

### Features

- Pressure rated 232 PSI (16 Bar, 2" valves), 150 PSI (10 Bar, 3-10" valves), 120 PSI (8 Bar, 12" valves) ~ at 73°F (23°C)
- ANSI 150 Wafer style flange connection
- Field convertible ISO & ANSI bolt patterns
- Polypropylene (PP) disc
- 316 Stainless Steel shaft
- Actuator-ready ISO 5211 mount
- Optional ten-position hand lever (up to 8") or gearbox (3-12")
- Lighter weight than ductile or cast iron butterfly valves
- Certified per NSF 372 and NSF 61 for potable drinking water

### Applications

Industrial quality PVC butterfly valves are typically used for potable drinking water where NSF approved construction is required, as well as for corrosive environment applications. Valves can be manually operated or mounted to air or electric actuators. PVC valves should never be used for compressed gas applications.

### Operation

Turning the valve one quarter-turn (90°) rotates the disc from closed to full open position. Installation should be performed with the valve in the open position before tightening flange bolts. For dirty or suspended particle applications, the valve should be mounted so the shaft is not vertical. Refer to the installation guidelines for further detail.

### Construction

<b>Valve Body</b>	PVC (dark gray)
<b>Disc</b>	PP (Polypropylene)
<b>Disc Seat/Liner</b>	EPDM
<b>Stem Seals</b>	EPDM
<b>Stem</b>	316 SS
<b>Shaft O-Rings</b>	EPDM
<b>Adapter Pad</b>	GR-PP
<b>Anti-friction Rings</b>	PTFE



### Description

Industrial grade PVC butterfly valves are available in pipe sizes from 2 through 12 inch. Gear boxes and hand levers are available as options. Anti-friction PTFE rings reduce seal wear and torque. Disc is PP material with a single piece 316 stainless steel shaft. Primary liner is EPDM.

### Approvals

- NSF International certified to:
  - NSF/ANSI 372 Drinking Water
  - NSF/ANSI 61 G
- ANSI B16.5
- Disc PP Type 1 homopolymer per ASTM D4101



### Options

- Electric actuators
- Air Actuators
- Hand levers
- Gear boxes
- Square nut operator

**Construction Features**

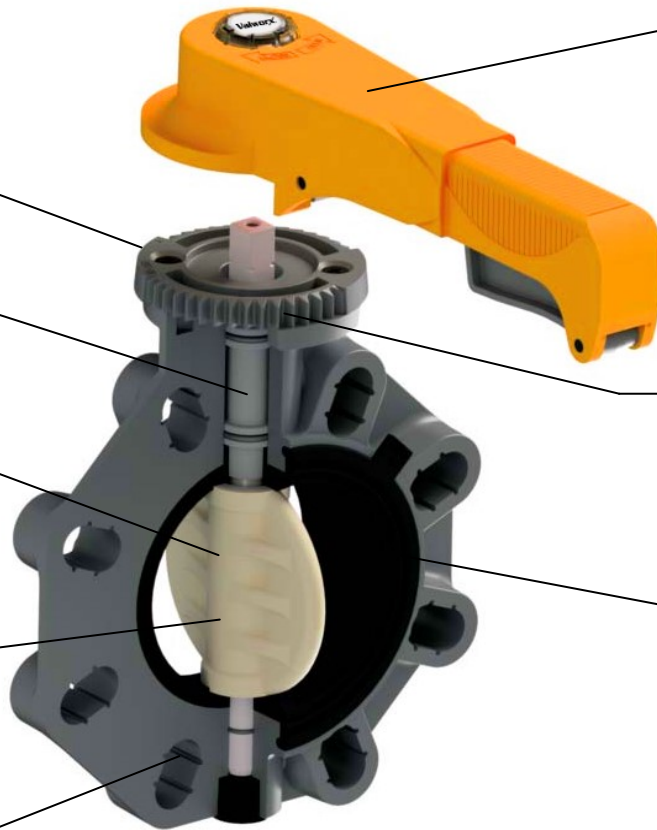
Actuator ready with ISO5211 mounting pad

Non-wetted 316 Stainless Steel disc shaft

PP (Polypropylene Disc) suitable for use with clean or dirty fluids

Disc, seat and seals are only components that come into contact with media flow, isolating PVC valve body

Oval bolt holes in body compatible with ISO or ANSI 150 mounting patterns



Optional tamper proof lockout-tagout capable handle available for valve sizes up to 8"

10 position incremental locking plate with optional handle

EPDM seat liner serves as flange gasket on both sides of valve\*\*

Certified per NSF61 for potable/drinking water



**Pressure/Temperature**

Pressure Rating\*: 232 PSI (16 Bar, 2" valves), 150 PSI (10 Bar, 3-10" valves), 120 PSI (8 Bar, 12" valves) ~ at 73°F (23°C)

Temperature Rating: 40 to 140°F (4.4 to 60°C)

\*See P/T chart (page 3)

\*\*Not for use in end of line service.

