



NAVAL

Navaltrim control valve



NAVALTRIM CONTROL VALVE

NAVALTRIM control valves are designed for control of liquid flows in heating, cooling and airconditioning systems. NAVALTRIM control valves can also be used as shut-off valves.

CONSTRUCTION:

NAVALTRIM is a control valve, 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 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 DN65-300 both can be changed. The valve is equipped with fittings for measuring of pressure difference.

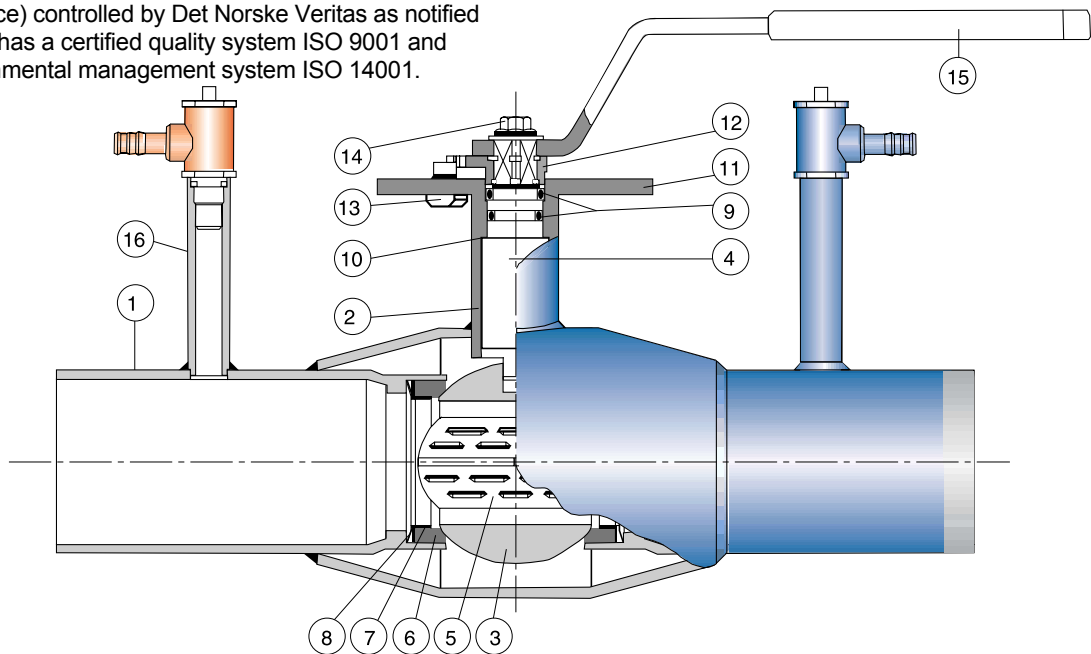
Naval ball valves are manufactured in accordance with European Pressure Equipment Directive 97/23/EY. Naval Oy applies Module H as conformity assessment procedure (=full quality assurance) controlled by Det Norske Veritas as notified body. Naval Oy has a certified quality system ISO 9001 and certified environmental management system ISO 14001.

CHARACTERISTICS:

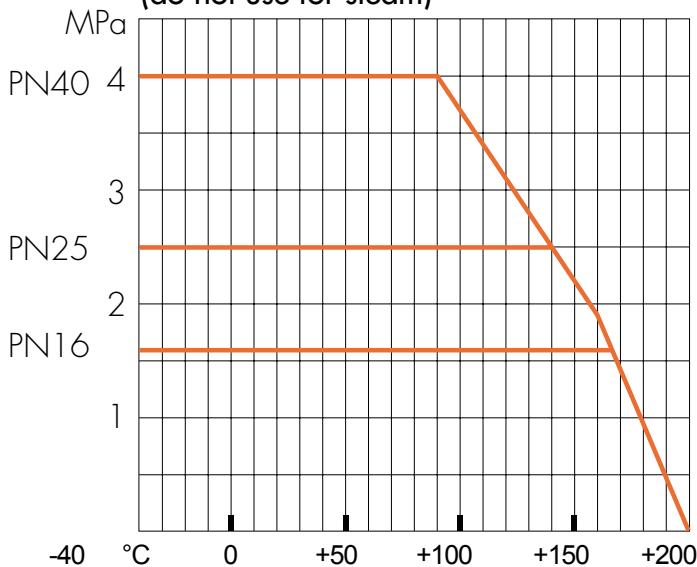
The unique Navaltrim construction provides a broad linear and exact control range. The flow resistance is very low in fully open position and the control plates inside the ball allow exact flow control without disturbing turbulence or cavitation. Therefore the information obtained from the measuring 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.



