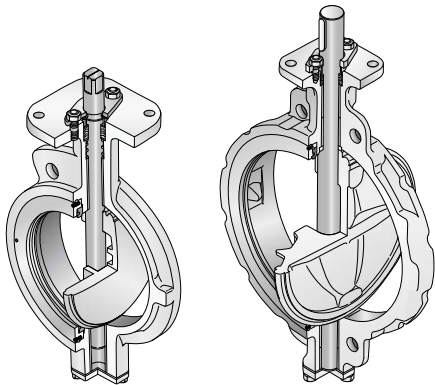


High Performance Butterfly Valves  
to Suit API Standard class 150 Rating

Tom Disco

**304A** Wafer

**304Q** Lugged



80mm to 300mm

350mm to 600mm



Lock Lever



Worm Gear



Pneumatic  
Cylinder



Motorized

## Features and Benefits

### Unique stopper structure

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

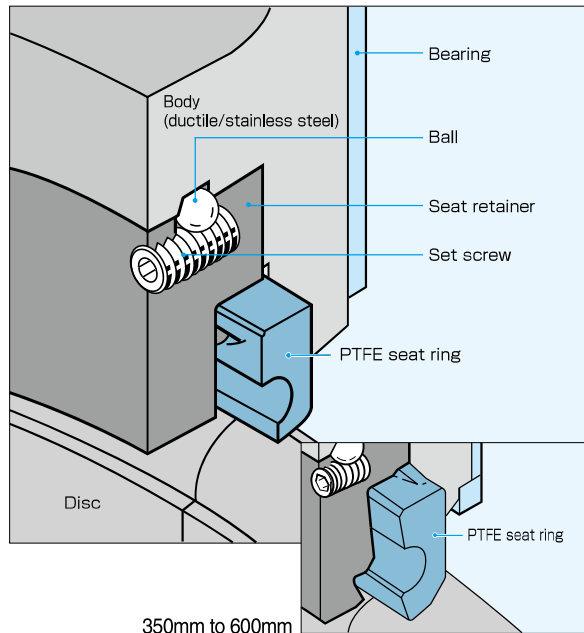
The ball lock method is used to simplify replacement of the seat ring.

### 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



Butterfly Valve

TRITEC

TT2

334A

344Q

302A/303Q

304A/304Q

304YA

302Y/304Y

304M

(HLV)

507V/508V

DTM

846T/847T/847Q

841T/842T

700Z

700G/704G/705G

72WG/72SG/72LG

731P/732P/

732Q/752W

731R

700E/700K/700S

704G/722F/720F

227P

907T/908H

(MKT)

903L/901C/

905C (Bata-check)

## Standard Specifications

| Valve nominal size*1      | 80mm to 300mm  |  | 350mm to 600mm (5 sizes)  |                                  |                    |
|---------------------------|--|--|---|----------------------------------|--------------------|
| Face-to-face dimensions   | API 609 (class 150) JPI-7S-83(class 150)<br>※ 125mm is as per JIS B 2002(series 46)/ISO 5752(series 20)  |  | API 609 (class 150), JPI-7S-83(class 150)<br>ISO 5752 (25 series), JIS B 2002 (47 series)                   |                                  |                    |
| Connection                | Wafer type / Lugged type (option: flanged type)  |  |   |                                  |                    |
| Pressure rating           | ASME B16.34 Class 150 (350mm and over: Seat rating is designed to suit APIII 609 Class 150 above zero degree C   |  |   |                                  |                    |
| Flange accommodation      | JIS 10K/16K/20K, ASME Class 125/150, API/JPI Class 150,<br>BS 10 Table F, BS 4504 PN 10/16, DIN PN 10/16   |  | JIS 5K/10K/16K/20K, ASME Class 125/150, API/JPI Class 150,<br>BS 10 Table F, BS 4504 PN 10/16, DIN PN 10/16 |                                  |                    |
| Body shell test           | Max 3.1MPa as per API 598 by hydraulic   |  |   |                                  |                    |
| Seat leak test            | 0.7MPa as per API 598 by Air. High pressure closure test is available upon request.  |  |   |                                  |                    |
| Max. working pressure*2   | 2.0MPa   |  |   |                                  |                    |
|                           | Bi-directional flow (Flow to disc side is recommended.)  |  |   |                                  |                    |
|                           | Max. working pressure at reverse flow:<br>2.0MPa (80mm to 200mm)<br>1.6MPa (250mm and 300mm)   |  | Max. working pressure at reverse flow:Please consult us.  |                                  |                    |
| 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)  |  |   |                                  |                    |
| Standard materials*3      | ISO 5208 rate A, API 598-1996  |  |   |                                  |                    |
|                           | 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<br>SUS 630            | SUS 304<br>SUS 630 |
|                           | Seat ring  | RPTFE as standard, White PTFE as an option |   |                                  |                    |
| Gland packing             | RPTFE  |  | Graphite  |                                  |                    |
| 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 304Y is available for 50mm and 65mm.