## Specifications (English units)

Stock Number	Pipe Size (inches)	Disc Size (inches)	Cv	Pressure (PSI)*	Body Material	Disc Material	Seal Materials	Torque (inch lbs)
<b>PVC BUTTERFLY VALVE, EPDM SEALS</b>								
540202	2	1.97	90	232	PVC	PP	EPDM	75
540204	3	3.15	249	150	PVC	PP	EPDM	221
540206	4	3.94	413	150	PVC	PP	EPDM	398
540208	6	5.91	1309	150	PVC	PP	EPDM	796
540210	8	7.9	2135	150	PVC	PP	EPDM	1239
540212	10	9.84	3724	150	PVC	PP	EPDM	2212
540214	12	11.81	5712	120	PVC	PP	EPDM	3097

\* Pressure at 32 to 73° F (reduced pressure at higher temperatures—see P/T chart)

Cv = The GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

Torque values at Max PSI

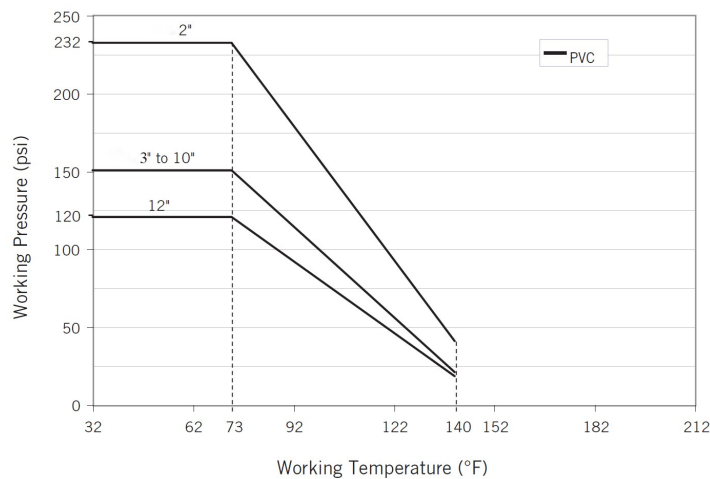
## Specifications (Metric units)

Stock Number	Pipe Size (mm)	Disc Size (mm)	Kv	Pressure (Bar)*	Body Material	Disc Material	Seal Materials	Torque (Nm)
<b>PVC BUTTERFLY VALVE, EPDM SEALS</b>								
540202	2	50	78	16	PVC	PP	EPDM	9
540204	3	80	215	10	PVC	PP	EPDM	25
540206	4	100	357	10	PVC	PP	EPDM	45
540208	6	150	1132	10	PVC	PP	EPDM	90
540210	8	200	1847	10	PVC	PP	EPDM	140
540212	10	250	3221	10	PVC	PP	EPDM	250
540214	12	300	4940	8	PVC	PP	EPDM	350

\* Pressure at 0 to 23° C (reduced pressure at higher temperatures—see P/T chart)

Torque values at Max BAR

## Pressure Temperature Chart



## Flow Coefficients

The flow coefficient ( $C_v$ ) represents the flow rate in gallons per minute (GPM) at 68°F for which there is a 1 psi pressure drop across the valve in the fully open position. These values are determined from an industry standard testing procedure which uses water as the flowing media (specific gravity of 1.0, varies for other media).

