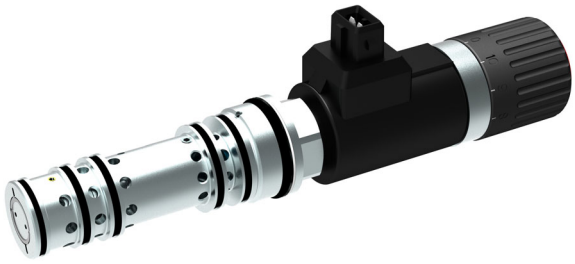
Flow Control Valve

Series SRCA..



- plug-in coil for easy coil change
- flow rates are unaffected by changes in temperature or load
- compact design
- reduced Δp
- ZnNi coating (>720h DIN EN ISO 9227 NSS)

1 Description

1.1 General

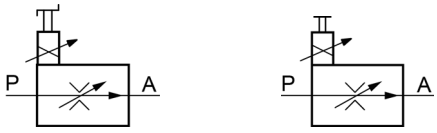
Flow control valves SRCA are used to set the working speed of hydraulic actuators, and the setting is load independent and pressure compensated. When used as a 3-way valve, the higher pressure can be at either the constant flow or surplus flow port. When used as a two-way flow control, omit the surplus-flow drilling, or plug it. The special orifice design ensures that the flow setting is largely independent of the viscosity of the fluid. The valve's cartridge construction allows to design a hydraulic system that meets the client's precise requirements.

1.2 Application examples

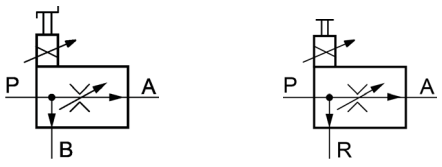
- Belt drives
- Spinner-plate drives
- Auger drives
- Brush drives
- Reel drives
- Pump drives for other liquids
- Fans, blowers
- …

2 Symbols

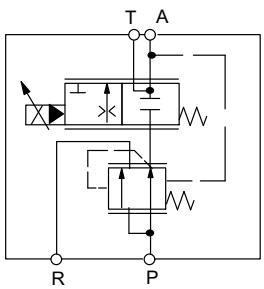
2.1 2-way flow control



2.2 3-way flow control



2.3 Schematic representation



3 Technical data

General characteristics	Unit	Description, value
Design		screw-in cartridge
Flow direction		P → A controlled P → B surplus flow discharge (can be pressurised)
Seals		NBR
De-energised position		orifice closed
Mounting attitude		unrestricted; preferably with coil at bottom end (automatic air bleed)
Commissioning		bleed all air from the system (if possible, operate valve several times without load)
Electrical characteristics	**Unit**	**Description, value**
Design		high pressure; wet armature
Supply voltage	VDC	12 or 24 from an electronic controller
Power consumption	Watt	Proportional operation: 16 with 12 V and I_{max} = 1350 mA 16 with 24 V and I_{max} = 675 mA ON/OFF operation: 27 with 12 V / 24 V
Dither frequency recommended	Hz	100
Relative duty cycle		100 %
Protection class (with a properly-fitted plug)		AMP Junior Timer IP65 Deutsch plug IP67 (DIN EN 60529)
Electrical connection		AMP Junior Timer plug connector (2-pole) Deutsch plug DT04-2P-EP04
Hydraulic characteristics	**Unit**	**Description, value**
Constant flow range	l/min	10, 16, 25, 32, 40, 50 [1]
Inlet flow	l/min	max. 60 [1]
Operating pressure	bar	max. 250
Leakage	cm^3/min	max. 60 at 100 bar [1] (or virtually zero if the priority flow discharges to tank)
Min. pressure difference (pressure compensator)	bar	4 … 7
Control accuracy (as a % of the nominal flow): Load-dependency when under pressure Hysteresis when operated		 max. ± 2,5 % [2] max. ± 3,5 % [2]
Fluids		mineral oil to DIN 51524 [3]
Fluid temperature range	°C	-20 ... +80
Viscosity range	mm^2/s	10 ... 300
Maximum admissible level of contamination of the hydraulic fluid		ISO 4406 class 20/18/15 (see paragraph 9)

