Pre-adjustable ball valve with drainage device

NexusValve
Initius

COMAP
Flamco

1. Safety instructions

Please read the instructions carefully before installation
The installation and initial operation of the assembly may be carried out only by an authorised specialist company.
Prior to starting work, familiarise yourself with all parts and how they are handled. The application examples in these operating instructions are ideas sketched out. Local laws and regulations have to be observed.

Target group:
These instructions are intended for authorised specialists exclusively. Work on the heating system, the potable water as well as gas and power network may be carried out by specialists only.

Please follow these safety instructions carefully in order to avoid hazards and damage to people and property.

1.1 Rules/regulations

Please observe the applicable accident prevention regulations, the environmental legislation and the legal rules for mounting, installation and operation. Moreover, please observe the appropriate guidelines of German standard DIN, EN, DVGW, VDI and VDE (including lightning protection) as well as all current relevant country-specific standards, laws and regulations. Old and newly enforced regulations and standards shall apply, if they are relevant for the individual case. Moreover, the regulations of your local energy supply company have to be observed.

Electrical connection:
Electrical wiring work may be carried out by qualified electricians only. The VDE regulations and the specifications of the relevant energy supply company have to be met.

Excerpt:
Installation and construction of heat generators as well as the drinking water heaters:
DIN EN 4753, Part 1: Water heater and water heating plants for potable and process water.
DIN EN 12828 Heating systems in buildings.
Allowed medium (cf. DIN EN 12828): Heating water according to VDI 2035 (non-corrosive), water-glycol mixtures with up to max. 50% glycol content.
DIN 18 421: Insulation work on technical plants
AV B Wa s V Regulations concerning the general conditions for the supply with water
DIN EN 806 ff.: Technical rules for potable water installation
DIN 1988 ff.: Technical rules for potable water installation (national addition)
DIN EN 1717: Protection of potable water against contaminations
DIN 4751: Safety equipment

Electrical connection:
VDE 0100: Erection of electrical equipment, grounding, protective conductor, potential equalisation conductor.
VDE 0701: Repair, modification and testing of electrical devices.
VDE 0185: General aspects on the erection of lightning protection systems.
VDE 0190: Main potential equalisation of electrical plants.
VDE 0855: Installation of antenna plants (shall apply mutatis mutandis).

Additional remarks:
VDI 6002 Sheet 1: General principles, system technology and use in house building
VDI 6002, Sheet 2: Use in students' hostels, retirement homes, hospitals, indoor swimming pools and on camping facilities

Caution:
Prior to any electrical wiring work on pumps and controls, these modules have to be disconnected from voltage correctly.

1.2 Intended use

Inexpert installation as well as use for a purpose not intended of the assembly shall rule out all warranty claims.
All shut-off valves may be closed by an approved specialist only in case of servicing as otherwise the safety valves are not effective.

Do not modify the electrical components, the construction or the hydraulic components! You will impair the safe function of the plant otherwise.

1.3 Initial operation

Prior to the initial operation, the plant has to be tested for tightness, correct hydraulic connection as well as accurate and correct electrical connection. In addition, the plant has to be flushed correctly and/as required in keeping with German standard DIN 4753. The initial operation has to be carried out by a trained specialist, which has to be recorded in writing. In addition, the settings have to be put down in writing. The technical documentation has to be available at the device.

1.4 Working on the system

The plant has to be de-energised and to be checked for the absence of voltage (such as on the separate fuse or a master switch). Secure the plant against unintentional restart. (If gas is used as fuel, close the gas shut-off valve and secure against unintentional opening.) Repair work on component parts with a safety-relevant function is impermissible.

1.5 Liability

These installation and operating instructions shall have to be handed to the customer. The executing and/or authorised tradesperson (such as fitter) shall have to explain the function and operation of the plant to the customer in an intelligible manner.

2. Introduction

NexusValve Initus

Shut off ball valve with pre-adjustment and drainage device

NexusValve Initus
DN 15 - DN 32
½" - 1 ¼"

2.1 Description

The NexusValve Initus is a compact shut off ball valve that also provides the option of throttling the flow as required by means of pre-adjustment. It can be used in all standard water-bearing heating and cooling systems.

Individual sections, lines or consumers can be easily shut off; in the event of any irregularities in the system supply, the excess supply of individual lines can be reduced by means of the integrated pre-adjustment mechanism. This automatically increases the flow of other, under-supplied system parts.

Of course, the pre-adjustments can also be determined in advance in order to balance the overall system.

2.2 Advantages

- Product range from DN 15 to DN 32 for heating and cooling systems
- Shut-off and pre-adjustment
- Compact model for installation in small spaces
- Valve installation can be independent of direction of flow
- Quick and simple pre-adjustment using hexagon socket wrench
- Precise and easily readable adjustment scale
- Simple flow shut-off with ball valve
- No change in settings during shut-off and renewed opening
- ON/OFF setting easily visible at a distance
- Non-rotating valve collar allows the bonding of insulation
- Insulation caps available

2.3 Design

The NexusValve Initus combines a shut-off function and pre-adjustment in a single fitting. The control spindle integrated in the ball valve of the NexusValve Initus enables pre-adjustment independent from the ball valve. The pre-adjustment is not lost when the fitting is opened or shut.

