



# SERIES R301

Two-Piece Ball Valve



INTRODUCTION

The Series R301 is a heavy duty two-piece ball valve designed for industrial and chemical applications. Featuring a full bore design with reinforced PTFE seats, it delivers reliable sealing performance and adaptability for a wide range of media. Constructed with a blowout-proof stem for enhanced safety, this valve ensures secure on/off control in diverse flow systems, making it an excellent solution for flow regulation needs.

- R301-10 (Full bore):Standard full-bore design for maximum flow capacity and minimal pressure drop.

TECHNICAL SUMMARY

SERIES R301-10

- ATEX
- Blow-out Proof Stem Design



|                                  |                                                       |                              |
|----------------------------------|-------------------------------------------------------|------------------------------|
| SIZE RANGE                       | Full Port                                             | 1/4" ~ 3"                    |
| PRESSURE RATING                  | Full Port                                             | 1000 PSI / CLASS 400 / PN 63 |
| END CONNECTIONS                  | Threaded                                              |                              |
| VALVE TYPE                       | Full Bore                                             |                              |
| BODY & END CAP MATERIAL ( ASTM ) | CF8M, CF3M, CF8, CF3, WCB, Titanium Alloy ( Gr. C-2 ) |                              |
| BODY & END CAP MATERIAL ( EN )   | 1.4408, 1.4409, 1.4308, 1.4309, 1.0619                |                              |
| SEAT MATERIAL                    | PTFE, RTFE, CTFE, TFM1600, MG1241, STFE               |                              |
| HANDLE TYPE                      | Flat, Butterfly, Oval                                 |                              |
| V-PORT OPTION                    | N/A                                                   |                              |

STANDARD OF COMPLIANCE

|                          |                         |
|--------------------------|-------------------------|
| MATERIAL CERTIFICATION   | EN 10204-3.1            |
| DESIGN                   | ASME B16.34             |
| THREADED END CONNECTIONS | NPT ASME B1.20.1        |
|                          | BSPP ISO 228-1          |
|                          | BSPT ISO 7-1            |
|                          | DIN 2999                |
| PRESSURE TESTING         | API 598                 |
| MARKING                  | ISO 5209                |
| CE APPROVAL              | 2014 / 68 / EU Module H |
| QUALITY ASSURANCE        | ISO 9001:2015           |

## INTRODUCTION

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- R301-20 (Full bore): Same specifications as R301-10, with the added capability to accommodate a solenoid valve for automation needs.

## TECHNICAL SUMMARY

### SERIES R301-20

- ATEX
- Blow-out Proof Stem Design
- Drilled and Tapped Mounting Pad



|                                  |                                                       |                              |
|----------------------------------|-------------------------------------------------------|------------------------------|
| SIZE RANGE                       | Full Port                                             | 1/4" ~ 4"                    |
| PRESSURE RATING                  | Full Port                                             | 1000 PSI / CLASS 400 / PN 63 |
| END CONNECTIONS                  | Threaded                                              |                              |
| VALVE TYPE                       | Full Bore                                             |                              |
| BODY & END CAP MATERIAL ( ASTM ) | CF8M, CF3M, CF8, CF3, WCB, Titanium Alloy ( Gr. C-2 ) |                              |
| BODY & END CAP MATERIAL ( EN )   | 1.4408, 1.4409, 1.4308, 1.4309, 1.0619                |                              |
| SEAT MATERIAL                    | PTFE, RTFE, CTFE, TFM1600, MG1241, STFE               |                              |
| HANDLE TYPE                      | Flat, Butterfly, Oval                                 |                              |
| V-PORT OPTION                    | N/A                                                   |                              |

## STANDARD OF COMPLIANCE

|                          |                         |
|--------------------------|-------------------------|
| MATERIAL CERTIFICATION   | EN 10204-3.1            |
| DESIGN                   | ASME B16.34             |
| THREADED END CONNECTIONS | NPT ASME B1.20.1        |
|                          | BSPP ISO 228-1          |
|                          | BSPT ISO 7-1            |
|                          | DIN 2999                |
| PRESSURE TESTING         | API 598                 |
| MARKING                  | ISO 5209                |
| CE APPROVAL              | 2014 / 68 / EU Module H |
| QUALITY ASSURANCE        | ISO 9001:2015           |

