Frese STBV VODRV
DN15-DN500

Description

Frese STBV VODRV is a Variable Orifice Double Regulating Valve for flow balancing and verification.

Application

The Frese STBV VODRV is ideally suited for use in heating and cooling applications for the balancing and accurate verification of flow in various sections of the system.

The VODRV balancing valve ensures simple and reliable verification of the system and can be installed in both variable flow systems and constant flow systems.

Operation

The double regulating valve feature allows the valve to be set to the required position and locked thus limiting the opening of the valve. If required, the valve can then be isolated by turning the handwheel to set point 0.0 and reopened to the previous set point.



Benefits

- Simple to install and adjust
- Clear, 2 digit pre-setting scale
- Isolation feature
- Provides an alternative to commissioning sets (only one valve to install instead of a separate DRV and metering station)
- Delivers accurate control of the flow at all settings

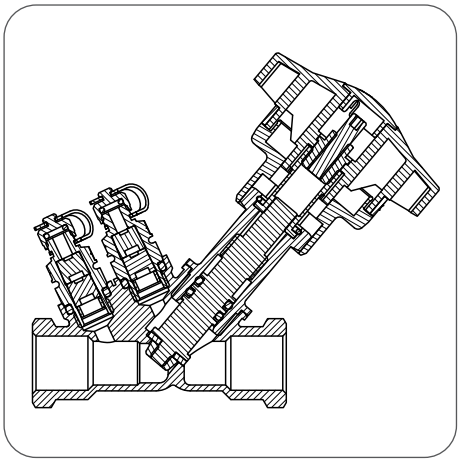
Features

- Available in sizes DN15 to DN500
- The double regulating feature allows the valve opening to be set and locked at the desired set point using an Allen key
- Built in PT ports for flow measurement
- Can be installed with the Frese PV Compact differential pressure control valve for efficient pressure and flow control

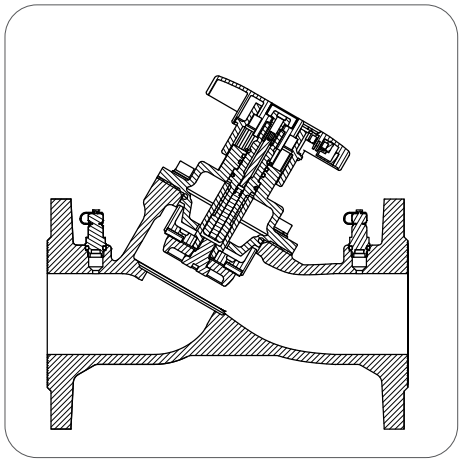
Frese STBV VODRV
DN15-DN500

Design

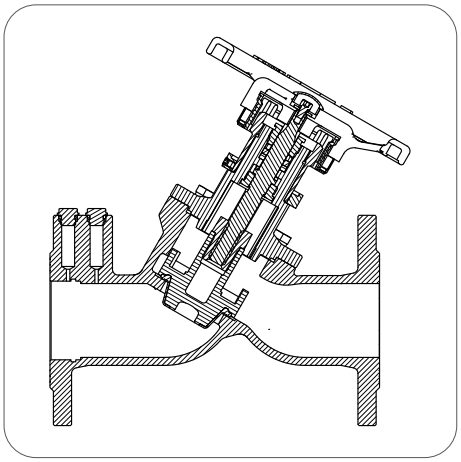
The VODRV valve consists of a throttling globe valve to set the flow and P/T plugs for flow verification. The accuracy of the flow measurement is +/- 5% at the fully open position . Accuracy at partial openings of the valve in accordance with BS 7350.



DN15-DN50 section drawing



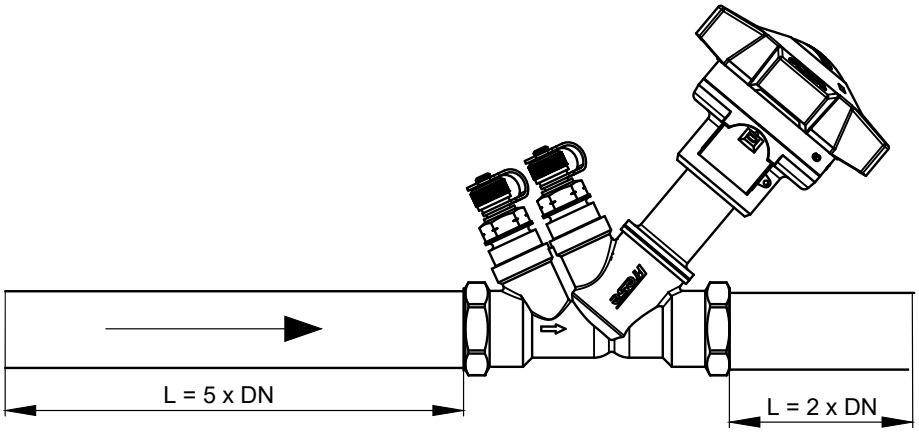
DN65-DN300 section drawing



DN350-DN500 section drawing

Installation

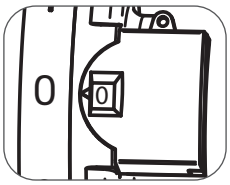
Frese STBV VODRV must be installed according to the requirements below to obtain the measured flow accuracy.



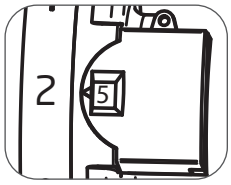
Frese STBV VODRV
DN15-DN500

Setting the valve DN15-DN50

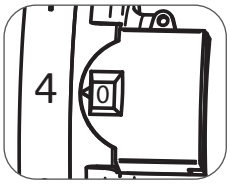
Valve closed



Valve set at 2.5



Valve fully open



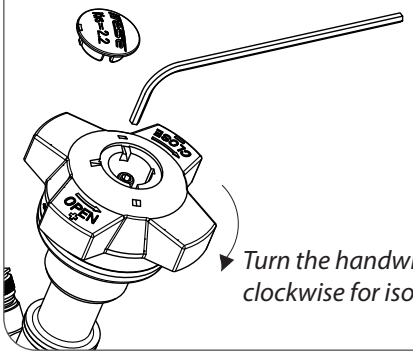
Frese STBV VODRV is set using the pre-setting scale located below the handwheel. The set point of the valve can be determined by using the tables from page 9.

Pre-setting max position.

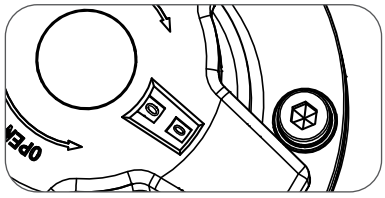
- Set the valve handwheel to the desired value
- Remove cap marked Frese, and tighten the locking screw (turn clockwise) with 3 mm Allen key
- The valve can then be reopened to the pre-set value after the valve has been used for isolation

To set the valve to another flow position, loosen the locking screw with the 3 mm Allen key (turn anti clockwise), set the handwheel to the new position and tighten the locking screw.

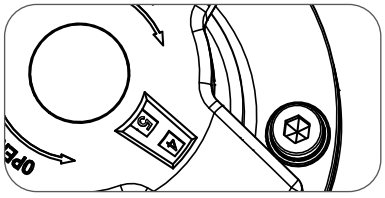
Turn Allen key clockwise to set the valve to max setting position



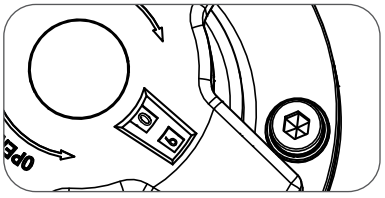
Setting the valve DN65-DN150



Valve closed



Valve set at 4.5



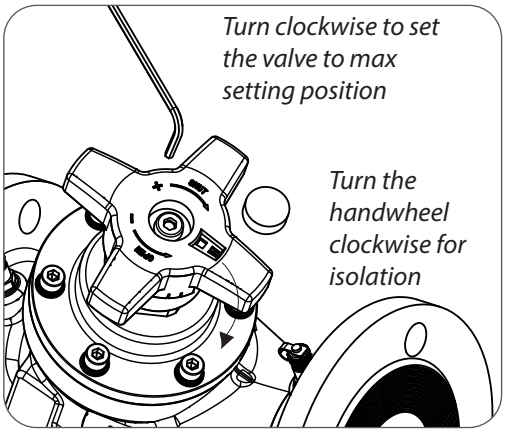
Valve fully open (9.0)

Frese STBV VODRV is set using the pre-setting scale located on the handwheel. The set point of the valve can be determined by using the tables from page 9.

