



nuflo[®] Control Valve

Actuator Built-in



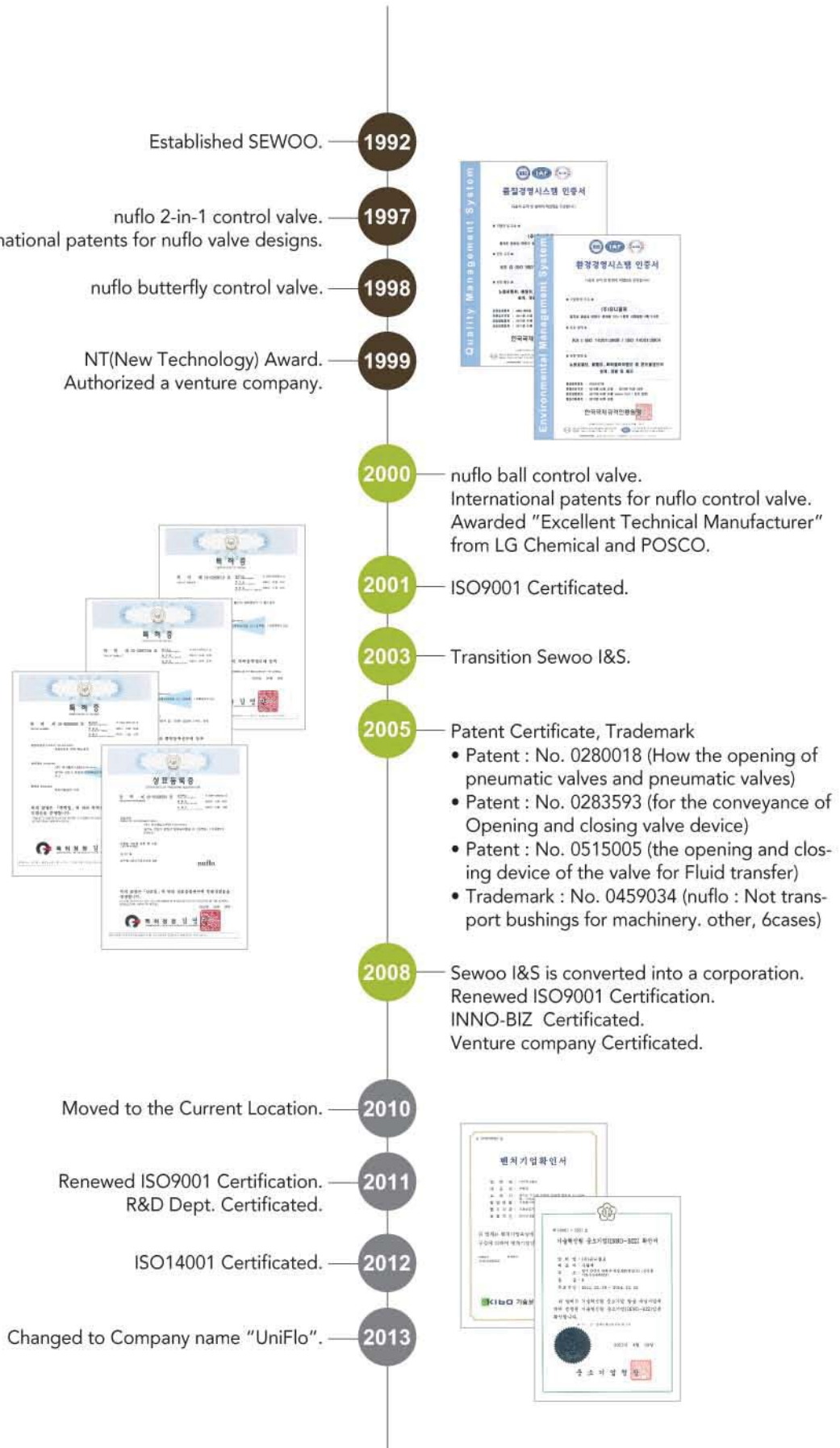
INNOBIZ
Innovation Association

Venture for
Tomorrow

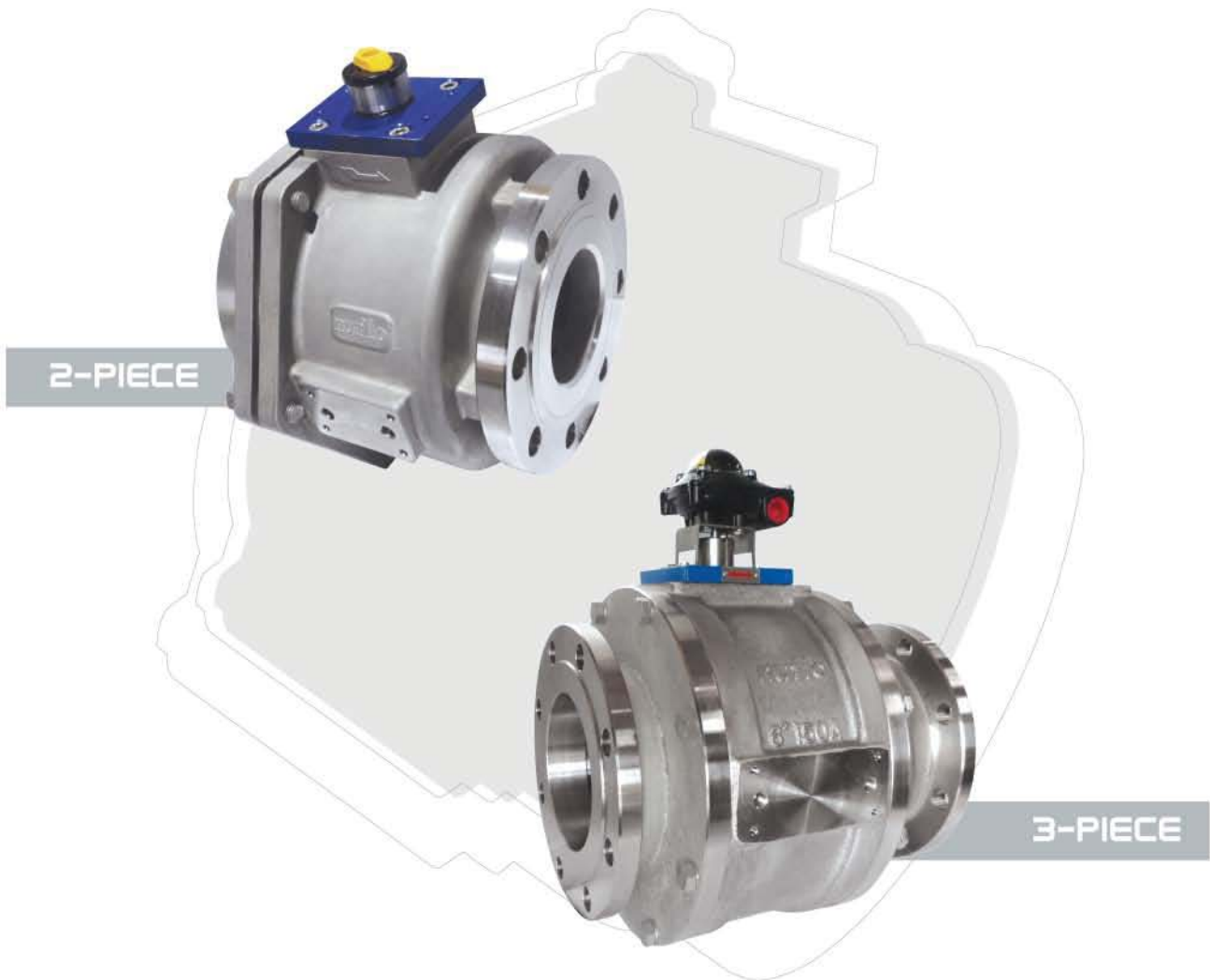


UNIFLO[®]

Company History



What is nuflo Valve?



Actuator Built-in Type Pneumatic Control Valve in New Concept

액츄에이터 내장형 신개념 컨트롤 밸브.

- Compact Design _ 간단한 외관구조
- Low operation Torque _ 작은 토크로 작동
- Low air consumption _ 적은 AIR 소모량
- Water Hammering Protection _ Water Hammering 방지
- No leakage around stem _ Stem 부위의 누수 없음
- Self cleaning seat _ Seat 부위 자동세척

Why nuflo Valve?

Features

nuflo® valve have superior life.

- _ nuflo®의 월등한 수명 유지.

Prevent Water Hammering.

- _ Water Hammering 방지.

Suitable for various Vacuum Line (Max 740mmHg).

- _ 각종 진공라인에 적합 (Max 740mmHg).

Best application for corrosion and toxic fluid.

- _ 부식물과 독극물 유체 라인에 최적화.

Best application for slurry and Tar fluid Line.

- _ 이물질과 타르 유체 라인에 최적화.

ANSI Class VI Seat tightness.

