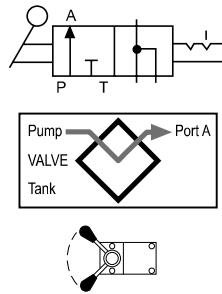
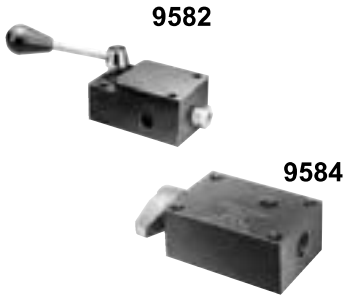


**3-WAY / 2-POSITION MANUAL VALVES**



**Applications:** Single-acting cylinders.

**Actuation:** Lever-operated.

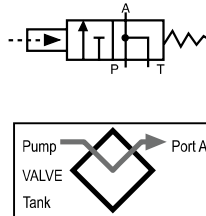
**Functions:** Cylinder piston "advance," "hold" and "return."

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

Order No.	Description
9582	3-Way/2-Position manual valve. Wt., 1,1 kg.
9584	3-Way/2-Position manual valve "flipper" control. Wt.,0,8 kg.

Accessories

**3-WAY / 2-POSITION PILOT-OPERATED AUTOMATIC VALVES**



**Applications:** Single-acting cylinders.

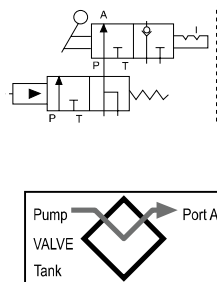
**Actuation:** Pilot oil.

**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, and PE120 series.

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

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



**Applications:** 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, and PE120 series. For application on other pumps, consult factory.

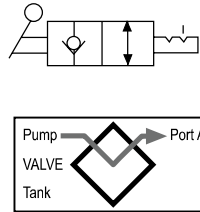
Order No.	Description
9610A	2/3-way/2-position manual/pilot-operated automatic valve. Wt., 2 kg.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve 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, 12,7 mm 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.

2-WAY/2-POSITION MANUAL VALVE



**Applications:** Single-acting cylinders.

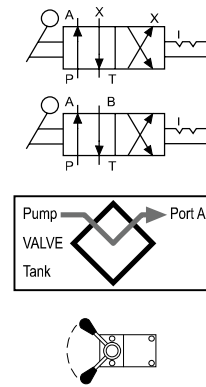
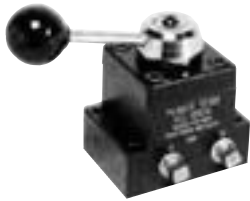
**Actuation:** Flipper lever-operated.

**Functions:** Cylinder piston "advance," "hold" and "retract."

**Used on these pumps:** PE172 and PA172.

Order No.	Description
9517	2-way/2-position manual valve. Wt., 1,5 kg.

3/4-WAY/2-POSITION MANUAL VALVE



**Applications:** 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 below regarding plugging of ports and resulting heat build-up..

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

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

**NOTE:** 9504 can be remote-mounted with a 9510 sub-plate.

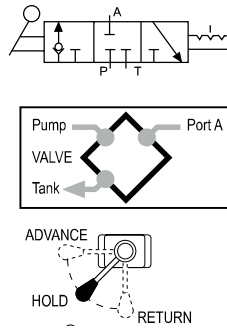
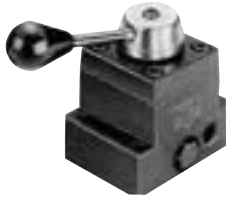
**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve in conjunction with the directional valve used in your application.

**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, 12,7 mm 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.

**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.

**3-WAY/3-POSITION (CLOSED CENTER) NON-INTER FLOW MANUAL VALVE WITH POSI-CHECK®**



**Applications:** 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, and pump should be shut-off.

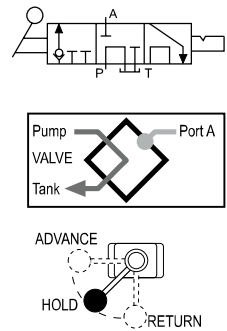
**Used on these pumps:** P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE120, PE400, PQ60 and PQ120 series.

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

**NOTE:** A pressure switch and/or gauge may be attached if desired. Also, the 9502 can be remote-mounted if a 9510 sub-plate is used.

Accessories

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



**Applications:** 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, PE120, PQ60, PQ120, PE400, PG30, PG55, PG120 and PG400 series.

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

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve in conjunction with the directional valve used in your application.

