

[www.stard-valve.com](http://www.stard-valve.com)



## CAST STEEL FLOATING BALL VALVE

### STARD VALVE

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SUZHOU SIP STARD VALVE CO.LTD.

# STARD VALVE

## [ABOUT COMPANY]

*International Quality, Precision Control*

STARD Ball Valves are manufactured and tested in conformance with the requirements of API 6D specifications. These industry standards dictate end-to-end dimensions, flange configuration, port sizes, materials of construction, quality control procedures and testing requirements.



In addition to Trunnion Ball Valves in cast 2pc and forged 3pc design, STARD offers a wide range of threaded end and flanged end floating ball valves in both cast and forged steel design.

As one of the major ball valve manufacturer in China, STARD offer special design of valves such as top entry ball valves, cryogenic ball valves, Metal-Metal seal ball valves for high temperature service, and we have one workshop specially making fully welded ball valves up to 56"

STARD Ball Valves are stocked by a network of authorized distributors to service the petroleum producing and refining industries. STARD products are marketed worldwide by domestic and international representatives.



## Production process



# Certificate



API 6D



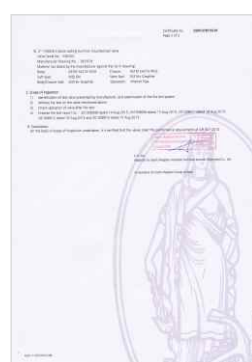
ISO 9001



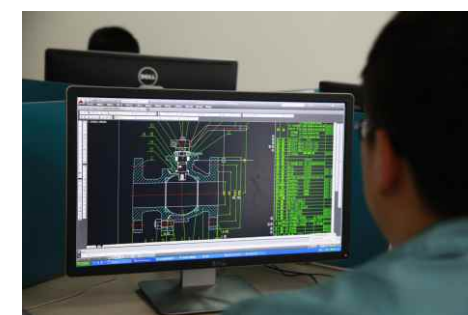
CE/PED



ATEX



FIRE SAFE TEST



Elaborate design  
is realized by strict  
control of details.



Zero-defect process control  
is the reliable guarantee for superior  
performance of STARD valves.



**STARD**  
2015|EDITION



Innovation is the  
sources of an  
enterprise's life,  
Innovation is to  
create new  
value!

» A provider of high-performance valves

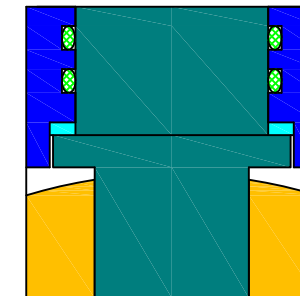


# STARD

High Performance Ball Valves

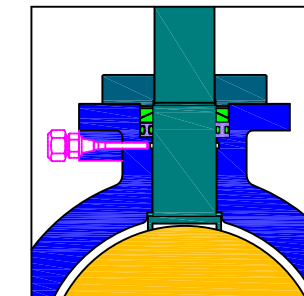
## STARD CAST STEEL FLOATING BALL VALVE

### • FEATURES AND BENEFITS



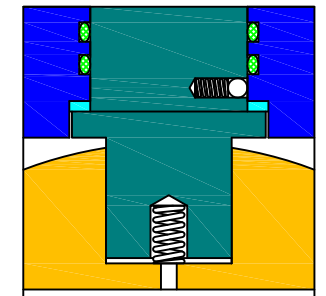
**BLOW-OUT PROOF STEM**

Internally inserted and back-seated stem assures the fire-safety and blow-out prevention by retaining the stem in the valve at all pressure



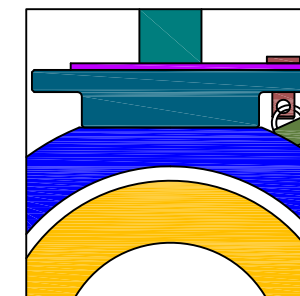
**STEM JOURNAL LUBRICATION (ON OPTION)**

All floating ball valves can be supplied with locking device to prevent unauthorized operation



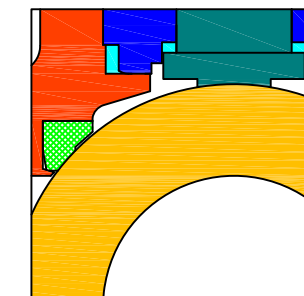
**ANTI-STATIC DEVICE**

The anti-static device is provided to assure the electrical continuity between ball, stem and body by spring-loaded pins for the whole valve.

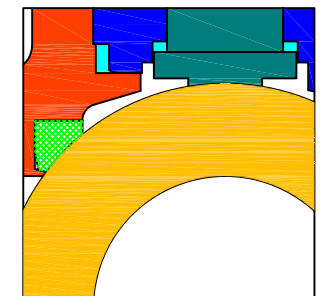


**LOCKING DEVICE (ON OPTION)**

All floating ball valves can be supplied with locking device to prevent unauthorized operation

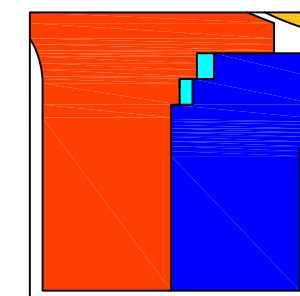


**BEFORE FIRE**



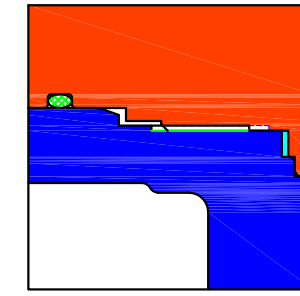
**AFTER FIRE**

Fire safe as per API 607 Fourth Edition criteria, metal seat at the port of opening provides inline seal in the event, that PTFE seat burns away in the fire, stem moves downstream to seal on metal seat, graphite gasket forms the body seal and graphite packing forms stem seal.



**SERIES F 2PC FLOATING BALL VALVE**

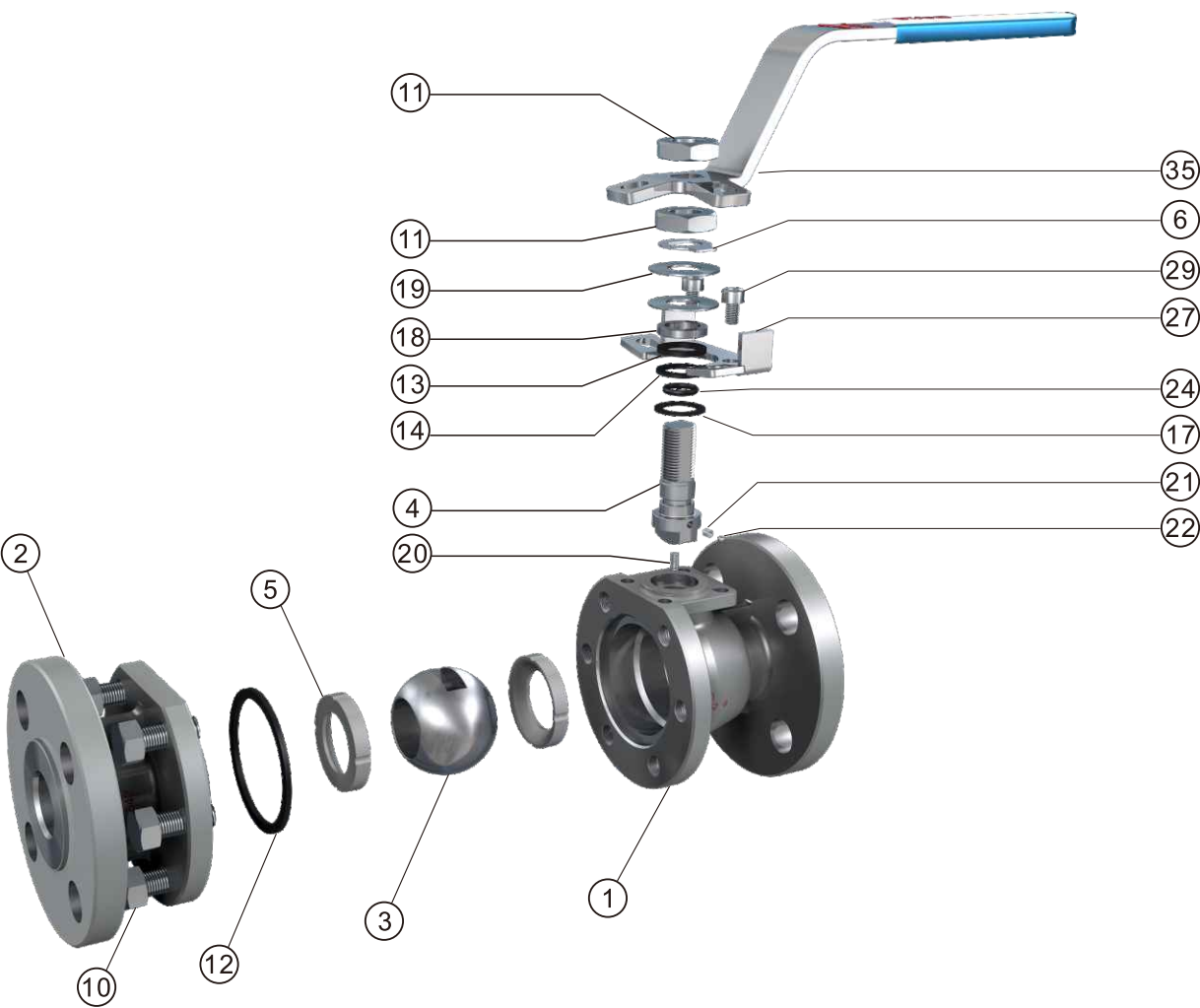
Double gaskets made of PTFE and graphite in series F floating ball valves suitable both for oil, gas and chemical application