Pre-setting max position.

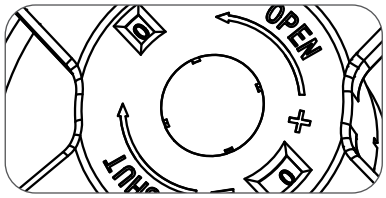
- Set the valve handwheel to the desired value
- Remove cap, and tighten the locking screw (turn clockwise) with 2.5 mm (DN65-DN80) and 3 mm (DN100-DN150) Allen key
- The valve can then be reopened to the pre-set value after the valve has been used for isolation

To set the valve to another flow position, loosen the locking screw with the Allen key (turn anti clockwise), set the handwheel to the new position and tighten the locking screw.

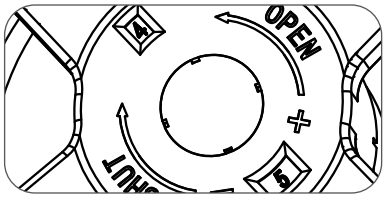


Frese STBV VODRV
DN15-DN500

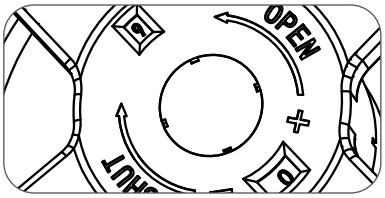
Setting the valve DN200-DN300



Valve closed



Valve set at 4.5

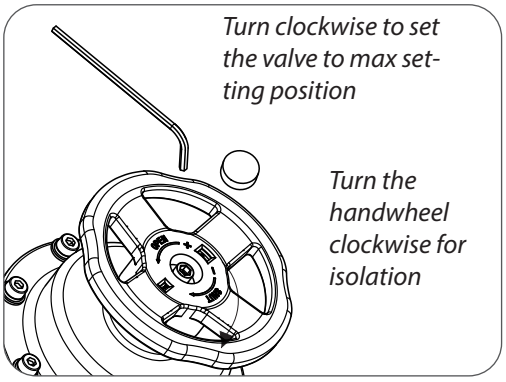


Valve fully open (9.0)

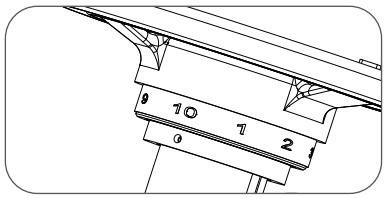
Frese STBV VODRV is set using the pre-setting scale located on the handwheel. The set point of the valve can be determined by using the tables from page 9.

Pre-setting max position.
- Set the valve handwheel to the desired value
- Remove cap, and tighten the locking screw (turn clockwise) with 4 mm Allen key
- The valve can then be reopened to the pre-set value after the valve has been used for isolation

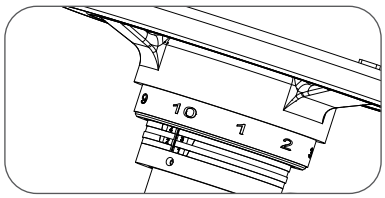
To set the valve to another flow position, loosen the locking screw with the 4 mm Allen key (turn anti clockwise), set the handwheel to the new position and tighten the locking screw.



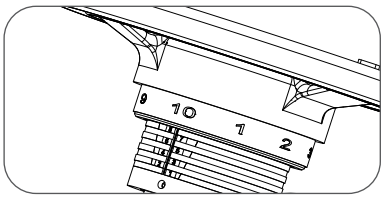
Setting the valve DN350-DN500



Valve closed

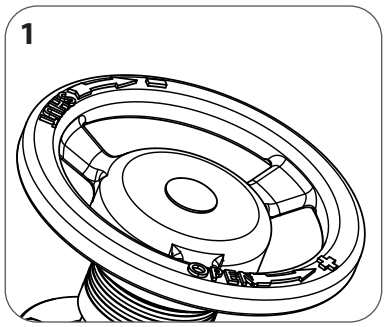


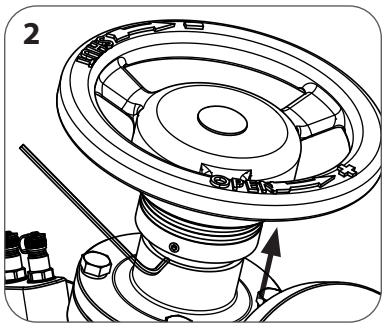
Valve set at 4.0

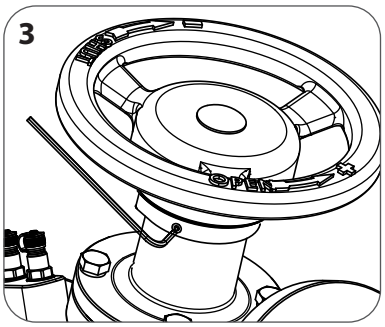


Valve set at 8.0

Frese STBV VODRV is set using the pre-setting scale located below the handwheel. The set point of the valve can be determined by using the tables from page 9.







Pre-setting max position:
1. Set the handwheel to the desired value
2. Loosen the 2 screws with a 2.5 mm Allen key in the ring below the handwheel and lift it up
3. Tighten the 2 screws again with the 2.5 mm Allen key

The valve can then be reopened to the pre-set value after the valve has been used for isolation

To set the valve to another flow position, loosen the screws again, set the handwheel to the new position, lift up the ring again and tighten.

Frese STBV VODRV
DN15-DN500

Verification of the flow

In general, the flow rate in a system can be verified in two ways:

1. Direct flow rate verification in a circuit
2. Measurement of the differential pressure across the balancing valve or metering station.

1. Direct flow rate verification
For example, this can be carried out by ultrasonic equipment. On the basis of the measured velocity of the flow and the pipe dimension, the software will compute the flow rate. The use of ultrasonic verification requires free access to the pipes as the sensors are fitted directly to the pipe.

2. Measurement of the differential pressure
In the case of balancing valves, such as the Frese STBV VODRV, the differential pressure across the balancing valve is measured to verify the flow.

Use the tables from page 9 to determine the Kv of the valve at the specific pre-setting. The formula on the right hand side of this page can be used to determine the flow from the measured ΔP.

The following applies to all flow control valves:

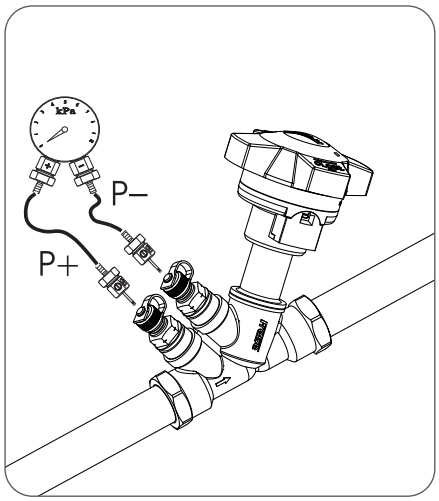
$$Q = Kv * \sqrt{\Delta p}$$

Q = Flow (m^3/h)
Kv = Orifice area
Δp = Differential pressure (Bar)

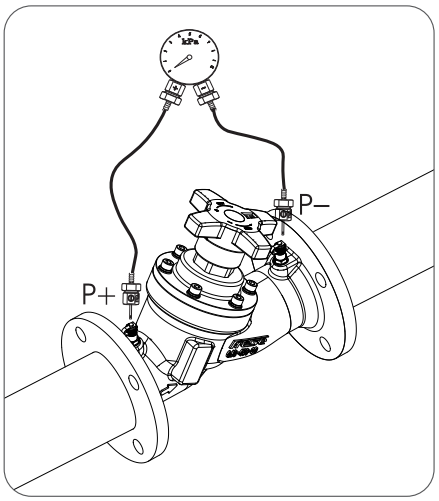
The Frese STBV VODRV verifies the flow by measuring the differential pressure across the variable orifice. The flow can be calculated using the formula above.

