



Range DN: 25 ~ 1000



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



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



Range PN: 16 ~ 100



**CERTIFICATE
API 607, 6FA**

Operating temperature: -196 °C ~ 550 °C

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



DESCRIPTION

K86 ball valves are controlled shut-off valves. They are designed to stop, regulate 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

K86 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

K81 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 558, EN 12 982

Dimensions of the welded ends

EN 12 627

Top Flange dimensions

EN ISO 5211

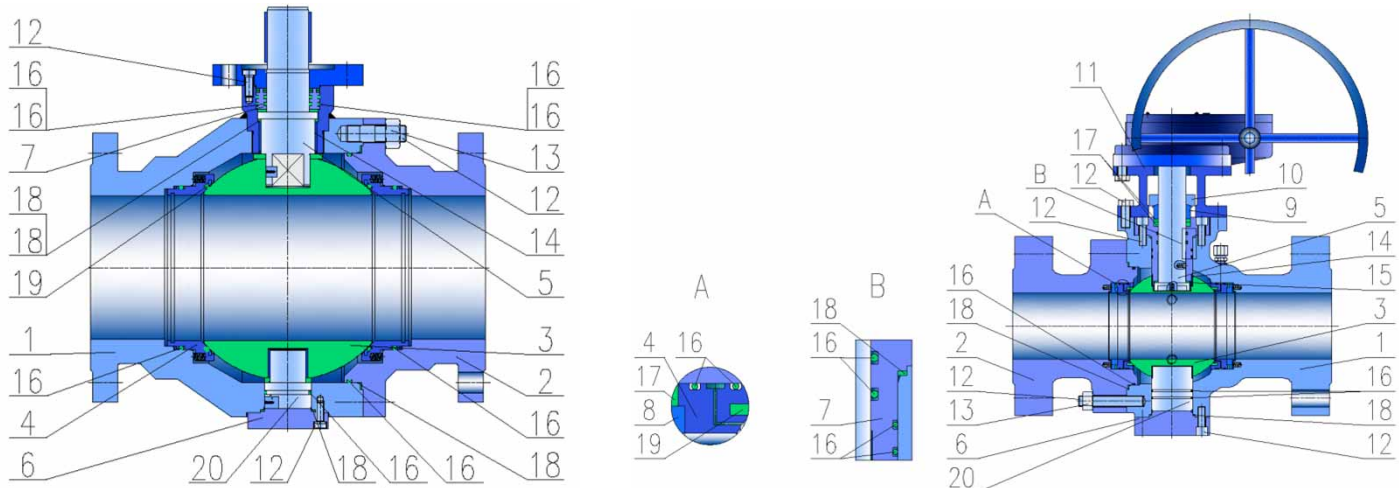
Flange dimensions

EN 1092 - 1, GOST 12815-80

Special

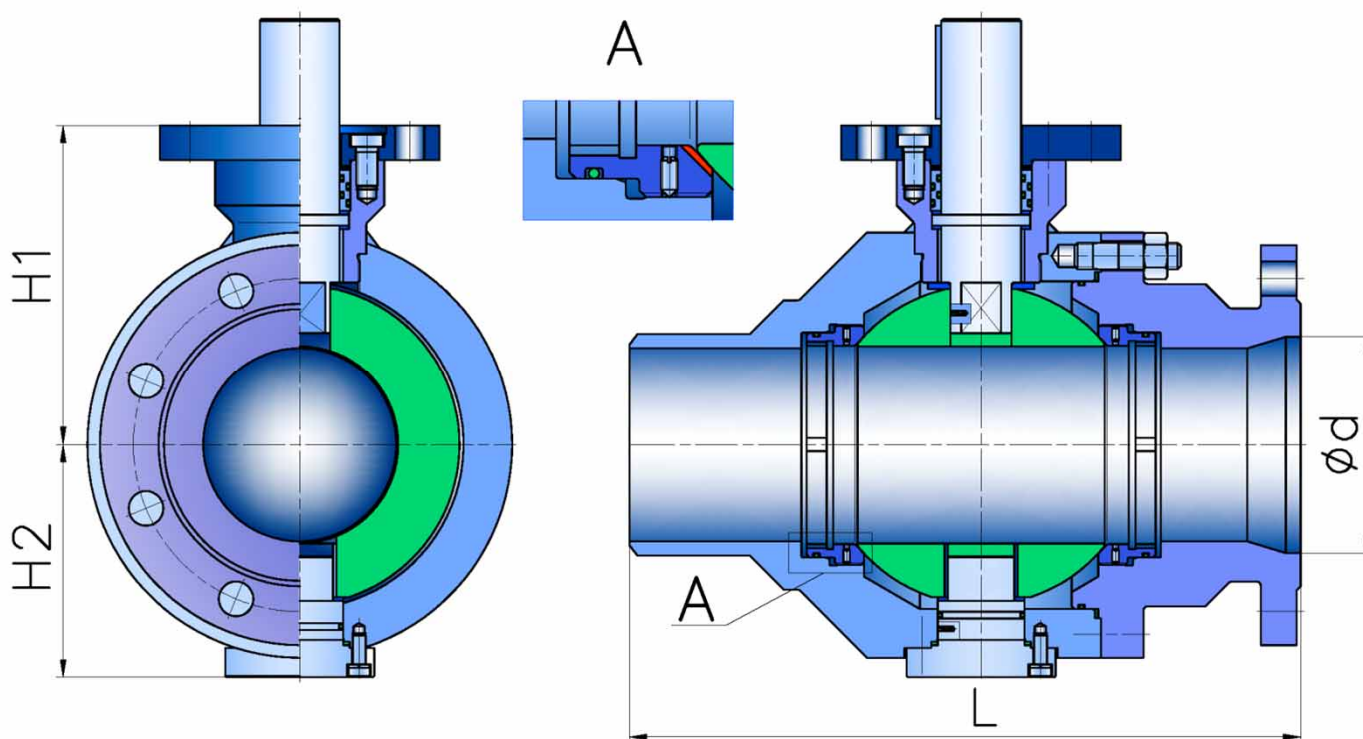
NACE MR-0175

MATERIAL SPECIFICATION



| Pos | Designation | Foundry execution | | | | | | Forged execution | | | | | |
|-----|-------------------------|--|--------------------------|----------------------|-----------------------|---------------------|----------------------|---------------------|-----------------|----------|-----------------------|---------------------|----------------------|
| | | WCB | LCB, LCC | CF3 | CF3M | CF8 | CF8M | LF2 | A105 | 1.4541 | F316L | F304 | F316 |
