

CONTROL BALL VALVE of carbon steel **36000 and 36500 series**




Description

Edition 05-07-2016

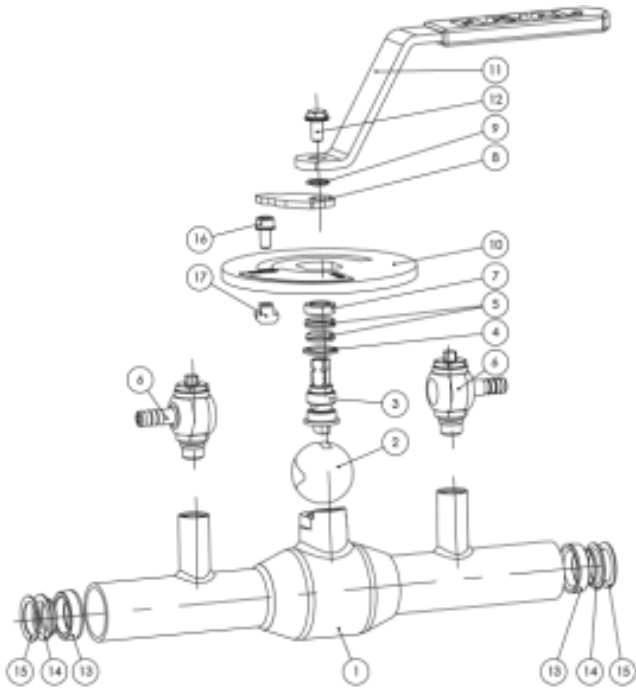
The valve has two cross linked specially designed trim plates that decrease the turbulence of the flow, improve the measuring accuracy and practically eliminate the cavitation and noise. This construction is used in sizes from DN40 up to DN300. The valve has an all-welded body and it is fitted with reinforced 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 DN65-400 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 no lubrication and is easy to install. These features combined guarantee a long and reliable life time with low running costs.

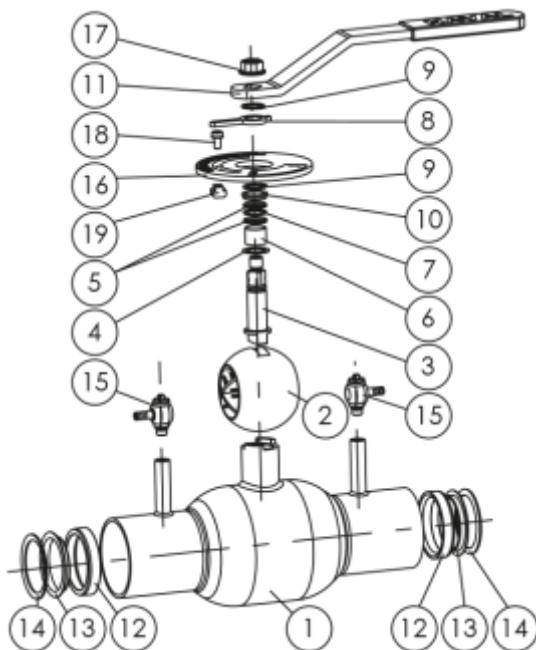
Nominal dimensions:	DN 15 - 300
Nominal pressure	36000TR-N, DN 15 - 50 – PN40 bar DN 65 - 300 – PN25 bar
	36500TR-N, DN 15 – 50 – PN40 bar DN 65 – 300 – PN25 bar according to flanges drilling (Available PN 10,16,25,40)
Connection	36000TR-N series – weld ends 36500TR-N series – flanges as per EN1092-1
Tightness class ISO 5208, EN 12266-1	RATE A
Working temperature of liquid media	-20°C... +200°C – standard -40°C... +200°C – option
Safety	Conform to the requirements of the Council Directive 97/23/EC on Pressure Equipment. 



