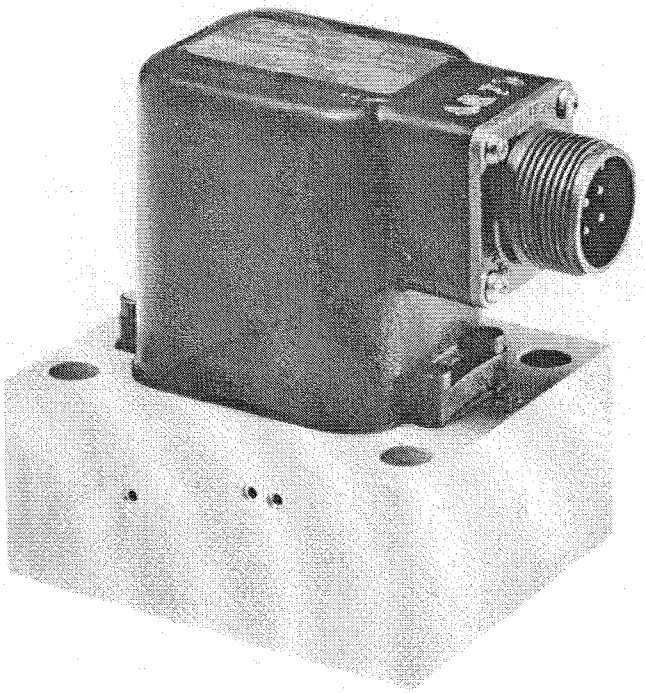
MOOG®

Single-stage *"bifurcated"* Servovalve

Model D061-205



Single-stage flapper-type servovalves provide excellent performance at low cost for low power control systems. A normal four-way single-stage valve having one flapper is limited to two variable nozzle orifices. The other two orifices of the four-way orifice bridge are fixed. Thus, maximum control flow to the load is limited to one-half of the leakage flow.

The Moog "bifurcated" single-stage servovalve uses two flappers driven by a common armature. Each flapper controls the opening of two opposed nozzles. The nozzle chambers are hydraulically separated and two flexure tubes are used. The nozzles are connected in a four-active-arm orifice bridge. This arrangement increases the useful control flow available from the valve with no increase in null leakage flow.*

*Design patents No. 3,455,330 and No. 3,228,423

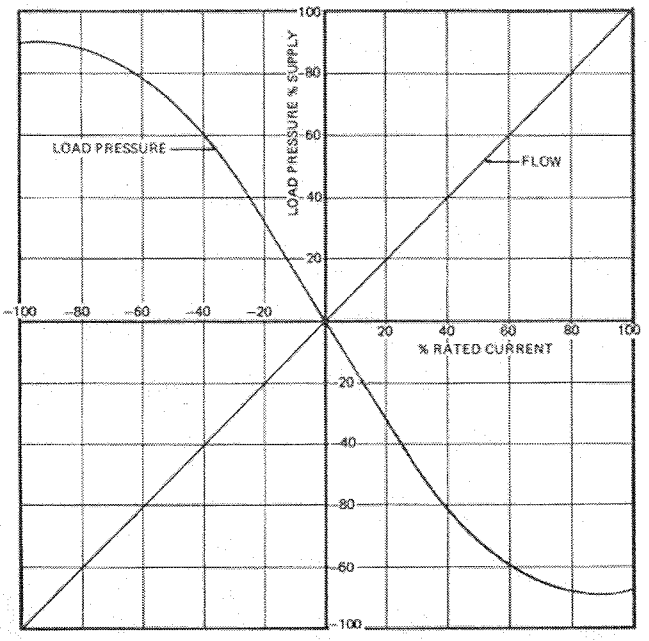


Fig. 1. Typical Flow and Pressure Gain

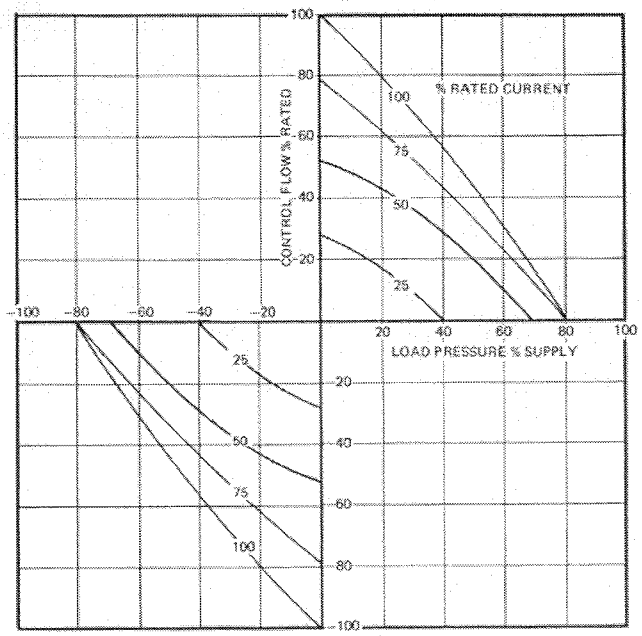


Fig. 2. Typical Flow-Load Curves

Design Features

- frictionless, flexure-tube design
- rugged construction suitable for industrial applications
- excellent dynamic response with negligible threshold
- dry torque motor
- integral 35μ nominal filter in pressure port
- integral 125μ nominal screens in cylinder ports