To determine flow rate and pressure loss scenarios for different fluids, one can use the formula shown.

$$f = sg \times \left( \frac{Q}{C_v} \right)^2$$

**f** is the pressure drop (friction loss in psi)

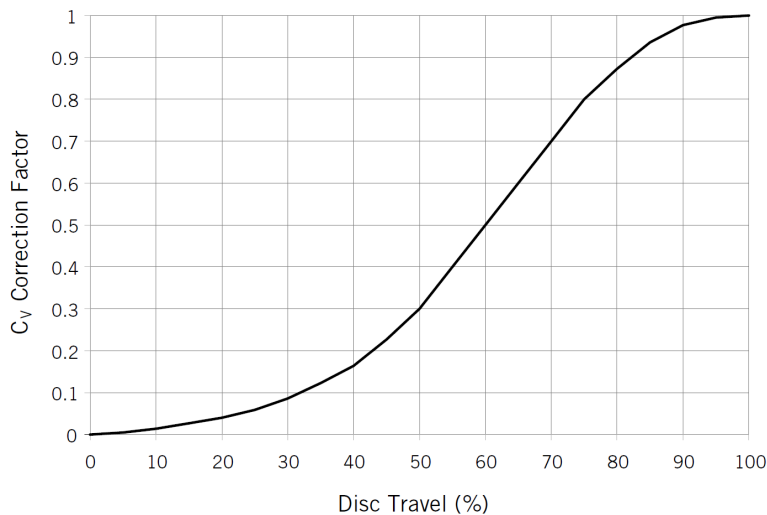
**sg** is the specific gravity of the fluid

**Q** is the flow rate in GPM

**$C_v$**  is the flow coefficient

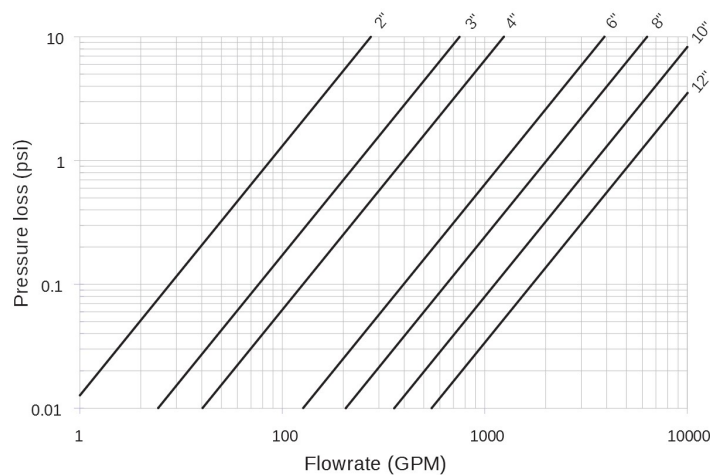
## Flow Coefficient Correction Factor Chart

Use this chart to determine the appropriate flow coefficient correction factor depending on the amount of disc travel. As the valve cycles from fully open (100% travel) to fully closed (0% travel), the corresponding  $C_v$  value will decrease in accordance with the adjacent graph.



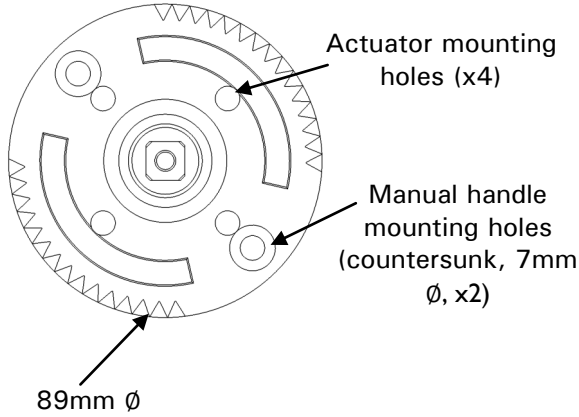
Size (in)	$C_v$
2"	90
3"	249
4"	313
6"	690
8"	1309
10"	3724
12"	5712

