

## BALL CONTROL VALVE of stainless steel

### 467TS-N and 468TS-N series




## Description

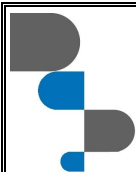
Edition 05-07-2016

Control ball valve series 467 and 468 are designed for control of liquid flows in heating and cooling systems. They are also suitable for various process industry applications. Valves can also be used as shut-off valves.

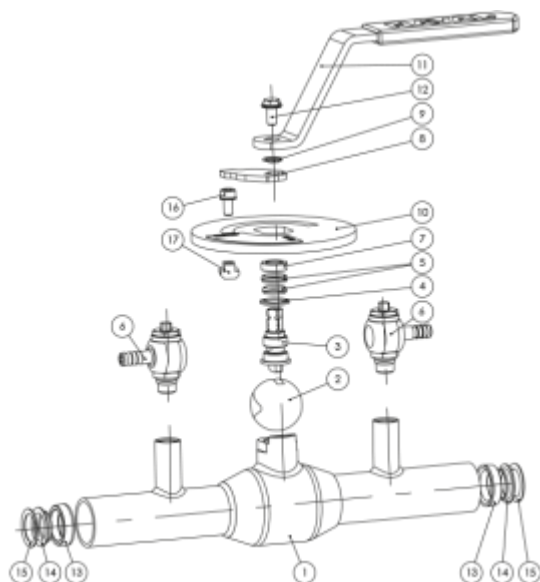
Valve has a patented control system, where two cross linked specially designed trim plates decrease the turbulence of the flow, improve the measuring accuracy and practically eliminate the cavitation and noise. This construction is used in sizes from DN40 up to DN250. The valve has an all-welded body and it is fitted with reinforced Teflon seals which are durable even if the valve is frequently operated, and are resistant to impurities and chemicals. The polished stainless steel ball is easy to turn and is designed to provide many years of reliable service. The blow-out proof stem is sealed with 2 O-rings. In smaller sizes the upper one can be changed and in sizes DN65-150 both can be changed. The valve is equipped with fittings for measuring of pressure difference.

The construction provides a broad linear and exact control range. The flow resistance is very low in fully open position and the control plates inside the ball allow exact flow control without disturbing turbulence or cavitation. Therefore the information obtained from the measuring outlet is reliable. The valve needs no servicing nor lubrication and is easy to install. These features combined guarantee a long and reliable life time with low running costs. The long and circular stem housing makes the valve easy to insulate. The operating lever can be dismantled, turned 180° and reinstalled to a new position.

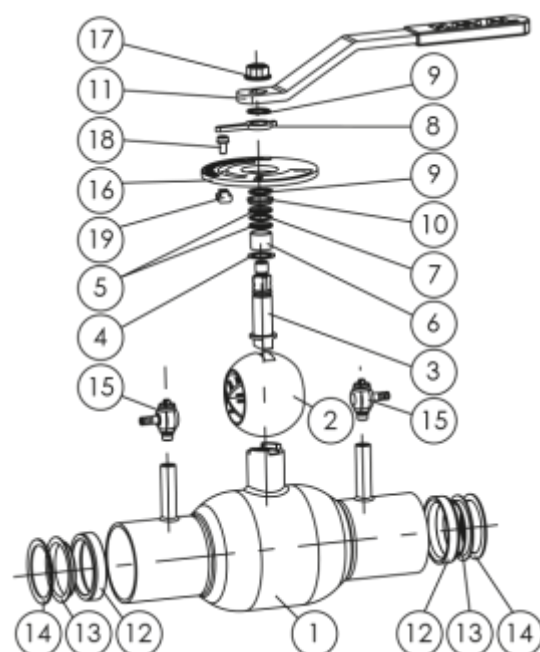
Nominal dimensions:	DN 15 – 250
Nominal pressure	DN 15 - 50 – PN 40 bar DN 65 - 250 – PN 25 bar DN 125 - 150 – PN 16 bar (Available PN 10,16,25,40)
Tightness class ISO 5208, EN 12266-1	RATE A
Working temperature of liquid media	-20°C... +200°C – standard -40°C... +200°C – option
Connection	467 series – weld ends 468 series – flanges: EN1092-1
Safety	Conform to the requirements of the Council Directive 97/23/EC on Pressure Equipment. 



