



THE LEADER IN FIRE PROTECTION

# Lifeco



LISTED 19TN



## Butterfly Valves

Grooved End UL Listed

Grooved End Sizes: 2-1/2", 3", 4", 6" & 8"

Wafer Type, UL Listed

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Universal Wafer Type Butterfly Valve suitable for connecting to ANSI B 16 Class 125, ISO 2084 / Din 2501 PN 16 & BS 4504 PN 16 Flanges. (Conforms to BS 593: 1998)

Bronze Valve, UL Listed

BG Grooved End Sizes: 2" and 2-1/2"

Bronze Valve, UL Listed

BT Threaded End Sizes:

1", 1-1/4", 1-1/2", 2" and 2-1/2"

Approvals: UL

### Specifications

Working Pressure:	175 PSI (12.5 Bars)
Max. Test Pressure:	350 PSI (25.0 Bars)
Max. Working Temp:	250°F (120°C)

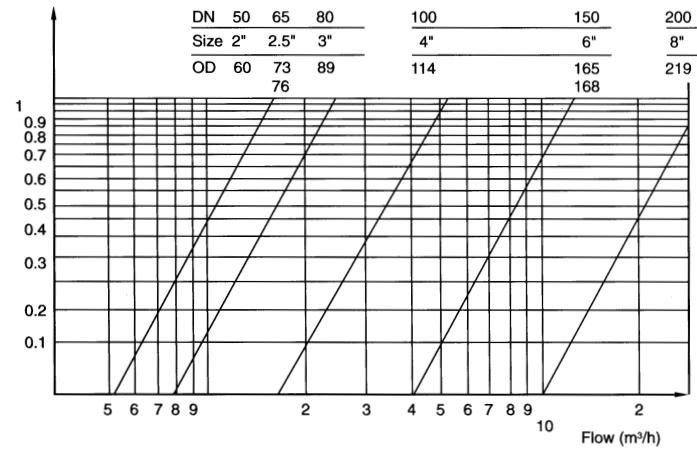
Factory installed UL Listed double tamper switch for indoor use only.

### Materials of Primary Components

	Grooved End	Wafer Type	BG Grooved End & BT Threaded End
Body:	ASTM A-536 Nylon-11 Coated	ASTM A-536 EPDM Encapsulated	ASTM B-505
Disc:	ASTM A-536 EPDM Encapsulated	ASTM B-584 or B-148 Nickel Chrome Plated	ASTM b-584 EPDM Encapsulated
Upper Stems:	AISI 420-SS	AISI 420-SS	ASTM A-564 Type XM 12
Lower Stems:	AISI 420-SS	AISI 420-SS	ASTM A-564 Type XM 12
Worm Gear Shaft:	AISI 410-SS	AISI 410-SS	
Housing:	ASTM A-536	ASTM A-536	
Hand Wheel:	ASTM a-536	ASTM a-536	ASTM A-619
Flag Indicator:	ASTM A-536	ASTM A-536	ASTM B-16
Shear Pin:	ASTM A-510	ASTM A-510	
Segment Gear:	ASTM B-148	ASTM B-148	
Housing Gasket:	EPDM Grade "E"	EPDM Grade "E"	
O-Rings (All):	EPDM Grade "E"	EPDM Grade "E"	EPDM Grade "E"
Gear Housing, Cover			ASTM A-619
York Mechanism			ASTM A-283
Stem Bushing			ASTM B-16
Conduit Connector			ASTM A-307
Cover Gasket			NBR

# Grooved End

## Flow characteristics



## Flow coefficient: Kv

Kv=m3/hour across valve at same standard condition (20°C, 1 bar)