Flow calculation with other units	
$Q = Kv \cdot 100 \cdot \sqrt{\Delta p}$	Q = l/h Δp = kPa
$Q = \frac{Kv}{36} \cdot \sqrt{\Delta p}$	Q = l/s Δp = kPa

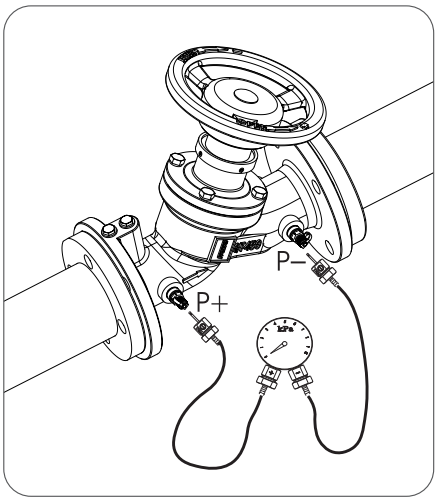
Measurement of the differential pressure across the variable orifice of the valve



DN15-DN50



DN65-DN300

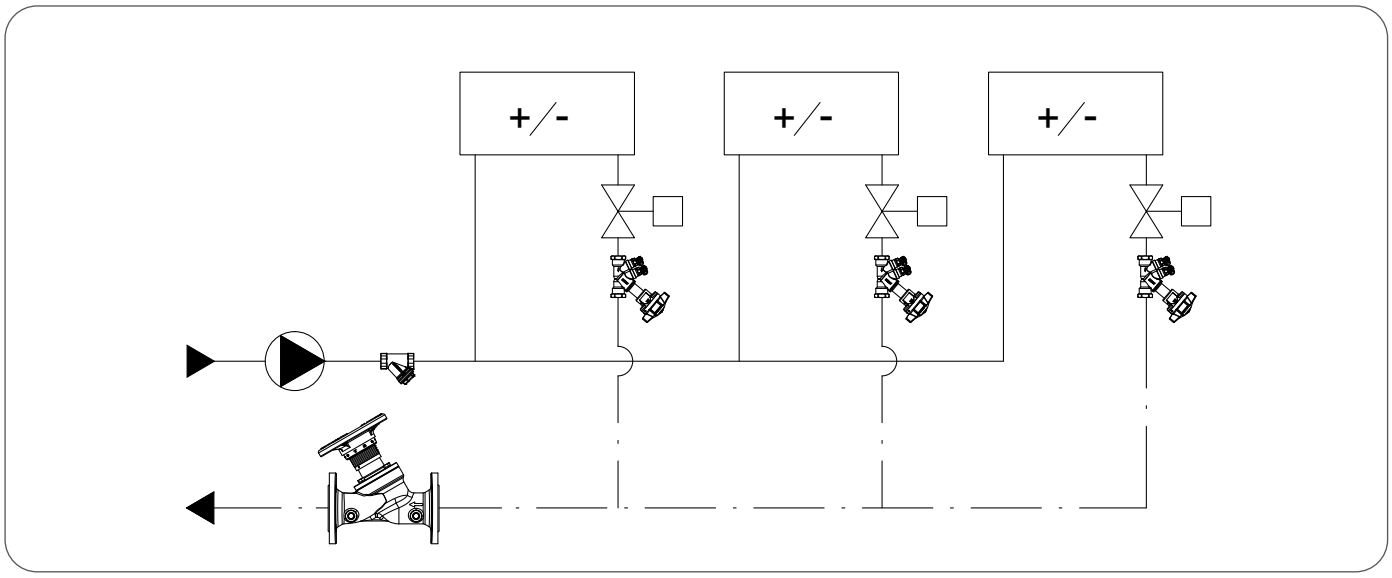


DN350-DN500

Frese STBV VODRV
DN15-DN500

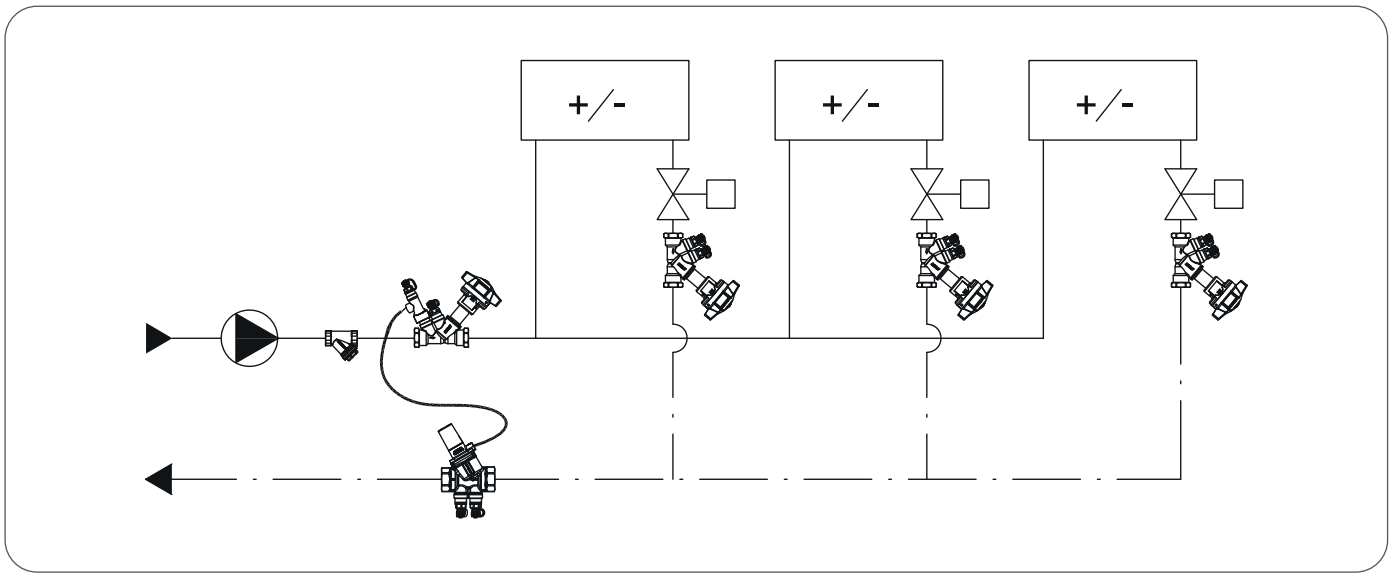
Application diagrams

Frese STBV VODRV in a system with 2-port Control Valves



The STBV VODRV valve is placed on every coil to verify and balance the flow.

Frese STBV VODRV in a system with the Frese PV Compact Differential Pressure Control Valve



The STBV VODRV valve is placed on every coil to verify and balance the flow.

The Frese PV Compact is connected to the Frese STBV VODRV to control and limit the differential pressure in the system. This assures noiseless operation of 2-way control valves and efficient flow modulation to the terminal units.

The pipe system must be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).

