

FLOWSERVE

NAVAL Ball Valves



NAVAL Gas ball valve



Experience In Motion



NAVAL GAS BALL VALVES

Naval Gas ball valves are designed for shut-off applications in natural gas pipelines. All valves fulfil the requirements of European Pressure directive (97/23/EY) and are manufactured to category III.(module H). Naval Oy has a certified quality system ISO 9001 and certified environmental management system ISO 14001. Naval gas valves can upon request be manufactured in accordance with the EU ATEX-directives (94/9/EC), equipment group II. The ATEX-requirement shall always be mentioned in the inquiry and order.

DESIGN

The valve has all-welded body and is fitted with carbonreinforced 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 150 both can be changed. The Teflon thrust washer between the stem shoulder and stem housing also acts as a seal.

Stem housings of DN65 valves and above are fitted with stainless steel bearings.

CHARACTERISTICS

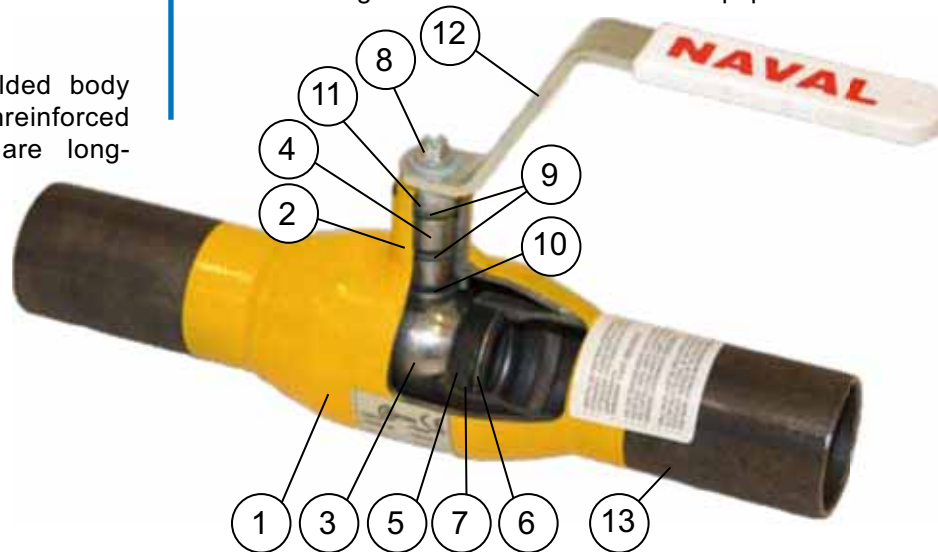
The valve needs no servicing - no adjustment or lubrication and is easy to install, long working life with low running costs.

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

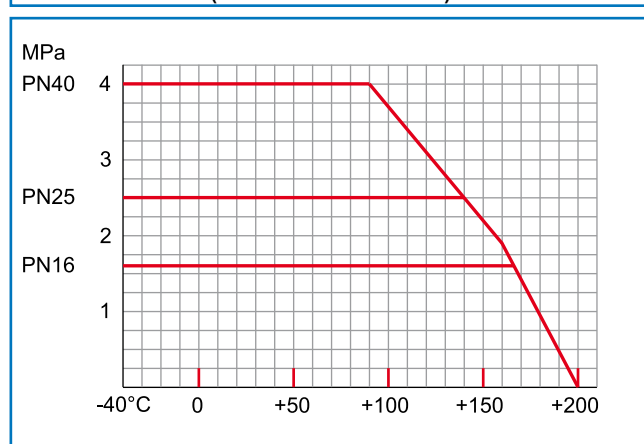
The operating lever is detachable and can be re-positioned at 180°.

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

It is easy to retrofit actuating equipment.



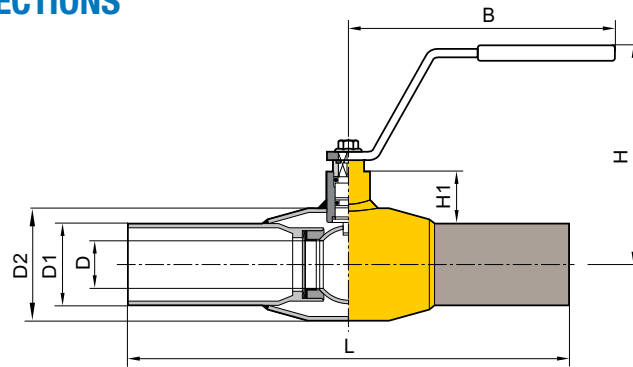
PRESSURE/TEMPERATURE CURVES
(do not use for steam)



