

# FLOW ADJUST

Standard and high resolution manual control valves for extremely precise control in low flow

## > Introduction

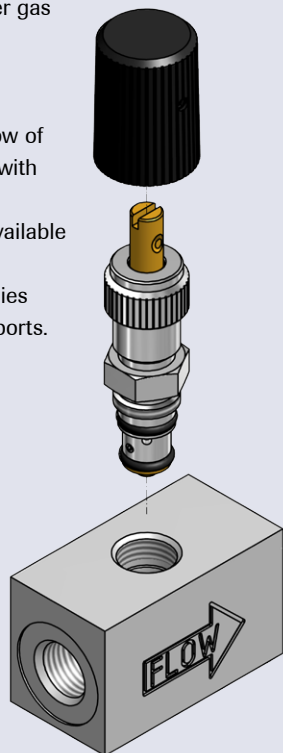
Bronkhorst High-Tech B.V., the European market leader in thermal Mass Flow Meters/Controllers and Electronic Pressure Controllers, has many years of experience in designing and manufacturing precise and reliable measurement and control devices. With a wide range of instruments, Bronkhorst offers innovative solutions for many different applications in many different markets.

## > Description

The new FLOW-ADJUST manual control valves are designed for extremely precise control in low flow gas and liquid applications. The manual control valves are available in two standard resolution (SR) and five high resolution (HR) models offering a smooth control of gas or liquid flow. The standard resolution needle valves cover the two highest flow ranges whereas the high resolution valves cover the lower gas and liquid flow ranges.

## > FLOW-ADJUST series

The FLOW-ADJUST series control the flow of gases and liquids which are compatible with the wetted parts specified in this leaflet. Kv ranges from  $2.7 \times 10^{-4}$  to  $9.0 \times 10^{-2}$  are available (Cv equivalent  $3.2 \times 10^{-4}$  to  $1.05 \times 10^{-1}$ ) in 7 different models as in-line valve assemblies with G 1/4" BSPP female inlet and outlet ports.



## > Features of SR valve

- ◆ Compact needle valve in aluminium housing
- ◆ Leak-free valve
- ◆ Precise flow adjustment with 7-turn standard resolution
- ◆ Valve knob included for easy adjustment
- ◆ Two M4 female threads in the bottom of the housing for solid fixation
- ◆ Suitable for gases and liquids

## > Features of HR valve (additional to SR)

- ◆ Spring loaded, non rising adjustment stem with 56-pitch thread provides smooth, non-reversing flow characteristics and 15-turn high resolution
- ◆ Non-rotating stainless steel valve pin with precision ground flat gives exact control
- ◆ Valve pin o-ring guarantees positive shut-off without stem damage
- ◆ Self-lubricating orifice liner assures long life

## > Technical specifications

### Ratings

Pressure rating	: 0...10 bar(g), 0...150 psi(g)
Temperature rating	: 0...70°C, 32...158°F

### Mechanical specifications

Connections (in/out)	: G 1/4" BSPP female
Closing	: Clockwise
Materials (wetted parts)	
Body	: Aluminium
Needle	: SS316
Valve needle holder	: Brass
O-rings	: Buna-N
Orifice	: Brass with Fluorosint® liner
Resolution SR series	: 7 turns
Resolution HR series	: 15 turns

### Leak integrity

Each valve is thoroughly tested to a bubble tight shut-off <sup>1</sup>

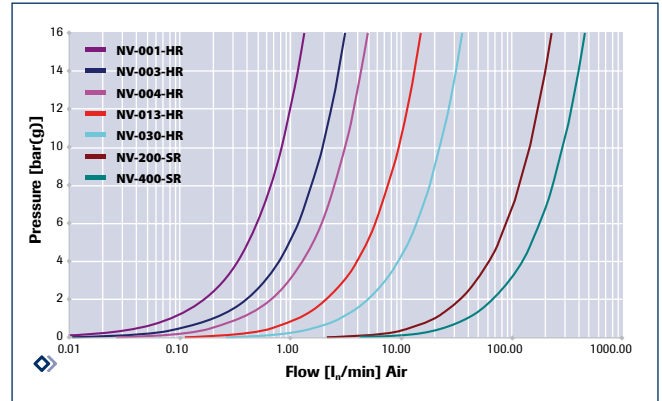
Note: excessive force used to achieve positive shut-off can deform or score the sealing surface in the valve

<sup>1</sup> tested with new unused needle valves

## > Capacity based on Air

(typical p1=1 bar(g), p2=0 bar(g), p1=14.5 psi(g), p2=0 psi(g))