| 1 | Body | A216 WCB | A352 LCB, LCC | A351 F3 | A351 CF3M | A351 CF8 | A351 CF8M | A350 LF2 | A105 | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 2 | Bonnet | A216 WCB | A352 LCB, LCC | A351 CF3 | A351 CF3M | A351 CF8 | A351 CF8M | A350 LF2 | A105 | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 3 | Ball | A105 + ENP (Cr), A350 LF2 + ENP (Cr) | A352 LCB, LCC + ENP (Cr) | A351 CF3, A182 F304L | A351 CF3M, A182 F316L | A351 CF8, A182 F304 | A351 CF8M, A182 F316 | A350 LF2 + ENP (Cr) | A105 + ENP (Cr) | 1.4541 | A351 CF3M, A182 F316L | A351 CF8, A182 F304 | A351 CF8M, A182 F316 |
| 4 | Seat | A105 + ENP (Cr), A350 LF2 + ENP (Cr) | A182 F6a | A182 F304L | A182 F316L | A182 F304 | A182 F316 | A350 LF2 + ENP (Cr) | A105 + ENP (Cr) | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 5 | Upper Stem | A182 F6a | A182 F6a | A182 F304L | A182 F316L | A182 F304 | A182 F316 | A182 F6a | A182 F6a | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 6 | Bottom Cover | A105, A350 LF2 | A182 F6a | A182 F304L | A182 F316L | A182 F304 | A182 F316 | A350 LF2 | A105 | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 7 | Top Cover | A105, A350 LF2 | A182 F6a | A182 F304L | A182 F316L | A182 F304 | A182 F316 | A350 LF2 | A105 | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 8 | Thrust Ring of the Seat | A105 + ENP (Cr), A350 LF2 + ENP (Cr) | A182 F6a | A182 F304L | A182 F316L | A182 F304 | A182 F316 | A350 LF2 + ENP (Cr) | A105 + ENP (Cr) | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 9 | Thurst Ring | A182 F6a | A182 F6a | A182 F304L | A182 F316 | A182 F304 | A182 F316 | A182 F6a | A182 F6a | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 10 | Gland Flange | A216 WCB | A352 LCB, LCC | A351 CF3 | A351 CF3M | A351 CF8 | A351 CF8M | A350 LF2 | A105 | 1.4541 | A182 F316L | A182 F304 | A182 F316 |
| 11 | Yoke | A216 WCB | A352 LCB, LCC | A351 CF3 | A351 CF3M | A351 CF8 | A381 CF8M | - | - | - | - | - | - |
| 12 | Bolt | A193 B7 | A320 L7 | A193 B8 | A193 B8M | A193 B8 | A193 B8M | 25CrMo4 | A193 B7 | A2 - 70 | A193 B8M | A193 B8 | A193 B8M |
| 13 | Nut | A194 2H | A194 4 | A194 8 | A194 8M | A194 8 | A194 8M | A2 - 70 | A194 2H | A2 - 70 | A194 8M | A194 8 | A194 BM |
| 14 | Bushing | stainless steel + PTFE, bronze | | | | | | | | | | | |
| 15 | Washer | stainless steel + PTFE, bronze | | | | | | | | | | | |
| 16 | O-Ring | NITRIL, VITON, NBR, HNBR, EPDM | | | | | | | | | | | |
| 17 | Sealing Ring | graphite | | | | | | | | | | | |
| 18 | Gasket | graphite, graphite + stainless steel | | | | | | | | | | | |
| 19 | Seat Ring | NYLON, DEVLON, PTFE, RPTFE, PEEK, NITRIL, VITON, NBR, HNBR, EPDM | | | | | | | | | | | |
| 20 | Bottom Stem | A182 F6a | A182 F6a | A182 F304L | A182 F316L | A182 F304 | A182 F316 | A182 F6a | A182 F6a | 1.1.4541 | A182 F316L | A182 F304 | A182 F316 |

