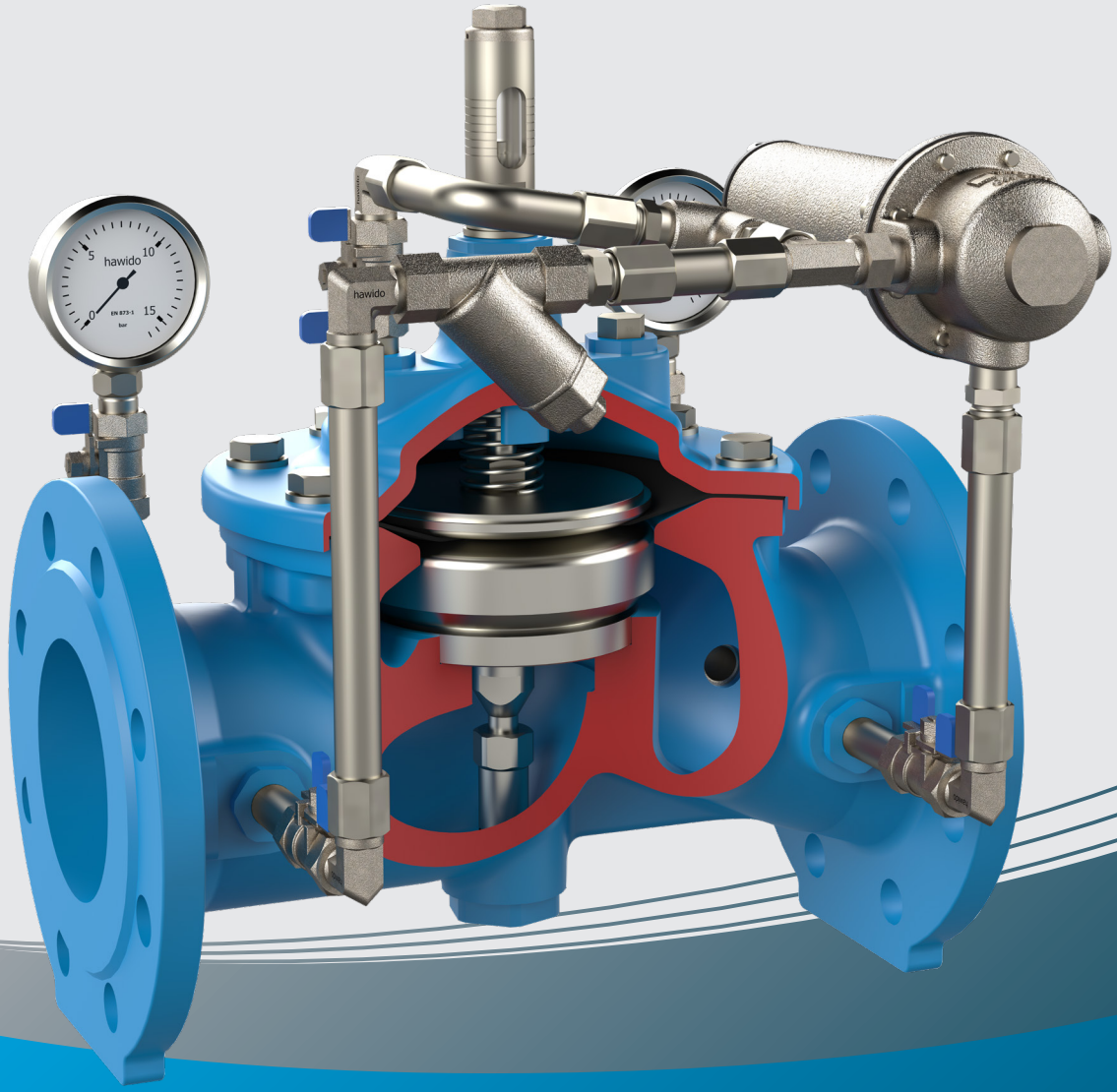


Medium-controlled control valves

03/2026

Explanatory notes on the brochure

General media information in the product descriptions may apply subject to certain restrictions. Kindly always state the relevant medium in your given application when you place an order or submit a query.

If you have any further questions about our products, please do not hesitate to contact our employees of the application engineering division at any time.

	Products for use in connection with potable water
hawle G 5 JAHRE Gewährleistung	In general, products sold by us are subject to the statutory warranty period of 2 years from the date of delivery at Hawle. Due to the high quality of Hawle products, we are able to offer you an extended warranty of 5 years for products manufactured by us. For more details, please see our website at: **www.hawle.de/en/warranty-extension/**
hawle Q 10 JAHRE Qualitätsgarantie	Information on our “10-year quality guarantee” for Hawle potable water products are available at the following link: **www.hawle.de/en/10-years-quality-warranty/**
hawle	For current information, please see our Hawle app. Further information is available at www.hawle.de/app

Technical features

Medium-controlled Hawle control valves are hydraulically operated diaphragm valves, consisting of a main valve, pilot circuit, pilot valve and accessories. A control line and pilot valve serve to regulate the function of the control valve (pressure reduction, pressure retention, level regulation, etc.). The dimension of the main valve depends on the pressure conditions and flow rates. Hawle control valves can be used for a wide variety of applications. They offers a large range of standard as well as special functions.

Models:

Functional principle: hydraulic

Pressure reducing valve, Order No.: 015-00

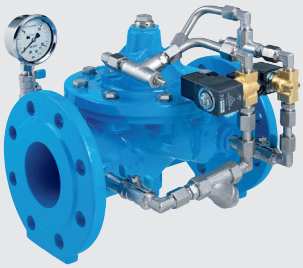
Float valve for open/close control, Order No.: 016-00

Standard functions, hydraulic only:

- Pressure reduction
- Pressure retention and/or pressure relief
- Float control
- Level regulation
- Backflow prevention
- Pipe-break protection

Functional principle: hydraulic + control current

On/off valve closed at zero current, Order No.: 017-03



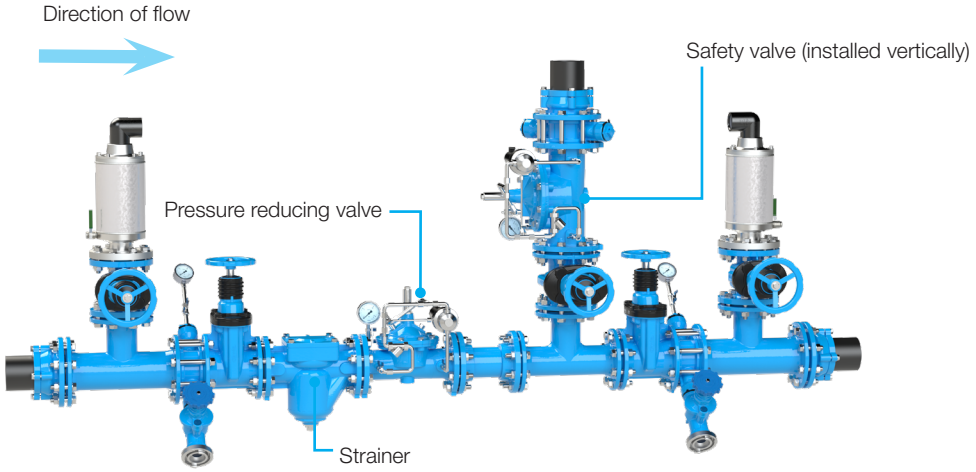
On/off valve, step-by-step operation, closed at zero current, Order No.: 017-95