Frese STBV VODRV
DN15-DN500

Technical data

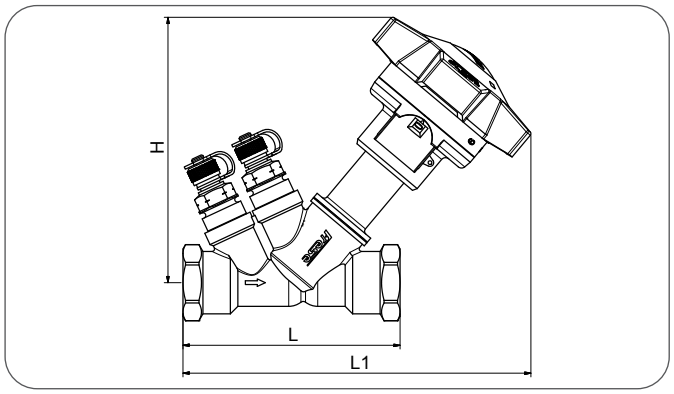
DN15 - DN50

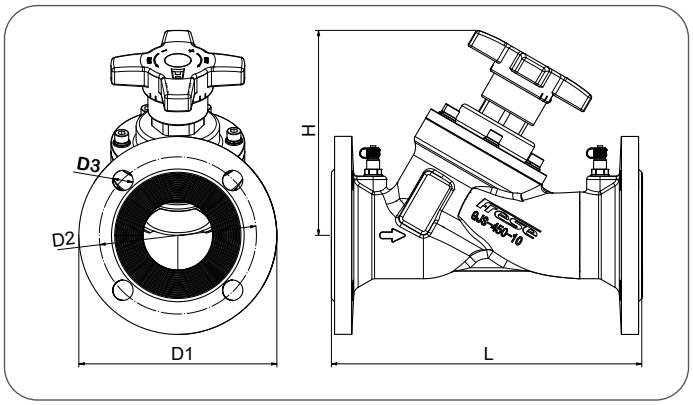
Housing: DZR Brass
Bonnet/Stem DZR Brass
Handwheel/Scale: PA6/ABS
O-rings: EPDM
Pressure class: PN25
Temperature range: -10°C to + 120°C
Thread: ISO 228

DN65 - DN500

Housing: Ductile Iron
O-rings: EPDM
Pressure class: PN16
Temperature range: -10°C to + 120°C (DN65 - DN200)
-10°C to + 110°C (DN250 - DN500)
Flange connections: EN 1092-2

Dimensions & Weight





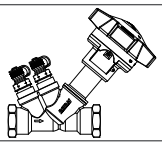
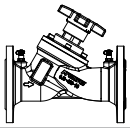
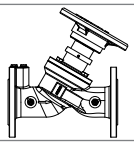
Size		DN15	DN20	DN25	DN32	DN40	DN50
Dimension (mm)	L	87	96	100	114	124	145
	L1	143	142	153	163	177	190
	H	112	108	125	129	142	154
Weight	kg	0.49	0.57	0.82	1.0	1.2	1.7

Size		DN65	DN80	DN100	DN125	DN150	DN200
Dimension (mm)	L	290	310	350	400	480	600
	H	193	204	240	253	289	443
	D1	185	200	220	250	285	340
	D2	145	160	180	210	240	295
	D3	4 x ø19	8 x ø19	8 x ø19	8 x ø19	8 x ø23	12 x ø23
Weight	Kg	14	18	26	33	48	95

Size		DN250	DN300	DN350	DN400	DN450	DN500
Dimension (mm)	L	730	850	980	1100	1200	1250
	H	484	506	750	835	860	962
	D1	405	460	520	580	640	715
	D2	355	410	470	525	585	650
	D3	12 x ø28	12 x ø28	16 x ø28	16 x ø31	20 x ø31	20 x ø34
Weight	Kg	135	192	300	450	506	679

Frese STBV VODRV
DN15-DN500

Product programme

	DN15	DN20	DN25	DN32	DN40	DN50
	53-2560	53-2561	53-2562	53-2563	53-2564	53-2565
Kv Total (Fully open valve)	3.5	6.5	10.5	21	26	40
	DN65	DN80	DN100	DN125	DN150	DN200
	53-2566	53-2567	53-2568	53-2569	53-2570	53-2571
Kv Total (Fully open valve)	94.6	119	215	289	403	852
	DN250	DN300	DN350	DN400	DN450	DN500
	53-2572	53-2573	53-2514	53-2515	53-2516	53-2517
Kv Total (Fully open valve)	1240	1420	2085	2189	2526	3381

Kv = m^3/h at a pressure drop of 1 bar across the fully open valve.

Accessories

	Frese no.	Description
	48-0015	Combi-drain
	09-2072	PT-plug and connection for capillary tube (for use with PV Compact DN15-DN50)
	48-0033	Connection for capillary tube (for use with flanged PV Compact DN50-DN200)

Frese STBV VODRV
DN15-DN500

Setting and Kv - total valve (For pump dimensioning)

	DN15	DN 20	DN25	DN32	DN40	DN50
Pre-set	**Kv**	**Kv**	**Kv**	**Kv**	**Kv**	**Kv**
0	0.0	0.0	0.0	0.0	0.0	0.0
0.1	0.2	0.3	0.5	0.7	0.6	1.1
0.2	0.4	0.6	1.0	1.4	1.1	2.2
0.3	0.6	0.9	1.5	2.2	1.7	3.3
0.4	0.8	1.3	2.0	2.9	2.3	4.4
0.5	1.0	1.6	2.5	3.6	2.8	5.6
0.6	1.1	1.8	2.9	4.3	3.9	6.9
0.7	1.2	2.0	3.3	5.0	5.0	8.3
0.8	1.3	2.2	3.7	5.7	6.1	9.6
0.9	1.4	2.4	4.2	6.4	7.2	11.0
1.0	1.5	2.6	4.6	7.2	8.3	12.3
1.1	1.6	2.8	4.9	7.8	9.3	13.4
1.2	1.7	3.0	5.3	8.5	10.2	14.4
1.3	1.7	3.1	5.7	9.1	11.2	15.5
1.4	1.8	3.3	6.1	9.8	12.1	16.5
1.5	1.9	3.5	6.5	10.5	13.1	17.6
1.6	2.0	3.6	6.7	11.0	13.7	18.5
1.7	2.0	3.8	6.9	11.5	14.4	19.4
1.8	2.1	3.9	7.1	12.0	15.0	20.3
1.9	2.2	4.0	7.4	12.5	15.6	21.2
2.0	2.3	4.2	7.6	13.0	16.3	22.1
2.1	2.3	4.3	7.8	13.4	16.9	22.8
2.2	2.4	4.5	8.0	13.9	17.5	23.5
2.3	2.4	4.6	8.3	14.3	18.1	24.2
2.4	2.5	4.7	8.5	14.8	18.6	24.9
2.5	2.5	4.9	8.7	15.2	19.2	25.7
2.6	2.6	5.0	8.8	15.6	19.7	26.4
2.7	2.7	5.1	9.0	16.1	20.2	27.2
2.8	2.7	5.2	9.1	16.5	20.7	27.9
2.9	2.8	5.4	9.3	16.9	21.2	28.7
3.0	2.9	5.5	9.4	17.3	21.7	29.5
3.1	3.0	5.6	9.5	17.7	22.2	30.2
3.2	3.0	5.7	9.7	18.1	22.6	30.9
3.3	3.1	5.9	9.8	18.5	23.1	31.7
3.4	3.1	6.0	10.0	18.9	23.6	32.4
3.5	3.2	6.1	10.1	19.3	24.1	33.1
3.6	3.3	6.2	10.2	19.7	24.5	33.8
3.7	3.3	6.3	10.3	20.0	24.8	34.4
3.8	3.4	6.3	10.3	20.3	25.2	35.0
3.9	3.4	6.4	10.4	20.7	25.6	35.7
4.0	3.5	6.5	10.5	21.0	26.0	36.3
4.1						37.1
4.2						37.8
4.3						38.5
4.4						39.3
4.5						40.00

