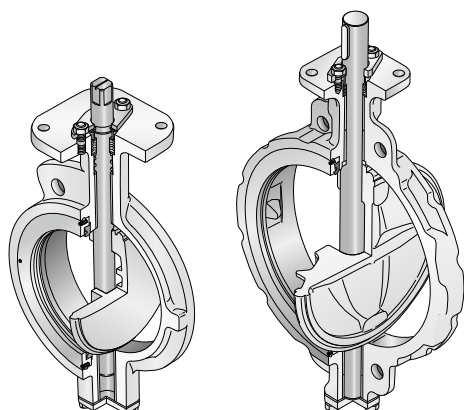
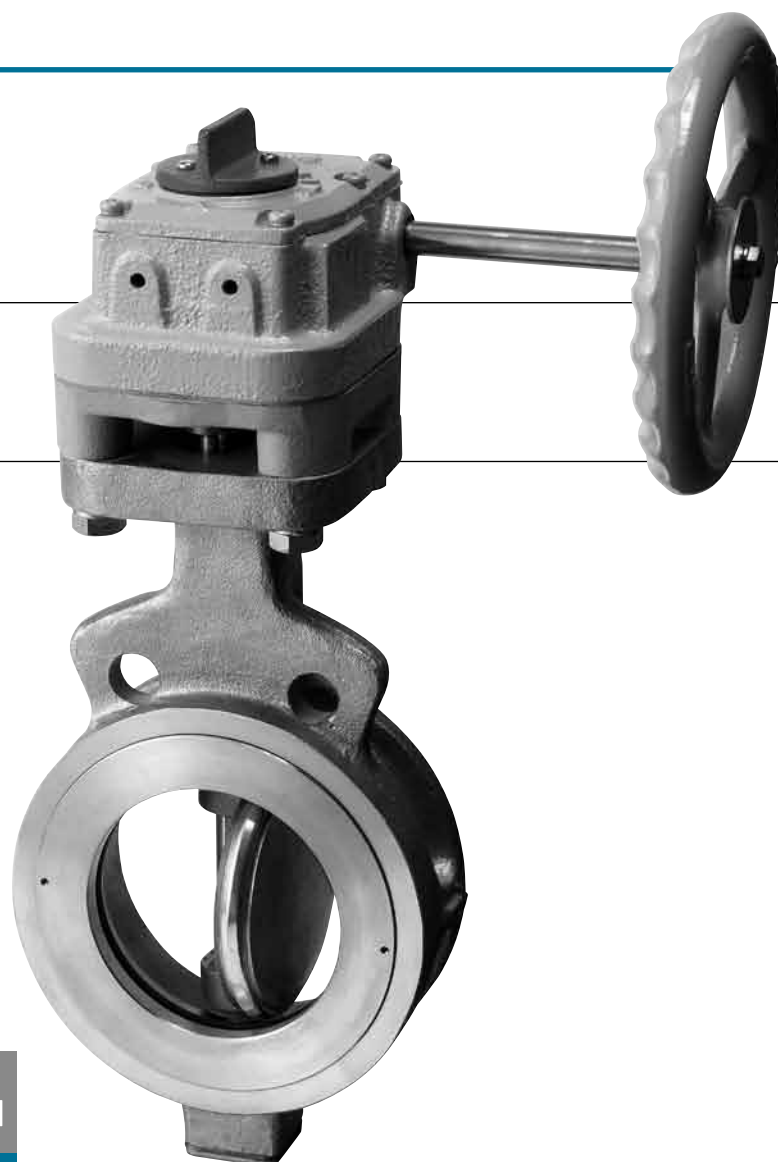


High Performance Butterfly Valves  
to Suit API Standard 150 lb Rating

Tom Disco®

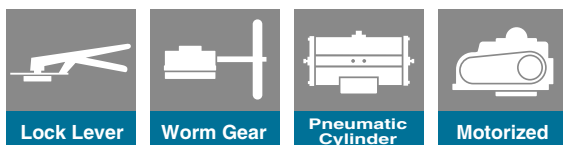
304A Wafer

304Q Lugged



80mm to 300mm

350mm to 600mm



Lock Lever

Worm Gear

Pneumatic  
Cylinder

Motorized

## Features and Benefits

### New stopper device

Japan Patent No.1769954 (80 to 300mm)  
For the 80 to 300mm models, automatic aligning and disc overrun prevention are ensured by the special spherical design of the inner surface of the body disc hub edge. As for the 350 to 600mm models, a spacer ring is provided between the mating surfaces of the disc hub edge and inner surface of the body for disc alignment. Disc overrun is prevented by a protrusion on the inner surface of the body.

### Double eccentric geometry

The axis of disc rotation is double offset to the seat ring. When the disc rotates, it unseats at a small turning angle by its cam effect. The design exhibits tight shut-off, reduced torques, chemical resistance, excellent throttling capabilities and the ability to operate with relatively high pressure drops. It also prevents seat abrasion and provides reliable sealing performance over long periods.

### Bi-directional flow

Seals flow in both directions. The valves can be used even if the flow changes direction. (There are pressure limitations for each direction of flow. See chart for recommended specifications).

### Easy replacement of the seat ring

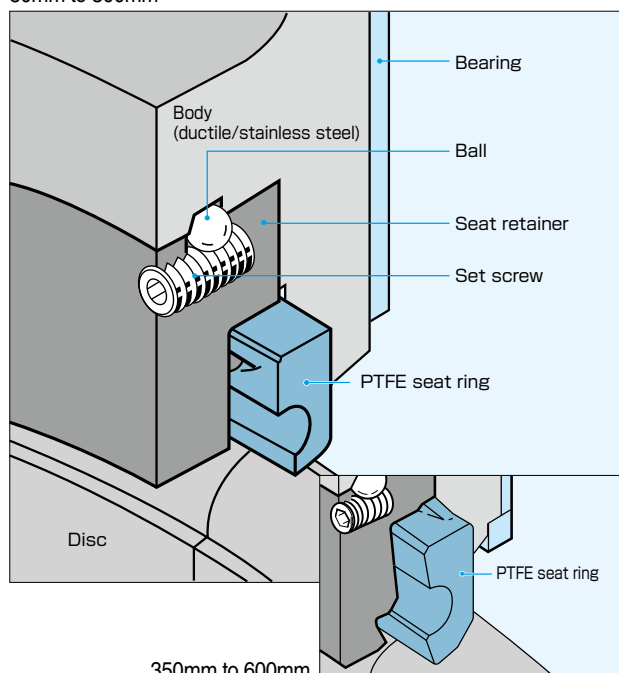
The ball lock method is used to simplify replacement of the seat ring.

### General Description

Designed to suit those severe conditions such as high temperature, high pressure or high velocity, which disallow the use of soft resilient seated butterfly valves. Ideal for use in chemical processes and applications with low pressure steam and high temperature gas.

### Seat Structure

80mm to 300mm



350mm to 600mm

|                            |
|----------------------------|
| Butterfly Valve            |
| <b>TRITEC</b>              |
| <b>TT2</b>                 |
| <b>334A</b>                |
| <b>302A/303Q</b>           |
| <b>304A/304Q</b>           |
| <b>302Y/304Y</b>           |
| <b>304M (HLV)</b>          |
| <b>507V/508V</b>           |
| <b>DTM</b>                 |
| <b>846T/847T/847Q</b>      |
| <b>841T/842T</b>           |
| <b>700Z</b>                |
| <b>700G/704G/705G</b>      |
| <b>700GB</b>               |
| <b>731P/732P/731Q/732Q</b> |
| <b>71LG</b>                |
| <b>700E/700K/700S</b>      |
| <b>704G/722F/720F</b>      |
| <b>KRV</b>                 |
| <b>227P</b>                |
| <b>907H/908H (MKT)</b>     |
| <b>903C</b>                |

### Standard Specifications

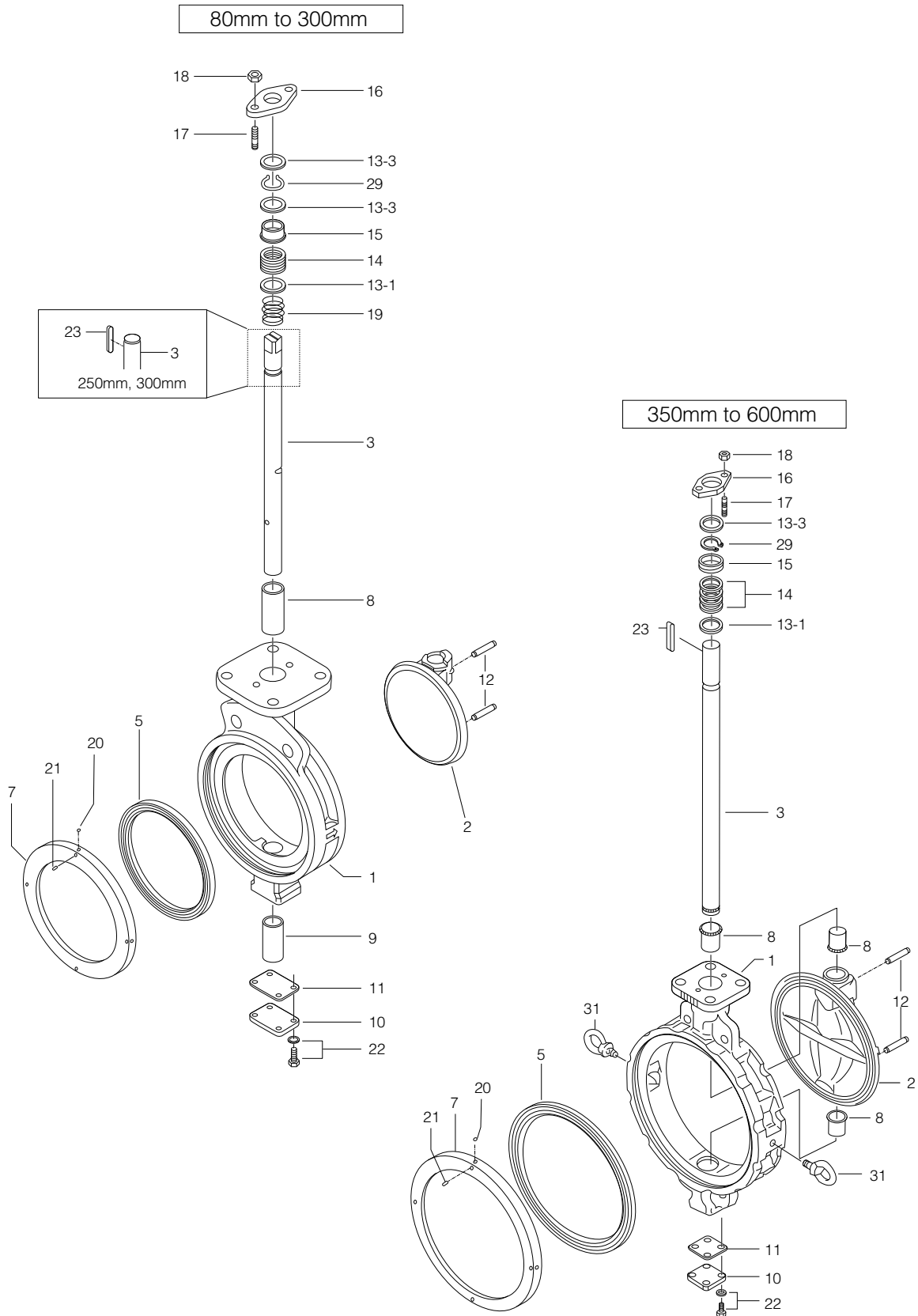
|                            |  |  |  |  |   |
|----------------------------|--|--|--|--|---|
| Valve nominal size         | 80mm to 300mm  |  | 350mm to 600mm (5 sizes)   |  |   |
| Face-to-face dimensions    | API 609 (class 150)  |  | API 609 (class 150)<br>ISO 5752 (25 series), JIS B 2002 (47 series)            |  |   |
| Connection                 | Wafer type / Lugged type   |  |  |  |   |
| Pressure rating            | ANSI B16.34 Class 150lb (Seat rating is designed to suit API 609 150lb above zero degree C)  |  |  |  |   |
| Applicable flange standard | JIS 10K/16K/20K, ANSI 125/150lb, BS 10 Table F, BS 4504 PN 10/16, DIN NP 10/16   |  | JIS 10K/16K/20K, ANSI 125/150lb, BS 10 Table F, BS 4504 PN 10/16, DIN NP 10/16 |  |   |
| Body shell test            | Max. 3.2MPa as per API 598   |  |  |  |   |
| Seat leak test             | Max. 2.3MPa as per API 598. Low pressure closure test is available upon request.   |  |  |  |   |
| Max. working pressure*1    | 2.0MPa   |  |  |  |   |
|                            | Bi-directional flow (Flow to disc side is recommended.)  |  |  |  |   |
|                            | Max. working pressure at reverse flow for 250mm and 300mm is 1.6MPa.   |  | Max. working pressure at reverse flow is 1.0MPa.                               |  |   |
| Working temperature range  | -29 to 232 degrees C (RPTFE)   |  | -20 to 232 degrees C (RPTFE)   |  |   |
| Seat leakage               | -20 to 200 degrees C (White PTFE as option)  |  |  |  |   |
|                            | ISO 5208 rate A, API 598-1996  |  |  |  |   |
| Standard materials*2       | Body   | SCPH2/WCB                                  | SCS 14A/CF8M   | SCPH 2/WCB   | SCS 13A/CF8                                     |
|                            | Disc   | SCS 13A/CF8 (Hard chrome plating)          | SCS 16A/CF3M (Hard chrome plating)   | SCS13A/CF8 (Hard chrome plating)                   |   |
|                            | Stem   | SUS 420 J2                                 | SUS 329 J1<br>SUS 316 L<br>SUS 329 J4 L  | SUS 420 J2 (Under 1.0MPa)<br>SUS 630 (Over 1.0MPa) | SUS 304 (Under 1.0MPa)<br>SUS 630 (Over 1.0MPa) |
|                            | Seat ring  | RPTFE as standard, White PTFE as an option |  |  |   |
|                            | Gland packing  | RPTFE                                      |  |  |   |
| Top flange                 | ISO 5211   |  |  |  |   |
| Bonnet type                | Open bonnet  |  |  |  |   |
| Actuators                  | Lock lever   | 80 to 150mm                                |  |  |   |
|                            | Worm gear  |  |  |  |   |
|                            | Pneumatic cylinder   | 80 to 600mm                                |  |  |   |
|                            | Motorized  |  |  |  |   |
| Coating                    | Silicon resin coating (grey N7) for less than 200 degrees C.<br>Heat resistant silver coating for 200 degrees C and over. No painting for stainless steel. |  |  |  |   |

\*1 Please consult us if the pressure exceeds 1.6MPa.

