



Waterworks PVC Butterfly Valves

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Design

Available in both the Bare Shaft and Lever handle style, the Waterworks PVC Butterfly Valves are used to regulate the flow of fluid in a pipe.

This high-strength valve has a PVC body and disc which has an additional ribbed design, contributing to its durability and strength. It has a low torque due to the placement of the seat seal on the valve body and is resistant to corrosion, these features ensuring longevity.

Sizes

Bare Shaft: DN50-DN300
Lever Handle: DN50-DN200

Applications

Waterworks PVC butterfly valves are suitable for most industrial and commercial applications, such as water transfer and reticulation, water and wastewater treatment, selected chemical applications, and swimming pools.

Pressure Rating

Bare Shaft
Sizes 50-150mm - PN10 at 22°C.
Sizes 200-300mm - PN6 at 22°C.

Lever Handle
Sizes 50-150mm - PN10 at 22°C.
Sizes 200mm - PN6 at 22°C.

Flange

Universal Specification

Approvals & Certifications

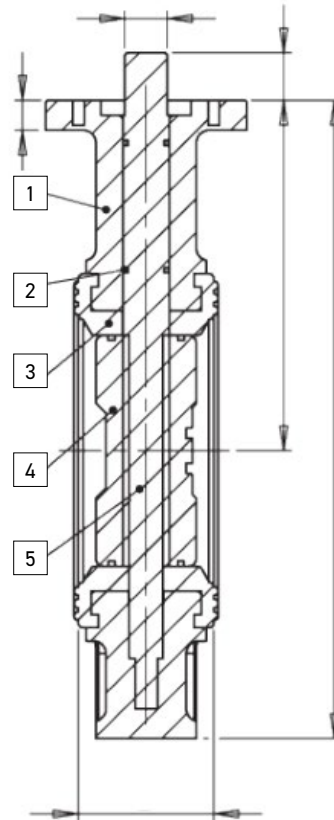
BS EN ISO 1452-4 : 2009
Bare Shaft Type - Meet ISO 5211 standard: F05, F07, F10
NSF approved

