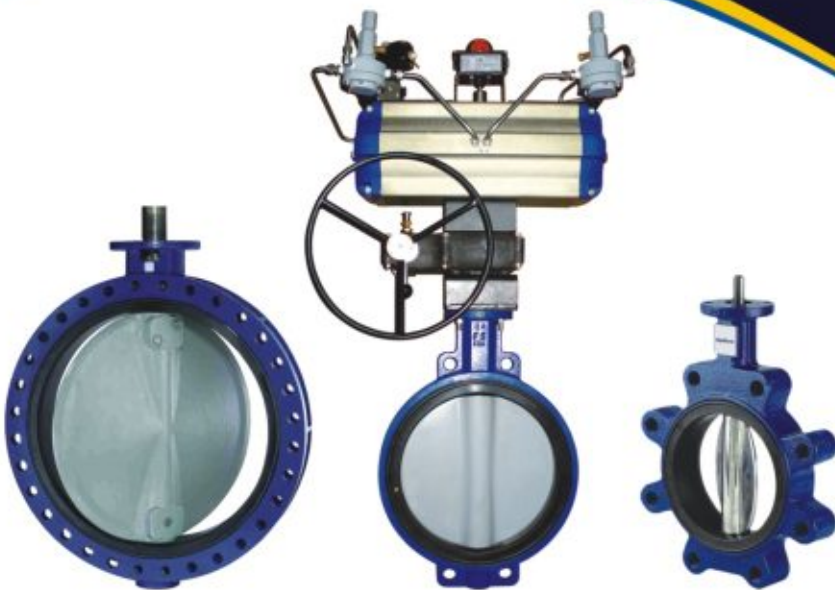


P R O D U C T CATALOGUE

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, BS, AWWA or other world drilling standards.

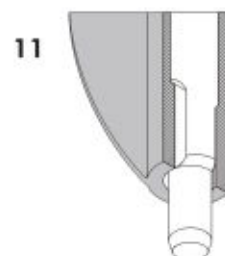
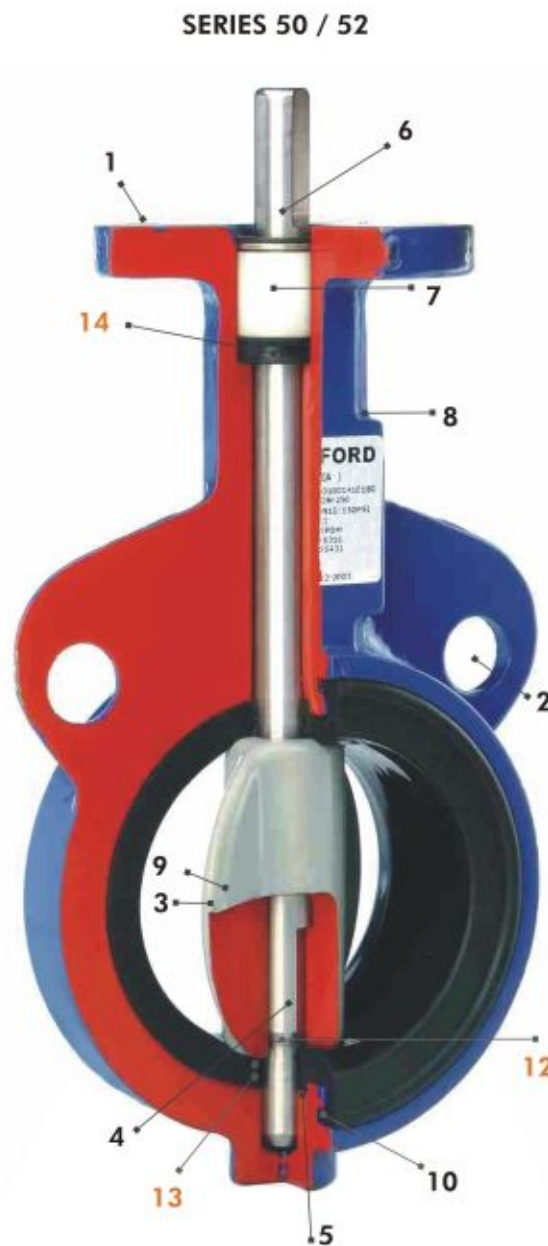
3 Nylon PA 12 coated disc option ensures excellent corrosion resistance to several chemical media. The hard, non-porous sintered polymer has very low hygroscopicity and is suitable for use in drinking water and non-alcoholic foodstuffs.

