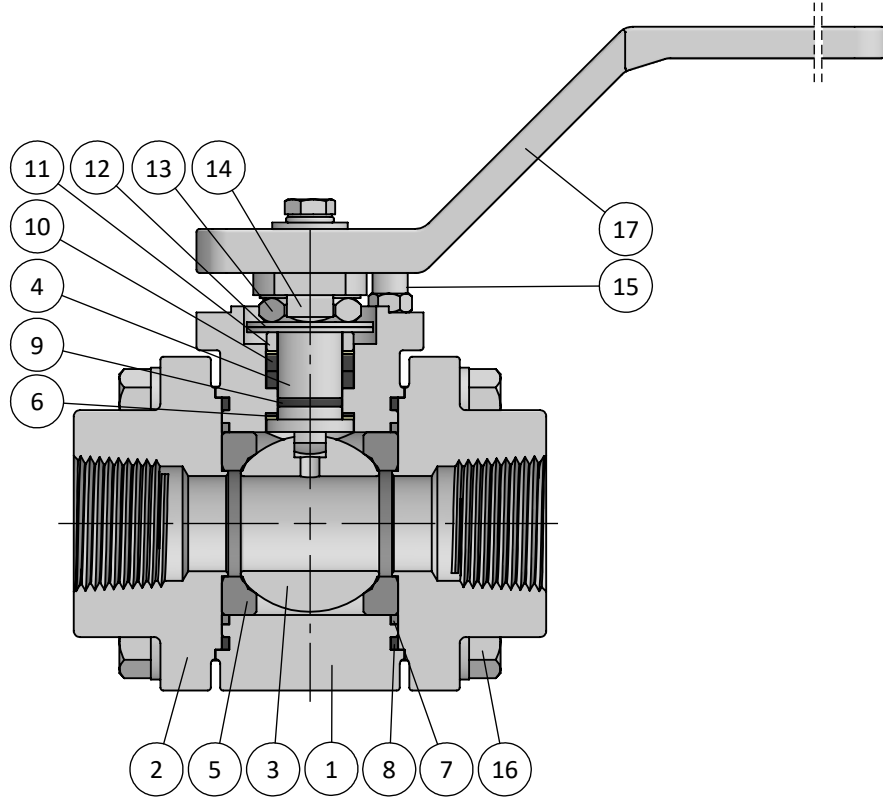
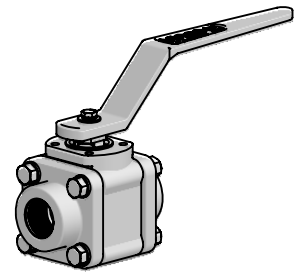




XF SERIES
CL800 (2000psi)
FULL BORE - 3/8" (DN10) to 2" (DN50)
REDUCED BORE - 1/2" (DN15) to 2 1/2" (DN65)
STANDARD
BILL OF MATERIALS



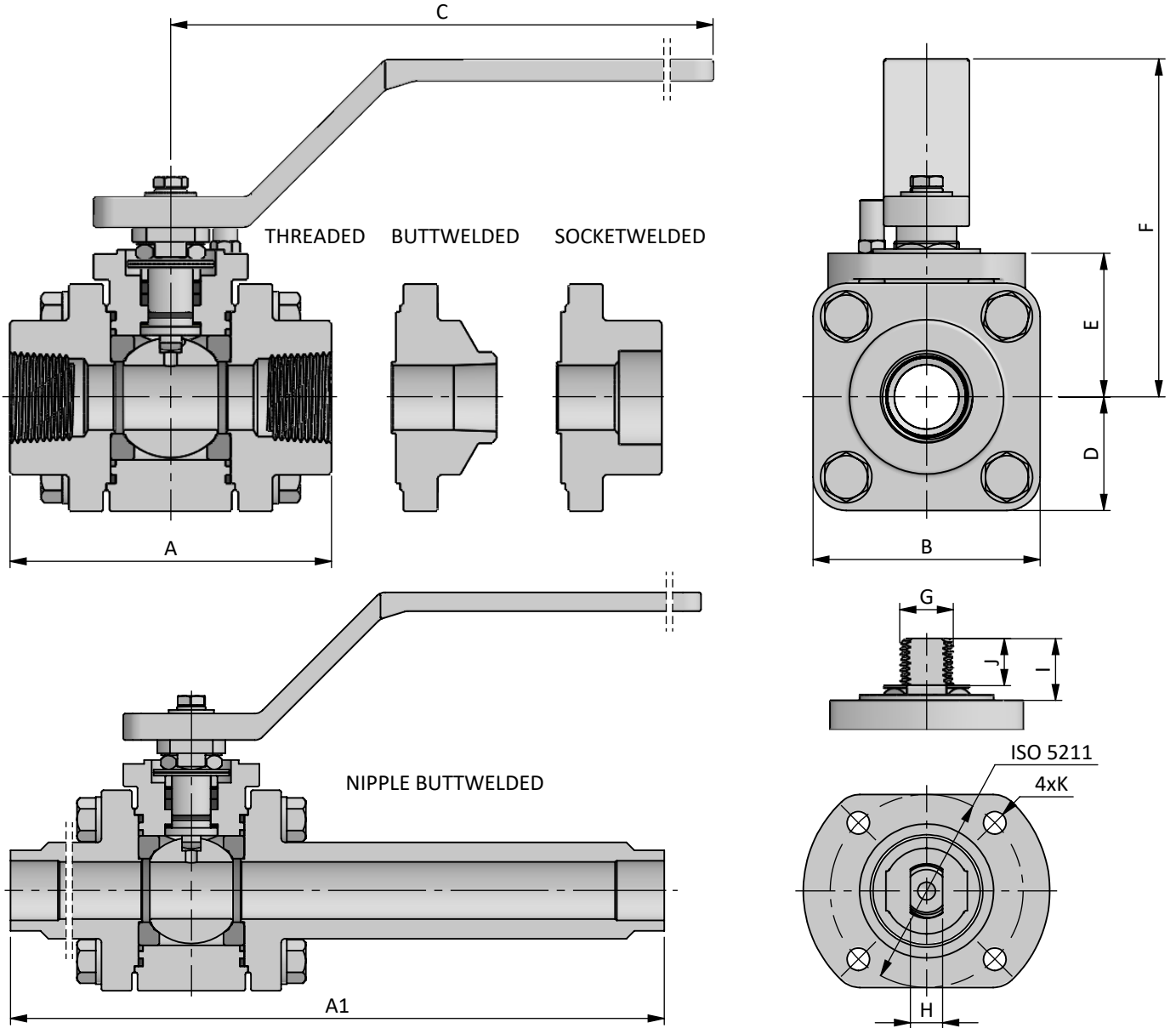
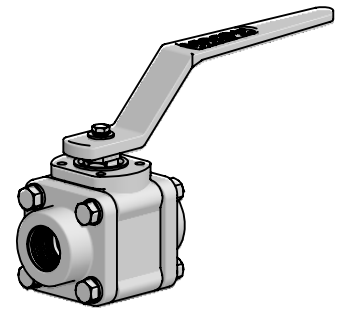
BILL OF MATERIALS