Temperature Range

Operating Temperature: 4°C to 40°C
Maximum Temperature: 60°C

Material Specifications

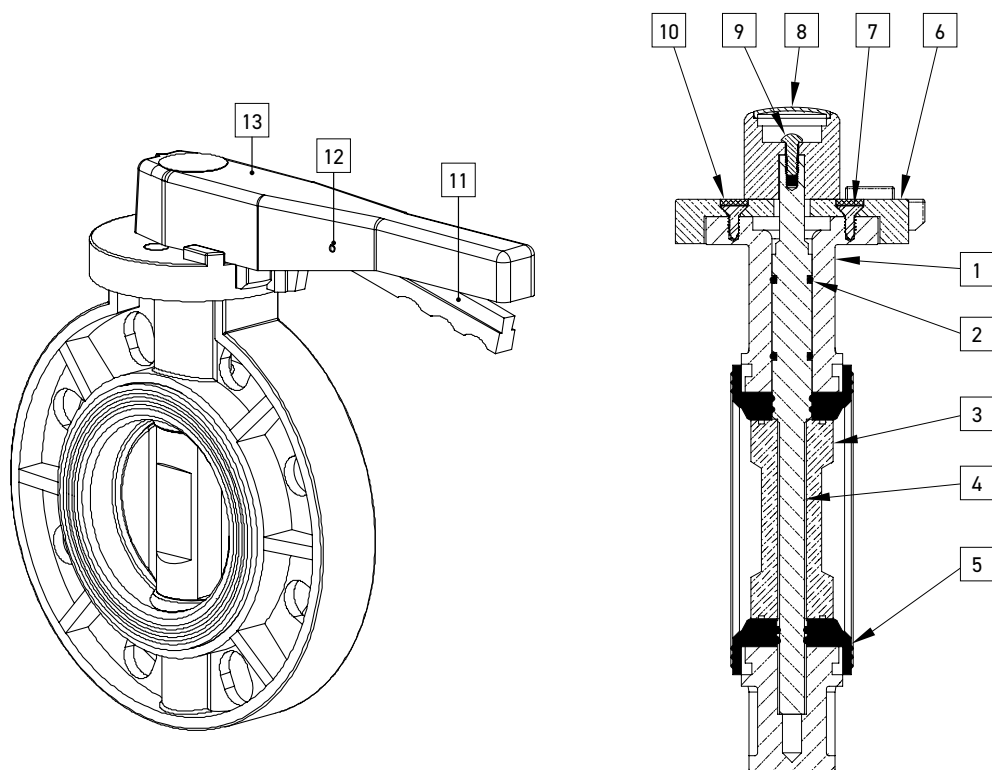
Bare Shaft



No.	Description	Material
1	Body	PVC
2	O-Ring	EPDM
3	Seat Seal/Gasket	EPDM
4	Disc	PVC
5	Stem	316 Stainless Steel

Material Specifications

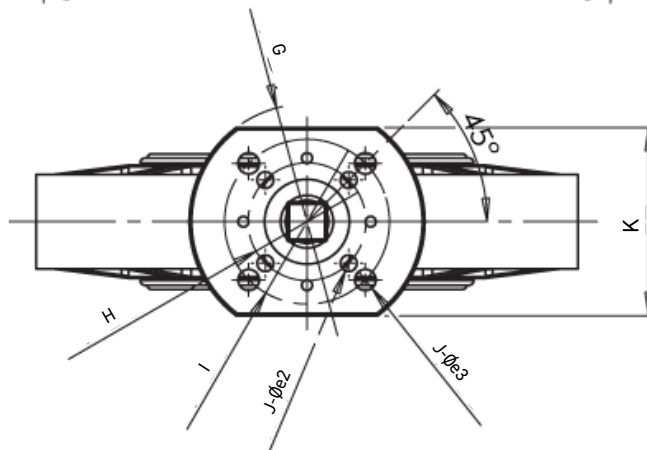
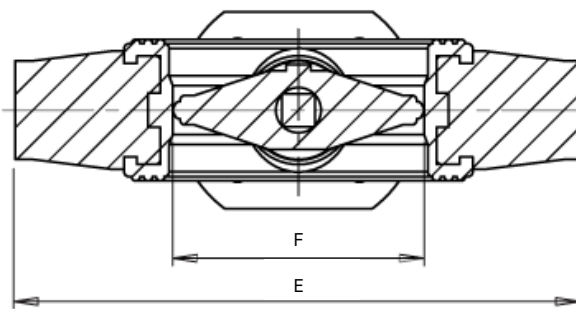
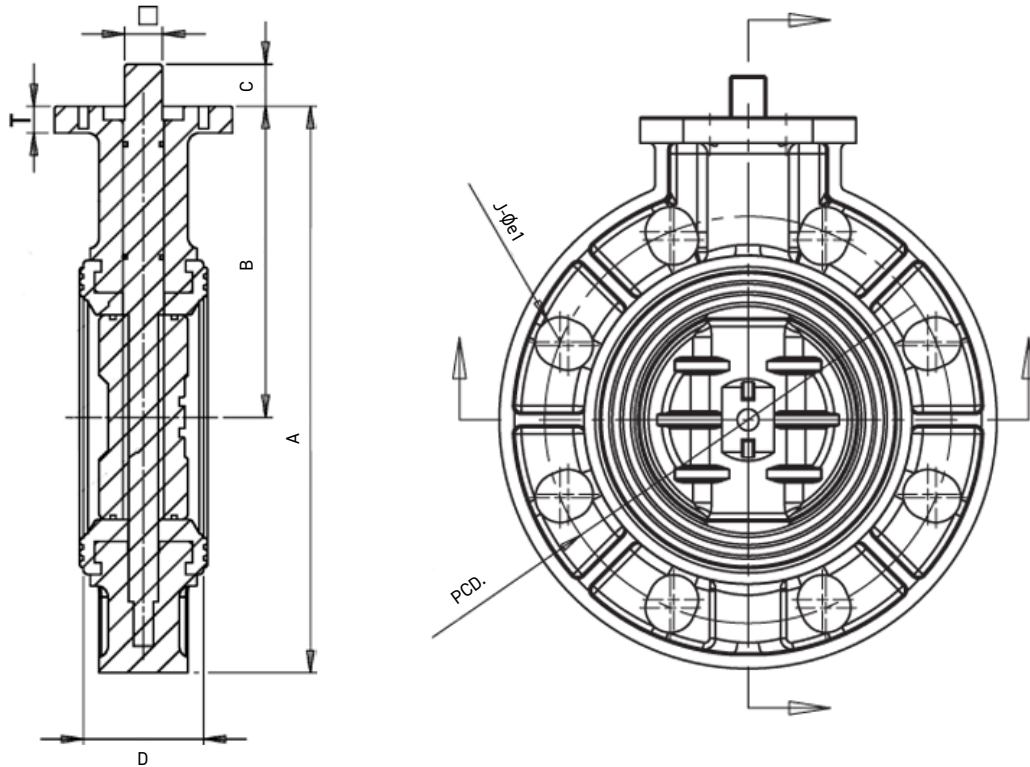
Lever Handle



