



NAVAL

Steel Ball Valves



NAVAL STEEL BALL VALVES

Naval ball valves are suitable for District Heating (CHP) installations, Heat Transfer piping, oil lines and oxygen-free water lines.

CONSTRUCTION

The valve has an all-welded body and is fitted with carbon-reinforced Teflon seals which are long-lasting against frequent operation, impurities and chemicals.

A ground and polished stainless steel ball gives easy turning and reliable operation over many years.

A floating ball construction is used. Bevel spring washers keep the seals pressed against the ball to ensure that the valve remains leak-tight regardless of pressure fluctuations.

The blow-out proof stem is sealed with 2 O-rings. In smaller valves, the upper one can be changed and in sizes 65 to 300mm both can be changed. The Teflon thrust washer between the stem shoulder and stem housing also acts as a seal.

Stem housings of 65mm valves and above are fitted with stainless steel bearings.

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

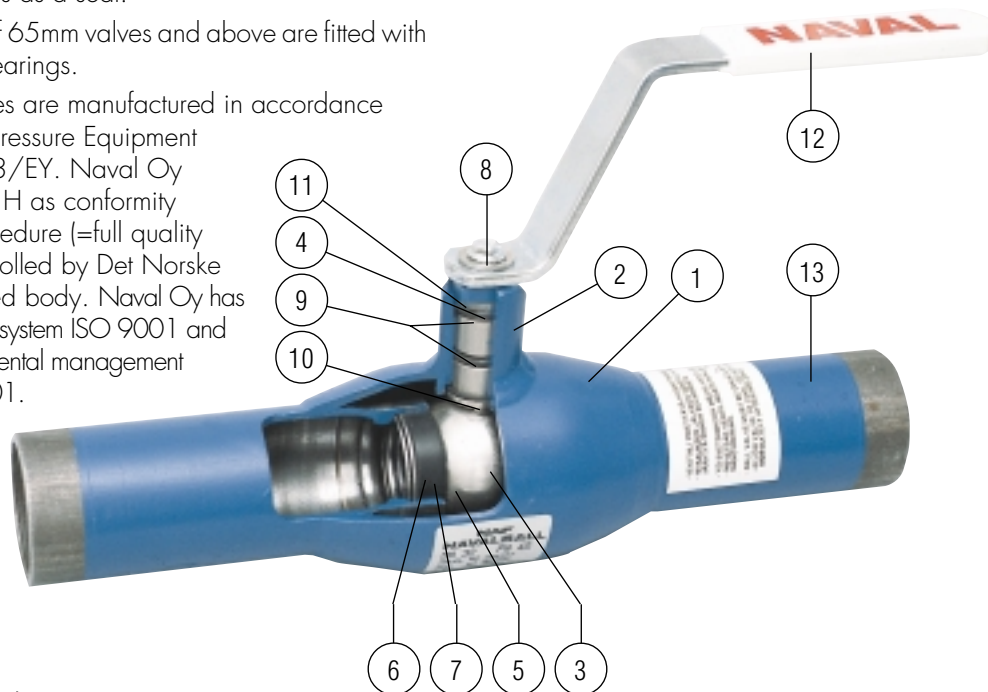
The valve needs no servicing - no adjustment or lubrication - and is easy to install, giving a long working life with low running costs.

It is easy to insulate because of the long, circular stem housing.

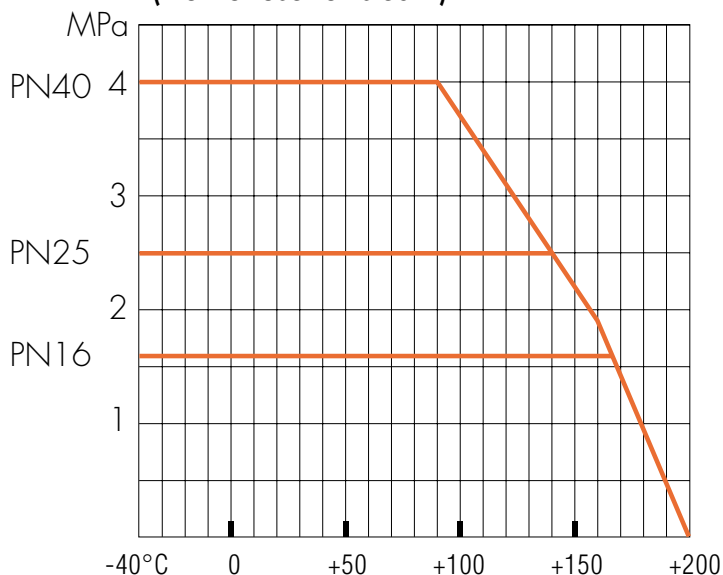
The operating lever is detachable and can be re-positioned at 180°.