Pressure/temperature curves
(do not use for steam)

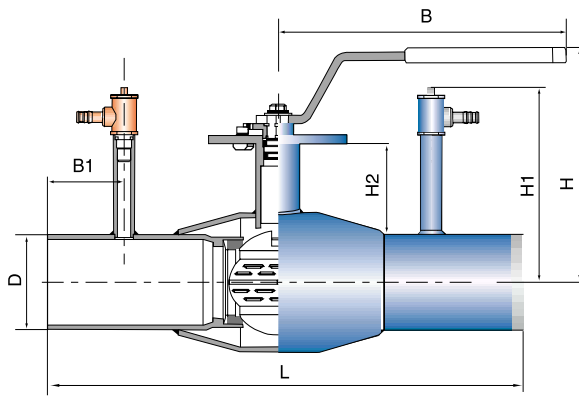


For temperatures below -20°C, please mention separately when ordering.

MATERIAL SPECIFICATION

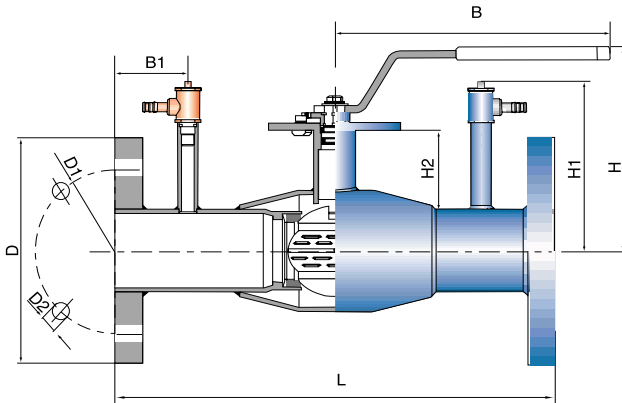
POS	DESCRIPTION	MATERIAL	
1.	Body	Carbon steel	St 37.8
2.	Stem housing	Carbon steel	Fe 52 EP
3.	Ball	Stainless steel	AISI 304
4.	Stem	Stainless steel	AISI 303
5.	Trim plates	Stainless steel	AISI 316 L
6.	Seat ring	Reinforced teflon	PTFE+GF
7.	Support ring	Stainless steel	AISI 303
8.	Bevel washer	Spring steel	
9.	O-ring	Viton	FPM
10.	Thrust washer	Teflon	PTFE
11.	Face plate	Carbon steel	
12.	Indicator/end stop	Cast steel	AISI 304
13.	Locking screw	Steel	
14.	Screw	Steel	
15.	Handle	Galvanized steel	
16.	Measuring outlet		

WITH BUTT WELD CONNECTION



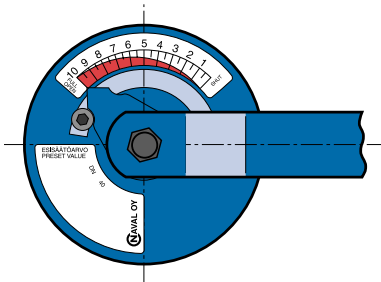
DN	PN	NAVAL NO	LVI NO	L	D	H	H1	H2	B	B1	KG
15	40	264 403	4018102	230	21,3	133	106	48,0	145	50	1,2
20	40	264 405	4018103	230	26,9	133	106	48,0	145	50	1,2
25	40	264 406	4018104	260	33,7	142	114	49,0	145	50	1,9
32	40	264 407	4018105	260	42,4	142	114	49,0	145	50	1,9
40	40	264 408	4018106	260	48,3	140	117	57,5	190	50	2,5
50	40	264 409	4018107	300	60,3	146	123	58,0	190	50	3,6
65	25	264 410	4018108	300	76,1	175	146	63,0	280	40	4,9
80	25	264 411	4018109	300	88,9	187	152	69,0	280	40	6,3
100	25	264 412	4018110	325	114,3	223	189	92,5	280	40	9,4
125	16	264 413	4018111	325	139,7	256	202	91,5	400	25	15,7
150	16	264 414	4018112	350	168,3	277	216	97,5	600	25	20,8
200	16	264 416	4018113	390	219,1	300	223	239,0	900	20	42,0
250	16	264 417	4018114	520	273,0	345	222	266,0	1200	20	82,0
125	25	264 453	4018131	325	139,7	256	202	91,5	400	25	15,7
150	25	264 454	4018132	350	168,3	277	216	97,5	600	25	20,8
200	25	264 456	4018133	390	219,1	300	223	239,0	900	20	42,0
250	25	264 457	4018134	520	273,0	345	222	266,0	1200	20	82,0