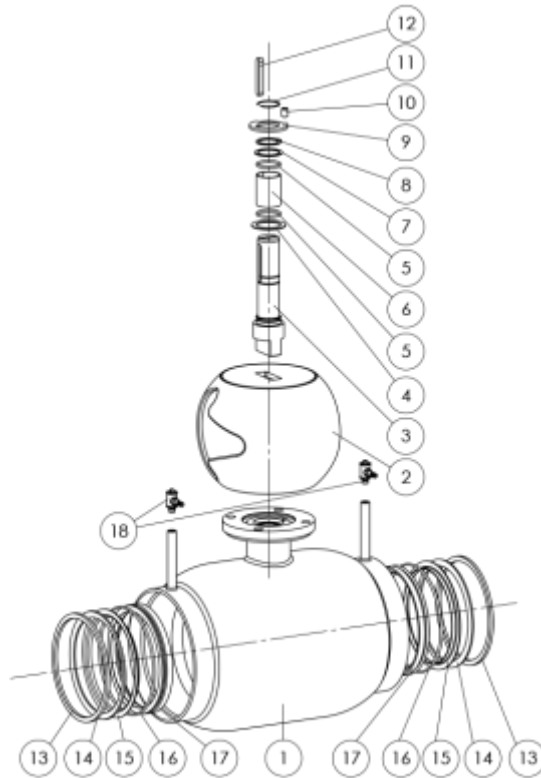
Exploded view, parts list and standard materials



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 200-300		
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

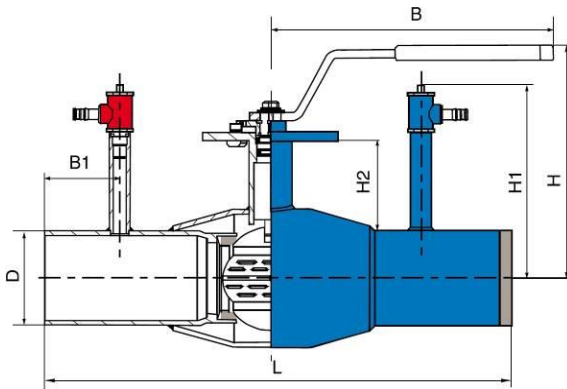


Standard materials

	DN 15-300
Body	Steel P235GH
Ball	Stainless steel 1.4301
Stem	Stainless steel 1.4305
Stem seals	FPM
Ball seals	PTFE+C
Operation	DN 15 - 150 with galvanized steel handle

Dimensions

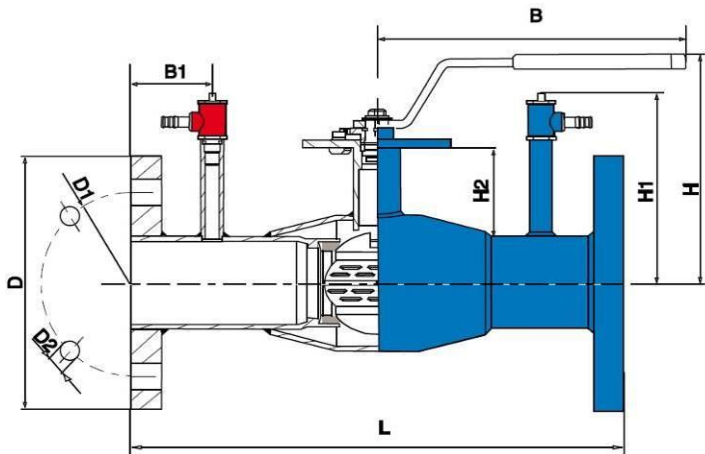
Butt weld connection, 36000TR-N series



DN	PN	L	D	H	H1	H2	B	B1	Weight kg
15	40	230	21,3	134	114,3	50	145	50	1,3
20	40	230	26,9	136	119,9	53	145	50	1,4
25	40	260	33,7	142	126,7	55	145	50	1,7
32	40	260	42,4	144	135,4	53	145	50	1,8
40	40	260	48,3	143	141,3	60	188	50	2,6
50	40	300	60,3	149	153,3	60	188	50	3,5
65	25	300	76,1	160	184,1	58	280	40	4,8
80	25	300	88,9	173	196,9	64	280	40	6,1
100	25	325	114,3	219	244,3	98	280	40	9,4
125	25	325	139,7	253	269,7	100	400	25	16,2
150	25	350	168,3	276	298,3	110	600	25	21,3
200	25	400	219,1	-	347,1	72	-	20	45
250	25	530	273	-	401	88	-	40	89
300	25	550	323,9	-	451,9	112	-	30	140