DIMENSIONS



ACCORDING TO DIN STANDARDS-FLANGED

| DN | PN 16, 25 | | | | | | 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) | FLG | d | H1 | H2 | EN ISO 5211 | (KG) |
| 25 | 160 | 28 | 101 | 68 | F07 | 5 | 160 | 28 | 101 | 68 | F 07 | 5 | 160 | 28 | 101 | 68 | F07 | 14 | 160 | 28 | 101 | 68 | F07 | 18 |
| 50 | 230 | 54 | 119 | 107 | F07 | 19 | 230 | 54 | 119 | 107 | F 07 | 18 | 230 | 54 | 119 | 107 | F07 | 30 | 230 | 52 | 119 | 107 | F07 | 36 |
| 65 | 290 | 70 | 170 | 110 | F10 | 28 | 290 | 70 | 170 | 110 | F 10 | 25 | 290 | 69 | 170 | 110 | F10 | 42 | 290 | 66 | 170 | 110 | F10/ F12 | 52 |
| 80 | 310 | 82 | 215 | 118 | F12 | 32 | 310 | 82 | 215 | 118 | F 12 | 30 | 310 | 80 | 215 | 118 | F12 | 55 | 310 | 78 | 215 | 118 | F12 | 72 |
| 100 | 350 | 107 | 218 | 153 | F12 | 53 | 350 | 107 | 218 | 153 | F 12 | 95 | 350 | 100 | 218 | 153 | F12 | 86 | 350 | 101 | 218 | 153 | F12/ F14 | 104 |
| 125 | 400 | 131 | 229 | 170 | F14 | 79 | 400 | 131 | 229 | 170 | F 14 | 120 | 400 | 125 | 229 | 170 | F14 | 154 | 400 | 124 | 229 | 170 | F14/ F16 | 162 |
| 150 | 450 | 159 | 266 | 190 | F16 | 100 | 450 | 159 | 266 | 193 | F 16 | 200 | 450 | 150 | 266 | 193 | F16 | 225 | 450 | 149 | 266 | 193 | F16/ F25 | 238 |
| 200 | 550 | 207 | 312 | 210 | F16 | 172 | 550 | 207 | 312 | 210 | F 16 | 246 | 550 | 203 | 312 | 210 | F25 | 354 | 550 | 194 | 312 | 210 | F25 | 448 |
| 250 | 650 | 259 | 475 | 270 | F25 | 284 | 650 | 259 | 475 | 270 | F 25 | 308 | 650 | 253 | 475 | 270 | F30 | 604 | 650 | 241 | 475 | 270 | F30 | 660 |
| 300 | 750 | 308 | 510 | 340 | F25 | 494 | 750 | 308 | 510 | 340 | F 25 | 512 | 750 | 299 | 510 | 340 | F30 | 830 | 750 | 288 | 510 | 340 | F30 | 1070 |
| 350 | 850 | 340 | 355 | 380 | F25 | 713 | 850 | 340 | 355 | 380 | F 25 | 790 | 850 | 337 | 380 | 400 | F30 | 1110 | 850 | 324 | 380 | 400 | F30 | 1720 |
| 400 | 950 | 389 | 415 | 440 | F25 | 1000 | 950 | 389 | 415 | 440 | F 25 | 1490 | 950 | 387 | 430 | 450 | F30 | 1910 | 950 | 387 | 430 | 450 | F30 | 2610 |
| 500 | 1150 | 488 | 490 | 515 | F25 | 1498 | 1150 | 488 | 490 | 515 | F 25 | 1720 | 1150 | 489 | 500 | 540 | F30 | 3120 | 1150 | 489 | 500 | 540 | F30 | 4397 |
| 600 | 1350 | 588 | 600 | 605 | F30 | 2540 | 1350 | 588 | 600 | 605 | F 30 | 2770 | 1350 | 591 | 620 | 620 | F 35 | 4640 | 1350 | 591 | 620 | 620 | F 35 | 7035 |
| 700 | 1550 | 686 | 675 | 683 | F35 | 3825 | 1550 | 686 | 675 | 683 | F 35 | 3995 | 1550 | 686 | 675 | 690 | F 35 | 8010 | - | - | - | - | - | - |
| 800 | 1750 | 785 | 760 | 775 | F35 | 6230 | 1750 | 785 | 760 | 775 | F 35 | 7176 | 1750 | 781 | 785 | 815 | F 35 | 11656 | - | - | - | - | - | - |
| 900 | 1950 | 882 | 835 | 850 | F35 | 8273 | 1950 | 882 | 835 | 850 | F 35 | 9988 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1000 | 2150 | 981 | 930 | 945 | F35 | 11084 | 2150 | 981 | 930 | 945 | F 35 | 11735 | - | - | - | - | - | - | - | - | - | - | - | - |

DIMENSIONS

ACCORDING TO DIN STANDARDS WELDING-ON (BW)