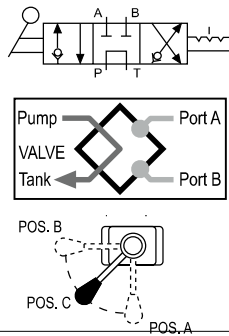
**NOTE:** Valves 9501, 9502, 9504 and 9507 can have a port blocked or have a closed center position. When a port is blocked and the valve is shifted to the blocked port, the pump will generate excessive heat. An electric or rotary air pump can either be turned off manually or with a pressure switch. 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, 12,7 mm longer mounting screws are required. For valves 9502 and 9520, order four 12001 cap screws. For valve 9576, order four 17428 cap screws.

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



**Applications:** Single or double-acting cylinders.

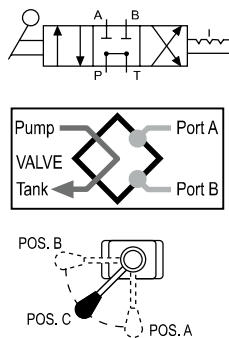
**Actuation:** Lever-operated, detent-positioned.

**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, PE120, PE400, PED, PG30, PG55, PG120, PG400, PQ60 and PQ120 series.

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

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



**Applications:** Single or double-acting cylinders.

**Actuation:** Lever-operated, detent-positioned.

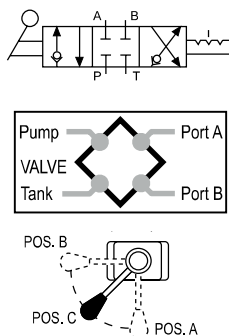
**Functions:** The 9500 provides "advance," "hold" and "return." The 9511 (open center) valve can be used if holding is not a requirement, as when running two separate hydraulic tools. Provides "advance" and "return" only.

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

\*Does not mount without 251528.

Order No.	Description
9500	4-way/3-position (tandem center) manual valve. Wt., 1,9 kg.
9511	4-way/3-position (open center) manual valve. Wt., 1,9 kg.

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



**Applications:** Single or double-acting cylinders.

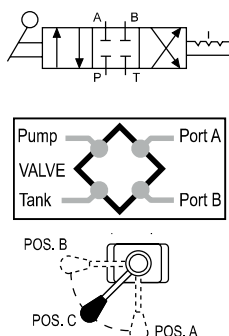
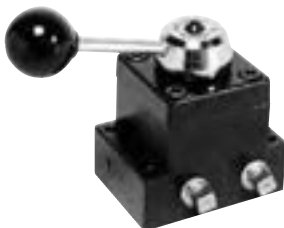
**Actuation:** Lever-operated, detent-positioned.

**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 below regarding plugging of ports and resulting heat build-up.

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

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

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



**Applications:** 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 below regarding plugging of ports and resulting heat build-up.

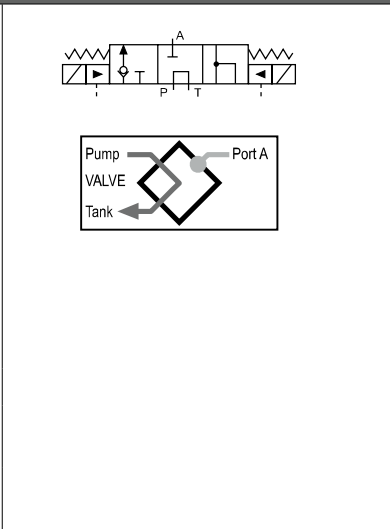
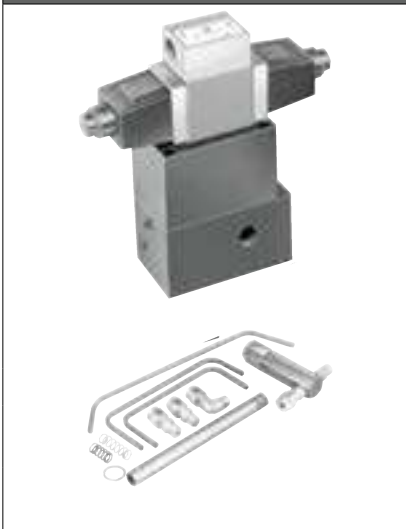
**Used on these pumps:** P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE120, PE400, PQ60 and P120 series.

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

**NOTE:** All valves on this page may be remote-mounted with a 9510 sub-plate. 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.