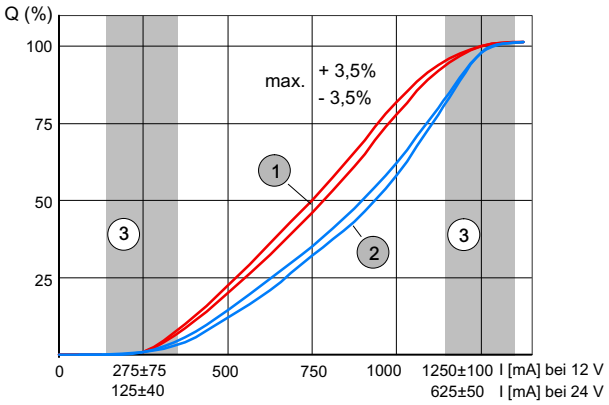
1) Values refer to an oil viscosity of 35 mm^2/s (cSt).

2) For higher pressures, consult Bucher Hydraulics.

3) Values refer to the selected flow range.

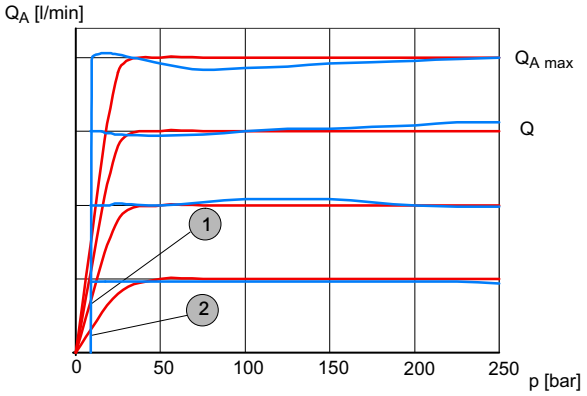
4 Performance graphs

4.1 Q - I characteristic curve



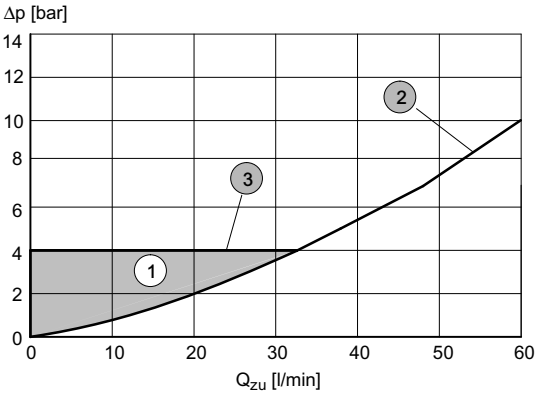
1	Q - I characteristic at 50 L
2	Q - I characteristic at 25 L
3	Fine control range

4.2 Variation in flow



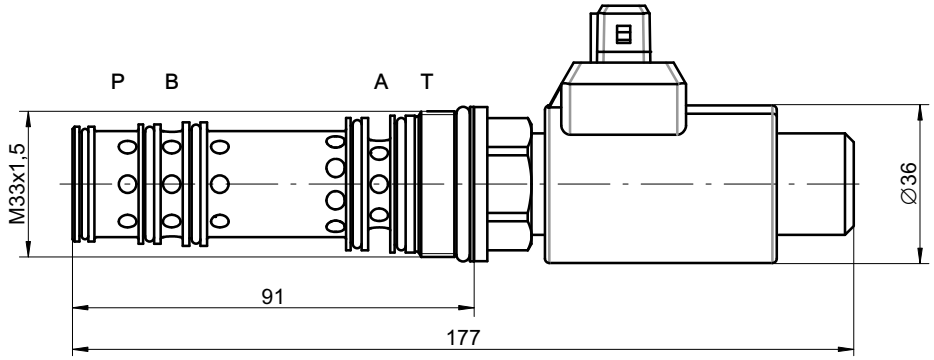
1	Q_A - constant flow pressurised
2	Q_A - surplus flow pressurised

4.3 Pressure drop during vented bypass P → B



1	Pressure loss area (The actual pressure-loss characteristic is dependent on the tank pressure at port B)
2	Control valve throttling curve (Dependent on body used)
3	Control - Δp - characteristic 4 bar

