked, pump remains running). Both valves have **Posi-Check®** feature to guard against pressure loss when shifting from "advance" to "hold."

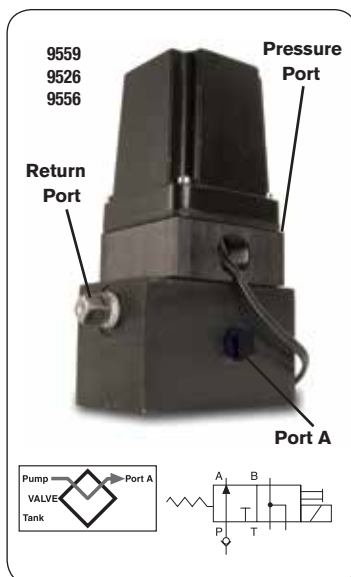
No. 9508 – 4-way 3-position (closed center) manual valve, including subplate for remote mounting. Wt., 6.3 lbs.

No. 9509 – Same as 9508, except is tandem center.

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 118) in conjunction with the directional valve used in your application.

CAUTION: The Posi-Check® feature will not hold the load when shifted directly A to B-B to A or from hold to A or B.

NOTE: Maximum tank line pressure for remote mounted valves is 500 psi.



3-WAY 2-POSITION SOLENOID VALVE

Application: Single-acting cylinders.

Actuation: Solenoid operated, 115/230/24 volt, 50/60 Hz.

Function: Advances cylinder piston when solenoid is de-energized, and pump is running. When solenoid is energized, oil is directed back through valve "return" port and cylinder piston returns. To place cylinder in "hold" position, pump must be stopped or its flow held at the valve "pressure" port with the solenoid de-energized.

NOTE: Valve is equipped with a 9631 snubber valve in port "A." The line from the "return" port of the valve must be unrestricted (100 psi back pressure maximum) back to the reservoir.

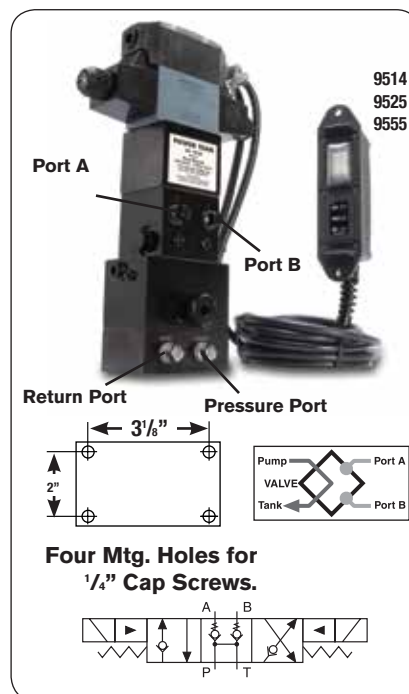
IMPORTANT: A 9580 in-line check valve (see page 119) must be installed in the "pressure" port if the supply pump is not equipped with an outlet check valve.

No. 9559 – 3-way 2-position solenoid valve, 115 volt 50/60 Hz. Includes a remote mounting subplate. Wt., 9.7 lbs.

No. 9526 – Same as 9559 except for 230 volt, 50/60 Hz.

No. 9556 – Same as 9559 except for 24 volt, 50/60 Hz.

NOTE: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 130).



4-way 3-position (tandem center) solenoid valve with Posi-Check®

Application: Double-acting cylinders.

Actuation: Solenoid operated, 115/230/24 volt, 50/60 Hz.

Functions: Push button control of "advance," "hold" and "return." The **Posi-Check®** feature guards against pressure loss when shifting from "advance" to "hold." With valve in "hold" position, cylinder ports are blocked and oil is directed from pump to reservoir.

NOTE: Do not allow return tank pressure to exceed 500 psi at the valve.

No. 9514 – 4-way 3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Remote hand control included. Wt., 10.1 lbs.

No. 9525 – Same as 9514 except for 230 volt, 50/60 Hz.

No. 9555 – Same as 9514 except for 24 volt, 50/60 Hz.