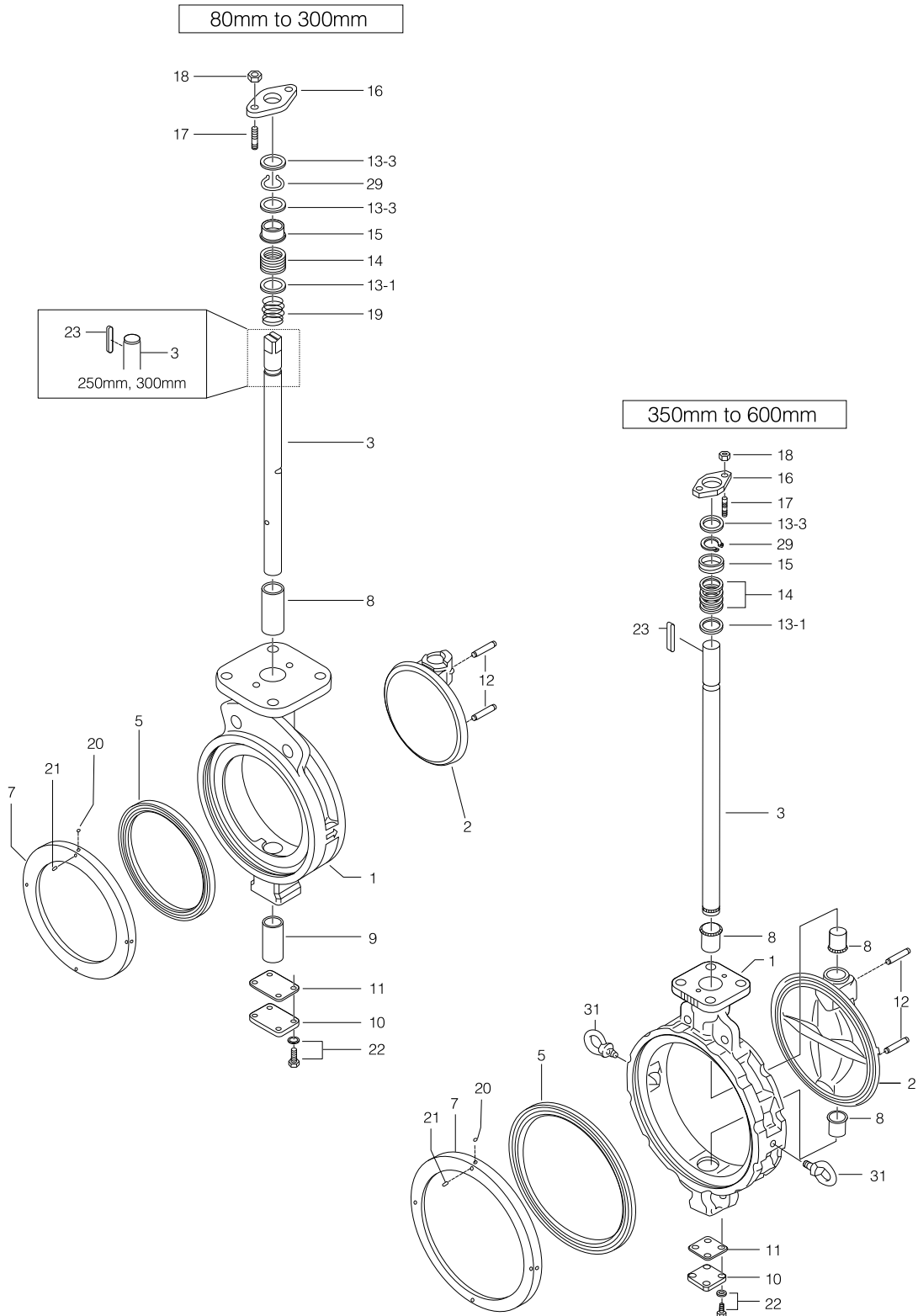
※2 Please consult us if the pressure exceeds 1.6MPa.

※3 Please refer to the pressure rating chart and stem material chart in the following pages. Other materials are available. Please consult us.

※It is possible that seat leakage occur when fluid (e.g. powder and/or liquid) is solidified by working temperature and other cause. Consult us.  
Please note that use with vertical line such as bottom area of discharge spout of hopper, and tank.

# 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 (Part #21 Set screw).

Butterfly Valve

**TRITEC**

**TT2**

**334A**

**344Q**

**302A/303Q**

**304A/304Q**

**304YA**

**302Y/304Y**

**304M**

(HLV)

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**72WG/72SG/72LG**

**731P/732P/  
732Q/752W**

**731R**

**700E/700K/700S**

**704G/722F/720F**

**227P**

**907T/908H**

(MKT)

**903L/901C/  
905C (Bata-check)**

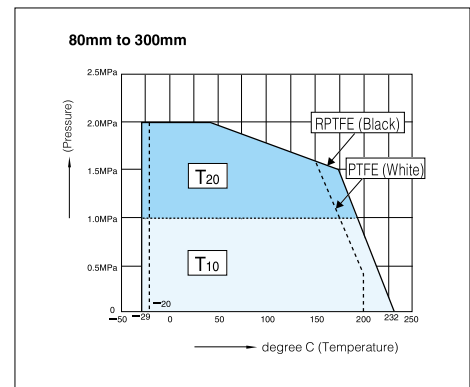
# Tom Disco 304A (Wafer)/304Q (Lugged)

## 304A Actuator selection chart

### 80mm to 300mm

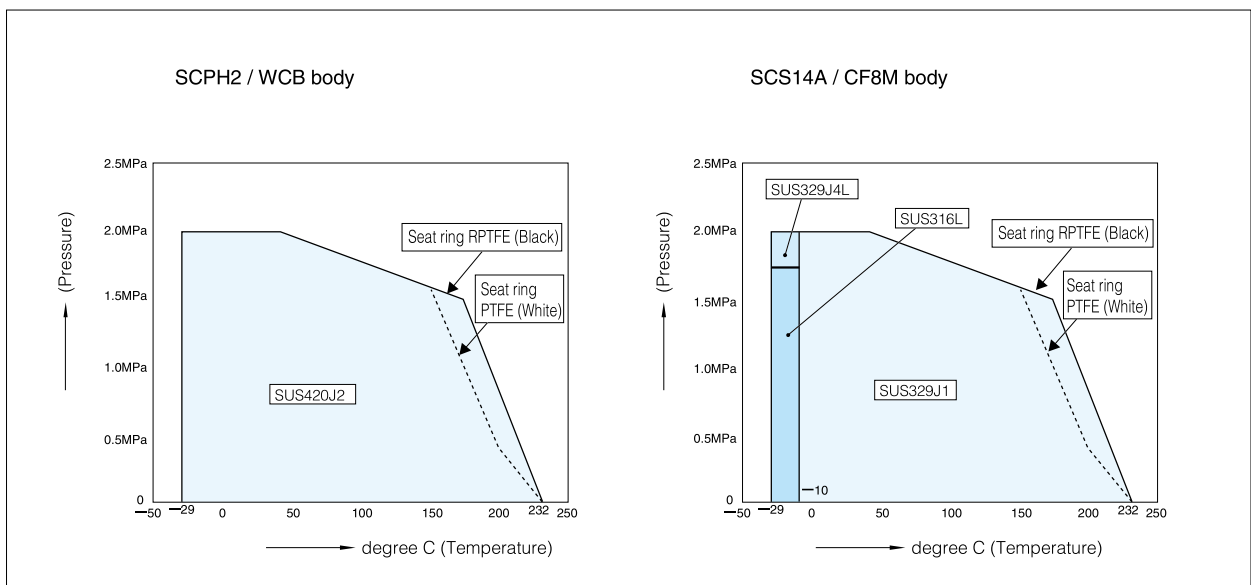
| Model          | Category | Size (mm / inch) |     |         |     |         |     |        |  |      |  |
|----------------|----------|------------------|-----|---------|-----|---------|-----|--------|--|------|--|
|                |          | 80               | 100 | 125     | 150 | 200     | 250 | 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

