

Model 200 Servovalve



- Nominal flows rates 1 to 7 l/min @ 70 bar
- Sapphire Technology™
- Miniature design
- High-Response characteristics
- Internal pilot supply

Star Hydraulics Ltd.
8A Beta Close
Tewkesbury Business Centre
Tewkesbury
Gloucestershire GL20 8SR
England U.K.

Tel.: +44 (0)1684 296176
Fax.: +44 (0)1684 850714

Email: sales@star-hydraulics.co.uk
Web: <http://www.star-hydraulics.co.uk>

Nominal flow ratings	2, 4, 7 l/min at 70 bar Δp For other flow ratings contact factory
Hysteresis	< 3% without dither
Threshold	< 0.5% without dither
Null bias	< 2%
Null shift	< 2%
with 40°C temp change	< 2%
with 70 bar supply pressure change	< 2%
with return pressure 0 to 35 bar	< 2%
Pressure gain	< 1% rated input signal for 60% of supply pressure
Seal materials available	FPM, NBR, EPDM
Operating temperature range	-30 °C to 130 °C
Proof pressure	
at pressure port	150% max supply pressure
at return port	100% max supply pressure
Burst pressure	
return port open	250% max supply pressure
External leakage	zero
Degree of protection	IP 65 (BS EN 60529 : 1992)
Weight	230 g
Mounting position	Any, fixed or movable
Supply filtration	
minimum	$\beta_{10} \geq 75$ (10 micron abs)
recommended	$\beta_5 = 200$ (5 micron abs)
Fluid cleanliness level	
minimum	ISO 4406 - 16/13 NAS 1638 - class 7
recommended	ISO 4406 - 13/10 NAS 1638 - class 4
Supply pressure	
min. to effect spool movement	3.5 bar
minimum recommended	15 bar
maximum continuous	210 bar (FPM & EPDM) 315 bar (NBR)
Viscosity	VG 10 to 100 ISO 3448
Fluid type	Petroleum based mineral oils For operation with other media contact factory

Calculating output flow

The output flow for a given pressure drop can be calculated using the following:

$$q = q_N \sqrt{\frac{\Delta p_N}{\Delta p_V}}$$

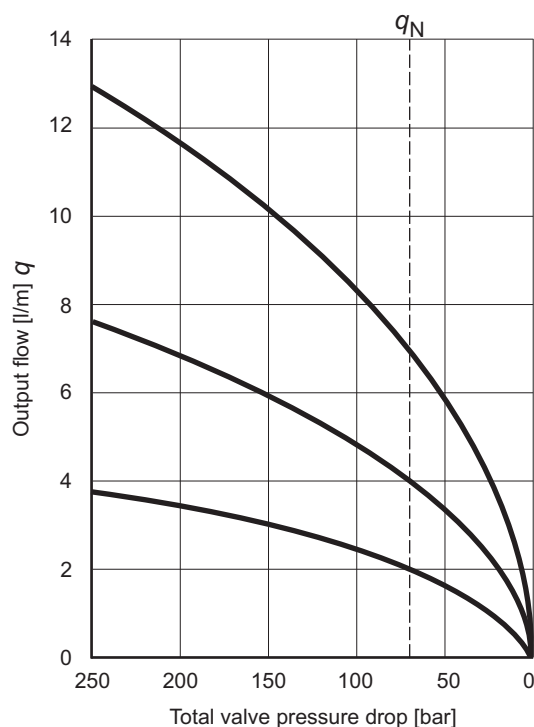
Where:

q = Output flow [l/min]

q_N = Rated flow [l/min]

Δp_N = Valve pressure drop [bar]

Δp_V = Rated valve pressure drop [bar]

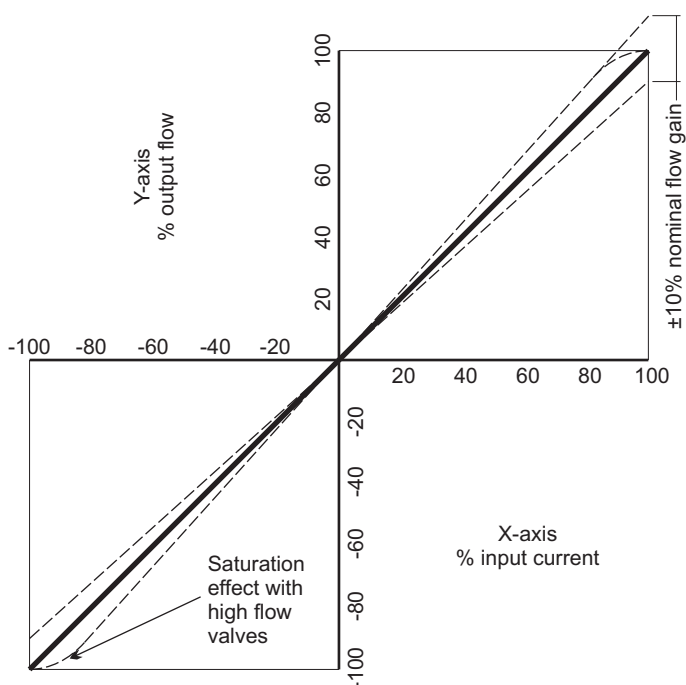


Internal leakage

This comprises of both pilot stage flow (tare leakage) and the second stage null leakage, typical values for this size of valve would be:

