

## 761 Series

ELECTRIC FEEDBACK SERVOVALVE

SERIES

# 761HR

**The 761HR Series** is a very high performance, two-stage design that provides excellent dynamic response, hysteresis, and threshold (resolution).

Electrical feedback of spool position is provided by a unique non-contacting spool position transducer\* located at the center of the spool and bushing assembly. Integral electronics provide closed-loop position control of the spool and a buffered spool position signal output for monitoring.

\* Patent Number 5,244,002

Model	Rated Flow (1000 psi)		Internal Leakage (1000 psi)		Rated Input (differential)
	gpm	lpm	gpm	lpm	volts
761-010A	1.0	3.8	< 0.23	< 0.92	± 10.0
761-011A	2.5	9.5	< 0.30	< 1.15	± 10.0
761-012A	5.0	19.0	< 0.45	< 1.78	± 10.0
761-013A	10.0	38.0	< 0.45	< 1.78	± 10.0
761-014A	15.0	57.0	< 0.45	< 1.78	± 10.0

Optional designs are available with special spool/bushing lap configurations. Optional input ratings: 1-5, 4-20, 10-50, 20-100, & ±10 mA; 0-5 & 0-10 volts. Available seal materials: BUNA (Std.), VITON or EPR.

### Frequency Response

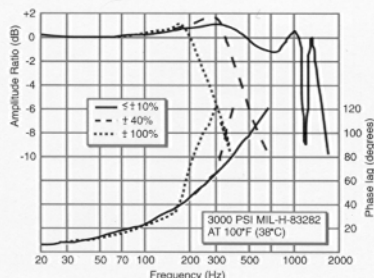


Figure 1 - 1, 2-1/2, and 5 gpm Servovalves

### Frequency Response

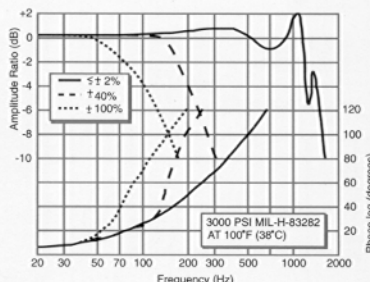


Figure 2 - 10 gpm Servovalves

### Frequency Response

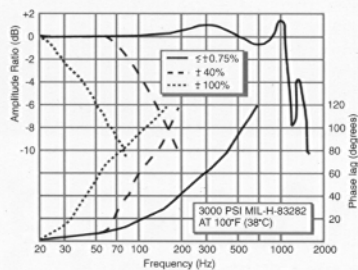


Figure 3 - 15 gpm Servovalves

### Step Responses

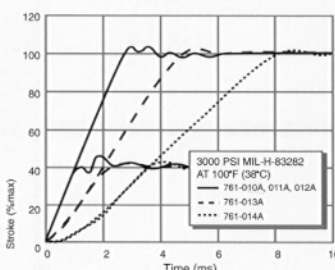


Figure 4

## Specifications

**Fluid Supply:** 761HR Series Servovalves are intended to operate with constant supply pressure.

### Supply Pressure:

Minimum: 200 psi (14 bar)  
(lower-call Factory)  
Maximum Standard: 3000 psi (210 bar)  
Maximum (special order): 5000 psi (350 bar)

### Proof Pressure:

150% of supply pressure at P port  
100% of supply pressure at R port

### Fluid:

Compatible with common hydraulic fluids

Recommended viscosity range:  
60-450 SUS @ 100°F (10-97 cSt @ 38°C)

### Cleanliness Level:

ISO DIS 4406 code 16/13 max.  
14/11 recommended

### Operating Temperature:

Minimum: -4°F (-20°C)  
(maximum fluid viscosity: 6000 SUS)  
Maximum: +185°F (+85°C)

### Rated Flow Tolerance:

± 2% typ, ± 10% max

### Symmetry:

2% typ, 10% max

### Hysteresis:

0.10% typ, 0.22% max

### Threshold:

est. 0.02% typ, 0.037% max

(measurement limited by s/n ratio)

### Null Shift:

with temperature, 100°F variation: < 4%  
with acceleration to 10g: < 0.75%

with supply pressure 1000 psi change:  
< 0.75% with return pressure 0 to 500 psi: < 0.75%

