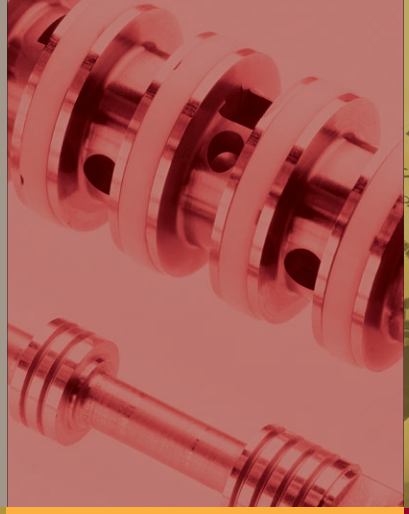
POWER ASSISTED STEERING VALVES (E243 SERIES) STANDARD VERSION

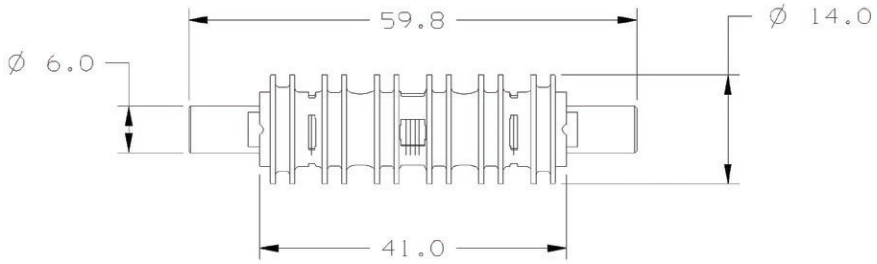
High performance in a miniature size



Moog has developed a new standard version of the well established E243 range of Power Assisted Steering Valves (PAS). Designed to meet the requirements of Formula 1, it occupies the smallest viable space envelope- 41mm (1.62 in) long and a mass of 27.5g (0.97 oz). Despite the small package size, it is able to control hydraulic flow rates up to 15 l/min (4 USG) and pressures up to 280 bar (4061 psi).

The new standard version E243 Valve allows the development of new PAS systems with a minimum design overhead and reduced lead time. Steering assistance characteristics can be easily be modified by varying the control port sizes and shapes (see page 2).

SPECIFICATIONS (mm)



ADVANTAGES

- Hydro-mechanical principle doesn't rely on transducer integrity for safe operation
- Operates directly from the vehicle's constant pressure hydraulic 'ring main'
- Very small size and low mass
- High power control capability up to a maximum of 7kW
- Requires only very small position control inputs, typically +/- 0.75 mm (0.03 inches)

PRODUCT HOMOLOGATION

All Moog electro-hydraulic products used in Formula 1 are homologated by the FIA, indicating they are approved for use with the mandated Formula 1 Electronic Control Unit (ECU).

INDUSTRY APPLICATION

Motorsport Formula 1

ORDERING INFORMATION

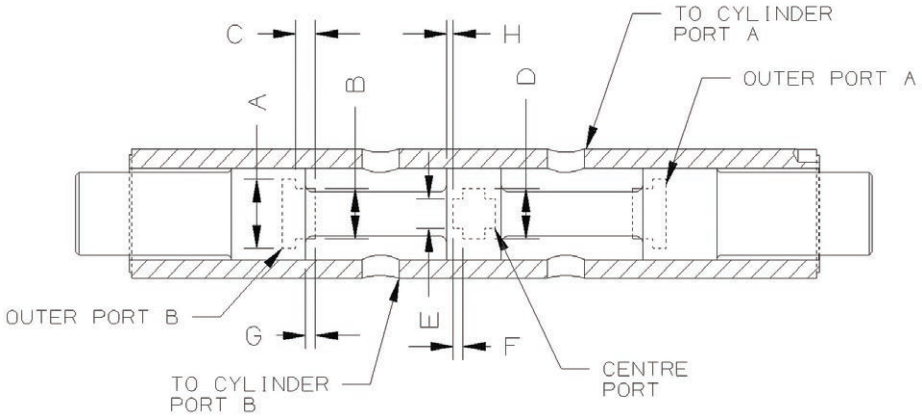
For full installation information, please see Moog installation drawing CB33259.

NOTES

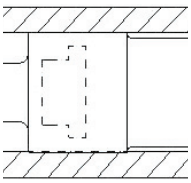
1. Dimensions in mm to two decimal places
2. For reduced friction levels, Moog recommends connecting the outer ports to return and the center port to the pressure supply.
3. For rectangular ports, enter the same dimension for A and B, and D and E, and zero for C and F.
4. Maximum slot width is 4mm. N.B. Slot widths specified are linear. Effective flow area depends on arc length around circumference of spool.

ORDERING INFORMATION - TO BE COMPLETED BY CUSTOMER

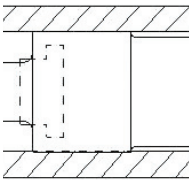
DIMENSION	FUNCTION	VALUE
A	Outer port full width	mm
B	Outer port start width	mm
C	Outer port flow transition point	mm
D	Center port full width	mm
E	Center port start width	mm
F	Center port flow transition point	mm
G	Overlap / underlap to outer ports. See drawings below	mm
H	Overlap / underlap to centre port. See drawings below	mm
	Number of center port slots (specify 1 or 2)	
	Number of outer ports slots (specify 1 or 2)	



DEFINITION OF LAP CONDITION



OVERLAP PORT
(Port fully closed at spool center position)
Enter +ve dimension in table



UNDERLAP PORT
(Port partly open at spool center position)
Enter –ve dimension in table

TECHNICAL DATA	
Maximum Supply Pressure	280 bar (4061 psi)
Return line pressure	0 - 10 bar (0 - 145 psi)
Rated Flow at 70 bar drop	Up to 15 l/min (4 USG)
Maximum input stroke	+/- 0.75 mm (0.03 in)
Environmental limits	0 - +165 °C (329 °F) and 25 G shock (any axis)
Fluid viscosity	> 4 cSt
Filtration	NAS Class 3/ISO 4406 12/8 or better

Moog has offices around the world. For more information or the office nearest you, contact us online.

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