Connection with flanges, 36500TR-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	134	145	103,7	50	60	2,5				
20	250	105	75	14	136	145	106,5	53	60	3				
25	240	115	85	14	142	145	109,9	55	55	3,7				
32	280	140	100	18	144	145	114,2	53	60	5,1				
40	270	150	110	18	143	188	117,2	60	55	6,2				
50	310	165	125	18	149	188	123,2	60	55	8,4				

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	160	280	146,1	146,1	58	45	10,5	11
80	310	200	160	160	18	18	143	280	152,2	152,5	64	45	12,6	14
100	350	220	180	190	18	22	219	280	189,2	189,2	98	52,5	17,5	20,7
125	360	250	210	220	18	26	253	400	199,9	199,9	100	42,5	26,1	31,3
150	390	285	240	250	22	26	276	600	215,2	215,2	110	45	34,6	40,7
200	425	340	295	310	22	26	-	-	237,6	237,6	72	-	60	74
250	550	405	355	370	26	30	-	-	264,5	264,5	88	-	114	120
300	580	460	410	430	26	30	-	-	260,9	272	112	-	168	176

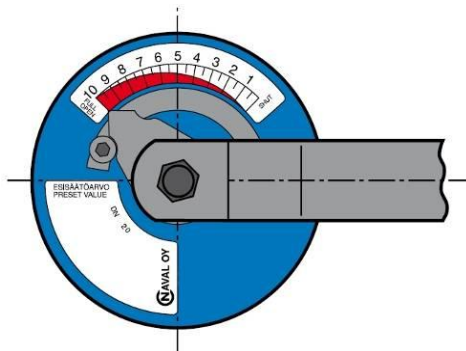


Product codes

	Butt weld control ball valve	Control ball valve with flanges
handlever	36000TR-N__.	36500TR-N__.
bare shaft	36000TR-N__Z	36500TR-N__Z
manual gear	36000TR-N__M	36500TR-N__M

