

INSTALLATION INFORMATION FOR 73 SERIES
INDUSTRIAL SERVOVALVE

HYDRAULIC SYSTEM PREPARATION:

To prolong servovalve life and to reduce hydraulic system maintenance, successful industrial users have installed a 5 or 10 micron large capacity filter a few inches upstream of each servovalve. Their practice has been to operate a new hydraulic system for a period with a flushing block at the servovalve location before the servovalve is installed. The period of flushing prior to servovalve installation varies considerably with the complexity and condition of the system. The usual period is at least four hours. The flushing is done under conditions of temperature, flow rates, etc., which reasonably simulate operating conditions. New system filter elements are installed during the flushing process whenever the pressure drop across the filter indicates that the element (s) need changing. When a filter will operate for a period of two hours with no perceptible increase in pressure drop, most of the harmful system contamination has been removed. To maintain a clean system, filters must be replaced whenever the pressure drop indicates a need for changing. Users also frequently install an oversize capacity 5 or 10 micron filter in the return line or in a line that provides constant full capacity flow. This increases the filter element replacement interval and greatly reduces the system contamination level.

REPLACEABLE FILTER (PN 071-22050)

The MOOG Industrial Servovalve is equipped with a sintered stainless steel field-replaceable filter. These may be obtained from MOOG, and it is recommended that a spare filter be maintained ready for use.

Filter elements supplied by MOOG are ready for immediate installation. In replacing the filter element, care should be exercised to prevent dirt from falling into the valve body or into the drilled passages in the filter plug.

The Filter may be replaced as follows:

1. Depressurize the supply and return lines to the valve.
2. Remove the four #1/4-28 socket head cap screws from the round cap on the end of the valve.
3. Remove the founded cap.
4. Remove the filter element from the valve by grasping it and pulling directly outward, being careful not to let any contaminate drop into the filter cavity.

5. Inspect the new filter cartridge to determine that the "o" ring is in place.
6. Install the new filter over the filter post located in the bottom of the filter cavity.
7. Replace the rounded cap; replace and tighten the four #1/4-28 socket head cap screws.

INSTALLATION:

The Industrial Servovalve may be mounted in any position. The mounting holes will accommodate 5/16-18 x 5/8 long minimum, socket head cap screws. The mounting pattern in the valve is shown by Installation Drawing No. 001-24735. With a light oil film on the socket head cap screw, the screws should be tightened to a torque of 96 in. -lbs.

The first time after installing a valve, pressure should be applied to the system slowly to allow oil to fill the filter cavities gradually.

TO PROVIDE EXTERNAL SUPPLY TO PILOT STATE:

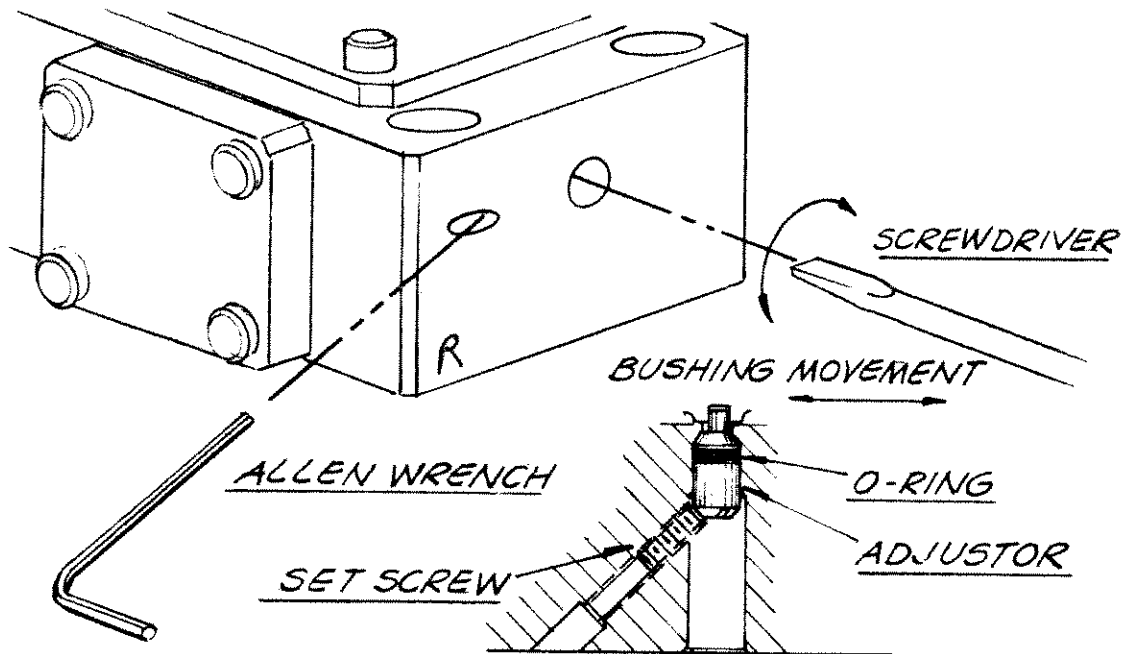
A set screw and "o" ring sealed plug are removed from the base of the valve and installed in the filter cavity. This operation blocks the passage-way between the main pressure port and the pilot-stage within the valve and creates a passage directly between the pilot-stage filter cavity and the auxiliary fifth-port on the base of the valve. This may be accomplished as follows:

1. Remove the #1/4-28 set screw from the base of the valve.
2. Remove the plug behind this screw by utilizing the #2-56 threaded hole in the plug.
3. Remove the filter as outlined above, making sure that it does not become contaminated.
4. Insert the plug, making sure the "o" ring does not become damaged, in the recess provided in the pilot filter cavity.
5. Install and tighten the #1/4-28 set screw behind this plug.
6. Replace the filter and the rounded cap.

MECHANICAL NULL ADJUSTMENT
MOOG 72 and 73 SERIES SERVOVALVES

It is often desirable to adjust the flow null of a servovalve independent of other system parameters. The "Mechanical Null-Adjustment" on the Moog 72 & 73 Series Servovalves allow a $\pm 20\%$ adjustment of flow null.

The "Mechanical Null Adjustor" is an eccentric bushing retainer pin, located above the "RETURN" port designation on the valve body, which when rotated provides control of the bushing position. Mechanical feedback elements position the spool relative to the valve body for a given input signal. Therefore, a movement of the bushing relative to the body changes the flow null.



ADJUSTMENT PROCEDURE:

1. Loosen #6 - 32 locking set screw (1/16 hex socket) to allow bushing pin to rotate but not be backed out by pressure.
2. With a screw driver, rotate mechanical null adjustor pin to obtain desired flow null.

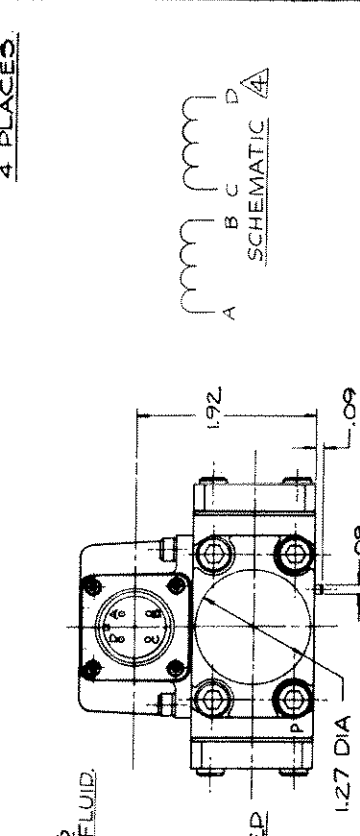
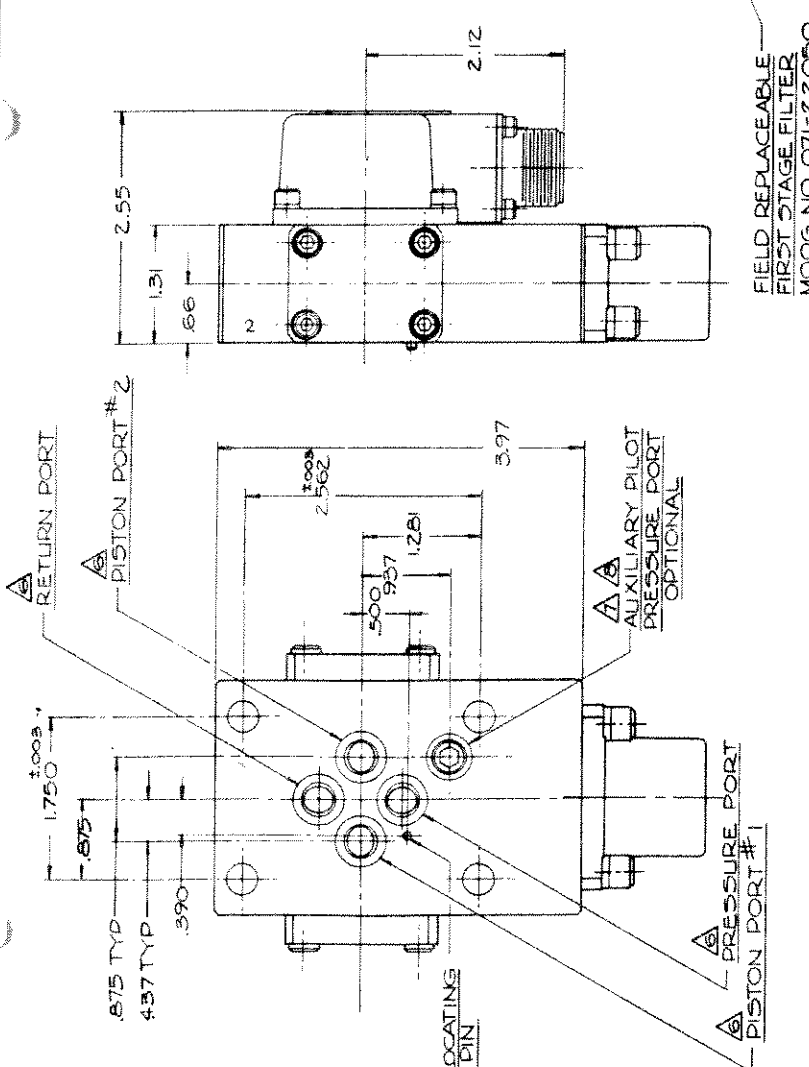
NOTE: Clockwise rotation of the pin produces an open loop flow from port #2 to port #1.