NOTE: Consult factory before installing a pressure switch on any of these valves.

ACCESSORIES

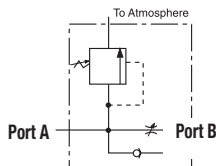


VALVES

HYDRAULIC IN-LINE

10,000 PSI

5 GPM Max Flow Rate



9596



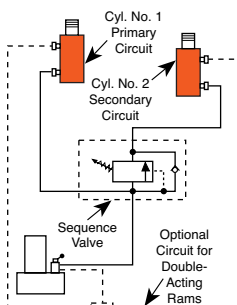
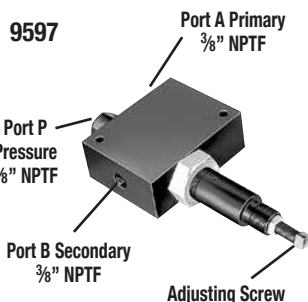
LOAD LOWERING VALVE

Application: Precision metering for controlled cylinder piston return.

Operation: Permits free flow when extending cylinder, built-in pressure relief and **Posi-Check®** locks and holds load in raised position until operator opens valve. May be pre-set to provide consistent metered return, or operator may select rate of return with each actuation. Has $\frac{3}{8}$ " NPTF ports.

NOTE: Pressure relief valve setting is 12,000 psi. Operating pressure is 10,000 psi and max. flow rate is 5 gpm.

No. 9596 – Load lowering valve. Wt., 2.1 lbs.



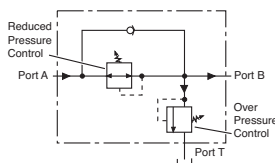
SEQUENCE VALVE

Application: Used when one cylinder in a multi-cylinder application must advance before any other.

Operation: Pump is connected to port "P" and separate cylinders to ports "A" and "B." When pressure is applied to port "P," cylinder "A" advances. Cylinder "B" will not advance until a predetermined pressure setting is reached in cylinder "A." Pressure setting is adjustable from 500 to 8,000 psi with adjustment screw; factory preset at 1,000 psi. Has $\frac{3}{8}$ " NPTF ports.

No. 9597 – Pressure control sequencing valve. Wt., 5.6 lbs.

9608



PRESSURE REDUCING VALVE

Application: Provides complete, independent pressure control to two or more clamping systems operated by a single power source.

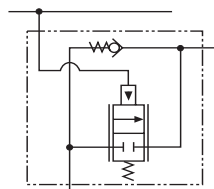
Operation: Can be used to provide different pressures in various stages of a single system. Virtually zero leakage across valve means each system can be operated by a single continuous pressure source. Adjustable from 1,000 to 5,000 psi at outlet port "B" (secondary). Has $\frac{1}{4}$ " NPTF ports.

No. 9608 – Pressure reducing valve. Wt., 5.8 lbs.

CAUTION: Over Pressure control must be set at a higher value than operating pressure.

9720

9721



COUNTER BALANCE VALVE

Application: Double-acting cylinders. Provides positive holding and controlled, "chatter-free" lowering of a load.

Operation: Load is raised at flow rate of pump, and held when pump is shut off. When the pump is shifted to "retract," the counter balance valve will continue to hold the load until system pressure exceeds pressure caused by load. The load can then be lowered smoothly to the flow rate of the pump. The counter balance valve is designed

to operate with pumps having a high pressure flow rate of up to 120 cu. in./min. and cylinder ratios of 3 to 1.

No. 9720 – Counter balance valve, including two pairs of fittings (male and female), hydraulic hoses, and dust caps. Wt., 10 lbs.

No. 9721 – Same as 9720, but does not include couplers, hoses, fittings and dust caps. Wt., 9.2 lbs.

CAUTION: The 9720 patented counter balance valve has a pilot pressure as high as 3,000 psi. Because this pressure is applied to the rod end of the cylinder while it is already under load, the system should not be sized for loads greater than 80% of cylinder rated capacity.

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 in conjunction with the directional valve used in your application. See above, this page.

