



nuflo[®] Ball Valve

Moveable(Non-Fixed) Type



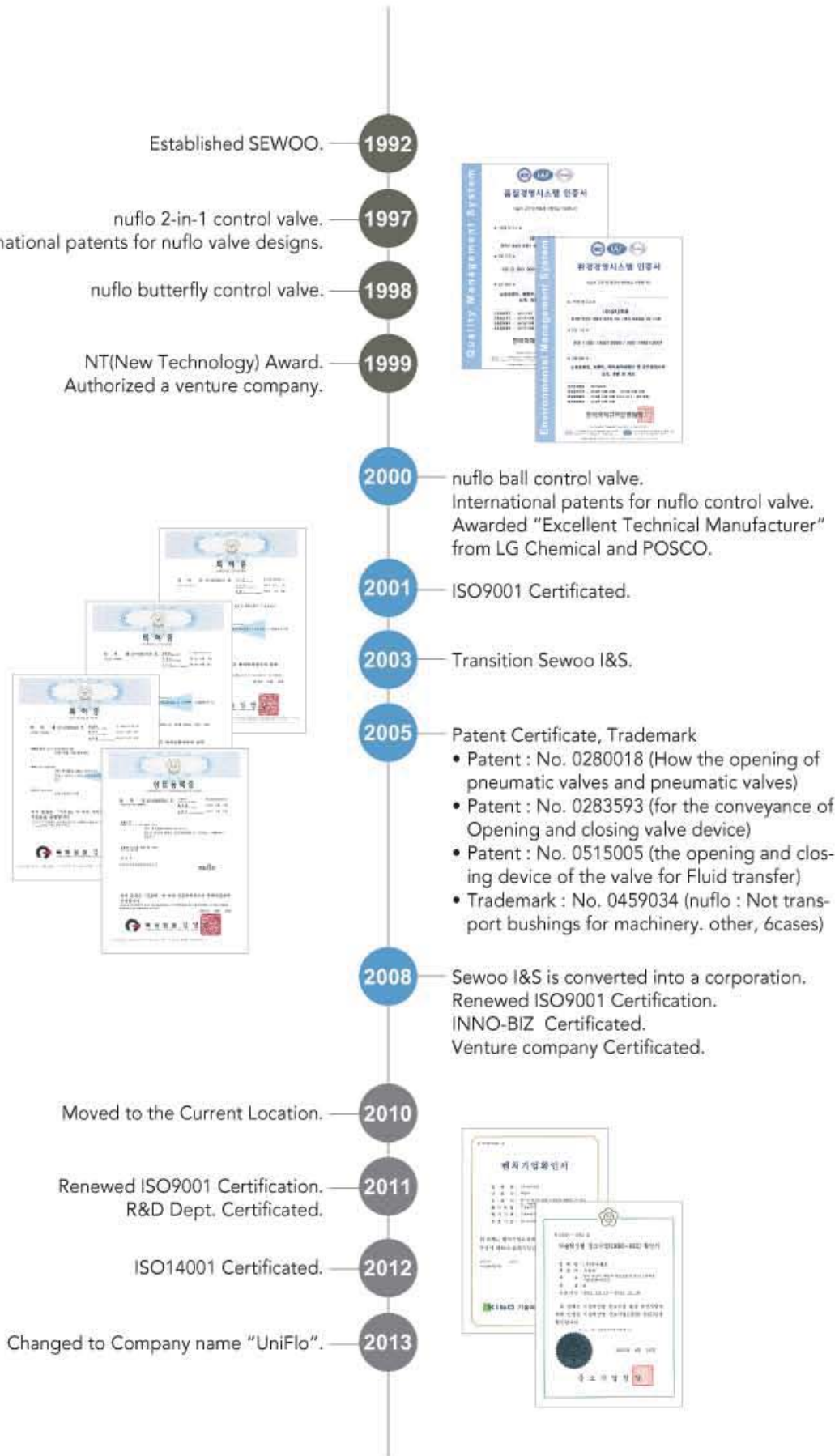
INNOBIZ
Innovation Association

Venture for
Tomorrow



UNIFLO[®]

Company History



What is nuflo Ball Valve?



