

## KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

A heavy duty industrial resilient seated butterfly valve



### FEATURES

- Wafer and lugged body design with face-to-face dimension, according to EN 558 Series 20 and API 609.
- Designed according to EN 593 and API 609.
- The seat is field replaceable and fully isolates the body and shaft from the flow.
- Primary shaft sealing exceeds the pressure rating of the valve and prevents leakage through shaft area to atmosphere.
- A secondary shaft sealing provides back-up safety.
- A molded-in O-ring in the seat for flange sealing eliminates the need for gaskets.
- Shaft seals prevent moisture penetrating into the shaft area.
- The two piece shaft allows for a thin disc and provides minimal obstruction to flow (up to DN 300).
- Rounded polished disc edge gives full concentric sealing, lower torques, longer seat life and drop-tight shut-off.
- Body locating holes allow ease of installation and centering between the flanges.
- Extended body neck allows for pipe insulation.
- Actuator flange according to ISO 5211.
- Top and bottom shaft bearings for optimized support and minimum friction and decreased torque.
- Top bushing absorbs actuator side thrust loads.
- All valves comply to Pressure Equipment Directive (2014/68/EU) Module B + D, CE Marking.
- Available approvals: NSF/ANSI 61, ACS, KIWA, WRAS, DVGW-G, ABS, CU-TR.
- Sizes DN 20 up to DN 40 might deviate from the above mentioned features. Please contact factory.

### GENERAL APPLICATION

Water, air, dry bulk conveying etc. These valves are for any service where a drop-tight shut-off with maximum flow area is required.

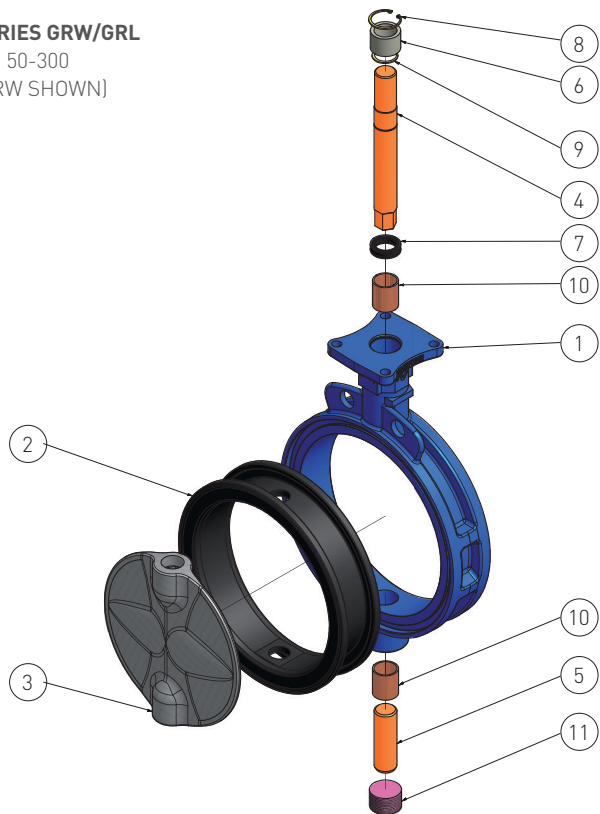
### TECHNICAL DATA

|                       |                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------|
| Sizes:                | DN 20 - 900                                                                                      |
| Pressure:             | 16 bar DN 20 - 300<br>10 bar DN 350 - 900<br>Reinforced seat:<br>16 bar DN 350 - 600             |
| End of line:          | 10 bar DN 20 - 300<br>6 bar DN 350 - 900<br>Reinforced seat:<br>10 bar DN 350 - 600              |
| Vacuum service:       | 0.4 bar                                                                                          |
| Temperature:          | -28°C to 160°C                                                                                   |
| Flange accommodation: | PN 6/10/16<br>ASME 125/150<br>JIS 10K<br>JIS 16K<br>BS Table E<br>AS4087 PN 16<br>AS2129 Table E |

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

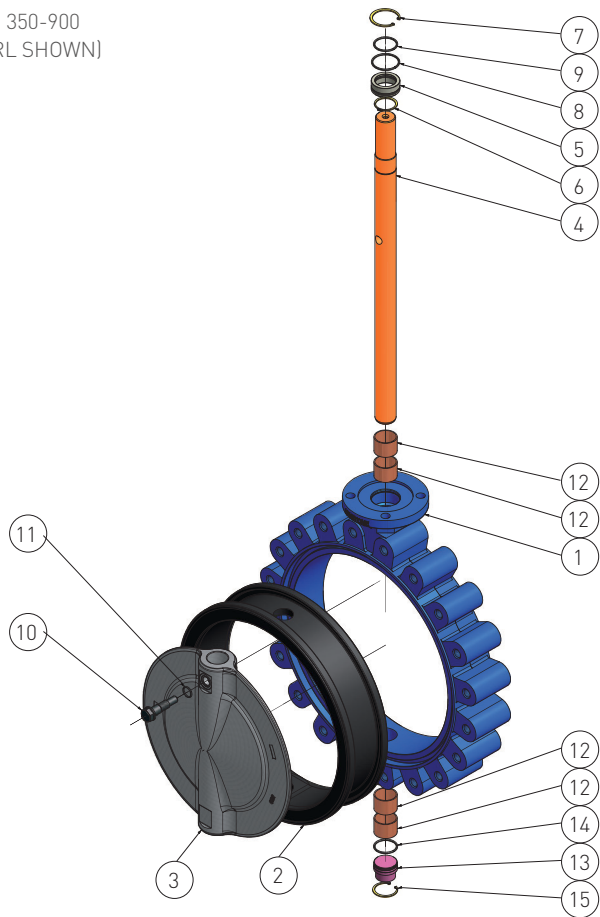
GRW/GRL (ISO)

**SERIES GRW/GRL**  
 DN 50-300  
 (GRW SHOWN)



| PARTS LIST |     |                         |
|------------|-----|-------------------------|
| Item       | Qty | Description             |
| 1          | 1   | Body                    |
| 2          | 1   | Seat                    |
| 3          | 1   | Disc                    |
| 4          | 1   | Upper shaft             |
| 5          | 1   | Lower shaft             |
| 6          | 1   | Upper bushing           |
| 7          | 1   | Packing                 |
| 8          | 1   | Body circlip            |
| 9          | 1   | Shaft circlip           |
| 10         | 2   | Upper and lower bearing |
| 11         | 1   | Plug                    |

DN 350-900  
 (GRL SHOWN)



| PARTS LIST |     |                         |
|------------|-----|-------------------------|
| Item       | Qty | Description             |
| 1          | 1   | Body                    |
| 2          | 1   | Seat                    |
| 3          | 1   | Disc                    |
| 4          | 1   | Shaft                   |
| 5          | 1   | Bushing                 |
| 6          | 1   | Shaft circlip           |
| 7          | 1   | Body circlip            |
| 8          | 1   | Body O-ring             |
| 9          | 1   | Shaft O-ring            |
| 10         | 1   | Disc screw              |
| 11         | 1   | Disc screw O-ring       |
| 12         | 4*  | Upper and lower bearing |
| 13         | 1   | Plug                    |
| 14         | 1   | Plug O-ring             |
| 15         | 1   | Plug circlip            |