Standard functions, hydraulic & control current:

- Electric open/close
- Electric volume regulation
- Pump protection valve

Special functions, e.g.: pressure reduction with inlet pressure control, pressure retention valve for electric actuation

Installation situation:



Technical data

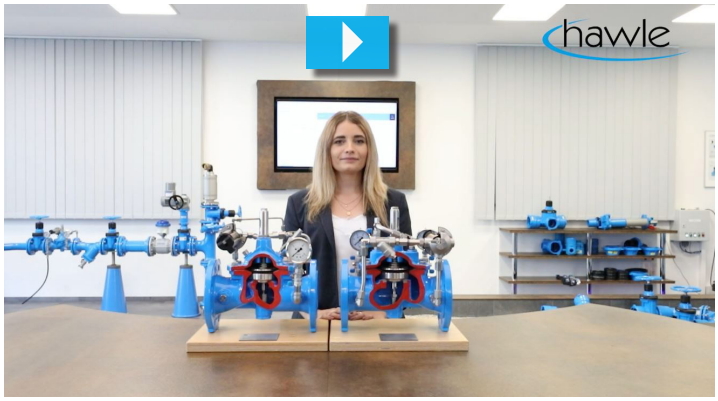
- DVGW (German Association for Gas and Water) certification
- Medium-controlled
- Face-to-face length according to DIN EN 558
- Wide choice of standard or special functions
- Stainless steel control line
- Maintenance-free stainless steel seat

Medium:	Potable water
Operating temperature:	0° - 40°C
Max. operating pressure:	16 bar (standard), 25 bar (on request)
Nominal diameters:	Flange DN 40 to DN 300 Female thread (FT) 1½” - 2”
Basis for development and tests:	DVGW W363, DIN EN 1074-1, DIN EN 1074-5, UBA KTW (Evaluation criteria for products and materials in contact with potable water), DVGW W 270
Material:	Body parts: GJS-400 cast iron, Hawle epoxy powder coated Control line: stainless steel Diaphragms, gaskets: EPDM in line with KTW-BWGL for water (evaluation criteria for products and materials in contact with potable water) Pilot valve: stainless steel, gunmetal
Body form:	Straight valve, angle valve

Functional testing and maintenance
Warranty of functional reliability:
- Annual performance test
- Primary maintenance every 4 to 5 years with replacement of wear parts

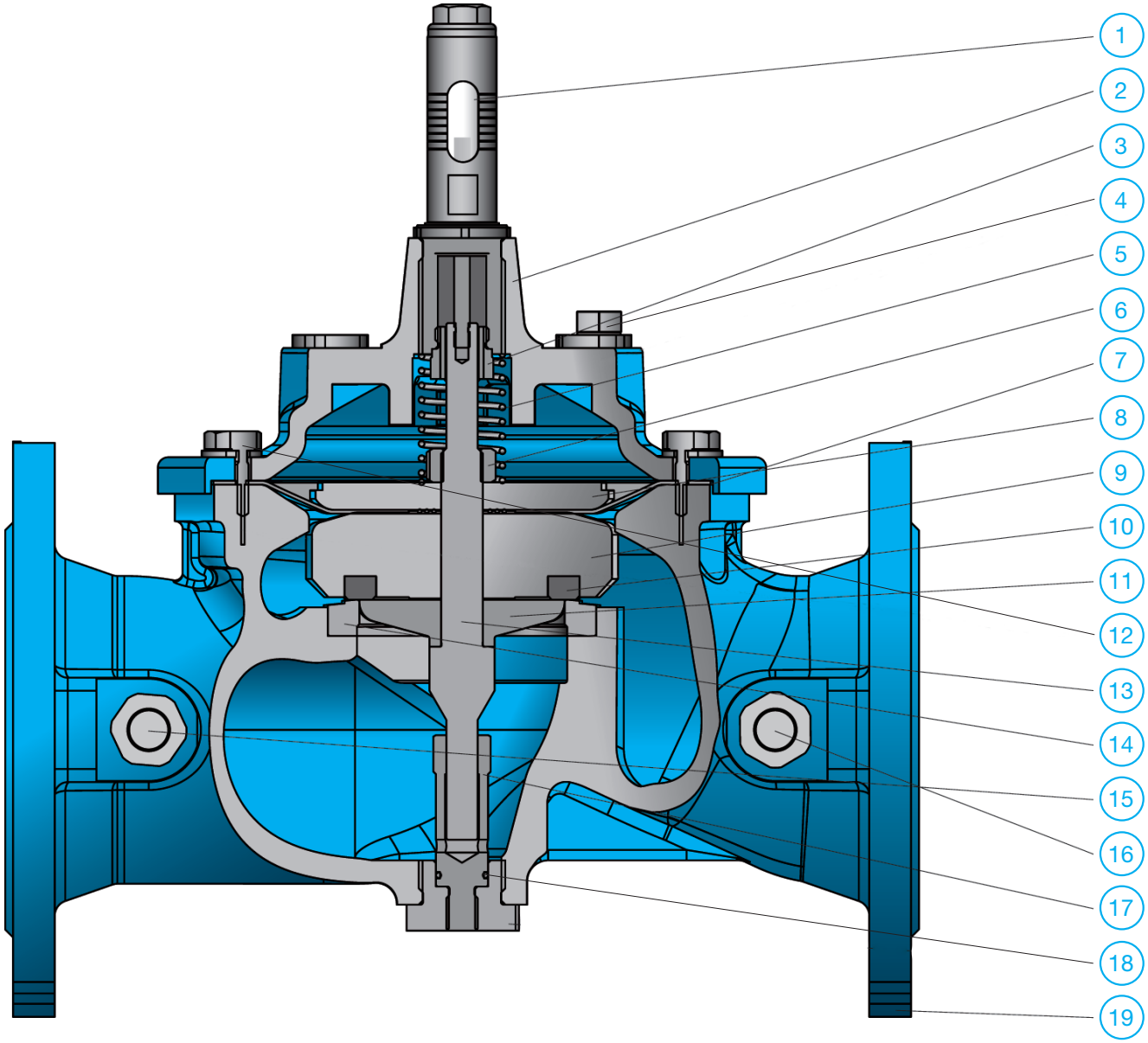
Control valve maintenance:
- Can be performed by Hawle Service (www.hawle-service.de)
- Maintenance agreement (on request) for regular servicing (info@hawle-kunststoff.de)