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

| ITEM | 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 | SEAL | TEFLON | PTFE+C |
| 6 | BEVEL WASHER | SPRING STEEL | |
| 7 | SUPPORT RING | STAINLESS STEEL | |
| 8 | SCREW | STEEL | |
| 9 | O-RING | | NBR |
| 10 | THRUST WASHER | TEFLON | PTFE |
| 11 | STOP | STAINLESS STEEL | 1.4016/1.4404 |
| 12 | HANDLE | ZINC-PLATED STEEL | |
| 13 | WELDING END | CARBON STEEL | P235GH |

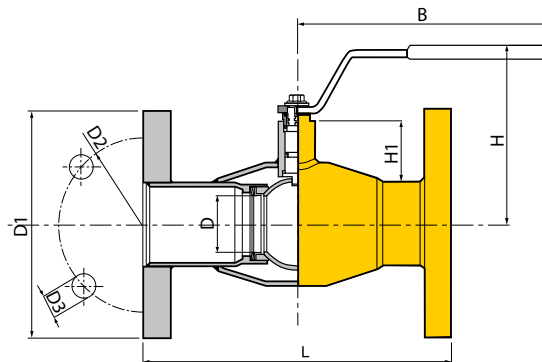
WITH BUTT WELD CONNECTIONS



| DN | PN | NAVAL no | L | D | D1 | D2 | H | B | H1 | kg |
|-----|----|----------|-----|-----|-------|-------|-----|-------|-----|------|
| 10 | 40 | 280 402 | 230 | 10 | 17,2 | 33,7 | 98 | 145 | 22 | 0,5 |
| 15 | 40 | 280 403 | 230 | 10 | 21,3 | 33,7 | 98 | 145 | 22 | 0,5 |
| 20 | 40 | 280 405 | 230 | 15 | 26,9 | 42,4 | 103 | 145 | 23 | 0,7 |
| 25 | 40 | 280 406 | 230 | 20 | 33,7 | 48,3 | 118 | 145 | 34 | 1,0 |
| 32 | 40 | 280 407 | 260 | 25 | 42,4 | 60,3 | 121 | 145 | 33 | 1,4 |
| 40 | 40 | 280 408 | 260 | 32 | 48,3 | 70,0 | 120 | 188 | 43 | 1,8 |
| 50 | 40 | 280 409 | 300 | 40 | 60,3 | 88,9 | 127 | 188 | 44 | 2,6 |
| 65 | 25 | 280 410 | 300 | 50 | 76,1 | 101,6 | 159 | 277,5 | 62 | 4,4 |
| 80 | 25 | 280 411 | 300 | 65 | 88,9 | 121,0 | 171 | 277,5 | 68 | 5,6 |
| 100 | 25 | 280 412 | 325 | 80 | 114,3 | 146,0 | 218 | 278,5 | 101 | 8,4 |
| 125 | 16 | 280 413 | 325 | 100 | 139,7 | 177,8 | 252 | 400 | 101 | 13,4 |
| 150 | 16 | 280 414 | 350 | 125 | 168,3 | 219,1 | 272 | 600 | 107 | 18,0 |
| 200 | 16 | 280 416 | 390 | 150 | 219,1 | 273,0 | 300 | 900 | 123 | 36,3 |
| 250 | 16 | 280 417 | 520 | 200 | 273,0 | 355,6 | 345 | 1200 | 122 | 72,0 |