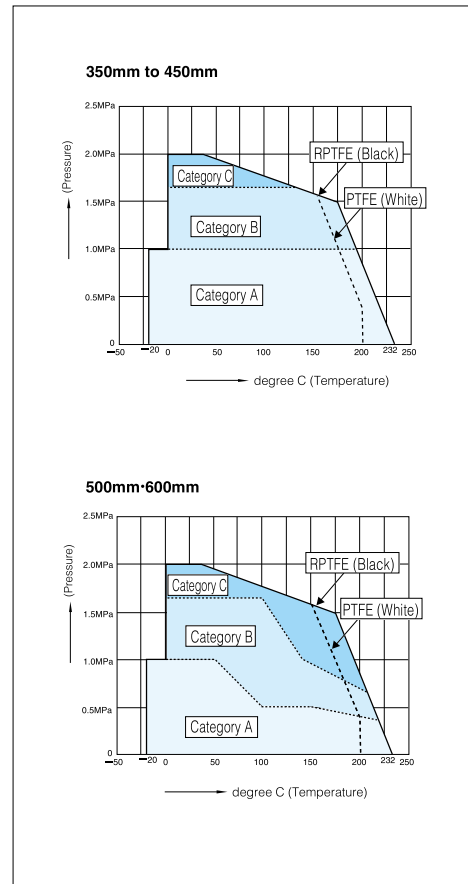


## 304A Actuator selection chart

### 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-3               |                      | DGH-4               | DGH-4.5       |     |
|       | C        | DGH-3               |                      | DGH-4+R/G5          | DGH-4.5 +R/G5 |     |
| 3A    | A        | TGA-125             | TGA-140              |                     | TGA-180       |     |
|       | B        | TGA-140             | TGA-160              |                     | TGA-200       |     |
|       | C        | TGA-140             | TGA-160              | TGA-180             | TGA-220       |     |
| 3U,3K | A        | TG-14S              |                      | TG-20S              |               |     |
|       | B        | TG-14S              |                      | TG-20S              |               |     |
|       | C        | TG-14S              |                      | TG-20S              |               |     |
| 4I    | A        | 4I-4                |                      |                     |               |     |
|       | B        | 4I-4                |                      |                     |               |     |
|       | C        | 4I-4                |                      |                     |               |     |
| 4L    | A        | LTKD-01 0.2kW/DGH-3 | LTKD-02 0.4kW/DGH-4  | LTKD-02 1.5kW/DGH-4 |               |     |
|       | B        | LTKD-02 0.4kW/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 | LTKD-05 1.5kW/DGH-5 |               |     |