Virtual product launch



www.hawle.de/video-rv

Valve structure

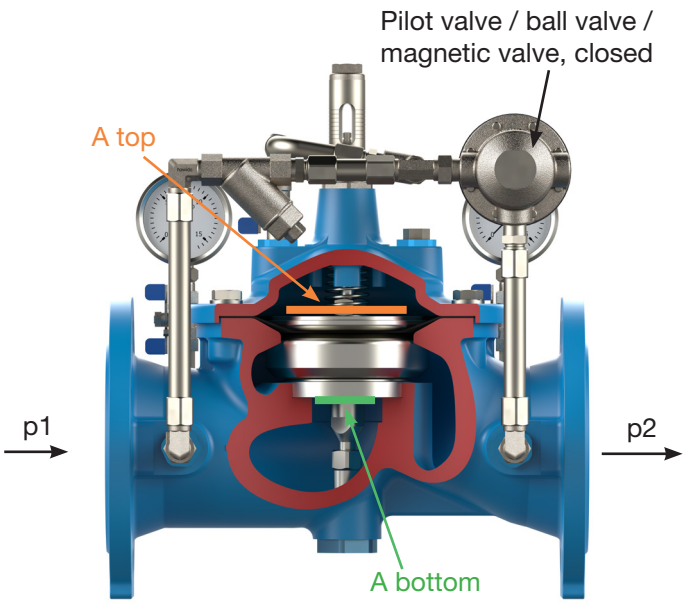


Components

1. Optical position indicator
2. Cover
3. Spindle guide, cover
4. Control line connection, cover
5. Spring
6. Nut
7. Diaphragm
8. Thrust washer
9. Gasket carrier
10. Gasket seal
11. Opposing seat
12. Hexagon head screw
13. Spindle
14. Seat
15. Control line connection, body (inlet)
16. Control line connection, body (outlet)
17. Spindle guide, body
18. O-ring
19. Body

Functional principle

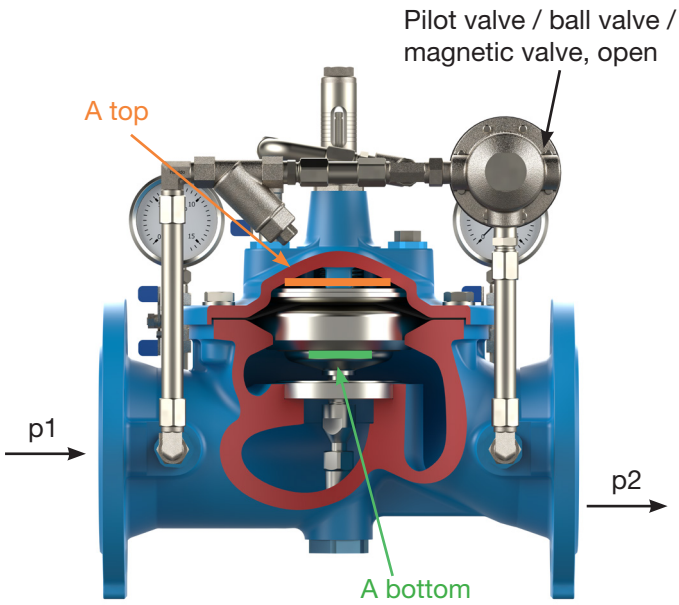
Medium-controlled control valves do not need any external energy to function. The desired function is achieved purely through hydraulic operation. Only some types of control valves require a control current to trigger hydraulic operation.



Pilot valve closed
p1 x A top (= closing force) > p1 x A bottom (= opening force)

Inlet pressure p1 acts on the diaphragm surface A top, thus generating a closing force.

Main valve closed



Pilot valve open:
p1 x A top (= closing force) < p1 x A bottom (= opening force)

When the pilot valve is open, the pressure is released from the pilot chamber to p2. Inlet pressure p1 acts on A bottom, thus opening the main valve.

Main valve open

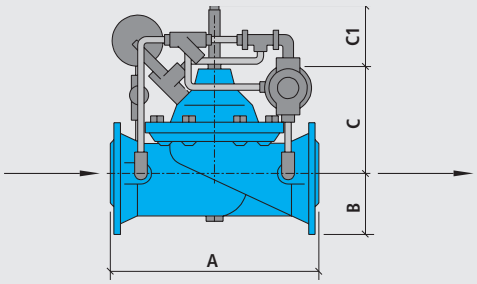
Functional requirement:

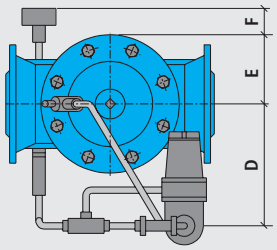
- A top > A bottom
- Minimum inlet pressure p: 1 bar
- Minimum pressure difference between inlet and outlet pressure: 1 bar
- Potable water or grey water with a degree of purity up to 40°C

Legend:
A top = thrust washer and diaphragm surface in the pilot chamber
A bottom = surface in the bottom seat area
p1 = inlet pressure
p2 = outlet pressure

Measurement tables

Straight valves, measurement tables





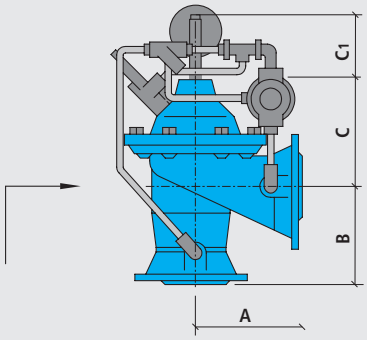
Face-to-face dimensions according to DIN EN 558
Flange mating dimensions according to DIN EN 1092-2

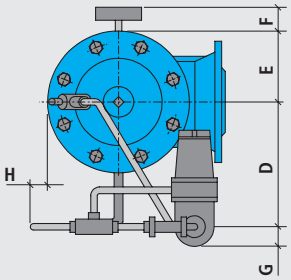
	PN [bar]	[1] 1½“ - 2“ [mm]	DN 40 [mm]	DN 50 [mm]	DN 65 [mm]	DN 80 [mm]	DN 100 [mm]	DN 125 [mm]	DN 150 [mm]	DN 200 [mm]	DN 250 [mm]	DN 300 [mm]
A	10/16/25	210	200	230	290	310	350	400	480	600	730	850
B	10/16	40	75	80	90	100	110	125	140	170	200	235
	25	40	75	80	90	100	115	135	150	180	-	-
C	10/16/25	130	130	130	150	160	195	245	278	330	405	365
D	10/16/25	160	160	160	170	180	190	205	220	250	275	740
E	10/16/25	65	70	70	85	105	115	145	160	200	250	740
F [2]	10/16/25	-	80	80	65	65	65	45	40	20	-	-
Valve with optical position indicator												
C1	10/16/25	85	85	85	85	85	85	112	112	112	112	135
Valve with electric position indicator												
C1	10/16/25	138	138	138	138	138	138	164	164	164	180	180