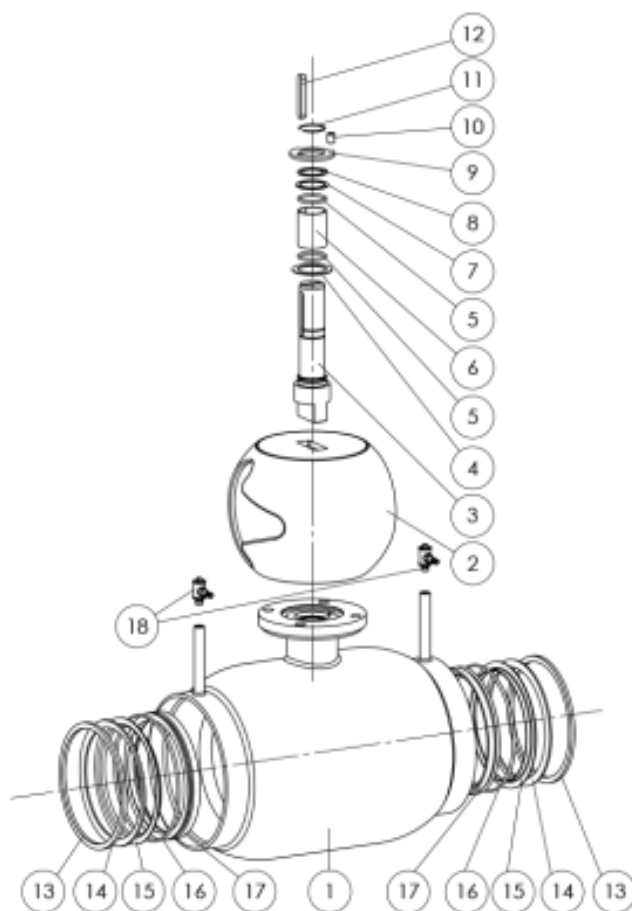
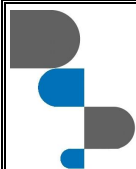
## Exploded view, parts list



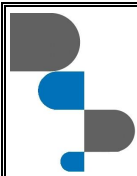
DN 15-32	
Part number	Part
1	Valve body
2	Ball
3	Stem
4	Sliding ring
5	O-ring
6	Measuring outlet
7	Bush
8	Block stop
9	Retaining ring
10	Flange
11	Handle
12	Screw
13	Ball seal
14	Support plate
15	Spring plate
16	Screw
17	Nut



DN 40-150	
Part number	Part
1	Valve body
2	Ball
3	Stem
4	Sliding ring
5	O-ring
6	Bush
7	Sliding ring
8	Block stop
9	Retaining ring
10	Bush
11	Handle
12	Ball seal
13	Support plate
14	Spring plate
15	Measuring outlet
16	Flange
17	Nut
18	Screw
19	Nut



DN 200-250		
Part number	Part	qty
1	Valve body	1
2	Control ball	1
3	Stem	1
4	Sliding plate	1
5	O-ring	2
6	Sliding bearing	1
7	Top distance plate	1
8	Retaining ring	1
9	Block stop	1
10	Dowel pin	1
11	Retaining ring	1
12	Key	1
13	Retaining ring	2
14	Spring plate	2
15	Support plate	2
16	O-ring	2
17	Ball seal	2
18	Measuring block	2

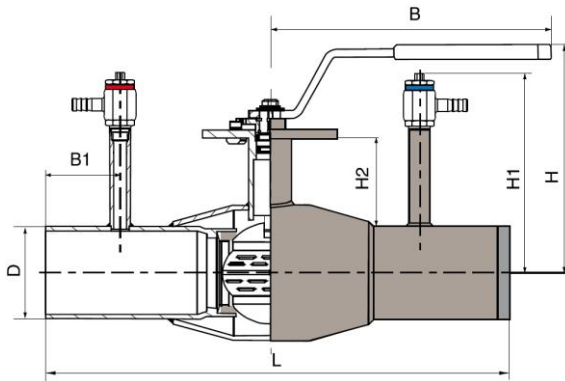


## Standard materials

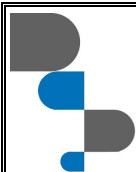
	DN 15-250
Body	Stainless steel 1.4404
Ball	Stainless steel 1.4404
Stem	Stainless steel 1.4404
Stem seals	FPM
Ball seals	PTFE+C
Operation	DN 15 - 200 with galvanized steel handle

