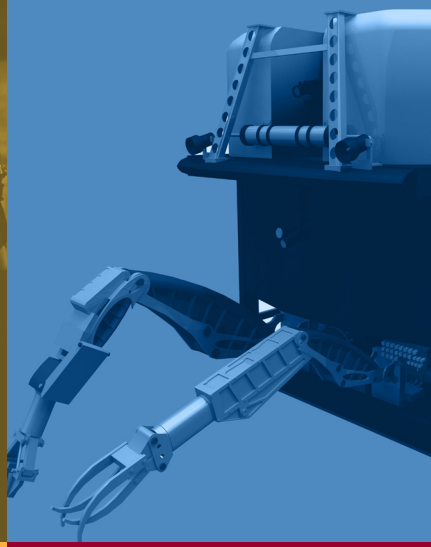
32 SERIES
MICRO SERVO VALVES

Responsive valve in a compact package



The 32 Series is a two-stage, flow control, double-nozzle, mechanical feedback servo valve that has a stainless steel body and integrated torque motor in an environmentally sealed compartment. Its nozzle-flapper design is a proven technology for applications where high response, stability and accuracy are required in a compact package. As the higher flow counterpart to the 30 series it has an impressive power density of nearly 1.5 horsepower per oz. equivalent, or 18.6 horsepower overall. Many options are available for this series including vented and non-vented motor caps, pigtail versions for convenient installation, tie wire options and special connectors.

The 32 Series Servo Valve is designed to provide a long service life even in demanding and extreme conditions. These products perform reliably in high and low temperatures, and high acceleration, shock and vibration environments. Along with the 24 and 30 Series Servo Valves, this product is part of our proven micro hydraulics offering that is well known for high power to weight ratio and efficiency, while delivering high dynamics and precise flow control for better overall system control.

Wire direct version for convenient installation and space saving

Many specialized d versions available including tie wire options and special connectors

Micro-hydraulics are ideal for applications requiring high power density

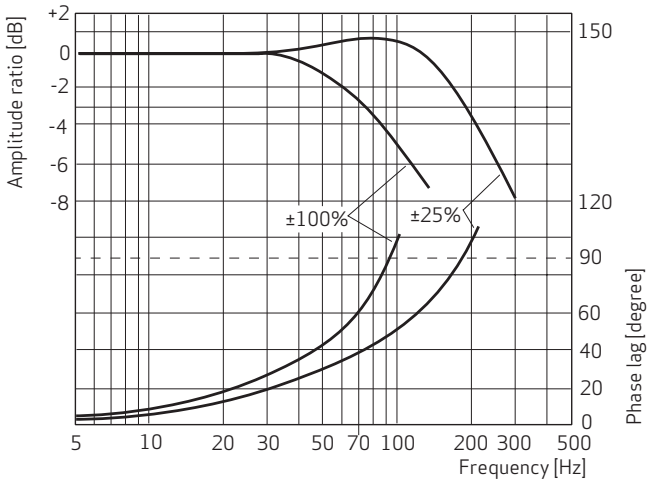
ADVANTAGES

- High response improves control capability
- Compact light weight package for mobile applications
- Rugged construction designed for extreme conditions

APPLICATIONS

- AGV/ROV
- Animatronics
- Manipulators
- Downhole Tools
- Entertainment
- Robotics for Unstructured Environments
- Human-Scale Robotics
- Mobile Robotics including Construction
- Collaborative Robotics
- Quadrupeds
- Humanoid
- Biomimetic
- Exo-Skeletons
- Haptics
- Virtual Reality, Simulation and Training
- Autonomous Vehicles