Frese STBV VODRV
DN15-DN500

Setting and Kv - ΔP signal (For flow verification)

	DN15	DN 20	DN25	DN32	DN40	DN50
Pre-set	**Kv**	**Kv**	**Kv**	**Kv**	**Kv**	**Kv**
0	0.00	0.00	0.00	0.00	0.00	0.00
0.1	0.20	0.33	0.55	0.73	0.58	1.09
0.2	0.40	0.66	1.10	1.45	1.15	2.18
0.3	0.60	0.98	1.64	2.18	1.73	3.26
0.4	0.80	1.31	2.19	2.90	2.30	4.35
0.5	1.00	1.64	2.74	3.63	2.88	5.4
0.6	1.12	1.88	3.40	4.36	3.97	6.8
0.7	1.25	2.13	4.07	5.1	5.1	8.1
0.8	1.37	2.37	4.73	5.8	6.2	9.4
0.9	1.50	2.62	5.4	6.5	7.2	10.7
1.0	1.62	2.86	6.1	7.3	8.3	12.0
1.1	1.72	3.05	7.1	8.0	9.5	13.1
1.2	1.83	3.24	8.1	8.8	10.7	14.3
1.3	1.93	3.43	9.1	9.5	11.8	15.4
1.4	2.04	3.62	10.2	10.3	13.0	16.5
1.5	2.14	3.81	11.2	11.0	14.1	17.7
1.6	2.24	4.00	12.1	11.5	15.0	18.7
1.7	2.34	4.19	13.1	12.1	15.9	19.7
1.8	2.45	4.39	14.0	12.6	16.9	20.7
1.9	2.55	4.58	14.9	13.1	17.8	21.7
2.0	2.65	4.77	15.9	13.7	18.7	22.7
2.1	2.70	4.92	16.8	14.1	19.5	23.8
2.2	2.75	5.1	17.8	14.6	20.4	24.8
2.3	2.79	5.2	18.8	15.1	21.3	25.8
2.4	2.84	5.4	19.7	15.5	22.2	26.8
2.5	2.89	5.5	20.7	16.0	23.0	27.9
2.6	3.12	5.7	21.6	16.5	23.8	28.8
2.7	3.34	5.9	22.4	16.9	24.6	29.7
2.8	3.57	6.1	23.3	17.3	25.4	30.5
2.9	3.79	6.3	24.1	17.8	26.2	31.4
3.0	4.02	6.5	25.0	18.2	26.9	32.3
3.1	4.29	6.8	26.2	18.7	28.1	33.3
3.2	4.56	7.0	27.4	19.2	29.4	34.3
3.3	4.82	7.3	28.6	19.7	30.6	35.4
3.4	5.1	7.6	29.8	20.2	31.8	36.4
3.5	5.4	7.9	31.0	20.8	33.0	37.4
3.6	5.6	8.3	31.2	21.2	34.4	38.4
3.7	5.9	8.7	31.3	21.7	35.8	39.5
3.8	6.2	9.1	31.5	22.1	37.2	40.6
3.9	6.5	9.5	31.6	22.6	38.6	41.6
4.0	6.8	9.9	31.8	23.0	40.0	42.7
4.1						44.1
4.2						45.5
4.3						46.9
4.4						48.3
4.5						49.7

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN65	
Pre-set	**Kv**
0	0.00
0.1	0.30
0.2	0.60
0.3	0.90
0.4	1.20
0.5	1.50
0.6	1.80
0.7	2.10
0.8	2.40
0.9	2.70
1	3.00
1.1	3.62
1.2	4.24
1.3	4.86
1.4	5.48
1.5	6.10
1.6	6.72
1.7	7.34
1.8	7.96
1.9	8.58
2	9.20
2.1	10.2
2.2	11.1
2.3	12.1
2.4	13.1
2.5	14.1
2.6	15.0
2.7	16.0
2.8	17.0
2.9	17.9
3	18.9
3.1	21.1
3.2	23.2
3.3	25.4
3.4	27.5
3.5	29.7
3.6	31.9
3.7	34.0
3.8	36.2
3.9	38.3
4	40.5
4.1	42.6
4.2	44.7
4.3	46.8
4.4	48.9
4.5	51.1
4.6	53.2
4.7	55.3
4.8	57.4
4.9	59.5
5.0	61.6

DN65	
Pre-set	**Kv**
5.1	63.0
5.2	64.3
5.3	65.7
5.4	67.0
5.5	68.4
5.6	69.8
5.7	71.1
5.8	72.5
5.9	73.8
6	75.2
6.1	76.1
6.2	77.0
6.3	77.9
6.4	78.8
6.5	79.7
6.6	80.5
6.7	81.4
6.8	82.3
6.9	83.2
7	84.1
7.1	84.8
7.2	85.4
7.3	86.1
7.4	86.7
7.5	87.4
7.6	88.1
7.7	88.7
7.8	89.4
7.9	90.0
8	90.7
8.1	91.1
8.2	91.5
8.3	91.9
8.4	92.3
8.5	92.7
8.6	93.0
8.7	93.4
8.8	93.8
8.9	94.2
9.0	94.6

DN80	
Pre-set	**Kv**
0	0.00
0.1	0.57
0.2	1.14
0.3	1.71
0.4	2.28
0.5	2.85
0.6	3.42
0.7	3.99
0.8	4.56
0.9	5.13
1	5.70
1.1	6.14
1.2	6.58
1.3	7.02
1.4	7.46
1.5	7.90
1.6	8.34
1.7	8.78
1.8	9.22
1.9	9.66
2	10.1
2.1	10.8
2.2	11.4
2.3	12.1
2.4	12.8
2.5	13.5
2.6	14.1
2.7	14.8
2.8	15.5
2.9	16.1
3	16.8
3.1	18.6
3.2	20.5
3.3	22.3
3.4	24.1
3.5	26.0
3.6	27.8
3.7	29.6
3.8	31.4
3.9	33.3
4	35.1
4.1	37.9
4.2	40.8
4.3	43.6
4.4	46.5
4.5	49.3
4.6	52.1
4.7	55.0
4.8	57.8
4.9	60.7
5.0	63.5

DN80	
Pre-set	**Kv**
5.1	65.7
5.2	67.9
5.3	70.1
5.4	72.3
5.5	74.6
5.6	76.8
5.7	79.0
5.8	81.2
5.9	83.4
6	85.6
6.1	87.0
6.2	88.5
6.3	89.9
6.4	91.3
6.5	92.8
6.6	94.2
6.7	95.6
6.8	97.0
6.9	98.5
7	99.9
7.1	101
7.2	102
7.3	103
7.4	104
7.5	105
7.6	106
7.7	107
7.8	108
7.9	108
8	109
8.1	110
8.2	111
8.3	112
8.4	113
8.5	114
8.6	115
8.7	116
8.8	117
8.9	118
9.0	119

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN100	
Pre-set	**Kv**
0	0,00
0.1	0,90
0.2	1,80
0.3	2,70
0.4	3,60
0.5	4,50
0.6	5,40
0.7	6,30
0.8	7,20
0.9	8,10
1	9,00
1.1	10,3
1.2	11,6
1.3	12,8
1.4	14,1
1.5	15,4
1.6	16,7
1.7	18,0
1.8	19,2
1.9	20,5
2	21,8
2.1	24,2
2.2	26,5
2.3	28,9
2.4	31,2
2.5	33,6
2.6	35,9
2.7	38,3
2.8	40,6
2.9	43,0
3	45,3
3.1	48,1
3.2	50,9
3.3	53,7
3.4	56,5
3.5	59,3
3.6	62,0
3.7	64,8
3.8	67,6
3.9	70,4
4	73,2
4.1	77,6
4.2	81,9
4.3	86,3
4.4	90,6
4.5	95,0
4.6	99,4
4.7	104
4.8	108
4.9	112
5.0	117