Accessories

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



**Applications:** Single-acting cylinders.

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

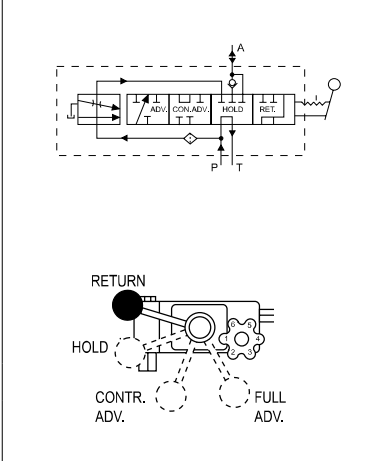
**Functions:** "Advance," "hold" and "return" positions. When in "advance," solenoid "B" is energized and oil goes from pump to cylinder through pressure port. In "return" position, solenoid "A" is energized and oil is directed from cylinder and pump to reservoir. With both solenoids de-energized, in "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.

Order No.	Description
9605	3-way/3-position (tandem center) solenoid valve, 115V, 50/60 Hz. Wt., 6,4 kg.
9599	3-way/3-position (tandem center) solenoid valve, 24V, 50/60 Hz. Wt., 6,4 kg.

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

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



**Applications:** 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, 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.

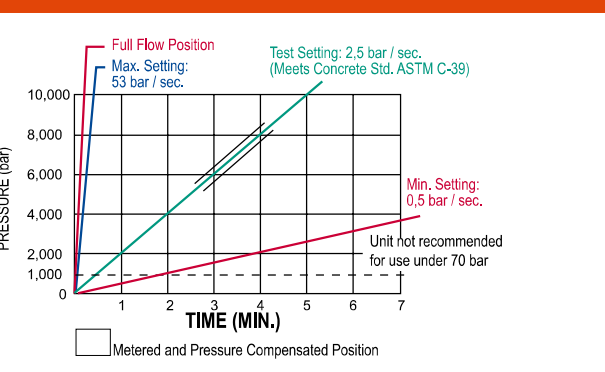
Order No.	Description
9609	3-way/4-position manual pressure compensated valve. Wt., 4 kg.

**Pressure compensated valve performance chart**

**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.

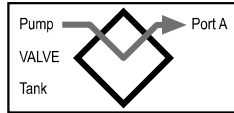
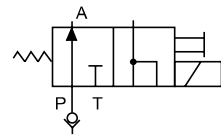
Chart to the right reflects valve performance when "metered advance" position is selected.



**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve 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, 12,7 mm 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.

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



**Applications:** Single-acting cylinders.

**Actuation:** Solenoid-operated, 115V, 50/60 Hz.

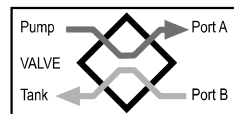
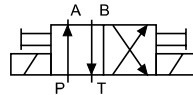
**Functions:** Cylinder piston advances when solenoid is de-energized and pump is running. When solenoid is energized, oil is directed to reservoir, and piston returns. For "hold" position, pump is stopped with solenoid de-energized.

**Used on these pumps:** PE17, PE21, PE30, PE46, PE55, PE120, PE400, PQ60 and PQ120 series.

Order No.	Description
9579	3-way/2-position solenoid valve, 115V, 50/60 Hz., Wt. 4,4 kg
9569	3-way/2-position solenoid valve, 24V, 50/60 Hz., Wt. 4,4 kg
9570	3-way/2-position solenoid valve, 230V, 50/60 Hz., Wt. 4,4 kg

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

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



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

**Actuation:** Solenoid-operated, 115V, 50/60 Hz.

**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.

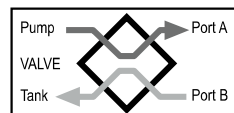
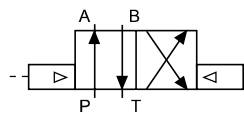
**Used on these pumps:** 9552, 9572 and 9592 are used with PE17, PE30 (with carrying handles removed), PE46, PE55, PE400, PQ60 and PQ120 series.

Order No.	Description
9592	3/4-way/2-position solenoid valve, 115V, 50/60 Hz., Wt. 6,6 kg
9552	3/4-way/2-position solenoid valve, 230V, 50/60 Hz., Wt. 6,6 kg
9572	3/4-way/2-position solenoid valve, 24V, 50/60 Hz., Wt. 6,6 kg

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

**NOTE:** Ports are 1/4" NPTF.

### AIR ACTUATED VALVE



**Applications:** 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.

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

**NOTE:** Valve above is shipped without controls. 9594 can be used with the 209593 remote hand control.

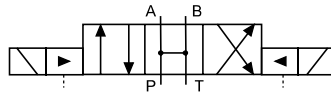
**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve in conjunction with the directional valve used in your application.

**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, 12,7 mm 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

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



**Applications:** Double-acting cylinders.

**Actuation:** Solenoid-operated, 115V, 50/60 Hz.

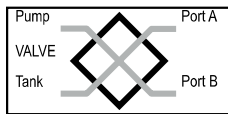
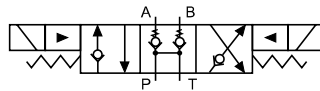
**Functions:** "Advance," open center and "return" positions. Cylinder ports and pump port are open to reservoir in "neutral."