Heavy and unreliable cast components are not used in the construction of the valve body.

It is easy to retrofit actuating equipment.



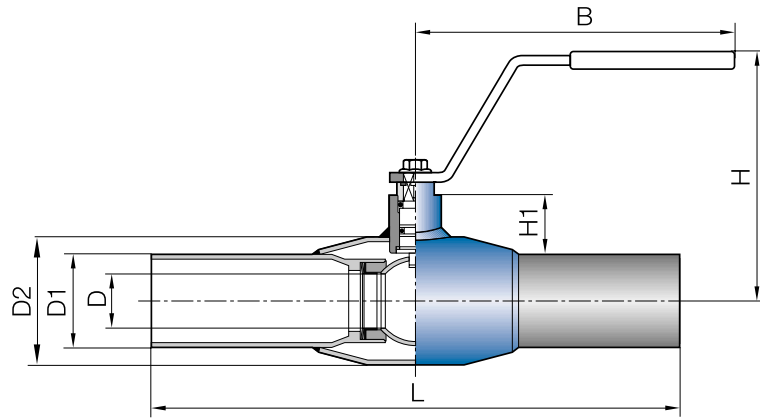
Pressure/temperature curves
(Do not use for steam)



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

MATERIAL SPECIFICATION

ITEM	DESCRIPTION	MATERIAL		DN600
1.	Body	Carbon steel	P235GH	SS 1330
2.	Stem Housing	Carbon steel	P355NH	SS 1430
3.	Ball	Stainless steel	1.4301	SS 2333
4.	Stem	Stainless steel	1.4305	SS 2324
5.	Seal	Teflon	PTFE+C	PTFE+C
6.	Bevel washer	Spring steel		Steel
7.	Support ring	Stainless steel		Steel
8.	Screw	Steel		
9.	O-ring	Viton	FPM	EPDM
10.	Thrust washer	Teflon	PTFE	PTFE
11.	Stop	Stainless steel	1.4016/1.4404	
12.	Handle	Zinc-plated steel		
13.	End pipe	Carbon steel	P235GH	ASTM, GWCC



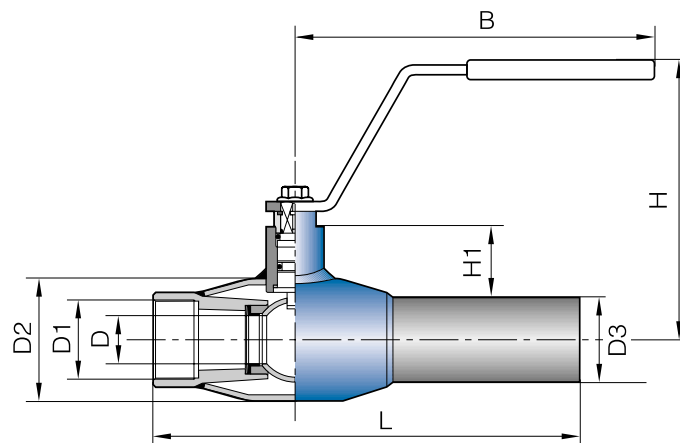
WITH BUTT WELD CONNECTIONS

DN	PN	NAVAL N:O	L	D	D1	D2	H	B	H1	kg
10	40	284 402	230	10	17,2	33,7	98	145	22	0,5
15	40	284 403	230	10	21,3	33,7	98	145	22	0,5
20	40	284 405	230	15	26,9	42,4	103	145	23	0,7
25	40	284 406	230	20	33,7	48,3	118	145	34	1,0
32	40	284 407	260	25	42,4	60,3	121	145	33	1,4
40	40	284 408	260	32	48,3	70,0	120	188	43	1,8
50	40	284 409	300	40	60,3	88,9	127	188	44	2,6

