

### SPECIFICATIONS

**Fluid Supply:** 743 Series Servovalves are intended to operate with constant supply pressure.

**Supply Pressure:**

Minimum: 500 psi (35 bar)

Maximum: 3,000 psi (210 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:**

-40°F to +185°F (-40°C to +85°C)

(maximum fluid viscosity: 6,000 SUS)

**Rated Flow Tolerance:** +10%

**Hysteresis:** < 3%

**Threshold:** < 0.3%

**Null Shift:** with supply pressure

1,000 psi change: < 2%

**Frequency Response:**

Typical response characteristics are shown in Figures 1 and 2.

**Step Response:**

Typical transient responses are shown in figure 3. The straight line portion of a response represents saturation flow from the pilot stage which will increase with higher supply pressures.

The 743 Series Servovalve is a two-stage design which flows up to a maximum of 25 gpm at 1,000 psi valve drop. The output stage is a closed center, four-way, sliding spool. The pilot stage is a symmetrical double-nozzle and flapper, driven by a double air gap, dry torque motor. The valve design is simple and rugged for dependable, long life operation.

Specific design features include a first stage field replaceable filter, and an internal null adjust which acts as an electrical failsafe. Models are also available with intrinsically safe coils approved by Factory Mutual (FM) and N.V. KEMA (CENELEC). Consult factory for intrinsically safe model information.

The valves are also FM approved for non hazardous locations and are primarily used on steam turbine applications.



### FREQUENCY RESPONSE

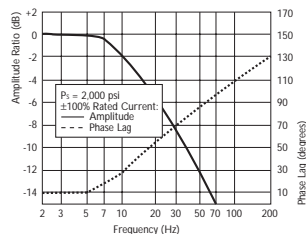


Figure 1 - Full Amplitude Frequency Response

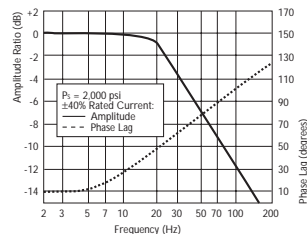


Figure 2 - Reduced Amplitude Frequency Response

### STEP RESPONSE

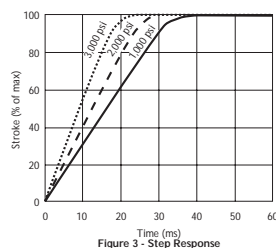
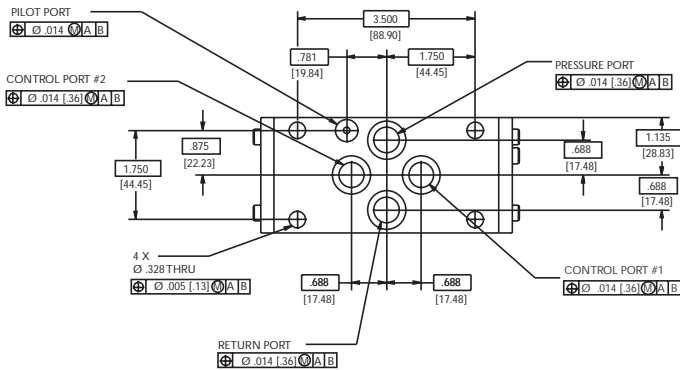
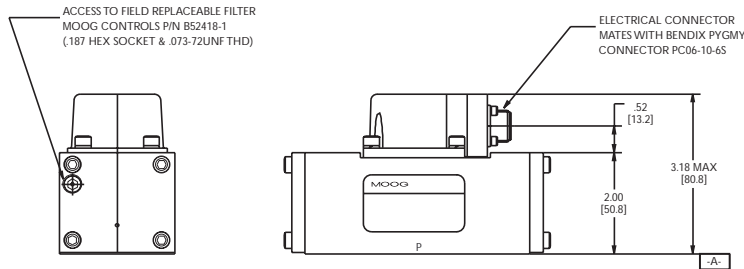
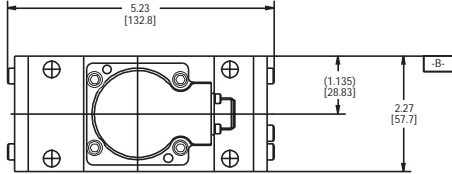
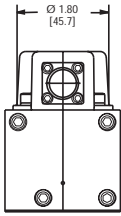


Figure 3 - Step Response

Model	Response	Rated Flow (1,000 psi)		Internal Leakage (1,000 psi)		Rated Current (parallel coils)	Coil Nom Resistance
		gpm	lpm	gpm	lpm	mA	ohms
743F002A	Std.	25	95	< .42	< 1.6	16	250
743F003*	Std.	25	95	< .42	< 1.6	48	89
743F004+	Std.	25	95	< .42	< 1.6	16	250

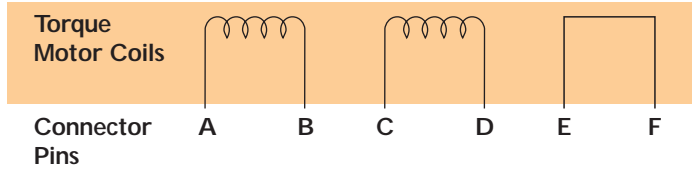
Optional designs available with special flow null cuts.  
Available seal materials: VITON (Std.), BUNA or EPR.  
\* 3 coil torque motor.  
+ Second stage bias fails pressure to control port 1.

## 743 SERIES SERVOVALVE SCHEMATIC



The products described herein are subject to change at any time without notice, including, but not limited to, product features, specifications, and designs.

## STANDARD ELECTRICAL CONFIGURATION



External connections and electrical polarity for flow out control port No. 1 are:  
 Single Coil: A+, B-; or C+, D-  
 Series Coils: tie B to C; A+, D-  
 Parallel Coils: tie A to C and B to D; A & C+, B & D-

## ACCESSORIES

**Mating Electrical Connector:**  
 P/N 78068-8 or P/N 78068-9  
 (PC06E-10-6S(SR))

**Suggested Mounting Bolts:**  
 P/N A31324-240B  
 5/16 – 18 NC x 2.50 long  
 Socket Head Cap Screw

**Replacement Filter Kit:**  
 P/N G3194-1

## NOTES

**Valve Weight:** 3.40 lb (1.54 kg)

**Base O-Ring Size:**  
 0.070 [1.78] sect. x .614 [15.59] I.D.  
 (universal size -016)

**Aux. Pilot Pressure Port O-Ring Size:**  
 0.070 [1.78] sect. x .301 [7.65]  
 (universal size -011)

**Aux. Pilot Pressure Port:**  
 Standard on all models.

**Null Adjust:**  
 Internal (factory adjusted).  
 Standard configuration is Pressure  
 to control port No. 2.

**Surface Finish:**  
 Surface to which valve is mounted  
 requires  $\sqrt{}$  [▽] finish, flat within  
 0.0015 [0.04] TIR.

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