## Dimensions

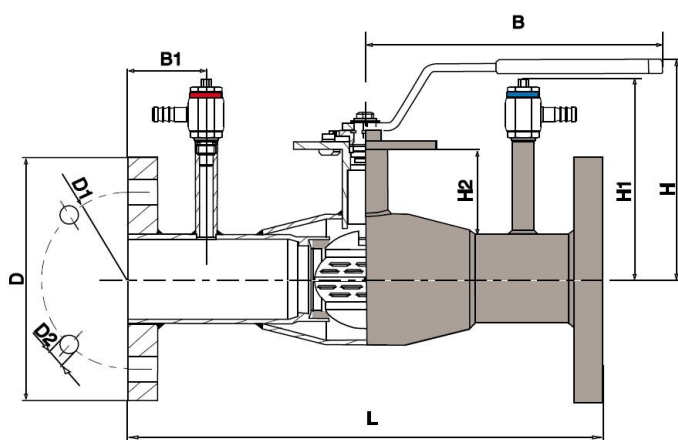
### Butt weld connection: 467TS-N series



DN	PN	L	D	H	H1	H2	B	B1	Weight kg
15	40	230	21,3	105	68,7	21	145	50	0,9
20	40	230	26,9	105	71,5	21	145	50	0,9
25	40	230	33,7	113	74,9	26	145	50	1,1
32	40	260	42,4	117	79,2	25	145	50	1,3
40	40	260	48,3	114	82,2	31	188	50	2,3
50	40	300	60,3	121	88,2	31	188	50	3,1
65	25	300	76,1	154	120,1	52	280	40	4,4
80	25	300	88,9	166	126,5	58	280	40	5,4
100	25	325	114,3	173	139,2	52	280	37	7,7
125	25	325	139,7	221	151,9	68	400	25	15,5
150	25	350	168,3	240	166,2	74	600	25	16,1
200	25	400	219,1	-	-	72	-	20	38,2
250	25	530	273	-	-	88	-	40	73,6



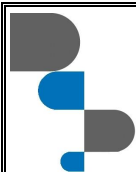
## Connection with flanges: 468TS-N series valve



Flanges: EN1092-1

DN	L	D	D1		D2		H	B	H1		H2	B1	Weight kg	
			PN 40	PN 40	PN 40	PN 40			PN 40	PN 40				
15	250	95	65	14	105	145	105,5	21	60	2,1				
20	250	105	75	14	105	145	110,5	21	60	2,6				
25	240	115	85	14	113	145	115,5	26	55	3,1				
32	280	140	100	18	117	145	128	25	60	4,7				
40	270	150	110	18	114	188	133	31	55	6,0				
50	310	165	125	18	121	188	140,5	31	55	8,1				

DN	L	D	D1		D2		H	B	H1		H2	B1	Weight kg	
			PN 16	PN 25	PN 16	PN 25			PN 16	PN 25			PN 16	PN 25
65	310	185	145	145	18	18	154	280	174,5	174,5	52	45	10,1	10,8
80	310	200	160	160	18	18	166	280	182	182	58	45	12	13,5
100	350	220	180	190	18	22	173	280	192	199,5	52	52,5	15,9	19,5
125	360	250	210	220	18	26	221	400	207	217	68	42,5	25,6	30,8
150	390	285	240	250	22	26	240	600	224,5	232	74	45	30	36
200	425	340	295	310	22	26	-	-	303	311	72	40	56,7	66
250	550	405	355	370	26	30	-	-	335,5	345,5	88	50	103,9	113

