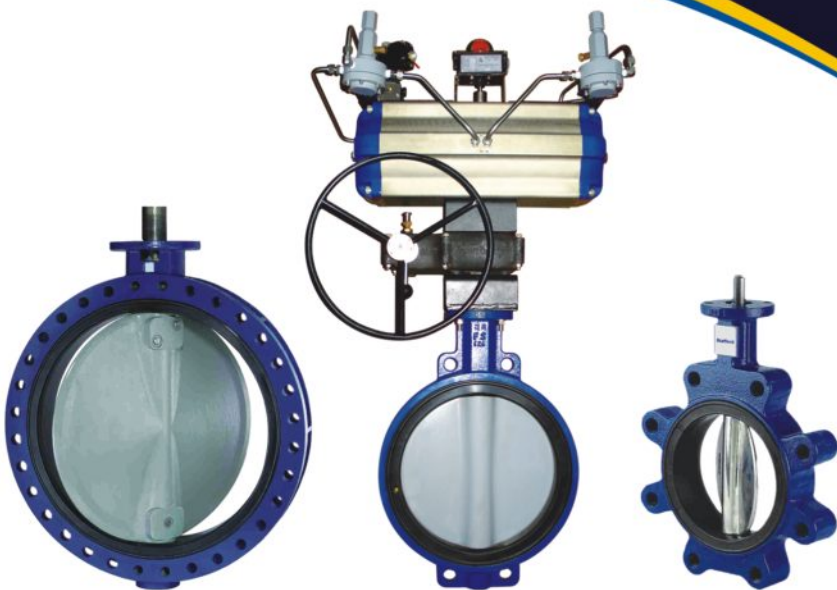


P R O D U C T CATALOGUE

Series 50/51/52/53



Wafer, Lug & Double Flanged ◆
Resilient Seated Butterfly Valves ◆
Sizes: 2" - 40" (DN 50 - DN 1000) ◆

Features

Stafford Controls Ltd. is pleased to offer top-of-the-line products in pipeline flow control. The **Stafford** Series 50/51 (wafer body), Series 52 (lug body) and Series 53 (Double Flanged body) Butterfly Valves have been developed with extensive application, design and manufacturing expertise. These products are produced in state-of-the-art manufacturing facilities and under a robust quality assurance system conforming to ISO 9001:2008. The **Stafford** Series 50/51/52/53 Butterfly Valves have been designed to offer excellent features that are described below.

1 ISO 5211 top plate drilling and stem connection. All handles, gear operators and pneumatic Stafford actuators are designed to mount directly to Stafford Valves.

2 Two flange locating holes for sizes up to 12" and four flange locating holes from size 14" to 40" for easy alignment of valve during installation. Flange locating holes meet ANSI #125/150 or other world drilling standards.

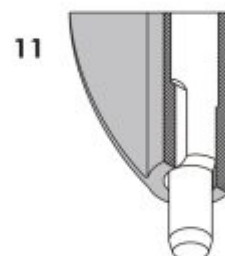
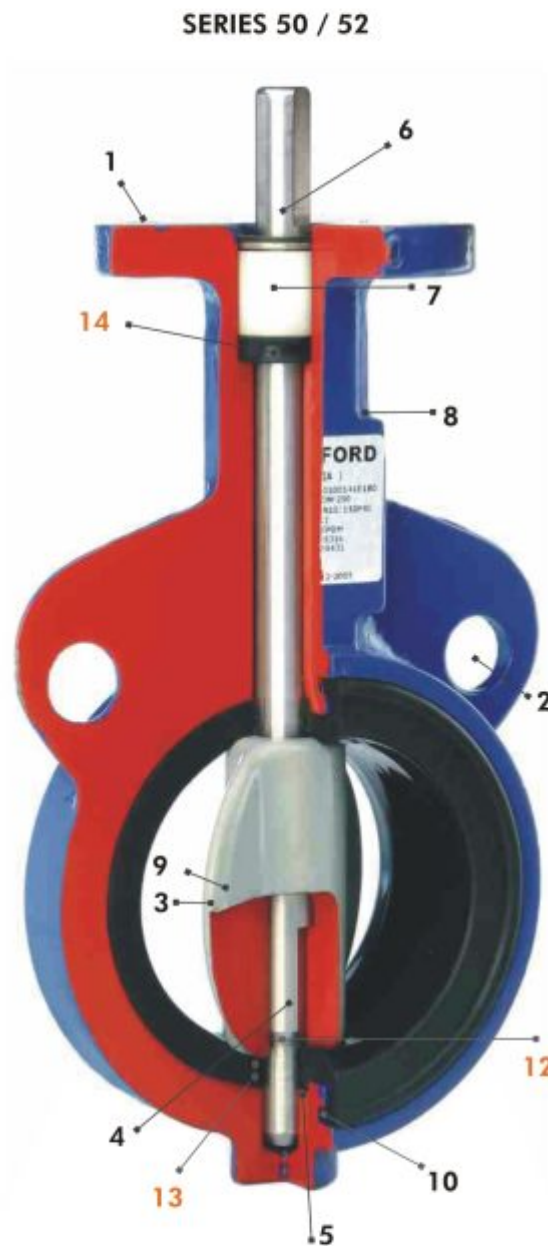
3 Nylon PA 12 coated disc option ensures excellent corrosion resistance to several chemical media. The hard, non-porous sintered polymer has very low hygroscopicity and is suitable for use in drinking water and non-alcoholic foodstuffs.

