Stafford

PRODUCT CATALOGUE

Series - 60/61

Double Offset Butterfly Valves

Sizes 2" - 56" / DN 50 - DN 1400

ASME Class150, PN 10 & PN 16

Features

Stafford Controls is pleased to offer top-of-the-line products in pipeline flow control. The **Stafford** Double Offset Butterfly Valve **Series 60 & 61** has been developed with extensive application, design and manufacturing expertise. These products are produced by employing modern manufacturing practices under a robust quality assurance system. These practices ensure consistent product quality and dependable performance. The **Stafford** Double Offset Butterfly Valve **Series 60 & 61** has been designed to include state-of-the-art features that are described in this bulletin.

1. Body

Flanged body styles offer UNIDIRECTIONAL sealing as standard in conformance with full ASME class 150, PN 10, PN 16 rating. The body rib is a machined stopper on the inner surface of the body that locates the disc in the seat to achieve maximum seat and seal life. The body rib is designed to prevent disc from rotating in the wrong direction.

2. Body Ring or Seat Ring

Body ring is a machined part which is fixed to the body rib.

3. Disc Trim

Seat ring or disc trim is a machined part which is mounted on a disc and is used to control the leakage when contact with body ring.

4. Disc

The disc has been engineered to maximize flow and minimize resistance to provide a high flow coefficient (Cv).

5. Stem

Stem provides maximum strength for high torque applications.

6. Top Flange

The top flange is drilled as per ISO 5211 to accommodate direct mounting of a wide range of actuators.

7. Extended Neck

Extended neck allows providing insulation and easy access to stem packing adjustment and actuator mounting.

Thrust pad

Thrust pad act as a thrust or load absorber. The thrust pad is located between End cover plate and stub shaft. This thrust pad is used to reduce the load of valve assembly acting on bottom of the body.

Bearings

Top and bottom bearings, consisting of a 316 stainless steel /PTFE liner bearing surface, securely support the stem.

