890E Series

Electro-Hydraulic Servovalves

Sapphire Technology

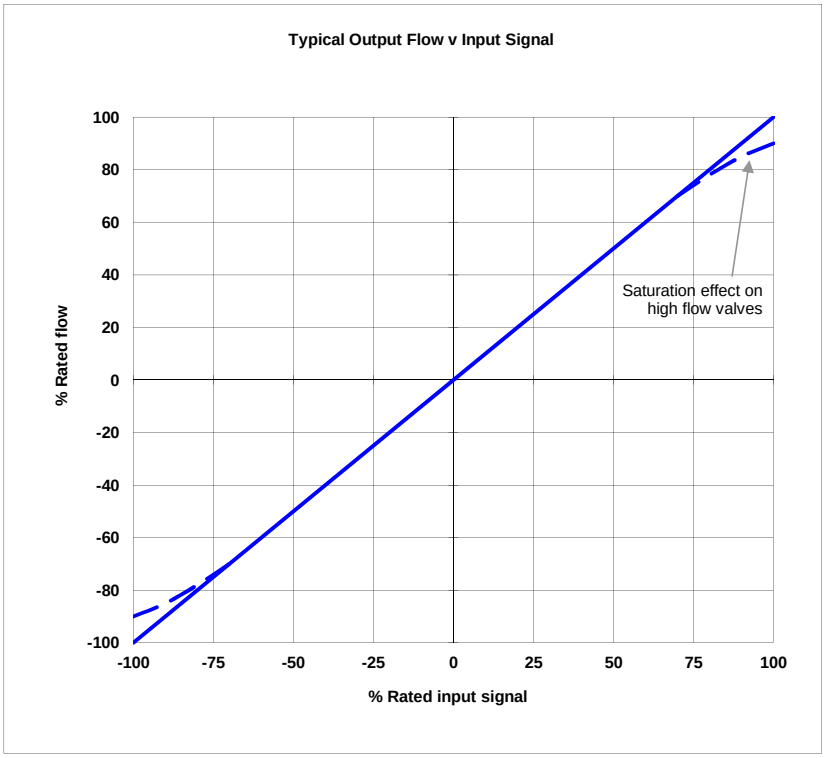
2-stage electric feedback, on board electronics
Low mass, high band-width torque motor
High spool drive forces
Long life "Sapphire Technology" design
Higher resolution, lower hysteresis
Rated flows 95 to 230 l/min at 70 bar
Higher frequency & step response
Internal pilot supply (4 port)
ISO 10372 size 6

Star Hydraulics Limited
8 Beta Close
Tewkesbury Business Centre
Tewkesbury
Gloucestershire
GL20 8SR
England (UK)