**NOTE**  
 \* Only 2 bearings are used for the DN 350 valve size.

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## MATERIAL SPECIFICATION (DN 20-300)

| Part name       | Material                          | Designation      | EN/DIN mat.no | Remark                       |
|-----------------|-----------------------------------|------------------|---------------|------------------------------|
| <b>DN 20-40</b> |                                   |                  |               |                              |
| Body            | Ductile iron                      | GJS-400-15       | EN JS-1030    |                              |
| Disc            | Stainless steel                   | GX5CrNiMo19-11-2 | EN 1.4408     | Comparable with CF8M         |
| Shaft           | Stainless steel                   | X17CrNi16-2      | EN 1.4057     | Similar to ASTM A276/Gr. 431 |
| Seat            | EPDM<br>NBR<br>EPDM-A<br>EPDM-WA3 |                  |               |                              |

|                  |                         |                  |            |                                      |
|------------------|-------------------------|------------------|------------|--------------------------------------|
| <b>DN 50-300</b> |                         |                  |            |                                      |
| Body             | Ductile iron            | GJS-400-15       | EN JS-1030 | Dual certified to ASTM A536-65-45-12 |
|                  | Ductile iron            | GJS-400-18LT     | EN 5.3103  | Dual certified to ASTM A395-60-40-18 |
|                  | Carbon steel            | GP240GH          | EN 1.0619  |                                      |
|                  | Stainless steel         | GX5CrNiMo19-11-2 | EN 1.4408  |                                      |
| Disc             | Super duplex            | GX2CrNiMoN26-7-4 | EN 1.4469  |                                      |
|                  | 316 stainless steel     | GX5CrNiMo19-11-2 | EN 1.4408  | Comparable with CF8M                 |
|                  | 304 stainless steel     | GX5CrNiMo19-10   | EN 1.4308  | Comparable with CF8                  |
|                  | Aluminium bronze        | CuAl10Fe2-C      | EN CC331G  |                                      |
|                  | Nickel aluminium bronze | CuAl10Fe5Ni5     | EN CC333G  |                                      |
|                  | Ductile iron NYL        | GJS-400-15       | EN JS-1030 | NYL = Nylon coating, max. temp. 60°C |
|                  | Ductile iron CTD        | GJS-400-15       | EN JS-1030 | CTD = Nickel plating                 |
|                  |                         |                  |            |                                      |
| Shaft            | 316 stainless steel     | X5CrNiMo17-12-2  | EN 1.4401  |                                      |
|                  | 431 stainless steel     | X17CrNi16-2      | EN 1.4057  |                                      |
|                  | Super duplex            | GX2CrNiMoN25-7-4 | EN 1.4410  |                                      |
|                  | Monel® K500             | DIN 17752        | EN 2.4375  |                                      |
| Seat             | EPDM                    |                  |            | Food grade, NSF/ANSI 61, ACS         |
|                  | EPDM E5                 |                  |            | KIWA, WRAS, ACS                      |
|                  | NBR                     |                  |            | Food grade                           |
|                  | NBR N7                  |                  |            | DVGW-G                               |
|                  | HNBR                    |                  |            |                                      |
|                  | White NBR               |                  |            |                                      |
|                  | FKM                     |                  |            |                                      |
|                  | Neoprene                |                  |            |                                      |
| Bushing          | Polyester               |                  |            |                                      |
| Packing          | NBR                     |                  |            |                                      |
| Bearing          | PTFE/steel              |                  |            |                                      |
| Circlip          | Stainless steel         |                  |            |                                      |
| Plug             | Carbon steel            |                  |            |                                      |

## NOTES

Valves with super duplex disc will have super duplex disc screw. All other discs will have a duplex disc screw.

Monel® is a registered trademark of Special Metals Corporation.

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## MATERIAL SPECIFICATION

| Part name          | Material                | Designation      | EN/DIN mat.no | Remark                               |
|--------------------|-------------------------|------------------|---------------|--------------------------------------|
| <b>DN 350-900</b>  |                         |                  |               |                                      |
| Body               | Ductile iron            | GJS-400-15       | EN JS-1030    | Dual certified to ASTM A536-65-45-12 |
|                    | Ductile iron            | GJS-400-18LT     | EN 5.3103     | Dual certified to ASTM A395-60-40-18 |
|                    | Carbon steel*           | GP240GH          | EN 1.0619     |                                      |
|                    | Stainless steel*        | GX5CrNiMo19-11-2 | EN 1.4408     |                                      |
|                    | Super duplex            | GX2CrNiMoN26-7-4 | EN 1.4469     |                                      |
|                    | Duplex                  | GX2CrNiMoN22-5-3 | EN 1.4470     |                                      |
| Disc               | Super duplex            | GX2CrNiMoN26-7-4 | EN 1.4469     |                                      |
|                    | Duplex                  | GX2CrNiMoN22-5-3 | EN 1.4470     |                                      |
|                    | 316 stainless steel     | GX5CrNiMo19-11-2 | EN 1.4408     | Comparable with CF8M                 |
|                    | 304 stainless steel     | GX5CrNiMo19-10   | EN 1.4308     | Comparable with CF8                  |
|                    | Aluminium bronze        | CuAl10Fe2-C      | EN CC331G     |                                      |
|                    | Nickel aluminium bronze | CuAl10Fe5Ni5     | EN CC333G     | Comparable with BS 1400 AB2          |
|                    | Ductile iron NYL        | GJS-400-15       | EN JS-1030    | NYL = Nylon coating, max. temp. 60°C |
|                    | Ductile iron CTD        | GJS-400-15       | EN JS-1030    | CTD = Epoxy coated, max. temp. 120°C |
| Shaft              | 431 stainless steel     | X17CrNi16-2      | EN 1.4057     | Similar to ASTM A276/Gr. 431         |
|                    | Duplex                  | X2CrNiMoN22-5-3  | EN 1.4462     |                                      |
|                    | Super duplex            | X2CrNiMoN25-7-4  | EN 1.4410     |                                      |
|                    | Monel® K500             | DIN 17752        | EN 2.4375     |                                      |
| Seat               | EPDM                    |                  |               | Food grade, NSF/ANSI 61, ACS         |
|                    | EPDM E5                 |                  |               | KIWA, WRAS, ACS                      |
|                    | NBR                     |                  |               | Food grade                           |
|                    | NBR N7                  |                  |               | DVGW-G                               |
|                    | HNBR                    |                  |               |                                      |
| Disc screw         | Super duplex            | GX2CrNiMoN25-7-4 | EN 1.4410     |                                      |
|                    | Duplex                  | X2CrNiMoN22-5-3  | EN 1.4462     |                                      |
| Disc screw O-ring  | EPDM                    |                  |               |                                      |
|                    | NBR                     |                  |               |                                      |
|                    | FKM                     |                  |               |                                      |
| Plug               | Carbon steel            |                  |               |                                      |
| Plug O-ring        | NBR                     |                  |               |                                      |
| Plug circlip       | Stainless steel         |                  |               |                                      |
| Bushing            | Polyester               |                  |               |                                      |
| Shaft/Body O-ring  | NBR                     |                  |               |                                      |
| Bearing            | PTFE/steel              |                  |               |                                      |
| Shaft/Body circlip | Stainless steel         |                  |               |                                      |

\* Carbon steel and stainless steel body material options are available up to and including DN 600

## MATERIAL SPECIFICATION - REINFORCED SEAT

| Part name          | Material                | Designation      | EN/DIN mat.no | Remark                               |
|--------------------|-------------------------|------------------|---------------|--------------------------------------|
| <b>DN 350-600</b>  |                         |                  |               |                                      |
| Body               | Ductile iron            | GJS-400-15       | EN JS-1030    | Dual certified to ASTM A536-65-45-12 |
|                    | Ductile iron            | GJS-400-18LT     | EN 5.3103     | Dual certified to ASTM A395-60-40-18 |
|                    | Carbon steel            | GP240GH          | EN 1.0619     |                                      |
|                    | Stainless steel         | GX5CrNiMo19-11-2 | EN 1.4408     |                                      |
|                    | Super duplex            | GX2CrNiMoN26-7-4 | EN 1.4469     |                                      |
|                    | Duplex                  | GX2CrNiMoN22-5-3 | EN 1.4470     |                                      |
| Disc               | Stainless steel         | GX5CrNiMo19-11-2 | EN 1.4408     | Comparable with CF8M                 |
|                    | Nickel aluminium bronze | CuA10Fe5Ni5      | EN CC333G     | Comparable with BS 1400 AB2          |
|                    | Ductile iron CTD        | GJS-400-15       | EN JS-1030    | CTD = Epoxy coated, max. temp. 120°C |
| Shaft              | 431 Stainless steel     | X17CrNi16-2      | EN 1.4057     | Similar to ASTM A276/Gr. 431         |
|                    | Super duplex            | X2CrNiMoN25-7-4  | EN 1.4410     |                                      |
| Seat               | EPDM E6                 |                  |               |                                      |
|                    | NBR N8                  |                  |               |                                      |
| Disc screw         | Duplex                  | X2CrNiMoN22-5-3  | EN 1.4462     |                                      |
| Disc screw O-ring  | NBR                     |                  |               |                                      |
| Plug               | Carbon steel            |                  |               |                                      |
| Plug O-ring        | NBR                     |                  |               |                                      |
| Plug circlip       | Stainless steel         |                  |               |                                      |
| Brushing           | Polyester               |                  |               |                                      |
| Shaft/body O-ring  | NBR                     |                  |               |                                      |
| Bearing            | PTFE/steel              |                  |               |                                      |
| Shaft/body circlip | Stainless steel         |                  |               |                                      |

