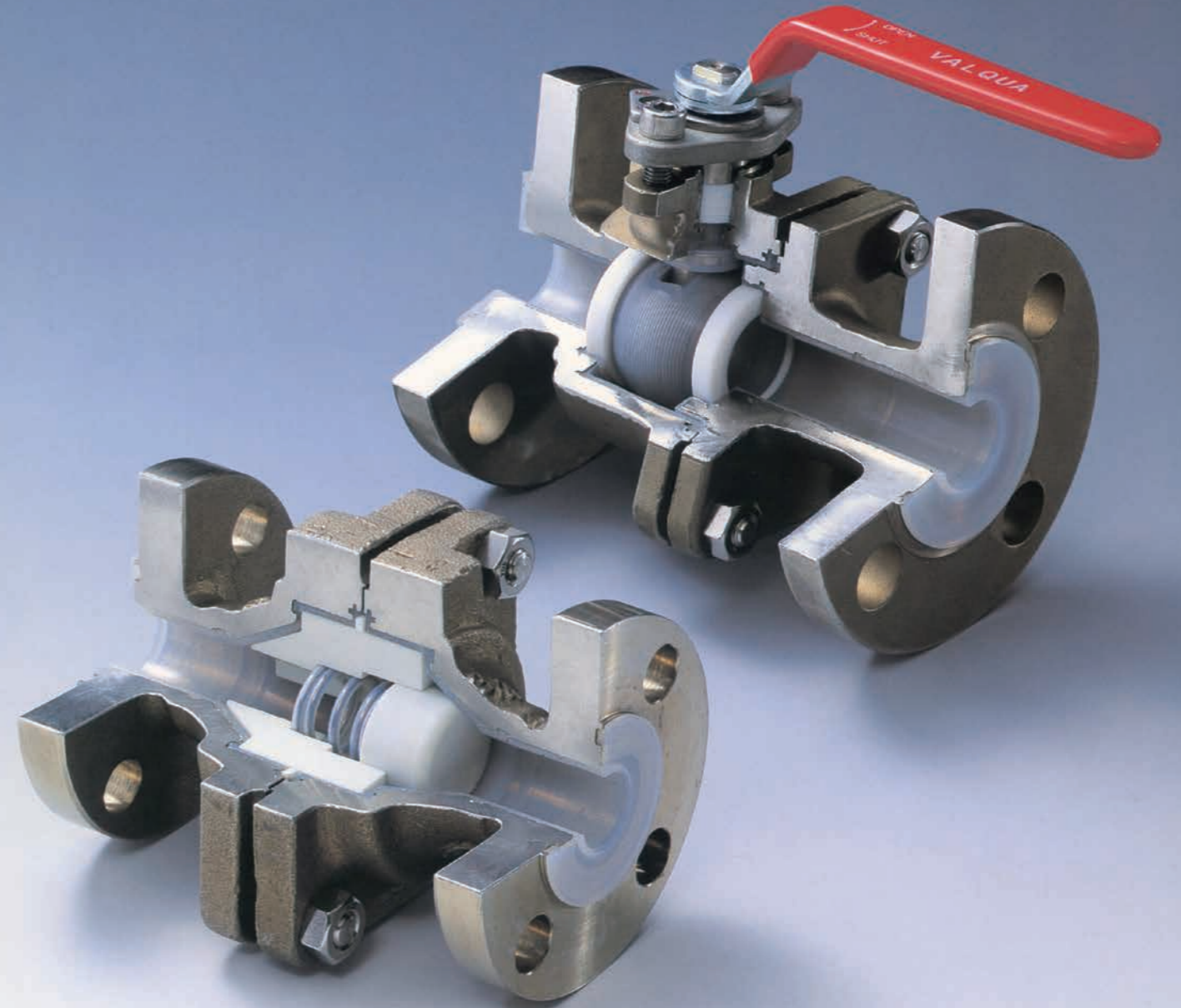




Revised April 2017
CATALOGUE No.ZP05

PFA Lined Ball Valve : Model PF2

PFA Lined Check Valve : Model PSC20 Spring Type



"VALQUA" is a compounded word coming from VALUE and QUALITY
which is the symbol and motto of the company.

The above trade mark is registered in Japan, Australia, China, India, Indonesia,
Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand and U.S.A.

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PFA Lining

PFA Lined Ball Valve : Model PF2

PFA Lined Check Valve : Model PSC20
Spring Type

As science and technology has continued to make great strides in recent years, revolutionary technological innovation and product development have moved forward at a rapid pace in a variety of fields. In these turbulent times, as an all-around manufacturer of fluoro-resin products and a pioneer of metal ball valves and seal engineering, we have always been focused on the future and creating results. For many years we have developed PFA lined ball valves and PFA lined check valves by utilizing our wealth of experience and high level technology to move forward with applied technologies and processing technologies. All of these product's fluid contact points are lined with chemically inactive PFA plastic with excellent anti-corrosive properties. Nippon Valqua delivers high quality valves with anti-corrosive properties thanks to its PFA plastic in addition to the normal features common in ball valves to customers in many different industries with confidence.

Superior Chemical Resistance 1

The entire area that makes contact with liquids has a protective lining made out of inactive PFA plastic and will not be corroded by almost any fluid that is used industrially.

