

BALANCING VALVE
in carbon steel
36000 and 36500 series



Description

Edition 30-09-2010

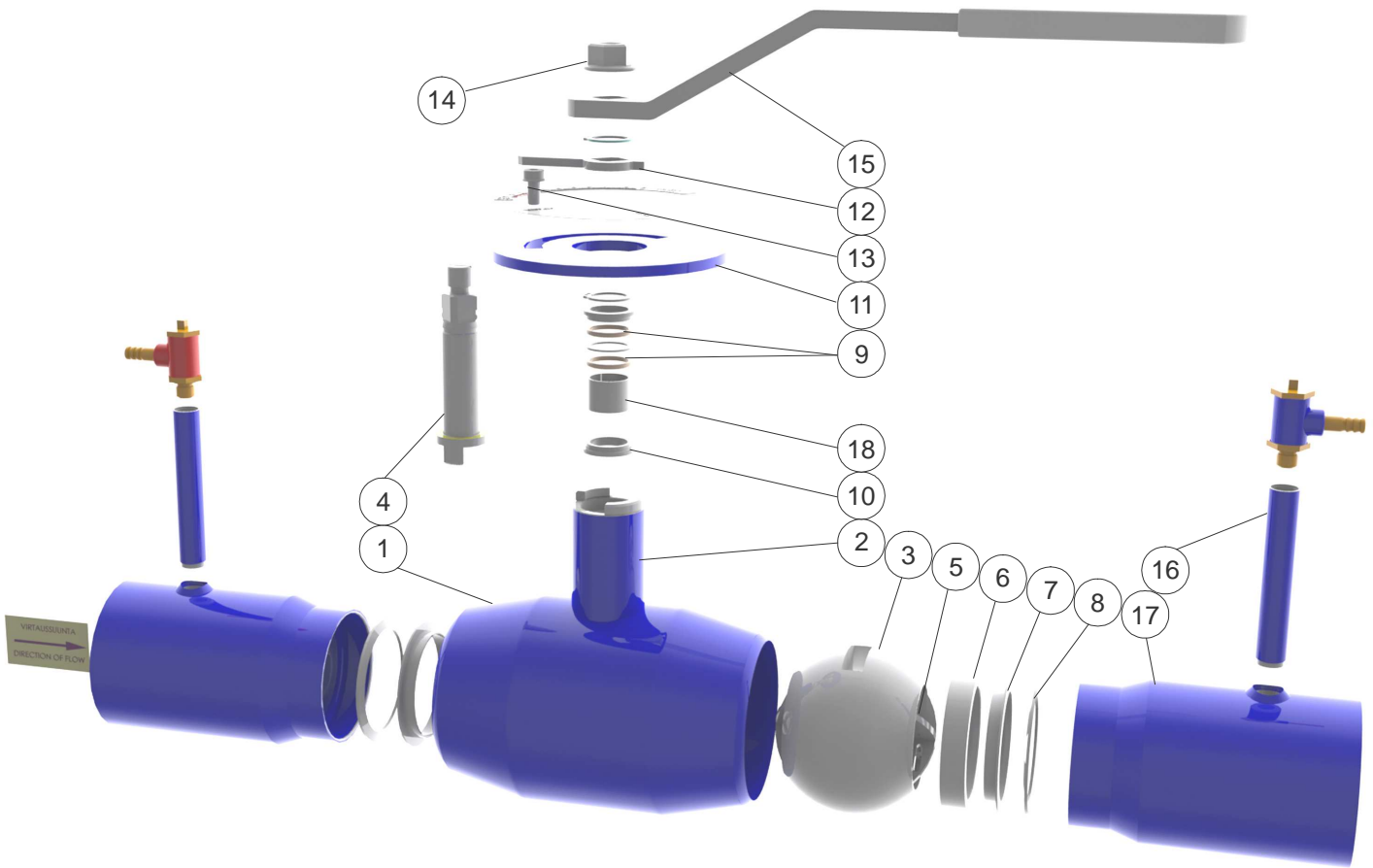
The valve has two cross linked specially designed trim plates that decrease the turbulence of the flow, improve the measuring accuracy and practically eliminate the cavitation and noise. This construction is used in sizes from DN40 up to DN300. The valve has an all-welded body and it is fitted with reinforced 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 - 400
Nominal pressure	36000TR-N, DN 15 - 50 – PN40 bar DN 65 - 100 – PN25 bar DN 125 - 400 – PN16 or PN25 bar
	36500TR-N, DN 15 – 50 – PN40 bar DN 65 – 400 – PN16 or PN25 bar according to flanges drilling
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. CE 0575



