

# FK Series Automated Butterfly Valves

## Product Data Sheet



### < STANDARDS >



ASTM D4101  
ASTM D1784  
ASTM D3222



ANSI B16.5

IPEX FK Series Automated Butterfly Valves offer superior strength and chemical resistance in highly corrosive environments and process flow conditions. This versatile industrial valve features double self-lubricating seals, and a special shaped liner and body cavity guaranteeing a bubble tight seal while keeping break-away torque at an absolute minimum. An integral stainless steel lug version provides for full bi-directional operation allowing disassembly of the downstream flange connection without weakening the integrity of the upstream connection to the pressurized line. FK Series Automated Butterfly Valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.

#### VALVE AVAILABILITY

|                   |   |
|-------------------|---|
| Body Material:    | Glass reinforced PP (GRPP)                                    |
| Disc Material:    | PP, PVC, CPVC, PVDF   |
| Size Range:       | 1-1/2" through 12"  |
| Pressure:         | See Sample Specifications                                     |
| Seats:            | EPDM or FKM   |
| Seals:            | EPDM or FKM   |
| Body Style:       | Wafer or Lugged   |
| End Connections:  | Flanged (ANSI 150)  |
| Actuator Control: | Double Acting Pneumatic,<br>Spring Return Pneumatic, Electric |

# FK Series Automated Butterfly Valves

## Product Data Sheet

### Sample Specification

#### 1.0 Butterfly Valves - FK

##### 1.1 Material

- The valve body shall be made of glass reinforced polypropylene (GRPP) obtained from homopolymer polypropylene (PPH).
- The valve disc shall be made of stabilized PP homopolymer compound, also containing a RAL 7032 pigment, which shall meet or exceed the requirements of Type I Polypropylene according to ASTM D4101.
- The valve disc shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.
- The valve disc shall be made of Corzan® CPVC compound which shall meet or exceed the requirements of cell classification 23447 according to ASTM D1784.
- The valve disc shall be made of virgin, non-regrind PVDF compound which shall meet or exceed the requirements of Table 1 according to ASTM D3222.
- The valve shaft shall be made of 316 or 420 stainless steel.

##### 1.2 Seats

- The disc liner shall be made of EPDM.
- The disc liner shall be made of FKM.

##### 1.3 Seals

- The o-ring seals shall be made of EPDM.
- The o-ring seals shall be made of FKM.

#### 2.0 Connections

##### 2.1 Flanged style

- The ANSI 150 flanged connections shall conform to the dimensional standard ANSI B16.5.

#### 3.0 Design Features

- The valve shall be of either wafer or lugged design (specifier must select one).
- The lugged style shall feature permanently integrated stainless steel lugs. No field inserted lugs allowed.
- The shaft shall have standard ISO square dimensions for direct mounting of actuators.
- The disc seat shall be a trapezoidal elastomeric liner and provide a bubble tight seal.
- The liner shall completely isolate the valve body from the process flow.
- The liner shall function as a flange gasket on both sides of the valve.
- The body cavity shall feature special channeling to prevent liner slippage and compression.
- The disc, seats, and seals shall be the only wetted parts.
- Teflon® seated o-ring seals shall prevent the stainless steel shaft from becoming wetted.

# FK Series Automated Butterfly Valves

## Product Data Sheet

### 3.1 Pressure Rating

#### PP Disc, Wafer Style

- 1-1/2" to 10" shall be rated at 150 psi at 73°F
- 12" shall be rated at 120 psi at 73°F
- 14" shall be rated at 100 psi at 73°F
- 16" shall be rated at 85 psi at 73°F

#### PVC Disc, Wafer Style

- 14" shall be rated at 100 psi at 73°F
- 16" shall be rated at 85 psi at 73°F

#### CPVC Disc, Wafer Style

- 1-1/2" and 2" shall be rated at 232 psi at 73°F
- 2-1/2" to 10" shall be rated at 150 psi at 73°F
- 12" shall be rated at 120 psi at 73°F

#### PVDF Disc, Wafer Style

- 1-1/2" and 2" shall be rated at 232 psi at 73°F
- 2-1/2" to 10" shall be rated at 150 psi at 73°F
- 12" shall be rated at 120 psi at 73°F

#### PP Disc, Lugged Style

- 2-1/2" to 8" shall be rated at 150 psi at 73°F
- 10" and 12" shall be rated at 85 psi at 73°F

#### CPVC Disc, Lugged Style

- 2-1/2" to 8" shall be rated at 150 psi at 73°F
- 12" shall be rated at 85 psi at 73°F

#### PVDF Disc, Lugged Style

- 2-1/2" to 8" shall be rated at 150 psi at 73°F
- 12" shall be rated at 85 psi at 73°F

### 3.2 Markings

- All valves shall be marked to indicate size, material designation, and manufacturers name or trade mark.

### 3.3 Color Coding

- All valve bodies shall be color-coded beige gray.
- PP valve discs shall be color-coded beige gray
- PVC valve discs shall be color-coded dark gray
- CPVC valve discs shall be color-coded light gray
- PVDF valve discs shall not be color-coded and be white in appearance

### 4.0 All valves shall be by IPEX or approved equal.

### 5.0 Actuators

- All Actuators shall be factory installed by IPEX

#### Pneumatic Actuator:

- Shall be sized for 80 psi control air pressure
- Shall be dual piston rack and pinion design with linear torque output.
- Body shall be Technopolymer UT series or Anodized Aluminum MT series with standard position indicator and NAMUR VDI/VDE 3845 and ISO 5211 mounting dimensions.
- All models shall be operable using air, water, nitrogen or compatible hydraulic fluids from 40 – 120psi.
- Aluminum body models shall feature dual travel stops that provide +/- 10° stroke rotation on both the opening and closing phases.
- All external fasteners shall be stainless steel.

#### Electric Actuator:

Contact IPEX.