No Fluid Contamination 2

PFA plastic and PTFE do not include any harmful additives or pigments in the plastic which would reduce the purity of a product or change its flavor.

Superior Heat Resistance 3

Our PFA plastic has the best heat resistance out of all fluoro-resins and will withstand temperatures as high as 260°C without any degradation or deterioration. PFA lined ball valves are anti-corrosive valves with superior heat resistance.

Almost No Loss of Pressure 4

Our valve is designed to be full flow, with almost no fluid resistance for a smooth flow with virtually no loss of pressure.

PTFE Seat and Gland Packing 5

Our PTFE seats and gland packing is completely separate from our PFA lining making it easy to switch parts.

Easy Maintenance 6

It is easy to disassemble and assemble the valve because the body and cap are comprised of two different parts.

Metal Touch Flange 7

The fitting flange for the body and cap are made of a metal touch construction that will eliminate pipe stress from affecting the seat and body gasket. This provides stable operability, sealability and product life.

False Open Prevention Handle Design 8

The handle is a stem top design that makes it possible to always confirm whether the valve is open or closed.

Protrusion Prevention Stem Design 9

A stem flange has been placed at the bottom of the stem to prevent protrusion from the top do to the internal fluid pressure.

Locking Mechanism 10

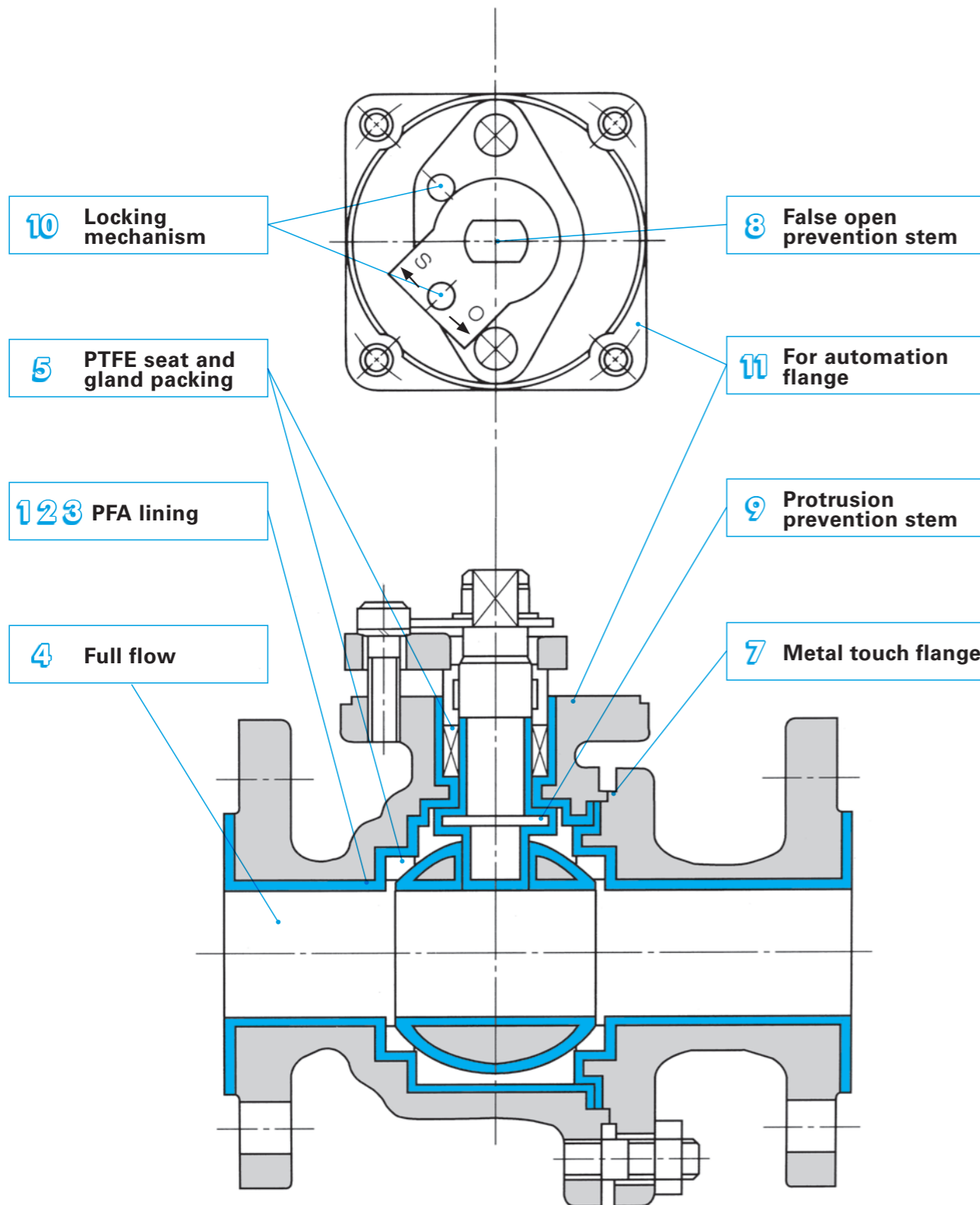
The valve can be locked in the open or closed position to prevent unintended operation of the valve.