**SERIES R 1PC FLOATING BALL VALVE**

Double gaskets made of PTFE and O-Ring in floating ball valves suitable both for oil, gas and chemical application

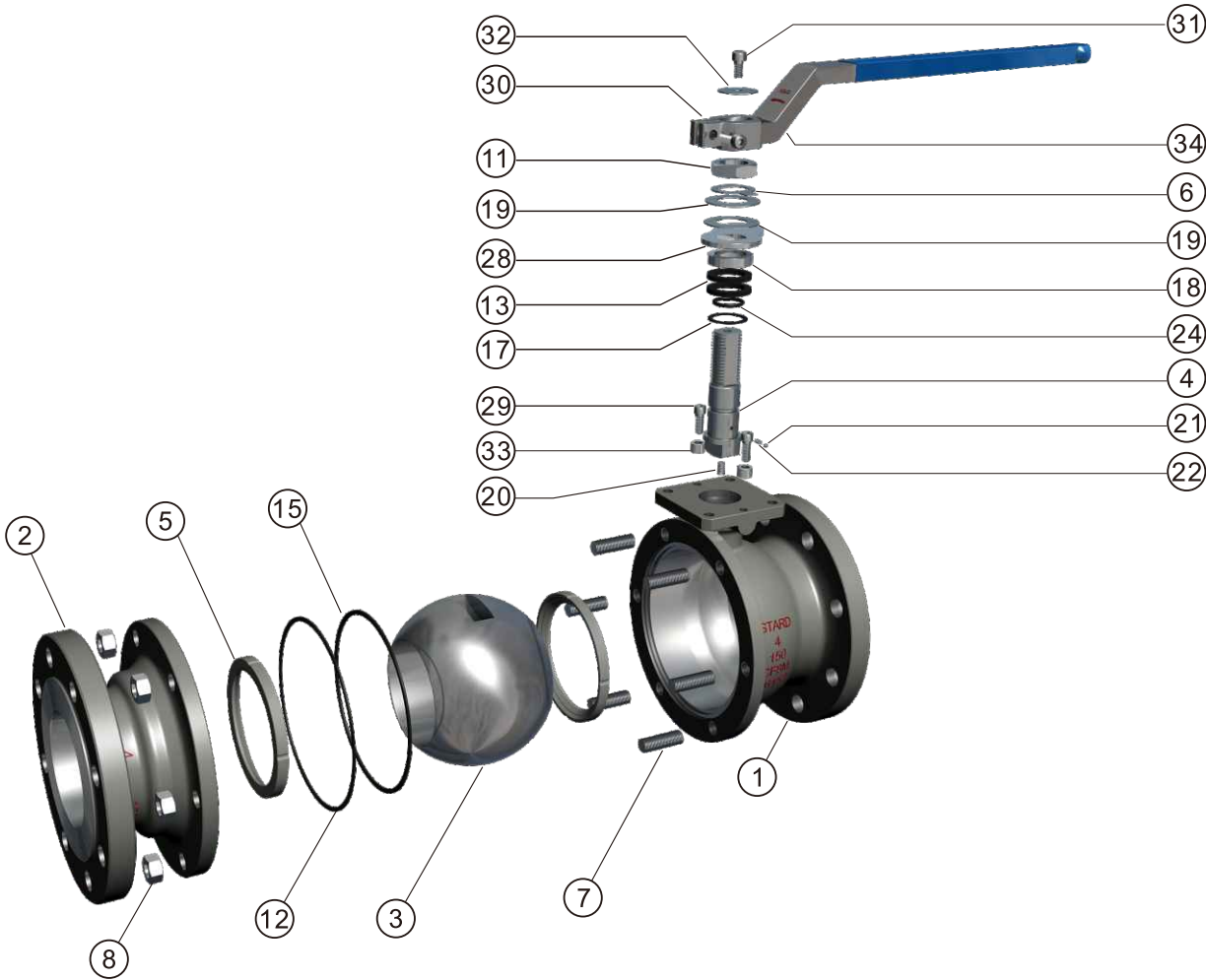
SERIES F 2PC FLOATING BALL VALVE



| ITEM | DESCRIPTION   | ITEM | DESCRIPTION       |
|------|---------------|------|-------------------|
| 1    | Body          | 17   | Thrust Washer     |
| 2    | End Cap       | 18   | Gland             |
| 3    | Ball          | 19   | Belleville Spring |
| 4    | Stem          | 20   | Antistatic Spring |
| 5    | Seat          | 21   | Antistatic Spring |
| 6    | Locking Plate | 22   | Antistatic Ball   |
| 10   | Screw         | 23   | O-ring            |
| 11   | Nut           | 27   | Position Plate    |
| 12   | Body Gasket   | 29   | Screw             |
| 13   | Stem packing  | 35   | Lever             |
| 14   | Stem packing  |      |                   |

| AVAILABLE | SIZE        |
|-----------|-------------|
| 150LB     | 1/2"~1-1/2" |
| 300LB     | 1/2"~1-1/2" |

SERIES F 2PC FLOATING BALL VALVE

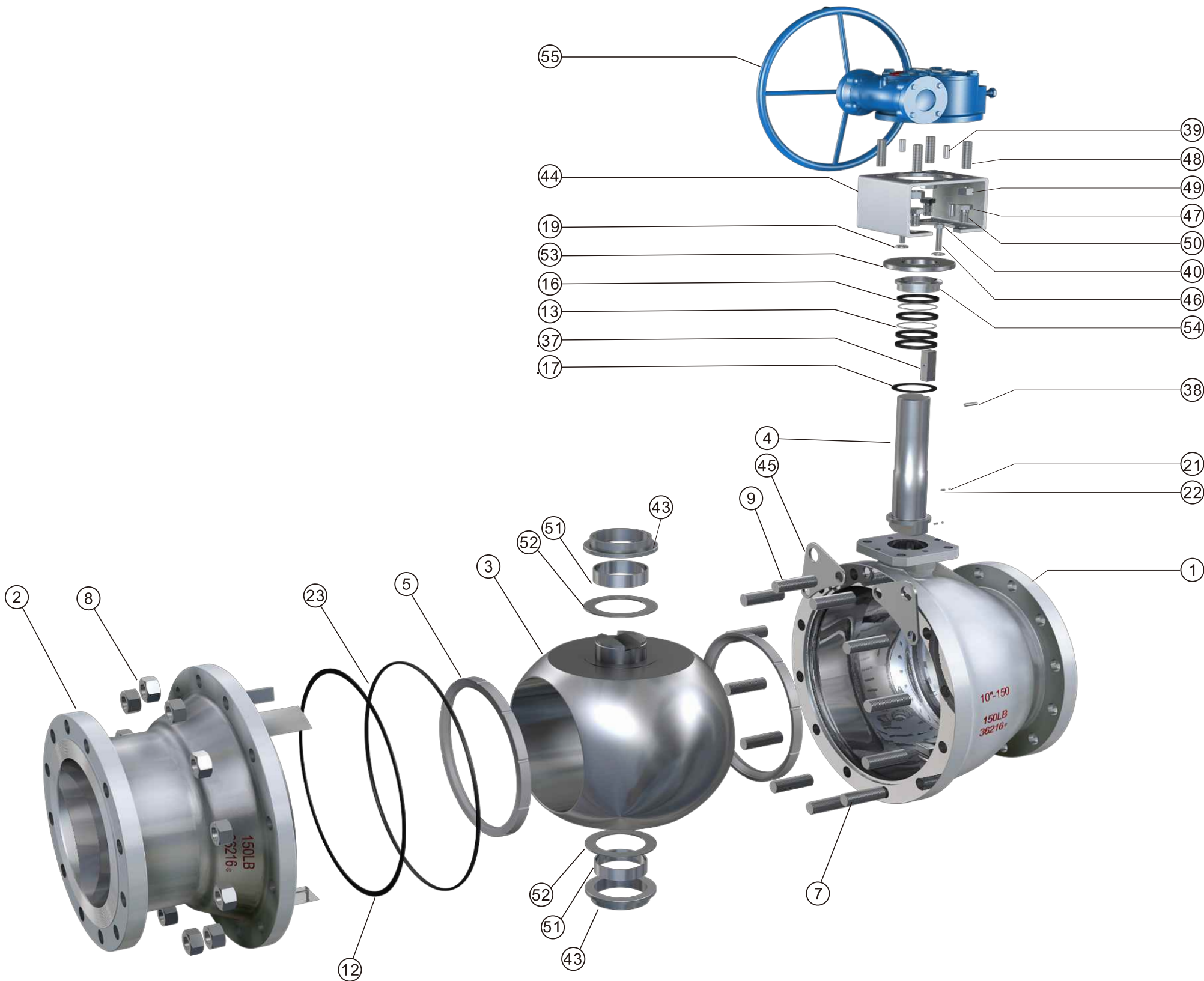


| ITEM | DESCRIPTION   | ITEM | DESCRIPTION       |
|------|---------------|------|-------------------|
| 1    | Body          | 18   | Gland             |
| 2    | End Cap       | 19   | Belleville Spring |
| 3    | Ball          | 20   | Antistatic Spring |
| 4    | Stem          | 21   | Antistatic Spring |
| 5    | Seat          | 22   | Antistatic Ball   |
| 6    | Locking Plate | 24   | O-ring            |
| 7    | Bolt          | 28   | Locking Plate     |
| 8    | Nut           | 29   | Screw             |
| 11   | Nut           | 30   | Screw             |
| 12   | Body Gasket   | 31   | Screw             |
| 13   | Stem packing  | 32   | Washer            |
| 15   | Washer        | 33   | Sleeve            |
| 17   | Thrust Washer | 34   | Lever             |

| AVAILABLE | SIZE  | FP |
|-----------|-------|----|
| 150LB     | 2"~6" |    |
| 300LB     | 2"~6" |    |
| 600LB     | 2"~4" |    |

| AVAILABLE | SIZE      | RP |
|-----------|-----------|----|
| 150LB     | 2"RP~8"RP |    |
| 300LB     | 2"RP~8"RP |    |
| 600LB     | 2"RP~4"RP |    |

