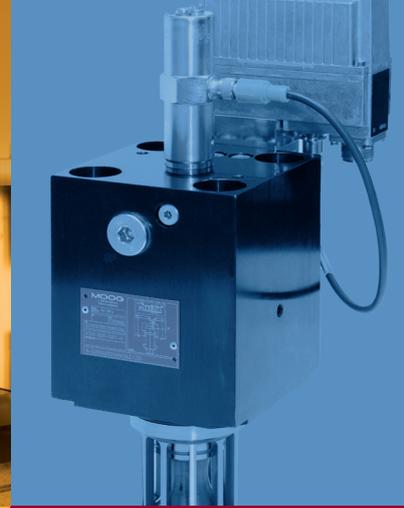


X700 SERIES 2-WAY SERVO CARTRIDGE VALVES

Sizes 32, 40 and 50

Fast response time and very
high flow performance



Moog's X700 Series Servo Cartridge Valves are throttle valves for use in 2-way applications. These valves are suitable for electrohydraulic flow control systems, including those with high dynamic response requirements.

The X700 product family is equipped with a dynamic Moog D636 Direct Drive Pilot Valve ensuring high energy efficiency and low internal leakage. The integrated electronics of the D636 provide closed-loop position control for the main stage cartridge poppet. For maximum flexibility customers can choose an analog and/or fieldbus interface.

The innovative new design of the main stage cartridge valve results in very high flow performance. Combined with its robustness, the Moog X700 Series provides reliable control for die casting machines, presses and heavy industrial equipment, as well as for other applications.

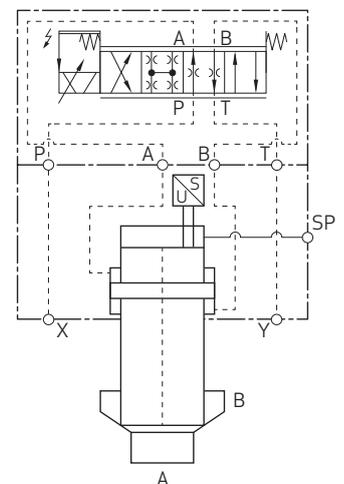
This product family is easily integrated and configurable to meet your exact application and performance needs. Fail-safe options are available for applications with safety requirements ensuring a defined main stage valve position to avoid uncontrolled machine movements.

ADVANTAGES

- Downsizing of valve size due to flow-optimized design with highest nominal flows
- Robust design for a nominal pressure of 420 bar (6,000 psi)
- Fast response time for high machine dynamics
- Reduced internal leakage to increase energy efficiency
- No alignment of sleeve in manifold required for flexibility in manifold design and ease of installation
- Optional field bus interface (IoT ready)

APPLICATIONS

- Die casting
- Metal forming and presses
- General industrial machinery



TECHNICAL DATA

		X702	X703	X704
Valve design		2-Way Servo Cartridge Valve, seat design		
Size according to ISO 7368		Size 32	Size 40	Size 50
Mounting pattern		ISO 7368-09-5-1-16	ISO 7368-10-7-1-16	ISO 7368-11-9-1-16
Main stage: maximum operating pressure of port A, B		420 bar (6,000 psi)		
Rated flow at Δp_N 5 bar (75 psi) ¹⁾	flow direction A-B	D1: 1,850 l/min (489 gpm) D2: 1,100 l/min (291 gpm)	D1: 2,600 l/min (687 gpm) D2: 1,550 l/min (409 gpm)	D1: 3,600 l/min (951 gpm) D2: 2,150 l/min (568 gpm)
	flow direction B-A	D1: 1,300 l/min (343 gpm) D2: 1,000 l/min (264 gpm)	D1: 1,900 l/min (502 gpm) D2: 1,400 l/min (370 gpm)	D1: 2,700 l/min (713 gpm) D2: 1,900 l/min (502 gpm)
Recommended maximum flow¹⁾		2,700 l/min (713 gpm)	4,100 l/min (1,083 gpm)	6,300 l/min (1,427 gpm)
Step response time according to ISO 10770-1 ($p_x = 210$ bar) ²⁾		11 ms	13 ms	16 ms
Pilot valve	minimum pilot pressure	50 % of main stage pressure		
	maximum pressure X port	350 bar (5,000 psi)		
Pilot leakage flow		< 1.2 l/min (< 0.32 gpm)		
Peak pilot flow for 100 % step		50 l/min (13.2 gpm)	60 l/min (15.9 gpm)	

¹⁾Expected flow values depending on flow direction and recommended cavity diameters of port A and B.

²⁾Step response time for 0 to 90 % at 0 to 100 % step.

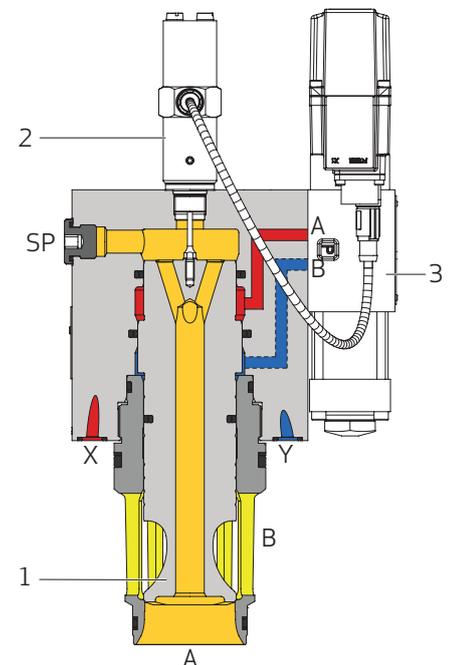
ELECTRICAL FEEDBACK VALVES

Moog's X700 Series 2/2-Way Servo Cartridge Valves are electrical feedback valves (EFBs), which means that the position control loop for the main stage cartridge poppet (1) and the pilot valve (3), is closed through a position transducer (2) by the integrated valve electronics.

An electric command signal (poppet position set point) is applied to the valve electronics. A position transducer (LVDT) measures the actual position of the poppet. The electronics compare the poppet position and the command signal, and control the pulse width modulated (PWM) current to the linear force motor of the pilot valve. The pilot valve moves the main stage cartridge poppet to the desired position, and the position of the main stage cartridge poppet is therefore proportional to the electric command signal.

The valves allow the use of analog or digital fieldbus interfaces like EtherCAT, CANopen, or combined analog and digital interfaces.

The flow direction of the main stage is either from port A to B or from port B to A. The valve has an offset of 2 %. Below a setpoint of 2 %, the poppet is pressed into the seat of the sleeve - the metallic seat closes the connection between port A and B leakage-free.



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This technical data is based on current available information and is subject to change at any time. Specifications for specific systems or applications may vary.

2-way Servo Cartridge Valve
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