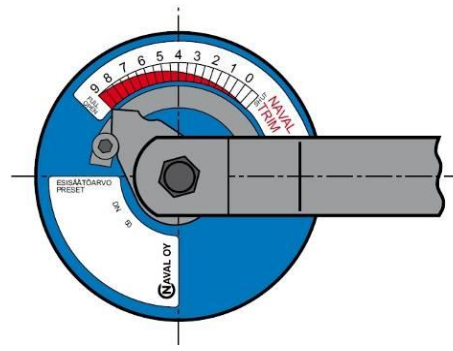
The control characteristics

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



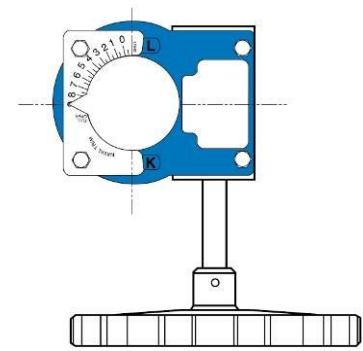
Control scale,

valve DN15-32 with hand lever



Control scale,

valve DN40-250 with hand lever



Control scale,

valve DN150-250 with gearbox

Kv value table

Asetusarvo	DN15/20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN 250	DN300
1	-	-	0,39	0,60	1,26	2,52	3,42	6,48	6,84	13,68	19,7	35,0	54,5
1.5	-	0,35	0,57	1,01	1,80	3,64	5,37	13,32	13,32	20,13	20,2	51,2	80,0
2	0,14	0,49	0,83	1,48	2,70	4,75	7,31	18,00	18,00	26,64	38,4	66,5	105,0
2.5	0,28	0,99	1,08	2,02	3,55	6,34	10,23	24,30	24,30	35,46	51,1	90,0	142,0
3	0,42	1,36	1,44	2,70	4,39	7,92	13,14	30,60	30,60	44,28	63,8	110,0	176,0
3.5	0,61	1,66	1,80	3,24	5,61	9,78	16,11	37,80	37,80	55,08	79,3	140,0	220,0
4	0,80	2,00	2,30	3,96	6,84	11,63	19,08	45,00	45,00	65,88	95,0	165,0	260,0
4.5	1,02	2,40	2,74	4,86	8,34	14,15	23,31	55,26	55,26	84,06	121,0	215,0	336,0
5	1,24	3,00	3,42	5,98	9,83	16,67	27,54	65,52	65,52	102,24	147,0	260,0	408,0
5.5	1,64	6,50	4,21	7,18	11,94	20,94	33,21	81,72	81,72	127,08	183,0	325,0	510,0
6	2,04	4,50	5,11	8,57	14,04	25,20	38,88	97,92	97,92	151,92	219,0	380,0	600,0
6.5	2,64	5,10	5,97	10,15	16,92	29,52	46,26	121,86	121,86	196,56	282,0	500,0	785,0
7	3,24	6,70	7,27	12,31	19,80	33,84	53,64	145,80	145,80	241,20	325,0	576,0	950,0
7.5	3,84	7,30	8,64	14,40	23,40	39,78	64,62	177,30	177,30	289,80	417,0	740,0	1156,0
8	4,45	9,30	10,08	17,64	27,00	45,72	75,60	208,80	208,80	338,40	486,0	866,0	1353,0
8.5	5,04	10,00	11,52	20,88	30,60	53,46	91,80	251,30	251,30	399,80	576,0	1020,0	1594,0
9	5,83	12,65	13,14	22,57	34,20	61,20	108,00	293,80	293,80	460,80	660,0	1170,0	1840,0



Pressure loss

WATER:

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

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

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

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

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

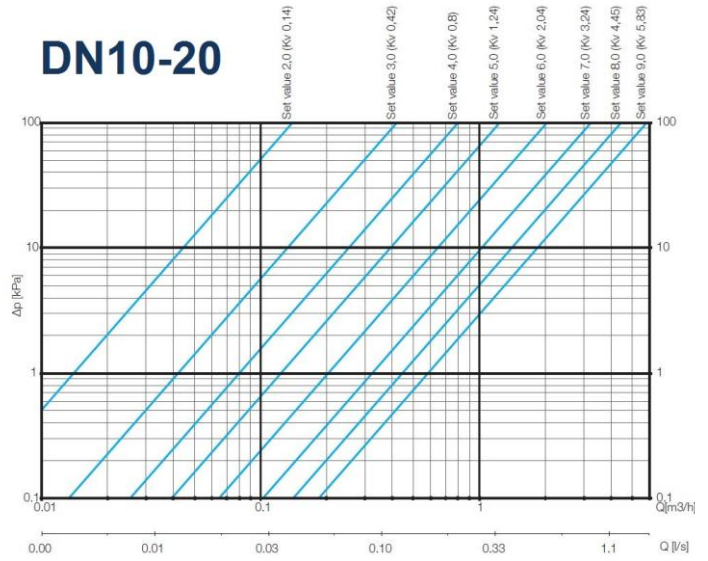
$\Delta p = \text{pressure difference, bar}$