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

**NOTE:** A pressure switch and/or gauge may be attached if desired.

Order No.	Description
9590	4-way/3-position (open center) solenoid valve, 115 volt, 50/60 Hz., Wt. 7 kg.
9522	4-way/3-position (open center) solenoid valve, 230 volt, 50/60 Hz., Wt. 7 kg.
9615	4-way/3-position (open center) solenoid valve, 24 volt, 50/60 Hz., Wt. 7 kg.

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



**Applications:** Double-acting cylinders.

**Actuation:** Solenoid-operated, 115V, 50/60 Hz.

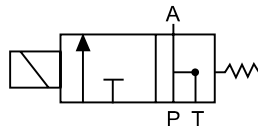
**Functions:** "Advance," "hold" and "return." The Posi-Check® feature holds the load when shifting from the "advance" to the "hold" position.

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

**NOTE:** A gauge may be attached if desired.

Order No.	Description
9513	4-way/3-position (tandem center) solenoid valve, 115V, 50/60 Hz., Wt. 8,2 kg.
9512	4-way/3-position (tandem center) solenoid valve, 24V, 50/60 Hz., Wt. 8,2 kg.
9516	4-way/3-position (tandem center) solenoid valve, 12V, Wt. 8,2 kg. For use on the PG1204S and PG400 series pumps only.
9519	4-way/3-position (tandem center) solenoid valve, 230V, 50/60 Hz., Wt. 8,2 kg. Consult factory for field installation.

**3-WAY/2-POSITION (PILOT-OPERATED, NORMALLY OPEN) SOLENOID VALVE**



**Applications:** Single-acting cylinders.

**Actuation:** Solenoid-operated, 115V, 50/60 Hz.

**Functions:** "Advance" and "return."

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

**NOTE:** A pressure switch and/or gauge may be attached if desired.

Order No.	Description
9589	3-way/2-position (pilot-operated) solenoid valve, 115V, 50/60 Hz., Wt. 3,7 kg.
9523	3-way/2-position (pilot-operated) solenoid valve, 230V, 50/60 Hz., Wt. 3,7 kg.
9553	3-way/2-position (pilot-operated) solenoid valve, 24V, 50/60 Hz., Wt.3,7 kg.

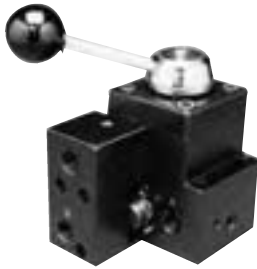
**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve in conjunction with the directional valve used in your application.

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

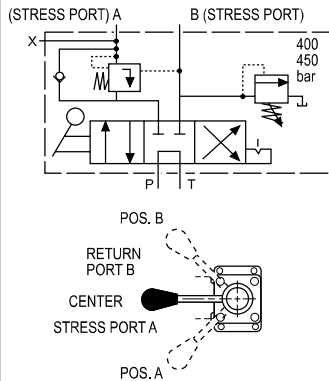
**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 12,7 mm longer mounting screws are required. For valves 9513 and 9519, order four 11956 cap screws. For valves 9523, 9553 and 9589, order four 10855 cap screws. For valves 9522, 9590 and 9615, order four 10854 cap screws.

**NOTE:** Valves above are shipped without control switch.

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



Designed for use with Power Team air, gas-line and electric powered hydraulic pumps.



**Applications:** Single strand, double-acting stressing jacks with Power Wedge seater.

**Actuation:** Lever-operated, detent-positioned.

**Operation:**

With valve in center position, pump is started.

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).

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.

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, PE120, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.

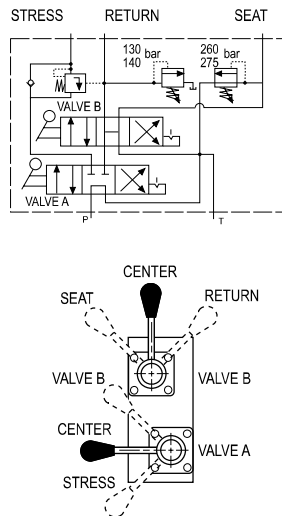
\* These pumps may have reduced first flow stage characteristics due to internal valve restrictions.

Order No.	Description
9628	Post-tensioning valve for 700 Bar (max.) single-acting/Power Wedge seater. Wt., 2,4 kg.

**"TWIN" 4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE**



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.



**Applications:** Multi-strand, double-acting stressing jacks with an auxiliary seating cylinder.

**Actuation:** Dual lever-operated, detent-positioned.

**Operation:**

With valves "A" and "B" in center position, pump is started, and cable is inserted into stressing tool.