INTRODUCTION

The Series R301 is a heavy duty two-piece ball valve designed for industrial and chemical applications. Featuring a full bore design with reinforced PTFE seats, it delivers reliable sealing performance and adaptability for a wide range of media. Constructed with a blowout-proof stem for enhanced safety, this valve ensures secure on/off control in diverse flow systems, making it an excellent solution for flow regulation needs.

- R301-30 (Reduced bore):Features a reduced bore design with the option to install a solenoid valve for automated flow control.

TECHNICAL SUMMARY

SERIES R301-30

- ATEX
- Blow-out Proof Stem Design
- Drilled and Tapped Mounting Pad



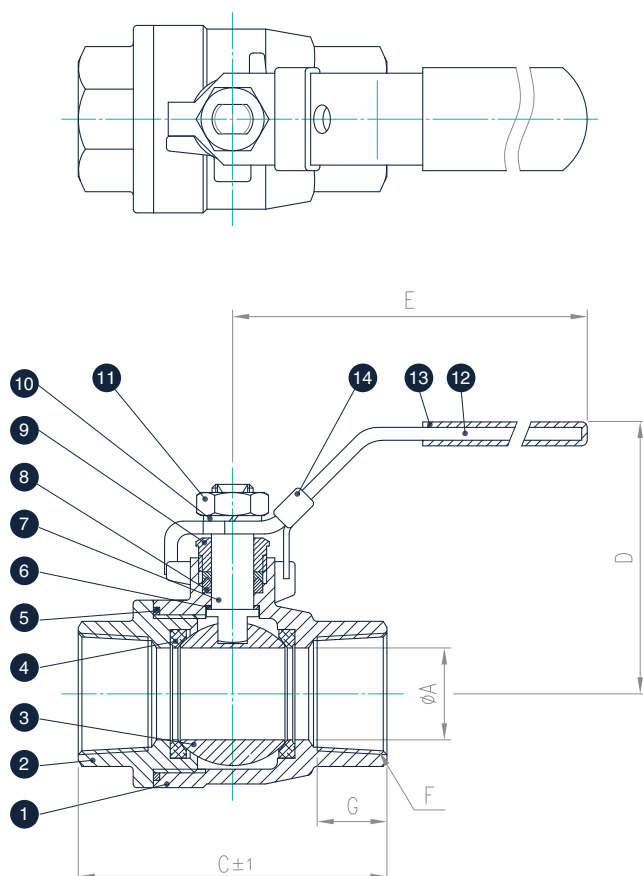
|                                  |                                                       |                                           |
|----------------------------------|-------------------------------------------------------|-------------------------------------------|
| SIZE RANGE                       | Reduced Port                                          | 1/4" ~ 2"                                 |
| PRESSURE RATING                  | Reduced Port                                          | 1/4" ~ 1" 2000 PSI / CLASS 800 / PN 125   |
|                                  |                                                       | 1-1/4" ~ 2" 1500 PSI / CLASS 600 / PN 100 |
| END CONNECTIONS                  | Threaded                                              |                                           |
| VALVE TYPE                       | Full Bore                                             |                                           |
| BODY & END CAP MATERIAL ( ASTM ) | CF8M, CF3M, CF8, CF3, WCB, Titanium Alloy ( Gr. C-2 ) |                                           |
| BODY & END CAP MATERIAL ( EN )   | 1.4408, 1.4409, 1.4308, 1.4309, 1.0619                |                                           |
| SEAT MATERIAL                    | PTFE, RTFE, CTFE, TFM1600, MG1241, STFE               |                                           |
| HANDLE TYPE                      | Flat, Butterfly, Oval                                 |                                           |
| V-PORT OPTION                    | N/A                                                   |                                           |

