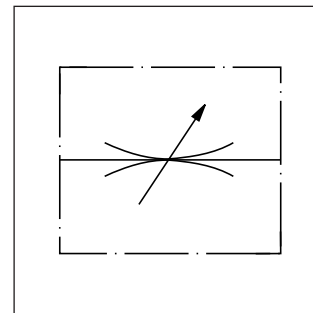
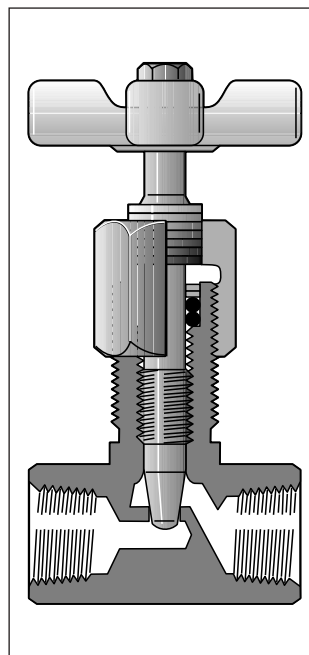


Manatrol needle valve, optional with 30° poppet, V-notch, or rectangular slot. The form of the throttle opening influences the accuracy of the flow setting, which depends on the pressure and viscosity. The needle is made of stainless steel and corresponds to a ring gap in the valve body.



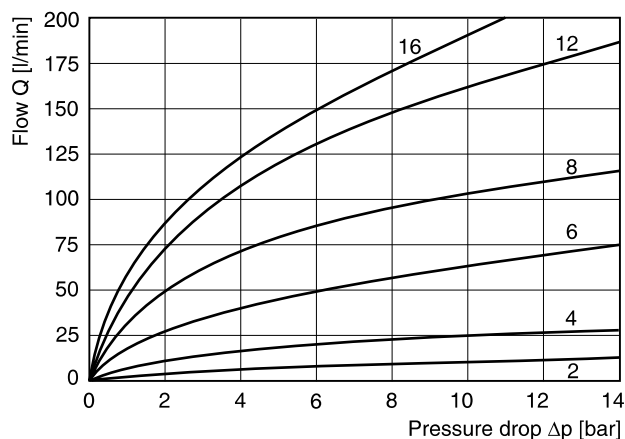
$$\text{Flow rate } Q \text{ [l/min]} = K_v \cdot \sqrt{\frac{\Delta p}{\gamma}}$$

K_v from the table
 Δp [bar]
 γ [kg/dm³] = specific weight of the medium
 (γ for mineral oil = 0.85 - 0.9)

Technical data

Size	Max. pressure [bar]		Flow [l/min] Δp 10bar	Max. cross. sect. [cm ²] Δp 10bar	Kv factor valve open	Weight [kg]
	steel	brass				
200	350	140	11	0.07	3.5	0.13
400	350	140	25	0.14	6.3	0.31
600	350	140	65	0.37	18.5	0.54
800	350	140	105	0.55	27.5	0.95
1200	350	-	160	0.90	45.7	1.58
1600	210	-	190	1.10	54.6	1.9
Size and needle type						
200-2			7			
200-3			2			
400-2			11			

$\Delta p/Q$ curves



All characteristic curves measured with HLP46 at 50°C.

Ordering code

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> <p>Thread type</p>	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> MV </div> <p>Needle valve</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> <p>Size and design</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> <p>Body</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> <p>Needle</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> <p>Seal</p>
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Code	Thread
omit	NPTF
9	BSPP

Straight way valve code	Size	Angle valve code
200	1/8	261
400	1/4	461
600	3/8	661
800	1/2	861
1200	3/4	1261
1600	1	—