## Pressure Loss Chart

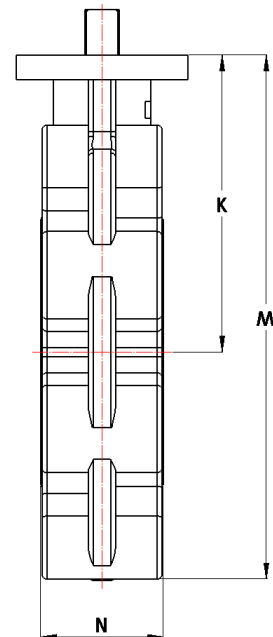
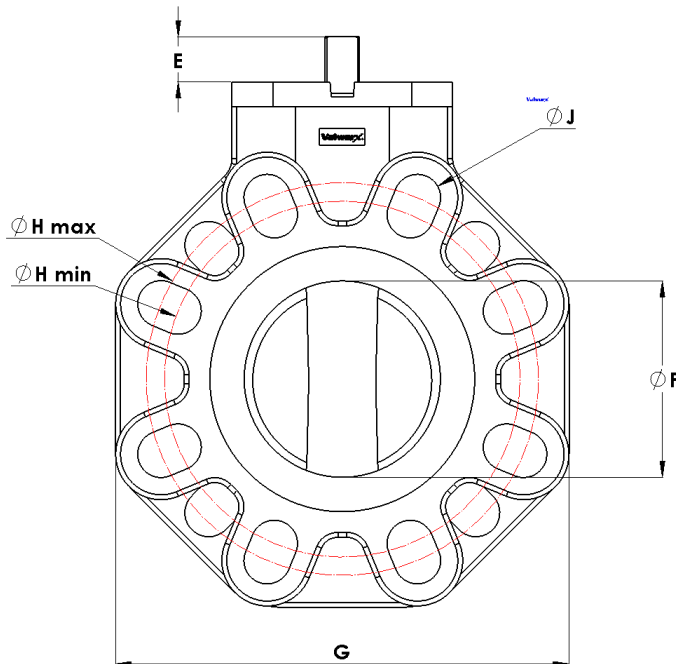
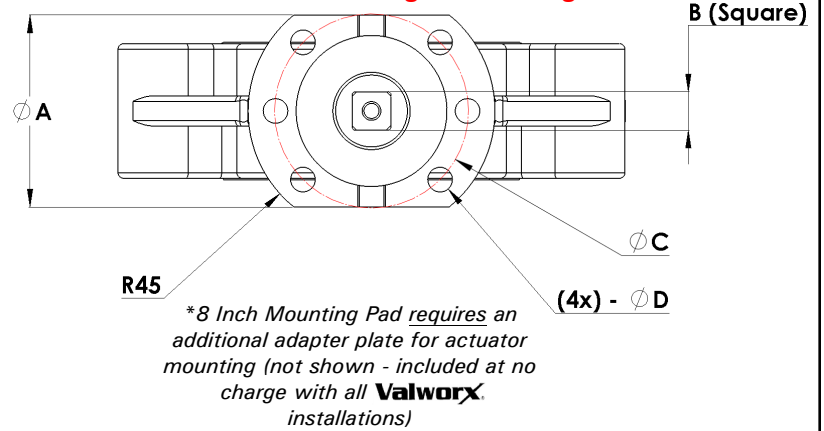