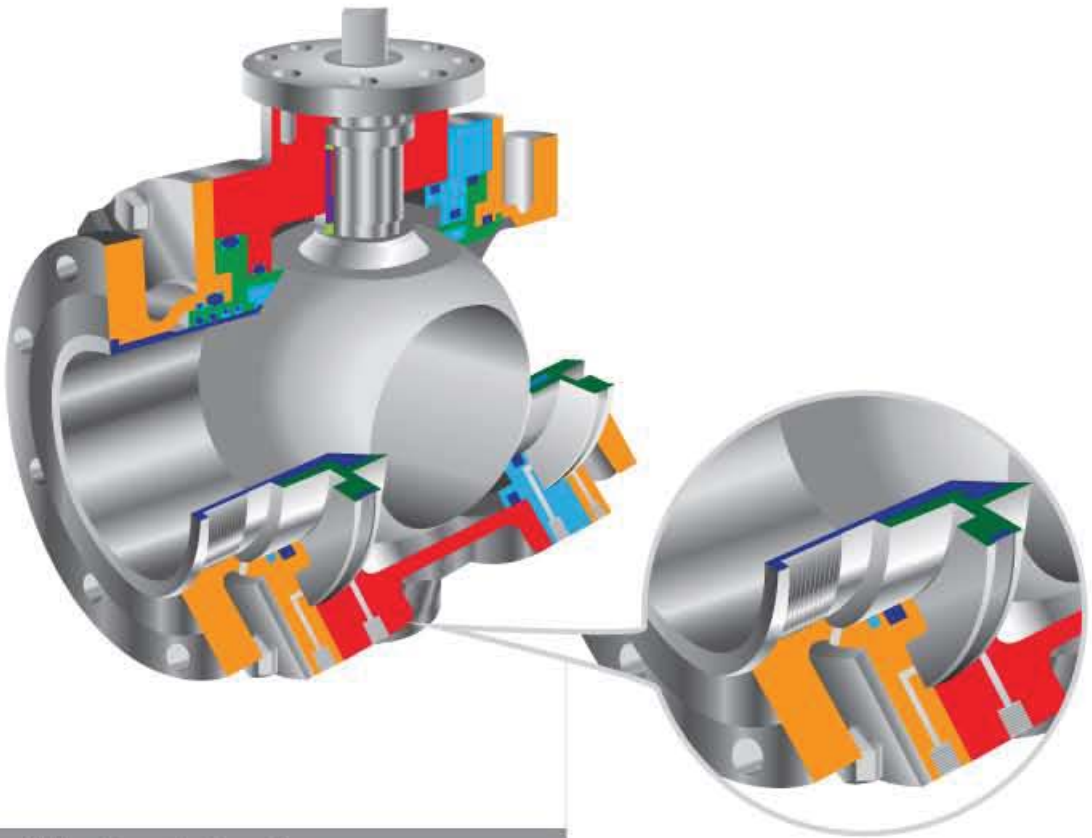
Movable Seat Design Pneumatic Control Valve

Seat가 Ball과 마찰되지 않는 컨트롤 밸브

Non-fixed Seat Design Ball Valve (seat Auto Moving Model)
Innovative Design for Next Generation.

– Ball Valve의 가장 큰 문제로 지적되는 Seat와 Ball의 마찰을 해소하여
Ball 표면에 있는 이물질로 인한 Seat손상을 방지하는 구조입니다.

Why nuflo Ball Valve?



Movable Seat Design

nuflo Ball Valve with movable seats design is specially designed to offer a solution in severe. Seat wear condition and having operational difficulty due to slurry accumulation between ball and seat.

When the ball is about to rotate to any position or in open position, the non-fixed seats are detached from the ball surface by pneumatic control. The non-fixed seat moves toward the ball and tight shut to the ball surface when the ball is in closed position.

With this superior movable seats design, there will be no leakage due to excessive seat wear and excellent sealing effect since the seats are tightened to ball by pneumatic pressure.

_ nuflo Ball valve는 Ball이 회전하기 전에 Seat가 탈착되는 moving Seat구조로 작동 시 Seat와 Ball사이에 전혀 마찰력이 없으며 Ball 표면에 묻은 0,2mm 이상의 이물질들 매 작동 시 Scraping함으로 Slurry로부터 안전하게 보호해줍니다.

또한 작동 시 Ball과 Seat의 마찰력을 없애줌으로 작은 Actuator의 힘으로도 부드러운 작동을 보장합니다. 당사 제품은 Seat의 안전한 보호로 기존 어느 밸브에 비하여도 세계 최고의 수준으로 수명을 보장합니다.

nuflo Ball Valve는 또한 Ball Valve의 내부에 Slurry가 적재될 경우 내부 세척을 할 수 있어 더욱 안정적인 작동을 보장합니다.

Feature

Non-Friction Between Ball and Seat.

_ Ball과 Seat 사이의 마찰로 인한 Seat 손상이 없다.

Will extend the life of the sludge line.

_ 슬러지가 심한 라인에서 Valve의 수명이 연장된다.

Operating torque is small. Therefore, the selection is small actuator.

_ 마찰이 없으므로 Operation Torque가 약해 작은 Size의 Actuator로도 동작가능.

Tight-Shut Off.

_ Close시 압축공기에 의해 Seat가 Ball에 완전히 밀착되어 Tight-Shut Off 실현.

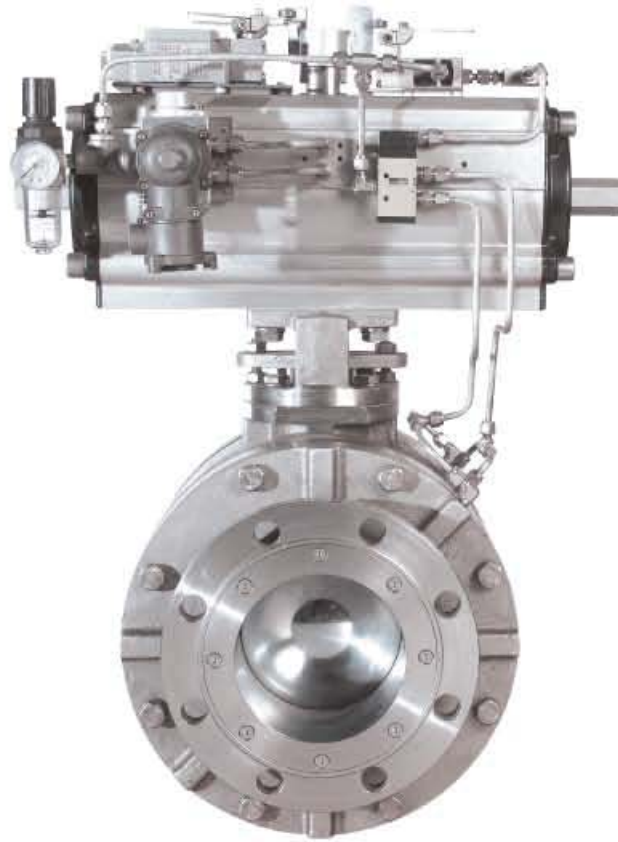
The best performance in coagulation sludge line(ex. LATEX).