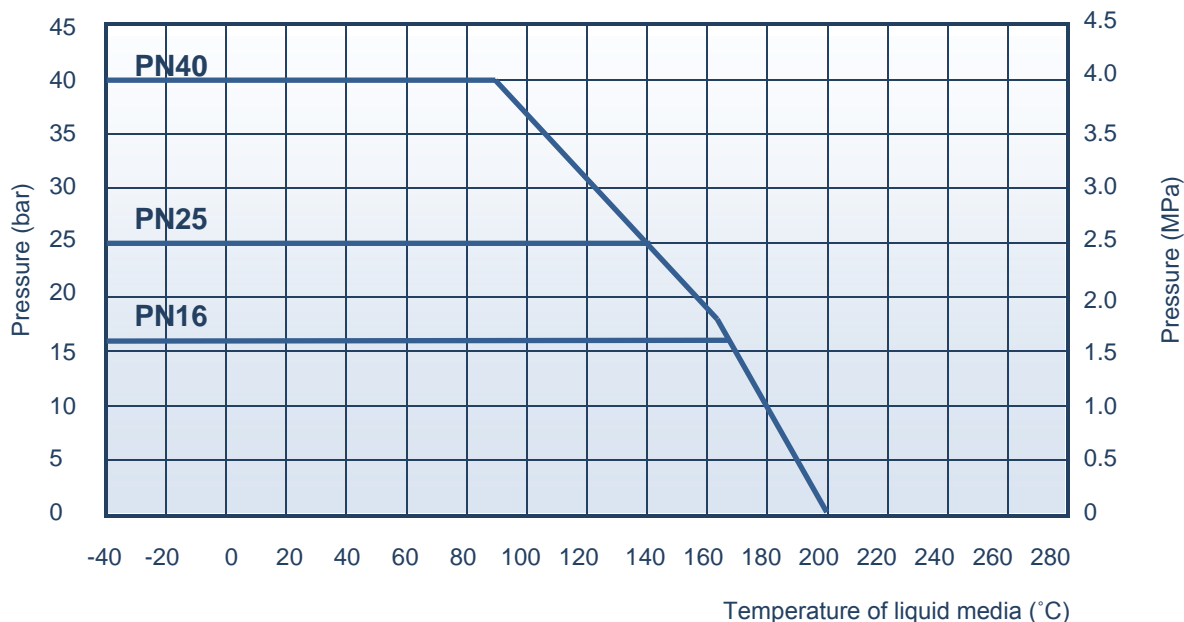


## Selection table of actuators

DN	Pneumatic, spring return	Electric actuator Auma
	Remote Control Sweden	
10	RC220-SR(RC210-DA)	SA07.1-GS50.3
15	RC220-SR(RC210-DA)	SA07.1-GS50.3
20	RC220-SR(RC210-DA)	SA07.1-GS50.3
25	RC230-SR(RC220-DA)	SA07.1-GS50.3
32	RC230-SR(RC220-DA)	SA07.1-GS50.3
40	RC240-SR(RC220-DA)	SA07.1-GS50.3
50	RC240-SR(RC230-DA)	SA07.1-GS50.3
65	RC240-SR(RC230-DA)	SA07.1-GS50.3
80	RC250-SR(RC240-DA)	SA07.1-GS50.3
100	RC260-SR(RC250-DA)	SA07.1-GS50.3
125	RC260-SR(RC250-DA)	SA07.1-GS50.3
150	RC270-SR(RC260-DA)	SA07.5-GS63.3
200	RC280-SR(RC265-DA)	SA07.5-GS80.3
250	RC88-SR(RC280-DA)	SA07.1-GS100.3/VZ4

## Pressure / Temperature Rating

The max pressure difference depends on the working temperature.



If working temperature below -20°C, it must be mentioned in order.