\*2 Please refer to the pressure rating chart and stem material chart in the following pages.

# Tom Disco® 304A (Wafer) / 304Q (Lugged)

## 304A Expanded view of components



### 304A Parts List

#### ■304A Parts List (80mm to 300mm)

| No.  | Description                 | Q'ty   | Remarks            |
|------|-----------------------------|--------|--------------------|
| 1    | Body                        | 1      |                    |
| 2    | Disc                        | 1      |                    |
| 3    | Stem                        | 1      |                    |
| ★ 5  | Seat ring                   | 1      |                    |
| 7    | Seat ring retainer          | 1      |                    |
| 8    | Top shaft bearing           | 1      |                    |
| 9    | Bottom shaft bearing        | 1      |                    |
| 10   | Bottom cover                | 1      |                    |
| ★ 11 | Bottom gasket               | 1      |                    |
| 12   | Taper pin                   | 2      |                    |
| 13-1 | Packing retainer            | 1      |                    |
| 13-3 | Ring                        | 2      |                    |
| ★ 14 | Gland packing               | 1 set  |                    |
| 15   | Gland bush                  | 1      |                    |
| 16   | Gland flange                | 1      |                    |
| 17   | Gland bolt                  | 2      |                    |
| 18   | Gland nut                   | 2      |                    |
| 19   | Gland coil                  | 1      | Only 80mm to 150mm |
| ★ 20 | Ball                        | 2      | 80mm to 125mm      |
|      |                             | 4      | 150mm to 300mm     |
| ★ 21 | Set screw                   | 2      | 80mm to 125mm      |
|      |                             | 4      | 150mm to 300mm     |
| 22   | Hexagon bolt, Spring washer | 4 sets |                    |
| 23   | Stem key                    | 1      | Only 250mm, 300mm  |
| 29   | C-ring                      | 1      |                    |

#### ■304A Parts List (350mm to 600mm)

| No.  | Description                 | Q'ty   | Remarks             |
|------|-----------------------------|--------|---------------------|
| 1    | Body                        | 1      |                     |
| 2    | Disc                        | 1      |                     |
| 3    | Stem                        | 1      |                     |
| ★ 5  | Seat ring                   | 1      |                     |
| 7    | Seat ring retainer          | 1      |                     |
| 8    | Shaft bearing               | 3      |                     |
| 10   | Bottom cover                | 1      |                     |
| ★ 11 | Bottom gasket               | 1      |                     |
| 12   | Taper pin                   | 1      |                     |
| 13-1 | Packing retainer            | 1      |                     |
| 13-3 | Ring                        | 1      |                     |
| ★ 14 | Gland packing               | 1 set  |                     |
| 15   | Gland bush                  | 1      |                     |
| 16   | Gland flange                | 1      |                     |
| 17   | Gland bolt                  | 2      |                     |
| 18   | Gland nut                   | 2      |                     |
| ★ 20 | Ball                        | 4      |                     |
| ★ 21 | Set screw                   | 4      |                     |
| 22   | Hexagon bolt, Spring washer | 4 sets |                     |
| 23   | Stem key                    | 1      |                     |
| 29   | C-ring                      | 1      |                     |
| 31   | Eye bolt                    | 2      | Only 450mm to 600mm |

Remark: The ★ indicates recommended spare parts. They are supplied as "Seat ring set" with a small hexagonal spanner to remove set screws (P.21).

|                            |
|----------------------------|
| Butterfly Valve            |
| <b>TRITEC</b>              |
| <b>TT2</b>                 |
| <b>334A</b>                |
| <b>302A/303Q</b>           |
| <b>304A/304Q</b>           |
| <b>302Y/304Y</b>           |
| <b>304M (HLV)</b>          |
| <b>507V/508V</b>           |
| <b>DTM</b>                 |
| <b>846T/847T/847Q</b>      |
| <b>841T/842T</b>           |
| <b>700Z</b>                |
| <b>700G/704G/705G</b>      |
| <b>700GB</b>               |
| <b>731P/732P/731Q/732Q</b> |
| <b>71LG</b>                |
| <b>700E/700K/700S</b>      |
| <b>704G/722F/720F</b>      |
| <b>KRV</b>                 |
| <b>227P</b>                |
| <b>907H/908H (MKT)</b>     |
| <b>903C</b>                |

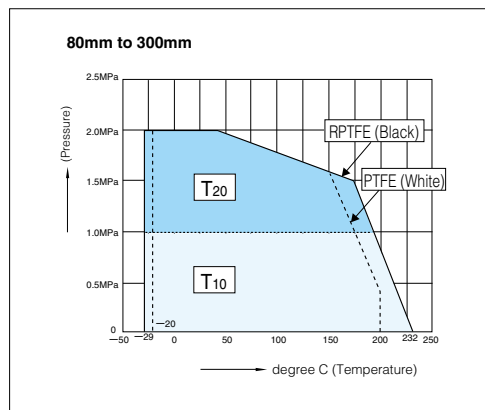
# Tom Disco® 304A (Wafer) / 304Q (Lugged)

## 304A Actuator selection chart

### 80mm to 300mm

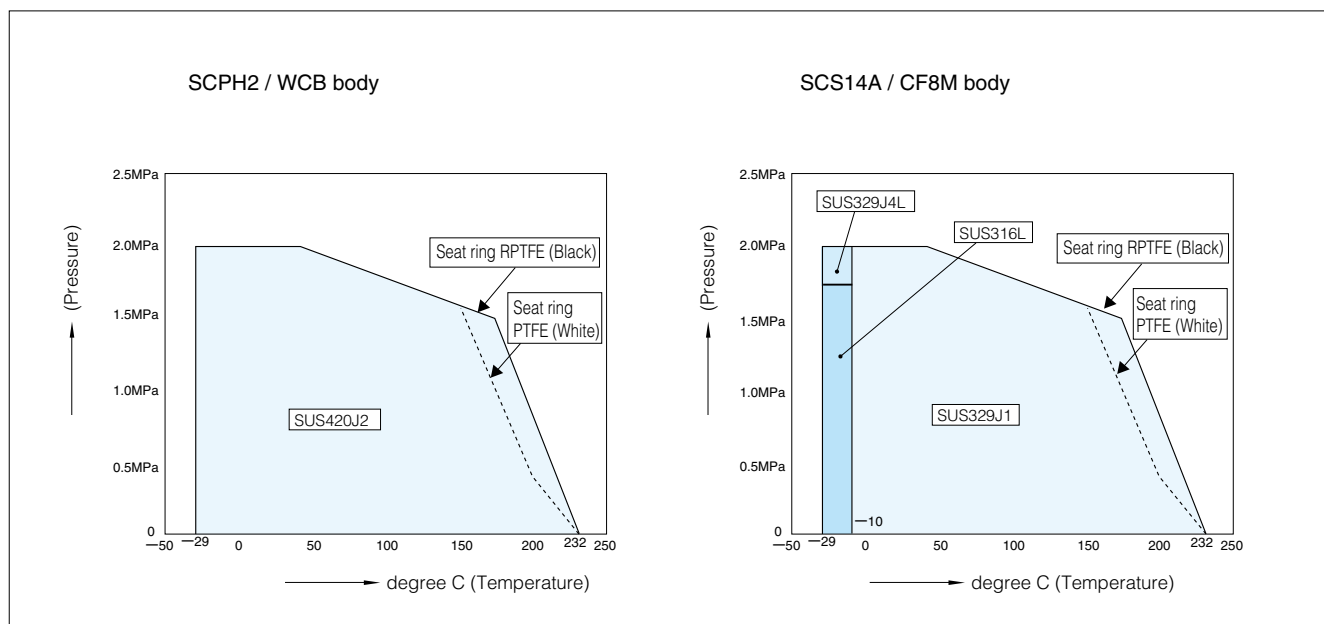
| Model          | Category | Size (mm / inch) |       |         |       |         |      |      |
|----------------|----------|------------------|-------|---------|-------|---------|------|------|
|                |          | 80               | 100   | 125     | 150   | 200     | 250  | 300  |
|                |          | 3                | 4     | 5       | 6     | 8       | 10   | 12   |
| 1T             | T10      | 1T-2             |       |         | 1T-3  |         |      |      |
|                | T20      | 1T-2             |       |         | 1T-3  |         |      |      |
| 2U             | T10      | 2U-2             |       |         | 2U-4  |         | 2U-5 |      |
|                | T20      | 2U-2             |       |         | 2U-4  |         | 2U-5 |      |
| 7E             | T10      | T85              | T200  |         | T380  | T750    |      |      |
|                | T20      | T85              | T200  |         | T380  | T750    |      |      |
| 7G,7F<br>3U,3K | T10      | T200S            | T380S |         | T750S | TG-12S  |      |      |
|                | T20      | T200S            | T380S |         | T750S | TG-12S  |      |      |
| 4I             | T10      | 4I-0             | 4I-1  | 4I-2    |       | 4I-2.5  |      | 4I-3 |
|                | T20      | 4I-0             | 4I-1  | 4I-2    |       | 4I-2.5  |      | 4I-3 |
| 4J             | T10      | SRJ-010          |       | SRJ-020 |       | SRJ-060 |      |      |
|                | T20      | SRJ-010          |       | SRJ-020 |       | SRJ-060 |      |      |

### 304A Pressure rating



## 304A Standard stem material

### 80mm to 300mm

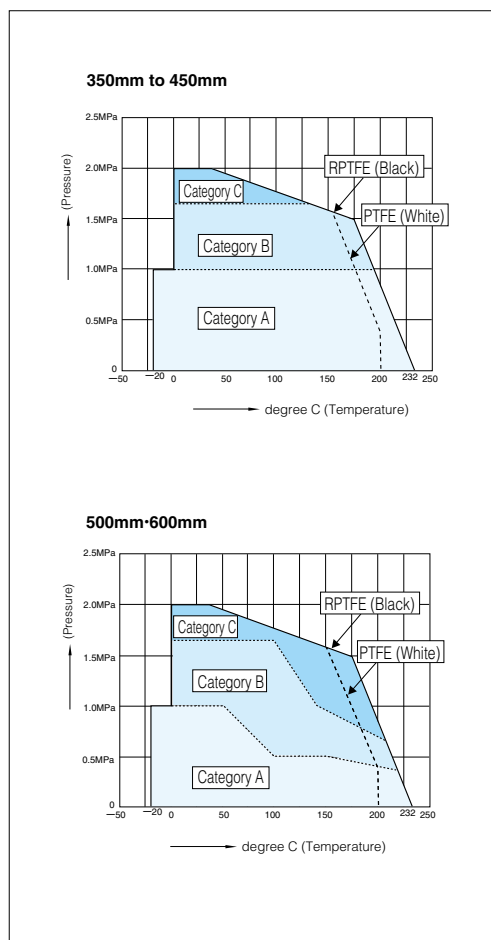


### 304A Actuator selection chart

#### 350mm to 600mm

| Model | Category | Size (mm / inch)    |                      |                      |                     |     |
|-------|----------|---------------------|----------------------|----------------------|---------------------|-----|
|       |          | 350                 | 400                  | 450                  | 500                 | 600 |
|       |          | 14                  | 16                   | 18                   | 20                  | 24  |
| 2S    | A        | DGH-3               | DGH-4                | DGH-4+R/G5           |                     |     |
|       | B        |                     |                      | DGH-4.5              |                     |     |
|       | C        |                     |                      | DGH-4+R/G5           |                     |     |
| 3A    | A        | TGA-125             | TGA-140              | TGA-180              |                     |     |
|       | B        | TGA-140             | TGA-160              | TGA-180              | TGA-200             |     |
|       | C        |                     |                      | TGA-180              | TGA-220             |     |
| 3U,3K | A        | TG-14S              | TG-20S               |                      |                     |     |
|       | B        |                     |                      |                      |                     |     |
|       | C        |                     |                      |                      |                     |     |
| 4I    | A        | 4I-4                |                      |                      |                     |     |
|       | B        |                     |                      |                      |                     |     |
|       | C        |                     |                      |                      |                     |     |
| 4L    | A        | LTKD-01 0.2kW/DGH-3 | LTKD-02 0.4kW/DGH-4  | LTKD-02 0.75kW/DGH-4 |                     |     |
|       | B        | LTKD-02 0.4kW/DGH-4 | LTKD-02 0.75kW/DGH-4 | LTKD-02 1.5kW/DGH-4  | LTKD-05 1.5kW/DGH-5 |     |
|       | C        | LTKD-02 0.4kW/DGH-4 | LTKD-02 0.75kW/DGH-4 |                      |                     |     |

