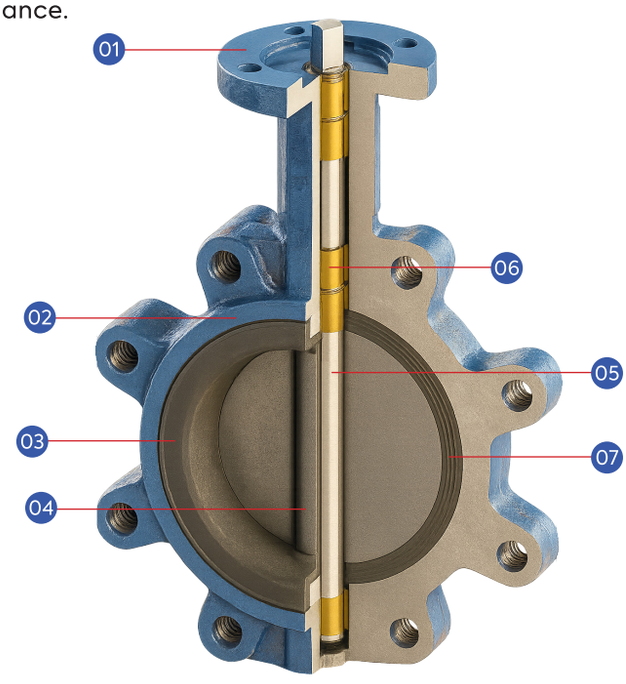
VALVEWERKZ

BUTTERFLY VALVES

RUBBER-LINED BUTTERFLY VALVE

ValveWerkz butterfly valves are developed with over 20 years of scientific research and real-world application experience. They offer enhanced torque control, smooth operation, and simplified installation and maintenance.



1. **Top Flange**
   ISO 5211 top flange with square or round stem to suit various types of actuators.

2. **Body**
   Available in full lug and wafer styles for compatibility with all flange types. Fully lugged bodies are also suitable for end-of-line service.

3. **Liner**
   The cartridge-style seat uses a phenolic stabilising ring to minimise tearing and fatigue while maintaining low seating torque. It resists extrusion and allows quick replacement without special tools.

4. **Disc**
   The disc edge is precision-machined and polished to ensure a tight shutoff with minimal operating torque.

5. **Shaft**
   Secured with a stem retainer plate, the shaft is designed without a pin between disc and shaft, preventing blowout.

6. **Bushing**
   The five-bushing PTFE design maximises radial support and shaft rigidity. It prevents shaft deflection and insulates the shaft from the valve body, enhancing control and extending service life.

7. **Bi-Directional Sealing**
   The valve provides full-rated bi-directional sealing with equal flow performance in both directions.

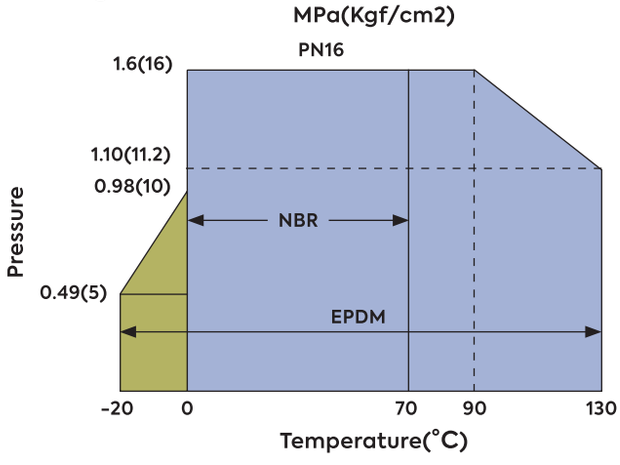
Rubber-Lined Butterfly Valve

Design Features and Advantages

- Concentric design
- Cartridge seat and groove lock boot seat
- Replaceable seat
- Standardised top flange for actuator adaptation
- Direct actuator mounting without additional brackets
- Economical and high-performance
- Blowout-proof stem design
- Low maintenance and long service life
- High Cv and lower head loss for improved energy efficiency
- Streamlined disc design maximises flow and control range
- Extended seat life with low operating torque, achieved through upper and lower stem bearings

Various Applications Under Different Operating Conditions

- Potable water, water treatment plants
- Wastewater treatment and environmental systems
- Agriculture
- Energy, power, and utilities
- HVAC systems
- Fire protection systems
- Chemical and petrochemical plants
- Ferrous metallurgy
- Pulp and paper processing
- Food and beverage production
- General industrial applications



P-T Rating

Notes 1: Some fluid types may have restrictions for service at 130°C. Contact ValveWerkz for details.

Notes 2: P-T rating for sub-zero applications is available upon request. Contact ValveWerkz for technical advice if service conditions exceed the P-T rating range listed above.

Cv-VALUES

		Opening angle α°								
DN(mm)	Size(Inch)	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	2″	0.06	3	7	15	27	44	70	105	115
65	2 ½″	0.1	6	12	25	45	75	119	178	196
80	3″	0.2	9	18	39	70	116	183	275	302
100	4″	0.3	17	36	78	139	230	364	546	600
125	5″	0.5	29	61	133	237	392	620	930	1022
150	6″	0.8	45	95	205	366	605	958	1437	1579
200	8″	2	89	188	408	727	1202	1903	2854	3136
250	10″	3	151	320	694	1237	2047	3240	4859	5340
300	12″	4	234	495	1072	1911	3162	5005	7507	8250
350	14″	6	338	715	1549	2761	4568	7230	10844	11917
400	16″	8	464	983	2130	3797	6282	9942	14913	16388
450	18″	11	615	1302	2822	5028	8320	13168	19752	21705
500	20″	14	791	1647	3628	6465	10698	16931	25396	27908
600	24″	22	1222	2587	5605	9989	16528	26157	39236	43116
750	30″	37	2080	4406	9546	17010	28147	44545	66818	73426

BU25 Series

Uni Body Design

Wafer, Lug

Body Material Option:
Cast Iron GG25, Ductile Iron GGG40, Carbon Steel 1.0619, Stainless Steel 1.4308, Stainless Steel 1.4408

