



Range DN: 50 ~ 1200



PED 97/23/EC
PED 2014/68/EU



TR TS 10/11,
12/11, 32/11



Range PN: 16 ~ 100

Operating temperature: -196 °C ~ 550 °C

Connection into piping: Flanged, welded ends, threaded ends, combined execution



DESCRIPTION

K89 (all-welded design) ball valves are controlled shut-off valves. They are designed to stop or allow the flow of the medium by external operation, either manually or via the installed drive. The ball valves allow the medium to flow in both directions. Their construction is designed to prevent the build-up of sediment in the flow channel which would otherwise hinder the valve operation. These ball valves are designed and manufactured to ensure maximum service life and reliability.

MATERIAL SPECIFICATION

K89 ball valves are made from carbon, alloy and stainless steels. The material type can be adjusted according to the customer's request to optimally suit the operating conditions.

APPLICATION

K89 ball valves are suitable for various liquids, gases and steam.

BASIC STANDARDS FOR DESIGN

Basic design

EN 1983

Pressure-temperature rating

EN 12 516 - 1

Testing

EN 12 266 - 1, 2

Face-to-face dimensions

EN 12 982

Dimensions of the welded ends

EN 12 627

Top Flange dimensions

EN ISO 5211

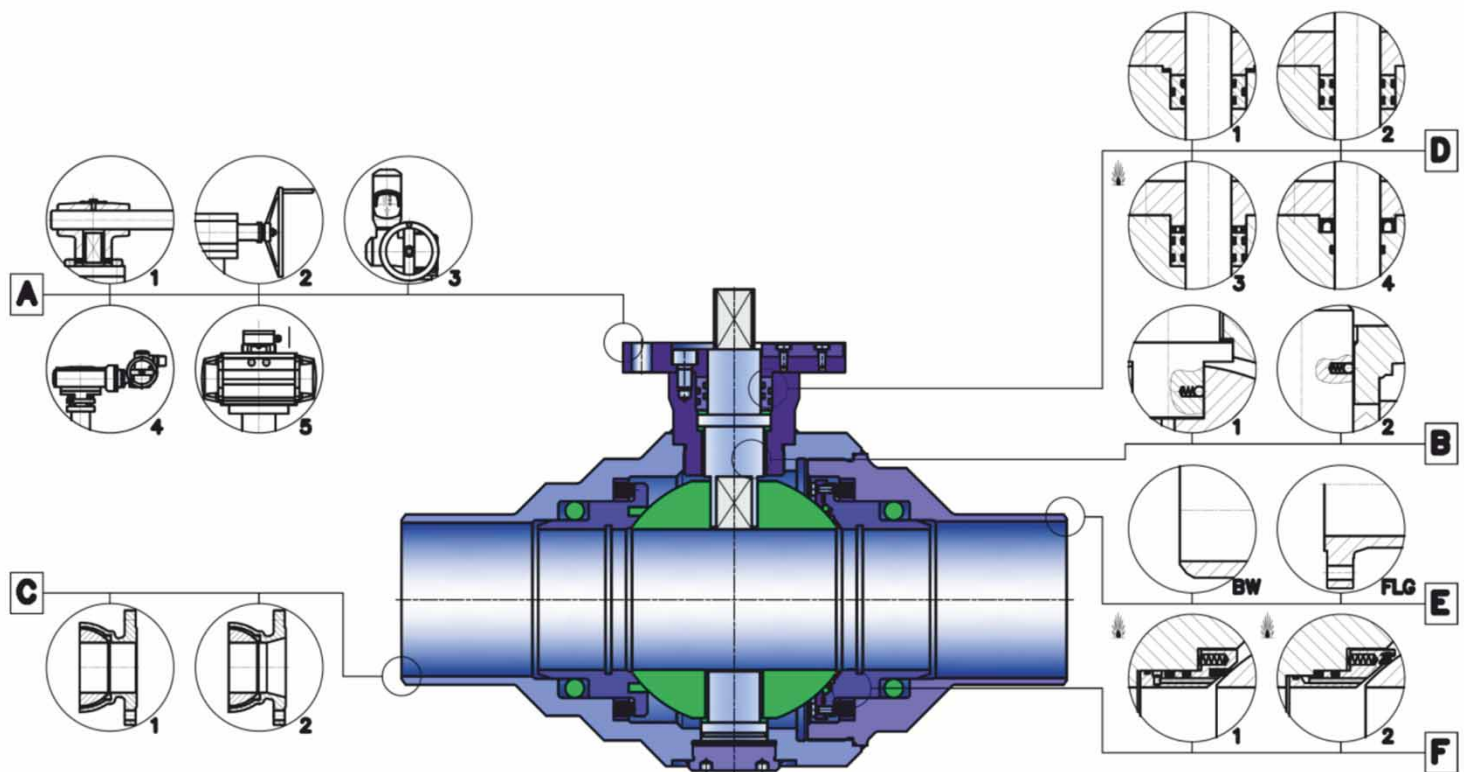
Flange dimensions

EN 1092 - 1

Special

NACE MR-0175