A line is shut off by simply rotating the valve handle of the NexusValve Initus by 90°. From the handle setting it is therefore easy to identify whether the valve is in an open or closed position. The compact design of the NexusValve Initus guarantees that the valve also fits perfectly in the smallest of spaces with restricted system access. The NexusValve Initus does not have any measurement points. For systems in which a flow reading is required, the NexusValve Fluctus or NexusValve Vertex should be used.

1 - Hexagon socket wrench for adjusting the flow
2 - Control spindle
3 - Ball valve for shutting off the flow
4 - Shut-off handle

2.4 Flow adjustment

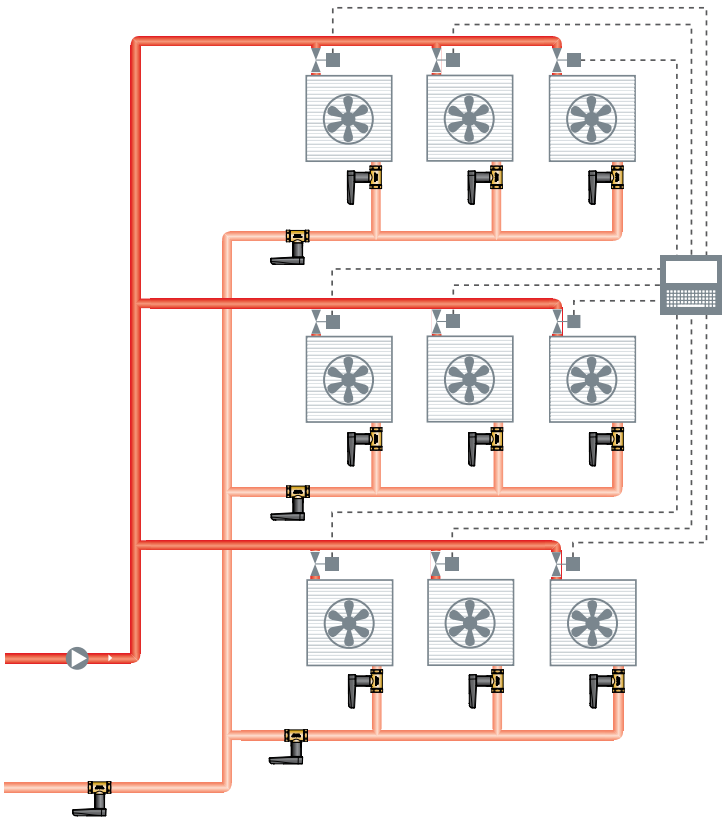
Our NexusValve software is available free of charge for configuring multiple valves. To calculate entire piping networks, the NexusValve data can be entered into the piping network calculation software.

2. Introduction

The NexusValve Initus does not have a prescribed direction of flow

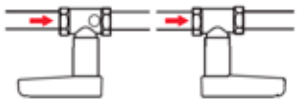
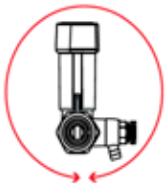
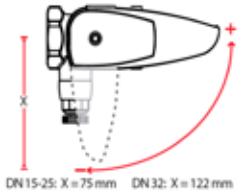
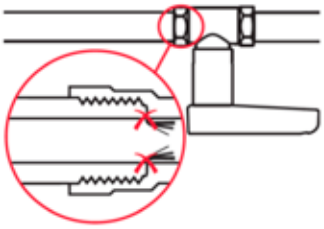
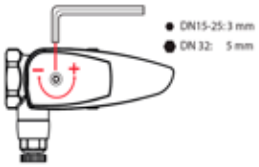
2.5 Operation

The NexusValve Initus is used as an independent shut-off valve with pre-adjustment. It allows individual system sections or consumers to be shut off. The flow can easily be adjusted as required. The integrated drainage device makes it possible to economise on an additional fill and drain ball valve.



The NexusValve Initus is used as an independent valve for shutting off and adjusting the flow.

2.6 Montage

	The NexusValve Initius can be installed regardless of the flow direction.
	The NexusValve Initius can be installed 360° around the pipe axis.
	Installation space is required to ensure the 90° isolation. The NexusValve Initius requires the specified installation space to perform isolation by the use of the quarter-turn handle..
	Loose hemps must not hang into the pipe
	Deburring of pipe ends is required to prevent system logging.
	Setting the valve is easily done using an Allen key. The valve is adjusted until the required flow is displayed on the flowmeter.

