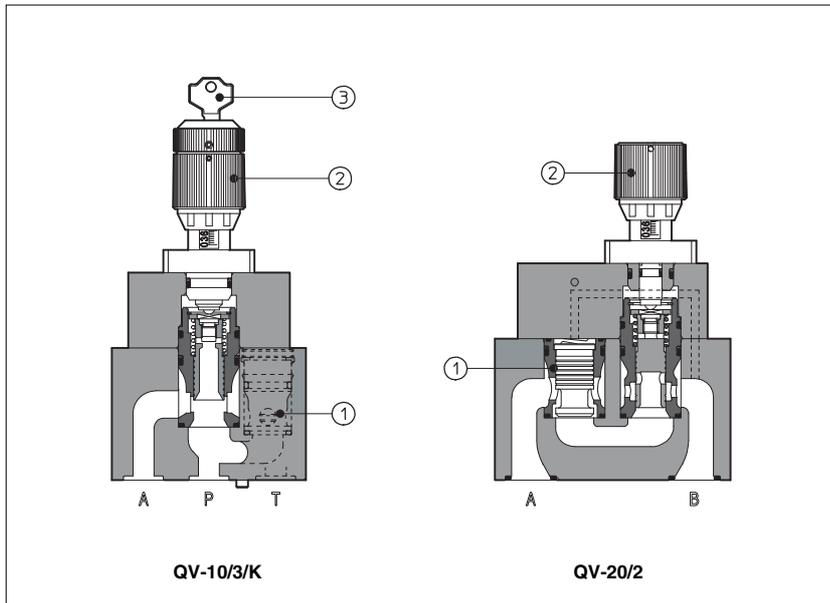


# Flow control valves type QV-10, QV-20

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



QV are flow control valves with pressure compensator ① (the controlled flow rate is independent 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.

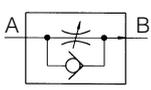
**QV-20** = ISO 6263 size 20 interface: flow up to 180 l/min (three-way version), max pressure 250 bar.

## 1 MODEL CODE

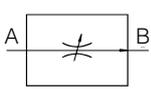
<b>QV</b>	-	<b>10</b>	/	<b>3</b>	/	<b>K</b>	<b>**</b>	/	<b>*</b>
Pressure compensated flow control valve		Size: <b>10</b> <b>20</b>		Options: <b>/K</b> = with lock key for the setting knob only for two-way valves <b>/V</b> = without by-pass check valve		Series number		Synthetic fluids: <b>WG</b> = water-glycol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

## 2 HYDRAULIC CHARACTERISTICS

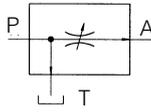
Hydraulic symbols



**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		

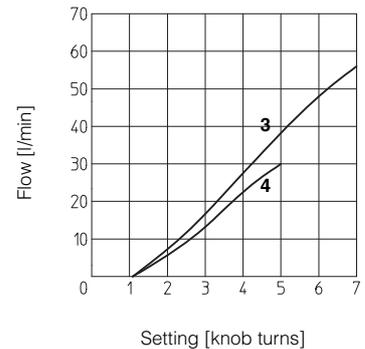
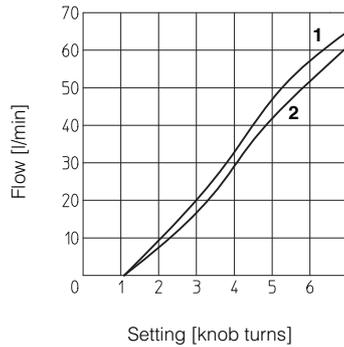
### 3 MAIN CHARACTERISTICS OF FLOW CONTROL VALVES TYPE QV-10 AND QV-20

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 mm <sup>2</sup> /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

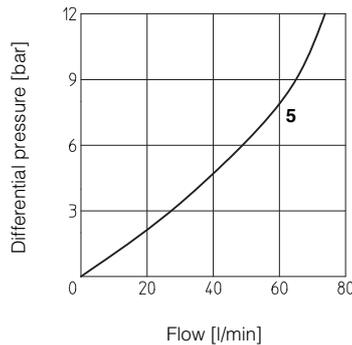
#### 4.1 Regulation diagram

- 1 = QV-10/2
- 2 = QV-10/2N
- 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)

