

# NAVAL STEEL BALL VALVES



 **NAVAL OY**

# 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.

## CHARACTERISTICS

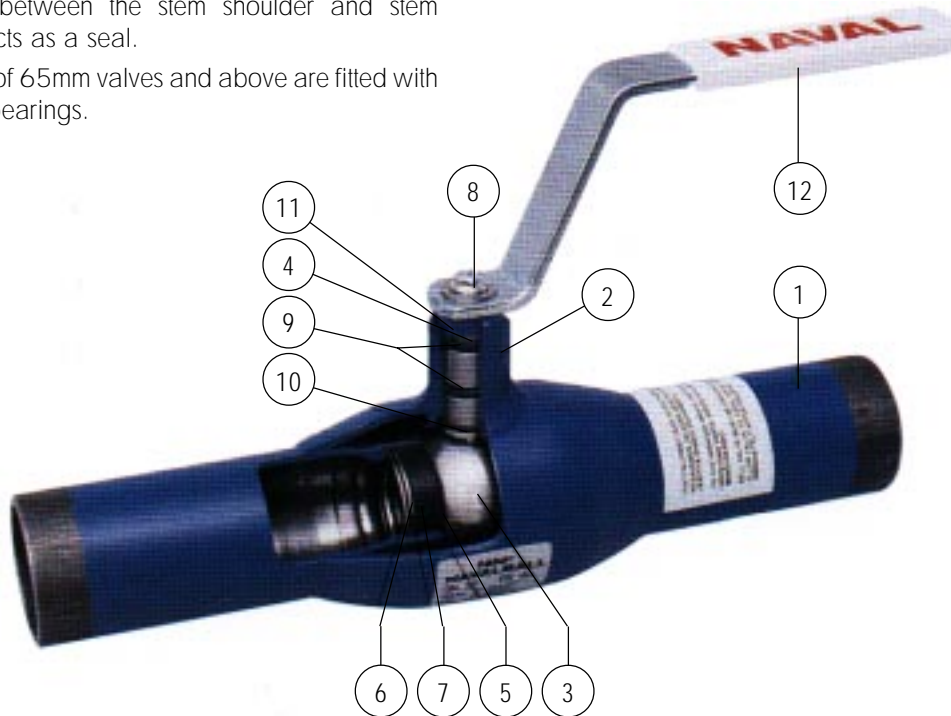
The valve needs no servicing - no adjustment or lubrication - and is easy to install, giving a long working life with low running costs.

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

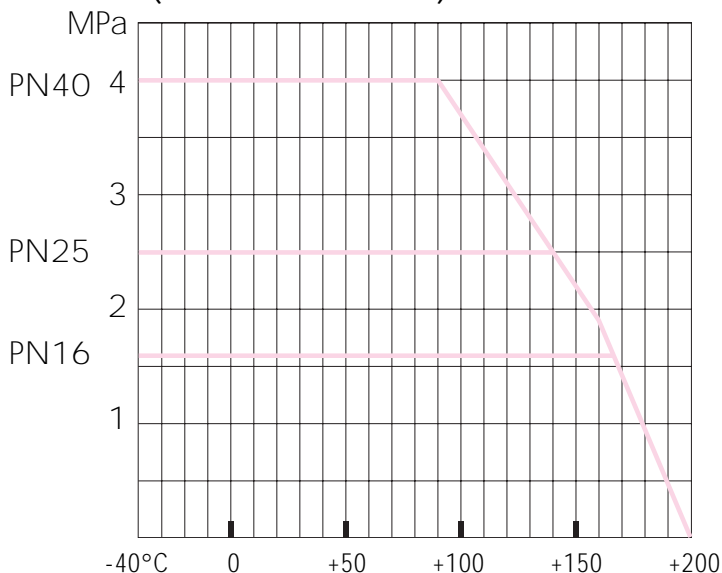
The operating lever is detachable and can be re-positioned at 180°.

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

It is easy to retrofit actuating equipment.