WITH BUTT WELD CONNECTIONS

65	25	284 410	300	50	76,1	101,6	159	277,5	62	4,4
80	25	284 411	300	65	88,9	121,0	171	277,5	68	5,6
100	25	284 412	325	80	114,3	146,0	218	278,5	101	8,4
125	16	284 413	325	100	139,7	177,8	252	400	101	13,4
150	16	284 414	350	125	168,3	219,1	272	600	107	18,0
200	16	284 416	390	150	219,1	273,0	300	900	123	36,3
250	16	284 417	520	200	273,0	355,6	345	1200	122	72,0
125	25	284 453	325	100	139,7	177,8	252	400	101	13,4
150	25	284 454	350	125	168,3	219,1	272	600	107	18,0
200	25	284 456	390	150	219,1	273,0	300	900	123	36,3
250	25	284 457	520	200	273,0	355,6	345	1200	122	72,0

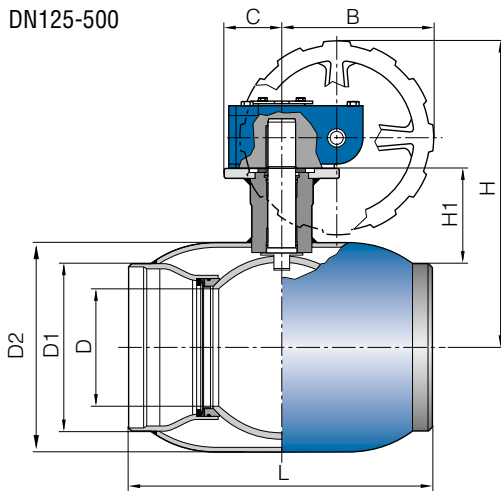
We recommend gear operation for valves \geq DN 125 and larger.



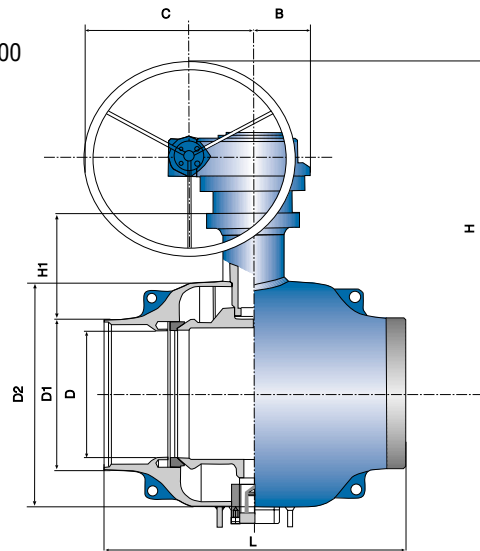
WITH BUTT WELD CONNECTION/FEMALE PIPE THREADS

DN	PN	NAVAL N:O	L	D	D1	D2	D3	H	B	H1	kg
10	40	284 002	153	10	R 3/8	33,7	17,2	98	145	22	0,5
15	40	284 003	158	10	R 1/2	33,7	21,3	98	145	22	0,5
20	40	284 005	168	15	R 3/4	42,4	26,9	103	145	23	0,6
25	40	284 006	172	20	R 1	48,3	33,7	118	145	34	0,9
32	40	284 007	195	25	R 1 1/4	60,3	42,4	121	145	33	1,2
40	40	284 008	205	32	R 1 1/2	70,0	48,3	120	188	43	1,7
50	40	284 009	240	40	R 2	88,9	60,3	127	188	44	2,3