## NOTES

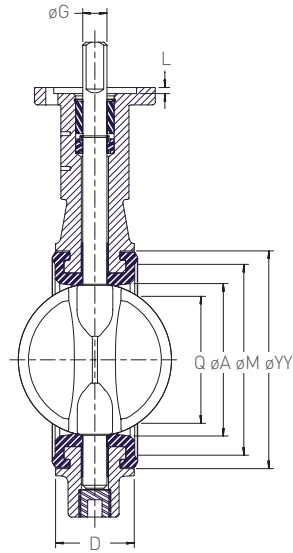
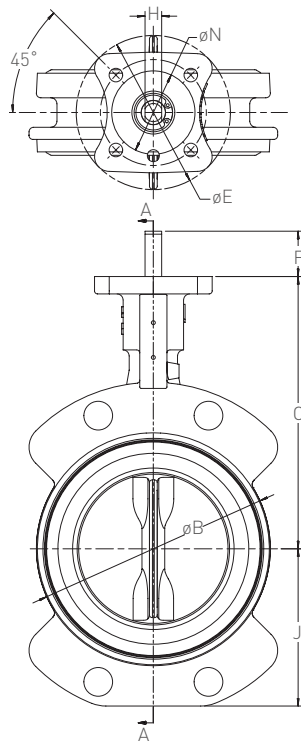
Valves with super duplex disc will have super duplex disc screw. All other discs will have a duplex disc screw.

Monel® is a registered trademark of Special Metals Corporation.

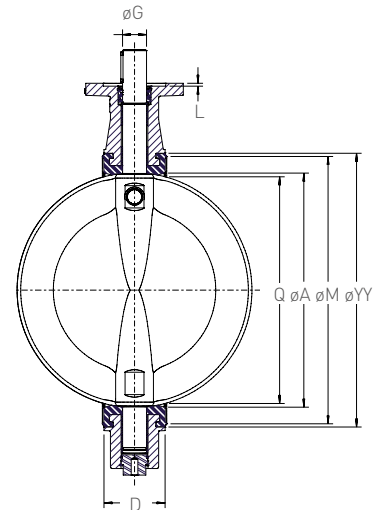
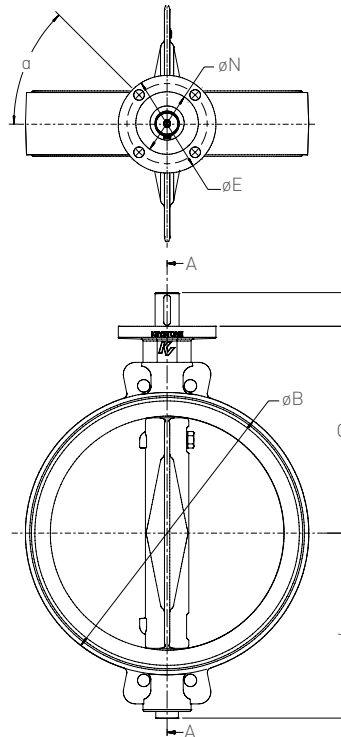
# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

SERIES GRW (WAFER)  
DN 50-300



DN 350-900



## VALVE DIMENSIONS (mm)

| Size <sup>(1)</sup><br>(DN) |     |      |     |     |     |     |     |   |     |     |                  |     | Shaft |                  |         | Top plate drilling |       |       |               | Adapt.<br>code | Weight <sup>(4)</sup><br>(kg) |
|-----------------------------|-----|------|-----|-----|-----|-----|-----|---|-----|-----|------------------|-----|-------|------------------|---------|--------------------|-------|-------|---------------|----------------|-------------------------------|
|                             | A   | B    | C   | D   | E   | F   | J   | L | M   | N   | Q <sup>(2)</sup> | YY  | G     | H <sup>(3)</sup> | Key     | No.<br>Bolt circle | Holes | a     | Holes<br>dia. |                |                               |
| 20                          | 30  | 61   | 115 | 25  | 65  | 25  | 49  | 4 | 38  | 35  | 18               | 50  | 12    | 8                | -       | 50                 | 4     | 45°   | 6.6           | F05            | 1.0                           |
| 25                          | 30  | 61   | 115 | 25  | 65  | 25  | 49  | 4 | 38  | 35  | 18               | 50  | 12    | 8                | -       | 50                 | 4     | 45°   | 6.6           | F05            | 1.0                           |
| 32                          | 40  | 78   | 130 | 33  | 65  | 25  | 61  | 4 | 49  | 35  | 25               | 64  | 12    | 8                | -       | 50                 | 4     | 45°   | 6.6           | F05            | 1.5                           |
| 40                          | 40  | 78   | 130 | 33  | 65  | 25  | 61  | 4 | 49  | 35  | 25               | 64  | 12    | 8                | -       | 50                 | 4     | 45°   | 6.6           | F05            | 1.5                           |
| 50                          | 50  | 91   | 135 | 43  | 65  | 25  | 60  | 4 | 66  | 35  | 28               | 80  | 12    | 8                | -       | 50                 | 4     | 45°   | 7.0           | F05            | 1.8                           |
| 65                          | 62  | 105  | 150 | 46  | 100 | 30  | 76  | 4 | 78  | 55  | 43               | 93  | 16    | 11               | -       | 70                 | 4     | 45°   | 9.0           | F07            | 2.7                           |
| 80                          | 77  | 123  | 160 | 46  | 100 | 30  | 82  | 4 | 97  | 55  | 65               | 112 | 16    | 11               | -       | 70                 | 4     | 45°   | 9.0           | F07            | 3.2                           |
| 100                         | 99  | 154  | 180 | 52  | 100 | 30  | 104 | 4 | 129 | 55  | 87               | 144 | 16    | 11               | -       | 70                 | 4     | 45°   | 9.0           | F07            | 4.5                           |
| 125                         | 124 | 187  | 195 | 56  | 100 | 30  | 120 | 4 | 160 | 55  | 113              | 175 | 20    | 14               | -       | 70                 | 4     | 45°   | 9.0           | F07            | 6.1                           |
| 150                         | 150 | 208  | 210 | 56  | 90  | 30  | 131 | 4 | 181 | 55  | 142              | 196 | 20    | 14               | -       | 70                 | 4     | 45°   | 9.0           | F07            | 6.8                           |
| 200                         | 195 | 265  | 240 | 60  | 90  | 30  | 162 | 4 | 233 | 55  | 188              | 248 | 20    | 14               | -       | 70                 | 4     | 45°   | 9.0           | F07            | 11.3                          |
| 250                         | 245 | 320  | 275 | 68  | 150 | 30  | 198 | 4 | 290 | 85  | 237              | 305 | 25    | 18               | -       | 125                | 4     | 45°   | 13.5          | F12            | 19.1                          |
| 300                         | 291 | 372  | 310 | 78  | 150 | 50  | 230 | 4 | 340 | 85  | 283              | 355 | 30    | 22               | -       | 125                | 4     | 45°   | 13.5          | F12            | 26.8                          |
| 350                         | 325 | 416  | 325 | 78  | 150 | 70  | 260 | 4 | 378 | 85  | 318              | 398 | 35    | -                | 10 x 8  | 125                | 4     | 45°   | 13.5          | F12            | 40.0                          |
| 400                         | 380 | 474  | 360 | 102 | 200 | 70  | 298 | 6 | 435 | 130 | 368              | 455 | 40    | -                | 12 x 8  | 165                | 4     | 45°   | 22.0          | F16            | 63.0                          |
| 450                         | 434 | 534  | 395 | 114 | 200 | 70  | 334 | 6 | 495 | 130 | 421              | 515 | 40    | -                | 12 x 8  | 165                | 4     | 45°   | 22.0          | F16            | 86.0                          |
| 500                         | 486 | 589  | 430 | 127 | 200 | 70  | 385 | 6 | 549 | 130 | 471              | 569 | 50    | -                | 14 x 9  | 165                | 4     | 45°   | 22.0          | F16            | 106.0                         |
| 600                         | 585 | 691  | 500 | 154 | 200 | 70  | 456 | 6 | 650 | 130 | 568              | 670 | 60    | -                | 18 x 11 | 165                | 4     | 45°   | 22.0          | F16            | 158.0                         |
| 700                         | 685 | 800  | 570 | 165 | 200 | 80  | 518 | 6 | 755 | 130 | 668              | 775 | 70    | -                | 20 x 12 | 165                | 4     | 45°   | 22.0          | F16            | 231.0                         |
| 750                         | 735 | 862  | 605 | 190 | 200 | 90  | 551 | 6 | 816 | 130 | 713              | 835 | 70    | -                | 20 x 12 | 165                | 4     | 45°   | 22.0          | F16            | 290.0                         |
| 800                         | 785 | 907  | 640 | 190 | 300 | 90  | 583 | 6 | 860 | 200 | 765              | 880 | 70    | -                | 20 x 12 | 254                | 8     | 22.5° | 17.5          | F25            | 326.0                         |
| 900                         | 885 | 1007 | 715 | 203 | 300 | 100 | 659 | 6 | 960 | 200 | 864              | 980 | 80    | -                | 22 x 14 | 254                | 8     | 22.5° | 17.5          | F25            | 419.0                         |