1) with threaded outlet

2) reference value depending on valve type

Control valves, angle valves, measurement tables



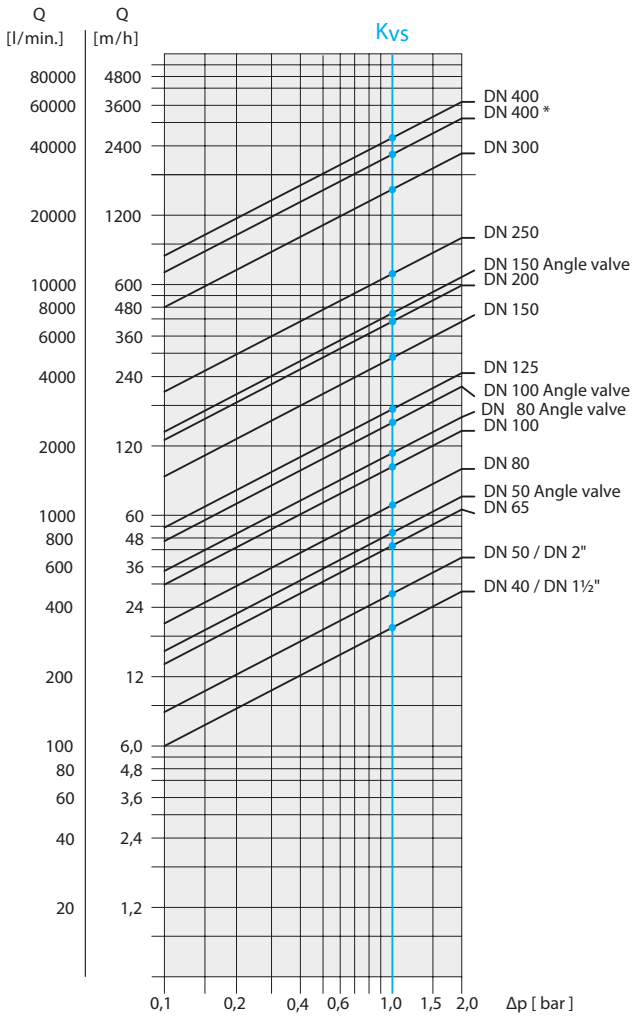


Face-to-face dimensions according to DIN EN 558
Flange mating dimensions according to DIN EN 1092-2

	PN [bar]	DN 50 [mm]	DN 80 [mm]	DN 100 [mm]	DN 150 [mm]
A	10/16/25	125	155	190	250
B	10/16/25	125	155	175	225
C	10/16/25	145	195	225	320
D	10/16/25	170	160	220	250
E	10/16/25	85	115	145	200
F	10/16/25	56	70	55	55
G	10/16/25	40	40	40	40
H	10/16/25	30	-	-	-
Valve with optical position indicator					
C1	10/16/25	80	80	80	135
Valve with electric position indicator					
C1	10/16/25	138	138	138	180

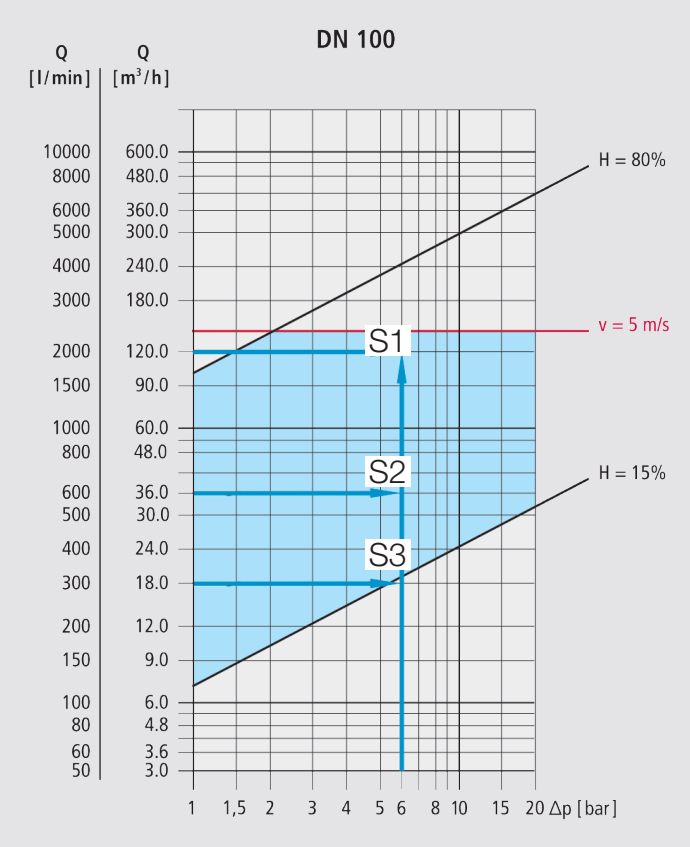
Pressure drop diagram & Kvs values

Pressure drop Δp depending on flow rate Q and the nominal diameter DN of valve



Flow coefficient Kvs in m³/h and l/min at Δp = 1 bar					
	Kvs straight valve			Kvs angled valve	
DN	m3/h	l/min.	DN	m3/h	l/min.
40	19	315			
50	27	460	50	51	850
65	48	725			
80	68	1140	80	111	1850
100	129	2150	100	156	2600
125	177	2955			
150	297	4960	150	432	7200
200	415	6925			
250	681	11360			
300	1476	24600			

Determination of the dimension of the main valve (Example)



Characteristics

Q = Flow rate in m³/h and l/min
Δp = Pressure difference between inlet and outlet pressure in bar
H = degree of opening in % of the max. valve opening
v = 5 m/s: max. admissible flow velocity (permitted for brief periods)
■ = optimal control range

Example:

Δp: 6 bar
Q max: 120 m³/h -------> Intersection S1 in optimal control range
Q Ø: 36 m³/h -------> Intersection S2 in optimal control range
Q min: 18 m³/h -------> Intersection S3 at boundary to optimal control range
Result: Main valve DN 100 = optimal dimension

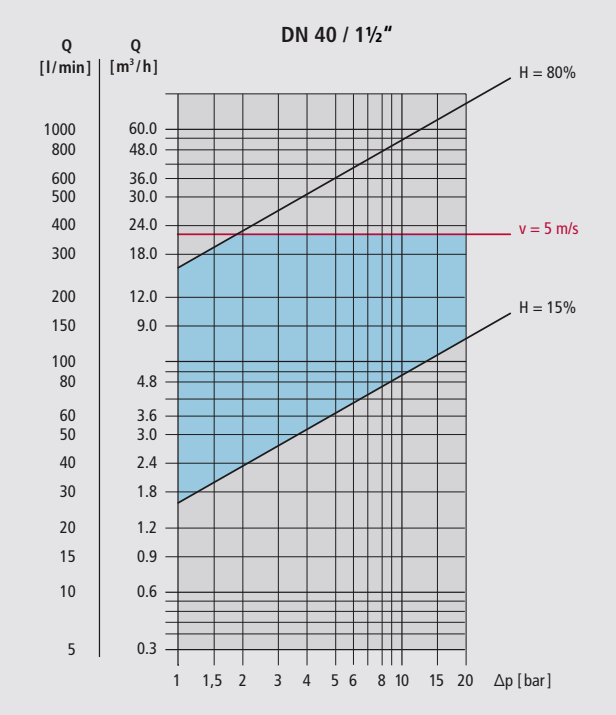
We generally recommend to have the dimensioning performed by Hawle Deutschland Armaturen GmbH.
See also DVGW Worksheet W335:
“Control valves and fittings are to be dimensioned by the manufacturer with due consideration of the issued data and cavitation behavior.”

