

E024-700 SERIES

SUB MINIATURE SERVO VALVE FOR SUBSEA SYSTEMS

A compact Electro-Hydraulic servo valve for use in high ambient pressure environments.

The established E024 Series Miniature Servo valve was developed from Moog's proven Aerospace technology widely used for flight control in civil and military aircraft. Compared to a standard aerospace valve, it is significantly reduced in size and weight, but retains a flow capability of up to 7.5 l/min (1.98 US g/min) to meet a wide variety of oil and gas applications.

The E024-700 Series variant incorporates a vented motorcap to allow operation in high ambient pressure environments, meeting the needs of subsea and downhole applications.

This valve retains the robust two-stage nozzle flapper construction of the 30 Series Aerospace Valve, to meet the extreme performance and environmental demands of the oil & gas industry. Having a mass of just 95gm, the E024-700 series valve can control hydraulic actuators with powers of up to 3.0kW. This valve is suited to a wide range of hydraulic actuation systems requiring precise control of position, force or velocity.



ADVANTAGES OF THE E024-700 SERVO VALVE:

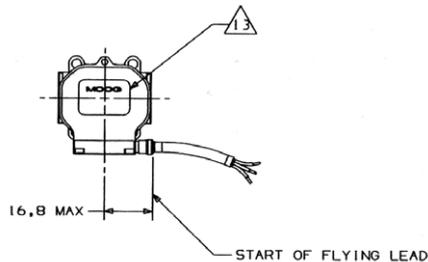
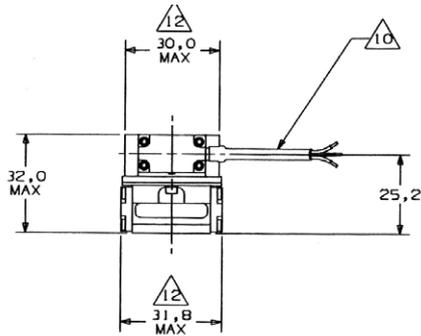
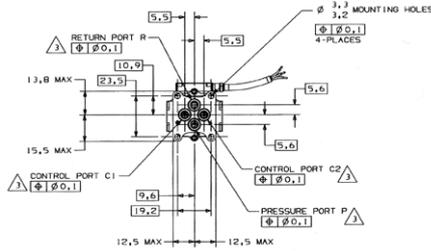
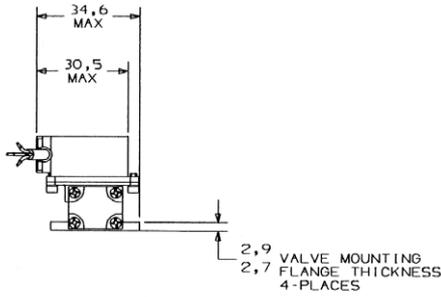
- Ultra-light weight 95gm (3.35oz)
- Compact package
- High power density
- Low input signal (10mA) allows operation remote from control electronics.
- Fast response to command inputs
- High peak flow capability
- Precise, repeatable characteristic control
- High ambient pressure operation.

INDUSTRY APPLICATIONS

- Subsea manipulators
- Thruster control
- Process valve actuation
- Exploration drilling
- Completion tool actuation

SPECIFICATIONS

TYPICAL GENERAL INSTALLATION INFORMATION



For full installation information see drawing number C24539

Moog has offices around the world. For further information, or the office nearest you, contact us online.

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E024-700 Datasheet CDL 63899

TECHNICAL DATA E024-700 SUB MINIATURE SERVOVALVES

	E024	E024 Dual Flow Rate
Maximum Supply Pressure:	280 Bar (4061 PSI)	
Valve Function:	Axis-cut linear flow control.	Axis-cut flow control with dual gain [Ratio 2.5:1].
Rated Flow: @ 70 Bar (1015 PSI) Valve Pressure Drop	Axis-cut valves: 0.4, 1.0, 1.5, 2.0, 3.8, 5.0, 7.0 l/m. (0.1, 0.3, 0.4, 0.5, 1.0, 1.3, 1.8 USg/min). NB Flow Tolerance +/-10%.	2.0, 3.8, 7.0 l/min (0.5, 1.0, 1.8 USg/min). NB: Flow tolerance +/-10%.
Leakage Flow:	Pilot stage flow: < 0.30 l/min (0.08 USg/min) (std version). Spool leakage at null: < 5% of rated flow (Axis-cut versions).	Pilot stage flow: < 0.30 l/min (0.08 USg/min). Spool leakage at null: < 2% of rated flow (Axis-cut versions).
Electrical Input Signal: (coils in parallel)	+/- 10mA into a 360 ohm. Inductance 1.4 Henry.	
Dynamic Performance:	25% signal @ 210 Bar (3045 PSI) & 40°C (104°F) 90° phase lag > 250 Hz -3dB attenuation > 250 Hz.	25% signal @ 210 Bar (3045 PSI) & 40°C (104°F) 90° phase lag > 250 Hz -3dB attenuation > 250 Hz.
Null Shift:	With supply pressure: < 3% of full signal over the range of 124 Bar (1798 PSI) -228 Bar (3307 PSI). With fluid temperature < 5% of full signal over a range of 35-135 °C (95°F-275°F).	With supply pressure: < 3% of full signal over the range of 124 (1798 PSI) -228 Bar (3307 PSI). (Corresponding to 1.6% of full flow). With fluid temperature < 5% of full signal over a range of 35-135 °C. (95°F-275°F). (Corresponding to 2% of full flow).
Accuracy of Flow Control:	Hysteresis < 3%. Threshold < 0.5%.	Hysteresis < 3% of full signal (Corresponding to 1.2% of full flow). Threshold < 0.5% of full signal (Corresponding to 0.2% of full flow).
Environmental Survivability Limits:	-40°C (-40°F) to +165°C (329°F) & 50G shock in any direction.	
Max Ambient Pressure	TBA	
Mass:	95g (3.35 oz).	
ENVIRONMENTAL OPERATING ENVELOPE FOR ALL E024 SERVO VALVES		
Pressure Supply:	140 (2030 PSI) - 280 bar (4061 PSI).	
Return Line Pressure:	2 (29 PSI) - 5 Bar (72 PSI).	
Temperature Range:	-20°C (-4°F) - 135 °C (0 - 275°F).	
Fluids Viscosity:	> 4 CSt.	
Filtration:	NAS 1638 CLASS 3 / ISO 4406 14/12/9 or better. It may be possible to operate the valve in certain applications outside of these design limits, but this must be checked and validated by the customer.	
Operation of Valves in Close Proximity:	Valves mounted in close proximity may experience magnetic interaction. The degree of interaction depends on the installation and may be minimized by the use of external shielding.	

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

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