4 One piece stem with close tolerance double D drive.

5 Unique "Center-Lock" seat design virtually eliminates any seat movement during the seating and unseating of the disc and isolates the body and stem from line media.

6 Unique stem retention system to provide blow-out proof stem assembly and easy disassembly of valve.

7 Heavy duty acetal bushing absorbs the forces acting on the stem/disc assembly due to line pressure.



Only for series 50/52

8 Heavy duty one-piece body with extended neck for 2" piping insulation. Standard coating is epoxy polyester powder coat of semi-glossy finish with excellent corrosion resistance.

9 Stainless steel disc with hand polished disc edge and hubs for bubble-tight shut off and longer service life and for minimum torque and maximum seat life.

10 Heavy duty square-grooved seat design with molded O-ring seals to serve as flange gaskets. EPDM and Buna-N seats are peroxide cured to yield the best elastic properties of the elastomer.

11 A close tolerance double D disc stem engagement provides all the advantages of a one-piece disc/stem connection.

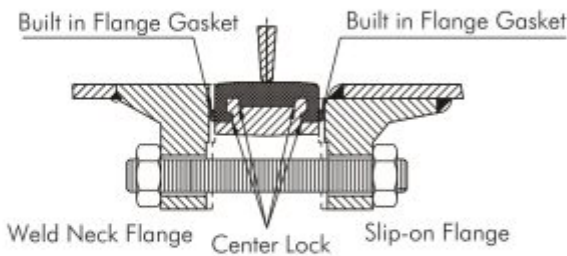
Tertiary Sealing

12 Precision machined radius on the upper and lower disc hubs is pressed against upper and lower seat sealing faces for achieving primary sealing between disc and seat.

13 Double O-rings are molded in both upper and lower journals providing a superior secondary seal. These are suitable for weld neck and slip-on flanges.

14 Self-adjusted bi-directional 'U' cup stem sealing prevents entry of external substances from upper stem bore. This packing acts as the tertiary pressure seal.

Features



Center-Lock Seat Design

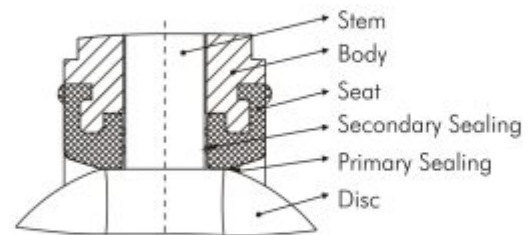
The "Center-Lock" heavy duty seat design incorporates rigid locking of the seat in the body at four points. This virtually eliminates any seat movement during seating and un-seating of the disc. The unique "Center-Lock" seat offers the rigidity of an in-situ molded liner valve and replaceability of a soft seated liner valve.

Stem Retention System (Series 50/52)

The valve stem is securely retained in the body with a stainless steel retaining washer. This washer is located on a step that is precision machined on the stem and is held in place by a high strength circlip fitted into a machined groove in the neck of the valve providing a "blow-out proof" stem assembly. The stem retention is designed for easy on site disassembly with the use of standard tools only.