Liner Material Option:
EPDM, NBR(Buna N), PTFE, Viton, Natural Rubber, Silicone

Pressure rating of PN10, PN16, ANSI 150, JIS 10K, JIS 16K

Face-to-face Standard API609, EN558-120 Series, ISO5752, DIN3202K1

ISO 5211 Top Flange

Flange Drilling BS EN1092, JIS B2220, ASME Class 125 / Class 150

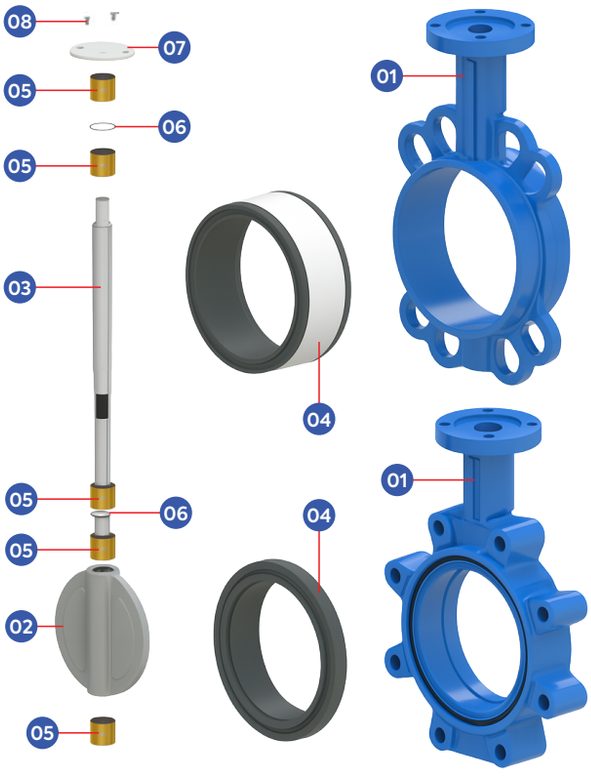
Two Piece Shaft Design (2" to 12")
Spline Design (14" & Above)

Square Stem Top

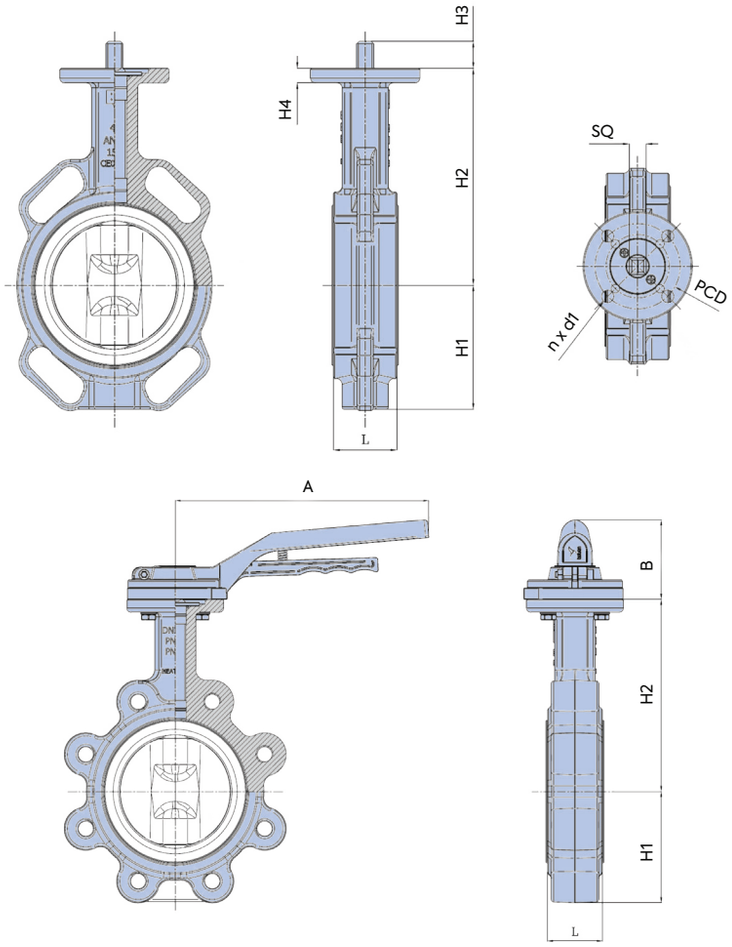
Operating Temperature
-20°C to 130°C

Performance Characteristics

- The butterfly valve features a universal flange, one-piece wafer-type body for reduced weight and maximum strength.
- The resilient cartridge seat, with a phenolic (or aluminium) hard back, prevents movement and deformation.
- Seat can also be moulded to the body, suitable for dead-end and vacuum service applications.
- Two stem connection types are available: pinless spline and traditional pin-type.
- High Cv and low head loss deliver longer service life with reduced operating torque.
- Operable via hand lever, worm gear, electric actuator or pneumatic actuator.
- The seat is replaceable, with a low-maintenance design for cost efficiency and extended durability.

