

CHEMICAL PIPING SYSTEM

UPVC / CPVC / PPH / PVDF

DIN / ANSI / JIS / Standard

+WD+

TECHNICAL SUPPORT VALVE UPVC/CPVC/PP/PVDF

WD is a professional manufacturer for UPVC, CPVC, PPH piping system & duct system, and PPR piping systems. We have sold our products worldwide and got good reputation.

Our Products confirm to ANSI、JIS、DIN & CNS standard, and they are widely used for chemical processing plating, high purity applications, portable water systems, electronic industries, water and wastewater treatment, drainage, irrigation, agricultural, power plant construction and other applications involving corrosive fluid transfer.

With experience in piping & duct systems,
Our Products confirm to ANSI、JIS、DIN & CNS standard, and they are widely used for chemical processing plating, high purity applications, portable water systems, electronic industries, water and wastewater treatment, drainage, irrigation, agricultural, power plant construction and other applications involving corrosive fluid transfer.

With experience in piping & duct systems, we will provide best solutions and services to you.

HYDROSTATIC PRESSURE TESTING NOTIFICATION OF PPR/PPH PIPES
2.4.1 Hydraulic test has to be performed sectional; tested length should be no longer than 500m.
2.4.2 Before test, make sure pipes are fixed, joints are not covered, and the whole system is independent
2.4.3 Pressure gage with tolerance 0.01Mpa needs to be installed in the lowest place of the system.
2.4.4 Fill water from lowest part of the system to remove the air and make watertight test.
2.4.5 Hand pump or electro pump is used to rise up the pressure. The process must be slowly
2.4.6 After rising up to the test pressure, hold it for 1 hour to check if there is leakage. If the pressure ualified
2.4.7 Hold the pressure 1.15 times of the working pressure for 2 hours. If the pressure lowers smaller
2.4.8 There must be no leakage in the system during test.
2.4.9 During 30 mins, if the pressure lowers down, it is allowed to raise up the pressure again 2 times.

Polypropylene (PP), also known as polypropylene, is a thermoplastic polymer used in a wide variety of applications including packaging and labeling, textiles (e.g., ropes, thermal underwear and carpets) stationery, plastic parts and reusable containers of various types, laboratory equipment, loudspeakers automotive components, and polymer banknotes.There are three general types of polypropylene: homopolymer, random copolymer, and block copolymer. The comonomer is typically used with ethylene. Polypropylene Random Copolymer (PP-R) is formulated by adding randomly polymerized ethylene monomer to polypropylene homopolymer. It decreases the polymer crystallinity and makes the polymer more transparent.

Polypropylene Homopolymer (PP-H) is another type of PP. It has better temperature & creep resistance than PPR, and with low temperature impact strength.

1.2.2 Introduction to PPR/PPH Piping System
1.2.3 Physical Properties
1.2.3.1 Physical Properties of PPR Pipes

1.1.1 Material Characteristic

Polyvinyl chloride is produced by polymerization of the monomer vinyl chloride (VCM). PVC is used in construction, sewerage pipes and other pipe applications because of its biologicaland chemical resistance and workability. It's more effective than traditional materials such as copper, iron or wood in pipe and profile applications.

Unplasticised Poly Vinyl Chloride (UPVC) is a rigid form of PVC often used in the building industry as a low-maintenance material.CPVC is PVC (polyvinyl chloride) that has been chlorinated. Depending on the method, a varying amount of chlorine is introduced into the polymer allowing for a measured way to fine tune the final properties. The chlorine content may vary from manufacturer to manufacturer; the base can be as low as PVC 56.7% to as high as 74% by mass, although most commercial resins have chlorine content from 63% to 69%. CPVC can withstand corrosive water at temperatures greater than PVC typically 40°C to 50°C (104°F to 122°F) or higher, contributing to its popularity as a material for water piping systems in residential as well as commercial construction.

CONSTRUCTING METHOD OF UPVC/CPVC

UPVC/CPVC piping systems are bonded by special solvent. Hereunder are the steps

1.Cutting & Deburring
Power Saw and plastic tubing cutters can be used for pipe cutting. Cut the pipes as squarely as possible to provide maximum bonding area and keep it clean without oil. Burrs must be removed from the inside, as well as the outside, of the pipe ends by pliers, filer and sandpaper on both inner side and outside of the cutting edge so that pipes and fittings are bond tightly.

2.Marking
Making marks on all pipes according to the length & depth of fitting parts. It can be used to ensure the pipe is completely bottomed into the fitting during assembly.

3.Heating
Guide the pipes into heater straight to the marked assembly depth. In the meanwhile, push the fitting onto the heater and reach the marked depth.