SERIES F 2PC FLOATING BALL VALVE



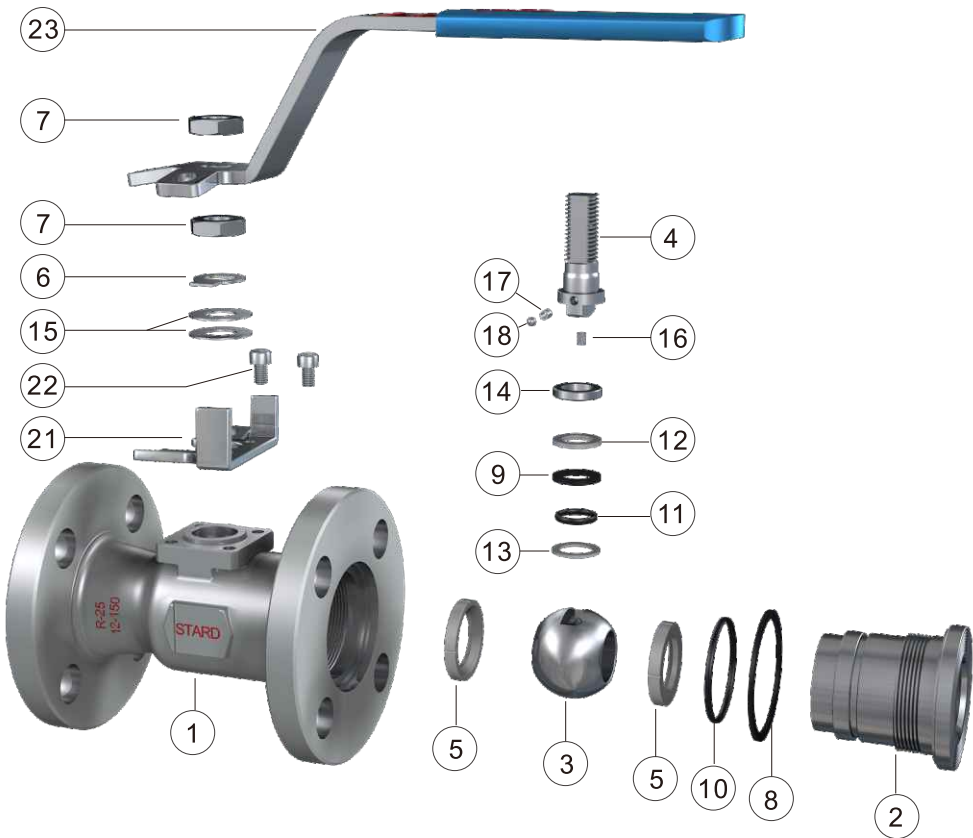
| ITEM | DESCRIPTION       | ITEM | DESCRIPTION    |
|------|-------------------|------|----------------|
| 1    | Body              | 38   | Pin            |
| 2    | End Cap           | 39   | Pin            |
| 3    | Ball              | 40   | Pin            |
| 4    | Stem              | 43   | Trunnion       |
| 5    | Seat              | 44   | Yoke           |
| 7    | Bolt              | 45   | Lifting eye    |
| 8    | Nut               | 46   | Bolt           |
| 9    | Bolt              | 47   | Nut            |
| 12   | Body Gasket       | 48   | Bolt           |
| 13   | Stem packing      | 49   | Nut            |
| 16   | Stem packing      | 50   | Screw          |
| 17   | Thrust Washer     | 51   | Bearing        |
| 19   | Belleville Spring | 52   | Washer         |
| 21   | Antistatic Spring | 53   | Retainer Plate |
| 22   | Antistatic Ball   | 54   | Packing Gland  |
| 23   | O-ring            | 55   | Gear           |
| 37   | Key               |      |                |

| AVAILABLE SIZE FP |            |
|-------------------|------------|
| 150LB             | 6"~12"     |
| 300LB             | 6"~10"     |
| AVAILABLE SIZE RP |            |
| 150LB             | 8"RP~10"RP |
| 300LB             | 8"RP~10"RP |

SERIES R 1PC FLOATING BALL VALVE

AVAILABLE SIZE

|       |             |
|-------|-------------|
| 150LB | 1/2"RP~2"RP |
| 300LB | 1/2"RP~2"RP |

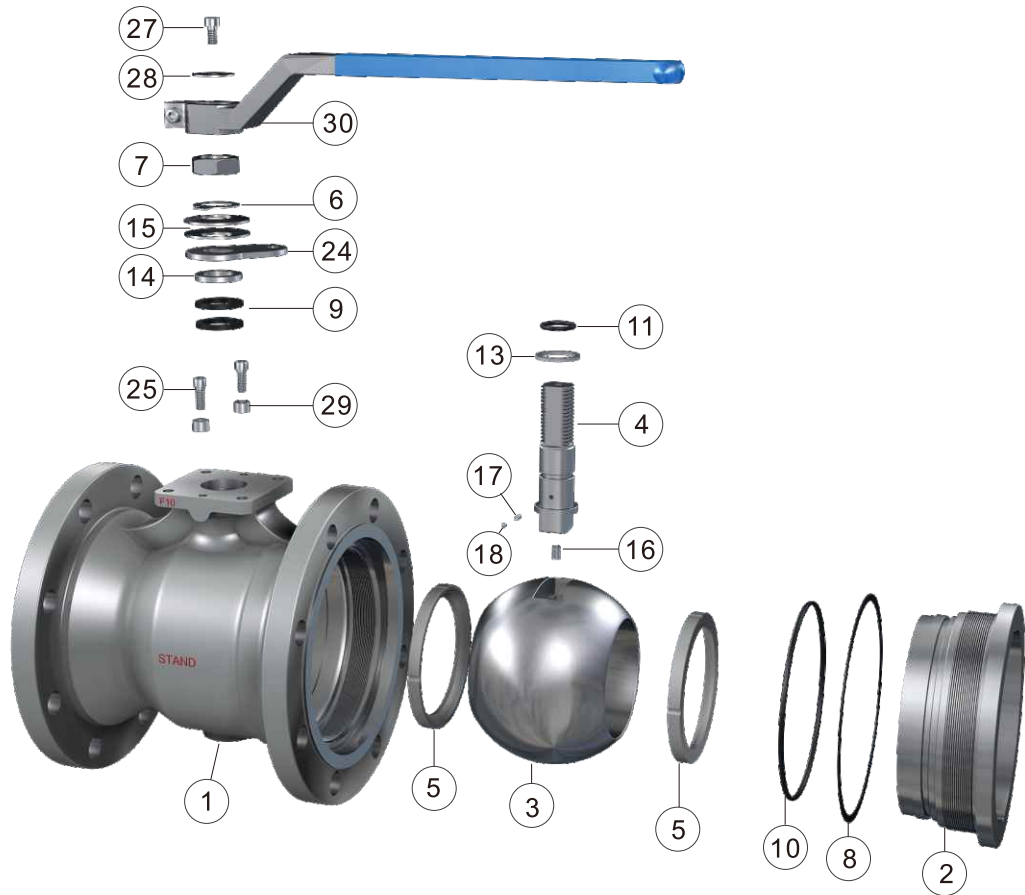


| ITEM | DESCRIPTION   | ITEM | DESCRIPTION       |
|------|---------------|------|-------------------|
| 1    | Body          | 12   | Stem packing      |
| 2    | End Cap       | 13   | Thrust Washer     |
| 3    | Ball          | 14   | Gland             |
| 4    | Stem          | 15   | Belleville Spring |
| 5    | Seat          | 16   | Antistatic Spring |
| 6    | Locking Plate | 17   | Antistatic Spring |
| 7    | Nut           | 18   | Antistatic Ball   |
| 8    | Body Gasket   | 21   | Position Plate    |
| 9    | Stem packing  | 22   | Screw             |
| 10   | O-ring        | 23   | Lever             |
| 11   | O-ring        |      |                   |