### 304A Pressure rating



Butterfly Valve

**TRITEC**

**TT2**

**334A**

**344Q**

**302A/303Q**

**304A/304Q**

**304YA**

**302Y/304Y**

**304M (HLV)**

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**72WG/72SG/72LG**

**731P/732P/732Q/752W**

**731R**

**700E/700K/700S**

**704G/722F/720F**

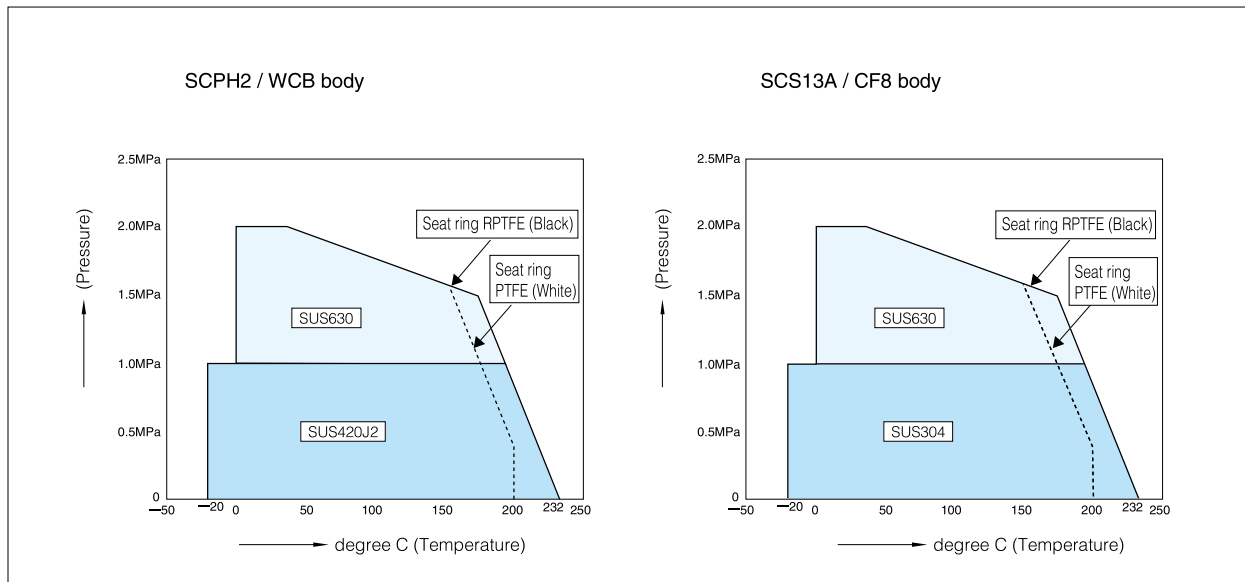
**227P**

**907T/908H (MKT)**

**903L/901C/905C (Beta-check)**

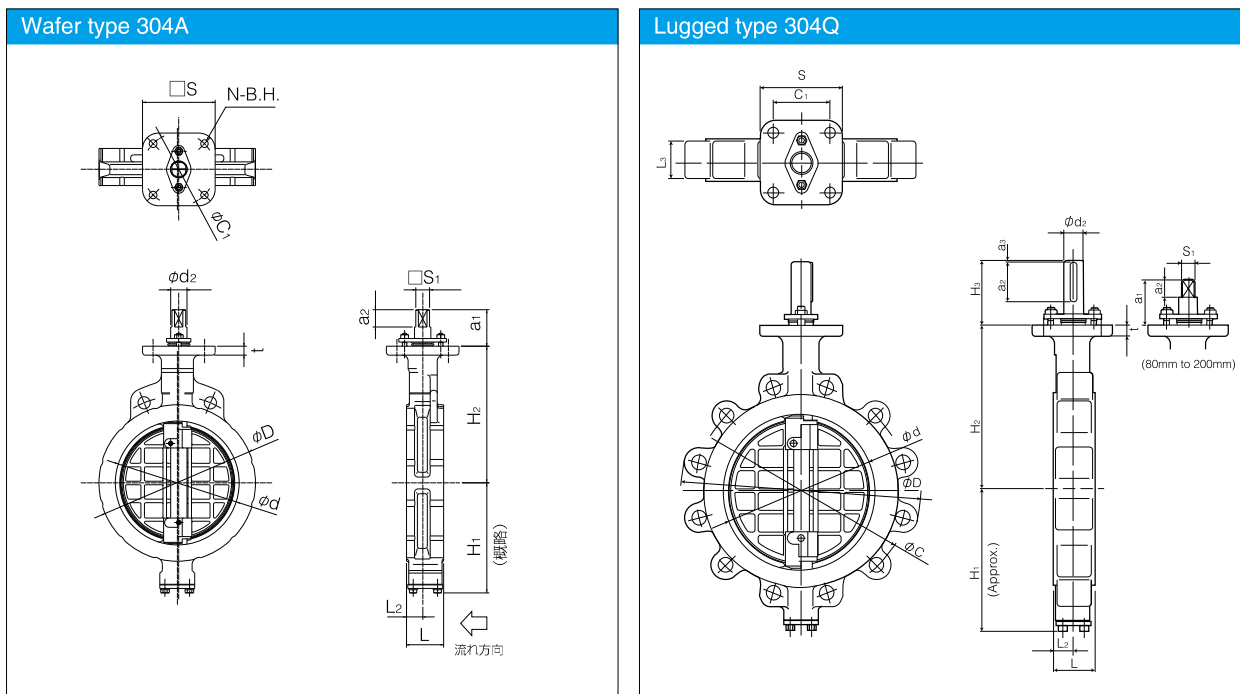
## 304A Standard stem material

### 350mm to 600mm



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

## Dimension List



### 304A Dimension List

| Stem shape | Nominal size |      | Dimension (mm) |          |     |                |                |                |                |                |               |            |    |                |    |                     | 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  | ISO 5211 Top Flange |                     |
| 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                |
| 02         | 200          | 8    | 213            | 269      | 64  | 28             | 190            | 235            | 63             | 30             | 24            | 28         | —  | —              | 15 | F12                 | 19                  |
|            | 250          | 10   | 263            | 330      | 71  | 31             | 236            | 283            | 108            | 65.3           | —             | 32         | 10 | 3              | 18 | F14                 | 33                  |
|            | 300          | 12   | 315            | 381      | 81  | 35             | 246            | 310            | 111            | 70.3           | —             | 35         | 10 | 3              | 18 | F14                 | 42                  |
|            | 350          | 14   | 350            | 416      | 92  | 39.5           | 308            | 340            | 113            | 70             | —             | 38         | 10 | 3              | 18 | F14                 | 61                  |
|            | 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | 113            | 70             | —             | 42         | 12 | 3.5            | 18 | F14                 | 88                  |
|            | 450          | 18   | 450            | 534      | 114 | 43             | 366            | 406            | 141.5          | 60             | —             | 45         | 12 | 3.5            | 20 | F16                 | 135                 |
|            | 500          | 20   | 500            | 589      | 127 | 50             | 405            | 442            | 141.5          | 70             | —             | 49         | 14 | 4              | 20 | F16                 | 173                 |
|            | 600          | 24   | 600            | 693      | 154 | 64             | 461            | 493            | 141.5          | 70             | —             | 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 |
|------------|------------------------------------|

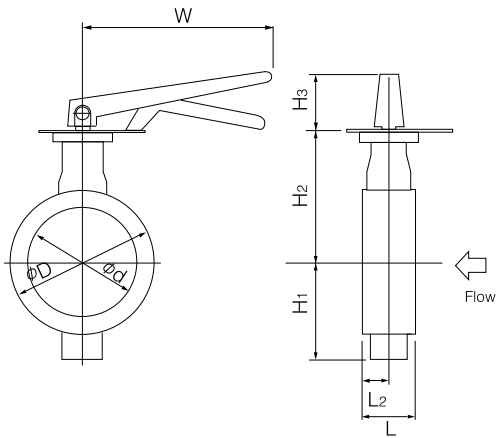
### 304Q Dimension List

| 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             | 189      | 48  | 23             | 38             | 95             | 147            | 52.5           | 16         | 16.5           | —              | 14             | 102 | 15 | 72             | 152.5               | 6        |
| 100          | 4    | 112            | 227      | 54  | 24             | 46             | 120            | 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

344Q

302A/303Q

304A/304Q

304YA

302Y/304Y

304M

(HLV)

507V/508V

DTM

846T/847T/847Q

841T/842T

700Z

700G/704G/705G

72WG/72SG/72LG

731P/732P/  
732Q/752W

731R

700E/700K/700S

704G/722F/720F

227P

907T/908H  
(MKT)

903L/901C/  
905C (Bata-check)

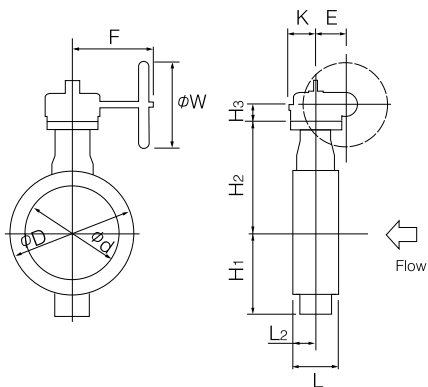


# Tom Disco 304A (Wafer)/304Q (Lugged)

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



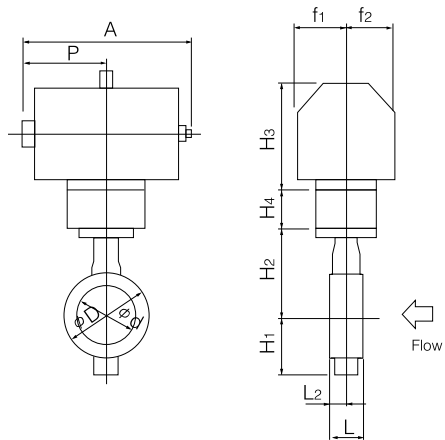
## 2U/2S Installation direction

|   |   |   |   |
|---|---|---|---|
| <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   |