DN125-500



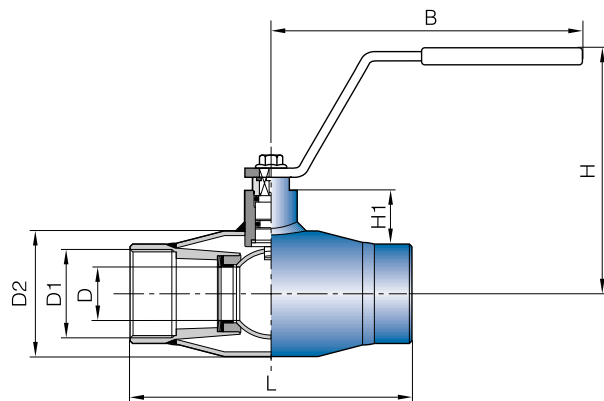
DN600



GEAR-OPERATED

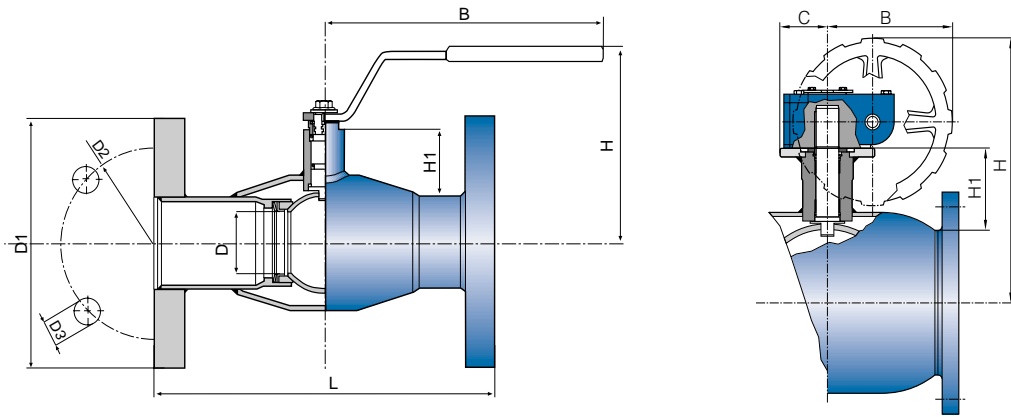
DN	PN	NAVAL N:O	L	D	D1	D2	H	B	C	H1	kg	
125	16	284 433	325	100	139,7	177,8	309	145	50	101	18	
150	16	284 434	350	125	168,3	219,1	330	145	50	107	23	
200	16	284 436	390	150	219,1	273	398	196	75	123	46	
250	16	284 437	520	200	273	355,6	451	236	100	122	87	
300	16	284 438	635	250	323,9	406,4	572	280	193	155	193	
*	350	16	284 498	762	335	355,6	559	795	480	170	253	342
400	16	284 439	762	350	406,4	559	795	480	170	228	322	
500	16	284 440	991	390	508	660	857	550	225	221	764	
600	16	284 441	1067	500	610	1022	1043	130	480	259	1470	
125	25	284 473	325	100	139,7	177,8	309	145	50	101	19	
150	25	284 474	350	125	168,3	219,1	330	145	50	107	24	
200	25	284 476	390	150	219,1	273	398	196	75	123	48	
250	25	284 477	520	200	273	355,6	451	236	100	122	90	
300	25	284 478	635	250	323,9	406,4	572	280	193	155	193	
*	350	25	284 495	762	335	355,6	559	795	480	170	253	342
400	25	284 479	762	350	406,4	559	795	480	170	228	322	
500	25	284 480	991	390	508	660	857	550	225	221	764	
600	25	284 481	1067	500	610	1022	1043	130	480	259	1470	

*full bore



WITH FEMALE PIPE THREADS

DN	PN	NAVAL N:O	L	D	D1	D2	H	B	H1	kg
10	40	284 152	75	10	R 3/8	33,7	98	145	22	0,5
15	40	284 153	85	10	R 1/2	33,7	98	145	22	0,5
20	40	284 155	100	15	R 3/4	42,4	103	145	23	0,5
25	40	284 156	115	20	R 1	48,3	118	145	34	0,7
32	40	284 157	130	25	R 1 1/4	60,3	121	145	33	0,9
40	40	284 158	150	32	R 1 1/2	70,0	120	188	43	1,5
50	40	284 159	180	40	R 2	88,9	127	188	44	2,1



WITH FLANGES

DN	PN	NAVAL N:O	L	D	D1	D2	D3	H	B	H1	kg
15	40	285 503	130	10	95	65	14	98	145	22	1,9
20	40	285 505	150	15	105	75	14	103	145	23	2,7
25	40	285 506	160	20	115	85	14	118	145	34	3,3
32	40	285 507	180	25	140	100	18	121	145	33	5,0
40	40	285 508	200	32	150	110	18	120	188	43	6,0
50	40	285 509	230	40	165	125	18	127	188	44	7,9
65	16	285 510	270	50	185	145	18	159	277,5	62	10,0
80	16	285 511	280	65	200	160	18	171	277,5	68	12,5
100	16	285 512	300	80	220	180	18	218	278,5	101	18,8
125	16	285 513	325	100	250	210	18	252	400	101	24,3
150	16	285 514	350	125	285	240	22	272	600	107	31,5
200	16	285 516	400	150	340	295	22	300	900	123	55,1
250	16	285 517	530	200	405	355	26	345	1220	122	97,8
65	25	285 570	270	50	185	145	18	159	277,5	61	11,3
80	25	285 571	280	65	200	160	18	171	277,5	68	14,9
100	25	285 572	300	80	235	190	22	218	278,5	101	19,4
125	25	285 573	325	100	270	220	26	252	400	101	28,5
150	25	285 574	350	125	300	250	26	272	600	107	37,1
200	25	285 576	400	150	360	310	26	300	900	123	63,0
250	25	285 577	530	200	425	370	30	345	1220	122	108,6

We recommend gear operation for valves \geq DN 125 and larger.