Rated flow	Internal leakage at 140 bar
2 l/min	< 0.3 l/min
4 l/min	< 0.3 l/min
7 l/min	< 0.5 l/min

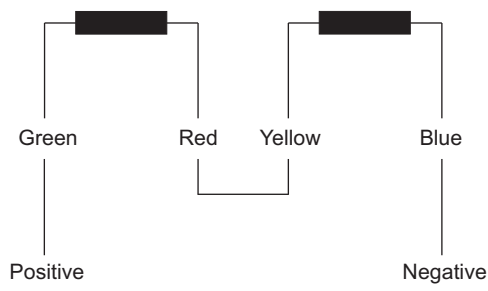
Output flow versus input signal at constant valve pressure drop



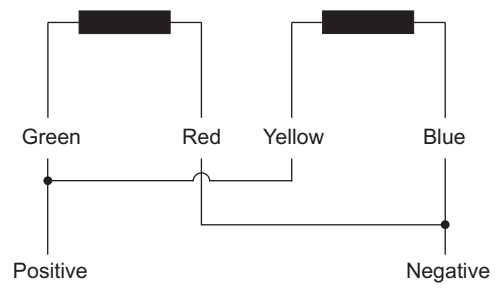
The flow tolerance for standard servovalves is $\pm 10\%$ of the nominal rated flow at $\pm 100\%$ input signal.

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

Coil schematics



Series connection



Parallel connection

Output flow polarity

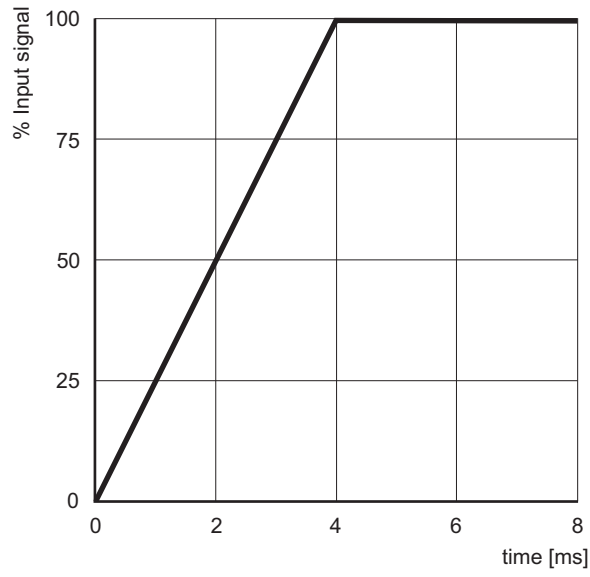
Flow in the direction of P→C2, C1→R will occur with the pilot stage coils configured as above.

Coil options

Coil specification		Series connection		Parallel connection	
Rated signal [mA]	Resistance per coil [Ω]	Input current [mA]	Effective resistance [Ω]	Input current [mA]	Effective resistance [Ω]
10	1000	5	2000	10	500