WITH FLANGES

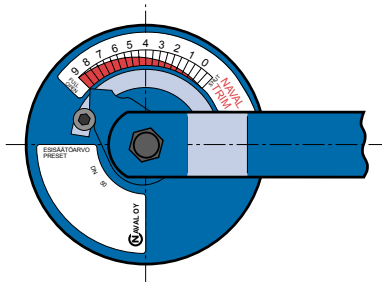


DN	PN	NAVAL NO	LVI NO	L	D	D1	D2	H	H1	H2	B	B1	KG
15	40	265 503	4018152	250	95	65	14	133	106	48,0	145	60	2,0
20	40	265 505	4018153	250	105	75	14	133	106	48,0	145	60	2,2
25	40	265 506	4018154	280	115	85	14	142	114	49,0	145	60	4,5
32	40	265 507	4018155	280	140	100	18	142	114	49,0	145	60	5,3
40	40	265 508	4018156	270	150	110	18	140	117	57,5	190	55	8,3
50	40	265 509	4018157	310	165	125	18	146	123	58,0	190	55	10,5
65	16	265 510	4018158	310	185	145	18	175	146	63,0	280	45	13,0
80	16	265 511	4018159	310	200	160	18	187	152	69,0	280	45	16,0
100	16	265 512	4018160	350	220	180	18	213	189	92,5	280	52	18,0
125	16	265 513	4018161	360	250	210	18	256	202	91,5	400	42	26,0
150	16	265 514	4018162	390	285	240	22	277	216	97,5	600	45	33,0
200	16	265 516	4018163	500	340	295	22	300	223	239	900	20	50,0
250	16	265 517	4018164	650	405	355	26	345	222	266	1200	20	100,0
65	25	265 570	4018178	310	185	145	18	175	146	63,0	280	45	15,0
80	25	265 571	4018179	310	200	160	18	187	152	69,0	280	45	18,0
100	25	265 572	4018180	350	235	190	22	213	189	92,5	280	52	20,0
125	25	265 573	4018191	360	270	220	26	256	202	91,5	400	42	28,0
150	25	265 574	4018192	390	300	250	26	277	216	97,5	600	45	35,0
200	25	265 576	4018193	500	360	310	26	300	223	239	900	20	55,0
250	25	265 577	4018194	650	425	370	30	345	222	266	1200	20	110,0

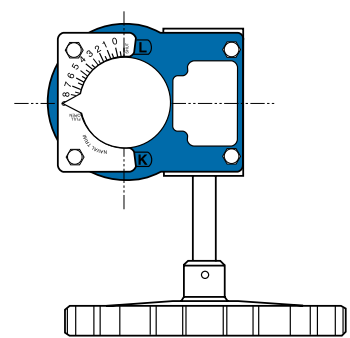
FLANGES: SFS 2123, SS335, DIN 2501, ISO 2084, ISO 7005-1