_ Latex와 같은 응고성 Slurry에 최고의 성능을 발휘할 수 있다.

Flushing line applications.

_ Flushing line설치를 통해 Valve내에 축적 되는 Slurry를 쉽게 제거 할수 있다.

Specification



| | |
|-----------------------|--|
| Size | 100A ~ 500A (4"~20") |
| Actuation | Pneumatic |
| Body Material | SCS13 / A351 CF8, SCS14 / A351 CF8M (Contact Others) |
| Seat Material | PTFE / RTFE / GRAPHITE / ENGINEERING PLASTIC |
| Temperature | -20°C ~ 100°C / 100°C ~ 200°C (Option) |
| Rating | ANSI 150#, 300# / JIS 10K, 20K |
| End Connection | RF FLANGE |
| Tightness | ANSI CLASS VI |
| Fluid | Gas, Latex, Petrochemical related products, Slurry liquid, Aggressive fluid. |

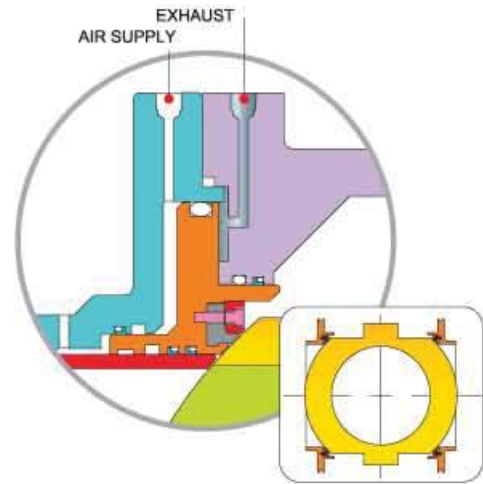
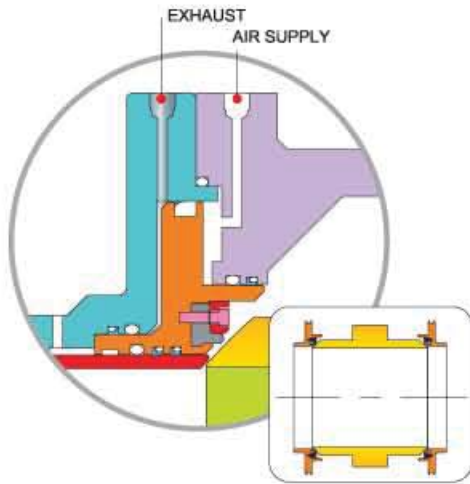
American Society of Mechanical Engineers

- B 16.5 Pipe Flanges and Flanged Fittings
- B 16.10 Face to face and End to end Dimensions of Ferrous Valves
- B 16.34 Valves-flanged and Butt-Welding end

Japanese Industrial Standard

- B 2001 Nominal Size and Bore of Valves
- B 2002 Face to face and End to end Dimensions of Valves
- B 2003 General Rules for Inspection of Valves
- B 2210 Flanged and Fittings

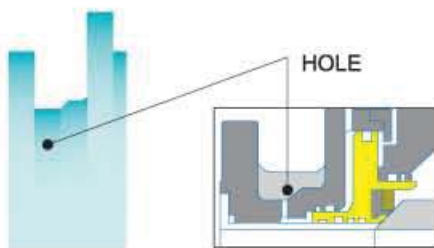
Seat Action



Valve Position _ Open

Valve Position _ Close

When supplying Air, Seat will take On/Off the Ball. The Picture shows Valve's Open/Close Positions.
 _AIR를 공급하게 되면 SEAT가 BALL에 탈착 되는 구조입니다. 그림은 VALVE의 OPEN / CLOSE POSITION을 보여줍니다



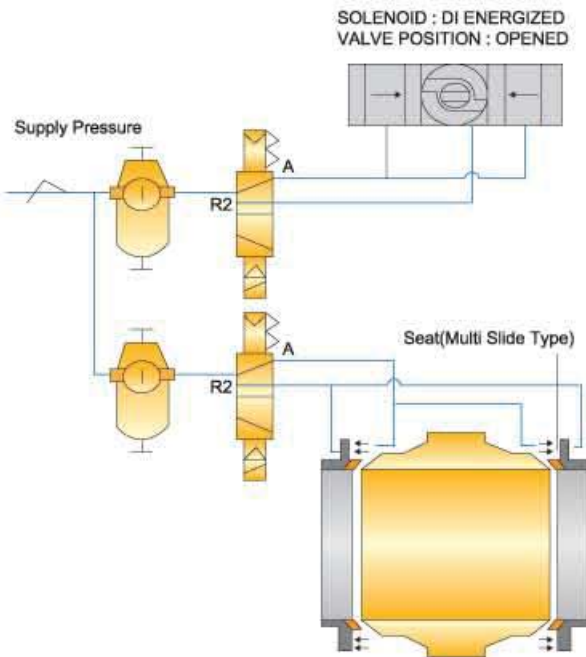
Hole is indicated when it is Valve operating, There's going to check the fluid Leak and you can determine when to replace the packing.