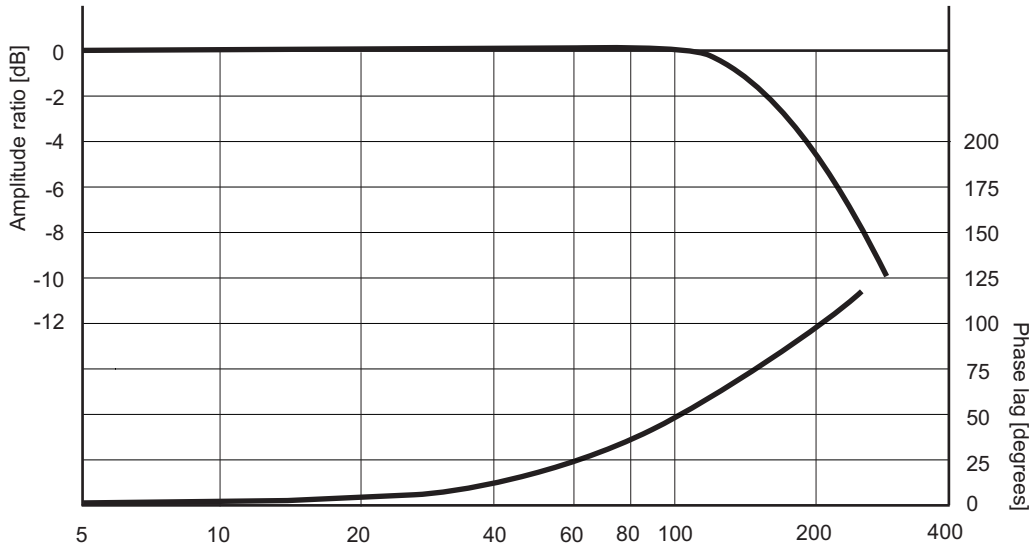
Other coil rates available upon request

Transient Response

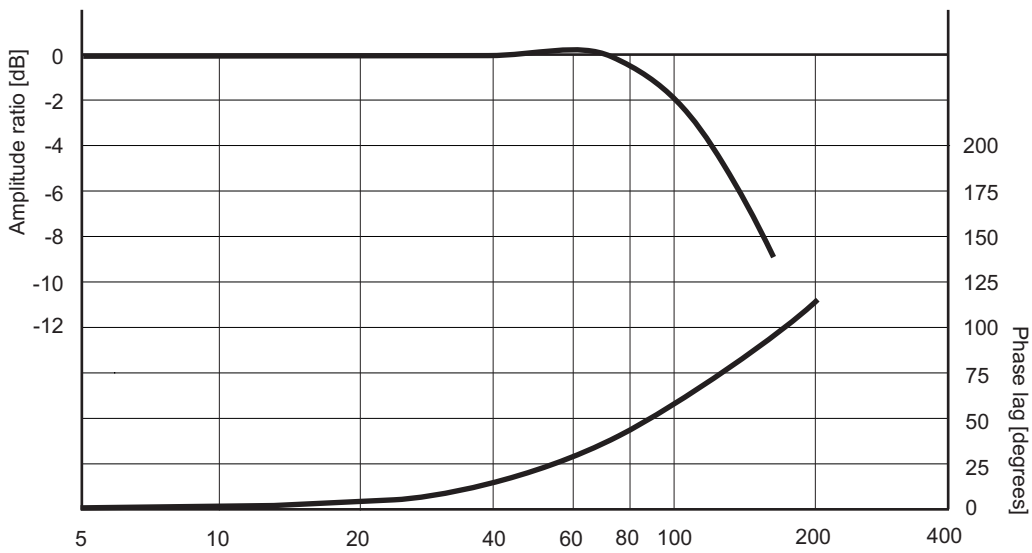


Rated flow = 7 l/min
Supply pressure = 210 bar

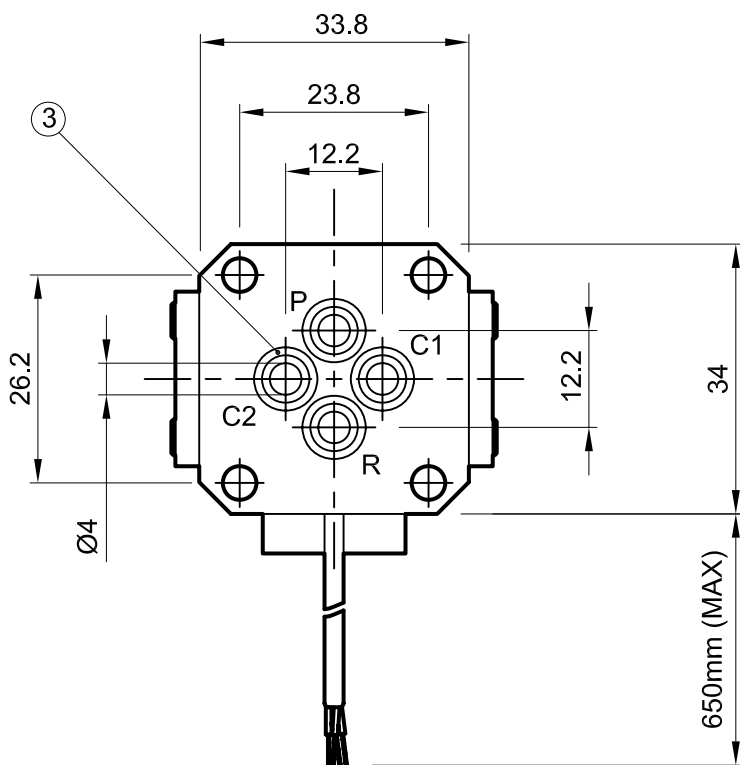
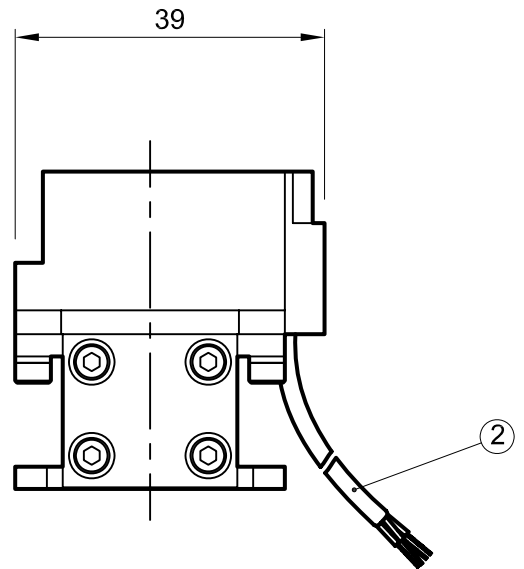
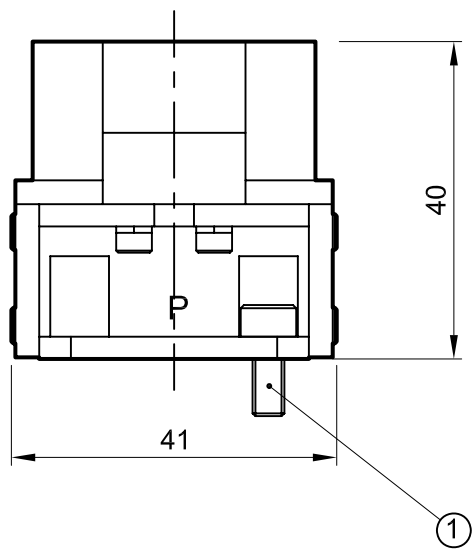
Frequency Response