No.	Description	Material
1	Body	PVC
2	O-Ring	EPDM
3	Disc	PVC
4	Stem	316 Stainless Steel
5	Seat Seal/Gasket	EPDM
6	Notch plate	ABS
7	Screw	316 Stainless Steel
8	Screw Cap	ABS
9	Screw	316 Stainless Steel
10	Screw Cap	ABS
11	Lever	ABS
12	Pin	316 Stainless Steel
13	Handle	ABS

Dimensions

Bare Shaft



Size		ISO5211							ISO5211		DIN	ANSI	JIS	
DN	A	B	C	D	E	F	G	H	I	J - Øe1	J - Øe1	J - Øe1		
50	180	100	12	43	160	48	100	50	F05	70	F07	4-Ø19	4-Ø19	4-Ø19
65	202	112	12/15	46	181	63	100	50	F05	70	F07	4-Ø19	4-Ø19	4-Ø19
80	218	120	15/18	49	196	78	100	50	F05	70	F07	8-Ø19	4-Ø19	8-Ø19
100	255	140	15/18	54	230	98	100	50	F05	70	F07	8-Ø19	8-Ø19	8-Ø19
125	295	165	18/23	64	260	122	140	70	F07	102	F10	8-Ø19	8-Ø19	8-Ø19
150	325	180	18/23	70	288	146	140	70	F07	102	F10	8-Ø23	8-Ø23	8-Ø23
200	387	215	18/23	88	344	199	140			102	F10	8-Ø23	8-Ø23	12-Ø23
250	430	260	23	98	412	246	200			102	F10	12-Ø23	12-Ø25	12-Ø25
300	528	285	28	108	487	296	220			102	F10	12-Ø23	12-Ø25	16-Ø25

Size		DIN			ANSI		JIS	PN	Torque		
DN	J - Øe2	J - Øe3	K	P.C.D.Ø	P.C.D.Ø	P.C.D.Ø	PSI	T	□	N.M.	
50	4-Ø7	4-Ø9	80	125	121	120	150	12	11	10	
65	4-Ø7	4-Ø9	80	145	140	140	150	12	11/14	10	
80	4-Ø7	4-Ø9	80	160	152	150	150	12	14/17	15	
100	4-Ø7	4-Ø9	80	180	191	175	150	12	14/17	25	
125	4-Ø9	4-Ø9	100	210	216	210	150	15	17/22	40	
150	4-Ø9	4-Ø9	100	240	241	240	150	15	17/22	55	
200		4-Ø9	100	295	298	290	100	15	17/22	70	
250		4-Ø9	110	350	362	355	100	20	22	210	
300		4-Ø9	150	400	432	400	100	21	27	300	

