HiVAL®
A HANKUN Brand

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Version 4.0.1



Due to the continuous development and improvement of the product, design and parameter changes will not be notified separately. Please call us for the latest product and technical information.


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HiVAL®
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# AUTO CONTROL VALVE

## Hankun Quality Driving The Future


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**Zero Leakage**
**Maintenance-free**

# CONTENTS









# Rubber Lined Butterfly Valve



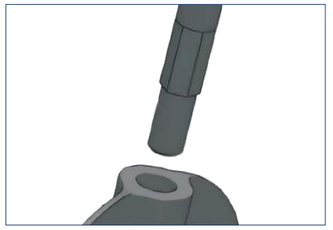


## PRODUCT INTRODUCTION

- Rubber lined butterfly valve is mainly used for fluid shut-off or regulation.
- Valve opening and closing is achieved by rotating the valve disc.
- The valve disc is actuated by the handle or actuator that connecting with valve stem.
- Lightweight, requires less support, and can be quickly closed.
- Control mode: Manual, Electric or Pneumatic.
- Electric actuator or pneumatic actuator actuation will make the control more precise.

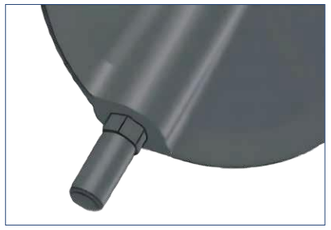
## PRODUCT ADVANTAGE

- With wafer or flange connection, the valve structure is simple and compact with lightweight, and can be installed in any positions.
- Valve disc without pin connection, zero leakage, long service life.
- Small flow resistance coefficient, large flow capacity, and good regulation performance.
- Axial thrust bearing or lubricated brass bushing protects the valve stem from overloading.
- The valve disc can be made of duplex stainless steel material, which is corrosion-resistant and wear-resistant.
- The top mounting flange of the valve complies with the ISO 5211 standard, allowing for the installation of manual operating mechanisms, or electric/pneumatic actuator.



The pinless valve stem features a hexagonal design

The valve disc incorporates a hexagonal socket.



The edge of the valve disc assembly is spherically machined and hand polished, offering advantages such as long service life, low operating torque, and bubble-tight bi-directional sealing with zero leakage.

**Material Table**

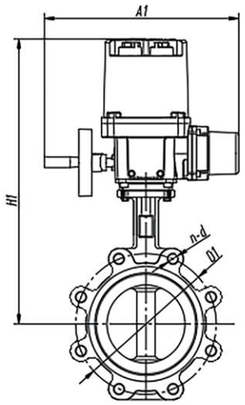
| Component Name | Material |
|---|---|
| Body | Grey cast iron, Cast Iron, Carbon Steel, Stainless Steel (304/304L/316/316L) |
| Seat | NBR/EPDM/PTFE/VITON, Special rubber for desulfurization |
| Trim | 2507Duplex stainless steel/1.4529Duplex stainless steel/DI/WCB/CF8/CF8M/C954 |
| Stem | 420/304/316/410 |

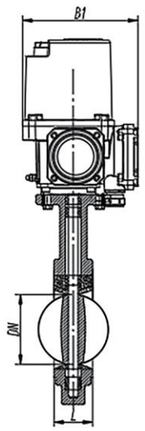
NOTE: The above materials are for standard configurations. For special operating conditions, we will match the material to your specific requirements.

Zero Leakage
Maintenance-free

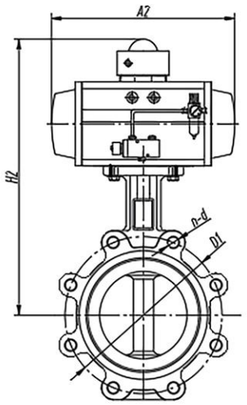
| Valve Seat Temperature Rating | | | |
|---|---|---|---|
| EPDM | -29℃~121℃ | FKM（VITON） | -18℃~204℃ |
| BUNA-N（NBR） | -18℃~100℃ | Polyurethane | -29℃~80℃ |

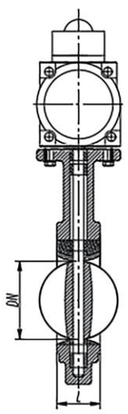
# The Wafer Rubber Lined Butterfly Valve




D971 Series




D671 Series

## Pressure Class PN6 (0.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D971 Series | | | D671 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 42 | 415 | 250 | 182 | 269 | 141 | 110 | 4-14 | 50 |
| 65 | 2-1/2 | 44 | 425 | 250 | 182 | 283 | 159 | 130 | 4-14 | 80 |
| 80 | 3 | 45 | 437 | 250 | 182 | 289 | 159 | 150 | 4-18 | 100 |
| 100 | 4 | 52 | 467 | 250 | 182 | 320 | 211 | 170 | 4-18 | 100 |
| 125 | 5 | 54 | 483 | 322 | 248 | 351 | 248 | 200 | 8-18 | 200 |
| 150 | 6 | 55 | 488 | 322 | 248 | 380 | 269 | 225 | 8-18 | 200 |
| 200 | 8 | 60 | 557 | 322 | 248 | 435 | 345 | 280 | 8-18 | 400 |
| 250 | 10 | 65 | 594 | 322 | 248 | 509 | 409 | 335 | 12-18 | 400 |
| 300 | 12 | 76 | 701 | 424 | 346 | 597 | 438 | 395 | 12-22 | 800 |
| 350 | 14 | 76 | 735 | 424 | 346 | 653 | 550 | 445 | 12-22 | 800 |
| 400 | 16 | 102 | 763 | 424 | 346 | 720 | 550 | 495 | 16-22 | 1200 |
| 450 | 18 | 114 | 797 | 424 | 346 | 772 | 600 | 550 | 16-22 | 1500 |
| 500 | 20 | 132 | 823 | 424 | 346 | 867 | 633 | 600 | 20-22 | 2000 |
| 600 | 24 | 154 | 852 | 424 | 346 | 998 | 730 | 705 | 20-26 | 3000 |
| 700 | 28 | 163 | 906 | 424 | 346 | 1116 | 1320 | 810 | 24-26 | 5000 |
| 800 | 32 | 188 | 996 | 910 | 571 | 1330 | 1430 | 920 | 24-30 | 9000 |

## Pressure Class PN10 (1.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D971 Series | | | D671 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 42 | 415 | 250 | 182 | 269 | 141 | 125 | 4-18 | 50 |
| 65 | 2-1/2 | 44 | 425 | 250 | 182 | 283 | 159 | 145 | 8-18 | 80 |
| 80 | 3 | 45 | 437 | 250 | 182 | 289 | 159 | 160 | 8-18 | 100 |
| 100 | 4 | 52 | 467 | 250 | 182 | 320 | 211 | 180 | 8-18 | 100 |
| 125 | 5 | 54 | 483 | 332 | 248 | 351 | 248 | 210 | 8-18 | 200 |
| 150 | 6 | 55 | 488 | 332 | 248 | 380 | 269 | 240 | 8-22 | 200 |
| 200 | 8 | 60 | 557 | 332 | 248 | 435 | 345 | 295 | 8-22 | 400 |
| 250 | 10 | 65 | 594 | 424 | 346 | 509 | 409 | 350 | 12-22 | 800 |
| 300 | 12 | 76 | 701 | 424 | 346 | 597 | 438 | 400 | 12-22 | 800 |
| 350 | 14 | 76 | 735 | 424 | 346 | 653 | 550 | 460 | 16-22 | 1200 |
| 400 | 16 | 102 | 763 | 424 | 346 | 720 | 550 | 515 | 16-26 | 1500 |
| 450 | 18 | 114 | 797 | 424 | 346 | 772 | 600 | 565 | 20-26 | 2500 |
| 500 | 20 | 132 | 823 | 424 | 346 | 867 | 633 | 620 | 20-26 | 4000 |
| 600 | 24 | 154 | 852 | 424 | 346 | 998 | 730 | 725 | 20-30 | 5000 |
| 700 | 28 | 163 | 906 | 890 | 507 | 1116 | 1320 | 840 | 24-30 | 9000 |
| 800 | 32 | 188 | 996 | 984 | 571 | 1330 | 1430 | 950 | 24-33 | 12000 |

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D971 Series | | | D671 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 42 | 415 | 250 | 182 | 269 | 141 | 125 | 4-18 | 50 |
| 65 | 2-1/2 | 44 | 425 | 250 | 182 | 283 | 159 | 145 | 8-18 | 80 |
| 80 | 3 | 45 | 437 | 250 | 182 | 289 | 159 | 160 | 8-18 | 100 |
| 100 | 4 | 52 | 467 | 332 | 248 | 320 | 211 | 180 | 8-18 | 200 |
| 125 | 5 | 54 | 483 | 332 | 248 | 351 | 248 | 210 | 8-18 | 200 |
| 150 | 6 | 55 | 488 | 332 | 248 | 380 | 269 | 240 | 8-22 | 400 |
| 200 | 8 | 60 | 557 | 424 | 346 | 435 | 345 | 295 | 12-22 | 800 |
| 250 | 10 | 65 | 594 | 424 | 346 | 509 | 409 | 355 | 12-26 | 1200 |
| 300 | 12 | 76 | 701 | 424 | 346 | 597 | 438 | 410 | 12-26 | 1200 |
| 350 | 14 | 76 | 735 | 424 | 346 | 653 | 550 | 470 | 16-26 | 1500 |
| 400 | 16 | 102 | 763 | 424 | 346 | 720 | 550 | 525 | 16-30 | 2500 |
| 450 | 18 | 114 | 797 | 424 | 346 | 772 | 600 | 585 | 20-30 | 4000 |
| 500 | 20 | 132 | 823 | 424 | 346 | 867 | 633 | 650 | 20-33 | 5000 |
| 600 | 24 | 154 | 852 | 890 | 507 | 998 | 730 | 770 | 20-36 | 8000 |
| 700 | 28 | 163 | 906 | 984 | 571 | 1116 | 1320 | 840 | 24-36 | 12000 |
| 800 | 32 | 188 | 996 | 984 | 571 | 1330 | 1430 | 950 | 24-39 | 15000 |