_ 지시된 Hole 은 Valve 작동 시 유체의 Leakage 여부를 확인하여 Packing의 교체시기를 판단하는 Hole 입니다.

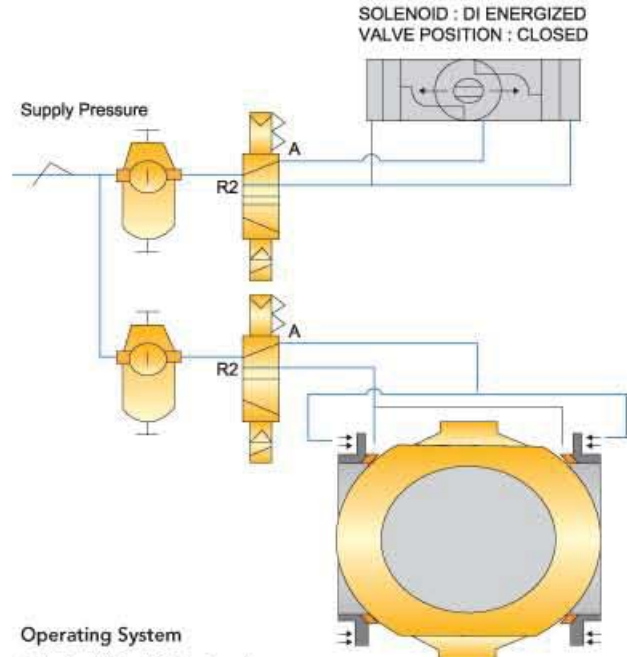
Logic Diagram



Close → Open



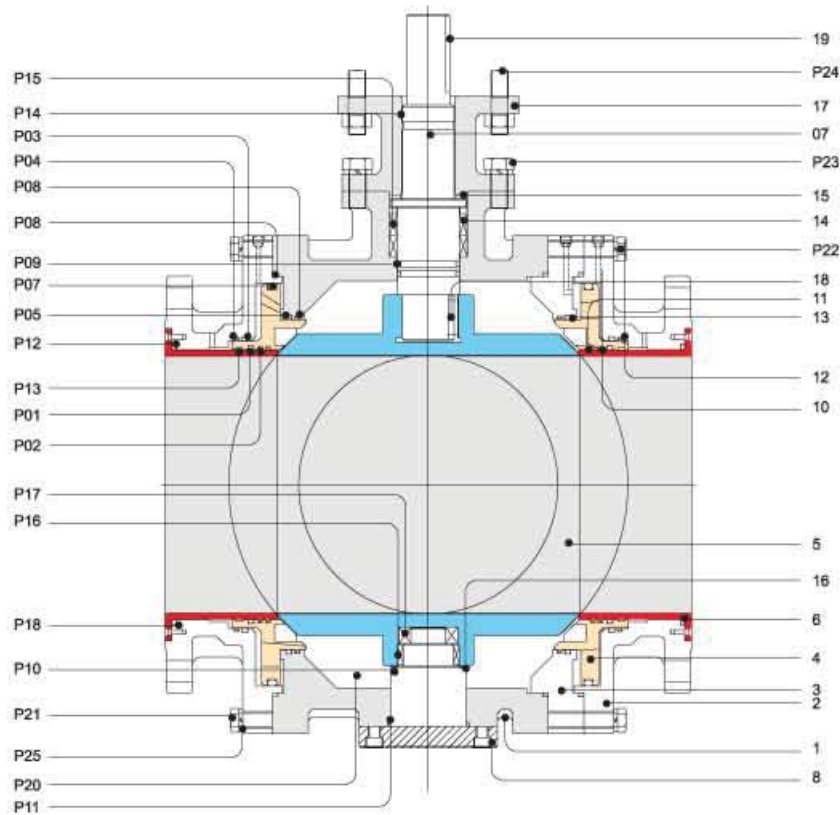
Open → Close



Operating System

- 1st - Seat (Multi Slide Type)
Separate - Open Direction
- 2nd - Actuator Rotation (Valve Open)