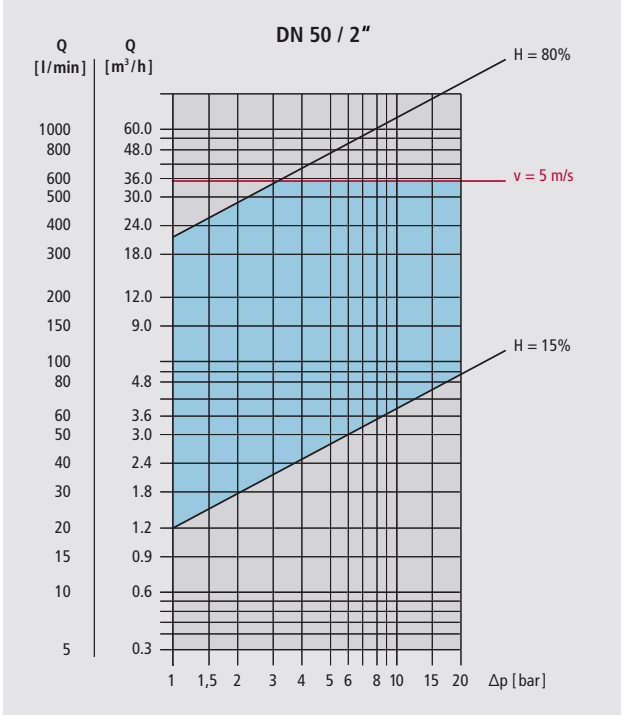
To calculate the nominal dimension, the following information is required:

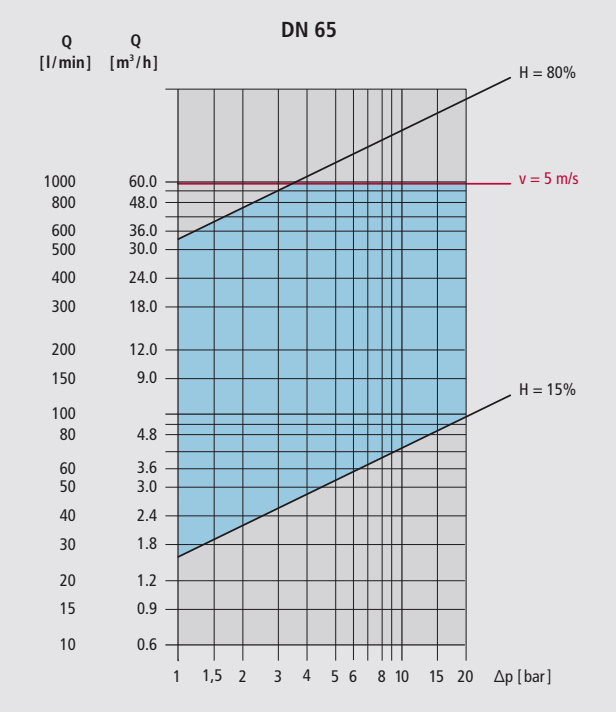
- Description of the control task
- Inlet pressure (static, dynamic)
- Outlet pressure
- Minimum flow rate
- Average flow rate
- Maximum required flow rate
- Fire extinguishing rate
- Installation situation
- Voltage supply
- Container size

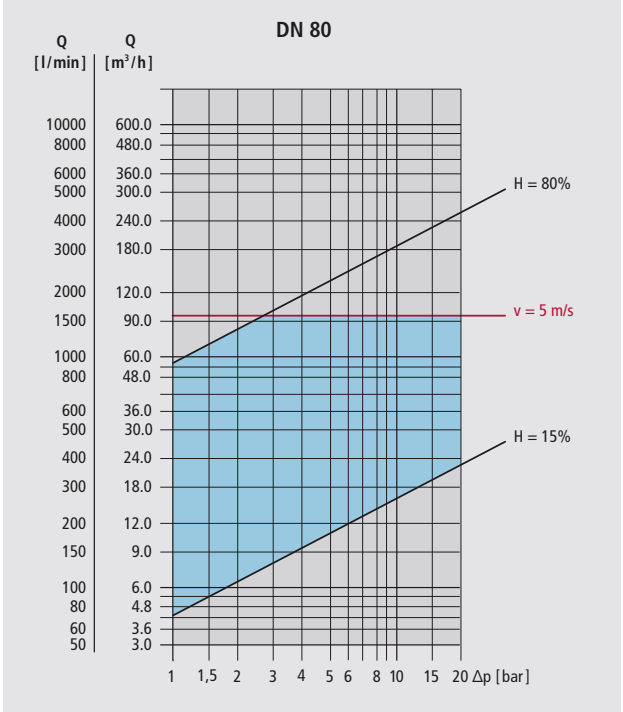
Performance chart for straight valves DN 40 to DN 80 as of year of manufacture 03/2008

The optimal working range (blue field) of Hawle control valves is between the boundary lines of the degree of opening of H = 15% and H = 80%. If the calculated value is below the minimum or above the maximum degree of opening, please contact us. Likewise, the maximum flow velocity of 5 m/s must be observed.