DN (mm)	Size (in)	OD	30°	40°	50°	60°	70°	80°	90°
65	2 1/2"	73	12	27.4	53.1	96	138	156	163
65	2 1/2"	76	12	27.4	53.1	96	138	156	163
80	3"	89	18.9	39.4	78.9	144	210	243	249
100	4"	114	30	65.1	129	226	377	488	514
150	6"	165	84	184	369	634	964	1196	1286
150	6"	168	84	184	369	634	964	1196	1286
200	8"	219	165	339	677	1230	2002	2850	3129

$$CV = \frac{7}{6} KV$$

Q = flow in m³/h

$$KV = \frac{Q}{31.6} \sqrt{\frac{\rho_1}{\Delta P}}$$

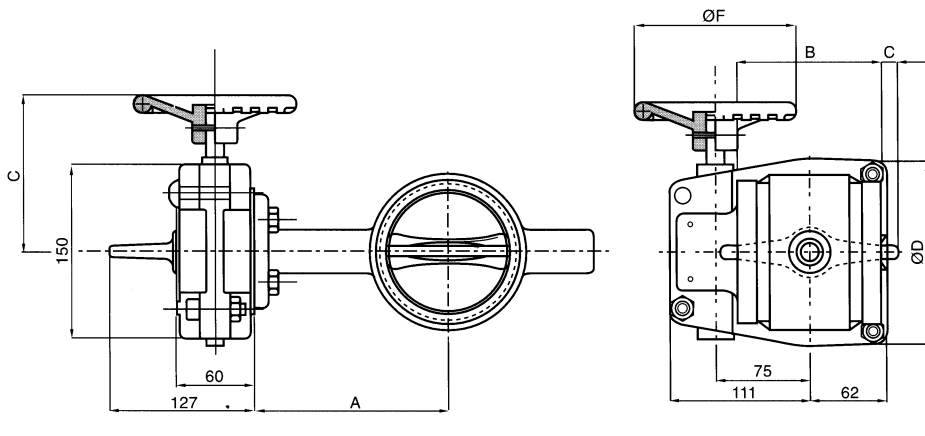
ΔP = pressure loss in bar

$$Q = 31.6 KV \sqrt{\frac{\Delta P}{\rho_1}}$$

ρ1 = density in kg/m³

## DIMENSION UNIT: IN (mm)

	A	B	C	D	E	F	G	H
2 1/2"	4.2(105)	3.4(85)	1.84(46)	4.64(116)	5.4(135)	5.4(135)	5.0(125)	0.38(9.5)
3"	4.48(112)	3.68(92)	1.84(46)	5.28(132)	5.68(142)	5.4(135)	5.0(125)	0.64(16)
4"	5.8(145)	4.32(108)	2.08(52)	6.08(152)	7.0(175)	5.4(135)	5.0(125)	1.0(25)
6"	7.2(180)	5.8(145)	2.24(56)	8.28(207)	8.4(210)	7.72(193)	9.0(225)	1.81(45.3)
8"	8.16(204)	6.8(170)	2.4(60)	10.48(262)	9.28(232)	7.72(193)	9.0(225)	2.74(68.5)



# Wafer Type Butterfly Valve

## Flow characteristics

Kv= m3/hour across valve at same standard conditions (20°C, 1 bar)  
Kv= GPM at 1 PSI differential pressure across valve at standard conditions (60°F, 14.7PSI)

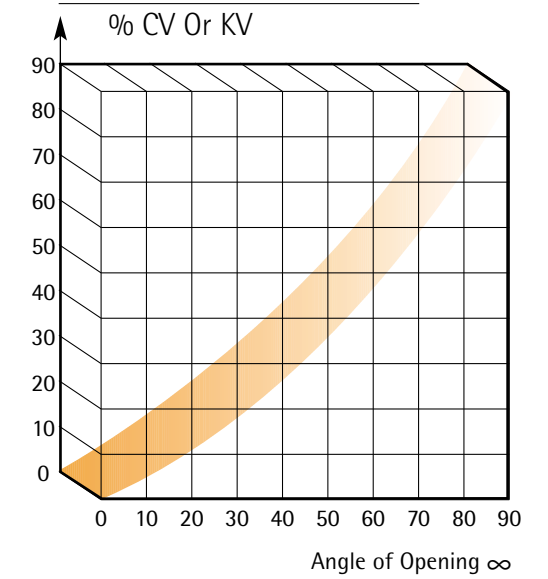
DN	65	80	100	150	200
Size	2 1/2"	3"	4"	6"	8"
Kv	210	330	610	1500	2700
Cv	240	385	712	1760	3150