## Dimensions: 2 to 8 inch Sizes

### 2" Mounting Pad Design

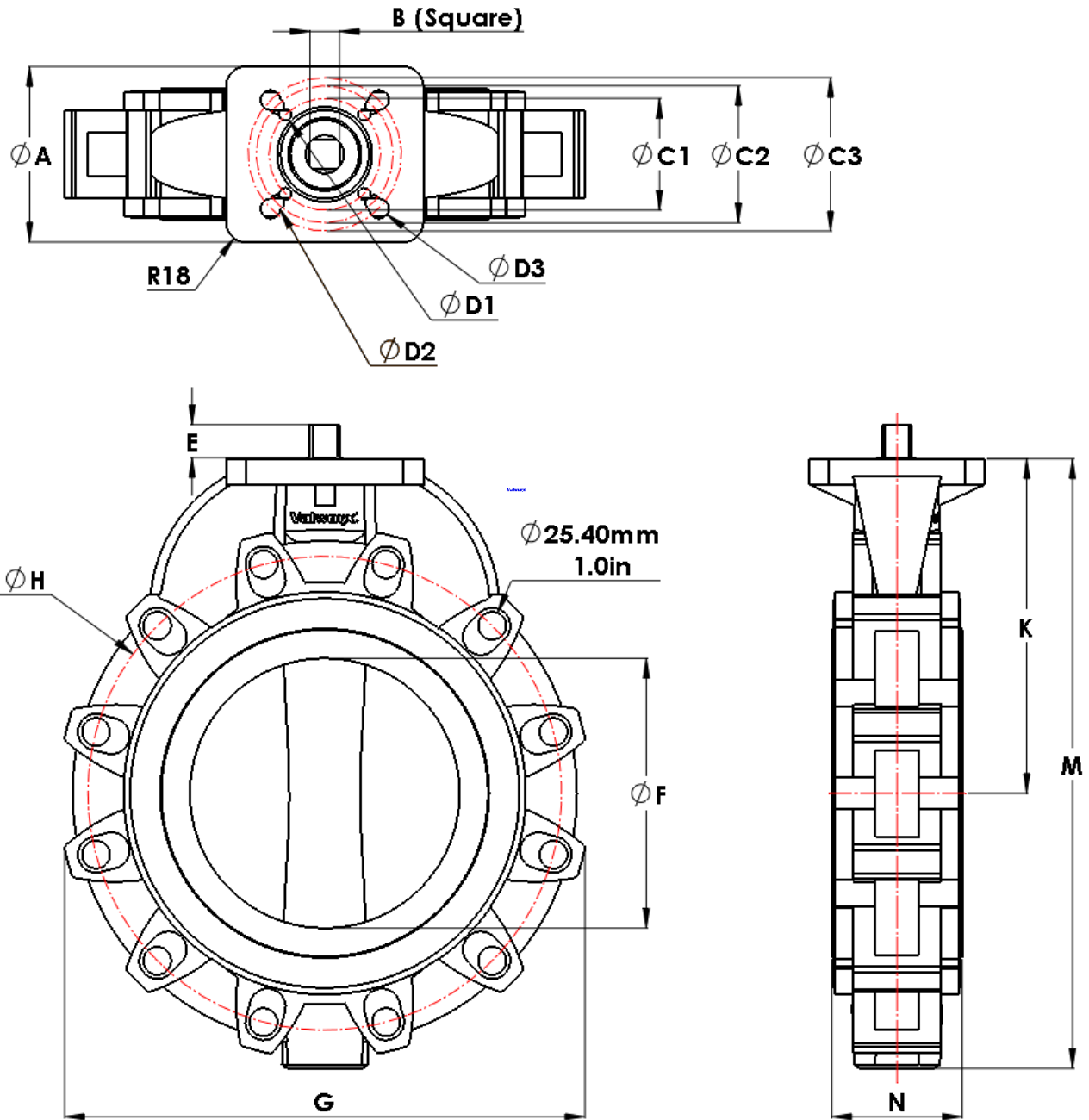


### 3" to 8" Mounting Pad Design



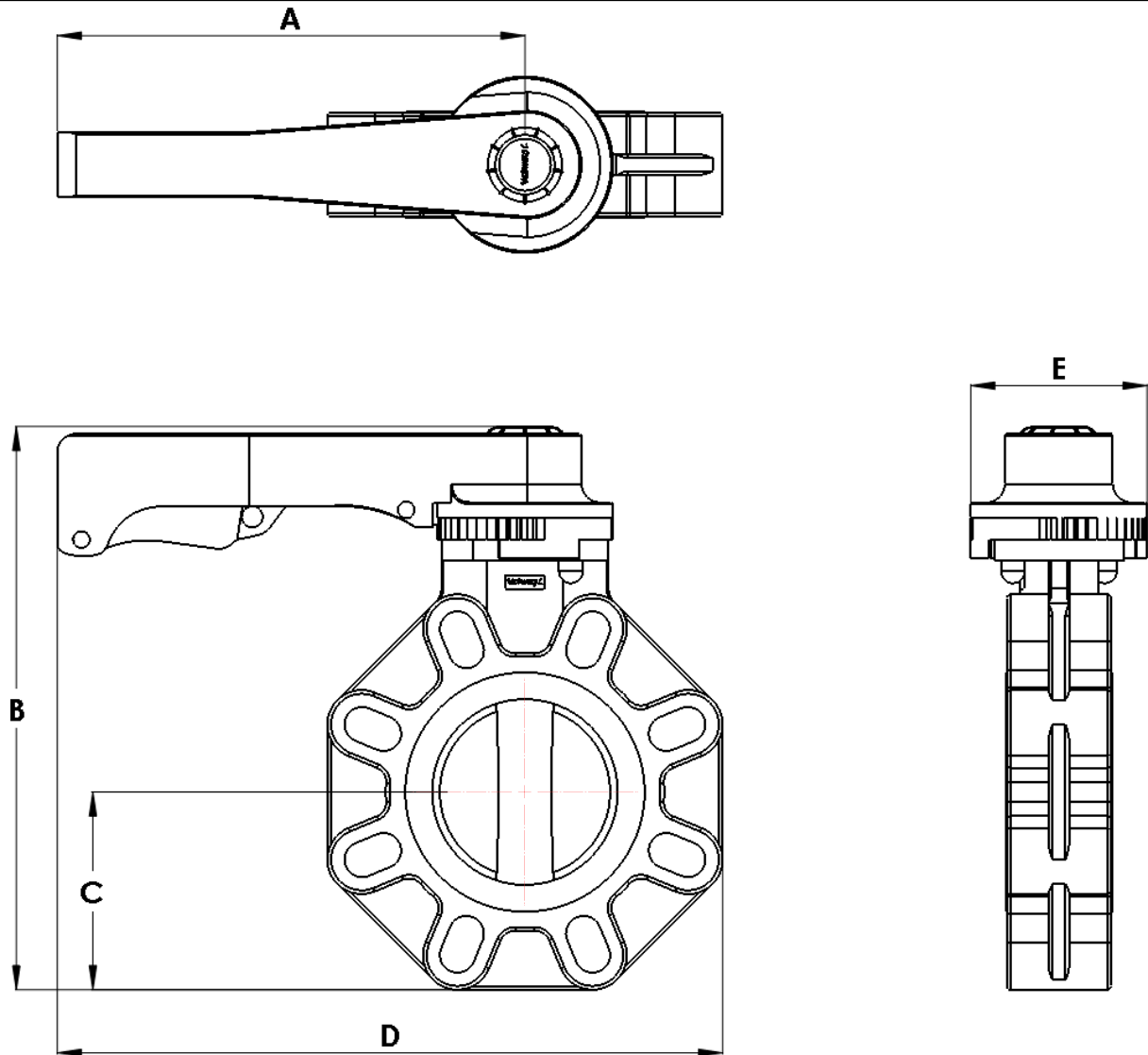
Pipe Size		A	B	C	D	E	F	G	H $\phi$ (min)	H $\phi$ (max)	J $\phi$	K	M	N	# holes	ISO Pad	Weight
2 DN50	inch	-	0.4	1.9	0.2	0.4	1.97	5.8	4.53	4.94	0.75	4.5	7.3	1.7	4	F05	1.7 lb
	mm	-	11	50	7	11	50	147	115	125.5	19	115	185	44			0.8 kg
3 DN80	inch	2.8	0.55	1.9	0.3	0.7	3.15	7.3	5.71	6.30	0.75	4.8	8.4	1.97	12	F07	3.3 lb
	mm	70	14	50	9	19	80	185	145	160	19	121	214	50			1.5 kg
4 DN100	inch	2.8	0.55	2.8	0.3	1.1	3.94	8.31	6.50	7.48	0.75	5.4	9.6	2.2	8	F07	4.1 lb
	mm	70	14	70	9	28	100	211	165	190	19	136	243	56			1.9 kg
6 DN150	inch	2.8	0.67	2.8	0.3	1.3	5.91	10.5	9.06	9.53	0.91	6.6	11.9	2.76	8	F07	8.1 lb
	mm	70	17	70	9	32	150	268	230	242	23	168	302	71			3.7 kg
8 DN200	inch	3.5	0.87	4.0	0.4	1.4	7.87	12.7	11.02	11.73	0.91	8.5	14.8	2.80	8	F10	14.3 lb
	mm	90	22	102	11	36	200	323	280	298	23	216	377	72			6.5 kg