- _ ANSI Leakage Class VI의 누수 방지.

Applications

Where needed long life warranty.

- _ 장기간 수명을 보장 받아야 하는 곳.

Space-constrained locations.

- _ 공간의 제약이 많은 곳.

Where needed no leak.

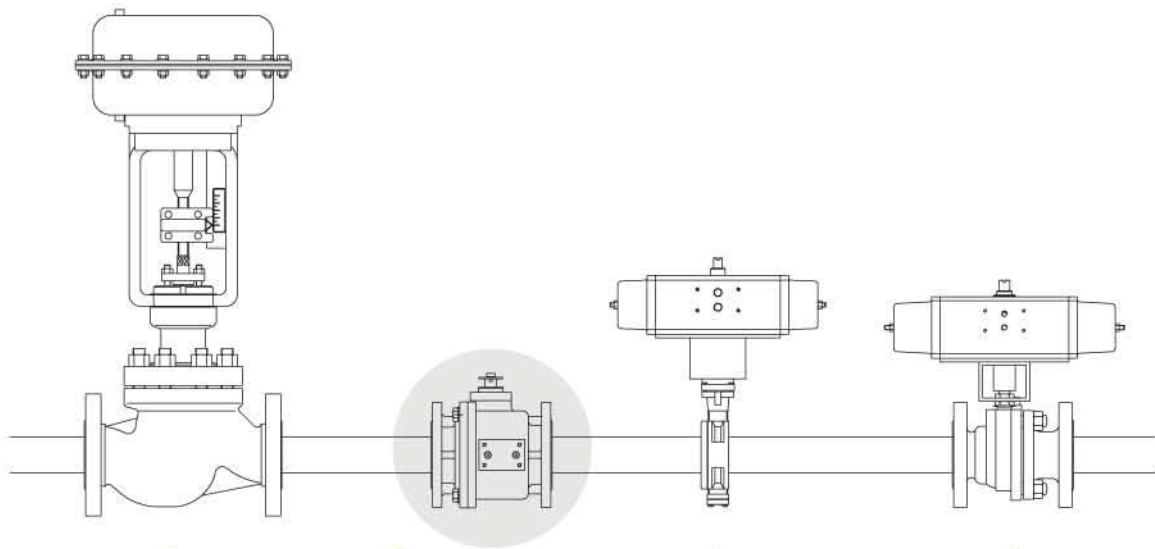
- _ 외부로 유체가 누수 되지 않아야 하는 곳.

Where needed material cost savings When plumbing.

- _ 배관 공사 시 공간절감 및 자재비 절감이 필요한 곳.

Where needed Easy on-site maintenance and repair.

- _ 간단한 현장 유지, 보수가 필요한 곳.



Glove Valve

Compact Design

Butterfly Valve

Ball Valve

Specification



Control Type	ON-OFF / Modulating
Size	15A ~ 500A (½"~20")
Actuation	Pneumatic (2~8 / for DOUBLE ACTING, 3.5~8 / for SPRING RETURN)
Rotation Angle	90°
Connection for accessories	Namur Standard(VDE/VDI 3845)
Body Material	SCS13 / A351 CF8, SCS14 / A351 CF8M, SCS16 / A351 CF3M
Seat Material	PTFE / RTFE / PEEK / METAL
Packing (O-Ring / Quad-Ring)	NBR / VITON / EPDM / SILICONE
Temperature	-20°C ~ 100°C / 100°C ~ 200°C (Option)
Rating	ANSI 150#, 300#, 600# / DIN2501 PN10,16,25,40 / JIS 10K, 20K, 40K
End Connection	RF FLANGE
Tightness	ANSI CLASS V, VI
Operating Time (Sec.)	½"~2" : 0.3~0.5, 2½"~ 4" : 0.5~0.8, 5" ~ 8" : 0.5~1.5, 10"~16" : 1~3, 16"~20" : 2~5
Fluid	Air, Water, Gas, Tar, Petrochemical related products, Slurry liquid, Aggressive fluid.

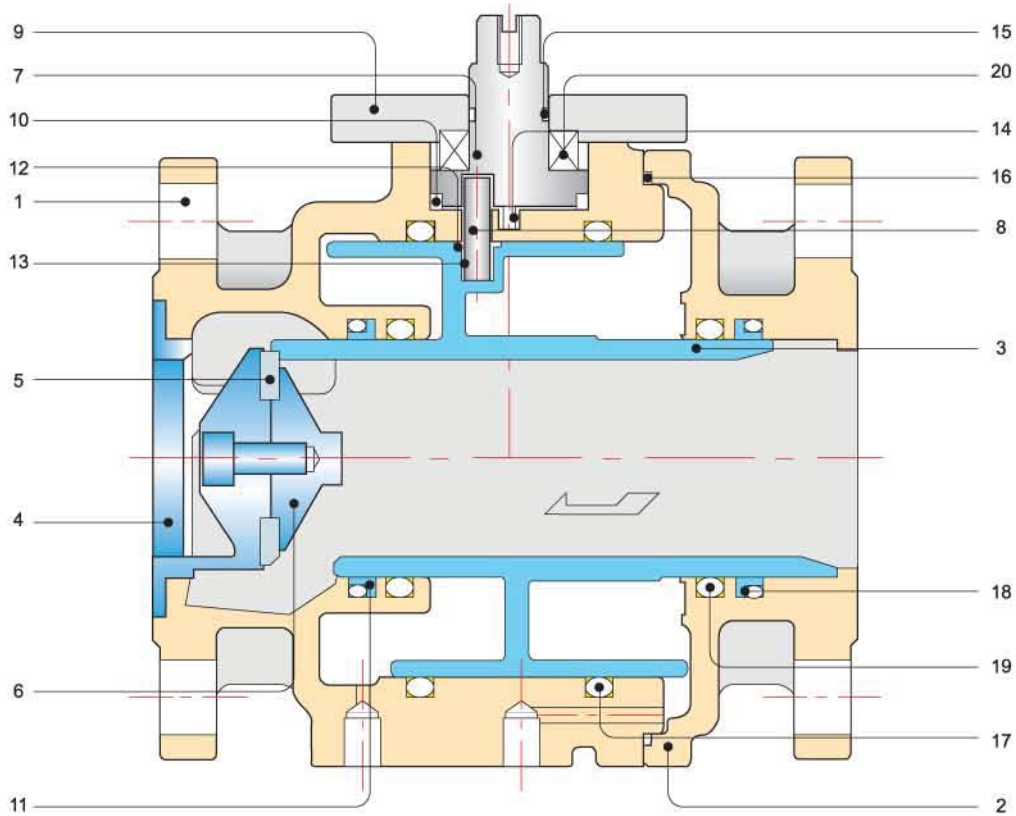
American Society of Mechanical Engineers

- 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

nuflo Construction



Parts

Disc

Operating by Small Torque.

– 적은 토크로 작동.

Port Trim

Designed for tight Sealing.

– 완벽한 Sealing(누수방지)구조로 설계.

Port Base

Guide provided for seat.

– 시트의 위치를 가이드 함.

Stem

Ready for various application of accessory.

– 다양한 악세서리 적용 가능.

Packing

Tight Sealing & Long life cycle.

– 최고의 봉합효과로 Disc작동 시 유체의 누수현상을 방지.