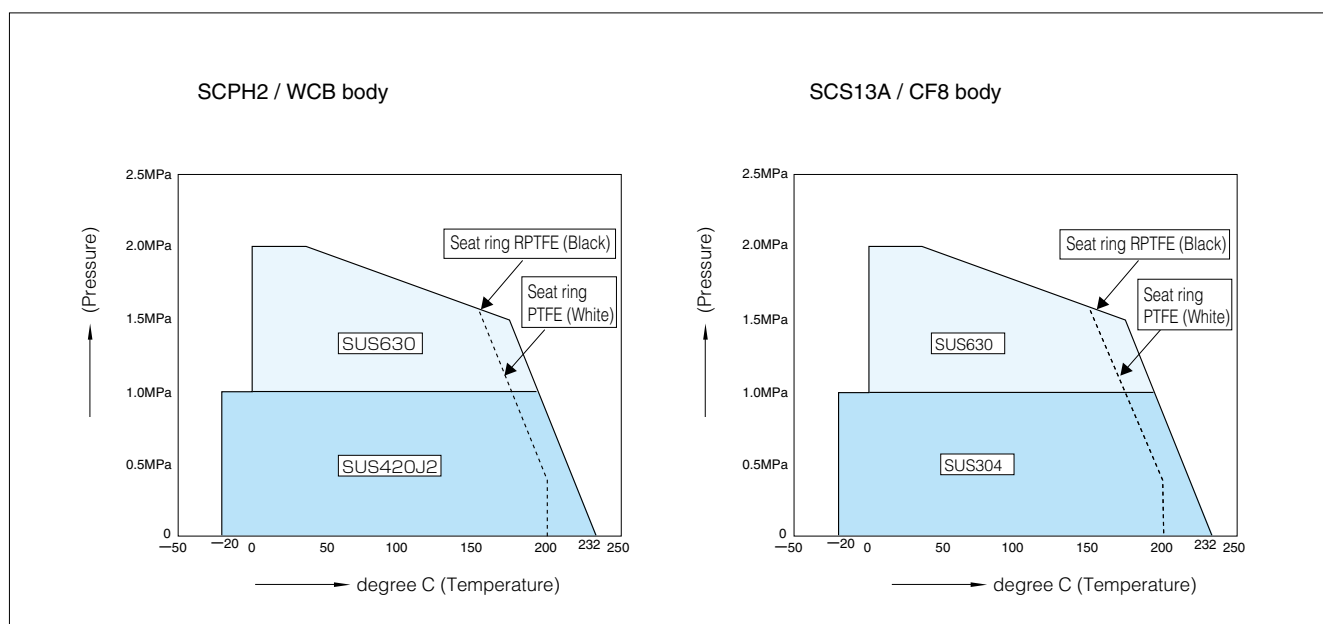
#### 304A Pressure rating



|                            |
|----------------------------|
| Butterfly Valve            |
| <b>TRITEC</b>              |
| <b>TT2</b>                 |
| <b>334A</b>                |
| <b>302A/303Q</b>           |
| <b>304A/304Q</b>           |
| <b>302Y/304Y</b>           |
| <b>304M (HLV)</b>          |
| <b>507V/508V</b>           |
| <b>DTM</b>                 |
| <b>846T/847T/847Q</b>      |
| <b>841T/842T</b>           |
| <b>700Z</b>                |
| <b>700G/704G/705G</b>      |
| <b>700GB</b>               |
| <b>731P/732P/731Q/732Q</b> |
| <b>71LG</b>                |
| <b>700E/700K/700S</b>      |
| <b>704G/722F/720F</b>      |
| <b>KRV</b>                 |
| <b>227P</b>                |
| <b>907H/908H (MKT)</b>     |
| <b>903C</b>                |

### 304A Standard stem material

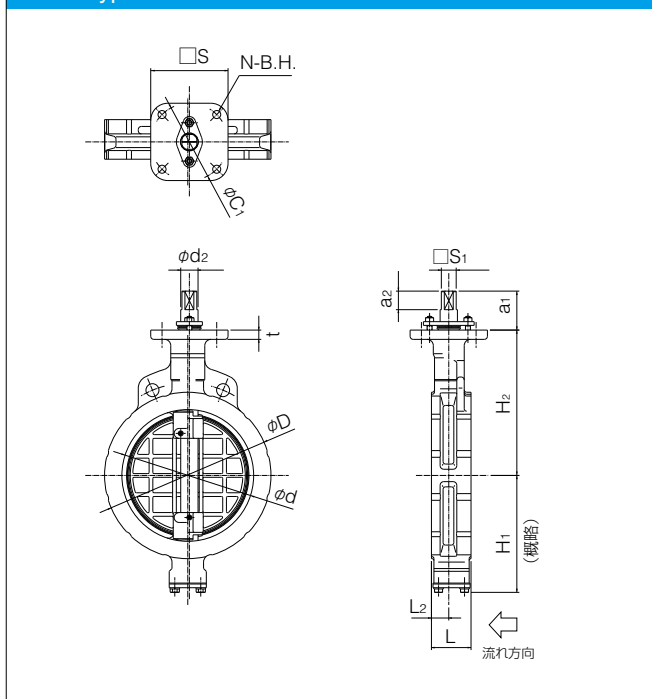
#### 350mm to 600mm



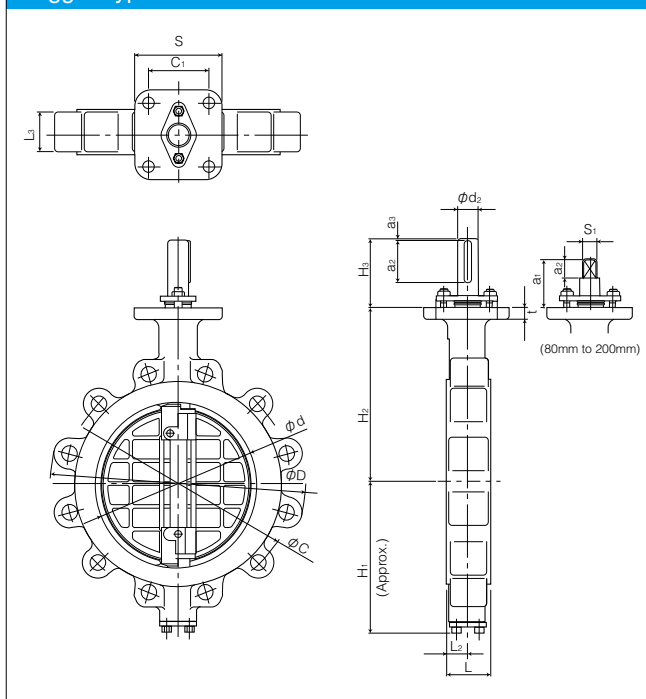
# Tom Disco® 304A (Wafer) / 304Q (Lugged)

## Dimension List

### Wafer type 304A



### Lugged type 304Q



### 304A Dimension List

| Stem shape | Nominal size |      | Dimension (mm) |          |     |                |                |                |                |                |               |            |    |                |     | ISO 5211 Top Flange | Approx. Weight (kg) |
|------------|--------------|------|----------------|----------|-----|----------------|----------------|----------------|----------------|----------------|---------------|------------|----|----------------|-----|---------------------|---------------------|
|            | mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | a <sub>1</sub> | a <sub>2</sub> | $\square S_1$ | $\phi d_2$ | b  | t <sub>2</sub> | t   |                     |                     |
| 01         | 80           | 3    | 89             | 127      | 48  | 23             | 95             | 147            | 52.5           | 16.5           | 14            | 16         | —  | —              | 15  | F10                 | 5                   |
|            | 100          | 4    | 112            | 156      | 54  | 24             | 110            | 170            | 52.5           | 16.5           | 14            | 16         | —  | —              | 15  | F10                 | 6.2                 |
|            | 125          | 5    | 137            | 185      | 56  | 24             | 139            | 185            | 52.5           | 16.5           | 16            | 20         | —  | —              | 15  | F10                 | 9.3                 |
|            | 150          | 6    | 163            | 216      | 57  | 23             | 164            | 205            | 55.5           | 20             | 18            | 22         | —  | —              | 15  | F12                 | 12.5                |
|            | 200          | 8    | 213            | 269      | 64  | 28             | 190            | 235            | 63             | 30             | 24            | 28         | —  | —              | 15  | F12                 | 19                  |
| 02         | 250          | 10   | 263            | 330      | 71  | 31             | 236            | 283            | 108            | 67.3           | —             | 32         | 10 | 3              | 18  | F14                 | 33                  |
|            | 300          | 12   | 315            | 381      | 81  | 35             | 246            | 310            | 111            | 72.3           | —             | 35         | 10 | 3              | 18  | F14                 | 42                  |
|            | 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | 113            | 72             | —             | 38         | 10 | 3              | 18  | F14                 | 61                  |
|            | 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | 113            | 72             | —             | 42         | 12 | 3.5            | 18  | F14                 | 88                  |
|            | 450          | 18   | 450            | 534      | 114 | 43             | 366            | 406            | 141.5          | 68             | —             | 45         | 12 | 3.5            | 20  | F16                 | 135                 |
|            | 500          | 20   | 500            | 589      | 127 | 50             | 405            | 442            | 141.5          | 79             | —             | 49         | 14 | 4              | 20  | F16                 | 173                 |
| 600        | 24           | 600  | 693            | 154      | 64  | 461            | 493            | 141.5          | 80             | —              | 59            | 16         | 5  | 20             | F16 | 272                 |                     |

### Top Flange Dimension

| ISO 5211 Top Flange | $\square S$ | $\phi C_1$ | N | B.H. |
|---------------------|-------------|------------|---|------|
| F10                 | 102         | 102        | 4 | 11   |
| F12                 | 125         | 125        | 4 | 13   |
| F14                 | 140         | 140        | 4 | 19   |
| F16                 | 165         | 165        | 4 | 23   |

|            |                                    |
|------------|------------------------------------|
| Stem shape | 01 : square<br>02 : round with key |
|------------|------------------------------------|

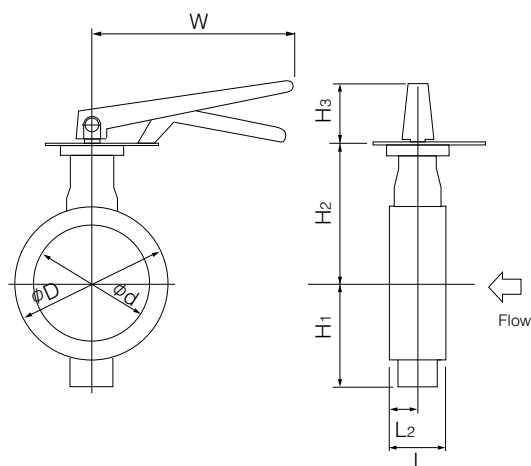
### 304Q Dimension List

| Nominal size |      | Dimension (mm) |          |     |                |                |                |                |                |            |                |                |                |     |    | Approx. Weight (kg) |                |          |
|--------------|------|----------------|----------|-----|----------------|----------------|----------------|----------------|----------------|------------|----------------|----------------|----------------|-----|----|---------------------|----------------|----------|
| mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | L <sub>3</sub> | H <sub>1</sub> | H <sub>2</sub> | H <sub>3</sub> | $\phi d_2$ | a <sub>2</sub> | a <sub>3</sub> | S <sub>1</sub> | S   | t  |                     | C <sub>1</sub> | $\phi C$ |
| 80           | 3    | 89             | 198      | 48  | 23             | 38             | 95             | 147            | 52.5           | 16         | 16.5           | —              | 14             | 102 | 15 | 72                  | 152.5          | 6        |
| 100          | 4    | 112            | 227      | 54  | 24             | 46             | 110            | 170            | 52.5           | 16         | 16.5           | —              | 14             | 102 | 15 | 72                  | 190.5          | 9.5      |
| 125          | 5    | 137            | 256      | 56  | 24             | 48             | 139            | 185            | 52.5           | 20         | 16.5           | —              | 16             | 102 | 15 | 72                  | 216            | 14       |
| 150          | 6    | 163            | 282      | 57  | 23             | 49             | 164            | 205            | 55.5           | 22         | 20             | —              | 18             | 125 | 15 | 88.4                | 241.5          | 16       |
| 200          | 8    | 213            | 343      | 64  | 28             | 54             | 190            | 235            | 63             | 28         | 30             | —              | 24             | 125 | 15 | 88.4                | 298.5          | 24       |
| 250          | 10   | 263            | 412      | 71  | 31             | 61             | 236            | 283            | 108            | 32         | 65             | 2              | —              | 140 | 18 | 99                  | 362            | 41       |
| 300          | 12   | 315            | 482      | 81  | 35             | 71             | 246            | 310            | 111            | 35         | 70             | 2              | —              | 140 | 18 | 99                  | 432            | 56       |
| 350          | 14   | 350            | 536      | 92  | 39.5           | 70             | 308            | 340            | 113            | 38         | 70             | 2              | —              | 140 | 18 | 99                  | 476.2          | 85       |
| 400          | 16   | 400            | 600      | 102 | 39             | 75             | 348            | 372            | 113            | 42         | 70             | 2              | —              | 140 | 18 | 99                  | 539.7          | 125      |
| 450          | 18   | 450            | 636      | 114 | 43             | 83             | 366            | 406            | 141.5          | 45         | 60             | 8              | —              | 165 | 20 | 116.7               | 577.8          | 170      |
| 500          | 20   | 500            | 720      | 127 | 50             | 90             | 405            | 442            | 141.5          | 49         | 70             | 9              | —              | 165 | 20 | 116.7               | 635            | 225      |
| 600          | 24   | 600            | 814      | 154 | 64             | 131            | 461            | 493            | 141.5          | 59         | 70             | 10             | —              | 165 | 20 | 116.7               | 749.3          | 350      |