Exploded view



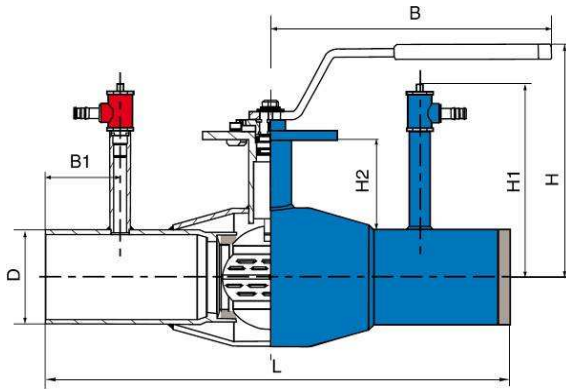
Parts list and standard materials

Part	Material
1 Body	Carbon steel P235GH
2 Stem Housing	Carbon steel P355NH
3 Ball	Stainless steel 1.4301
4 Stem	Stainless steel 1.4305
5 Trim plates	Stainless steel 1.4404
6 Seat ring	Teflon PTFE+GF
7 Support ring	Stainless steel 1.4305
8 Bevel washer	Spring steel
9 O-ring	Viton FPM
10 Thrust washer	Teflon PTFE
11 Face plate	Carbon steel
12 Indicator / end stop	Cast steel 1.4301
13 Locking screw	Steel
14 Screw	Steel
15 Hand lever	Galvanized steel
16 Measuring outlet	
17 End pipe	Carbon steel P235GH
18 Bearing	



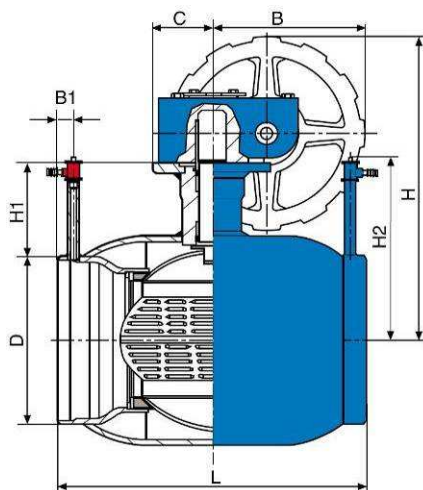
Dimensions.

Butt weld connection, 36000TR-N series



DN	L	D	H	H1	H2	B	B1	Weight kg
15	230	21.3	133	106	48.0	145	50	1.2
20	230	26.9	133	106	48.0	145	50	1.2
25	260	33.7	142	114	49.0	145	50	1.9
32	260	42.4	142	114	49.0	145	50	1.9
40	260	48.3	140	117	57.5	188	50	2.5
50	300	60.3	146	123	58.0	188	50	3.6
65	300	76.1	175	146	63.0	278	40	4.9
80	300	88.9	187	152	69.0	278	40	6.3
100	325	114.3	223	189	92.5	279	40	9.4
125	325	139.7	256	202	91.5	400	25	15.7
150	350	168.3	277	216	97.5	600	25	20.8
200	390	219.1	300	239	123.0	900	20	42.0
250	520	273.0	345	266	122.0	1200	20	82.0