Seat

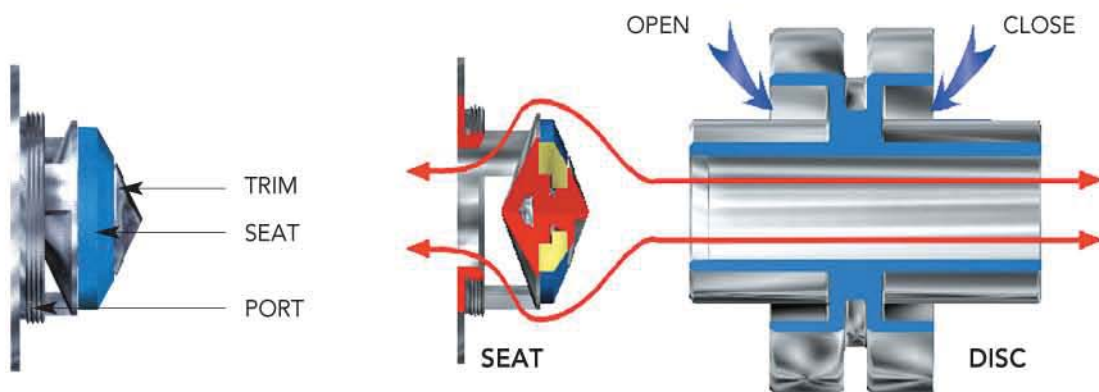
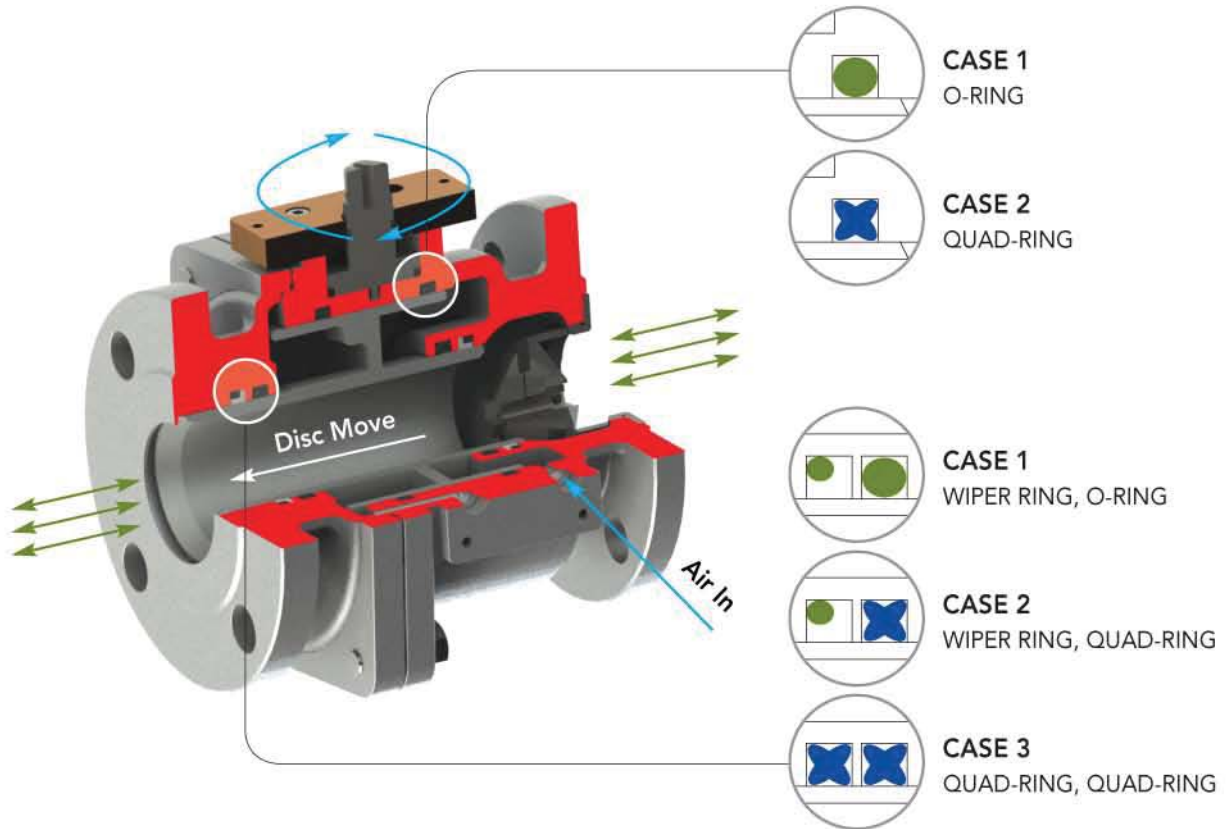
Replaceable for types of fluids, temp. etc.

– 다양한 유체의 유형과 온도의 범위에 따라 교체 가능.

NO Part / Material

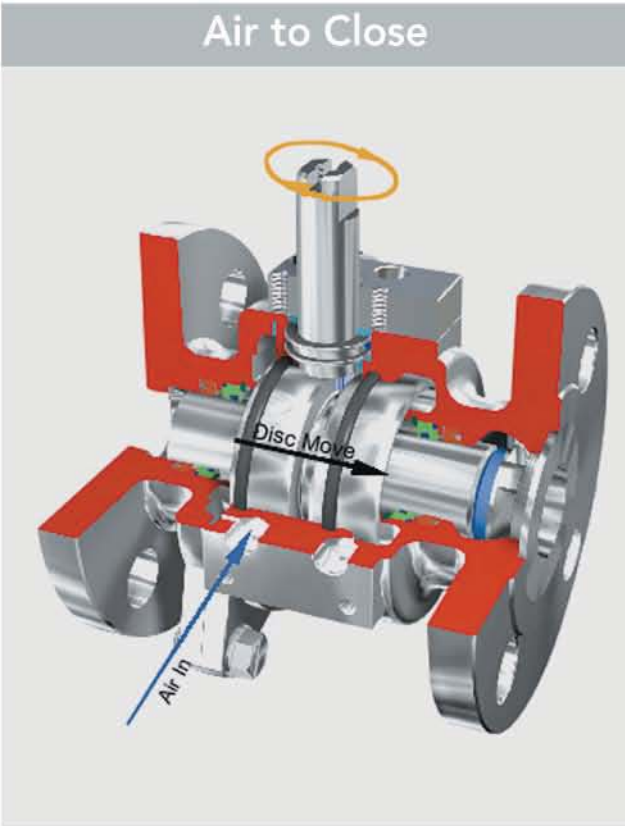
- | | |
|----|--|
| 1 | Valve Body / Stainless Steel |
| 2 | Cover / Stainless Steel |
| 3 | Disc / Stainless Steel |
| 4 | Port Base / Stainless Steel |
| 5 | Seat / PTFE / RTFE / PEEK / METAL |
| 6 | Port Trim / Stainless Steel |
| 7 | Stem / Stainless Steel |
| 8 | Stem Pin / Piano Steel |
| 9 | Stem Plate / Al Alloy |
| 10 | Stem Guide Ring / Brass |
| 11 | Wiper Ring / Quad-Ring / PTFE / Rubber |
| 12 | Thrust Washer / PTFE |
| 13 | Inner Ring / Bearing Metal |
| 14 | DU-Bush / Alloy |
| 15 | O-Ring / Rubber |
| 16 | O-Ring / Rubber |
| 17 | O-Ring / Quad-Ring / Rubber |
| 18 | O-Ring / Quad-Ring / Rubber |
| 19 | O-Ring / Quad-Ring / Rubber |
| 20 | Ball Bearing / Bearing Metal |

Packing Application



Double Acting

Air to Close

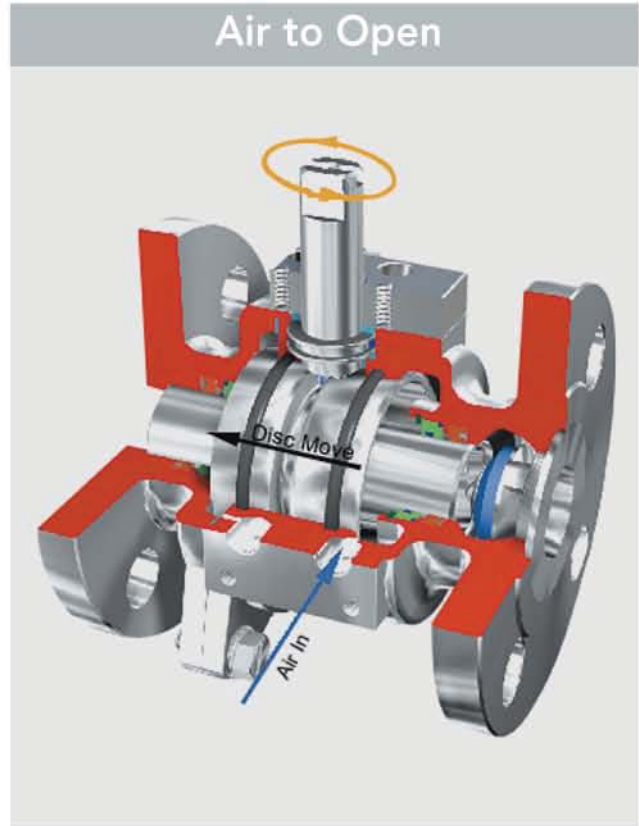


STEM ROTATE (Counter Clockwise 90°)

Supplying air through the AIR PORT "A", the disc move towards the seat direction. And stem rotate clockwise direction. The above drawing shows the final position.

— AIR PORT "A"로 에어를 공급했을 때, 디스크가 시트방향으로 움직이게 됩니다. 그리고 STEM은 시계방향으로 회전합니다. 도면은 최종 위치를 보여줍니다.

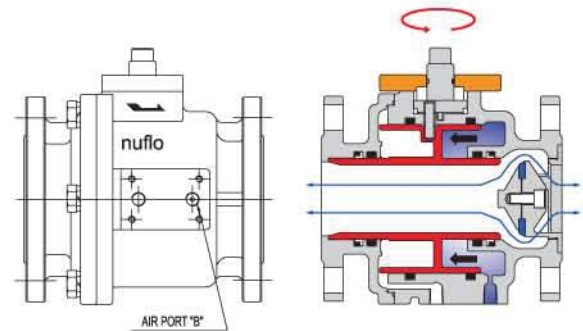
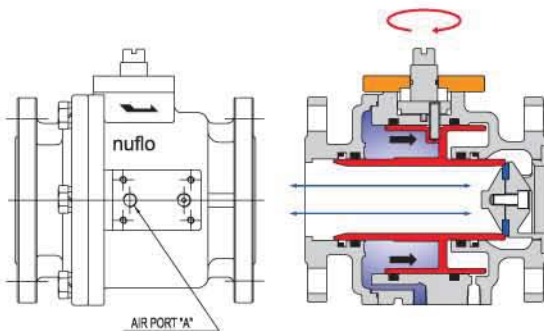
Air to Open



STEM ROTATE (Clockwise 90°)

Supplying air through the AIR PORT "B", the disc move outwards direction. And stem rotate counter clockwise direction. The above drawing shows final position.