Shut-off valve

Application: This needle valve permits fine metering of hydraulic oil.
Operation: Can be used for controlling multiple single-acting cylinders.

No. 9575 – Shut off valve with $\frac{3}{8}$ " NPTF ports. Wt., 1.4 lbs.



9575

Check valve

Application: Permits flow of hydraulic oil in one direction only.

Operation: Installs right in hydraulic line.

No. 9580 – Check valve with $\frac{3}{8}$ " NPTF male ends. Wt., .4 lb.



9580

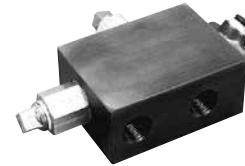


Pilot operated check valve

Application: For use with open or tandem center valves. Permits free flow of fluid in one direction.

Operation: Flow is blocked in opposite direction until pilot oil pressure is applied. This prevents the loss of pressure if the valve is inadvertently shifted or the pump line is broken. Minimum cracking pressure is 60 psi. Required pilot pressure is approximately 16% of checked system pressure.

No. 9581 – Pilot operated check valve with $\frac{3}{8}$ " NPTF ports. Wt., 3.8 lbs.



9581



"In-line" pressure relief valve

Application: Single or double-acting cylinders. For remote locations in a hydraulic circuit where maximum pressure requirements are less than basic overload valve setting in pump.

Operation: Adjustable from 1,000 to 10,000 psi. Valve is spring-loaded and direct-acting.

No. 9623 – Pressure relief valve with $\frac{3}{8}$ " NPTF ports. Wt., 2 lbs.



9623



Metering valve

Application: For systems using large cylinders or extended lengths of hydraulic hose.

Operation: Controls surges by restricting flow if it exceeds 7 gpm. When flow subsides, valve reopens automatically. Has $\frac{3}{8}$ " NPTF male end to thread into return port of system control valve, and a $\frac{3}{8}$ " NPTF female end, permitting return hose to be directly connected.

No. 9631 – Metering valve. Wt., 0.2 lb.



9631



"In-line" pressure regulator valve

Application: Single or double-acting cylinders. Permits adjusting operating pressures at various values below relief valve setting of pump.

Operation: Regulator valve is easily adjusted to maintain pressures between 300 and 10,000 psi. Maintains a given pressure setting within 3% over repeated cycles. Flow range is 17 cu. in./minute to 6 gpm.

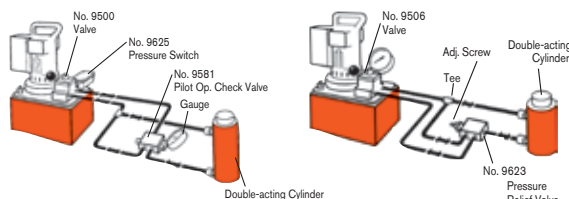
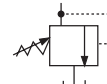
No. 9633 – In-line pressure regulator valve with two $\frac{3}{8}$ " NPTF inlet ports, one $\frac{1}{8}$ " NPTF tank port and 3 foot drain line kit. Wt., 1.9 lbs.

Simply turn the handle clockwise to increase the pressure setting, counter-clockwise to reduce pressure.

Note: 3' Drain Line Kit is included.

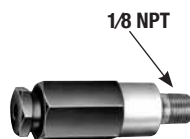


9633



Provide an economical means of protecting an hydraulic circuit against over pressurization.

Operation: These factory preset valves are designed for maximum flow rate of 5 gpm. Furnished with $\frac{1}{8}$ " NPTF male port. All valves weigh 0.2 lb. See chart to the right for ordering information.



