

## Features

- ISO5211 top mounting for manual, air or electric actuators
- Unique wave line seat reduces torque and extends seal life
- Ductile iron body with 3-layer epoxy/epoxy/PUR coating
- 316SS disc with 2-piece stem design enhances flow capacity
- EPDM or NBR (Buna-N) seal options
- Seat is vulcanized to phenolic backup ring
- V-ring stem/shaft seals, same material as seat
- PTFE graphite reinforced stem bearings
- Pressure rated 230 PSI (16 Bar) 2-8" sizes, 145 PSI (10 Bar) 12"
- Multi-standard flanged mounting holes
- Optional 10 position locking hand lever for 2-6" sizes
- Optional hand wheel gear operator for 4-12" sizes

## Applications

Wafer body butterfly valves are used to control the flow of water, oils, air, vacuum and other media compatible with the materials of construction. Valves can be operated with manual, air or electric actuators.

Two seal options are available (for 2-6" sizes):

EPDM: Water service, other compatible media.

NBR (Buna-N): Oils, air, vacuum, other compatible media.

## Temperature Range

EPDM Seals: 0 to 248° F (-18 to 120°C)

Buna-N Seals: 5 to 185° F (-15 to 85°C)

## Construction

<b>Valve Body</b>	3-layer Epoxy/Epoxy/PUR coated ductile iron GGG40
<b>Disc</b>	316 stainless steel CF8M
<b>Disc Seat/Liner - Options</b>	EPDM, NBR (Buna-N)
<b>Stem Seals</b>	V-ring (same material as seat)
<b>Stem</b>	420SS
<b>Bearings</b>	PTFE Graphite reinforced/Nylon
<b>Fasteners</b>	Stainless Steel



## Operation

Direct mount wafer butterfly valves can be easily fitted with optional manual operator, air actuator or electric actuator using standard ISO5211 top mounting. Rotating the square stem one quarter turn moves the stainless steel disc and open or closes the valve. Unique wave line soft seat reduces the torque required to close the valve and extends the seal life.

## Description

Wafer butterfly valves with epoxy-coated ductile iron body are designed to control various media in commercial and industrial applications. Valve mounts between two standard ANSI/ASME Class 125/ 150 and other international flanges. Seat to flange seal, eliminates the need for flange gaskets. Disc is precision machined 316SS. Two piece stem and disc design enhances the flow capacity and reduces turbulence.

## Options

- Hand lever with 10 position locking (2-6")
- Gear Operators (4-12")
- Air Actuators
- Electric Actuators

### Specifications (English units)

Stock Number	Pipe Size (inch)	Orifice Diam. (inch)	Cv Flow Factor	Pressure Max.(PSI)	Fluid Media*	Body	Disc
<b>Wafer Body EPDM Seals: BARE STEM (no handle)</b>							
564416	2	2.00	124	230	Water	Ductile Iron	316SS
564420	2-1/2	2.50	247	230	Water	Ductile Iron	316SS
564424	3	3.00	470	230	Water	Ductile Iron	316SS
564432A	4	4.00	929	230	Water	Ductile Iron	316SS
564448	6	6.00	2243	230	Water	Ductile Iron	316SS
564452	8	8.00	3584	230	Water	Ductile Iron	316SS
564456	12	12.00	8498	145	Water	Ductile Iron	316SS
<b>Wafer Body NBR (BUNA-N) Seals: BARE STEM (no handle)</b>							
564616	2	2.00	124	230	Air, Oil, Vacuum	Ductile Iron	316SS
564620	2-1/2	2.50	247	230	Air, Oil, Vacuum	Ductile Iron	316SS
564624	3	3.00	470	230	Air, Oil, Vacuum	Ductile Iron	316SS
564632A	4	4.00	929	230	Air, Oil, Vacuum	Ductile Iron	316SS
564648	6	6.00	2243	230	Air, Oil, Vacuum	Ductile Iron	316SS