Easy Automation 11

A flange with actuator is located at the top of the valve body that makes automation easy.

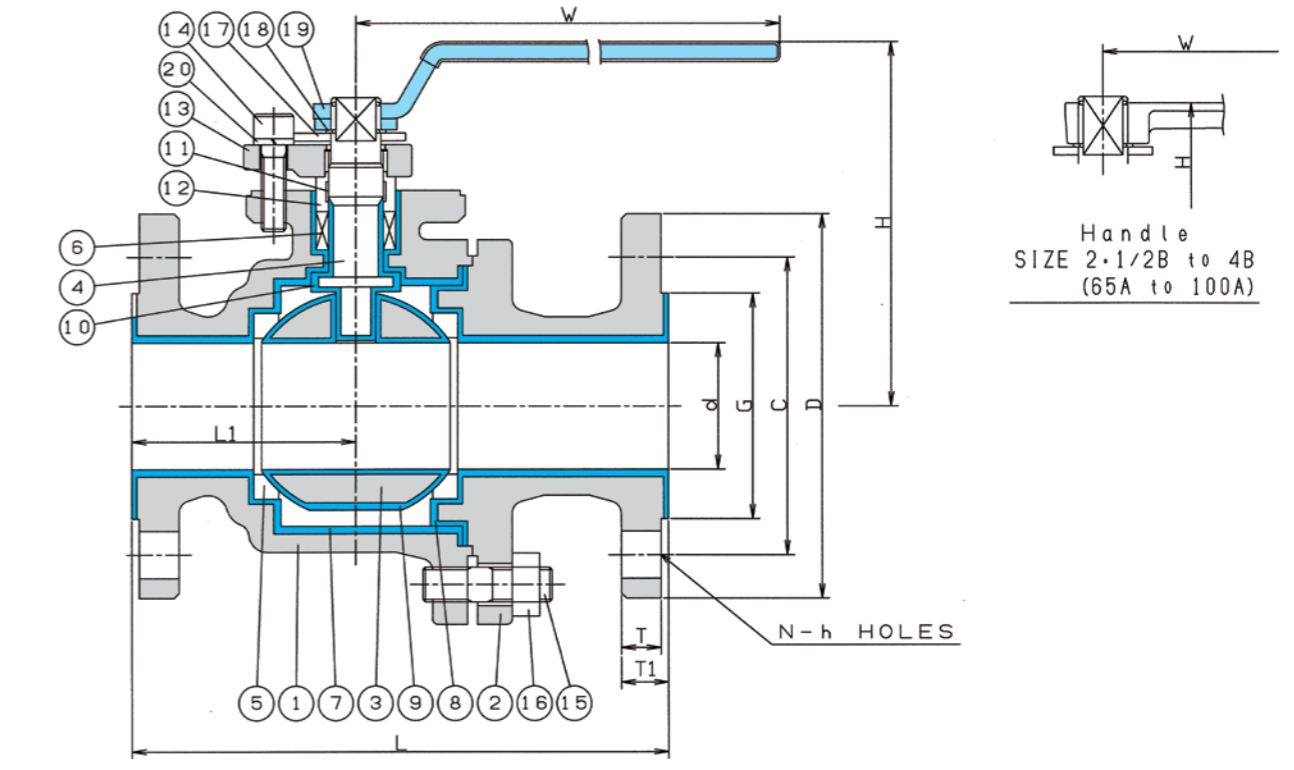
PFA Lined Ball Valve: Model PF2

Cross Section Diagram



PFA Lined Ball Valve: Model PF2

Standard Parts Materials Table and Dimensions Table



STANDARD PARTS MATERIAL SPECIFICATION

	NAME OF PARTS	MATERIALS		NAME OF PARTS	MATERIALS
1	BODY	SCS13A FCD-S ^{*1}	11	STEM BEARING	VALQUA NO.7980 ^{*2}
2	CAP	SCS13A FCD-S ^{*1}	12	GLAND SLEEVE	SUS304
3	BALL	SCS13 or SUS304	13	GLAND	SCS13A
4	STEM	SCS13A or SUS304	14	GLAND BOLT	STAINLESS STEEL
5	SEAT PACKING	PTFE	15	STUD BOLT	SUS304
6	GLAND PACKING	PTFE	16	NUT	SUS304
7	BODY LINING	PFA	17	STOPPER	SUS304
8	CAP LINING	PFA	18	RETAINING RING	SUS304
9	BALL LINING	PFA	19	STEM BEARING	C-TFE ^{*3}
10	STEM LINING	PFA	20	SPRING WASHER	SUS304