Valve "A" is placed in "Stress" position and 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.

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).

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.

"Stress" port will remain open and cylinder will return as long as pressure differential is maintained. "Stress" and "Seat" ports are open to reservoir.

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, PE120, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.\*

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


Order No.	Description
9632	Post-tensioning valve for 700 Bar (max.) double-acting systems. Wt., 6,2 kg.


**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve 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, 12,7 mm 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.





OIL COOLER KITS		
	Order No.	Description
	252511	Oil cooler kit designed for use with PE604T or PE604PT pumps with 115V. Wt., 2,3 kg.
	252512	Oil cooler kit designed for use with PE604T or PE604PT pumps with 220V. Wt., 2,3 kg.


FLUID LEVEL/TEMPERATURE GAUGE	
	Displays fluid level and temperature of hydraulic oil in reservoir.  0°- 100° C. 32 mm wide and 162 mm high.
Order No.	Description
350431	Fluid level/temperature gauge.

RESERVOIR BREATHER KITS		
	Order No.	Description
	206767	Reservoir breather kit designed for use on PA17, PA55, PE17, PE55, PE120, PG55, PG120, PQ60 and PQ120 series pumps. Wt., 0,6 kg.
	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 required.
Order No.	Description
10494	Single caster wheel. Wt., 0,1 kg.

FOOT CONTROL GUARD		
	Order No.	Description
	16339	Foot Guard for use with 10461 and 251660 foot controls.

MAGNETIC STRIP		
	Order No.	Description
	207762	Magnetic strip with adhesive back can be added to No. 25017, 202777, 202778 and 304718 hand controls. Provides 2,7 kg. of holding force. Wt., 50 g.

VITON™ * SEAL KITS			
	Order No.	Use With	Model
	300507	P12	All
	300472	P23, P55	All
	300510	P59	All
	300508	P157, P159, P300	A
	300690	P157, P159	B
	300696	P300	B
	300508	P157D, P159D, P300D	A
	300693	P157D, P159D	B
	300699	P300D	B

Viton™\* seal kits Can be used in all "C" and "RH" series cylinders, 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. Not required with Flame-Out® fluid.

\* Viton™ is a trademark or registered trademark of The Chemours Company

## UNIVERSAL PUMP CART

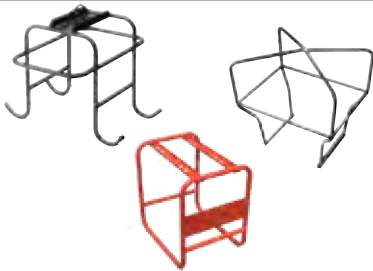


Mobilize your hydraulic pumps with the PC200. The rugged tubular frame can easily handle pumps weighing up to 91 kg. With 305 mm wheels, the cart rolls easily. Just load the pump onto the cart and wheel it right to the job. The universal mounting hole pattern lets you handle a wide variety of Power Team pumps.

**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 L- and 38 L reservoirs; Nos. RP50, RP51, RP101 and RP103.  
**(Shown with pump, pump not included)**

Order No.	Description
PC200	Universal pump cart with 305 mm wheels. Wt., 12,2 kg.

## PROTECTIVE PUMP ROLL CAGE

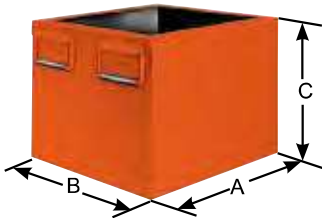


Safeguards pump, gas engine and valves on the job site. Horizontal bars provide convenient hand holds for carrying pump, a pick-up point permits lifting unit with an overhead crane or other device. Standard equipment on PG1203 and PG1204. Can be ordered as an option with any other gas, air, or electrically driven hydraulic pump equipped with a 19 liter reservoir.

**NOTE:** Refer to PG1203/PG1204 pump for details.

Order No.	Description
PC200RC	Roll cage for use with PC200. (Cannot be used on pumps with 38 liter reservoirs.) Wt., 16,3 kg.
RC2GAL	Roll cage for use with PA46, PA55, PE46, PE55 pumps with 9 liter reservoirs.
RC5	Roll cage for PG55 & PG120. For use with PG120 and PG 55 series pumps. Wt., 8,8 kg.

## Large capacity reservoirs



Reservoirs are equipped with drain plugs and all necessary conversion items.