RV21278 Series

Valve Order No.	Pressure Setting (psi)	Valve Order No.	Pressure Setting (psi)
RV21278	10,100 / 10,700	RV21278-50	5,100 / 5,700
RV21278-6	600 / 640	RV21278-52	5,300 / 5,900
RV21278-10	900 / 1,000	RV21278-55	5,600 / 6,200
RV21278-15	1,500 / 1,700	RV21278-57	5,800 / 6,400
RV21278-17	1,600 / 1,800	RV21278-60	6,100 / 6,700
RV21278-20	1,900 / 2,200	RV21278-65	6,600 / 7,200
RV21278-25	2,300 / 2,700	RV21278-70	7,100 / 7,700
RV21278-27	2,600 / 2,800	RV21278-75	7,600 / 8,200
RV21278-28	2,700 / 3,000	RV21278-80	8,100 / 8,700
RV21278-30	3,000 / 3,400	RV21278-83	8,400 / 9,000
RV21278-32	3,100 / 3,300	RV21278-86	8,700 / 9,300
RV21278-35	3,500 / 3,800	RV21278-88	8,900 / 9,600
RV21278-38	3,750 / 3,950	RV21278-90	9,100 / 9,700
RV21278-40	4,100 / 4,500	RV21278-114	11,500 / 12,100
RV21278-43	4,400 / 4,800	RV21278-6280	6,380 / 6,900
RV21278-48	4,900 / 5,300	Preset — Non-Serviceable	

NOTE: Care should be exercised to protect workers from hot, pressurized hydraulic oil. Install these valves only in an enclosed or shielded area.



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.

- 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 pages 42-45. Check speed chart on page 6.
- Step 3-** Select pump within series with the valve option that best matches cylinder, pump and application. See pages 122-127.

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
<div><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></div>	None	<div><p>Oil goes to the “retract” side of the cylinder, oil from the “extend” side returns to reservoir.</p></div>

ACCESSORIES






4-WAY, 3-POSITION

(FOR CONTROL OF DOUBLE-ACTING CYLINDERS)

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

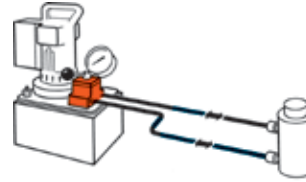
TYPICAL CENTERS

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

VALVES

Selection Information

Pump Mounted Valves



PUMP MOUNTED VALVES

Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/ Return	Advance/ Hold Return	Posi Check® Feature
9500	125	S.A. & D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	no
9501	125	S.A. & D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	no
9502	124	S.A.	Manual	3-way, 3 Pos. Closed Ctr.	—	no	yes	yes
9504	123	S.A. & D.A.	Manual	3/4-way, 2 Pos.	—	yes	yes	no
9506	125	D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9507	125	D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	yes
9511	125	S.A. & D.A.	Manual	4-way, 3 Pos. Open Center	—	yes	yes	no
9512	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9513	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
9516	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	12DC	no	yes	yes
9517	123	S.A.	Manual	2-way, 2 Pos.	—	no	yes	no
9519	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9520	124	S.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9522	128	D.A.	Solenoid	4-way, 3 Pos. Open Center	230	yes	no	no
9523	128	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	230	yes	no	no
9552	127	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	yes	no	no
9553	128	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	24	yes	no	no
9569	127	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9570	127	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9572	127	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	yes	no	no
9576	124	S.A.	Manual	3-way, 3 Pos. Metering Tandem Ctr.	—	no	yes	no
9579	127	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9582	123	S.A.	Manual	3-way, 2 Pos.	—	no	yes	no
9584	123	S.A.	Manual	3-way, 2 Pos.	—	no	yes	no
9589	128	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	115	yes	no	no
9590	128	D.A.	Solenoid	4-way, 3 Pos. Open Center	115	yes	no	no
9592	127	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	yes	no	no
9594	127	S.A. & D.A.	Air	3/4-way, 2 Pos.	—	no	yes	yes
9599	126	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	24	no	yes	yes
9605	126	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	115	no	yes	yes
9609	126	S.A.	Manual	3-way, 3 Pos. Tandem Center	—	no	yes	no
9610	123	S.A.	Auto Pilot Operated	3-way, 2 Pos.	—	yes	no	no
9610A	123	S.A.	Manual	2/3-way, 2 Pos.	—	no	yes	no
9615	128	D.A.	Solenoid	4-way, 3 Pos. Open Center	24	yes	no	no
9628	129	S.A. & D.A.	Manual	Post Tensioning	—	special	no	no
9632	129	S.A. & D.A.	Manual	Post Tensioning	—	special	no	no

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

ACCESSORIES



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., 2.5 lbs.

