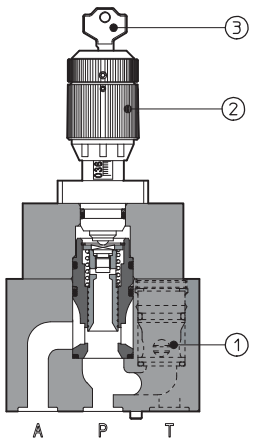
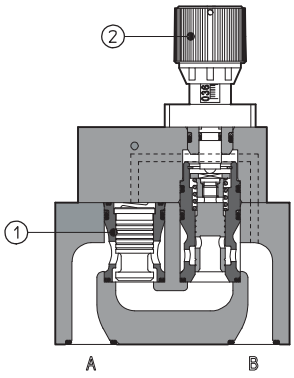
Flow control valves type QV-10, QV-20

pressure compensated, two or three way, ISO 6263 sizes 10 and 20



QV-10/3/K



QV-20/2

QV are flow control valves with pressure compensator ① (the controlled flow rate is indipendent of pressure variations), designed to operate in oil hydraulic systems.

The two-way type are available with a built-in check valve to allow the free flow in the opposite direction.

The flow adjustment is done by turning a graduate micrometer knob ②.
Clockwise rotation increases the throttling (reduced passage).
Optional versions with locking key ③ on the adjustment knob are available on request.

QV-10 = ISO 6263 size 10 interface: max flow 60 l/min, max pressure 250 bar.

QV-20 = ISO 6263 size 20 interface: flow up to 180 l/min (three-way version), max pressure 250 bar.

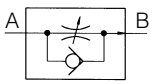
1 MODEL CODE

QV	-	10	/	3	/K	**	/*

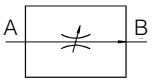
- **QV**: Pressure compensated flow control valve
- **10 / 3**: Size: **10**, **20**; **2** = two-way valve, **3** = three-way valve
- **/K**: Options: **/K** = with lock key for the setting knob only for two-way valves; **/V** = without by-pass check valve
- ******: Series number
- **/***: Synthetic fluids: **WG** = water-glycol, **PE** = phosphate ester

2 HYDRAULIC CHARACTERISTICS

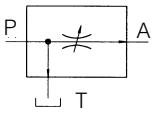
Hydraulic symbols



TWO-WAY VERSION



TWO-WAY VERSION WITHOUT CHECK VALVE



THREE-WAY VERSION

Valve model		QV-10/2	QV-10/2/V	QV-10/3	QV-20/2	QV-20/2/V	QV-20/3
Max regulated flow	[l/min]	65	60		130	160	180
Min regulated flow	[cm³/min]	120			120		
Max flow B → A through check valve (2-way versions)	[l/min]	80	–	–	160	–	–
Regulating Δp	[bar]	6		6	7		8
Max flow on port P (only 3-way versions)	[l/min]	–	–	60	–	–	180
Max pressure	[bar]	250			250		

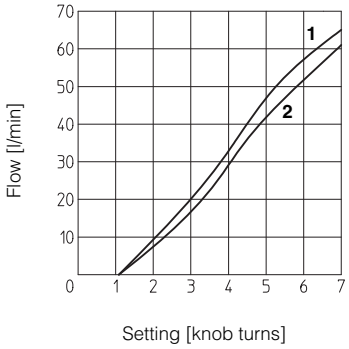
3 MAIN CHARACTERISTICS OF FLOW CONTROL VALVES TYPE QV-10 AND QV-20

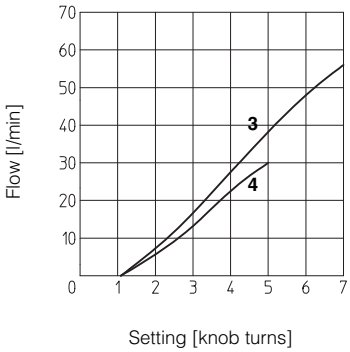
Assembly position	Any position
Subplate surface finishing	Roughness index $\sqrt{}^{0,4}$, flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	-20°C to + 70°
Fluid	Hydraulic oil as per DIN 51524...535, for other fluids see section 1
Recommended viscosity	15 ÷ 100 mm²/s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 μm value and $\beta_{25} \geq 75$ (recommended)
Fluid temperature	-20°C +60°C (standard and /WG seals) -20°C +80°C (/PE seals)