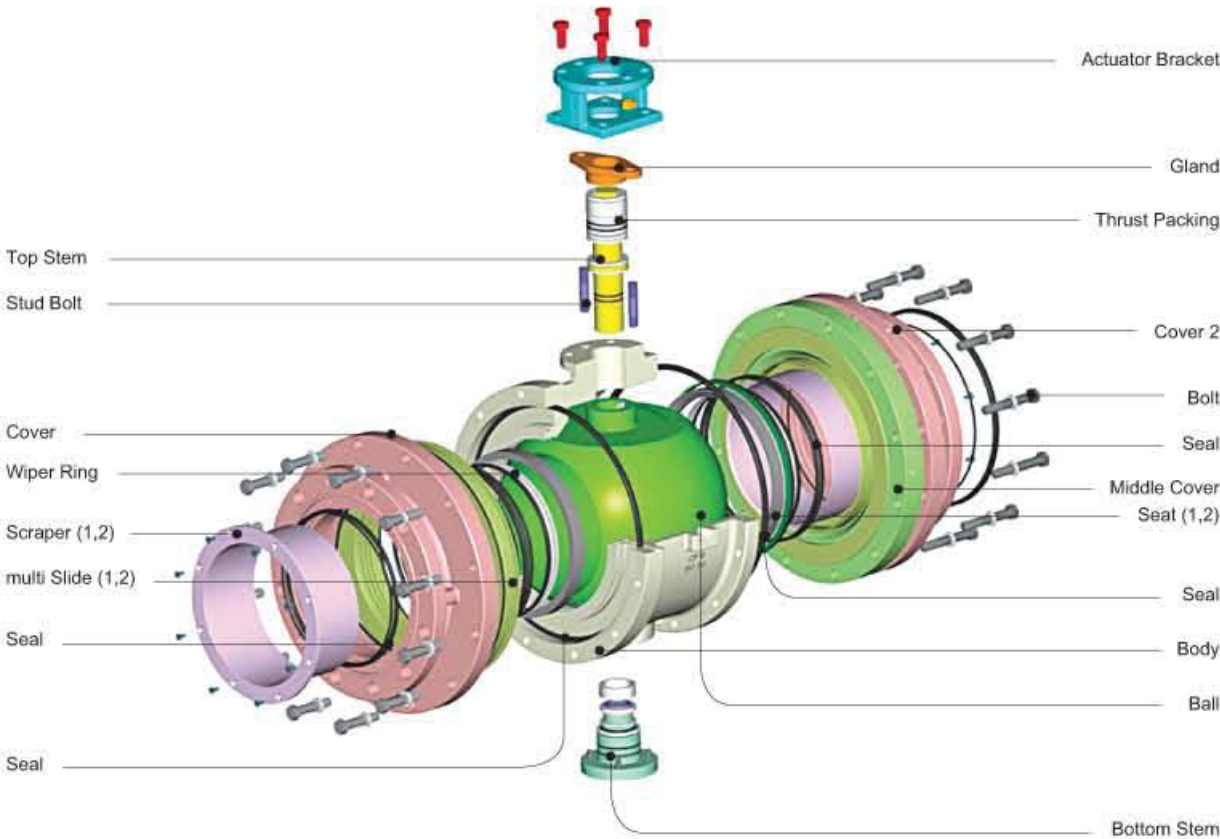
Construction



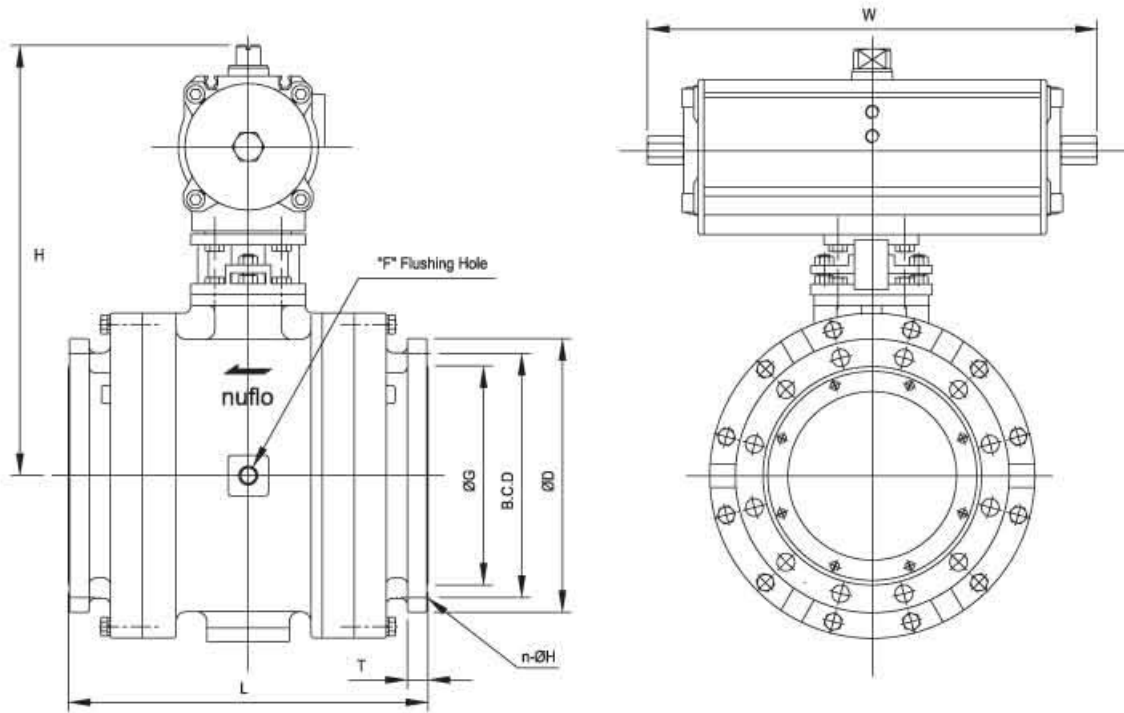
NO Part / Material / Q'TY

| | | | | | |
|----|------------------------------------|-----|--|-----|-------------------------|
| 1 | Body / Cast Steel / 1 | P01 | O Ring / Rubber / 1 | P20 | Wrench Bolt / SS / 8 |
| 2 | Cover / Cast Steel / 2 | P02 | O Ring / Rubber / 4 | P21 | Hexagon Bolt / SS / 16 |
| 3 | Middle Cover / Cast Steel / 1 | P03 | O Ring / Rubber / 2 | P22 | Hexagon Bolt / SS / 16 |
| 4 | Multi Slide Guide / Cast Steel / 2 | P04 | O Ring / Rubber / 2 | P23 | Hexagon Bolt / SS / 4 |
| 5 | Ball / Cast Steel / 1 | P05 | O Ring / Rubber / 2 | P24 | Stud Bolt / SS / 4 |
| 6 | Scraper / Cast Steel / 2 | P06 | O Ring / Rubber / 2 | P25 | Spring Washer / SS / 32 |
| 7 | Top Stem / Cast Steel / 1 | P07 | O Ring / Rubber / 2 | | |
| 8 | Bottom Stem / Cast Steel / 1 | P08 | O Ring / Rubber / 3 | | |
| 10 | Seat / Teflon / 2 | P09 | O Ring / Rubber / 2 | | |
| 11 | Wiper Ring 1 / Teflon / 4 | P10 | O Ring / Rubber / 1 | | |
| 12 | Wiper Ring 2 / Teflon / 2 | P11 | O Ring / Rubber / 1 | | |