DN100	
Pre-set	**Kv**
5.1	120
5.2	124
5.3	127
5.4	131
5.5	134
5.6	138
5.7	141
5.8	145
5.9	148
6	152
6.1	155
6.2	157
6.3	160
6.4	163
6.5	166
6.6	168
6.7	171
6.8	174
6.9	177
7	179
7.1	182
7.2	184
7.3	186
7.4	189
7.5	191
7.6	193
7.7	196
7.8	198
7.9	201
8	203
8.1	204
8.2	205
8.3	207
8.4	208
8.5	209
8.6	210
8.7	212
8.8	213
8.9	214
9.0	215

DN125	
Pre-set	**Kv**
0	0,00
0.1	0,97
0.2	1,94
0.3	2,91
0.4	3,88
0.5	4,85
0.6	5,82
0.7	6,79
0.8	7,76
0.9	8,73
1	9,70
1.1	10,9
1.2	12,1
1.3	13,4
1.4	14,6
1.5	15,8
1.6	17,0
1.7	18,2
1.8	19,5
1.9	20,7
2	21,9
2.1	25,0
2.2	28,1
2.3	31,2
2.4	34,3
2.5	37,4
2.6	40,4
2.7	43,5
2.8	46,6
2.9	49,7
3	52,8
3.1	57,4
3.2	62,1
3.3	66,7
3.4	71,4
3.5	76,0
3.6	80,6
3.7	85,3
3.8	89,9
3.9	94,6
4	99,2
4.1	105
4.2	112
4.3	118
4.4	124
4.5	131
4.6	137
4.7	143
4.8	149
4.9	156
5.0	162

DN125	
Pre-set	**Kv**
5.1	165
5.2	169
5.3	172
5.4	175
5.5	178
5.6	182
5.7	185
5.8	188
5.9	192
6	195
6.1	199
6.2	202
6.3	206
6.4	209
6.5	213
6.6	217
6.7	220
6.8	224
6.9	227
7	231
7.1	234
7.2	237
7.3	240
7.4	242
7.5	245
7.6	248
7.7	251
7.8	254
7.9	257
8	260
8.1	263
8.2	265
8.3	268
8.4	271
8.5	274
8.6	277
8.7	280
8.8	283
8.9	286
9.0	289

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN150	
Pre-set	**Kv**
0	0,00
0.1	1,41
0.2	2,8
0.3	4,2
0.4	5,6
0.5	7,1
0.6	8,5
0.7	9,9
0.8	11,3
0.9	12,7
1	14,1
1.1	17,0
1.2	19,9
1.3	22,8
1.4	25,7
1.5	28,6
1.6	31,4
1.7	34,3
1.8	37,2
1.9	40,1
2	43,0
2.1	48,0
2.2	53,0
2.3	58,0
2.4	63,0
2.5	68,0
2.6	73,0
2.7	78,0
2.8	83,0
2.9	88,0
3	93,0
3.1	98,3
3.2	104
3.3	109
3.4	114
3.5	120
3.6	125
3.7	130
3.8	135
3.9	141
4	146
4.1	152
4.2	157
4.3	163
4.4	169
4.5	175
4.6	180
4.7	186
4.8	192
4.9	197
5.0	203

DN150	
Pre-set	**Kv**
5.1	206
5.2	210
5.3	213
5.4	216
5.5	220
5.6	223
5.7	226
5.8	229
5.9	233
6	236
6.1	242
6.2	247
6.3	253
6.4	258
6.5	264
6.6	270
6.7	275
6.8	281
6.9	286
7	292
7.1	298
7.2	304
7.3	309
7.4	315
7.5	321
7.6	327
7.7	333
7.8	338
7.9	344
8	350
8.1	355
8.2	361
8.3	366
8.4	371
8.5	377
8.6	382
8.7	387
8.8	392
8.9	398
9.0	403

DN200	
Pre-set	**Kv**
0	0,00
0.1	4,8
0.2	9,7
0.3	14,5
0.4	19,4
0.5	24,2
0.6	29,0
0.7	33,9
0.8	38,7
0.9	43,6
1	48,4
1.1	55,0
1.2	61,5
1.3	68,1
1.4	74,6
1.5	81,2
1.6	87,8
1.7	94,3
1.8	101
1.9	107
2	114
2.1	119
2.2	124
2.3	129
2.4	134
2.5	139
2.6	144
2.7	149
2.8	154
2.9	159
3	164
3.1	171
3.2	179
3.3	186
3.4	194
3.5	201
3.6	208
3.7	216
3.8	223
3.9	231
4	238
4.1	253
4.2	269
4.3	284
4.4	300
4.5	315
4.6	330
4.7	346
4.8	361
4.9	377
5.0	392

DN200	
Pre-set	**Kv**
5.1	404
5.2	415
5.3	427
5.4	438
5.5	450
5.6	461
5.7	473
5.8	484
5.9	496
6	507
6.1	517
6.2	526
6.3	536
6.4	546
6.5	556
6.6	565
6.7	575
6.8	585
6.9	594
7	604
7.1	613
7.2	621
7.3	630
7.4	638
7.5	647
7.6	656
7.7	664
7.8	673
7.9	681
8	690
8.1	699
8.2	709
8.3	718
8.4	727
8.5	737
8.6	746
8.7	755
8.8	764
8.9	774
9.0	783
9.1	790
9.2	797
9.3	804
9.4	811
9.5	817
9.6	824
9.7	831
9.8	838
9.9	845
10.0	852

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN250	
Pre-set	**Kv**
0	0,00
0.1	7,0
0.2	14,0
0.3	21,0
0.4	28,0
0.5	35,0
0.6	41,9
0.7	48,9
0.8	55,9
0.9	62,9
1.0	69,9
1.1	78,4
1.2	86,9
1.3	95,4
1.4	104
1.5	112
1.6	121
1.7	129
1.8	138
1.9	146
2.0	155
2.1	164
2.2	173
2.3	182
2.4	191
2.5	200
2.6	208
2.7	217
2.8	226
2.9	235
3.0	244
3.1	250
3.2	255
3.3	261
3.4	266
3.5	272
3.6	277
3.7	283
3.8	288
3.9	294
4.0	299

DN250	
Pre-set	**Kv**
4.1	311
4.2	322
4.3	334
4.4	345
4.5	357
4.6	368
4.7	380
4.8	391
4.9	403
5.0	414
5.1	427
5.2	439
5.3	452
5.4	465
5.5	478
5.6	490
5.7	503
5.8	516
5.9	528
6.0	541
6.1	553
6.2	565
6.3	578
6.4	590
6.5	602
6.6	614
6.7	626
6.8	639
6.9	651
7.0	663
7.1	675
7.2	688
7.3	700
7.4	712
7.5	725
7.6	737
7.7	749
7.8	761
7.9	774
8.0	786

DN250	
Pre-set	**Kv**
8.1	799
8.2	812
8.3	825
8.4	838
8.5	852
8.6	865
8.7	878
8.8	891
8.9	904
9.0	917
9.1	928
9.2	940
9.3	951
9.4	962
9.5	974
9.6	985
9.7	996
9.8	1007
9.9	1019
10.0	1030
10.1	1041
10.2	1052
10.3	1063
10.4	1074
10.5	1085
10.6	1096
10.7	1107
10.8	1118
10.9	1129
11.0	1140
11.1	1150
11.2	1160
11.3	1170
11.4	1180
11.5	1190
11.6	1200
11.7	1210
11.8	1220
11.9	1230
12.0	1240

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN300	
Pre-set	**Kv**
0	0,00
0.1	9,4
0.2	18,7
0.3	28,1
0.4	37,4
0.5	46,8
0.6	49,1
0.7	51,3
0.8	53,6
0.9	55,8
1.0	58,1
1.1	66,0
1.2	73,9
1.3	81,8
1.4	89,7
1.5	97,6
1.6	105
1.7	113
1.8	121
1.9	129
2.0	137
2.1	145
2.2	153
2.3	161
2.4	169
2.5	177
2.6	184
2.7	192
2.8	200
2.9	208
3.0	216
3.1	222
3.2	228
3.3	233
3.4	239
3.5	245
3.6	251
3.7	257
3.8	262
3.9	268
4.0	274

