

Fine-adjusting valve VMV

TECHNICAL INFORMATION

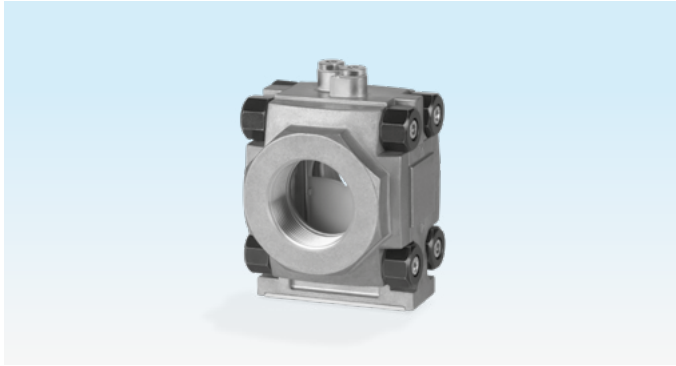
- Precise setting via a slide valve optimized for linear flow
- Tamper-proof thanks to self-locking thread
- Easy installation into a system in conjunction with valVario valves and regulators
- Suitable for hydrogen



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1 Application



Fine-adjusting valve VMV for presetting the gas and air flow rate to gas burners or gas appliances. For use in gas control and safety systems in all sectors of the iron, steel, glass and ceramics industries, and also in commercial heat generation.

It can easily be adapted to different pipes thanks to the selection of various flanges for individual valve sizes. The modular design allows the individual assembly with val-Vario valves or regulators making it possible to construct space-saving gas systems.