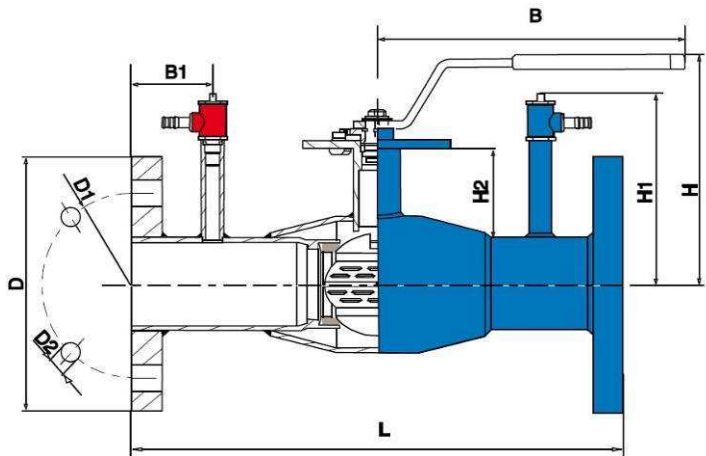
36000TR-N series with manual gear



DN	L	D	H	H1	H2	B	B1	C	Weight kg
150	350	168.3	330	107	216	145	25	50	25
200	390	219.1	398	123	239	196	20	75	50
250	520	273.0	451	122	266	236	20	100	90
300	635	323.9	572	155	345	280	24	193	150
400	762	406.4	795	155	358	480	24	170	322



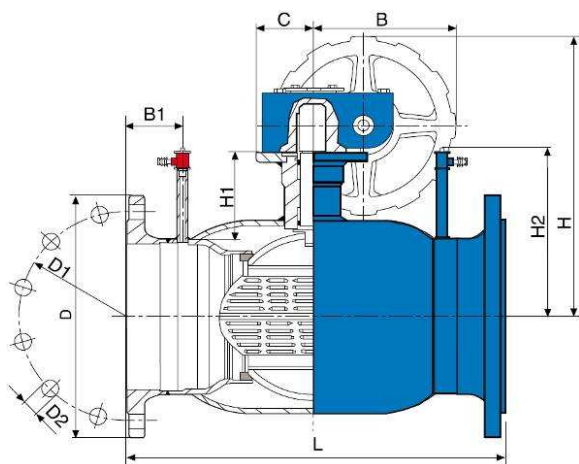
Connection with flanges, 36500TR-N series valve.



Flanges: EN1092-1

DN	PN	L	D	D1	D2	PN25		H	H1	H2	B	B1	Weight kg	
						D1	D2							PN25
15	40	250	95	65	14			133	106	48.0	145	60	2.0	
20	40	250	105	75	14			133	106	48.0	145	60	2.2	
25	40	280	115	85	14			142	114	49.0	145	60	4.5	
32	40	280	140	100	18			142	114	49.0	145	60	5.3	
40	40	270	150	110	18			140	117	57.5	188	55	8.3	
50	40	310	165	125	18			146	123	58.0	188	55	10.5	
65	16	310	185	145	18	145	18	175	146	63.0	278	45	13.0	15.0
80	16	310	200	160	18	160	18	187	152	69.0	278	45	16.0	18.0
100	16	350	220	180	18	190	22	213	189	92.5	279	52	18.0	20.0
125	16	360	250	210	18	220	26	256	202	91.5	400	42	26.0	28.0
150	16	390	285	240	22	250	26	277	216	97.5	600	45	33.0	35.0
200	16	500	340	295	22	310	26	300	239	123	900	75	50.0	55.0
250	16	650	405	355	26	370	30	345	266	122	1200	85	100.0	110.0

36500TR-N series with manual gear



DN	PN	L	D	D1	D2	H	H1	H2	B	B1	C	Weight kg
150	16	390	285	240	22	330	107	216	145	25	50	38
200	16	500	340	295	22	298	123	239	196	75	75	65
250	16	650	405	355	26	451	122	266	236	85	100	115
300	16	750	460	410	26	572	155	345	280	85	193	190
400	16	-	580	525	30	795	228	358	480	-	170	464
150	25	390	300	250	26	330	107	216	145	25	50	40
200	25	500	360	310	26	298	123	239	196	75	75	65
250	25	650	425	370	30	451	122	266	236	85	100	120
300	25	750	485	430	30	572	155	345	280	85	193	200
400	25	-	620	550	36	795	228	358	480	-	170	464