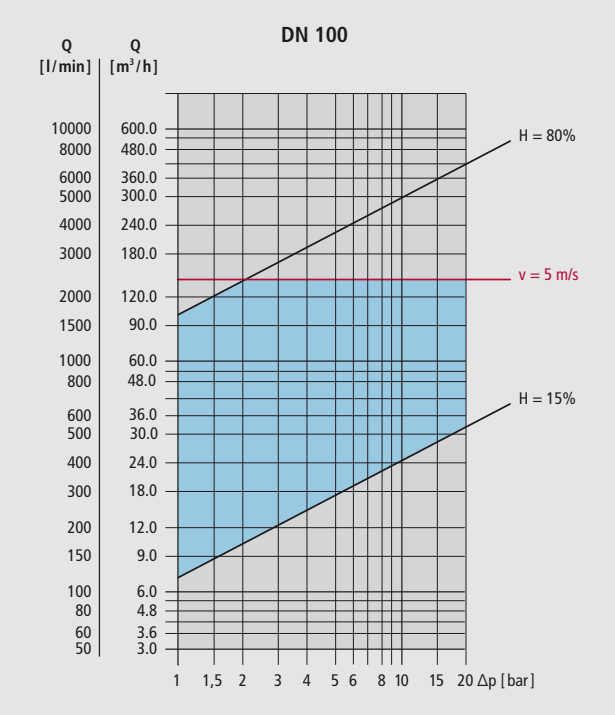


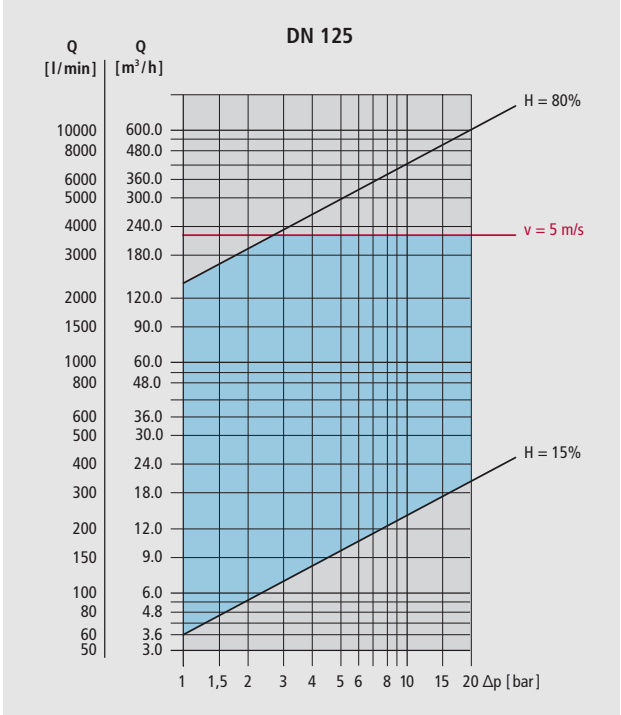


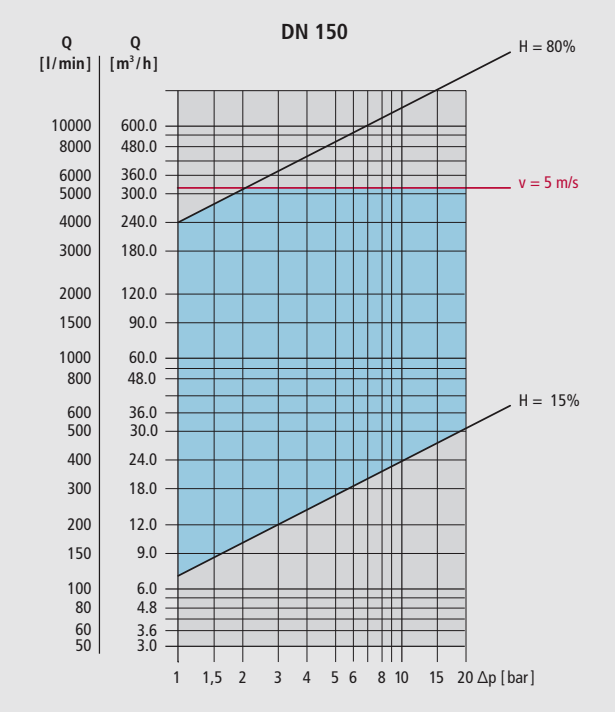


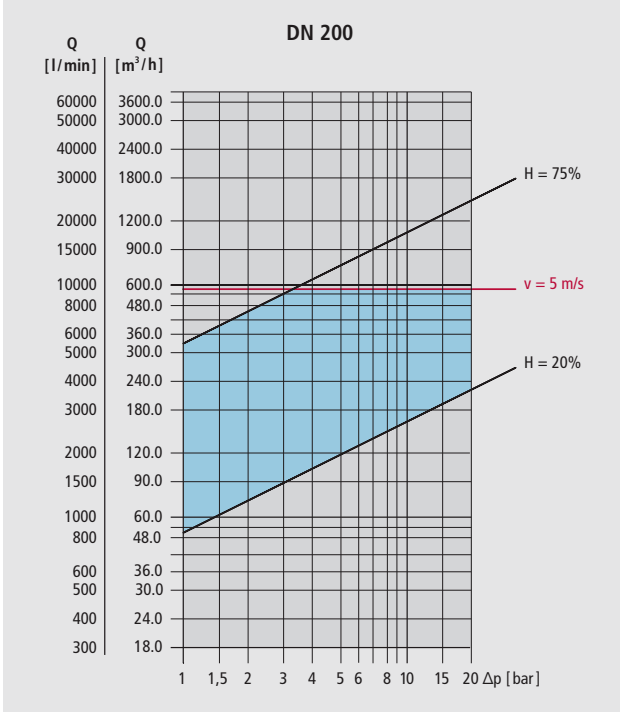
Performance chart for straight valves DN 100 to DN 200 as of year of manufacture 03/2008

The optimal working range (blue field) of Hawle control valves is between the boundary lines of the degree of opening of H = 15% and H = 80%. If the calculated value is below the minimum or above the maximum degree of opening, please contact us. Likewise, the maximum flow velocity of 5 m/s must be observed.



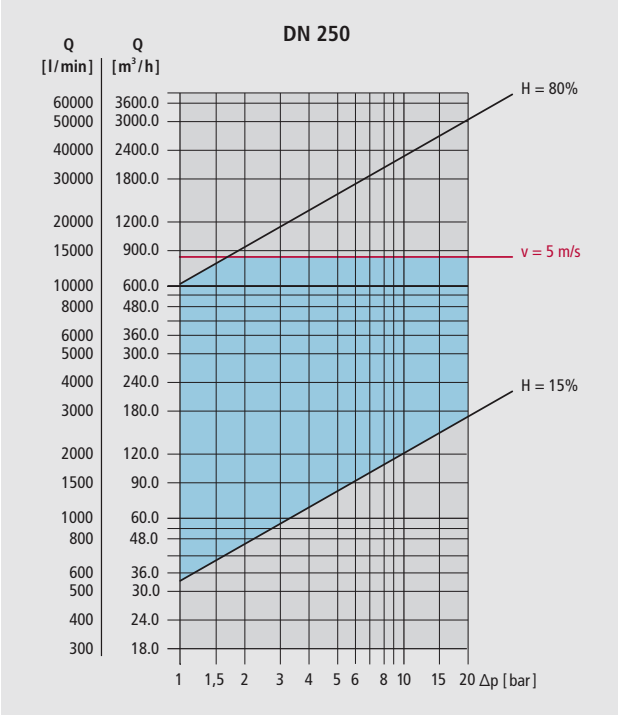


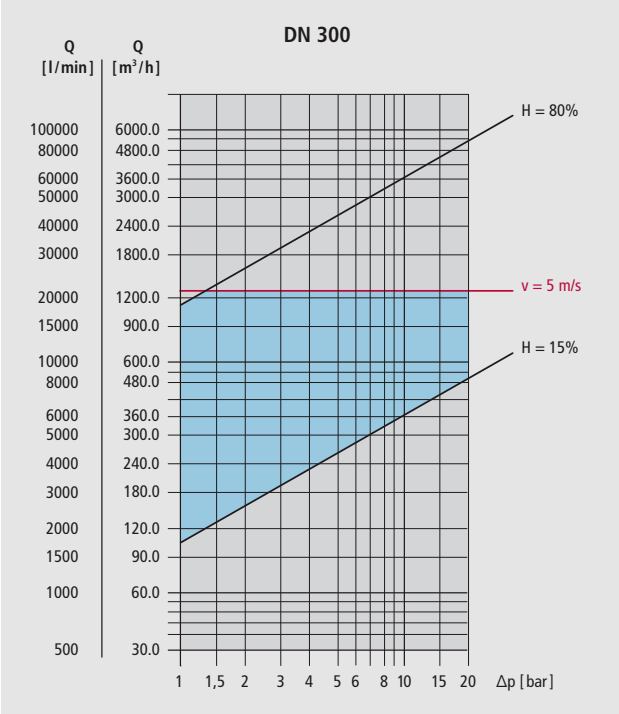




Performance chart for straight valves DN 250 to DN 300 as of year of manufacture 03/2008