STANDARD OF COMPLIANCE

|                          |                         |
|--------------------------|-------------------------|
| MATERIAL CERTIFICATION   | EN 10204-3.1            |
| DESIGN                   | ASME B16.34             |
| THREADED END CONNECTIONS | NPT ASME B1.20.1        |
|                          | BSPP ISO 228-1          |
|                          | BSPT ISO 7-1            |
|                          | DIN 2999                |
|                          | API 598                 |
| PRESSURE TESTING         | ISO 5209                |
| MARKING                  | 2014 / 68 / EU Module H |
| CE APPROVAL              |                         |
| QUALITY ASSURANCE        | ISO 9001:2015           |

## CONSTRUCTION - BILL OF MATERIAL

### SERIES R301-10 1/4"~ 3" Full port



| NO. | Parts          | Material    | Qty   |
|-----|----------------|-------------|-------|
| 1   | Body           | CF8M        | 1     |
| 2   | End Cap        | CF8M        | 1     |
| 3   | Ball           | SS316       | 1     |
| 4   | Seat           | PTFE / RTFE | 2     |
| 5   | Joint Gasket   | PTFE        | 1     |
| 6   | Thrust Washer  | PTFE        | 1     |
| 7   | Stem           | SS316       | 1     |
| 8   | Gland Packing  | PTFE        | 1 Set |
| 9   | Gland Bush     | SS304       | 1     |
| 10  | Stem Washer    | SS304       | 1     |
| 11  | Stem Nut       | SS304       | 1     |
| 12  | Handle         | SS304       | 1     |
| 13  | Handle Cover   | VINYL       | 1     |
| 14  | Locking Device | SS304       | 1     |