Lock lever type 304A-1T(80mm to 150mm)

| Nominal size |      | Dimension (mm) |          |    |                |                |                |                                   |                |     | Lever type | Approx. Mass (kg) |
|--------------|------|----------------|----------|----|----------------|----------------|----------------|-----------------------------------|----------------|-----|------------|-------------------|
| mm           | inch | $\phi d$       | $\phi D$ | L  | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category                          | H <sub>3</sub> | W   |            |                   |
| 80           | 3    | 89             | 127      | 48 | 23             | 95             | 147            | T <sub>10</sub> , T <sub>20</sub> | 117            | 300 | 1T-2       | 7.1               |
| 100          | 4    | 112            | 156      | 54 | 24             | 110            | 170            | T <sub>10</sub> , T <sub>20</sub> | 117            | 300 | 1T-2       | 8.3               |
| 125          | 5    | 137            | 185      | 56 | 24             | 139            | 185            | T <sub>10</sub> , T <sub>20</sub> | 117            | 300 | 1T-2       | 11.4              |
| 150          | 6    | 163            | 216      | 57 | 23             | 164            | 205            | T <sub>10</sub> , T <sub>20</sub> | 125            | 350 | 1T-3       | 14.6              |

■ 304A-1T



■ 1T Installation direction

|  |  |  |  |
|--|--|--|--|
| <p>Retainer side</p> <p>Stem side</p> <p>1TA</p> | <p>Retainer side</p> <p>Stem side</p> <p>1TB</p> | <p>Retainer side</p> <p>Stem side</p> <p>1TC</p> | <p>Retainer side</p> <p>Stem side</p> <p>1TD</p> |
|--|--|--|--|

Butterfly Valve

- TRITEC**
- TT2**
- 334A**
- 302A/303Q**
- 304A/304Q**
- 302Y/304Y**
- 304M (HLV)**
- 507V/508V**
- DTM**
- 846T/847T/847Q**
- 841T/842T**
- 700Z**
- 700G/704G/705G**
- 700GB**
- 731P/732P/731Q/732Q**
- 71LG**
- 700E/700K/700S**
- 704G/722F/720F**
- KRV**
- 227P**
- 907H/908H (MKT)**
- 903C**

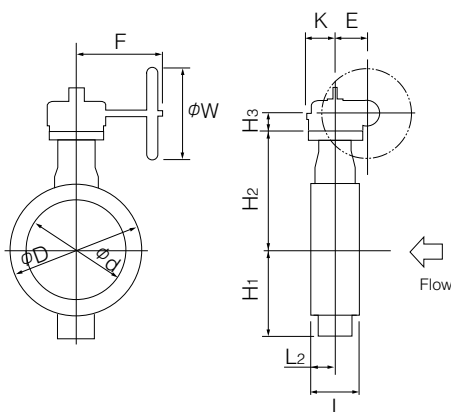


# Tom Disco® 304A (Wafer) / 304Q (Lugged)

Worm gear type 304A-2U (80mm to 300mm) / 304A-2S (350mm to 600mm)

| Nominal size |      | Dimension (mm) |          |     |                |                |                |                                   |                |      |     |       |          | Gear type    | Approx. Mass (kg) |
|--------------|------|----------------|----------|-----|----------------|----------------|----------------|-----------------------------------|----------------|------|-----|-------|----------|--------------|-------------------|
| mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category                          | H <sub>3</sub> | E    | K   | F     | $\phi W$ |              |                   |
| 80           | 3    | 89             | 127      | 48  | 23             | 95             | 147            | T <sub>10</sub> , T <sub>20</sub> | 61             | 44   | 53  | 173.5 | 160      | 2U-2         | 7.9               |
| 100          | 4    | 112            | 156      | 54  | 24             | 110            | 170            | T <sub>10</sub> , T <sub>20</sub> | 61             | 44   | 53  | 173.5 | 160      | 2U-2         | 9.1               |
| 125          | 5    | 137            | 185      | 56  | 24             | 139            | 185            | T <sub>10</sub> , T <sub>20</sub> | 61             | 44   | 53  | 173.5 | 160      | 2U-2         | 12.4              |
| 150          | 6    | 163            | 216      | 57  | 23             | 164            | 205            | T <sub>10</sub> , T <sub>20</sub> | 77.5           | 87.5 | 90  | 222.5 | 200      | 2U-4         | 29                |
| 200          | 8    | 213            | 269      | 64  | 28             | 190            | 235            | T <sub>10</sub> , T <sub>20</sub> | 77.5           | 87.5 | 90  | 222.5 | 200      | 2U-4         | 35.5              |
| 250          | 10   | 263            | 330      | 71  | 31             | 236            | 283            | T <sub>10</sub> , T <sub>20</sub> | 90             | 87.5 | 90  | 222.5 | 280      | 2U-4         | 49.5              |
| 300          | 12   | 315            | 381      | 81  | 35             | 246            | 310            | T <sub>10</sub> , T <sub>20</sub> | 92             | 90   | 105 | 266   | 280      | 2U-5         | 64                |
| 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | A, B, C                           | 97             | 117  | 164 | 335   | 355      | DGH-3        | 99                |
| 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | A                                 | 97             | 117  | 164 | 335   | 355      | DGH-3        | 124               |
|              |      |                |          |     |                |                |                | B, C                              | 215            | 140  | 198 | 402   | 450      | DGH-4        | 162               |
| 450          | 18   | 450            | 534      | 114 | 43             | 366            | 406            | A, B                              | 127            | 140  | 198 | 402   | 450      | DGH-4        | 198               |
|              |      |                |          |     |                |                |                | C                                 | 127            | 140  | 198 | 432   | 355      | DGH-4+R/G5   | 200               |
| 500          | 20   | 500            | 589      | 127 | 50             | 405            | 442            | A, B                              | 127            | 140  | 198 | 402   | 450      | DGH-4        | 236               |
|              |      |                |          |     |                |                |                | C                                 | 127            | 140  | 198 | 432   | 355      | DGH-4+R/G5   | 238               |
| 600          | 24   | 600            | 693      | 154 | 64             | 461            | 493            | A                                 | 127            | 140  | 198 | 432   | 355      | DGH-4+R/G5   | 338               |
|              |      |                |          |     |                |                |                | B, C                              | 245            | 185  | 264 | 497   | 355      | DGH-4.5+R/G5 | 413               |

## 304A-2U/2S



## 2U/2S Installation direction

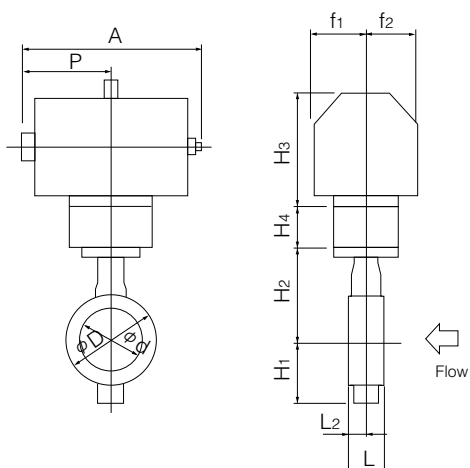
|   |   |   |   |
|---|---|---|---|
| <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> | <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> | <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> | <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> |
| 2UA/2SA   | 2UB/2SB   | 2UC/2SC   | 2UD/2SD   |

Double-acting pneumatic cylinder type 304A-7E (80mm to 300mm)

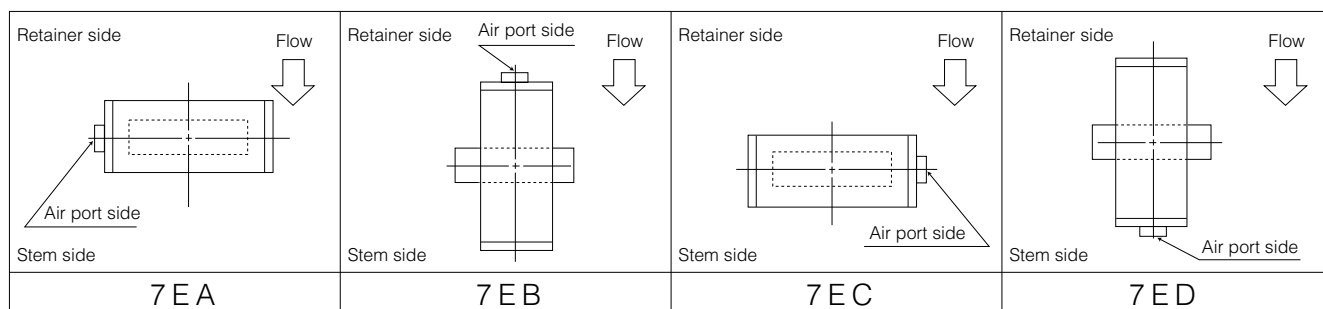
| Nominal size |      | Dimension (mm) |          |    |                |                |                |                                  |                |                |     |     |                |                | Cylinder type | Approx. Mass (kg) |
|--------------|------|----------------|----------|----|----------------|----------------|----------------|----------------------------------|----------------|----------------|-----|-----|----------------|----------------|---------------|-------------------|
| mm           | inch | $\phi d$       | $\phi D$ | L  | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category                         | H <sub>3</sub> | H <sub>4</sub> | A   | P   | f <sub>1</sub> | f <sub>2</sub> |               |                   |
| 80           | 3    | 89             | 127      | 48 | 23             | 95             | 147            | T <sub>10</sub> ,T <sub>20</sub> | 168            | 26.5           | 276 | 142 | 75             | 47             | T85           | 11                |
| 100          | 4    | 112            | 156      | 54 | 24             | 110            | 170            | T <sub>10</sub>                  | 168            | 26.5           | 276 | 142 | 75             | 47             | T85           | 12                |
|              |      |                |          |    |                |                |                | T <sub>20</sub>                  | 203            | 26.5           | 346 | 176 | 79             | 57             | T200          | 16                |
| 125          | 5    | 137            | 185      | 56 | 24             | 139            | 185            | T <sub>10</sub> ,T <sub>20</sub> | 203            | 26.5           | 346 | 176 | 79             | 57             | T200          | 19                |
| 150          | 6    | 163            | 216      | 57 | 23             | 164            | 205            | T <sub>10</sub> ,T <sub>20</sub> | 203            | 29.5           | 346 | 176 | 79             | 57             | T200          | 23                |
| 200          | 8    | 213            | 269      | 64 | 28             | 190            | 235            | T <sub>10</sub> ,T <sub>20</sub> | 231            | 29.5           | 423 | 214 | 91             | 69             | T380          | 35                |
| 250          | 10   | 263            | 330      | 71 | 31             | 236            | 283            | T <sub>10</sub>                  | 231            | 190            | 423 | 214 | 91             | 87.5           | T380          | 63                |
|              |      |                |          |    |                |                |                | T <sub>20</sub>                  | 269            | 190            | 546 | 270 | 118            | 87.5           | T750          | 73                |
| 300          | 12   | 315            | 381      | 81 | 35             | 246            | 310            | T <sub>10</sub> ,T <sub>20</sub> | 269            | 190            | 546 | 270 | 118            | 87.5           | T750          | 82                |

|                            |
|----------------------------|
| Butterfly Valve            |
| <b>TRITEC</b>              |
| <b>TT2</b>                 |
| <b>334A</b>                |
| <b>302A/303Q</b>           |
| <b>304A/304Q</b>           |
| <b>302Y/304Y</b>           |
| <b>304M (HLV)</b>          |
| <b>507V/508V</b>           |
| <b>DTM</b>                 |
| 846T/847T/847Q             |
| <b>841T/842T</b>           |
| <b>700Z</b>                |
| 700G/704G/705G             |
| <b>700GB</b>               |
| <b>731P/732P/731Q/732Q</b> |
| <b>71LG</b>                |
| 700E/700K/700S             |
| 704G/722F/720F             |
| <b>KRV</b>                 |
| <b>227P</b>                |
| <b>907H/908H (MKT)</b>     |
| <b>903C</b>                |