5 Dimensions



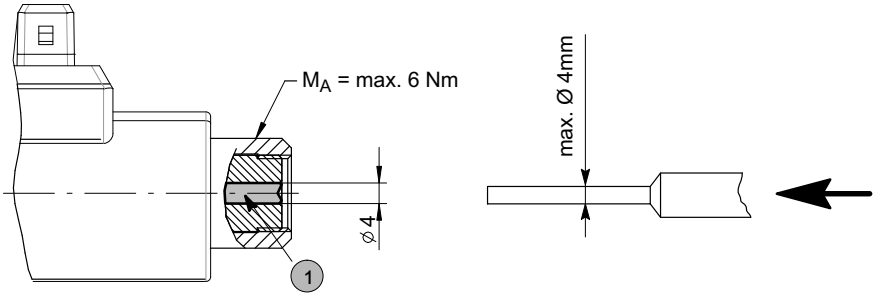
A	Priority flow (controlled)	P	Inlet
B	Surplus flow (3-way)	T	Priority flow discharge with closed orifice

BUCHER
hydraulics

6 Models

6.1 Manual override

6.1.1 Emergency pin, SRCA….S..

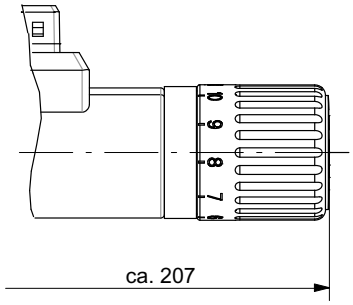


1	Emergency pin

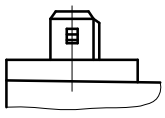
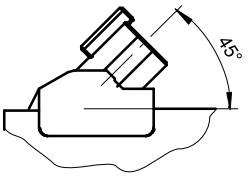
IMPORTANT : By pressing the solenoid pin (1), you operate the valve ON/OFF.

6.1.2 Basic manual override, SRCA….T..

Q_0 to $Q_{max.}$ = about one turn of the handle



6.2 Sockets

AMP Junior Timer J	Deutsch plug DT04-2P-EP04 T
	

7 Ordering code

S	R	C	A	0	5	0	S	3	-	0	J	1	2	/	

Flow control valve SR

Cartridge

Size

Constant flow rate (10, 16, 25, 32, 40, 50 l/min)
z.B. 0...50 l/min = 050

Type of operator solenoid + emergency pin = S
solenoid + deluxe manual override = T

3-way (can also be used as a 2-way flow control) = 3

Design stage (to be inserted by the factory)

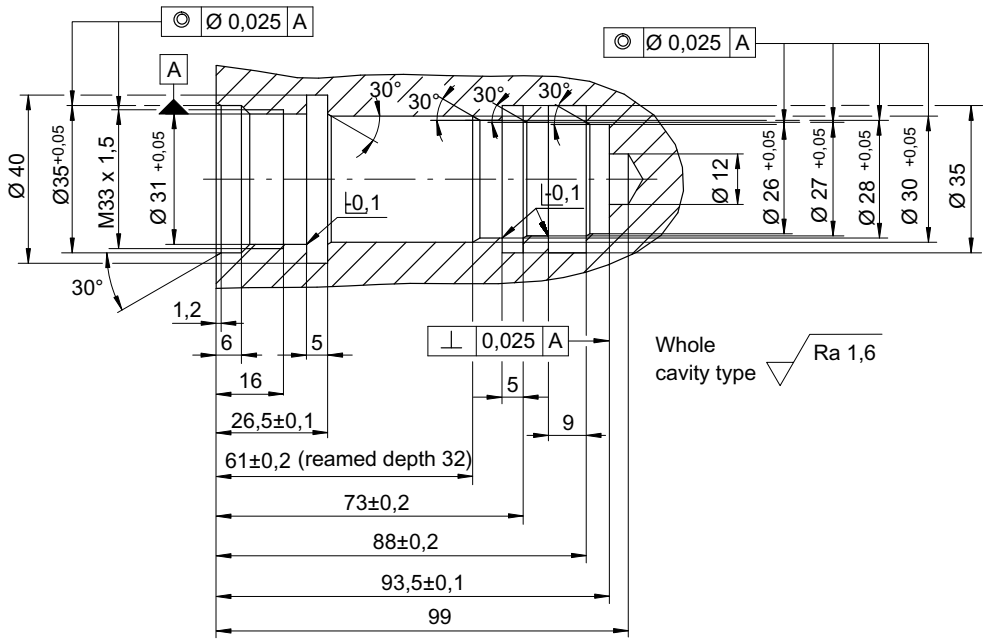
Plug connector AMP Junior Timer = J
Deutsch plug = T