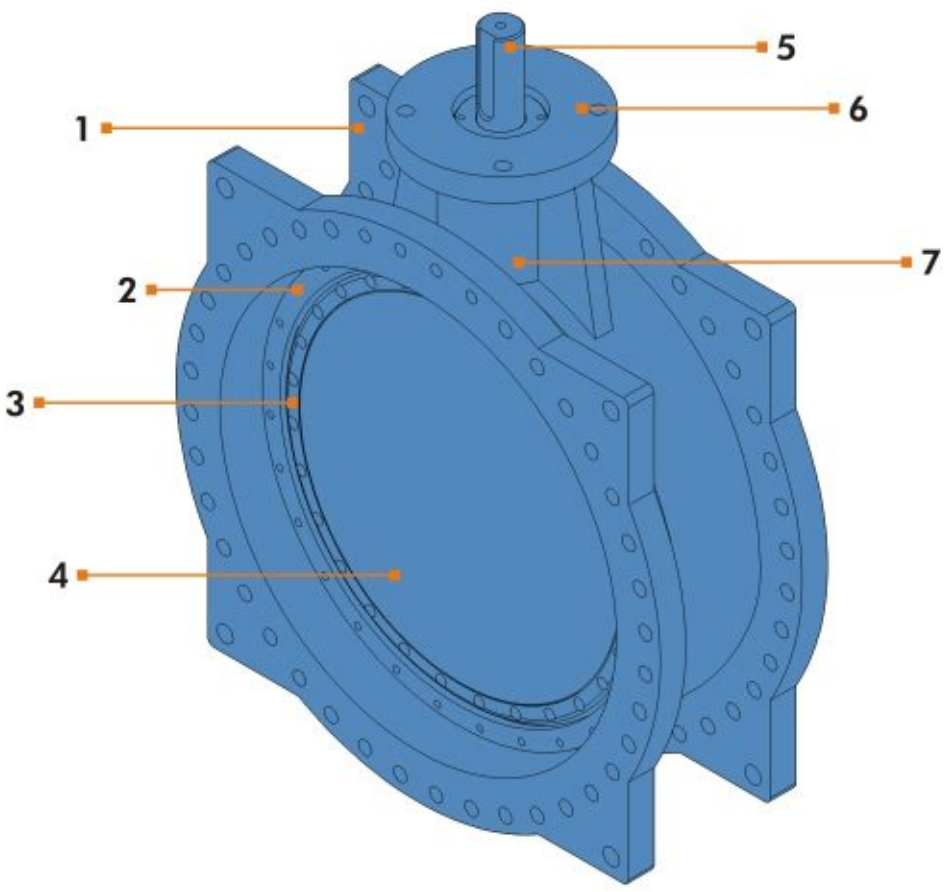
Shaft Pin

Shaft pin is used to lock the disc with shaft so that the motion is carried without any fail.

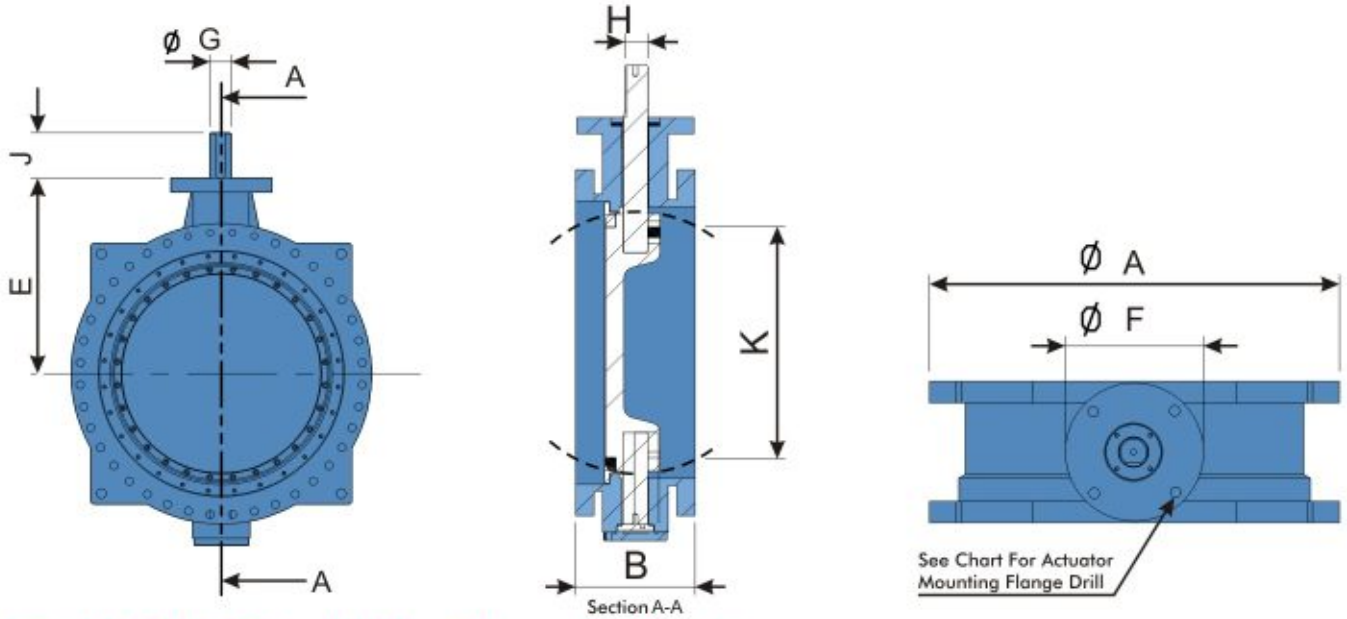
Packing Glands

Stem assembly is "live loaded" with bearing bushes, gland plate and O ring. This gland ensures continuous compression of packing and sealing contact with the stem and body. The packing gland is used to adjust packing while the valve is pressurized with fluid.