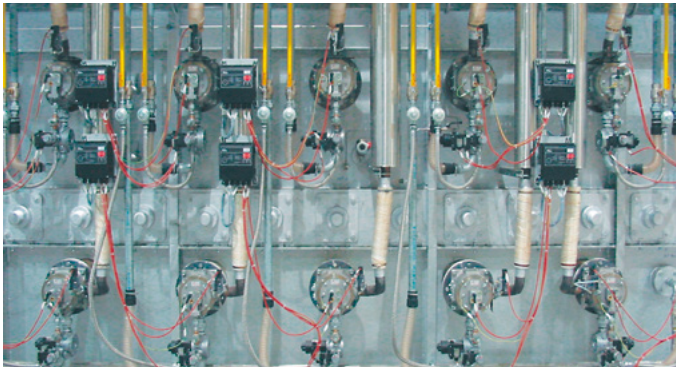


VMV attached to the flow rate regulator VAH

1.1 Application examples

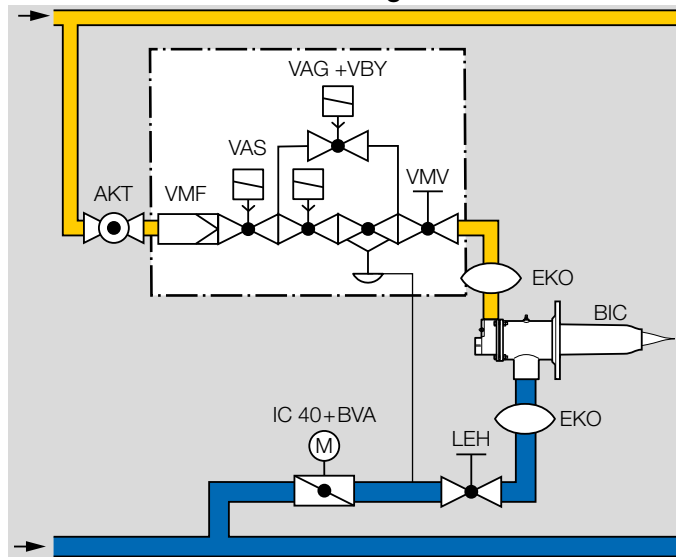


Bogie hearth furnace



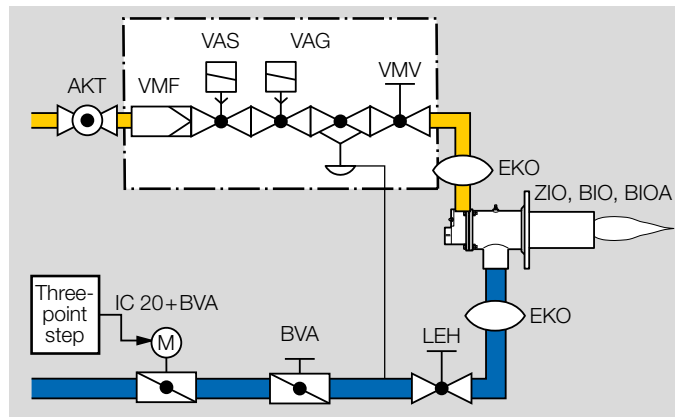
Roller hearth furnace

1.1.1 Industrial burner with staged control



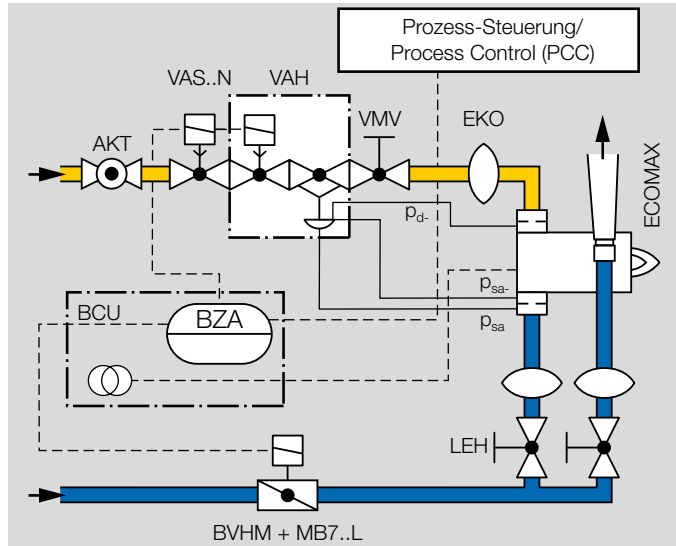
The high output pulse frequency at the burner generated by this type of control produces a uniform temperature distribution and good circulation of the furnace or kiln atmosphere, e.g. in heat treatment furnaces in the iron and non-ferrous metal industries or kilns for heavy clay and fine ceramics. The required lambda value can be set using the fine-adjusting valve VMV and the air adjusting cock LEH. Using the filter module VMF, the gas flow upstream of the gas valve VAS is cleaned.

1.1.2 Industrial burner with continuous control



Using the filter module VMF, the gas flow upstream of the gas valve VAS and the air/gas ratio control VAG is cleaned. The gas/air mixture is set using the fine-adjusting valve VMV. A constant mixture setting is maintained over a wide turn-down range while at the same time preventing low air pressure. This type of control is used on boilers with multi-stage or infinitely adjustable forced draught burners, in melting furnaces in the aluminium industry or in regenerative incineration installations in the environment industry, for example.

1.1.3 Continuous control of a self-recuperative burner



The air flow rate is measured by a measuring orifice on the burner and the VAH controls the gas flow rate proportionally. The required lambda value can be set using the fine-adjusting valve VMV.

2 Certification

2.1 Certificate download

Certificates – see www.docuthek.com

2.2 Declaration of conformity



We, the manufacturer, hereby declare that the products VAS.../VAD/VAG/VAV/VAC/VAH/VBY/VRH/VMF/VMV/VMO with product ID No. CE-0063BO1580 comply with the requirements of the listed Directives and Standards.

Directives:

- 2014/35/EU – LVD
- 2014/30/EU – EMC
- 2011/65/EU – RoHS II
- 2015/863/EU – RoHS III

Regulation:

- (EU) 2016/426 – GAR

Standards:

- EN 161:2011+A3:2013
- EN 88-1:2011+A1:2016
- EN 126:2012
- EN 1854:2010

The relevant product corresponds to the tested type sample.

The production is subject to the surveillance procedure pursuant to Regulation (EU) 2016/426 Annex III paragraph 3.

