Flow Control Valve

Series SRR..

- **Robust, simple and reliable**
- **Easy coil change without opening the hydraulic envelope**
- **Flow rates are unaffected by temperature change or when the higher load pressure alternates between the outlet ports**
- **Easy to service**
- **Dependable**

1 Descriptions

1.1 Generals

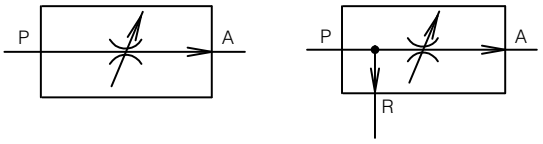
The flow control valves of the SRR series are used to set the working speed of hydraulics actuators, the setting being load-independent, and pressure compensated. The flow rate is set by an adjustable slit-type orifice. When used as a 3-way valve, the higher pressure can be either at the A or the B port. The special orifice design ensures that the flow setting is largely independent of the viscosity of the operating fluid. For a 2-way flow control function please ask Bucher Hydraulics.

1.2 Application examples

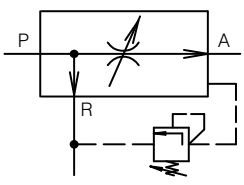
- Harvesters
- Sweepers
- Refuse collection vehicles
- Fertiliser spreaders
- Trailered machines
- Mowers
- Road rollers
- Municipal vehicles
- Forestry machines
- Wood chippers

2 Symbols

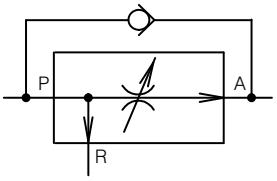
2.1 2 and 3-way flow control valves



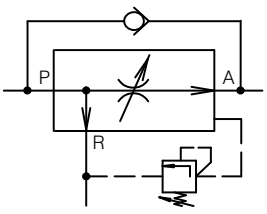
2.2 3-way flow control with pressure relief



2.3 3-way flow control with bypass check valve



2.4 3-way flow control with pressure relief and bypass CV



3 Technical datas

General characteristics	Description, value, unit
Design	line mounting
Flow direction	P → A controlled P → R surplus flow discharge (models shown in 2.1 a. 2.3, surplus flow can be press.)
Seals	Viton (FPM)
De-energized position	orifice closed
Mounting attitude	unrestricted; preferably with coil at bottom (auto. air bleed)

Electrical characteristics	Description, value, unit
Design	high pressure; wet armature
Supply voltage	12 or 24 Volt DC from an electronic controller
Power consumption	27.6 Watt at 12 V coil and Imax. = 2,3 A 27,6 Watt at 24 V coil et Imax. = 1,15 A
Dither frequency required	50 Hz - 150 Hz (pay attention to Imax.)
Relative duty cycle	100% at Imax.
Protection class (with a properly-fitted plug)	DIN plug - IP54; AMP Junior Timer - IP65; Deutsch plug - IP67
Electrical connection	plug-base with pins to DIN 43650; AMP Junior Timer plug connector (2-pole); Deutsch plug DT04-2P-EP04

Hydraulical characteristics	Description, value, unit
Constant flow range in l/min	10, 16, 25, 32, 40, 50, 63, 80 [1)]
Inlet flow	max. 100 l/min [1)]
Operating pressure	max. 315 bar [2)]
Leakage	max. 100 cm^3/min at 100 bar [1)]
Min. pressure difference (pressure compensator)	7 bar
Control accuracy (as a % of the nominal flow): Load-dependency when under pressure Hysteresis when operated	 max ± 2,5% [3)] max ± 3,5% [3)]
Fluids	mineral oil to DIN 51524 and DIN 51525 [4)]
Fluid temperature range	-20 °C ... +80 °C
Viscosity range	10 mm^2/s ... 300 mm^2/s
Filtration	NAS 1638 class 9, ISO 4406 class 21/18/14; achievable with a filter rating of $ß_{10} \geqq 75$

1) Values refer to an oil viscosity of 35 mm^2/s (cSt).
2) For higher pressures, consult Bucher Hydraulics
3) Values refer to the selected flow range.
4) for other fluids, consult Bucher Hydraulics.