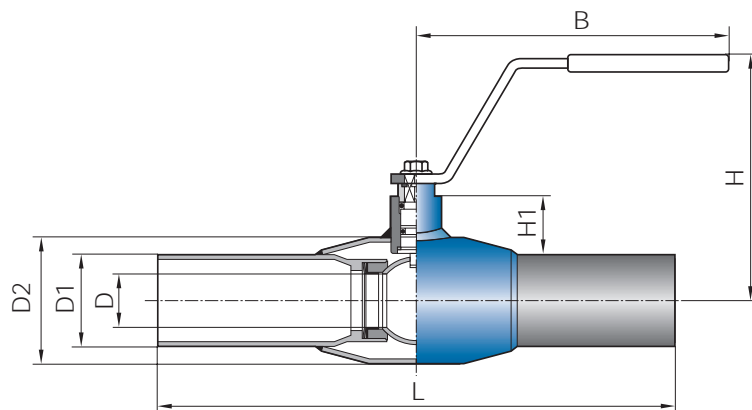


Pressure/temperature curves  
(Do not use for steam)



## MATERIALS SPECIFICATION

ITEM	DESCRIPTION	MATERIAL	
1.	Body	Carbon steel	St 37.8
2.	Stem Housing	Carbon steel	Fe 52 DP
3.	Ball	Stainless steel	AISI 304
4.	Stem	Stainless steel	AISI 303
5.	Seal	Teflon	PTFE
6.	Bevel washer	Spring steel	
7.	Support ring	Stainless steel	
8.	Screw	Steel	
9.	O-ring	Viton	FPM
10.	Thrust washer	Teflon	PTFE
11.	Stop	Casted steel	AISI 304
12.	Handle	Zinc-plated steel	



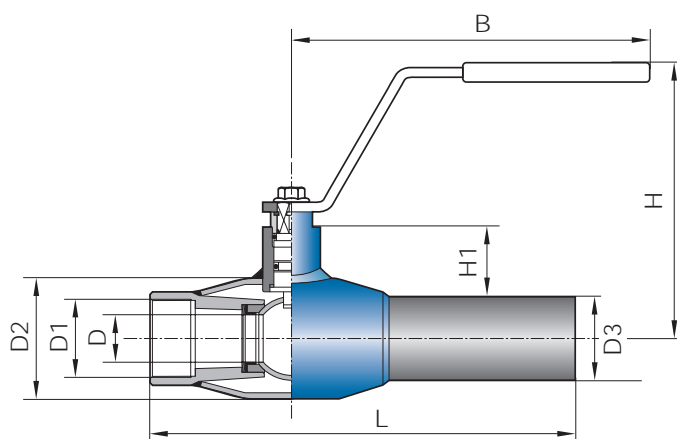
### WITH BUTT WELD CONNECTIONS

DN	PN	NAVAL No	L	D	D1	D2	H	B	H1	Weight (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	76,1	120	190	43	1,8
50	40	284 409	300	40	60,3	88,9	127	190	44	2,6

### WITH BUTT WELD CONNECTIONS

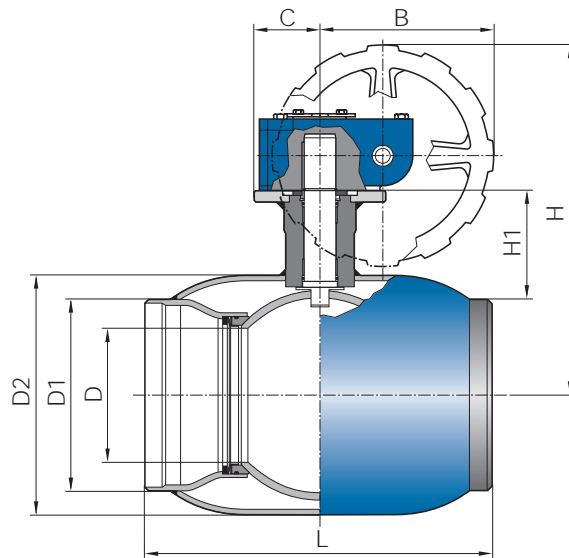
65	25	284 410	300	50	76,1	114,3	170	280	71	4,4
80	25	284 411	300	65	88,9	139,7	185	280	77	5,6
100	25	284 412	325	80	114,3	168,3	210	280	102	8,4
125	16	284 413	325	100	139,7	177,8	253	400	101	13,4
150	16	284 414	350	125	168,3	219,1	273	600	107	18,0
200	16	284 416	390	150	219,1	273	300	900	123	36,3
250	16	284 417	520	200	273	355,6	345	1200	122	72,0
125	25	284 453	325	100	139,7	177,8	253	400	101	13,4
150	25	284 454	350	125	168,3	219,1	273	600	107	18,0
200	25	284 456	390	150	219,1	273	300	900	123	36,3
250	25	284 457	520	200	273	355,6	345	1200	122	72,0

We recommend gear operation for valves 125 mm and larger.