Elster GmbH

2.3 UKCA certified



Gas Appliances (Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019)

EN 161:2011+A3:2013, EN 88-1:2011+A1:2016, EN 126:2012, EN 1854:2010

2.4 Eurasian Customs Union



The products VMV meet the technical specifications of the Eurasian Customs Union.

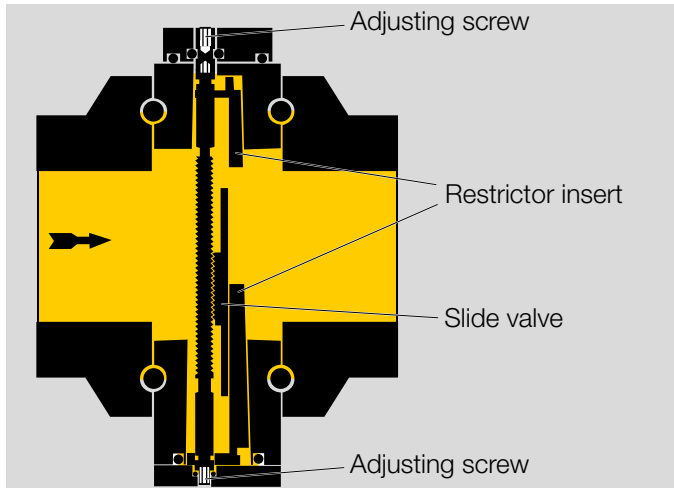
2.5 REACH Regulation

The device contains substances of very high concern which are listed in the Candidate List of the European REACH Regulation No. 1907/2006. See Reach list HTS at www.docuthek.com.

2.6 China RoHS

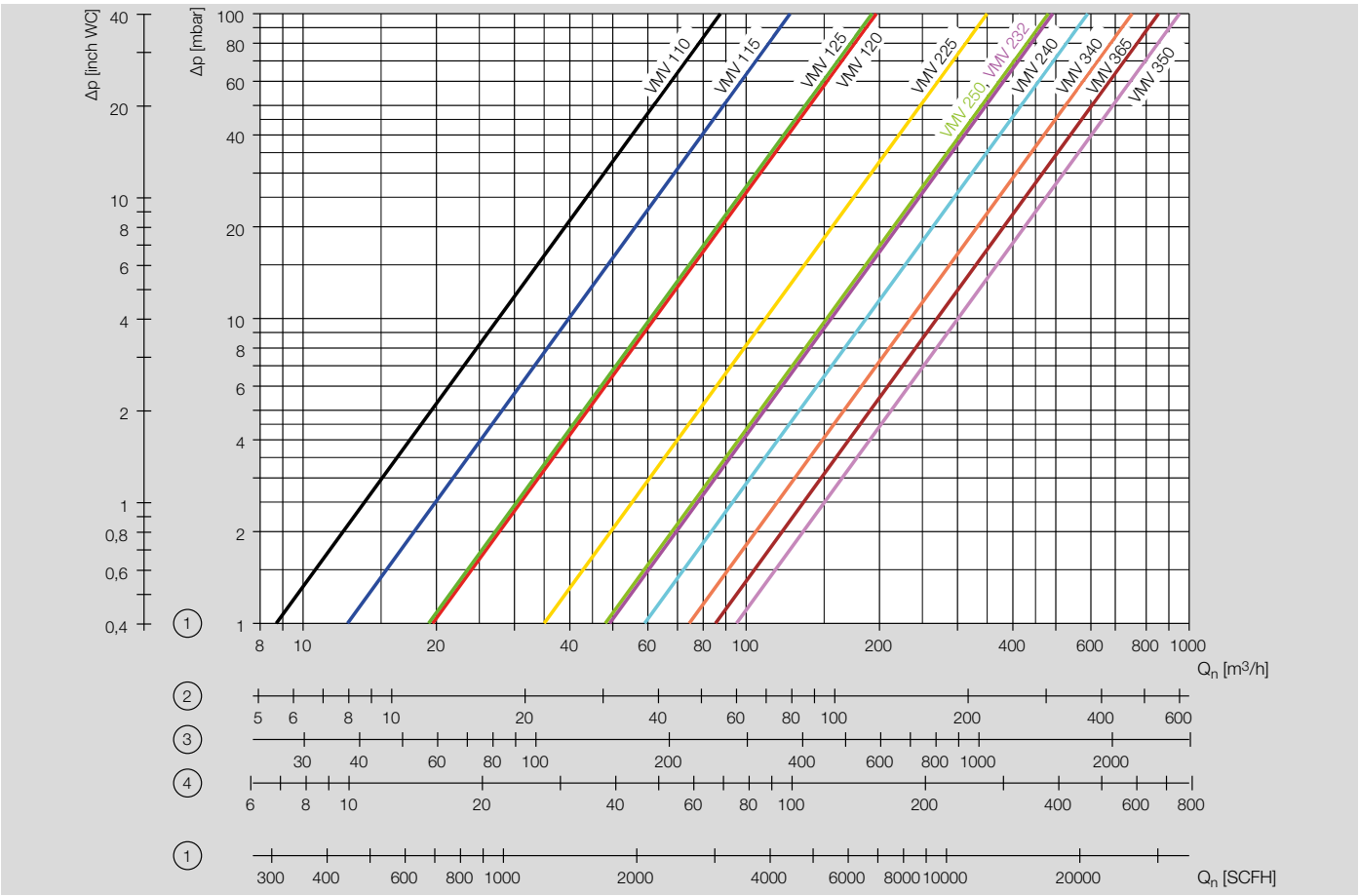
Directive on the restriction of the use of hazardous substances (RoHS) in China. Scan of the Disclosure Table China RoHS2, see certificates at www.docuthek.com.