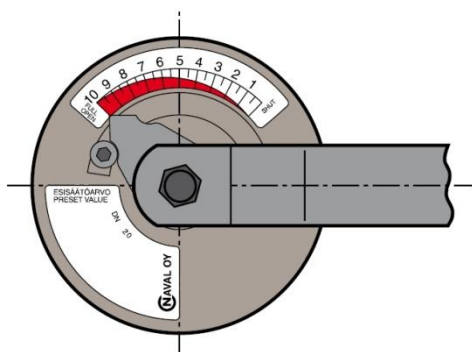


## Product codes

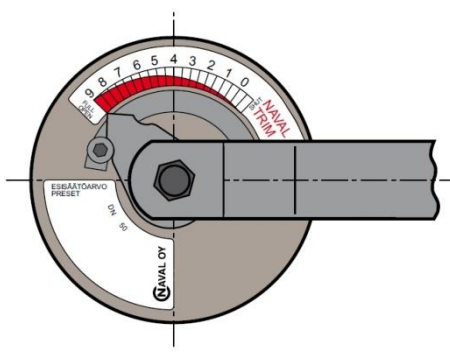
	Butt weld control ball valve	Control ball valve with flanges
handlever	467TS_ _.	468TS_ _.
bare shaft	467TS_ _ Z	468TS_ _ Z
manual gear	467TS_ _ M	468TS_ _ M

## The control characteristics

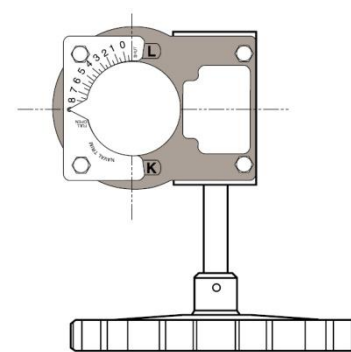
The curves indicate the regulating values of the valve at different opening angles.



Control scale,  
valve DN15-32 with hand lever



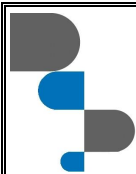
Control scale,  
valve DN40-250 with hand lever



Control scale,  
valve DN150-250 with gearbox

## Kv value table

Set value	DN15-20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250
1	-	-	0,39	0,60	1,26	2,52	3,42	6,48	6,84	13,68	19,7	35,0
1.5	-	0,35	0,57	1,01	1,80	3,64	5,37	9,47	13,32	20,16	20,2	51,0
2	0,14	0,49	0,83	1,48	2,70	4,75	7,31	12,46	18,00	26,64	38,4	66,5
2.5	0,28	0,99	1,08	2,02	3,55	6,34	10,23	16,28	24,30	35,46	51,1	90,0
3	0,42	1,36	1,44	2,70	4,39	7,92	13,14	20,09	30,60	44,28	63,8	110,0
3.5	0,61	1,66	1,80	3,24	5,61	9,78	16,11	24,45	37,80	55,08	79,3	140,0
4	0,8	2,00	2,30	3,96	6,84	11,63	19,08	28,84	45,00	65,88	95,0	165,0
4.5	1,02	2,40	2,74	4,86	8,34	14,15	23,31	35,82	55,26	48,06	121,0	215,0
5	1,24	3,00	3,42	5,98	9,83	16,67	27,54	42,84	65,52	102,24	147,0	260,0
5.5	1,64	3,50	4,21	7,18	11,94	20,94	33,21	51,84	81,72	127,08	183,0	325,0
6	2,04	4,50	5,11	8,57	14,04	25,20	38,88	60,84	97,92	151,92	219,0	380,0
6.5	2,64	5,10	5,97	10,15	16,92	29,52	46,26	75,42	121,86	196,56	282,0	500,0
7	3,24	6,70	7,27	12,31	19,80	33,84	53,64	90,00	145,80	241,20	325,0	576,0
7.5	3,84	7,30	8,64	14,40	23,40	39,78	64,62	113,40	177,30	289,80	417,0	740,0
8	4,45	9,30	10,08	17,64	27,00	45,72	75,60	136,80	208,80	338,40	486,0	866,0
8.5	5,04	10,00	11,52	20,88	30,60	53,46	91,80	169,20	251,30	399,80	576,0	1020,0
9	5,83	12,65	13,14	22,57	34,20	61,20	108,0	216,00	293,80	460,80	660,0	1170,0