304A-7E



7E Installation direction

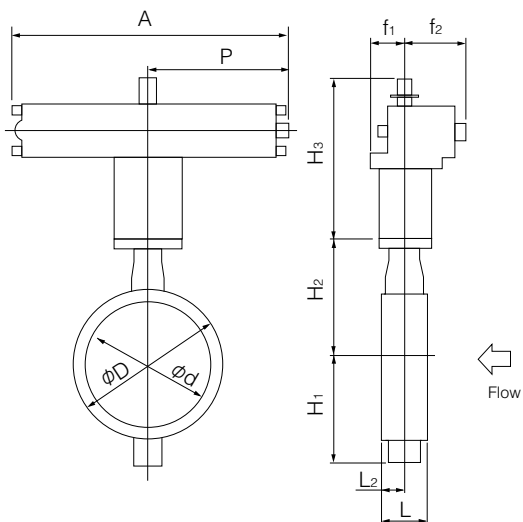


# Tom Disco® 304A (Wafer) / 304Q (Lugged)

## Double-acting pneumatic cylinder type 304A-3A (350mm to 600mm)

| Nominal size |      | Dimension (mm) |          |     |                |                |                |          |                |      |     |                |                | Cylinder type | Approx. Mass (kg) |
|--------------|------|----------------|----------|-----|----------------|----------------|----------------|----------|----------------|------|-----|----------------|----------------|---------------|-------------------|
| mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category | H <sub>3</sub> | A    | P   | f <sub>1</sub> | f <sub>2</sub> |               |                   |
| 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | A        | 424            | 743  | 381 | 100            | 164            | TGA-125       | 110               |
|              |      |                |          |     |                |                |                | B,C      | 472            | 810  | 417 | 100            | 180            | TGA-140       | 121               |
| 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | A        | 424            | 743  | 381 | 100            | 164            | TGA-125       | 136               |
|              |      |                |          |     |                |                |                | B        | 472            | 810  | 417 | 100            | 180            | TGA-140       | 147               |
|              |      |                |          |     |                |                |                | C        | 510            | 939  | 483 | 130            | 202            | TGA-160       | 214               |
| 450          | 18   | 450            | 534      | 114 | 43             | 366            | 406            | A        | 502            | 810  | 417 | 100            | 180            | TGA-140       | 207               |
|              |      |                |          |     |                |                |                | B,C      | 530            | 939  | 483 | 130            | 202            | TGA-160       | 263               |
| 500          | 20   | 500            | 589      | 127 | 50             | 405            | 442            | A        | 502            | 810  | 417 | 100            | 180            | TGA-140       | 246               |
|              |      |                |          |     |                |                |                | B        | 530            | 939  | 483 | 130            | 202            | TGA-160       | 302               |
|              |      |                |          |     |                |                |                | C        | 543            | 1053 | 543 | 130            | 218            | TGA-180       | 330               |
| 600          | 24   | 600            | 693      | 154 | 64             | 461            | 493            | A        | 543            | 1053 | 543 | 130            | 218            | TGA-180       | 431               |
|              |      |                |          |     |                |                |                | B        | 610            | 1163 | 599 | 160            | 253            | TGA-200       | 475               |
|              |      |                |          |     |                |                |                | C        | 640            | 1248 | 642 | 160            | 270            | TGA-220       | 535               |

### 304A-3A



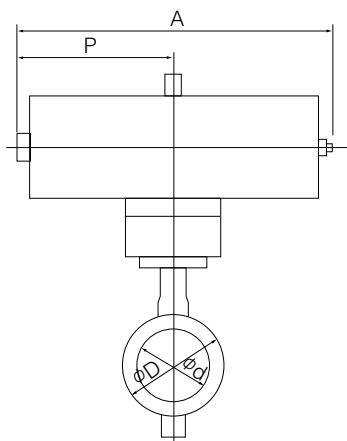
### 3A Installation direction

|  |  |  |  |
|--|--|--|--|
| <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> <p>3 A A</p> | <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> <p>3 A B</p> | <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> <p>3 A C</p> | <p>Retainer side</p> <p>Flow</p> <p>Stem side</p> <p>3 A D</p> |
|--|--|--|--|

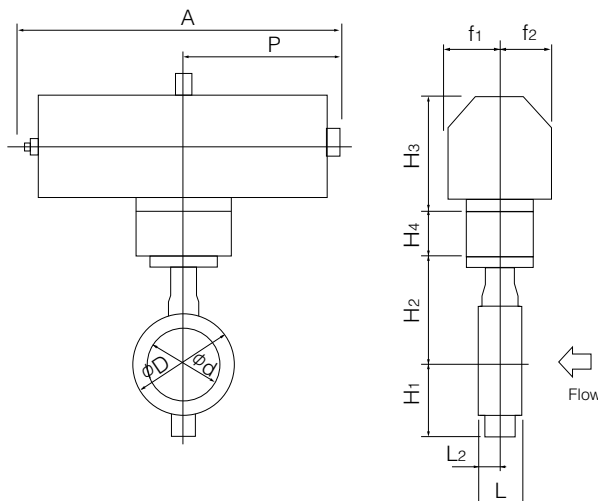
Single-acting pneumatic cylinder type 304A-7G (Air to open: 80mm to 200mm) / 304A-7F (Air to close: 80mm to 200mm)

| Nominal size |      | Dimension (mm) |          |    |                |                |                |                                   |                |                |     |     |                | Cylinder type | Approx. Mass (kg) |                |
|--------------|------|----------------|----------|----|----------------|----------------|----------------|-----------------------------------|----------------|----------------|-----|-----|----------------|---------------|-------------------|----------------|
| mm           | inch | $\phi d$       | $\phi D$ | L  | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category                          | H <sub>3</sub> | H <sub>4</sub> | A   | P   | f <sub>1</sub> |               |                   | f <sub>2</sub> |
| 80           | 3    | 89             | 127      | 48 | 23             | 95             | 147            | T <sub>10</sub> , T <sub>20</sub> | 203            | 26.5           | 449 | 226 | 79             | 57            | T200S             | 17             |
| 100          | 4    | 112            | 156      | 54 | 24             | 110            | 170            | T <sub>10</sub>                   | 203            | 26.5           | 449 | 226 | 79             | 57            | T200S             | 18             |
|              |      |                |          |    |                |                |                | T <sub>20</sub>                   | 231            | 26.5           | 550 | 276 | 91             | 69            | T380S             | 27             |
| 125          | 5    | 137            | 185      | 56 | 24             | 139            | 185            | T <sub>10</sub>                   | 231            | 26.5           | 550 | 276 | 91             | 69            | T380S             | 30             |
|              |      |                |          |    |                |                |                | T <sub>20</sub>                   | 269            | 26.5           | 723 | 360 | 118            | 85            | T750S             | 43             |
| 150          | 6    | 163            | 216      | 57 | 23             | 164            | 205            | T <sub>10</sub> , T <sub>20</sub> | 269            | 29.5           | 723 | 360 | 118            | 85            | T750S             | 47             |
| 200          | 8    | 213            | 269      | 64 | 28             | 190            | 235            | T <sub>10</sub>                   | 269            | 29.5           | 723 | 360 | 118            | 85            | T750S             | 54             |

304A-7F



304A-7G



7F Installation direction

|   |   |   |   |
|---|---|---|---|
| <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7FA</p> | <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7FB</p> | <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7FC</p> | <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7FD</p> |
|---|---|---|---|

7G Installation direction

|   |   |   |   |
|---|---|---|---|
| <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7GA</p> | <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7GB</p> | <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7GC</p> | <p>Retainer side</p> <p>Air port side</p> <p>Stem side</p> <p>7GD</p> |
|---|---|---|---|

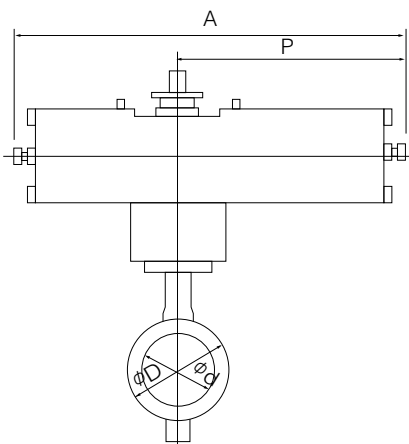
|                     |
|---------------------|
| Butterfly Valve     |
| TRITEC              |
| TT2                 |
| 334A                |
| 302A/303Q           |
| 304A/304Q           |
| 302Y/304Y           |
| 304M (HLV)          |
| 507V/508V           |
| DTM                 |
| 846T/847T/847Q      |
| 841T/842T           |
| 700Z                |
| 700G/704G/705G      |
| 700GB               |
| 731P/732P/731Q/732Q |
| 71LG                |
| 700E/700K/700S      |
| 704G/722F/720F      |
| KRV                 |
| 227P                |
| 907H/908H (MKT)     |
| 903C                |

# Tom Disco® 304A (Wafer) / 304Q (Lugged)

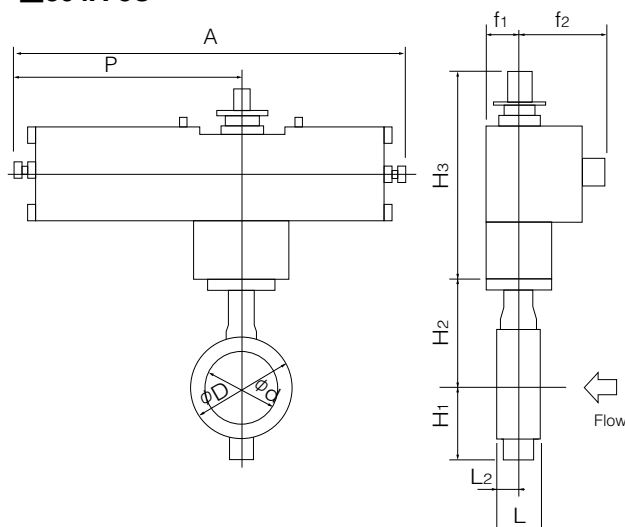
Single-acting pneumatic cylinder type 304A-3U (Air to open: 200mm to 600mm) / 304A-3K (Air to close: 200mm to 600mm)

| Nominal size |      | Dimension (mm) |          |     |                |                |                |                                   |                |      |      |                |                | Cylinder type | Approx. Mass (kg) |
|--------------|------|----------------|----------|-----|----------------|----------------|----------------|-----------------------------------|----------------|------|------|----------------|----------------|---------------|-------------------|
| mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category                          | H <sub>3</sub> | A    | P    | f <sub>1</sub> | f <sub>2</sub> |               |                   |
| 200          | 8    | 213            | 269      | 64  | 28             | 190            | 235            | T <sub>10</sub>                   | 377            | 945  | 585  | 75             | 165            | TG-10S        | 78                |
|              |      |                |          |     |                |                |                | T <sub>20</sub>                   | 377            | 1080 | 720  | 94             | 206            | TG-12S        | 122               |
| 250          | 10   | 263            | 330      | 71  | 31             | 236            | 283            | T <sub>10</sub> , T <sub>20</sub> | 417            | 1080 | 720  | 94             | 206            | TG-12S        | 141               |
| 300          | 12   | 315            | 381      | 81  | 35             | 246            | 310            | T <sub>10</sub> , T <sub>20</sub> | 417            | 1080 | 720  | 94             | 206            | TG-12S        | 150               |
| 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | A                                 | 450            | 1255 | 865  | 131            | 257            | TG-14S        | 264               |
|              |      |                |          |     |                |                |                | B, C                              | 602            | 1655 | 1095 | 164            | 348            | TG-20S        | 485               |
| 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | A                                 | 450            | 1255 | 865  | 131            | 257            | TG-14S        | 292               |
|              |      |                |          |     |                |                |                | B, C                              | 602            | 1655 | 1095 | 164            | 348            | TG-20S        | 512               |
| 450          | 18   | 450            | 534      | 114 | 43             | 366            | 406            | A, B, C                           | 624            | 1655 | 1095 | 164            | 348            | TG-20S        | 564               |
| 500          | 20   | 500            | 589      | 127 | 50             | 405            | 442            | A, B, C                           | 624            | 1655 | 1095 | 164            | 348            | TG-20S        | 602               |
| 600          | 24   | 600            | 693      | 154 | 64             | 461            | 493            | A                                 | 624            | 1655 | 1095 | 164            | 348            | TG-20S        | 701               |

