

### Applications

Boiler drains  
Feedwater drains  
Steam drum vents  
Isolation valve for bypass lines  
Economizer header drains

### End Connections

Socketweld  
Buttweld  
Flanged<sup>1</sup>

### Sizes

3/4 to 2-1/2 inch

<sup>1</sup> Available Upon Request

### Features

#### Ball and Seats

- Mate-lapped for 100% contact
- Ensures absolute shutoff
- Corrosion resistant
- Seats are protected from flow in open / closed position
- *Inconel 718 Spray & Fused CC upgrade available to provide additional resistance to corrosion<sup>1</sup>*

#### Mechanical Precision Stop

- Prevents turning ball 180°
- Eliminates misalignment

#### Stem & Packing Arrangement

- Live Loading
- Quarter-turn non-rising stem does not deteriorate packing
- Extensive stuffing box
- Dual anti-extrusion rings keep packing in place

#### Rigid Mounting Bracket

- Designed to support actuator in any position

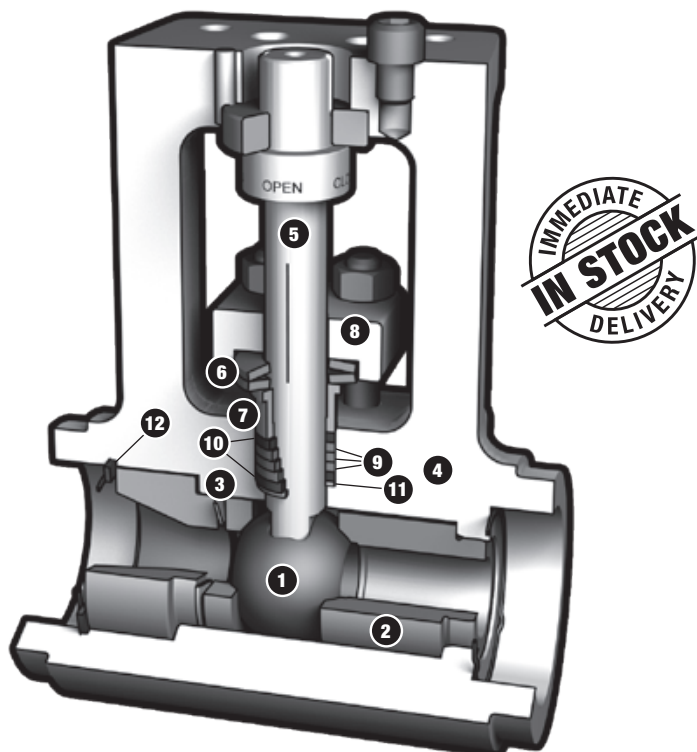
#### Seat Spring

- Assisted by line pressure, provides a constant mechanical force on ball against seat to maintain seal

### Bill of Materials

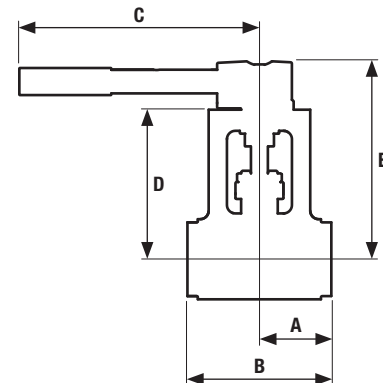
| Item No. | Description               | Material                                                                     |
|----------|---------------------------|------------------------------------------------------------------------------|
| 1        | Ball                      | 410SS / HVOF-CC Coated or Inconel 718 / Spray & Fused CC Coated <sup>1</sup> |
| 2        | Seat                      | 410SS / HVOF-CC Coated or Inconel 718 / Spray & Fused CC Coated <sup>1</sup> |
| 3        | Spring                    | Inconel 718                                                                  |
| 4        | Body                      | A182 F22<br>A105<br>A182 F91                                                 |
| 5        | Stem                      | A276 GR431 Nitrided                                                          |
| 6        | Live Loading              | Inconel 718                                                                  |
| 7        | Gland Thruster            | 316 Nitrided                                                                 |
| 8        | Gland Flange              | 410SS                                                                        |
| 9        | Stem Packing              | Expanded Graphite                                                            |
| 10       | Anti-Extrusion Rings      | Braided Graphite w/ Inconel Wires                                            |
| 11       | Metal Anti-Extrusion Ring | 316SS                                                                        |
| 12       | Retaining Ring            | A638 660                                                                     |