### Pressure loss

WATER:

$$\text{Volume flow: } Q = K_V \sqrt{\frac{\Delta p}{\rho}}$$

$$\text{Flow velocity: } V = 354 \frac{Q}{DN^2}$$

$K_V = KV\text{value} - \text{Capacity factor (m}^3/\text{h)}$

$DN = \text{nominal valve size (mm)}$

$\alpha = \text{disc opening angle}$

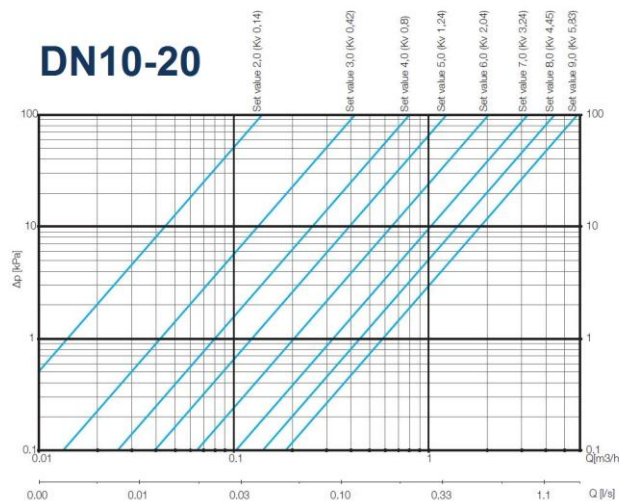
$\Delta p = \text{pressure difference, bar}$