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.

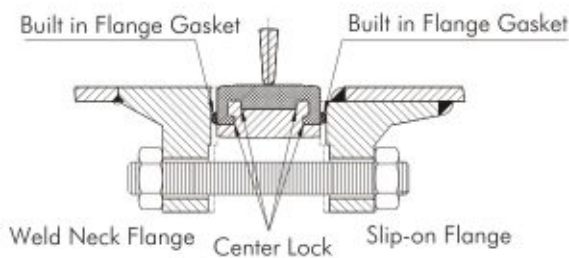
Tertiary Sealing

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

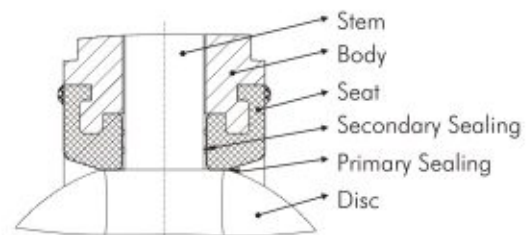
The "Center-Lock" heavy duty seat design incorporates rigid locking of the seat in the body at four points. This virtually eliminates any seat movement during seating and un-seating of the disc. The unique "Center-Lock" seat offers the rigidity of an in-situ molded liner valve and replaceability of a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

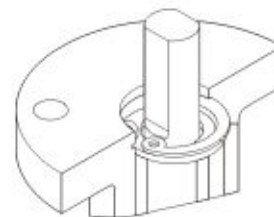
Built in Flange Gasket

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"

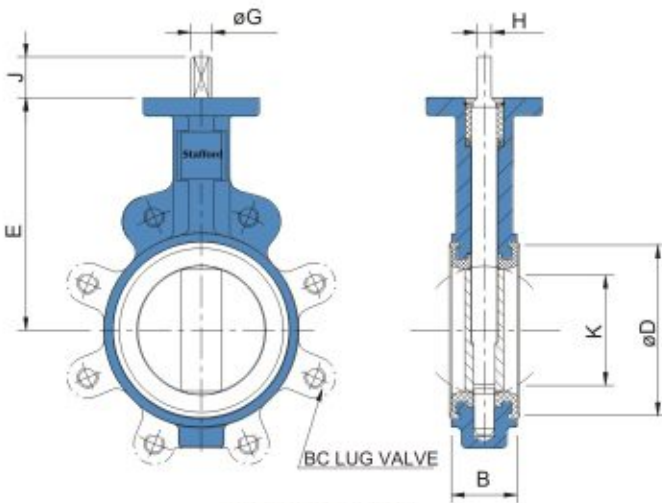
SERIES 51 / 53

- 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. 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.