| Part | Qt. | Description | CARBON STEEL VERSION | LT CARBON STEEL VERSION | STAINLESS STEEL VERSION |
|------|-----|-------------------|----------------------|-------------------------|-------------------------|
| 1 | 1 | Body | A216 WCB | A352 LCC | A351 CF3M |
| 2 | 2 | End | A216 WCB | A352 LCC | A351 CF3M |
| 3 | 1 | Ball | | A351 CF8M | |
| 4 | 1 | Stem | | A479 316/L | |
| 5 | 2 | Seat | | C-RPTFE | |
| 6 | 1 | Stem Thrust Seals | | C-RPTFE + PEEK | |
| 7 | 2 | 1st Body Seal | | C-RPTFE | |
| 8 | 2 | 2nd Body Seal | | GRAPHITE | |
| 9 | 1 | O'Ring | | FKM | |
| 10 | 1 | Stem Packing Set | | GRAPHITE + PEEK | |
| 11 | 1 | Gland Packing | | STAINLESS ST. 316 | |
| 12 | 2 | Disc Spring | | STAINLESS ST. 316 | |
| 13 | 1 | Stem Nut | | STAINLESS ST. 316 | |
| 14 | 1 | Locking Clip | | STAINLESS ST. 316 | |
| 15 | 1 | Stop Pin | | STAINLESS ST. 316 | |
| 16 | 8 | Bolt | A193 Gr. B7 Zinc. | A320 Gr. L7M ZINC. | A193 Gr. B8M cl.2 |
| 17 | 1 | Handle | | A351 CF8 | |

↙ TYPICAL SPARE PARTS

XF SERIES

CL800 (2000psi)
 FULL BORE - 3/8" (DN10) ÷ 2" (DN50)
 REDUCED BORE - 1/2" (DN15) ÷ 2 1/2" (DN65)
 THREADED & WELDED ENDS

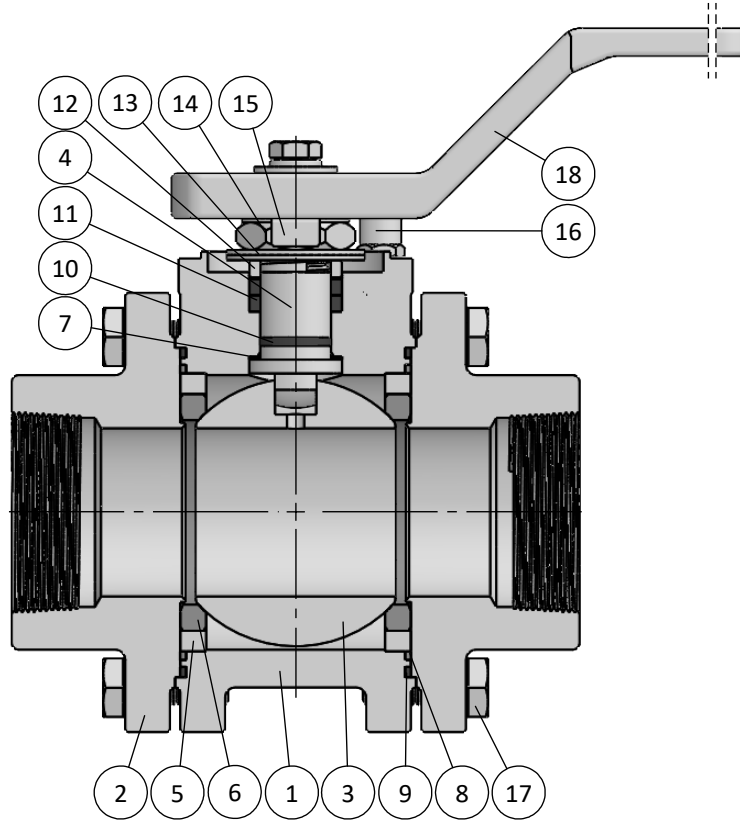
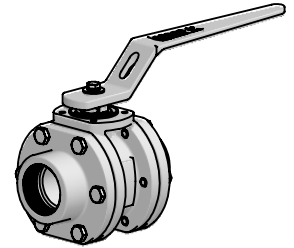


| DN / Size | | | | Dimensions | | | | | | | | Automation | | | | | | Weight Approx. [kg] | |
|-----------|--------|--------------|--------|------------|-----|-----|-----|-----|------|----|-----|------------|-----|------|-----|----|----------|---------------------|------|
| FULL BORE | | REDUCED BORE | | Ball Port | A | A1 | B | C | D | E | F | G | H | I | J | K | ISO 5211 | Short | Long |
| mm | inch | mm | inch | | | | | | | | | | | | | | | | |
| 10 | 3/8" | 15 | 1/2" | 11.9 | 70 | - | 50 | 150 | 25 | 30 | 75 | 10 | 6 | 10 | 7 | M5 | F03 | 1.0 | - |
| 15 | 1/2" | 20 | 3/4" | 15.1 | 75 | 250 | 55 | 150 | 27.5 | 35 | 80 | 10 | 6 | 10 | 7 | M5 | F03 | 1.2 | 1.6 |
| 20 | 3/4" | 25 | 1" | 20.6 | 90 | 260 | 65 | 180 | 32.5 | 40 | 95 | 12 | 7.5 | 14.5 | 7.5 | M5 | F04 | 2.0 | 2.5 |
| 25 | 1" | 32 | 1 1/4" | 25.4 | 100 | 270 | 75 | 180 | 37.5 | 45 | 100 | 12 | 7.5 | 14.5 | 7.5 | M5 | F04 | 3.0 | 3.5 |
| 32 | 1 1/4" | 40 | 1 1/2" | 31.8 | 115 | 280 | 85 | 210 | 42.5 | 55 | 120 | 16 | 11 | 21.5 | 9 | M6 | F05 | 4.5 | 6.0 |
| 40 | 1 1/2" | 50 | 2" | 38.1 | 125 | 290 | 95 | 210 | 47.5 | 60 | 125 | 16 | 11 | 21.5 | 9 | M6 | F05 | 6.0 | 7.0 |
| 50* | 2" | 65 | 2 1/2" | 49.0 | 165 | 310 | 145 | 300 | 65 | 75 | 140 | 20 | 14 | 21.5 | 10 | M8 | F07 | 10.5 | 11.5 |

Nipple butt weld only available in full bore version
 DN65 Reduced bore only available in Butt weld version

*Valve construction is similar to DN65 ÷ DN100 (page 4-5)

XF SERIES
CL400/300 (1000/750 psi)
FULL BORE - 2½" (DN65) ÷ 4" (DN100)
REDUCED BORE - 3" (DN80) ÷ 4" (DN100)
STANDARD
BILL OF MATERIALS