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

Order No.	Cap. (l)	Usable Oil (l/min)	Use With	Size (mm.)		
				A	B	C
RP20**	7,6	7,1	PA6, PA50 series (models A-E)	292	241	165
RP20-F**	7,6	7,1	PA6 series (model F), PA 50 series (model F & G)	292	241	165
RP20M*	9,5	7,2	PA6, PA50 series (models A-E)	292	241	165
RP20M-F*	9,5	7,2	PA6 series (model F), PA50 series (model F & G)	292	241	165
RP21*	9,5	7,2	PE18 series	292	241	165
RP22†	9,5	7,1	PE55, PE120, PA55	292	241	165
RP50	19,0	18,4	PE55, PE120, PA55	457	317	216
RP51	19,0	18,4	PA46, PE21	457	317	216
RP100	37,9	35,1	PE55, PE120, PA55	457	317	368
RP101	37,9	35,1	PG55, PG120	457	317	368
RP103*	37,9	37,0	PQ60, PQ120	392	362	313
RP104	37,9	35,1	PA46, PE46, PE21	457	317	356

\* Four mounting holes: 1/2"-20, for 50,4 mm diameter swivel casters (No. 10494)

\*\* High density polyethylene reservoir.

† Aluminum reservoir.

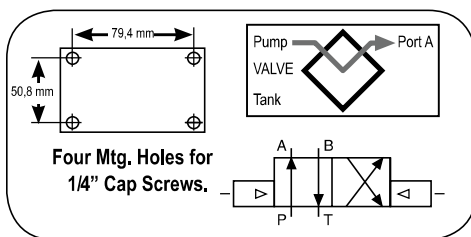
## METAL RESERVOIR CONVERSION KITS FOR PUMPS (INCLUDES GASKETS AND FASTENERS)

Pump Number	Metal Reservoir Order Number	Metal Reservoir Capacity (l)	Reservoir Wt. (kg)
PA6	213896	1,7	1,4
PA6A	213896	1,7	1,4
PA6D	213896	1,7	1,4
PA6-2	213895	9,5	4,1
PA6D2	213895	9,5	4,1

Pump Number	Metal Reservoir Order Number	Metal Reservoir Capacity (l)	Reservoir Wt. (kg)
PA50	213896	1,7	1,4
PA50R	213896	1,7	1,4
PA6R	213896	1,7	1,4
PA50R2	213895	9,5	4,1
PA172	213895	9,5	4,1

Pump Number	Metal Reservoir Order Number	Metal Reservoir Capacity (l)	Reservoir Wt. (kg)
PA174	213895	9,5	4,1
PE172	213895	9,5	4,1
PE172A	213895	9,5	4,1
PE172S	213895	9,5	4,1
PE174	213895	9,5	4,1

Model Shown:  
**9593**



**3/4-WAY / 2-POSITION SOLENOID ACTUATED VALVES**

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

**Actuation:** 9593, 9524 and 9554 are solenoid-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 bank 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.

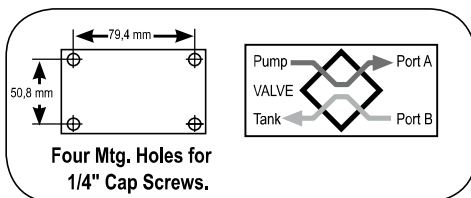
**Operation with double-acting cylinder:** Port "A" is connected to "advance" port of cylinder, oil port "B" connects to cylinder "return" port. Solenoid is energized to position "A," oil port "A" becomes pressurized to extend cylinder piston. The opposite happens when solenoid "B" is energized. Valve 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.

Order No.	Description
9593	3/4-way 2-position, remote-mounted solenoid valve, 115V, 50/60 Hz., Prod. Wt. 7,0 kg.
9524	3/4-way 2-position, remote-mounted solenoid valve, 230V, 50/60 Hz., Wt. 7,0 kg.
9554	3/4-way 2-position, remote-mounted solenoid valve, 24V, 50/60 Hz., Wt. 7,0 kg.

Model Shown:  
**9595**



**3/4-WAY / 2-POSITION AIR ACTUATED VALVES**

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

**Actuation:** 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 bank 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.

Order No.	Description
9595	3/4-way 2-position, remote-mounted air-operated solenoid valve (minimum of 3,5 bar air pressure required), Prod. Wt. 5,2 kg.

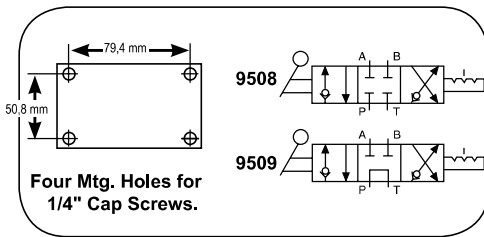
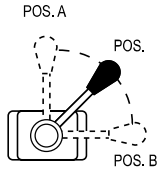
**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve in conjunction with the directional valve used in your application.