4 DIAGRAMS OF QV-10 based on mineral oil ISO VG 46 at 50°C

4.1 Regulation diagram

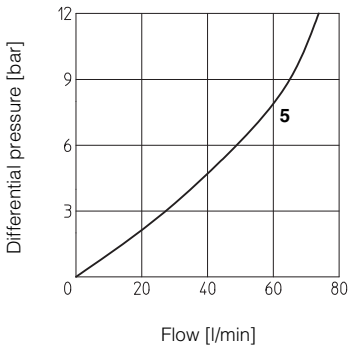
1 = QV-10/2
2 = QV-10/2/V
3 = QV-10/3 with 60 l/min of inlet flow
4 = QV-10/3 with 30 l/min of inlet flow





4.2 Q/Δp diagram through the check valve for free flow B → A (two-way valve)

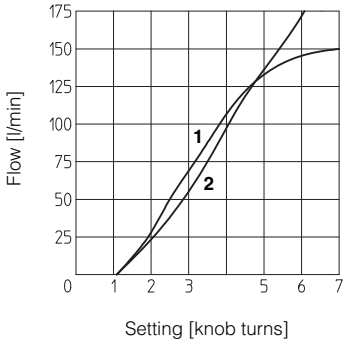
5 = QV-10/2

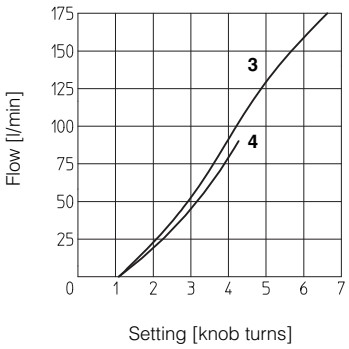


5 DIAGRAMS OF QV-20 based on mineral oil ISO VG 46 at 50°C

5.1 Regulation diagram

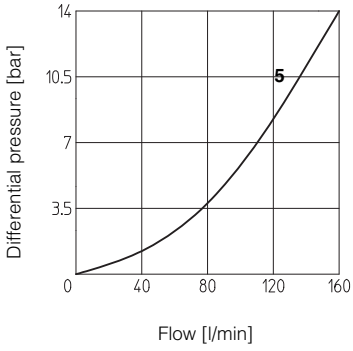
1 = QV-20/2
2 = QV-20/2/V
3 = QV-20/3 with 180 l/min of inlet flow
4 = QV-20/3 with 90 l/min of inlet flow



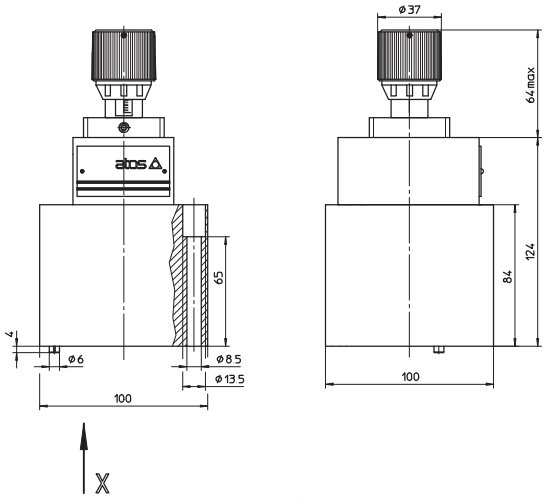


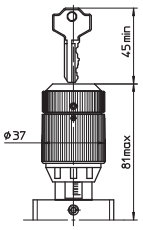
5.2 Q/Δp diagram through the check valve for free flow B → A (two-way valve)

5 = QV-20/2



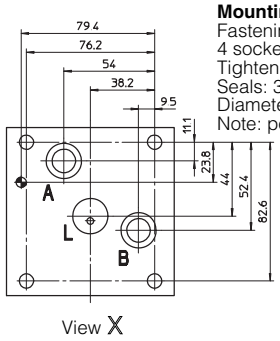
6 DIMENSIONS OF QV-10 [mm]