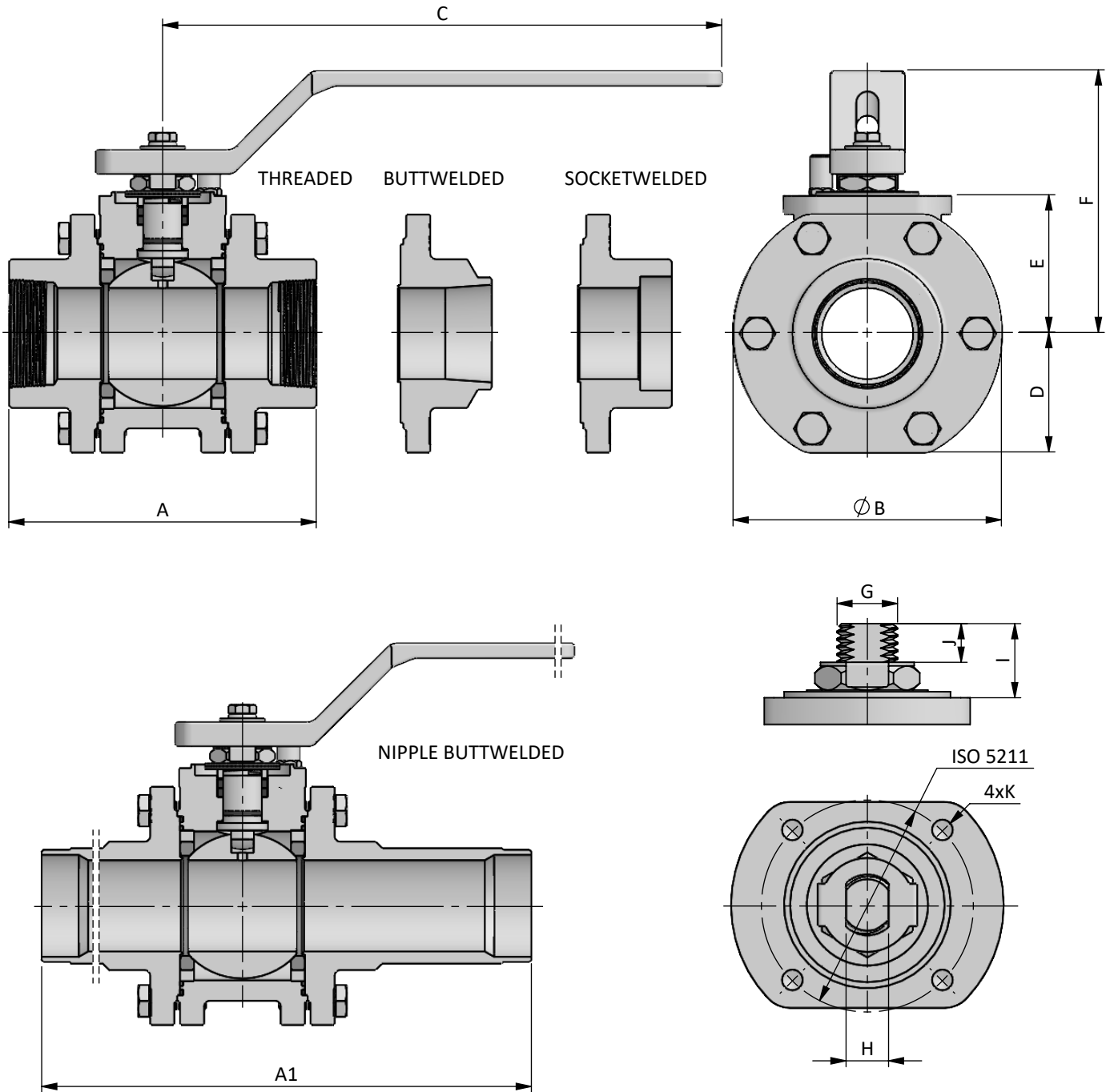
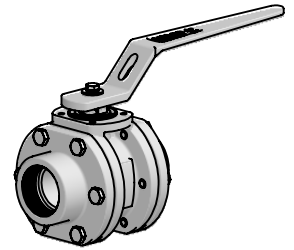
BILL OF MATERIALS

| Part | Qt. | Description | CARBON STEEL VERSION | LT CARBON STEEL VERSION | STAINLESS STEEL VERSION |
|------|-----|-------------------|----------------------|-------------------------|-------------------------|
| 1 | 1 | Body | A216 WCB | A352 LCC | A351 CF3M |
| 2 | 2 | End | A216 WCB | A352 LCC | A351 CF3M |
| 3 | 1 | Ball | | A351 CF8M | |
| 4 | 1 | Stem | | A479 316/L | |
| 5 | 2 | Seat Ring | | A479 316/L | |
| 6 | 2 | Seat | ↘ | C-RPTFE | |
| 7 | 1 | Stem Thrust Seals | ↘ | C-RPTFE + PEEK | |
| 8 | 2 | 1st Body Seal | ↘ | C-RPTFE | |
| 9 | 2 | 2nd Body Seal | ↘ | GRAPHITE | |
| 10 | 1 | O'Ring | ↘ | FKM | |
| 11 | 1 | Stem Packing Set | ↘ | GRAPHITE + PEEK | |
| 12 | 1 | Gland Packing | | STAINLESS ST. 316 | |
| 13 | 2 | Disc Spring | | STAINLESS ST. 316 | |
| 14 | 1 | Stem Nut | | STAINLESS ST. 316 | |
| 15 | 1 | Locking Clip | | STAINLESS ST. 316 | |
| 16 | 1 | Stop Pin | | STAINLESS ST. 316 | |
| 17 | - | Bolt | A193 Gr. B7 Zinc. | A320 Gr. L7M ZINC. | A193 Gr. B8M cl.2 |
| 18 | 1 | Handle | | A351 CF8 | |

↘ TYPICAL SPARE PARTS

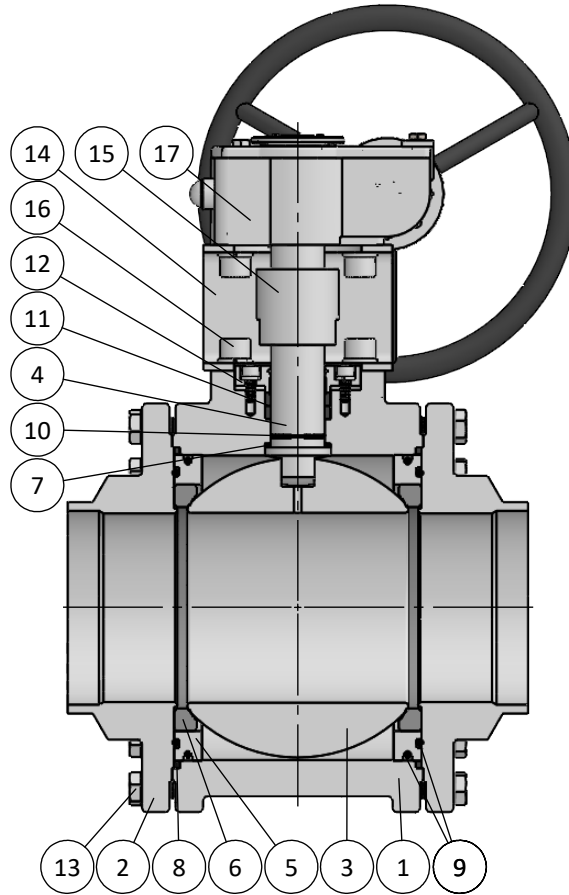
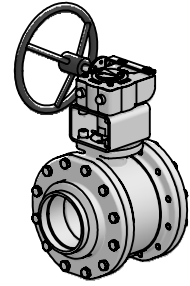
XF SERIES