4.Assembly
Heating time must be complied with the values in the under table. After heating time remove pipe and fitting from the heater immediately and assemble them to the marked depth straight so that there is even bulge is the assembly place. Within the working time, tiny adjustment can be made but rotation must be prohibited. Keeping pipe and fitting from being wrenched, bent, and stretched.

TRUE UNION BALL VALVE (UPVC , CPVC, PPH)

Features

- Full Port Type
- Pressure Rating 150 Psi
- Less Flow loss and seal hermetically
- Fit Compactly in spaces
- Actuator could beinstalled with inserted nut
- The standard product without nut inserted
- Standard JIS/ANSI/DIN

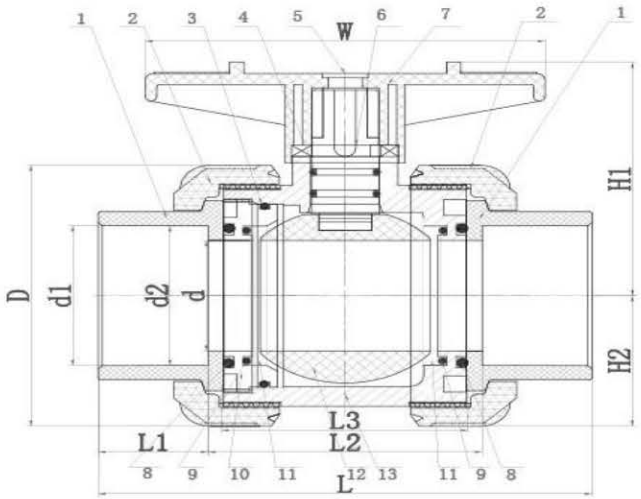


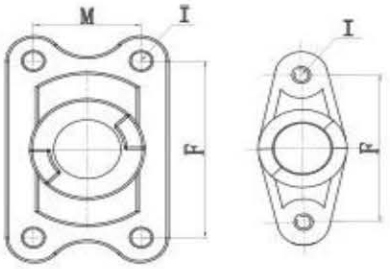
Size: 1/2"-2"



Size: 2- 1/2"-4"

Drawing Structure





Material

NO	PART	MATERIAL	PCS
3/4/8/9	O-ring	EPDM/VITON	7
1	UNION END	UPVC /CPVC/PPH	2
2	UNION NUT	UPVC /CPVC/PPH	2
5	CAP	ABS	1
6	STEM	UPVC /CPVC/PPH	1
7	HANDEL	ABS	1
10	SEAL	UPVC /CPVC/PPH	1
11	SEAT	PTFE	2
12	BALL	UPVC /CPVC/PPH	1
13	BODY	UPVC /CPVC/PPH	1

TRUE UNION BALL VALVE (UPVC , CPVC, PPH)

Diamension

Unit:mm

SIZE	d	d1				d2			
		ANSI	DIN	JIS	CNS	ANSI	DIN	JIS	CNS
1/2"	15	21.40	20.25	22.30	22.40	21.25	20.25	21.85	21.90
3/4"	20	26.75	25.25	26.30	26.40	26.58	25.05	25.85	25.90
1"	25	33.52	32.25	32.33	34.50	33.28	32.05	31.85	33.90
1-1/4"	32	42.28	40.25	38.43	42.50	42.05	40.05	37.85	41.90
1-1/2"	40	48.40	50.25	48.46	48.60	48.12	50.05	47.75	47.90
2"	50	60.45	63.25	60.56	60.60	60.18	63.05	59.75	59.90
2-1/2"	63	73.30	75.25	76.60	76.70	72.85	75.05	75.87	75.90
3"	75	89.25	90.35	89.60	89.70	88.70	90.05	88.83	88.90
4"	90	114.60	110.35	114.70	115.00	114.10	110.05	113.98	113.80

Diamension

Unit:mm

SIZE	D	L	L1	L2	L3	W	H1	H2	M	I	TORQUE(NM)
1/2"	54.00	106.00	23.00	60.00	52.00	84.00	52.50	27.50	-	M6	2.00
3/4"	63.00	114.00	26.00	62.00	54.00	90.00	59.00	32.00	-	M6	2.50
1"	73.50	128.00	29.00	70.00	62.00	106.00	67.50	37.25	-	M6	4.00
1-1/4"	84.50	144.00	33.00	78.00	70.00	116.00	77.50	42.75	-	M8	5.00
1-1/2"	98.00	158.50	35.50	87.50	79.50	128.00	90.00	50.00	-	M8	7.50
2"	118.00	172.00	38.50	95.00	85.00	140.00	106.00	52.00	-	M8	8.50
2-1/2"	150.00	278.00	64.50	144.50	132.50	198.00	136.50	70.00	45.00	M10	13.00
3"	169.00	310.00	70.00	166.00	150.00	218.00	149.50	84.00	45.00	M10	16.00
4"	190.00	352.00	84.00	181.00	157.00	235.00	166.00	121.00	49.00	M12	25.00