# FK Series Automated Butterfly Valves

## Product Data Sheet

### Valve Selection

| Size<br>(inches) | Disc<br>Material | Seal<br>Material | IPEX Part Number           |         |   |         |   |         |
|------------------|------------------|------------------|----------------------------|---------|---|---------|---|---------|
|                  |                  |                  | Pneumatic<br>Double Acting |         | Pneumatic Spring Return,<br>Normally Closed |         | Pneumatic Spring Return,<br>Normally Open |         |
|                  |                  |                  | Wafer                      | SS Lugs | Wafer                                       | SS Lugs | Wafer                                     | SS Lugs |
| 1-1/2            | PP               | EPDM             | 253536                     | -       | 253572                                      | -       | 253608                                    | -       |
|                  |                  | FKM              | 253546                     | -       | 253582                                      | -       | 253618                                    | -       |
| 2                | PP               | EPDM             | 253537                     | -       | 253573                                      | -       | 253609                                    | -       |
|                  |                  | FKM              | 253547                     | -       | 253583                                      | -       | 253619                                    | -       |
| 2-1/2            | PP               | EPDM             | 253538                     | 253556  | 253574                                      | 253592  | 253610                                    | 253628  |
|                  |                  | FKM              | 253548                     | 253564  | 253584                                      | 253600  | 253620                                    | 253636  |
| 3                | PP               | EPDM             | 253539                     | 253557  | 253575                                      | 253593  | 253611                                    | 253629  |
|                  |                  | FKM              | 253549                     | 253565  | 253585                                      | 253601  | 253621                                    | 253637  |
| 4                | PP               | EPDM             | 253640                     | 253558  | 253576                                      | 253594  | 253612                                    | 253630  |
|                  |                  | FKM              | 235550                     | 235566  | 253586                                      | 253602  | 253622                                    | 253638  |
| 5                | PP               | EPDM             | 253541                     | 253559  | 253577                                      | 253595  | 253613                                    | 253631  |
|                  |                  | FKM              | 253551                     | 253567  | 253587                                      | 253603  | 253623                                    | 253639  |
| 6                | PP               | EPDM             | 253542                     | 253560  | 253578                                      | 253596  | 253614                                    | 253632  |
|                  |                  | FKM              | 253552                     | 253568  | 253588                                      | 253604  | 253624                                    | 253640  |
| 8                | PP               | EPDM             | 253543                     | 253561  | 253579                                      | 253597  | 253615                                    | 253633  |
|                  |                  | FKM              | 253553                     | 253569  | 253589                                      | 253605  | 253625                                    | 253641  |
| 10               | PP               | EPDM             | 253544                     | 253562  | 253580                                      | 253598  | 253616                                    | 253634  |
|                  |                  | FKM              | 253554                     | 253570  | 253590                                      | 253606  | 253626                                    | 253642  |
| 12               | PP               | EPDM             | 253545                     | 253563  | 253581                                      | 253599  | 253617                                    | 253635  |
|                  |                  | FKM              | 253555                     | 253571  | 253591                                      | 253607  | 253627                                    | 253643  |

| Size<br>(inches) | Disc<br>Material | Seal<br>Material | IPEX Part Number           |         |   |         |   |         |
|------------------|------------------|------------------|----------------------------|---------|---|---------|---|---------|
|                  |                  |                  | Pneumatic<br>Double Acting |         | Pneumatic Spring Return,<br>Normally Closed |         | Pneumatic Spring Return,<br>Normally Open |         |
|                  |                  |                  | Wafer                      | SS Lugs | Wafer                                       | SS Lugs | Wafer                                     | SS Lugs |
| 1-1/2            | CPVC             | EPDM             | 154600                     | -       | 154618                                      | -       | 154636                                    | -       |
|                  |                  | FKM              | 154668                     | -       | 154686                                      | -       | 154704                                    | -       |
| 2                | CPVC             | EPDM             | 154601                     | -       | 154619                                      | -       | 154637                                    | -       |
|                  |                  | FKM              | 154669                     | -       | 154687                                      | -       | 154705                                    | -       |
| 2-1/2            | CPVC             | EPDM             | 154602                     | 154610  | 154620                                      | 154628  | 154638                                    | 154646  |
|                  |                  | FKM              | 154670                     | 154678  | 154688                                      | 154696  | 154706                                    | 154714  |
| 3                | CPVC             | EPDM             | 154603                     | 154611  | 154621                                      | 154629  | 154639                                    | 154647  |
|                  |                  | FKM              | 154671                     | 154679  | 154689                                      | 154697  | 154707                                    | 154715  |
| 4                | CPVC             | EPDM             | 154604                     | 154612  | 154622                                      | 154630  | 154640                                    | 154648  |
|                  |                  | FKM              | 154672                     | 154680  | 154690                                      | 154698  | 154708                                    | 154716  |
| 5                | CPVC             | EPDM             | 154605                     | 154613  | 154623                                      | 154631  | 154641                                    | 154649  |
|                  |                  | FKM              | 154673                     | 154681  | 154691                                      | 154699  | 154709                                    | 154717  |
| 6                | CPVC             | EPDM             | 154606                     | 154614  | 154624                                      | 154632  | 154642                                    | 154650  |
|                  |                  | FKM              | 154674                     | 154682  | 154692                                      | 154700  | 154710                                    | 154718  |
| 8                | CPVC             | EPDM             | 154607                     | 154615  | 154625                                      | 154633  | 154643                                    | 154651  |
|                  |                  | FKM              | 154675                     | 154683  | 154693                                      | 154701  | 154711                                    | 154719  |
| 10               | CPVC             | EPDM             | 154608                     | 154616  | 154626                                      | 154634  | 154644                                    | 154652  |
|                  |                  | FKM              | 154676                     | 154684  | 154694                                      | 154702  | 154712                                    | 154720  |
| 12               | CPVC             | EPDM             | 154609                     | 154617  | 154627                                      | 154635  | 154645                                    | 154653  |
|                  |                  | FKM              | 154677                     | 154685  | 154695                                      | 154703  | 154713                                    | 154721  |

FOR CUSTOM CONFIGURATIONS, PLEASE CONTACT IPEX.