CL400/300 (1000/750 psi)
 FULL BORE - 2½" (DN65) ÷ 4" (DN100)
 REDUCED BORE - 3" (DN80) ÷ 4" (DN100)
 THREADED & WELDED ENDS



| DN / Size | | | | Dimensions | | | | | | | | Automation | | | | | | Weight Approx. [kg] | |
|-----------|------|--------------|------|------------|-----|-----|-----|-----|-----|-----|-----|------------|----|------|------|-----|----------|---------------------|------|
| FULL BORE | | REDUCED BORE | | Ball Port | A | A1 | B | C | D | E | F | G | H | I | J | K | ISO 5211 | Short | Long |
| mm | inch | mm | inch | | | | | | | | | | | | | | | | |
| 65 | 2½" | 80 | 3" | 62.0 | 190 | 330 | 175 | 360 | 80 | 90 | 170 | 24 | 18 | 29.5 | 13.5 | M8 | F07 | 17.5 | 19.0 |
| 80 | 3" | 100 | 4" | 75.0 | 215 | 350 | 195 | 420 | 95 | 105 | 185 | 24 | 18 | 24 | 12.5 | M10 | F10 | 25.5 | 26.5 |
| 100 | 4" | N/A | | 100.0 | 265 | 390 | 295 | 480 | 115 | 135 | 225 | 30 | 22 | 41.5 | 17 | M10 | F10 | 45.0 | 47.0 |

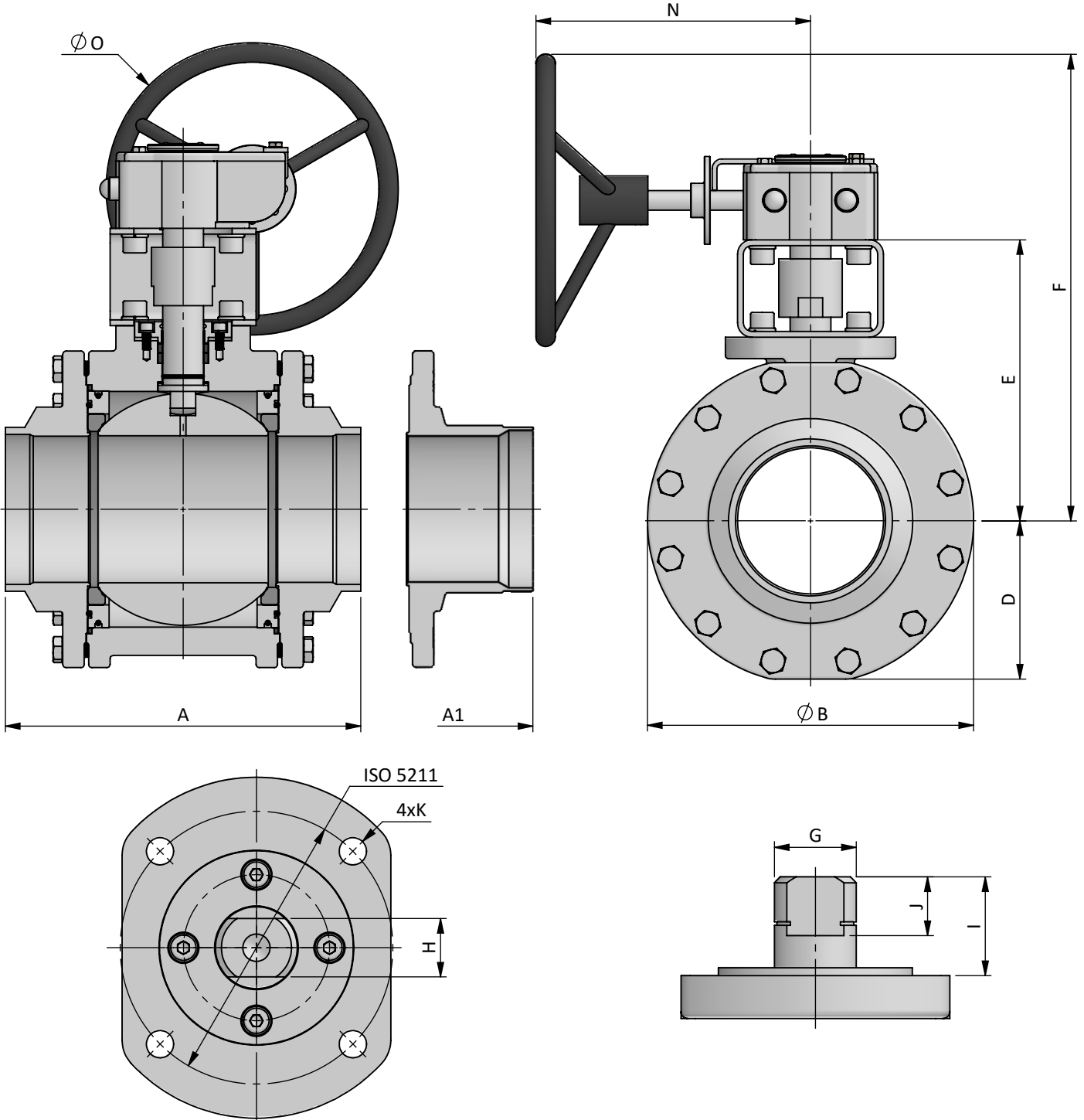
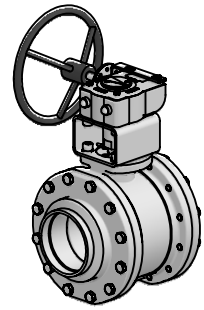
Reduced bore only available in Butt weld version



BILL OF MATERIALS

| Part | Qt. | Description | CARBON STEEL VERSION | LT CARBON STEEL VERSION | STAINLESS STEEL VERSION |
|------|-----|-------------------|----------------------|-------------------------|-------------------------|
| 1 | 1 | Body | A216 WCB | A352 LCC | A351 CF3M |
| 2 | 2 | End | A216 WCB | A352 LCC | A351 CF3M |
| 3 | 1 | Ball | | A351 CF8M | |
| 4 | 1 | Stem | | A479 316/L | |
| 5 | 2 | Seat Ring | | A479 316/L | |
| 6 | 2 | Seat | | C-RPTFE | |
| 7 | 1 | Stem Thrust Seals | | C-RPTFE + PEEK | |
| 8 | 2 | Body Seal | | GRAPHITE | |
| 9 | 4 | Body O'Ring | | FKM | |
| 10 | 1 | O'Ring | | FKM | |
| 11 | 1 | Stem Packing Set | | GRAPHITE + PEEK | |
| 12 | 1 | Gland Packing | | A479 316/L | |
| 13 | - | Bolt | A193 Gr. B7 Zinc. | A320 Gr. L7M ZINC. | A193 Gr. B8M cl.2 |
| 14 | 1 | Bracket | | STAINLESS ST. 304 | |
| 15 | 1 | Bracket Stem | | A479 316/L | |
| 16 | 8 | Bracket Bolt | | STAINLESS ST. 304 | |
| 17 | 1 | Gear Box | | CAST IRON | |