SERIES R 1PC FLOATING BALL VALVE

AVAILABLE SIZE

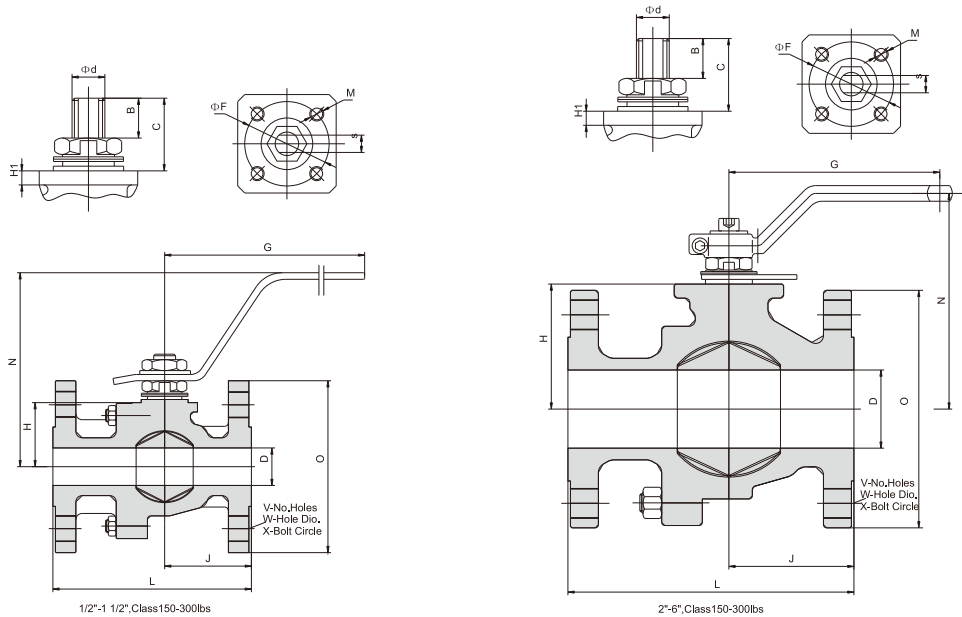
|       |           |
|-------|-----------|
| 150LB | 3"RP~8"RP |
| 300LB | 3"RP~6"RP |



| ITEM | DESCRIPTION   | ITEM | DESCRIPTION       |
|------|---------------|------|-------------------|
| 1    | Body          | 14   | Gland             |
| 2    | End Cap       | 15   | Belleville Spring |
| 3    | Ball          | 16   | Antistatic Spring |
| 4    | Stem          | 17   | Antistatic Spring |
| 5    | Seat          | 18   | Antistatic Ball   |
| 6    | Locking Plate | 24   | Locking Plate     |
| 7    | Nut           | 25   | Screw             |
| 8    | Body Gasket   | 26   | Screw             |
| 9    | Stem packing  | 27   | Screw             |
| 10   | O-ring        | 28   | Washer            |
| 11   | O-ring        | 29   | Sleeve            |
| 13   | Thrust Washer | 30   | Lever             |

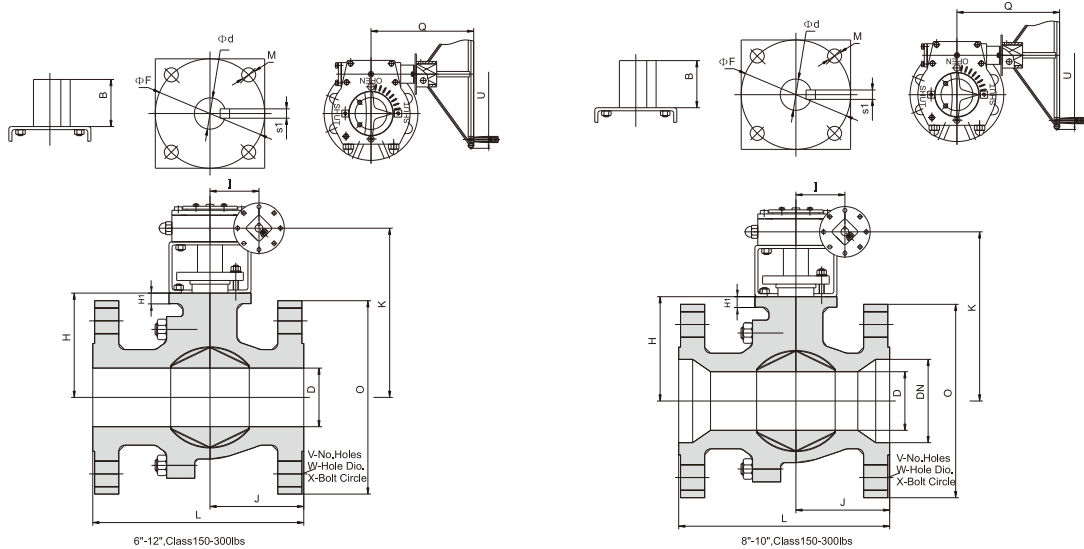
SERIES F 2PC FLOATING BALL VALVE  
FP Lever

| Dim.        |       | Valve Size (mm) |        |       |          |        |        |        |        |
|-------------|-------|-----------------|--------|-------|----------|--------|--------|--------|--------|
|             |       | 1/2"FP          | 3/4"FP | 1"FP  | 1-1/2"FP | 2"FP   | 3"FP   | 4"FP   | 6"FP   |
| Weight (Kg) | 150LB | 1.8             | 2      | 3.6   | 7.2      | 11.1   | 22     | 50     | 108    |
|             | 300LB | 2.3             | 3.6    | 5.1   | 10       | 14     | 30.6   | 53     | 116    |
| ISO 5211    |       | F03             | F03    | F04   | F05      | F07    | F10    | F10    | F12    |
| DN          |       | Φ14             | Φ19    | Φ25   | Φ38      | Φ50    | Φ76    | Φ100   | Φ151   |
| L           | 150LB | 108             | 117    | 127   | 165      | 178    | 203    | 229    | 394    |
|             | 300LB | 140             | 152    | 165   | 190      | 216    | 283    | 305    | 403    |
| O           | 150LB | Φ90             | Φ100   | Φ110  | Φ125     | Φ150   | Φ190   | Φ230   | Φ280   |
|             | 300LB | Φ95             | Φ115   | Φ125  | Φ155     | Φ165   | Φ210   | Φ255   | Φ320   |
| J           | 150LB | 47              | 53     | 55.5  | 75       | 80     | 95     | 104    | 175    |
|             | 300LB | 52              |        | 60    |          |        |        |        |        |
| H           |       | 36              | 41.5   | 43    | 57.5     | 89     | 117    | 135    | 195    |
| H1          | 150LB | 5               | 5      | 6     | 7.5      | 10     | 12     | 12     | 16     |
|             | 300LB |                 |        |       |          |        | 12.5   |        |        |
| N           |       | 109             | 115    | 120   | 130      | 146    | 200    | 225    | 291    |
| G           | 150LB | 160             | 180    | 180   | 240      | 240    | 400    | 400    | 600    |
|             | 300LB |                 |        |       |          |        |        |        | 800    |
| Φd          |       | M10             | M12    | M14   | M18      | M18    | M27    | M27    | M36    |
|             |       |                 |        |       |          |        | M30    |        | M40    |
| ΦF          |       | Φ36             | Φ36    | Φ42   | Φ50      | Φ70    | Φ102   | Φ102   | Φ125   |
| ΦM          |       | M5              | M5     | M5    | M6       | M8     | M10    | M10    | M12    |
| B           | 150LB | 8.5             | 11.5   | 17    | 23       | 14     | 23     | 23     | 26.5   |
|             | 300LB |                 |        |       |          |        | 22.5   |        | 28     |
| C           | 150LB | 18.5            | 25     | 27.5  | 33       | 36     | 52.5   | 52.5   | 62.5   |
|             | 300LB |                 |        |       |          |        | 55     |        | 64     |
| s           | 150LB | 7               | 8      | 11    | 14       | 13     | 20     | 20     | 24     |
|             | 300LB |                 |        |       |          |        |        |        | 28     |
| V           | 150LB | 4               | 4      | 4     | 4        | 4      | 4      | 8      | 8      |
|             | 300LB | 4               | 4      | 4     | 4        | 8      | 8      | 8      | 12     |
| W           | 150LB | Φ16             | Φ16    | Φ16   | Φ16      | Φ19    | Φ19    | Φ19    | Φ22.2  |
|             | 300LB | Φ16             | Φ19    | Φ19   | Φ22.2    | Φ19    | Φ22.2  | Φ22.2  | Φ22.2  |
| X           | 150LB | Φ60.3           | Φ69.9  | Φ79.4 | Φ98.4    | Φ120.7 | Φ152.4 | Φ190.5 | Φ241.3 |
|             | 300LB | Φ66.7           | Φ82.6  | Φ88.9 | Φ114.3   | Φ127   | Φ168.3 | Φ200   | Φ269.9 |