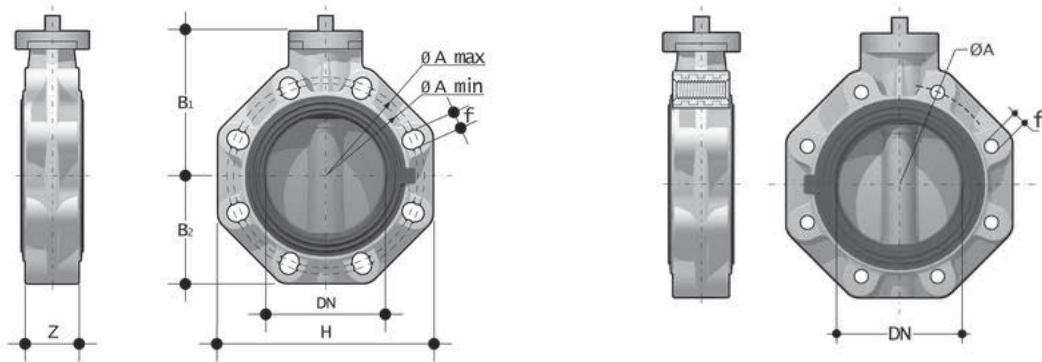
PVC and PVDF disc valves available on request. For 10" and 12" electrically actuated valves, please contact IPEX.

For 14" and 24" actuated valves, please contact IPEX

# FK Series Automated Butterfly Valves

## Product Data Sheet

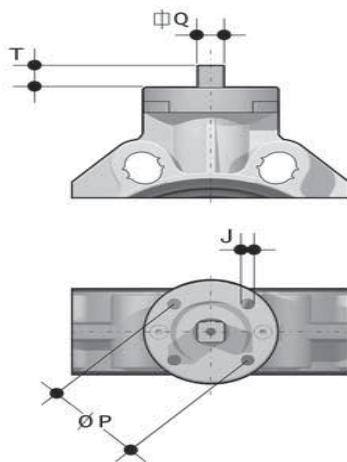
### Dimensions



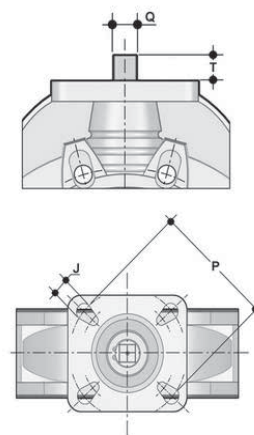
Dimensions (inches)

| Size  | DN    | Z    | B <sub>1</sub> | B <sub>2</sub> | H     | A <sub>min</sub> | A <sub>max</sub> | f    | Alug  | flug    | # holes |
|-------|-------|------|----------------|----------------|-------|------------------|------------------|------|-------|---------|---------|
| 1-1/2 | 1.57  | 1.30 | 4.17           | 2.36           | 5.20  | 3.90             | 4.29             | 0.75 | 3.87  | 1/2-UNC | 4       |
| 2     | 1.97  | 1.69 | 4.41           | 2.76           | 5.79  | 4.53             | 4.94             | 0.75 | 4.75  | 5/8-UNC | 4       |
| 2-1/2 | 2.56  | 1.81 | 4.69           | 3.15           | 6.50  | 5.04             | 5.67             | 0.75 | 5.50  | 5/8-UNC | 4       |
| 3     | 3.15  | 1.93 | 5.24           | 3.66           | 7.28  | 5.71             | 6.30             | 0.75 | 6.00  | 5/8-UNC | 8       |
| 4     | 3.94  | 2.20 | 5.79           | 4.21           | 8.31  | 6.50             | 7.48             | 0.75 | 7.50  | 5/8-UNC | 8       |
| 5     | 4.92  | 2.52 | 6.57           | 4.72           | 9.45  | 8.03             | 8.46             | 0.91 | 8.50  | 3/4-UNC | 8       |
| 6     | 5.91  | 2.76 | 7.09           | 5.28           | 10.55 | 9.06             | 9.53             | 0.91 | 9.50  | 3/4-UNC | 8       |
| 8     | 7.87  | 2.80 | 8.94           | 6.34           | 12.72 | 11.02            | 11.73            | 0.91 | 11.75 | 3/4-UNC | 8       |
| 10    | 9.84  | 4.49 | 9.76           | 8.27           | 15.94 | 13.19            | 14.25            | 1.00 | 14.25 | 7/8-UNC | 12      |
| 12    | 11.81 | 4.49 | 12.01          | 9.65           | 18.70 | 15.35            | 17.01            | 1.14 | 17.00 | 7/8-UNC | 12      |

### Sizes 1-1/2" to 8"



### Sizes 10" to 12"



Dimensions (inches)