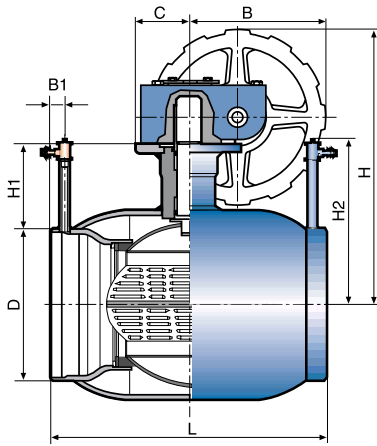
CONTROL SCALE
(WITH HANDLE)
DN15 - DN32



CONTROL SCALE
(WITH HANDLE)
DN40 - DN250

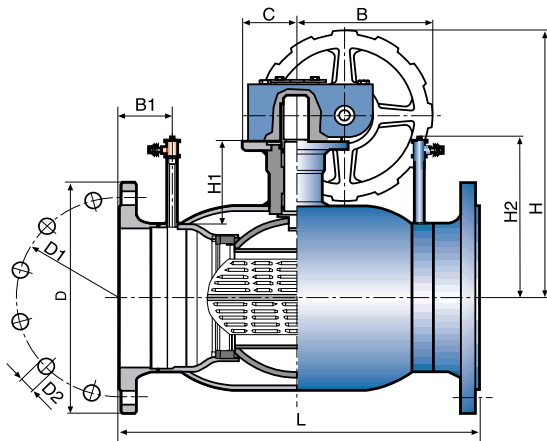


CONTROL SCALE
(WITH GEARBOX)
DN150 - DN300



DN 150-300 WITH BUTT WELD CONNECTION AND WITH GEAR

DN	PN	NAVAL NO	LVI NO	L	D	H	H1	H2	B	B1	C	KG
150	16	264 434	4018121	350	168,3	330	107	216	145	25	50	25
200	16	264 436	4018122	390	219,1	398	123	239	196	20	75	50
250	16	264 437	4018123	520	273,0	451	122	266	236	20	100	90
300	16	264 438	4018124	635	323,9	572	155	345	280	24	193	150
150	25	264 474	4018141	350	168,3	330	107	216	145	25	50	25
200	25	264 476	4018142	390	219,1	398	123	239	196	20	75	50
250	25	264 477	4018143	520	273,0	451	122	266	236	20	100	90
300	25	264 478	4018144	635	323,9	572	155	345	280	24	193	150



DN 150-300 WITH FLANGES AND WITH GEAR

DN	PN	NAVAL NO	L	D	D1	D2	H	H1	H2	B	B1	C	KG
150	16	265 534	390	285	240	22	330	107	216	145	25	50	38
200	16	265 536	500	340	295	22	298	123	239	196	20	75	65
250	16	265 537	650	405	355	26	451	122	266	236	20	100	115
300	16	265 538	750	460	410	26	572	155	345	280	24	193	190
150	25	265 594	390	300	250	26	330	107	216	145	25	50	40
200	25	265 596	500	360	310	26	298	123	239	196	20	75	65
250	25	265 597	650	425	370	30	451	122	266	236	20	100	120
300	25	265 598	750	485	430	30	572	155	345	280	24	193	200

Flanges: SFS 2123, SS335, DIN 2501, ISO 2084
ISO 7005-1

NAVALTRIM KV-FACTORS

SET VALUE	DN 15/20	DN 25/32
1		
2	0,22	0,50
3	0,42	0,95
4	0,76	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	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
1	1,06	1,60	2,40	5,10	11,5	14,6	21,4	46,6	50,6	75,4
2	2,84	3,99	6,40	12,4	24,8	28,9	50,9	91,3	138	205
3	4,93	7,12	10,6	20,9	37,0	46,4	76,1	129	200	298
4	6,83	10,5	15,9	30,7	54,3	68,0	111	185	289	430
5	9,85	15,6	23,7	46,2	80,8	102	171	284	419	624
6	14,4	23,2	34,3	66,3	113	149	251	391	628	936
7	21,0	33,9	51,3	101	162	211	392	571	918	1350
8	29,7	47,9	78,6	149	247	314	594	914	1480	2300
9	41,4	66,2	110	233	341	519	952	1300	2580	3830

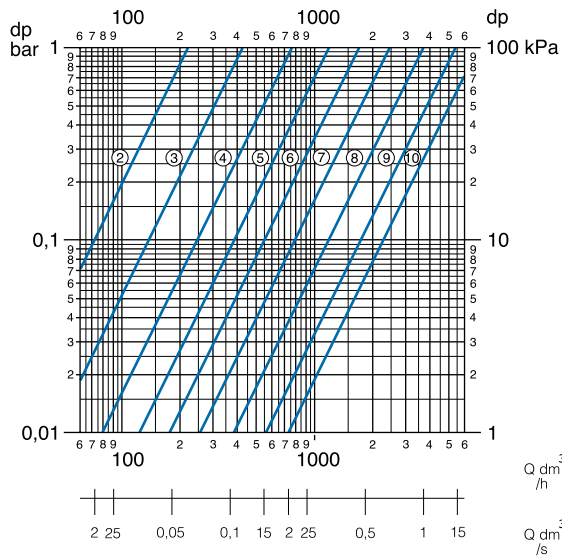
TA-CMI measuring equipment can be used for accurate information on actual pressure and flow values (ask for full technical data)