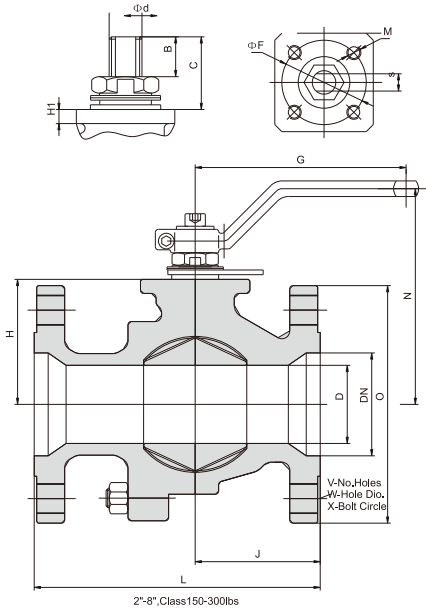
SERIES F 2PC FLOATING BALL VALVE  
FP&RP Gear

| Dim.        |       | Valve Size (mm) |        |        |        |        |        |
|-------------|-------|-----------------|--------|--------|--------|--------|--------|
|             |       | 6"FP            | 8"FP   | 10"FP  | 12"FP  | 8"RP   | 10"RP  |
| Weight (Kg) | 150LB | 132             | 195    | 312    | 346    | 146    | 218    |
|             | 300LB | 145             | 234.5  | 493    |        | 172    | 320    |
| ISO 5211    |       | F12             | F14    | F14    | F25    | F12    | F14    |
| D<br>DN     |       | Φ151            | Φ202   | Φ254   | Φ305   | Φ151   | Φ202   |
|             |       |                 |        |        |        | Φ202   | Φ254   |
| L           | 150LB | 394             | 457    | 533    | 610    | 457    | 533    |
|             | 300LB | 403             | 502    | 568    |        | 502    | 568    |
| O           | 150LB | Φ280            | Φ345   | Φ405   | 485    | Φ345   | Φ405   |
|             | 300LB | Φ320            | Φ380   | Φ445   |        | Φ380   | Φ445   |
| J           | 150LB | 175             | 200    | 226    | 304    | 200    | 226    |
|             | 300LB |                 |        | 261    |        |        | 261    |
| H           |       | 195             | 237    | 282    | 296    | 195    | 237    |
| H1          | 150LB | 16              | 16     | 22     | 25     | 16     | 16     |
|             | 300LB |                 |        |        |        |        |        |
| Φd          | 150LB | Φ34             | Φ45    | 55     | Φ78    | Φ34    | Φ45    |
|             | 300LB | Φ38             | Φ45    | 55     | Φ78    | Φ38    | Φ45    |
| ΦF          |       | Φ125            | Φ140   | 140    | Φ254   | Φ125   | Φ140   |
| ΦM          |       | M12             | M16    | M16    | M16    | M12    | M16    |
| B           | 150LB | 50              | 64     | 63     | 97.5   | 50     | 64     |
|             | 300LB |                 |        |        |        |        |        |
| s1          |       | 10              | 12     | 18     | 22     | 10     | 12     |
| V           | 150LB | 8               | 8      | 12     | 12     | 8      | 12     |
|             | 300LB | 12              | 12     | 16     |        | 12     | 16     |
| W           | 150LB | Φ22.2           | Φ22.2  | Φ25.4  | Φ25.4  | Φ22.2  | Φ25.4  |
|             | 300LB | Φ22.2           | Φ25.4  | Φ28.6  |        | Φ25.4  | Φ28.6  |
| X           | 150LB | Φ241.3          | Φ298.5 | Φ362   | Φ431.8 | Φ298.5 | Φ362   |
|             | 300LB | Φ269.9          | Φ330.2 | Φ387.4 |        | Φ330.2 | Φ387.4 |
| U           | 150LB | Φ300            | Φ400   | Φ600   | Φ600   | Φ300   | Φ400   |
|             | 300LB |                 | Φ700   | Φ600   |        |        | Φ700   |
| I           | 150LB | 78              | 120    | 120    | 125    | 78     | 120    |
|             | 300LB |                 | 126    | 126    |        |        | 126    |
| K           | 150LB | 318             | 389.5  | 437    | 493    | 318    | 389.5  |
|             | 300LB |                 | 379    | 441    |        |        | 379    |
| Q           | 150LB | 223.5           | 267    | 316    | 513    | 223.5  | 267    |
|             | 300LB |                 | 404    | 402    |        |        | 404    |



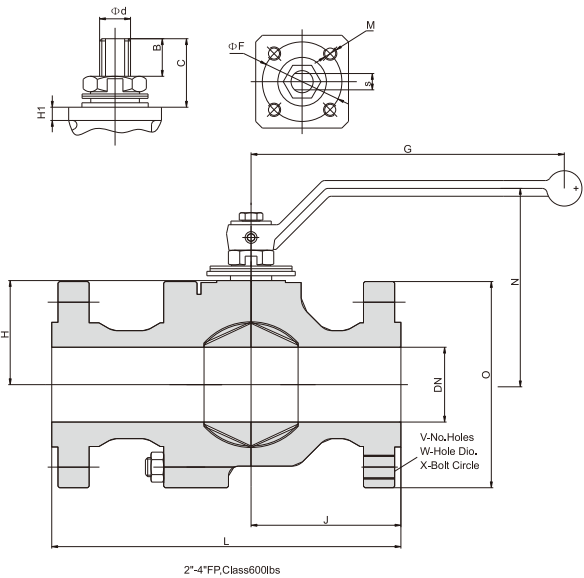
SERIES F 2PC FLOATING BALL VALVE  
RP Lever

| Dim.        |       | Valve Size (mm) |        |        |        |        |
|-------------|-------|-----------------|--------|--------|--------|--------|
|             |       | 2"RP            | 3"RP   | 4"RP   | 6"RP   | 8"RP   |
| Weight (Kg) | 150LB | 9               | 16     | 29.5   | 48     | 123    |
|             | 300LB | 11              | 30     | 39     | 72.5   | 148    |
| ISO 5211    |       | F05             | F07    | F10    | F10    | F12    |
| D           |       | Φ38             | Φ50    | Φ76    | Φ100   | Φ151   |
| DN          |       | Φ50             | Φ76    | Φ100   | Φ151   | Φ202   |
| L           | 150LB | 178             | 203    | 229    | 394    | 457    |
|             | 300LB | 216             | 283    | 305    | 403    | 502    |
| O           | 150LB | Φ150            | Φ190   | Φ230   | Φ280   | Φ345   |
|             | 300LB | Φ165            | Φ210   | Φ255   | Φ320   | Φ380   |
| J           | 150LB | 80              | 90     | 100    | 150    | 200    |
|             | 300LB | 95              | 110    | 125    | 160    | 225    |
| H           |       | 55              | 80     | 115    | 135    | 195    |
| H1          | 150LB | 8               | 9      | 12     | 12     | 16     |
|             | 300LB |                 |        |        |        |        |
| N           |       | 112.5           | 146    | 200    | 221    | 286    |
| G           | 150LB | 240             | 240    | 400    | 400    | 600    |
|             | 300LB |                 |        |        |        | 800    |
| Φd          |       | M18             | M18    | M27    | M27    | M36    |
|             |       |                 |        |        | M30    | M40    |
| ΦF          |       | Φ50             | Φ70    | Φ102   | Φ102   | Φ125   |
| ΦM          |       | M6              | M8     | M10    | M10    | M12    |
| B           | 150LB | 13.5            | 17     | 25     | 26     | 35     |
|             | 300LB |                 |        |        | 25.5   | 26     |
| C           | 150LB | 33              | 37     | 52     | 53     | 62     |
|             | 300LB |                 |        |        | 55     |        |
| s           | 150LB | 13              | 13     | 20     | 20     | 24     |
|             | 300LB |                 |        |        |        | 28     |
| V           | 150LB | 4               | 4      | 8      | 8      | 8      |
|             | 300LB | 8               | 8      | 8      | 12     | 12     |
| W           | 150LB | Φ19             | Φ19    | Φ19    | Φ22.2  | Φ22.2  |
|             | 300LB | Φ19             | Φ22.2  | Φ22.2  | Φ22.2  | Φ25.4  |
| X           | 150LB | Φ120.7          | Φ152.4 | Φ190.5 | Φ241.3 | Φ298.5 |
|             | 300LB | Φ127            | Φ168.3 | Φ200   | Φ269.9 | Φ330.2 |



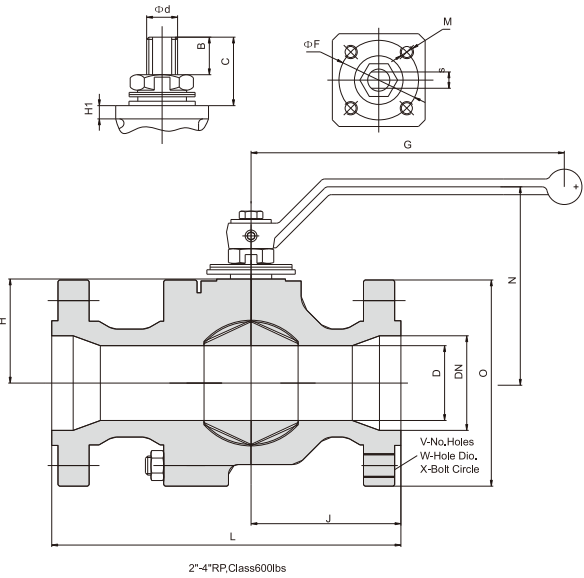
SERIES F 2PC FLOATING BALL VALVE  
FP CLASS 600

| Dim.        |       | Valve Size (mm) |        |        |
|-------------|-------|-----------------|--------|--------|
|             |       | 2"FP            | 3"FP   | 4"FP   |
| Weight (Kg) | 600LB | 21.75           | 49.2   | 96.9   |
|             |       |                 |        |        |
| ISO 5211    |       | F07             | F10    | F10    |
| DN          |       | Φ50             | Φ76    | Φ100   |
| L           |       | 292             | 356    | 432    |
| O           |       | Φ165            | Φ210   | Φ275   |
| J           |       | 113.5           | 153    | 178    |
| H           |       | 77              | 106    | 150    |
| H1          |       | 8.5             | 12     | 11.5   |
| N           |       | 151             | 204    | 204    |
| G           |       | 340             | 367    | 610    |
| Φd          |       | M22             | M30    | M40    |
| ΦF          |       | Φ70             | Φ102   | Φ102   |
| ΦM          |       | M8              | M10    | M10    |
| B           |       | 12              | 24.5   | 21.5   |
| C           |       | 37              | 63     | 64     |
| s           |       | 12              | 20     | 28     |
| V           |       | 8               | 8      | 8      |
| W           |       | Φ19             | Φ22.2  | Φ25.4  |
| X           |       | Φ127            | Φ168.3 | Φ215.9 |