Technical Data

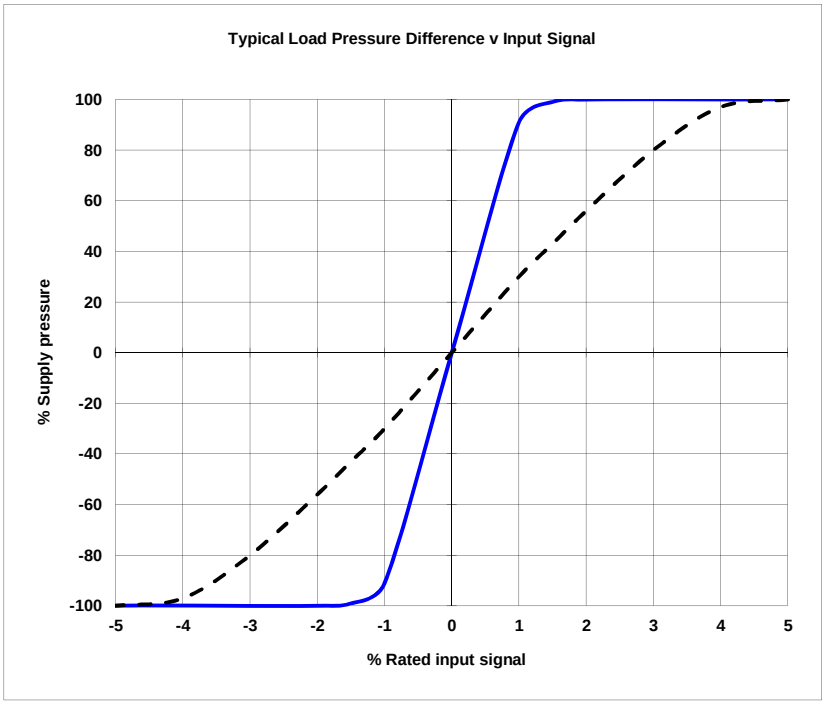
Nominal flow ratings at 70 bar Dp	**95, 150 & 230 l/min** **For other flow ratings consult factory**
Hysteresis	**< 0.5%**
Threshold	**< 0.1%**
Null shift	
with 40 °C temp change	**< 2%**
with 70 bar supply pressure change	**< 2%**
with return pressure 0 to 35 bar	**< 2%**
Load pressure difference at 1% input	**≥ 30% of supply pressure can be as high as 100%**
Seal material options	**FPM, NBR, EPDM**
Temperature range (ambient)	**-15 to 80 °C**
Proof pressure	
at pressure port	**150% operating pressure**
at return port	**100% operating pressure**
Burst pressure	**250% max supply pressure**
External leakage	**zero**
Degree of protection EN 50529P	**IP 65**
Weight	**3.8 kg (w/ field filter 5.0 kg)**
Vibration	**30 g, 3 axes**
Mounting position	**Any, fixed or movable** **(consult factory for critical startup applications)**
Supply filtration	
non by-pass	**Beta 10 = 200 (10 μm abs)**
cleanliness control filter	**Beta 3 = 200 (3 μm abs)**
Fluid cleanliness level per ISO 4406: 1999	
minimum	**16/ 14/ 12**
recommended	**14/ 12/ 10**
Operating pressure (max)	
EPDM	**210 bar**
FPM, NBR	**300 bar**
Supply pressure	**Constant**
Fluid viscosity	**10 to 100 cSt**
Fluid type	**Petroleum based mineral oil** **For operation with other media consult factory**

Technical Data

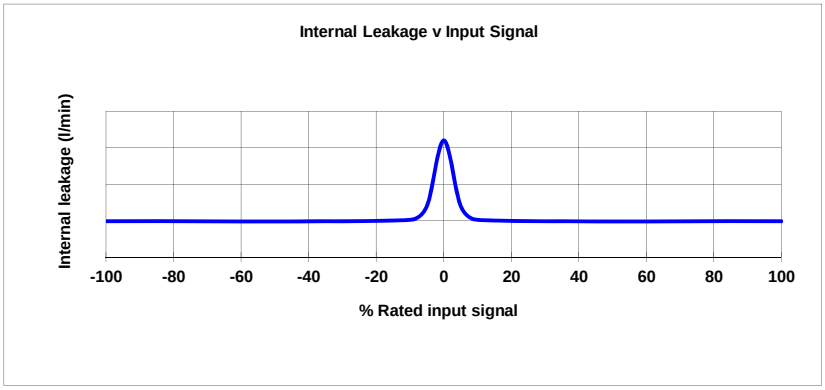


The flow tolerance for standard servovalves is ±10% of the rated flow at 100% rated input signal.

The rated flow is quoted at 70 bar Δp, 100% rated input signal.



Pressure gain characteristic will vary with positive and negative lap conditions.

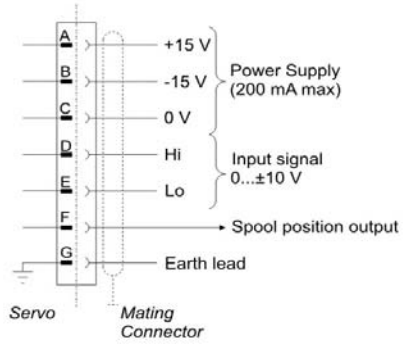


This comprises of both 1st stage flow (tare leakge) and the second stage null leakage.

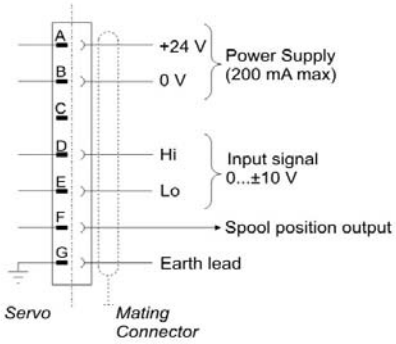
Figures vary in accordance with rated flow, spool lap and performance characteristics.