DN300	
Pre-set	**Kv**
4.1	280
4.2	285
4.3	291
4.4	296
4.5	302
4.6	307
4.7	313
4.8	318
4.9	324
5.0	329
5.1	344
5.2	360
5.3	375
5.4	391
5.5	406
5.6	421
5.7	437
5.8	452
5.9	468
6.0	483
6.1	496
6.2	510
6.3	523
6.4	536
6.5	550
6.6	563
6.7	576
6.8	589
6.9	603
7.0	616
7.1	630
7.2	643
7.3	657
7.4	670
7.5	684
7.6	698
7.7	711
7.8	725
7.9	738
8.0	752

DN300	
Pre-set	**Kv**
8.1	765
8.2	779
8.3	792
8.4	805
8.5	819
8.6	832
8.7	845
8.8	858
8.9	872
9.0	885
9.1	900
9.2	914
9.3	929
9.4	943
9.5	958
9.6	972
9.7	987
9.8	1001
9.9	1016
10.0	1030
10.1	1043
10.2	1056
10.3	1069
10.4	1082
10.5	1095
10.6	1108
10.7	1121
10.8	1134
10.9	1147
11.0	1160
11.1	1173
11.2	1186
11.3	1199
11.4	1212
11.5	1225
11.6	1238
11.7	1251
11.8	1264
11.9	1277
12.0	1290

DN300	
Pre-set	**Kv**
12.1	1303
12.2	1316
12.3	1329
12.4	1342
12.5	1355
12.6	1368
12.7	1381
12.8	1394
12.9	1407
13.0	1420

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN350		DN350		DN350		DN350		DN350	
Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv
0	0.0								
0.1	16.9	4.1	565	8.1	959	12.1	1267	16.1	1710
0.2	33.8	4.2	578	8.2	964	12.2	1279	16.2	1723
0.3	50.7	4.3	590	8.3	969	12.3	1290	16.3	1737
0.4	67.6	4.4	603	8.4	975	12.4	1301	16.4	1751
0.5	84.5	4.5	615	8.5	980	12.5	1312	16.5	1764
0.6	101	4.6	628	8.6	985	12.6	1324	16.6	1778
0.7	118	4.7	641	8.7	990	12.7	1335	16.7	1791
0.8	135	4.8	653	8.8	995	12.8	1346	16.8	1805
0.9	152	4.9	666	8.9	1000	12.9	1358	16.9	1819
1.0	169	5.0	678	9.0	1006	13.0	1369	17.0	1832
1.1	182	5.1	688	9.1	1008	13.1	1377	17.1	1842
1.2	195	5.2	698	9.2	1010	13.2	1385	17.2	1853
1.3	208	5.3	708	9.3	1012	13.3	1393	17.3	1863
1.4	221	5.4	718	9.4	1015	13.4	1401	17.4	1874
1.5	234	5.5	728	9.5	1017	13.5	1409	17.5	1884
1.6	246	5.6	738	9.6	1019	13.6	1416	17.6	1894
1.7	259	5.7	748	9.7	1021	13.7	1424	17.7	1905
1.8	272	5.8	758	9.8	1024	13.8	1432	17.8	1915
1.9	285	5.9	768	9.9	1026	13.9	1440	17.9	1925
2.0	298	6.0	778	10.0	1028	14.0	1448	18.0	1936
2.1	312	6.1	787	10.1	1038	14.1	1460	18.1	1950
2.2	325	6.2	796	10.2	1047	14.2	1473	18.2	1965
2.3	338	6.3	805	10.3	1057	14.3	1485	18.3	1980
2.4	352	6.4	814	10.4	1066	14.4	1497	18.4	1995
2.5	365	6.5	824	10.5	1076	14.5	1509	18.5	2010
2.6	379	6.6	833	10.6	1085	14.6	1522	18.6	2025
2.7	392	6.7	842	10.7	1094	14.7	1534	18.7	2040
2.8	406	6.8	851	10.8	1104	14.8	1546	18.8	2055
2.9	419	6.9	861	10.9	1113	14.9	1558	18.9	2070
3.0	433	7.0	870	11.0	1123	15.0	1571	19.0	2085
3.1	445	7.1	878	11.1	1136	15.1	1583		
3.2	457	7.2	887	11.2	1149	15.2	1596		
3.3	469	7.3	895	11.3	1163	15.3	1608		
3.4	481	7.4	903	11.4	1176	15.4	1621		
3.5	493	7.5	912	11.5	1189	15.5	1633		
3.6	505	7.6	920	11.6	1203	15.6	1646		
3.7	517	7.7	929	11.7	1216	15.7	1659		
3.8	529	7.8	937	11.8	1229	15.8	1671		
3.9	541	7.9	945	11.9	1243	15.9	1684		
4.0	552	8.0	954	12.0	1256	16.0	1696		

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN400		DN400		DN400		DN400		DN400	
Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv
0	0.0								
0.1	23.2	4.1	680	8.1	1084	12.1	1283	16.1	1803
0.2	46.5	4.2	693	8.2	1088	12.2	1296	16.2	1818
0.3	69.7	4.3	706	8.3	1092	12.3	1310	16.3	1833
0.4	93.0	4.4	719	8.4	1096	12.4	1323	16.4	1847
0.5	116	4.5	732	8.5	1100	12.5	1336	16.5	1862
0.6	139	4.6	745	8.6	1104	12.6	1349	16.6	1877
0.7	163	4.7	759	8.7	1108	12.7	1363	16.7	1891
0.8	186	4.8	772	8.8	1112	12.8	1376	16.8	1906
0.9	209	4.9	785	8.9	1117	12.9	1389	16.9	1921
1.0	232	5.0	798	9.0	1121	13.0	1402	17.0	1936
1.1	248	5.1	808	9.1	1123	13.1	1415	17.1	1951
1.2	263	5.2	819	9.2	1125	13.2	1428	17.2	1967
1.3	278	5.3	830	9.3	1128	13.3	1441	17.3	1982
1.4	293	5.4	840	9.4	1130	13.4	1454	17.4	1998
1.5	308	5.5	851	9.5	1132	13.5	1467	17.5	2013
1.6	323	5.6	862	9.6	1135	13.6	1480	17.6	2029
1.7	338	5.7	872	9.7	1137	13.7	1493	17.7	2044
1.8	353	5.8	883	9.8	1139	13.8	1506	17.8	2060
1.9	369	5.9	894	9.9	1142	13.9	1519	17.9	2075
2.0	384	6.0	904	10.0	1144	14.0	1532	18.0	2091
2.1	398	6.1	913	10.1	1147	14.1	1546	18.1	2101
2.2	412	6.2	923	10.2	1150	14.2	1559	18.2	2110
2.3	427	6.3	932	10.3	1153	14.3	1572	18.3	2120
2.4	441	6.4	941	10.4	1156	14.4	1586	18.4	2130
2.5	455	6.5	950	10.5	1159	14.5	1599	18.5	2140
2.6	470	6.6	960	10.6	1162	14.6	1613	18.6	2150
2.7	484	6.7	969	10.7	1165	14.7	1626	18.7	2160
2.8	499	6.8	978	10.8	1169	14.8	1640	18.8	2169
2.9	513	6.9	987	10.9	1172	14.9	1653	18.9	2179
3.0	527	7.0	996	11.0	1175	15.0	1666	19.0	2189
3.1	541	7.1	1005	11.1	1184	15.1	1679		
3.2	555	7.2	1013	11.2	1194	15.2	1691		
3.3	569	7.3	1021	11.3	1203	15.3	1703		
3.4	583	7.4	1030	11.4	1213	15.4	1715		
3.5	597	7.5	1038	11.5	1222	15.5	1727		
3.6	611	7.6	1046	11.6	1232	15.6	1740		
3.7	625	7.7	1055	11.7	1241	15.7	1752		
3.8	639	7.8	1063	11.8	1251	15.8	1764		
3.9	653	7.9	1071	11.9	1260	15.9	1776		
4.0	667	8.0	1080	12.0	1270	16.0	1789		