## Flow coefficient: Kv

The flow coefficient KV is the follow in m3/h of water, at an average temperature of 20°C, crossing the value with creating a headloss of 1 bar. The relation between Cv and KV is;

$$Cv = \frac{7}{6} Kv$$

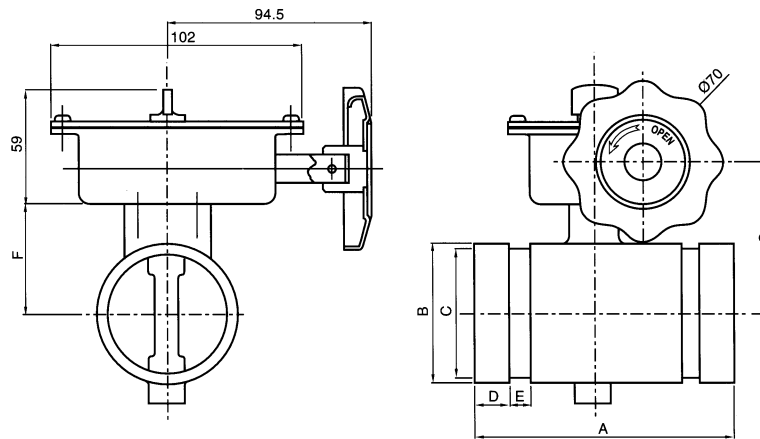
## Cv VS Disc Angle



# BG Grooved End

## DIMENSION UNIT: IN (mm)

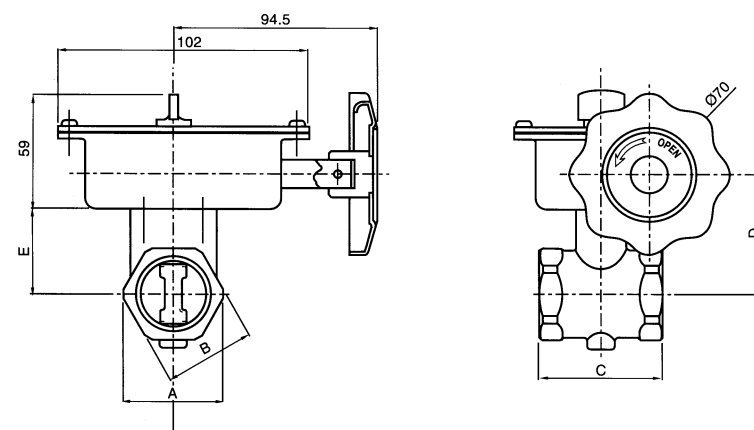
	A	B	C	D	E	F	G
2"	4.56(114)	2.41(60.3)	2.29(57.15)	0.64(16)	0.32(8)	1.96(49)	3.62(90.5)
2 1/2"	4.56(114)	3.0(75)	2.75(69.1)	0.64(16)	0.32(8)	2.18(54.5)	3.82(95.5)