TRUE UNION BALL VALVE (UPVC , CPVC, PPH)

Techical Information

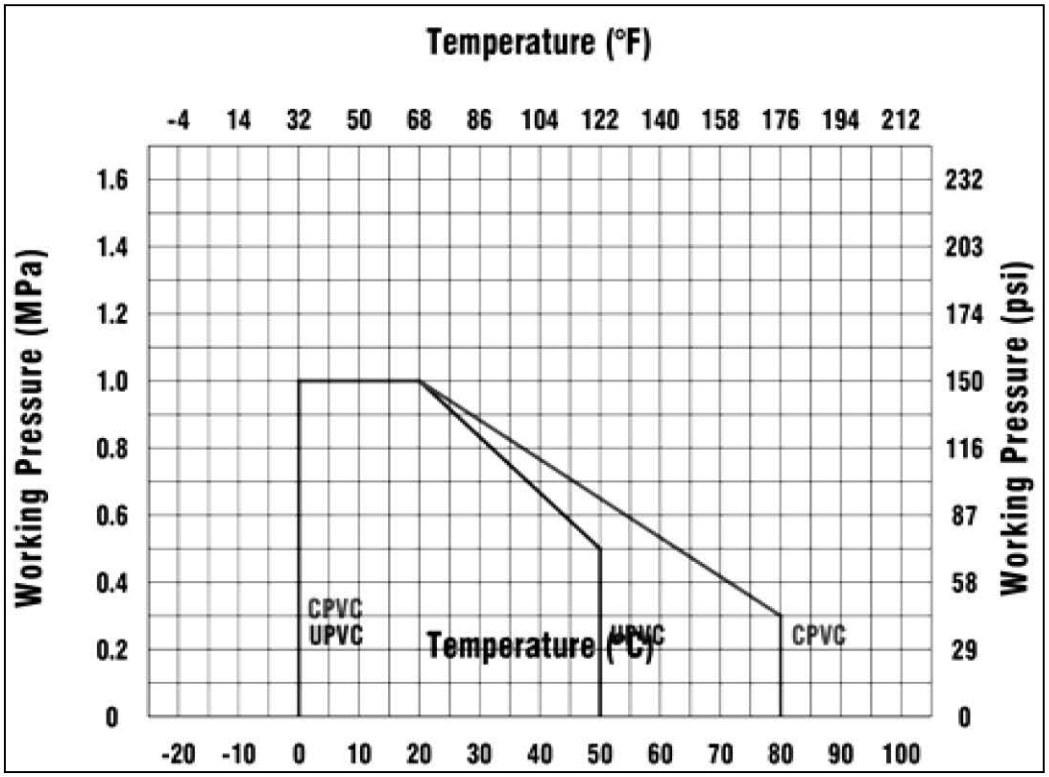
SIZE	HYDROSTATIC TESING		SEAT AND O-RING TEST		TORQUE KG*CM	CV
	BUST PRESSURE WATER(KG/CM^2) MINIUMN	LONG-TERM BEHAVIOUR TEST WATER(KG/CM^2)	SEAT VALVE CLOSE AIR(KG/CM^2)	O-RING VALVE OPEN AIR(KG/CM^2)		
1/2"	42	22	6	6	20	8
3/4"	42	22	6	6	25	15
1"	42	22	6	6	40	29
1-1/4"	42	22	6	6	50	75
1-1/2"	42	22	6	6	75	90
2"	42	22	6	6	85	140
2-1/2"	31	22	6	6	130	330
3"	31	22	6	6	160	480
4"	31	22	6	6	250	600

Pressure Loss Calculation Formula

 # $P=(Q/Cv)^2$

P:Pressure Drop
Q : Flow GPM
Cv : Flow Confficient

Table Pressure (Material)

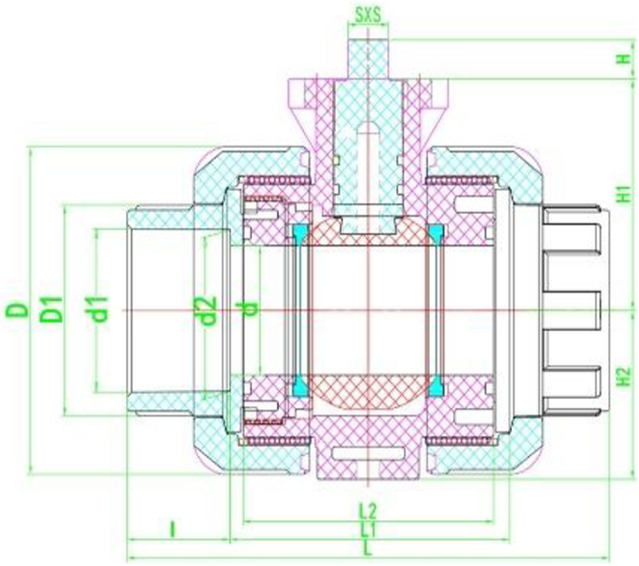


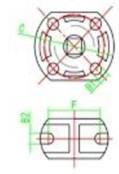
TRUE UNION BALL VALVE (UPVC , CPVC, PPH)