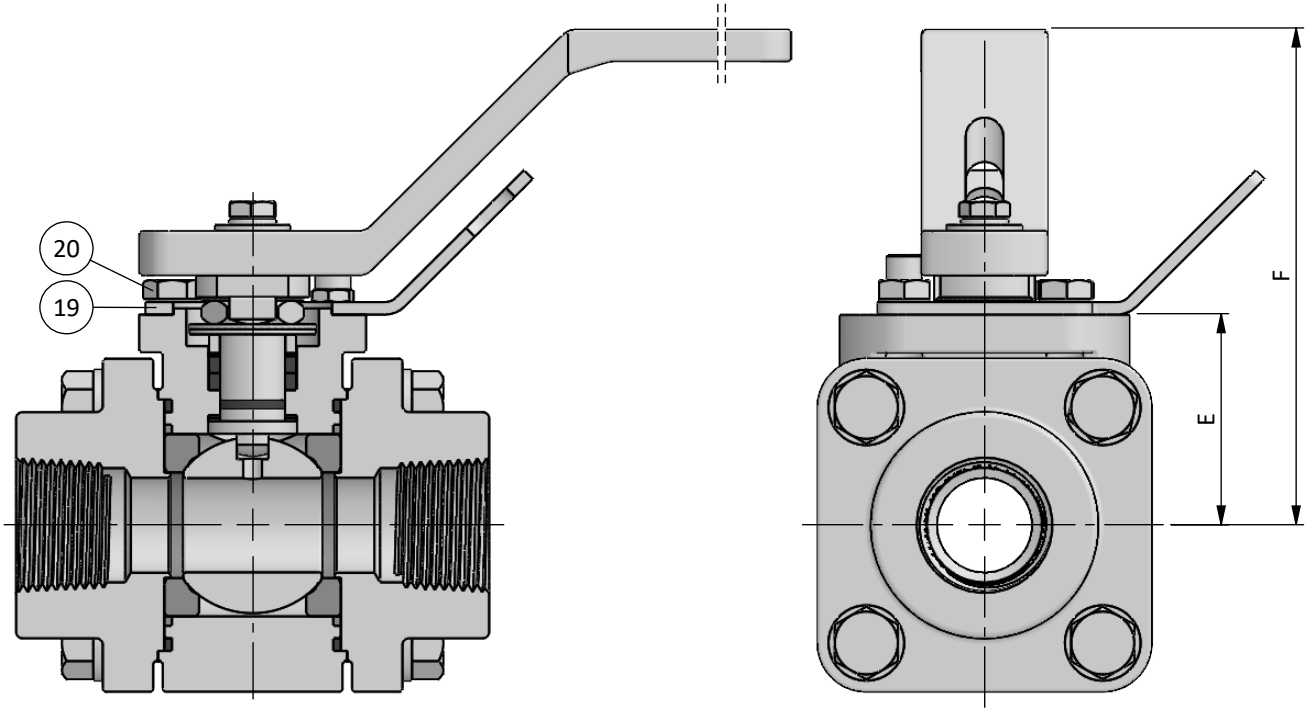
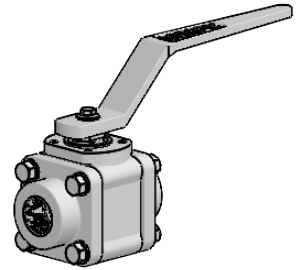
↳ TYPICAL SPARE PARTS



| DN / Size | | Dimensions | | | | | | | | Automation | | | | | | | | Weight Approx. [kg] | |
|-----------|------|------------|-----|-----|-----|---|-----|-----|-----|------------|----|----|----|-----|-----|-----|----------|---------------------|-------|
| FULL BORE | | Ball Port | A | A1 | B | C | D | E | F | G | H | I | J | K | N | O | ISO 5211 | Short | Long |
| mm | inch | | | | | | | | | | | | | | | | | | |
| 150 | 6" | 150.0 | 365 | 450 | 335 | - | 165 | 190 | 480 | 42 | 30 | 51 | 30 | M16 | 285 | 300 | F14 | 123.5 | 125.0 |

XF SERIES

CL800/400/300/150 (2000/1000/750/300 psi)
 FULL BORE - 3/8" (DN10) ÷ 6" (DN150)
 REDUCED BORE - 1/2" (DN15) ÷ 4" (DN100)
 LOCKING DEVICE



BILL OF MATERIALS

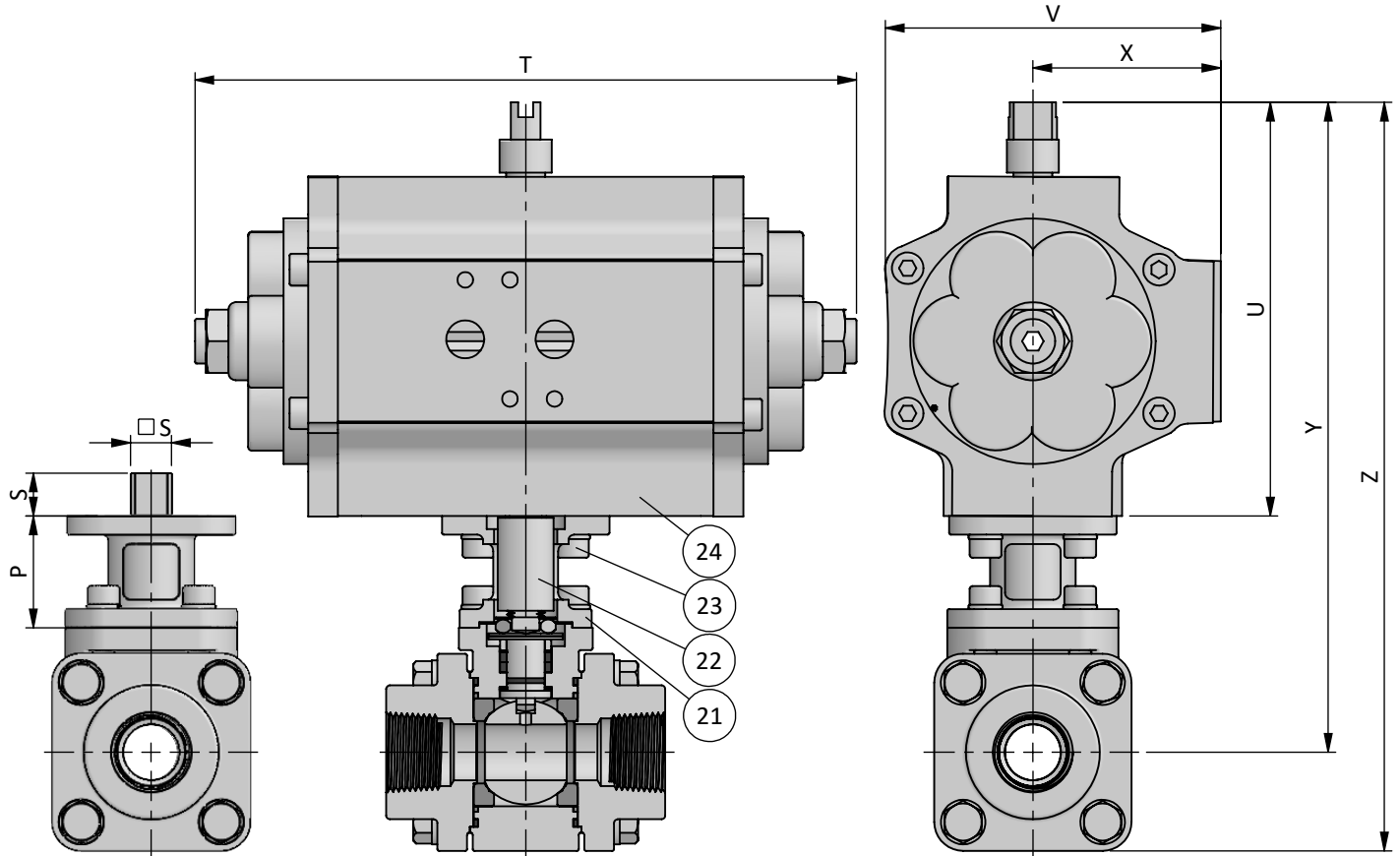
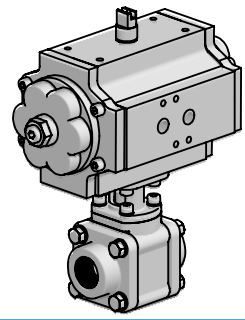
| Part | Qt. | Description | Material |
|------|-----|---------------|-------------------|
| 19 | 1 | Locking Plate | STAINLESS ST. 304 |
| 20 | 3 | Bolt | STAINLESS ST. 316 |