Cv Factors

Valve Size	Cv (at various opening degrees)		
Inches	30°C	60°C	90°C
2"	7	73	120
2-1/2"	15	153	250
3"	18	183	300
4"	28	287	470
5"	49	506	830
6"	66	671	1100
8"	150	1525	2500
10"	232	2355	3860
12"	342	3477	5700

Pressure vs Temperature

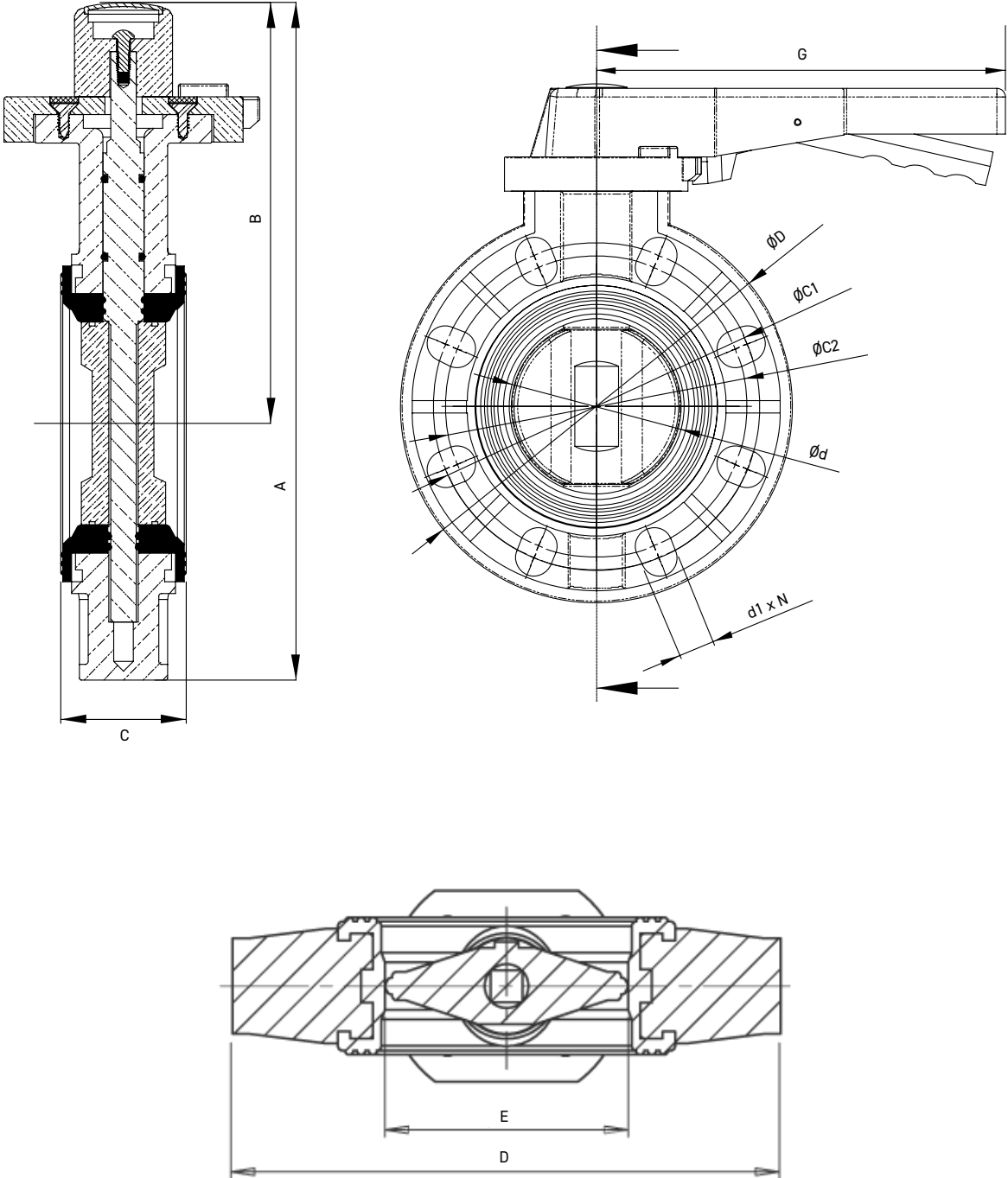
Body	PVC	
Valve Size (Inches)	0°C 49°C	50°C 60°C
2"	150 PSI	70 PSI
2-1/2"	150 PSI	70 PSI
3"	150 PSI	70 PSI
4"	150 PSI	45 PSI
5"	150 PSI	45 PSI
6"	150 PSI	45 PSI
8"	100 PSI	30 PSI
10"	100 PSI	30 PSI
12"	100 PSI	25 PSI