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

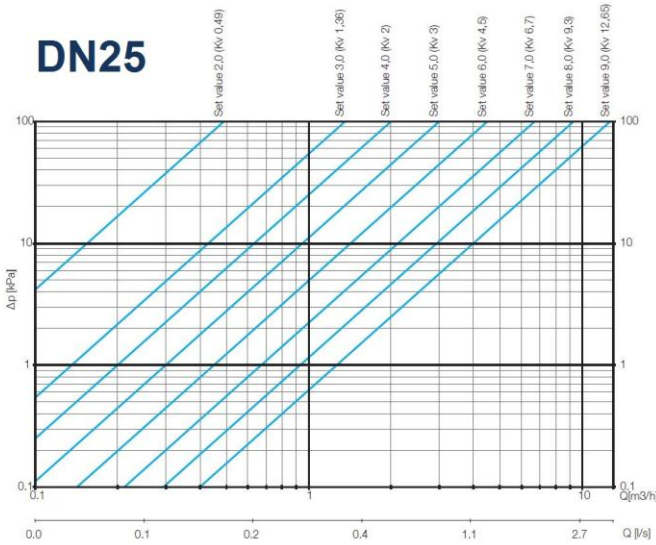
$V - \text{flow velocity m/s}$

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

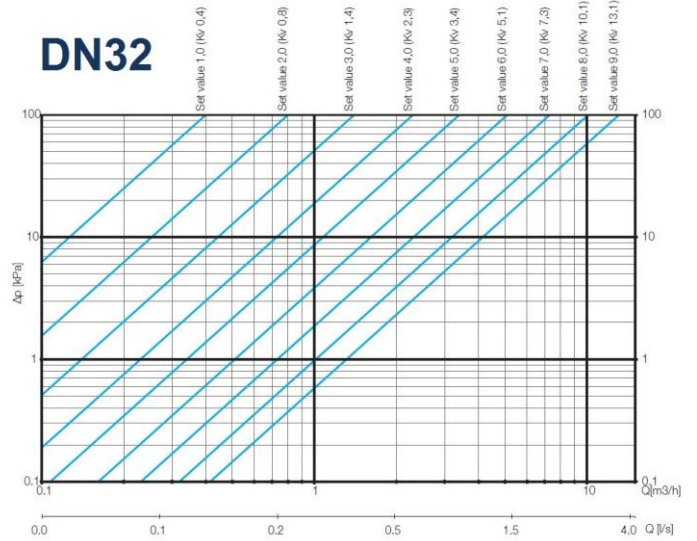
DN10-20



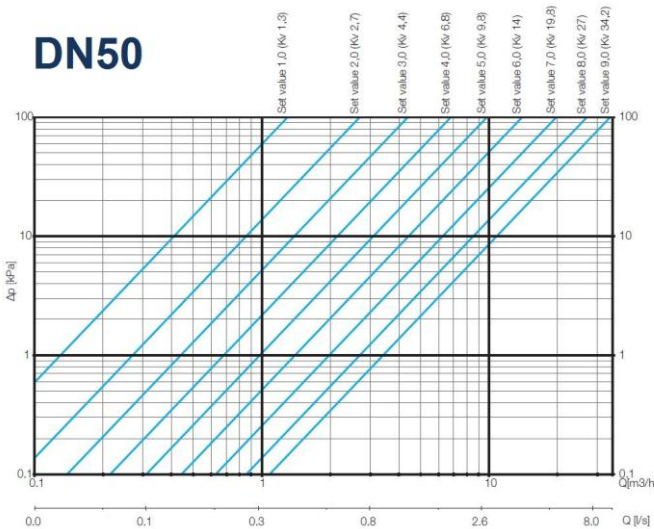
DN25



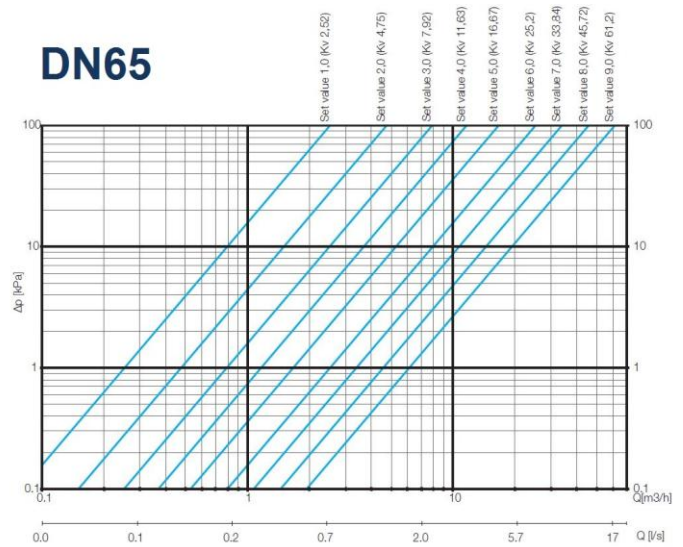