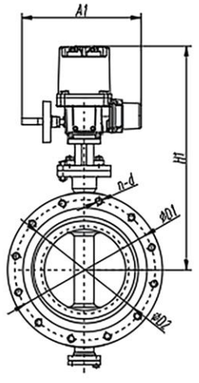
## American Standard ANSI CLASS 150

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D971 Series | | | D671 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 42 | 415 | 250 | 182 | 269 | 141 | 120.7 | 4-18 | 50 |
| 65 | 2-1/2 | 44 | 425 | 250 | 182 | 283 | 159 | 139.7 | 4-18 | 80 |
| 80 | 3 | 45 | 437 | 250 | 182 | 289 | 159 | 152.4 | 4-18 | 100 |
| 100 | 4 | 52 | 467 | 332 | 248 | 320 | 211 | 190.5 | 8-18 | 200 |
| 125 | 5 | 54 | 483 | 332 | 248 | 351 | 248 | 215.9 | 8-22 | 200 |
| 150 | 6 | 55 | 488 | 332 | 248 | 380 | 269 | 241.3 | 8-22 | 400 |
| 200 | 8 | 60 | 557 | 424 | 346 | 435 | 345 | 298.5 | 8-22 | 800 |
| 250 | 10 | 65 | 594 | 424 | 346 | 509 | 409 | 362.0 | 12-26 | 1200 |
| 300 | 12 | 76 | 701 | 424 | 346 | 597 | 438 | 431.8 | 12-26 | 1200 |
| 350 | 14 | 76 | 735 | 424 | 346 | 653 | 550 | 476.3 | 12-30 | 1500 |
| 400 | 16 | 102 | 763 | 424 | 346 | 720 | 550 | 539.8 | 16-30 | 2500 |
| 450 | 18 | 114 | 797 | 424 | 346 | 772 | 600 | 577.9 | 16-33 | 4000 |
| 500 | 20 | 132 | 823 | 424 | 346 | 867 | 633 | 635 | 20-33 | 5000 |
| 600 | 24 | 154 | 852 | 890 | 507 | 998 | 730 | 749.3 | 20-36 | 8000 |
| 700 | 28 | 163 | 906 | 984 | 571 | 1116 | 1320 | 863.5 | 20-36 | 12000 |
| 800 | 32 | 188 | 996 | 984 | 571 | 1330 | 1430 | 978 | 28-42 | 15000 |

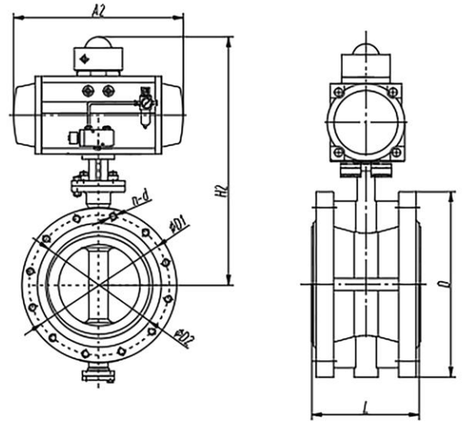
NOTE: Flange standard GB/T 9113、GB/T 9115

- Dimensions H1, H2, and L can be customized to customer's requirements, this product is typically supplied in a short structure. For long structure or special materials, please specify while ordering.
- As required, the pneumatic actuators can be equipped with accessories such as solenoid valve, positioner, filter regulator, limit switch, etc.

# The Flanged Rubber Lined Butterfly Valve




D941 Series




D641 Series

## Pressure Class PN10 (1.0MPa)

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D941 Series | | | D641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 108 | 415 | 250 | 182 | 269 | 141 | 165 | 125 | 102 | 4-18 | 50 |
| 65 | 2-1/2 | 112 | 425 | 250 | 182 | 283 | 159 | 185 | 145 | 122 | 8-18 | 80 |
| 80 | 3 | 114 | 437 | 250 | 182 | 289 | 159 | 200 | 160 | 138 | 8-18 | 100 |
| 100 | 4 | 127 | 467 | 250 | 182 | 320 | 211 | 220 | 180 | 158 | 8-18 | 100 |
| 125 | 5 | 140 | 483 | 332 | 248 | 351 | 248 | 250 | 210 | 188 | 8-18 | 200 |
| 150 | 6 | 140 | 488 | 332 | 248 | 380 | 269 | 285 | 240 | 212 | 8-22 | 200 |
| 200 | 8 | 152 | 557 | 332 | 248 | 435 | 345 | 340 | 295 | 268 | 8-22 | 400 |
| 250 | 10 | 165 | 594 | 424 | 346 | 509 | 409 | 395 | 350 | 320 | 12-22 | 800 |
| 300 | 12 | 178 | 701 | 424 | 346 | 597 | 438 | 445 | 400 | 370 | 12-22 | 800 |
| 350 | 14 | 190 | 735 | 424 | 346 | 653 | 550 | 505 | 460 | 430 | 16-22 | 1200 |
| 400 | 16 | 216 | 763 | 424 | 346 | 720 | 550 | 565 | 515 | 482 | 16-26 | 1500 |
| 450 | 18 | 222 | 797 | 424 | 346 | 772 | 600 | 615 | 565 | 532 | 20-26 | 2500 |
| 500 | 20 | 229 | 823 | 424 | 346 | 867 | 633 | 670 | 620 | 585 | 20-26 | 4000 |
| 600 | 24 | 267 | 852 | 424 | 346 | 998 | 730 | 780 | 725 | 685 | 20-30 | 5000 |
| 700 | 28 | 292 | 906 | 890 | 507 | 1116 | 1320 | 895 | 840 | 800 | 24-30 | 9000 |
| 800 | 32 | 318 | 996 | 984 | 571 | 1330 | 1430 | 1015 | 950 | 905 | 24-33 | 12000 |
| 900 | 36 | 330 | 996 | 984 | 571 | 1420 | 1950 | 1115 | 1050 | 1005 | 28-33 | 15000 |
| 1000 | 40 | 410 | 996 | 1060 | 580 | 1510 | 1950 | 1230 | 1160 | 1110 | 28-36 | 20000 |

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D941 Series | | | D641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 108 | 415 | 250 | 182 | 269 | 141 | 165 | 125 | 102 | 4-18 | 50 |
| 65 | 2-1/2 | 112 | 425 | 250 | 182 | 283 | 159 | 185 | 145 | 122 | 8-18 | 80 |
| 80 | 3 | 114 | 437 | 250 | 182 | 289 | 159 | 200 | 160 | 138 | 8-18 | 100 |
| 100 | 4 | 127 | 467 | 332 | 248 | 320 | 211 | 235 | 180 | 158 | 8-18 | 200 |
| 125 | 5 | 140 | 483 | 332 | 248 | 351 | 248 | 250 | 210 | 188 | 8-18 | 200 |
| 150 | 6 | 140 | 488 | 332 | 248 | 380 | 269 | 285 | 240 | 212 | 8-22 | 400 |
| 200 | 8 | 152 | 557 | 424 | 346 | 435 | 345 | 340 | 295 | 268 | 12-22 | 800 |
| 250 | 10 | 165 | 594 | 424 | 346 | 509 | 409 | 405 | 355 | 320 | 12-26 | 1200 |
| 300 | 12 | 178 | 701 | 424 | 346 | 597 | 438 | 460 | 410 | 378 | 12-26 | 1200 |
| 350 | 14 | 190 | 735 | 424 | 346 | 653 | 550 | 520 | 470 | 428 | 16-26 | 1500 |
| 400 | 16 | 216 | 763 | 424 | 346 | 720 | 550 | 580 | 525 | 490 | 16-30 | 2500 |
| 450 | 18 | 222 | 797 | 424 | 346 | 772 | 600 | 640 | 585 | 550 | 20-30 | 4000 |
| 500 | 20 | 229 | 823 | 424 | 346 | 867 | 633 | 715 | 650 | 610 | 20-33 | 5000 |
| 600 | 24 | 267 | 852 | 890 | 507 | 998 | 730 | 840 | 770 | 725 | 20-36 | 8000 |
| 700 | 28 | 292 | 906 | 984 | 571 | 1116 | 1320 | 910 | 840 | 795 | 24-36 | 12000 |
| 800 | 32 | 318 | 996 | 984 | 571 | 1330 | 1430 | 1025 | 950 | 900 | 24-39 | 15000 |
| 900 | 36 | 330 | 996 | 1060 | 580 | 1420 | 1950 | 1125 | 1050 | 1000 | 28-39 | 20000 |
| 1000 | 40 | 410 | 996 | 1170 | 620 | 1510 | 1950 | 1255 | 1170 | 1115 | 28-42 | 30000 |