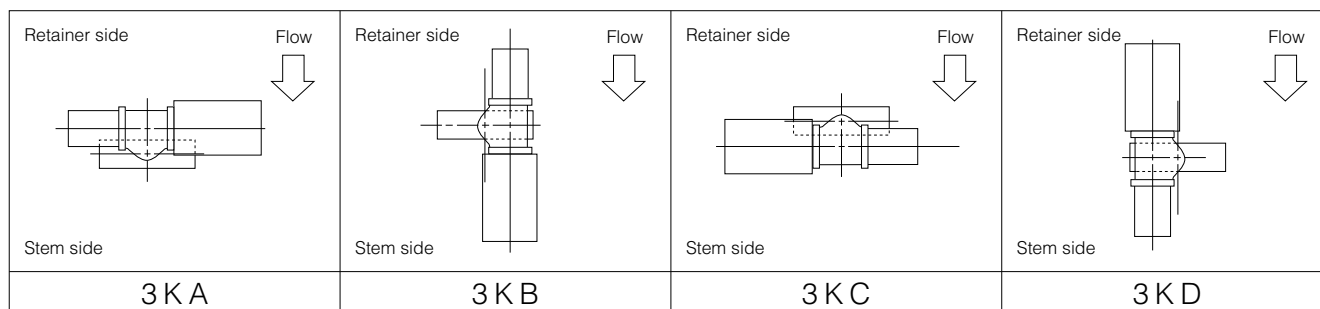
## 304A-3K



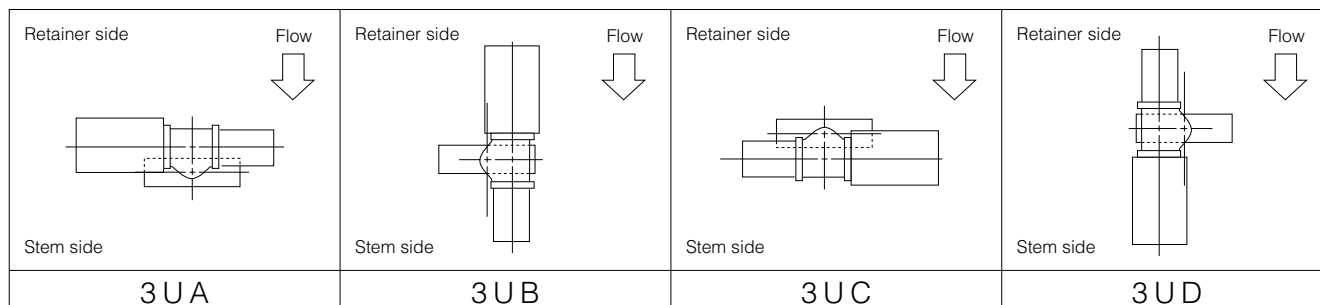
## 304A-3U



## 3K Installation direction



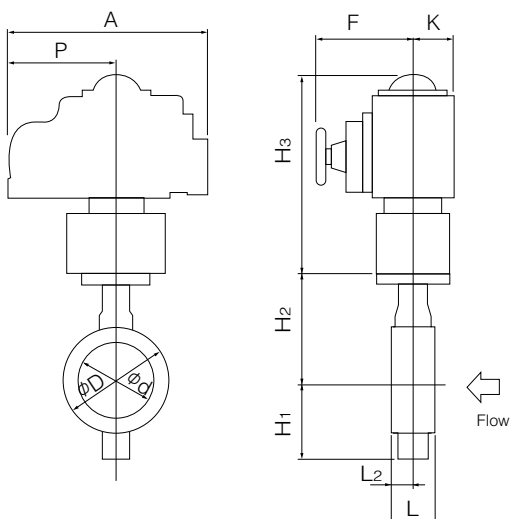
## 3U Installation direction



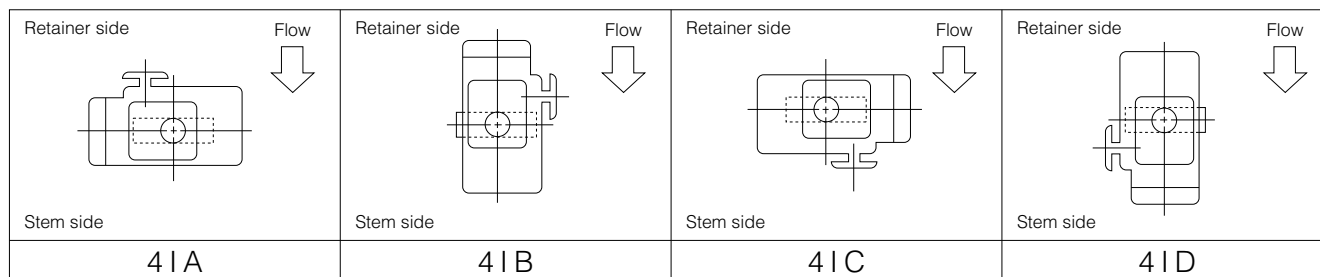
Single phase electric motor type 304A-4 I (80mm to 400mm)

| Nominal size |      | Dimension (mm) |          |     |                |                |                |                                   |                |     |     |     | Motor type | Approx. Mass (kg) |      |
|--------------|------|----------------|----------|-----|----------------|----------------|----------------|-----------------------------------|----------------|-----|-----|-----|------------|-------------------|------|
| mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category                          | H <sub>3</sub> | A   | P   | F   |            |                   | K    |
| 80           | 3    | 89             | 127      | 48  | 23             | 95             | 147            | T <sub>10</sub> , T <sub>20</sub> | 250            | 202 | 100 | 85  | 54         | 4 I-0             | 12.1 |
| 100          | 4    | 112            | 156      | 54  | 24             | 110            | 170            | T <sub>10</sub>                   | 265            | 252 | 138 | 126 | 65         | 4 I-1             | 15.5 |
|              |      |                |          |     |                |                |                | T <sub>20</sub>                   | 298            | 310 | 167 | 154 | 85         | 4 I-2             | 21.5 |
| 125          | 5    | 137            | 185      | 56  | 24             | 139            | 185            | T <sub>10</sub> , T <sub>20</sub> | 298            | 310 | 167 | 154 | 85         | 4 I-2             | 24.5 |
| 150          | 6    | 163            | 216      | 57  | 23             | 164            | 205            | T <sub>10</sub> , T <sub>20</sub> | 373            | 310 | 167 | 154 | 85         | 4 I-2             | 29.5 |
| 200          | 8    | 213            | 269      | 64  | 28             | 190            | 235            | T <sub>10</sub> , T <sub>20</sub> | 373            | 310 | 167 | 154 | 85         | 4 I-2.5           | 39   |
| 250          | 10   | 263            | 330      | 71  | 31             | 236            | 283            | T <sub>10</sub>                   | 411            | 310 | 167 | 154 | 85         | 4 I-2.5           | 56.5 |
|              |      |                |          |     |                |                |                | T <sub>20</sub>                   | 420            | 388 | 223 | 246 | 136        | 4 I-3             | 66   |
| 300          | 12   | 315            | 381      | 81  | 35             | 246            | 310            | T <sub>10</sub> , T <sub>20</sub> | 420            | 388 | 223 | 246 | 136        | 4 I-3             | 75   |
| 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | A, B                              | 423            | 388 | 223 | 246 | 136        | 4 I-4             | 96   |
| 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | A                                 | 423            | 388 | 223 | 246 | 136        | 4 I-4             | 123  |

■ 304A-4 I



■ 4I Installation direction



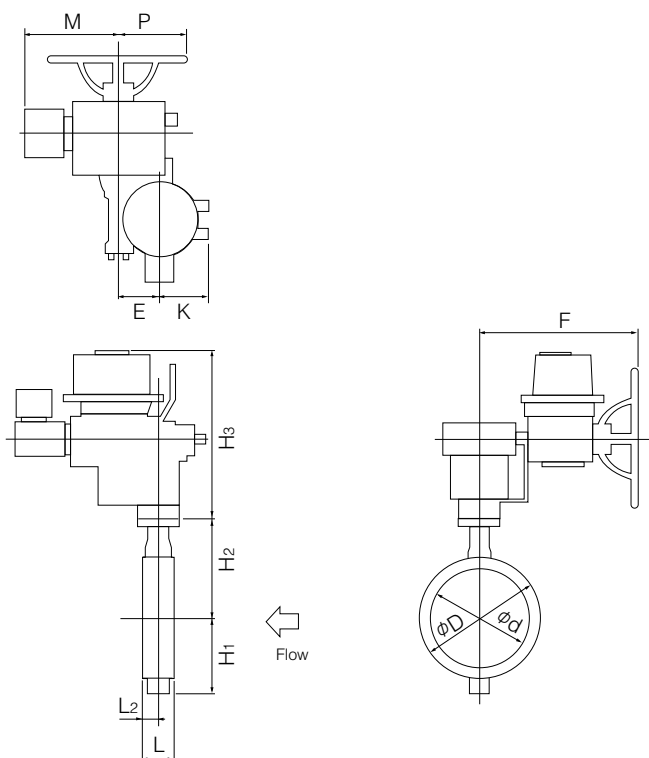
| Butterfly Valve            |
|----------------------------|
| <b>TRITEC</b>              |
| <b>TT2</b>                 |
| <b>334A</b>                |
| <b>302A/303Q</b>           |
| <b>304A/304Q</b>           |
| <b>302Y/304Y</b>           |
| <b>304M (HLV)</b>          |
| <b>507V/508V</b>           |
| <b>DTM</b>                 |
| <b>846T/847T/847Q</b>      |
| <b>841T/842T</b>           |
| <b>700Z</b>                |
| <b>700G/704G/705G</b>      |
| <b>700GB</b>               |
| <b>731P/732P/731Q/732Q</b> |
| <b>71LG</b>                |
| <b>700E/700K/700S</b>      |
| <b>704G/722F/720F</b>      |
| <b>KRV</b>                 |
| <b>227P</b>                |
| <b>907H/908H (MKT)</b>     |
| <b>903C</b>                |

# Tom Disco® 304A (Wafer) / 304Q (Lugged)

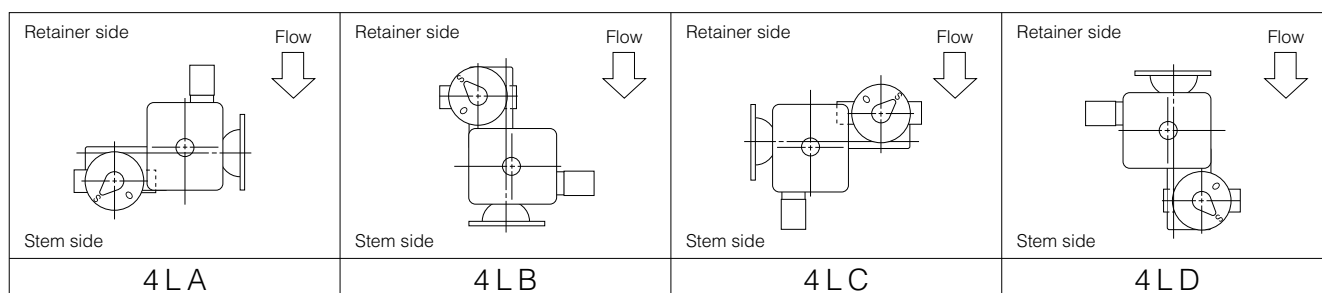
## Three phase motor actuator type 304A-4L (350mm to 600mm)

| Nominal size |      | Dimension (mm) |          |     |                |                |                |          |                |     |     |     |     |     | Motor type            | Approx. Mass (kg) |
|--------------|------|----------------|----------|-----|----------------|----------------|----------------|----------|----------------|-----|-----|-----|-----|-----|-----------------------|-------------------|
| mm           | inch | $\phi d$       | $\phi D$ | L   | L <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | Category | H <sub>3</sub> | E   | K   | F   | M   | P   |                       |                   |
| 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | A, B     | 547            | 117 | 164 | 533 | 357 | 230 | LTKD-01 0.2kW /DGH-3  | 171               |
|              |      |                |          |     |                |                |                | C        | 592            | 140 | 198 | 593 | 373 | 230 | LTKD-02 0.4kW /DGH-4  | 221               |
| 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | A        | 547            | 117 | 164 | 533 | 357 | 230 | LTKD-01 0.2kW /DGH-3  | 197               |
|              |      |                |          |     |                |                |                | B        | 592            | 140 | 198 | 593 | 373 | 230 | LTKD-02 0.4kW /DGH-4  | 247               |
|              |      |                |          |     |                |                |                | C        | 592            | 140 | 198 | 593 | 400 | 230 | LTKD-02 0.75kW /DGH-4 | 258               |
| 450          | 18   | 450            | 534      | 114 | 43             | 366            | 406            | A        | 642            | 140 | 198 | 593 | 373 | 230 | LTKD-02 0.4kW /DGH-4  | 308               |
|              |      |                |          |     |                |                |                | B, C     | 642            | 140 | 198 | 593 | 400 | 230 | LTKD-02 0.75kW /DGH-4 | 319               |
| 500          | 20   | 500            | 589      | 127 | 50             | 405            | 442            | A        | 642            | 140 | 198 | 593 | 373 | 230 | LTKD-02 0.4kW /DGH-4  | 346               |
|              |      |                |          |     |                |                |                | B, C     | 642            | 140 | 198 | 593 | 400 | 230 | LTKD-02 0.75kW /DGH-4 | 357               |
| 600          | 24   | 600            | 693      | 154 | 64             | 461            | 493            | A        | 642            | 140 | 198 | 593 | 400 | 230 | LTKD-02 0.75kW /DGH-4 | 460               |
|              |      |                |          |     |                |                |                | B, C     | 749            | 210 | 300 | 748 | 477 | 360 | LTKD-05 1.5kW /DGH-5  | 605               |

