

E242

SUB MINIATURE CARTRIDGE DDV HYDRAULIC PROPORTIONAL VALVE

A fast and precise proportional valve with high contamination resistance, for use in challenging environments such as world rally championship cars.



Motorsport, subsea exploration and automotive testing often involve extreme and challenging environments where there is a need for high resistance to hydraulic contamination.

The E242 Cartridge Direct Drive Valve (DDV) Proportional Valve is a motorsport development of the established Moog D633-7 design. This Proportional DDV uses a linear motor to directly actuate the flow control spool. Moog DDV technology achieves the robust function of a proportional valve with the speed and accuracy of a servovalve.

This miniature valve has a flow capability of up to 18 l/min (4.7 USg/min), meeting the requirements of the majority of motorsport applications. The cartridge design permits compact packaging especially for applications where multiple valves are required to be mounted in a single manifold. The robust mechanical design is optimised to meet the extreme performance and environmental demands of the motorsport industry. In particular the high operating force of the linear motor 80N (18 LBF) gives this valve high 'chip shear' capability, yielding excellent resistance to fluid borne contamination.



TWO BASIC VERSIONS OF THE E242 PROPORTIONAL VALVE ARE AVAILABLE:

- 1 An axis-cut version for use in position, pressure and force control applications.
- 2 A special sequential gear box actuation version for open loop control of ratchet drum indexing mechanisms.

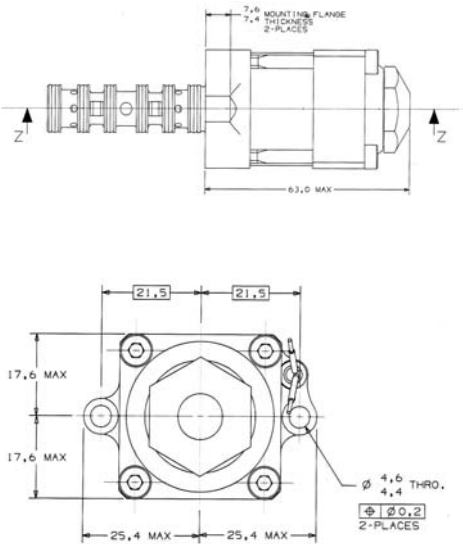
ADVANTAGES OF THE E242 VALVE

- Excellent peak flow capability up to 18 l/min (4.7 USg/min)
- High operating force of linear motor 80N (18 LBF)
- Compact for multiple mounting on single manifold
- Extremely resistant to hydraulic contamination
- Suitable for challenging and extreme environments

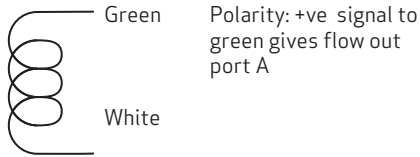
INDUSTRY APPLICATIONS

- World Rally Championship (WRC)
- Automotive Damper Test
- Subsea (Thrusters)
- LMP Sports-Racing Cars

SPECIFICATIONS



Electrical connections:



TECHNICAL DATA E242 CARTRIDGE DDV PROPORTIONAL VALVE

Max Supply Pressure:	210 Bar (3045 PSi)
Rated Flow: @ 70 Bar (1015 PSi) Valve Pressure Drop	Axis-cut valves: 5.0, 10.0, 18.0 l/min (1.5, 2.6, 4.7 USg/min) Gearbox indexing version; 7.0 l/min (1.8 USg/min) [engage] 3.0 l/min (0.8 USg/min) [re-set] NB Flow tolerance +/-10%
Leakage Flow: @ 140 Bar (2030 PSi) with 25 cSt Fluid	Axis-cut valves: internal leakage with spool at null: 5.0 l/min (1.3 USg/min) version: 0.05 l/min (0.01 USg/min) 10.0 l/min (2.6 USg/min) version: 0.10 l/min (0.03 USg/min) 18.0 l/min (4.7 USg/min) version: 0.15 l/min (0.04 USg/min)
Operating Fluids:	Mineral oils
Electrical Input Signal:	+/- 1.0A into a 5.2 ohm load
Dynamic Performance: 25% signal @ 210 Bar (3045PSi) & 40°C (104°F)	90° phase lag > 150 Hz -3 dB attenuation > 150 Hz
Accuracy of Flow Control:	Full amplitude Hysteresis <120 mA Small amplitude Hysteresis <50 mA
Environmental Survivability Limits:	120°C (248°F) & 25 G shock load (Any axis)
Connector Type:	Flying lead PTFE insulated 2.4 AWG 19 strand 36 AWG silver coated copper wire Fluoropolymer Heatstrink Tubing. Length 90 mm
Mass:	380gm (13.4 oz)

For full installation information see drawing number CA33262

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