## American Standard ANSI CLASS 150

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D941 Series | | | D641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 108 | 415 | 250 | 182 | 269 | 141 | 150 | 120.7 | 92.1 | 4-18 | 50 |
| 65 | 2-1/2 | 112 | 425 | 250 | 182 | 283 | 159 | 180 | 139.7 | 104.8 | 4-18 | 80 |
| 80 | 3 | 114 | 437 | 250 | 182 | 289 | 159 | 190 | 152.4 | 127 | 4-18 | 100 |
| 100 | 4 | 127 | 467 | 332 | 248 | 320 | 211 | 230 | 190.5 | 157.2 | 8-18 | 200 |
| 125 | 5 | 140 | 483 | 332 | 248 | 351 | 248 | 255 | 215.9 | 185.7 | 8-22 | 200 |
| 150 | 6 | 140 | 488 | 332 | 248 | 380 | 269 | 280 | 241.3 | 215.9 | 8-22 | 400 |
| 200 | 8 | 152 | 557 | 424 | 346 | 435 | 345 | 345 | 298.5 | 269.9 | 8-22 | 800 |
| 250 | 10 | 165 | 594 | 424 | 346 | 509 | 409 | 405 | 362.0 | 323.8 | 12-26 | 1200 |
| 300 | 12 | 178 | 701 | 424 | 346 | 597 | 438 | 485 | 431.8 | 381.0 | 12-26 | 1200 |
| 350 | 14 | 190 | 735 | 424 | 346 | 653 | 550 | 535 | 476.3 | 412.8 | 12-30 | 1500 |
| 400 | 16 | 216 | 763 | 424 | 346 | 720 | 550 | 595 | 539.8 | 469.9 | 16-30 | 2500 |
| 450 | 18 | 222 | 797 | 424 | 346 | 772 | 600 | 635 | 577.9 | 533.4 | 16-33 | 4000 |
| 500 | 20 | 229 | 823 | 424 | 346 | 867 | 633 | 700 | 635 | 584.2 | 20-33 | 5000 |
| 600 | 24 | 267 | 852 | 890 | 507 | 998 | 730 | 815 | 749.3 | 692.2 | 20-36 | 8000 |
| 700 | 28 | 292 | 906 | 984 | 571 | 1116 | 1320 | 927 | 863.5 | 800 | 20-36 | 12000 |
| 800 | 32 | 318 | 996 | 984 | 571 | 1330 | 1430 | 1060 | 978 | 914 | 28-42 | 15000 |
| 900 | 36 | 330 | 996 | 1060 | 580 | 1420 | 1950 | 1168 | 1085.8 | 1022 | 32-42 | 20000 |
| 1000 | 40 | 410 | 996 | 1170 | 620 | 1510 | 1950 | 1289 | 1200.2 | 1124 | 36-42 | 30000 |

NOTE: Flange standard GB/T 9113、GB/T 9115

- Dimensions H1, H2, and L can be customized to customer's requirements, this product is typically supplied in a short structure. For long structure or special materials, please specify while ordering.
- As required, the pneumatic actuators can be equipped with accessories such as solenoid valve, positioner, filter regulator, limit switch, etc.

# Hard-Seal Butterfly Valve

## PRODUCT FEATURES

### Seat & Seal ring

The valve seat and seal ring can be replaced separately, reducing maintenance time and cost while extending the service life of valve.

### Stem

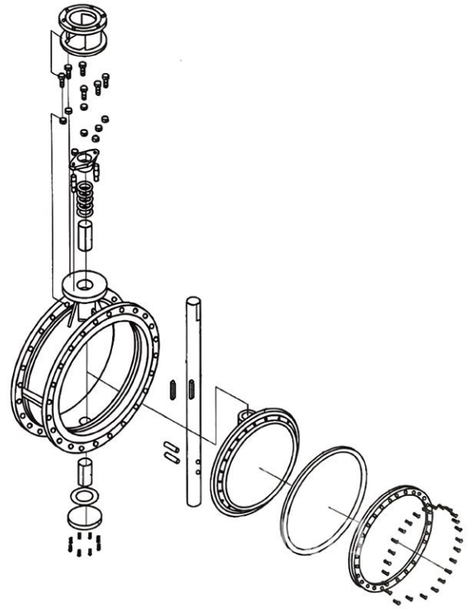
The unique spline connection between the valve disc and stem of HIVAL reduces hysteresis phenomena and eliminates many problems caused by external connections (additional hardware), enabling easy installation and removal. Featuring an integrated valve stem design, HIVAL incorporates an anti blowout ring above the packing, ensuring that the valve stem fully complies with international standards under operating pressure conditions.

### Bearing

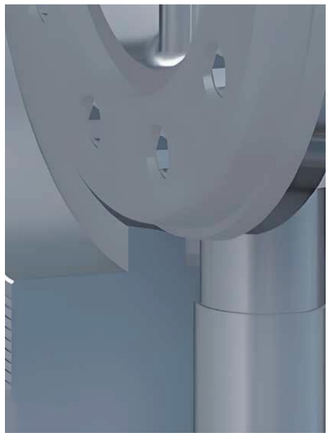
Standard bearing seals effectively prevents destructive particles from entering the valve stem bearing, extending its service life.

### Packing

Adjustable packing system (packing gland) reduces the risk of medium leakage and allows for easy replacement.



**Exploded View of a Triple Eccentric Butterfly Valve**



## Main performance parameters and Adopted standard

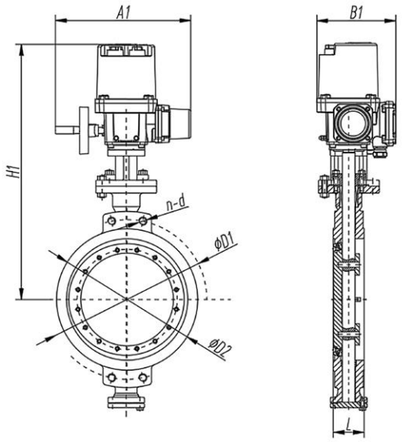
| | | | | |
|---|---|---|---|---|
| **Design Standard** | | API 609 | | |
| **Flange Connection Dimensions** | | DN≤24"(As per ANSI B16.5); DN > 24"(As per ANSI B16.47) | | |
| **Testing and Inspection** | | API 598 | | |
| **Temperature and Pressure Class** | | ASME B16.34 | | |
| **Structure Length** | **Short Structure** | API 609, ISO 5752 | | |
| | **Long Structure** | ASME B16.10 | | |
| **Fire-proof Manufacturing** | | API 607 | | |
| **Pressure Class** | | 150Lb | 300Lb | 600Lb |
| **Pressure Testing at Normal Temperature (MPa)** | **The Shell Pressure Testing** | 2.93 | 7.58 | 15 |
| | **High-Pressure Sealing Testing** | 2.07 | 5.52 | 11.03 |
| | **Low-Pressure Sealing Testing** | 0.6 | 0.6 | 0.6 |
| **Applicable Medium** | | Water，Oil，Gas，and various corrosive medium (different materials are selected for different medium) | | |
| **Applicable Temperature** | | -196℃~+650℃ | | |

## Material Table

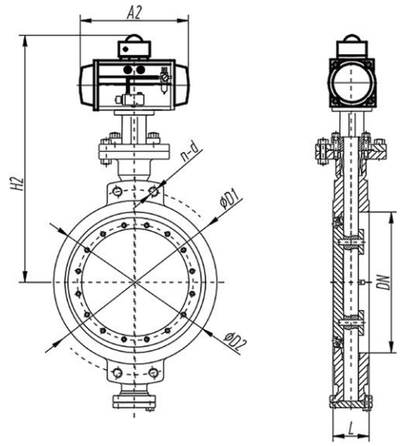
| Component Name | Material |
|---|---|
| **Body** | Cast steel, Stainless Steel, Chromium molybdenum steel, Alloy steel |
| **Trim** | Cast steel, Alloy steel, Stainless Steel, Chromium molybdenum steel |
| **Sealing Ring** | The stainless steel and high-temperature-resistant asbestos plates are combined to form a multi-layered composite structure. |
| **Stem** | 2Cr13, 1Cr13Stainless Steel, Chromium molybdenum steel |
| **Bearing** | Austenitic stainless steel, 304+Nitriding |
| **Packing** | Flexible graphite |

NOTE: The above materials are for standard configurations. For special operating conditions, we will match the material to your specific requirements.

# Wafer Type Triple Eccentric Butterfly Valve




D973 Series




D673 Series

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D973 Series | | | D673 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 43 | 415 | 250 | 182 | 277 | 159 | 125 | 4-18 | 100 |
| 65 | 2-1/2 | 46 | 425 | 250 | 182 | 287 | 211 | 145 | 8-18 | 100 |
| 80 | 3 | 49 | 437 | 250 | 182 | 365 | 248 | 160 | 8-18 | 100 |
| 100 | 4 | 56 | 467 | 332 | 248 | 420 | 269 | 180 | 8-18 | 200 |
| 125 | 5 | 64 | 483 | 332 | 248 | 436 | 315 | 210 | 8-18 | 200 |
| 150 | 6 | 70 | 488 | 332 | 248 | 466 | 345 | 240 | 8-22 | 400 |
| 200 | 8 | 71 | 557 | 424 | 346 | 593 | 409 | 295 | 12-22 | 900 |
| 250 | 10 | 76 | 594 | 424 | 346 | 682 | 438 | 355 | 12-26 | 1500 |
| 300 | 12 | 83 | 701 | 424 | 346 | 725 | 550 | 410 | 12-26 | 2000 |
| 350 | 14 | 92 | 735 | 424 | 346 | 832 | 600 | 470 | 16-26 | 3000 |
| 400 | 16 | 102 | 763 | 424 | 346 | 862 | 633 | 525 | 16-30 | 3500 |
| 450 | 18 | 114 | 797 | 424 | 346 | 945 | 633 | 585 | 20-30 | 4000 |
| 500 | 20 | 127 | 823 | 424 | 346 | 1058 | 730 | 650 | 20-33 | 5000 |
| 600 | 24 | 154 | 852 | 984 | 571 | 1108 | 1180 | 770 | 20-36 | 9000 |
| 700 | 28 | 165 | 906 | 984 | 571 | 1170 | 1320 | 840 | 24-36 | 14000 |
| 800 | 32 | 190 | 996 | 1060 | 580 | 1325 | 1430 | 950 | 24-39 | 20000 |