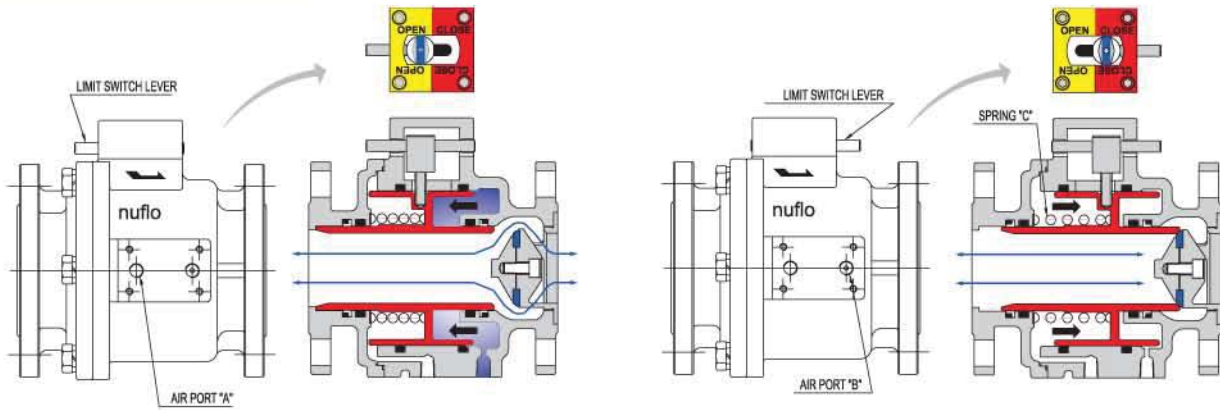
— AIR PORT "B"로 에어를 공급했을 때, 디스크가 바깥쪽 방향으로 움직이게 됩니다. 그리고 STEM은 반시계방향으로 회전합니다. 도면은 최종 위치를 보여줍니다.



Spring Return

Less than 4" linear type stem apply. _ 4인치 이하 linear type stem 적용.

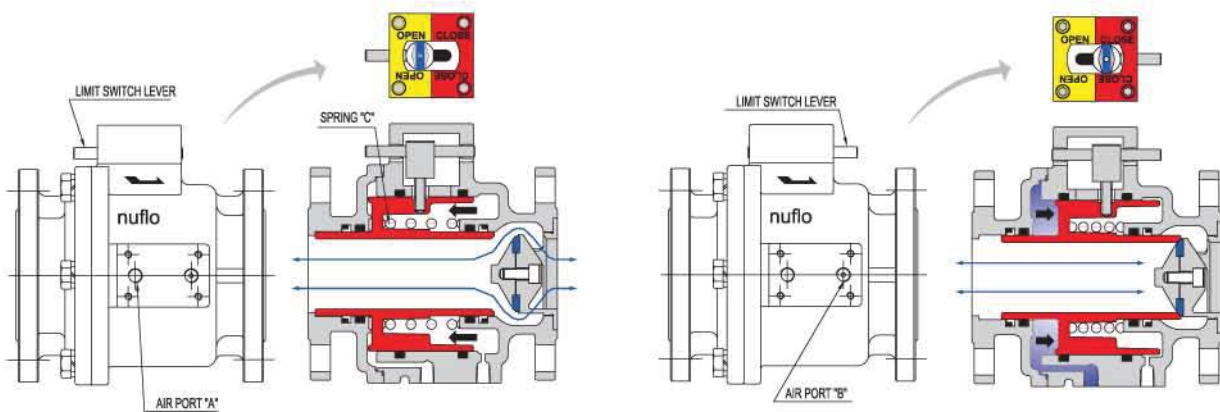
Fail to Close



Supplying air through the AIR PORT "B", the disc & limit switch lever outwards direction. Without air supply, the disc & limit switch lever of single acting valve(fall close) towards the seat direction due to spring. The above drawing shows the final position.

_ AIR PORT "B"로 에어를 공급했을 때, 디스크와 리미트 스위치 레버가 바깥쪽으로 움직이게 됩니다. 에어공급이 없을 때, 단동식 밸브(fall close)는 SPRING "C"에 의해 스위치 레버가 시트방향으로 움직이게 됩니다. 도면은 최종 위치를 보여줍니다.

Fail to Open



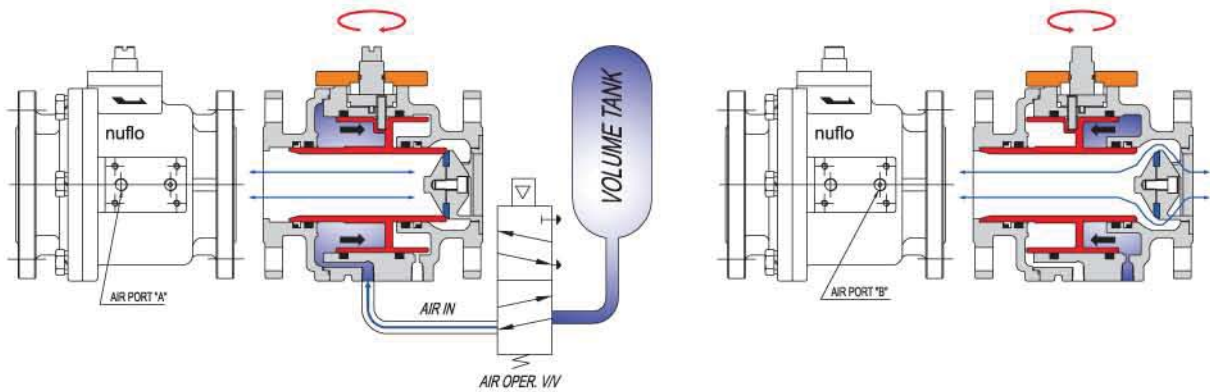
Supplying air through the AIR PORT "A", the disc & limit switch lever towards the seat direction. Without air supply, the disc & limit switch lever of single acting valve(fall open) outwards direction due to spring. The above drawing shows the final position.

_ AIR PORT "A"로 에어를 공급했을 때, 디스크와 리미트 스위치 레버가 시트방향으로 움직이게 됩니다. 에어공급이 없을 때, 단동식 밸브(fall close)는 SPRING "C"에 의해 스위치 레버가 바깥쪽 방향으로 움직이게 됩니다. 도면은 최종 위치를 보여줍니다.

Single Acting by Volume Tank

A whole size apply. _ 전체 사이즈 적용.

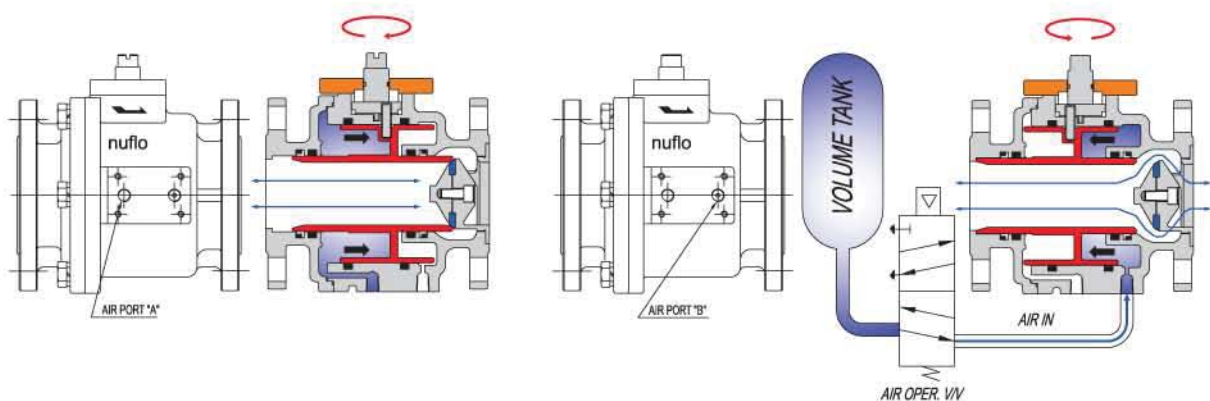
Fail to Close



Supplying air through the AIR PORT "B", the disc outwards direction. Without air supply, the disc of single acting valve(fall close) towards the seat direction due to Volume Tank. The above drawing shows the final position.