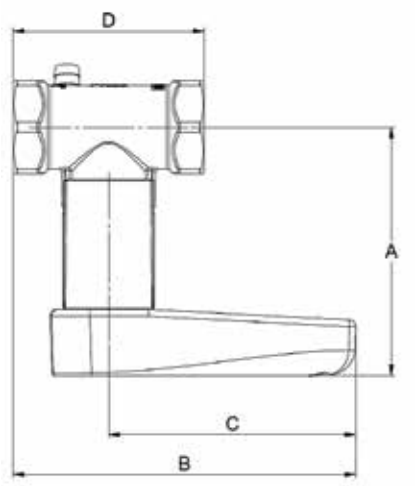
3. Product data sheet

3.1 Product overview

Flow range		Kvs m^3/h	Size
l/s	l/h		
0.005 - 0.147	19 - 530	1.71	DN 15
0.015 - 0.325	55 - 1170	4.40	DN 20
0.023 - 0.603	84 - 2170	7.46	DN 25
0.086 - 1.250	310 - 4500	13.50	DN 32

3.2 NexusValve Initus DN 15-32 female/female thread

Dimensions



Specifications

Maximum temperature	105°C (socket on fill and drain ball valve not more than 90°C for a long period)
Minimum temperature	-20°C
Pressure rating	PN25
Marking on valve	DN (handle & valve body) PN (valve body)
Connection	Female thread ISO 7/1 parallel
Valve body	CW617N (CuZn40Pb2)
Ball and needle	DR brass CW602N (chrome-plated)
Valve handle	Polyamide (PA 6.6 30% GF)
Seals	O-rings of EPDM Seals of PTFE O-rings of bleed valve of NBR

DN	A (mm)	B (mm)	C (mm)	D (mm)
15	76	103	75	58
20	78	106	75	64
25	82	113	75	76
32	109	165	121	89

Note! Information on insulation sections, press adaptors and other components can be found in the "Accessories" chapter

3. Product data sheet

Valve	Article	Nominal size Inches	Kvs m³/h	Flow range l/s	Flow range l/h
DN 15					
	MN80597.740	½"	1.71	0.005 - 0.147	19 - 530
DN 20					
	MN80597.741	¾"	4.40	0.015 - 0.325	55 - 1,170
DN 25					
	MN80597.742	1"	7.46	0.023 - 0.603	84 - 2,170
DN 32					
	MN80597.743	1 ¼"	13.50	0.086 - 1.250	310 - 4,500