$\rho = \text{density of liquid kg/m}^3$

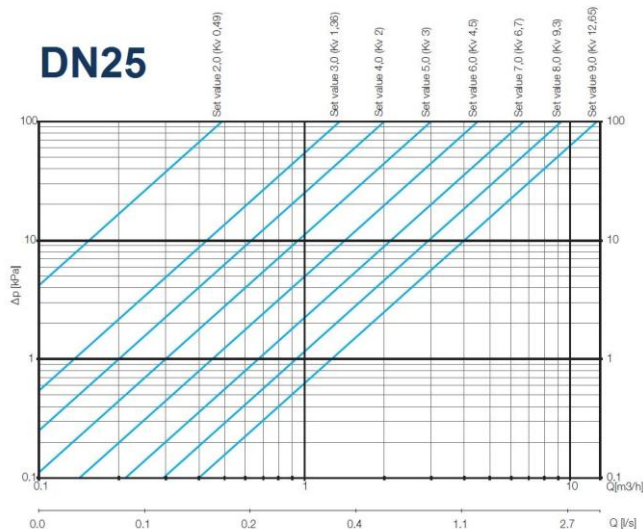
$V = \text{flow velocity m/s}$

$Q = \text{volume flow m}^3/\text{h}$

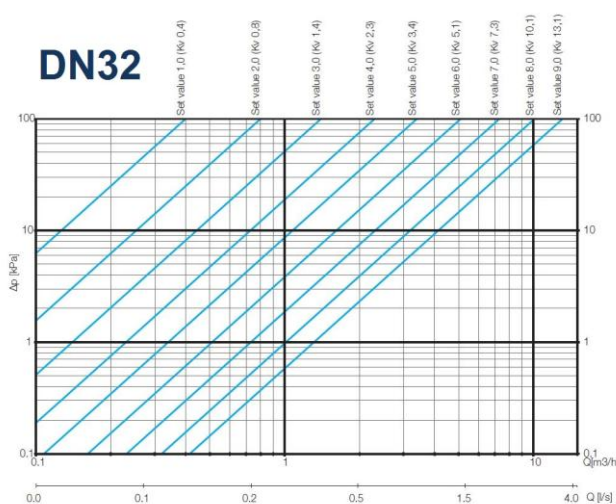
### DN10-20



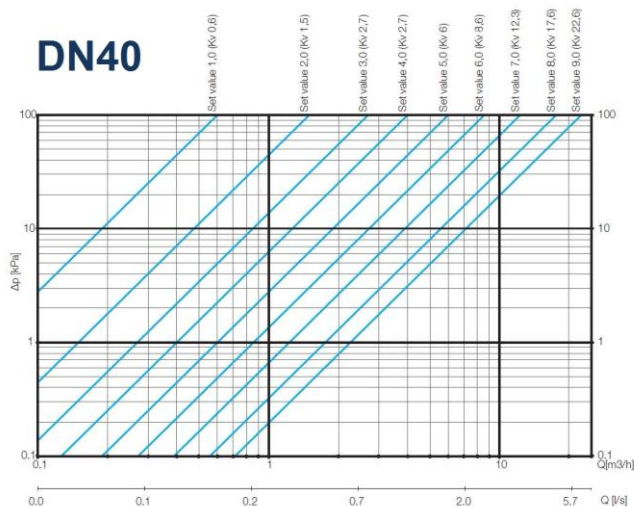
### DN25



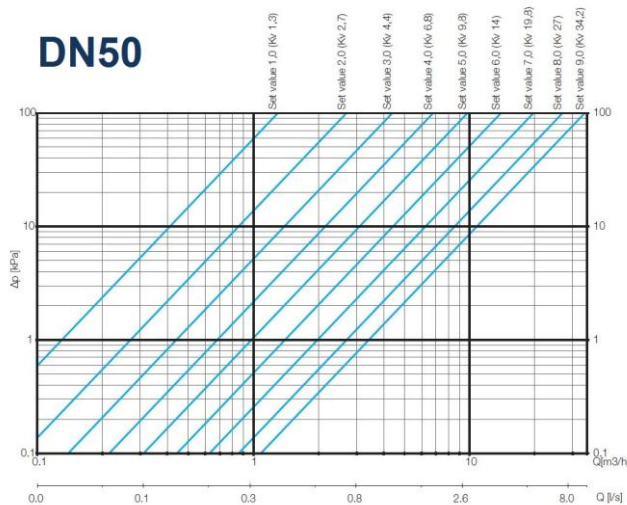
### DN32



### DN40



### DN50







SILVER LINE

# CONTROL BALL VALVE of stainless steel

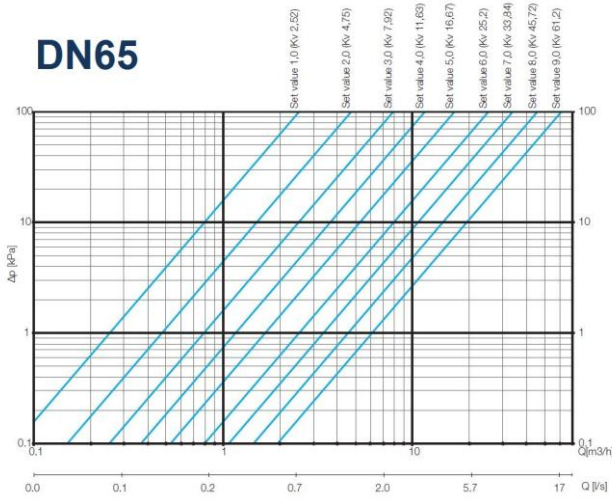