Built in Flange Gasket

An O- ring is precisely molded on the face of the seat and serves as a flange gasket. Valves are designed for installation between ANSI class 125/150, BS EN 1092 PN 10 / PN 16 and BS10 Table D or E. Weld neck or slip-on raised face flanges can be used.



Improved Disc/Seat/Stem Sealing

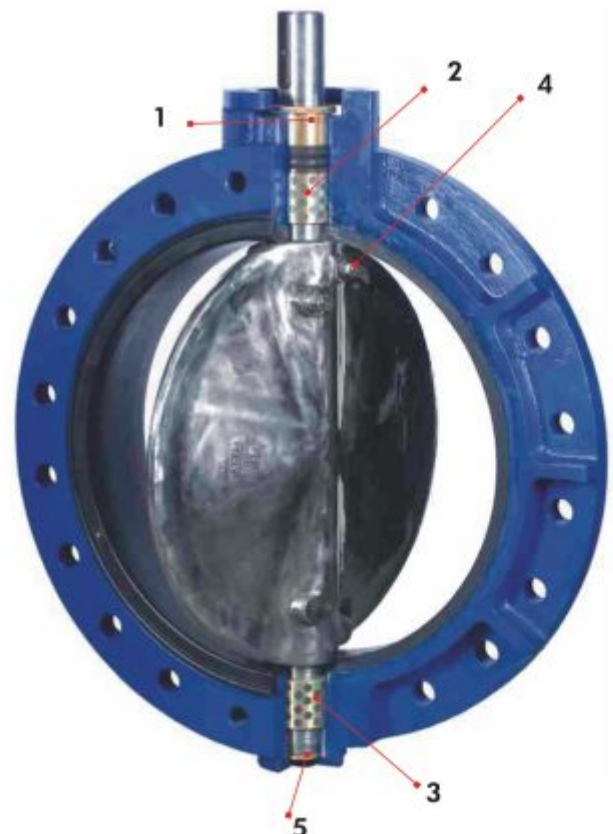
The disc/ seat /stem interfacing area is designed for efficient sealing. A precision radius machined on the upper and lower disc hub is pressed into the seat sealing faces to ensure positive "primary sealing". Two molded O-rings in the upper and lower seat journals press against the stem shaft ensuring positive "secondary sealing". The sealing prevents the stem and body from coming into contact with line media.



Additional features for valve sizes above 20"

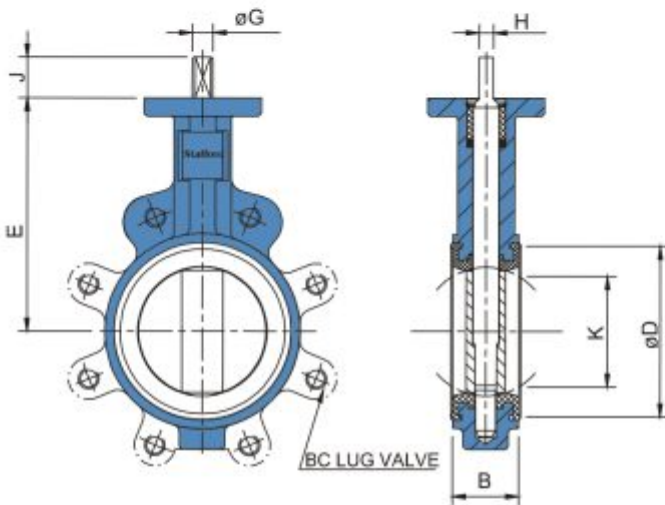
SERIES 51 / 53

- 1** A bronze packing gland allows for field adjustment of stem packing.
- 2** Self lubricated bronze sleeve bearing to reduce bearing friction and operating torque.
- 3** Thick bronze bushing absorbs actuator side thrusts.
- 4** 17-4 PH stainless steel pins fitted tangentially half in disc and half in stem placing them in compression rather than shear. This eliminates potential for failure. O-rings insure bubble-tight shut off under pressure or vacuum.
- 5** Bronze vertical thrust bearing eliminates disc displacement due to weight of stem and disc.