| DN | PN 16, 25 | | | | | | PN 40 | | | | | | PN 63 | | | | | | PN 100 | | | | | |
|------|-----------|-------|-----|-----|-------------|-------|-------|-------|-----|-----|-------------|-------|-------|-------|-----|-----|-------------|------|--------|-------|-----|-----|-------------|------|
| | L | d | H1 | H2 | EN ISO 5211 | (KG) | L | d | H1 | H2 | EN ISO 5211 | (KG) | L | d | H1 | H2 | EN ISO 5211 | (KG) | L | d | H1 | H2 | EN ISO 5211 | (KG) |
| 25 | 270 | 28,5 | 101 | 68 | F07 | 5 | 270 | 28,5 | 101 | 68 | F07 | 5 | 270 | 28,5 | 101 | 68 | F07 | 14 | 270 | 27,9 | 101 | 68 | F07 | 18 |
| 50 | 300 | 54,5 | 119 | 107 | F07 | 19 | 300 | 54,5 | 119 | 107 | F07 | 18 | 300 | 52,3 | 119 | 107 | F07 | 30 | 300 | 51,3 | 119 | 107 | F07 | 36 |
| 65 | 360 | 70,3 | 170 | 110 | F10 | 28 | 360 | 70,3 | 170 | 110 | F10 | 25 | 360 | 68,1 | 170 | 110 | F10 | 42 | 360 | 66,1 | 170 | 110 | F10 / F12 | 52 |
| 80 | 390 | 82,5 | 215 | 118 | F12 | 32 | 390 | 82,5 | 215 | 118 | F12 | 30 | 390 | 79,9 | 215 | 118 | F12 | 55 | 390 | 77,7 | 215 | 118 | F12 | 72 |
| 100 | 450 | 107,1 | 218 | 153 | F12 | 53 | 450 | 107,1 | 218 | 153 | F12 | 95 | 450 | 105,3 | 218 | 153 | F12 | 86 | 450 | 100,3 | 218 | 153 | F12 / F14 | 104 |
| 125 | 525 | 131,7 | 229 | 170 | F14 | 79 | 525 | 131,7 | 229 | 170 | F14 | 120 | 525 | 127,8 | 229 | 170 | F14 | 154 | 525 | 123,7 | 229 | 170 | F14 / F16 | 162 |
| 150 | 600 | 159,3 | 266 | 190 | F16 | 100 | 600 | 159,3 | 266 | 193 | F16 | 200 | 600 | 155,7 | 266 | 193 | F16 | 225 | 600 | 148,3 | 266 | 193 | F16 / F25 | 238 |
| 200 | 600 | 206,5 | 312 | 210 | F16 | 172 | 600 | 206,5 | 312 | 210 | F25 | 246 | 600 | 204,9 | 312 | 210 | F25 | 354 | 600 | 194,1 | 312 | 210 | F25 | 448 |
| 250 | 730 | 258,5 | 475 | 270 | F25 | 284 | 730 | 258,8 | 475 | 270 | F30 | 308 | 730 | 255,4 | 475 | 270 | F30 | 604 | 730 | 241 | 475 | 270 | F30 | 660 |
| 300 | 850 | 307,9 | 510 | 340 | F25 | 494 | 850 | 307,9 | 510 | 340 | F30 | 512 | 850 | 301,9 | 510 | 340 | F30 | 830 | 850 | 278,9 | 510 | 340 | F30 | 1070 |
| 350 | 980 | 337,6 | 380 | 355 | F25 | 510 | 980 | 337,6 | 380 | 355 | F30 | 740 | 980 | 330,6 | 400 | 380 | F30 | 1700 | 980 | 315,6 | 400 | 380 | F30 | 2240 |
| 400 | 1100 | 384,4 | 440 | 415 | F25 | 750 | 1100 | 384,4 | 450 | 430 | F30 | 1030 | 1100 | 378,4 | 450 | 430 | F30 | 1970 | 1100 | 366,4 | 450 | 430 | F30 | 2770 |
| 500 | 1250 | 480 | 515 | 490 | F25 | 1190 | 1250 | 480 | 540 | 500 | F30 | 1540 | 1250 | 472 | 540 | 500 | F30 | 3250 | 1250 | 458 | 540 | 500 | F30 | 3740 |
| 600 | 1143 | - | 605 | 600 | F30 | 2100 | 1143 | - | 620 | 620 | F30 | 2600 | 1397 | - | 620 | 620 | F35 | 4604 | 1143 | - | 620 | 615 | F35 | 5560 |
| 700 | 1346 | - | 683 | 675 | F35 | 3000 | 1346 | - | 690 | 675 | F35 | 3900 | 1549 | - | 690 | 675 | F40 | 6621 | - | - | - | - | - | - |
| 800 | 1397 | - | 775 | 760 | F35 | 6155 | 1397 | - | 815 | 785 | F35 | 7006 | 1651 | - | 815 | 785 | F40 | 8917 | - | - | - | - | - | - |
| 900 | 1524 | - | 850 | 835 | F35 | 8267 | 1524 | - | 890 | 905 | F40 | 9208 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1000 | 1727 | - | 945 | 930 | F35 | 10720 | 1727 | - | 955 | 940 | F40 | 11820 | - | - | - | - | - | - | - | - | - | - | - | - |