## Pressure Class PN25 (2.5MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D973 Series | | | D673 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 43 | 375 | 250 | 182 | 277 | 159 | 125 | 4-18 | 150 |
| 65 | 2-1/2 | 46 | 385 | 250 | 182 | 287 | 211 | 145 | 8-18 | 150 |
| 80 | 3 | 49 | 395 | 332 | 248 | 365 | 248 | 160 | 8-18 | 200 |
| 100 | 4 | 56 | 422 | 332 | 248 | 420 | 269 | 190 | 8-22 | 200 |
| 125 | 5 | 64 | 431 | 332 | 248 | 436 | 315 | 220 | 8-26 | 300 |
| 150 | 6 | 70 | 450 | 332 | 248 | 466 | 409 | 250 | 8-26 | 400 |
| 200 | 8 | 71 | 514 | 424 | 346 | 593 | 438 | 310 | 12-26 | 1200 |
| 250 | 10 | 76 | 558 | 424 | 346 | 682 | 550 | 370 | 12-30 | 2000 |
| 300 | 12 | 83 | 668 | 424 | 346 | 702 | 600 | 430 | 16-30 | 2500 |
| 350 | 14 | 92 | 710 | 424 | 346 | 832 | 633 | 490 | 16-33 | 4000 |
| 400 | 16 | 102 | 733 | 424 | 346 | 910 | 633 | 550 | 16-36 | 4500 |
| 450 | 18 | 114 | 780 | 424 | 346 | 1005 | 730 | 600 | 20-36 | 5000 |
| 500 | 20 | 127 | 816 | 890 | 507 | 1058 | 730 | 660 | 20-36 | 6000 |
| 600 | 24 | 154 | 846 | 984 | 571 | 1110 | 1320 | 770 | 20-39 | 14000 |
| 700 | 28 | 165 | 916 | 1060 | 580 | 1255 | 1430 | 875 | 24-42 | 20000 |
| 800 | 32 | 190 | 971 | 1170 | 620 | 1325 | 1950 | 990 | 24-48 | 30000 |

## Pressure Class PN40 (4.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D973 Series | | | D673 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 43 | 375 | 332 | 248 | 277 | 211 | 125 | 4-18 | 300 |
| 65 | 2-1/2 | 46 | 385 | 332 | 248 | 310 | 248 | 145 | 8-18 | 400 |
| 80 | 3 | 49 | 395 | 332 | 248 | 375 | 269 | 160 | 8-18 | 400 |
| 100 | 4 | 56 | 422 | 424 | 346 | 436 | 315 | 190 | 8-22 | 500 |
| 125 | 5 | 64 | 431 | 424 | 346 | 462 | 345 | 220 | 8-26 | 600 |
| 150 | 6 | 70 | 150 | 424 | 346 | 543 | 438 | 250 | 8-26 | 800 |
| 200 | 8 | 71 | 514 | 424 | 346 | 665 | 550 | 320 | 12-30 | 2000 |
| 250 | 10 | 76 | 558 | 424 | 346 | 752 | 600 | 385 | 12-33 | 2500 |
| 300 | 12 | 83 | 668 | 424 | 346 | 820 | 633 | 450 | 16-33 | 4000 |
| 350 | 14 | 92 | 710 | 890 | 507 | 938 | 730 | 510 | 16-36 | 6000 |
| 400 | 16 | 102 | 733 | 890 | 507 | 970 | 1180 | 585 | 16-39 | 7000 |
| 450 | 18 | 152 | 780 | 984 | 571 | 1005 | 1180 | 610 | 20-39 | 8500 |
| 500 | 20 | 152 | 816 | 984 | 571 | 1145 | 1320 | 670 | 20-42 | 10000 |
| 600 | 24 | 178 | 846 | 1060 | 580 | 1195 | 1970 | 795 | 20-48 | 20000 |

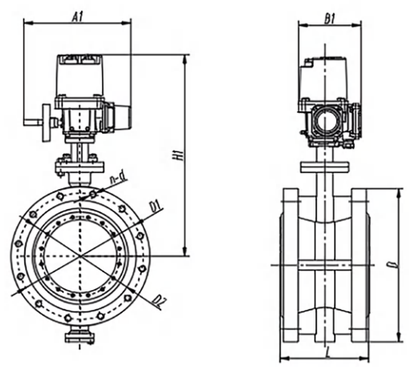
## American standard ANSI CLASS 150

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | D973 Series | | | D673 Series | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D1 | n-d | Torque(Nm) |
| 50 | 2 | 43 | 415 | 250 | 182 | 277 | 159 | 120.7 | 4-18 | 100 |
| 65 | 2-1/2 | 46 | 425 | 250 | 182 | 287 | 211 | 139.7 | 4-18 | 100 |
| 80 | 3 | 49 | 437 | 250 | 182 | 365 | 248 | 152.4 | 4-18 | 100 |
| 100 | 4 | 56 | 467 | 332 | 248 | 420 | 269 | 190.5 | 8-18 | 200 |
| 125 | 5 | 64 | 483 | 332 | 248 | 436 | 315 | 215.9 | 8-22 | 200 |
| 150 | 6 | 70 | 488 | 332 | 248 | 466 | 345 | 241.3 | 8-22 | 400 |
| 200 | 8 | 71 | 557 | 424 | 346 | 593 | 409 | 298.5 | 8-22 | 900 |
| 250 | 10 | 76 | 594 | 424 | 346 | 682 | 438 | 362 | 12-26 | 1500 |
| 300 | 12 | 86 | 701 | 424 | 346 | 725 | 550 | 431.8 | 12-26 | 2000 |
| 350 | 14 | 92 | 735 | 424 | 346 | 832 | 600 | 476.3 | 12-30 | 3000 |
| 400 | 16 | 102 | 763 | 424 | 346 | 862 | 633 | 539.8 | 16-30 | 3500 |
| 450 | 18 | 114 | 797 | 424 | 346 | 945 | 633 | 577.9 | 16-33 | 4000 |
| 500 | 20 | 127 | 823 | 424 | 346 | 1058 | 730 | 635 | 20-33 | 5000 |
| 600 | 24 | 154 | 852 | 984 | 571 | 1108 | 1180 | 749.3 | 20-36 | 9000 |
| 700 | 28 | 165 | 906 | 984 | 571 | 1170 | 1320 | 863.5 | 20-36 | 14000 |
| 800 | 32 | 190 | 996 | 1060 | 580 | 1325 | 1430 | 978 | 28-42 | 20000 |

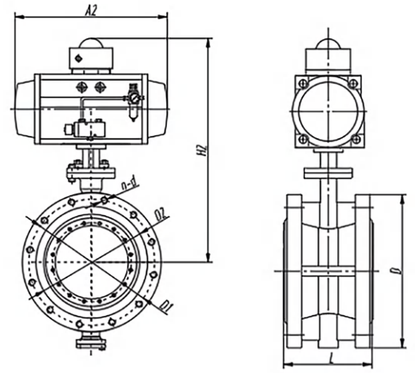
NOTE: Flange standard GB/T 9113、GB/T 9115

- Dimensions H1, H2, and L can be customized to customer's requirements, this product is typically supplied in a short structure. For long structure or special materials, please specify while ordering.
- As required, the pneumatic actuators can be equipped with accessories such as solenoid valve, positioner, filter regulator, limit switch, etc.

# Flange-Type Triple Eccentric Butterfly Valve




D943 Series




D643 Series

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D943 Series | | | D643 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 108 | 415 | 250 | 182 | 277 | 159 | 165 | 125 | 102 | 4-18 | 100 |
| 65 | 2-1/2 | 112 | 425 | 250 | 182 | 287 | 211 | 185 | 145 | 122 | 8-18 | 100 |
| 80 | 3 | 114 | 437 | 250 | 182 | 365 | 248 | 200 | 160 | 138 | 8-18 | 100 |
| 100 | 4 | 127 | 467 | 332 | 248 | 420 | 269 | 235 | 180 | 158 | 8-18 | 200 |
| 125 | 5 | 140 | 483 | 332 | 248 | 436 | 315 | 250 | 210 | 188 | 8-18 | 200 |
| 150 | 6 | 140 | 488 | 332 | 248 | 466 | 345 | 285 | 240 | 212 | 8-22 | 400 |
| 200 | 8 | 152 | 557 | 424 | 346 | 593 | 409 | 340 | 295 | 268 | 12-22 | 900 |
| 250 | 10 | 165 | 594 | 424 | 346 | 682 | 438 | 405 | 355 | 320 | 12-26 | 1500 |
| 300 | 12 | 178 | 701 | 424 | 346 | 725 | 550 | 460 | 410 | 378 | 12-26 | 2000 |
| 350 | 14 | 190 | 735 | 424 | 346 | 832 | 600 | 520 | 470 | 428 | 16-26 | 3000 |
| 400 | 16 | 216 | 763 | 424 | 346 | 862 | 633 | 580 | 525 | 490 | 16-30 | 3500 |
| 450 | 18 | 222 | 797 | 424 | 346 | 945 | 633 | 640 | 585 | 550 | 20-30 | 4000 |
| 500 | 20 | 229 | 823 | 424 | 346 | 1058 | 730 | 715 | 650 | 610 | 20-33 | 5000 |
| 600 | 24 | 267 | 852 | 984 | 571 | 1108 | 1180 | 840 | 770 | 725 | 20-36 | 9000 |
| 700 | 28 | 292 | 906 | 984 | 571 | 1170 | 1320 | 910 | 840 | 795 | 24-36 | 14000 |
| 800 | 32 | 318 | 996 | 1060 | 580 | 1325 | 1430 | 1025 | 950 | 900 | 24-39 | 20000 |
| 900 | 36 | 330 | 1041 | 1060 | 580 | 1360 | 1950 | 1125 | 1050 | 1000 | 28-39 | 25000 |
| 1000 | 40 | 410 | 1101 | 1170 | 620 | 1420 | 2210 | 1255 | 1170 | 1115 | 28-42 | 35000 |