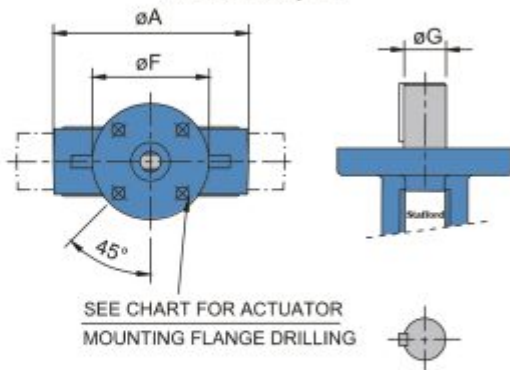


Engineering

SERIES 50 / 52

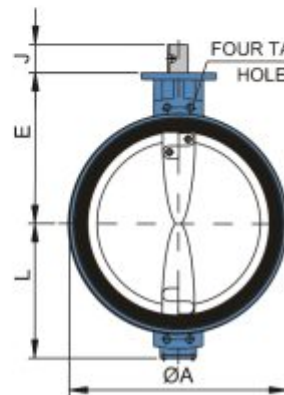


SERIES 50 / 52

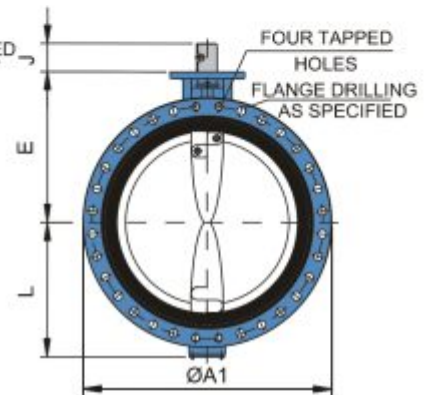


14" & ABOVE

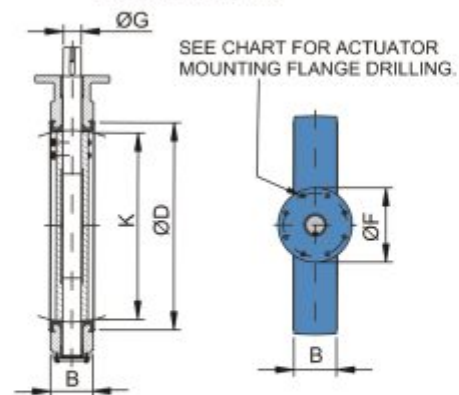
SERIES 51



SERIES 53



SERIES 51 / 53



Torques (Nm)

Valve Size		Full Rated Pressure Valves ΔP , bar				Reduced Disc Dia ΔP , bar
Inches	DN	3.5	7	10	12	3.5
2	50	10	11	11.5	12	10
2.5	65	15	18	18.5	19	15
3	80	20	23	24	25	20
4	100	32	34	36	37	21
5	125	43	47	51	53	32
6	150	64	72	77	82	42
8	200	124	138	153	160	85
10	250	199	224	248	260	130
12	300	297	336	375	395	199
14	350	430	495	560	---	287
16	400	555	667	780	---	371
18	450	682	856	1030	---	458
20	500	896	1122	1347	---	597
22	550	1126	1442	1774	---	730
24	600	1356	1763	2200	---	860
26	650	1660	2202	2750	---	1063
28	700	1962	2640	3320	---	1266
30	750	2270	3083	3900	---	1465
32	800	2685	3715	4740	---	1755
36	900	3530	4975	6420	---	2342
40	1000	4185	6175	8165	---	3085

1. The above anticipated seating and unseating torques are to be used as a guide only and are for CLASS 1 services.

2. Stafford classifies seating and unseating torques in the following categories;

CLASS 1: General, clean and highly lubricating, non-corrosive services and the valve being frequently operated.

CLASS 2: General, less lubricating, mildly corrosive services and the valve being less frequently operated.

CLASS 3: Severe, dry and non-lubricating services, powders, slurries etc and the valve being infrequently operated.

3. Dynamic torque values are not considered in the above data. When designing valve systems please consult Stafford Technical Data Sheets.

4. Bi-directional and fully tested for 110% of rated working pressure for seat test and 150% of the rated working pressure for shell test.