ACCORDING TO GOST STANDARDS-FLANGED

| DN | KVS m3/h | PN 16, 25 | | | | | | PN 40 | | | | | |
|-----|----------|-----------|-----|-----|-----|-------------|------|-------|-----|-----|-----|-------------|------|
| | | L | d | H1 | H2 | EN ISO 5211 | (KG) | L | d | H1 | H2 | EN ISO 5211 | (KG) |
| 25 | 65 | 210 | 25 | 101 | 68 | F07 | 5 | 210 | 25 | 101 | 68 | F07 | 5 |
| 50 | 320 | 230 | 49 | 119 | 107 | F07 | 19 | 230 | 48 | 119 | 107 | F07 | 18 |
| 65 | 570 | 290 | 66 | 170 | 110 | F10 | 28 | 290 | 66 | 170 | 110 | F10 | 25 |
| 80 | 850 | 310 | 78 | 215 | 118 | F12 | 32 | 310 | 78 | 215 | 118 | F12 | 30 |
| 100 | 1420 | 350 | 96 | 218 | 153 | F12 | 53 | 350 | 96 | 218 | 153 | F12 | 95 |
| 125 | 2020 | 400 | 121 | 229 | 170 | F14 | 79 | 400 | 120 | 229 | 170 | F14 | 120 |
| 150 | 3400 | 480 | 146 | 266 | 190 | F16 | 100 | 480 | 145 | 266 | 193 | F16 | 200 |
| 200 | 6075 | 550 | 202 | 312 | 210 | F25 | 172 | 550 | 200 | 312 | 210 | F25 | 246 |
| 250 | 10600 | 650 | 254 | 475 | 270 | F30 | 284 | 650 | 252 | 475 | 270 | F30 | 308 |
| 300 | 16800 | 750 | 303 | 510 | 340 | F30 | 494 | 750 | 301 | 510 | 340 | F30 | 512 |

| DN | KVS m3/h | PN 63 | | | | | | PN 100 | | | | | |
|-----|----------|-------|-----|-----|-----|-------------|------|--------|-----|-----|-----|-------------|------|
| | | L | d | H1 | H2 | EN ISO 5211 | (KG) | L | d | H1 | H2 | EN ISO 5211 | (KG) |
| 25 | 65 | 210 | 25 | 101 | 68 | F07 | 14 | 210 | 25 | 101 | 68 | F07 | 18 |
| 50 | 320 | 230 | 47 | 119 | 107 | F07 | 30 | 230 | 45 | 119 | 107 | F07 | 36 |
| 65 | 570 | 290 | 64 | 170 | 110 | F10 | 42 | 290 | 62 | 170 | 110 | F10 / F12 | 52 |
| 80 | 850 | 310 | 77 | 215 | 118 | F12 | 55 | 310 | 75 | 215 | 118 | F12 | 72 |
| 100 | 1420 | 350 | 94 | 218 | 153 | F12 | 86 | 350 | 92 | 218 | 153 | F12 / F14 | 104 |
| 125 | 2020 | 400 | 118 | 229 | 170 | F14 | 154 | 400 | 112 | 229 | 170 | F14 / F16 | 162 |
| 150 | 3400 | 480 | 142 | 266 | 193 | F16 | 225 | 480 | 136 | 266 | 193 | F16 / F25 | 238 |
| 200 | 6075 | 550 | 198 | 312 | 210 | F25 | 354 | 550 | 190 | 312 | 210 | F25 | 448 |
| 250 | 10600 | 650 | 246 | 475 | 270 | F30 | 604 | 650 | 236 | 475 | 270 | F30 | 660 |
| 300 | 16800 | 750 | 294 | 510 | 340 | F30 | 830 | 750 | 284 | 510 | 340 | F30 | 1070 |

TYPE DESIGNATION

K86 ABC DEF M PN/S

A FACE-TO- FACE DIMENSION

- 1 Short
- 2 Long

BODY DESIGN

- 2 Two pieces
- 3 Three pieces

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

D FLOW DIRECTION

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

M BODY MATERIAL

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

C CONTROL STEM SEALING METHOD

- 1 O- ring
- 2 O – ring + graphite (fire safe)
- 3 O – ring + Graphite packing
- 4 V-shaped PTFE O - ring
- 5 Graphite packing

E CONNECTION INTO PIPE

- 1 Flanged
- 2 Welded ends
- 8 Combined

B SEATS EXECUTION

- 9 Metal - Metal

S SPECIAL EXECUTION

- AS Antistatic design
- LT Low temperature design