_ AIR PORT "B"로 에어를 공급했을 때, 디스크가 바깥쪽 방향으로 움직이게 됩니다. 에어공급이 없을 때, 볼륨탱크에 의해서 디스크가 시트방향으로 움직이게 됩니다. 도면은 최종 위치를 보여줍니다.

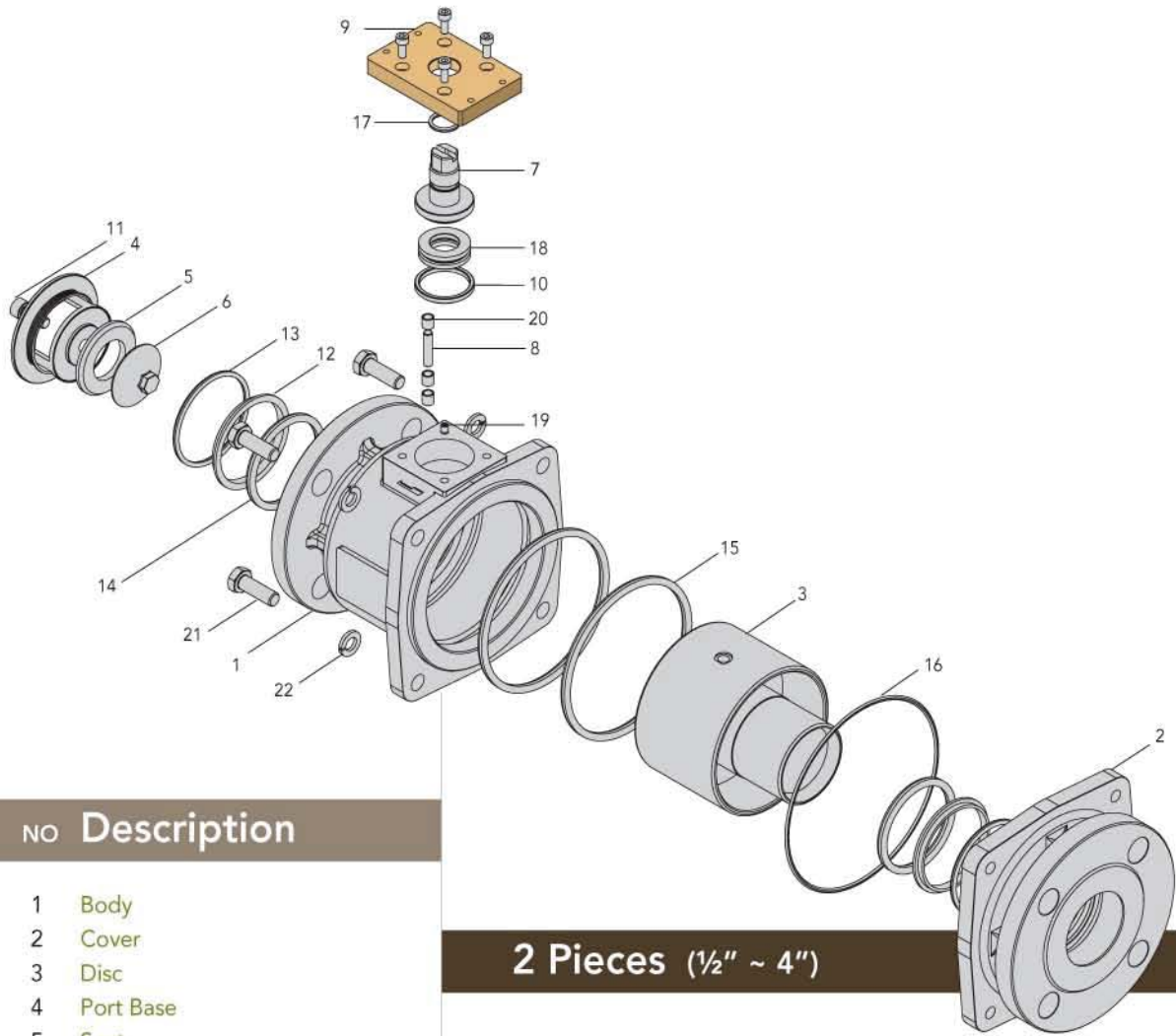
Fail to Open



Supplying air through the AIR PORT "A", the disc towards the seat direction. Without air supply, the disc of single acting valve(fall open) outwards direction due to Volume Tank. The above drawing shows the final position.

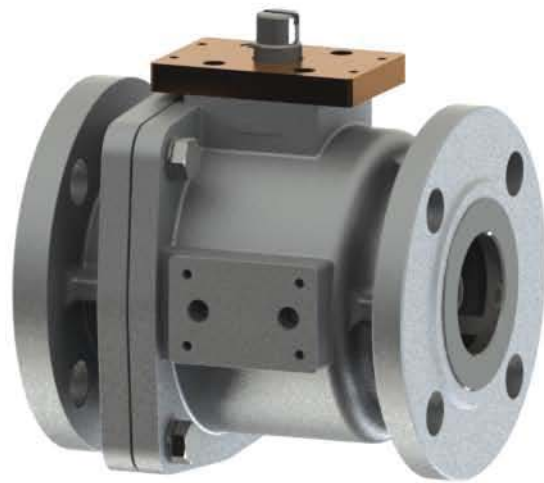
_ AIR PORT "A"로 에어를 공급했을 때, 디스크가 시트방향으로 움직이게 됩니다. 에어공급이 없을 때, 볼륨탱크에 의해서 디스크가 바깥쪽 방향으로 움직이게 됩니다. 도면은 최종 위치를 보여줍니다.

Part List

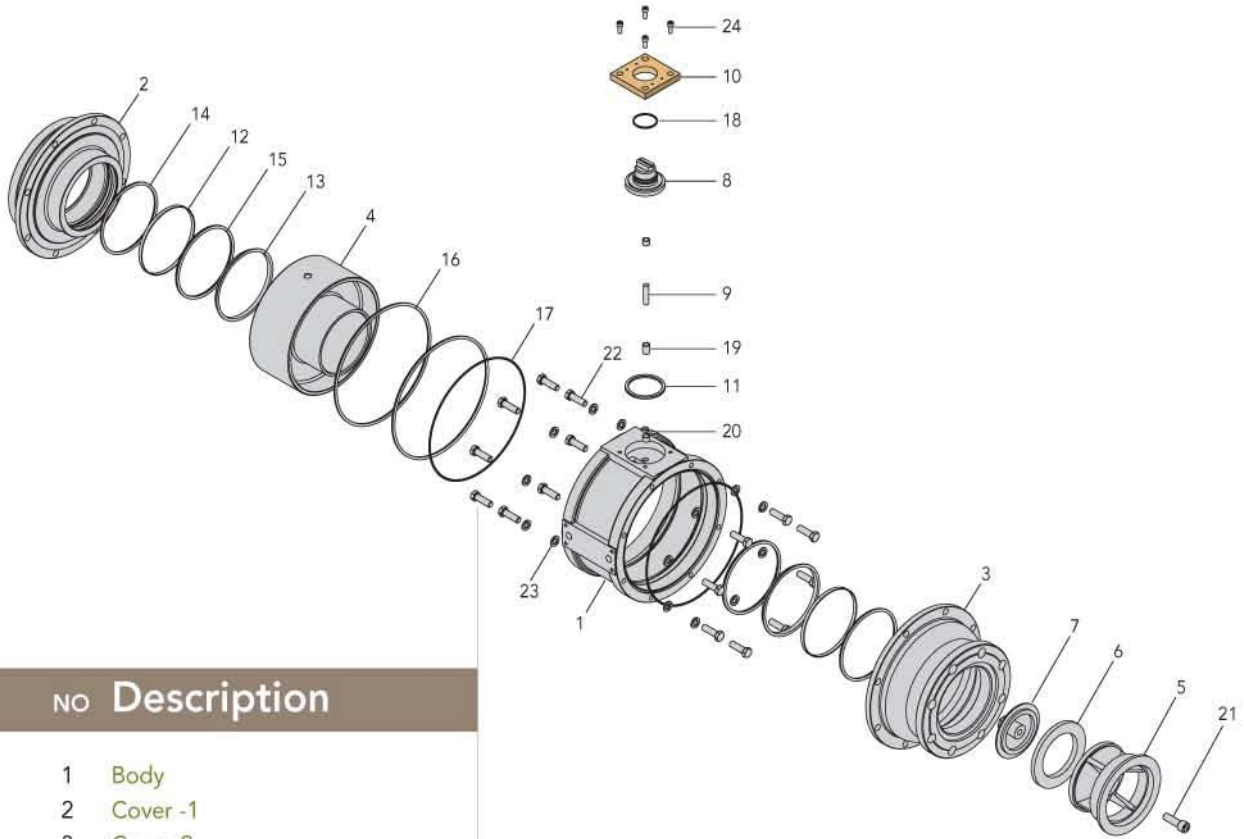


NO	Description
----	-------------

- | | |
|----|------------------------|
| 1 | Body |
| 2 | Cover |
| 3 | Disc |
| 4 | Port Base |
| 5 | Seat |
| 6 | Port Trim |
| 7 | Stem |
| 8 | Stem Pin |
| 9 | Stem Plate |
| 10 | Stem Guide Ring |
| 11 | Port Base Bolt |
| 12 | Wiper Ring / Quad-Ring |
| 13 | O-Ring / Quad-Ring |
| 14 | O-Ring / Quad-Ring |
| 15 | O-Ring / Quad-Ring |
| 16 | O-Ring |
| 17 | O-Ring |
| 18 | Ball Bearing |
| 19 | DU Bush |
| 20 | Inner Ring |
| 21 | Body Bolt |
| 22 | Spring Washer |