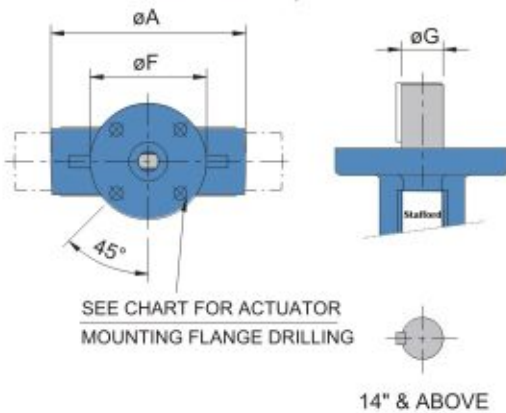


Engineering

SERIES 50 / 52

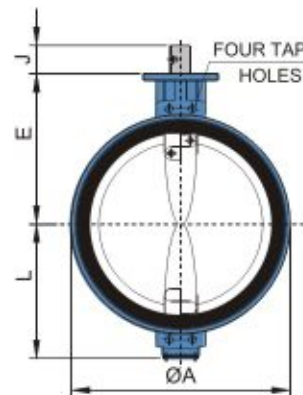


SERIES 50 / 52

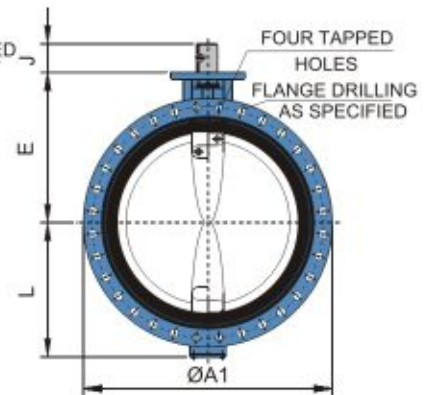


14" & ABOVE

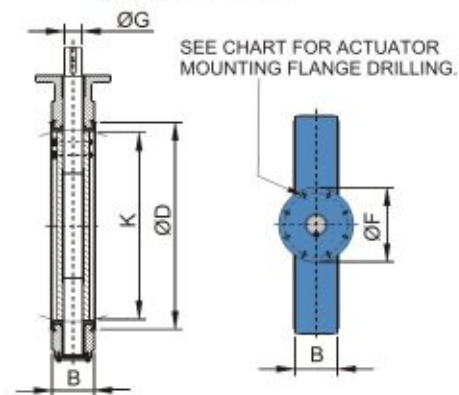
SERIES 51



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 | | | K | WT. (Kg) | |
|------------|---------|----------|-------------|-----|------|-----|-----|-----|---------------------|--------------|-----------|----------------------|-----|---------------|-----|----------|---------|
| Inches | DN | | | | | | | | BC | No. Of Holes | Hole Dia. | 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 | 521 | 191 | 231 |
| 24" | DN 600 | 695 | 839 | 151 | 654 | 495 | 445 | 210 | 165 | 4 | 21 | 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 | 598 | 264 | 356 |
| 28" | DN 700 | 795 | 960 | 165 | 756 | 580 | 504 | 300 | 254 | 8 | 18 | 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 | 717 | 332 | 730 |
| 32" | DN 800 | 900 | 1061 | 190 | 855 | 670 | 555 | 300 | 254 | 8 | 18 | 76.2 | 102 | 19.05 x 19.05 | 751 | 386 | 849 |
| 36" | DN 900 | 1025 | 1169 | 200 | 972 | 705 | 630 | 350 | 298 | 8 | 21 | 88.9 | 134 | 22.23 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 | 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.
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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, CF8, CF3M, CF3
- ◇ DI ASTM A 536 Grade 65-45-12 + Aroxy coated
- ◇ Duplex Steel

Stem

- ◇ 431 Stainless Steel ASTM A479 Type 431
- ◇ 316 Stainless Steel ASTM A276 Type 316
- ◇ 410 Stainless Steel ASTM A276 Type 410
- ◇ 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