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

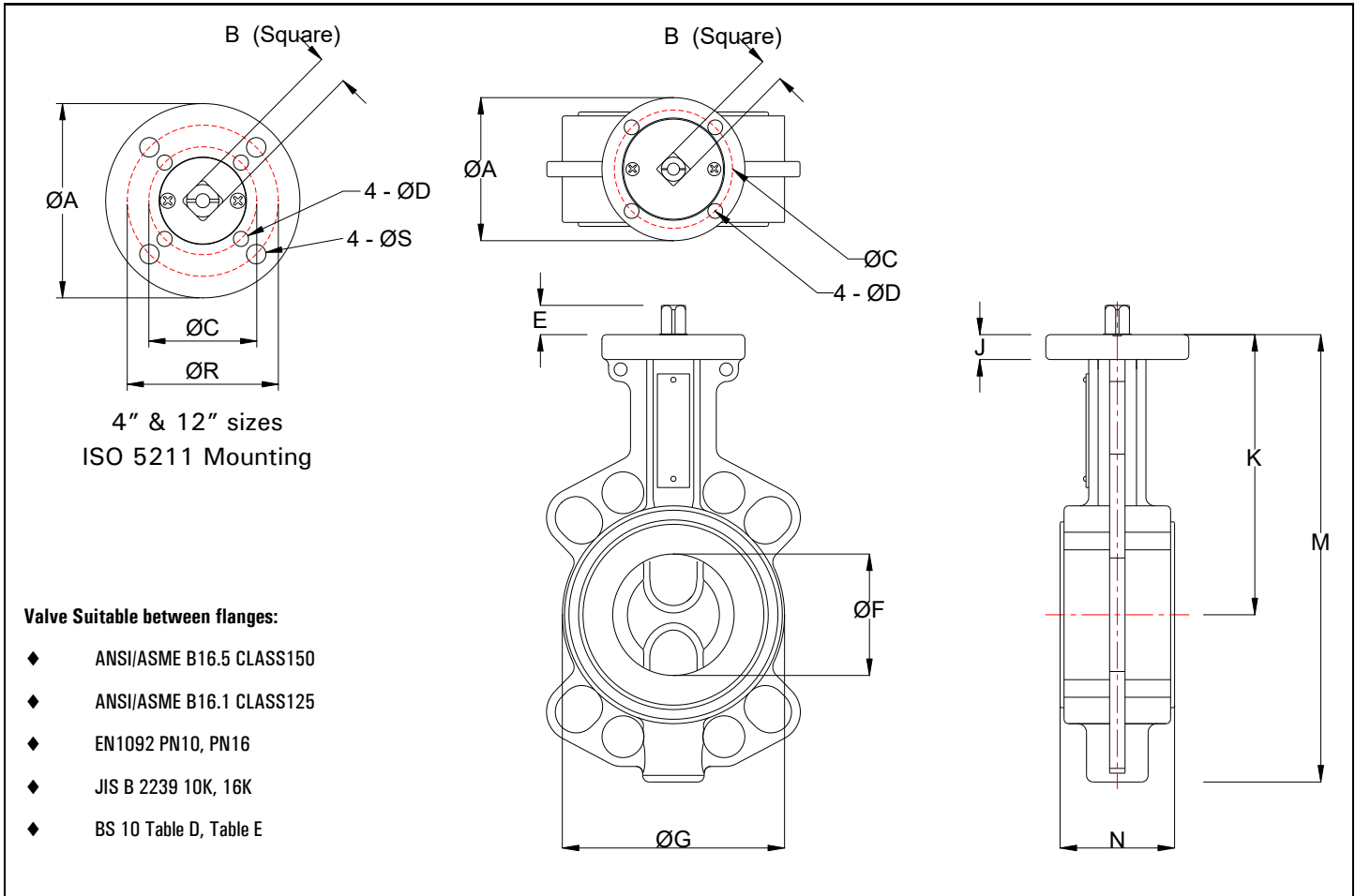
\* Consult compatibility chart for other fluid media. Suitable for vacuum up to 29 inHg

### Specifications (Metric units)

Stock Number	Pipe Size (DN)	Orifice Diam. (mm)	Kv Flow Factor	Pressure Max.(Bar)	Fluid Media*	Body	Disc
<b>Wafer Body EPDM Seals: BARE STEM (no handle)</b>							
564416	50	50	107	16	Water	Ductile Iron	316SS
564420	65	65	212	16	Water	Ductile Iron	316SS
564424	80	80	404	16	Water	Ductile Iron	316SS
564432A	100	100	799	16	Water	Ductile Iron	316SS
564448	150	150	1929	16	Water	Ductile Iron	316SS
564452	200	200	3100	16	Water	Ductile Iron	316SS
564456	300	300	7350	10	Water	Ductile Iron	316SS
<b>Wafer Body NBR (BUNA-N) Seals: BARE STEM (no handle)</b>							
564616	50	50	107	16	Air, Oil, Vacuum	Ductile Iron	316SS
564620	65	65	212	16	Air, Oil, Vacuum	Ductile Iron	316SS
564624	80	80	404	16	Air, Oil, Vacuum	Ductile Iron	316SS
564632A	100	100	799	16	Air, Oil, Vacuum	Ductile Iron	316SS
564648	150	150	1929	16	Air, Oil, Vacuum	Ductile Iron	316SS