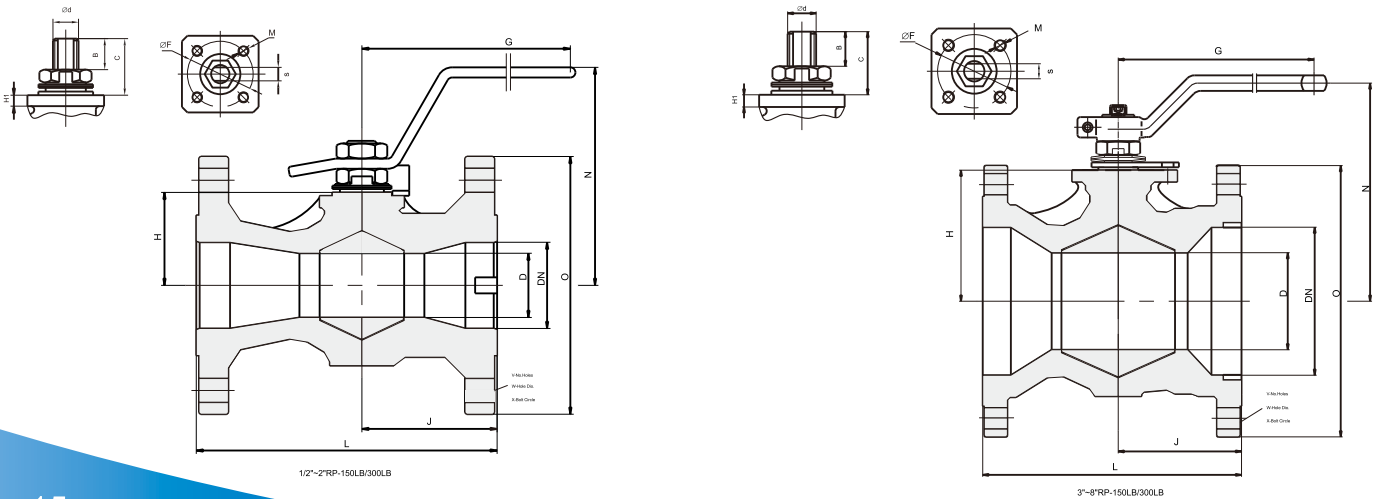
SERIES F 2PC FLOATING BALL VALVE  
RP CLASS 600

| Dim.        |       | Valve Size (mm) |        |        |
|-------------|-------|-----------------|--------|--------|
|             |       | 2"RP            | 3"RP   | 4"RP   |
| Weight (Kg) | 600LB | 19.26           | 31.31  | 76     |
|             |       |                 |        |        |
| ISO 5211    |       | F07             | F07    | F10    |
| D           |       | Φ38             | Φ50    | Φ76    |
| DN          |       | Φ50             | Φ76    | Φ100   |
| L           |       | 292             | 356    | 432    |
| O           |       | Φ165            | Φ210   | Φ275   |
| J           |       | 117.5           | 158.5  | 203    |
| H           |       | 67              | 77     | 106    |
| H1          |       | 8.4             | 10     | 15     |
| N           |       | 141             | 151    | 204    |
| G           |       | 340             | 340    | 367    |
| Φd          |       | M22             | M22    | M30    |
| ΦF          |       | Φ70             | Φ70    | Φ102   |
| ΦM          |       | M8              | M8     | M10    |
| B           |       | 11              | 12     | 24.5   |
| C           |       | 35              | 37     | 61.5   |
| s           |       | 12              | 12     | 20     |
| V           |       | 8               | 8      | 8      |
| W           |       | Φ19             | Φ22.2  | Φ25.4  |
| X           |       | Φ127            | Φ168.3 | Φ215.9 |



SERIES R 1PC FLOATING BALL VALVE  
DIMENSION TABLE

| Dim.        |       | Valve Size (mm) |        |        |          |         |         |         |         |         |
|-------------|-------|-----------------|--------|--------|----------|---------|---------|---------|---------|---------|
|             |       | 1/2"RP          | 3/4"RP | 1"RP   | 1 1/2"RP | 2"RP    | 3"RP    | 4"RP    | 6"RP    | 8"RP    |
| Weight (Kg) | 150LB | 1.5             | 2.5    | 3      | 6.5      | 9       | 18.5    | 30.5    | 46      | 88.5    |
|             | 300LB | 2               | 3.5    | 4.5    | 9        | 11.5    | 25.5    | 43.5    | 77      |         |
| ISO 5211    |       | F03             | F03    | F03    | F05      | F05     | F07     | F10     | F10     | F12     |
| D           |       | φ 11            | φ 14   | φ 19   | φ 30     | φ 38    | φ 62    | φ 76    | φ 100   | 144     |
| DN          |       | φ 15            | φ 20.8 | φ 25.4 | φ 38     | φ 51    | φ 76    | φ 101.5 | φ 152.5 | 202.5   |
| L           | 150LB | 108             | 117    | 127    | 165      | 178     | 203     | 229     | 267     | 292     |
|             | 300LB | 139.7           | 152.4  | 165    | 190.5    | 216     | 282.5   | 304.8   | 403     |         |
| O           | 150LB | φ 90            | φ 100  | φ 110  | φ 125    | φ 150   | φ 190   | φ 230   | φ 280   | φ 345   |
|             | 300LB | φ 95            | φ 115  | φ 125  | φ 155    | φ 165   | φ 210   | φ 255   | φ 320   |         |
| J           | 150LB | 53              | 59.6   | 61.1   | 76.3     | 80      | 88.6    | 104.6   | 127     | 146     |
|             | 300LB | 53              | 59.6   | 61.1   | 76.3     | 80      | 88.6    | 104.6   | 127     |         |
| H           |       | 18.75           | 27.75  | 32.5   | 49.5     | 55      | 95.5    | 117     | 135     | 187.5   |
| N           |       | 93.6            | 103.5  | 108.5  | 125      | 131     | 169.5   | 207     | 222     | 283.5   |
| G           | 150LB | 160             | 160    | 180    | 240      | 240     | 300     | 400     | 400     | 500     |
|             | 300LB | 160             | 160    | 180    | 240      | 240     | 300     | 400     | 400     |         |
| φ d         |       | M10             | M10    | M12    | M18      | M18     | M22     | M27     | M27     | M36     |
| φ E         |       |                 |        |        |          |         |         |         | M30     |         |
| φ F         |       | 36              | 36     | 36     | 50       | 50      | 70      | 102     | 102     | 125     |
| φ M         |       | M5              | M5     | M5     | M6       | M6      | M8      | M10     | M10     | M12     |
| B           |       | 8               | 10     | 12     | 19       | 15      | 19      | 23      | 23      | 28      |
| C           |       | 18              | 22.75  | 25.5   | 35.5     | 34      | 43      | 52.5    | 52.5    | 64      |
| s           |       | 7               | 7      | 9      | 14       | 14      | 16      | 20      | 20      | 24      |
|             |       |                 |        |        |          |         |         |         | 20      |         |
| V           | 150LB | 4               | 4      | 4      | 4        | 4       | 4       | 8       | 8       | 8       |
|             | 300LB | 4               | 4      | 4      | 4        | 8       | 8       | 8       | 12      |         |
| W           | 150LB | φ 16            | φ 16   | φ 16   | φ 16     | φ 19    | φ 19    | φ 19    | φ 22.2  | φ 22.2  |
|             | 300LB | φ 16            | φ 19   | φ 19   | φ 22.2   | φ 19    | φ 22.2  | φ 22.2  | φ 22.2  |         |
| X           | 150LB | φ 60.3          | φ 69.9 | φ 79.4 | φ 98.4   | φ 120.7 | φ 152.4 | φ 190.5 | φ 241.3 | φ 298.5 |
|             | 300LB | φ 66.7          | φ 82.6 | φ 88.9 | φ 114.3  | φ 127   | φ 168.3 | φ 200   | φ 269.9 |         |



SERIES STARD CAST STEEL FLOATING BALL VALVE

TORQUE VALUE FOR FP (N.M)

| SIZE (") | CLASS (LB) |      |     |
|----------|------------|------|-----|
|          | 150        | 300  | 600 |
| 1/2      | 7.8        | 12   |     |
| 3/4      | 12         | 16   |     |
| 1        | 15         | 20   |     |
| 1-1/2    | 30         | 40   |     |
| 2        | 50         | 72   | 138 |
| 3        | 91         | 180  | 293 |
| 4        | 230        | 345  | 690 |
| 6        | 420        | 735  |     |
| 8        | 1100       | 3050 |     |
| 10       | 2600       | 3650 |     |
| 12       | 4000       |      |     |