Part List



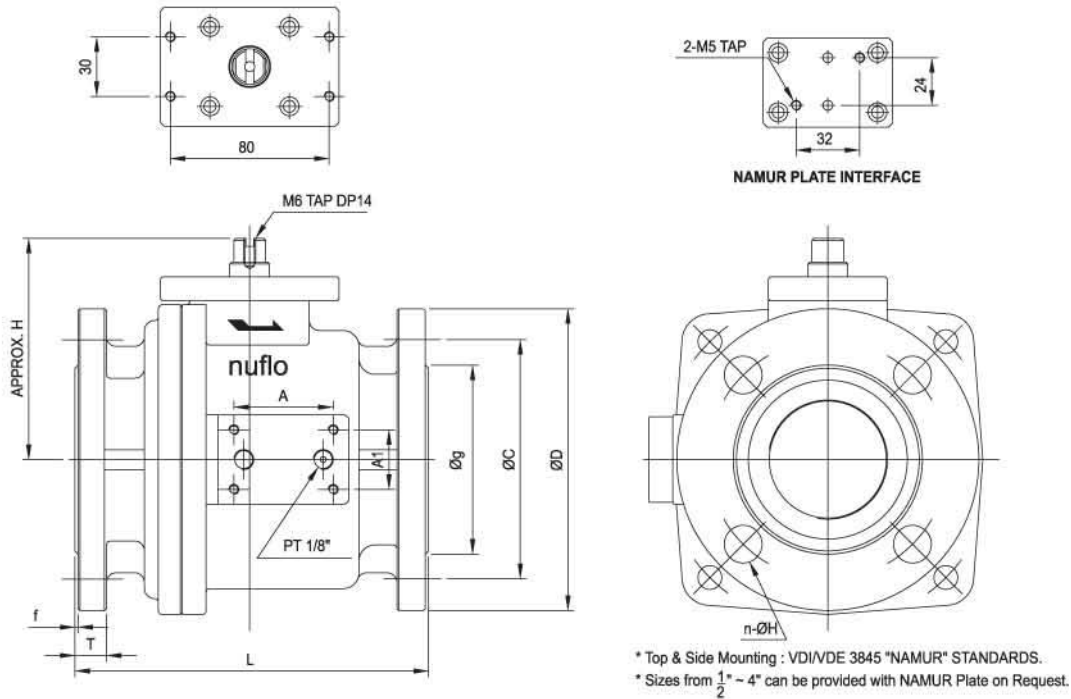
NO Description

- 1 Body
- 2 Cover -1
- 3 Cover-2
- 4 Disc
- 5 Port Base
- 6 Seat
- 7 Port Trim
- 8 Stem
- 9 Stem Pin
- 10 Stem Plate
- 11 Sten Guide Ring
- 12 Wear Ring
- 13 Wiper Ring / Quad Ring
- 14 O-Ring / Quad Ring
- 15 O-Ring / Quad Ring
- 16 O-Ring / Quad Ring
- 17 O-Ring
- 18 O-Ring
- 19 Inner Ring
- 20 DU Bush
- 21 Port Base Bolt
- 22 Body Bolt
- 23 Spring Washer
- 24 Plate Bolt

3 Pieces (5" ~ 20")



Dimension



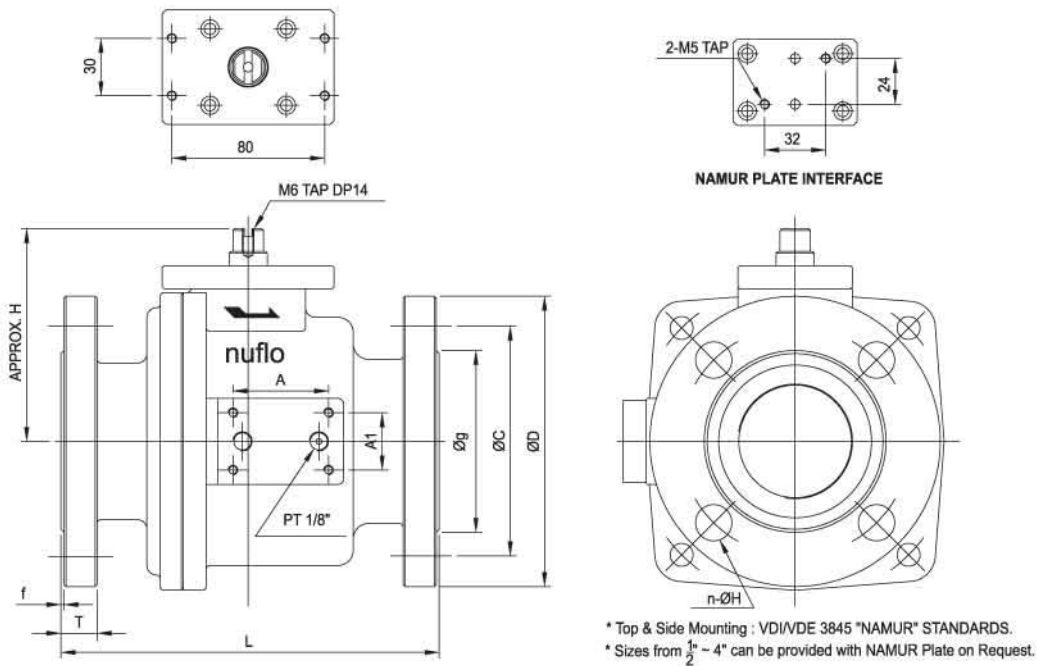
JIS 10K

Size	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
	mm	15A	20A	25A	32A	40A	50A	65A	80A	100A
L	mm	108	108	127	166	166	178	190	203	229
H	mm	91.5	91.5	94	109.5	109.5	112	130	154	168
g	mm	51	56	65	76	85	96	120	130	151
C	mm	70	75	90	100	105	120	140	150	175
D	mm	95	100	125	135	140	155	175	195	210
T	mm	12	14	14	16	16	16	18	18	18
f	mm	1	1	2	2	2	2	2	2	2
n-ØH		4-M12	4-M12	4-19	4-19	4-19	4-19	4-19	8-19	8-19
Stroke	mm	9.8	9.8	10	16	16	16	21	24	28
Weight	(Approx.)kg	8	8	9	10.5	11.5	13.7	20	30	36
Air Con.	/hr/Half Cycle	4.6	4.6	6.2	13.3	13.3	17.9	25.5	83.5	114.7
A	mm	24	24	24	49	49	50	50	60	60
A1	mm	32	32	32	29	29	30	32	32	32

ANSI 150Lbs

Size	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
	mm	15A	20A	25A	32A	40A	50A	65A	80A	100A
L	mm	108	108	127	166	166	178	190	203	229
H	mm	91.5	91.5	94	109.5	109.5	112	130	154	168
g	mm	35	43	51	64	73	92	105	127	157
C	mm	60.5	70	79.5	89	98.5	120.5	139.5	152.5	190.5
D	mm	89	98	108	117	127	152	178	190	229
T	mm	11.2	14	14.3	15.9	17.5	19.1	22.3	23.9	23.9
f	mm	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
n-ØH		4-M12	4-M12	4-15	4-15	4-15	4-19	4-19	4-19	8-19
Stroke	mm	9.8	9.8	10	16	16	16	21	24	28
Weight	(Approx.)kg	8	8	9	10.5	11.5	13.7	20	30	36
Air Con.	/hr/Half Cycle	4.6	4.6	6.2	13.3	13.3	17.9	25.5	83.5	114.7
A	mm	24	24	24	49	49	50	50	60	60
A1	mm	32	32	32	29	29	30	32	32	32