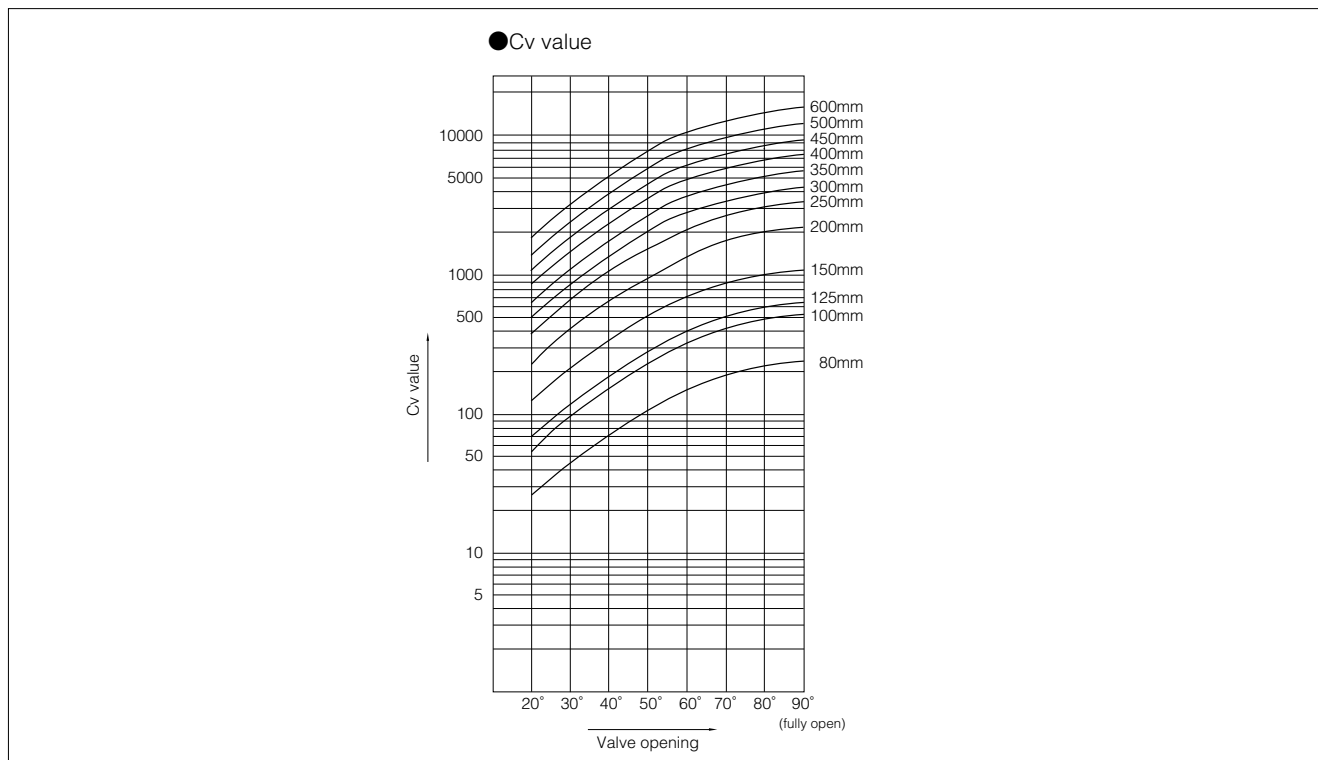
### 304A-4L



### 4L Installation direction



### 304A Cv value



Butterfly Valve

- TRITEC**
- TT2**
- 334A**
- 302A/303Q**
- 304A/304Q**
- 302Y/304Y**
- 304M (HLV)**
- 507V/508V**
- DTM**
- 846T/847T/847Q**
- 841T/842T**
- 700Z**
- 700G/704G/705G**
- 700GB**
- 731P/732P/731Q/732Q**
- 71LG**
- 700E/700K/700S**
- 704G/722F/720F**
- KRV**
- 227P**
- 907H/908H (MKT)**
- 903C**

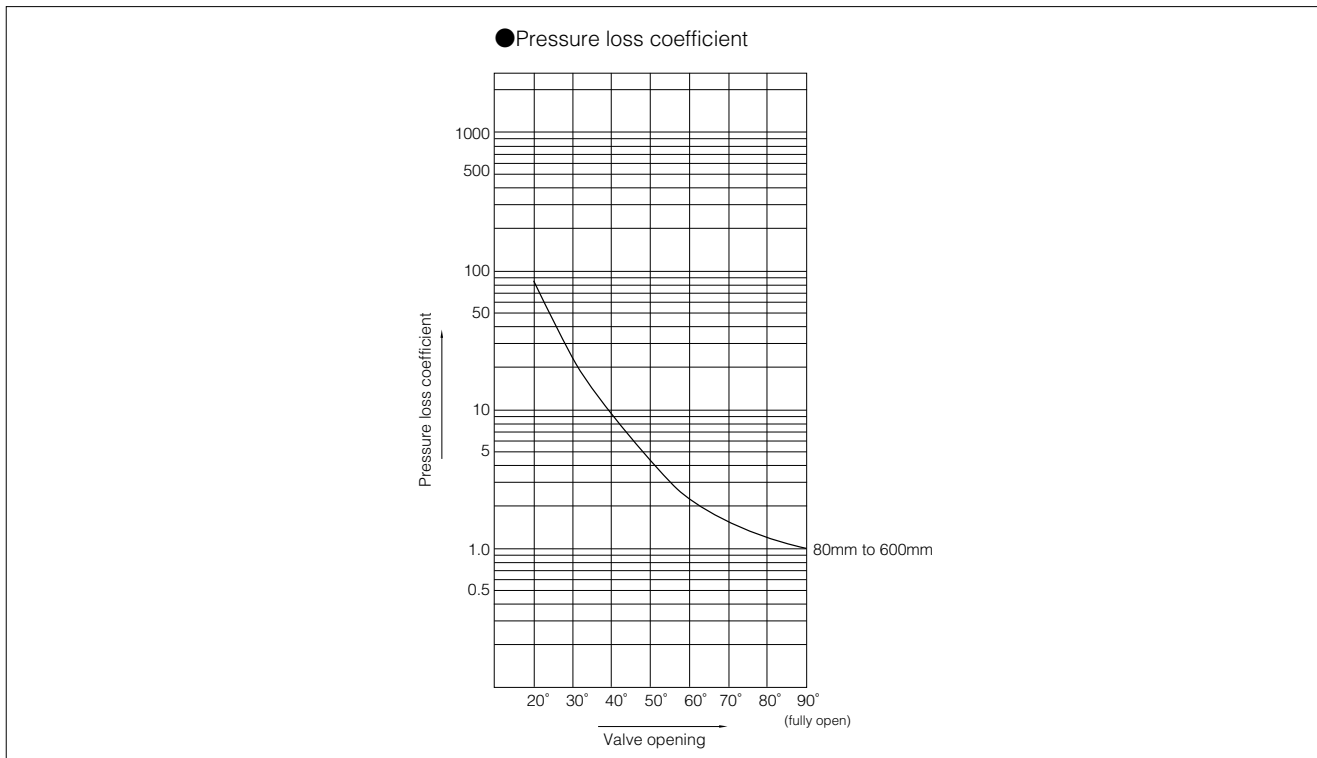
### 304A Cv value

| Nominal size |      | Valve opening |      |      |      |       |       |       |       |
|--------------|------|---------------|------|------|------|-------|-------|-------|-------|
| mm           | inch | 20°           | 30°  | 40°  | 50°  | 60°   | 70°   | 80°   | 90°   |
| 80           | 3    | 29            | 52   | 85   | 122  | 162   | 207   | 243   | 252   |
| 100          | 4    | 49            | 88   | 144  | 207  | 279   | 351   | 414   | 432   |
| 125          | 5    | 77            | 140  | 230  | 333  | 441   | 549   | 648   | 684   |
| 150          | 6    | 126           | 225  | 369  | 531  | 720   | 900   | 1080  | 1116  |
| 200          | 8    | 234           | 423  | 693  | 990  | 1350  | 1710  | 1980  | 2070  |
| 250          | 10   | 390           | 703  | 1148 | 1648 | 2240  | 2857  | 3300  | 3443  |
| 300          | 12   | 492           | 888  | 1454 | 2081 | 2838  | 3612  | 4172  | 4354  |
| 350          | 14   | 648           | 1170 | 1915 | 2741 | 3739  | 4758  | 5496  | 5736  |
| 400          | 16   | 829           | 1496 | 2449 | 3505 | 4780  | 6084  | 7027  | 7334  |
| 450          | 18   | 1041          | 1879 | 3076 | 4403 | 6004  | 7642  | 8827  | 9212  |
| 500          | 20   | 1323          | 2387 | 3909 | 5595 | 7630  | 9710  | 11216 | 11705 |
| 600          | 24   | 1929          | 3481 | 5700 | 8159 | 11126 | 14161 | 16356 | 17070 |



# Tom Disco® 304A (Wafer)/304Q (Lugged)

## 304A pressure loss coefficient



## 304A Pressure loss coefficient

| Nominal size |      | Valve opening |     |     |     |     |     |     |     |
|--------------|------|---------------|-----|-----|-----|-----|-----|-----|-----|
| mm           | inch | 20°           | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 80           | 3    | 95            | 29  | 11  | 5   | 3   | 2   | 1   | 1   |
| 100          | 4    | 98            | 30  | 11  | 5   | 3   | 2   | 1   | 1   |
| 125          | 5    | 93            | 28  | 10  | 5   | 3   | 2   | 1   | 1   |
| 150          | 6    | 70            | 22  | 8   | 4   | 2   | 1   | 1   | 1   |
| 200          | 8    | 62            | 19  | 7   | 3   | 2   | 1   | 1   | 1   |
| 250          | 10   | 54            | 17  | 6   | 3   | 2   | 1   | 1   | 1   |
| 300          | 12   | 70            | 21  | 8   | 4   | 2   | 1   | 1   | 1   |
| 350          | 14   | 68            | 21  | 8   | 4   | 2   | 1   | 1   | 1   |
| 400          | 16   | 73            | 22  | 8   | 4   | 2   | 1   | 1   | 1   |
| 450          | 18   | 75            | 23  | 9   | 4   | 2   | 1   | 1   | 1   |
| 500          | 20   | 72            | 22  | 8   | 4   | 2   | 1   | 1   | 1   |
| 600          | 24   | 70            | 22  | 8   | 4   | 2   | 1   | 1   | 1   |

304A Applicable flange standard

| Nominal size |      | JIS |     |     |     | ANSI/API/JPI<br>150Lb | BS4504 |      | DIN  |      | BS10<br>Table E |
|--------------|------|-----|-----|-----|-----|-----------------------|--------|------|------|------|-----------------|
| mm           | inch | 5K  | 10K | 16K | 20K |                       | PN10   | PN16 | NP10 | NP16 |                 |
| 80           | 3    | ×   | D   | D   | D   | ○                     | D      | D    | D    | D    | ×               |
| 100          | 4    | ×   | D   | D   | D   | D                     | D      | D    | D    | D    | ×               |
| 125          | 5    | ×   | D   | D   | D   | D                     | D      | D    | D    | D    | ×               |
| 150          | 6    | ×   | D   | D   | D   | D                     | D      | D    | D    | D    | ×               |
| 200          | 8    | ×   | D   | D   | D   | D                     | D      | D    | D    | D    | ×               |
| 250          | 10   | ×   | D   | D   | D   | D                     | D      | D    | D    | D    | ×               |
| 300          | 12   | ×   | D   | D   | D   | D                     | D      | D    | D    | D    | ×               |
| 350          | 14   | D   | D   | D   | D   | D                     | D      | D    | D    | D    | D               |
| 400          | 16   | D   | D   | D   | D   | D                     | D      | D    | D    | D    | D               |
| 450          | 18   | D   | T   | T   | T   | D                     | T      | T    | T    | T    | D               |
| 500          | 20   | T   | T   | T   | T   | T                     | T      | T    | T    | T    | T               |
| 600          | 24   | T   | T   | T   | T   | T                     | T      | T    | T    | T    | T               |

○ : Can be used without flange drilling.  
D : With flange drilling  
T : With flange tapping  
× : Not applicable

| Butterfly Valve            |
|----------------------------|
| <b>TRITEC</b>              |
| <b>TT2</b>                 |
| <b>334A</b>                |
| <b>302A/303Q</b>           |
| <b>304A/304Q</b>           |
| <b>302Y/304Y</b>           |
| <b>304M (HLV)</b>          |
| <b>507V/508V</b>           |
| <b>DTM</b>                 |
| <b>846T/847T/847Q</b>      |
| <b>841T/842T</b>           |
| <b>700Z</b>                |
| <b>700G/704G/705G</b>      |
| <b>700GB</b>               |
| <b>731P/732P/731Q/732Q</b> |
| <b>71LG</b>                |
| <b>700E/700K/700S</b>      |
| <b>704G/722F/720F</b>      |
| <b>KRV</b>                 |
| <b>227P</b>                |
| <b>907H/908H (MKT)</b>     |
| <b>903C</b>                |

# Tom Disco® 304A (Wafer) / 304Q (Lugged)

## 304A Applicable pipe list in case of **A**

| Nominal size |      | SGP                  |                         | Sch20                |                         | Sch40                |                         | Sch60                |                         | Sch80                |                         | Sch10S               |                         | Sch20S               |                         | Minimum internal diameters of piping (mm) |
|--------------|------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|---|
|              |      | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) |   |
| mm           | inch |                      |                         |                      |                         |                      |                         |                      |                         |                      |                         |                      |                         |                      |                         |   |
| 80           | 3    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 72.5                                      |
| 100          | 4    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 93.8                                      |
| 125          | 5    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 119.4                                     |
| 150          | 6    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | ○                       | ○                    | ○                       | 147.5                                     |
| 200          | 8    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | ○                       | ○                    | ○                       | 197.5                                     |
| 250          | 10   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | ○                       | ○                    | ○                       | 248.1                                     |
| 300          | 12   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ×                       | ×                    | ○                       | ○                    | ○                       | 297.6                                     |
| 350          | 14   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ×                       | ×                    | —                       | —                    | —                       | 330                                       |
| 400          | 16   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 377                                       |
| 450          | 18   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 424                                       |
| 500          | 20   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 470                                       |
| 600          | 24   | —                    | —                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ×                       | ×                    | —                       | —                    | —                       | 564                                       |