RESPONSE PLOT

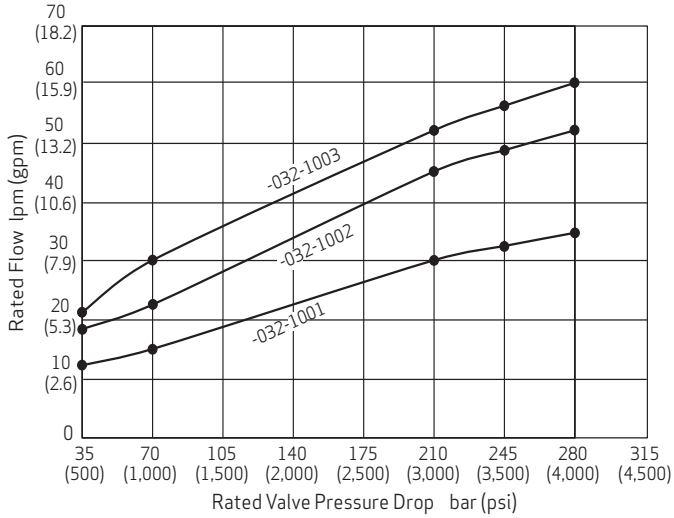


Typical Responses for Peak Sinusoidal Inputs of ±25 % and ±100 % Rated Current

Supply 210 bar (3,000 psi)

Oil Temp 38°C (100°F)

PERFORMANCE CURVE



DYNAMIC TECHNICAL SPECIFICATIONS

Frequency of 90 deg phase (3,000 psi)	› 160 Hz
Step Response	4.5 ms
Amplitude Ratio	‹ 2 db
First Order Time Constant	0.0020 sec
2nd Order Natural Frequency	160 Hz
Damping Ratio	0.55

GENERAL TECHNICAL SPECIFICATIONS

Weight	370 g (13 oz)
Maximum Operating Pressure	275 bar (4,000 psi)
Rated Flow	15.0 to 30.0 l/min (4.0 to 8.0 gpm) @ Δp 70 bar (1,000 psi)
Mounting Pattern	0.78 in. port circle [ISO 10372-03-03-0-92]
Static Performance	
Rated Flow Tolerance	±10 %
Linearity	‹ ±7 %
Null Region	‹ ±3 %
Null Bias	‹ ±3 % initial; ‹ ±5 % long term
Hysteresis	‹ ±3 %
Threshold	‹ ±1 %
Operating Temperature	-20°F to 400°F (-28°C to 204°C)
Internal Leakage @ 3,000 psi (cis)	‹ ±3 % rated flow plus ‹ 0.50 cis tare
Proof Pressure	415 bar (6,000 psi) max (Supply), 275 bar (4,000 psi) (Return)
Burst Pressure	690 bar (10,000 psi) max (Supply), 345 bar (5,000 psi) (Return)

TECHNICAL HYDRAULIC DATA

Seal Material: FKM

System Filtration: High Pressure filter (without bypass but with dirt alarm) mounted in the main flow and if possible directly upstream of the valve

Class of Cleanliness: The cleanliness of the hydraulic fluid greatly affects the performance (e.g., spool positioning, high resolution) and wear (e.g., metering edges, pressure gain, leakage) of the servo valves

Recommended Cleanliness Class

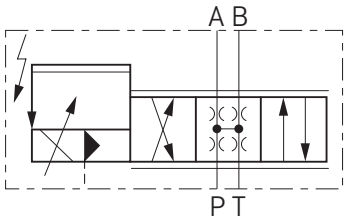
For functional safety ISO 4406 <17/14/11
For longer service life ISO 4406 <16/13/10

Filter Rating recommended

For normal operation $\beta_{10} \geq 75$ (10 µm absolute)
For longer life $\beta_5 \geq 75$ (5 µm absolute)

Compatible Fluids: Petroleum base or selected phosphate ester fluid, 10 to 97 centistokes at 38°C (60 to 450 SSU at 100°F)

HYDRAULIC VALVE SYMBOL



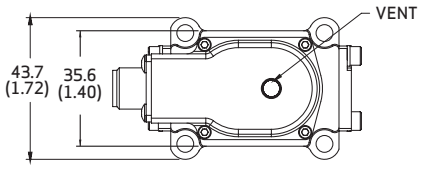
COIL RESISTANCE

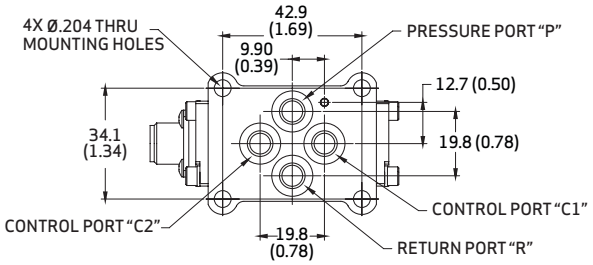
The effects of coil resistance changes can be essentially eliminated through the use of a current feedback servoamplifier having a high output resistance such as the Moog G123-825 Buffer Amplifier.