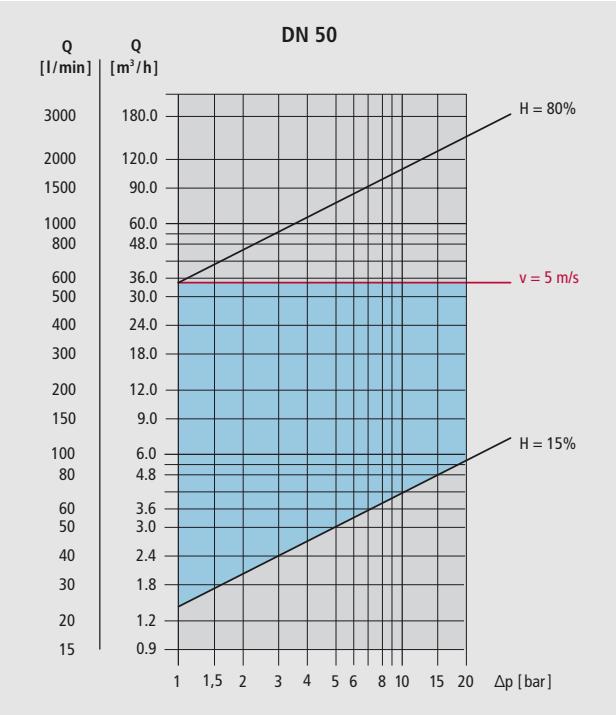
The optimal working range (blue field) of Hawle control valves is between the boundary lines of the degree of opening of H = 15% and H = 80%. If the calculated value is below the minimum or above the maximum degree of opening, please contact us. Likewise, the maximum flow velocity of 5 m/s must be observed.

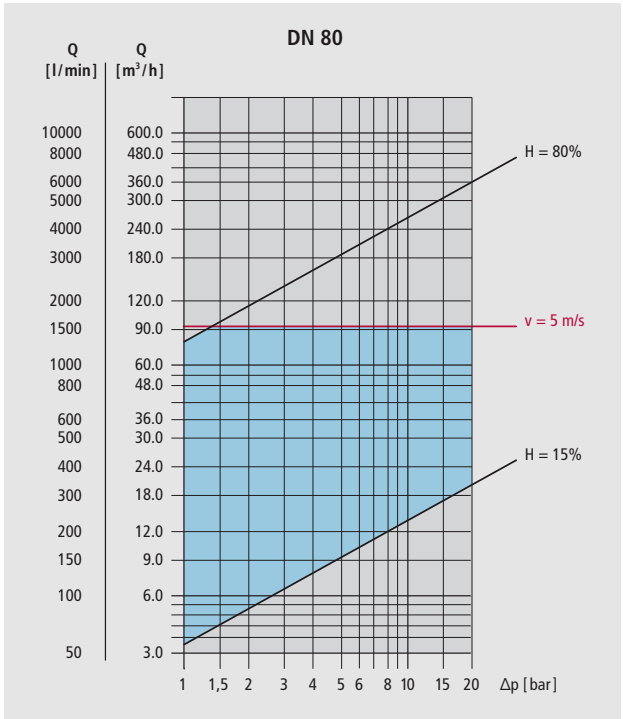


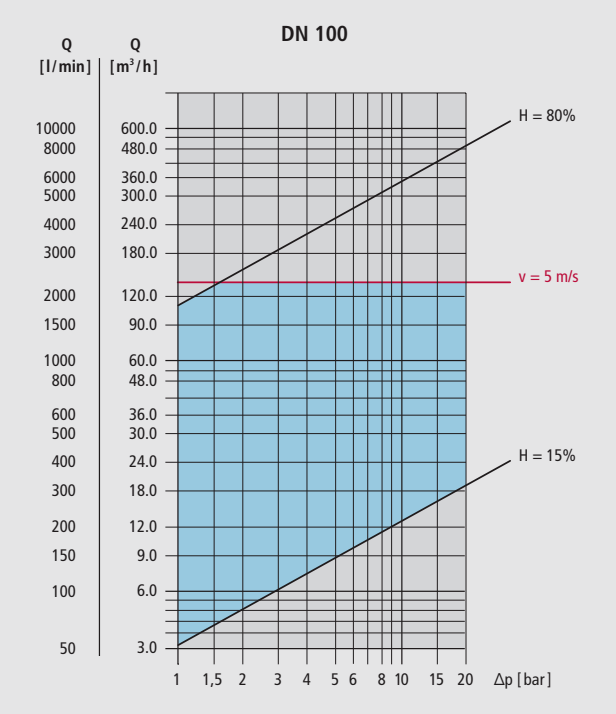


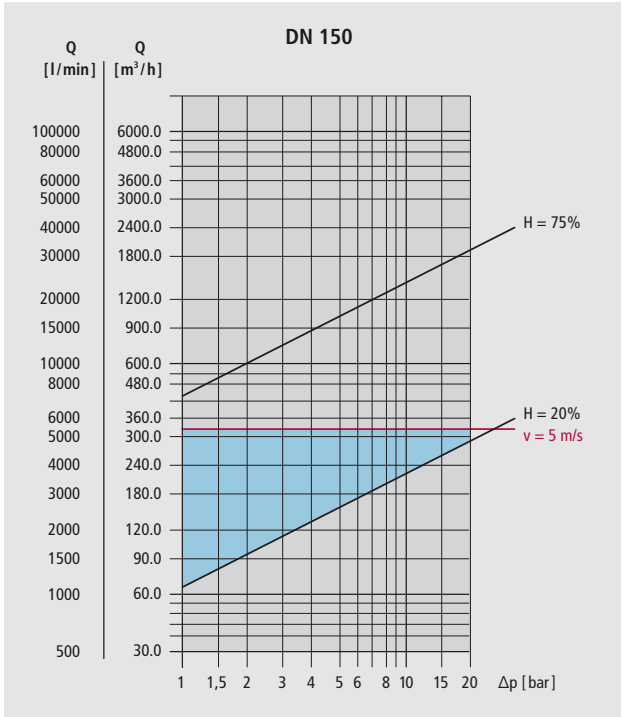
Performance charts for angle valves DN 50, DN 80, DN 100, DN 150 as of year of manufacture 03/2008

The optimal working range (blue field) of Hawle control valves is between the boundary lines of the degree of opening of H = 15% and H = 80%. If the calculated value is below the minimum or above the maximum degree of opening, please contact us. Likewise, the maximum flow velocity of 5 m/s must be observed.