\*Optional : Anti-static stem with ATEX certification

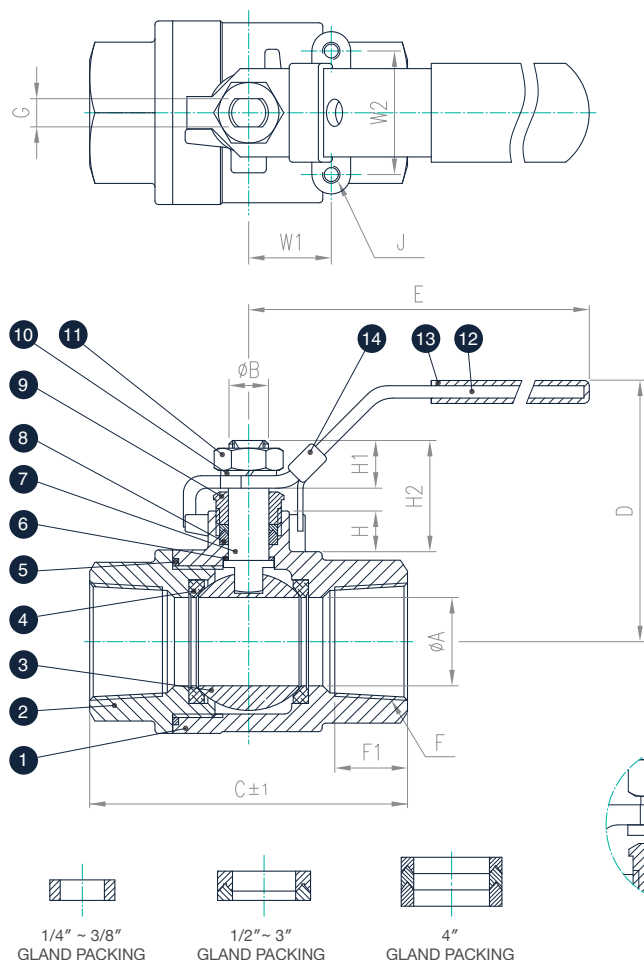


## DIMENSIONS(mm)

| SIZE   | φA   | C   | D   | E   | F                    | G    |
|--------|------|-----|-----|-----|----------------------|------|
| 1/4"   | 11.5 | 55  | 50  | 100 | 1/4" PF - NPT - PT   | 13   |
| 3/8"   | 11.5 | 55  | 50  | 100 | 3/8" PF - NPT - PT   | 13   |
| 1/2"   | 15   | 65  | 60  | 130 | 1/2" PF - NPT - PT   | 16   |
| 3/4"   | 20   | 72  | 64  | 130 | 3/4" PF - NPT - PT   | 17   |
| 1"     | 25   | 84  | 71  | 165 | 1" PF - NPT - PT     | 19   |
| 1-1/4" | 32   | 94  | 78  | 165 | 1-1/4" PF - NPT - PT | 22   |
| 1-1/2" | 38   | 110 | 86  | 190 | 1-1/2" PF - NPT - PT | 22.5 |
| 2"     | 50   | 126 | 95  | 190 | 2" PF - NPT - PT     | 26   |
| 3"     | 80   | 178 | 148 | 250 | 3" PF - NPT - PT     | 12   |

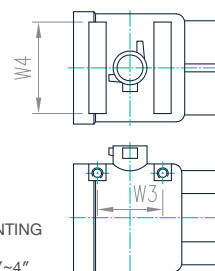
## CONSTRUCTION - BILL OF MATERIAL

### SERIES R301-20 1/4"~ 4" Full port



| NO. | Parts          | Material    | Qty   |
|-----|----------------|-------------|-------|
| 1   | Body           | CF8M        | 1     |
| 2   | End Cap        | CF8M        | 1     |
| 3   | Ball           | SS316       | 1     |
| 4   | Seat           | PTFE / RTFE | 2     |
| 5   | Joint Gasket   | PTFE        | 1     |
| 6   | Thrust Washer  | PTFE        | 1     |
| 7   | Stem           | SS316       | 1     |
| 8   | Gland Packing  | PTFE        | 1 Set |
| 9   | Gland Bush     | SS304       | 1     |
| 10  | Stem Washer    | SS304       | 1     |
| 11  | Stem Nut       | SS304       | 1     |
| 12  | Handle         | SS304       | 1     |
| 13  | Handle Cover   | VINYL       | 1     |
| 14  | Locking Device | SS304       | 1     |
| 15  | Handle Washer  | SS304       | @     |

\*Optional : Anti-static stem with ATEX certification  
@ 4" (1pcs)