| 13 | Wiper Ring 3 / Teflon / 2 | P12 | O Ring / Rubber / 2 | | |
| 14 | Thrust Washer 1 / Teflon / 1 | P13 | Wear Ring / ENG, Plastec / 2 | | |
| 15 | Thrust Washer 2 / Teflon / 1 | P14 | Wear Ring / ENG, Plastec / 1 | | |
| 16 | Thrust Washer / Teflon / 1 | P15 | Needle Bearing / Bearing Metal / 2 | | |
| 17 | Actuator Bracket / Cast Steel / 1 | P16 | Needle Bearing / Bearing Metal / 1 | | |
| 18 | Key 1 / SS / 2 | P17 | Taper Roller Bearing / Bearing Metal / 1 | | |
| 19 | Key 2 / SS / 1 | P18 | Flat Wrench Bolt / SS / 16 | | |

Construction



Dimension



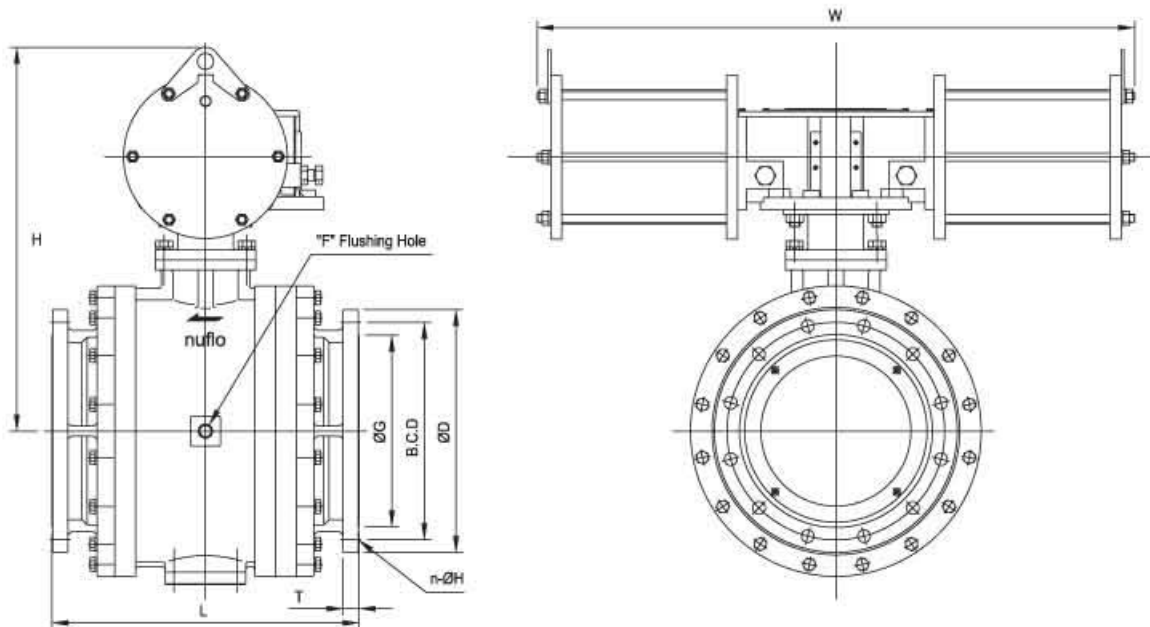
JIS 10K

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-----|-------|-----|-------|----|-----|-----|------|------------|
| 4" | 100A | 229 | 155 | 175 | 210 | 8-19 | 18 | 510 | 328 | 3/8" | 126 |
| 5" | 125A | 356 | 185 | 210 | 250 | 8-23 | 20 | 586 | 350 | 1/2" | 187 |
| 6" | 150A | 394 | 245 | 240 | 280 | 8-23 | 22 | 600 | 279 | 1/2" | 218 |
| 8" | 200A | 457 | 265 | 290 | 330 | 12-23 | 22 | 656 | 466 | 3/4" | 239 |
| 10" | 250A | 533 | 325 | 355 | 400 | 12-25 | 24 | 670 | 581 | 3/4" | 407 |