3 Function



There is a restrictor insert with an adjusting screw and a slide valve in the housing of the VMV. The restrictor insert features an opening specially designed for linear flow which is opened and closed by the slide valve. A circumferential sealing ring on the restrictor insert reduces the leakage flow. The slide valve can be exactly positioned from two sides using the adjusting screw, thus enabling the release of the required flow rate.

4 Flow rate



- 1 = natural gas ($\rho = 0.80 \text{ kg/m}^3$)
- 2 = propane ($\rho = 2.01 \text{ kg/m}^3$)
- 3 = hydrogen ($\rho = 0.09 \text{ kg/m}^3$)
- 4 = air ($\rho = 1.29 \text{ kg/m}^3$)

The characteristic curves are measured at 15°C (59°F) with a measurement set-up in accordance with the standards EN 13611/EN 161.

4 Flow rate

This involves measuring the pressure 5 x DN upstream and downstream of the unit under test. The pressure drop of the pipe is also measured but is not compensated for.

Max. flow rate when 100% open.

4.1 Calculating the nominal size

A web app for calculating the nominal size is available at www.adlatus.org.

5 Selection

Option	VMV 1	VMV 2	VMV 3
DN – inlet	10, 15, 20, 25	25, 32, 40, 50	40, 50, 65
DN – outlet ¹⁾	10, 15, 20, 25	25, 32, 40, 50	40, 50, 65
Pipe connection	R, N	R, N, F ²⁾	R, N, F ²⁾
Inlet pressure	05	05	05
Pressure measuring point	M, P	M, P	M, P

¹⁾ Specification omitted, if the nominal diameter of the inlet and outlet flanges is the same.

²⁾ Only available for VMV 240/VMV 350.

Order example

VMV 1-25R05M

5.1 Type code

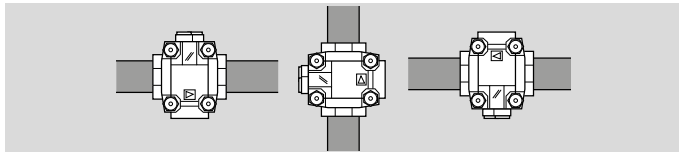
VMV	Fine-adjusting valve
1-3	Sizes
10-65	Inlet and outlet flange nominal size
R	Rp internal thread
N	NPT internal thread
F	Flange to ISO 7005
05	p _u max. 500 mbar
P	Screw plugs
M	Test nipple

5.2 ProFi

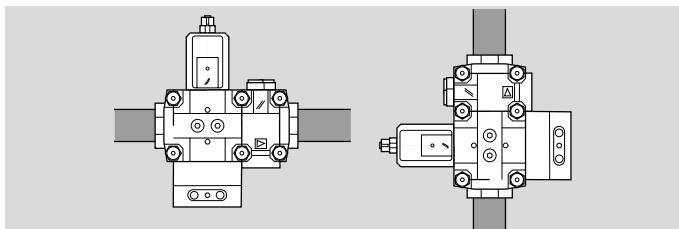
A web app selecting the correct product is available at www.adlatus.org.