3. Product data sheet

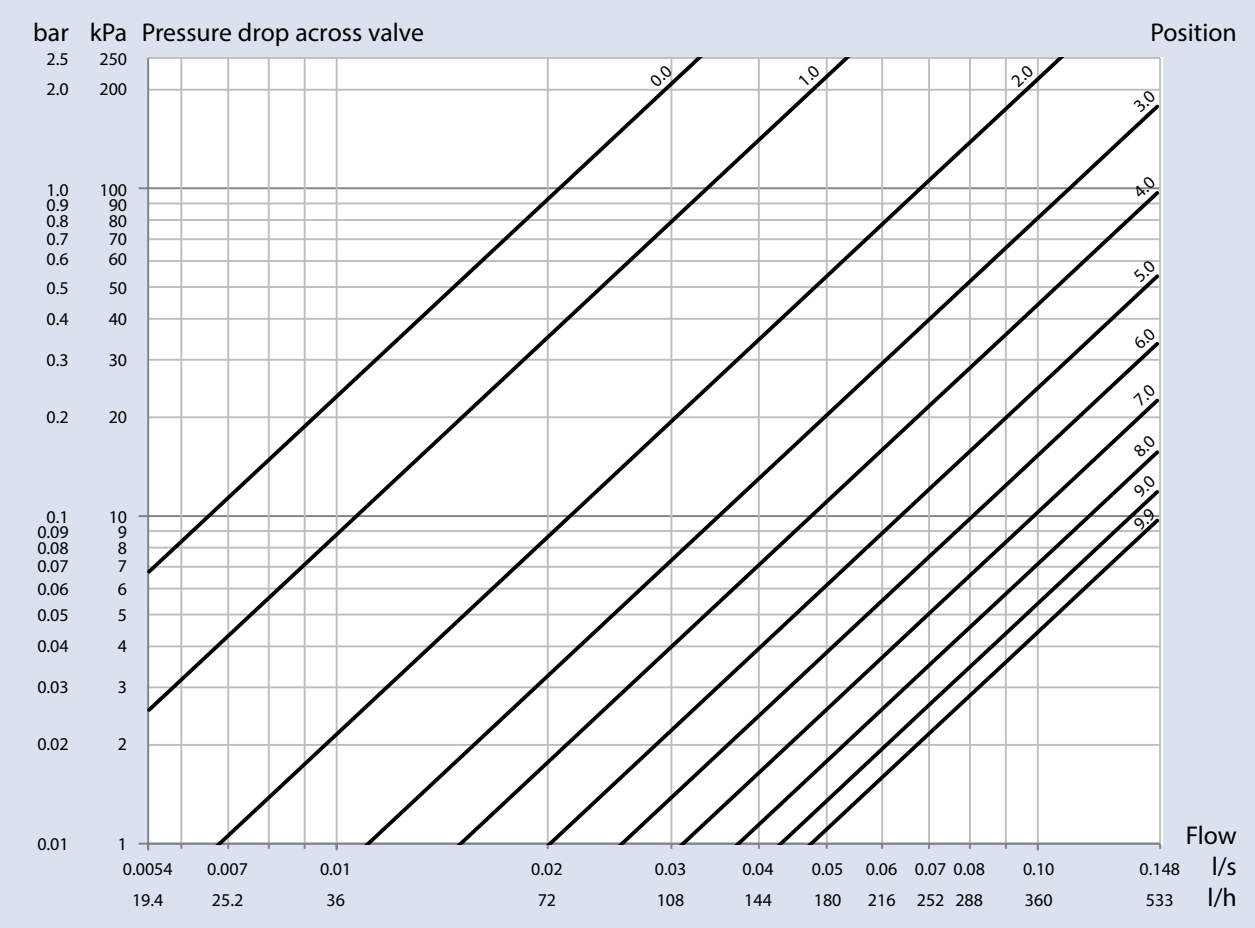
3.3 Flow diagrams

The diagram illustrates the entire drop in pressure across the NexusValve Initus for a specified pre-adjustment and flow rate.

The minimum setting of the digital scale is 0.0 and the maximum setting (a fully opened valve) is 9.9. One hundred different positions in increments of 0.1 are possible, each of which represents a different Kv value.

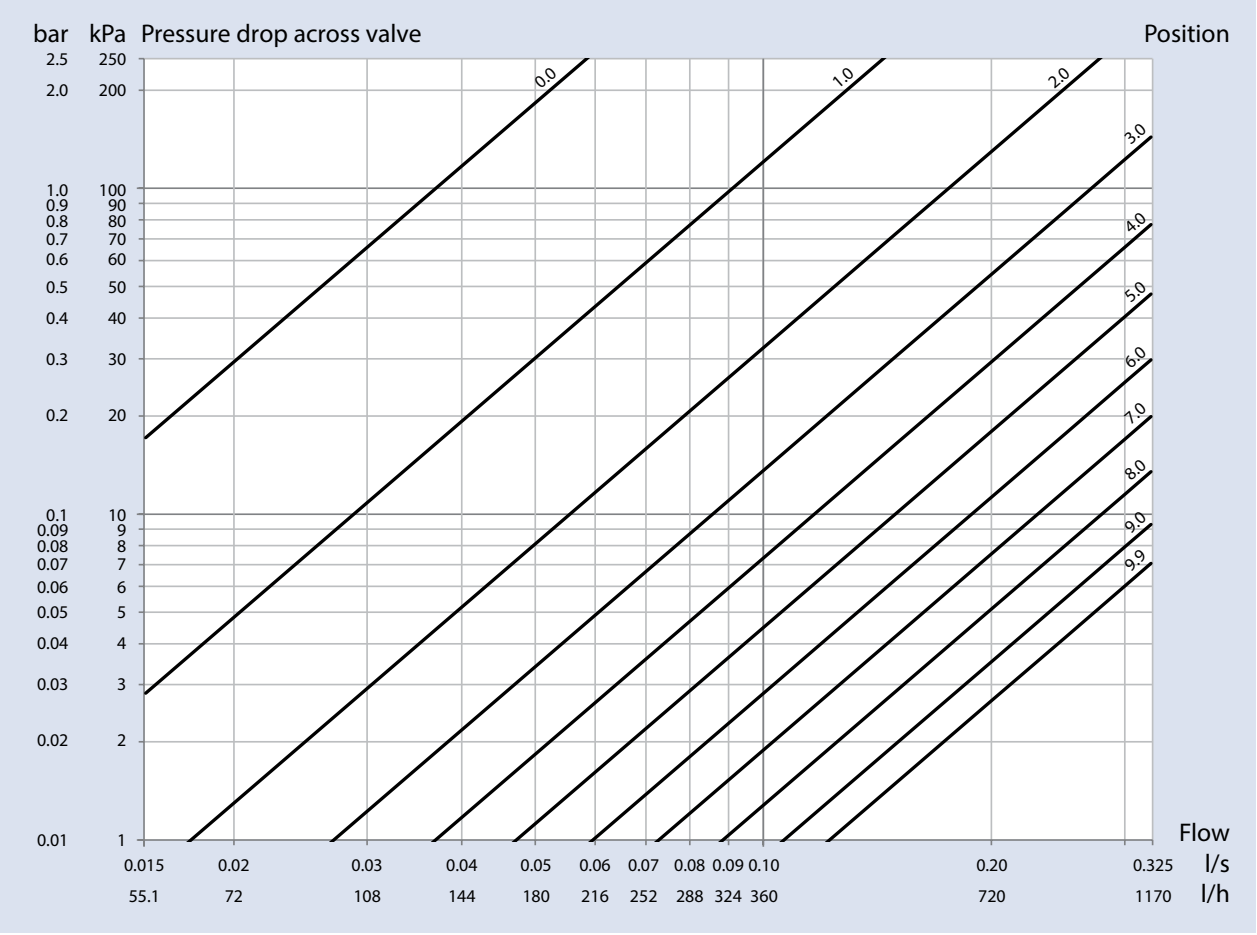
The Kv value and the Kvs value (with a fully opened valve) refer to the drop in pressure across the entire valve. These values are used to dimension the system and select the pump. The Kv and Kvs values are not the same as the Kvm value, which is connected to the drop in pressure at the measurement points. The Kvm value is used to ensure the correct flows are displayed on the flow meter when balancing the system. The Kvm value that corresponds to a specific setting on the NexusValve Initus is entered as the flow indicator in the flow meter. A drop in pressure of up to 250 kPa is permissible across the NexusValve Initus valve. It must be ensured within the workspace that no cavitation occurs in the event of any drop in pressure.