## Pressure Class PN25 (2.5MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D943 Series | | | D643 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 108 | 415 | 250 | 182 | 277 | 159 | 165 | 125 | 102 | 4-18 | 150 |
| 65 | 2-1/2 | 112 | 425 | 250 | 182 | 287 | 211 | 185 | 145 | 122 | 8-18 | 150 |
| 80 | 3 | 114 | 437 | 332 | 248 | 365 | 248 | 200 | 160 | 138 | 8-18 | 200 |
| 100 | 4 | 127 | 467 | 332 | 248 | 420 | 269 | 235 | 190 | 162 | 8-22 | 200 |
| 125 | 5 | 140 | 483 | 332 | 248 | 436 | 315 | 270 | 220 | 188 | 8-26 | 300 |
| 150 | 6 | 140 | 488 | 332 | 248 | 466 | 409 | 300 | 250 | 218 | 8-26 | 400 |
| 200 | 8 | 152 | 557 | 424 | 346 | 593 | 438 | 360 | 310 | 278 | 12-26 | 1200 |
| 250 | 10 | 165 | 594 | 424 | 346 | 682 | 550 | 425 | 370 | 335 | 12-30 | 2000 |
| 300 | 12 | 178 | 701 | 424 | 346 | 702 | 600 | 485 | 430 | 395 | 16-30 | 2500 |
| 350 | 14 | 190 | 735 | 424 | 346 | 832 | 633 | 555 | 490 | 450 | 16-33 | 4000 |
| 400 | 16 | 216 | 763 | 424 | 346 | 910 | 633 | 620 | 550 | 505 | 16-36 | 4500 |
| 450 | 18 | 222 | 797 | 424 | 346 | 1005 | 730 | 670 | 600 | 555 | 20-36 | 5000 |
| 500 | 20 | 229 | 823 | 890 | 507 | 1058 | 730 | 730 | 660 | 615 | 20-36 | 6000 |
| 600 | 24 | 267 | 852 | 984 | 571 | 1110 | 1320 | 845 | 770 | 720 | 20-39 | 14000 |
| 700 | 28 | 292 | 906 | 1060 | 580 | 1255 | 1430 | 960 | 875 | 820 | 24-42 | 20000 |
| 800 | 32 | 318 | 996 | 1170 | 620 | 1325 | 1950 | 1085 | 990 | 930 | 24-48 | 30000 |
| 900 | 36 | 330 | 996 | 1245 | 720 | 1360 | 1950 | 1185 | 1090 | 1030 | 28-48 | 40000 |
| 1000 | 40 | 410 | 996 | 1245 | 720 | 1420 | 2210 | 1320 | 1210 | 1140 | 28-55 | 50000 |

## American standard ANSI CLASS 150

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D943 Series | | | D643 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 108 | 415 | 250 | 182 | 277 | 159 | 152 | 120.7 | 92 | 4-18 | 100 |
| 65 | 2-1/2 | 112 | 425 | 250 | 182 | 287 | 211 | 178 | 139.7 | 105 | 4-18 | 100 |
| 80 | 3 | 114 | 437 | 250 | 182 | 365 | 248 | 190 | 152.4 | 127 | 4-18 | 100 |
| 100 | 4 | 127 | 467 | 332 | 248 | 420 | 269 | 229 | 190.5 | 157 | 8-18 | 200 |
| 125 | 5 | 140 | 483 | 332 | 248 | 436 | 315 | 254 | 215.9 | 186 | 8-22 | 200 |
| 150 | 6 | 140 | 488 | 332 | 248 | 466 | 345 | 279 | 241.3 | 216 | 8-22 | 400 |
| 200 | 8 | 152 | 557 | 424 | 346 | 593 | 409 | 343 | 298.5 | 270 | 8-22 | 900 |
| 250 | 10 | 165 | 594 | 424 | 346 | 682 | 438 | 406 | 362 | 324 | 12-26 | 1500 |
| 300 | 12 | 178 | 701 | 424 | 346 | 725 | 550 | 483 | 431.8 | 381 | 12-26 | 2000 |
| 350 | 14 | 190 | 735 | 424 | 346 | 832 | 600 | 533 | 476.3 | 413 | 12-30 | 3000 |
| 400 | 16 | 216 | 763 | 424 | 346 | 862 | 633 | 579 | 539.8 | 470 | 16-30 | 3500 |
| 450 | 18 | 222 | 797 | 424 | 346 | 945 | 633 | 635 | 577.9 | 533 | 16-33 | 4000 |
| 500 | 20 | 229 | 823 | 424 | 346 | 1058 | 730 | 700 | 635 | 584 | 20-33 | 5000 |
| 600 | 24 | 267 | 852 | 984 | 571 | 1108 | 1180 | 813 | 749.3 | 692 | 20-36 | 9000 |
| 700 | 28 | 292 | 906 | 984 | 571 | 1170 | 1320 | 927 | 863.5 | 800 | 28-36 | 14000 |
| 800 | 32 | 318 | 996 | 1060 | 580 | 1325 | 1430 | 1060 | 978 | 914 | 28-42 | 20000 |
| 900 | 36 | 330 | 996 | 1060 | 580 | 1360 | 1950 | 1168 | 1085.8 | 1022 | 32-42 | 25000 |
| 1000 | 40 | 410 | 996 | 1170 | 620 | 1420 | 2210 | 1289 | 1200.2 | 1124 | 36-42 | 35000 |

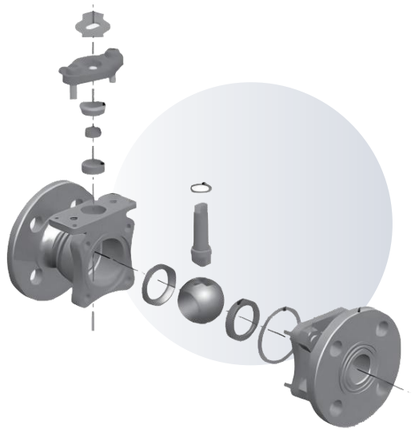
## American standard ANSI CLASS 300

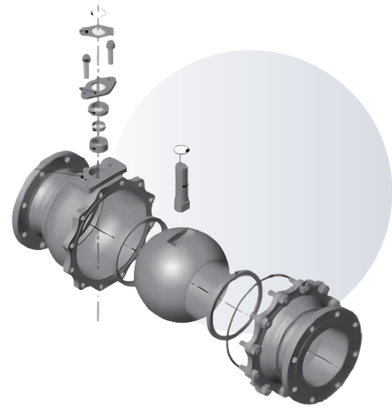
| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D943 Series | | | D643 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 108 | 415 | 332 | 248 | 277 | 159 | 165 | 127 | 92 | 8-19 | 300 |
| 65 | 2-1/2 | 112 | 425 | 332 | 248 | 287 | 211 | 190 | 149 | 105 | 8-22 | 400 |
| 80 | 3 | 114 | 437 | 332 | 248 | 365 | 248 | 210 | 168.5 | 127 | 8-22 | 400 |
| 100 | 4 | 127 | 467 | 424 | 346 | 420 | 269 | 255 | 200 | 157 | 8-22 | 500 |
| 125 | 5 | 140 | 483 | 424 | 346 | 436 | 315 | 280 | 235 | 186 | 8-22 | 600 |
| 150 | 6 | 140 | 488 | 424 | 346 | 466 | 409 | 320 | 270 | 216 | 12-22 | 800 |
| 200 | 8 | 152 | 557 | 424 | 346 | 593 | 438 | 380 | 330 | 270 | 12-26 | 2000 |
| 250 | 10 | 165 | 594 | 424 | 346 | 682 | 550 | 445 | 387.5 | 324 | 16-29 | 2500 |
| 300 | 12 | 178 | 701 | 424 | 346 | 702 | 600 | 520 | 451 | 381 | 16-32 | 4000 |
| 350 | 14 | 190 | 735 | 890 | 507 | 832 | 633 | 585 | 514.5 | 413 | 20-32 | 6000 |
| 400 | 16 | 216 | 763 | 890 | 507 | 910 | 633 | 650 | 571.5 | 470 | 20-35 | 7000 |
| 450 | 18 | 222 | 797 | 984 | 571 | 1005 | 730 | 710 | 628.5 | 533 | 24-35 | 8500 |
| 500 | 20 | 229 | 823 | 984 | 571 | 1058 | 730 | 775 | 686 | 584 | 24-35 | 10000 |
| 600 | 24 | 267 | 852 | 1060 | 580 | 1110 | 1320 | 915 | 813 | 692 | 24-41 | 20000 |
| 700 | 28 | 292 | 906 | 1170 | 620 | 1255 | 1430 | 1035 | 940 | 800 | 28-45 | 35000 |
| 800 | 32 | 318 | 996 | 1245 | 720 | 1325 | 1950 | 1149 | 1054 | 914 | 28-52 | 45000 |
| 900 | 36 | 330 | 996 | 1245 | 720 | 1360 | 1950 | 1270 | 1168.5 | 1022 | 32-54 | 55000 |
| 1000 | 40 | 410 | 996 | 1410 | 880 | 1420 | 2210 | 1238 | 1155.7 | 1086 | 32-45 | 70000 |

NOTE: Flange standard GB/T 9113、GB/T 9115

- Dimensions H1, H2, and L can be customized to customer's requirements, this product is typically supplied in a short structure. For long structure or special materials, please specify while ordering.
- As required, the pneumatic actuators can be equipped with accessories such as solenoid valve, positioner, filter regulator, limit switch, etc.