ANSI 150Lbs

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-------|-------|-----|---------|------|-----|-----|------|------------|
| 4" | 100A | 229 | 157.2 | 190.5 | 229 | 8-19.1 | 23.9 | 510 | 328 | 3/8" | 126 |
| 5" | 125A | 356 | 185.7 | 215.9 | 254 | 8-22.4 | 23.9 | 586 | 350 | 1/2" | 187 |
| 6" | 150A | 394 | 215.9 | 241.3 | 279 | 8-22.4 | 25.4 | 600 | 279 | 1/2" | 218 |
| 8" | 200A | 457 | 269.7 | 298.5 | 343 | 8-22.4 | 28.4 | 656 | 466 | 3/4" | 239 |
| 10" | 250A | 533 | 323.9 | 362 | 406 | 12-25.4 | 30.3 | 670 | 581 | 3/4" | 407 |

Dimension



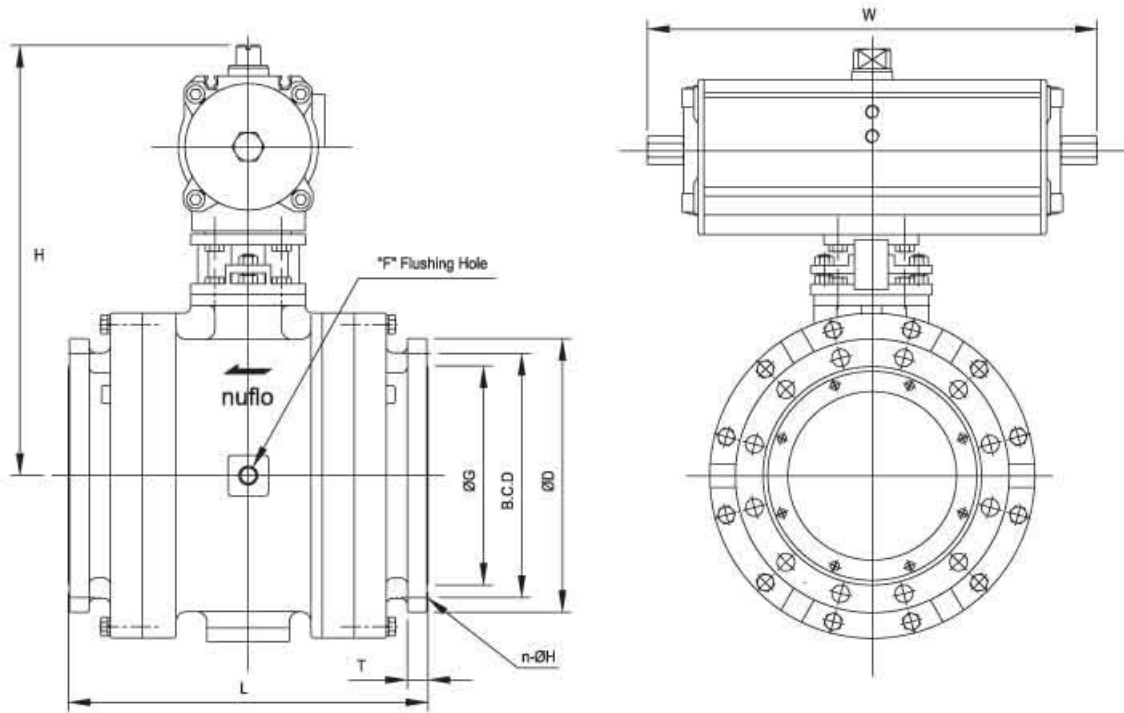
JIS 10K

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-----|-------|-----|-------|----|-----|-----|------|------------|
| 12" | 300A | 610 | 370 | 400 | 445 | 16-25 | 24 | 700 | 747 | 3/4" | 680 |
| 14" | 350A | 686 | 415 | 445 | 490 | 16-25 | 26 | 750 | 747 | 1" | 872 |
| 16" | 400A | 762 | 475 | 510 | 560 | 16-27 | 28 | 800 | 747 | 1" | 1045 |
| 18" | 450A | 864 | 530 | 565 | 620 | 20-27 | 30 | 850 | 747 | 1" | 1275 |
| 20" | 500A | 914 | 585 | 620 | 675 | 24-33 | 30 | 900 | 747 | 1" | 1705 |

ANSI 150Lbs

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-------|-------|-----|---------|------|-----|-----|------|------------|
| 12" | 300A | 610 | 381 | 431.8 | 483 | 12-25.4 | 31.8 | 700 | 747 | 3/4" | 680 |
| 14" | 350A | 686 | 412.8 | 476.3 | 533 | 12-28.4 | 35.1 | 750 | 747 | 1" | 872 |
| 16" | 400A | 762 | 469.9 | 539.8 | 597 | 16-28.4 | 36.6 | 800 | 747 | 1" | 1045 |
| 18" | 450A | 846 | 533.4 | 577.9 | 635 | 16-31.8 | 39.6 | 850 | 747 | 1" | 1275 |
| 20" | 500A | 914 | 584.2 | 635 | 699 | 20-31.8 | 42.9 | 900 | 747 | 1" | 1705 |