| DN / Size | | | | E | F |
|-----------|--------|--------------|--------|-----|-----|
| FULL BORE | | REDUCED BORE | | | |
| mm | inch | mm | inch | | |
| 10 | 3/8" | 15 | 1/2" | 30 | 75 |
| 15 | 1/2" | 20 | 3/4" | 35 | 80 |
| 20 | 3/4" | 25 | 1" | 40 | 95 |
| 25 | 1" | 32 | 1 1/4" | 45 | 100 |
| 32 | 1 1/4" | 40 | 1 1/2" | 55 | 120 |
| 40 | 1 1/2" | 50 | 2" | 60 | 125 |
| 50 | 2" | 65 | 2 1/2" | 75 | 140 |
| 65 | 2 1/2" | 80 | 3" | 90 | 170 |
| 80 | 3" | 100 | 4" | 105 | 185 |
| 100 | 4" | N/A | | 135 | 225 |
| 150 | 6" | | | 190 | - |

Larger size valves available with lockable gearboxes

XF SERIES

CL800/400/300/150 (2000/1000/750/300 psi)
 FULL BORE - 3/8" (DN10) ÷ 6" (DN150)
 REDUCED BORE - 1/2" (DN15) ÷ 4" (DN100)
 BRACKET FOR AUTOMATION VERSION



BILL OF MATERIALS

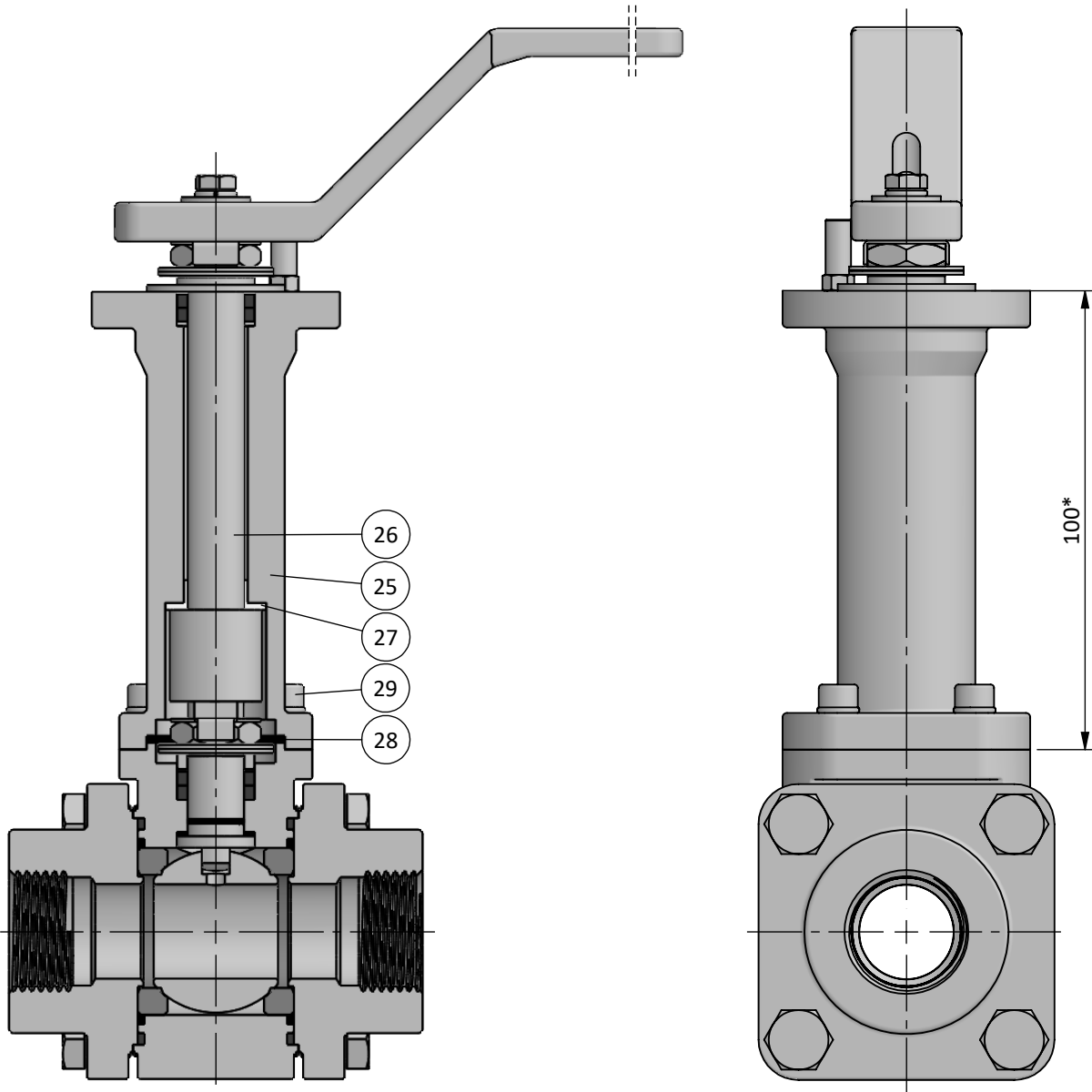
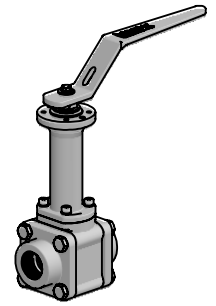
| Part | Qt. | Description | Material |
|------|-----|--------------------|-------------------|
| 21 | 1 | Bracket | STAINLESS ST. 304 |
| 22 | 1 | Coupling | A479 316/L |
| 23 | 8 | Bolt | STAINLESS ST. 304 |
| 24 | 1 | Pneumatic Actuator | ALUMINIUM |