# GB Standard Floating Ball Valve



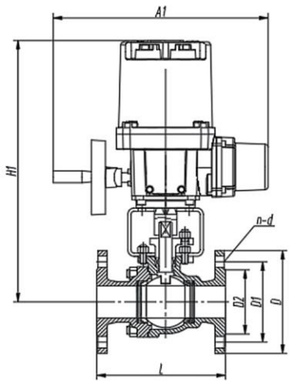


## Implementation Standard

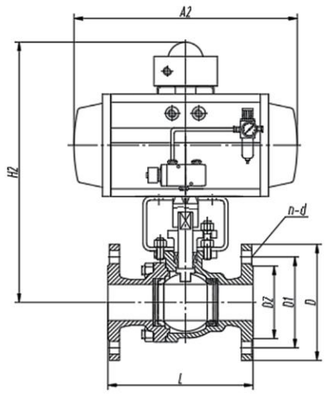
| | Design Standard | Structure Length | Flange Connection Dimensions | Testing and Inspection |
|---|---|---|---|---|
| Adopted Standard | GB/T12237<br>JB/T7745 | GB/T12221<br>JB/T7745 | JB/T 79 | GB/T 13927<br>JB/T 9092 |

## Material Table

| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB/A105+HCr（ENP） | WCB/304 | WCB/316 | CF8 | CF8M |
| **Body** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Packing** | PTFE | | | | |
| **Bushing** | PTFE | | | | |
| **Packing Bushing** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F304 |
| **Packing Plate** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Screw** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **Upper Sealing Gasket** | PTFE | | | | |
| **Stem** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Ball** | A105+HCr（ENP） | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Sealing Ring** | RPTFE | | | | |
| **Gasket** | PTFE | | | | |
| **Bolt** | A192 2H | A192 2H | A192 2H | A194 8 | A194 8M |
| **Nut** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **Bonnet** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |




Q941 Series




Q641 Series

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q941 Series | | | Q941 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 20 | 3/4 | 140 | 352 | 250 | 182 | 230 | 528 | 105 | 75 | 55 | 4-14 | 40 |
| 25 | 1 | 150 | 371 | 250 | 182 | 257 | 528 | 115 | 85 | 65 | 4-14 | 40 |
| 32 | 1-1/4 | 165 | 393 | 250 | 182 | 262 | 528 | 135 | 100 | 78 | 4-18 | 40 |
| 40 | 1-1/2 | 180 | 412 | 250 | 182 | 264 | 601 | 145 | 110 | 85 | 4-18 | 40 |
| 50 | 2 | 200 | 440 | 250 | 182 | 340 | 683 | 160 | 125 | 100 | 4-18 | 40 |
| 65 | 2-1/2 | 220 | 472 | 250 | 182 | 370 | 683 | 180 | 145 | 120 | 4-18 | 100 |
| 80 | 3 | 250 | 486 | 250 | 182 | 389 | 683 | 195 | 160 | 135 | 8-18 | 150 |
| 100 | 4 | 280 | 579 | 322 | 248 | 594 | 683 | 215 | 180 | 155 | 8-18 | 300 |
| 125 | 5 | 320 | 595 | 322 | 248 | 646 | 988 | 245 | 210 | 185 | 8-18 | 400 |
| 150 | 6 | 360 | 650 | 424 | 346 | 658 | 988 | 280 | 240 | 210 | 8-23 | 700 |
| 200 | 8 | 400 | 739 | 424 | 346 | 781 | 1451 | 335 | 295 | 265 | 12-23 | 1200 |

## Pressure Class PN25 (2.5MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q941 Series | | | Q641 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 20 | 3/4 | 140 | 371 | 250 | 182 | 230 | 528 | 105 | 75 | 55 | 4-14 | 50 |
| 25 | 1 | 150 | 393 | 250 | 182 | 257 | 528 | 115 | 85 | 65 | 4-14 | 50 |
| 32 | 1-1/4 | 165 | 412 | 250 | 182 | 262 | 528 | 135 | 100 | 78 | 4-18 | 50 |
| 40 | 1-1/2 | 180 | 440 | 250 | 182 | 264 | 601 | 145 | 110 | 85 | 4-18 | 50 |
| 50 | 2 | 200 | 472 | 250 | 182 | 340 | 683 | 160 | 125 | 100 | 4-18 | 100 |
| 65 | 2-1/2 | 220 | 486 | 322 | 248 | 370 | 683 | 185 | 145 | 120 | 8-18 | 200 |
| 80 | 3 | 250 | 579 | 322 | 248 | 389 | 683 | 200 | 160 | 135 | 8-18 | 300 |
| 100 | 4 | 280 | 595 | 424 | 346 | 594 | 683 | 220 | 180 | 160 | 8-18 | 600 |
| 125 | 5 | 320 | 650 | 424 | 346 | 646 | 988 | 250 | 210 | 188 | 8-18 | 800 |
| 150 | 6 | 360 | 739 | 424 | 346 | 658 | 988 | 285 | 240 | 218 | 8-22 | 1200 |
| 200 | 8 | 400 | 799 | 424 | 346 | 781 | 1451 | 340 | 295 | 278 | 12-22 | 2000 |

## Pressure Class PN40 (4.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q941 Series | | | Q941 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 20 | 3/4 | 140 | 371 | 250 | 182 | 230 | 528 | 105 | 75 | 55 | 4-14 | 100 |
| 25 | 1 | 150 | 393 | 250 | 182 | 257 | 528 | 115 | 85 | 65 | 4-14 | 100 |
| 32 | 1-1/4 | 180 | 412 | 250 | 182 | 262 | 528 | 135 | 100 | 78 | 4-18 | 100 |
| 40 | 1-1/2 | 200 | 440 | 250 | 182 | 264 | 601 | 145 | 110 | 85 | 4-18 | 100 |
| 50 | 2 | 220 | 472 | 250 | 182 | 340 | 683 | 160 | 125 | 100 | 4-18 | 100 |
| 65 | 2-1/2 | 250 | 486 | 322 | 248 | 370 | 683 | 180 | 145 | 120 | 8-18 | 200 |
| 80 | 3 | 280 | 579 | 322 | 248 | 389 | 683 | 195 | 160 | 135 | 8-18 | 300 |
| 100 | 4 | 320 | 595 | 424 | 346 | 594 | 683 | 230 | 190 | 160 | 8-23 | 600 |
| 125 | 5 | 400 | 650 | 424 | 346 | 646 | 988 | 270 | 220 | 188 | 8-25 | 800 |
| 150 | 6 | 400 | 739 | 424 | 346 | 658 | 988 | 300 | 250 | 218 | 8-25 | 1200 |
| 200 | 8 | 457 | 799 | 424 | 346 | 781 | 1451 | 375 | 320 | 282 | 12-30 | 2500 |

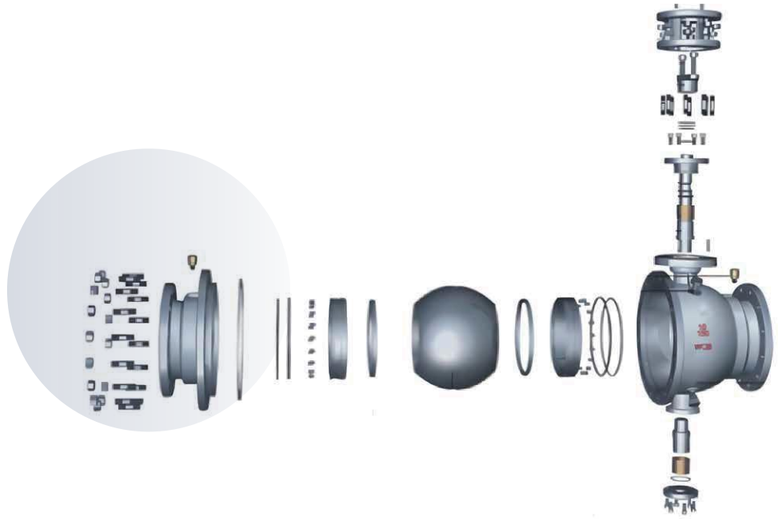
## Pressure Class PN64 (6.4MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q941 Series | | | Q941 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 20 | 3/4 | 190 | 371 | 250 | 182 | 230 | 528 | 125 | 90 | 68 | 4-14 | 100 |
| 25 | 1 | 216 | 393 | 250 | 182 | 257 | 528 | 135 | 100 | 78 | 4-18 | 100 |
| 32 | 1-1/4 | 229 | 412 | 250 | 182 | 262 | 528 | 150 | 110 | 82 | 4-18 | 100 |
| 40 | 1-1/2 | 241 | 440 | 250 | 182 | 264 | 601 | 165 | 125 | 95 | 4-23 | 100 |
| 50 | 2 | 292 | 472 | 250 | 182 | 340 | 683 | 175 | 135 | 105 | 4-23 | 150 |
| 65 | 2-1/2 | 330 | 486 | 322 | 248 | 370 | 683 | 200 | 160 | 130 | 8-23 | 300 |
| 80 | 3 | 356 | 579 | 424 | 346 | 389 | 683 | 210 | 170 | 140 | 8-23 | 500 |
| 100 | 4 | 432 | 595 | 424 | 346 | 594 | 683 | 250 | 200 | 168 | 8-25 | 900 |

## Pressure Class PN100 (10.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q941 Series | | | Q941 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 20 | 3/4 | 190 | 402 | 250 | 182 | 250 | 528 | 125 | 90 | 68 | 4-18 | 100 |
| 25 | 1 | 216 | 413 | 250 | 182 | 268 | 528 | 135 | 100 | 78 | 4-18 | 100 |
| 32 | 1-1/4 | 229 | 422 | 250 | 182 | 275 | 601 | 150 | 110 | 82 | 4-23 | 100 |
| 40 | 1-1/2 | 241 | 455 | 322 | 248 | 285 | 683 | 165 | 125 | 95 | 4-23 | 200 |
| 50 | 2 | 292 | 486 | 322 | 248 | 358 | 683 | 195 | 145 | 112 | 4-25 | 300 |
| 65 | 2-1/2 | 330 | 499 | 424 | 346 | 390 | 683 | 220 | 170 | 138 | 8-25 | 600 |
| 80 | 3 | 356 | 598 | 424 | 346 | 408 | 683 | 230 | 180 | 148 | 8-25 | 800 |
| 100 | 4 | 432 | 620 | 424 | 346 | 620 | 683 | 265 | 210 | 172 | 8-30 | 1200 |