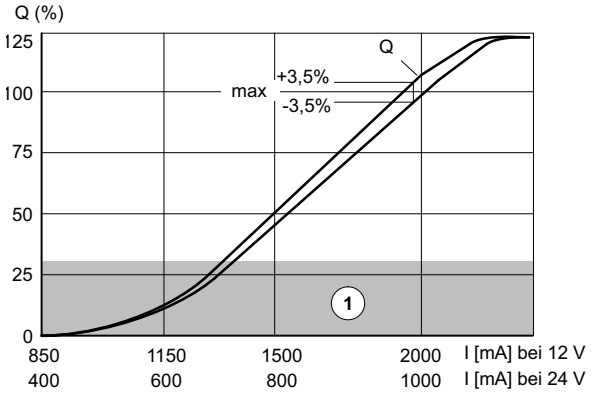
3.1 Initial start-up

To ensure reliable operation, M27x2 or G3/4” fittings with threaded stud ends to DIN 3852 (length of stud end 16 mm) must be used in port P; preferably the versions that use a DIN 3869 profiled sealing ring. If required adapters for M27x2 to M22x1,5 can be supplied (see section 7).

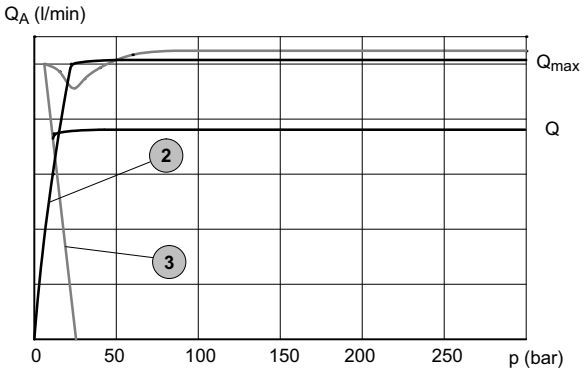
Bleed all air from the system (if possible, operate the flow control valve several times at no-load)

4 Performance graphs

4.1 Q / I characteristics

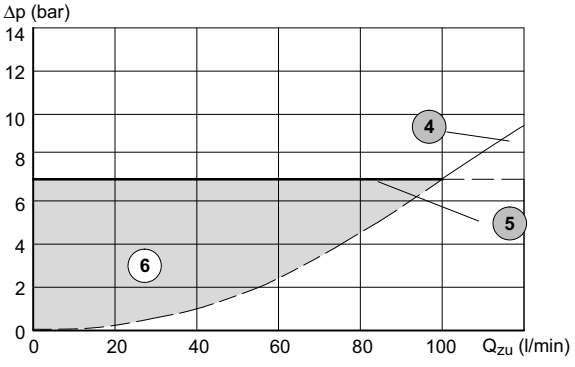


4.2 Variation in flow



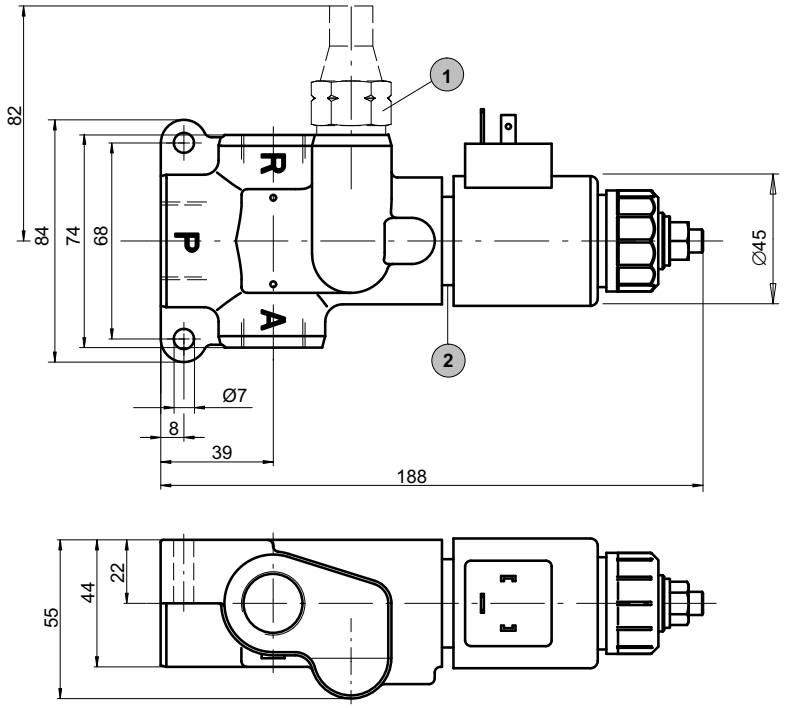
1	fine control range
2	Q_A - constant flow pressurised
3	Q_A - surplus flow pressurised