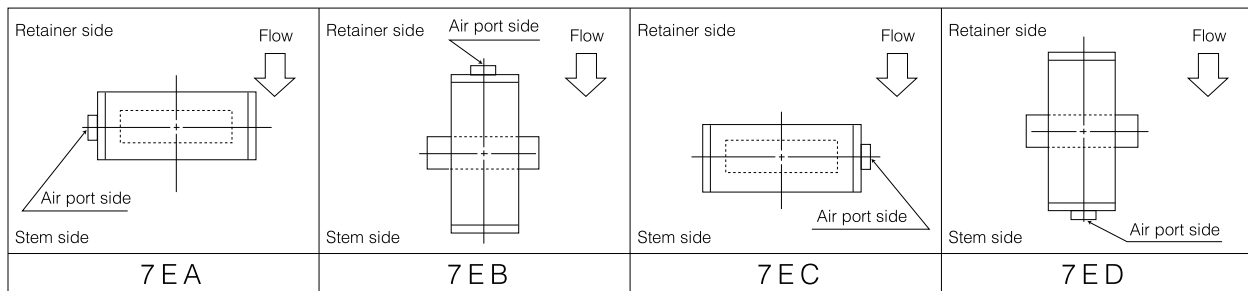
## Double-acting pneumatic cylinder type 304A-7E (80mm to 300mm)

| 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                |

### 304A-7E



### 7E Installation direction



Butterfly Valve

**TRITEC**

**TT2**

**334A**

**344Q**

**302A/303Q**

**304A/304Q**

**304YA**

**302Y/304Y**

**304M**

(HLV)

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**72WG/72SG/72LG**

**731P/732P/  
732Q/752W**

**731R**

**700E/700K/700S**

**704G/722F/720F**

**227P**

**907T/908H**

(MKT)

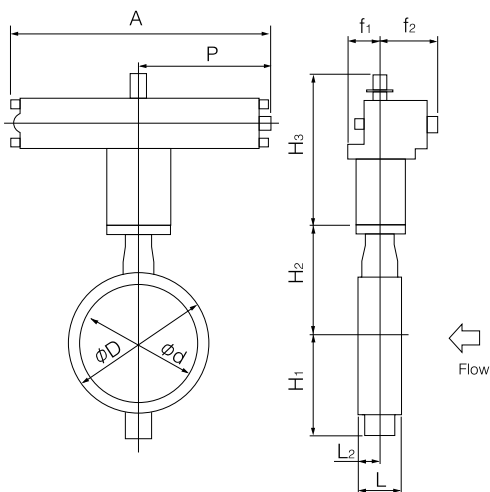
**903L/901C/  
905C (Bata-check)**

# 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  | 432 | 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  | 432 | 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  | 432 | 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  | 432 | 100            | 180            | TGA-140       | 246               |
|              |      |                |          |     |                |                |                | B        | 530            | 939  | 483 | 130            | 202            | TGA-160       | 302               |
|              |      |                |          |     |                |                |                | C        | 543            | 1069 | 543 | 130            | 218            | TGA-180       | 330               |
| 600          | 24   | 600            | 693      | 154 | 64             | 461            | 493            | A        | 543            | 1069 | 543 | 130            | 218            | TGA-180       | 431               |
|              |      |                |          |     |                |                |                | B        | 610            | 1175 | 599 | 160            | 253            | TGA-200       | 475               |
|              |      |                |          |     |                |                |                | C        | 640            | 1263 | 642 | 160            | 270            | TGA-220       | 535               |

### 304A-3A



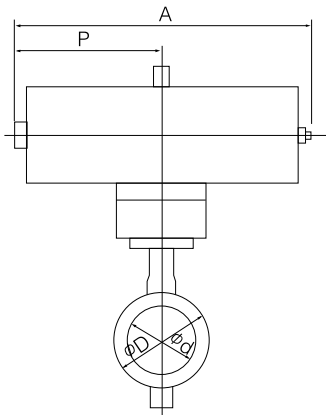
### 3A Installation direction

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

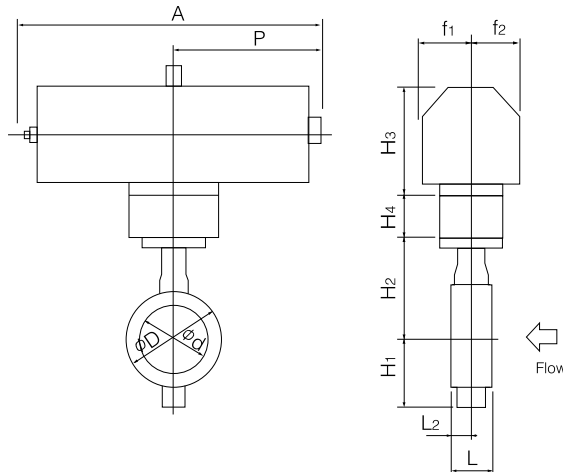
Single-acting pneumatic cylinder type 304A-7G (Air to open: 80mm to 200mm) / 304A-7F (Air to close: 80mm to 200mm)