SERIES 60 / 61



Engineering (Series 60 & 61)



Double Offset Butterfly Valve Dimensions (mm)

Valve Size		ØA	B	E	ØF	Top Plate Drilling			ØG	H	J	Key Size	K	Weights In Kg
Inches	DN					BC	No of Holes	Hole Dia.						
2	50	95	43	125	102	50	4	10	14	10	32	-	39.8	7
2 1/2	65	105	46	146	102	50	4	10	16	11	32	-	53.3	8
3	80	127	114	151	102	50	4	10	16	11	32	-	66	9.8
4	100	157	127	172	102	70	4	10	16	11	32	-	86.4	14.2
5	125	186	127	188	125	70	4	10	19	13	32	-	114.3	17.8
6	150	216	140	209	125	70	4	10	19	13	32	-	139.7	22.6
8	200	343	152	215	175	102	4	14	22	16	37	-	180.3	65
10	250	407	165	260	215	102	4	14	30	22	57	-	229	83
12	300	483	178	300	215	102	4	14	30	22	57	-	282	95
14	350	534	190	330	230	102	4	14	35	-	62	10x8	324	110
16	400	597	216	370	260	140	4	14	35	-	62	10x8	376	135
18	450	635	222	405	285	140	4	21	50	-	72	14x9	426	160
20	500	700	229	450	210	140	4	21	60	-	90	18x11	466.1	180
24	600	815	267	535	330	165	4	21	70	-	100	20x12	576	260
26	650	869	292	560	300	165	8	18	88.9	-	102	25x14	605	300
28	700	927	292	600	300	254	8	18	88.9	-	102	25x14	660.5	385
30	750	984	318	640	350	254	8	18	88.9	-	102	25x14	715	450
32	800	1060	318	670	350	254	8	18	101.6	-	134	28x16	767	525
36	900	1168	330	705	350	254	8	21	101.6	-	134	28x16	864.2	775
40	1000	1289	410	810	415	254	8	21	120	-	150	32x18	945	1100
44	1100	1403	410	845	415	254	8	33	120	-	150	32x18	1040	1275
48	1200	1511	470	915	415	298	8	33	120	-	150	32x18	1125	1435
56	1400	1746	530	1000	500	450	8	33	120	-	150	32x18	1362	1685

- Valves Above 56" Can Be Supplied As Per The Customer Requirements.
- Face To Face Dimension "B", Generally Conforming To MSSSP68 Table1 / API609 Category B / BS EN558-1/ASME B16.10
  All Bolt Holes 1 1/8" And Larger Have AN 8-unthread Series As Per MSS SP 68 & API 609.
- Flanged End Connection Are Considered As Per ANSI B 16.5 (size Upto 24")& ANSI B 16.47 (above 24")

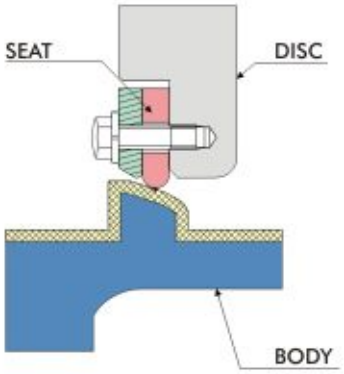
Torque (Nm)

Maximum Seating & Unseating Torque

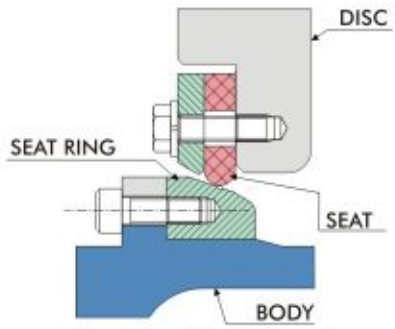
Soft Seated Valve Size		Differential Pressure			
Inches	DN	PN3.5	PN10	PN16	Class 150
2	50	24	27	28	29
2.5	65	27	29	31	32
3	80	32	34	37	40
4	100	43	49	53	68
5	125	59	70	78	83
6	150	88	104	116	124
8	200	148	181	199	214
10	250	193	323	283	315
12	300	235	480	413	465
14	350	389	716	735	836
16	400	496	972	936	1076
18	450	646	1275	1224	1409
20	500	862	1638	1663	1897
24	600	1305	1765	2558	2958
26	650	1597	2210	2610	3170
28	700	1755	2490	2830	3360
30	750	2395	3429	4256	4825
32	800	3099	4529	5456	6325
36	900	3865	5659	7094	8081
40	1000	6102	9100	11499	13152
44	1100	7725	10320	13040	14910
48	1200	9950	14770	18806	21420