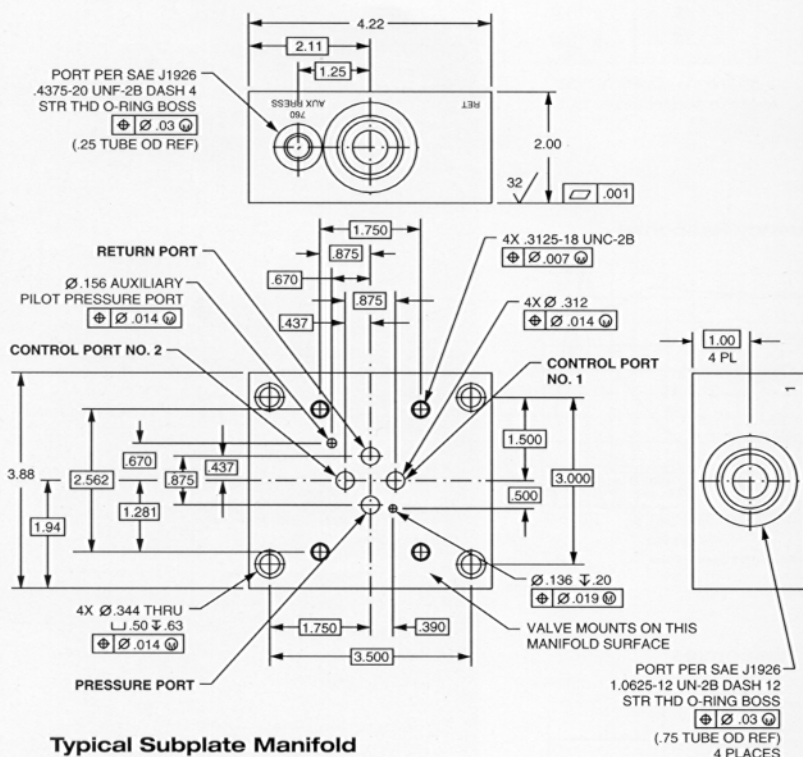
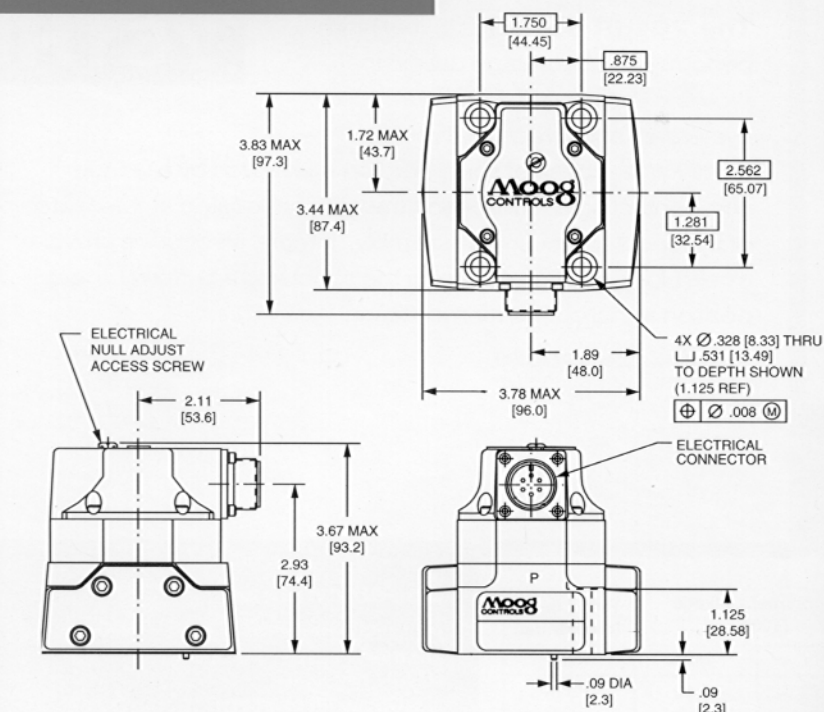
**Frequency Response:** Typical spool position response characteristics are shown in Figures 1, 2, and 3 for various input amplitudes.

**Step Response:** Typical transient responses are shown in Figure 4.

# Moog

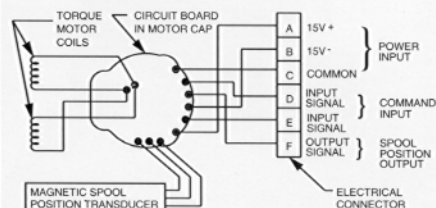
CONTROLS

**761HR**  
SERVOVALVES



### Typical Subplate Manifold

### Standard Electrical Configuration



**Polarity:** Flow out control port No. 2 when voltage at pin E is greater than voltage at pin D.

**Power Input:**  $\pm 15.0$  Vdc, regulated ( $\pm 3\%$ ), 3 wire at 300 mA max.

**Command Input:** Analog differential voltage input (standard).

**Spool Position Output:** Analog single-ended voltage with respect to pin C. Amplitude is  $\pm 5.0$  volts at  $\pm$  rated spool stroke. Polarity is positive with flow out control port No. 2.

### Accessories:

**Flushing Block:** PN 23718-1K1

**Mating Electrical Connector:**  
PN 49054F14S6S (MS3106F14S-6S)

**Suggested Mounting Bolts:**

PN A31324-228B  
5/16 - 18 NC x 1-3/4 long  
Socket Head Cap Screw

**Subplate:** 5000 psi  
4 & 5 port PN 43586AM7

Filter: PN A01713-1

**Notes:**

**Valve Weight:**

Standard: 2.60 lb (1.18 kg)  
w/ Steel body: 4.24 lb (1.92 kg)

**Subplate O-Ring Size:**

0.070 [1.78] sect.  
x 0.426 [10.82] I.D.  
(universal size -013)

### Aux. Pilot Pressure Port

**O-Ring Size:**  
0.070 [1.78] sect. x 0.364 [9.25] I.D.  
(universal size -012)

Null Adjust:

Flow out of control port No. 1 will increase with clockwise rotation of electrical null adjust.

**Surface Finish:**

Surface to which valve is mounted requires  $\sqrt{32}$  [ $\Delta \Delta$ ] finish, flat within 0.001 [0.03] TIR.

Moog  
CONTROLS

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