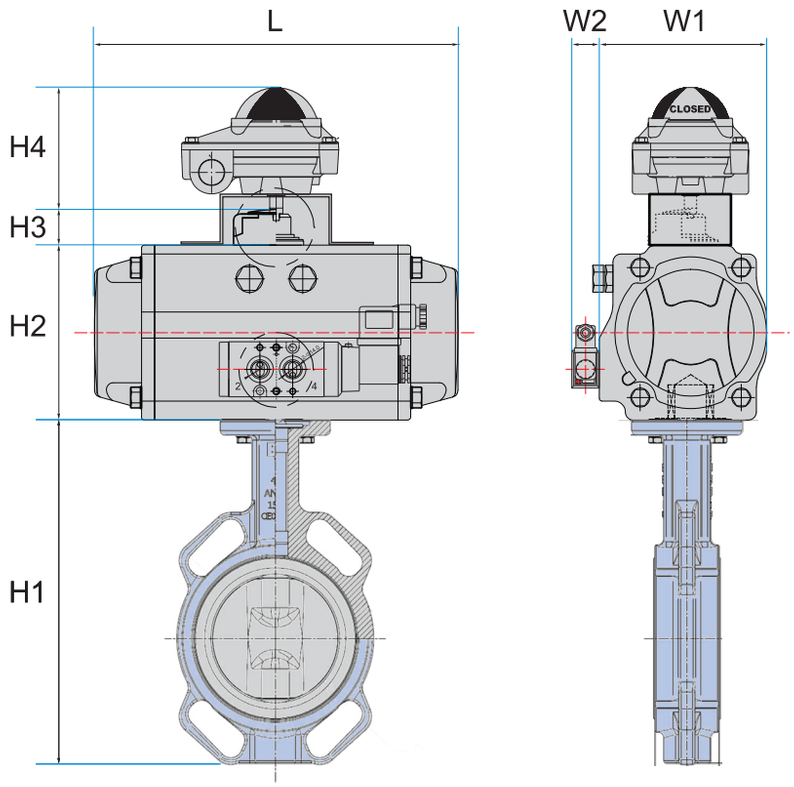


	Part Name	Material
1.	Body	Cast Iron GG25, Ductile Iron GGG40, Carbon Steel 1.0619, Stainless Steel 1.4308, Stainless Steel 1.4408
2.	Disc	Ductile Iron, Stainless Steel 1.4308, Aluminum Bronze, Duplex SS
3.	Shaft	Stainless Steel 1.4308, Duplex SS, Monel
4.	Liner	EPDM, NBR(Buna N), PTFE, Viton, Natural Rubber, Silicone
5.	Bushing	PTFE
6.	O-Ring	Rubber
7.	Retaining Plate	Stainless Steel 1.4308 / Other Alloys
8.	Retaining Plate Screw	Stainless Steel 1.4308



Dimensions(mm)

DN	Inch	L	H1		H2		H3		SQ		ISO		PCD		n x d1		Lever		
			Wafer	Lug	Wafer	Lug	Wafer	Lug	Wafer	Lug	Wafer	Lug	Wafer	Lug	Wafer	Lug	A	B	F
2 Piece Shaft Design																			
50	2″	43	71.4	143.0	142.7	57	22.0	29	11	9	F05/F07	F05	70	50	4 x d10	4 x d8	190	65	F05
65	2 ½″	46	77.8	155.0	155.4	68	22.0	29	11	9	F05/F07	F05	70	50	4 x d10	4 x d8	190	65	F05
80	3″	46	89.0	160.0	161.8	82	22.0	29	11	9	F05/F07	F05	70	50	4 x d10	4 x d8	190	65	F05
100	4″	52	102.0	181.0	178.0	100	22.0	29	14	11	F07	F07	70	70	4 x d10	4 x d10	256	76	F07
125	5″	56	123.0	194.0	190.5	112.0	22.0	29	14	14	F07	F07	70	70	4 x d10	4 x d10	256	76	F07
150	6″	56	138.0	202.0	205.2	126.0	22.0	29	14	14	F07	F07	70	70	4 x d10	4 x d10	256	76	F07
200	8″	60	168.0	240.0	237.0	162.0	34.5	35	17	17	F10	F10	102	102	4 x d12	4 x d12	355	106	F10
250	10″	68	207.0	272.0	268.3	193.0	34.5	35	22	22	F10	F10	102	102	4 x d12	4 x d12	355	106	F10
300	12″	78	243.5	318.0	308.5	236.5	34.5	35	27	22	F12	F10	125	102	4 x d14	4 x d12	355	106	F10
Spline Shaft Design																			
350	14″	78	328.0	368.0	264.0	267.0	45.0	45.0			F10	F10							
400	16″	102	360.0	400.0	293.0	298.0	51.2	51.2			F14	F14							
450	18″	114	400.0	422.0	324.0	318.0	51.2	51.2			F14	F14							
500	20″	127	460.0	480.0	350.0	355.0	64.2	64.2			F14	F14							
600	24″	154	540.0	562.0	440.0	444.0	70.2	70.2			F16	F16							
700	28″	165	624.0	624.0	505.0	505.0	66.0	66.0			F25	F25							



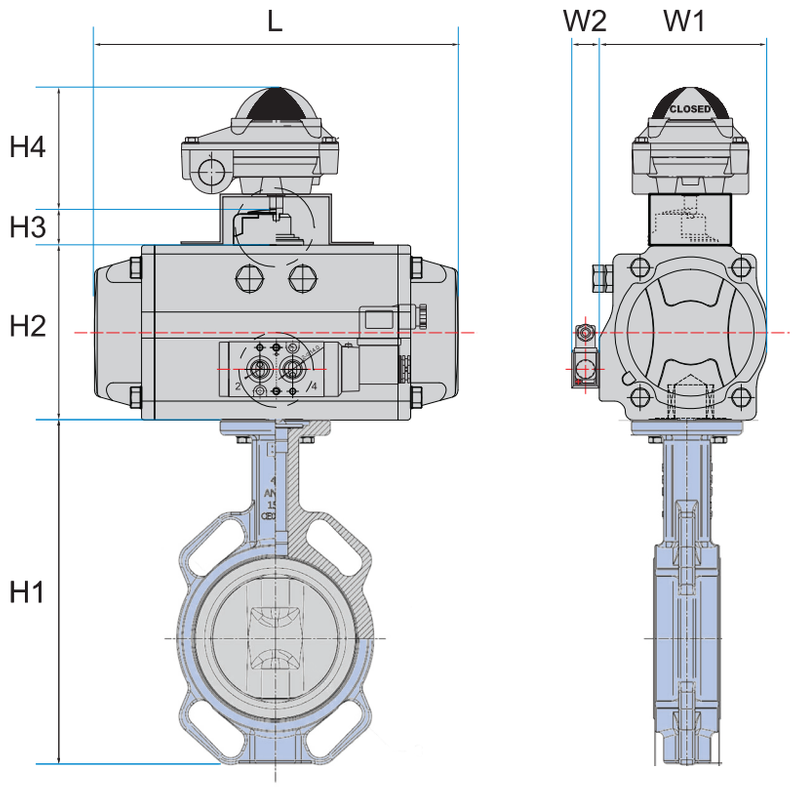
Pneumatic Actuator (Double Acting)