No. 9584 – Same as 9582, but has “flipper” control. Wt., 1.8 lbs.

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., 4.2 lbs.

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., 4.4 lbs.

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., 3.2 lbs.

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 124 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., 4.2 lbs.

NOTE: 9504 can be remote mounted with a 9510 subplate (see page 131).

NOTE: A pressure switch and/or gauge may be attached to any valve on this page (refer to pages 131, 110-111).

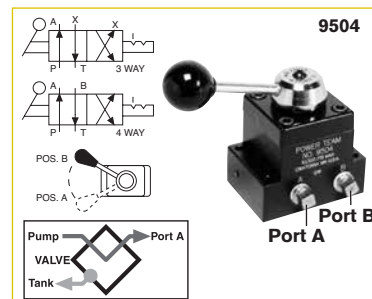
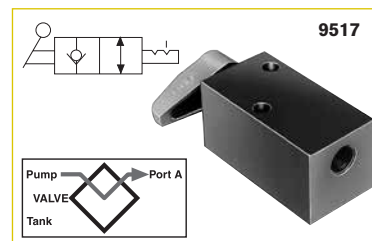
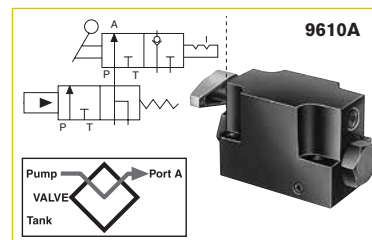
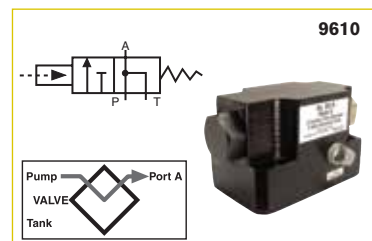
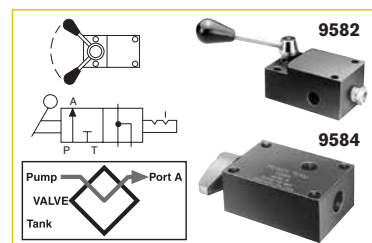
CAUTION: To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

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.

VALVES

Hydraulic Pump Mounted



ACCESSORIES



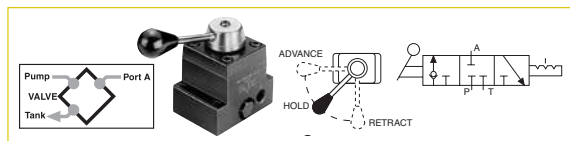
VALVES

Pump Mounted

3 Way/3 Position

Manual

10,000 PSI., 3/8" PORTS, 5 GPM MAX FLOW RATE.



3-WAY/3-POSITION (CLOSED CENTER) NON-INTERFLOW MANUAL VALVE WITH PO-SI-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 110-111, 131). Also, the 9502 can be remote mounted if a 9510 subplate is used (see page 131).

No. 9502 – 3-way/3-position (closed center) manual valve. Wt., 4.2 lbs.

9520



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

Application – Single-acting cylinders.

Actuation – Lever operated, detent positioned.

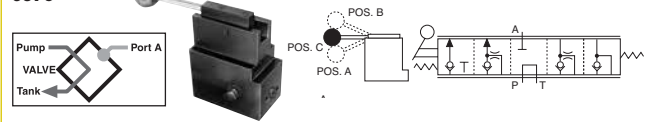
Functions – “Advance,” “hold” and “return.” When shifted to “return” position, pump and cylinder return oil through their own separate return lines, allowing faster retraction of piston. The Posi-Check feature guards against pressure loss when shifting from “advance” to “hold” position.

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., 5.1 lbs.

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

9576



VALVE

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 110-111, 131). Also, the 9576 can be remote mounted with a 9510 subplate (see page 131).

No. 9576 – 3-way/3-position (tandem center) metering valve. Wt., 8.5 lbs.