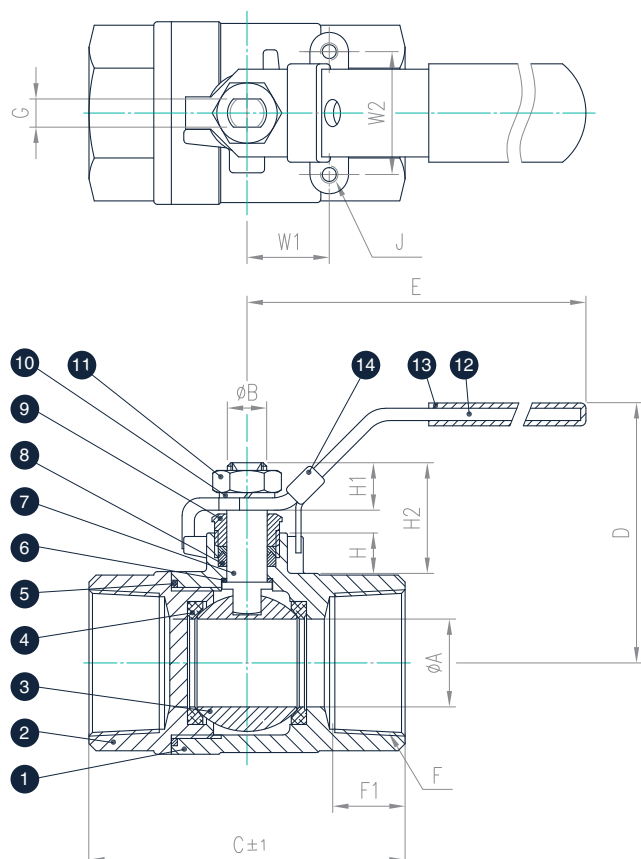


## DIMENSIONS(mm)

| SIZE   | øA   | øB  | C     | D   | E   | F1   | F                    | J         | G   | H    | H1   | H2   | W1   | W2   | W3  | W4   |
|--------|------|-----|-------|-----|-----|------|----------------------|-----------|-----|------|------|------|------|------|-----|------|
| 1/4"   | 11.5 | 8   | 55    | 50  | 100 | 13   | 1/4" PF - NPT - PT   | 10-24UNC  | 5   | 8    | 9.8  | 22.3 | 12.7 | 28.5 | -   | -    |
| 3/8"   | 12.5 | 8   | 55    | 50  | 100 | 13   | 3/8" PF - NPT - PT   | 10-24UNC  | 5   | 8    | 9.8  | 22.3 | 12.7 | 28.5 | -   | -    |
| 1/2"   | 15   | 9.5 | 65    | 60  | 130 | 16   | 1/2" PF - NPT - PT   | 10-24UNC  | 6.5 | 10.5 | 11   | 25.6 | 12.7 | 28.5 | -   | -    |
| 3/4"   | 20   | 9.5 | 74.6  | 64  | 130 | 17   | 3/4" PF - NPT - PT   | 10-24UNC  | 6.5 | 10.5 | 11   | 25.6 | 22.4 | 35   | -   | -    |
| 1"     | 25   | 11  | 88    | 71  | 165 | 19   | 1" PF - NPT - PT     | 10-24UNC  | 8   | 11.5 | 13.5 | 31.5 | 23.4 | 35   | -   | -    |
| 1-1/4" | 32   | 11  | 102   | 78  | 165 | 22   | 1-1/4" PF - NPT - PT | 1/4-20UNC | 8   | 11.5 | 13.5 | 31.5 | 25.4 | 38.1 | -   | -    |
| 1-1/2" | 38   | 14  | 110   | 86  | 190 | 22.5 | 1-1/2" PF - NPT - PT | 1/4-20UNC | 9.7 | 12   | 15.6 | 35.1 | 25.4 | 38.1 | -   | -    |
| 2"     | 50   | 14  | 125   | 95  | 190 | 26   | 2" PF - NPT - PT     | 1/4-20UNC | 9.7 | 9.5  | 15.6 | 30.6 | 25.4 | 38.1 | -   | -    |
| 2-1/2" | 65   | 19  | 160.6 | 130 | 250 | 31   | 2-1/2" PF - NPT - PT | 1/4-20UNC | 12  | 17   | 24.5 | 54.2 | -    | -    | 59  | 61   |
| 3"     | 80   | 19  | 178   | 148 | 250 | 34   | 3" PF - NPT - PT     | 1/4-20UNC | 12  | 18   | 24.5 | 55.2 | -    | -    | 70  | 71   |
| 4"     | 100  | 19  | 240   | 175 | 250 | 43   | 4" PF - NPT - PT     | 1/4-20UNC | 15  | 20.8 | 24.5 | 57.4 | -    | -    | 100 | 78.5 |

## CONSTRUCTION - BILL OF MATERIAL

### SERIES R301-30 1/4"~ 2" Reduced port



| NO. | Parts          | Material    | Qty   |
|-----|----------------|-------------|-------|
| 1   | Body           | CF8M        | 1     |
| 2   | End Cap        | CF8M        | 1     |
| 3   | Ball           | SS316       | 1     |
| 4   | Seat           | PTFE / RTFE | 2     |
| 5   | Joint Gasket   | PTFE        | 1     |
| 6   | Thrust Washer  | PTFE        | 1     |
| 7   | Stem           | SS316       | 1     |
| 8   | Gland Packing  | PTFE        | 1 Set |
| 9   | Gland Bush     | SS304       | 1     |
| 10  | Stem Washer    | SS304       | 1     |
| 11  | Stem Nut       | SS304       | 1     |
| 12  | Handle         | SS304       | 1     |
| 13  | Handle Cover   | VINYL       | 1     |
| 14  | Locking Device | SS304       | 1     |