4.3 Pressure drop during vented bypass P → R



4	Control valve throtting curve
5	Control - Δp - characteristic 7 bar
6	Pressure loss area (the actual pressure-loss characteristic is dependent on the tank pressure at port R)

5 Dimensions



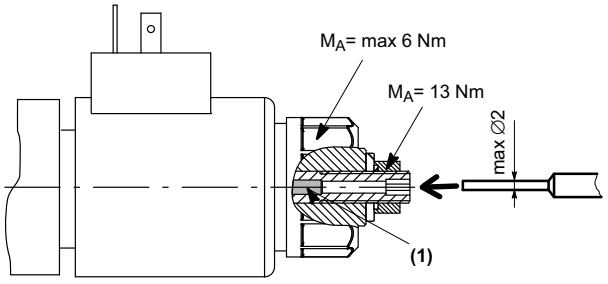
Port threads P = M27x2 or G3/4”
A and R = M22x1.5 or G1/2”

1	Model with pressure relief	2	M_A = 30 $^{+5}$ Nm

6 Models

6.1 Manual overrides

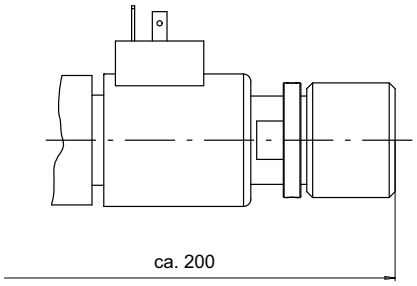
Emergency pin, SRC....**S**..



IMPORTANT : By pressing the emergency pin (1) you operate the valve ON/OFF

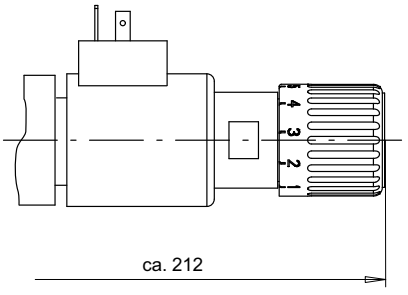
Basic manual override, SRC....**N**..

Q_0 to $Q_{max.}$ = approx. 3,5 turns at the rotary knob

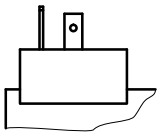
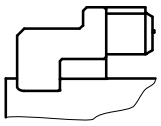
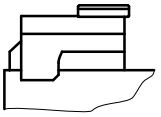


Basic manual override, SRC....**T**..

Q_0 to $Q_{max.}$ = approx. one turn at the rotary knob



6.2 Plug bases

GDM plug to DIN 43650 -G..-	AMP-Junior Timer -J..-	Deutsch plug DT04-2P-EP04 -T..-
		