Features

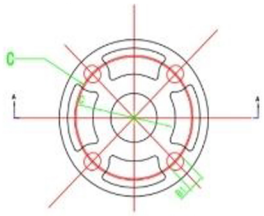
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- The standard product without nut inserted
- Standard JIS/ANSI/DIN



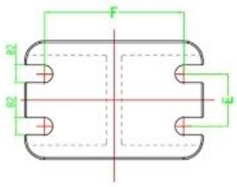




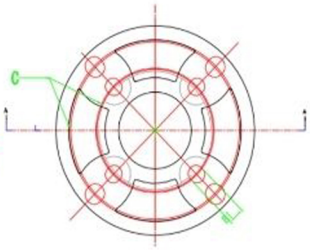
1/2"(DN15)-2"(DN50)



2-1/2"(DN65)-3"(DN80)



2-1/2"(DN65)-4"(DN100)



4"(DN100)

Size	d	L	I	d1		d2	
				UPVC/CPVC	PPH	UPVC/CPVC	PPH
DN15	15	112	23	20.25	19.2	20.05	19
DN20	20	120	26	25.25	24.2	25.05	23.8
DN25	25	136	29	32.25	31.1	32.05	30.7
DN32	32	150.5	32.5	40.25	39	40.05	38.6
DN40	40	168	35.5	50.25	48.9	50.05	48.6
DN50	50	180	38.5	63.25	61.9	63.05	61.4
DN65	63	235	44.5	75.25	73.6	75.05	72.3
DN80	75	265	51	90.35	88.3	90.05	86.9
DN100	90	304	61.5	110.3	108	110	106.4

Size	D	D1	L1	L2	H	H1	H2	SXS	C	B1	B2	E	F	Operating torque(N.M)
DN15	56	32	66	57	8.2	44.3	28.7	9X9	36	M5	6	/	31	2
DN20	65	37	68	59	8.2	53.3	32.7	9X9	36	M5	6	/	35	2.5
DN25	76	45.5	76	68	9.2	60.6	38.75	9X9	36	M5	6	/	42	3
DN32	87	55.5	85	76	11	61.5	44.25	11X11	50	M6	8	/	56	3.5
DN40	101	62	95.5	86.5	12	71.5	51.5	11X11	50	M6	8	/	58	4.5
DN50	121	79	103	92	12	82.5	62	11X11	50	M6	8	/	70	5.5
DN65	150	94.2	146	134	15	94.5	79.5	14X14	70	M8	10	30	84	7.5
DN80	169.5	110	163	148	15	105	90	14X14	70	M8	10	32	90	8.5
DN100	190	132	181	157	15	117.5	96	14X14	70/100	M8/M10	10	40	100	12

BUTTERFLY VALVE (UPVC , CPVC, PPH)

Features

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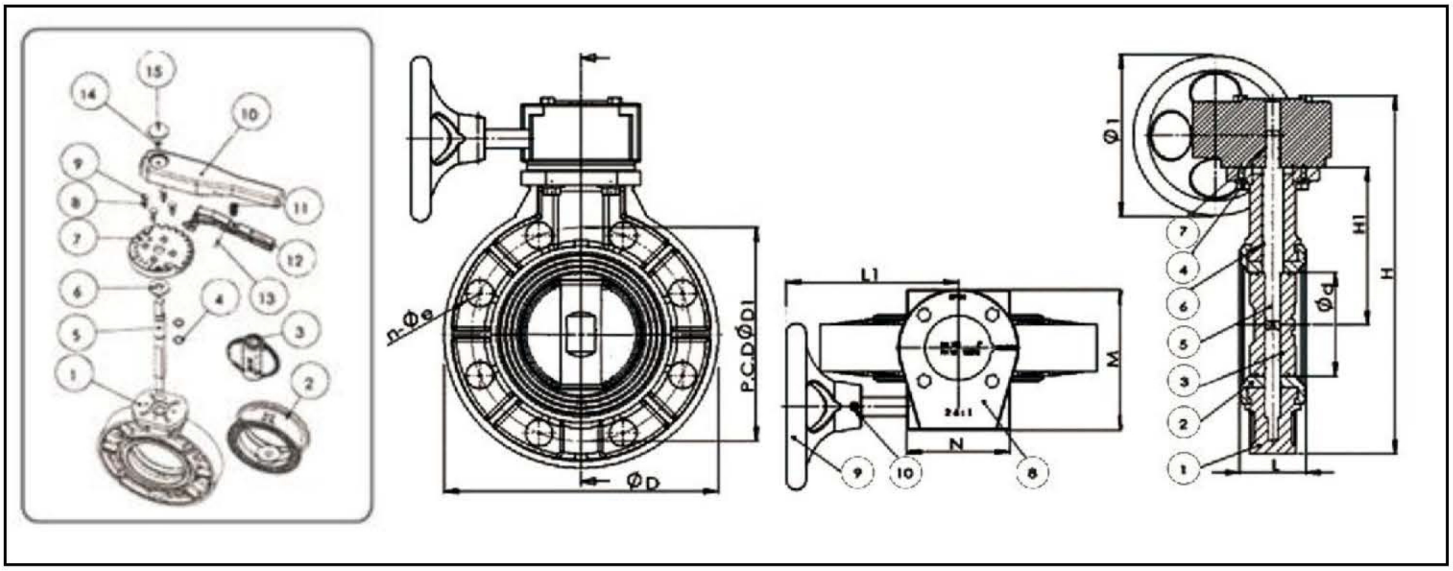