STRUCTURAL DESIGN



A - control

- by hand lever
- gear box + hand wheel
- electric actuator
- electric actuator + gear box
- pneumatic actuator

B – special execution

- antistatic design

C – flow direction

- straight, full bore
- straight, reduced bore

D – control stem sealing method

- dynamic – 2x O - ring, static O - ring + Graphite
- dynamic – 2x O - ring, static – 2x O - ring
- dynamic - 2xO-ring + Graphite (Fire safe design)
- static - 2x O - ring + Graphite (Fire safe design)
- O-ring + V-shaped PTFE ring packing

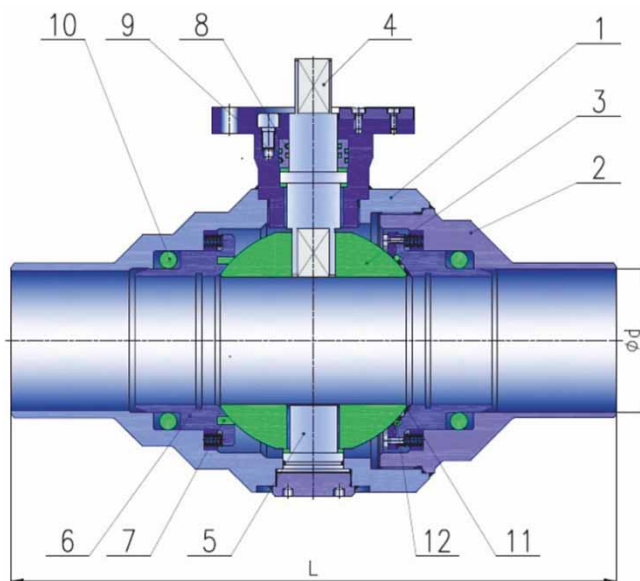
E – connection into piping

- flanged
- welded ends
- welded ends according to customer's requirements

F- Seats execution

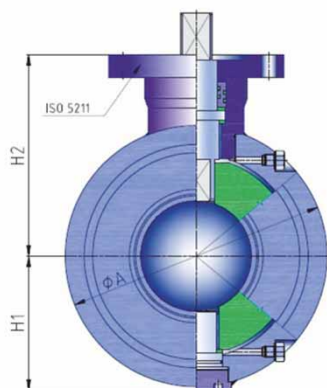
- The seats are made with single or double piston effect, with possibilities of greasing and in Fire safe design execution. Also the seats are supplied with „DBB“ (double block and bleed) execution. The seats with single piston effect have possibility to reduce the pressure in an intermediate space between the ball and body. The seats with double piston effect are pressed to the ball also by the fluid pressure in the intermediate space, what is ensuring hermetic closure at the inlet and the outlet side of the valve. For restriction of the pressure in the intermediate space of the body an overflow device is mounted..