Valves

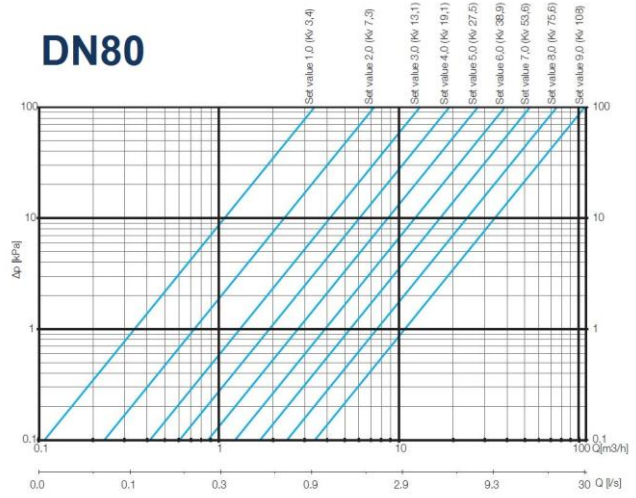
467TS-N / 468TS-N series

05-07-2016

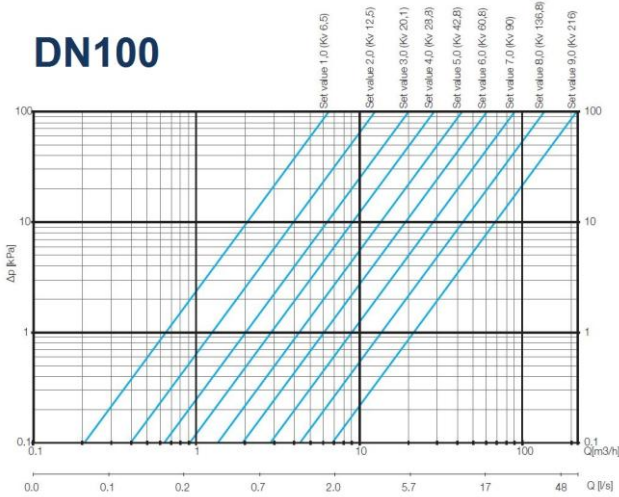
## DN65



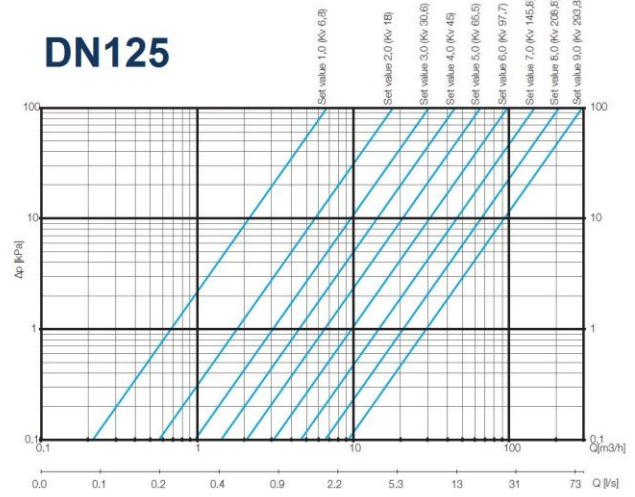
## DN80



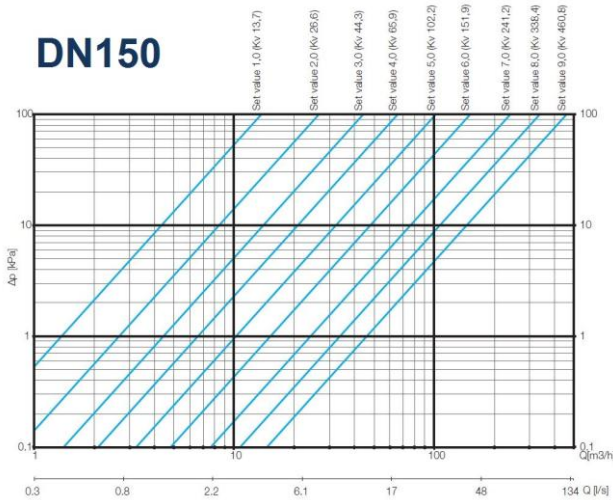
## DN100



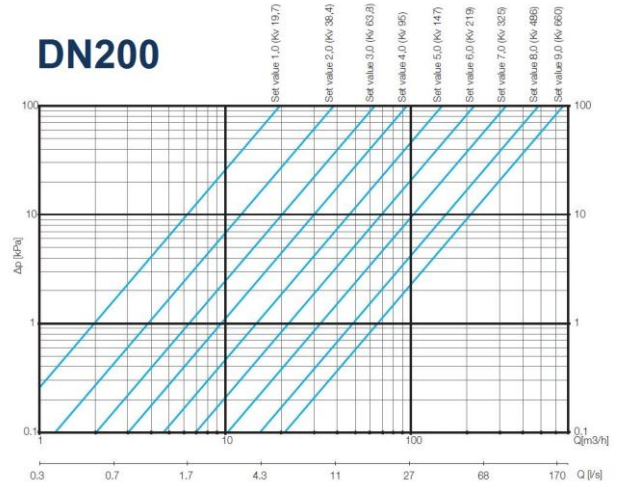
## DN125



## DN150



## DN200





SILVER LINE

# CONTROL BALL VALVE of stainless steel



Valves

**467TS-N / 468TS-N series**

05-07-2016

## DN250