⚠ 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 118) 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

Pump Mounted

4 Way/3 Position Manual

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

Application – Single or 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., 5.1 lbs.

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., 4.2 lbs.

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

4-WAY/3-POSITION (CLOSED CENTER) MANUAL VALVE WITH 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 124 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., 5 lbs.

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

Application – Single or double-acting cylinders.

Actuation – Lever operated, detent positioned.

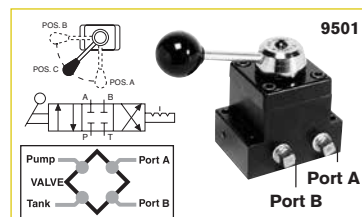
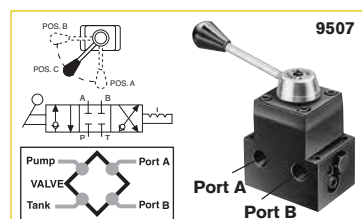
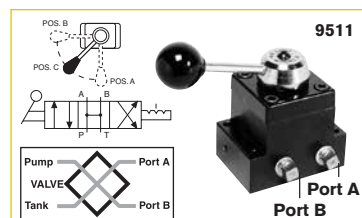
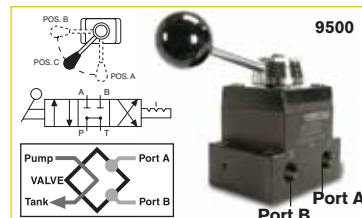
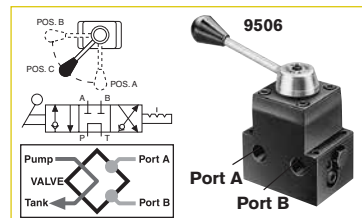
Functions – “Advance,” “hold” and “return.” Closed center design makes valve suitable for operating multiple cylinders from a single pump. See note on page 124 regarding plugging of ports and resulting heat build-up.

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., 4.2 lbs.

NOTE: A pressure switch and/or gauge may be attached to valves 9500, 9501, 9506, 9511 if desired (see pages 110-111, 131). Also, all valves on this page may be remote mounted with a 9510 subplate (see page 131).

10,000 PSI., 3/8” PORTS, 5 GPM MAX FLOW RATE.



ACCESSORIES

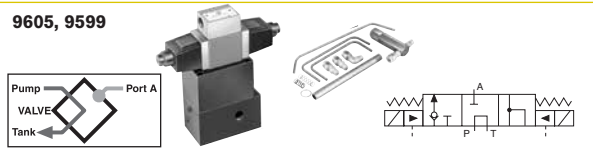


VALVES

Pump Mounted Manual and Pilot Operated

**10,000 PSI., 3/8" PORTS, 5
GPM 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, 50/60 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.

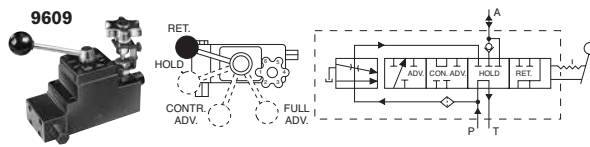
No. 9605 – 3-way/3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Wt., 14.0 lbs.

No. 9599 – Same as 9605 except for 24 volt, 50/60 Hz circuits. Wt. 14.0 lbs.

NOTE: Valves above are shipped without controls. Use 202777 remote hand control (see page 130). Consult factory for field installation.



9609



3-WAY/4-POSITION MANUAL PRESSURE COM- PENSATED 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 1,000 and 10,000 psi.

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.

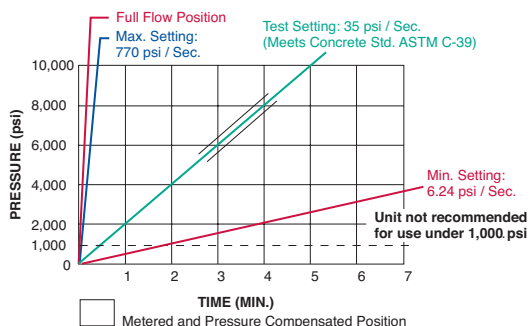
NOTE: This valve can be remote mounted with a 9510 subplate (see page 131).