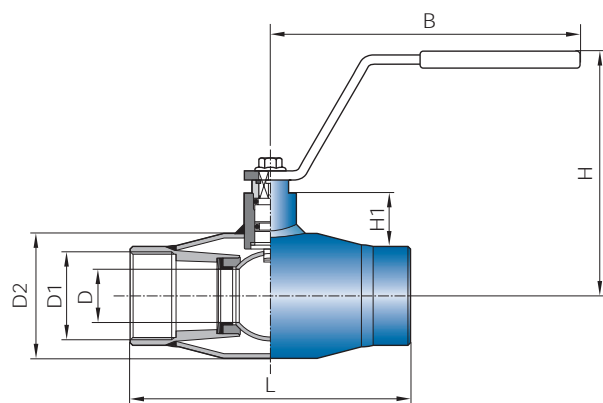
### WITH BUTT WELD CONNECTION/FEMALE PIPE THREADS

DN	PN	NAVAL No	L	D	D1	D2	D3	H	B	H1	Weight (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	76,1	48,3	120	190	43	1,7
50	40	284 009	240	40	R 2	88,9	60,3	127	190	44	2,3



## GEAR-OPERATED

DN	PN	NAVAL No	L	D	D1	D2	H	B	C	H1	Weight (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	451	236	100	122	87
300	16	284 438	620	250	323,9	455	572	280	193	155	193
350	16	284 498	686	300	355,6	508	658	231	155	187	351
400	16	284 439	762	350	406,4	610	757	325	150	221	504
500	16	284 440	914	400	508	680	810	466	175	211	746
600	16	284 441	1067	500	610	830	966	325	150	259	1507
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	451	236	100	122	90
300	25	284 478	620	250	323,9	455	572	280	193	155	193
350	25	284 495	686	300	355,6	508	697	325	150	187	385
400	25	284 479	762	350	406,4	610	764	466	175	221	567
500	25	284 480	914	400	508	680	810	466	175	211	746
600	25	284 481	1067	500	610	830	973	466	175	259	1568



## WITH FEMALE PIPE THREADS

DN	PN	NAVAL No	L	D	D1	D2	H	B	H1	Weight (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	76,1	120	190	43	1,5
50	40	284 159	180	40	R 2	88,9	127	190	44	2,1



# 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	SG05-11	Z3
15	40	RC210-SR	RC205-DA	SG05-11	Z3
20	40	RC210-SR	RC210-DA	SG05-11	Z3
25	40	RC220-SR	RC210-DA	SG05-11	Z3
32	40	RC220-SR	RC210-DA	SG05-11	Z3
40	40	RC230-SR	RC220-DA	SG05-11	OA6
50	40	RC230-SR	RC220-DA	SG05-11	OA6
65	25	RC240-SR	RC230-DA	SG05-11	OA8
80	25	RC240-SR	RC230-DA	SG05-11	OA15
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	AS80
200	16	RC270-SR	RC260-DA	SG12-63	BS100
250	16	RC280-SR	RC270-DA	SA07.1- GSM100.3/VZ4.3	SRA6 RS250
300	16		RC280-DA	SA07.5- GSM125.3/VZ4.3	SR12 RS600
350	16			SA07.5- GS160/GZ14	SR25 RS1825
400	16			SA07.5- GS200/GZ16	SR12 RS1825 G
500	16			SA10.1- GS250/GZ25	SR25 RS3030 G
600	16			SA07.5- GS200/GZ16	SR12 RS1825 G

Electric actuators are available with one or three phase motors.



DN25 + Bernard Z3



DN80 + RC230-DA



DN200 + Auma SG12-63



DN400 + Bernard SR12 RS1825 G

## KV-VALUE TABLE

	DN																	
Size	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	4280	6320	8630	11180	16970



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