Dimension



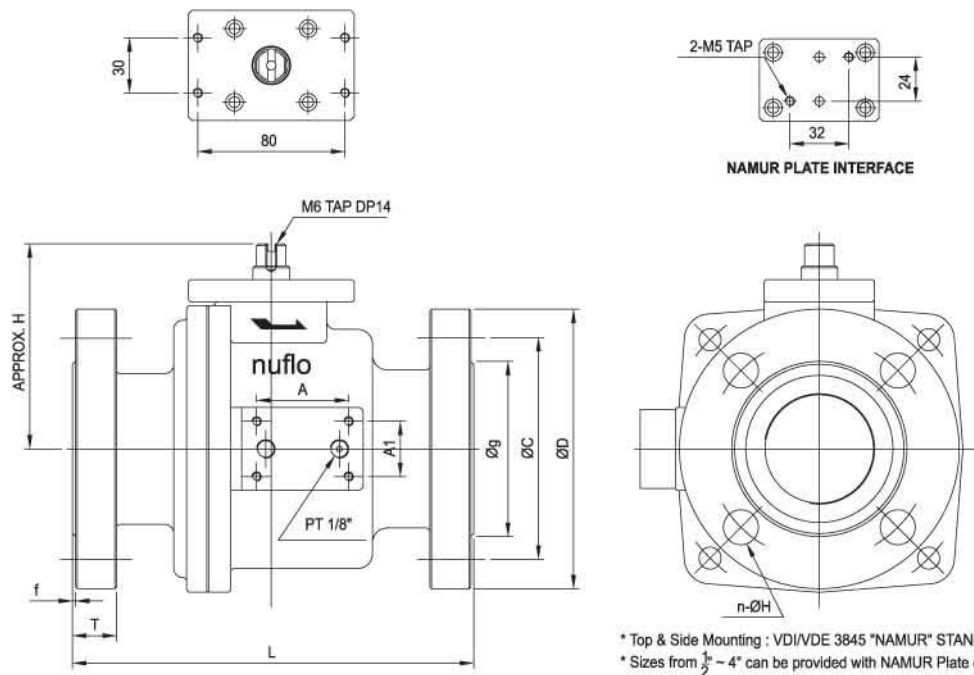
JIS 20K

Size	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
	mm	15A	20A	25A	32A	40A	50A	65A	80A	100A
L	mm	140	152	165	178	190	216	241	283	305
H	mm	91.5	91.5	94	109.5	109.5	112	130	154	168
g	mm	51	56	67	76	81	96	116	132	160
C	mm	70	75	90	100	105	120	140	160	185
D	mm	95	100	125	135	140	155	175	200	225
T	mm	14	16	16	18	18	18	20	22	24
f	mm	1	1	1	2	2	2	2	2	2
n-ØH		4-15	4-15	4-19	4-19	4-19	8-19	8-19	8-23	8-23
Stroke	mm	9.8	9.8	10	16	16	16	21	24	28
Weight	(Approx.)kg	9	9	10	12	13	16	22	33	40
Air Con.	/hr/Half Cycle	4.6	4.6	6.2	13.3	13.3	17.9	25.5	83.5	114.7
A	mm	24	24	24	49	49	50	50	60	60
A1	mm	32	32	32	29	29	30	32	32	32

ANSI 300Lbs

Size	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
	mm	15A	20A	25A	32A	40A	50A	65A	80A	100A
L	mm	140	152	165	178	190	219	241	283	305
H	mm	91.5	91.5	94	109.5	109.5	112	130	154	168
g	mm	35	43	51	64	73	92	105	127	157
C	mm	66.5	82.6	89	98.5	114.5	127	149	168	200
D	mm	95	117	124	133	156	165	190	210	254
T	mm	14.3	15.7	17.5	19.1	20.7	22.3	25.4	28.6	31.8
f	mm	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
n-ØH		4-16	4-19	4-19	4-19	4-22	8-19	8-22	8-22	8-22
Stroke	mm	9.8	9.8	10	16	16	16	21	24	28
Weight	(Approx.)kg	9	9	10	12	13	16	22	33	40
Air Con.	/hr/Half Cycle	4.6	4.6	6.2	13.3	13.3	17.9	25.5	83.5	114.7
A	mm	24	24	24	49	49	50	50	60	60
A1	mm	32	32	32	29	29	30	32	32	32

Dimension



* Top & Side Mounting : VDI/VDE 3845 "NAMUR" STANDARDS.
 * Sizes from 1/2" - 4" can be provided with NAMUR Plate on Request.

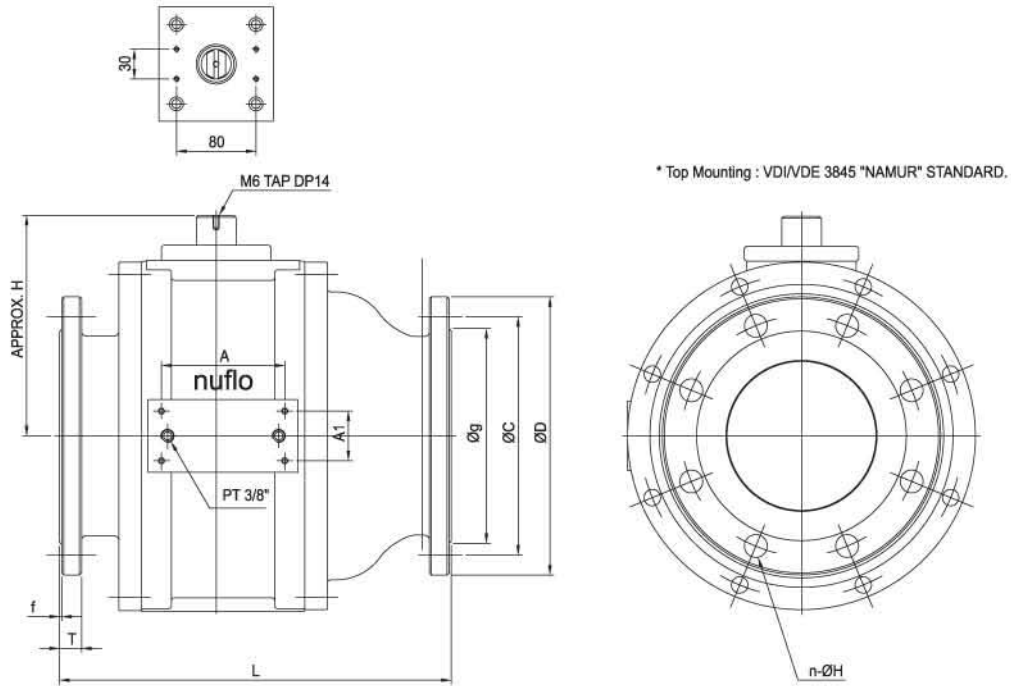
JIS 40K

Size	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
	mm	15A	20A	25A	32A	40A	50A	65A	80A	100A
L	mm	165	190	216	241	241	292	330	356	432
H	mm	91.5	91.5	94	109.5	109.5	112	130	154	168
g	mm	51	60	70	80	90	105	130	140	165
C	mm	80	85	95	105	120	130	160	170	205
D	mm	115	120	130	140	160	165	200	210	250
T	mm	20	20	22	24	24	26	60	32	36
f	mm	1	1	1	2	2	2	2	2	2
n-ØH		4-19	4-19	4-19	4-19	4-23	8-19	8-23	8-23	8-25
Stroke	mm	9.8	9.8	10	16	16	16	21	24	28
Weight	(Approx.)kg	10	10	12	14	15	18	26	39	47
Air Con.	/hr/Half Cycle	4.6	4.6	6.2	13.3	13.3	17.9	25.5	83.5	114.7
A	mm	24	24	24	49	49	50	50	60	60
A1	mm	32	32	32	29	29	30	32	32	32

ANSI 600Lbs

Size	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
	mm	15A	20A	25A	32A	40A	50A	65A	80A	100A
L	mm	165	190	216	241	241	292	330	356	432
H	mm	91.5	91.5	94	109.5	109.5	112	130	154	168
g	mm	35	43	51	64	73	92	105	127	157
C	mm	66.5	82.6	89	98.5	114.5	127	149	168	216
D	mm	95	117	124	133	156	165	190	210	273
T	mm	14.2	15.7	23.9	27.1	28.7	31.8	35.	38.2	44.5
f	mm	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
n-ØH		4-16	4-19	1-19	4-19	4+22	8-19	8-22	8-22	8-25
Stroke	mm	9.8	9.8	10	16	16	16	21	24	28
Weight	(Approx.)kg	10	10	12	14	15	18	26	39	47
Air Con.	/hr/Half Cycle	4.6	4.6	6.2	13.3	13.3	17.9	25.5	83.5	114.7
A	mm	24	24	24	49	49	50	50	60	60
A1	mm	32	32	32	29	29	30	32	32	32

