2-Way Flow-Control Cartridge, Size 16

Q_{max} = 200 l/min, p_{max} = 350 bar
With fixed orifice, load compensated, adjustable compensator spring
Series MRPB-2-16…

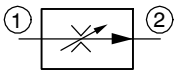
- **Load-independent flow rate**
- **Compact design for cavity type EF – M42 x 2 to Bucher standards**
- **Various flow-rate control ranges**
- **Optimum integration in system thanks to adjustable pressure-compensator spring**
- **Very good reproducibility**
- **Reliable operation over the whole pressure and flow range** (even with high pressure differentials)
- **Available with hand-knob or tamper-proof cap**
- **All external parts zinc plated, chromited (CrVI-free)**
- **Can be fitted in a line-mounting body**

1 Description

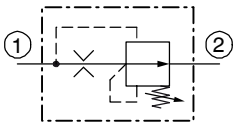
Series MRPB… 2-way flow-control valves are size 16, high performance, load-compensated screw-in cartridges with an M42 x 2 mounting thread. By means of a fixed orifice and an integral pressure-compensator function, the flow rate to an actuator is kept constant regardless of load changes. The load compensation is done by the pressure-compensator piston, which maintains the pressure drop across the fixed orifice at a constant level. The flow-control cartridges can be supplied with various fixed orifices that determine the flow-control range. Using the adjustable pressure-compensator spring, the required flow rate (the range depends on the fixed orifice) is adjusted directly at the system. The spring is adjusted by means of an adjusting screw or a hand-knob. To safeguard valve settings, the adjusting spindle can be sealed with a tamper-proof cap. These 2-way flow-control cartridges are used in in mobile and industrial applications where a constant flow rate must be maintained under conditions of varying load. All external parts of the cartridge are zinc plated and chromited (CrVI-free) and are thus suitable for use in the harshest operating environments. If you intend to manufacture your own cavities or are designing a line-mounting installation, please refer to the section “Related data sheets”.

2 Symbol

Simplified



Detailed



3 Technical data

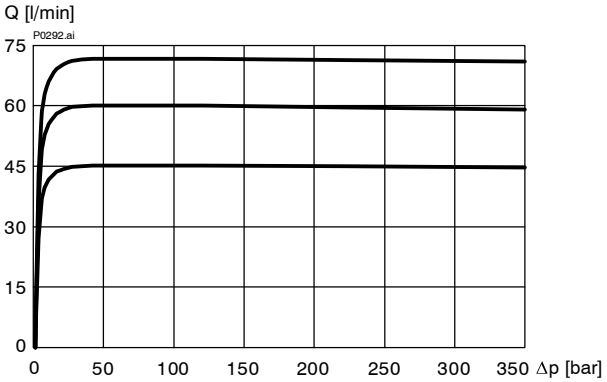
General characteristics	Description, value, unit
Designation	2-way flow-control
Design	with fixed orifice, load compensated, adjustable compensator spring, with mechanical operation
Mounting method	screw-in cartridge M42 x 2
Tightening torque	200 Nm ± 10 %
Size	nominal size 16 mm, cavity type EF to Bucher standards
Weight	1.10 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C … +80 °C

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	350 bar
Maximum flow rate	200 l/min
Nominal flow rate Q_N	200, 140, 110, 70 l/min
Flow direction	1 → 2, see symbols
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please consult BUCHER
Hydraulic fluid temperature range	-25 °C … +80 °C
Viscosity range	10…650 mm^2/s (cSt), recommended 15...250 mm^2/s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 20/18/15

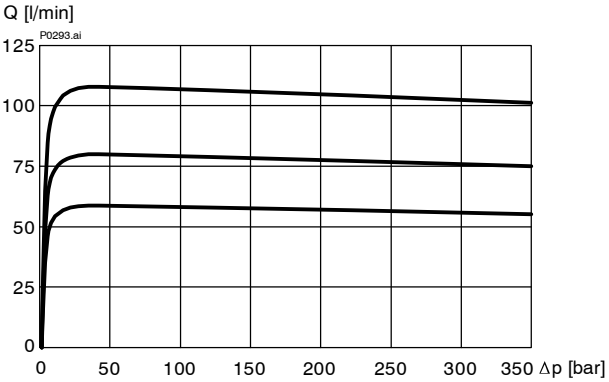
4 Performance graphs

measured with oil viscosity 33 mm^2/s (cSt)

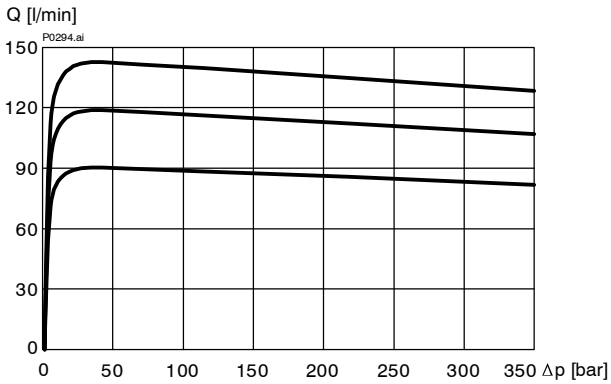
Q = f (Δp) Flow-rate adjust. characteristic [Q_N = 70 l/min]