Metal Seated Valve Size		Differential Pressure			
Inches	DN	PN3.5	PN10	PN16	Class 150
2	50	58	63	66	70
2.5	65	68	73	76	79
3	80	84	91	94	99
4	100	107	117	125	134
5	125	119	143	159	171
6	150	201	236	265	280
8	200	333	394	446	482
10	250	490	624	707	795
12	300	747	964	1118	1254
14	350	880	1132	1347	1485
16	400	1015	1365	1654	1839
18	450	1302	1944	2506	2829
20	500	1814	2789	3638	4149
24	600	2880	3957	4876	5388
28	700	-	1766	-	-
32	800	-	2746	-	-
48	1200	-	13000	-	-
56	1400	-	16157	-	-

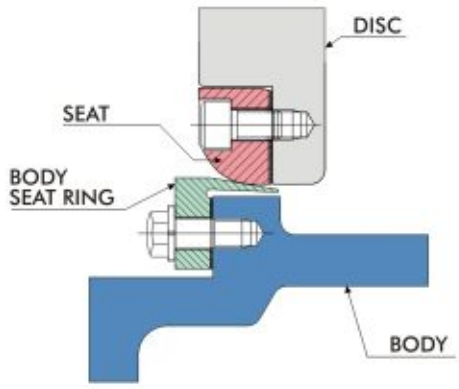
- Above torque values are indicative and defined for flow in preferred direction i.e. Seat retainer upstream. Torque values for flow in non preferred direction i.e. seat retainer downstream, multiply the above values by 1.25



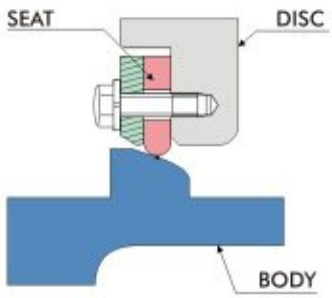
Details of Soft Seated With Rubber Lining



Details of Soft Seated



Details of Metal Seated



Details of Soft Seated Without Rubber Lining

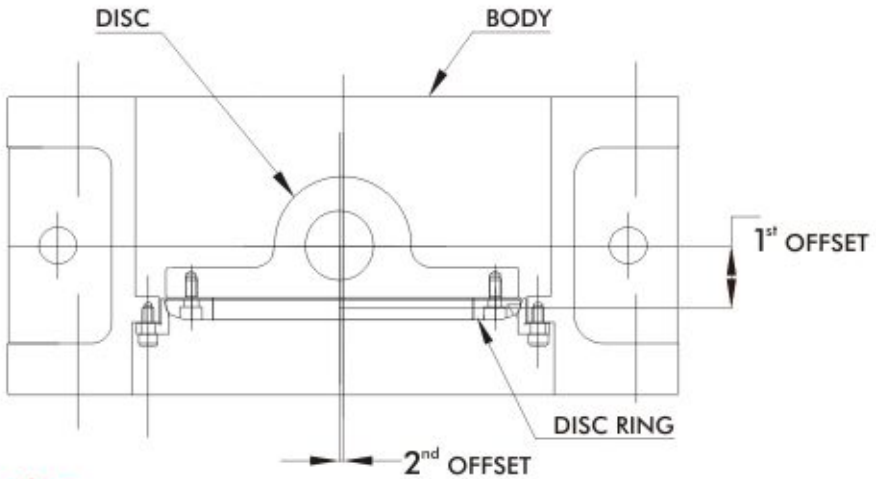
Feature & Selection

Double Offset Disc Design

The offset disc produces a cam-like action, pulling the disc from the seat. This action reduces leakage of fluid as compared to the normal design. Due to offsetting of disc, the valve achieves the tight shutoff.