Size: 2" - 8"



Size: 6" - 20"

Drawing Structure



Material

NO	PART	MATERIAL	PCS
1	Body	UPVC/CPVC/PP-H	1
2	Seat Seal	EPDM/VITON	1
3	Disc	UPVC/CPVC/PP-H	1
4	O-ring	EPDM/VITON	2
5	Stem	Steel/SUS304/SUS316	1
6	Bear	ABS	1
7	Plate	ABS	1
8	Screw	Steel	4
9	Cap	ABS	4
10	Handel	ABS	1
11	Spring	304	1
12	Lever	ABS	1
13	Set Pin	Steel	1
14	Bolt	Steel	1
15	Mark Cap	ABS	1

BUTTERFLY VALVE (UPVC , CPVC, PPH)

Diamension

Unit:mm

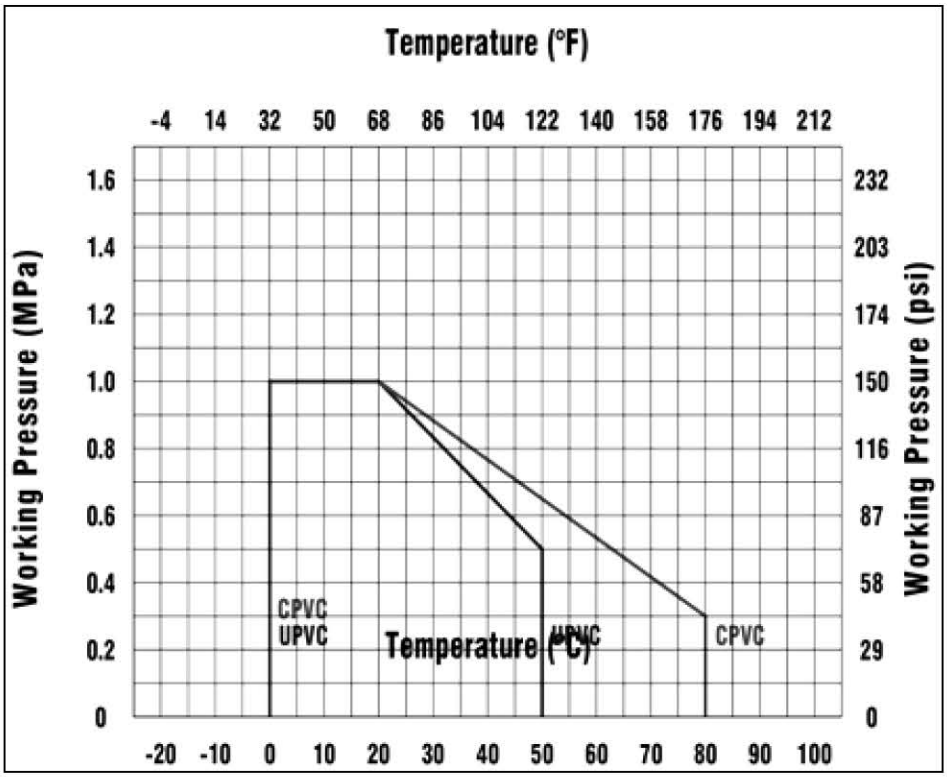
SIZE	D	P.C.D. D1			d	L	L1	H1	H2	H
		DIN	ANSI	JIS						
2"	160.00	125.00	121.00	120.00	52.00	43.00	200.00	104.00	140.00	225.00
2-1/2"	180.00	145.00	140.00	140.00	66.00	46.00	200.00	114.00	150.00	245.00
3"	200.00	160.00	152.00	150.00	78.00	49.00	240.00	125.00	168.00	280.00
4"	230.00	180.00	191.00	175.00	101.00	55.00	240.00	140.00	183.00	315.00
5"	250.00	210.00	216.00	210.00	127.00	65.00	310.00	154.00	211.00	360.00
6"	280.00	240.00	241.00	240.00	151.00	70.00	310.00	165.00	222.00	390.00
8"	335.00	295.00	298.00	290.00	200.00	88.00	310.00	228.00	285.00	465.00
10"	400.00	350.00	362.00	355.00	255.00	101.00	210.00	258.00	535.00	
12"	460.00	400.00	432.00	400.00	303.00	106.00	210.00	305.00	590.00	