DN 15 - female/female thread



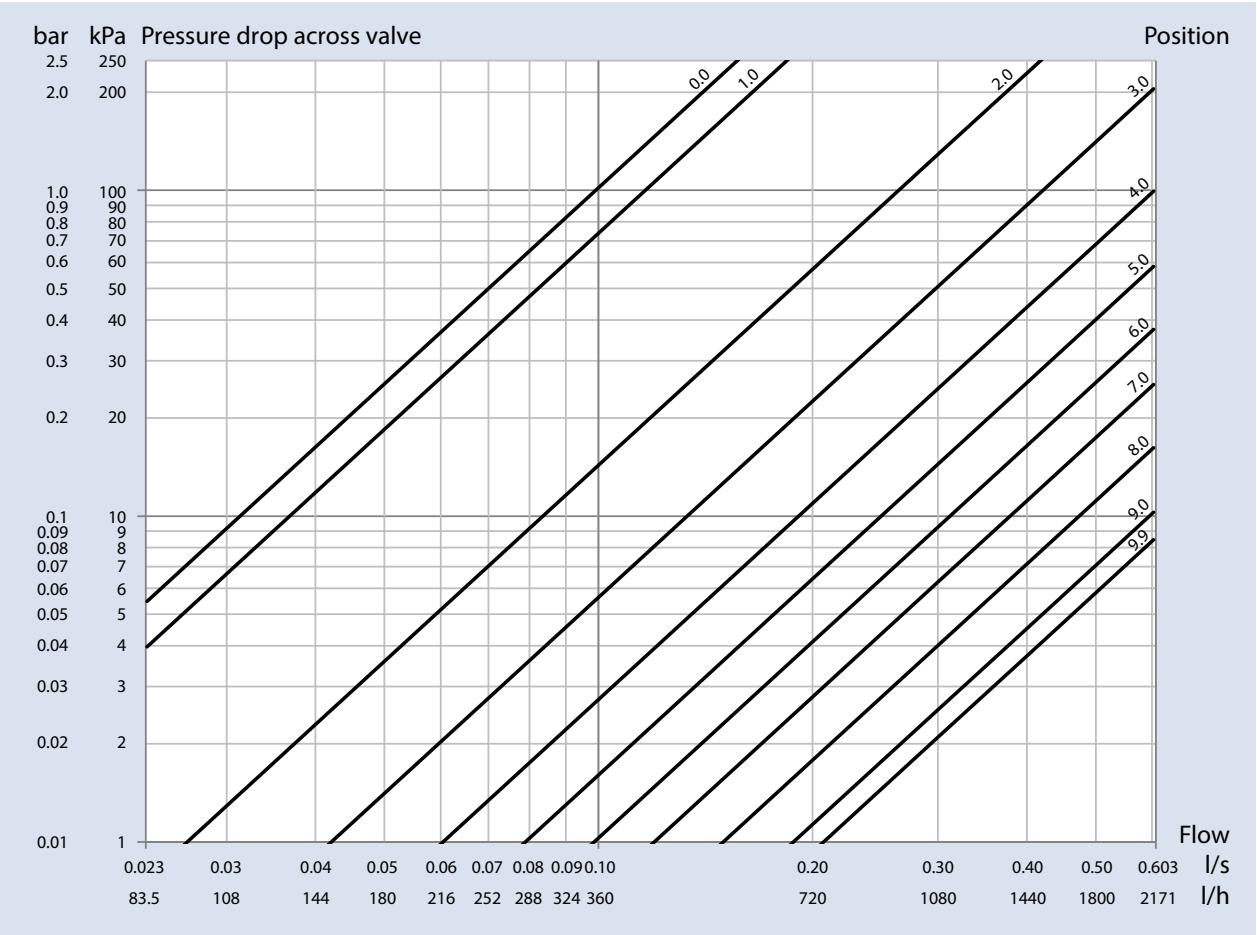
3. Product data sheet

DN 20 - female/female thread



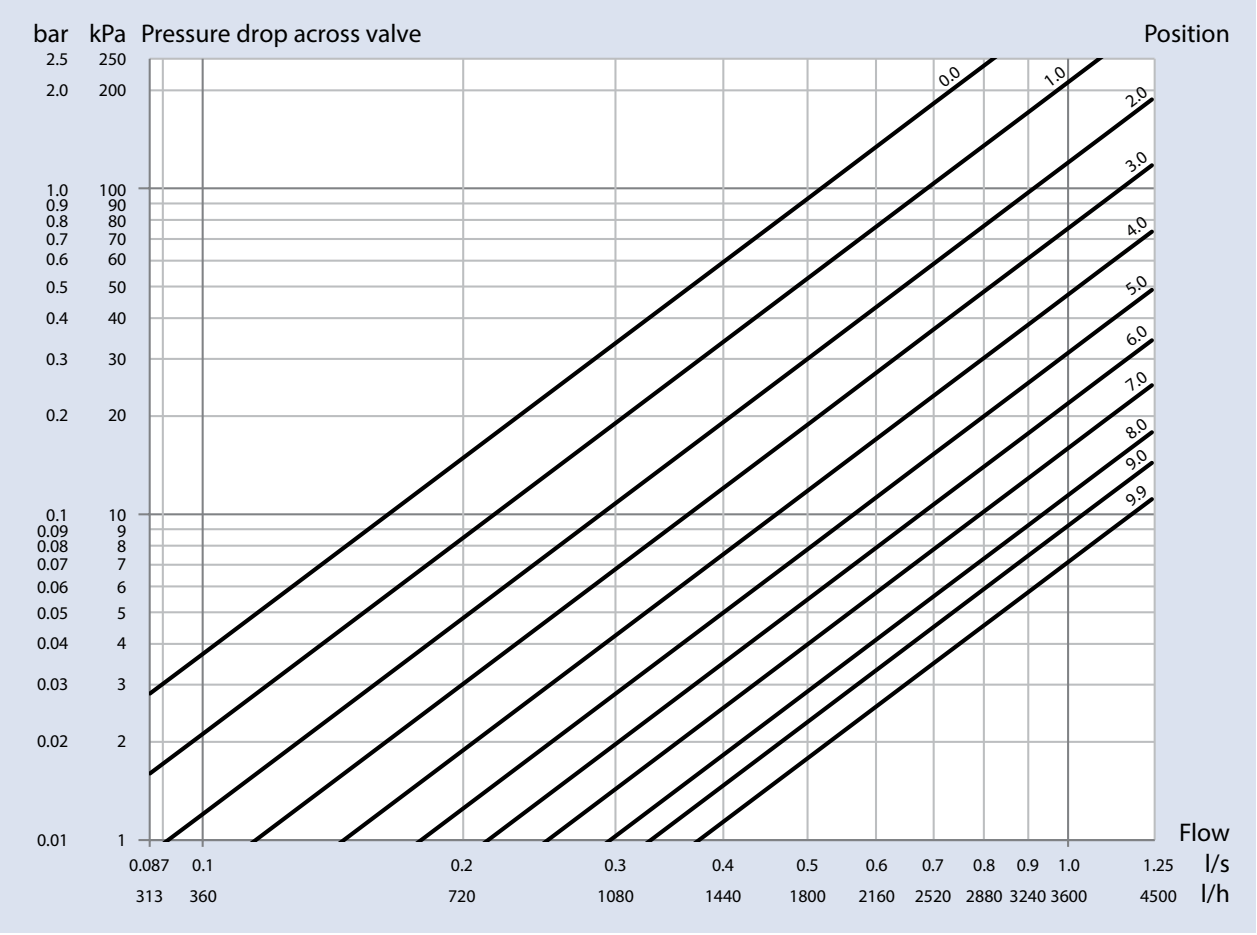
3. Product data sheet

DN 25 - female/female thread



3. Product data sheet

DN 32 - female/female thread



3. Product data sheet

3.4 Valve settings

With specific valve settings, the Kvs values and the Kv values refer to the drop in pressure across the valve and are used to plan the system and dimension the pumps.

DN 15 - female/female thread

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
0.0	0.07	1.0	0.11	2.0	0.25	3.0	0.40	4.0	0.55
0.1	0.07	1.1	0.12	2.1	0.26	3.1	0.41	4.1	0.57
0.2	0.06	1.2	0.13	2.2	0.28	3.2	0.43	4.2	0.58
0.3	0.06	1.3	0.15	2.3	0.29	3.3	0.44	4.3	0.60
0.4	0.07	1.4	0.16	2.4	0.31	3.4	0.46	4.4	0.62
0.5	0.07	1.5	0.17	2.5	0.32	3.5	0.47	4.5	0.63