TORQUE VALUE FOR RP (N.M)

| SIZE (") | CLASS (LB) |      |     |
|----------|------------|------|-----|
|          | 150        | 300  | 600 |
| 1/2      | 3          | 7    |     |
| 3/4      | 7.8        | 12   |     |
| 1        | 12         | 16   |     |
| 1-1/2    | 15         | 20   |     |
| 2        | 30         | 40   | 112 |
| 3        | 50         | 72   | 138 |
| 4        | 91         | 180  | 293 |
| 6        | 230        | 345  |     |
| 8        | 420        | 735  |     |
| 10       | 1100       | 3050 |     |

Material For Series F 2pc Floating Ball Valve

| Parts No. | Parts Description | Material                                                                               |
|-----------|-------------------|----------------------------------------------------------------------------------------|
| 1         | Body              | ASTMA216 WCB, ASTMA352 LCC,ASTMA351 CF8M/CF8/CN7M, ASTMA494 M-35-1, ASTMA995 4A        |
| 2         | End Cap           | ASTMA216 WCB, ASTMA352 LCC,ASTMA351 CF8M/CF8/CN7M, ASTMA494 M-35-1, ASTMA995 4A        |
| 3         | Ball              | ASTMA182 F304/F316/F51, ASTMA351 CF8M/CF8/CN7M, ASTMA494 M-35-1,ASTMA995 4A, Monel 400 |
| 4         | Stem              | ASTMA182 F316/F304/F51, Monel 400,Alloy 20                                             |
| 5         | Seat              | RPTFE, PTFE, Peek, Devlon                                                              |
| 6         | Body Gasket       | Graphite                                                                               |
| 7         | Thrust Washer     | PTFE                                                                                   |
| 8         | Stem Packing      | Graphite, PTFE                                                                         |
| 9         | Bolt              | ASTMA193 B8M、B8、B7M、B7,ASTMA320 L7M、L7                                                 |
| 10        | Nut               | ASTMA194 8M、8、2HM、2H,7M、4                                                              |

Material For Series R 1pc Floating Ball Valve

| Parts No. | Parts Description | Material                                                                               |
|-----------|-------------------|----------------------------------------------------------------------------------------|
| 1         | Body              | ASTMA216 WCB, ASTMA352 LCC,ASTMA351 CF8M/CF8/CN7M, ASTMA494 M-35-1, ASTMA995 4A        |
| 2         | End Cap           | ASTMA105, ASTMA351 LF2,ASTMA182 F316/F304/UNS N08020, Monel 400, ASTMA182 F51          |
| 3         | Ball              | ASTMA182 F304/F316/F51, ASTMA351 CF8M/CF8/CN7M, ASTMA494 M-35-1,ASTMA995 4A, Monel 400 |
| 4         | Stem              | ASTMA182 F316/F304/F51, Monel 400,Alloy 20                                             |
| 5         | Seat              | RPTFE, PTFE, Peek, Devlon                                                              |
| 6         | Body Gasket       | Graphite                                                                               |
| 7         | Thrust Washer     | PTFE                                                                                   |
| 8         | Stem Packing      | Graphite, PTFE                                                                         |

STARD CAST STEEL FLOATING BALL VALVE

CV VALUE

| 2PC FULL BORE |       |           |         |                         |        |        |        |        |       |       |      |
|---------------|-------|-----------|---------|-------------------------|--------|--------|--------|--------|-------|-------|------|
| VALVE         | SIZE  | BALL BROE | Cv max  | Cv FOR VARIOUS OPENINGS |        |        |        |        |       |       |      |
| DN            | NPS   | ΦD        | 90°     | 80°                     | 70°    | 60°    | 50°    | 40°    | 30°   | 20°   | 10°  |
| 15            | 1/2   | 14        | 16.0    | 8.7                     | 4.5    | 2.1    | 0.8    | 0.2    | 0.0   | 0.0   | 0.0  |
| 20            | 3/4   | 19        | 32.5    | 20.2                    | 11.9   | 6.6    | 3.4    | 1.5    | 0.4   | 0.0   | 0.0  |
| 25            | 1     | 24        | 55.8    | 33.6                    | 15.4   | 10.2   | 4.9    | 1.9    | 0.3   | 0.1   | 0.1  |
| 32            | 1-1/4 | 30        | 93.3    | 58.5                    | 34.8   | 19.5   | 10.1   | 4.5    | 1.3   | 0.1   | 0.1  |
| 40            | 1-1/2 | 38        | 160.4   | 103.8                   | 63.8   | 37.3   | 20.4   | 9.9    | 3.7   | 0.5   | 0.1  |
| 50            | 2     | 50        | 300.8   | 193.4                   | 118.2  | 68.6   | 37.1   | 17.7   | 6.4   | 0.7   | 0.3  |
| 65            | 2-1/2 | 62        | 491.4   | 331.1                   | 212.7  | 130.5  | 75.7   | 40.4   | 18.3  | 5.4   | 0.4  |
| 80            | 3     | 76        | 782.6   | 516.8                   | 325.0  | 194.6  | 109.6  | 56.0   | 23.3  | 5.0   | 0.7  |
| 100           | 4     | 100       | 1465.3  | 987.7                   | 634.7  | 389.4  | 226.0  | 120.6  | 54.8  | 16.1  | 1.3  |
| 125           | 5     | 120       | 2200.6  | 1457.0                  | 918.7  | 551.8  | 312.1  | 160.3  | 67.4  | 15.3  | 2.0  |
| 150           | 6     | 151       | 3720.3  | 2531.8                  | 1643.6 | 1019.5 | 599.6  | 326.2  | 153.5 | 50.1  | 3.3  |
| 200           | 8     | 202       | 7223.5  | 4959.5                  | 3249.6 | 2036.2 | 1540.6 | 670.8  | 325.2 | 115.2 | 10.5 |
| 250           | 10    | 254       | 12172.7 | 8409.0                  | 5545.6 | 3499.3 | 2100.7 | 1175.7 | 581.5 | 216.5 | 26.2 |
| 300           | 12    | 305       | 18462.4 | 12849.6                 | 8540.9 | 5435.3 | 3295.5 | 1869.5 | 946.0 | 371.9 | 59.5 |

| 2PC REDUCED BORE |       |           |        |                         |        |       |       |       |       |      |      |
|------------------|-------|-----------|--------|-------------------------|--------|-------|-------|-------|-------|------|------|
| VALVE            | SIZE  | BALL BROE | Cv max | Cv FOR VARIOUS OPENINGS |        |       |       |       |       |      |      |
| DN               | NPS   | ΦD        | 90°    | 80°                     | 70°    | 60°   | 50°   | 40°   | 30°   | 20°  | 10°  |
| 20               | 3/4   | 14        | 14.9   | 9.7                     | 6.3    | 4.1   | 2.6   | 1.6   | 0.9   | 0.4  | 0.1  |
| 25               | 1     | 19        | 28.3   | 18.5                    | 12.1   | 7.8   | 4.9   | 3.0   | 1.7   | 0.8  | 0.2  |
| 40               | 1-1/2 | 30        | 73.2   | 47.8                    | 31.2   | 20.1  | 12.6  | 7.7   | 4.3   | 2.1  | 0.6  |
| 50               | 2     | 38        | 119.9  | 78.3                    | 51.1   | 32.9  | 20.7  | 12.5  | 7.1   | 3.4  | 0.9  |
| 80               | 3     | 62        | 332.7  | 217.2                   | 141.9  | 91.4  | 57.5  | 34.8  | 19.6  | 9.4  | 2.6  |
| 100              | 4     | 76        | 507.1  | 331.1                   | 216.3  | 139.3 | 87.7  | 53.1  | 29.9  | 14.4 | 3.9  |
| 150              | 6     | 100       | 895.3  | 584.6                   | 381.8  | 245.9 | 154.8 | 93.7  | 52.8  | 25.4 | 7.0  |
| 200              | 8     | 144       | 1908.4 | 1246                    | 813.8  | 524.1 | 330.0 | 199.8 | 112.5 | 54.0 | 14.8 |
| 250              | 10    | 187       | 3276.9 | 2139.5                  | 1397.4 | 900.0 | 566.6 | 343.0 | 193.2 | 92.8 | 25.5 |