DN(mm)	Size(Inch)	Torques	Actuator	H1	H2	H3	H4	W1	W2	L
50	2″	16.3	HP-50	214.1	73	20	90	72	29.5	144
65	2 ½″	21.5	HP-63	233.2	87	20	90	85	29.5	163
80	3″	31.2	HP-63	250.8	87	20	90	85	29.5	163
100	4″	53.3	HP-75	280.0	104	20	90	96	29.5	210
125	5″	72.8	HP-88	313.5	116	20	90	108	29.5	247
150	6″	123.5	HP-100	343.2	128	20	90	123	29.5	268
200	8″	240.5	HP-125	405.0	150	20	90	151	29.5	347
250	10″	377.0	HP-145	475.3	179	20	90	172	29.5	414
300	12″	442.0	HP-145	552.0	179	20	90	172	29.5	414

The selection of the actuators are based on the below conditions:

- Air Supply Pressure : 5.5 bar
- Operating Pressure : 10 bar
- Safety Factor : 30%
- Liner : NBR

*Compatible with various actuator types.



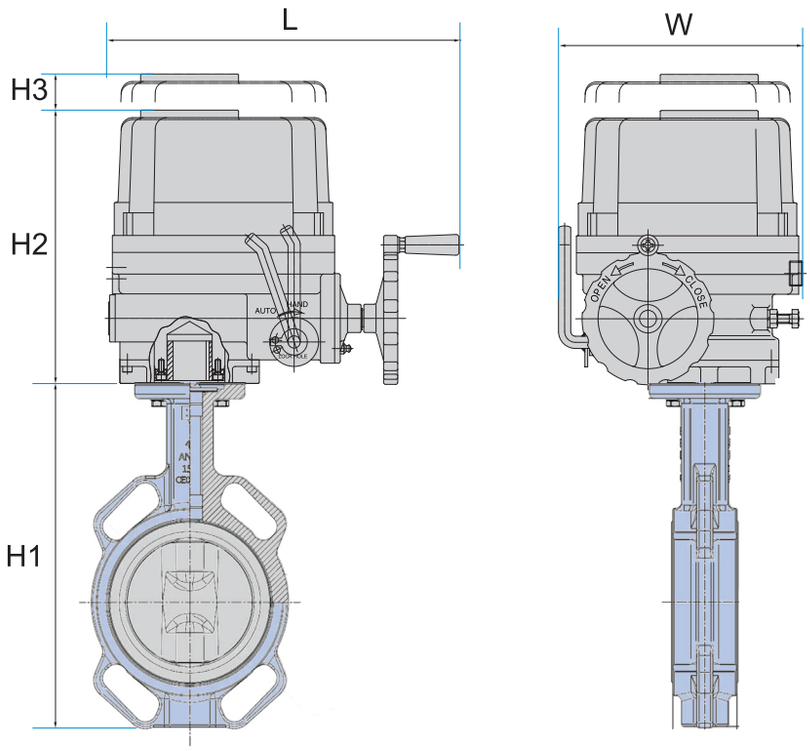
Pneumatic Actuator (Single Acting)

DN(mm)	Size(Inch)	Torques	Actuator	H1	H2	H3	H4	W1	W2	L
50	2″	16.3	HP-66S	214.1	87	20	90	85	29.5	202
65	2 ½″	21.5	HP-75S	233.2	104	20	90	96	29.5	210
80	3″	31.2	HP-88S	250.8	116	20	90	108	29.5	247
100	4″	53.3	HP-100S	280.0	128	20	90	123	29.5	268
125	5″	72.8	HP-115S	313.5	146	20	90	141	29.5	316
150	6″	123.5	HP-125S	343.2	159	20	90	151	29.5	347
200	8″	240.5	HP-160S	405.0	196	30	90	190	29.5	467
250	10″	377.0	HP-200S	475.3	247	30	90	227	29.5	555
300	12″	442.0	HP-210S	552.0	256	30	90	236	29.5	628

The selection of the actuators are based on the below conditions:

- Air Supply Pressure : 5.5 bar
- Liner : NBR
- Operating Pressure : 10 bar
- Air to Open, Spring to Close
- Safety Factor : 30%

*Compatible with various actuator types.



Electrical Actuator Operated

DN(mm)	Size(Inch)	Torques	Actuator	H1	H2	H3	W	L
50	2″	16.3	HQ-004	214.1	124	–	89	124
65	2 ½″	21.5	HQ-004	233.2	124	–	89	124
80	3″	31.2	HQ-006	250.8	132	–	126	104
100	4″	53.3	HQ-006	280.0	132	–	126	104
125	5″	72.8	HQ-008	313.5	265	–	166	166
150	6″	123.5	HQ-015	343.2	268	–	229	338
200	8″	240.5	HQ-030	405.0	304	–	259	368
250	10″	377.0	HQ-050	475.3	304	–	259	368
300	12″	442.0	HQ-050	552.0	304	–	259	368

The selection of the actuators are based on the below conditions:
- Air Supply Pressure : 5.5 bar
- Operating Pressure : 10 bar
- Safety Factor : 30%
- Liner : NBR

*Compatible with various actuator types.

REQUEST FOR QUOTE

STEP 1
Find the model series

STEP 2
Define the specification/ valve code

STEP 3
Fill up ordering sheet (back of the brochure) or Scan the QR code below

STEP 4
Submit your order via our website or contact your local partner

STEP 5
Prepare for confirmation and delivery

*For further assistance with placing your order, please contact your local partner.
A sales engineer will be assigned to assist you.