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

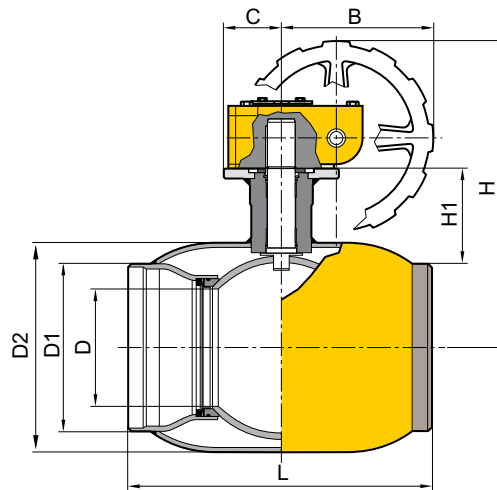
WITH FLANGES



| DN | PN | NAVAL no | L | D | D1 | D2 | D3 | H | B | H1 | kg |
|-----|----|----------|-----|-----|-----|-----|----|-----|-------|-----|------|
| 15 | 40 | 280 503 | 130 | 10 | 95 | 65 | 14 | 98 | 145 | 22 | 1,9 |
| 20 | 40 | 280 505 | 150 | 15 | 105 | 75 | 14 | 103 | 145 | 23 | 2,7 |
| 25 | 40 | 280 506 | 160 | 20 | 115 | 85 | 14 | 118 | 145 | 34 | 3,3 |
| 32 | 40 | 280 507 | 180 | 25 | 140 | 100 | 18 | 121 | 145 | 33 | 5,0 |
| 40 | 40 | 280 508 | 200 | 32 | 150 | 110 | 18 | 120 | 188 | 43 | 6,0 |
| 50 | 40 | 280 509 | 230 | 40 | 165 | 125 | 18 | 127 | 188 | 44 | 7,9 |
| 65 | 16 | 280 510 | 270 | 50 | 185 | 145 | 18 | 159 | 277,5 | 62 | 10,0 |
| 80 | 16 | 280 511 | 280 | 65 | 200 | 160 | 18 | 171 | 277,5 | 68 | 12,5 |
| 100 | 16 | 280 512 | 300 | 80 | 220 | 180 | 18 | 218 | 278,5 | 101 | 18,8 |
| 125 | 16 | 280 513 | 325 | 100 | 250 | 210 | 18 | 252 | 400 | 101 | 24,3 |
| 150 | 16 | 280 514 | 350 | 125 | 285 | 240 | 22 | 272 | 600 | 107 | 31,5 |
| 200 | 16 | 280 516 | 400 | 150 | 340 | 295 | 22 | 300 | 900 | 123 | 55,1 |
| 250 | 16 | 280 517 | 530 | 200 | 405 | 355 | 26 | 345 | 1200 | 122 | 97,8 |

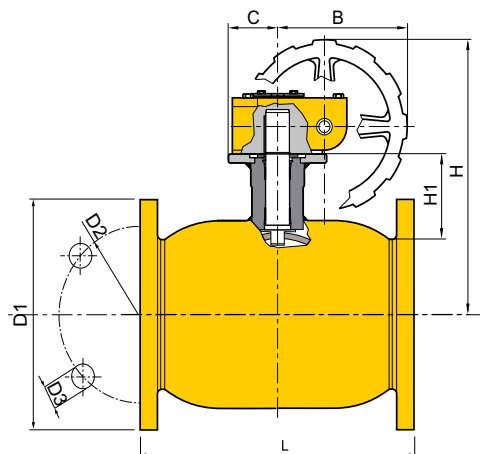
We recommend gear operation for valves \geq DN 125 and larger.

WITH BUTT WELD CONNECTIONS AND GEAR



| DN | PN | NAVAL no | L | D | D1 | D2 | H | B | C | H1 | kg |
|-----|----|----------|-----|-----|-------|-------|-----|-----|-----|-----|-----|
| 125 | 16 | 280 433 | 325 | 100 | 139,7 | 177,8 | 309 | 145 | 50 | 101 | 18 |
| 150 | 16 | 280 434 | 350 | 125 | 168,3 | 219,1 | 330 | 145 | 50 | 107 | 23 |
| 200 | 16 | 280 436 | 390 | 150 | 219,1 | 273 | 398 | 196 | 75 | 123 | 46 |
| 250 | 16 | 280 437 | 520 | 200 | 273,0 | 355,6 | 451 | 236 | 100 | 122 | 87 |
| 300 | 16 | 280 438 | 635 | 250 | 323,9 | 406,4 | 572 | 280 | 193 | 155 | 193 |