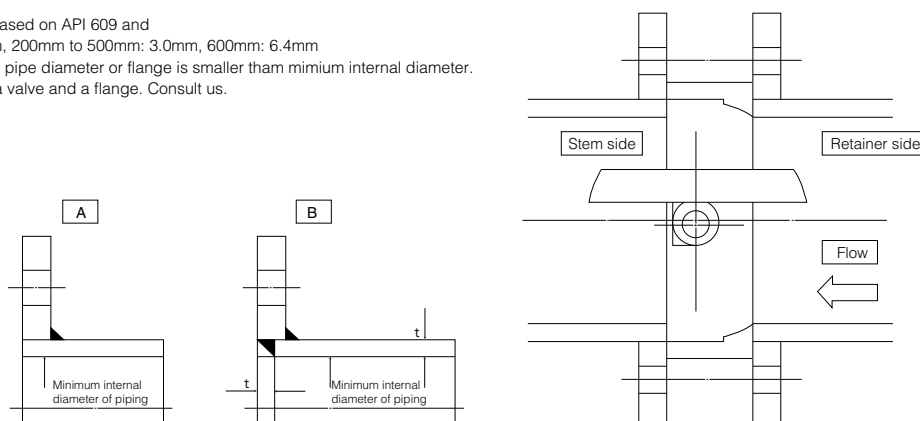
## 304A Applicable pipe list in case of **B**

| Nominal size |      | SGP                  |                         | Sch20                |                         | Sch40                |                         | Sch60                |                         | Sch80                |                         | Sch10S               |                         | Sch20S               |                         | Minimum internal diameters of piping (mm) |
|--------------|------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|---|
|              |      | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) | Retainer (up stream) | Stem Side (down stream) |   |
| mm           | inch |                      |                         |                      |                         |                      |                         |                      |                         |                      |                         |                      |                         |                      |                         |   |
| 80           | 3    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 63.6                                      |
| 100          | 4    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 87.0                                      |
| 125          | 5    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 112.8                                     |
| 150          | 6    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | 142.5                                     |
| 200          | 8    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | ○                       | ○                    | ○                       | 193.3                                     |
| 250          | 10   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | ○                       | ○                    | ○                       | 248.1                                     |
| 300          | 12   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | ○                       | ○                    | ○                       | 297.6                                     |
| 350          | 14   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 323.0                                     |
| 400          | 16   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 371.0                                     |
| 450          | 18   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 418.0                                     |
| 500          | 20   | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 464.0                                     |
| 600          | 24   | —                    | —                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ×                    | ○                       | ×                    | —                       | —                    | —                       | 557.0                                     |

Remark 1: ○=Applicable X=Not applicable

Remark 2: The clearance of disc and pipe is based on API 609 and MSS SP67 80mm to 150mm: 1.5mm, 200mm to 500mm: 3.0mm, 600mm: 6.4mm

Remark 3: In case of "X" shown above, internal pipe diameter or flange is smaller than minimum internal diameter. Consider to put a spacer between a valve and a flange. Consult us.



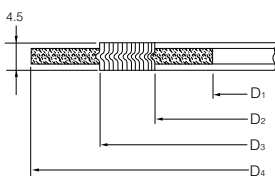
### 304A Piping gasket

- In case of sheet gasket ..... Any standard can be used.
- In case of spiral gasket  
For API, JPI, ANSI flange ..... Any standard gaskets with inner/outer ring can be used.  
For JIS flange ..... Use special spiral gasket shown below.

#### Special spiral gasket for JIS flange size

| Nominal size |      | JIS flange        |     |     |     |     |          |
|--------------|------|-------------------|-----|-----|-----|-----|----------|
|              |      | 5K, 10K, 16K, 20K |     |     | 5K  | 10K | 16K, 20K |
| mm           | inch | D1                | D2  | D3  | D4  | D4  | D4       |
| 80           | 3    | 89                | 97  | 120 | ×   | 134 | 140      |
| 100          | 4    | 115               | 124 | 145 | ×   | 159 | 165      |
| 125          | 5    | 140               | 151 | 177 | ×   | 190 | 202      |
| 150          | 6    | 166               | 178 | 205 | ×   | 220 | 237      |
| 200          | 8    | 217               | 227 | 256 | ×   | 270 | 282      |
| 250          | 10   | 268               | 278 | 315 | ×   | 332 | 354      |
| 300          | 12   | 319               | 331 | 362 | ×   | 377 | 404      |
| 350          | 14   | 356               | 369 | 399 | 412 | 422 | 450      |
| 400          | 16   | 406               | 420 | 457 | 472 | 484 | 508      |
| 450          | 18   | 458               | 472 | 517 | 532 | 539 | 573      |
| 500          | 20   | 508               | 532 | 567 | 582 | 594 | 628      |
| 600          | 24   | 610               | 626 | 672 | 689 | 700 | 734      |

Remark1; X: Not applicable



#### Applicable standard for spiral gasket

| Nominal size |      | Tomoe special |                    |                   | Standard gasket |                    |                   |
|--------------|------|---------------|--------------------|-------------------|-----------------|--------------------|-------------------|
|              |      | JIS 10K       | JIS 16K<br>JIS 20K | ANSI<br>125/150Lb | JIS 10K         | JIS 16K<br>JIS 20K | ANSI<br>125/150Lb |
| mm           | inch |               |                    |                   |                 |                    |                   |
| 80           | 3    | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 100          | 4    | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 125          | 5    | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 150          | 6    | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 200          | 8    | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 250          | 10   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 300          | 12   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 350          | 14   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 400          | 16   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 450          | 18   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 500          | 20   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |
| 600          | 24   | ○             | ○                  | ○                 | ×               | ×                  | ○                 |

Remark 1: ○: Applicable, X: Not applicable

Remark 2: In case a minute leakage of gas (less than 100PPm) becomes a problem, please inquire of our business charge.

### 304A Applicable standard for standard piping gasket

| Nominal size |      | Max. allowable inside diameter (D) | Joint sheet or RPTFE solid gasket (t≤2mm) |         |                    |                   |              | PTFE mold type gasket<br>VALQUA or NICHIAS |         |                    |                   |              |
|--------------|------|------------------------------------|---|---------|--------------------|-------------------|--------------|--|---------|--------------------|-------------------|--------------|
|              |      |                                    | JIS 5K                                    | JIS 10K | JIS 16K<br>JIS 20K | ANSI<br>125/150Lb | JPI<br>150Lb | JIS 5K                                     | JIS 10K | JIS 16K<br>JIS 20K | ANSI<br>125/150Lb | JPI<br>150Lb |
| mm           | inch |                                    |   |         |                    |                   |              |  |         |                    |                   |              |
| 80           | 3    | 97                                 | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 100          | 4    | 124                                | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 125          | 5    | 151                                | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 150          | 6    | 178                                | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 200          | 8    | 227                                | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 250          | 10   | 282                                | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 300          | 12   | 331                                | ×   | ○       | ○                  | ○                 | ○            | ×  | ○       | ○                  | ○                 | ○            |
| 350          | 14   | 362                                | ○   | ○       | ○                  | ○                 | ○            | ○  | ○       | ○                  | ○                 | ○            |
| 400          | 16   | 414                                | ○   | ○       | ○                  | ○                 | ○            | ○  | ○       | ○                  | ○                 | ○            |
| 450          | 18   | 468                                | ○   | ○       | ○                  | ○                 | ○            | ○  | ○       | ○                  | ○                 | ○            |
| 500          | 20   | 518                                | ○   | ○       | ○                  | ○                 | ○            | ○  | ○       | ○                  | ○                 | ○            |
| 600          | 24   | 619                                | ○   | ○       | ○                  | ○                 | ○            | ○  | ○       | ○                  | ○                 | ○            |

Remark; ○: Applicable, X: Not applicable

|                     |
|---------------------|
| Butterfly Valve     |
| TRITEC              |
| TT2                 |
| 334A                |
| 302A/303Q           |
| 304A/304Q           |
| 302Y/304Y           |
| 304M (HLV)          |
| 507V/508V           |
| DTM                 |
| 846T/847T/847Q      |
| 841T/842T           |
| 700Z                |
| 700G/704G/705G      |
| 700GB               |
| 731P/732P/731Q/732Q |
| 71LG                |
| 700E/700K/700S      |
| 704G/722F/720F      |
| KRV                 |
| 227P                |
| 907H/908H (MKT)     |
| 903C                |

# Tom Disco® 304A (Wafer) / 304Q (Lugged)

## 304A Piping Bolts and Nuts Sizes

| Nominal size |      | JIS5K               |               | JIS10K              |                 | JIS16K              |                  |
|--------------|------|---------------------|---------------|---------------------|-----------------|---------------------|------------------|
| mm           | inch | Long Bolts and Nuts | Setting Bolts | Long Bolts and Nuts | Setting Bolts   | Long Bolts and Nuts | Setting Bolts    |
| 80           | 3    | —                   | —             | 8-M16×145           | —               | 8-M20×170           | —                |
| 100          | 4    | —                   | —             | 8-M16×145           | —               | 8-M20×170           | —                |
| 125          | 5    | —                   | —             | 8-M20×170           | —               | 8-M22×190           | —                |
| 150          | 6    | —                   | —             | 8-M20×170           | —               | 12-M22×190          | —                |
| 200          | 8    | —                   | —             | 12-M20×170          | —               | 12-M22×190          | —                |
| 250          | 10   | —                   | —             | 12-M22×190          | —               | 12-M24×210          | —                |
| 300          | 12   | —                   | —             | 16-M22×190          | —               | 16-M24×225          | —                |
| 350          | 14   | 12-M22×210          | —             | 16-M22×210          | —               | 16-M30(P3)×245      | —                |
| 400          | 16   | 16-M22×220          | —             | 16-M24×235          | —               | 16-M30(P3)×265      | —                |
| 450          | 18   | 16-M22×230          | ※ 1           | 16-M24×250          | 4-M24×84×60     | 16-M30(P3)×280      | 4-M30(P3)× 95×65 |
|              |      |                     |               |                     | 4-M24×58×50     |                     | 4-M30(P3)× 73×50 |
| 500          | 20   | 16-M22×245          | 4-M22×80×50   | 16-M24×260          | 4-M24×90×60     | 16-M30(P3)×300      | 4-M30(P3)×105×65 |
|              |      |                     | 4-M22×60×50   |                     | 4-M24×70×60     |                     | 4-M30(P3)× 81×50 |
| 600          | 24   | 16-M24×280          | 4-M24×84×60   | 20-M30(P3)×300      | 4-M30(P3)×81×50 | 20-M36(P3)×345      | 4-M36(P3)×100×60 |
|              |      |                     | 4-M24×65×50   |                     | 4-M30(P3)×65×50 |                     | 4-M36(P3)× 82×50 |

| Nominal size |      | JIS20K              |                  | ANSI 150Lb, API/JPI 150Lb |                      |
|--------------|------|---------------------|------------------|---------------------------|----------------------|
| mm           | inch | Long Bolts and Nuts | Setting Bolts    | Long Bolts and Nuts       | Setting Bolts        |
| 80           | 3    | 8-M20×170           | —                | 4-U5/8-11UNC×155          | —                    |
| 100          | 4    | 8-M20×170           | —                | 8-U5/8-11UNC×155          | —                    |
| 125          | 5    | 8-M22×190           | —                | 8-U3/4-10UNC×175          | —                    |
| 150          | 6    | 12-M22×190          | —                | 8-U3/4-10UNC×175          | —                    |
| 200          | 8    | 12-M22×190          | —                | 8-U3/4-10UNC×205          | —                    |
| 250          | 10   | 12-M24×210          | —                | 12-U7/8- 9UNC×215         | —                    |
| 300          | 12   | 16-M24×225          | —                | 12-U7/8- 9UNC×215         | —                    |
| 350          | 14   | 16-M30(P3)×260      | —                | 12-U1 - 8UNC×240          | —                    |
| 400          | 16   | 16-M30(P3)×280      | —                | 16-U1 - 8UNC×255          | —                    |
| 450          | 18   | 16-M30(P3)×300      | 4-M30(P3)×105×65 | 16-U1 1/8- 8UN×280        | —                    |
|              |      |                     | 4-M30(P3)× 81×50 |                           |                      |
| 500          | 20   | 16-M30(P3)×315      | 4-M30(P3)×110×60 | 16-U1 1/8- 8UN×295        | 4-U1 1/8- 8UN×105×50 |
|              |      |                     | 4-M30(P3)× 90×65 |                           | 4-U1 1/8- 8UN× 80×50 |
| 600          | 24   | 20-M36(P3)×360      | 4-M36(P3)×108×60 | 16-U1 1/4- 8UN×340        | 4-U1 1/4- 8UN×100×50 |
|              |      |                     | 4-M36(P3)× 90×50 |                           | 4-U1 1/4- 8UN× 90×50 |

※ 1 Tapped drilling is also applicable.  
 Remark: Use SNB 7/S45C (A193 B7/A, 194 2H) SUS304/SUS304  
 For long bolt, use full thread bolt.  
 For hexagon nut, use heavy nut.  
 A metric screw should have 3 pitches if its nominal diameter exceeds M30.  
 A unified screw should have 8 threads per inch if its nominal diameter exceeds 1 inch.  
 Hexagon bolts (set bolts) are indicated with the retainer side on the up side and the stem side on down side.

Examples

Long bolts: 12 - M22 × 185  
 N M L

Setting bolts: 4 - M30 × 95 × 65  
 (Hexagon bolts) N M L S