Table Pressure (Material)

Pressure Loss Calculation Formula

 # $P=(Q/Cv)^2$

P:Pressure Drop
Q : Flow GPM
Cv : Flow Confficient



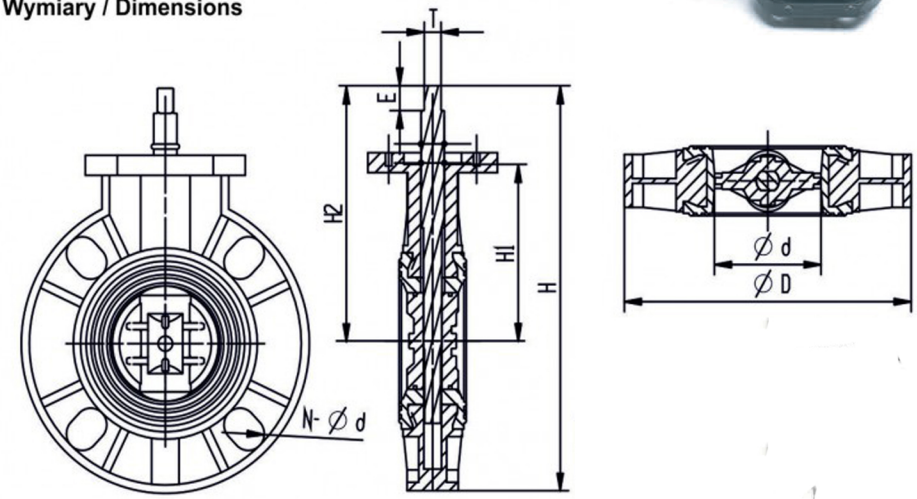
BUTTERFLY VALVE (UPVC , CPVC, PPH)

Features

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- Standard JIS/ANSI/DIN



Wymiary / Dimensions



Rys. 2. Rysunek techniczny
Fig. 2. Technical drawing

Material

NO	PART	MATERIAL	PCS
1	Body	UPVC/CPVC/PP-H	1
2	Seat Seal	EPDM/VITON	1
3	Disc	UPVC/CPVC/PP-H	1
4	O-ring	EPDM/VITON	2
5	Stem	Steel/SUS304/SUS316	1
6	Bear	ABS	1
7	Plate	ABS	1
8	Screw	Steel	4
9	Cap	ABS	4
10	Handel	ABS	1
11	Spring	304	1
12	Lever	ABS	1
13	Set Pin	Steel	1
14	Bolt	Steel	1
15	Mark Cap	ABS	1

BUTTERFLY VALVE (UPVC , CPVC, PPH)