Kv = The number of m<sup>3</sup> per hour of 20° C water at 1 bar pressure drop

## Dimensions 2" to 12" Sizes

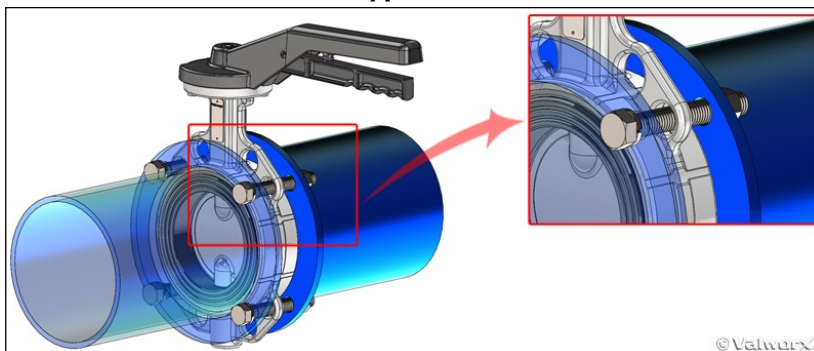


Pipe Size		A	B	C	D	E	F	G	J	K	M	N	R	S	ISO	Weight
2 DN50	inch	2.56	0.43	1.97	0.28	0.53	1.97	3.90	0.39	4.96	7.95	1.81	-	-	F05	4.4 lb
	mm	65	11	50	7	13.5	50	99	10	126	202	46	-	-		2.0 kg
2-1/2 DN65	inch	2.56	0.43	1.97	0.28	0.53	2.56	4.46	0.39	5.28	8.50	1.93	-	-	F05	5.5 lb
	mm	65	11	50	7	13.5	65	113	10	134	216	49	-	-		2.5 kg
3 DN80	inch	2.56	0.43	1.97	0.28	0.53	3.15	5.07	0.39	6.18	9.96	1.93	-	-	F05	7.3 lb
	mm	65	11	50	7	13.5	80	129	10	157	253	49	-	-		3.3 kg
4 DN100	inch	3.54	0.55	1.97	0.28	0.75	3.94	6.17	0.51	6.57	11.06	2.19	2.76	0.35	F05/F07	10.8 lb
	mm	90	14	50	7	19	100	157	13	167	281	56	70	9		4.9 kg
6 DN150	inch	3.54	0.67	2.76	0.35	0.73	5.91	8.39	0.51	7.99	13.58	2.31	-	-	F07	17.0 lb
	mm	90	17	70	9	18.5	150	213	13	203	345	59	-	-		7.7 kg
8 DN200	inch	4.92	0.87	4.02	0.43	0.96	7.87	10.67	0.59	8.98	15.75	2.52	-	-	F10	26.9 lb
	mm	125	22	102	11	24.5	200	271	15	228	400	64	-	-		12.2
12 DN300	inch	5.91	1.06	4.02	0.43	1.04	11.81	15.04	0.59	11.46	20.98	3.35	4.92	0.55	F10/F12	57.3 lb
	mm	150	27	102	11	26.5	300	382	15	291	533	85	125	14		26.0 kg

## Valve Seating Torques (inch lbs)

SIZE	Standard Disc Differential Pressure (PSI)		
	87	145	232
2	145	159	174
2-1/2	232	247	261
3	348	363	377
4	522	537	551
6	1377	1450	1523
8	2755	2828	2901
12	4641	4931	

## Typical Wafer Valve Installation



## Valve Seating Torques (nm)

SIZE	Standard Disc Differential Pressure (Bar)		
	9	10	11
DN50	10	11	12
DN65	16	17	18
DN80	24	25	26
DN100	36	37	38
DN150	95	100	105
DN200	190	195	200
DN300	320	340	

Torques shown are for on-off “wet” service (ex: water), for dry service (ex: air) multiply above values by 1.25, or see below. Valve disc turned clockwise and activated at least once per month. The effect of dynamic torque is not considered in calculation.

## Example Valve Torque Service and Medium Factors

SERVICE FACTOR (SF)	Multiply by	Medium Factor (MF)	Multiply by	Medium Factor (MF)	Multiply by
ON/OFF operation	1.15	Lubricating liquid/gas	0.90	For dry service (dry gas/air)	1.25
Modulating operation	1.25	Viscous liquids/molasses	1.30	Dirty air slurry, natural gas, dirty slurry	1.50-1.80
* 2 cycle/day “NC”	1.15	Degreasing liquid	1.25	Lime water, chlorine gas, oxygen, powder	1.50-1.80
** 1 cycle/week “NC”	1.50	Saturated steam	1.20	Hydrodynamic torque	N/A

\* Valve normally remains completely closed (NC), and is opened 2 times a day minimum.