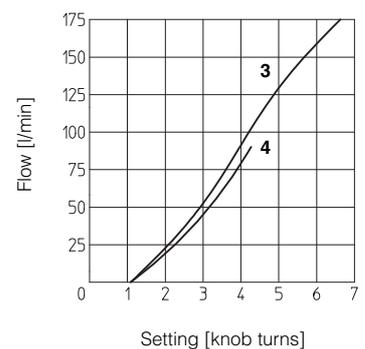
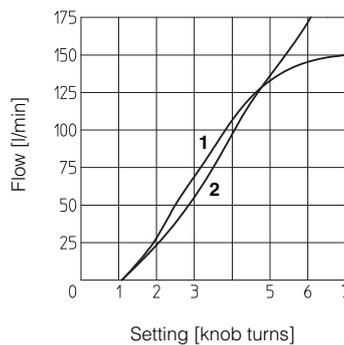
- 5 = QV-10/2



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

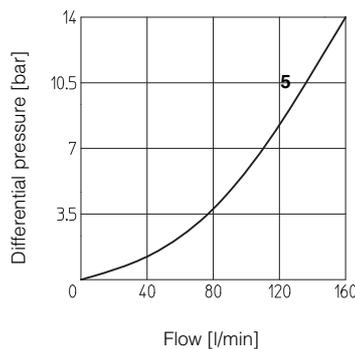
#### 5.1 Regulation diagram

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

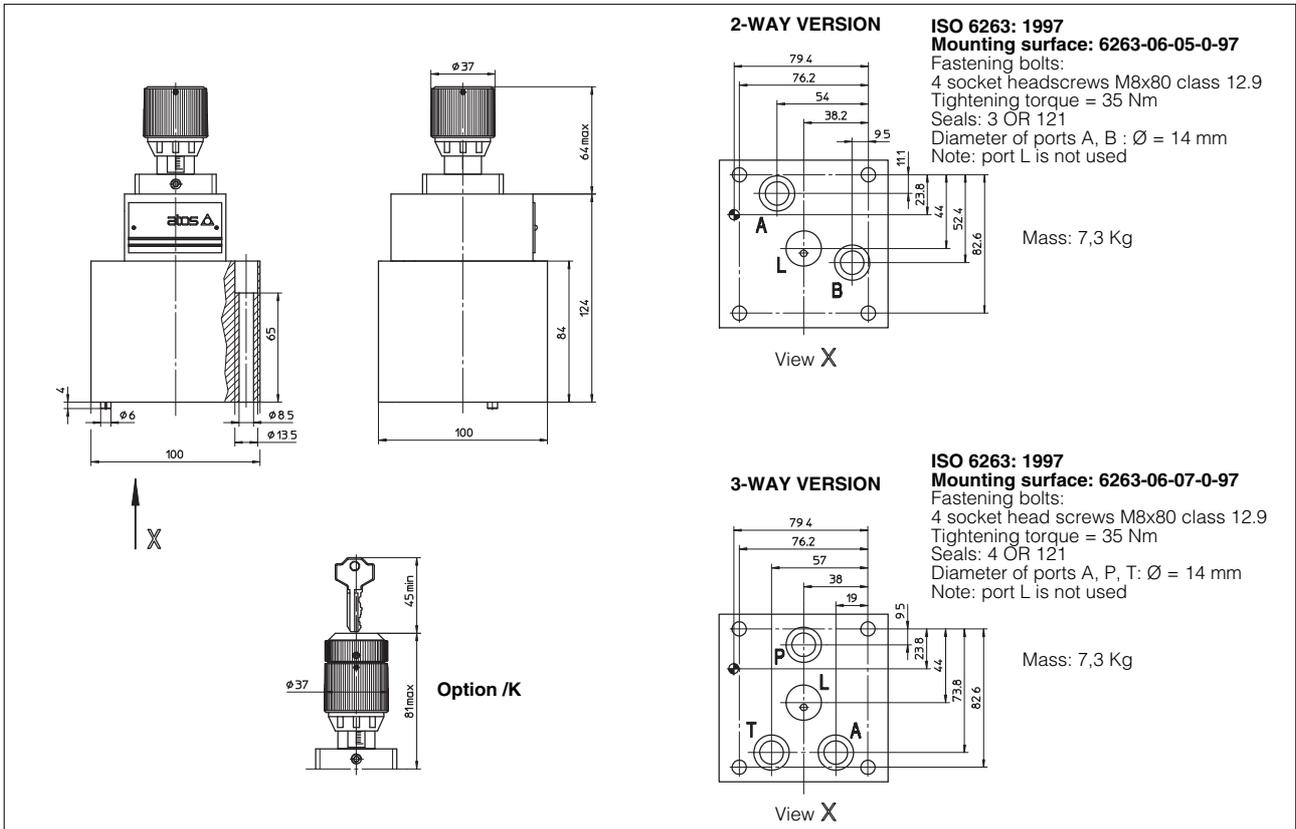