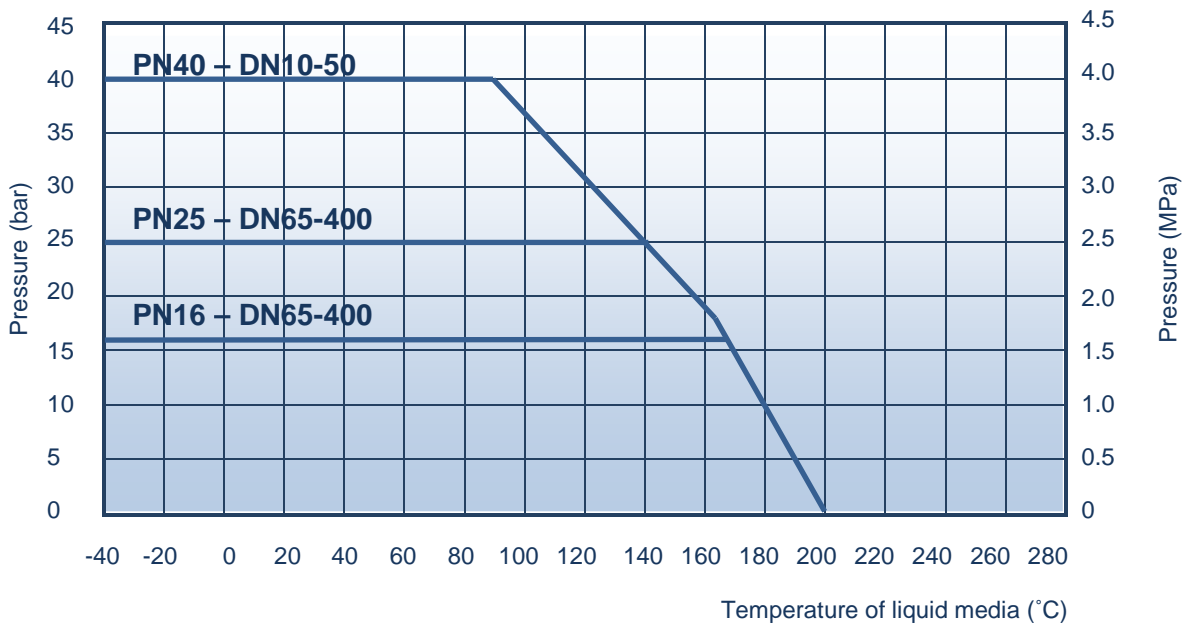
Selection table of actuators

Högfors valves can be equipped with an actuator to your specification.

DN	Pneumatic, spring return Remote Control Sweden	Pneumatic, spring return Remote Control Sweden	Electric actuator Auma	Electric actuator Bernard
15	RC220-SR	RC210-DA	SA07.1-GS50.3	OAP8
20	RC220-SR	RC210-DA	SA07.1-GS50.3	OAP8
25	RC230-SR	RC220-DA	SA07.1-GS50.3	OAP8
32	RC230-SR	RC220-DA	SA07.1-GS50.3	OAP8
40	RC240-SR	RC220-DA	SA07.1-GS50.3	OAP8
50	RC240-SR	RC230-DA	SA07.1-GS50.3	OAP8
65	RC240-SR	RC230-DA	SA07.1-GS50.3	ASP25
80	RC250-SR	RC240-DA	SA07.1-GS50.3	ASP25
100	RC260-SR	RC250-DA	SA07.1-GS50.3	ASP25
125	RC260-SR	RC250-DA	SA07.1-GS50.3	AS50
150	RC270-SR	RC260-DA	SA07.5-GS63.3	AS50
200	RC280-SR	RC265-DA	SA07.5-GS80.3	BS100
250	RC88-SR	RC280-DA	SA07.1-GS100.3/VZ4	AS200
300	RCG100-SR	RC88-DA	SA07.5-GS125.3/VZ4	ASM1+RS600
400			SA07.5-GZS200.3/GZ200.3	

Pressure / Temperature Rating

The max pressure difference depends on the working temperature.