Engineering

Dimensions (mm) Series 50/52

Valve Size		ØA	B*	D	E	F	Top Plate Drilling			ØG	H	J	K	Lug Bolting Data			Weights In Kg	
Inches	DN						BC	No of Holes	Hole Dia					BC	No.of Holes	Threads UNC-2B	Wafer (Series 50)	Lug (Series 52)
2	50	88	41	72	140	90	70	4	10	14	10	32	28.6	120.7	4	5/8-11	2.5	3.5
2 ½	65	102	44	87	152	90	70	4	10	14	10	32	47.8	139.7	4	5/8-11	2.9	3.8
3	80	120	44	103	160	90	70	4	10	14	10	32	66.8	152.4	4	5/8-11	3.5	4.2
4	100	151	51	132	180	90	70	4	10	16	11	32	86.5	190.5	8	5/8-11	5.6	8.0
5	125	175	54	156	192	90	70	4	10	19	13	32	113.3	215.9	8	3/4-10	6.4	9.8
6	150	195	54	180	205	90	70	4	10	19	13	32	140.5	241.3	8	3/4-10	7.2	11.3
8	200	262	64	240	241	150	125	4	14	22	16	32	187.9	298.5	8	3/4-10	14.4	18.4
10	250	320	64	292	273	150	125	4	14	30	22	51	242.0	362.0	12	7/8 - 9	21.5	28.5
12	300	372	76	342	311	150	125	4	14	30	22	51	288.7	431.8	12	7/8 - 9	30.5	41.5

Valve Size		ØA	B*	D	E	F	Top Plate Drilling			ØG	J	Key Size	K	Lug Bolting Data			Weights In Kg	
Inches	DN						BC	No of Holes	Hole Dia					BC	No.of Holes	Threads UNC-2B	Wafer (Series 50)	Lug (Series 52)
14	350	430	76	388	346	150	125	4	14	35	51	10X10	329.6	476.2	12	1-8	47	56.5
16	400	485	102	442	375	150	125	4	14	35	51	10X10	376.2	539.7	16	1-8	67	91.5
18	450	536	108	495	406	210	165	4	21	50	64	10X12	423.1	577.8	16	1 1/8-7	94	110.0
20	500	590	127	548	438	210	165	4	21	50	64	10X12	473.8	635.0	20	1 1/8-7	123	148.0

Dimensions (mm) Series 51/53

Valve Size		ØA WAFER	ØA1 FL. END	B*	ØD	E	L	ØF	Top Flange Drilling			Pressure Rating PN10			Pressure Rating PN3.5			K	WT. (Kg)	
Inches	DN								BC	No. Of Holes	Hole Dia.	ØG	J	Key Size	ØG	J	Key Size		Wafer	Fl. End
22"	DN 550	645	750	151	612	511	419	210	165	4	21	63.5	102	15.88 x 15.88	63.5	102	15.88 x 15.88	521	191	231
24"	DN 600	695	839	151	654	495	445	210	165	4	21	63.5	102	15.88 x 15.88	63.5	102	15.88 x 15.88	573	198	275
26"	DN 650	745	896	165	707	555	475	300	254	8	18	63.5	102	15.88 x 15.88	63.5	102	15.88 x 15.88	598	264	356
28"	DN 700	795	960	165	756	580	504	300	254	8	18	63.5	102	15.88 x 15.88	63.5	102	15.88 x 15.88	651	282	682
30"	DN 750	865	985	167	813	595	528	300	254	8	18	76.2	102	19.05 x 19.05	63.5	102	15.88 x 15.88	717	332	730
32"	DN 800	900	1061	190	855	670	555	300	254	8	18	76.2	102	19.05 x 19.05	63.5	102	15.88 x 15.88	751	386	849
36"	DN 900	1025	1169	200	972	705	630	350	298	8	21	88.9	134	22.23 x 15.88	63.5	102	15.88 x 15.88	870	486	1069
40"	DN 1000	1120	1290	216	1056	782	675	350	298	8	21	101.6	134	25.4 x 19.05	88.9	134	22.23 x 15.88	952	790	1737

Note : Additional keyway for 0.71 x 0.43 key will be provided up to 36" 50 psi rated valves for direct mounting of actuator.