- Standard four-year warranty; one-year warranty on high-cycle applications (1 cycle per day, 365 days per year)
- Patented design



| Dimensions <sup>2</sup> (in) |      |          |      |      |       |      |       |        |
|------------------------------|------|----------|------|------|-------|------|-------|--------|
| Model                        | Bore | SW End   | A    | B    | C     | D    | E     | Weight |
| RSVP-UC                      | 0.63 | 3/4      | 3.95 | 6.47 | 9.79  | 5.03 | 6.50  | 15 lb  |
|                              |      | 1, 1-1/2 | 2.49 | 5.00 | 9.79  | 5.03 | 6.50  | 15 lb  |
| RSVP-UF                      | 1.00 | 1-1/2, 2 | 3.17 | 6.38 | 21.56 | 6.63 | 8.80  | 32 lb  |
| RSVP-UL                      | 1.30 | 2        | 3.51 | 7.5  | 22.38 | 7.63 | 10.12 | 54 lb  |
|                              |      | 2-1/2    | 3.75 | 7.5  | 22.38 | 7.63 | 10.12 | 53 lb  |
| RSVP-UM <sup>3</sup>         | 1.50 | 2        | 5.59 | 9.59 | —     | 7.63 | —     | 61 lb  |
|                              |      | 2-1/2    | 3.88 | 7.75 | —     | 7.63 | —     | 58 lb  |

| Dimensions <sup>2</sup> (mm) |      |         |     |     |     |     |     |        |
|------------------------------|------|---------|-----|-----|-----|-----|-----|--------|
| Model                        | Bore | SW (DN) | A   | B   | C   | D   | E   | Weight |
| RSVP-UC                      | 16   | 20      | 100 | 164 | 249 | 128 | 165 | 7 Kg   |
|                              |      | 25, 40  | 63  | 127 | 249 | 128 | 165 | 7 Kg   |
| RSVP-UF                      | 25   | 40, 50  | 81  | 162 | 548 | 168 | 224 | 15 Kg  |
| RSVP-UL                      | 33   | 50      | 89  | 191 | 568 | 194 | 257 | 24 Kg  |
|                              |      | 65      | 95  | 191 | 568 | 194 | 257 | 24 Kg  |
| RSVP-UM <sup>3</sup>         | 38   | 50      | 142 | 244 | —   | 194 | —   | 28 Kg  |
|                              |      | 65      | 99  | 197 | —   | 194 | —   | 26 Kg  |


<sup>2</sup> Consult factory for F91 dimensions.

<sup>3</sup> RSVP-UM is designed to meet ASME TDP-1 1998 full-bore and reliability requirements, and is a non-standard stock item.