Electrical Details

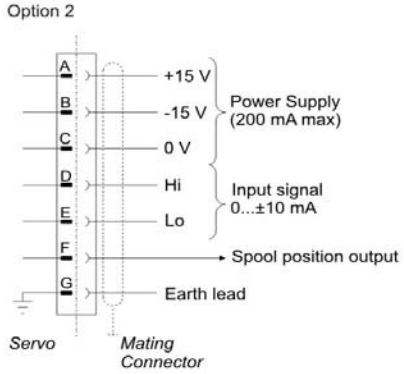
Option 1



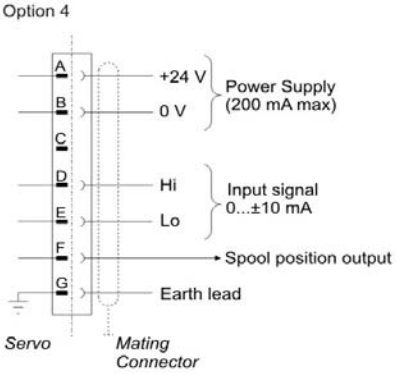
Option 3



Option 2



Option 4



Notes

Above options are factory set

Power supply voltage ±3% of rated figure, ripple < 50 mV p-p

Connection cable to be DEF STAN 61-12, part 4 screened, 7-2-C type, 8 core (7/0.2 mm)