DN32



DN50



DN65





BLUE LINE

CONTROL BALL VALVE of carbon steel

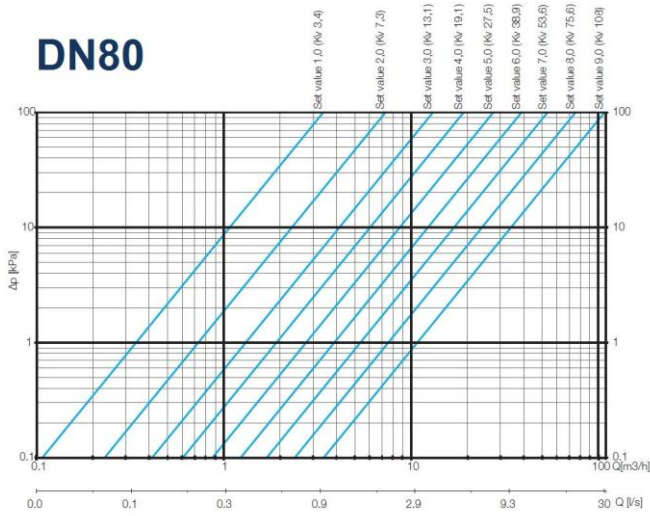


Valves

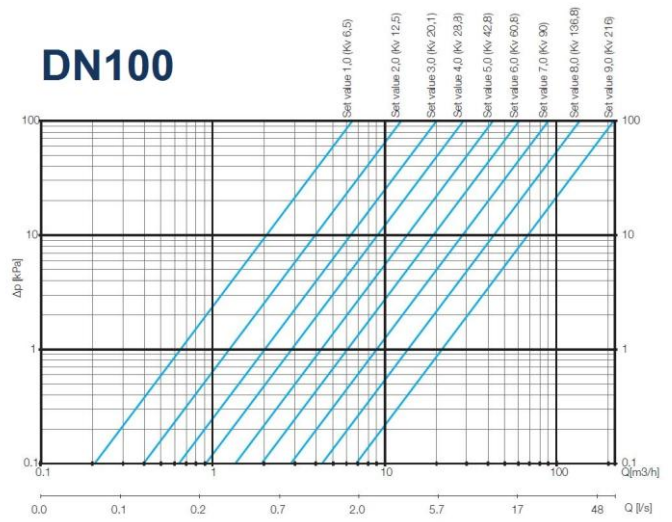
36000TR-N / 36500TR-N series

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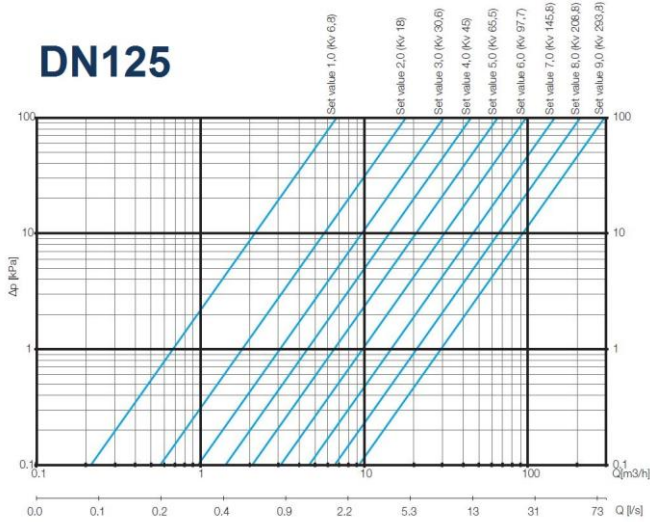
DN80