| DN / Size | | | | Automation | | Actuator * | | | | | | |
|-----------|--------|--------------|--------|------------|----|------------|-----|-----|-----|-----|-----|-----|
| FULL BORE | | REDUCED BORE | | P | S | REF. | T | U | V | X | Y | Z |
| mm | inch | mm | inch | | | | | | | | | |
| 10 | 3/8" | 15 | 1/2" | 30 | 11 | 005-10 | 180 | 111 | 89 | 49 | 170 | 195 |
| 15 | 1/2" | 20 | 3/4" | 30 | 11 | 005-10 | 180 | 111 | 89 | 49 | 175 | 200 |
| 20 | 3/4" | 25 | 1" | 40 | 17 | 008-10 | 233 | 131 | 112 | 57 | 210 | 245 |
| 25 | 1" | 32 | 1 1/4" | 40 | 17 | 008-10 | 233 | 131 | 112 | 57 | 215 | 250 |
| 32 | 1 1/4" | 40 | 1 1/2" | 50 | 19 | 012-08 | 280 | 131 | 112 | 57 | 235 | 280 |
| 40 | 1 1/2" | 50 | 2" | 50 | 22 | 020-14 | 294 | 151 | 133 | 70 | 260 | 310 |
| 50 | 2" | 65 | 2 1/2" | 60 | 22 | 030-18 | 286 | 189 | 169 | 85 | 325 | 390 |
| 65 | 2 1/2" | 80 | 3" | 60 | 22 | 030-18 | 286 | 189 | 169 | 85 | 340 | 420 |
| 80 | 3" | 100 | 4" | 100 | 27 | 040-18 | 344 | 199 | 169 | 85 | 405 | 500 |
| 100 | 4" | N/A | | 100 | 36 | 100-18 | 440 | 246 | 210 | 108 | 480 | 595 |
| 150 | 6" | N/A | | 100 | 46 | 200-20 | 537 | 272 | 232 | 120 | 560 | 725 |

*Spring Return Pneumatic Actuators selected for PTFE and filled PTFE seats considering input air pressure of 5.5bar and minimum 25% safety margin

XF SERIES

CL800/400/300/150 (2000/1000/750/300 psi)
 FULL BORE - 3/8" (DN10) ÷ 6" (DN150)
 REDUCED BORE - 1/2" (DN15) ÷ 4" (DN100)
 EXTENDED STEM



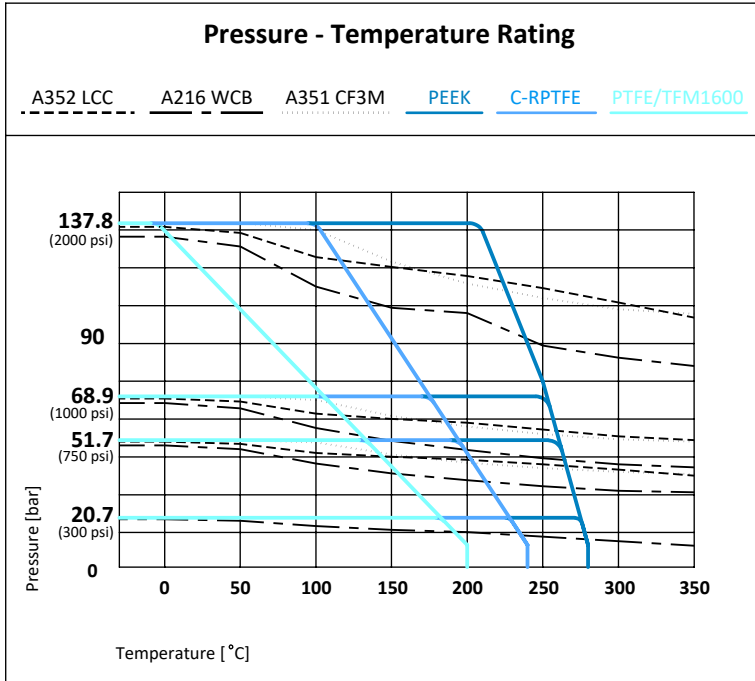
BILL OF MATERIALS

| Part | Qt. | Description | Material |
|------|-----|----------------|-------------------|
| 25 | 1 | Extension | A351 CF8M |
| 26 | 1 | Stem Extension | A479 316/L |
| 27 | 1 | Bearing | TFM 1600 |
| 28 | 1 | Extension Seal | GRAPHITE |
| 29 | 4 | Bolt | STAINLESS ST. 304 |

*Size 6" valve extension height is 150mm

XF SERIES

CL800/400/300/150 (2000/1000/750/300 psi)
 FULL BORE - 3/8" (DN10) ÷ 6" (DN150)
 REDUCED BORE - 1/2" (DN15) ÷ 4" (DN100)
TECHNICAL SPECIFICATIONS



Working Conditions

| Material | mOT* [°C] | | | | MOT* [°C] |
|-----------------|------------|----------|-----------|-------|------------|
| | A216 WCB | A352 LCC | A351 CF3M | ALL | |
| PTFE / TFM 1600 | -29 | -46 | -50 | -100* | 200 |
| C-RPTFE | -29 | -46 | -50 | -100* | 240 |
| PEEK | -29 | -46 | -50 | | 280 |

*mOT - minimum Operating Temperature
 *MOT - Maximum Operating Temperature at 10 bar
 Standard version recommended down to -50 °C
 *Extended version recommended down to -100 °C

| DN | Rating |
|--|----------------------|
| FB 3/8" (DN10) to 2" (DN50) RB 1/2" (DN15) to 2 1/2" (DN65) | 137.8 bar / 2000 psi |
| FB 2 1/2" (DN65) to 3" (DN80) RB 3" (DN80) to 4" (DN100) | 68.9 bar / 1000 psi |
| FB 4" (DN100) | 51.7 bar / 750 psi |
| FB 6" (DN150) | 20.7 bar / 300 psi |

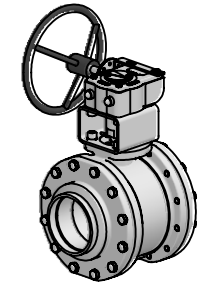
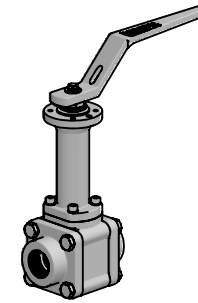
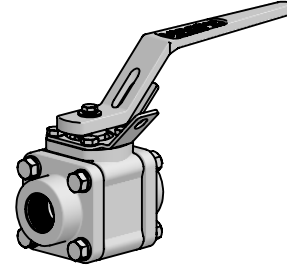
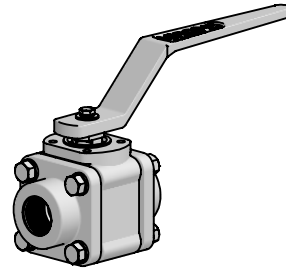
| DN / Size | | | | Torque Valve Figure [Nm] * | | | | | | Maximum Allowable Stem Torque [Nm] | | | | | Flow Coefficient Cv |
|-----------|--------|--------------|--------|----------------------------|-----|-----|-----|-----|-----|------------------------------------|--------|--------|--------|------|---------------------|
| FULL BORE | | REDUCED BORE | | C-RPTFE | | | | | | 316 | S31803 | S32760 | S17400 | 718 | |
| mm | inch | mm | inch | BTO | RTO | ETO | BTC | RTC | ETC | MAST | | | | | |
| 10 | 3/8" | 15 | 1/2" | 6 | 4 | 4 | 4 | 4 | 5 | 21.5 | 25 | 30 | 40 | 53.5 | 12 |
| 15 | 1/2" | 20 | 3/4" | 8 | 5 | 5 | 5 | 5 | 6 | 21.5 | 25 | 30 | 40 | 53.5 | 15 |
| 20 | 3/4" | 25 | 1" | 14 | 8 | 11 | 11 | 8 | 12 | 40 | 45 | 55 | 71.5 | 98.5 | 35 |
| 25 | 1" | 32 | 1 1/4" | 18 | 10 | 14 | 14 | 10 | 15 | 40 | 45 | 55 | 71.5 | 98.5 | 50 |
| 32 | 1 1/4" | 40 | 1 1/2" | 32 | 18 | 24 | 24 | 18 | 26 | 110 | 125 | 150 | 200 | 275 | 80 |
| 40 | 1 1/2" | 50 | 2" | 46 | 26 | 35 | 35 | 26 | 37 | 110 | 125 | 150 | 200 | 275 | 115 |
| 50 | 2" | 65 | 2 1/2" | 55 | 31 | 42 | 42 | 31 | 44 | 110 | 240 | 290 | 385 | 535 | 200 |
| 65 | 2 1/2" | 80 | 3" | 70 | 39 | 46 | 46 | 39 | 53 | 205 | 445 | 540 | 715 | 1000 | 325 |
| 80 | 3" | 100 | 4" | 100 | 55 | 65 | 65 | 55 | 45 | 205 | 445 | 540 | 715 | 1000 | 490 |
| 100 | 4" | N/A | | 200 | 110 | 130 | 130 | 110 | 150 | 405 | 880 | 1075 | 1420 | 1950 | 900 |
| 150 | 6" | N/A | | 350 | 193 | 263 | 263 | 193 | 280 | 1150 | 2525 | 3085 | 4075 | 5600 | 2000 |