## NOTES

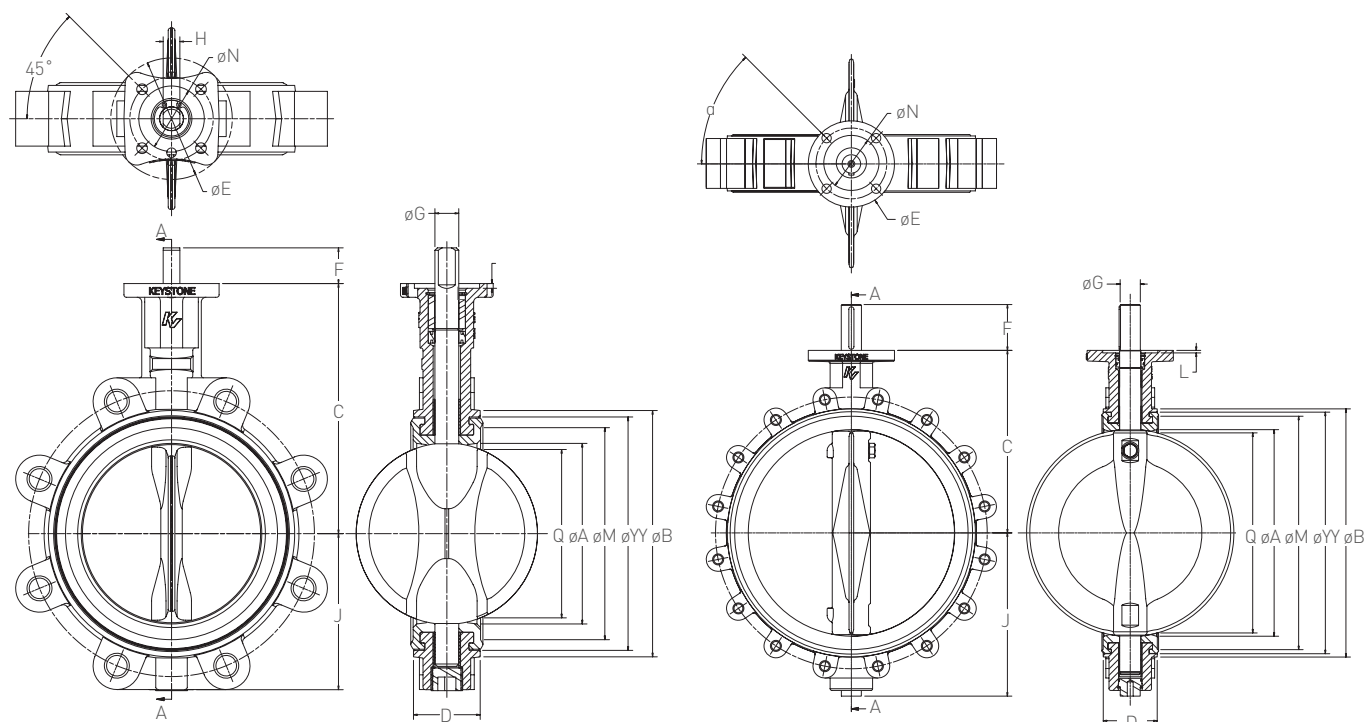
- Sizes 20-40 differ from above images.
- 'Q' dimension is the minimum allowable pipe or flange inside diameter at the centered body face to protect the disc sealing edge against damage when opening the valve.
- 'H' dimension refers to flat on shaft.
- Weight may vary depending on trim materials used.
- øYY dimension is to the outside of the seat
- øM dimension is to the O-ring seal