| 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                |

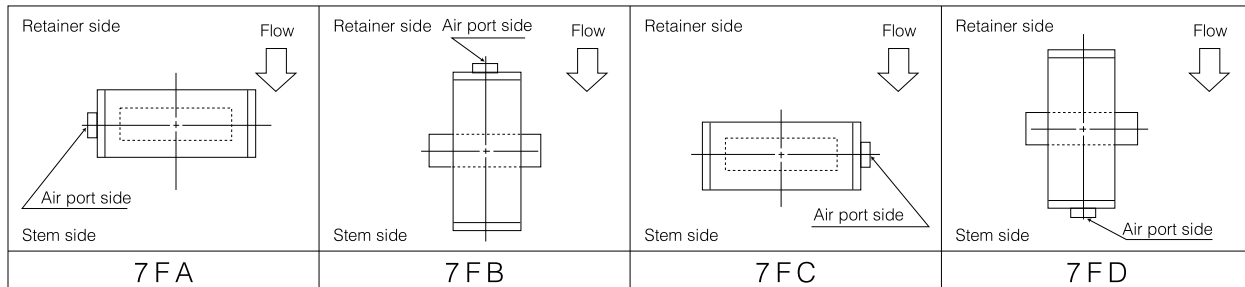
304A-7F



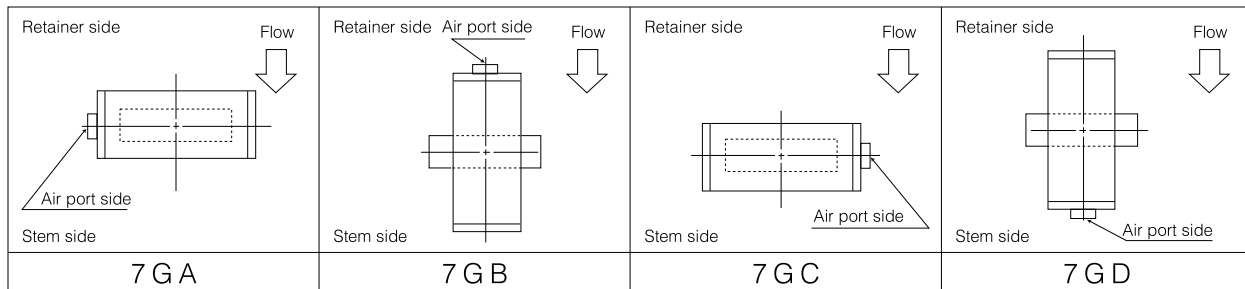
304A-7G



7F Installation direction



7G Installation direction



Butterfly Valve

**TRITEC**

**TT2**

**334A**

**344Q**

**302A/303Q**

**304A/304Q**

**304YA**

**302Y/304Y**

**304M (HLV)**

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**72WG/72SG/72LG**

**731P/732P/732Q/752W**

**731R**

**700E/700K/700S**

**704G/722F/720F**

**227P**

**907T/908H (MKT)**

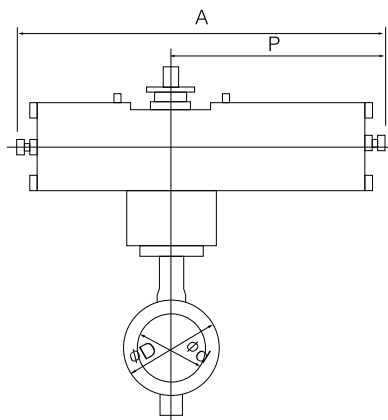
**903L/901C/905C (Bata-check)**

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

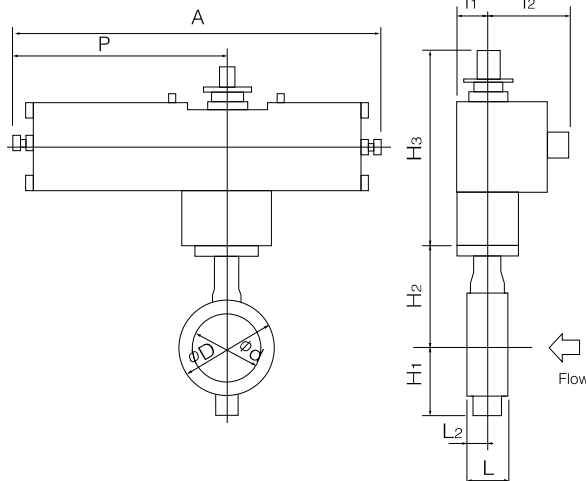
Single-acting pneumatic cylinder type 304A-3U (Air to open: 200mm to 600mm) / 304A-3K (Air to close: 200mm to 600mm)

| 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        | 123               |
| 250          | 10   | 263            | 330      | 71  | 31             | 236            | 283            | T <sub>10</sub> , T <sub>20</sub> | 417            | 1080 | 720  | 94             | 206            | TG-12S        | 138               |
| 300          | 12   | 315            | 381      | 81  | 35             | 246            | 310            | T <sub>10</sub> , T <sub>20</sub> | 417            | 1080 | 720  | 94             | 206            | TG-12S        | 147               |
| 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

|       |       |       |       |
|-------|-------|-------|-------|
|       |       |       |       |
| 3 K A | 3 K B | 3 K C | 3 K D |

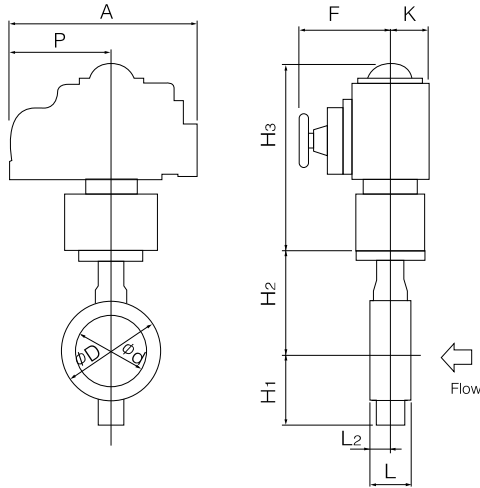
## 3U Installation direction

|       |       |       |       |
|-------|-------|-------|-------|
|       |       |       |       |
| 3 U A | 3 U B | 3 U C | 3 U D |

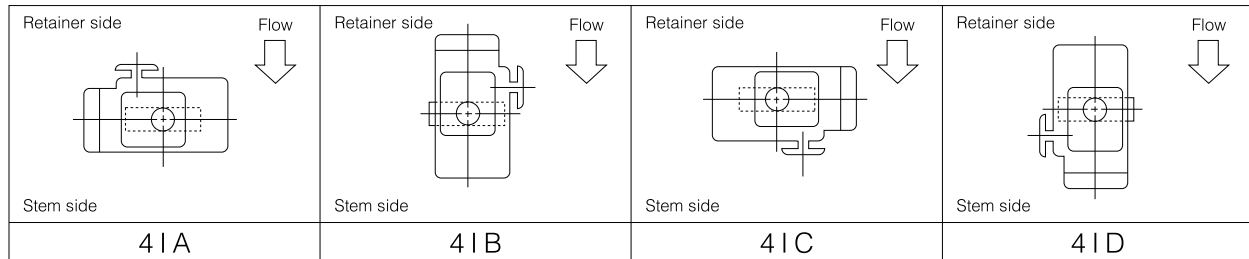
## Single phase electric motor type 304A-4 I (80mm to 400mm)

| 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> | 276            | 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                              | 448            | 388 | 223 | 246 | 136        | 4 I-4             | 96   |
| 400          | 16   | 400            | 475      | 102 | 39             | 348            | 372            | A                                 | 448            | 388 | 223 | 246 | 136        | 4 I-4             | 123  |

### 304A-4 I



### 4 I Installation direction



Butterfly Valve

**TRITEC**

**TT2**

**334A**

**344Q**

**302A/303Q**

**304A/304Q**

**304YA**

**302Y/304Y**

**304M**

(HLV)

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**72WG/72SG/72LG**

**731P/732P/  
732Q/752W**

**731R**

**700E/700K/700S**

**704G/722F/720F**

**227P**

**907T/908H**

(MKT)