MATERIAL SPECIFICATION – WELEDED ENDS EXECUTION



| Pos. | Designation | Material | | | | | | | | |
|------|-------------|----------------------------------|--------------------|-------------------|-------------------|---------------------|---------------------|-------------------|-------------------|-------------------|
| 1 | Body | A350 LF2 | A105 | A182F5 | A182F9 | A182F304 | A182F316 | 1.4541 | 1.4401 | 1.4404 |
| 2 | Bonnet | A350 LF2 | A105 | A182F5 | A182F9 | A182F304 | A182F316 | 1.4541 | 1.4401 | 1.4404 |
| 3 | Ball | X12Cr13 + Cr (ENP) | X12Cr13 + Cr (ENP) | A182F5 + Cr (ENP) | A182F9 + Cr (ENP) | A182F304 + Cr (ENP) | A182F316 + Cr (ENP) | 1.4541 + Cr (ENP) | 1.4401 + Cr (ENP) | 1.4404 + Cr (ENP) |
| 4 | Upper Stem | X12Cr13 | X12Cr13 | A182F5 | A182F9 | A182F304 | A182F316 | 1.4541 | 1.4401 | 1.4404 |
| 5 | Bottom stem | X12Cr13 | X12Cr13 | A182F5 | A182F9 | A182F304 | A182F316 | 1.4541 | 1.4401 | 1.4404 |
| 6 | Seat | A350 LF2 + STL | A105 + STL | A182F5 | A182F9 | A182F304 | A182F316 | 1.4541 | 1.4401 | 1.4404 |
| 7 | Seat ring | PTFE | | | | | | | | |
| 8 | O-ring | NBR, HNBR, EPDM, Viton, PTFE | | | | | | | | |
| 9 | O-ring | NBR, HNBR, EPDM, Viton, PTFE | | | | | | | | |
| 10 | O-ring | NBR, HNBR, EPDM, Viton, PTFE | | | | | | | | |
| 11 | Overlay | Ni, Stelit 6 | | | | | | | | |
| 12 | Seat ring | NBR, HNBR, EPDM, VITON, Graphite | | | | | | | | |

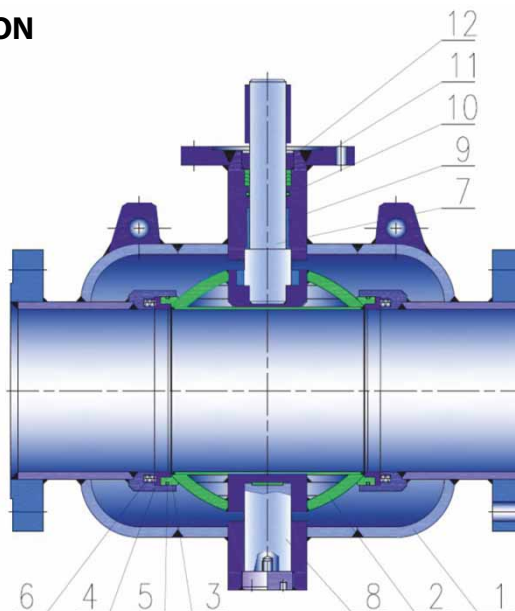
DIMENSIONS – WELEDED ENDS EXECUTION



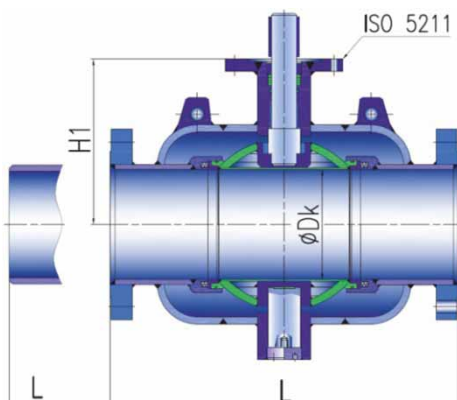
| DN | PN 40 | | | | | | PN 63 | | | | | | PN 100 | | | | | |
|-----|-------|-------|-----|-----|-------------|------|-------|-------|-----|-----|-------------|------|--------|-------|-----|-----|-------------|------|
| | FLG | d | H1 | H2 | EN ISO 5211 | (KG) | FLG | d | H1 | H2 | EN ISO 5211 | (KG) | FLG | d | H1 | H2 | EN ISO 5211 | (KG) |
| 50 | 300 | 54,5 | 70 | 204 | F07 | 21 | 300 | 52,3 | 69 | 138 | F07 | 28 | 300 | 52,3 | 69 | 138 | F07 | 28 |
| 65 | 360 | 70,3 | 100 | 305 | F10 | 33 | 360 | 68,1 | 100 | 160 | F10 | 41 | 360 | 66,1 | 100 | 160 | F10 / F12 | 43 |
| 80 | 390 | 82,5 | 110 | 335 | F12 | 54 | 390 | 79,9 | 107 | 181 | F12 | 58 | 390 | 78,9 | 107 | 181 | F12 | 64 |
| 100 | 450 | 107,1 | 116 | 423 | F12 | 66 | 450 | 105,3 | 116 | 209 | F12 | 72 | 450 | 103,1 | 116 | 209 | F12 / F14 | 75 |
| 125 | 525 | 131,7 | 150 | 444 | F14 | 98 | 525 | 127,8 | 150 | 229 | F14 | 115 | 525 | 127,1 | 150 | 229 | F14 / F16 | 117 |
| 150 | 600 | 159,3 | 180 | 526 | F16 | 145 | 600 | 155,7 | 180 | 266 | F16 | 170 | 600 | 152,3 | 180 | 266 | F16 / F25 | 195 |
| 200 | 600 | 206,5 | 197 | 619 | F25 | 210 | 600 | 204,9 | 197 | 312 | F25 | 265 | 600 | 201,5 | 197 | 312 | F25 | 295 |
| 250 | 730 | 258,8 | 250 | 855 | F30 | 285 | 730 | 255,4 | 250 | 475 | F30 | 380 | 730 | 253 | 250 | 475 | F30 | 470 |
| 300 | 850 | 307,9 | 300 | 940 | F30 | 445 | 850 | 301,9 | 300 | 510 | F30 | 535 | 850 | 298,9 | 300 | 510 | F30 | 650 |