6 Project planning information

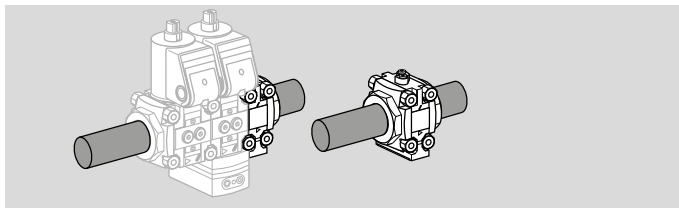
6.1 Installation



Installation position: VMV can be installed as required.

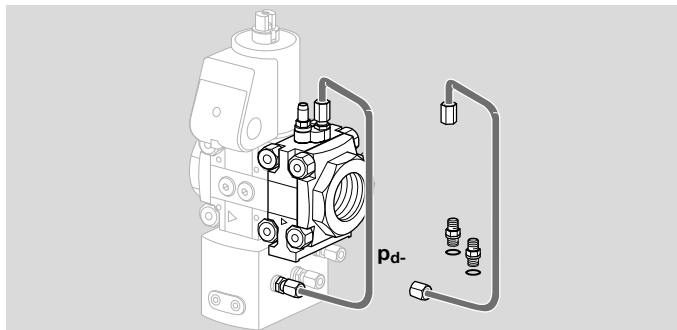


When fitting to pressure regulator VAD, VAG, VAV or VAH, the base plate must be facing the same direction as the regulator body.



Installation position when using valVario controls: VMV should be installed downstream of the valVario control or as a standalone device.

6.2 VAH and VMV with prefabricated impulse line



Fine-adjusting valve VMV can be installed on the flow rate regulator VAH for fine adjustment of the gas flow rate.

The gas control line for gas outlet pressure p_d is available with two 1/8" compression fittings, see page 13 (7.3 Gas control line).

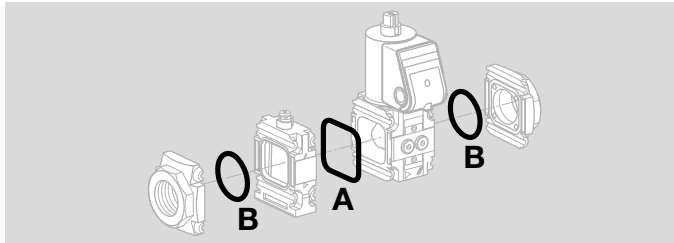
6.3 Hydrogen



Other hydrogen-compatible products can be found here: [Technical Information, Products for hydrogen](#).

7 Accessories

7.1 Seal set VA 1–3



The seal set VA is available for retrofitting the VMV to a val-Vario control.

Seal set for size 1: Order No. 74921988

Seal set for size 2: Order No. 74921989

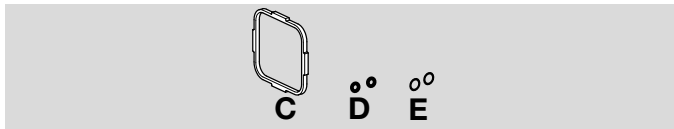
Seal set for size 3: Order No. 74921990

Scope of delivery:

A 1 x double block seal

B 2 x shaped rings (VA 1) for flange or 2 x O-rings (VA 2–3) for flange

The following components are not necessary when mounting the VMV:

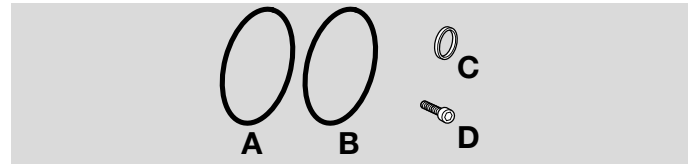


C 1 x retaining frame

D 2 x O-rings (pressure switch)