**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 35 bar.

Accessories

Model Shown:  
**9508**



**4-WAY / 3-POSITION (CLOSED CENTER) AND (TANDEM CENTER) MANUAL VALVES WITH POSI-CHECK®**

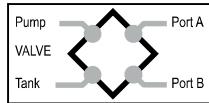
**Application:** Single or double-acting cylinders. When used with single-acting cylinders, one port must be plugged. For double-acting cylinders, either port can be used to "advance" or "return."

**Actuation:** Lever-operated, detent-positioned.

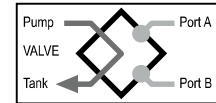
**Functions:** The 9508 provides "advance," "hold" and "return" positions with all ports blocked (closed center) in the "hold" position. The 9509 has "advance," "hold" and "return" with tandem center (cylinder ports are blocked, pump remains running). Both valves have Posi-Check® feature to guard against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

Order No.	Description
9508	4-way 3-position (closed center) manual valve, including sub-plate for remote mounting. Wt., 2,9 kg.
9509	4-way 3-position (tandem center) manual valve, including sub-plate for remote mounting. Wt., 2,9 kg.

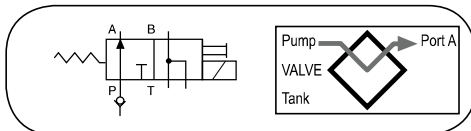
**9508**



**9509**



Model Shown:  
**9526**



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

**Application:** Single-acting cylinders.

**Actuation:** Solenoid-operated, 115/230/24V, 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.

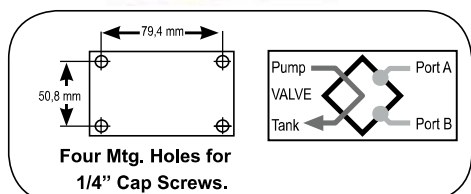
**NOTE:** Valve is equipped with a 9631 snubber valve in port "A." The line from the "return" port of the valve must be unrestricted (100 bar back pressure maximum) back to the reservoir.

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

**NOTE:** Valves above are shipped without control switch. Use 202777 remote hand switch.

Order No.	Description
9559	3-way 2-position solenoid valve, 115V 50/60 Hz. Includes a remote mounting sub-plate. Wt., 4,4 kg.
9526	3-way 2-position solenoid valve, 230V 50/60 Hz. Includes a remote mounting sub-plate. Wt., 4,4 kg.
9556	3-way 2-position solenoid valve, 24V 50/60 Hz. Includes a remote mounting sub-plate. Wt., 4,4 kg.

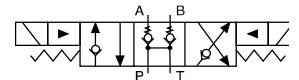
Model Shown:  
**9514**



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

**Application:** Double-acting cylinders.

**Actuation:** Solenoid-operated, 115/230/24V, 50/60 Hz.

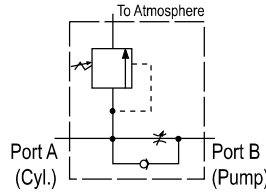


**Functions:** Push button control of "advance," "hold" and "return." The Posi-Check® feature guards against pressure loss when shifting from "advance" to "hold." With valve in "hold" position, cylinder ports are blocked and oil is directed from pump to reservoir.

**NOTE:** Do not allow return tank pressure to exceed 500 bar at the valve. Consult factory before installing a pressure switch on any of these valves.

Order No.	Description
9514	4-way 3-position (tandem center) solenoid valve, 115V, 50/60 Hz. Remote hand control included. Wt., 4,6 kg.
9525	4-way 3-position (tandem center) solenoid valve, 230V, 50/60 Hz. Remote hand control included. Wt., 4,6 kg.
9555	4-way 3-position (tandem center) solenoid valve, 24V, 50/60 Hz. Remote hand control included. Wt., 4,6 kg.

**LOAD-LOWERING VALVE**



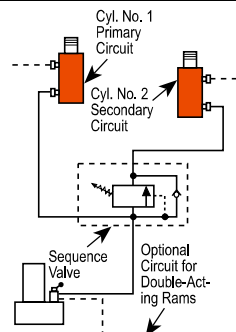
**Application:** Precision metering for controlled cylinder piston return.

**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 3/8" NPTF ports.

**NOTE:** Pressure relief valve setting is 830 bar. Operating pressure is 700 Bar and max. flow rate is 19 l/min.

Order No.	Description
9596	Load-lowering valve. Wt., 1 kg.