3. After the desired flow null has been obtained, lock null adjustor by torquing #6 - 32 set screw to 7 in. lbs..

NOTE: The set screw must bottom on the 45° chamfer on the back of the null adjustor pin to assure that pin is securely locked.

INDUSTRIAL DIVISION
MOOG INC.
EAST AURORA, NEW YORK

REVISIONS		
SYM	DESCRIPTION	DATE
B	REDRAWN: SEE EO 31926A	11/9/65
		APPROVED
		BY: K.M.



NOTES:

1. SUGGESTED MOUNTING SCREWS $\frac{7}{16}$ -18 \times 1 1/2 LONG SOCKET HEAD CAP SCREWS
2. FLUID: MIL-H-5606A OR INDUSTRIAL TYPE PETROLEUM BASE HYDRAULIC FLUID.
3. OPERATING TEMPERATURE RANGE: -25°F TO +275°F
4. VALVE PHASING: FLOW OUT OF PORT 2 WILL RESULT WHEN:
 - A. SERIES OPERATION: 'B' AND 'C' CONNECTED TOGETHER, 'A' PLUS, 'D' MINUS.
 - B. PUSH-PULL OPERATION: 'B' AND 'C' PLUS 'A' AND 'D' MINUS, CURRENT C-D > B-A.
5. PORTS P-R, 1, & 2, .312 DIA CBORED NOMINALLY .375 ID \times .562 OD \times .055 DEEP
6. P-R, & 2 PORT O-RINGS: M5-28775-013 (.070 SECT \times .426 ID) - 1/2"
7. AUX. PORT BASE O-RING: M5-28775-012 (.070 SECT \times .364 ID) - 1/2"
8. AUX. PILOT PRESSURE PORT: .213 DIA CBORED NOMINALLY .312 ID \times .500 OD \times .055 DEEP
9. VALVES ARE SUPPLIED WITH PROVISIONS FOR EITHER INTERNAL OR EXTERNAL PORTING OF FIRST STAGE PILOT PRESSURE
10. SURFACE TO WHICH VALVE IS MOUNTED REQUIRES 32 RMS FINISH, FLAT WITHIN .001 TIR
11. ELECTRICAL CONNECTOR MATES WITH M5-3106A-143-25
12. ASSEMBLY DATE PER ANA 438 STAMPED ON MOTOR CAP
13. 10 MICRON SYSTEM FILTRATION REQUIRED (5 MICRON ABSOLUTE)
14. DIMENSIONS WITHOUT TOLERANCE ARE FOR REFERENCE ONLY
15. ONE SCREW OF EACH END CAP, MOTOR CAP, AND CONNECTOR SEALED WITH GLYPTAL
16. NULL ADJUST: FLOW OUT PORT 2 IS OBTAINED WITH CLOCKWISE ROTATION OF NULL ADJUST PIN.

MOOG SERVOCONTROLS, INC. EAST AURORA, NEW YORK	
INSTALLATION SERIES 73 SERVOVALVE	
CODE IDENT NO. 94697	SIZE C
FIRST ONE 73 SERIES SHEET	
APPROVALS	
DESIGNER: L. KUREK	CHECKED: BECKER
APPROVED: RCS	APPROVED: L. J. W.
APPROVED: W. MEYER	APPROVED: L. F.
APPROVED: [Signature]	
APPROVAL DESIGN ACTIVITY	
APPROVAL OTHER	
APPLICABLE SPECIFICATIONS	