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

SERIES GRL (LUG)  
DN 50-300

DN 350-900



## VALVE DIMENSIONS (mm)

| Size <sup>(1)</sup><br>(DN) |     |      |     |     |     |     |     |   |     |     |                  |     |    | Shaft |                  |     | Top plate drilling |              |               | Adapt.<br>code | Weight <sup>(4)</sup><br>(kg) |
|-----------------------------|-----|------|-----|-----|-----|-----|-----|---|-----|-----|------------------|-----|----|-------|------------------|-----|--------------------|--------------|---------------|----------------|-------------------------------|
|                             | A   | B    | C   | D   | E   | F   | J   | L | M   | N   | Q <sup>(2)</sup> | YY  |    | G     | H <sup>(3)</sup> | Key | Bolt circle        | No.<br>holes | Holes<br>dia. |                |                               |
| 20                          | 30  | 61   | 115 | 25  | 65  | 25  | 43  | 4 | 38  | 35  | 18               | 50  | 12 | 8     | -                | -   | 50                 | 4            | 45°           | F05            | 1.4                           |
| 25                          | 30  | 61   | 115 | 25  | 65  | 25  | 43  | 4 | 38  | 35  | 18               | 50  | 12 | 8     | -                | -   | 50                 | 4            | 45°           | F05            | 1.4                           |
| 32                          | 40  | 78   | 130 | 33  | 65  | 25  | 55  | 4 | 58  | 35  | 25               | 66  | 12 | 8     | -                | -   | 50                 | 4            | 45°           | F05            | 2.1                           |
| 40                          | 40  | 78   | 130 | 33  | 65  | 25  | 55  | 4 | 58  | 35  | 25               | 66  | 12 | 8     | -                | -   | 50                 | 4            | 45°           | F05            | 2.1                           |
| 50                          | 50  | 92   | 135 | 43  | 65  | 25  | 60  | 4 | 66  | 35  | 28               | 80  | 12 | 8     | -                | -   | 50                 | 4            | 45°           | F05            | 2.7                           |
| 65                          | 62  | 105  | 150 | 46  | 100 | 30  | 76  | 4 | 78  | 55  | 43               | 93  | 16 | 11    | -                | -   | 70                 | 4            | 45°           | F07            | 4.0                           |
| 80                          | 77  | 126  | 160 | 46  | 100 | 30  | 82  | 4 | 97  | 55  | 65               | 112 | 16 | 11    | -                | -   | 70                 | 4            | 45°           | F07            | 4.3                           |
| 100                         | 99  | 156  | 180 | 52  | 100 | 30  | 104 | 4 | 129 | 55  | 87               | 144 | 16 | 11    | -                | -   | 70                 | 4            | 45°           | F07            | 7.0                           |
| 125                         | 124 | 190  | 195 | 56  | 100 | 30  | 120 | 4 | 160 | 55  | 113              | 175 | 20 | 14    | -                | -   | 70                 | 4            | 45°           | F07            | 10.0                          |
| 150                         | 150 | 214  | 210 | 56  | 100 | 30  | 131 | 4 | 181 | 55  | 142              | 196 | 20 | 14    | -                | -   | 70                 | 4            | 45°           | F07            | 11.0                          |
| 200                         | 195 | 268  | 240 | 60  | 90  | 30  | 162 | 4 | 233 | 55  | 188              | 248 | 20 | 14    | -                | -   | 70                 | 4            | 45°           | F07            | 17.0                          |
| 250                         | 245 | 321  | 275 | 68  | 150 | 30  | 198 | 4 | 290 | 85  | 237              | 305 | 25 | 18    | -                | -   | 125                | 4            | 45°           | F12            | 29.5                          |
| 300                         | 291 | 375  | 310 | 78  | 150 | 50  | 230 | 4 | 340 | 85  | 283              | 355 | 30 | 22    | -                | -   | 125                | 4            | 45°           | F12            | 41.0                          |
| 350                         | 325 | 416  | 325 | 78  | 150 | 70  | 260 | 4 | 378 | 85  | 318              | 398 | 35 | -     | 10 x 8           | -   | 125                | 4            | 45°           | F12            | 52.0                          |
| 400                         | 380 | 474  | 360 | 102 | 200 | 70  | 298 | 6 | 435 | 130 | 368              | 455 | 40 | -     | 12 x 8           | -   | 165                | 4            | 45°           | F16            | 88.0                          |
| 450                         | 434 | 534  | 395 | 114 | 200 | 70  | 334 | 6 | 495 | 130 | 421              | 515 | 40 | -     | 12 x 8           | -   | 165                | 4            | 45°           | F16            | 107.0                         |
| 500                         | 486 | 589  | 430 | 127 | 200 | 70  | 385 | 6 | 549 | 130 | 471              | 569 | 50 | -     | 14 x 9           | -   | 165                | 4            | 45°           | F16            | 161.0                         |
| 600                         | 585 | 691  | 500 | 154 | 200 | 70  | 456 | 6 | 650 | 130 | 568              | 670 | 60 | -     | 18 x 11          | -   | 165                | 4            | 45°           | F16            | 235.0                         |
| 700                         | 685 | 800  | 570 | 165 | 200 | 80  | 518 | 6 | 755 | 130 | 668              | 775 | 70 | -     | 20 x 12          | -   | 165                | 4            | 45°           | F16            | 315.0                         |
| 750                         | 735 | 862  | 605 | 190 | 200 | 90  | 551 | 6 | 816 | 130 | 713              | 835 | 70 | -     | 20 x 12          | -   | 165                | 4            | 45°           | F16            | 378.0                         |
| 800                         | 785 | 907  | 640 | 190 | 300 | 90  | 583 | 6 | 860 | 200 | 765              | 880 | 70 | -     | 20 x 12          | -   | 254                | 8            | 22,5°         | F25            | 438.0                         |
| 900 <sup>(5)</sup>          | 885 | 1007 | 715 | 203 | 300 | 100 | 659 | 6 | 960 | 200 | 864              | 980 | 80 | -     | 22 x 14          | -   | 254                | 8            | 22,5°         | F25            | 559.0                         |

## NOTES

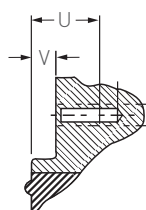
- Sizes 20-40 differ from above images.
- 'Q' dimension is the minimum allowable pipe or flange inside diameter at the centered body face to protect the disc sealing edge against damage when opening the valve.
- 'H' dimension refers to flat on shaft.
- Weight may vary depending on trim materials used.
- Valve size DN 900 is tapped flange design and has no separate lugs.
- ØYY dimension is to the outside of the seat
- ØM dimension is to the O-ring seal

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## SERIES GRW AND GRL

**Note:** all holes in lugged version are through threaded, except the holes closest to top and bottom shaft.



## DIMENSIONS OF TAPPED FLANGE LOCATING HOLES (mm)

| Size (DN) | Series GRW |      | Series GRL |     |
|-----------|------------|------|------------|-----|
|           | U          | V    | U          | V   |
| 700       | 45.5       | 5.5  | 45.5       | 5.5 |
| 750       | 65.0       | 25.0 | 45.5       | 5.5 |
| 800       | 60.0       | 20.0 | 45.5       | 5.5 |
| 900       | 54.5       | 6.5  | 54.5       | 6.5 |

## TORQUE APPLICATION FACTOR CATEGORIES

### Application I

Clean liquid lubricating media (water, clean oils, lube oil, mineral oil, etc.); and with no deposit or chemical attack, valve operated at least once a week.

Temperature range from 0°C to maximum temperature rating of the elastomer seat.

### Application II

Other liquid media and lubricating gases (aqueous liquids, such as food and beverage, water, etc.); and with minor deposit or chemical attack, valve operated at least once a month.

Temperature range from 0°C to maximum temperature rating of the elastomer seat.

### Application III

a. Dry non-abrasive media or gases (non-abrasive powders and dry gas); or  
b. Fluids with moderate deposit or chemical attack; or  
c. Valves operated less than once a month.

Temperature range from 0°C to maximum temperature rating of the elastomer seat.

### Application IV

a. Dry abrasive media and degreasing applications (sand, cement, silicone free, oxygen cleaned); or  
b. Liquids with severe deposit; or

c. Valves not frequently operated (once a year). All above with temperature range from -10°C to maximum temperature rating of the elastomer seat.

### NOTES

- For applications with temperatures above or below the guidelines above, please consult factory.
- For dry service valves it is suggested to use U/C discs (reduced diameter) when service conditions are less than 3.5 bar.