^{*1} SIZE 1-1/2B to 4B
^{*2} SIZE 1B to 4B
^{*3} SIZE 1/2B & 3/4B

DIMENSIONS

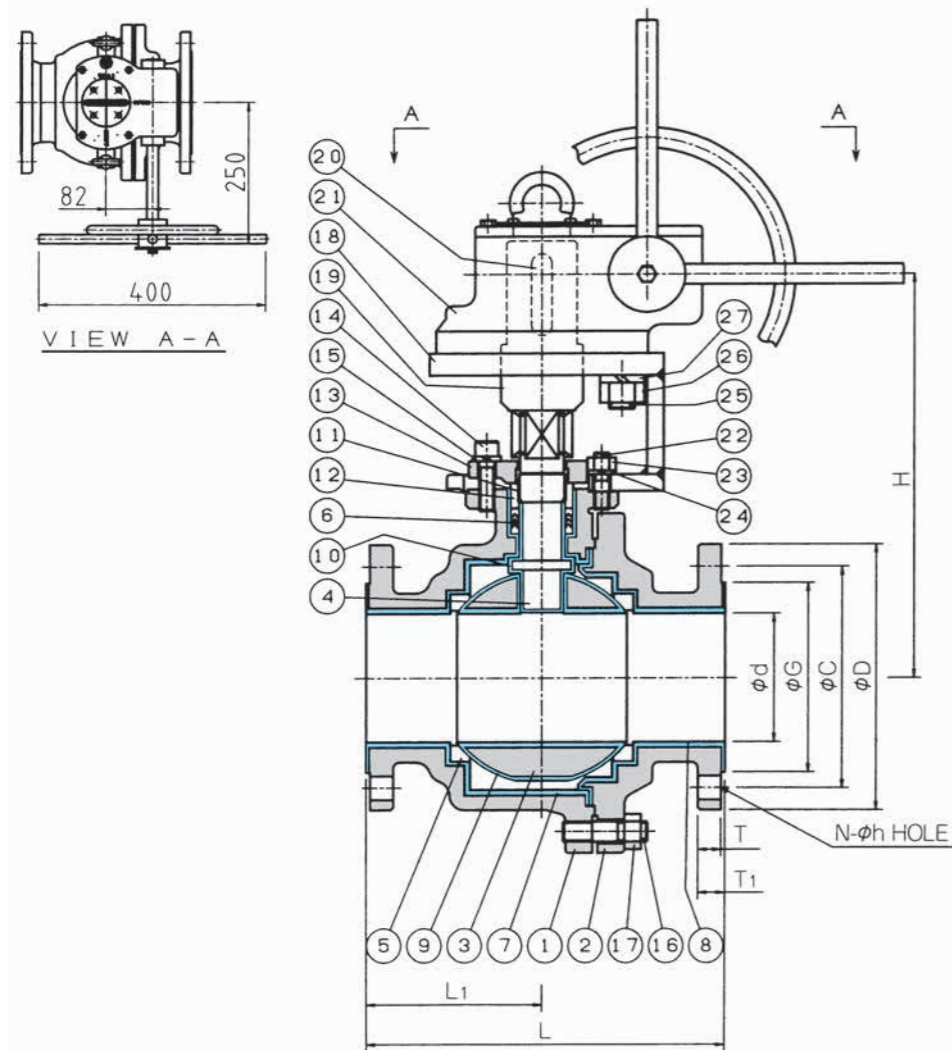
UNIT : mm

SIZE	d	L	L ₁	H	W	FLANGE : CLASS 150LB							FLANGE : JIS 10K							
						D	C	G	T	T ₁	N-h	Weight (kg)	D	C	G	T	T ₁	N-h	Weight (kg)	
1/2B	15A	15	140	55	93	135	89	60.5	35	11.2	14.2	4-16	2.8	95	70	45	12	15	4-15	3.0
3/4B	20A	20	152	62	100	135	98	70.0	43	11.2	14.2	4-16	3.4	100	75	50	14	17	4-15	3.5
1B	25A	25	165	65	111	150	108	79.5	51	11.2	14.2	4-16	5.0	125	90	61	14	17	4-19	5.5
1-1/2B	40A	38.5	191	81	136	250	127	98.5	73	14.3	17.3	4-16	9.0	140	105	76	16	19	4-19	10.0
2B	50A	51	216	90	146	250	152	120.5	92	15.9	18.9	4-19	14.0	155	120	91	16	19	4-19	14.0
2-1/2B	65A	65	240	105	167	400	178	139.5	105	17.5	20.5	4-19	23.5	175	140	113	18	21	4-19	22.5
3B	80A	76	250	115	178	400	190	152.5	127	19.1	22.1	4-19	30.5	185	150	125	18	21	8-19	27.5
4B	100A	102	280	137	207	500	229	190.5	157	23.9	26.9	8-19	47.5	210	175	150	18	21	8-19	43.5

PFA Lined Ball Valve: Model PF2

Cross Section Diagram / Dimensions and Standard Parts Materials

Model:PF2-15S-WGA (PF2-10S-WGA) Class 150Lb-5B,6B (JIS 10K-125A,150A)



DIMENSIONS

UNIT : mm

SIZE	d	L	L ₁	H	FLANGE : CLASS 150LB							FLANGE : JIS 10K						
					D	C	G	T	T ₁	N-h	Weight(kg)	D	C	G	T	T ₁	N-h	Weight(kg)
5B 125A	125	319	157	352	254	215.9	186	24	28	8-22	91.0	250	210	180	20	24	8-23	89.0
6B 150A	150	350	173	370	279	241.5	210	25.4	29.4	8-22	117.0	280	240	210	22	26	8-23	115.0