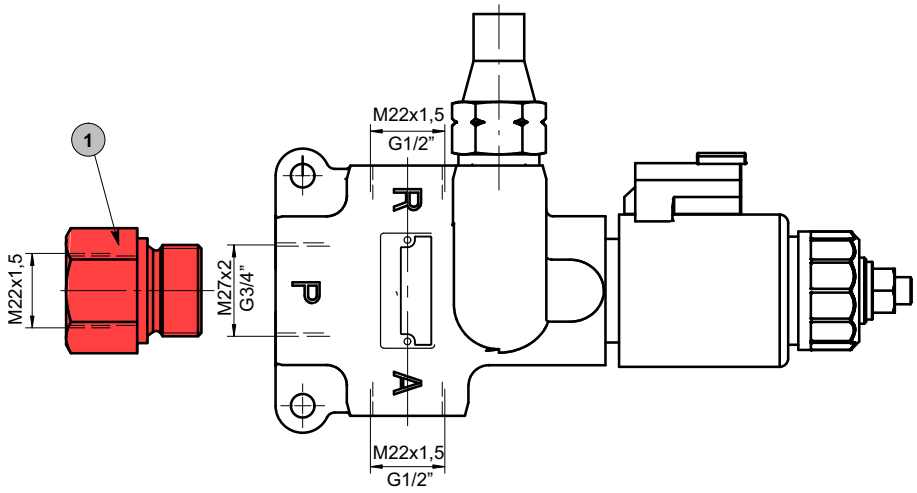
7 Ordering code

S R R B 0 5 0 S 3 M - 0 G 1 2 - R P / [ ] P=

Flow control valve			
Pipe mounting			
Size			
Constant flow range (10, 16, 25, 32, 40, 50, 63, 80 l/min) e.g. 0...50 l/min		=	050
Type of operation	solenoid + emergency pin	=	S
	solenoid + basic manual override	=	N
	solenoid + deluxe manual override	=	T
3-way		=	3
2-way (for this function please ask Bucher Hydraulics)		=	2
Port threads	P: M27x2 / A+R: M22x1.5	=	M
	P: G3/4" / A+R: G1/2"	=	G
(Adapters for pressure port P can be ordered separately, see section 8)			
Design number	(to be inserted by the factory)		
Plug connector	GDM plug (DIN)	=	G
	AMP Junior Timer	=	J
	Deutsch plug	=	T
Proportional solenoid supply voltage	DC 12 Volt	=	12
	DC 24 Volt	=	24
Bypass check valve A → P		=	R
without		=	*
Pressure relief function (surplus flow cannot be pressurised)		=	P (Specify the pressure setting in plain text)
without		=	*
Options	(to be inserted by the factory)		

8 Accessories

8.1 Adapter



1	Adapter M27x2 → M22x1,5 Part number: 100000183

8.2 Electronics

For controlling SR... flow control valves, we recommend the E.SK 103 and E.SK 106 series of control units and plug-in cards. These are used to control 1 or 2 proportional solenoids and can also operate on/off solenoids and other auxiliary functions. Plug-in cards are available, and control units can be supplied. The folowing table contains a small selection of the extensive range of accessories and electronics from Bucher Hydraulics.

Bestellbezeichnung	Ausführung	Bestellnummer
ELSK106-91***	with screw terminals	100018790
ELSK106-81***	with screw terminals, encapsulated	100018791
ELSK106-81***/02	with screw terminals, encapsulated, with ramp 2s	100013454
ELSK106-81***/04	with screw terminals, encapsulated, with ramp 4s	100026079
Junior Timer 2Pol	plug, AMP J, with 2 m cable	100152575

9 Installation information

IMPORTANT!
When mounting the valve, ensure that the body is not subjected to any distorting forces. If necessary use shims to equalise the level of the mounting points. Do not use any pipe fittings with tapered-threads!

10 Specification sheet Flow-control valve, series SRR

Order ❑ Enquiry ❑

Company:		Customer No.	
Address:		Phone number:	
Code/Location:		Fax number:	
Country:		E-mail address	

Ordering code (see Sect. 6)

		Pressure setting	Quantity
SRRB	- 0 -	bar	
SRRB	- 0 -	bar	
SRRB	- 0 -	bar	
SRRB	- 0 -	bar	

10.1 Details of the application

Operating pressure (bar): Max. intermittent pressure (bar):

Inlet flow (l/min): Controlled flow rate (l/min):

Fluids: ❑ Mineral oil ❑ Biodegradable oil ❑ Other

❑ HFA ❑ HFC ❑ HFD

Fluid temperature range (°C): Viscosity range (mm^2/s) (cSt):

Supply system: ❑ Fixed-disp. pump ❑ Constant-pressure pump

❑ Var.-disp. pump, LS ❑ Variable-displacement pump, power-limited

Name Date Signature

info.kl@bucherhydraulics.com **www.bucherhydraulics.com**

Classification: 430.310.310.330310