0.6	0.08	1.6	0.19	2.6	0.34	3.6	0.49	4.6	0.65
0.7	0.08	1.7	0.20	2.7	0.35	3.7	0.50	4.7	0.67
0.8	0.09	1.8	0.22	2.8	0.37	3.8	0.52	4.8	0.68
0.9	0.10	1.9	0.23	2.9	0.38	3.9	0.53	4.9	0.70

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
5.0	0.72	6.0	0.91	7.0	1.13	8.0	1.35	9.0	1.55
5.1	0.74	6.1	0.93	7.1	1.15	8.1	1.37	9.1	1.57
5.2	0.76	6.2	0.96	7.2	1.18	8.2	1.40	9.2	1.59
5.3	0.77	6.3	0.98	7.3	1.20	8.3	1.42	9.3	1.61
5.4	0.79	6.4	1.00	7.4	1.22	8.4	1.44	9.4	1.63
5.5	0.81	6.5	1.02	7.5	1.24	8.5	1.46	9.5	1.64
5.6	0.83	6.6	1.04	7.6	1.27	8.6	1.48	9.6	1.66
5.7	0.85	6.7	1.06	7.7	1.29	8.7	1.50	9.7	1.68
5.8	0.87	6.8	1.09	7.8	1.31	8.8	1.52	9.8	1.69
5.9	0.89	6.9	1.11	7.9	1.33	8.9	1.54	9.9	1.71

Note! For high measuring accuracy, the entire adjustment range applies – with the exception of settings 0.0-0.9.