WITH FLANGES AND GEAR

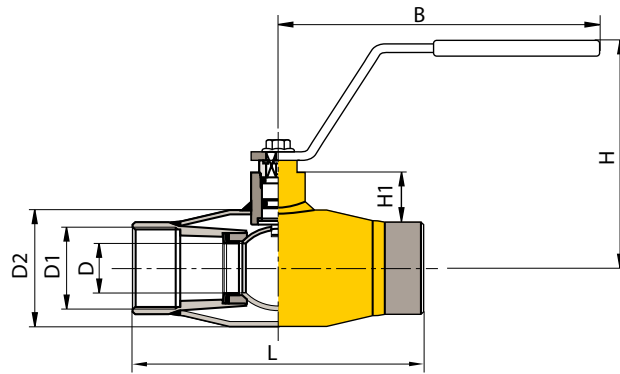


| DN | PN | NAVAL no | L | D | D1 | D2 | D3 | H | B | C | H1 | kg |
|-----|----|----------|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|
| 125 | 16 | 280 533 | 325 | 100 | 250 | 210 | 18 | 309 | 145 | 50 | 101 | 29 |
| 150 | 16 | 280 534 | 350 | 125 | 285 | 240 | 22 | 330 | 145 | 50 | 107 | 36 |
| 200 | 16 | 280 536 | 400 | 150 | 340 | 295 | 22 | 398 | 196 | 75 | 123 | 65 |
| 250 | 16 | 280 537 | 530 | 200 | 405 | 355 | 26 | 451 | 236 | 100 | 122 | 113 |
| 300 | 16 | 280 538 | 630 | 250 | 460 | 410 | 26 | 572 | 280 | 193 | 155 | 229 |

Flanges: EN1092-1

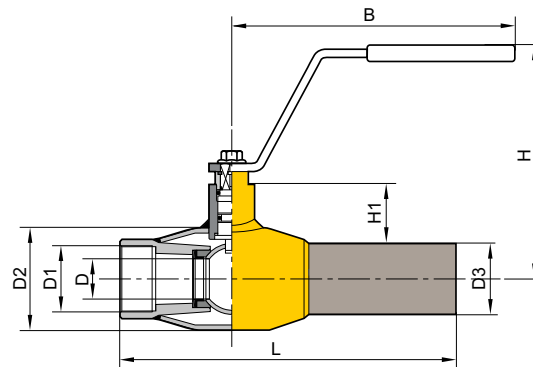
Face to face dimensions: EN558-1

WITH FEMALE PIPE THREADS



| DN | PN | NAVAL no | L | D | D1 | D2 | H | B | H1 | kg |
|----|----|----------|-----|----|---------|------|-----|-----|----|-----|
| 15 | 40 | 280 153 | 85 | 10 | R 1/2 | 33,7 | 98 | 145 | 22 | 0,5 |
| 20 | 40 | 280 155 | 10 | 15 | R 3/4 | 42,4 | 103 | 145 | 23 | 0,5 |
| 25 | 40 | 280 156 | 115 | 20 | R 1 | 48,3 | 118 | 145 | 34 | 0,7 |
| 32 | 40 | 280 157 | 130 | 25 | R 1 1/4 | 60,3 | 121 | 145 | 33 | 0,9 |
| 40 | 40 | 280 158 | 150 | 32 | R 1 1/2 | 70,0 | 120 | 188 | 43 | 1,5 |
| 50 | 40 | 280 159 | 180 | 40 | R2 | 88,9 | 127 | 188 | 44 | 2,1 |