Diamension

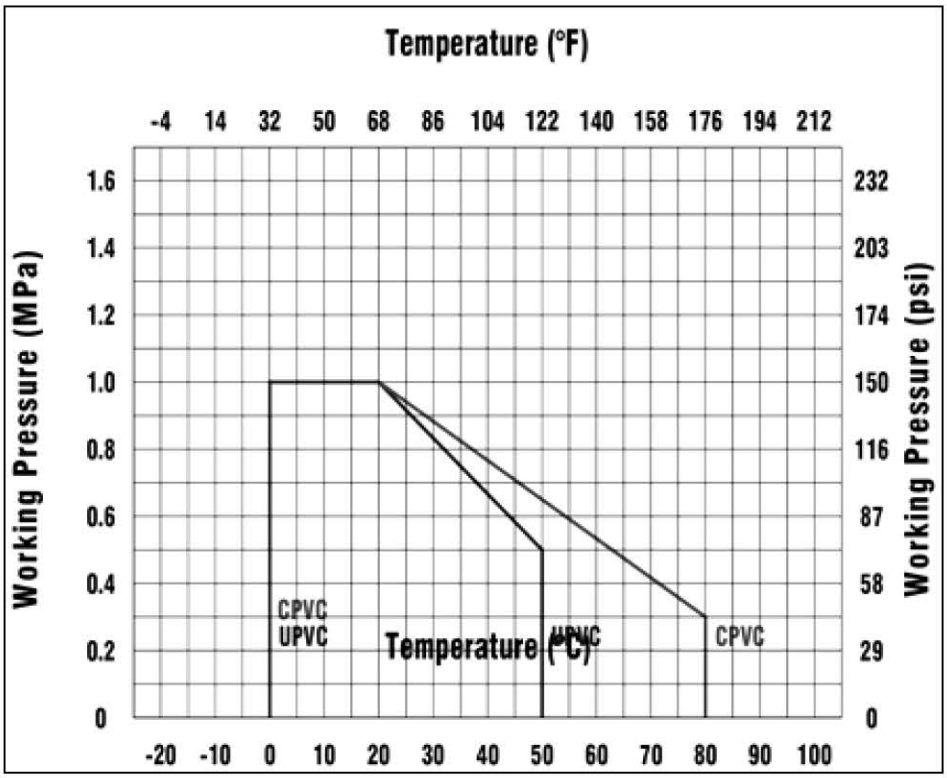
Unit:mm

SIZE	D	P.C.D. D1			d	L	L1	H1	H2	H
		DIN	ANSI	JIS						
2"	160.00	125.00	121.00	120.00	52.00	43.00	200.00	104.00	140.00	225.00
2-1/2"	180.00	145.00	140.00	140.00	66.00	46.00	200.00	114.00	150.00	245.00
3"	200.00	160.00	152.00	150.00	78.00	49.00	240.00	125.00	168.00	280.00
4"	230.00	180.00	191.00	175.00	101.00	55.00	240.00	140.00	183.00	315.00
5"	250.00	210.00	216.00	210.00	127.00	65.00	310.00	154.00	211.00	360.00
6"	280.00	240.00	241.00	240.00	151.00	70.00	310.00	165.00	222.00	390.00
8"	335.00	295.00	298.00	290.00	200.00	88.00	310.00	228.00	285.00	465.00
10"	400.00	350.00	362.00	355.00	255.00	101.00	210.00	258.00	535.00	
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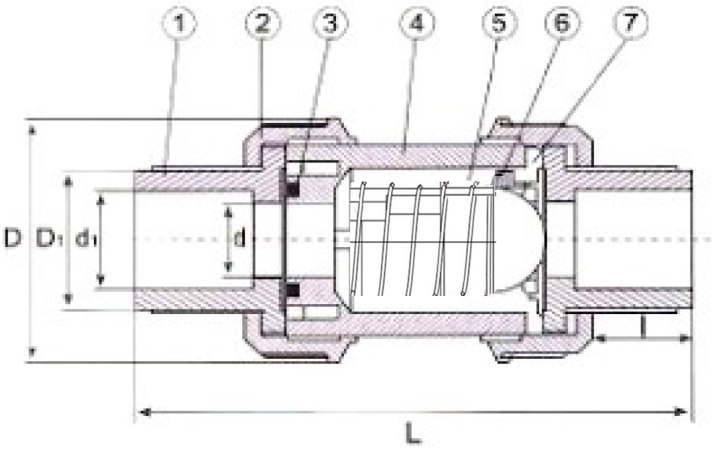
TRUE UNION SPRING CHECK VALVE (UPVC , CPVC, PPH)

Features

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- Pressure Rating 150 Psi
- Less Flow loss and seal hermetically
- Fit Compactly in spaces
- Standard JIS/ANSI/DIN



Drawing Structure



Material

NO	PART	MATERIAL	PCS
1	End	UPVC/CPVC/PP-H	2
2	Cap	UPVC/CPVC/PP-H	2
3	Seat	EPDM/VITON	1
4	Body	UPVC/CPVC/PP-H	1
5	Spring	SS304	1
6	O-ring	EPDM/VITON	1
7	Carrier	UPVC/CPVC/PP-H	1

Diamension

Unit:mm

Size	D	D1	L	d1		
				JIS	ANSI	DIN
1/2"	53.5	15	101	22	21	20
3/4"	63.3	19.5	115	26	26	25
1"	73	25	156	32	33	32
1-1/4"	97.5	32	171	38	42	40
1-1/2"	171	40	171	48	48	50
2"	195	50	195	60	60	63
2-1/2"	184	62.5	226	76	73	75
3"	199	76	274	89	89	90
4"	206	100	367	114	114	110