Dimensions: 10 to 12 inch Sizes



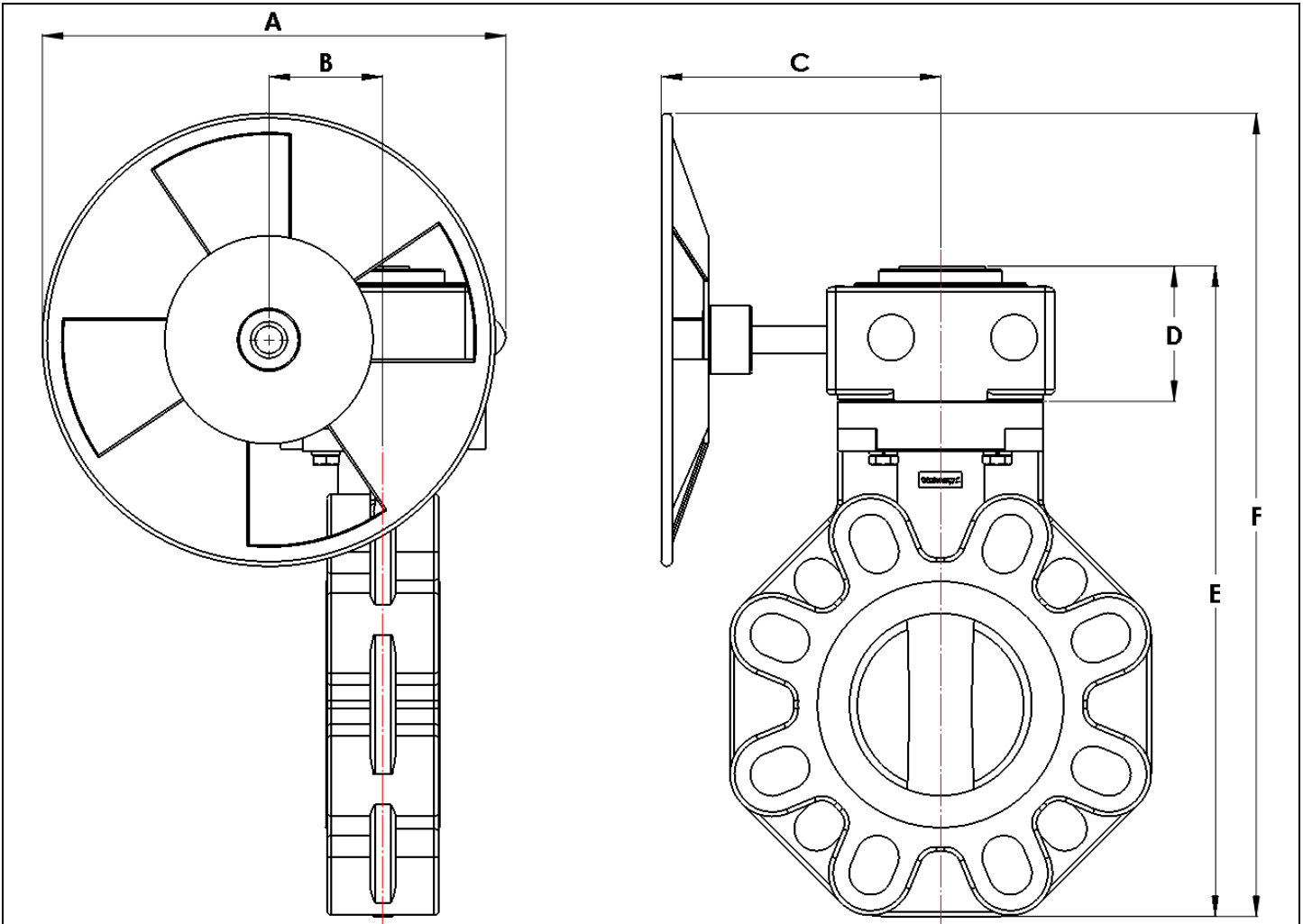
Pipe Size		A	B	C1	C2	C3	D1	D2	D3	E	F	G	H $\emptyset$	K	M	N	# holes	ISO Pad	Weight
10	inch	6.3	1.1	4	4.9	5.5	0.4	0.5	0.7	1.1	9.8	15.9	14.25	9.8	18.1	4.5	4	F10	29.5 lb
DN250	mm	160	27.0	102	125	140	11	14	18	30	250	405	362	248.5	459	114		F12	13.4 kg
12	inch	6.3	1.0	4	4.9	5.5	0.4	0.5	0.7	1.1	11.81	18.7	17.01	12.0	21.9	4.5	12	F10	40.1 lb
DN300	mm	160	27	102	125	140	11	14	18	30	300	475	432	305	556	114		F12	18.1 kg

**Dimensions: 2 to 8 inch Sizes - with optional Hand Lever**



Pipe Size		A	B	C	D	E	Weight
2	inch	6.9	8.7	2.8	9.9	3.5	2.3 lb
	mm	176	220	70	251	90	1.0 kg
3	inch	9.9	10.8	3.7	13.6	3.7	4.4 lb
	mm	252	275	93	345	95	2.0 kg
4	inch	9.9	11.9	4.2	14.1	3.7	5.4 lb
	mm	252	303	107	359	95	2.4 kg
6	inch	13.4	14	5.2	18.7	3.7	9.8 lb
	mm	340	362	133	474	95	4.4 kg
8	inch	16.9	18.9	6.3	23.3	5.2	18.0 lb
	mm	430	480	161	592	131	8.2 kg