NAVAL NO 264 100

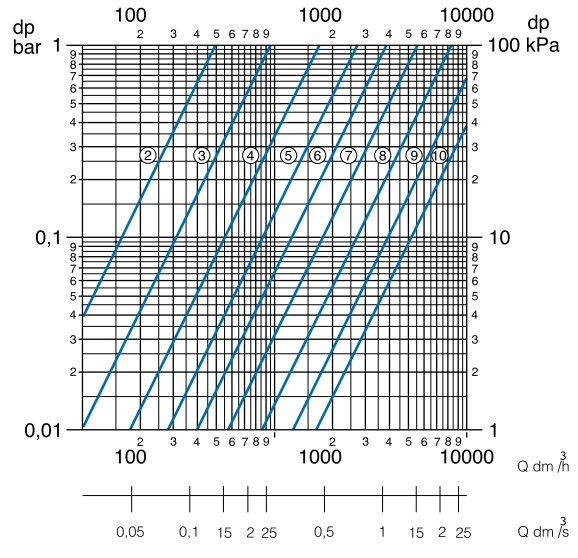


CONTROL GRAPHS *

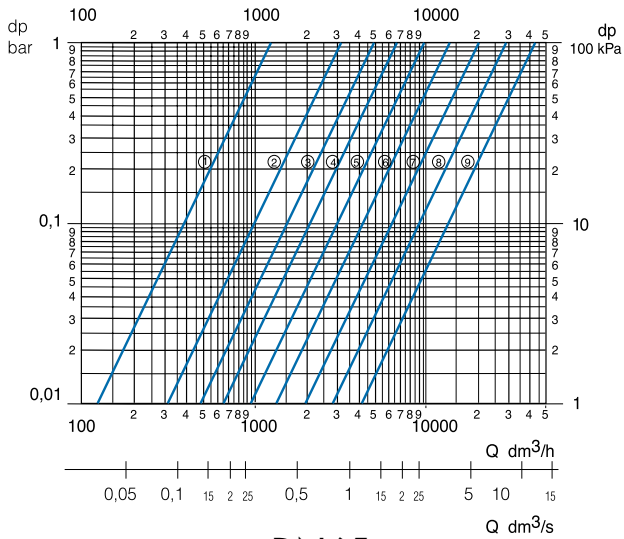
DN15 AND DN20



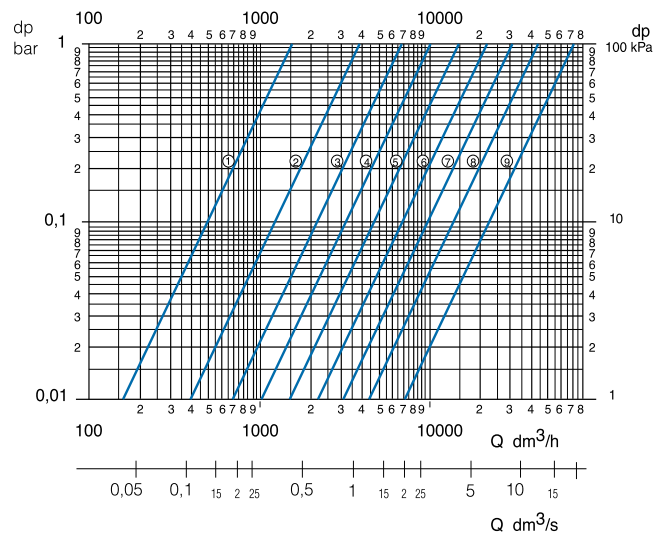
DN25 AND DN32



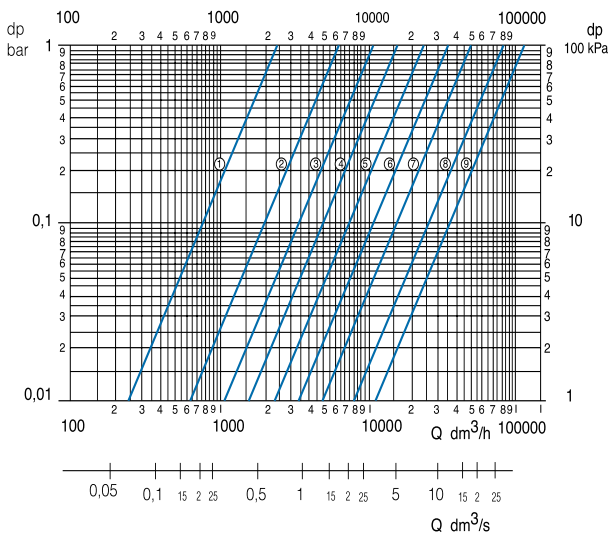
DN40



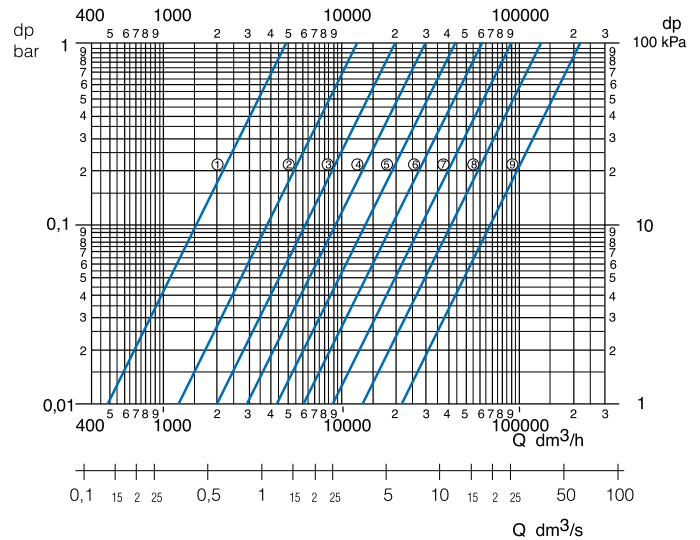