# BT Threaded End

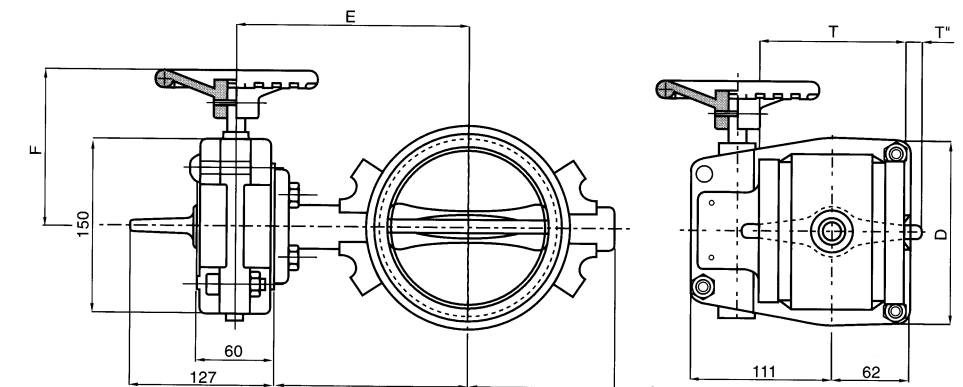
## DIMENSION UNIT: IN (mm)

	A	B	C	D	E
1"	1.75(43.7)	1.56(39.7)	2.16(54)	2.08(52)	1.48(37)
1 1/4"	2.16(54)	1.96(49)	2.68(67)	2.24(56)	1.64(41)
1 1/2"	2.4(60)	2.24(56)	2.92(73)	2.36(59)	2.45(61.3)
2"	3.04(76)	2.8(70)	3.3(82.4)	2.56(64)	1.96(49)
2 1/2"	3.6(90)	3.36(84)	4.16(104)	2.78(69.5)	2.18(54.5)



## DIMENSION UNIT: IN (mm)

	A	B	C	D	E	F	G	H
2 1/2"	4.2(105)	3.4(85)	1.84(46)	4.64(116)	5.4(135)	5.4(135)	5.0(125)	0.38(9.5)
3"	4.48(112)	3.68(92)	1.84(46)	5.28(132)	5.68(142)	5.4(135)	5.0(125)	0.64(16)
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# Installation & Maintenance

## Design Requirements

The Lifeco grooved butterfly valve should be connected to the piping system with approved coupling or flange adaptors. Flow may be from either direction, and the valve may be positioned in any direction.

Lifeco butterfly valves have been designed with a slow close hand wheel operator, which effectively minimizes water hammer. These valves feature minimum flow restriction and pressure loss when in the fully open position.

## Installation

When the valves are received from the manufacture they should be handled carefully to avoid breakage and damage to the seating area. Before installation of the valve, clean piping, flange and coupling. When the valve closes hard, it is usually due to debris lodged in the sealing area. Often this may be corrected by backing off the hand wheel and closing again.

The valve should never be forced to seat by applying a wrench to the hand wheel as this may distort the valve components or score the sealing surface. The use of excessive force to open or close the valve violates all warranties whether express or implied.

The inlet and outlet pipe adjacent to the valve should be properly supported to prevent excessive stress on the valve body. The valve should not be used to force a pipeline into position as this may result in distortion of the valve body.

Conduit and electrical connections to the optional tamper switch must be in accordance with National Electrical Code (NFPA 72) and requirements of the local authority having jurisdiction.

## Care & Maintenance

Lifeco butterfly valves require no regular maintenance, however, it is advisable to inspect and verify proper operation of the unit annually or in accordance with the authority having jurisdiction.

The inspection should include a visual check for leakage at the valve pipe connection and body to operate connection. Inspection and maintenance should be performed by a qualified inspection service.

## Switch Installation

Lifeco butterfly valves are provided with internal supervisor position switches. The tamper switch operates by a cam connected to the valve stem. The switch will change position and close within two (2) full turn of the hand wheel from the fully open position.

### Switch #1:

For connection to the supervisory circuit.

Normally closed : 2 Yellow

Normally open : 2 Red

Common : 2 White

### Switch #2:

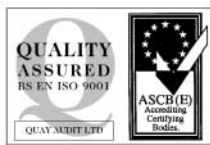
Auxiliary switch connected per authority.

Normally closed : 1 Blue

Normally open : 1 Orange

Common : 1 Black

Ground Lead : 1 Green



Certificate No. 4011714

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