*Face to face dimensions "B" generally conforming to API 609 CATEGORY A / ISO 5752 SERIES 20 / EN 558 - 1 SERIES 20

Seat Temperature Range

Seat Type	Temperature Range	
	Min.	Max.
EPDM	-13°F (-25°C)	248°F (120°C)
BUNA-N	-13°F (-25°C)	212°F (100°C)
White BUNA-N	-13°F (-25°C)	212°F (100°C)
Viton® / FKM	-23°F (-5°C)	392°F (200°C)
Silicone	-58°F (-50°C)	356°F (180°C)

Note : Compatibility of liner & line fluid has to be checked.
Viton® is registered trademark of E.I. DuPont

Pressure Rating

For bi-directional bubble tight shut off with disc in the closed position

Inches	DN	PSIG	Max Rating(bar)
2"-12"	50-300	285	#150
14 - 40"	350-1000	150	PN10

Material Of Construction

Body

- ◊ Cast Iron ASTM A126 Class B
- ◊ Ductile Iron ASTM A536 Grade 65-45-12
- ◊ Carbon steel ASTM A 216 WCB

Disc

- ◊ Aluminum Bronze ASTM B148-C95400
- ◊ Nylon 12 Coated Ductile Iron ASTM A536 Grade 65-45-12
- ◊ 316 Stainless Steel ASTM A351 Grade CF8M
- ◊ DI ASTM A 536 Grade 65-45-12 + Aroxy coated

Stem

- ◊ 431 Stainless Steel ASTM A479 Type 431
- ◊ 316 Stainless Steel ASTM A276 Type 316
- ◊ Carbon steel BS 970

Seat

- ◊ EPDM - Food Grade
- ◊ Buna-N - Food Grade
- ◊ White Buna-N - Food Grade
- ◊ Viton[®] FKM - Food Grade
- ◊ Silicone

Drive Pin (For Series 51/53)

- ◊ 17-4 PH Stainless Steel ASTM A564 Type 630 Cond. H900

Bearings (For Series 51/53)

- ◊ Luberized Bronze

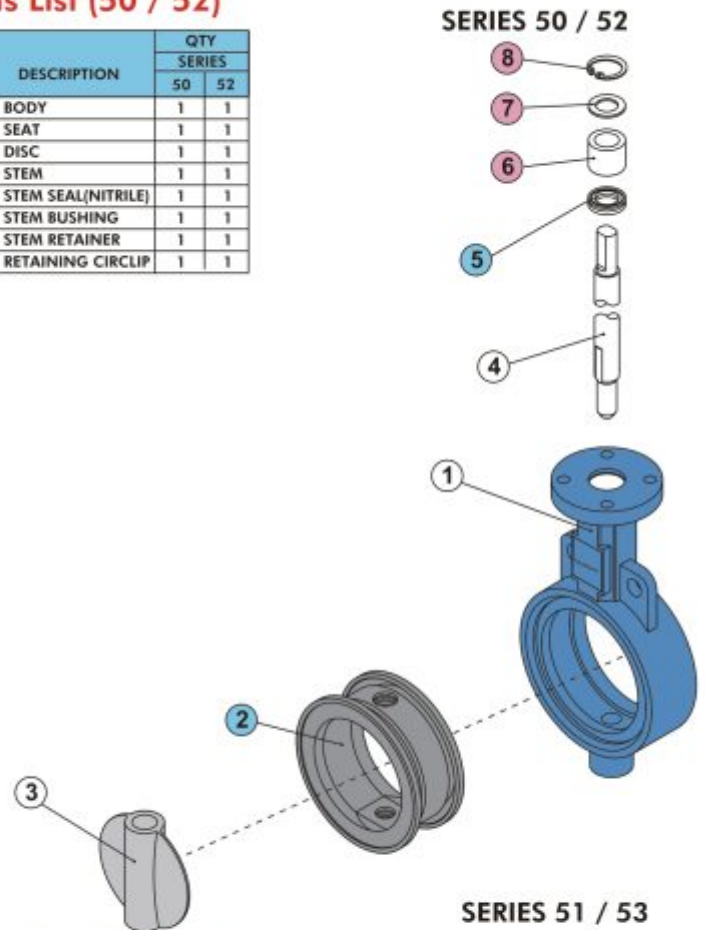
Applications

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
- ◊ Drilling Rings
- ◊ Heating and Air Conditioning
- ◊ Cooling Water Circulation
- ◊ Pneumatic Conveyors
- ◊ Compressed Air
- ◊ Gas Plants
- ◊ Desulphurisation Plants

Parts List (50 / 52)