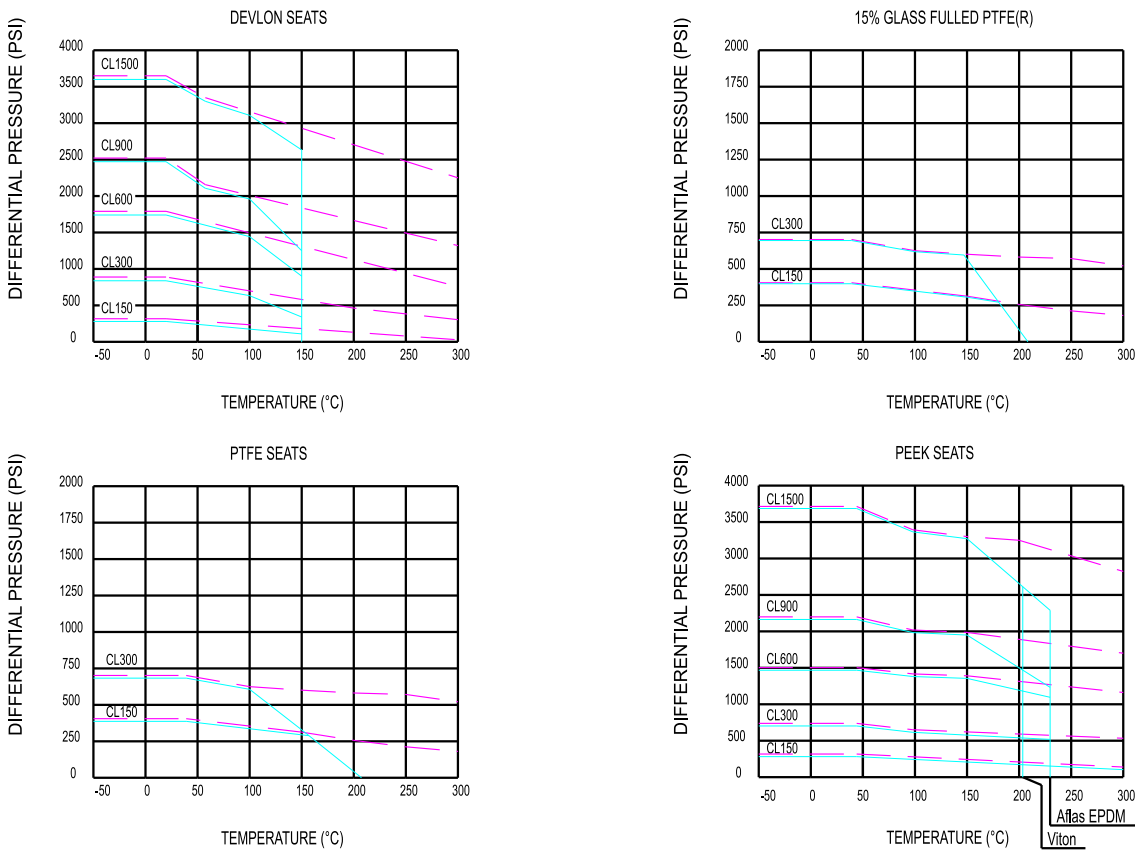
STARD CAST STEEL FLOATING BALL VALVE

CV VALUE

| 1PC REDUCED BORE |       |           |        |                         |       |       |       |       |       |      |      |
|------------------|-------|-----------|--------|-------------------------|-------|-------|-------|-------|-------|------|------|
| VALVE            | SIZE  | BALL BROE | Cv max | Cv FOR VARIOUS OPENINGS |       |       |       |       |       |      |      |
| DN               | NPS   | ΦD        | 90°    | 80°                     | 70°   | 60°   | 50°   | 40°   | 30°   | 20°  | 10°  |
| 15               | 1/2   | 11        | 7.8    | 5.1                     | 3.3   | 2.2   | 1.4   | 0.85  | 0.5   | 0.2  | 0.05 |
| 20               | 3/4   | 14        | 14.9   | 9.7                     | 6.3   | 4.1   | 2.6   | 1.6   | 0.9   | 0.4  | 0.1  |
| 25               | 1     | 19        | 28.3   | 18.5                    | 12.1  | 7.8   | 4.9   | 3.0   | 1.7   | 0.8  | 0.2  |
| 40               | 1 1/2 | 30        | 73.2   | 47.8                    | 31.2  | 20.1  | 12.6  | 7.7   | 4.3   | 2.1  | 0.6  |
| 50               | 2     | 38        | 119.9  | 78.3                    | 51.1  | 32.9  | 20.7  | 12.5  | 7.1   | 3.4  | 0.9  |
| 80               | 3     | 62        | 332.7  | 217.2                   | 141.9 | 91.4  | 57.5  | 34.8  | 19.6  | 9.4  | 2.6  |
| 100              | 4     | 76        | 507.1  | 331.1                   | 216.3 | 139.3 | 87.7  | 53.1  | 29.9  | 14.4 | 3.9  |
| 150              | 6     | 100       | 895.3  | 584.6                   | 381.8 | 245.9 | 154.8 | 93.7  | 52.8  | 25.4 | 7.0  |
| 200              | 8     | 144       | 1908.4 | 1246                    | 813.8 | 524.1 | 330.0 | 199.8 | 112.5 | 54.0 | 14.8 |

STARD CAST STEEL FLOATING BALL VALVE

PRESSURE TEMPERATURE DATA



STARD CAST STEEL FLOATING BALL VALVE

HOW TO ORDER

Our cast steel floating valve code consists of 19-20 digits,and see the example as following:

|        |       |          |             |       |       |       |        |          |           |
|--------|-------|----------|-------------|-------|-------|-------|--------|----------|-----------|
| 2      | F     | 300      | RFxRF       | 24    | T     | R     | F      | 24       | BS        |
| SIZE   | Valve | Pressure | End         | Body  | Seat  | Seal  | Fire   | Internal | Actuation |
| Inches | Model | Class    | Connections | Group | Group | Group | Tested | Group    |           |

This code meas:2"/300LBS FP BALL VALVE,RF ends,Body in LCB/LCC LF2/LF2+3MIL trim,HNBR O ring,PTFE seat,fire-safe,bare-shaft

|                               |                       |    |                |    |                  |               |         |                               |    |  |
|-------------------------------|-----------------------|----|----------------|----|------------------|---------------|---------|-------------------------------|----|--|
| End Connections:              | RFxRF, RTJxRTJ, LFXLF |    |                |    | Fire tested      | F             |         |                               |    |  |
| Body Group:                   | WCB/WCC               | 23 | CN7M           | 29 | Actuation        | Bare shaft    |         | BS                            |    |  |
|                               | LCB/LCC               | 24 | CK3MCuN        | 30 |                  | Wrench        |         | W                             |    |  |
|                               | CF8M                  | 25 | 4A             | 31 |                  | Gear operated |         | G                             |    |  |
|                               | CF8                   | 26 | 5A             | 32 | Pressure Class   | 150           |         |                               |    |  |
|                               | CF3M                  | 27 | 6A             | 33 |                  | 300           |         |                               |    |  |
|                               | CF3                   | 28 | M35-1          | 34 |                  | 600           |         |                               |    |  |
| Model                         | F                     |    | 2pc split body |    | Seal Group       | Viton         | V       | Graphite                      | G  |  |
|                               | R                     |    | 1pc unibody    |    |                  | HNBR          | R       | braided Graphite              | H  |  |
|                               | D                     |    | 3-way          |    |                  | EPDM          | E       | 316SS Spiral Wound Graphite I |    |  |
| Seat Group                    | Devlon                | D  | PCTFE          | K  |                  | Buna          | N       | B                             |    |  |
|                               | PTFE                  | T  | TFM1600        | F  |                  | Aflas         | A       |                               |    |  |
|                               | Peek                  | P  | RPTFE          | J  |                  | Lip –seal     | L       |                               |    |  |
|                               |                       |    |                |    |                  |               |         |                               |    |  |
| Internal Group<br>(Soft seal) | A105+3mil ENP         | 23 | F55            | 29 | Internal Group   | F6A+TCC       | M1      | Inconel 625+TCC               | M7 |  |
|                               | LF2+3mil ENP          | 24 | 17–4PH         | 30 | M–M seal         | F316+TCC      | M2      |                               |    |  |
|                               | F6A/CA15              | 25 | Inconel 625    | 31 | TCCcoating       | M             | F51+TCC | M3                            |    |  |
|                               | CF8M/F316             | 26 | M35-1          | 32 | CCCcoating       | C             | F53+TCC | M4                            |    |  |
|                               | F51/4A                | 27 | ALLOY20/CN7M   | 33 | Stellite coating | S             | F55+TCC | M5                            |    |  |
|                               | F53/5A                | 28 |                |    |                  | 17–4PH+TCC    | M6      |                               |    |  |

The trim charts provide more specific application details including availability of Fire Tested Materials. Please contact factory personnel for information concerning availability of trims other than those listed or for any additional information concerning the choice or guidance for application of the trims listed.

NACE MR0175/ISO 15156 Compliance – Materials of construction shall be in compliance with the pre-qualified material requirements specified by NACE MR0175/ISO 15156. According to NACE MR0175/ISO 15156, it is the manufacturer's responsibility for meeting metallurgical requirements and the customer/user responsibility to ensure that a material will be satisfactory in the intended environment. When given the application requirements (environment) by the customer/user, STARD can make technical recommendations in accordance with NACE MR0175/ISO 15156 but in no way certifies or warrants the product or materials for the application.

STARD CAST STEEL FLOATING BALL VALVE

SPECIFICATIONS AND CONFORMANCE

STARD CAST STEEL FLOATING Valves are designed, manufactured and tested in accordance with the following industry standards. Additional end user or industry standards may be produced upon request.

ASME/ANSI - American Society of Mechanical Engineers/American National Standard Institute

- B16.5 Pipe Flanges and Flanged Fittings
- B16.10 Face-to-Face and End-to End dimensions of ferrous valve
- B16.34 Valves — Flanged, Threaded, and Welding End.

NACE - National Association of Corrosion Engineers

MR0175 Sulfide stress cracking resistant metallic materials for oil field equipment.

- API - American Petroleum Institute
- Spec. 6D Specification for pipeline valves.
- Spec. 607 Specification for fire testing of valves.
- Spec. Q1 Quality program.

- MSS - Manufacturers Standardization Society
- SP - 6 Standard Finishes for contact faces of pipe flanges and connecting end flanges of valves and fittings.
- SP - 25 Standard marking system for valves, fittings, flanges and unions.