*Values without safety margin

Reference BTO 100% - RTO 55% | ETO 75% | BTC 75% | RTC 55% | ETC 80%

| CERTIFICATION | CONSTRUCTION STANDARDS | TEST STANDARDS |
|--|---|--|
| CE Certification acc. to PED 2014/68/EU Fire Safe Design acc. to API 607Ed.6/ISO 10497 ATEX II 2GD Design acc. to 2014/34/EU Fugitive Emissions Class B acc. to ISO 15848 CO1 (-46 °C to RT) Quality System Certified acc. to ISO 9001 | ASME B16.34 ISO 17292 ASME B1.20.1 ISO 7-1 ISO 228-1 ASME B16.25 ASME B36.10M ASME B16.11 MSS-SP-25 ISO 5211 | Pressure tests according to: EN12266-1 / API 598 / ISO 5208 Rate A Tests applied: Hydrostatic Shell Test Hydrostatic Seat Test Pneumatic Tightness Test Pneumatic Seat Test EN 10204 type 3.1 Certificate |

Standards acc. to the latest available revision



| SERIE | CLASS | VERSION | PORT | DN | ENDS | BODY | BALL STEM | BOLTING | SEATS 1 st SEAL | PACKING 2 nd SEAL O'RING | OPTIONS |
|-------|--------------------------|---------|--------|------------|----------------------|---------------|---------------------------------|--------------------------------|-------------------------------------|--|-------------------------------------|
| XF | 4 | CL800 | F - FB | 010 | BUTTWELD | A - A216 WCB | E - A351 CF8M A564 S17400 | A - B7 | 1 - PTFE PTFE | 1 - Grafito Grafito FKM | A - 2 Opposite sides Flattened Ends |
| | | | | 015 | B1 - BW SCH 10 | B - A352 LCC | F - A351 CF8M A479 316 | F - B8M cl.2 | 2 - TFM 1600 PTFE | 2 - VTFM 1600 PTFE | C - Spring Return |
| | | | | 020 | B2 - BW SCH 40 | C - A351 CF3M | G - A351 CF8 A479 304 | D - L7M | 3 - C-RPTFE C-RPTFE | 3 - VC-RPTFE C-RPTFE | D - Simple Extension 60 mm |
| | | | | 025 | B3 - BW SCH 80 | Z - Others | Z - Others | 4 - PEEK NATURE C-RPTFE | 4 - Extension 100 mm | | |
| | | | | 032 | B4 - BW SCH 160* | | 6 - DEVLON C-RPTFE | F - Bracket Automation | | | |
| | | | | 040 | B6 - BW ISO 1127 S1 | | 7 - UHMWPE UHMWPE | G - Gear Box | | | |
| | | | | 050 | B9 - OTHERS | | | H - Actuators | | | |
| | | | | 065 | SOCKETWELD | | | I - Switch Box / Limit Swiches | | | |
| | | | | 080 | C1 - SW ASME B16.11 | | | L - Locking Lever/Handle | | | |
| | | | | 100 | C9 - OTHERS | | | O - Oval Lever/Handle | | | |
| | | | | 150 | THREADED | | | R - Bare Shaft / Bare Stem | | | |
| | | | | | D1 - BSP - ISO 228/1 | | | S - Solenoid Valve | | | |
| | | | | | D2 - BSPT - ISO 7/1 | | | T - Upstream Relief Hole | | | |
| | | | | | D3 - NPT - B1.20.1 | | | W - "V" Ball Port | | | |
| | | | | | D9 - OTHERS | | | Y - Full Execution SS.316 | | | |
| | INTEGRAL NIPPLE** | | | Z - Others | | | | | | | |
| | N1 - BW SCH 10 | | | | | | | | | | |
| | N2 - BW SCH 40 | | | | | | | | | | |
| | N3 - BW SCH 80 | | | | | | | | | | |
| | N4 - BW SCH 160* | | | | | | | | | | |
| | N6 - BW ISO 1127 S1 | | | | | | | | | | |
| | N9 - OTHERS | | | | | | | | | | |
| | WELDED BLOCK | | | | | | | | | | |
| | W100 - BLOCK 100 | | | | | | | | | | |
| | W500 - BLOCK 500 | | | | | | | | | | |
| | * Sch 160 up to DN 50 | | | | | | | | | | |
| | **Except DN 10 | | | | | | | | | | |

Example:
XF32F015B1D3AFA31E
XF22F080N1N1CFF12

INDUSTRIAL RANGE

CF Series
2 split body - Floating
Cl 150/300
DN ½" (15) to 4" (100)



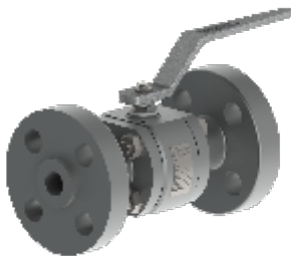
BF Series
2 split body - Floating
Cl 150 to 600
DN ½" (15) to 4" (100)



SF Series
3 pieces bolted - Floating
Cl 300 to 800
DN ¾" (10) to 6" (150)



HF Series
3 pieces bolted - Floating
Cl 1500/2500
DN ¾" (10) to 2" (50)



QF Series
Multi-ways - Floating
Cl 150 to 600
DN ½" (15) to 2" (50)



VTR Series
3 pieces bolted - Trunnion
Cl 150 to 2500
DN ½" (15) to 12" (300)



OTHER RANGE

CRYOGENIC RANGE
CCF / CXF / CBF / CSF / CVT



METALLIC SEATS RANGE
XFM / CFM / BFM / SFM / VTM