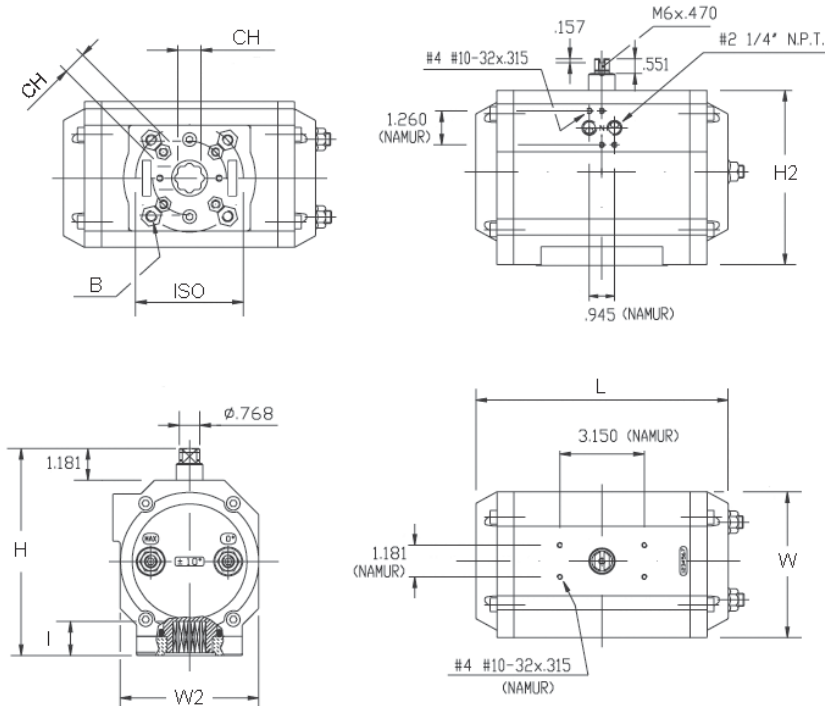
| Size  | T    | Q    | ISO             | P                  | J                  |
|-------|------|------|-----------------|--------------------|--------------------|
| 1-1/2 | 0.47 | 0.43 | F05             | 1.97               | 0.28               |
| 2     | 0.47 | 0.43 | F05             | 1.97               | 0.28               |
| 2-1/2 | 0.47 | 0.43 | F05 / F07       | 1.97 / 2.76        | 0.28 / 0.35        |
| 3     | 0.63 | 0.55 | F07             | 2.76               | 0.35               |
| 4     | 0.63 | 0.55 | F07             | 2.76               | 0.35               |
| 5     | 0.75 | 0.67 | F07             | 2.76               | 0.35               |
| 6     | 0.75 | 0.67 | F07             | 2.76               | 0.35               |
| 8     | 0.94 | 0.87 | F10             | 4.02               | 0.43               |
| 10    | 1.14 | 1.06 | F10 / F12 / F14 | 4.02 / 4.92 / 5.51 | 0.43 / 0.51 / 0.67 |
| 12    | 1.14 | 1.06 | F10 / F12 / F14 | 4.02 / 4.92 / 5.51 | 0.43 / 0.51 / 0.67 |

# FK Series Automated Butterfly Valves

## Product Data Sheet

### Pneumatic Actuator Dimensions

Models UT16, UT21, UT26, UT31, UT36, UT41, UT46, UT51, UT61



Dimensions (inches)

| Valve Size | Double Acting Model | ISO       | CH   | L     | W    | W2   | H    | H2   | I    | B                  |
|------------|---------------------|-----------|------|-------|------|------|------|------|------|--------------------|
| 1-1/2      | MT16DA              | F05 / F07 | 0.55 | 6.50  | 3.19 | 2.44 | 4.37 | 3.19 | 0.75 | 1/4-20 UNC x 0.51  |
| 2          | MT16DA              | F05 / F07 | 0.55 | 6.50  | 3.19 | 2.44 | 4.37 | 3.19 | 0.75 | 1/4-20 UNC x 0.51  |
| 2-1/2      | MT16DA              | F05 / F07 | 0.55 | 6.50  | 3.19 | 2.44 | 4.37 | 3.19 | 0.75 | 1/4-20 UNC x 0.51  |
| 3          | MT21DA              | F05 / F07 | 0.67 | 6.97  | 3.78 | 3.01 | 5.04 | 3.86 | 0.75 | 5/16-18 UNC x 0.51 |
| 4          | MT21DA              | F05 / F07 | 0.67 | 6.97  | 3.78 | 3.01 | 5.04 | 3.86 | 0.75 | 5/16-18 UNC x 0.51 |
| 5          | MT26DA              | F05 / F07 | 0.67 | 9.41  | 3.78 | 3.01 | 5.04 | 3.86 | 0.75 | 5/16-18 UNC x 0.51 |
| 6          | MT31DA              | F05 / F07 | 0.67 | 9.06  | 4.49 | 3.56 | 5.79 | 4.61 | 0.91 | 5/16-18 UNC x 0.51 |
| 8          | MT36DA              | F07 / F10 | 0.87 | 9.69  | 5.10 | 3.76 | 7.24 | 6.06 | 1.18 | 3/8-16 UNC x 0.71  |
| 10         | MT51DA              | F10 / F12 | 1.06 | 14.21 | 7.13 | 4.33 | 9.13 | 7.95 | 1.57 | 1/2-13 UNC x 0.79  |
| 12         | MT51DA              | F10 / F12 | 1.06 | 14.21 | 7.13 | 4.33 | 9.13 | 7.95 | 1.57 | 1/2-13 UNC x 0.79  |

Dimensions (inches)

| Valve Size | Spring Return Model | ISO       | CH   | L     | W    | W2   | H     | H2    | I    | B                  |
|------------|---------------------|-----------|------|-------|------|------|-------|-------|------|--------------------|
| 1-1/2      | MT21S5              | F05 / F07 | 0.67 | 6.97  | 3.78 | 3.01 | 5.04  | 3.86  | 0.75 | 5/16-18 UNC x 0.51 |
| 2          | MT26S4              | F05 / F07 | 0.67 | 9.41  | 3.78 | 3.01 | 5.04  | 3.86  | 0.75 | 5/16-18 UNC x 0.51 |
| 2-1/2      | MT26S4              | F05 / F07 | 0.67 | 9.41  | 3.78 | 3.01 | 5.04  | 3.86  | 0.75 | 5/16-18 UNC x 0.51 |
| 3          | MT31S4              | F05 / F07 | 0.67 | 9.06  | 4.49 | 3.56 | 5.79  | 4.61  | 0.91 | 5/16-18 UNC x 0.51 |
| 4          | MT36S4              | F07 / F10 | 0.87 | 9.69  | 5.10 | 3.76 | 7.24  | 6.06  | 1.18 | 3/8-16 UNC x 0.71  |
| 5          | MT41S4              | F07 / F10 | 0.87 | 11.42 | 5.16 | 3.76 | 7.24  | 6.06  | 1.18 | 3/8-16 UNC x 0.71  |
| 6          | MT46S4              | F07 / F10 | 0.87 | 13.82 | 5.71 | 3.88 | 7.81  | 6.63  | 1.18 | 3/8-16 UNC x 0.71  |
| 8          | MT51S4              | F10 / F12 | 1.06 | 14.21 | 7.13 | 4.33 | 9.13  | 7.95  | 1.57 | 1/2-13 UNC x 0.79  |
| 10         | MT61S5              | F14       | 1.42 | 17.48 | 9.13 | 6.32 | 11.30 | 10.12 | 1.97 | 5/8-11 UNC x 0.98  |
| 12         | MT61S5              | F14       | 1.42 | 17.48 | 9.13 | 6.32 | 11.30 | 10.12 | 1.97 | 5/8-11 UNC x 0.98  |