3. Product data sheet

DN 20 - female/female thread

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
0.0	0.12	1.0	0.31	2.0	0.64	3.0	0.98	4.0	1.33
0.1	0.13	1.1	0.34	2.1	0.67	3.1	1.02	4.1	1.37
0.2	0.14	1.2	0.37	2.2	0.70	3.2	1.05	4.2	1.40
0.3	0.16	1.3	0.40	2.3	0.74	3.3	1.09	4.3	1.44
0.4	0.17	1.4	0.44	2.4	0.77	3.4	1.12	4.4	1.48
0.5	0.19	1.5	0.47	2.5	0.81	3.5	1.16	4.5	1.51
0.6	0.21	1.6	0.50	2.6	0.84	3.6	1.19	4.6	1.55
0.7	0.24	1.7	0.53	2.7	0.88	3.7	1.23	4.7	1.59
0.8	0.26	1.8	0.57	2.8	0.91	3.8	1.26	4.8	1.63
0.9	0.29	1.9	0.60	2.9	0.95	3.9	1.30	4.9	1.66

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
5.0	1.70	6.0	2.13	7.0	2.63	8.0	3.20	9.0	3.82
5.1	1.74	6.1	2.18	7.1	2.68	8.1	3.26	9.1	3.88
5.2	1.78	6.2	2.22	7.2	2.74	8.2	3.32	9.2	3.95
5.3	1.82	6.3	2.27	7.3	2.79	8.3	3.38	9.3	4.01
5.4	1.87	6.4	2.32	7.4	2.85	8.4	3.44	9.4	4.08
5.5	1.91	6.5	2.37	7.5	2.91	8.5	3.50	9.5	4.14
5.6	1.95	6.6	2.42	7.6	2.96	8.6	3.57	9.6	4.21
5.7	1.99	6.7	2.47	7.7	3.02	8.7	3.63	9.7	4.27
5.8	2.04	6.8	2.52	7.8	3.08	8.8	3.69	9.8	4.34
5.9	2.08	6.9	2.57	7.9	3.14	8.9	3.76	9.9	4.40

Note! For high measuring accuracy, the entire adjustment range applies – with the exception of settings 0.0-0.9.

3. Product data sheet

DN 25 - female/female thread

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
0.0	0.34	1.0	0.48	2.0	0.93	3.0	1.55	4.0	2.21
0.1	0.34	1.1	0.51	2.1	0.98	3.1	1.62	4.1	2.27
0.2	0.34	1.2	0.55	2.2	1.04	3.2	1.68	4.2	2.34
0.3	0.35	1.3	0.59	2.3	1.10	3.3	1.75	4.3	2.40
0.4	0.35	1.4	0.63	2.4	1.16	3.4	1.81	4.4	2.47
0.5	0.37	1.5	0.67	2.5	1.23	3.5	1.88	4.5	2.53
0.6	0.38	1.6	0.72	2.6	1.29	3.6	1.95	4.6	2.59
0.7	0.40	1.7	0.77	2.7	1.35	3.7	2.01	4.7	2.66
0.8	0.42	1.8	0.82	2.8	1.42	3.8	2.08	4.8	2.72
0.9	0.45	1.9	0.87	2.9	1.48	3.9	2.14	4.9	2.78

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
5.0	2.85	6.0	3.51	7.0	4.31	8.0	5.35	9.0	6.57
5.1	2.91	6.1	3.58	7.1	4.40	8.1	5.47	9.1	6.69
5.2	2.97	6.2	3.65	7.2	4.50	8.2	5.59	9.2	6.81
5.3	3.04	6.3	3.73	7.3	4.59	8.3	5.71	9.3	6.92
5.4	3.10	6.4	3.80	7.4	4.69	8.4	5.83	9.4	7.03
5.5	3.17	6.5	3.88	7.5	4.80	8.5	5.96	9.5	7.13
5.6	3.23	6.6	3.96	7.6	4.90	8.6	6.08	9.6	7.23
5.7	3.30	6.7	4.04	7.7	5.01	8.7	6.20	9.7	7.32
5.8	3.37	6.8	4.13	7.8	5.12	8.8	6.33	9.8	7.40
5.9	3.44	6.9	4.22	7.9	5.24	8.9	6.45	9.9	7.46

Note! For high measuring accuracy, the entire adjustment range applies – with the exception of settings 0.0-0.9.