MATERIAL SPECIFICATION – FLANGED EXECUTION

| Pos. | Designation | Material |
|------|-------------|---------------|
| 1 | Body | P265 GH |
| 2 | Ball | 1.4301 |
| 3 | Seat | PTFE |
| 4 | Ring | P265 GH + ENP |
| 5 | O-ring | VITON |
| 6 | Spring | INCONEL X750 |
| 7 | Upper Stem | 1.4301 |
| 8 | Bottom stem | 1.4301 |
| 9 | Bushing | PTFE |
| 10 | O-ring | VITON |
| 11 | Gland | PTFE |
| 12 | Nut | P265 GH |

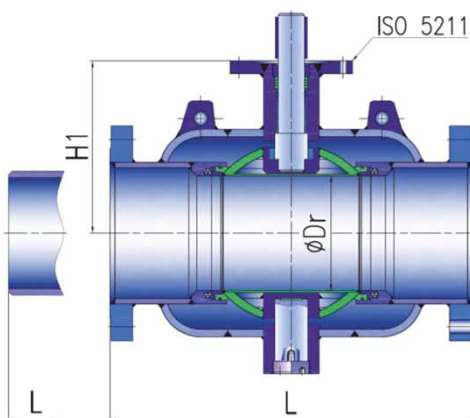


DIMENSIONS – FULL BORE EXECUTION



| DN | PN 16 | | | | | | | PN 25 | | | | | | |
|------|-------|-----|-----|-------------|----------------------|------|------|-------|-----|-----|-------------|----------------------|------|------|
| | FLG | Dk | H1 | EN ISO 5211 | Kv m ³ /h | (KG) | | FLG | Dk | H1 | EN ISO 5211 | Kv m ³ /h | (KG) | |
| | | | | | | RF | BW | | | | | | RF | BW |
| 200 | 630 | 200 | 464 | F16 | 8650 | 170 | 150 | 630 | 200 | 464 | F16 | 8650 | 179 | 150 |
| 250 | 710 | 250 | 491 | F16 | 14705 | 228 | 200 | 710 | 250 | 491 | F16 | 14705 | 240 | 200 |
| 300 | 750 | 300 | 525 | F25 | 20760 | 303 | 265 | 750 | 300 | 525 | F25 | 20760 | 318 | 265 |
| 350 | 860 | 350 | 547 | F25 | 24220 | 479 | 423 | 860 | 350 | 547 | F25 | 24220 | 507 | 423 |
| 400 | 970 | 400 | 599 | F25 | 31140 | 677 | 605 | 970 | 400 | 599 | F25 | 31140 | 715 | 605 |
| 500 | 1150 | 500 | 646 | F30 | 49305 | 1227 | 1099 | 1150 | 500 | 646 | F30 | 49305 | 1267 | 1099 |
| 600 | 1380 | 600 | 725 | F35 | 64875 | 2472 | 2280 | 1380 | 600 | 725 | F35 | 64875 | 2535 | 2280 |
| 700 | 1525 | 700 | 795 | F35 | 80445 | 3390 | 3160 | 1525 | 700 | 795 | F35 | 80445 | - | 3160 |
| 800 | 1650 | 779 | 820 | F40 | 95583 | 4426 | 4110 | 1650 | 779 | 820 | F40 | 95583 | - | 4110 |
| 900 | 1750 | 876 | 902 | F40 | 115045 | 6106 | 5666 | 1750 | 876 | 902 | F40 | 115045 | - | 5666 |
| 1000 | 1850 | 976 | 963 | F40 | 129750 | 7794 | 7260 | 1850 | 976 | 963 | F40 | 129750 | - | 7260 |