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

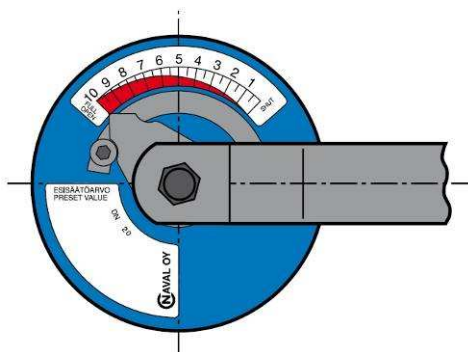


Product codes

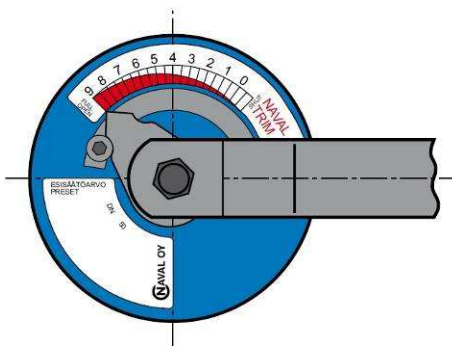
	Butt weld control ball valve	Control ball valve with flanges
handlever	36000TR-N_ _.	36500TR-N_ _.
bare shaft	36000TR-N_ _ Z	36500TR-N_ _ Z
manual gear	36000TR-N_ _ M	36500TR-N_ _ M

The control characteristics

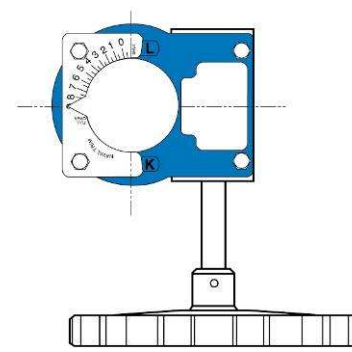
The curves indicate the regulating values of the valve at different opening angles.



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

Set value	DN 15-20	DN 25-32
1		
2	0.2	0.5
3	0.4	1.0
4	0.8	1.7
5	1.2	2.7
6	1.7	3.9
7	2.5	5.6
8	3.7	8.4
9	5.4	12.2
10	7.1	16.0

Set value	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN 250	DN300	DN400
1	1.06	1.60	2.40	5.10	11.5	14.6	21.4	46.6	50.6	75.4	99.0
1.5	1.98	2.84	4.47	8.88	18.4	22.1	36.7	70.0	95.6	142	197
2	2.84	3.99	6.40	12.4	24.8	28.9	50.9	91.3	138	205	289
2.5	3.94	5.64	8.63	16.9	31.4	38.2	64.5	112	172	256	437
3	4.93	7.12	10.6	20.9	37.0	46.4	76.1	129	200	298	573
3.5	5.97	8.95	13.4	26.2	46.3	58.1	95.0	159	248	370	703
4	6.83	10.5	15.9	30.7	54.3	68.0	111	185	289	430	813
4.5	8.47	13.3	20.1	39.0	68.6	86.1	143	238	359	535	1010
5	9.85	15.6	23.7	46.2	80.8	102	171	284	419	624	1177
5.5	12.3	19.7	29.4	57.1	98.4	127	214	343	531	791	1560
6	14.4	23.2	34.3	66.3	113	149	251	391	628	936	1897
6.5	18.0	29.0	43.4	84.7	140	182	326	488	785	1160	2354
7	21.0	33.9	51.3	101	162	211	392	571	918	1350	2742
7.5	25.7	41.5	65.9	127	208	266	500	754	1220	1850	3445
8	29.7	47.9	78.6	149	247	314	594	914	1480	2300	4046
8.5	36.1	57.9	95.9	194	298	423	784	1120	2060	3110	5678
9	41.4	66.2	110	233	341	519	952	1300	2580	3830	7143