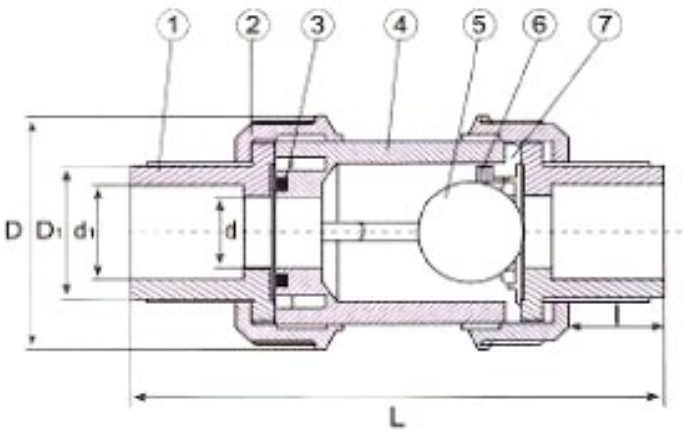
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4	Body	UPVC/CPVC/PP-H	1
5	Ball	UPVC/CPVC/PP-H	1
6	O-ring	EPDM/VITON	1
7	Carrier	UPVC/CPVC/PP-H	1

Diamension

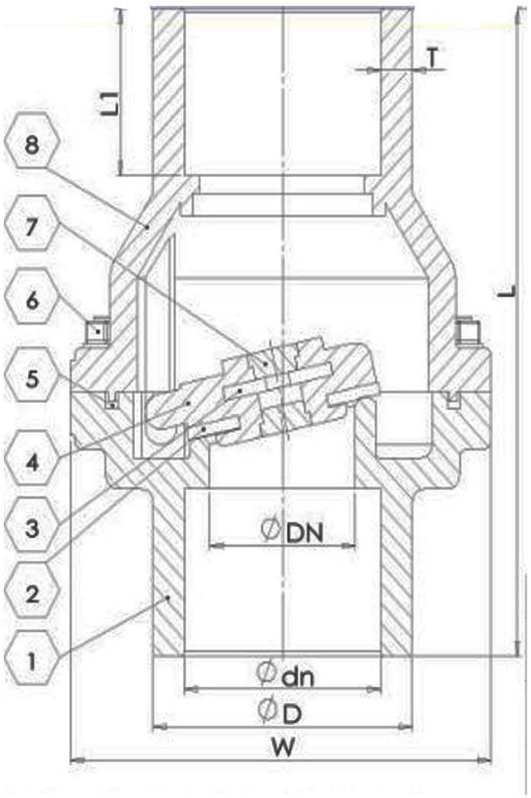
Unit:mm

Size	D	D1	L	d1		
				JIS	ANSI	DIN
1/2"	53.5	15	101	22	21	20
3/4"	63.3	19.5	115	26	26	25
1"	73	25	156	32	33	32
1-1/4"	97.5	32	171	38	42	40
1-1/2"	171	40	171	48	48	50
2"	195	50	195	60	60	63
2-1/2"	184	62.5	226	76	73	75
3"	199	76	274	89	89	90
4"	206	100	367	114	114	110

SWING CHECK VALVE



Size : 3/4" - 6"
Joint End : Socket (ANSI/CNS/DNS/JIS)
Working Pressure : 150 PSI



Specification of material

NO	PART	MATERIAL	QTY
1	BODY	UPVC/PP/CPVC/PVDF	1
2	SEAL	EPDM/VITON	1
3	PLATE	STEEL	1 - 3
4	FLAPPER	UPVC/PP/CPVC/PVDF	1
5	O-RING	EPDM/VITON	1
6	BOLT	SS304/SS316	4 - 12
7	COVER	UPVC/PP/CPVC/PVDF	1
8	UPPER	UPVC/PP/CPVC/PVDF	1

Dimensions

Unit: mm

SIZE / Nom.		D	L1	L	W	T
3/4"	DN20	36	27	98	64	6
1"	DN25	46	27	107	75	7
1-1/4"	DN32	56	34	130	110	8
1-1/2"	DN40	66	38	147	120	9
2"	DN50	81	39	162	140	9
2-1/2"	DN65	95	45	198	148	10
3"	DN80	112	55	236	163	11
4"	DN100	132	75	305	204	11
6"	DN150	194	90	382	292	17



U-PVC MALE UNION

Union Adaptor

U-PVC Male Union



MATERIAL

BODY : U-PVC

O-RING : EPDM

CONNECTION

: SOCKET JIS

: MALE BSPT

PRESSURE : 150 PSI

U-PVC Male Union Buying Guide

รุ่น	รายละเอียด	ขนาด D (นิ้ว)	ขนาด D (มิลลิเมตร)	ขนาด DN (มิลลิเมตร)
UU-ER-0021.5	U-PVC Union [สวมท่อ + เกลียว]	1.5"	58.8	80.1
UU-ER-0022.0	U-PVC Union [สวมท่อ + เกลียว]	2"	73.7	99.5

DIMENSIONS

Description	ขนาดท่อ	Dimension (mm.)	
		A	B
U-PVC Male Union	1.5"	83	105
U-PVC Male Union	2"	105	132