## VALVE SEATING AND UNSEATING TORQUES (Nm)

| Differential pressure (bar) | Valve size (DN) |    |    |    |    |    |    |     |     |     |     |     |     |     |      |      |      |      |                     |                       |                     |      |
|-----------------------------|-----------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|---------------------|-----------------------|---------------------|------|
|                             | 20              | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400  | 450  | 500  | 600  | 700                 | 750                   | 800                 | 900  |
| I*                          |                 |    |    |    |    |    |    |     |     |     |     |     |     |     |      |      |      |      |                     |                       |                     |      |
| 3.5                         | 7               | 7  | 10 | 10 | 13 | 19 | 26 | 37  | 58  | 81  | 148 | 241 | 345 | 467 | 639  | 845  | 1089 | 1700 | 2494                | 2967                  | 3495                | 4422 |
| 7                           | 7               | 7  | 10 | 10 | 13 | 20 | 27 | 40  | 63  | 88  | 164 | 271 | 387 | 520 | 719  | 960  | 1248 | 1979 | 2943                | 3521                  | 4169                | 5275 |
| 10                          | 7               | 7  | 11 | 11 | 14 | 21 | 30 | 44  | 70  | 99  | 188 | 315 | 451 | 595 | 832  | 1123 | 1473 | 2373 | 3575                | <sup>(1)</sup> 4302   | 5120                | 6479 |
| 14                          | 7               | 7  | 11 | 11 | 15 | 23 | 33 | 49  | 80  | 113 | 219 | 374 | 536 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 16                          | 8               | 8  | 12 | 12 | 15 | 25 | 36 | 51  | 85  | 120 | 235 | 403 | 578 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 3.5 (U/C)                   | -               | -  | -  | -  | 8  | 11 | 16 | 22  | 35  | 49  | 89  | 145 | 207 | 280 | 383  | 507  | 653  | 1020 | 1497                | 1780                  | 2097                | 2653 |
| II*                         |                 |    |    |    |    |    |    |     |     |     |     |     |     |     |      |      |      |      |                     |                       |                     |      |
| 3.5                         | 7               | 7  | 10 | 10 | 14 | 21 | 29 | 42  | 66  | 93  | 169 | 274 | 392 | 528 | 718  | 945  | 1212 | 1877 | 2736                | 3245                  | 3811                | 4822 |
| 7                           | 7               | 7  | 11 | 11 | 14 | 22 | 31 | 45  | 71  | 100 | 185 | 303 | 434 | 580 | 796  | 1058 | 1369 | 2153 | 3180                | 3793                  | 4479                | 5667 |
| 10                          | 7               | 7  | 11 | 11 | 15 | 23 | 33 | 49  | 78  | 111 | 208 | 347 | 498 | 652 | 906  | 1217 | 1590 | 2542 | 3804                | <sup>(1)</sup> 4565   | 5419                | 6858 |
| 14                          | 8               | 8  | 12 | 12 | 16 | 26 | 36 | 54  | 88  | 125 | 240 | 406 | 583 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 16                          | 8               | 8  | 12 | 12 | 17 | 27 | 38 | 56  | 93  | 132 | 255 | 436 | 626 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 3.5 (U/C)                   | -               | -  | -  | -  | 8  | 13 | 17 | 25  | 40  | 56  | 101 | 164 | 235 | 317 | 431  | 567  | 727  | 1126 | 1642                | 1947                  | 2287                | 2893 |
| III*                        |                 |    |    |    |    |    |    |     |     |     |     |     |     |     |      |      |      |      |                     |                       |                     |      |
| 3.5                         | 7               | 7  | 11 | 11 | 15 | 23 | 32 | 48  | 74  | 105 | 190 | 306 | 439 | 588 | 797  | 1045 | 1336 | 2055 | 2978                | 3523                  | 4127                | 5222 |
| 7                           | 7               | 7  | 11 | 11 | 16 | 24 | 34 | 50  | 79  | 112 | 206 | 336 | 481 | 639 | 874  | 1156 | 1490 | 2328 | 3417                | <sup>(1)</sup> 4065   | 4788                | 6059 |
| 10                          | 8               | 8  | 12 | 12 | 16 | 26 | 36 | 54  | 86  | 122 | 229 | 380 | 545 | 709 | 981  | 1312 | 1707 | 2710 | <sup>(1)</sup> 4034 | <sup>(1,2)</sup> 4828 | <sup>(2)</sup> 5719 | 7237 |
| 14                          | 8               | 8  | 13 | 13 | 17 | 28 | 40 | 59  | 96  | 136 | 261 | 439 | 629 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 16                          | 8               | 8  | 13 | 13 | 18 | 29 | 41 | 61  | 101 | 143 | 276 | 468 | 672 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 3.5 (U/C)                   | -               | -  | -  | -  | 9  | 14 | 19 | 29  | 44  | 63  | 114 | 184 | 263 | 353 | 478  | 627  | 801  | 1233 | 1787                | 2114                  | 2476                | 3133 |
| IV*                         |                 |    |    |    |    |    |    |     |     |     |     |     |     |     |      |      |      |      |                     |                       |                     |      |
| 3.5                         | 7               | 7  | 12 | 12 | 17 | 26 | 37 | 55  | 86  | 122 | 221 | 355 | 509 | 679 | 915  | 1195 | 1521 | 2322 | 3341                | 3940                  | 4601                | 5822 |
| 7                           | 8               | 8  | 13 | 13 | 18 | 27 | 39 | 58  | 91  | 129 | 237 | 384 | 551 | 728 | 990  | 1303 | 1671 | 2589 | 3772                | <sup>(1)</sup> 4473   | 5252                | 6646 |
| 10                          | 8               | 8  | 13 | 13 | 18 | 29 | 41 | 62  | 99  | 140 | 260 | 428 | 615 | 795 | 1094 | 1454 | 1883 | 2963 | <sup>(1)</sup> 4378 | <sup>(1,2)</sup> 5223 | <sup>(2)</sup> 6168 | 7805 |
| 14                          | 8               | 8  | 13 | 13 | 19 | 31 | 45 | 67  | 108 | 154 | 292 | 487 | 700 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 16                          | 8               | 8  | 13 | 13 | 20 | 32 | 46 | 69  | 113 | 161 | 307 | 517 | 742 | -   | -    | -    | -    | -    | -                   | -                     | -                   | -    |
| 3.5 (U/C)                   | -               | -  | -  | -  | 10 | 16 | 22 | 33  | 52  | 73  | 133 | 213 | 305 | 408 | 549  | 717  | 913  | 1393 | 2005                | 2364                  | 2761                | 3493 |

### NOTES

\* Application I, II, III, IV

3.5 U/C refers to reduced diameter disc option.

- Use a minimum of Class 8.8 steel bolts to connect actuator to valve.
- Duplex shaft not suitable for these conditions, use only 431 stainless steel or super duplex.

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## VALVE SEATING AND UNSEATING TORQUES (Nm) - REINFORCED SEAT

| Differential pressure<br>(bar) | Valve size (DN) |      |      |      |      |
|--------------------------------|-----------------|------|------|------|------|
|                                | 350             | 400  | 450  | 500  | 600  |
| <b>I*</b>                      |                 |      |      |      |      |
| 10                             | 851             | 1173 | 1563 | 2026 | 3198 |
| 14                             | 986             | 1374 | 1849 | 2419 | 3876 |
| 16                             | 1053            | 1474 | 1992 | 2615 | 4216 |
| <b>II*</b>                     |                 |      |      |      |      |
| 10                             | 947             | 1298 | 1721 | 2221 | 3879 |
| 14                             | 1081            | 1499 | 2007 | 2614 | 4157 |
| 16                             | 1149            | 1599 | 2150 | 2810 | 4496 |
| <b>III*</b>                    |                 |      |      |      |      |
| 10                             | 1297            | 1755 | 2300 | 2936 | 4509 |
| 14                             | 1432            | 1956 | 2586 | 3329 | 5187 |
| 16                             | 1499            | 2057 | 2729 | 3525 | 5526 |

## NOTES

As the reinforced seat is intended for high pressure applications the base torque commences at 1000 kPa/10 bar.

Reinforced seat are suitable for:

- Severe vacuum application (use 10 bar torque values).
- High line velocities up to 12 m/s for liquids.
- Pressure testing during erection and commissioning.

## TORQUE APPLICATION FACTOR CATEGORIES

### Application I

Clean liquid lubricating media (water, clean oils, lube oil, mineral oil, etc.); and with no deposit or chemical attack, valve operated at least once a week.

Temperature range from 0°C to maximum temperature rating of the elastomer seat.

### Application II

Other liquid media and lubricating gases (aqueous liquids, such as food and beverage, water, etc.); and with minor deposit or chemical attack, valve operated at least once a month.

Temperature range from 0°C to maximum temperature rating of the elastomer seat.

### Application III

- Dry non-abrasive media or gases (non-abrasive powders and dry gas); or
- Fluids with moderate deposit or chemical attack; or
- Valves operated less than once a month.

Temperature range from 0°C to maximum temperature rating of the elastomer seat.

## NOTE

- For applications with temperatures above or below the guidelines above, please consult factory.

