Document Number: IEN-R-0301567

Data Sheet for E024 Series Microvalve

E024 Series
Sub Miniature Servovalve
For Motorsport Applications

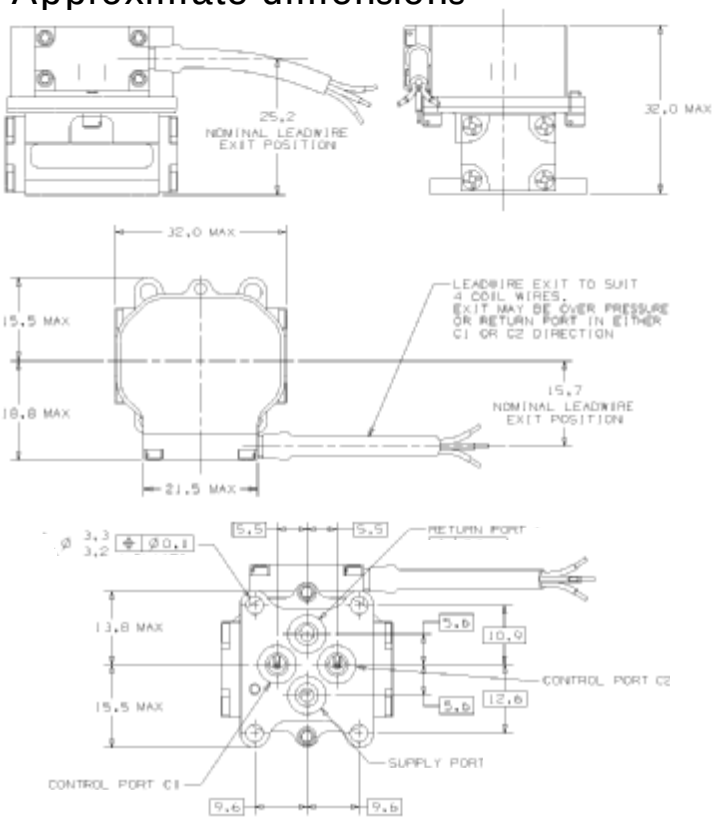
Description

The Moog E024 Series sub miniature servovalve is a development of the Moog Series 30 / 50 servovalve. It is significantly reduced in size and weight, but retains a flow capability of up to 7.5 L/min to meet the requirements of the vast majority of Motorsport applications. This valve retains the well proven two stage nozzle flapper construction of the 30 / 50 series valve, to meet the extreme performance and environmental demands of the Motorsport industry.

Two basic versions of the valve are available:

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

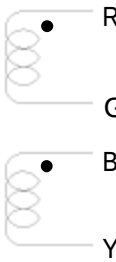
Approximate dimensions



Leadwire exit may be specified over pressure or return port in either C1 or C2 direction

Mounting Screws:	M3 with head dia reduced to 4.6 / 4.8
Base O-Rings:	Moog Part No 42082-188 (1.0 Section x 5.334 1/D)

Electrical Connections



Polarity: +ve signal to Red & Blue gives flow out C1

In line with Moog's policy of continuing development changes, this literature may be updated without notice
Issue 2: 10 October 2003

Moog Controls Limited, Ashchurch, Tewkesbury, Glos, GL20 8NA
Tel: 01684 296600 Fax: 01684 278410 email: sales.england@moog.com Website: www.moog.com

Moog E024 Series Performance Characteristics

Max Supply Pressure:	210Bar
Rated Flow:	[@ 70 Bar Valve pressure drop] Axis-cut valves: 1.0 1.5 2.0 3.8 5.0 7.5 l/min Gearbox indexing version; 7.4 l/min [engage] 5.6 l/min [re-set] NB Flow tolerance +/-10%
Leakage Flow:	Pilot stage flow: < 0.30 l/min [std version] < 0.12 l/min [low leakage version] Spool leakage at null: <5% of rated flow [Axis-cut versions]
Electrical input signal :	[coils in parallel] +/- 10mA into a 360 ohm. Inductance 1.4 Henry
Dynamic performance:	[25% signal @ 210 Bar & 40 Deg C] 90 deg phase lag > 250 Hz [Low leakage version >120Hz] -3dB attenuation > 250 Hz [Low leakage version > 120Hz]
Null Shift:	With supply pressure: < 4% over the range of 124-228 Bar With fluid temperature< 5% over a range of 30-100 Deg C
Accuracy of flow control:	Hysteresis<3% Threshold <0.5%
Environmental survivability limits:	165 deg C & 25G shock load [Any axis]

Application Notes

1. Environmental operating envelope:
   The E024 series valve is optimised to operate in the following conditions:
   Pressure supply 160-210 Bar
   Return line pressure 2-5 Bar
   Temperature range of 20-120 deg C *(20-135 deg C 'L' Version)**
   Fluids viscosity of > 4CSt *(2.5CST for 'L' Version)**
   Filtration to NAS 1638 Class 3 / ISO 4406 12/8 or better.
   NB. It may be possible to operate the valve in certain applications outside of these design limits, but this must be checked and validated by the customer.

   **'L' Version optimised for use on low viscosity fluids.*

2. Operation of valves in close proximity:
   Valves mounted in close proximity may experience magnetic interaction. The degree of interaction depends on the installation and may be minimised by the use of external shielding

Issue 2: 10 October 2003.

Moog Controls Limited, Ashchurch, Tewkesbury, Glos, GL20 8NA
Tel: 01684 296600 Fax: 01684 278410 email: sales.england@moog.com Website: www.moog.com