#### 5.2 Q/Δp diagram through the check valve for free flow B → A (two-way valve)

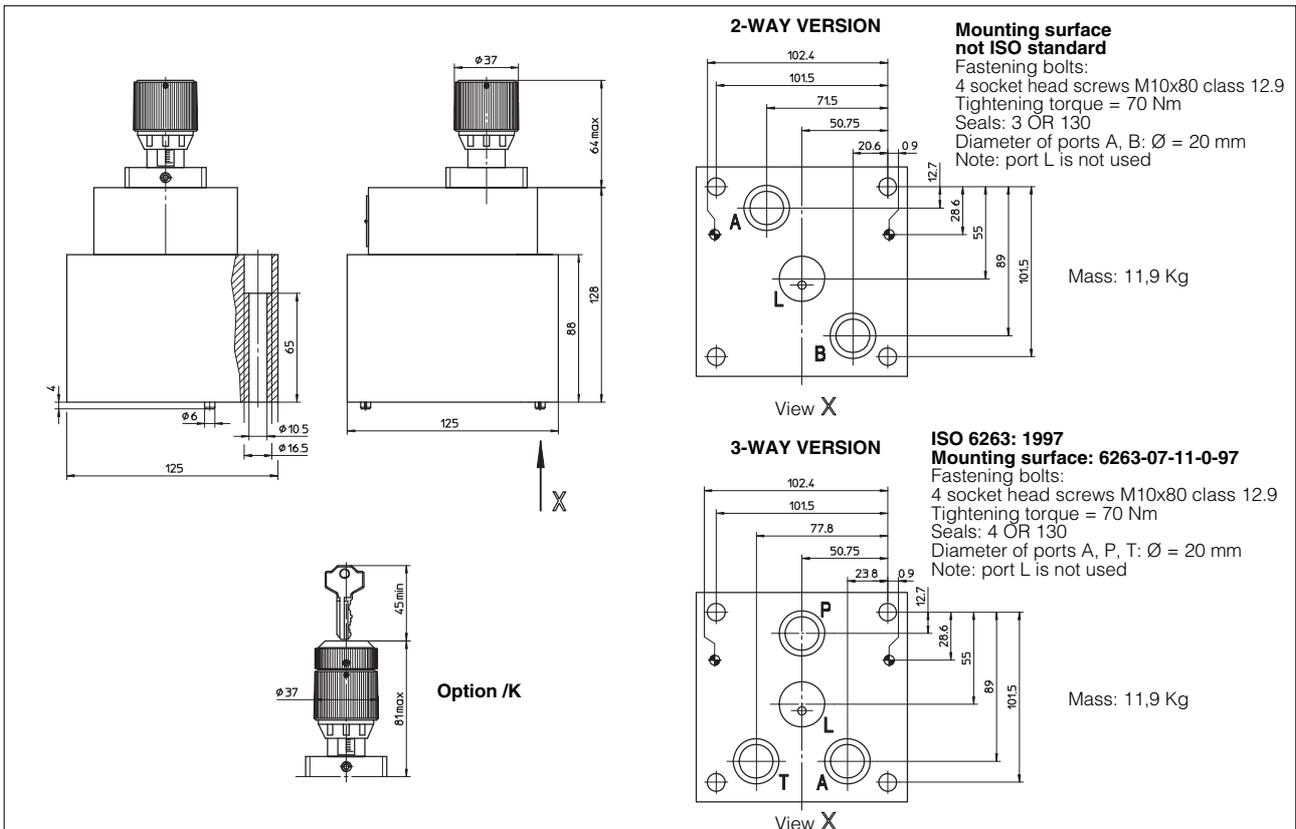
- 5 = QV-20/2



**6 DIMENSIONS OF QV-10 [mm]**



**7 DIMENSIONS OF QV-20 [mm]**



**8 MOUNTING SUBPLATES**

Valve	Subplate model	Port location	Ports A, B, P, T	$\varnothing$ 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-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.