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## MAXIMUM ALLOWABLE SHAFT TORQUES (Nm)

| Shaft material           | Valve size (DN) |    |    |    |    |     |     |     |     |     |     |     |      |      |      |      |      |      |
|--------------------------|-----------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
|                          | 20              | 25 | 32 | 40 | 50 | 65  | 80  | 100 | 125 | 150 | 200 | 250 | 300  | 350  | 400  | 450  | 500  | 600  |
| 316SS (SS 1.4401)        | -               | -  | -  | -  | 65 | 160 | 160 | 160 | 320 | 320 | 320 | 545 | 970  | -    | -    | -    | -    | -    |
| 431SS (SS 1.4057)        | 20              | 20 | 90 | 90 | 90 | 230 | 230 | 230 | 460 | 460 | 460 | 935 | 1660 | 1470 | 1824 | 2448 | 3308 | 5346 |
| Duplex (SS 1.4462)       | -               | -  | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | -    | 1103 | 1368 | 1836 | 2481 | 3341 |
| Super duplex (SS 1.4410) | -               | -  | -  | -  | 85 | 210 | 210 | 210 | 420 | 420 | 420 | 855 | 1520 | 1348 | 1727 | 2390 | 3032 | 4589 |
| Monel® K500 (2.4375)     | -               | -  | -  | -  | 76 | 190 | 190 | 190 | 381 | 381 | 381 | 777 | 1381 | 1225 | 1520 | 2040 | 2756 | 3713 |

## FLOWRATE CO-EFFICIENTS - K<sub>v</sub> VALUES

| Valve size<br>(DN) | Disc opening (degrees) |      |      |      |       |       |       |       |       |
|--------------------|------------------------|------|------|------|-------|-------|-------|-------|-------|
|                    | 10°                    | 20°  | 30°  | 40°  | 50°   | 60°   | 70°   | 80°   | 90°   |
| 20                 | -                      | 0.2  | 0.5  | 1.3  | 2.8   | 4.5   | 8.3   | 12.8  | 19.0  |
| 25                 | -                      | 0.2  | 0.5  | 1.3  | 4.5   | 10.3  | 17.7  | 26.5  | 31.0  |
| 32                 | -                      | 0.6  | 2.0  | 6.0  | 14.8  | 23.5  | 36.0  | 49.8  | 54.0  |
| 40                 | -                      | 0.6  | 2.0  | 6.0  | 16.0  | 28.0  | 43.0  | 55.0  | 56.0  |
| 50                 | 0                      | 0.9  | 4.8  | 14   | 30    | 47    | 72    | 99    | 108   |
| 65                 | 0                      | 2.4  | 11   | 27   | 50    | 78    | 123   | 172   | 217   |
| 80                 | 0                      | 6    | 28   | 55   | 91    | 141   | 215   | 304   | 409   |
| 100                | 0                      | 14   | 57   | 109  | 177   | 265   | 407   | 600   | 807   |
| 125                | 0                      | 28   | 85   | 158  | 250   | 389   | 630   | 964   | 1251  |
| 150                | 7                      | 52   | 130  | 226  | 367   | 578   | 987   | 1551  | 1946  |
| 200                | 22                     | 115  | 231  | 405  | 646   | 1029  | 1773  | 2910  | 3516  |
| 250                | 34                     | 173  | 339  | 641  | 980   | 1546  | 2677  | 4449  | 5806  |
| 300                | 49                     | 253  | 495  | 935  | 1430  | 2255  | 3905  | 6710  | 8910  |
| 350                | 119                    | 304  | 637  | 1142 | 1936  | 3110  | 5010  | 8969  | 10407 |
| 400                | 155                    | 397  | 832  | 1492 | 2529  | 4062  | 6544  | 11714 | 13592 |
| 450                | 196                    | 503  | 1053 | 1888 | 3200  | 5141  | 8288  | 14826 | 17203 |
| 500                | 242                    | 621  | 1300 | 2331 | 3951  | 6347  | 10224 | 18303 | 21238 |
| 600                | 349                    | 894  | 1871 | 3357 | 5689  | 9140  | 14723 | 26357 | 30583 |
| 700                | 475                    | 1216 | 2547 | 4569 | 7744  | 12440 | 20040 | 35875 | 41626 |
| 750                | 545                    | 1396 | 2924 | 5245 | 8890  | 14281 | 23005 | 41183 | 47785 |
| 800                | 620                    | 1589 | 3327 | 5968 | 10114 | 16248 | 26174 | 46857 | 54369 |
| 900                | 785                    | 2011 | 4211 | 7553 | 12801 | 20564 | 33127 | 59303 | 68811 |

## NOTE

K<sub>v</sub> = The volume of water in m<sup>3</sup>/hr that will pass through a valve with a pressure drop of 1 bar at 20°C

## PRESSURE-TEMPERATURE DIAGRAM

| Seat material*    | Disc material** | Body material                                                | Size range (DN) | Valve function<br>Standard / End of Line | Temperature (°C) |     |     |     |   |    |    |     |     |     |     |     |
|-------------------|-----------------|--------------------------------------------------------------|-----------------|------------------------------------------|------------------|-----|-----|-----|---|----|----|-----|-----|-----|-----|-----|
|                   |                 |                                                              |                 |                                          | -40              | -28 | -20 | -15 | 0 | 50 | 80 | 100 | 120 | 130 | 150 | 160 |
| EPDM              | all             | DI GJS-400-15<br>CS GP240GH                                  | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| EPDM              | all             | SS Gx5CrMo19-11-2<br>DI GJS-400-18LT<br>Super Duplex, Duplex | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| NBR and white NBR | all             | all                                                          | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| HNBR              | all             | all                                                          | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| FKM               | all             | all                                                          | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| EPDM E5           | all             | all                                                          | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| Neoprene          | all             | all                                                          | 50-300          | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| EPDM              | all             | DI GJS-400-15<br>CS GP240GH                                  | 350-900         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| EPDM              | all             | SS Gx5CrMo19-11-2<br>DI GJS-400-18LT<br>Super Duplex, Duplex | 350-600         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| NBR               | all             | all                                                          | 350-900         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| HNBR              | all             | all                                                          | 350-900         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| FKM               | all             | all                                                          | 350-900         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| EPDM E6           | all             | all                                                          | 350-600         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |
| NBR N8            | all             | all                                                          | 350-600         | Std / EOL                                |                  |     |     |     |   |    |    |     |     |     |     |     |