Pressure Loss Calculation Formula

$$\Delta P = \left[\frac{Q}{Cv} \right]^2 \quad \Delta P = \text{Pressure Drop} \quad Q = \text{Flow in GPM} \quad Cv = \text{Flow Coefficient}$$

Dimensions

Lever Handle



Size						DIN	ANSI	JIS
DN	A	B	C	D	E	n- Øe1	n- Øe1	n- Øe1
50	221	141	45	159	48	4-Ø19	4-Ø19	4-Ø19
65	245	154	48	181	63	4-Ø19	4-Ø19	4-Ø19
80	264	166	53	195	78	8-Ø19	4-Ø19	8-Ø19
100	300	186	56	230	98	8-Ø19	8-Ø19	8-Ø19
125	352	222	67	259	122	8-Ø19	8-Ø19	8-Ø19
150	381	238	73	288	146	8-Ø23	8-Ø23	8-Ø23
200	448	272	90	351	199	8-Ø23	8-Ø23	12-Ø23

Size		DIN	ANSI	JIS	PN	Torque
DN	G	P.C.D.Ø	P.C.D.Ø	P.C.D.Ø	PSI	N.M.
50	190	125	121	120	150	10
65	190	145	140	140	150	10
80	241	160	152	150	150	15
100	241	180	191	175	150	25
125	317	210	216	210	150	40
150	317	240	241	240	150	55
200	317	295	298	290	100	70

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5"	150 PSI	45 PSI
6"	150 PSI	45 PSI
8"	100 PSI	30 PSI

Pressure Loss Calculation Formula

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Installation Instructions

Storage and Handling instructions

Storage

Store the valves indoors in a clean and dry place. Deterioration that occurs during storage could reduce the life span of the valve. Direct exposure to UV or high temperatures will shorten the expected service life of the valve. The optimal storage condition is in covered pallets with an ambient temperature of 5-20°C. Butterfly valves shall be stored with the disc slightly opened to prevent permanent disc setting deformation.

Consider the following to prevent damage to the valve:

Damage to the disc edge: Take care to avoid damage to the disc edge. Any scratching could cause leaking around the disc.

Damage to the rubber liner: Take care to avoid damage to the rubber seat and sealing surface. Sharp objects could damage the sealing surface inside the valve or on the flanges.

Force applied to top of stem: When mounting a lever, gearbox, or actuator onto the bare shaft butterfly valve be careful to avoid excessive force on the stem as this may cause a permanent imprint in the rubber.

Installation

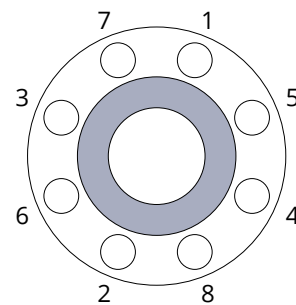
Check that installation conditions are within the specifications of the valve. It's important to install the valve in a location where service conditions won't exceed the valves pressure, temperature or operating media ratings, as this could lead to failure of the valve. When installing please keep in mind that the valve seat has been designed to provide a secure and proper seal. As a result, there is no need to use additional flange gaskets.