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN450		DN450		DN450		DN450		DN450	
Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv
0	0.0								
0.1	25.5	4.1	746	8.1	1284	12.1	1580	16.1	1986
0.2	50.9	4.2	760	8.2	1290	12.2	1582	16.2	2003
0.3	76.4	4.3	774	8.3	1296	12.3	1583	16.3	2020
0.4	102	4.4	788	8.4	1302	12.4	1584	16.4	2037
0.5	127	4.5	802	8.5	1307	12.5	1586	16.5	2054
0.6	153	4.6	816	8.6	1313	12.6	1587	16.6	2072
0.7	178	4.7	830	8.7	1319	12.7	1588	16.7	2089
0.8	204	4.8	844	8.8	1324	12.8	1590	16.8	2106
0.9	229	4.9	858	8.9	1330	12.9	1591	16.9	2123
1.0	255	5.0	872	9.0	1336	13.0	1592	17.0	2140
1.1	269	5.1	887	9.1	1347	13.1	1607	17.1	2158
1.2	284	5.2	903	9.2	1357	13.2	1621	17.2	2176
1.3	299	5.3	918	9.3	1368	13.3	1635	17.3	2195
1.4	314	5.4	933	9.4	1379	13.4	1649	17.4	2213
1.5	328	5.5	948	9.5	1389	13.5	1663	17.5	2231
1.6	343	5.6	963	9.6	1400	13.6	1678	17.6	2249
1.7	358	5.7	978	9.7	1411	13.7	1692	17.7	2267
1.8	373	5.8	993	9.8	1421	13.8	1706	17.8	2286
1.9	387	5.9	1008	9.9	1432	13.9	1720	17.9	2304
2.0	402	6.0	1023	10.0	1443	14.0	1734	18.0	2322
2.1	418	6.1	1035	10.1	1454	14.1	1741	18.1	2342
2.2	435	6.2	1047	10.2	1466	14.2	1748	18.2	2363
2.3	451	6.3	1059	10.3	1477	14.3	1755	18.3	2383
2.4	467	6.4	1071	10.4	1489	14.4	1762	18.4	2404
2.5	484	6.5	1083	10.5	1500	14.5	1769	18.5	2424
2.6	500	6.6	1094	10.6	1512	14.6	1776	18.6	2445
2.7	516	6.7	1106	10.7	1523	14.7	1783	18.7	2465
2.8	533	6.8	1118	10.8	1535	14.8	1790	18.8	2485
2.9	549	6.9	1130	10.9	1546	14.9	1797	18.9	2506
3.0	565	7.0	1142	11.0	1558	15.0	1804	19.0	2526
3.1	582	7.1	1156	11.1	1560	15.1	1821		
3.2	599	7.2	1169	11.2	1562	15.2	1837		
3.3	615	7.3	1183	11.3	1564	15.3	1854		
3.4	632	7.4	1197	11.4	1566	15.4	1870		
3.5	649	7.5	1210	11.5	1568	15.5	1887		
3.6	665	7.6	1224	11.6	1570	15.6	1903		
3.7	682	7.7	1238	11.7	1572	15.7	1919		
3.8	699	7.8	1251	11.8	1575	15.8	1936		
3.9	715	7.9	1265	11.9	1577	15.9	1952		
4.0	732	8.0	1279	12.0	1579	16.0	1969		

Frese STBV VODRV
DN15-DN500

Setting and Kv (For flow verification & pump dimensioning)

DN500		DN500		DN500		DN500		DN500	
Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv	Pre-set	Kv
0	0.0								
0.1	32.2	4.1	1011	8.1	1618	12.1	1941	16.1	2744
0.2	64.3	4.2	1031	8.2	1627	12.2	1961	16.2	2764
0.3	96.5	4.3	1050	8.3	1637	12.3	1980	16.3	2784
0.4	129	4.4	1070	8.4	1646	12.4	1999	16.4	2804
0.5	161	4.5	1090	8.5	1655	12.5	2019	16.5	2824
0.6	193	4.6	1109	8.6	1664	12.6	2038	16.6	2844
0.7	225	4.7	1129	8.7	1674	12.7	2057	16.7	2864
0.8	257	4.8	1149	8.8	1683	12.8	2077	16.8	2884
0.9	289	4.9	1169	8.9	1692	12.9	2096	16.9	2904
1.0	322	5.0	1188	9.0	1701	13.0	2116	17.0	2924
1.1	346	5.1	1206	9.1	1706	13.1	2135	17.1	2945
1.2	370	5.2	1224	9.2	1712	13.2	2154	17.2	2967
1.3	395	5.3	1242	9.3	1717	13.3	2173	17.3	2988
1.4	419	5.4	1260	9.4	1722	13.4	2192	17.4	3010
1.5	443	5.5	1278	9.5	1727	13.5	2211	17.5	3031
1.6	468	5.6	1296	9.6	1732	13.6	2230	17.6	3052
1.7	492	5.7	1314	9.7	1738	13.7	2249	17.7	3074
1.8	517	5.8	1332	9.8	1743	13.8	2268	17.8	3095
1.9	541	5.9	1349	9.9	1748	13.9	2287	17.9	3117
2.0	565	6.0	1367	10.0	1753	14.0	2306	18.0	3138
2.1	587	6.1	1381	10.1	1757	14.1	2326	18.1	3163
2.2	609	6.2	1394	10.2	1760	14.2	2346	18.2	3187
2.3	631	6.3	1408	10.3	1764	14.3	2365	18.3	3211
2.4	653	6.4	1421	10.4	1767	14.4	2385	18.4	3235
2.5	675	6.5	1435	10.5	1771	14.5	2405	18.5	3260
2.6	696	6.6	1448	10.6	1775	14.6	2425	18.6	3284
2.7	718	6.7	1462	10.7	1778	14.7	2444	18.7	3308
2.8	740	6.8	1475	10.8	1782	14.8	2464	18.8	3333
2.9	762	6.9	1489	10.9	1785	14.9	2484	18.9	3357
3.0	784	7.0	1502	11.0	1789	15.0	2503	19.0	3381
3.1	805	7.1	1513	11.1	1802	15.1	2525		
3.2	825	7.2	1523	11.2	1815	15.2	2547		
3.3	846	7.3	1534	11.3	1829	15.3	2569		
3.4	867	7.4	1545	11.4	1842	15.4	2591		
3.5	887	7.5	1556	11.5	1855	15.5	2613		
3.6	908	7.6	1566	11.6	1869	15.6	2635		
3.7	929	7.7	1577	11.7	1882	15.7	2657		
3.8	950	7.8	1588	11.8	1895	15.8	2679		
3.9	970	7.9	1598	11.9	1908	15.9	2701		
4.0	991	8.0	1609	12.0	1922	16.0	2723		

Frese STBV VODRV
DN15-DN500

Text for Technical Specifications

The valve housing, stem and bonnet shall be made of DZR brass (DN15-DN50) and Ductile Iron (DN65-DN500).

The valve shall be pressure class rated PN25 (DN15-DN50) and PN16 (DN65-DN500).

The valve shall be a double regulating valve with a variable orifice.

The valve shall include P/T plugs for the verification of flow through measurement of the differential pressure across the orifice.

The Kv-value for flow verification shall be changed by the handwheel setting.

The valve shall have a flow accuracy measurement +/- 5% at the fully open position . Accuracy at partial openings of the valve shall be in accordance with BS 7350.

The valve shall only be adjustable by a handle that can be set and locked to a maximum position.

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