Option /K

2-WAY VERSION

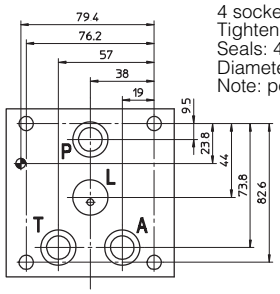


View X

ISO 6263: 1997
Mounting surface: 6263-06-05-0-97
Fastening bolts:
4 socket headscrews M8x80 class 12.9
Tightening torque = 35 Nm
Seals: 3 OR 121
Diameter of ports A, B : Ø = 14 mm
Note: port L is not used

Mass: 7,3 Kg

3-WAY VERSION

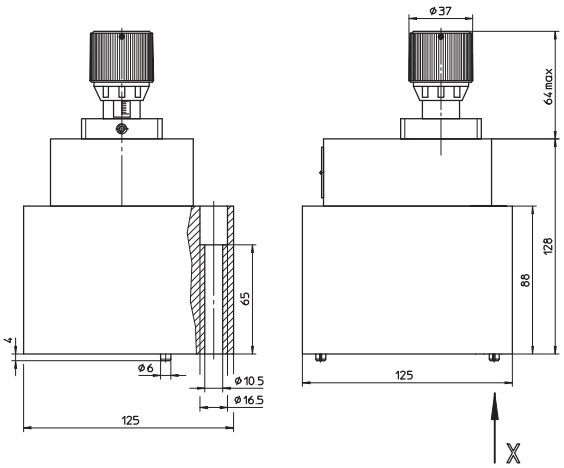


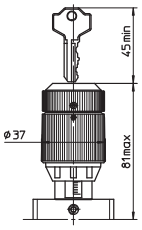
View X

ISO 6263: 1997
Mounting surface: 6263-06-07-0-97
Fastening bolts:
4 socket head screws M8x80 class 12.9
Tightening torque = 35 Nm
Seals: 4 OR 121
Diameter of ports A, P, T: Ø = 14 mm
Note: port L is not used

Mass: 7,3 Kg

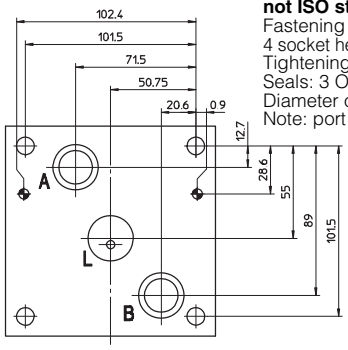
7 DIMENSIONS OF QV-20 [mm]





Option /K

2-WAY VERSION

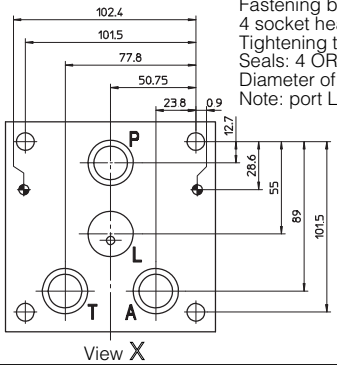


View X

Mounting surface
not ISO standard
Fastening bolts:
4 socket head screws M10x80 class 12.9
Tightening torque = 70 Nm
Seals: 3 OR 130
Diameter of ports A, B: Ø = 20 mm
Note: port L is not used

Mass: 11,9 Kg

3-WAY VERSION



View X

ISO 6263: 1997
Mounting surface: 6263-07-11-0-97
Fastening bolts:
4 socket head screws M10x80 class 12.9
Tightening torque = 70 Nm
Seals: 4 OR 130
Diameter of ports A, P, T: Ø = 20 mm
Note: port L is not used

Mass: 11,9 Kg

8 MOUNTING SUBPLATES

Valve	Subplate model	Port location	Ports A, B, P, T	Ø Counterbore [mm] A, B, P, T	Mass [Kg]
QV-10/2	BA-320	Ports A, B, underneath;	G 1/2"	30	4,2
QV-10/3	BA-322	Ports A, P, T, underneath;	G 1/2"	30	3,9
QV-20/2	BA-420	Ports A, B, underneath;	G 3/4"	36,5	5,5
QV-20/3	BA-422	Ports A, P,T, underneath;	G 3/4"	36,5	5,2
QV-20/2	BA-520	Ports A,B, underneath;	G 1"	46	5,5
QV-20/3	BA-522	Ports A, P, T, underneath;	G 1"	46	5,2

The subplates are supplied with fastening bolts. For further details see table K280.