Parallel Coils			Series Coils			Single Coils		
R Ohms	L Henrys	i_R mA	R Ohms	L Henrys	i_R mA	R Ohms	L Henrys	i_R mA
40	0.18	40	160	0.56	20	80	0.22	40
100	0.59	20	400	2.2	10	200	0.72	20
500	2.6	10	2,000	9.7	5	1,000	3.2	10

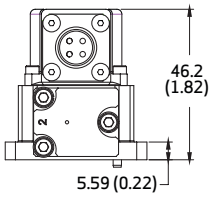
Note:
1. Resistance values at 20°C (68°F) 10 % tolerance
2. Inductance values are typical to 50 Hz, servovalve pressurized. Inductance is not normally measured on individual servo valves.

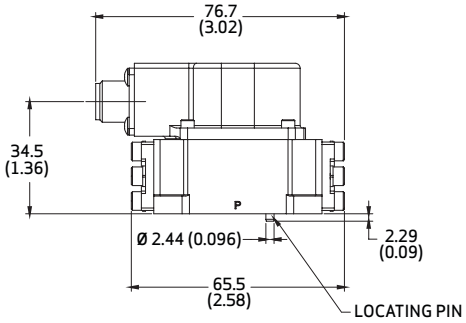
INSTALLATION DRAWING





REFERENCE MOUNTING PATTERN SPECIFICATION
ISO 10372-03-03-0-92





mm (in)

ORDERING INFORMATION

Model number (assigned at the factory)

-032 - [ ][ ][ ][ ] [ ]

Model designation	
	Assigned at the factory

Factory Identification (Revision Level)

Type designation

1 2 3 4 5 6 7 8 9 10 11

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

1	Valve version
S	Standard response

2	Rated flow in l/min (gpm)	
	For Δp_N = 35 bar (500 psi) per spool land	
15	15.1	(4.0)
23	22.6	(6.0)
31	30.2	(8.0)

3	Maximum operating pressure in bar (psi) and body material	
H	275	(4,000) Stainless steel

4	Bushing/spool design
*O	4-way/axis cut/linear
C	4-way/±3% overlap/linear
D	4-way/±10% overlap/linear
N	4-way/±3% underlap/linear

5	Pilot stage design
F	Low flow, nozzle-flapper

6	Spool position without electrical signal
M	Mid position

7	Pilot connections
4	Internal

8	Seal material
V	Fluorocarbon (FKM) 85 Shore A

9	Valve connector
A	4-Pin MS Threaded Connector over Port A
B	4-Pin MS Threaded Connector over Port B
1	4-Lead (18") Pigtail over Port B
2	4-Lead (18") Pigtail over Port A

10	Signals for 100 % spool stroke
G	± 10 mA single coil
J	± 20 mA single coil
L	± 40 mA single coil

11	Vented Standard Motor Cap
	*Standard Motor Cap
V	Vented Motor Cap

*Preferred Models

MOOG GLOBAL SUPPORT

Moog Global Support is our promise to help you maximize uptime and get more from your machine investment. Moog has the expertise you can trust to perform the highest quality repairs to ensure like new performance for your servovalves. Only Moog technicians use authentic Moog OEM replacement parts to ensure "like-new" performance after every repair. Moog products are repaired to the original specifications and returned to you with a renewed warranty. Moog standard repair levels are available for this product and Moog offers options for express service in many of our locations.

Moog provides a wide variety of accessories that our customers may need for hydraulic valves. The Moog G123-825 Buffer Amplifier is a DIN Rail mount module that solves the common problem of the input signal being incompatible with the valve drive requirements. For more info visit www.moog.com or contact your local office.

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

e-mail: info@moog.com

www.moog.com/industrial

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