Open Condition: When the valve was under open or slight open condition, the contact period between the seat and the body is reduced. This action drastically reduced the wear and increase the life time of the seat. Due to the less contact period, the torque required to operate the valve is also reduced.

Closed Condition: When the valve was under close or tight shut off condition, the cam-like action makes the disc pushes into the seat more effectively. This makes the seat to have a tight contact with the body and reduce the leakage of the valve.



Material Of Construction

Body Material
- C.I. ASTM A126 Class B. / IS 210 FG260
- D.I. ASTM A 536 Gr. (65-45-12)
- ASTM A351 CF8M/CF8/CF3M/CF3
- ASTM A216 Gr.WCB

Disc Material
- D.I. ASTM A536 65-45-12 (NYLON PA12 COATED)
- ASTM A351 CF8M/CF8/CF3M/CF3
- AL BRZ ASTM B148-C95400
- ASTM A216 Gr.WCB
- Other Special Alloy Materials

Stem Material
- ASTM A 276 SS316/SS316L/SS304/SS410/SS431
- ASTM A479 SS316/SS316L/SS304/SS410/SS431
- A182 F316/F304/F316L (Stem Materials)

Seat Material
- EPDM (Ethylene Propylene Diene Monomer), BUNA-N, SILICON, VITON, PTFE, NEOPRENE
- SS 304 / SS410 / SS420 (METAL SEATED) / SS 316

Applications

Stafford Butterfly Valves are extremely adaptable and have numerous application possibilities, including :

- Water Treatment
- Chemical Industry
- Waste Effluent Treatment Plant
- Paper Industry
- Sugar Industry
- Construction Industry
- Oil Rigs
- Heating and Air Conditioning
- Cooling Water Circulation
- Pneumatic Conveyors
- Gas Plants
- Desulphurization Plants
- Power Plants
- Metallurgy Industries
- Balance of Plants.
- Desalination Plants