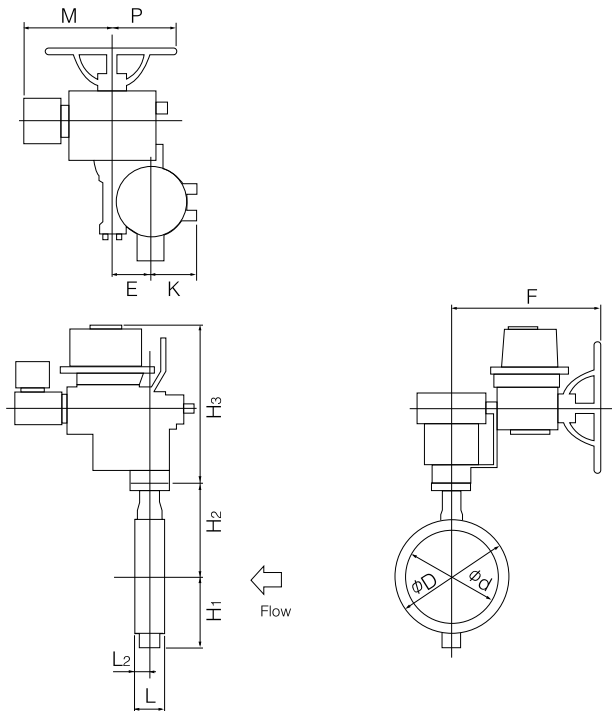
**903L/901C/  
905C (Bata-check)**

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

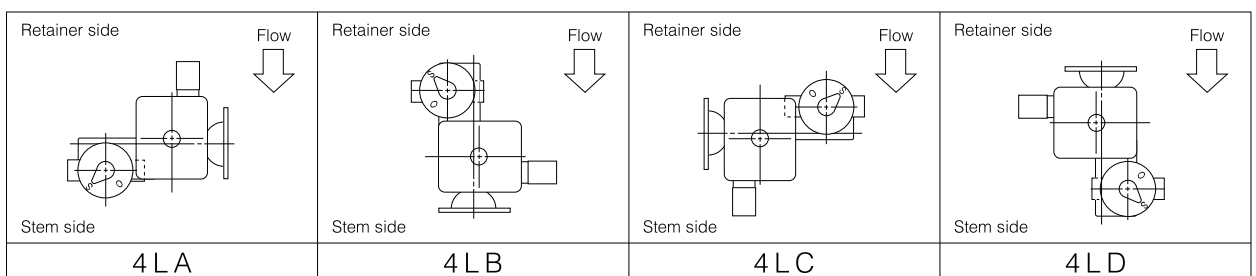
## Three phase motor actuator type 304A-4L (350mm to 600mm)

| 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 | 363 | 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 | 363 | 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  | 350 |
|              |      |                |          |     |                |                |                | 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 |

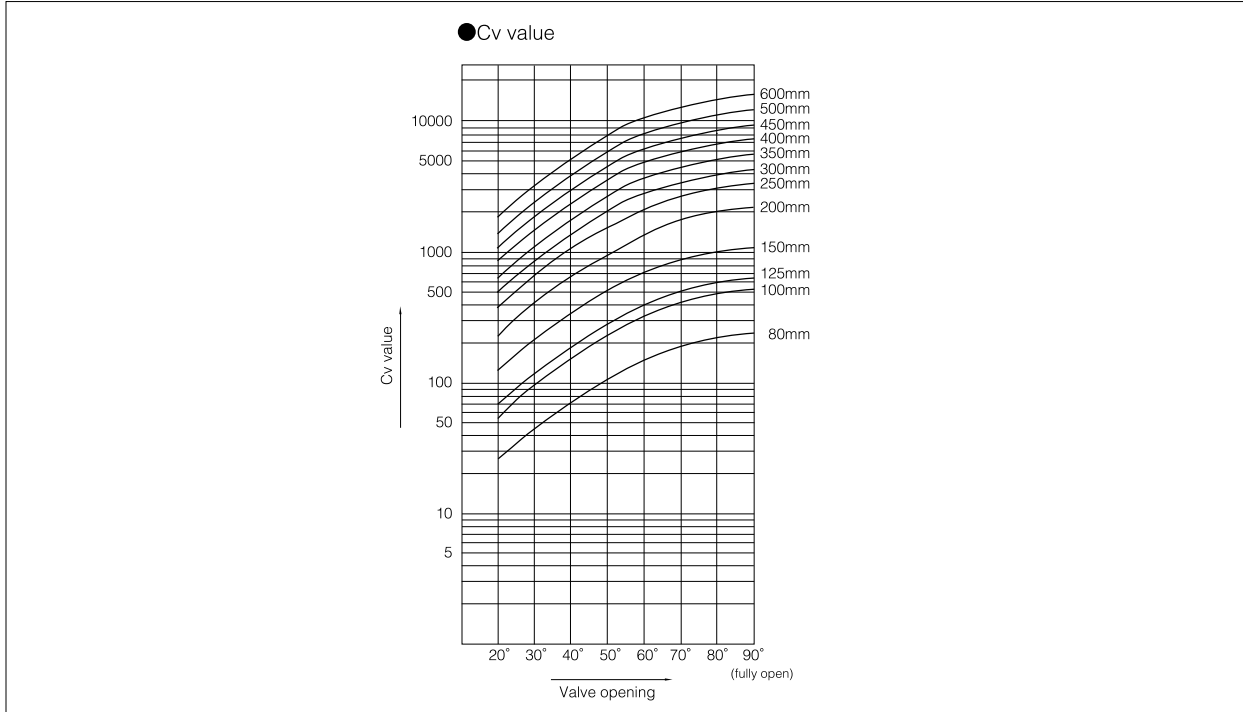
### 304A-4L



### 4L Installation direction



### 304A Cv value



### 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 |

Butterfly Valve

**TRITEC**

**TT2**

**334A**

**344Q**

**302A/303Q**

**304A/304Q**

**304YA**

**302Y/304Y**

**304M**

(HLV)