# FK Series Automated Butterfly Valves

## Product Data Sheet



Note: Pneumatic actuator performance is based on 80psi available control air pressure.

| Valve Size (inches) | Double Acting Pneumatic | Spring Return Pneumatic |
|---------------------|-------------------------|-------------------------|
| 1-1/2               | UT16DA                  | UT21S5                  |
| 2                   | UT16DA                  | UT26S4                  |
| 2-1/2               | UT16DA                  | UT26S4                  |
| 3                   | UT21DA                  | UT31S4                  |
| 4                   | UT21DA                  | UT36S4                  |
| 5                   | UT26DA                  | UT41S4                  |
| 6                   | UT31DA                  | UT46S4                  |
| 8                   | UT36DA                  | UT51S4                  |
| 10                  | UT51DA                  | UT61S5                  |
| 12                  | UT51DA                  | UT61S5                  |

### Pneumatic Actuator Torque Data

| Valve Size (inches) | DOUBLE ACTING |                 |        | SPRING RETURN         |                              |                            |                           |                         |
|---------------------|---------------|-----------------|--------|-----------------------|------------------------------|----------------------------|---------------------------|-------------------------|
|                     | Model         | Torque (in-lbs) | Model  | Spring Set (standard) | Spring Torque (in-lbs) Start | Spring Torque (in-lbs) End | Air Torque (in-lbs) Start | Air Torque (in-lbs) End |
| 1-1/2               | UT16DA        | 275             | UT21S5 | S5                    | 307                          | 230                        | 270                       | 193                     |
| 2                   | UT16DA        | 275             | UT26S4 | S4                    | 392                          | 247                        | 503                       | 358                     |
| 2-1/2               | UT16DA        | 275             | UT26S4 | S4                    | 392                          | 247                        | 503                       | 358                     |
| 3                   | UT21DA        | 500             | UT31S4 | S4                    | 502                          | 374                        | 626                       | 498                     |
| 4                   | UT21DA        | 500             | UT36S4 | S4                    | 824                          | 614                        | 986                       | 776                     |
| 5                   | UT26DA        | 750             | UT41S4 | S4                    | 1011                         | 741                        | 1259                      | 989                     |
| 6                   | UT31DA        | 1000            | UT46S4 | S4                    | 1779                         | 1120                       | 2005                      | 1346                    |
| 8                   | UT36DA        | 1600            | UT51S4 | S4                    | 2203                         | 1738                       | 2762                      | 2297                    |
| 10                  | UT51DA        | 4500            | UT61S5 | S5                    | 5366                         | 4277                       | 4823                      | 3734                    |
| 12                  | UT51DA        | 4500            | UT61S5 | S5                    | 5366                         | 4277                       | 4823                      | 3734                    |