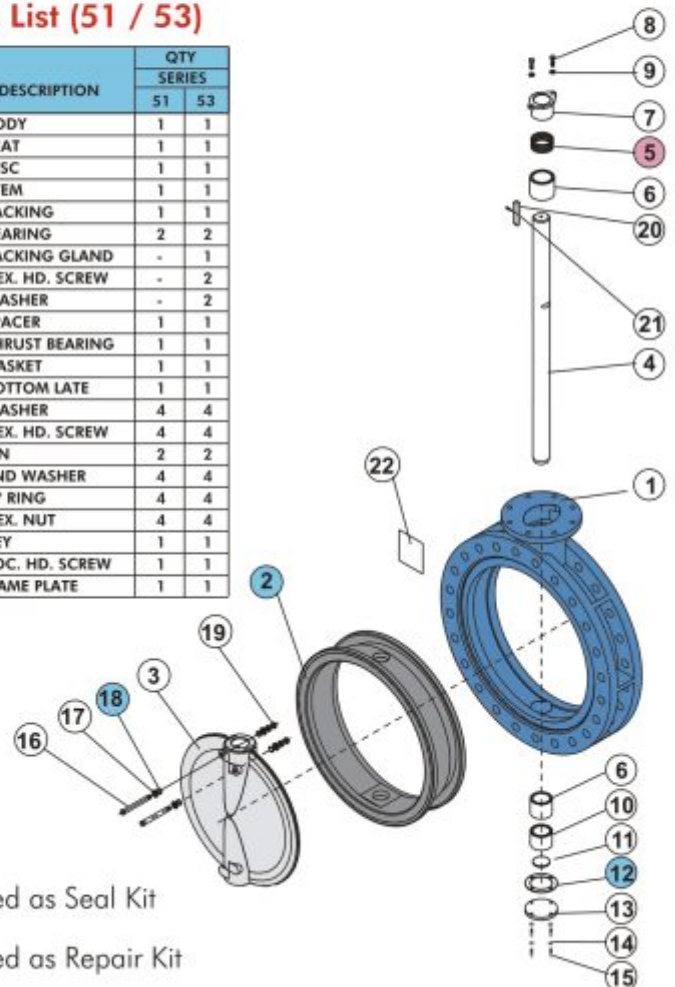
ITEM NO.	DESCRIPTION	QTY	
		50	52
1	BODY	1	1
2	SEAT	1	1
3	DISC	1	1
4	STEM	1	1
5	STEM SEAL(NITRILE)	1	1
6	STEM BUSHING	1	1
7	STEM RETAINER	1	1
8	RETAINING CIRCLIP	1	1



SERIES 50 / 52

Parts List (51 / 53)

ITEM NO.	DESCRIPTION	QTY	
		51	53
1	BODY	1	1
2	SEAT	1	1
3	DISC	1	1
4	STEM	1	1
5	PACKING	1	1
6	BEARING	2	2
7	PACKING GLAND	-	1
8	HEX. HD. SCREW	-	2
9	WASHER	-	2
10	SPACER	1	1
11	THRUST BEARING	1	1
12	GASKET	1	1
13	BOTTOM LATE	1	1
14	WASHER	4	4
15	HEX. HD. SCREW	4	4
16	PIN	2	2
17	END WASHER	4	4
18	'O' RING	4	4
19	HEX. NUT	4	4
20	KEY	1	1
21	SOC. HD. SCREW	1	1
22	NAME PLATE	1	1

