

MOOG

642 Series Proportional Valves

SPECIFICATIONS

Fluid Supply:

642 Series proportional valves are intended to operate with constant supply pressure.

Supply Pressure:

Minimum: 500 psi (350 bar) max.
Pilot Stage: 200 to 3,000 psi (15 to 210 bar);
5,000 psi is optional

Proof Pressure:

150% of supply pressure at P, A & B ports. 2,000 psi (140 bar) maximum at R port (with internal pilot return).

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:

-4°F to 175°F (-2°C to 80°C)

Rated Flow Tolerance: ±10%

Hysteresis:* <1.5%

Threshold:* <0.25%

Null Shift:* with temperature, 100°F variation: <1.5%

Null Leakage:* <1.5 gpm (6 lpm)

Frequency Response:*

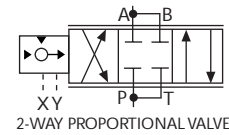
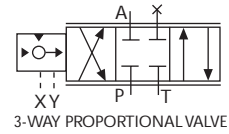
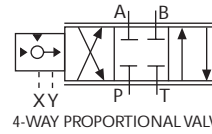
See figures 1 and 2.

Step Response:

See figures 3 and 4.

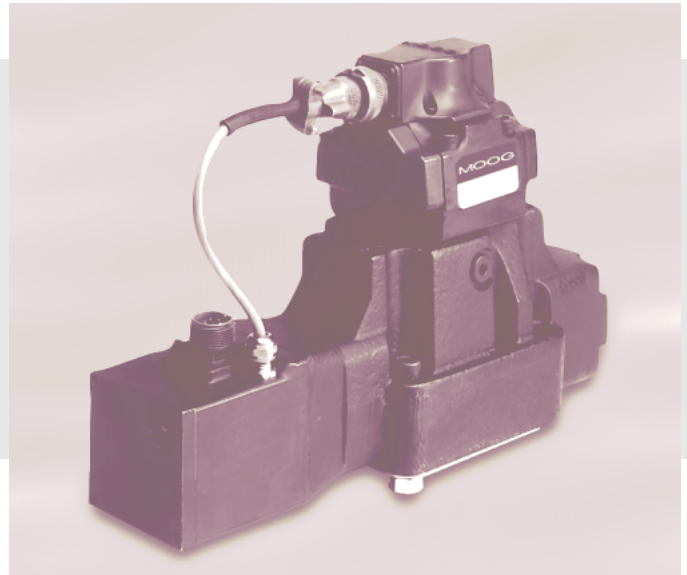
* at 2,000 psi (140 bar) pilot supply pressure

AVAILABLE FLOW AND SPOOL CONFIGURATIONS



The 642 Series Proportional Valve is suitable for position, velocity or load-control systems on high speed and force level equipment. These high flow valves are multi-stage devices consisting of a separate pilot valve and sliding spool main stage spool is measured by a non-contacting position transducer. Integrated servoelectronics provide on to the transducer, condition its output, and close the loop around the main stage spool.

The design features of these valves include integral drive electronics to simplify installation and setup; an international mounting pattern conforming to ISO 4401 from A16 (CETOP 7); provisions for internal and external pilot supply and return; and available spool position signal for interconnection to other controls or to assist with setup and trouble-shooting.



FREQUENCY RESPONSE

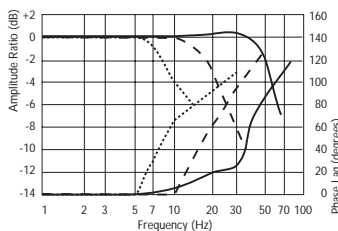


Figure 1 - Frequency Response of 2-Stage Valve

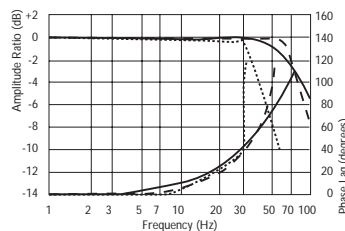


Figure 2 - Frequency Response of 3-Stage Valve

STEP RESPONSE

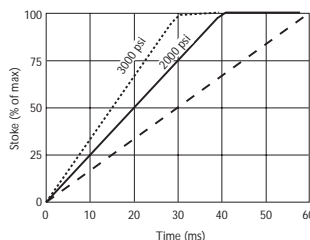


Figure 3 - Step Response of 2-Stage Valve

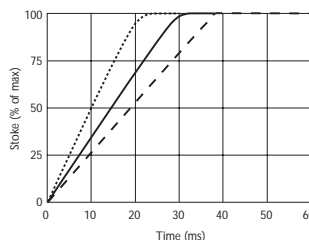
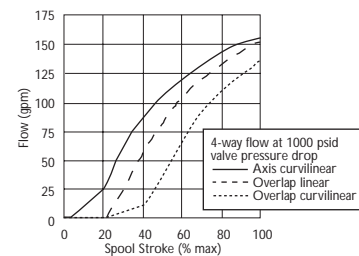