### Pneumatic Actuator Weights and Air Consumption

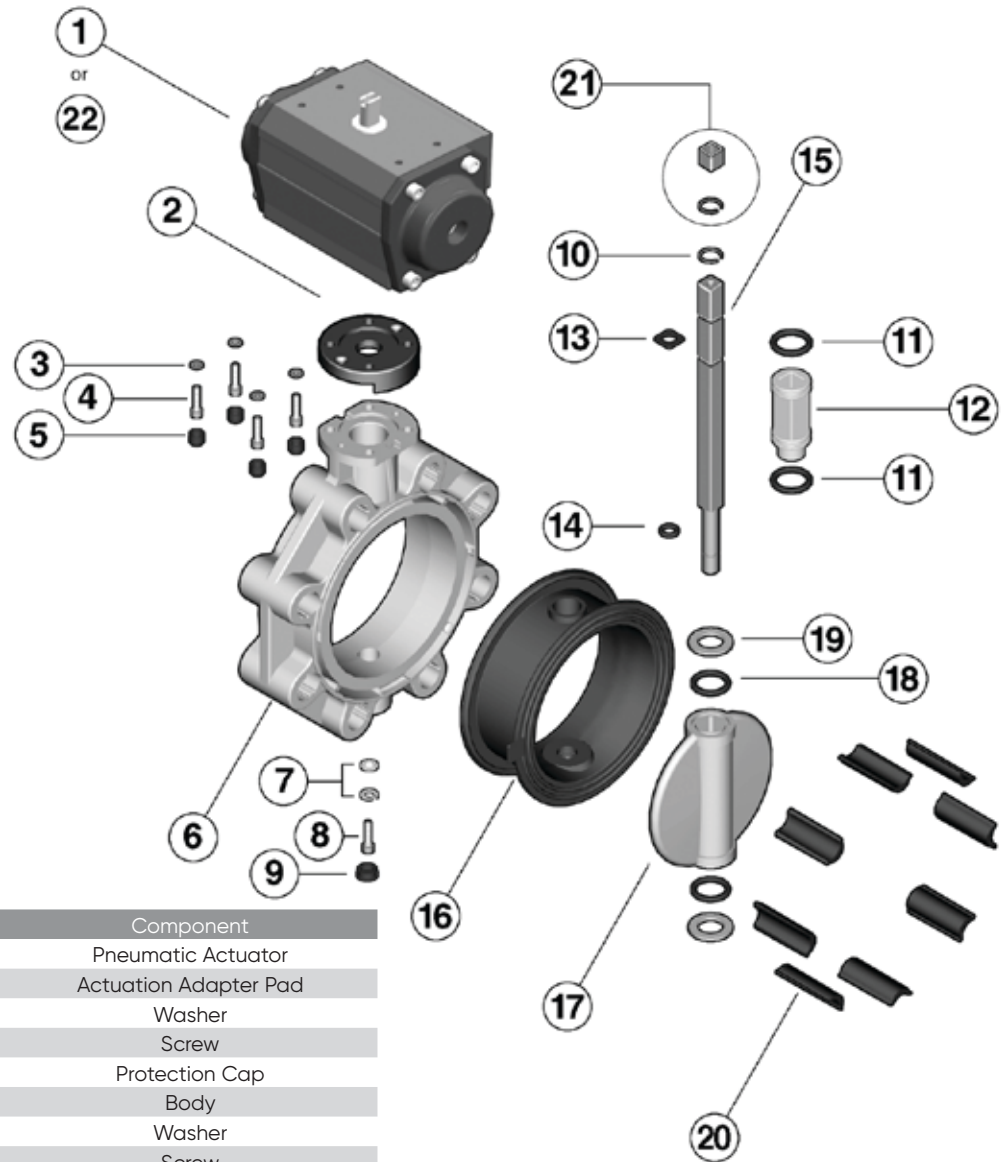
| Valve Size (inches) | DOUBLE ACTING |              |                 | SPRING RETURN |              |                 |
|---------------------|---------------|--------------|-----------------|---------------|--------------|-----------------|
|                     | Model         | Weight (lbs) | Air Cons. (in3) | Model         | Weight (lbs) | Air Cons. (in3) |
| 1-1/2               | UT16DA        | 4.03         | 25.6            | UT21S5        | 7.16         | 18.1            |
| 2                   | UT16DA        | 4.03         | 25.6            | UT26S4        | 9.88         | 30.0            |
| 2-1/2               | UT16DA        | 4.03         | 25.6            | UT26S4        | 9.88         | 30.0            |
| 3                   | UT21DA        | 6.33         | 44.4            | UT31S4        | 12.28        | 40.6            |
| 4                   | UT21DA        | 6.33         | 44.4            | UT36S4        | 19.88        | 75.0            |
| 5                   | UT26DA        | 8.82         | 68.7            | UT41S4        | 23.61        | 100.0           |
| 6                   | UT31DA        | 10.67        | 88.9            | UT46S4        | 33.11        | 115.6           |
| 8                   | UT36DA        | 16.71        | 153.1           | UT51S4        | 49.89        | 181.3           |
| 10                  | UT51DA        | 39.24        | 425.0           | UT61S5        | 101.19       | 343.8           |
| 12                  | UT51DA        | 39.24        | 425.0           | UT61S5        | 101.19       | 343.8           |

# FK Series Automated Butterfly Valves

## Product Data Sheet

### Components

Sizes 1-1/2" to 8"



| #  | Component                     |
|----|-------------------------------|
| 1  | Pneumatic Actuator            |
| 2  | Actuation Adapter Pad         |
| 3  | Washer                        |
| 4  | Screw                         |
| 5  | Protection Cap                |
| 6  | Body                          |
| 7  | Washer                        |
| 8  | Screw                         |
| 9  | Protection Cap                |
| 10 | Seeger Ring                   |
| 11 | Bush O-Ring                   |
| 12 | Bush                          |
| 13 | Shaft O-Ring                  |
| 14 | Shaft O-Ring                  |
| 15 | Shaft                         |
| 16 | Primary Liner                 |
| 17 | Disc                          |
| 18 | Disc O-Ring                   |
| 19 | Anti-Friction Ring            |
| 20 | Centering Inserts             |
| 21 | Reduction Sleeve              |
| 22 | Electric Actuator (not shown) |