+ve input to pin D causes flow in the direction of P » C2, C1 » R

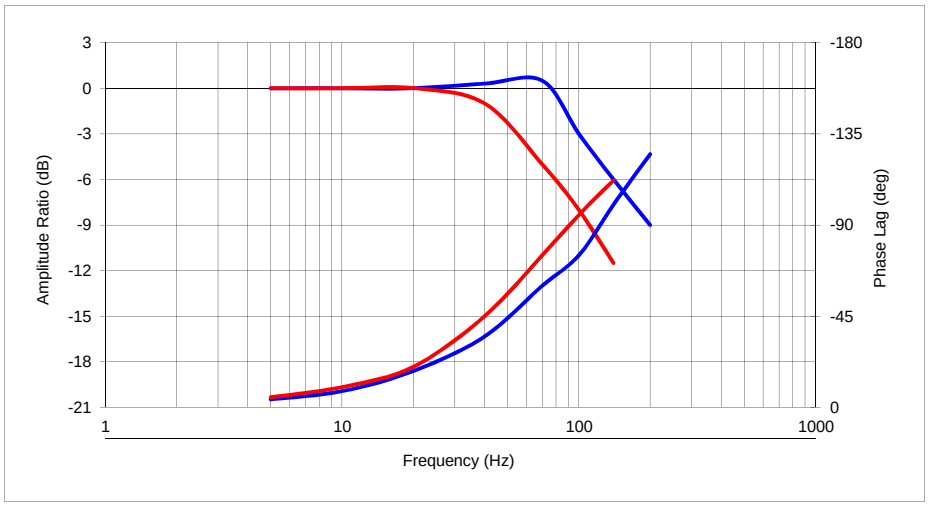
Pin F must be referenced to 0 V

CE

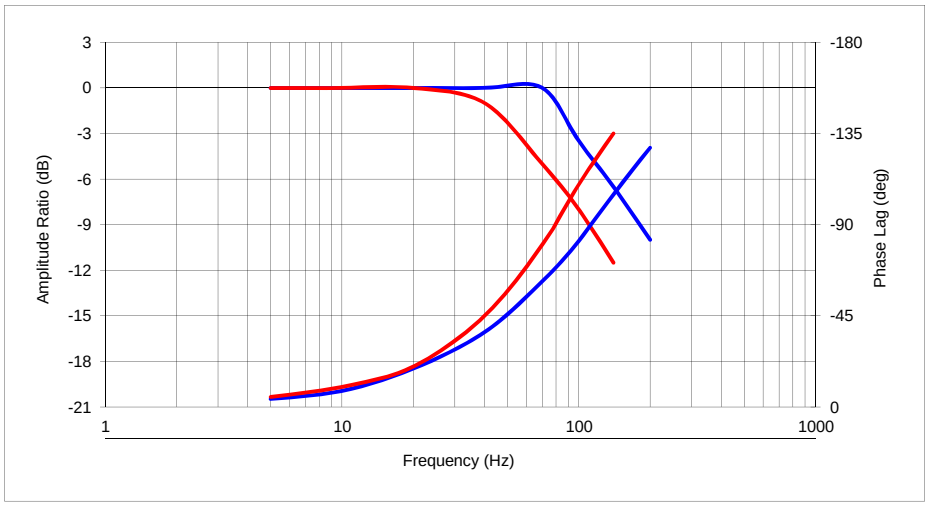
Frequency Response

25% In — 100% In

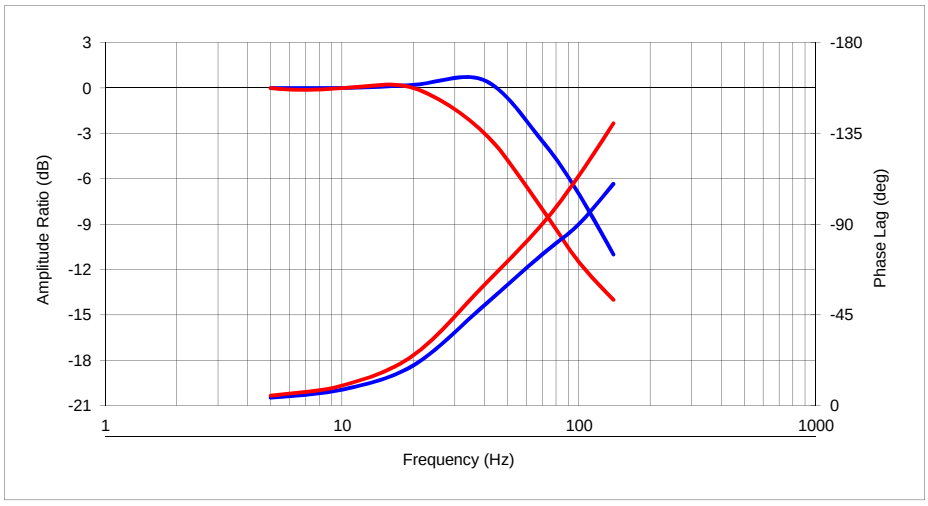
Rated Flow (l/m) … **95**



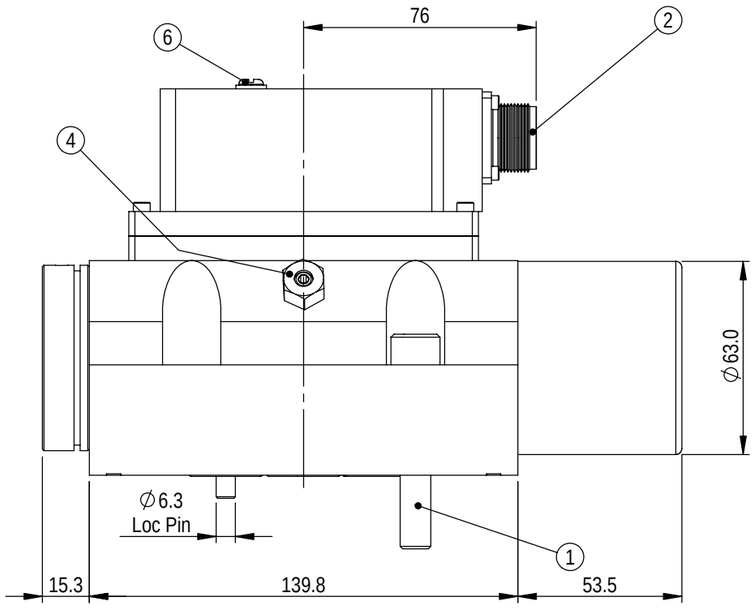
Rated Flow (l/m) … **150**

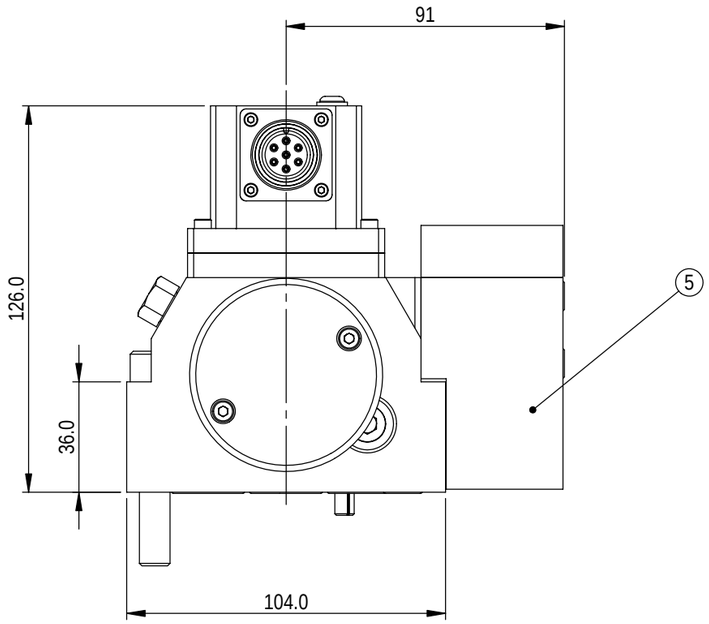