Pressure loss

WATER:

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

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

K_V = KVvalue – Capacity factor (m³/h)

DN = nominal valve size (mm)

α – disc opening angle

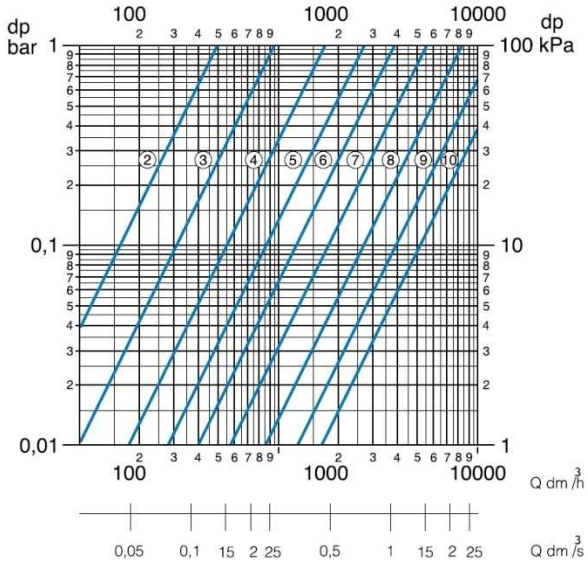
Δp = pressure difference, bar

ρ – density of liquid kg/m³