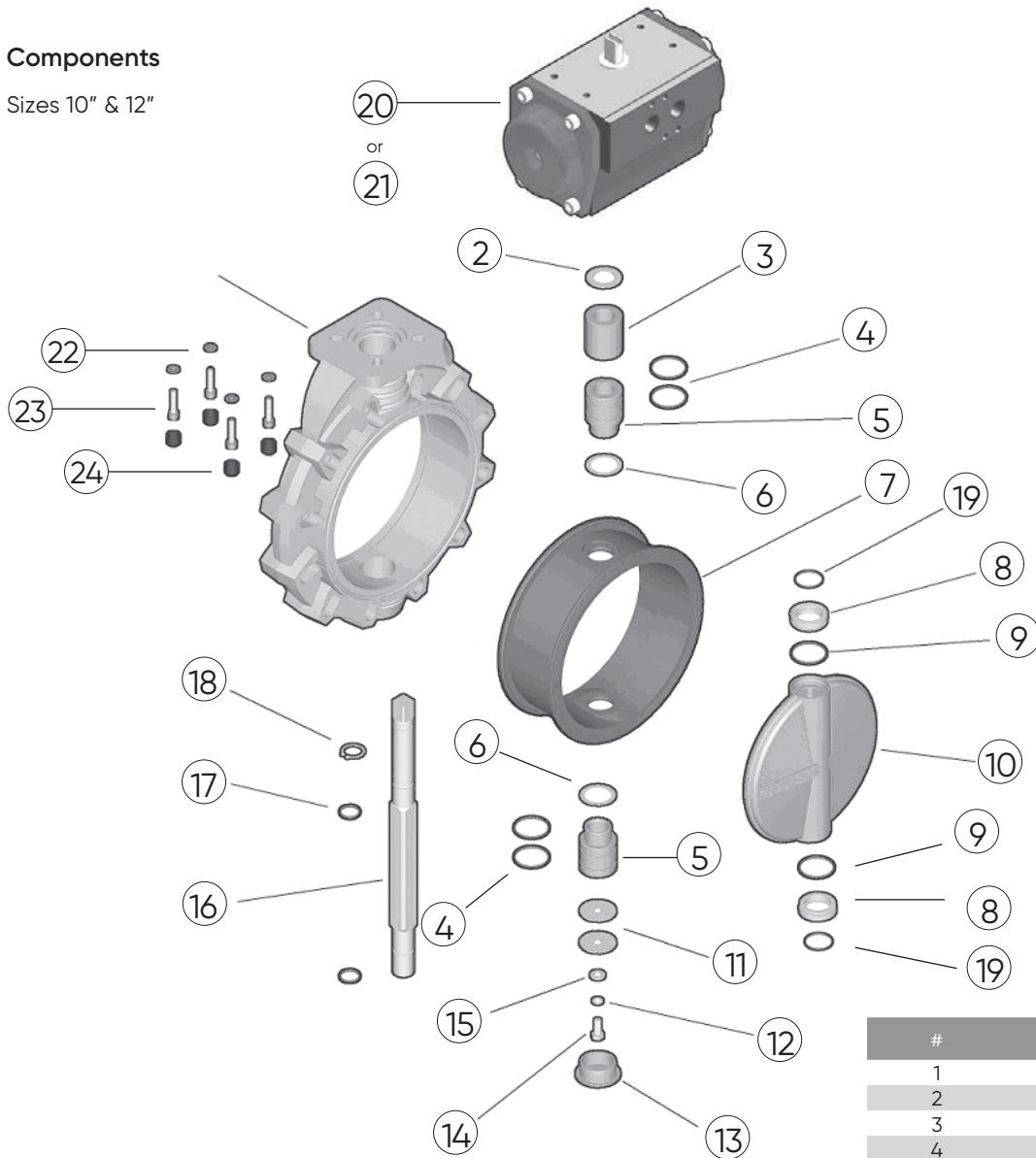


# FK Series Automated Butterfly Valves

## Product Data Sheet

### Components

Sizes 10" & 12"



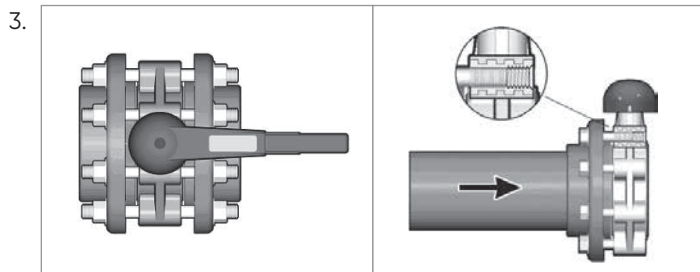
| #  | Component                     |
|----|-------------------------------|
| 1  | Body                          |
| 2  | Washer                        |
| 3  | Bushing                       |
| 4  | Bushing O-Ring                |
| 3  | Bushing for O-Ring            |
| 6  | Washer                        |
| 7  | Primary Liner                 |
| 8  | Anti-Friction Ring            |
| 9  | Disc O-Ring                   |
| 10 | Disc                          |
| 11 | Washer                        |
| 12 | Washer                        |
| 13 | Cap                           |
| 14 | Screw                         |
| 15 | Washer                        |
| 16 | Shaft                         |
| 17 | Shaft O-Ring                  |
| 18 | Retaining Ring                |
| 19 | O-Ring                        |
| 20 | Pneumatic Actuator            |
| 21 | Electric Actuator (not shown) |
| 22 | Washer                        |
| 23 | Screw                         |
| 24 | Protection Cap                |

# FK Series Automated Butterfly Valves

## Product Data Sheet

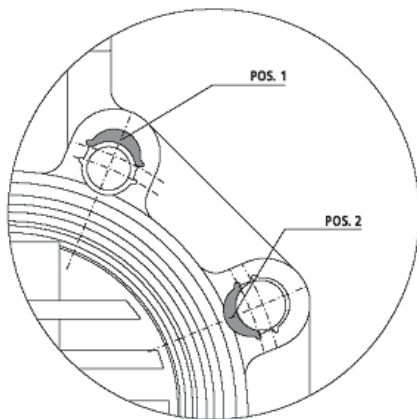
### Installation

1. For non-lugged style sizes 1-1/2" through 8", push the inserts (27) into the body holes according to the position chart below.
2. Ensure that the length of the bolts is sufficient for the size of valve being installed. Due to the varying designs of plastic flanges, there is no recommended minimum length. However, a length that results in at least 5 exposed threads on each side should be sufficient.

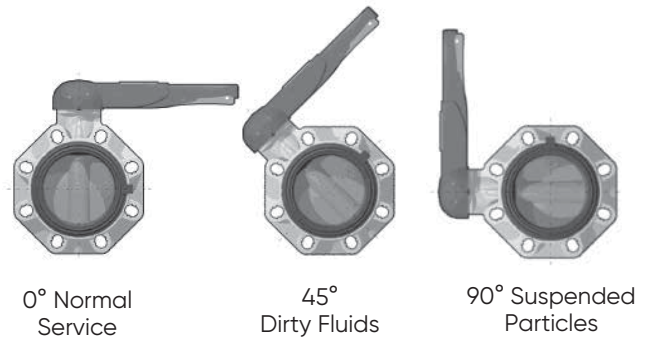


Please refer to the appropriate application sub-section:

- a. For typical inline installation, ensure that the disc is in the partially closed position then carefully insert the valve into the piping system between the two flanges. Insert the bolts, washers, and nuts (if necessary), then hand tighten. Take care to properly line up the valve and flanges as any misalignment may cause leakage.
- b. For lugged version end of line installation, ensure that the disc is in the partially closed position then carefully position the valve on the flange. Insert the bolts, and washers, then hand tighten. Take care to properly line up the valve and flange as any misalignment may cause leakage.