3. Product data sheet

DN 32 - female/female thread

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
0.0	1.85	1.0	2.45	2.0	3.28	3.0	4.20	4.0	5.24
0.1	1.89	1.1	2.53	2.1	3.36	3.1	4.30	4.1	5.34
0.2	1.94	1.2	2.61	2.2	3.45	3.2	4.40	4.2	5.46
0.3	1.99	1.3	2.69	2.3	3.54	3.3	4.50	4.3	5.57
0.4	2.05	1.4	2.77	2.4	3.63	3.4	4.60	4.4	5.69
0.5	2.11	1.5	2.85	2.5	3.73	3.5	4.70	4.5	5.80
0.6	2.17	1.6	2.93	2.6	3.82	3.6	4.81	4.6	5.92
0.7	2.24	1.7	3.02	2.7	3.91	3.7	4.91	4.7	6.04
0.8	2.31	1.8	3.10	2.8	4.01	3.8	5.02	4.8	6.16
0.9	2.38	1.9	3.19	2.9	4.10	3.9	5.13	4.9	6.29

Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h	Setting	Kvs m³/h
5.0	6.41	6.0	7.71	7.0	9.08	8.0	10.46	9.0	11.91
5.1	6.54	6.1	7.84	7.1	9.21	8.1	10.60	9.1	12.07
5.2	6.66	6.2	7.98	7.2	9.35	8.2	10.74	9.2	12.23
5.3	6.79	6.3	8.12	7.3	9.49	8.3	10.88	9.3	12.40
5.4	6.92	6.4	8.25	7.4	9.63	8.4	11.02	9.4	12.57
5.5	7.05	6.5	8.39	7.5	9.76	8.5	11.16	9.5	12.75
5.6	7.18	6.6	8.53	7.6	9.99	8.6	11.31	9.6	12.93
5.7	7.31	6.7	8.66	7.7	10.04	8.7	11.45	9.7	13.12
5.8	7.44	6.8	8.80	7.8	10.18	8.8	11.60	9.8	13.33
5.9	7.58	6.9	8.94	7.9	10.32	8.9	11.75	9.9	13.48

Notes

Notes

Notes

Contact

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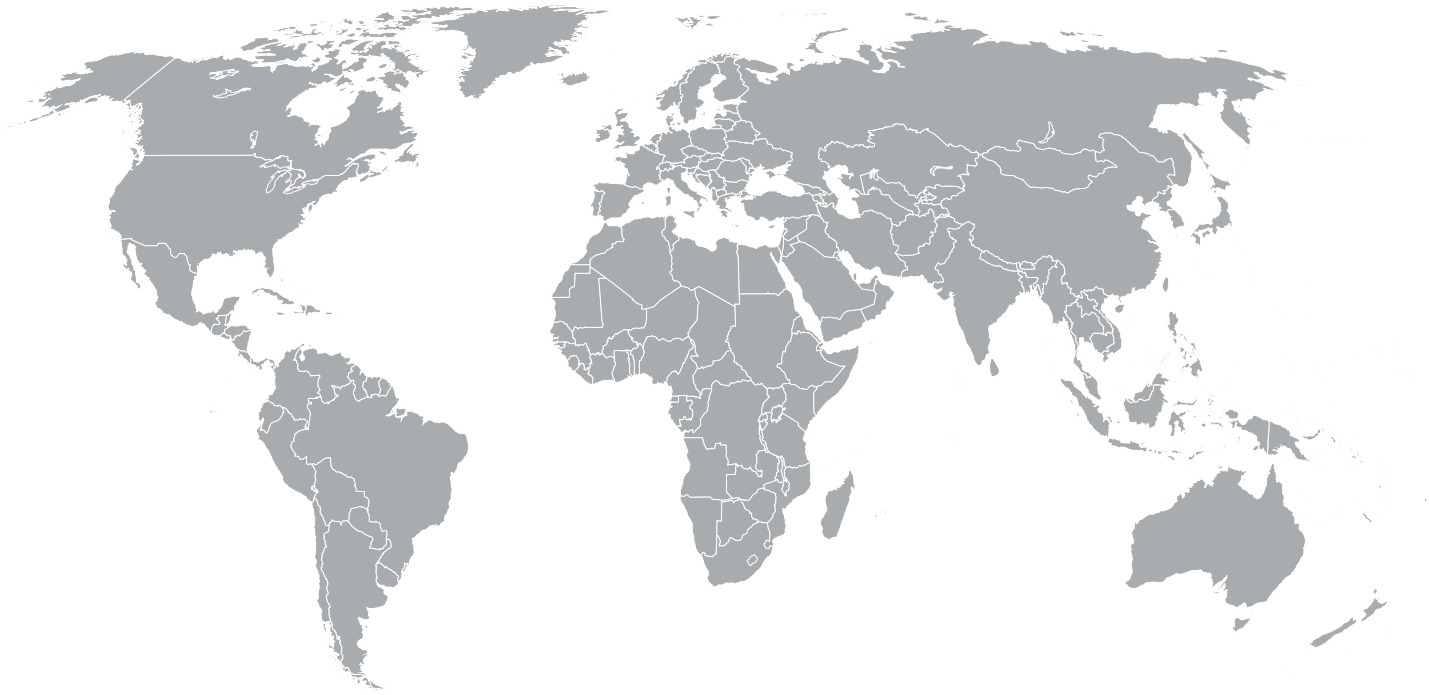

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