Code	Seal
omit	NBR
V	FPM

Code	Body
S	Steel
B ¹⁾	Brass

¹⁾ not for models MV 1200/1600 and design „61“

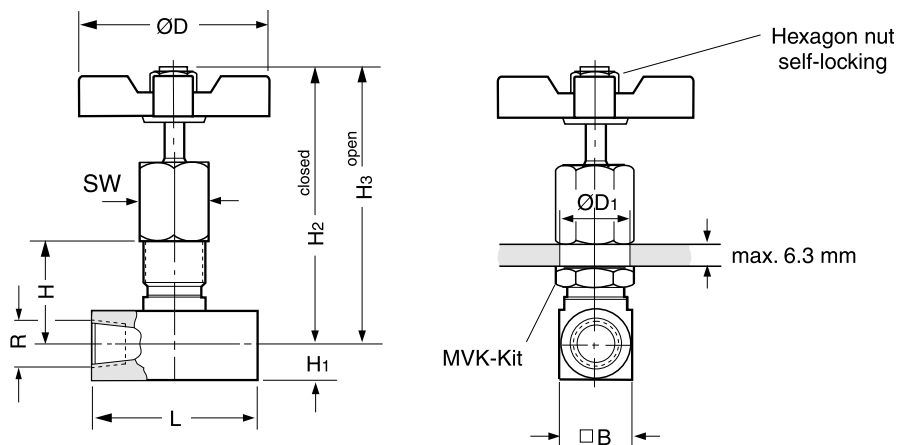
Code	Needle
omit	Standard with 30° taper
2 ²⁾	Fine due to V-notch
3 ²⁾	Micro-fine due to rect. slot

²⁾ only for size 400

**Bold letters =
Short-term availability**

Dimensions

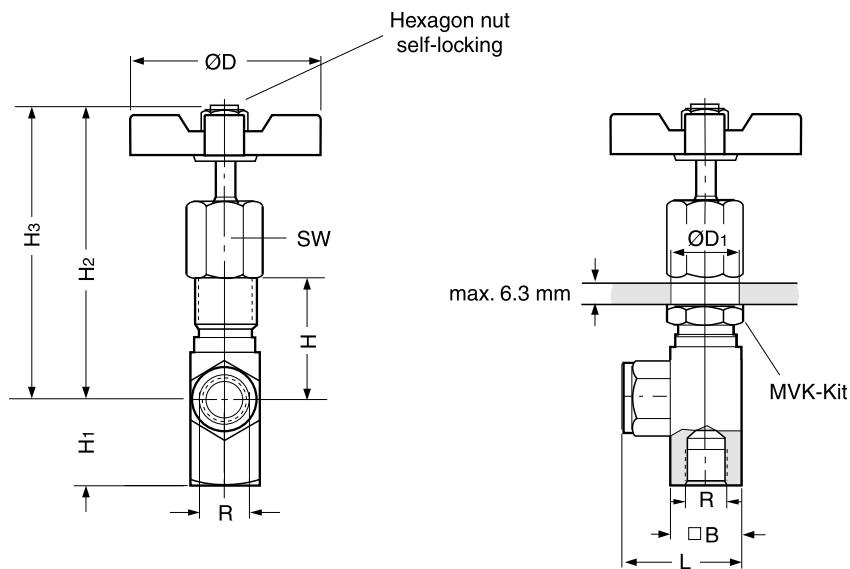
Series MV*00 valve with connecting thread in-line



Size	R*	H	H3	H2	H1	B	ØD1	L	ØD	SW	MVK sets
2	1/8	24	69	64	8	16	15	38	45	15.7	MVK 2
4	1/4	33	86	81	10.5	21	20	51	51	22.1	MVK 4
6	3/8	38	108	100	13	26	23	64	64	25.4	MVK 6
8	1/2	51	130	117	16	32	29	67	83	31.8	MVK 8
12	3/4	54	142	128	19	38	36	83	98	41.2	MVK 12
16	1	60	147	133	22.5	45	36	108	98	41.2	MVK 16