No. 9609 – 3-way/4-position manual pressure compensated valve. Wt., 8.7 lbs.

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 118) 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 - 5 gpm (Ref.)
Metered advance position
65 cu. in./min. (Max.)

PRESSURE

Min. working pressure - 1,000 psi.
Max. working pressure - 10,000 psi.
Max. valve case pressure - 500 psi.

VALVES

Pump Mounted Solenoid or Air Operated

3-WAY/2-POSITION SOLENOID VALVE

Application – Single-acting cylinders.

Actuation – Solenoid operated,
115 volt, 50/60 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, 50/60 Hz. Wt., 9.6 lbs.

No. 9569 – Same as 9579, except with 24 volt, 50/60 Hz solenoid.

No. 9570 – Same as 9579 except with 230 volt, 50/60 Hz solenoid.

NOTES: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 130). 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, 50/60 Hz. Wt., 14.6 lbs.

No. 9552 – Same as 9592, except with 230 volt, 50/60 Hz solenoid.

No. 9572 – Same as 9592, except with 24 volt, 50/60 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 130).

NOTE: Ports are 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 50 psi air pressure required). Wt., 11 lbs.

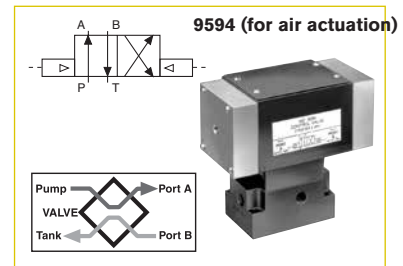
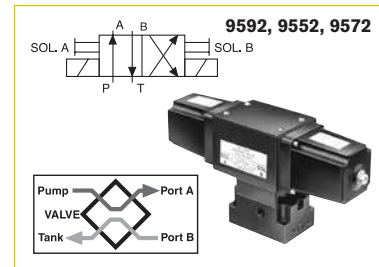
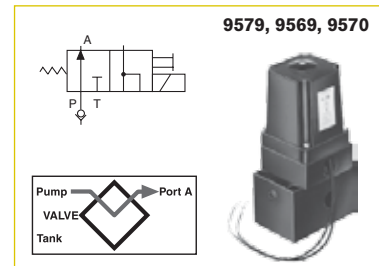
NOTES: Valve above is shipped without controls. 9594 can be used with the 209593 remote hand control (see page 130). See page 118 for remote mounted models of this valve.

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 118) 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.

**10,000 PSI., 3/8" PORTS, 5
GPM MAX FLOW RATE.**

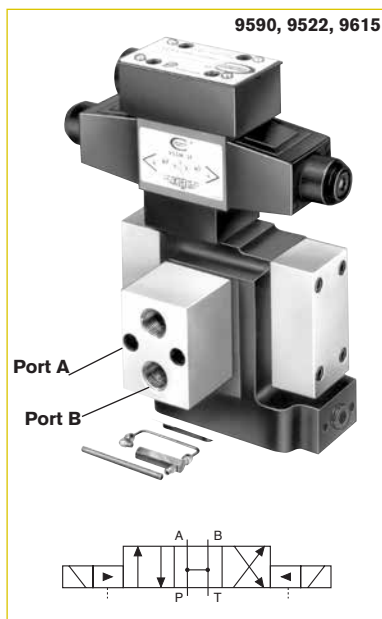


ACCESSORIES



VALVES

Pump Mounted Solenoid or Air Operated



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

Application – Double-acting cylinders.

Actuation – Solenoid operated, 115 volt, 50/60 Hz.