Valve Coding Sheet
BU25

01	—	02	—	03	—	04	—	05	—	06

Body Material

Code	Material
G1	Cast Iron
G2	Ductile Iron
C1	WCB
S1	SS304
S2	SS316

Liner Material

Code	Material
E	EPDM
N	NBR
P	PTFE
V	Viton
S	Silicone
R	Natural Rubber (Nr)

Rating

Code	Rating
A	PN10
B	PN16
C	ANSI150
D	JIS 10K
E	JIS 16K

Size

Code	Size
A	½″
B	2″
C	2 ½″
D	3″
E	4″
F	5″
G	6″
H	8″
I	10″
J	12″
K	14″
L	16″
M	18″
N	20″
O	24″
P	28″

Connection

Code	Material
W	Wafer
L	Lug

Operation

Code	Type
L	Lever
G	Gearbox
D	Double Acting Pneumatic Actuated
S	Single Acting Pneumatic Actuated
E	Electric Actuated

Your Valve Ordering Code:

BU25	—	01	02	03	04	05	06

Example:

BU25 - S2NADWL.
SS316 Material. NBR Liner. Pressure Rating of PN10, 3 inch size. Wafer Connection Type. Lever Operating Type.

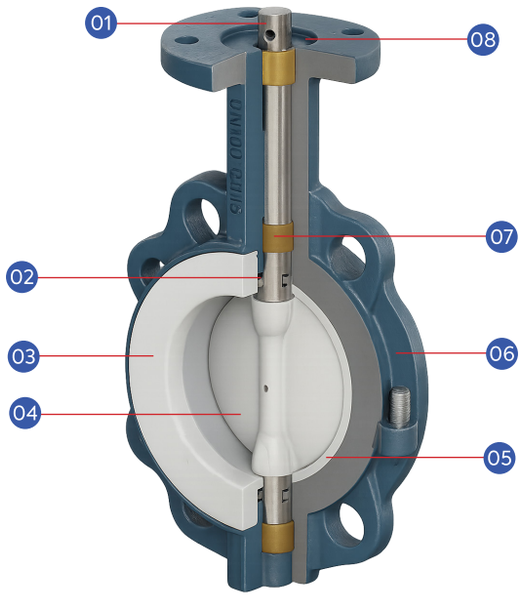
*For special material or customisation, please refer to our sales engineer.

SCAN FOR ONLINE ORDERING FORM

Tel: +65 6909 1221
Email: enquiry@valvewerkz.com
Website: www.valvewerkz.com

PFA-LINED BUTTERFLY VALVE

ValveWerkz BU26 series PFA-lined butterfly valve is engineered for precise control and dependable isolation of aggressive media. This fully PFA-lined valve is ideal for corrosive and abrasive environments where tight shutoff, consistent operating torque, and minimal maintenance are critical. The BU26 series is rated for pressures up to 150 psi and is equally suitable for ultrapure process systems.



1. **Shaft**
   Square-type stem head design enables easy adaptation to automated actuation.

2. **Belleville Washer**
   The specially designed elastomer washer applies live loading to maintain constant pressure on the body lining. Fluoroelastomer materials reduce deformation caused by continuous temperature variation.

3. **Seat**
   Moulded liner is machined to deliver low torque and minimise wear on contact surfaces.

4. **One-Piece Disc**
   The disc features a spherically machined and hand-polished edge to reduce torque and enhance sealing performance.

5. **Elastomer Back-up**
   Matching the width of the disc edge, this back-up element locks into the body groove. It increases resilience to the body liner and provides a bubble-tight seal.

6. **Body**
   Two-piece split body with epoxy coating resists the effects of atmospheric corrosion.

7. **Stem Bearings**
   Bronze, PTFE, or stainless steel bearings maintain shaft alignment. Self-lubricated design reduces shaft loading.

8. **ISO 5211 Mounting Flange**
   Universal mounting dimensions support a wide range of actuators. Direct mounting of several actuation types is possible without adapters.

Lining Material

ValveWerkz uses high-quality virgin resin sourced from reputable global brands for the production of its PFA, PTFE and FEP fluoropolymers. For lined valves, key performance factors such as liner thickness, resin grade, and fabrication quality play a vital role in determining valve reliability and overall service life.

Seat Liner

Materials used: PFA, PTFE and FEP
Moulded and machined with a minimum nominal thickness of 3 mm.
Optional TFM liner available for highly demanding applications.

Disc Lining

Fully lined with PFA or PTFE.
Encapsulated with a minimum 3 mm thick PFA or PTFE layer.

Lining Thickness

In compliance with ASTM F1545, the minimum required lining thickness is 3 mm. In real-world applications, increased thickness enhances protection in vacuum conditions, improves abrasion resistance, and reduces gas permeability. This contributes to better operational safety and a longer service life.

Electrostatic Spark Test

Each lined valve is tested using a non-destructive high-voltage spark method before shipment, following standard QA procedures. The test uses a minimum of 10,000 volts to detect cracks, pinholes, or liner defects, ensuring structural integrity and a leak-tight seal.

BU26 Series

Split Body Design

Wafer, Lug

Body Material Option:
Ductile Iron GGG40
Carbon Steel 1.0619
Stainless Steel 1.4408