E 2 x sealing rings (flat sealing), 2 x profiled sealing rings

7.2 Seal set VMO/VMV



Seal set VMO/VMV 1 /B: 74924936

Seal set VMO/VMV 2 /B: 74924937

Seal set VMO/VMV 3 /B: 74926024

Scope of delivery:

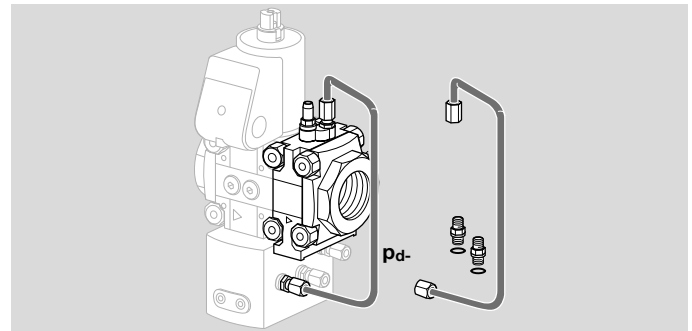
A 1 x O-ring (baseplate)

B 1 x O-ring (restrictor insert)

C 2 x profiled sealing rings

D 2 x or 4 x set screws

7.3 Gas control line



Gas control line VAH 1 /B: Order No. 74924458

Gas control line VAH 2 /B: Order No. 74924459

Gas control line VAH 3 /B: Order No. 74926055

8 Technical data

Gas types:

natural gas, LPG (gaseous), biogas (max. 0.1 %-by-vol. H_2S), hydrogen or air; other gases on request.

The gas must be dry in all conditions and must not contain condensate.

Max. inlet pressure p_u :

500 mbar (7.25 psig).

Medium and ambient temperatures:

-20 to +60°C (-4 to +140°F), no condensation permitted.

Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

Storage temperature: -20 to +40°C (-4 to +104°F).

Housing: aluminium.

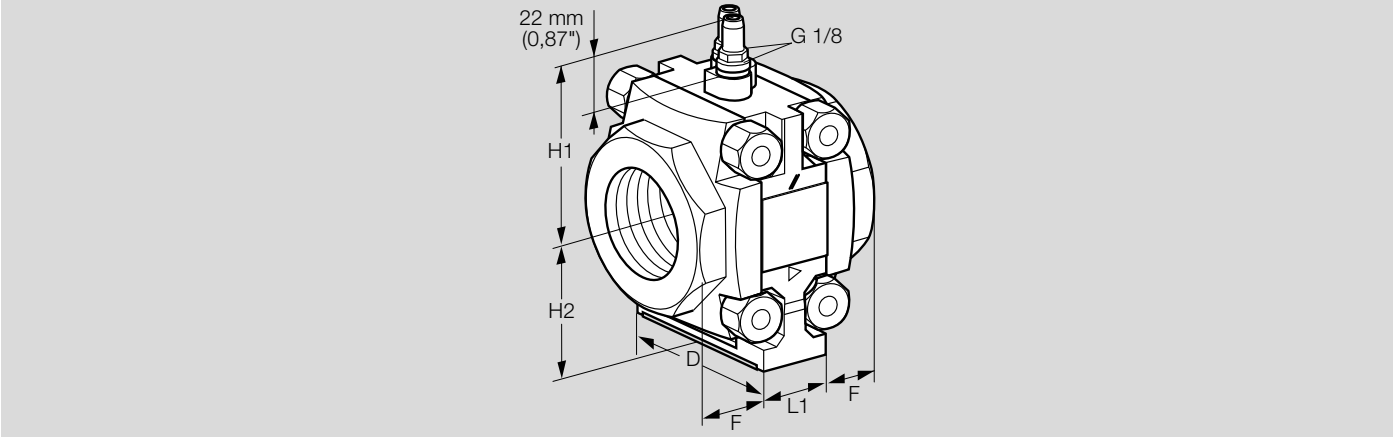
Connection flanges:

with internal thread: Rp to ISO 7-1, NPT to ANSI/ASME,

with ISO flange: DN 40 and DN 50 to ISO 7005.