# GB Standard Trunnion-Mounted Ball Valve

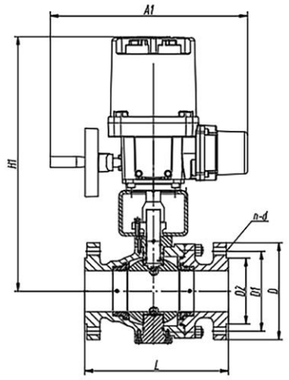



## Implementation Standard

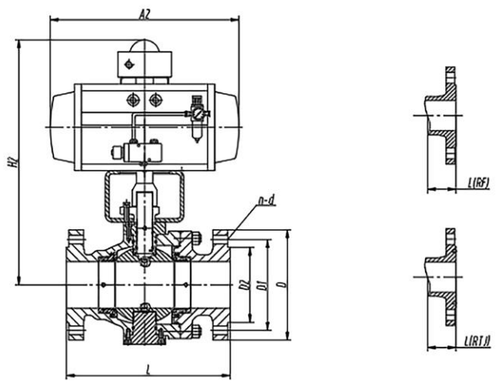
| | Design Standard | Structure Length | Flange Connection Dimensions | Welding | Testing and Inspection |
|---|---|---|---|---|---|
| Adopted Standard | GB/T12237<br>GB/T19672 | GB/T12221<br>JB/T7745 | GB/T 9113<br>JB/T 79 | GB/T 1224 | GB/T 13927<br>JB/T 9092 |

## Material Table

| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB/A105+HCr（ENP） | WCB/304 | WCB/316 | CF8 | CF8M |
| **Body** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Bonnet** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Lower Bonnet** | A105 | A105 | A105 | A182 F304 | A182 F316 |
| **Ball** | A105+HCr（ENP） | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Seat** | RPTFE | | | | |
| **Stem** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Lower Shaft** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Seat** | A105 | A105 | A105 | A182 F304 | A182 F316 |
| **Gasket** | PTFE | | | | |
| **Gasket** | PTFE | | | | |
| **Stem Shaft Sleeve** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Lower Stem Shaft Sleeve** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Gasket** | PTFE | | | | |
| **Gasket** | PTFE | | | | |
| **Cover** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Relief Valve** | A29 1025 | A29 1025 | A29 1025 | SS | SS |
| **Bolt** | A192 2H | A192 2H | A192 2H | A194 8 | A194 8M |
| **Spring** | SS304/Inconel 750 | SS304/Inconel 750 | SS316/Inconel 750 | SS304/Inconel 750 | SS316/Inconel 750 |
| **O-ring** | Viton | | | | |
| **Injection Valve** | A29 1025 | A29 1025 | A29 1025 | SS | SS |
| **Discharge Plug** | A29 1025 | A29 1025 | A29 1025 | SS | SS |
| **Key** | Carbon Steel | Carbon Steel | Carbon Steel | Stainless Steel | Stainless Steel |
| **Bracket** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **O-ring** | Viton | | | | |
| **Screw** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |




Q947 Series




Q647 Series




## Preesure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 178 | 420 | 250 | 182 | 269 | 405 | 160 | 125 | 100 | 4-18 | 40 |
| 65 | 2-1/2 | 191 | 440 | 250 | 182 | 379 | 405 | 180 | 145 | 120 | 4-18 | 100 |
| 80 | 3 | 203 | 459 | 250 | 182 | 452 | 574 | 195 | 160 | 135 | 8-18 | 150 |
| 100 | 4 | 229 | 472 | 322 | 248 | 579 | 574 | 215 | 180 | 155 | 8-18 | 300 |
| 125 | 5 | 356 | 482 | 322 | 248 | 595 | 756 | 245 | 210 | 185 | 8-18 | 400 |
| 150 | 6 | 394 | 492 | 424 | 346 | 595 | 756 | 280 | 240 | 210 | 8-23 | 700 |
| 200 | 8 | 457 | 592 | 424 | 346 | 736 | 756 | 335 | 295 | 265 | 12-23 | 1200 |
| 250 | 10 | 533 | 648 | 424 | 346 | 942 | 1060 | 405 | 355 | 320 | 12-25 | 2000 |
| 300 | 12 | 610 | 788 | 424 | 346 | 994 | 1060 | 460 | 410 | 375 | 12-25 | 3000 |
| 350 | 14 | 686 | 822 | 424 | 346 | 1188 | 1360 | 520 | 470 | 436 | 16-25 | 5000 |
| 400 | 16 | 762 | 922 | 890 | 507 | 1280 | 1360 | 580 | 525 | 485 | 16-30 | 7000 |
| 450 | 18 | 864 | 1004 | 910 | 571 | 1480 | 2910 | 640 | 585 | 515 | 20-30 | 10000 |
| 500 | 20 | 914 | 1152 | 984 | 571 | 1554 | 2910 | 715 | 650 | 608 | 20-34 | 12000 |
| 600 | 24 | 1067 | 1354 | 984 | 571 | 1580 | 3330 | 840 | 770 | 718 | 20-36 | 15000 |

## Preesure Class PN25 (2.5MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 216 | 420 | 250 | 182 | 269 | 405 | 160 | 125 | 100 | 4-18 | 100 |
| 65 | 2-1/2 | 241 | 440 | 322 | 248 | 379 | 405 | 180 | 145 | 120 | 8-18 | 200 |
| 80 | 3 | 283 | 459 | 322 | 248 | 452 | 574 | 195 | 160 | 135 | 8-18 | 300 |
| 100 | 4 | 305 | 472 | 424 | 346 | 579 | 574 | 230 | 190 | 160 | 8-23 | 600 |
| 125 | 5 | 381 | 482 | 424 | 346 | 595 | 756 | 270 | 220 | 188 | 8-25 | 800 |
| 150 | 6 | 457 | 492 | 424 | 346 | 595 | 756 | 300 | 250 | 218 | 8-25 | 1200 |
| 200 | 8 | 521 | 592 | 424 | 346 | 736 | 756 | 360 | 310 | 278 | 12-25 | 2000 |
| 250 | 10 | 568 | 648 | 424 | 346 | 942 | 1060 | 425 | 370 | 332 | 12-30 | 2500 |
| 300 | 12 | 648 | 788 | 424 | 346 | 994 | 1060 | 485 | 430 | 390 | 16-30 | 4000 |
| 350 | 14 | 762 | 822 | 890 | 507 | 1188 | 1360 | 550 | 490 | 448 | 16-34 | 7500 |
| 400 | 16 | 838 | 922 | 984 | 571 | 1280 | 1360 | 610 | 550 | 505 | 16-34 | 9000 |
| 450 | 18 | 914 | 1004 | 984 | 571 | 1480 | 2910 | 660 | 600 | 555 | 20-34 | 12000 |
| 500 | 20 | 991 | 1152 | 984 | 571 | 1554 | 2910 | 730 | 660 | 610 | 20-41 | 15000 |
| 600 | 24 | 1143 | 1354 | 1060 | 580 | 1580 | 3330 | 840 | 770 | 718 | 20-41 | 25000 |

## Preesure Class PN40 (4.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 216 | 420 | 250 | 182 | 269 | 405 | 160 | 125 | 100 | 4-18 | 100 |
| 65 | 2-1/2 | 241 | 440 | 322 | 248 | 379 | 405 | 180 | 145 | 120 | 8-18 | 200 |
| 80 | 3 | 283 | 459 | 322 | 248 | 452 | 574 | 195 | 160 | 135 | 8-18 | 300 |
| 100 | 4 | 305 | 472 | 424 | 346 | 579 | 574 | 230 | 190 | 160 | 8-23 | 600 |
| 125 | 5 | 381 | 482 | 424 | 346 | 595 | 756 | 270 | 220 | 188 | 8-25 | 800 |
| 150 | 6 | 457 | 492 | 424 | 346 | 595 | 756 | 300 | 250 | 218 | 8-25 | 1200 |
| 200 | 8 | 521 | 592 | 424 | 346 | 736 | 756 | 360 | 310 | 278 | 12-25 | 2000 |
| 250 | 10 | 568 | 648 | 424 | 346 | 942 | 1060 | 425 | 370 | 332 | 12-30 | 2500 |
| 300 | 12 | 648 | 788 | 424 | 346 | 994 | 1060 | 485 | 430 | 390 | 16-30 | 4000 |
| 350 | 14 | 762 | 822 | 890 | 507 | 1188 | 1360 | 550 | 490 | 448 | 16-34 | 7500 |
| 400 | 16 | 838 | 922 | 984 | 571 | 1280 | 1360 | 610 | 550 | 505 | 16-34 | 9000 |
| 450 | 18 | 914 | 1004 | 984 | 571 | 1480 | 2910 | 660 | 600 | 555 | 20-34 | 12000 |
| 500 | 20 | 991 | 1152 | 984 | 571 | 1554 | 2910 | 730 | 660 | 610 | 20-41 | 15000 |
| 600 | 24 | 1143 | 1354 | 1060 | 580 | 1580 | 3330 | 840 | 770 | 718 | 20-41 | 25000 |