Proportional solenoid supply voltage DC 12 Volt = 12
DC 24 Volt = 24

Options (to be inserted by the factory)

8 Cavity body

8.1 Cavity type GB3WM33 for 3-way flow control valves

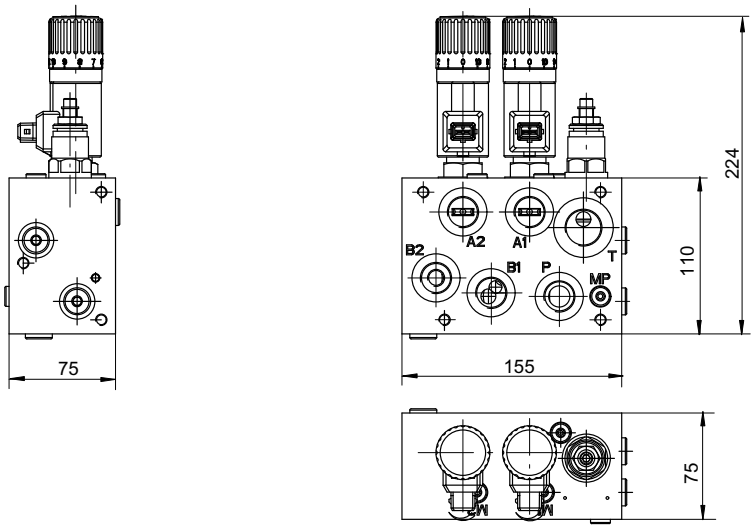


Form tool T2031 (order number: 100608916) to machine own cartridge cavities can be hired on request.

8.2 Housing variants

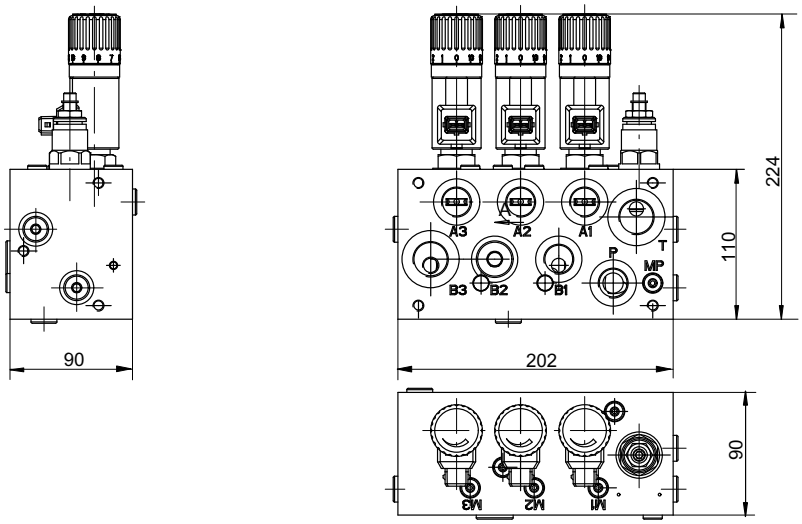
8.2.1 Example of a complete valve block SRCAVM2-.***2-0M22

8.2.1.1 Flow control valve with solenoid and emergency pin



8.2.2 Example of a complete valve block SRCAVM3-.***2-0M22

8.2.2.1 Flow control valve with solenoid and emergency pin



9 Fluid

Flow control valves require fluid with a minimum cleanliness level of ISO 4406 code 20/18/15.
We recommend the use of fluids that contain anti-wear additives for mixed-friction operating conditions. Fluids without appropriate additives can reduce the service life of the valves.

The user is responsible for maintaining, and regularly checking the fluid quality.

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Classification: 430.310.330.305.