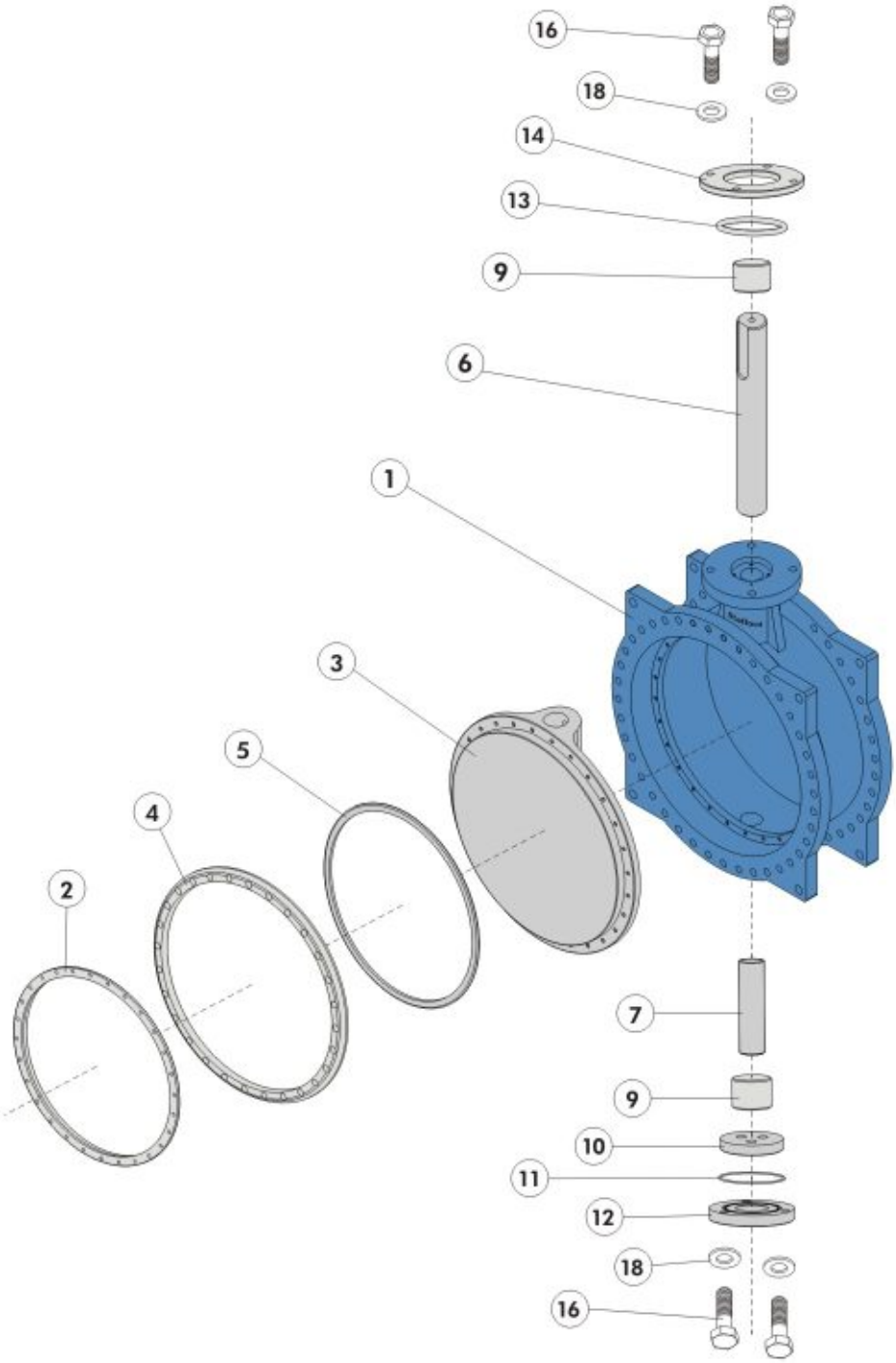
Codes And Standards

General design and manufacturing	:	API 609 Category B / MSS-SP-68 / EN 593
Inspection and Testing	:	API 598 / MSS-SP-68 / EN 12266-1 / AISI FCI 70-2
Pressure temperature rating	:	ASME B 16.34

Bill Of Materials

S.No	DESCRIPTION
1	BODY
2	BODY SEAT RING
3	DISC
4	DISC RING
5	SEAT
6	DRIVE SHAFT
7	STUB SHAFT
8	SHAFT PIN
9	BEARING BUSH
10	THRUST PAD
11	END COVER PLATE O RING
12	END COVER PLATE
13	GLAND PLATE O RING
14	GLAND PLATE
15	KEY
16	HEX BOLTS
17	HEX NUTS
18	WASHER PLATE
19	FULL THREAD STUD
20	NAME PLATE

Not Shown In The Figure



Operators

LEVER HANDLES:

Valves up to 6" for class 150 can be supplied with lever handles for manual operation. Optional accessories for hand-lever operation can be provided for various flow control requirements.

GEAR OPERATED:

Valves up to size 48" can be direct mounted with gear operators for manual operation. Gear operators can also be attached with chain-wheel operators for opening or closing valves located on pipelines at high elevations.

ACTUATORS:

All valves can be direct mounted with pneumatic actuators or electric actuators and accessories for complete automation options such as fail open/close and positioner controlled. Valves can be mounted with manual overrides.