Liner Material Option:
PFA / PTFE / RTFE / TFM

Pressure rating of PN10, PN16, ANSI 150, JIS 10K, JIS 16K

Face-to-face Standard API609, EN558-120 Series, ISO5752, DIN3202K1

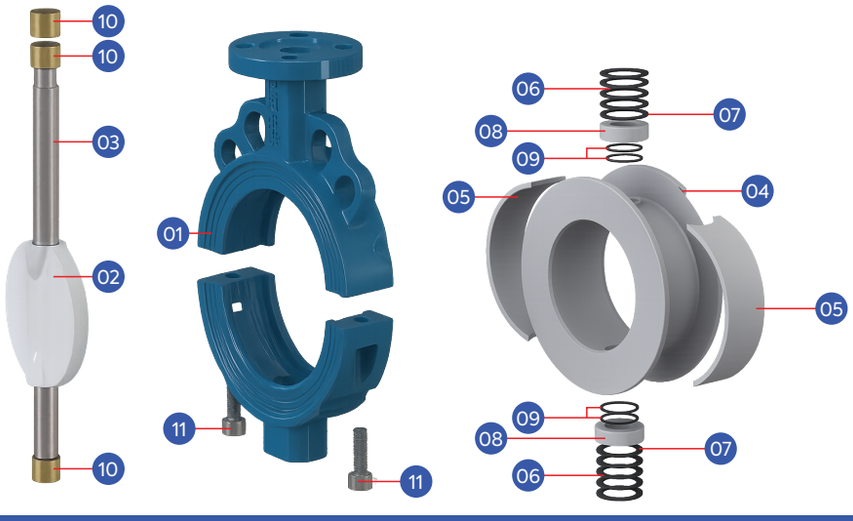
ISO 5211 Top Flange

Flange Drilling BS EN1092, JIS B2220, ASME Class 125 / Class 150

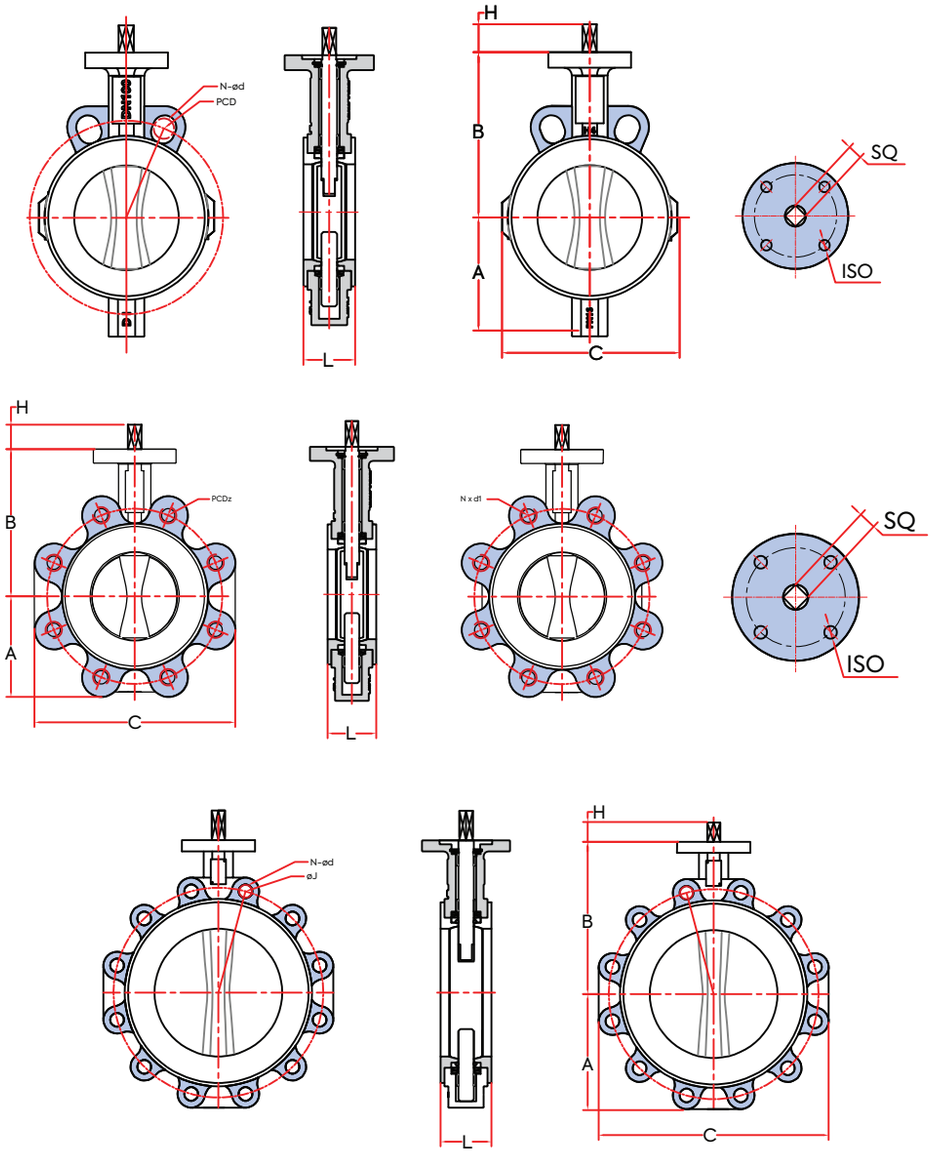
Square Top Flange

Operating Temperature
-40°C to 180°C

ValveWerkz BU26 Series PFA-lined butterfly valve is engineered for precise control and reliable isolation of aggressive media. This PFA-lined design is ideal for corrosive and abrasive environments that require tight shutoff, stable torque, and low-maintenance performance. The BU26 series is rated for pressures up to 150 psi and is suitable for use in ultrapure process systems.