DN50



DN65

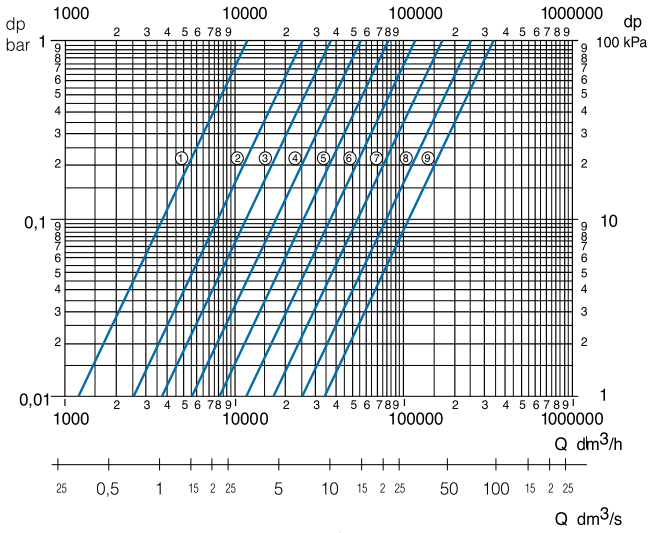


DN80

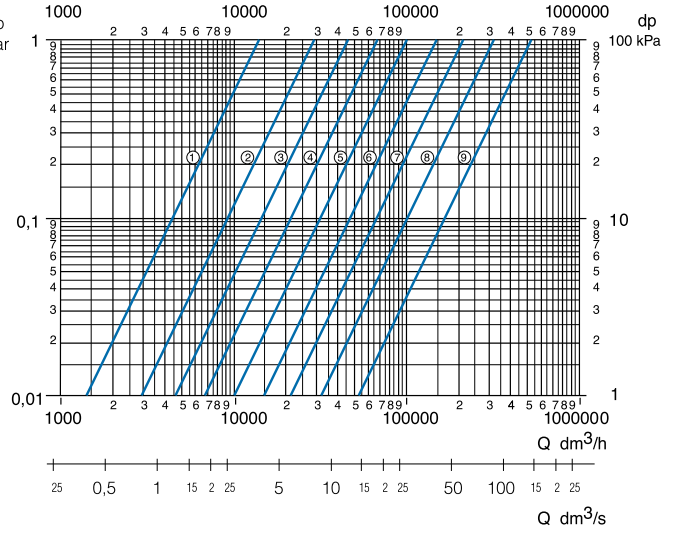


* ask for NAVALTRIM operating instructions for more detailed information

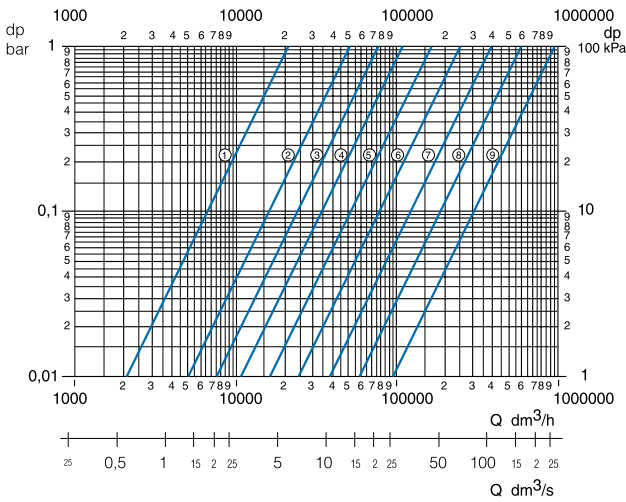
DN100



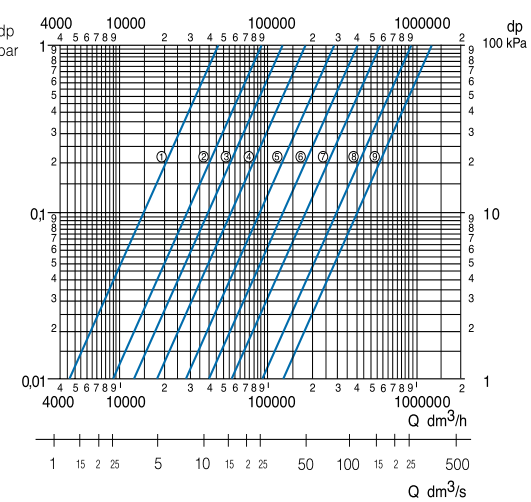