**SEQUENCE VALVE**

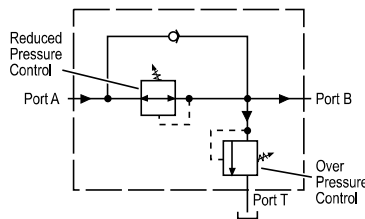


**Application:** Used when one cylinder in a multi-cylinder application must advance before any other.

**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 35 to 550 bar with adjustment screw (factory preset at 70 bar). Has 3/8" NPTF ports.

Order No.	Description
9597	Pressure control sequencing valve. Wt., 2,5 kg.

**PRESSURE REDUCING VALVE**



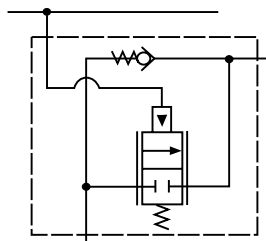
**Application:** Provides complete, independent pressure control to two or more clamping systems operated by a single power source.

**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 70 to 350 bar at outlet port "B" (secondary). Has 1/4" NPTF ports.

Order No.	Description
9608	Pressure reducing valve. Wt., 2,6 kg.

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

**COUNTER BALANCE VALVE**



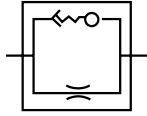
**Application:** Double-acting cylinders. Provides positive holding and controlled, "chatter-free" lowering of a load.

**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 1,9 l/min. and cylinder ratios of 3 to 1.

Order No.	Description
9720	Counter balance valve, including two pairs of fittings (male and female), hydraulic hoses, and dust caps. Wt., 4,5 kg.
9721	Counter balance valve, including two pairs of fittings (male and female), but does not include couplers, hoses, fittings and dust caps. Wt., 4,2 kg.

**CAUTION:** The 9720 patented counter balance valve has a pilot pressure as high as 210 bar. 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. To prevent sudden, uncontrolled descent of a load as it is being lowered, use a 9596 Load-Lowering Valve or 9720 Counter Balance Valve in conjunction with the directional valve used in your application.

METERING VALVE

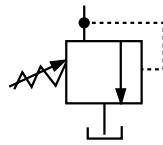


**Application:** For systems using large cylinders or extended lengths of hydraulic hose.

**Operation:** Controls surges by restricting flow if it exceeds 26,5 l/min. When flow subsides, valve reopens automatically. Has 3/8" NPTF male end to thread into return port of system control valve, and a 3/8" NPTF female end, permitting return hose to be directly connected.

Order No.	Description
9631	Metering valve. Wt., 0,1 kg.

"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 20 and 700 Bar. Maintains a given pressure setting within 3% over repeated cycles. Flow range is 0,3 l/min to 23 l/min.

Order No.	Description
9633	In-line pressure regulator valve with two 3/8" NPTF inlet ports, one 1/8" NPTF tank port and 1 m drain line kit. Wt., 1,9 kg

RELIEF VALVE



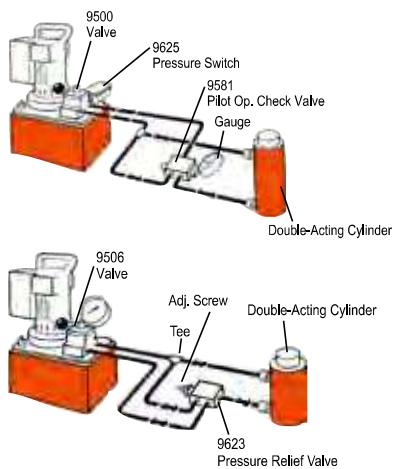
**Application:** Provide an economical means of protecting a hydraulic circuit against over pressurization.

**Operation:** These factory preset valves are designed for maximum flow rate of 19 l/min. Furnished with 1/8" NPTF male port. All valves weigh 0,1 kg. See chart below for ordering information.

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



Typical Set-Up



Relief Valve Order No.	Pressure Setting* (bar)
RV21278	697/738
RV21278-6	41/44
RV21278-10	62/69
RV21278-15	103/117
RV21278-17	110/124
RV21278-20	131/152
RV21278-25	159/186
RV21278-27	179/193
RV21278-28	186/207
RV21278-30	207/235
RV21278-32	214/228
RV21278-35	241/262
RV21278-38	283/310
RV21278-40	304/331
RV21278-43	338/366
RV21278-48	352/393

Relief Valve Order No.	Pressure Setting* (bar)
RV21278-50	352/393
RV21278-52	366/407
RV21278-55	386/428
RV21278-57	400/442
RV21278-60	421/462
RV21278-65	455/497
RV21278-70	490/531
RV21278-75	524/566
RV21278-80	559/600
RV21278-83	580/621
RV21278-86	600/642
RV21278-88	614/662
RV21278-90	628/669
RV21278-114	793/834
RV21278-6280	440/476

\*All RV's are Preset - Non-Serviceable