Dimension



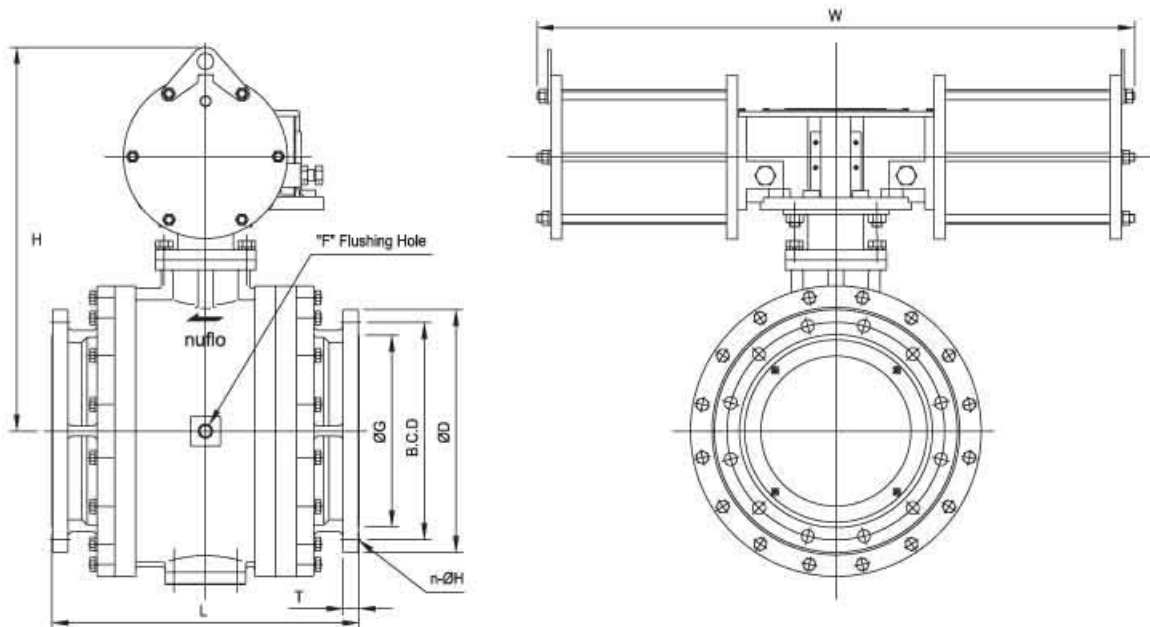
JIS 20K

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-----|-------|-----|-------|----|-----|-----|------|------------|
| 4" | 100A | 305 | 160 | 185 | 225 | 8-23 | 24 | 510 | 328 | 3/8" | 133 |
| 5" | 125A | 381 | 195 | 225 | 270 | 8-25 | 26 | 586 | 350 | 1/2" | 207 |
| 6" | 150A | 403 | 230 | 260 | 305 | 12-25 | 28 | 600 | 279 | 1/2" | 234 |
| 8" | 200A | 502 | 275 | 305 | 350 | 12-25 | 30 | 656 | 466 | 3/4" | 384 |
| 10" | 250A | 568 | 345 | 380 | 430 | 12-27 | 34 | 670 | 581 | 3/4" | 452 |

ANSI 300Lbs

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-------|-------|-----|---------|------|-----|-----|------|------------|
| 4" | 100A | 305 | 157.2 | 200.2 | 254 | 8-22.4 | 31.8 | 510 | 328 | 3/8" | 133 |
| 5" | 125A | 381 | 185.7 | 235 | 279 | 8-22.4 | 35.1 | 586 | 350 | 1/2" | 207 |
| 6" | 150A | 403 | 215.9 | 268.7 | 318 | 12-22.4 | 36.6 | 600 | 279 | 1/2" | 234 |
| 8" | 200A | 502 | 269.7 | 330.2 | 381 | 12-25.4 | 41.4 | 656 | 466 | 3/4" | 384 |
| 10" | 250A | 568 | 323.9 | 387.4 | 445 | 16-28.4 | 47.8 | 670 | 581 | 3/4" | 452 |

Dimension



JIS 20K

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-----|-------|-----|-------|----|-----|-----|------|------------|
| 12" | 300A | 648 | 395 | 430 | 480 | 16-27 | 36 | 700 | 747 | 3/4" | 727 |
| 14" | 350A | 762 | 440 | 480 | 540 | 16-33 | 40 | 750 | 747 | 1" | 977 |
| 16" | 400A | 868 | 495 | 540 | 605 | 16-33 | 46 | 800 | 747 | 1" | 1075 |
| 18" | 450A | 914 | 560 | 605 | 675 | 20-33 | 48 | 850 | 747 | 1" | 1535 |
| 20" | 500A | 991 | 615 | 660 | 730 | 20-33 | 50 | 900 | 747 | 1" | 1945 |

ANSI 300Lbs

| inch | mm | L | ØG | B.C.D | ØD | n-ØH | T | H | W | F | Weight(kg) |
|------|------|-----|-------|-------|-----|---------|-------|-----|-----|------|------------|
| 12" | 300A | 648 | 381 | 450.9 | 521 | 16-31.8 | 500.8 | 700 | 747 | 3/4" | 727 |
| 14" | 350A | 762 | 412.8 | 514.4 | 584 | 20-31.8 | 53.8 | 750 | 747 | 1" | 977 |
| 16" | 400A | 838 | 469.9 | 571.5 | 648 | 20-35.1 | 57.2 | 800 | 747 | 1" | 1075 |
| 18" | 450A | 914 | 533.4 | 628.7 | 711 | 24-35.1 | 60.5 | 850 | 747 | 1" | 1535 |
| 20" | 500A | 991 | 584.2 | 685.8 | 775 | 24-35.1 | 63.5 | 900 | 747 | 1" | 1945 |

Working Process Picture



Typical Application



The solution
for **today!**
The standard
for **tomorrow!**

UNIFLO Co., Ltd. _____

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