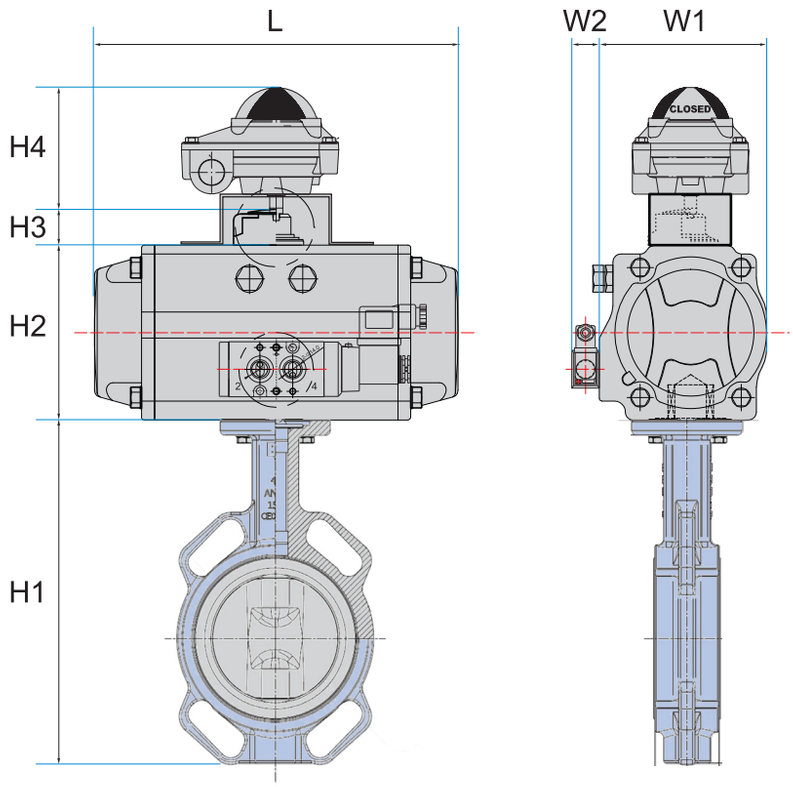


	Part Name	Material		
1.	Body	Ductile Iron GGG40	Carbon Steel 1.0619	Stainless Steel 1.4408
2.	Disc	PFA / PTFE / FEP Lined	Stainless Steel 1.4308	Aluminum Bronze
3.	Stem	Stainless Steel 1.4308		
4.	Liner	PFA / PTFE / RTFE / TFM		
5.	Back-up	VMQ Silicon Rubber / FKM / EPDM		
6.	Belleville Washers	VMQ Silicon Rubber		
7.	Washers	PTFE		
8.	Pusher	Stainless Steel 1.4308		
9.	O-Ring	FKM / VMQ / FKM with PTFE		
10.	Bearing	316 with PTFE		
11.	Screw	Stainless Steel 1.4308		



Dimensions(mm)

DN	Inch	L	A		B		C		H	SQ	ISO	PCD	n X Ød	Lever		
			Wafer	Lug	Wafer	Lug	Wafer	Lug						A	B	F
50	2″	47	75.0	66.0	136.0	136	116	149	32	9	F05	65	4-7	190	65	F05
65	2 ½″	50	85.0	70.0	138.0	138	130	159	32	9	F05	65	4-7	190	65	F05
80	3″	50	90.0	92.0	140.0	140	142	182	32	9	F05	65	4-7	190	65	F05
100	4″	55	115.0	108.0	158.0	158	178	217	32	11	F07	90	4-10	256	76	F07
125	5″	59	135.0	120.0	170.0	170.0	217.0	240.0	32	14	F07	90	4-10	256	76	F07
150	6″	59	147.0	134.0	190.0	190.0	233.0	267.0	32	14	F07	90	4-10	256	76	F07
200	8″	63	172.0	160.0	231.0	232.0	288.0	320.0	32	17	F10	125	4-12	355	106	F10
250	10″	73	210.0	200.0	260.0	270.0	344.0	400.0	32	22	F10	125	4-12	355	106	F10
300	12″	81	245.0	233.0	291.0	300.0	306.0	465.0	45	22	F10	125	4-12	355	106	F10
350	14″	81	260.0	258.0	320.0	333.0	456.0	512.0	45	22	F12	150	4-14			
400	16″	102	298.0	292.0	408.0	403.0	585.0	585.0	52.0	27	F14	175	4-18			



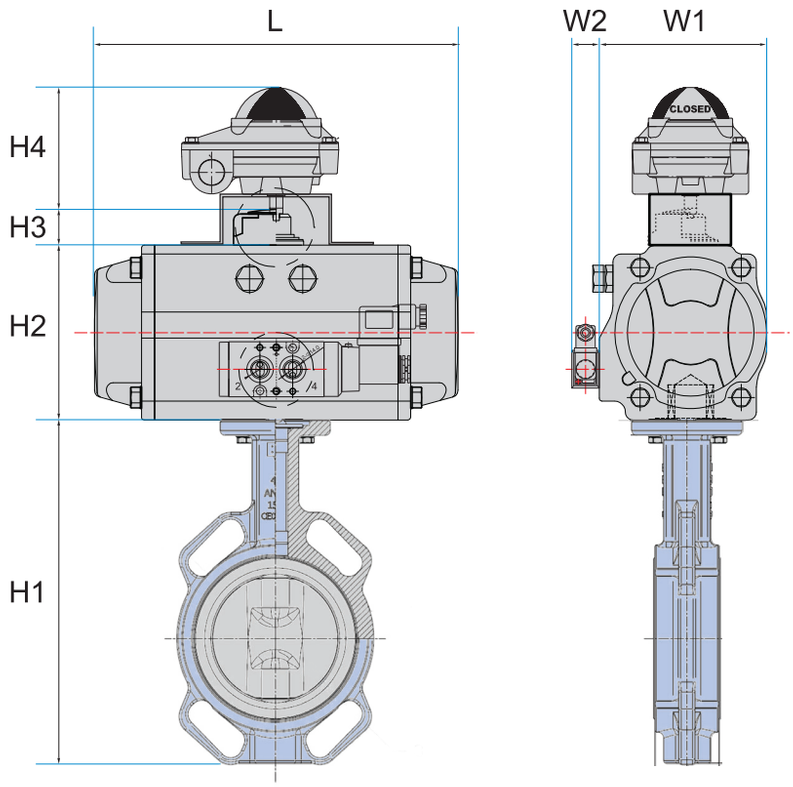
Pneumatic Actuator (Double Acting)

DN(mm)	Size(Inch)	Torques	Actuator	H1		H2	H3	H4	W1	W2	L
				Wafer	Lug						
50	2″	39.0	HP-066	211.0	202.0	87	20	90	85	29.5	202
65	2 ½″	45.5	HP-066	223.0	208.0	87	20	90	85	29.5	202
80	3″	71.5	HP-088	230.0	232.0	116	20	90	108	29.5	247
100	4″	84.5	HP-088	273.0	266.0	116	20	90	108	29.5	247
125	5″	149.5	HP-100	305.0	290.0	128	20	90	123	29.5	268
150	6″	195.0	HP-115	337.0	324.0	146	20	90	141	29.5	316
200	8″	325.0	HP-145	403.0	392.0	179	20	90	172	29.5	414
250	10″	468.0	HP-145	470.0	470.0	179	20	90	172	29.5	414
300	12″	585.0	HP-160	536.0	533.0	196	30	90	190	29.5	467

The selection of the actuators are based on the below conditions:

- Air Supply Pressure : 5.5 bar
- Operating Pressure : 10 bar
- Safety Factor : 30%
- Liner : PTFE

*Compatible with various actuator types.