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**72WG/72SG/72LG**

**731P/732P/732Q/752W**

**731R**

**700E/700K/700S**

**704G/722F/720F**

**227P**

**907T/908H**

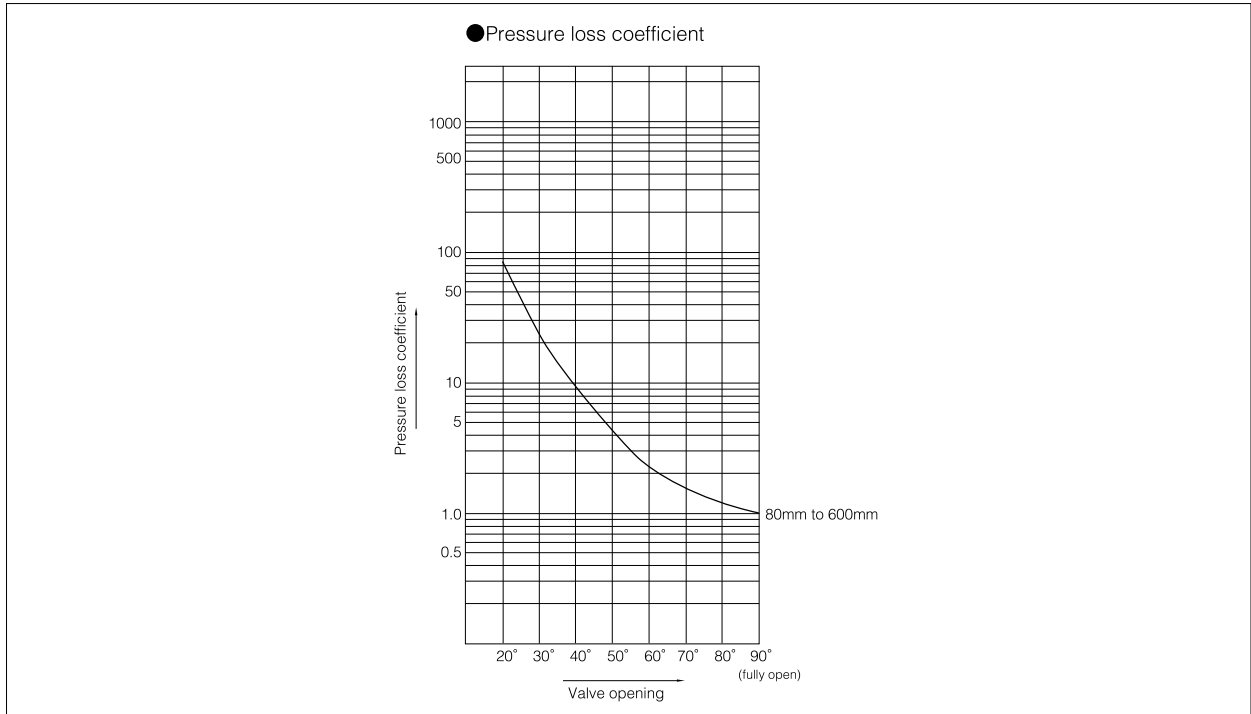
(MKT)

903L/901C/905C (Bata-check)



# 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 Flange accommodation

| Nominal size |      | JIS |     |     |     | ASME/API/JPI<br>Class 150 | 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>344Q</b>                        |
| <b>302A/303Q</b>                   |
| <b>304A/304Q</b>                   |
| <b>304YA</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>72WG/72SG/72LG</b>              |
| <b>731P/732P/732Q/752W</b>         |
| <b>731R</b>                        |
| <b>700E/700K/700S</b>              |
| <b>704G/722F/720F</b>              |
| <b>227P</b>                        |
| <b>907T/908H (MKT)</b>             |
| <b>903L/901C/905C (Bata-check)</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) |
|--------------|------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|---|
| mm           | inch | 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) |   |
| 80           | 3    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       |   |
| 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                                       |

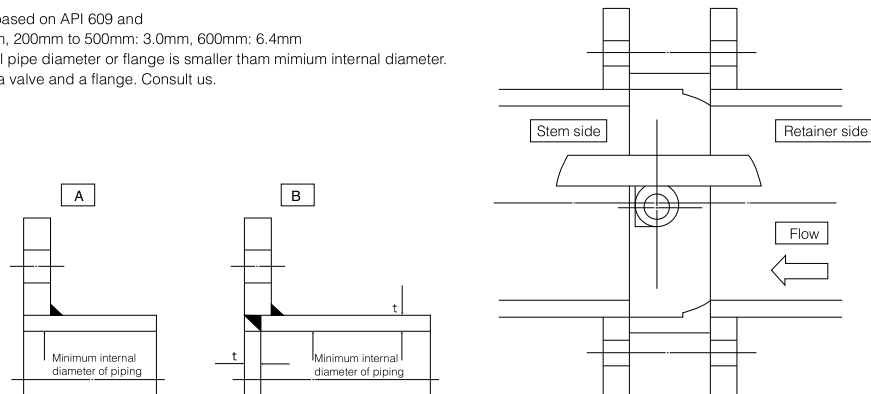
## 304A Applicable pipe list in case of **B**

| Nominal size |      | SGP                  |                         | Sch20                |                         | Sch40                |                         | Sch60                |                         | Sch80                |                         | Sch10S               |                         | Sch20S               |                         | Minimum internal diameters of piping (mm) |
|--------------|------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|---|
| mm           | inch | 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) |   |
| 80           | 3    | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       | ○                    | ○                       |   |
| 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.



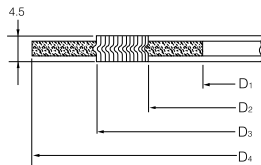
### 304A Piping gasket

- In case of sheet gasket ..... Any standard can be used.
- In case of spiral gasket
  - For ASME / API / JPI 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 | 146 | ×   | 159      | 165 |
| 125          | 5    | 140               | 151 | 177 | ×   | 190      | 202 |
| 150          | 6    | 166               | 178 | 207 | ×   | 220      | 237 |
| 200          | 8    | 217               | 227 | 257 | ×   | 270      | 282 |
| 250          | 10   | 268               | 282 | 318 | ×   | 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 | ASME<br>Class 125/150 | JIS 10K         | JIS 16K<br>JIS 20K | ASME<br>Class 125/150 |
| 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 | ASME<br>Class 125/150 | JPI<br>150Lb | JIS 5K                                     | JIS 10K | JIS 16K<br>JIS 20K | ASME<br>Class 125/150 | 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

※ All standard joint seats and PTFE cut gaskets can be used.

※ Only VALQUA flawless gaskets (Part No.: 7030/7031/7035) and NICHIAS PTFE cushion gaskets (Part No.: 9010/9011) can be used. (Products from other manufacturers cannot be used due to their dimensions.)

Butterfly Valve

TRITEC

TT2

334A

344Q

302A/303Q

304A/304Q

304YA

302Y/304Y

304M

(HLV)

507V/508V

DTM

846T/847T/847Q

841T/842T

700Z

700G/704G/705G

72WG/72SG/72LG

731P/732P/732Q/752W

731R

700E/700K/700S

704G/722F/720F

227P

907T/908H

(MKT)

903L/901C/905C (Bata-check)

# 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              |                  | ASME / API / JPI Class 150 |                      |
|--------------|------|---------------------|------------------|----------------------------|----------------------|
| 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

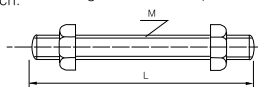
Long bolts: 12 - M22 × 185

N
M
L

Setting bolts: 4 - M30 × 95 × 65

(Hexagon bolts) N M L S

Long bolts and nuts (full thread)



Setting bolts (Hexagon bolts)