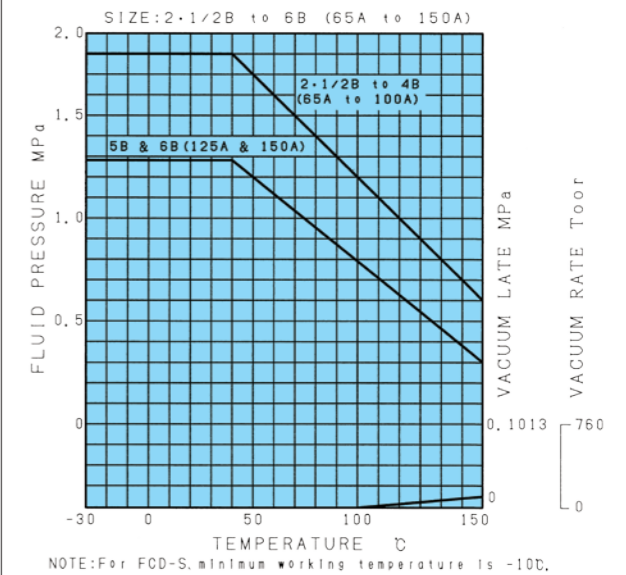
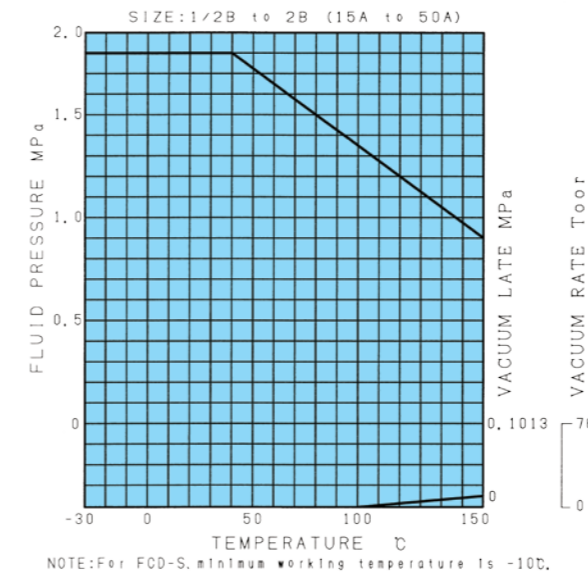
STANDARD PARTS MATERIAL SPECIFICATION

NAME OF PARTS	MATERIALS	NAME OF PARTS	MATERIALS
1 BODY	SCS13A	15 SPRING WASHER	SUS304
2 CAP	SCS13A	16 STUD BOLT	SUS304
3 BALL	SUS304	17 NUT	SUS304
4 STEM	SUS304	18 BRACKET	SS400
5 SEAT PACKING	PTFE	19 COUPRING	S45C
6 GLAND PACKING	PTFE	20 KEY	SF490
7 BODY LINING	PFA	21 WORM GEAR	WGA-1
8 CAP LINING	PFA	22 STUD BOLT	S45C
9 BALL LINING	PFA	23 NUT	SS400
10 STEM LINING	PFA	24 SPRING WASHER	SWRH62
11 STEM BEARING	VALQUA NO.7980	25 STUD BOLT	S45C
12 GLAND SLEEVE	SUS304	26 NUT	SS400
13 GLAND	SCS13A	27 SPRING WASHER	SWRH62
14 GLAND BOLT	STAINLESS STEEL		

