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

Application – Single-acting cylinders.
Actuation – Solenoid operated: 9605 is 115 volt, 50/60 Hz; 9599 is 24 volt, 50 Hz.
Functions – “Advance”, “hold” and “return” positions. When in “advance”, solenoid “B” is energized and oil goes from pump to cylinder through pressure port. In “return” position, solenoid “A” is energized and oil is directed from cylinder and pump to reservoir. With both solenoids de-energized, in “hold” position, oil from pump is directed back to reservoir while oil is checked in cylinder. The “Posi-Check®” feature holds load when shifting from “advance” to “hold” position.

Used on these pumps – Furnished with pilot lines and adapters for PE55, PE30 (carrying handles must be removed) and PE120 series. For application on other models, consult factory.
No. 9605 – 3-way/3-position (tandem center) solenoid valve, 115 volt, 50 Hz. Wt., 6.4 kg.
No. 9599 – Same as 9605 except for 24 volt, 50 Hz circuits.

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

3-WAY/4-POSITION MANUAL PRESSURE COMPENSATED VALVE

Actuation – Lever and adjustable, pressure compensated flow control valve.
Functions – Cylinder piston “return”, “hold”, “controlled advance” (pressure compensated) and “advance” (full flow). Will deliver a relatively constant flow regardless of pressure between 70 and 700 bar.

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

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

NOTE: This valve can be remote mounted with a 9510 subplate (see page 117).
No. 9609 – 3-way/4-position manual pressure compensated valve. Wt., 4 kg.

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

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

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

FLOW

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

PRESSURE

Min. working pressure - 70 bar.
Max. working pressure - 700 bar.
Max. valve case pressure - 35 bar.
3-WAY/2-POSITION SOLENOID VALVE

Application – Single-acting cylinders.
Actuation – Solenoid operated, 115 volt, 50 Hz.
Functions – Cylinder piston advances when solenoid is de-energized and pump is running. When solenoid is energized, oil is directed to reservoir, and piston returns. For “hold” position, pump is stopped with solenoid de-energized.
Used on these pumps – PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PE600, and PE800 series.

No. 9579 – 3-way/2-position solenoid valve, 115 volt, 50 Hz. Wt., 4.4 kg.
No. 9569 – Same as 9579, except with 24 volt, 50 Hz solenoid.
No. 9570 – Same as 9579 except with 230 volt, 50 Hz solenoid.

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

3/4-WAY/2-POSITION SOLENOID VALVES

Application – Single- or double-acting cylinders. When used with single-acting cylinders, one port should be plugged.
Actuation – Solenoid operated.
Functions – Oil is directed to “extend” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Oil is directed to “retract” side of cylinder; oil from “extend” side goes to reservoir.

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

Used on these pumps – 9552, 9572 and 9592 are used with PE17, PE30, PE46, PE55, PE84, PE90, PE200, PE400, PE600, and PE800 series.
No. 9592 – 3/4-way/2-position solenoid valve, 115 volt, 50 Hz. Wt., 6.6 kg.
No. 9552 – Same as 9592, except with 230 volt, 50 Hz solenoid.
No. 9572 – Same as 9592, except with 24 volt, 50 Hz solenoid.

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

Note: Ports are 1/4” NPTF.

AIR ACTUATED VALVE

Application – Single- or double-acting cylinders. When used with single-acting cylinders, one port should be plugged.
Actuation – Air operated.
Functions – Oil is directed to “extend” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Oil is directed to “retract” side of cylinder; oil from “extend” side goes to reservoir.

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

Used on these pumps – PA17, PA46 and PA55 series.
No. 9594 – 3/4-way/2-position solenoid valve, air operated (minimum of 4 bar air pressure required). Wt., 5 kg.
NOTES: Valve above is shipped without controls. 9594 can be used with the 209593 remote hand control (see page 116). See page 132 for remote mounted models of this valve.

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

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

IMPORTANT: When ordering any valve for a PE30 or PG30 series pump, 1/4” longer mounting screws are required. For valves 9569, 9570 and 9579, order four 10856 cap screws. For valves 9552, 9572 and 9592, order four 12001 cap screws.
**Valves**

**HYDRAULIC PUMP MOUNTED**

**Solenoid or Air Operated**

700 bar, 1/4” ports, 19 l/min max flow rate.

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

**Application** – Double-acting cylinders.
**Actuation** – Solenoid operated, 115 volt, 50 Hz.
**Functions** – “Advance”, “hold” and “return”. The “Posi-Check” feature holds the load when shifting from the “advance” to the “hold” position.
**Used on these pumps** – PE17, PE21, PE30 (with carrying handles removed), PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.
**NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 124-125).

- **No. 9513** – 4-way/3-position (open center) solenoid valve, 115 volt, 50Hz. Wt., 8,2 kg.
- **No. 9512** – Same as 9513 except for 24 volt, 50 Hz circuits.
- **No. 9516** – Same as 9513 except for 12 volt DC. For use on the PG1204S and PG400 series pumps only.
- **No. 9519** – Same as 9513 except for 230 volt, 50 Hz circuits. Consult factory for field installation.

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

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

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

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2” longer mounting screws are required. For valves 9513 and 9519, order four 11956 cap screws. For valves 9523, 9553 and 9589, order four 10855 cap screws. For valves 9522, 9590 and 9615, order four 10854 cap screws.
4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE

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

Actuation – Lever operated, detent positioned.

Operation –
1. With valve in center position, pump is started.
2. Cable is inserted into stressing tool, valve is placed in “A” position. “Pull” portion of stressing tool is pressurized to specified level for proper cable tensioning (“A” port is checked internally, can only be released by building pressure in “B” position).
3. Valve is placed in “B” position, which is pressure controlled and will not exceed 440 bar. “Return” portion of stressing tool is pressurized and will release “A” port when pressure reaches approximately one-half the “A” port pressure. “A” port remains open as long as this pressure differential is maintained.
4. Pump is stopped, valve is placed in “A” position, releasing “B” port pressure.

Used on these pumps: PA17*, PA46*, PA55, PE17*, PE21*, PE30, PE46*, PE55, PE60, PE84, PE120, 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 700 bar (max.) single-acting/Power Wedge seater.

Wt., 2.5 kg.

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

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

Actuation – Dual lever operated, detent positioned.

Operation –
1. With valves “A” and “B” in center position, pump is started; cable is inserted into stressing tool.
2. Valve “A” is placed in “Stress” position; cylinder extends to tension cable. Pump pressure controls force exerted by tensioning cylinder in this position. “Stress” port is checked internally, and can only be released by building pressure in the valve “B” return position.
3. When desired cable tension is achieved, valve “A” is placed in valve “B” position and valve “B” in “Seat” position. Seating portion of cylinder will be pressurized to seating pressure controlled by “Seat” relief valve (factory set to 275 bar).
4. Valve “B” is shifted to “Return” position, which is pressure controlled and will not exceed 155 bar. “Return” portion of stressing tool should be pressurized and will release “Stress” port when pressure reaches 15% of “Stress” port pressure.
5. “Stress” port will remain open and cylinder will return as long as pressure differential is maintained. “Stress” and “Seat” ports are open to reservoir.
6. When cylinder has fully returned, both valves are shifted to “Center” position and oil will be directed to reservoir. Maximum pressure setting for the “Seat” relief valve is 420 bar.

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

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

No. 9632 – Post tensioning valve for 700 bar (max.) double-acting systems.

Wt., 6.2 kg.