### Temperature vs Pressure — Limited Class Ratings

| Class                                | Mat'l.            | Temperature (°F) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------------------|-------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                                      |                   | -20 to 100       | 200  | 300  | 400  | 500  | 600  | 650  | 700  | 750  | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |
| ASME 600<br>Maximum Pressure (psig)  | F22 <sup>4</sup>  | 1500             | 1500 | 1480 | 1455 | 1450 | 1440 | 1430 | 1415 | 1415 | 1415 | 1355 | 1200 | 953  | 688  | 446  | 282  |
|                                      | A105 <sup>5</sup> | 1500             | 1500 | 1480 | 1465 | 1465 | 1465 | 1430 | 1380 | 1270 | 1030 | —    | —    | —    | —    | —    | —    |
|                                      | F91               | 1500             | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 | 1465 | 1460 | 1440 | 1355 | 1200 | 953  | 862  | 862  | 775  |
| ASME 900<br>Maximum Pressure (psig)  | F22 <sup>4</sup>  | 2250             | 2250 | 2220 | 2185 | 2175 | 2165 | 2145 | 2120 | 2120 | 2120 | 2030 | 1800 | 1433 | 1045 | 681  | 426  |
|                                      | A105 <sup>5</sup> | 2250             | 2250 | 2220 | 2200 | 2200 | 2200 | 2145 | 2075 | 1905 | 1545 | —    | —    | —    | —    | —    | —    |
|                                      | F91               | 2250             | 2250 | 2250 | 2250 | 2250 | 2250 | 2250 | 2200 | 2185 | 2160 | 2030 | 1800 | 1433 | 1311 | 1311 | 1175 |
| ASME 1500<br>Maximum Pressure (psig) | F22 <sup>4</sup>  | 3750             | 3750 | 3695 | 3640 | 3620 | 3605 | 3580 | 3535 | 3535 | 3535 | 3385 | 3000 | 2412 | 1785 | 1170 | 732  |
|                                      | A105 <sup>5</sup> | 3750             | 3750 | 3700 | 3665 | 3665 | 3665 | 3575 | 3455 | 3170 | 2570 | —    | —    | —    | —    | —    | —    |
|                                      | F91               | 3750             | 3750 | 3750 | 3750 | 3750 | 3750 | 3750 | 3665 | 3645 | 3600 | 3385 | 3000 | 2412 | 2250 | 2250 | 2015 |
| Class                                | Mat'l.            | Temperature (°C) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                                      |                   | -29 to 38        | 50   | 100  | 150  | 200  | 250  | 300  | 325  | 350  | 375  | 400  | 425  | 450  | 475  | 500  | 538  |
| ASME 600<br>Maximum Pressure (barg)  | F22 <sup>4</sup>  | 103              | 103  | 103  | 102  | 100  | 100  | 100  | 99   | 98   | 98   | 98   | 98   | 94   | 86   | 72   | 47   |
|                                      | A105 <sup>5</sup> | 103              | 103  | 103  | 102  | 101  | 101  | 101  | 100  | 98   | 94   | 87   | 72   | —    | —    | —    | —    |
|                                      | F91               | 103              | 103  | 103  | 103  | 103  | 103  | 103  | 103  | 103  | 101  | 101  | 99   | 95   | 86   | 72   | 59   |
| ASME 900<br>Maximum Pressure (barg)  | F22 <sup>4</sup>  | 155              | 155  | 155  | 153  | 151  | 150  | 149  | 149  | 148  | 146  | 146  | 146  | 141  | 128  | 109  | 72   |
|                                      | A105 <sup>5</sup> | 155              | 155  | 155  | 153  | 152  | 152  | 152  | 150  | 147  | 141  | 130  | 108  | —    | —    | —    | —    |
|                                      | F91               | 155              | 155  | 155  | 155  | 155  | 155  | 155  | 155  | 154  | 152  | 151  | 149  | 143  | 128  | 109  | 90   |
| ASME 1500<br>Maximum Pressure (barg) | F22 <sup>4</sup>  | 259              | 259  | 258  | 255  | 251  | 250  | 249  | 248  | 246  | 244  | 244  | 244  | 236  | 214  | 183  | 123  |
|                                      | A105 <sup>5</sup> | 259              | 259  | 259  | 255  | 253  | 253  | 253  | 251  | 245  | 236  | 217  | 180  | —    | —    | —    | —    |
|                                      | F91               | 259              | 259  | 259  | 259  | 259  | 259  | 259  | 259  | 257  | 253  | 251  | 248  | 241  | 214  | 183  | 155  |

<sup>4</sup>F22 not recommended for prolonged use above 1100°F / 593°C per ASME B16.34.

<sup>5</sup>A105 not recommended for prolonged use above 800°F / 427°C per ASME B16.34.

### Cv

| Bore (inches) | Pipe Size (inches) / Schedule |             |           |           |               |               |           |           |               |               |
|---------------|-------------------------------|-------------|-----------|-----------|---------------|---------------|-----------|-----------|---------------|---------------|
|               | 3/4 Sch 160                   | 3/4 Sch XXS | 1 Sch 160 | 1 Sch XXS | 1-1/2 Sch 160 | 1-1/2 Sch XXS | 2 Sch 160 | 2 Sch XXS | 2-1/2 Sch 160 | 2-1/2 Sch XXS |
| 0.63          | 40                            | 19          | 18        | 38        | 11            | 13            | —         | —         | —             | —             |
| 1.00          | —                             | —           | —         | —         | 43            | 70            | 33        | 37        | —             | —             |
| 1.30          | —                             | —           | —         | —         | —             | —             | 90        | 117       | 66            | 82            |
| 1.50          | —                             | —           | —         | —         | —             | —             | 144       | 242       | 103           | 145           |