\*\* Valve normally remains completely closed (NC), and is opened only one time per week or less.

Having a long period without maneuvering a valve will increase the breakaway torque.

Only choose one Service Factor (SF) and one Medium Factor (MF) when calculating the sizing torque.

## Flow Capacity (Cv)

SIZE	Disc Open Angle							
	20°	30°	40°	50°	60°	70°	80°	90°
2	1	5.5	16	33	54	82	113	124
2-1/2	2.7	13	31	57	89	141	199	247
3	7	32	62	106	163	248	350	470
4	16	66	125	203	225	470	691	929
6	59	150	260	422	665	1136	1785	2243
8	131	264	463	739	1177	2029	3099	3584
12	289	567	1069	1637	2580	4469	7343	8498

Cv = The number of US gallons per minute of 60° F water at 1 psi pressure drop

## Flow Capacity (Kv)

SIZE	Disc Open Angle							
	20°	30°	40°	50°	60°	70°	80°	90°
DN50	0.9	4.7	13	29	47	71	97	107
DN65	2.3	11	26	49	77	121	170	212
DN80	6	28	54	91	140	213	301	404
DN100	14	57	108	175	262	404	594	799
DN150	51	129	224	363	572	977	1535	1929
DN200	114	229	401	639	1018	1755	2680	3100
DN300	250	490	925	1416	2231	3865	6351	7350

Kv = The number of m³ per hour of 20° C water at 1 bar pressure drop

## Seat Liner Resistance to Media

LINER	*Typically suitable for	**Typically unsuitable for
EPDM	Water, steam, alcohol, glycol, caustic soda, ozone, food products (not NSF approved), glycerine, milk, oxygen, air, saturated salt, iron chloride, gelatin, dry hydrogen sulfide, potassium chloride, sodium, magnesium chloride	Mineral oil, chlorine compounds, ketones, acetyl, chloride, asphalt, bromine, butane, butyl, petrol, diesel oil, acid, fish oil, Freon, chlorine, natural gas, exhaust gas, nitric acid
NBR (BUNA-N)	Mineral oil, grease, air, seawater, gas, boric acid, aluminium chloride, ammonia gas, citric acid, diesel oil, fish oil, petrol, gelatin, glycerine, magnesium chloride, lactic acid, linseed oil, natural gas	Ozone, acetone, aniline, chlorine dioxide, chromic acid, phenol, ethyl acetate, Freon 21 + 22 + 23, hot nitric acid, styrene, hydrogen sulfide, isopropyl acetate, oxygen, sulfuric acid

\* Many conditions can affect the valve material choices, including: pressure, temperature, chemical mix, material compounding, viscosity and environment. Ultimately it is the user's responsibility to ensure valve materials are suitable for any specific purpose.

\*\* Butterfly valves can be mounted in any direction. However, 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. Over time, particles may collect at the bottom of the valve, posing a threat to the seal between the disc, liner and shaft.

### Features

- Powder epoxy coated aluminum hand lever
- 10 position locking handle
- Convenient installation and usage
- 304SS bolts and nuts

### Appication

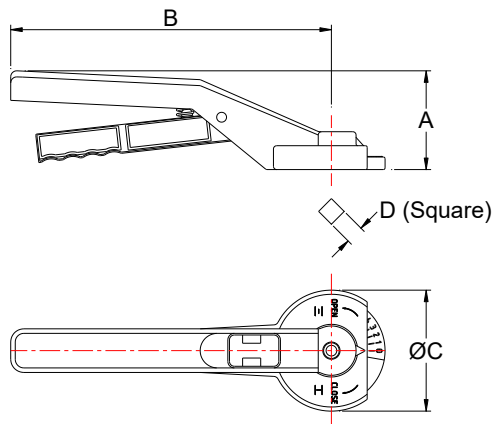
Hand lever operator for wafer and lug style butterfly valves. The valve disc can be locked in any one of 10 positions with spring loaded lever. Hand lever kit includes lever, gear locking plate and stainless hardware for mounting.