8.1 Dimensions

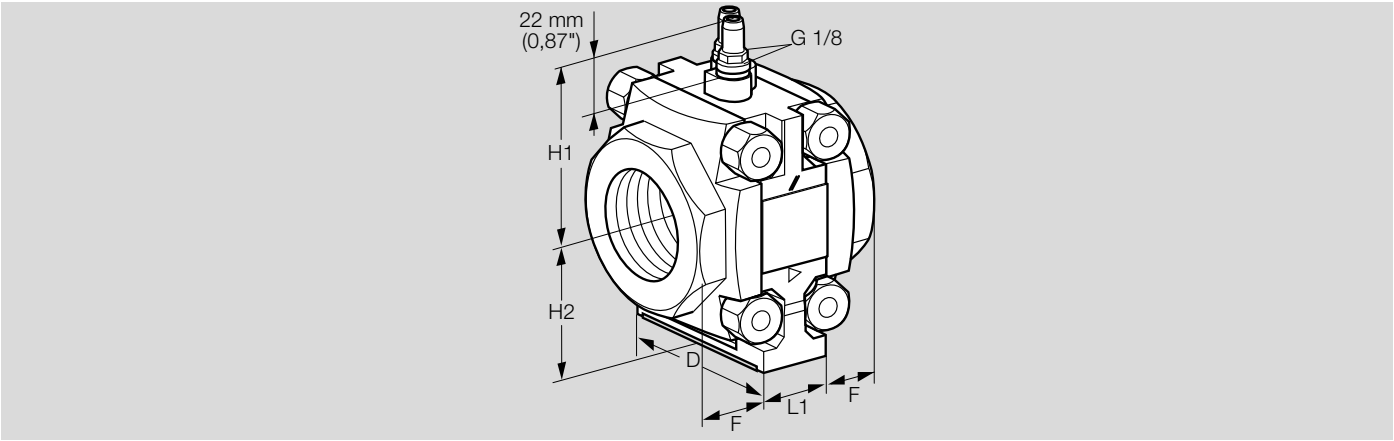
8.1.1 VMV..R



Type	Connection		Dimensions					Q _{air} for Δp = 1 mbar	k _V max.	Weight*
	Rp	DN	L1 mm	F mm	D mm	H1 mm	H2 mm	m ³ /h	m ³ /h	kg
VMV 110	3/8	10	30	15	62.7	69.1	44.2	7.0	8.0	0.212
VMV 115	1/2	15	30	15	62.7	69.1	44.2	10.0	11.5	0.212
VMV 120	3/4	20	30	23	62.7	69.1	44.2	15.7	18.0	0.212
VMV 125	1	25	30	23	62.7	69.1	44.2	15.3	17.6	0.212
VMV 225	1	25	34	29	88	82.8	64.6	27.9	32.0	0.460
VMV 232	1¼	32	34	29	88	82.8	64.6	39.2	45.0	0.460
VMV 240	1½	40	34	29	88	82.8	64.6	47.0	54.0	0.460
VMV 250	2	50	34	29	88	82.8	64.6	38.3	44.0	0.460
VMV 340	1½	40	36	36	106	94.6	77.5	59.2	68.0	1.3
VMV 350	2	50	36	36	106	94.6	77.5	75.8	87.0	1.3
VMV 365	2½	65	36	36	106	94.6	77.5	67.9	78.0	1.3