Installation Procedure:

1. Before proceeding with the valve installation, check the valve identification tag to make sure that the pressure and valve materials are correct for the application.
2. The counter flanges sealing surface must be free of burrs, radial grooves, dirt/oil, and sharp edges. Sharp edges may result in liner damage.
3. Make sure the pipeline has sufficient support to prevent vibrations and load weight from damaging the valve.
4. Make sure pipes are aligned:
When the valve is installed between two pipeline flanges, these must be completely aligned. Ensuring alignment during the valve installation process is crucial, as it helps to prevent high loads that can lead to stress and possibly fracture. When the valve is installed in a pipeline, make sure it is as tension-free as possible. The pipeline forces transmitted to the valve must not exceed the values specified in EN

1074-2.

5. Make sure the pipe flanges and valve sealing faces are clean from any debris.
6. Spread the flanges enough to allow the butterfly valve to fit with partly opened disc (5-10 degrees).
7. The valves can be mounted in any orientation, with horizontal and/or vertical pipelines. In general, Waterworks recommends the rubber seated valve be installed with the stem in the Horizontal position. Please note for larger size butterfly valves the actuator must be supported.
8. Fix the valve (without any gaskets) with the bolts - without tightening them - open the disc to a fully open position and make sure it will not be in contact with the pipe.
9. Tighten each bolt diametrically opposed to each other as according to the figure on the right.
10. After the valve has been installed and if not in operation, please keep the valve disc in a slightly open position.



Removing the valve

Prior to any replacement or maintenance, the valves must be dismantled from the pipe system as follows:

1. Drain and depressurize the pipe on each side of the valve.
2. Ensure that the disc is partially opened (5-10 degrees) before removing the valve.
3. Before removing an automatic actuator ensure that the operating system is not pressurized. Before re-installation of the valve please look through the installation instructions.

Disclaimer: This manual is intended to provide a guide for the installation and operation of the Waterworks Butterfly Valves. It is the responsibility of the installer to ensure approved materials are used in accordance with regulatory and best practice guidelines. Waterworks can provide assistance in ensuring the correct valve is selected for your installation.

TRANSPORT

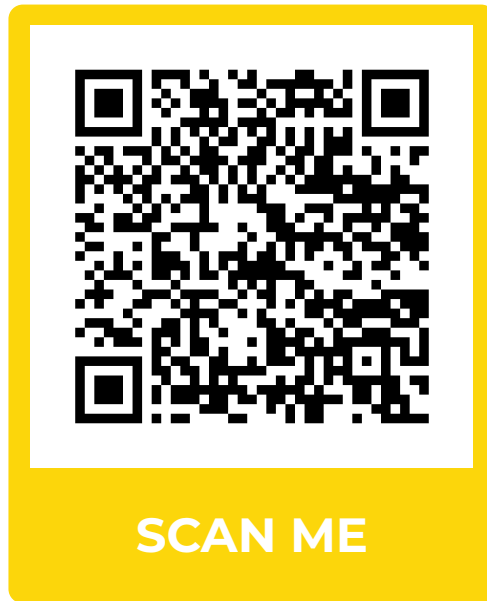
	Packaging	Use original packaging		
			Top	Fragile
	Environment			
		Max 40°C	30% - 80% H.R.	Shade
	When Lifting	Use the correct equipment		

STORAGE

	Environment			
		Max 40°C	30% - 80% H.R.	Shade
	Disc Position			

INSTALLATION

	Valve open/closed			
	If the fluid is dangerous	Avoid contact.		
	In case of external fire	Tightness not guaranteed.		
	In case of explosive atmosphere	Body earthen. Periodical conductivity check required.		
	Direction of Flow	Bi-directional allowed.		
	Shaft Position	Valve shaft should be horizontal.		
	Flange Gaskets	Separate gaskets should not be used unless specifically recommended by Waterworks.		
	Centring	Installation in the centre of the pipe.		
	Tightening of Bolts	Criss-cross fashion.		
	Tightening Torque	Until leakage stops (metal/metal contact not required).		



Scan the QR code to view our
PVC Butterfly Valves online.





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