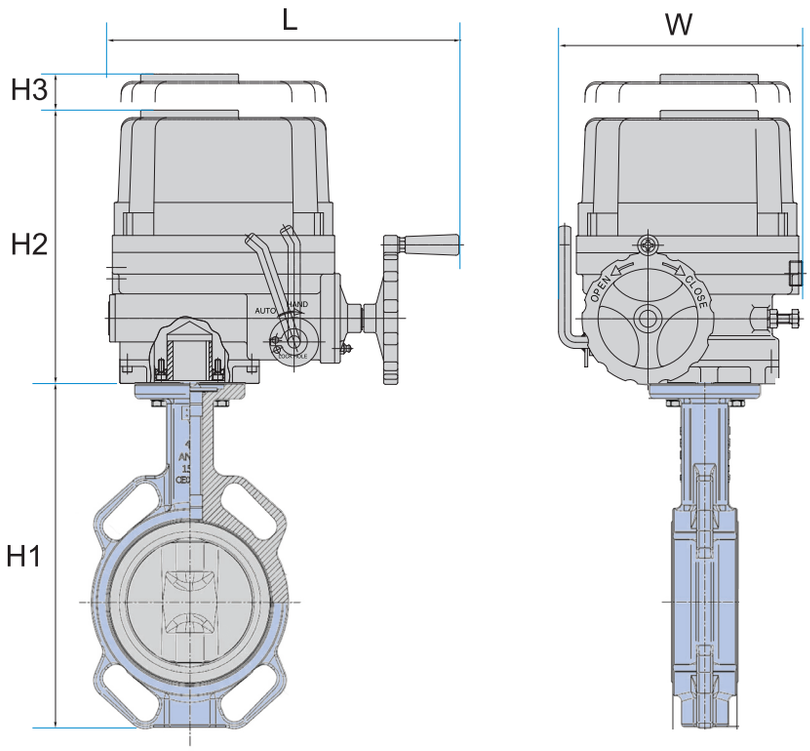
Pneumatic Actuator (Single Acting)

DN(mm)	Size(Inch)	Torques	Actuator	H1		H2	H3	H4	W1	W2	L
				Wafer	Lug						
50	2″	39.0	HP-88S	211.0	202.0	116	20	90	108	29.5	247
65	2 ½″	45.5	HP-100S	223.0	208.0	128	20	90	123	29.5	268
80	3″	71.5	HP-115S	230.0	232.0	146	20	90	141	29.5	316
100	4″	84.5	HP-115S	273.0	266.0	146	20	90	141	29.5	316
125	5″	149.5	HP-145S	305.0	290.0	179	20	90	172	29.5	414
150	6″	195.0	HP-145S	337.0	324.0	179	20	90	172	29.5	414
200	8″	325.0	HP-200S	403.0	392.0	247	30	90	227	29.5	555
250	10″	468.0	HP-200S	470.0	470.0	247	30	90	227	29.5	555
300	12″	585.0	HP-211S	536.0	533.0	256	30	90	236	29.5	669

The selection of the actuators are based on the below conditions:

- Air Supply Pressure : 5.5 bar
- Liner : PTFE
- Operating Pressure : 10 bar
- Air to Open, Spring to Close
- Safety Factor : 30%

*Compatible with various actuator types.



Electrical Actuator Operated

DN(mm)	Size(Inch)	Torques	Actuator	H1		H2	H3	W	L
				Wafer	Lug				
50	2″	39.0	HQ-006	211.0	202.0	132	-	126	104
65	2 ½″	45.5	HQ-006	223.0	208.0	132	-	126	104
80	3″	71.5	HQ-008	230.0	232.0	235	-	166	265
100	4″	84.5	HQ-010	273.0	266.0	235	-	166	265
125	5″	149.5	HQ-015	305.0	290.0	268	-	229	338
150	6″	195.0	HQ-030	337.0	324.0	304	-	259	368
200	8″	325.0	HQ-050	403.0	392.0	304	-	259	368
250	10″	468.0	HQ-050	470.0	470.0	304	-	259	368
300	12″	585.0	HQ-060	536.0	533.0	304	-	259	378

The selection of the actuators are based on the below conditions:

- Air Supply Pressure : 5.5 bar
- Operating Pressure : 10 bar
- Safety Factor : 30%
- Liner : PTFE

*Compatible with various actuator types.

REQUEST FOR QUOTE

STEP 1
Find the model series

STEP 2
Define the specification/ valve code

STEP 3
Fill up ordering sheet (back of the brochure) or Scan the QR code below

STEP 4
Submit your order via our website or contact your local partner

STEP 5
Prepare for confirmation and delivery

*For further assistance with placing your order, please contact your local partner.
A sales engineer will be assigned to assist you.

Valve Coding Sheet
BU26

01 — 02 — 03 — 04 — 05 — 06

Body Material

Code	Material
G2	Ductile Iron
C1	WCB
S2	SS316

Liner Material

Code	Material
P	PTFE
F	RTFE
A	PFA
T	TFM

Rating

Code	Rating
A	PN10
B	PN16
C	ANSI150
D	JIS 10K
E	JIS 16K

Size

Code	Size
A	½″
B	2″
C	2 ½″
D	3″
E	4″
F	5″
G	6″
H	8″
I	10″
J	12″
K	14″
L	16″

Connection

Code	Material
W	Wafer
L	Lug

Operation

Code	Type
L	Lever
G	Gearbox
D	Double Acting Pneumatic Actuated
S	Single Acting Pneumatic Actuated
E	Electric Actuated

Your Valve Ordering Code:

BU26 — 01 02 03 04 05 06

Example:

BU26 - S2PADWL.
SS316 Material. PTFE Liner. Pressure Rating of PN10, 3 inch size. Wafer Connection Type. Lever Operating Type.

*For special material or customisation, please refer to our sales engineer.

SCAN FOR ONLINE ORDERING FORM

Tel: +65 6909 1221
Email: enquiry@valvewerkz.com
Website: www.valvewerkz.com