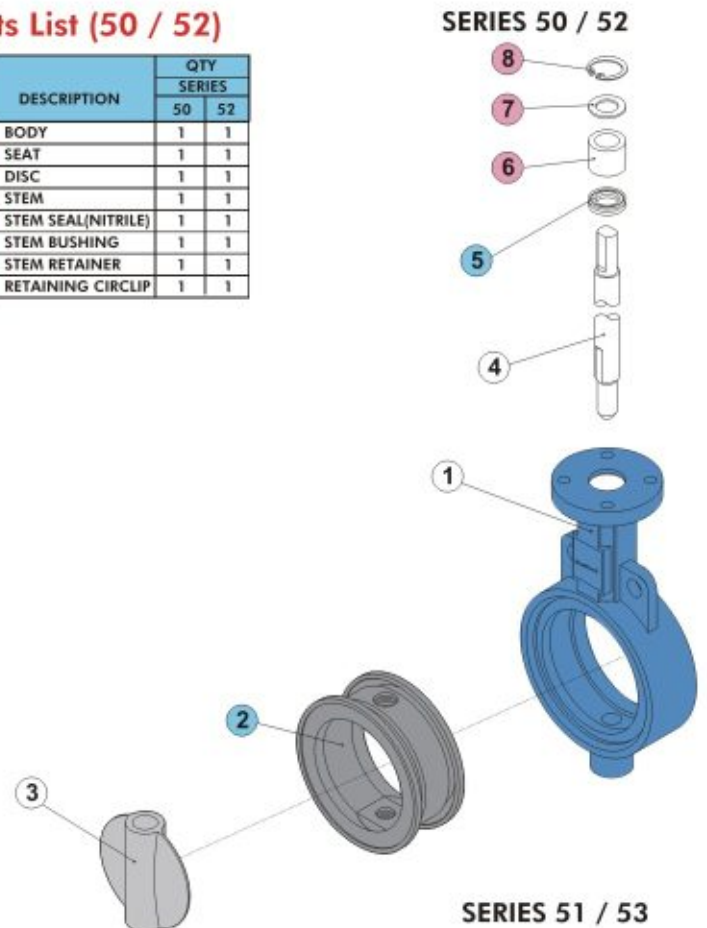
Applications

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
- ◇ Power Plants
- ◇ Balance of Plants
- ◇ Desalination Plants
- ◇ Metallurgy Industries

Parts List (50 / 52)

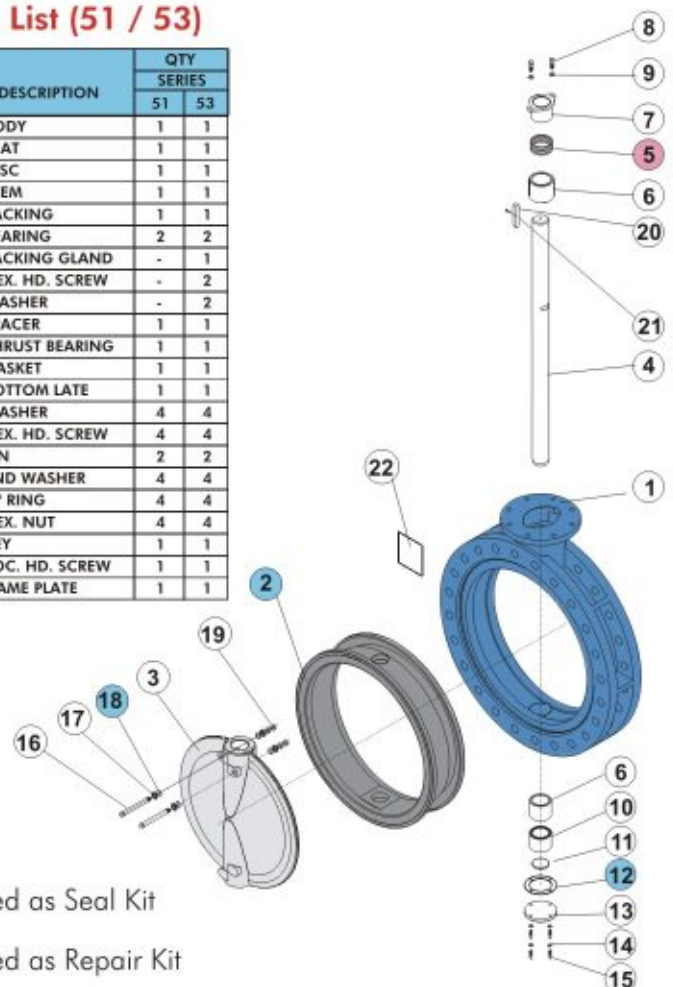
| ITEM NO. | DESCRIPTION | QTY | |
|----------|--------------------|-----|----|
| | | 50 | 52 |
| 1 | BODY | 1 | 1 |
| 2 | SEAT | 1 | 1 |
| 3 | DISC | 1 | 1 |
| 4 | STEM | 1 | 1 |
| 5 | STEM SEAL(NITRILE) | 1 | 1 |
| 6 | STEM BUSHING | 1 | 1 |
| 7 | STEM RETAINER | 1 | 1 |
| 8 | RETAINING CIRCLIP | 1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