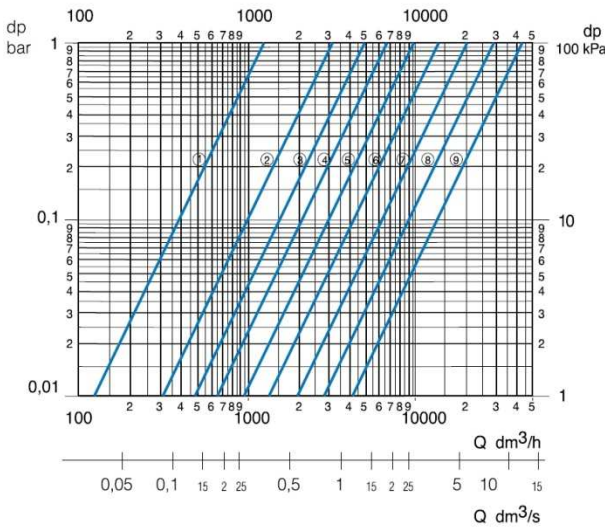
V – flow velocity m/s

Q – volume flow m³/h

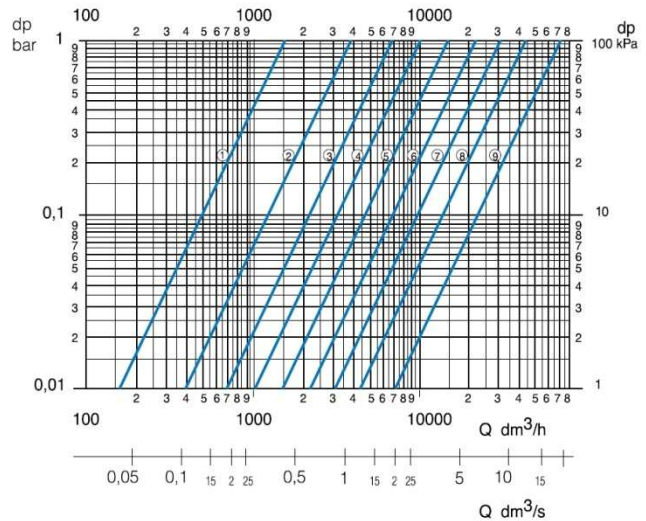
DN25 - DN32



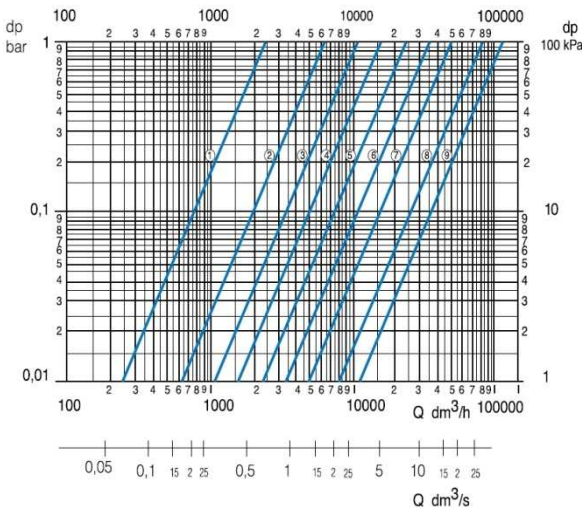
DN40



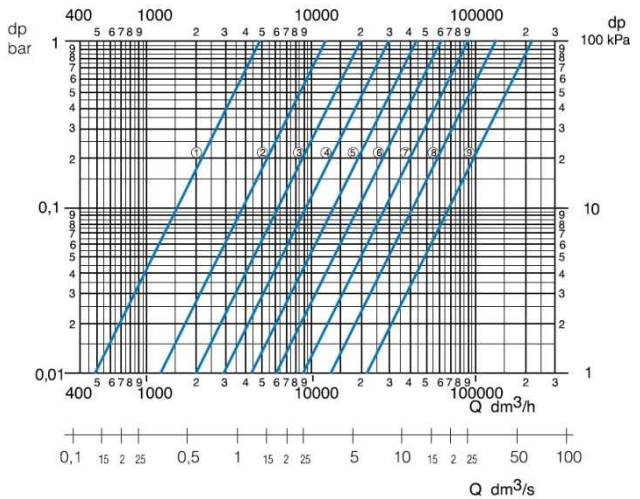
DN50



DN65



DN80





BLUE LINE

CONTROL BALL VALVE of carbon steel

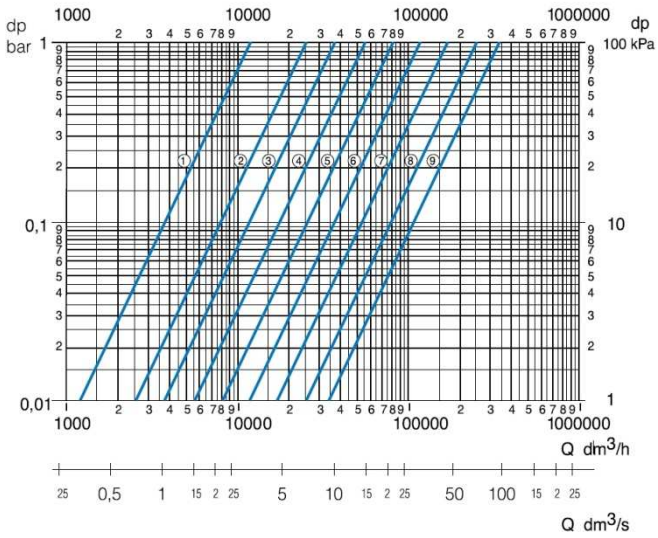