* Without flanges and connection parts

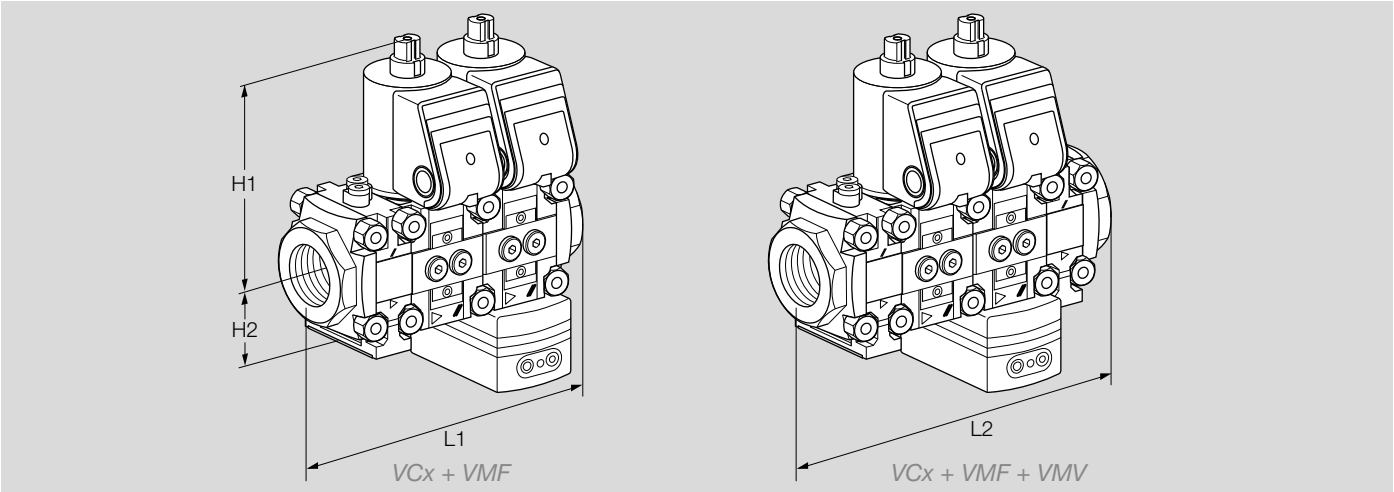
8.1.2 VMV..N



Type	Connection		Dimensions					Q _{air} for Δp = 0.04 "WC	Weight*
	NPT	DN	L1 inch	F inch	D inch	H1 inch	H2 inch		
VMV 110	3/8	10	1.18	0.59	2.47	2.72	1.74	246	0.47
VMV 115	1/2	15	1.18	0.59	2.47	2.72	1.74	353	0.47
VMV 120	3/4	20	1.18	0.91	2.47	2.72	1.74	552	0.47
VMV 125	1	25	1.18	0.91	2.47	2.72	1.74	540	0.47
VMV 225	1	25	1.34	1.14	3.46	3.26	2.55	982	460
VMV 232	1¼	32	1.34	1.14	3.46	3.26	2.55	1381	1.01
VMV 240	1½	40	1.34	1.14	3.46	3.26	2.55	1657	1.01
VMV 250	2	50	1.34	1.14	3.46	3.26	2.55	1350	1.01
VMV 340	1½	40	1.42	1.42	4.17	3.72	3.05	2087	2.86
VMV 350	2	50	1.42	1.42	4.17	3.72	3.05	2670	2.86
VMV 365	2½	65	1.42	1.42	4.17	3.72	3.05	2394	2.86

* Without flanges and connection parts

8.1.3 VCx with VMF and VMV



Type	[mm]			
	L1	L2	H1	H2
VMF 110	150	180	143	32
VMF 115	150	180	143	32
VMF 120	166	196	143	32
VMF 125	166	196	143	32
VMF 225	230	264	170	47
VMF 232	230	264	170	47
VMF 240	230	264	170	47
VMF 250	230	264	170	47
VMF 340	274	310	180	59
VMF 350	274	310	180	59
VMF 365	274	310	180	59

Type	[inch]			
	L1	L2	H1	H2
VMF 110	5.9	7.1	5.63	1.26
VMF 115	5.9	7.1	5.63	1.26
VMF 120	6.5	7.7	5.63	1.26
VMF 125	6.5	7.7	5.63	1.26
VMF 225	9.1	10.4	6.69	1.85
VMF 232	9.1	10.4	6.69	1.85
VMF 240	9.1	10.4	6.69	1.85
VMF 250	9.1	10.4	6.69	1.85
VMF 340	10.8	12.2	7.09	2.3
VMF 350	10.8	12.2	7.09	2.3
VMF 365	10.8	12.2	7.09	2.3

9 Maintenance cycles

Check for external tightness at least once per annum, at least twice per annum for operation with biogas.

For more information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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