\*Optional : Anti-static stem with ATEX certification



## DIMENSIONS(mm)

| SIZE   | øA   | øB  | C    | D  | E   | F1   | F                    | J         | G   | H    | H1   | H2   | W1   | W2   |
|--------|------|-----|------|----|-----|------|----------------------|-----------|-----|------|------|------|------|------|
| 1/4"   | 9.5  | 8   | 51   | 50 | 100 | 11   | 1/4" PF - NPT - PT   | 10-24UNC  | 5   | 6    | 8    | 17.7 | 12.7 | 28.5 |
| 3/8"   | 9.5  | 8   | 51   | 50 | 100 | 11   | 3/8" PF - NPT - PT   | 10-24UNC  | 5   | 6    | 8    | 17.7 | 12.7 | 28.5 |
| 1/2"   | 12.5 | 8   | 59.5 | 50 | 100 | 15   | 1/2" PF - NPT - PT   | 10-24UNC  | 5   | 8    | 9.8  | 22.6 | 12.7 | 28.5 |
| 3/4"   | 15   | 9.5 | 70   | 53 | 130 | 16.5 | 3/4" PF - NPT - PT   | 10-24UNC  | 6.5 | 10.5 | 11   | 25   | 22.4 | 35   |
| 1"     | 20   | 9.5 | 84   | 64 | 130 | 19.5 | 1" PF - NPT - PT     | 10-24UNC  | 6.5 | 9    | 11   | 25   | 22.4 | 35   |
| 1-1/4" | 25   | 11  | 91   | 66 | 165 | 20   | 1-1/4" PF - NPT - PT | 10-24UNC  | 8   | 13   | 13.5 | 33   | 22.4 | 35   |
| 1-1/2" | 32   | 11  | 104  | 79 | 165 | 22   | 1-1/2" PF - NPT - PT | 1/4-20UNC | 8   | 11.5 | 13.5 | 31   | 25.4 | 38.1 |
| 2"     | 38   | 14  | 117  | 83 | 190 | 23   | 2" PF - NPT - PT     | 1/4-20UNC | 9.7 | 9    | 15.6 | 31.6 | 25.4 | 38.1 |

**TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight**

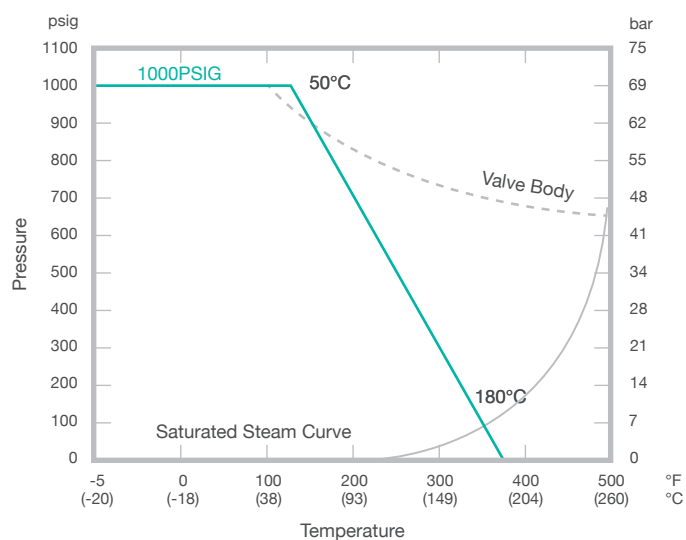
| R301-10    |        |        |           |                               |             |
|------------|--------|--------|-----------|-------------------------------|-------------|
| Valve size | Torque |        | Cv values | Kv values (M <sup>3</sup> /h) | Weight (Kg) |
|            | N.m    | lbs.in |           |                               |             |
| 1/4"       | 5      | 44     | 7         | 6                             | 0.3         |
| 3/8"       | 5      | 44     | 8         | 7                             | 0.3         |
| 1/2"       | 7      | 62     | 15        | 13                            | 0.5         |
| 3/4"       | 8      | 71     | 40        | 34                            | 0.6         |
| 1"         | 14     | 124    | 70        | 60                            | 1.0         |
| 1-1/4"     | 18     | 160    | 110       | 94                            | 1.3         |
| 1-1/2"     | 26     | 230    | 250       | 213                           | 1.9         |
| 2"         | 34     | 301    | 430       | 366                           | 3           |
| 3"         | 78     | 691    | 1100      | 935                           | 9.9         |