Modelcode	Capacity	
NV-001-HR	0.08 l <sub>n</sub> /min	0.08 SLM
NV-003-HR	0.3 l <sub>n</sub> /min	0.3 SLM
NV-004-HR	0.4 l <sub>n</sub> /min	0.4 SLM
NV-013-HR	1.3 l <sub>n</sub> /min	1.3 SLM
NV-030-HR	3 l <sub>n</sub> /min	3 SLM
NV-200-SR	20 l <sub>n</sub> /min	20 SLM
NV-400-SR	40 l <sub>n</sub> /min	40 SLM



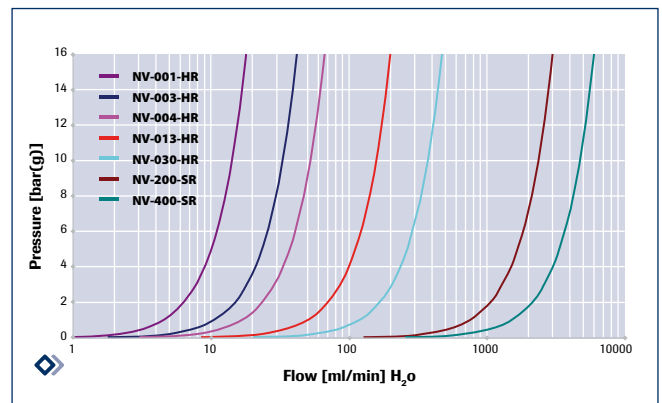
## > Available models

Modelcode	Description	Kv	Cv
NV-001-HR	High Resolution needle valve for gases and liquids	2.7E <sup>-4</sup>	3.2E <sup>-4</sup>
NV-003-HR	High Resolution needle valve for gases and liquids	6.3E <sup>-4</sup>	7.3E <sup>-4</sup>
NV-004-HR	High Resolution needle valve for gases and liquids	1.0E <sup>-3</sup>	1.2E <sup>-3</sup>
NV-013-HR	High Resolution needle valve for gases and liquids	3.0E <sup>-3</sup>	3.5E <sup>-3</sup>
NV-030-HR	High Resolution needle valve for gases and liquids	7.1E <sup>-3</sup>	8.3E <sup>-3</sup>
NV-200-SR	Standard Resolution needle valve for gases and liquids	4.5E <sup>-2</sup>	5.3E <sup>-2</sup>
NV-400-SR	Standard Resolution needle valve for gases and liquids	9.0E <sup>-2</sup>	1.05E <sup>-1</sup>

## > Capacity based on Water

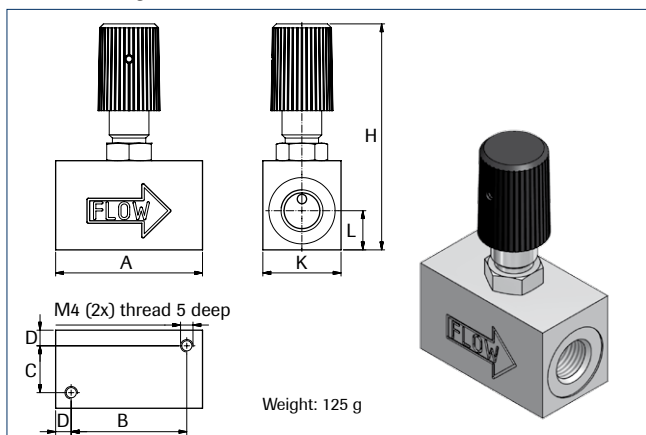
(typical p1=1 bar(g), p2=0 bar(g), p1=14.5 psi(g), p2=0 psi(g))

Modelcode	Capacity	
NV-001-HR	4.5 ml/min	0.07 GPH
NV-003-HR	10.5 ml/min	0.16 GPH
NV-004-HR	16.6 ml/min	0.26 GPH
NV-013-HR	50 ml/min	0.7 GPH
NV-030-HR	118 ml/min	1.8 GPH
NV-200-SR	750 ml/min	11 GPH
NV-400-SR	1500 ml/min	23 GPH



## > Dimensions

### Standard and High Resolution



Model	A	B	C	D	H	K	L
NV-001, 003, 004, 013, 030-HR	47	37	15	5	75	25	12.5
NV-200, 400-SR	47	37	15	5	68	25	12.5

Dimensions in mm.

Bronkhorst distributor



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