* Pipe thread G or NPTF

Series MV*61 angle valve with connections at 90° angle

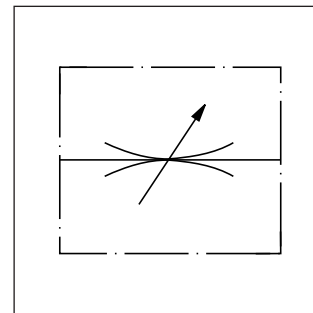
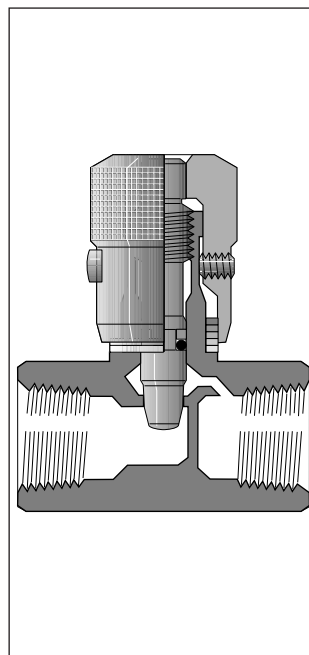


Size	R*	H	H3	H2	H1	B	ØD1	L	ØD	SW
2	1/8	27	72	67	20.6	16	15	27	45	15.7
4	1/4	36	90	85	27.7	21	20	38	51	22.1
6	3/8	42	111	103	34.8	26	23	45	64	25.4
8	1/2	55	134	121	42.7	32	29	53	83	31.8
12	3/4	59	147	133	41.1	38	36	64	98	41.2

* Pipe thread G or NPTF

MV-9MV_UK.INDD RH_17.05.10

Manatrol stop and throttle valves with 2-stage needle cone. Fine adjustment for the first stage can be achieved with 3 rotations of the adjustment knob. The second stage with normal throttle characteristics is achieved with 3 further rotations. A cylindrical needle with a rectangular slot is provided to reduce the viscosity effect for sizes 200 up to 600. The flow is dependent on pressure and viscosity.



$$\text{Flow rate } Q \text{ [l/min]} = K_v \cdot \sqrt{\frac{\Delta p}{\gamma}}$$

K_v from the table
 Δp [bar]
 γ [kg/dm³] = specific weight of the medium
 (γ for mineral oil = 0.85 - 0.9)

Specifications

Return check poppet	0.4 bar
Nominal cracking pressure	
Operating temperature	-40°C to +121°C

Technical data (only for standard 2 stage needle)

Size	Steel	Brass	Flow [l/min]	Max. cross section	Kv factor valve	Weight [kg]
200	350	140	11	0.066	3.3	0.15
400	350	140	25	0.13	6.3	0.22
600	350	140	40	0.22	11.2	0.6
800	350	140	50	0.28	13.9	0.63
1200	350	140	120	0.70	35.4	1.04
1600	210	35	250	1.48	75	2.13