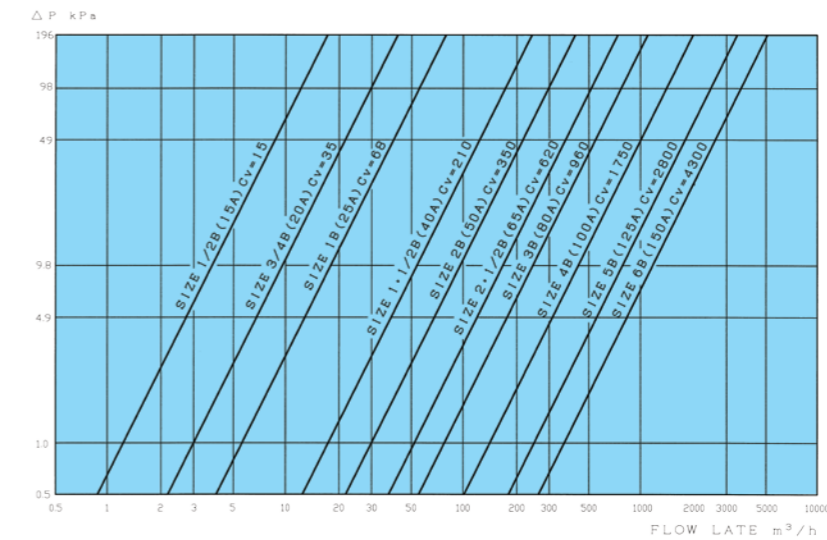
PFA Lined Ball Valve: Model PF2

Characteristics Table

PRESSURE-TEMPERATURE RATING



Cv VALUE



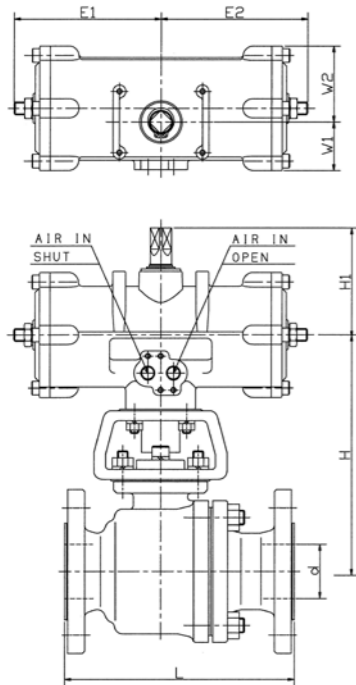
PFA Lined Ball Valve : Model PF2

Automated Torque Cylinder Operation

This product is an automatic ball valve using an air cylinder. This can be used in a wide range of applications such as various devices, remote on and off valves and control valves for process lines.

PF2-VTAD

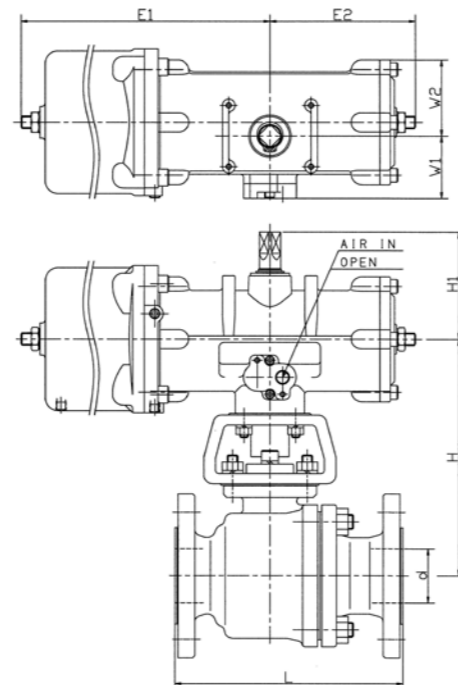
Double Action



SIZE	Double Action							L	
	mm	H	H1	W1	W2	E1	E2		TYPE
15A	137.5	73	36	46	99	99	99	TA2V-050D	140
20A	144.5	73	36	46	99	99	99	TA2V-050D	152
25A	166.5	81	38	57	118	118	118	TA2V-063D	165
40A	213.5	101	45	71	138	138	138	TA2V-080D	191
50A	223.5	101	45	71	138	138	138	TA2V-080D	216
65A	279	114	57	85.5	171	171	171	TA2V-100D	240
80A	290	114	57	85.5	171	171	171	TA2V-100D	250
100A	354	127	60	90	210	210	210	TA2V-125D	280
125A	427	148	68	113	253	253	253	TA2V-160D	319
150A	445	148	68	113	253	253	253	TA2V-160D	350

PF2-VTAR

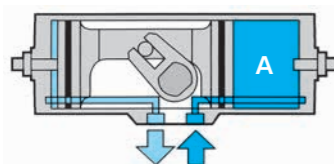
Single Action [Spring return type]



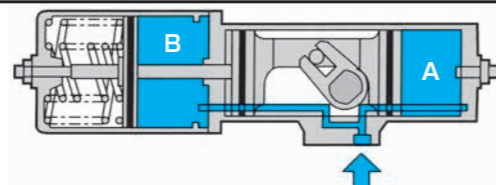
SIZE	Single Action							L	
	mm	H	H1	W1	W2	E1	E2		TYPE
15A	137.5	73	50	53	234	99	99	TA2V-050R	140
20A	144.5	73	50	53	234	99	99	TA2V-050R	152
25A	166.5	81	52	66.5	281	118	118	TA2V-063R	165
40A	213.5	101	59	82.5	333	138	138	TA2V-080R	191
50A	223.5	101	59	82.5	333	138	138	TA2V-080R	216
65A	279	114	71	103	407	171	171	TA2V-100R	240
80A	290	114	71	103	407	171	171	TA2V-100R	250
100A	354	127	74	118.5	532	210	210	TA2V-125R	280
125A	427	148	82	149	645	253	253	TA2V-160R	319
150A	445	148	82	149	645	253	253	TA2V-160R	350



Amount of Air Consumed



A : Actuator Main Unit Volume (ℓ)
 B : Spring Cartridge Unit Volume (ℓ)
 P : Operating Pressure MPa
 n : Movement Cycle (1 Cycle = 1 rotation)



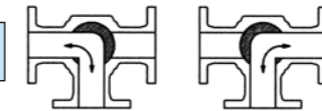
TYPE	A[ℓ]	Amount of Air Consumed[ℓ]
TA2V-050D	0.09	$2A \left(\frac{P+0.1013}{0.1013} \right) n$
TA2V-063D	0.17	
TA2V-080D	0.33	
TA2V-100D	0.68	
TA2V-125D	1.36	
TA2V-160D	2.78	

TYPE	A[ℓ]	B[ℓ]	Amount of Air Consumed[ℓ]
TA2V-050R	0.09	0.25	$(A+B) \left(\frac{P+0.1013}{0.1013} \right) n$
TA2V-063R	0.17	0.50	
TA2V-080R	0.33	0.93	
TA2V-100R	0.68	1.94	
TA2V-125R	1.36	3.08	
TA2V-160R	2.78	5.99	

PFA Lined Ball Valve : Model PF2

Valves with Special Specifications

1. 3-way L Type



Utilizes a port shaped L type ceramic ball.