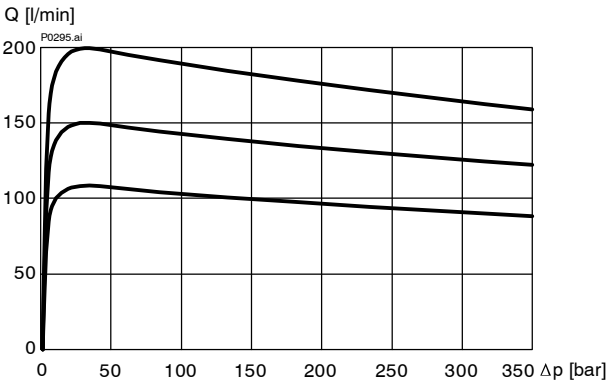
Q = f (Δp) Flow-rate adjust. characteristic [Q_N = 110 l/min]



Q = f (Δp) Flow rate adjust. characteristic [Q_N = 140 l/min]

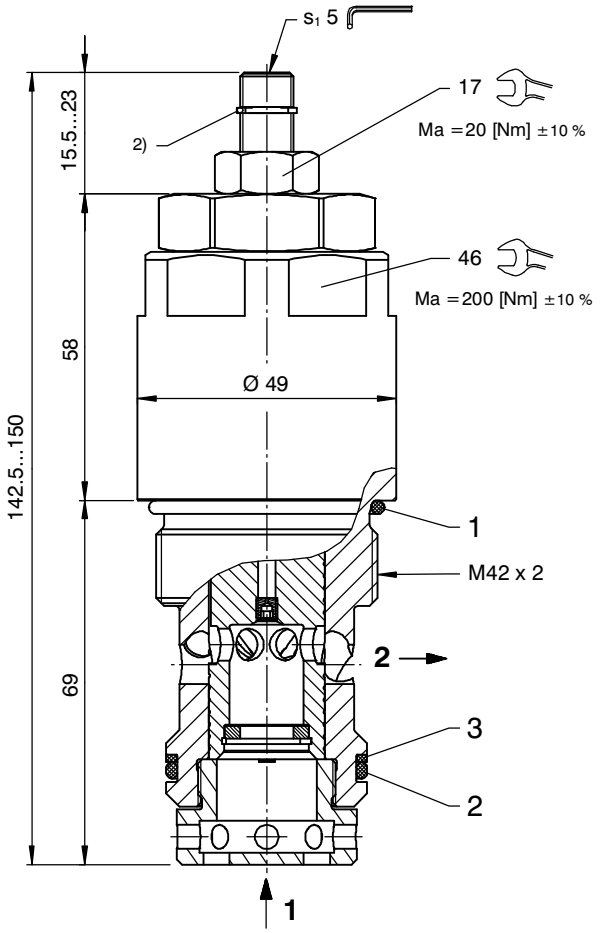


Q = f (Δp) Flow-rate adjust. characteristic [Q_N = 200 l/min]

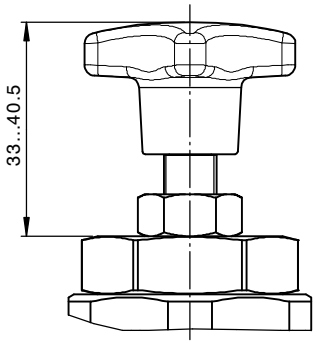


5 Dimensions & sectional view

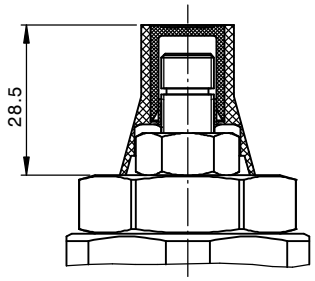
With adjusting screw “S”



With hand-knob adjuster “H”



Adjusting screw with tamper-proof cap
(order separately in plain language)



6 Installation information

IMPORTANT!
When fitting the cartridges, use the specified tightening torque. Set the required flow rate with the adjusting screw (s_1). After you have set the valve, lock the adjusting screw with the lock nut.

ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Seal kit NBR no. DS-418-N [1)]

Item	Qty.	Description
1	1	O-ring no. 129 ∅ 39,34 x 2,62 N90
2	1	O-ring no. 125 ∅ 32,99 x 2,62 N90
3	1	Backup ring ∅ 32,0 x 2,0 x 1,4 FI0751

IMPORTANT!
1) Seal kit with FKM (Viton) seals, no. DS-418-V

7 Ordering code

Ex. M R P B - 2 - 16 - S - 200 _ - _

M	=	flow valve
R	=	flow-control valve
P	=	screw-in cartridge M42 x 2
A ... Q	=	standard model - see relevant data sheets
Z ... R	=	special features - please consult BUCHER
2	=	2-way model
16	=	nominal size 16
S	=	screw adjuster (**standard**)
H	=	hand-knob adjuster
		nominal flow rate Q_N – control range:
200	=	120 … 200 l/min
140	=	90 … 140 l/min
110	=	70 … 110 l/min
070	=	45 … 70 l/min
(blank)	=	NBR (Nitrile) seals (**standard**)
V	=	FKM (Viton) seals
		(special seals - please consult BUCHER)
1 ... 9	=	design stage (omit when ordering new units)

IMPORTANT!
When required, the tamper-proof cap (the adjustment seal) must be ordered separately in plain language.

8 Related data sheets

Reference	(Old no.)	Description
400-P-040011	(i-32)	The form-tool hire programme
400-P-080127		Cavity type EF to Bucher standards
400-P-750131		Line-mounting body, type GEFA (G 1”)

info.ch@bucherhydraulics.com **www.bucherhydraulics.com**

Classification: 430.300.330.305.330