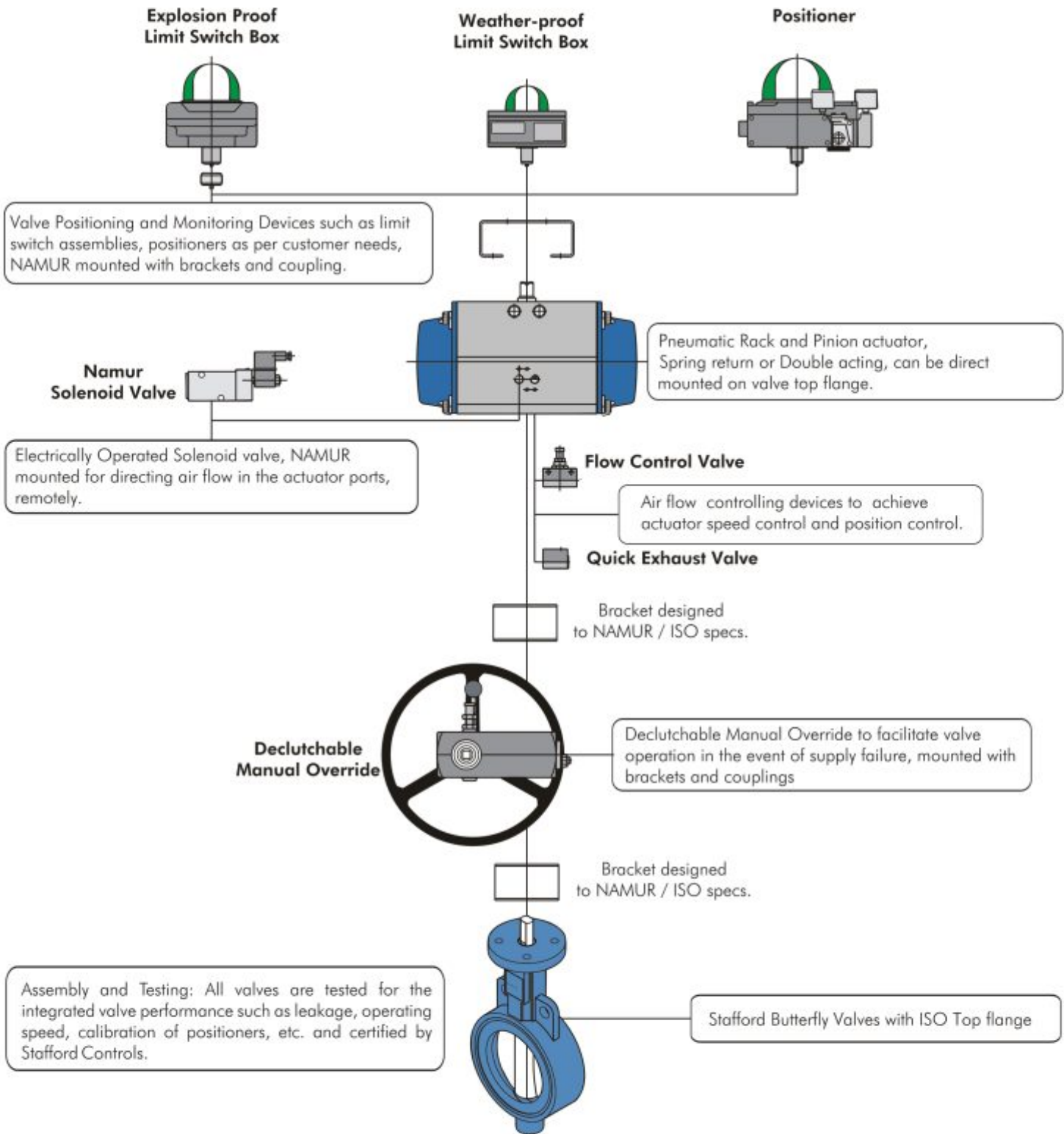


SERIES 51 / 53

 Recommended as Seal Kit

 Recommended as Repair Kit

Valve Automation Systems



Quality Certification



ISO 9001: 2008

How to order Stafford valves

SERIES	SIZE	TRIM / OTHER VARIABLES / SPECIALS						
□ □	□ □ □	□	□	□	□	□	□	□
VALVE DESCRIPTION	DN 50=020 TO DN 1000=400	BODY	DISC	STEM	SEAT	RATING	OPERATOR	SPECIAL
50 : Wafer 1 Pc. Body 51 : Wafer 1 Pc. Body 52 : Lug 1 Pc. Body 53 : Double Flanged 1 Pc. Body	DN 50=020 DN 400=160 DN 65=025 DN 450=180 DN 80=030 DN 500=200 DN 100=040 DN 550=220 DN 125=050 DN 600=240 DN 150=060 DN 650=260 DN 200=080 DN 700=280 DN 250=100 DN 800=320 DN 300=120 DN 900=360 DN 350=140 DN 1000=400	1= C.I. 2= D.I. 3= WCB 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 X= Special	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. Body Lug Valve, Body- C.I., Disc- Aluminium bronze, Stem- SS431, Seat- BunaN, Rating - PN10, Gear operated, with no special requirements.

5 2 1 2 0 1 3 1 B 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.

Distributor

Stafford Controls Limited

Plot No : 319, Sidco Industrial Estate
Ambattur, Chennai - 600 098. INDIA
Phone: +91 44 2624 1719
TeleFax: +91 44 2625 8319
E-mail: sales@staffordvalves.com
Website: www.staffordvalves.com