2. Jacketed valve

Utilizes a jacket to retain heat or cold fluids.

3. With vent holes

Gas that transmits through PFA lining is released through the vent holes.

4. Measures for Abnormal Pressurization

Includes a relief hole to prevent abnormal pressurization when the valve is closed.

5. Tank Bottom Valve

Structure with a small fluid reservoir at the bottom of the tank.

6. Ceramic Ball

The ceramic ball is suitable for the slurry line.

7. We can also manufacture reduced bore types.

Precautions and Major Applications When Using a Ball Valve

Precautions

Although PFA plastics have excellent anti-corrosive properties for most chemical products, please avoid the following fluids.

- 1) Fused alkali metal and its solutions
High temperature fluorine and fluorine compounds (ClF3)
- 2) Halogen, halogen compounds, etc. with a high permeability in fluid form and high use temperature
- 3) As a rule, please use valves when completely open or closed.
If you use valves when they are half open, it may damage the seat which will cause leaks when fully open.

Major Uses

Valqua PFA lined ball valves can be utilized in a variety of industries and applications. It is especially usable in the following applications.

- 1) Fluids with strong corrosive properties that normal metal valves cannot handle
(Ex.) Hydrochloric acid, sulfuric acid, hydrofluoric acid, industrial crude phosphoric acid, etc.
- 2) Process piping and transport piping that pumps acid and alkali together at a plant.
- 3) Other types of anti-corrosive valves (PE, PP hard PVC, FRP, hard rubber lined, ferrosilicon, tantalum, titanium, nickel alloy, glass lined, PVDF, FEP, PCTFE and other cocks and stop valves, diaphragm valves and ball valves) and areas where it is best to avoid use due to a lack of heat resistance, stress cracking, mechanical strength, etc.

Features

Perfect for Extremely Corrosive Fluids Metal Valves Cannot Withstand

1 Excellent Anti-corrosive Properties

The entire area that makes contact with liquids has a protective lining made out of inactive PFA plastic and will not be corroded by almost any fluid that is used industrially.

2 No Fluid Contamination

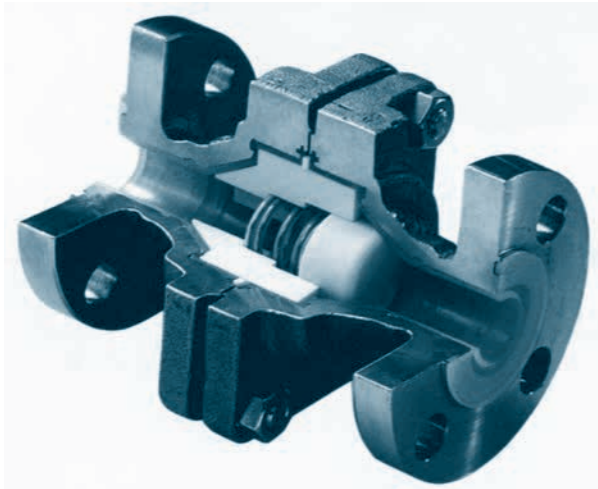
PFA plastic and PTFE do not include any harmful additives or pigments in the plastic which would reduce the purity of a product or change its flavor.

3 Metal Touch Flange

Body and cap joints are made of a metal touch construction that will eliminate pipe stress from affecting internal parts. This provides a stable product life.

4 No Restrictions on Piping Positions

The valve disc is supported by a spring which makes it possible to install to any piping position.