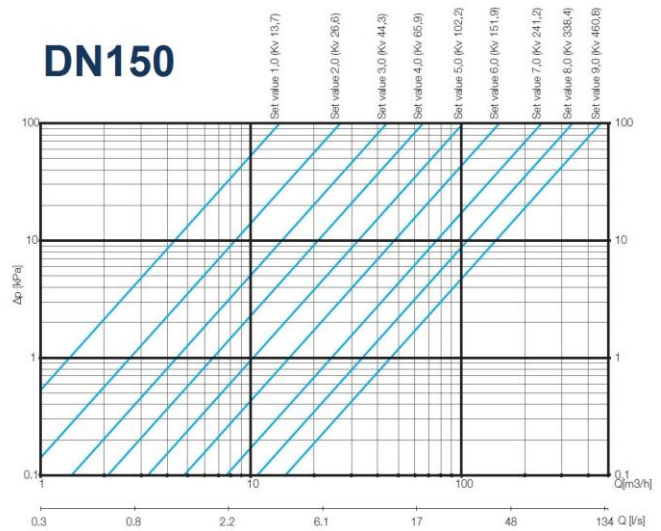
DN100



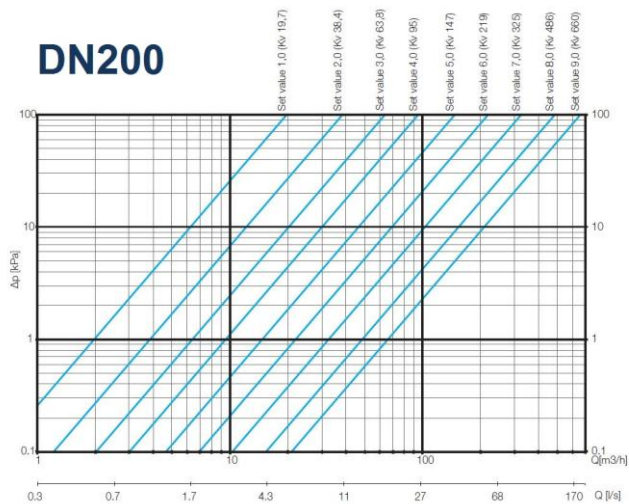
DN125



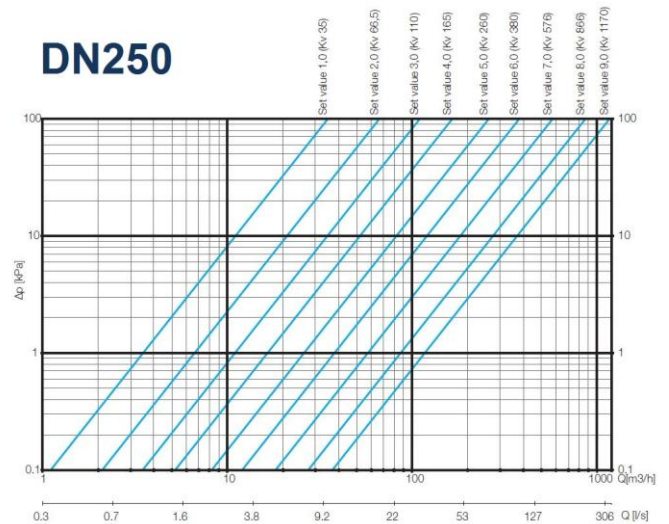
DN150



DN200



DN250





BLUE LINE

CONTROL BALL VALVE of carbon steel



Valves

3600TR-N / 36500TR-N series

05-07-2016

DN300