Valves

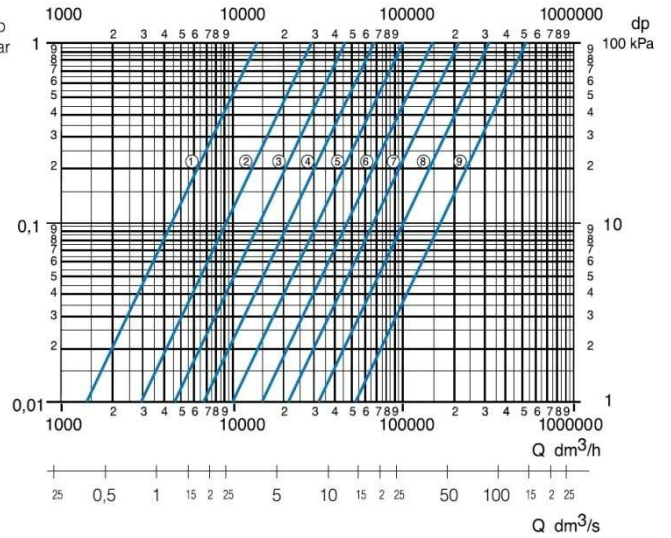
36000TR-N / 36500TR-N series

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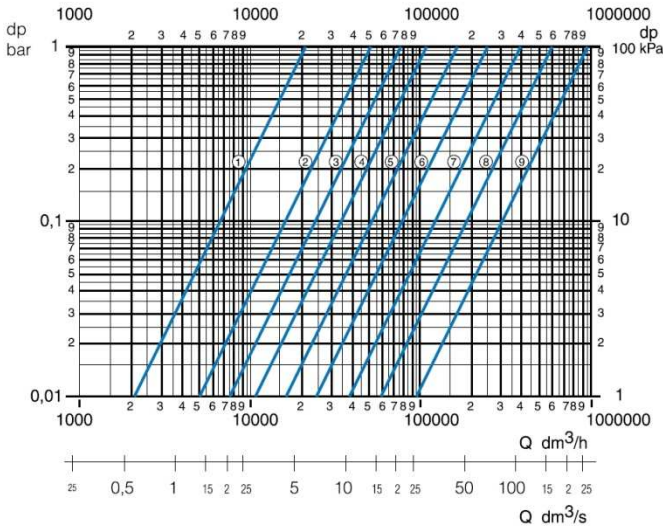
DN100



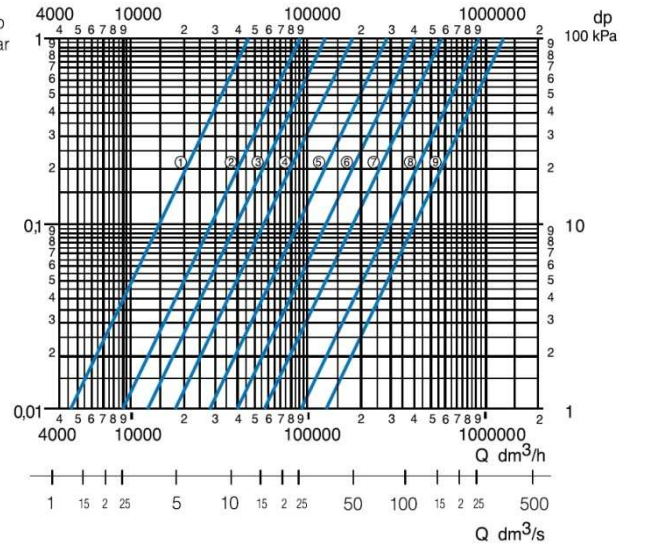
DN125



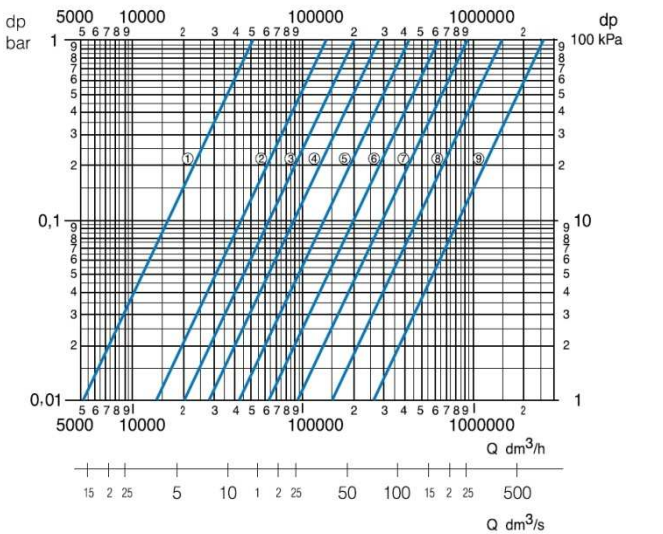
DN150



DN200



DN250



DN300