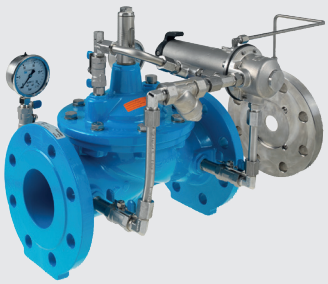




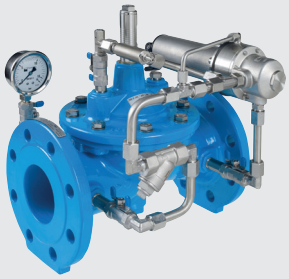




Medium-controlled control valves



013-00
Flow control / limiting valve

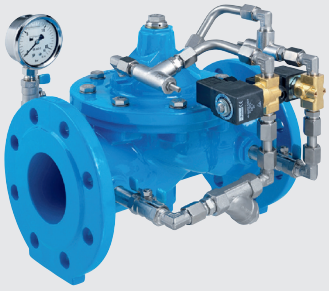


014-00
Safety/pressure retention valve

015-00
Pressure reducing valve

016-00
Float valve
for open/close control

017-03
On/off valve

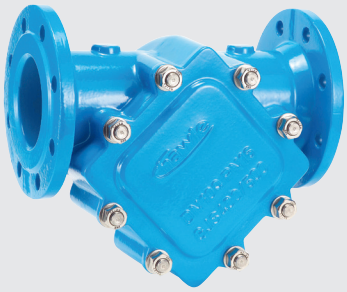


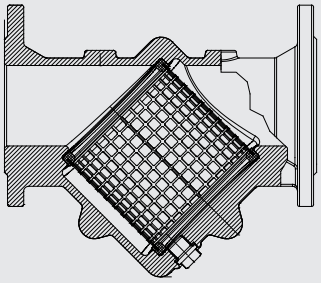
017-95
On/off valve
Step-by-step operation

No.:	Description	Nominal diameter
013-00	Flow control / limiting valve	FT 1½“ - DN 300
014-00	Safety/pressure retention valve	FT 1½“ - DN 300
015-00	Pressure reducing valve	FT 1½“ - DN 300
016-00	Float valve for open/close control	FT 1½“ - DN 300
017-03	On/off valve for electric actuation - closed at zero current	FT 1½“ - DN 300
017-95	On/off valve for electric actuation, step-by-step operation - closed at zero current	FT 1½“ - DN 300

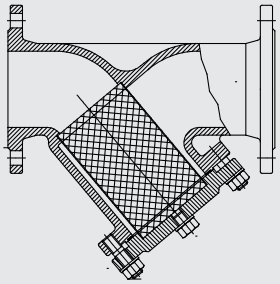
For other versions, please see our website: www.hawle.de/en/products/infos/category/12/

Strainer

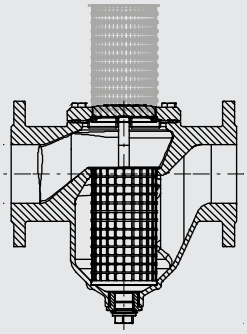




019-00
Strainer, lateral cover



019-01
Strainer, with angle seat



019-02
Strainer, with angle seat

No.:	Description	Nominal diameter
019-00	Strainer, lateral cover	DN 50 - 200
019-01	Strainer with angle seat	DN 40 - 300
019-02	Strainer, top cover	DN 40 - 200

Accessories

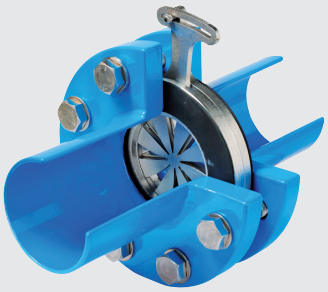
011-00
Optical position indicator

011-01
Electric position indicator

011-02
Analog position indicator

013-07
Opening limiter

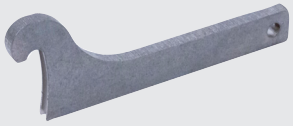
013-08
Float protection tube



013-09
Orifice plate, adjustable

No.:	Description	Nominal diameter
011-00	Optical position indicator	For use with: FT 1½“ - DN 300
011-01	Electric position indicator with sensor(s)	For use with: FT 1½“ - DN 300
011-02	Analog position indicator	For use with: FT 1½“ - DN 300
013-07	Opening limiter	FT 1½“ - DN 300
013-08	Float protection tube including assembly set	-
013-09	Orifice plate, adjustable	DN 40 - 200

Accessories



013-10
Adjustment tool for orifice plate

011-03
Power limitation module / plug-in module

No.:	Description	Nominal diameter
013-10	Adjustment tool for adjustable orifice plate (013-09)	-
011-03	Power limitation module / plug-in module LBV 24 V DC or 48-230 V DC/AC	-

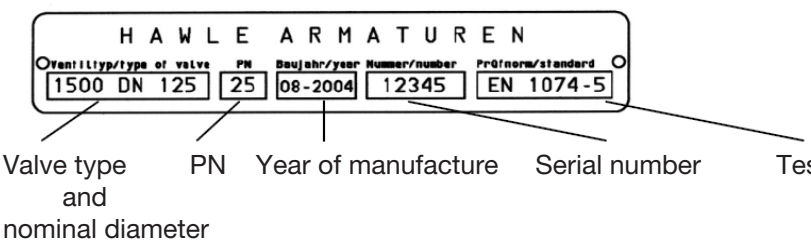
Request for spare parts:

To determine the required repair sets and appropriate spare parts, please provide

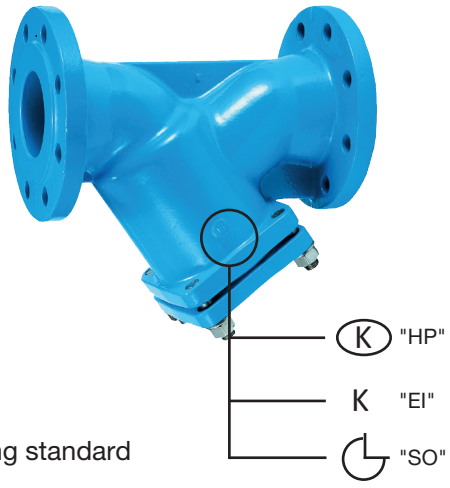
- the information on the type plate
- 2 or 3 photos of the control valve
  to be serviced with DN and PN specifications

Please submit inquiries in writing by email to anfragen@hawle.de

Example of type plate:



In the case of Y-shaped strainers, please also provide the casting symbol on the strainer in question. For possible symbols, see the illustration below:



Maintenance / Control valve service:

In accordance with DVGW [German Association for Gas and Water] W 392-2, safety and pressure control valves must undergo an annual functional check and periodic maintenance, during which gaskets have to be replaced. Hawle control valves are scheduled for maintenance every 4 to 5 years.

If required, we will be pleased to provide you with a maintenance agreement. In this case, a service engineer from Hawle Kunststoff & Service GmbH will carry out the maintenance. Medium-controlled control valves and fittings are tested in accordance with DVGW W 400-3-B1 and W 491-1 /2.

For further information, please see www.hawle-service.de.

A sustainable all-in-one solution for your construction project

Hawle Kunststoff GmbH, headquartered in Wiehl, Germany, manufactures and sells plastic pipe and chamber systems, as well as suitable molded parts and connecting pieces for private and municipal supply of potable water and wastewater disposal. Our extensive portfolio includes plastic solutions made of PP and PE-HD for use in waster, wastewater, industrial and landfill technology.

Our all-in-one systems are based on a plastic profile spiral pipe, which can be produced with a smooth or profiled exterior in nominal diameters from DN 300 to DN 3500. Chambers made of polypropylene or polyethylene are extremely durable with an expected service life of 100 years.

Advantages of plastic constructions

- Prefabricated
- Short delivery times
- Very quick installation
- Low weight
- Durable material
- Absolutely corrosion-resistant
- Absolutely leaktight

Comments

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