Dimension



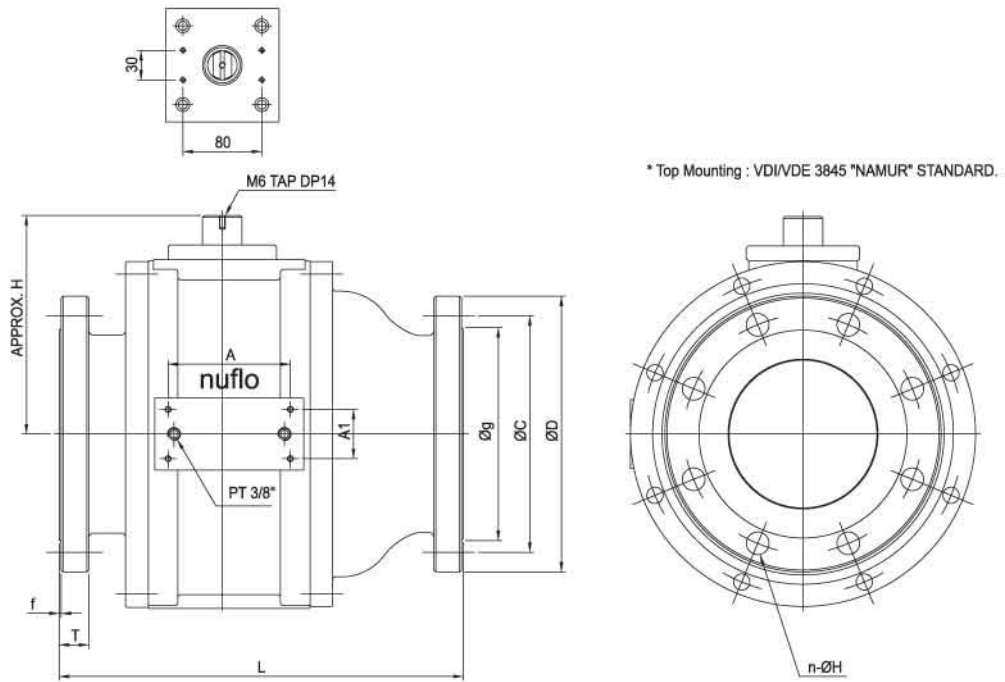
JIS 10K

Size	inch	5"	6"	8"	10"	12"	14"	16"	18"	20"
	mm	125A	150A	200A	250A	300A	350A	400A	450A	500A
L	mm	356	394	457	533	610	686	864	864	914
H	mm	240	250	256	286	390	424	439	449	500
g	mm	155	215	262	324	368	413	475	530	585
C	mm	210	240	290	355	400	445	510	565	620
D	mm	250	280	330	400	445	490	560	620	675
T	mm	20	22	22	24	24	26	28	30	30
f	mm	2	2	2	2	3	3	3	3	3
n-ØH		8-23	8-23	12-23	12-25	16-25	16-25	16-27	20-27	20-27
Stroke	mm	32	37.5	50	63	75	87.5	100	100	100
Weight	(Approx.)kg	116	126	164	291	420	667	1004	1023	1100
Air Con.	/hr/Half Cycle	69.1	72.5	231.6	442.7	575.5	1741.8	2232.9	2436.5	2692.7
A	mm	84	124	134	170					
A1	mm	50	50	50	50					

ANSI 150Lbs

Size	inch	5"	6"	8"	10"	12"	14"	16"	18"	20"
	mm	125A	150A	200A	250A	300A	350A	400A	450A	500A
L	mm	356	394	457	533	610	686	864	864	914
H	mm	240	250	256	286	390	424	439	449	500
g	mm	186	216	270	324	381	413	470	533	584
C	mm	216	241.5	298.5	362	432	476	510	578	635
D	mm	254	279	343	406	483	533	597	635	699
T	mm	23.9	25.4	28.6	30.2	31.8	35.1	36.6	39.6	42.9
f	mm	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
n-ØH		8-22	8-22	8-22	12-25	12-25	12-28	16-28	16-32	20-32
Stroke	mm	32	37.5	50	63	75	87.5	100	100	100
Weight	(Approx.)kg	116	126	164	291	420	667	1004	1023	1100
Air Con.	/hr/Half Cycle	69.1	72.5	231.6	442.7	575.5	1741.8	2232.9	2436.5	2692.7
A	mm	84	124	134	170					
A1	mm	50	50	50	50					

Dimension



JIS 20K

Size	inch	5"	6"	8"	10"	12"	14"	16"	18"	20"
	mm	125A	150A	200A	250A	300A	350A	400A	450A	500A
L	mm	381	403	502	568	686	762	864	864	991
H	mm	240	250	256	286	390	424	439	449	500
g	mm	195	230	275	345	395	440	495	560	615
C	mm	225	2690	305	380	430	480	540	605	660
D	mm	270	305	350	430	480	540	605	678	730
T	mm	26	28	30	34	36	40	46	48	50
f	mm	2	2	2	2	3	3	3	3	3
n-ØH		8-25	12-25	12-25	12-27	16-27	16-33	16-33	20-33	20-33
Stroke	mm	32	37.5	50	63	75	87.5	100	100	100
Weight	(Approx.)kg	128	139	181	321	462	734	1105	1145	1200
Air Con.	/hr/Half Cycle	69.1	72.5	231.6	442.7	575.5	1741.8	2232.9	2436.5	2692.7
A	mm	84	124	134	170					
A1	mm	50	50	50	50					

ANSI 300Lbs

Size	inch	5"	6"	8"	10"	12"	14"	16"	18"	20"
	mm	125A	150A	200A	250A	300A	350A	400A	450A	500A
L	mm	381	403	502	468	686	762	864	864	991
H	mm	240	250	256	286	390	424	439	449	500
g	mm	186	216	270	324	381	413	470	555	584
C	mm	235	270	330	387.5	451	514.5	571.5	628.5	686
D	mm	279	318	381	444	521	584	648	711	775
T	mm	35	36.6	41.3	47.7	50.8	53.8	57.2	60.5	63.5
f	mm	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
n-ØH		8-22	12-28	16-25	16-29	16-32	20-32	20-35	24-35	24-35
Stroke	mm	32	37.5	50	63	75	87.5	100	100	100
Weight	(Approx.)kg	128	139	181	321	462	734	1105	1145	1200
Air Con.	/hr/Half Cycle	69.1	72.5	231.6	442.7	575.5	1741.8	2232.9	2436.5	2692.7
A	mm	84	124	134	170					
A1	mm	50	50	50	50					

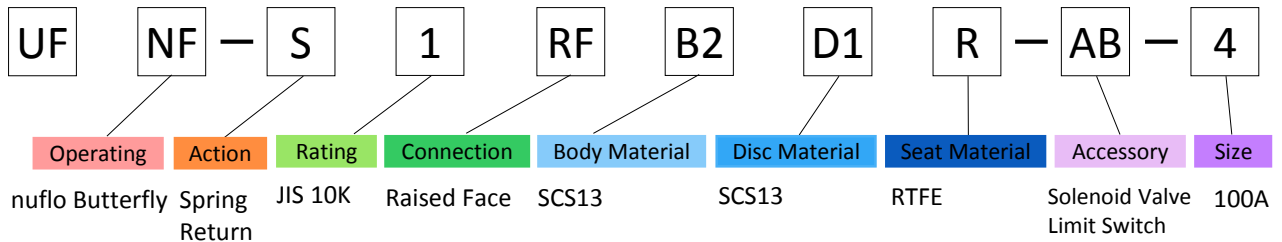
Typical Application



Typical Application



nuflo Valve Numbering



Operating

N : nuflo
 NF : nuflo Butterfly
 NB : nuflo Ball

Action

D : Double Action
 S : Spring Return

Rating

1 : JIS 10K
 2 : JIS 20K
 3 : JIS 30K
 15 : ANSI 150#
 30 : ANSI 300#
 60 : ANSI 600#
 S : Special

Connection

RF : Raised Face
 FF : Face Face
 TF : Threaded
 W : WAFER
 L : LUG
 S : Special

Body Material

JIS	ANSI
B1 : SCPH2	A216 WCB
B2 : SCS13	A351 CF8
B3 : SCS14	A351 CF8M
B4 : SCS16	A351 CF3M
B5 :	Duplex
B6 :	Alloy 20
B7 :	Hastelloy
B8 :	Special

Disc Material

JIS	ANSI
D1 : SCS13	A351 CF8
D2 : SCS14	A351 CF8M
D3 : SCS16	A351 CF3M
D4 :	Duplex
D5 :	Alloy 20
D6 :	Hastelloy
D7 :	Special

Seat Material

R : RTFE
 M : Metal
 S : Special

Accessory

A : Solenoid Valve (WEA-PROOF)
 B : Limit Switch (WEA-PROOF)
 C : Solenoid Valve (EX-PROOF)
 D : Limit Switch (EX-PROOF)
 E : Air Set
 F : Positioner (WEA-PROOF)
 G : Positioner (EX-PROOF)
 S : Special

Size

N : 15A (½")	5 : 125A (5")
R : 20A (¾")	6 : 150A (6")
1 : 25A (1")	8 : 200A (8")
S : 32A (1 ¼")	10 : 250A (10")
T : 40A (1 ½")	12 : 300A (12")
2 : 50A (2")	14 : 350A (14")
U : 65A (2 ½")	16 : 400A (16")
3 : 80A (3")	18 : 450A (18")
4 : 100A (4")	20 : 500A (20")

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

UNIFLO Co., Ltd. _____

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