DIMENSIONS – REDUCED BORE EXECUTION



| DN | PN 16 | | | | | | | PN 25 | | | | | | |
|------|-------|-----|-----|-------------|----------------------|------|------|-------|-----|-----|-------------|----------------------|------|------|
| | FLG | Dr | H1 | EN ISO 5211 | Kv m ³ /h | (KG) | | FLG | Dr | H1 | EN ISO 5211 | Kv m ³ /h | (KG) | |
| | | | | | | RF | BW | | | | | | RF | BW |
| 250 | 630 | 200 | 464 | F16 | 3028 | 98 | 70 | 630 | 200 | 464 | F16 | 3028 | 110 | 70 |
| 300 | 710 | 250 | 491 | F16 | 4723 | 184 | 146 | 710 | 250 | 491 | F16 | 4723 | 199 | 146 |
| 350 | 750 | 300 | 525 | F25 | 6834 | 258 | 202 | 750 | 300 | 525 | F25 | 6834 | 286 | 202 |
| 400 | 860 | 350 | 547 | F25 | 9256 | 362 | 290 | 860 | 350 | 547 | F25 | 9256 | 400 | 290 |
| 450 | 970 | 400 | 599 | F25 | 12110 | 467 | 375 | 970 | 400 | 599 | F25 | 12110 | 504 | 375 |
| 500 | 970 | 400 | 599 | F25 | 15570 | 648 | 520 | 970 | 400 | 599 | F25 | 15570 | 688 | 520 |
| 600 | 1150 | 500 | 646 | F30 | 19030 | 748 | 556 | 1150 | 500 | 646 | F30 | 19030 | 811 | 556 |
| 700 | 1380 | 600 | 725 | F35 | 27248 | 1271 | 1041 | 1380 | 600 | 725 | F35 | 27248 | - | 1041 |
| 800 | 1525 | 700 | 795 | F35 | 37195 | 2736 | 2420 | 1525 | 700 | 795 | F35 | 37195 | - | 2420 |
| 900 | 1650 | 779 | 820 | F40 | 48440 | 3750 | 3310 | 1650 | 779 | 820 | F40 | 48440 | - | 3310 |
| 1000 | 1750 | 876 | 902 | F40 | 61415 | 4844 | 4310 | 1750 | 876 | 902 | F40 | 61415 | - | 4310 |
| 1200 | 1850 | 976 | 963 | F40 | 74390 | - | 4560 | 1850 | 976 | 963 | F40 | 74390 | - | 4560 |

TYPE DESIGNATION

K89 ABC DEF M PN/S

A FACE-TO- FACE DIMENSION

- 1 Short
- 2 Long

BODY DESIGN

- 1 All welded body

D FLOW DIRECTION

- 1 Straight, full bore
- 2 Straight, reduced bore

F CONTROL

- 1 By hand lever
- 2 Hand wheel with gearbox
- 3 Electric actuator
- 4 Electric actuator with gearbox
- 5 Pneumatic actuator
- 6 Other actuator
- 9 Without control

B SEATS EXECUTION

- 1 Polymer
- 2 Polymer + secondary sealing by paste
- 3 Polymer + fire safe
- 4 Polymer + fire safe + secondary sealing by paste
- 5 Metal + O - ring
- 6 Metal + O - ring + secondary sealing by paste
- 7 Metal + O - ring + fire safe

M BODY MATERIAL

- 0 Stainless steel
- 2 Cast alloy steel
- 3 Forged alloy steel
- 4 Forged carbon steel
- 5 Cast carbon steel

C CONTROL STEM SEALING METHOD

- 1 O - ring
- 2 O - ring+graphite
- 3 O - ring + graphite packing
- 4 V-shaped PTFE
- 5 Graphite packing

E CONNECTION INTO PIPE

- 1 Flanged
- 2 Welding-on ends
- 3 Combined

S SPECIAL EXECUTION

- DPE** Seats with double piston effect
- AS** Antistatic design
- LT** Low temperature design