Ordering code

	N					
	Thread type	Needle valve	Thread size	Body	Needle	Clamping screw

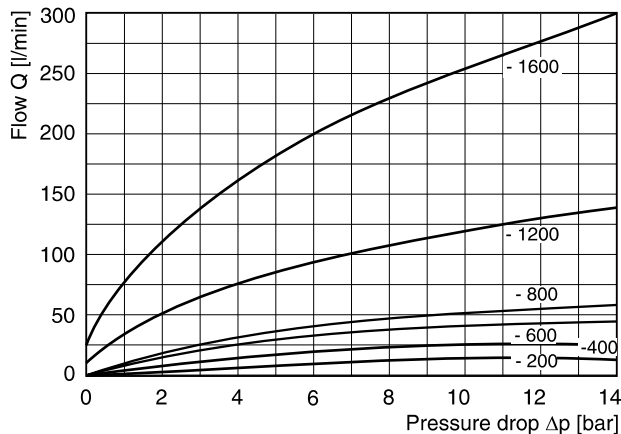
<table border="1" style="width: 100%;"> <tr><th>Code</th><th>Thread</th></tr> <tr><td>omit</td><td>NPTF</td></tr> <tr><td>9</td><td>BSPP</td></tr> </table>	Code	Thread	omit	NPTF	9	BSPP	<table border="1" style="width: 100%;"> <tr><th>Code</th><th>Size</th></tr> <tr><td>200</td><td>1/8</td></tr> <tr><td>400</td><td>1/4</td></tr> <tr><td>600</td><td>3/8</td></tr> <tr><td>800</td><td>1/2</td></tr> <tr><td>1200</td><td>3/4</td></tr> <tr><td>1600</td><td>1</td></tr> </table>	Code	Size	200	1/8	400	1/4	600	3/8	800	1/2	1200	3/4	1600	1	<table border="1" style="width: 100%;"> <tr><th>Code</th><th>Seal</th></tr> <tr><td>omit</td><td>NBR</td></tr> <tr><td>V</td><td>FPM</td></tr> </table>	Code	Seal	omit	NBR	V	FPM	<table border="1" style="width: 100%;"> <tr><th>Code</th><th>Clamping screw</th></tr> <tr><td>omit</td><td>Hexagon socket</td></tr> <tr><td>F</td><td>With knurled knob</td></tr> <tr><td>T</td><td>Tamper-proof</td></tr> </table>	Code	Clamping screw	omit	Hexagon socket	F	With knurled knob	T	Tamper-proof
Code	Thread																																				
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**Bold letters =
Short-term availability**

* only for sizes 200 to 600

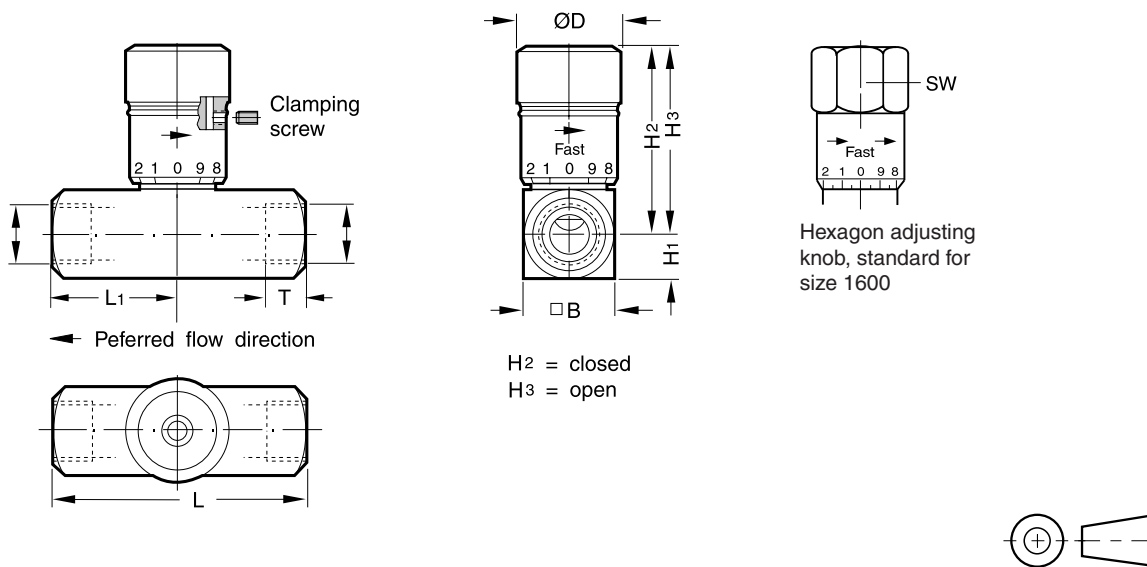
10

p/Q curves



All characteristic curves measured with HLP46 at 50°C.

Dimensions



10

Size	R* Threads	H3	H2	H1	B	L1	L	ØD	SW
200	1/8	39	35	8	16	16	38	19	-
400	1/4	46	40	10.5	21	25	51	21	-
600	3/8	55	49	13	26	32	64	25	-
800	1/2	69	61	16	32	33	67	30	-
1200	3/4	86	71	19	38	41	83	35	-
1600	1	124	107	22.5	45	54	108	-	47.8

* G or NPTF