### Specifications

Stock No.	Description
565001A	Hand lever for valve sizes 2", 2-1/2", 3" (DN50, DN65, DN80)
565002	Hand lever for valve size 4" (DN100)
565003	Hand lever for valve size 6" (DN150)

### Dimensions



Pipe Size		A	B	C	D	ISO	Weight
2, 2-1/2, 3 (DN50, 65, 80)	inch	2.4	7.7	2.9	0.43	F05	0.70 lbs
	mm	60	195	73	11		0.32 kg
4 (DN100)	inch	3.1	10.8	3.94	0.55	F07	1.5 lbs
	mm	78	275	100	14		0.68 kg
6 (DN150)	inch	3.1	10.8	3.94	0.67	F07	1.5 lbs
	mm	78	275	100	17		0.68 kg

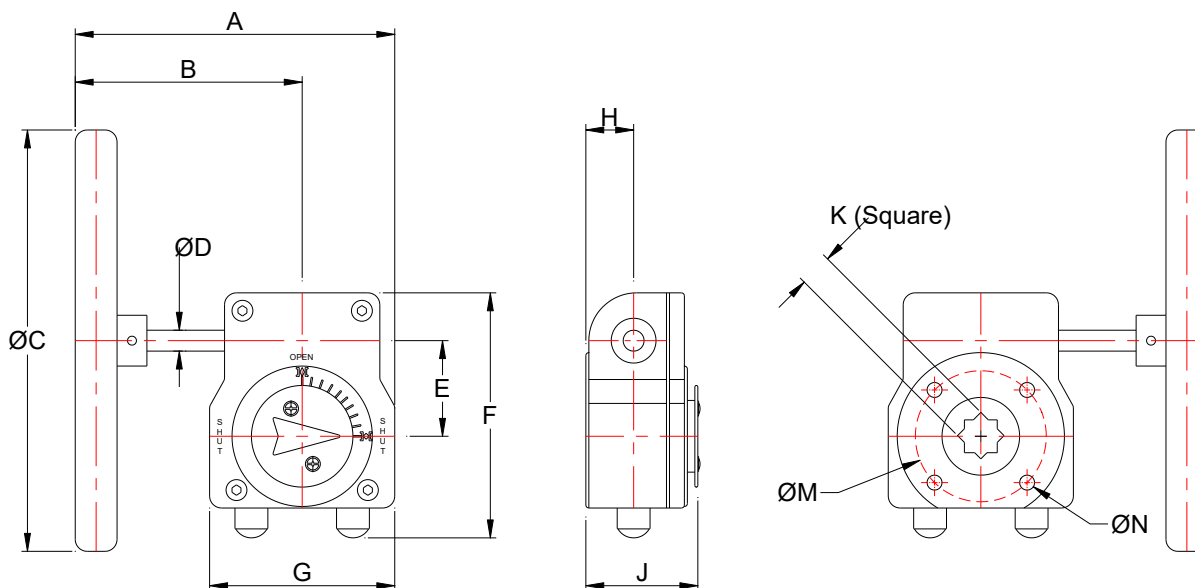
### Features

- Aluminum alloy housing
- Hand wheel control
- Steel input shaft and worm gear drive
- Easy ISO5211 mounting
- Waterproof enclosure
- Adjustable travel stops are standard and factory set
- 304SS bolts and nuts



### Specifications

Stock No.	Description
565009	Hand wheel gear operator for valve size 4" (DN100)
565008	Hand wheel gear operator for valve size 6" (DN150)
565015	Hand wheel gear operator for valve size 8" (DN200)
565017	Hand wheel gear operator for valve size 12" (DN300)



Pipe Size		A	B	C	D	E	F	G	H	J	K	M	N	ISO	Weight
4 (DN100)	inch	6.77	4.69	7.87	0.47	2.01	5.12	3.94	1.02	2.05	0.55	2.76	-	F07	4.9 lbs
	mm	172	119	200	12	51	130	100	26	52	14	70	M8x16 depth		2.22 kg
6 (DN150)	inch	6.77	4.69	7.87	0.47	2.01	5.12	3.94	1.02	2.05	0.67	2.76	-	F07	4.9 lbs
	mm	172	119	200	12	51	130	100	26	52	17	70	M8x16 depth		2.22 kg
8 (DN200)	inch	11.5	8.7	11.8	0.6	2.4	6.7	5.7	1.5	3.0	0.9	4.0	-	F10	11.9 lbs
	mm	293	220	300	15	60	171	146	38	76	22	102	M10x20 depth		5.4 kg
12 (DN300)	inch	16.1	12.7	15.7	0.79	3.1	8.43	6.9	1.56	3.43	1.06	5.51	-	F10	20.1 lbs
	mm	410	323	400	20	80	214	175	39.5	87	27	102	M16x20 depth		9.1 kg