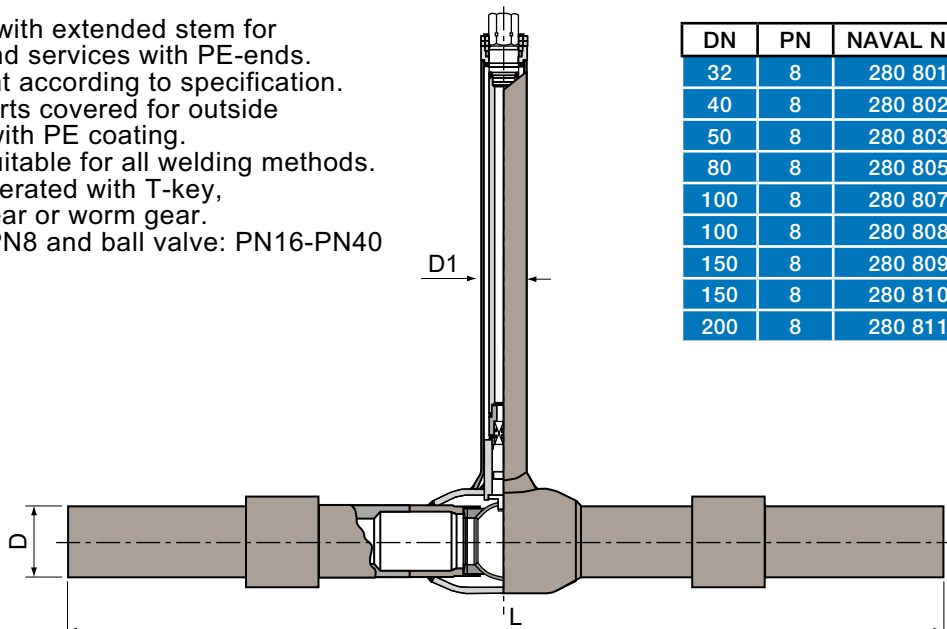
WITH BUTT WELD CONNECTIONS/FEMALE PIPE THREADS



| DN | PN | NAVAL no | L | D | D1 | D2 | D3 | H | B | H1 | kg |
|----|----|----------|-----|----|---------|------|------|-----|-----|----|-----|
| 15 | 40 | 280 003 | 158 | 10 | R 1/2 | 33,7 | 21,3 | 98 | 145 | 22 | 0,5 |
| 20 | 40 | 280 005 | 168 | 15 | R 3/4 | 42,4 | 26,9 | 103 | 145 | 23 | 0,6 |
| 25 | 40 | 280 006 | 172 | 20 | R 1 | 48,3 | 33,7 | 118 | 145 | 34 | 0,9 |
| 32 | 40 | 280 007 | 195 | 25 | R 1 1/4 | 60,3 | 42,4 | 121 | 145 | 33 | 1,2 |
| 40 | 40 | 280 008 | 205 | 32 | R 1 1/2 | 70,0 | 48,3 | 120 | 188 | 43 | 1,7 |
| 50 | 40 | 280 009 | 240 | 40 | R2 | 88,9 | 60,3 | 127 | 188 | 44 | 2,3 |

GAS VALVE FOR PE-PIPES

- Gas valve with extended stem for underground services with PE-ends.
- Stem height according to specification.
- All steel parts covered for outside corrosion with PE coating.
- PE ends suitable for all welding methods.
- Valve is operated with T-key, portable gear or worm gear.
- PE-ends: PN8 and ball valve: PN16-PN40



| DN | PN | NAVAL N:O | L | D | D1 |
|-----|----|-----------|------|-----|------|
| 32 | 8 | 280 801 | 1058 | 40 | 33,7 |
| 40 | 8 | 280 802 | 1084 | 50 | 33,7 |
| 50 | 8 | 280 803 | 1126 | 63 | 33,7 |
| 80 | 8 | 280 805 | 1100 | 90 | 42,4 |
| 100 | 8 | 280 807 | 1171 | 110 | 60,3 |
| 100 | 8 | 280 808 | 1181 | 125 | 60,3 |
| 150 | 8 | 280 809 | 1324 | 160 | 60,3 |
| 150 | 8 | 280 810 | 1356 | 180 | 60,3 |
| 200 | 8 | 280 811 | 1358 | 200 | 88,9 |

SELECTION TABLE OF ACTUATORS

| DN | PNEUMATIC, SPRING RETURN Rotork Sweden AB | PNEUMATIC, DOUBLE ACTING Rotork Sweden AB | ELECTRIC ACTUATOR AUMA | ELECTRIC ACTUATOR BERNARD |
|-----|---|---|---------------------------|------------------------------|
| 10 | RC210-SR | RC205-DA | SG04 | OA3/OA6 |
| 15 | RC210-SR | RC205-DA | SG04 | OA3/OA6 |
| 20 | RC210-SR | RC210-DA | SG04 | OA3/OA6 |
| 25 | RC220-SR | RC210-DA | SG04 | OA3/OA6 |
| 32 | RC220-SR | RC210-DA | SG04 | OA3/OA6 |
| 40 | RC230-SR | RC220-DA | SG04 | OA6 |
| 50 | RC230-SR | RC220-DA | SG04 | OA6 |
| 65 | RC240-SR | RC230-DA | SG05 | OA8 |
| 80 | RC240-SR | RC230-DA | SG05 | OA15 |
| 100 | RC250-SR | RC240-DA | SG07 | AS18 |
| 125 | RC260-SR | RC250-DA | SG07 | AS50 |
| 150 | RC270-SR | RC260-DA | SG10 | AS50 |
| 200 | RC270-SR | RC260-DA | SG12 | AS100 |
| 250 | RC280-SR | RC270-DA | SA07.1-GS100.3 | AS200 |
| 300 | | RC280-DA | SA07.5-GS125.3 | ASM1+RS600 |

Electric actuators are available with one or three phase motors. The valve and actuator combination can upon request be manufactured in accordance with the EU ATEX-directives.

GAS- AND QUALITY APPROVALS



ISO 9001



PED



GOST



ATEX

Kv-VALUE TABLE

| Size | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|----------|----|----|----|-----|-----|-----|-----|-----|------|------|------|------|
| Kv-value | 26 | 41 | 67 | 105 | 182 | 315 | 420 | 650 | 1070 | 1420 | 2620 | 5820 |



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