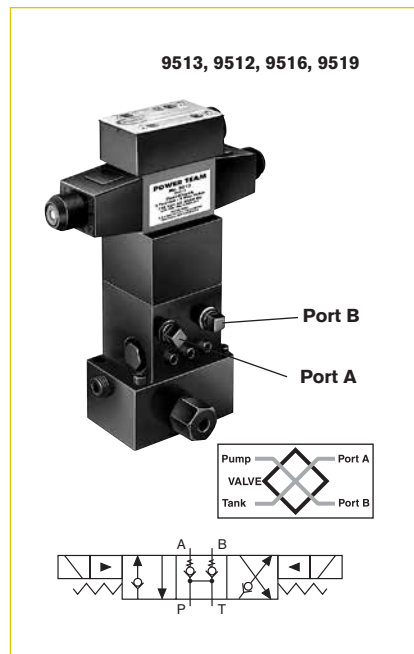
Functions – “Advance,” open center and “return” positions. Cylinder ports and pump port are open to reservoir in “neutral.”

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 110-111, 131).

No. 9590 – 4-way/3-position (open center) solenoid valve, 115 volt, 50/60 Hz. Wt., 15.5 lbs.

No. 9522 – Same as 9590 except for 230 volt, 50/60 Hz.

No. 9615 – Same as 9590 except for 24 volt, 50/60 Hz.



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

Application – Double-acting cylinders.

Actuation – Solenoid operated, 115 volt, 50/60 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 110-111).

No. 9513 – 4-way/3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Wt., 18.1 lbs.

No. 9512 – Same as 9513 except for 24 volt, 50/60 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, 50/60 Hz circuits. Consult factory for field installation.

NOTE: Valves above are shipped without control switch.

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 118) 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, NORMALLY OPEN) SOLENOID VALVE

Application: Single-acting cylinders.

Actuation: Solenoid operated, 115 volt, 50/60 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 110-111, 131).

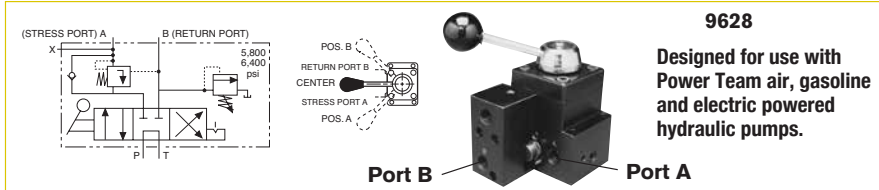
No. 9589 – 3-way/2-position (pilot operated) solenoid valve, 115 volt, 50/60 Hz. Wt., 8.2 lbs.

No. 9523 – Same as 9589 except for 230 volt, 50/60 Hz.

No. 9553 – Same as 9589 except for 24 volt, 50/60 Hz.

VALVES

Pump Mounted Manual



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,
3. Valve is placed in "B" position, which is pressure controlled and will not exceed 6,400 psi. "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.

can only be released by building pressure in "B" position).

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.

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

No. 9628 – Post tensioning valve for 10,000 psi (max.) single-acting/Power Wedge seater.
Wt., 5.4 lbs.

"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 –

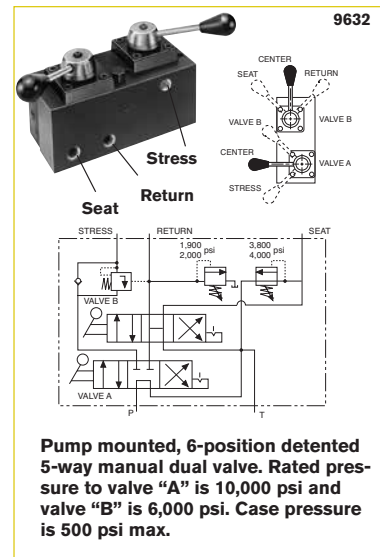
1. With valves "A" and "B" in center position, pump is started; cable is inserted into stressing tool.
2. Valve "A" is placed in "Stress" position; cylinder extends to tension cable. Pump pressure controls force exerted by tensioning cylinder in this position. "Stress" port is checked internally, and 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 con-
4. Valve "B" is shifted to "Return" position, which is pressure controlled and will not exceed 2,200 psi. "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 6,000 psi.

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 10,000 psi (max.) double-acting systems.
Wt., 13.6 lbs.



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 118) 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.

ACCESSORIES