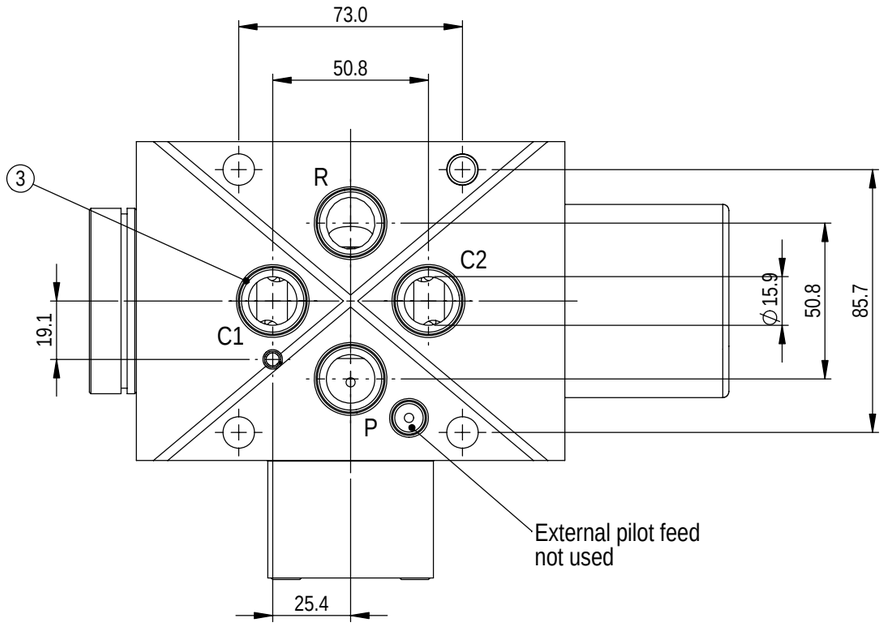
Rated Flow (l/m) … **230**



Typical performance curves optimised per 210 bar supply pressure, fluid viscosity 32 cSt at 40 °C







1. Suggested mounting bolts M10 x 60 long high tensile steel socket head cap screws.

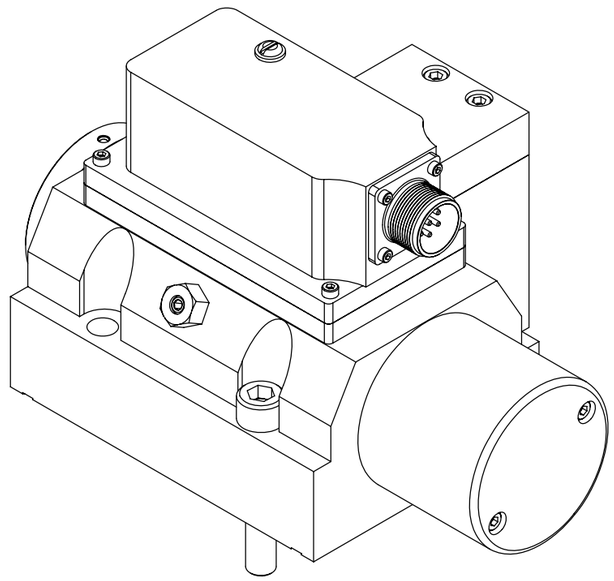
2. 7-way electrical connector mates with MS3106E-14S-A7SN or equivalent.