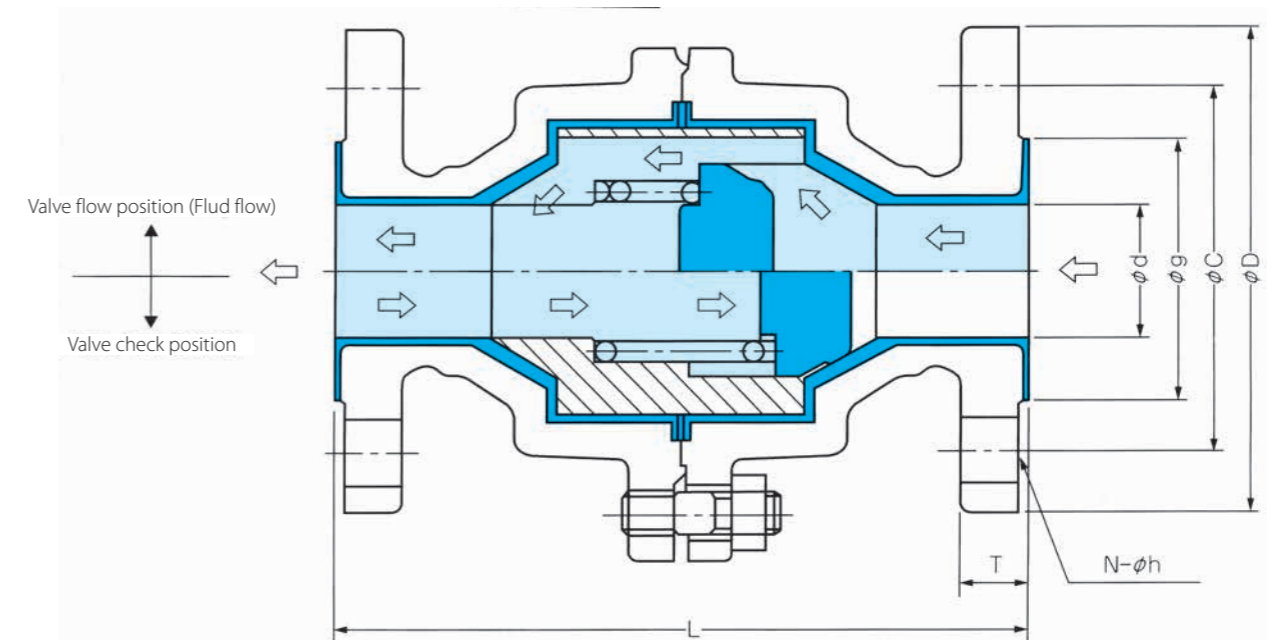
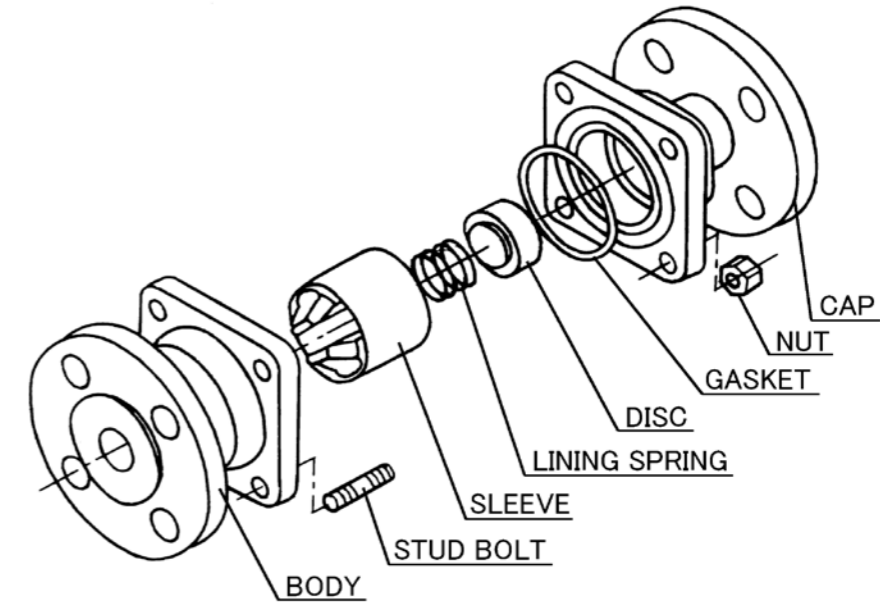


- Max. working pressure
 - Flow : 1.87 MPa
 - Check : 0.98 MPa
- Max. working temperature :
 - 100°C (PTFE : 60°C)
- Nominal pressure : Class 150, JIS 10K
- Main parts materials
 - Body : SCS13A
 - Lining : PFA
 - Disc : Glass fiber filled PTFE, NEW PTFE, PTFE
 - Spring : SUS304-WP + PTFE

Use Precautions

- 1 Please avoid using with the following fluids.
 - Fused alkali metal, its solutions, high temperature fluorine and fluorine compounds
 - Halogen, halogen compounds, etc. with a high permeability in fluid form and high working temperature
 - Fluids including slurry or sticky fluids
- 2 Please contact us if you have a fluid that cannot be used with Glass fiber filled PTFE.
- 3 Check valves cannot be used with gases.
- 4 Please periodically replace springs.
- 5 Please do not use in areas with fast flow rates, near pumps or actively pulsating areas.

Cross Section Diagram



DIMENSIONS

UNIT : mm

SIZE	d	L	T	FLANGE : CLASS 150LB						FLANGE : JIS 10K				
				D	C	G	N-h	Weight (kg)	D	C	G	N-h	Weight (kg)	
1/2B	15A	15	140	15	89	60.5	35	4-16	3.5	95	70	45	4-15	3.0
3/4B	20A	20	152	17	98	70.0	43	4-16	4.5	100	75	50	4-15	4.0
1B	25A	25	165	17	108	79.5	51	4-16	7.5	125	90	61	4-19	5.5
1-1/2B	40A	38.5	191	19	127	98.5	73	4-16	11.0	140	105	76	4-19	9.5
2B	50A	51	216	19	152	120.5	92	4-19	14.5	155	120	91	4-19	14.0
2-1/2B	65A	65	240	21	178	139.5	105	4-19	12.5	175	140	113	4-19	23.0
3B	80A	76	250	22.1	191	152.5	127	4-19	18.5	185	150	125	8-19	29.0
4B	100A	102	280	26.9	229	190.5	157	8-19	44.0	210	175	150	8-19	46.0