4. Connect pneumatic or electric connections according to provided diagrams.



| Size (inches) | ANSI 150 Insert Position | Nominal Bolt Torque (ft-lbs) |
|---------------|--------------------------|------------------------------|
| 1-1/2         | POS 1                    | 7                            |
| 2             | -                        | 9                            |
| 2-1/2         | POS 2                    | 11                           |
| 3             | POS 2                    | 13                           |
| 4             | POS 2                    | 15                           |
| 5             | POS 2                    | 26                           |
| 6             | POS 2                    | 30                           |
| 8             | POS 2                    | 41                           |
| 10            | -                        | 52                           |
| 12            | -                        | 52                           |

5. To avoid damage to the primary gasket, cycle the valve to the open position before tightening the bolts. For correct joining procedure, please refer to the section entitled, "Joining Methods – Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems". The bolts should be tightened in an even pattern to the nominal torque in the table below. These torque ratings are sufficient to maintain a watertight seal at the maximum rated operating pressure.

Note: 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 (see diagrams). Over time, particles may collect at the bottom of the valve posing a threat to the seal between the disc, liner, and shaft.

Note: All quarter turn automated valves are tested for proper operation before leaving the factory.

# FK Series Automated Butterfly Valves

## Product Data Sheet

### Disassembly

1. If removing the valve from an operating system, isolate the valve from the rest of the system. Be sure to depressurize and drain the isolated branch before continuing. It is recommended that all actuators be de-activated before servicing the valve to avoid injury.
2. Cycle the valve to a partially open position then loosen each bolt holding the valve to the pipe flange(s). Please refer to the section entitled, "Joining Methods – Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems" for a recommended bolt tightening pattern diagram. Follow the same pattern when disassembling the flanged joint(s) then carefully remove the valve from the line.

### Sizes 1-1/2" to 8":

3. Loosen and remove the bolts, washers and protection caps fixed to the actuator (3, 4, & 5). Carefully remove the actuator and the pad (2) from the valve taking care not to damage the stem.
4. Remove the cap (9) then loosen and remove the screw (8) and washer (7) from the base of the valve body.
5. Carefully pull the shaft (15) out of the valve body then remove the disc (17).
6. Remove the primary liner (16) from the valve body.
7. Remove the nylon bushing (12) and o-rings (11) from the valve body (sizes 2-1/2" to 8").
8. Remove the disc anti-friction rings (19), and o-rings (18, sizes 2-1/2" to 8").
9. Remove the retaining ring (10, sizes 2-1/2" to 8") and o-rings (13, 14) from the shaft.
10. The valve components can now be checked for problems and/or replaced.

### Sizes 10" to 12":

3. Loosen and remove the bolts, washers and protection caps fixed to the actuator (22, 23 & 24). Carefully remove the actuator from the valve taking care not to damage the stem.
4. Remove the cap (13) then loosen and remove the screw (14) and washers (11, 12 & 15) from the base of the valve body (1).
5. Carefully pull the shaft (16) out of the valve body then remove the disc (10).
6. Remove the primary liner (7) from the valve body.
7. Remove the upper and lower bushings (3, 5), washers (2, 6), and o-rings (4) from the valve body.
8. Remove the disc anti-friction rings (8) and o-rings (9, 19).
9. Remove the retaining ring (18) and o-rings (17) from the shaft.
10. The valve components can now be checked for problems and/or replaced.

# FK Series Automated Butterfly Valves

## Product Data Sheet

### Assembly

Note: Before assembling the valve components, it is advisable to lubricate the o-rings with a water soluble lubricant. Be sure to consult the "IPEX Chemical Resistance Guide" and/or other trusted resources to determine specific lubricant-rubber compatibilities.

#### Sizes 1-1/2" to 8":

1. Insert the primary liner (16) into the valve body (6). Ensure that the proper holes line up with those on the body.
2. Properly fit the o-rings (11) on the nylon bushing (12) (sizes 2-1/2" to 8") then insert the Teflon washer and bushing into the valve body from above.
3. Properly fit the disc o-rings (18, sizes 2-1/2" to 8") and anti-friction rings (19) on the disc (17), then insert into the valve liner taking care to center the holes.
4. Properly fit the o-rings (13, 14) and retaining ring (10, sizes 2-1/2" to 8") in their grooves on the shaft (15), then carefully insert into the valve body from above.
5. Fasten the shaft at the base of the valve body using the screw (8) and washer (7). Affix the cap (9) over the bolt.
6. Place the spacer pad (2) on the valve body.
7. Carefully place the actuator on the stem, lining up the holes. Fasten using the necessary bolts, washers and protection caps (3, 4 & 5). Ensure that the actuator and disk position correspond to the same operating position.

#### Sizes 10" to 12":

1. Insert the primary liner (7) into the valve body (1). Ensure that the proper holes line up with those on the body.
2. Properly fit the o-rings (4) on the upper and lower bushings (3, 5) then insert into the valve body from above and below along with the washers (2, 6).
3. Properly fit the disc o-rings (9, 19) and anti-friction rings (8) on the disc (10), then insert into the valve liner taking care to center the holes.
4. Properly fit the o-rings (17) and retaining ring (18) in their grooves on the shaft (16), then carefully insert into the valve body from above.
5. Fasten the shaft at the base of the valve body using the screw (14) and washers (11, 12, and 15). Affix the cap (13) over the bolt.
6. Carefully place the actuator on the stem, lining up the holes. Fasten using the necessary bolts, washers and protection cap (22, 23 & 24). Ensure that the actuator and disk position correspond to the same operating position.

# FK Series Automated Butterfly Valves

## Product Data Sheet

### About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems
- PVC, CPVC, PP, PVDF, PE, ABS, and PEX pipe and fittings

---

This literature is published in good faith and is believed to be reliable. However, it does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience.

A policy of ongoing product improvement is maintained. This may result in modifications of features and/or specifications without notice.