3. Base O-Rings: 20.3 I/D x 1.78 section (4 pcs).

4. Can be supplied with facility for mechanical null offset - consult factory.

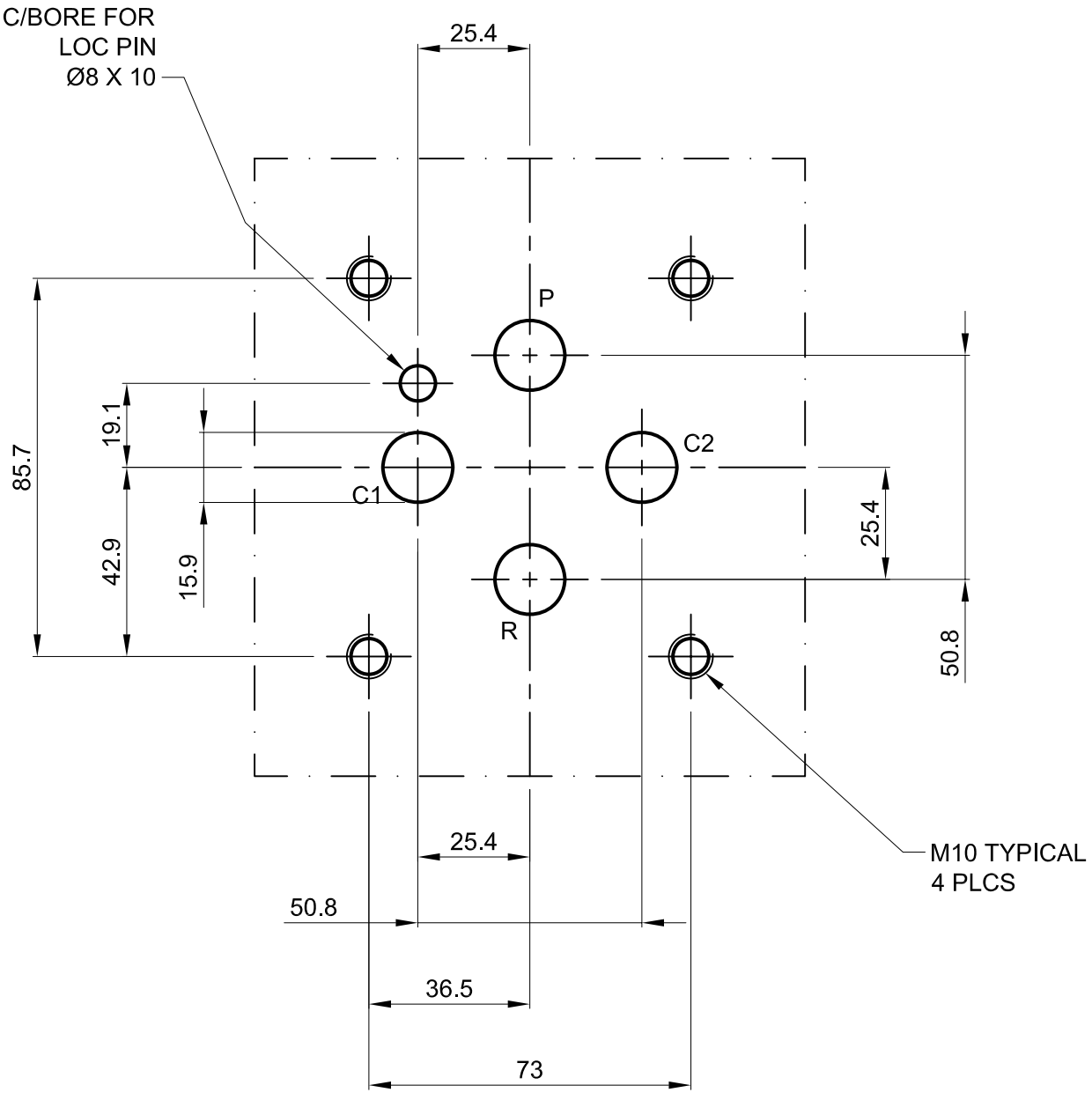
5. Optional field replaceable filter - additional charge applies - consult factory.

6. Blanking screw, remove to access multi-turn potentiometer for electrical null adjustment.



Installation Details Model 890E

Dimensions in millimeters 3rd Angle Projection



Manifold Dimensions Model 890

Dimensions in millimeters 3rd angle projection	Filename