WITH FLANGES AND WITH GEAR

DN	PN	NAVAL N:O	L	D	D1	D2	D3	H	B	C	H1	kg
125	16	285 533	325	100	250	210	18	309	145	50	101	29
150	16	285 534	350	125	285	240	22	330	145	50	107	36
200	16	285 536	400	150	340	295	22	398	196	75	123	65
250	16	285 537	530	200	405	355	26	451	236	100	122	113
300	16	285 538	630	250	460	410	26	572	280	193	155	229
* 350	16	285 575	927	335	520	470	26	795	480	170	253	414
400	16	285 539	762	350	580	525	30	795	480	170	228	464
500	16	285 540	1016	390	715	650	35	857	550	225	221	914
600	16	285 541	1300	500	840	770	36	1043	130	480	259	1644
125	25	285 593	325	100	270	220	26	309	145	50	101	33
150	25	285 594	350	125	300	250	26	330	145	50	107	42
200	25	285 596	400	150	360	310	26	398	196	75	123	72
250	25	285 597	530	200	425	370	30	451	236	100	122	124
300	25	285 598	630	250	485	430	30	572	280	193	155	272
* 350	25	285 595	927	335	555	490	33	795	480	170	253	414
400	25	285 599	762	350	620	550	36	795	480	170	228	464
500	25	285 500	1016	390	730	660	36	857	550	225	221	914
600	25	285 501	1300	500	845	770	39	1043	130	480	259	1745

*full bore

Flanges: DIN 2501, ISO 2084, SFS 2123, SS 335, EN 1092-1

Face to face dimensions

according to: DN15-50 DIN 3202/F1 DN400-500 DIN 3202/F18
 DN65-200 DIN 3202/F5 DN600 DIN 3202/F6
 DN250-350 DIN 3202/F15

SELECTION TABLE OF ACTUATORS

DN	PN	Pneumatic, spring return RC	Pneumatic, double acting RC	Electric actuator Auma	Electric actuator Bernard
10	40	RC210-SR	RC205-DA	SG03-11	OA3
15	40	RC210-SR	RC205-DA	SG03-11	OA3
20	40	RC210-SR	RC210-DA	SG03-11	OA3
25	40	RC220-SR	RC210-DA	SG03-11	OA3
32	40	RC220-SR	RC210-DA	SG03-11	OA3
40	40	RC230-SR	RC220-DA	SG04-11	OA6
50	40	RC230-SR	RC220-DA	SG04-11	OA6
65	25	RC240-SR	RC230-DA	SG05-11	OA8
80	25	RC240-SR	RC230-DA	SG05-11	OA8
100	25	RC250-SR	RC240-DA	SG07-22	AS18
125	16	RC260-SR	RC250-DA	SG07-22	AS50
150	16	RC270-SR	RC260-DA	SG10-45	AS50
200	16	RC270-SR	RC260-DA	SG12-63	AS100
250	16	RC280-SR	RC270-DA	SA07.1-GSM100.3	AS200
300	16		RC280-DA	SA07.5-GSM125.3	ASM1+RS600
* 350	16			SA07.5-GS200.3	ASM2+RS1825G
400	16			SA07.5-GS200.3	ASM2+RS1825G
500	16			SA10.1-GS250.3	ASM2+RS1825G
600	16			SA07.5-GS200.3	ASM2+RS1825G

*full bore

Electric actuators are available with one or three phase motors.



DN25 + Bernard OA3



DN80 + RC230-DA



DN200 + Auma SG12-63



DN500 + Bernard ASM2+RS1825 G

KV-VALUE TABLE

Size	DN																* full bore			
	10-15	20	25	32	40	50	65	80	100	125	150	200	250	300	350*	400	500	600		
Kv-value	6	14	26	41	67	105	182	315	420	650	1070	1420	2620	5820	34600	12593	16300	16970		



Flow Control Division

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