\* All seat materials drop tight

\*\* Per material listed in the material specification tables

Minimum temperature size range DN 20-40: -10°C

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## SELECTION GUIDE

| Example:                            |                                         | GRL | 0100 | - D0 | A1 | S2 | E0 | A1 | I | - 00 | 000 | 00 |
|-------------------------------------|-----------------------------------------|-----|------|------|----|----|----|----|---|------|-----|----|
| <b>Series</b>                       |                                         |     |      |      |    |    |    |    |   |      |     |    |
| GR                                  |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>Body style</b>                   |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>GRL</b>                          | Lug                                     |     |      |      |    |    |    |    |   |      |     |    |
| <b>GRW</b>                          | Wafer                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>Size</b>                         |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>0020</b>                         | DN 20                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0025</b>                         | DN 25                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0032</b>                         | DN 38                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0040</b>                         | DN 40                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0050</b>                         | DN 50                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0065</b>                         | DN 65                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0080</b>                         | DN 80                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>0100</b>                         | DN 100                                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>0125</b>                         | DN 125                                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>0150</b>                         | DN 150                                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>0200</b>                         | DN 200                                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>Body</b>                         |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>D0</b>                           | Ductile iron GJS 400-15                 |     |      |      |    |    |    |    |   |      |     |    |
| <b>D2</b>                           | Ductile iron GJS 400-18-LT              |     |      |      |    |    |    |    |   |      |     |    |
| <b>C0</b>                           | Carbon steel <sup>[4]</sup>             |     |      |      |    |    |    |    |   |      |     |    |
| <b>S0</b>                           | 316 stainless steel <sup>[4]</sup>      |     |      |      |    |    |    |    |   |      |     |    |
| <b>Disc</b>                         |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>D0</b>                           | Ductile iron - ENP                      |     |      |      |    |    |    |    |   |      |     |    |
| <b>D1</b>                           | Ductile iron - epoxy                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>D2</b>                           | Ductile iron - nylon                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>D3</b>                           | Ductile iron - FBE <sup>[3]</sup> ctd   |     |      |      |    |    |    |    |   |      |     |    |
| <b>S0</b>                           | 316 stainless steel                     |     |      |      |    |    |    |    |   |      |     |    |
| <b>Shaft</b>                        |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>S0</b>                           | 316 stainless steel <sup>[1]</sup>      |     |      |      |    |    |    |    |   |      |     |    |
| <b>S2</b>                           | 431 stainless steel                     |     |      |      |    |    |    |    |   |      |     |    |
| <b>U0</b>                           | Duplex                                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>Seat</b>                         |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>E0</b>                           | EPDM FG (NSF ANSI/61 and ACS)           |     |      |      |    |    |    |    |   |      |     |    |
| <b>E5</b>                           | EPDM (WRAS, KWIA, ACS)                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>E6</b>                           | EPDM reinforced (DN 350-600, NPS 14-24) |     |      |      |    |    |    |    |   |      |     |    |
| <b>H1</b>                           | HNBR                                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>N0</b>                           | NBR FG                                  |     |      |      |    |    |    |    |   |      |     |    |
| <b>Flange drilling</b>              |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>Single drilled lug and wafer</b> |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>A1</b>                           | ASME 125/150                            |     |      |      |    |    |    |    |   |      |     |    |
| <b>J1</b>                           | JIS B2210 - 10K                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>P1</b>                           | PN 6                                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>P2</b>                           | PN 10                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>P3</b>                           | PN 16                                   |     |      |      |    |    |    |    |   |      |     |    |
| <b>PA</b>                           | PN 6/10/16                              |     |      |      |    |    |    |    |   |      |     |    |
| <b>Multi drilled wafer</b>          |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>M1</b>                           | PN 10/16, ASME 125/150, BS EJIS10       |     |      |      |    |    |    |    |   |      |     |    |
| <b>M2</b>                           | PN 10/16, ASME 125/150, BS E            |     |      |      |    |    |    |    |   |      |     |    |
| <b>MB</b>                           | PN 6/10/16, ASME 125/150                |     |      |      |    |    |    |    |   |      |     |    |
| <b>MC</b>                           | PN 10/16                                |     |      |      |    |    |    |    |   |      |     |    |
| <b>Actuator mounting</b>            |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>I</b>                            | ISO 5211 mount                          |     |      |      |    |    |    |    |   |      |     |    |
| <b>Actuation</b>                    |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>00</b>                           | None                                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>H1</b>                           | 10 pos handle - blue                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>Special</b>                      |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>000</b>                          | None                                    |     |      |      |    |    |    |    |   |      |     |    |
| <b>P04</b>                          | Reduced disc for 3.5 bar                |     |      |      |    |    |    |    |   |      |     |    |
| <b>Coating</b>                      |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>00</b>                           | Standard blue                           |     |      |      |    |    |    |    |   |      |     |    |
| <b>02</b>                           | C3 blue ctd body                        |     |      |      |    |    |    |    |   |      |     |    |
| <b>G1</b>                           | Gear - blue                             |     |      |      |    |    |    |    |   |      |     |    |
| <b>G5</b>                           | Chainwheel - blue                       |     |      |      |    |    |    |    |   |      |     |    |
| <b>C22</b>                          |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>009</b>                          | Silicone free                           |     |      |      |    |    |    |    |   |      |     |    |
| <b>03</b>                           |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>04</b>                           | C5M blue ctd body                       |     |      |      |    |    |    |    |   |      |     |    |
| <b>04</b>                           |                                         |     |      |      |    |    |    |    |   |      |     |    |
| <b>04</b>                           | FBE blue ctd body                       |     |      |      |    |    |    |    |   |      |     |    |

## NOTES

1. The standard shaft material is 431 stainless steel. 316 SS is only available as an option on DN 50-300.
2. All disc screws will be of duplex except for super duplex disc which will have a super duplex disc screw.
3. FBE = Fusion bond epoxy
4. Carbon Steel and Stainless Steel body material options are available DN 50 - 600

Other options are available on request.  
Please consult your local sales representative.  
Monel® is a registered trademark of the  
Special Metals Corporation.

# KEYSTONE SERIES GR RESILIENT SEATED BUTTERFLY VALVES

GRW/GRL (ISO)

## FLANGE ACCOMMODATION CHART FOR WAFER VALVES

| Drillings    | Sizes (DN) |              |     |              |     |              |     |              |        |              |      |              |         |              |
|--------------|------------|--------------|-----|--------------|-----|--------------|-----|--------------|--------|--------------|------|--------------|---------|--------------|
|              | 20         | Ord.<br>code | 25  | Ord.<br>code | 32  | Ord.<br>code | 40  | Ord.<br>code | 50-500 | Ord.<br>code | 600  | Ord.<br>code | 700-900 | Ord.<br>code |
| PN 6         | NA         | -            | STD | MB           | NA  | -            | STD | MB           | Mod.   | P1           | Mod. | P1           | Mod.    | P1           |
| PN 10        | STD        | MC           | STD | MB           | STD | MC           | STD | MB           | STD    | M1           | STD  | M2           | A-o     | P2           |
| PN 16        | STD        | MC           | STD | MB           | STD | MC           | STD | MB           | STD    | M1           | STD  | M2           | A-o     | P3           |
| ASME 125/150 | NA         | -            | STD | MB           | NA  | -            | STD | MB           | STD    | M1           | STD  | M2           | A-o     | A1           |
| BS Table E   | NA         | -            | NA  | -            | NA  | -            | STD | MB           | STD    | M1           | STD  | M2           | A-o     | B1           |
| JIS 10K      | NA         | -            | NA  | -            | NA  | -            | STD | MB           | STD    | M1           | NA   | -            | A-o     | J1           |

## FLANGE ACCOMMODATION CHART FOR LUG VALVES

| Drillings    | Sizes (DN) |              |     |              |     |              |     |              |        |              |     |              |         |              |
|--------------|------------|--------------|-----|--------------|-----|--------------|-----|--------------|--------|--------------|-----|--------------|---------|--------------|
|              | 20         | Ord.<br>code | 25  | Ord.<br>code | 32  | Ord.<br>code | 40  | Ord.<br>code | 50-500 | Ord.<br>code | 600 | Ord.<br>code | 700-900 | Ord.<br>code |
| PN 6         | NA         | -            | NA  | -            | NA  | -            | STD | PA           | A-o    | P1           | A-o | P1           | A-o     | P1           |
| PN 10        | STD        | PB           | STD | PB           | STD | PB           | STD | PA           | A-o    | P2           | A-o | P2           | A-o     | P2           |
| PN 16        | STD        | PB           | STD | PB           | STD | PB           | STD | PA           | A-o    | P3           | A-o | P3           | A-o     | P3           |
| ASME 125/150 | NA         | -            | STD | A1           | NA  | -            | STD | A1           | A-o    | A1           | A-o | A1           | A-o     | A1           |
| BS Table E   | NA         | -            | NA  | -            | NA  | -            | NA  | -            | A-o    | B1           | A-o | B1           | A-o     | B1           |
| JIS 10K      | NA         | -            | NA  | -            | NA  | -            | NA  | -            | A-o    | J1           | NA  | -            | A-o     | J1           |

Mod. = Modifications required - Is possible but will require some modifications and will be a special

STD = Standard valve locating plate is multi drilled and covers this flange standard

A-o = As ordered - All valves have to be ordered as this drilling using the code above

NA = Not possible on this valve size

VCTDS-06268-EN © 2021 Emerson Electric Co. All rights reserved 07/21. Keystone is a mark owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their prospective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Electric Co. does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Electric Co. product remains solely with the purchaser.

[Emerson.com/FinalControl](https://www.emerson.com/FinalControl)