| R301-20    |        |        |           |                               |             |
|------------|--------|--------|-----------|-------------------------------|-------------|
| Valve size | Torque |        | Cv values | Kv values (M <sup>3</sup> /h) | Weight (Kg) |
|            | N.m    | lbs.in |           |                               |             |
| 1/4"       | 5      | 44     | 7         | 6                             | 0.3         |
| 3/8"       | 5      | 44     | 8         | 7                             | 0.3         |
| 1/2"       | 7      | 62     | 15        | 13                            | 0.5         |
| 3/4"       | 8      | 71     | 40        | 34                            | 0.6         |
| 1"         | 14     | 124    | 70        | 60                            | 1.0         |
| 1-1/4"     | 18     | 160    | 110       | 94                            | 1.5         |
| 1-1/2"     | 26     | 230    | 250       | 213                           | 2.0         |
| 2"         | 34     | 301    | 430       | 366                           | 3.0         |
| 2-1/2"     | 56     | 496    | 700       | 595                           | 6.8         |
| 3"         | 78     | 691    | 1100      | 935                           | 9.9         |
| 4"         | 124    | 1099   | 2000      | 1700                          | 20.6        |

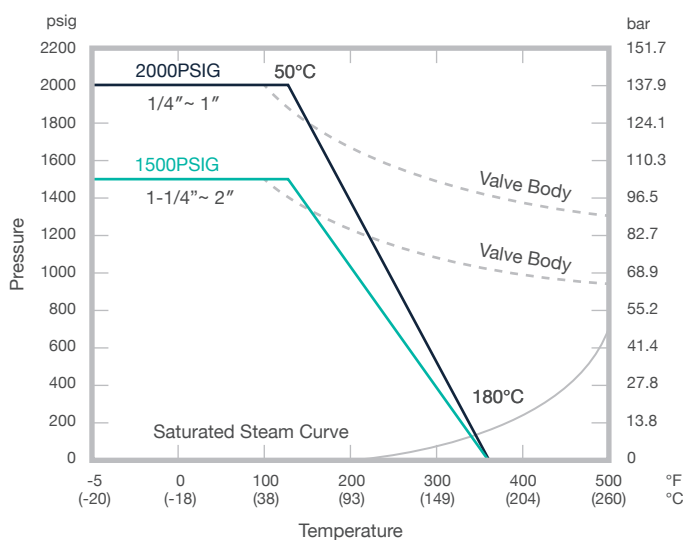
| R301-30    |        |        |           |                               |             |
|------------|--------|--------|-----------|-------------------------------|-------------|
| Valve size | Torque |        | Cv values | Kv values (M <sup>3</sup> /h) | Weight (Kg) |
|            | N.m    | lbs.in |           |                               |             |
| 1/4"       | 5      | 44     | 7         | 6                             | 0.3         |
| 3/8"       | 5      | 44     | 7         | 6                             | 0.3         |
| 1/2"       | 7      | 62     | 8         | 7                             | 0.4         |
| 3/4"       | 8      | 71     | 15        | 13                            | 0.5         |
| 1"         | 14     | 124    | 40        | 34                            | 0.8         |
| 1-1/4"     | 18     | 160    | 70        | 60                            | 1.1         |
| 1-1/2"     | 26     | 230    | 110       | 94                            | 1.6         |
| 2"         | 34     | 301    | 250       | 213                           | 2.4         |

**TECHNICAL DATA | Pressure - Temperature diagram**

R301-10 / R301-20  
Seat material : PTFE / RTFE



R301-30  
Seat material : PTFE / RTFE





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Established in 1992  
TAWD has dedicated over 30 years to  
manufacturing premium ball valves

**INNOVATION**

**INTEGRITY**

**STRICT SELECTION**