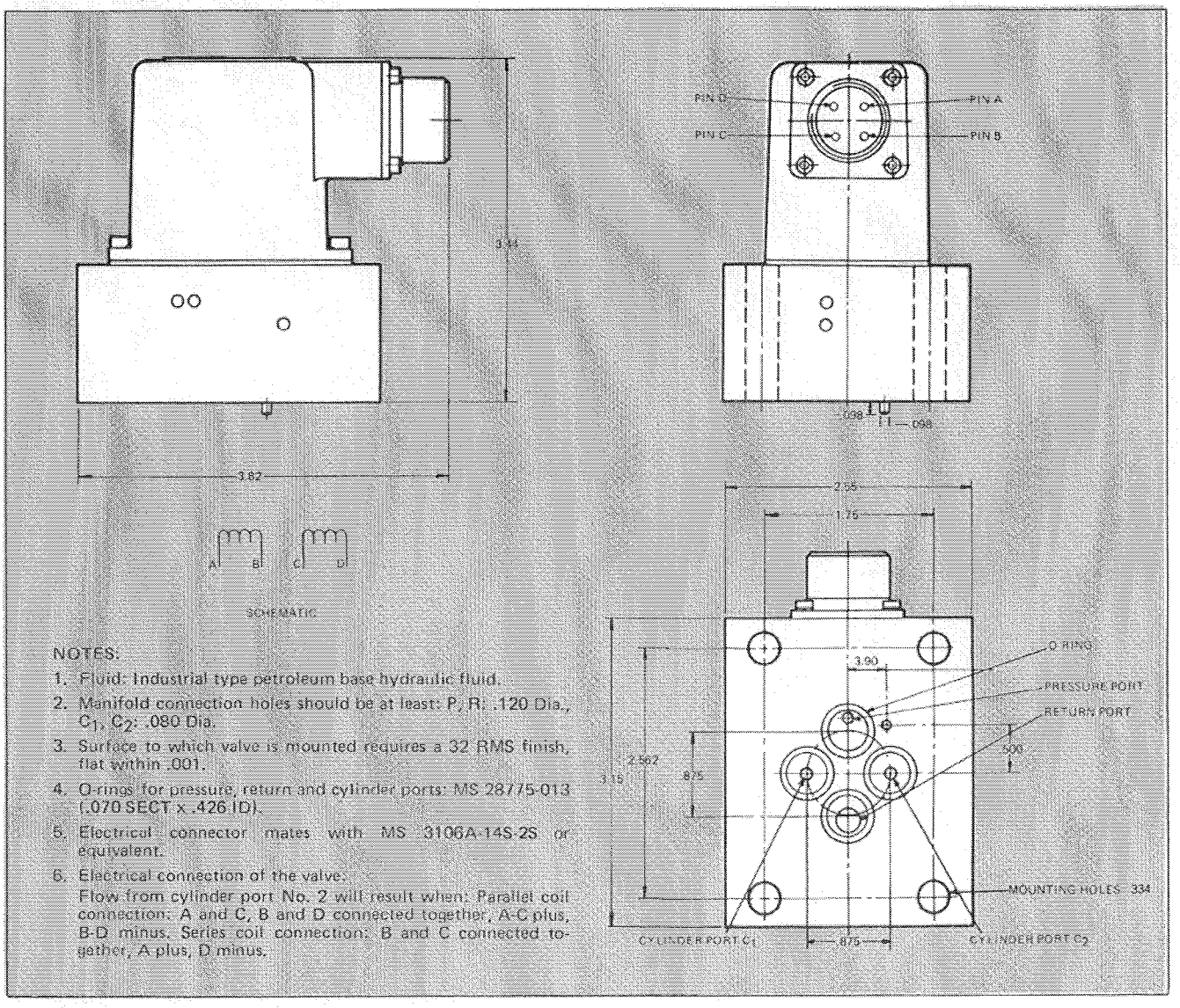
Typical Performance

Supply pressure	150 to 1000 psi
Supply proof pressure	1500 psi
Return proof pressure	1000 psi
Threshold	<0.1%
Hysteresis	<3%
Linearity	<15%
Symmetry	<10%
Null bias	<5%
Operating temperature	15°F to 180°F
Frequency response at 1000 psi supply	90°phase lag at 400 Hz –3 db amplitude ratio at 650 Hz

Model D061-205 Parameters

Rated Flow at 1000 psi supply	0.37 gpm
Rated Current	
Series coils	75 ma
Parallel coils	150 ma
Resistance per coil	27 ohms ± 10%
Inductance per coil at 50 Hz and 1000 psi supply	0.25 henries
Null leakage flow at 1000 psi supply	0.63 gpm
Supply filtration required	10μ nominal or better recommended

Installation Details



NOTES:

1. Fluid: Industrial type petroleum base hydraulic fluid.
2. Manifold connection holes should be at least: P, R: .120 Dia., C_1, C_2: .080 Dia.
3. Surface to which valve is mounted requires a 32 RMS finish, flat within .001.
4. O-rings for pressure, return and cylinder ports: MS 28775-013 (.070 SECT x .426 ID).
5. Electrical connector mates with MS 3106A-14S-2S or equivalent.
6. Electrical connection of the valve:
   Flow from cylinder port No. 2 will result when: Parallel coil connection: A and C, B and D connected together, A-C plus, B-D minus. Series coil connection: B and C connected together, A plus, D minus.

MOOG INC., CONTROLS DIVISION, PRONER AIRPORT, EAST AURORA, NEW YORK 14052 716/652-2000 TWX-710 264 1442
Cheltenham, England — Böblingen, West Germany — Hiratsuka, Japan — Rungis, France