DN125



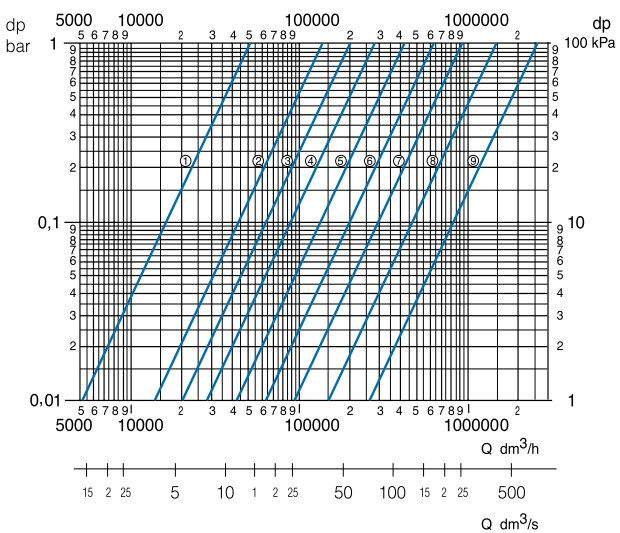
DN150



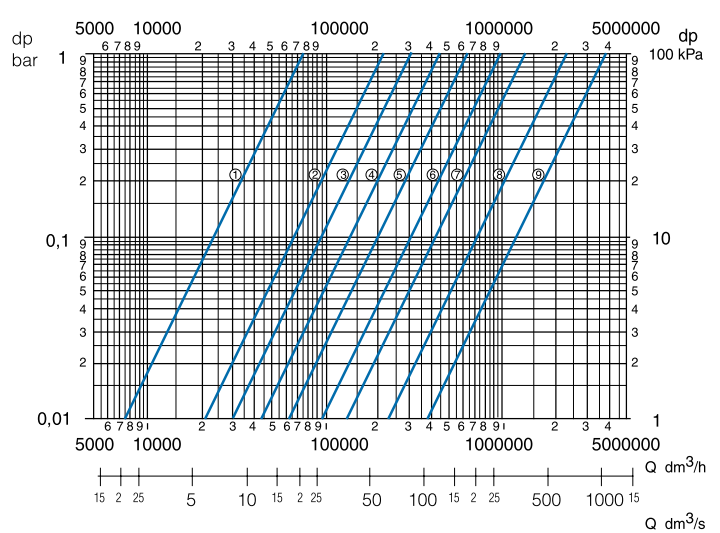
DN 200



DN 250



DN 300



Flow Control Division

NAVAL OY, P.O.Box 32, FIN-23801 Laitila, FINLAND,
 tel. +358-2-85 091, fax +358-2-856 506,
 e-mail: naval@naval.fi, www.naval.fi