**Dimensions: 3 to 12 inch Sizes - with optional Gear Operator**



Pipe Size		A	B	C	D	E	F	Weight
3	inch	5.4	1.9	4.5	2.3	11.2	13.9	8.3 lb
	DN80	mm	139	50	115	59	285	3.8 kg
4	inch	5.4	1.9	4.5	2.3	12.4	15.0	9.1 lb
	DN100	mm	139	50	115	59	314	4.1 kg
6	inch	5.4	1.9	4.5	2.3	14.7	17.3	13 lb
	DN150	mm	139	50	115	59	373	5.9 kg
8	inch	11.5	2.4	8.7	3.0	18.3	22.8	26.8 lb
	DN200	mm	293	60	220	76	466	12.16 kg
10	inch	16.1	3.1	12.7	3.4	21.5	27.5	49.7 lb
	DN250	mm	410	80	323	87	545	22.5 kg
12	inch	16.1	3.1	12.7	3.4	25.3	31.3	60.2 lb
	DN300	mm	410	80	323	87	643	27.3 kg

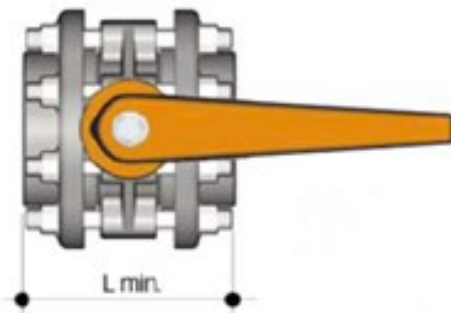


## Dimensions: 2 to 12 inch Sizes

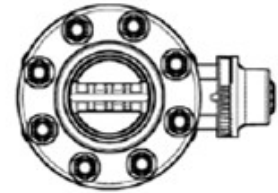
### Installation Procedures

- For lever handle installation, attach the handle to the valve body by removing the Valworx cap from the top of the handle. Use the supplied bolt and washer and screw through the handle into the valve stem. Affix the cap over the bolt head.
- Ensure that the length of the bolts is sufficient for the size of valve being installed (represented below as "L min"). Due to the varying designs of plastic flanges, there is no recommended minimum length. However, a length that results in at least 5 exposed threads on each side of the valve should be sufficient. The liner functions as a flange gasket on both sides of the valve. Only disc, seat and seals will be wetted.
- For typical inline installation, ensure that the disc is in the partially closed position, then carefully insert the valve into the piping between the two flanges. Insert the bolts, washers and nuts (if necessary), then hand tighten. Take care to properly align the valve and flanges as and misalignment may cause leakage.
- To avoid damage to the primary gasket, cycle the valve to the **open** position before tightening the bolts. The bolts must be tightened in an even crisscross pattern, to the nominal torque specified in the chart (also printed on the valve body). These torque ratings are sufficient to maintain a watertight seal at the maximum rated operating pressure.

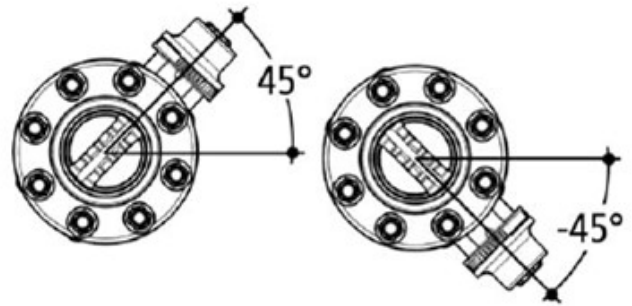
**NOTE: If the process media is dirty or contains suspended particles, it is advisable to install the valve in an orientation in which the shaft is not vertical (see diagrams). Over time, particles may collect at the bottom of the valve, posing a threat to the seal between the disc, liner, and shaft.**



Clean Fluid



Suspended Particles



Dirty Fluid

Dirty Fluid

### Flange/Valve Tightening Torques

Pipe Size		L min.	Weight
2	inch	6	10 ft/lb
	DN50	mm	152.4
3	inch	7	13 ft/lb
	DN80	mm	177.8
4	inch	7	15 ft/lb
	DN100	mm	177.8
6	inch	9.5	30 ft/lb
	DN150	mm	241.3
8	inch	10.5	41 ft/lb
	DN200	mm	266.7
10	inch	12.5	52 ft/lb
	DN250	mm	317.5
12	inch	13.5	52 ft/lb
	DN300	mm	342.9