Input signal = 25%
Rated flow = 7 l/min
Supply pressure = 210 bar



Input signal = 100%
Rated flow = 7 l/min
Supply pressure = 210 bar

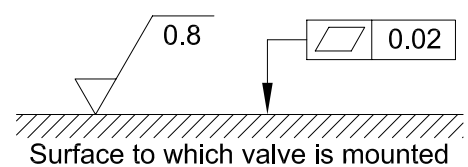


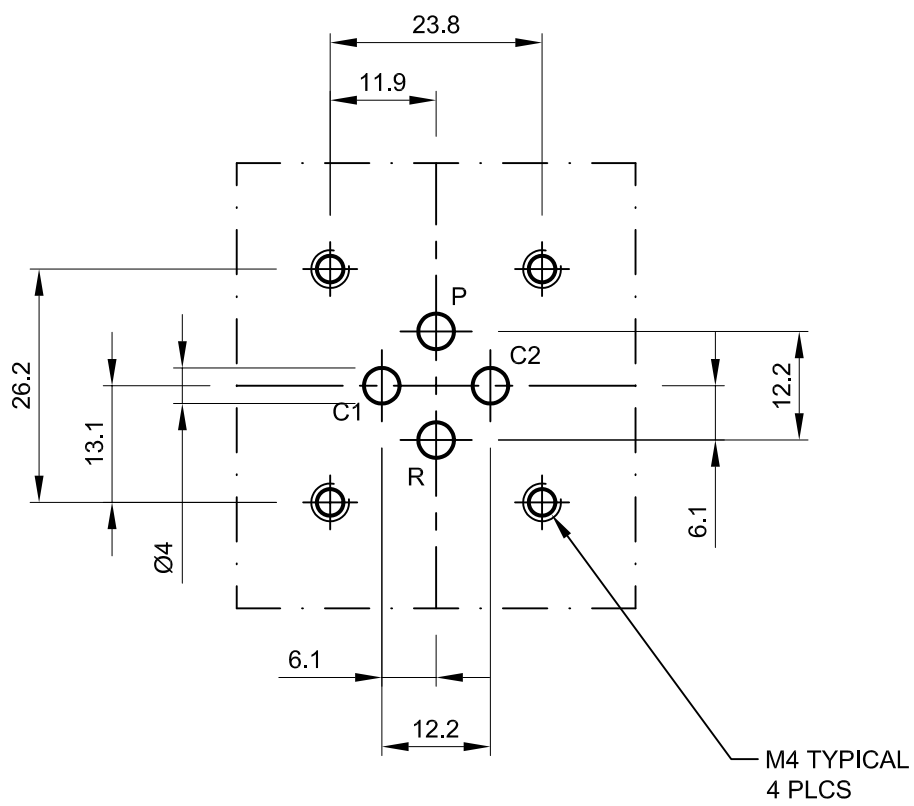
1. Suggested mounting bolts M4 x 10 long high tensile steel socket head cap screws.
2. Colour coded flying lead available at 180° to position shown (advise desired position at time of order).
3. Base O-Rings: 6 I/D x 1 section (4 pcs).

Installation Details Model 200

Dimensions in millimeters
3rd angle projection

ID200-1Q09-En





Manifold Dimensions Model 200

Dimensions in millimeters
3rd angle projection

Filename