Figure 4 - Step Response of 3-Stage Valve

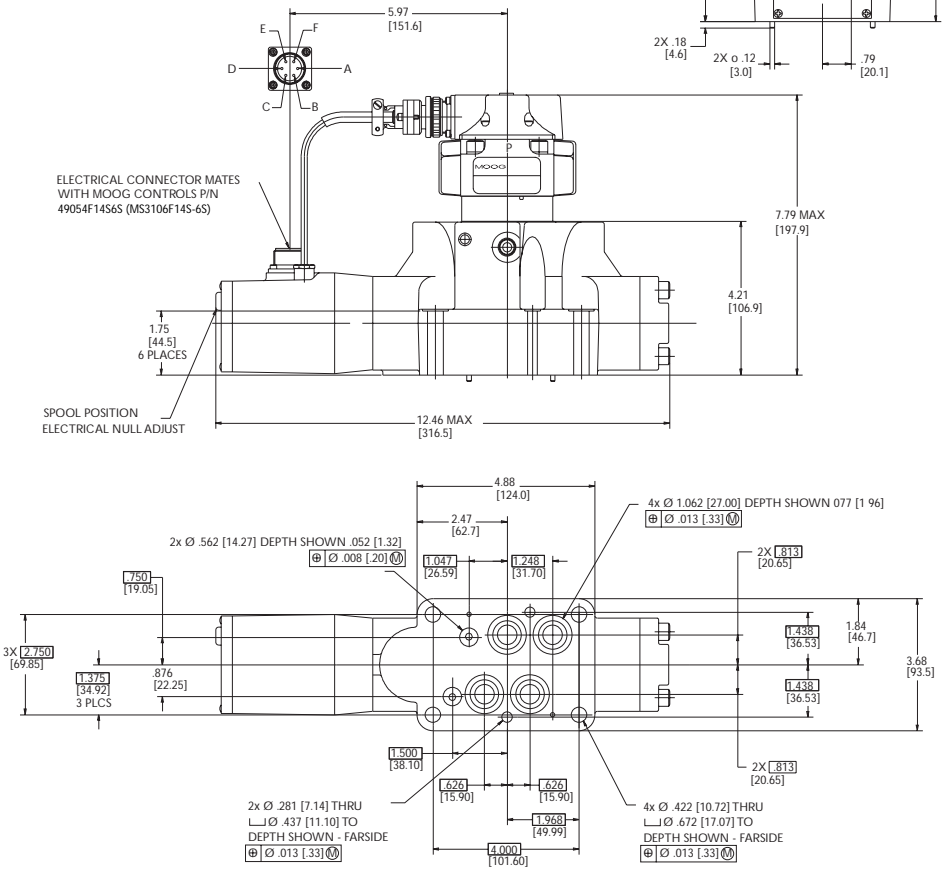
AVAILABLE FLOW AND SPOOL CONFIGURATIONS



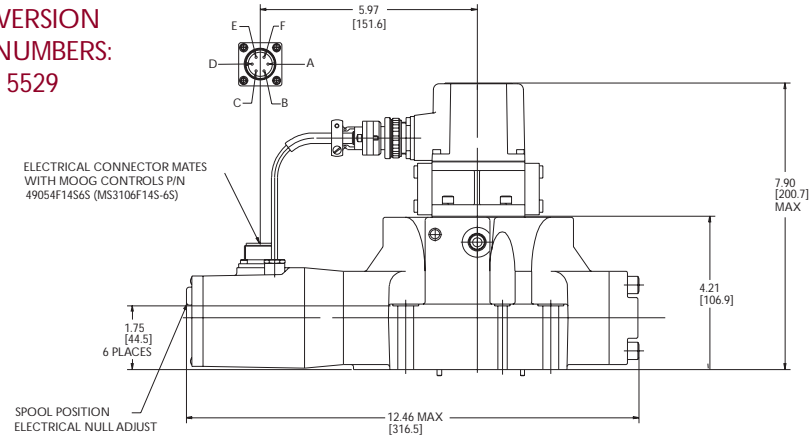
Model	Type	Rated Flow (1,000 psi, 4-way)	Spool Configuration (4-way)
		gpm	% Overlap
642-5515	Stub-Shafted, 2-stage	150	<3%, curvilinear
642-5529	Stub-Shafted, 2-Stage	150	20%, curvilinear
642-3301	Full Area Spool, 3-Stage	150	<3%, curvilinear
642-3302	Full Area Spool, 3-Stage	150	<3%, linear

Optional designs are available with special flow null cuts. Available seal materials: BUNA (Std.), VITON or EPR.

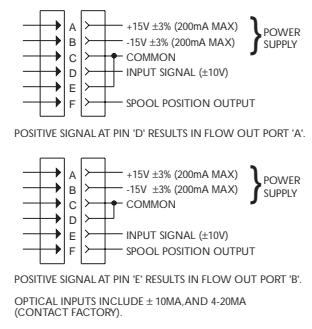
**3-STAGE VERSION
MODEL NUMBERS:
642-3301, 3302**



**2-STAGE VERSION
MODEL NUMBERS:
642-5515, 5529**



STANDARD ELECTRICAL CONFIGURATION



ACCESSORIES

- Flushing Block:** P/N A72037-1
- Mating Electrical Connector:** P/N 49054F14S-6S (MS3106F-14S-6S)
- Suggested Mounting Bolts:**
 - .375-24 UNF x 2.50 long (4): P/N A01410-540
 - .250-28 UNF x 2.25 long (2): P/N A01408-536

Subplate:
for pressures to 5,000 psi (350 bar):
4-way operation: P/N A55693AM1
3-way operation: P/N A72128AM1

Pilot Stage Filters:
61-6XXC:B40414-1
760-XXX:A01713-1

NOTES

- Valve Weight:** 24.2 lb (11.0kg)
- Base O-Ring Size:**
(4 req'd) P/N 45122-129 (univ.-118)
(2 req'd) P/N 45122-22 (univ.-13)
- Null Adjust:** Flow out of port A will increase with counterclockwise rotation of null adjust potentiometer (4-turn potentiometer under screw plug).

Surface Finish:
Surface to which valve is mounted requires $\sqrt{63}$ finish, flat within 0.001 [0.02] TIR.

Ordering Information
(When ordering, add a dash number after model. I = Internal, E = External)

Dash #	Pilot Supply	Pilot Return
-4	I	I
-5	E	I
-6	E	E
-7	I	E

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