Valve Automation Systems

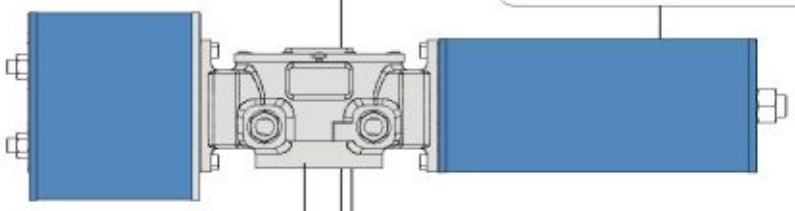
Explosion Proof Limit Switch Box

Weather-proof Limit Switch Box

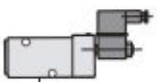
Positioner

Valve Positioning and Monitoring Devices such as limit switch assemblies, positioners as per customer needs, NAMUR mounted with brackets and coupling.

Stafford Series 20 Pneumatic Rack and Pinion actuator, Spring return or double acting, can be direct mounted on valve top flange.



Namur Solenoid Valve



Electrically Operated Solenoid valve, NAMUR mounted for directing air flow in the actuator ports, remotely.

Flow Control Valve

Air flow controlling devices to achieve actuator speed control and position control.

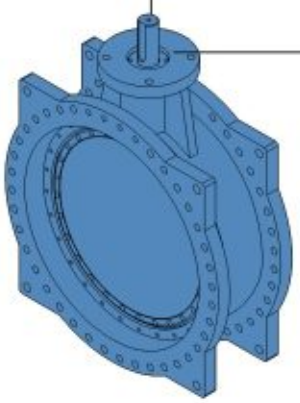
Quick Exhaust Valve

Bracket designed to NAMUR / ISO specs.

Declutchable Manual Override

Declutchable Manual Override to facilitate valve operation in the event of supply failure, mounted with brackets and couplings.

Bracket designed to NAMUR / ISO specs.



Stafford Butterfly Valves with ISO Top flange.

Assembly and Testing: All valves are tested for the integrated valve performance such as leakage, operating speed, calibration of positioners, etc. and certified by Stafford Controls.

Quality Certification

ISO 9001 : 2015

ENGINEERS INDIA LTD

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AVANT-GARDE

How to order Stafford valves

SERIES ☐☐	SIZE ☐☐☐	TRIM / OTHER VARIABLES / SPECIALS ☐ ☐ ☐ ☐ ☐ ☐ ☐						
VALVE	DN 50=020 TO DN 1400=560	BODY	DISC	STEM	SEAT	RATING	OPERATOR	SPECIAL
DOUBLE OFFSET 60: soft seated 61: metal seated	DN 50=020 DN 450=180 DN 65=025 DN 500=200 DN 80=030 DN 550=220 DN 100=040 DN 600=240 DN 125=050 DN 650=260 DN 150=060 DN 700=280 DN 200=080 DN 800=320 DN 250=100 DN 900=360 DN 300=120 DN 1000=400 DN 350=140 DN 1100=440 DN 400=160 DN 1200=480 DN 1400=560	1= C.I. 2= D.I. 3= WCB 4 = CF8M 6 = CF8 X= Special	1= D.I+. Nylon Coating 2= D.I.+ Aroxy Coating 3= Aluminium Bronze 4= SS316 X= Special	1= SS431 2= SS316 3= CS 5= SS410 X= Special	B= BunaN E= EPDM V= Viton S= Silicone M= METAL SEATED P= PTFE	1= PN10/PN12 2= PN16/#150 3= PN 3.5	B=Bare stem L=Lever G=Gear C=Chain wheel A=Automated	0= No special requirements. S= Special requirements as specified by customer.

For Example:- To order DN 300, 1 Pc. Double offset Valve, Body- C.I., Disc- Aluminium bronze, Stem- SS431, Seat- Metal seat, Rating - PN10, Gear operated, with no special requirements.

6	1		1	2	0		1	3	1	M	1	G	0

All statements, technical information and recommendations in the bulletin are for general use only. Stafford is not responsible for suitability or compatibility of these products in relation to system requirements. Consult Stafford distributors or factory for the specific requirements and material selection for your intended application. Stafford reserves the right to change or modify product design or product without prior notice.

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