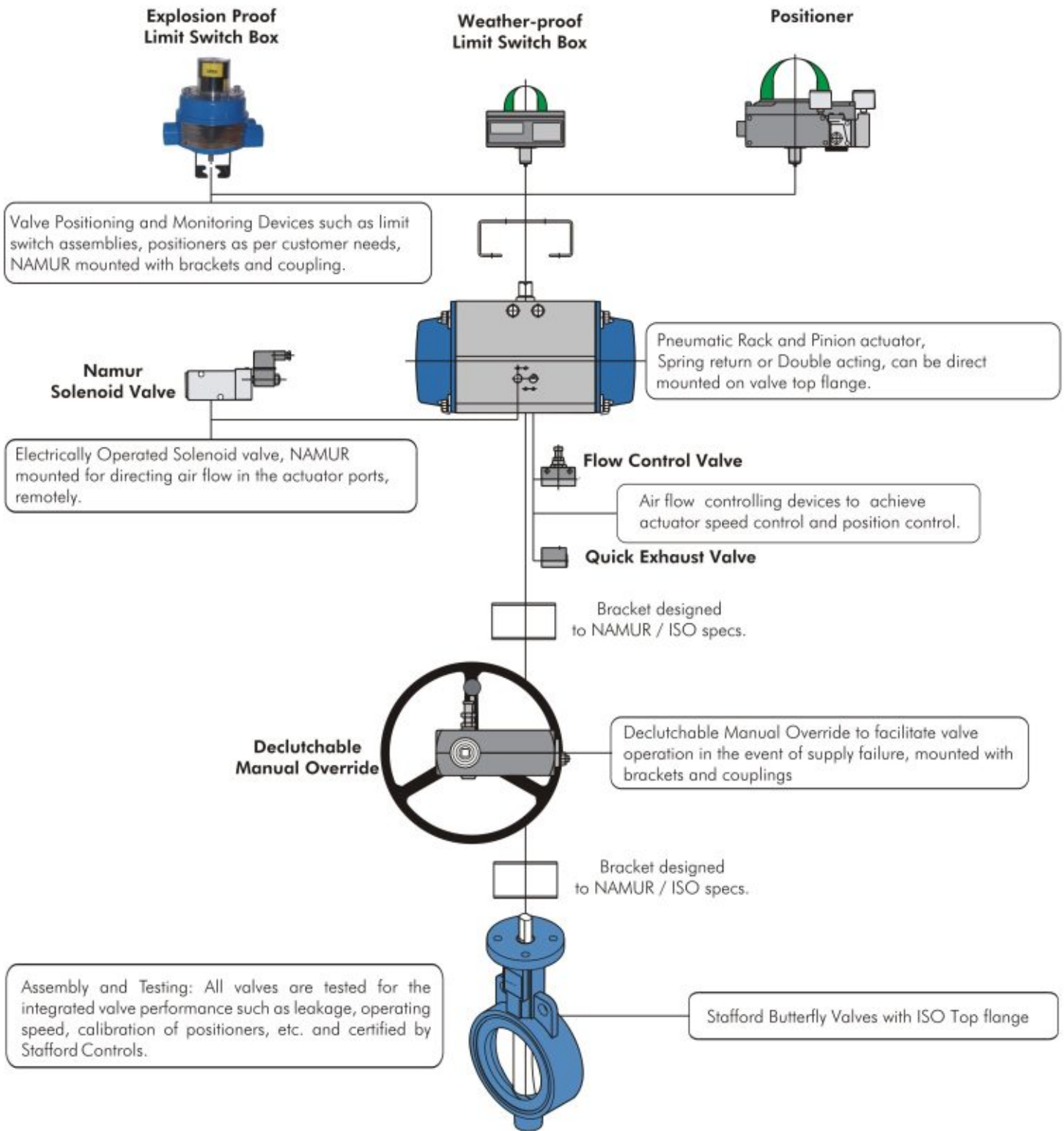
SERIES 51 / 53



Recommended as Seal Kit

Recommended as Repair Kit

Valve Automation Systems



Quality Certification



ISO 9001: 2008



EIL



AVANT-GARDE

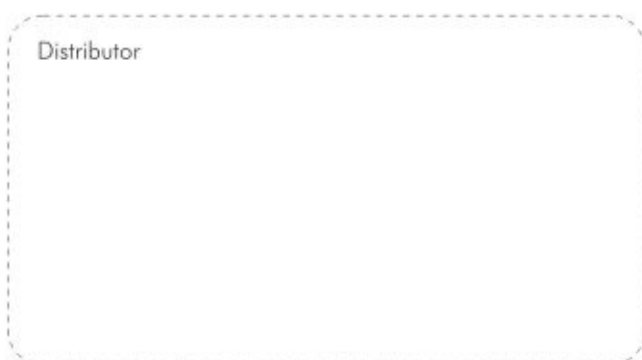
How to order Stafford valves

| 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.



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