## Preesure Class PN64 (6.4MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 292 | 460 | 250 | 182 | 279 | 405 | 175 | 135 | 105 | 4-23 | 150 |
| 65 | 2-1/2 | 330 | 485 | 322 | 248 | 385 | 574 | 200 | 160 | 130 | 8-23 | 300 |
| 80 | 3 | 356 | 509 | 424 | 346 | 465 | 574 | 210 | 170 | 140 | 8-23 | 500 |
| 100 | 4 | 406 | 530 | 424 | 346 | 590 | 756 | 250 | 200 | 168 | 8-25 | 900 |
| 150 | 6 | 495 | 554 | 424 | 346 | 606 | 756 | 340 | 280 | 240 | 8-34 | 1500 |
| 200 | 8 | 597 | 600 | 424 | 346 | 606 | 756 | 405 | 345 | 300 | 12-34 | 3000 |
| 250 | 10 | 673 | 652 | 424 | 346 | 746 | 1060 | 470 | 400 | 352 | 12-36 | 5000 |
| 300 | 12 | 762 | 761 | 890 | 507 | 962 | 1060 | 530 | 460 | 415 | 16-36 | 7000 |
| 350 | 14 | 826 | 771 | 984 | 571 | 1020 | 1360 | 595 | 525 | 475 | 16-41 | 10000 |
| 400 | 16 | 902 | 831 | 984 | 571 | 1210 | 1360 | 670 | 585 | 525 | 16-42 | 14000 |
| 450 | 18 | 978 | 943 | 1060 | 580 | 1300 | 2910 | 715 | 630 | 570 | 20-48 | 20000 |
| 500 | 20 | 1054 | 1123 | 1060 | 580 | 1520 | 2910 | 800 | 705 | 640 | 20-48 | 25000 |
| 600 | 24 | 1232 | 1218 | 1170 | 620 | 1580 | 3330 | 930 | 820 | 750 | 20-58 | 35000 |

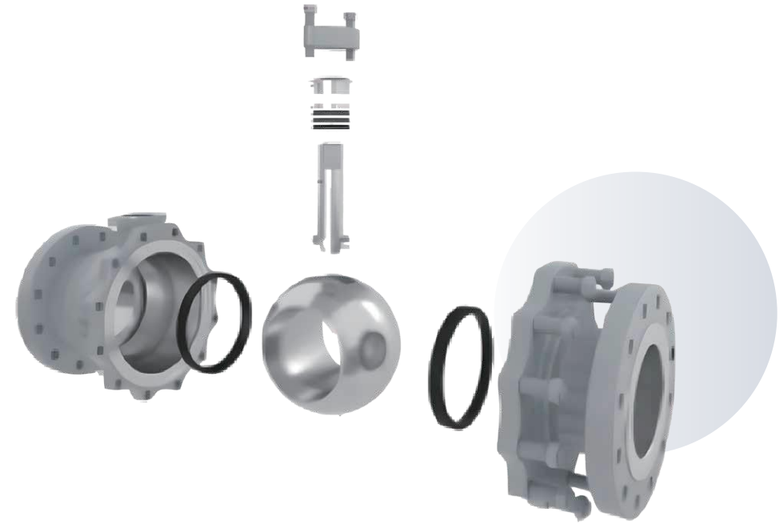
## Preesure Class PN100 (10.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 292 | 500 | 322 | 248 | 269 | 405 | 195 | 145 | 112 | 4-25 | 300 |
| 65 | 2-1/2 | 330 | 525 | 424 | 346 | 379 | 405 | 220 | 170 | 138 | 8-25 | 600 |
| 80 | 3 | 356 | 548 | 424 | 346 | 519 | 574 | 230 | 180 | 148 | 8-25 | 800 |
| 100 | 4 | 432 | 560 | 424 | 346 | 636 | 574 | 265 | 210 | 172 | 8-30 | 1200 |
| 150 | 6 | 559 | 600 | 424 | 346 | 728 | 756 | 350 | 290 | 250 | 12-34 | 2500 |
| 200 | 8 | 660 | 652 | 424 | 346 | 839 | 1060 | 430 | 360 | 312 | 12-36 | 4000 |
| 250 | 10 | 787 | 761 | 890 | 507 | 1014 | 1060 | 500 | 430 | 382 | 12-41 | 6000 |
| 300 | 12 | 838 | 771 | 984 | 571 | 1120 | 1360 | 585 | 500 | 442 | 16-48 | 9500 |
| 350 | 14 | 889 | 831 | 984 | 571 | 1224 | 2890 | 665 | 560 | 498 | 16-48 | 14000 |
| 400 | 16 | 991 | 921 | 1060 | 580 | 1374 | 2890 | 715 | 620 | 558 | 16-54 | 20000 |
| 450 | 18 | 1092 | 943 | 1060 | 580 | 1450 | 2890 | 770 | 675 | 615 | 20-58 | 25000 |
| 500 | 20 | 1194 | 1123 | 1170 | 620 | 1490 | 3330 | 870 | 760 | 690 | 20-58 | 35000 |
| 600 | 24 | 1397 | 1218 | 1245 | 720 | 1615 | 3330 | 990 | 875 | 800 | 24-58 | 50000 |

# ASME Standard Floating Ball Valve







## PRODUCT INTRODUCTION

The ball in a floating ball valve is free to move and under the medium pressure,the ball can shift slightly and press tightly against the sealing surface at the outlet end, ensuring the sealing of the outlet end.

The floating ball valve has a simple structure and provides excellent sealing performance. However, the load exerted on the ball by the working medium is entirely transferred to the outlet sealing ring. Therefore, it is necessary to consider whether the sealing ring material can withstand the working load of the medium. When subjected to high pressure impact, the ball may shift. Generally applicable to medium and low pressure ball valves.

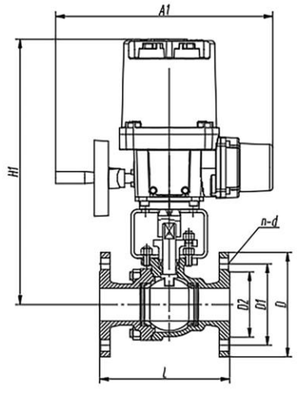
## PRODUCT FEATURES

- Ball valves offer low flow resistance.When a full-bore ball valve is open, the bore of the ball, valve body and connecting pipes share the same diameter and form a straight flow path, allowing the medium to pass through without restriction.
- The ball valve can be fully closed or fully opened by rotating 90 degrees, enabling quick operation. Its compact size and lightweight design facilitate easy pipeline installation.
- Advanced valve seat: Ensures excellent sealing performance, low friction coefficient, minimal operating torque. Offers multiple seat material options, suitable for a wide range of applications.
- Applicable medium: water, gas, oil, natural gas, and acidic or alkaline corrosive medium.

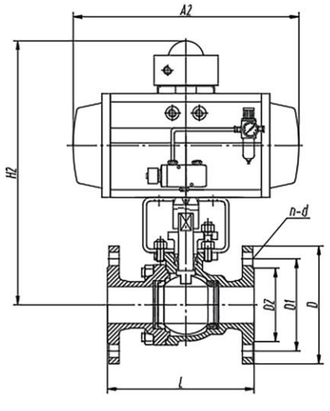
| Implementation Standard | | | | | |
|---|---|---|---|---|---|
| Adopted Standard | Design Standard | Structure Length | Welding | Flange Connection Dimensions | Testing and Inspection |
| | API 608/API 6D | ANSI B16.10/API 6D | ASME B16.25 | ANSI B16.5 | API 1598/API 6D |

## Material Table

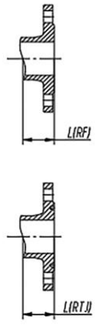
| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB/A105+HCr（ENP） | WCB/304 | WCB/316 | CF8 | CF8M |
| Body | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| Packing | PTFE | | | | |
| Bushing | PTFE | | | | |
| Packing Bushing | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F304 |
| Packing Plate | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| Screw | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| Locating Plate | Carbon Steel | Carbon Steel | Carbon Steel | Stainless Steel | Stainless Steel |
| Retaining Ring | Carbon Steel | Carbon Steel | Carbon Steel | Stainless Steel | Stainless Steel |
| Wrench | Carbon Steel | Carbon Steel | Carbon Steel | Carbon Steel | Carbon Steel |
| Nut | Carbon Steel | Carbon Steel | Carbon Steel | Carbon Steel | Carbon Steel |
| Upper Sealing Gasket | PTFE | | | | |
| Stem | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| Ball | A105+HCr（ENP） | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| Sealing Ring | RPTFE | | | | |
| Gasket | PTFE | | | | |
| Bolt | A192 2H | A192 2H | A192 2H | A194 8 | A194 8M |
| Nut | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| Bonnet | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |




Q941 Series




Q641 Series




## Pressure Class CLASS 150

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Q941 Series | | | Q641 Series | | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 127 | 140 | 371 | 250 | 182 | 257 | 528 | 110 | 79.4 | 50.8 | 4-16 | 40 |
| 32 | 1-1/4 | 140 | 153 | 393 | 250 | 182 | 262 | 528 | 115 | 88.9 | 63.5 | 4-16 | 40 |
| 40 | 1-1/2 | 165 | 178 | 412 | 250 | 182 | 264 | 601 | 125 | 98.4 | 73 | 4-16 | 40 |
| 50 | 2 | 178 | 191 | 440 | 250 | 182 | 340 | 683 | 150 | 120.7 | 92.1 | 4-18 | 40 |
| 65 | 2-1/2 | 190 | 203 | 472 | 250 | 182 | 370 | 683 | 180 | 139.7 | 104.8 | 4-18 | 100 |
| 80 | 3 | 203 | 216 | 486 | 250 | 182 | 389 | 683 | 19 | 152.4 | 127 | 4-18 | 150 |
| 100 | 4 | 229 | 242 | 579 | 322 | 248 | 594 | 683 | 230 | 190.5 | 157.2 | 8-18 | 300 |
| 125 | 5 | 256 | 369 | 595 | 322 | 248 | 646 | 988 | 255 | 215.9 | 185.7 | 8-22 | 400 |
| 150 | 6 | 394 | 407 | 650 | 424 | 346 | 658 | 988 | 280 | 241.3 | 215.9 | 8-22 | 700 |
| 200 | 8 | 457 | 470 | 739 | 424 | 346 | 781 | 1451 | 345 | 298.5 | 269.9 | 8-22 | 1200 |
| 250 | 10 | 533 | 546 | 799 | 424 | 346 | 830 | 1451 | 405 | 362.0 | 323.8 | 12-26 | 2000 |

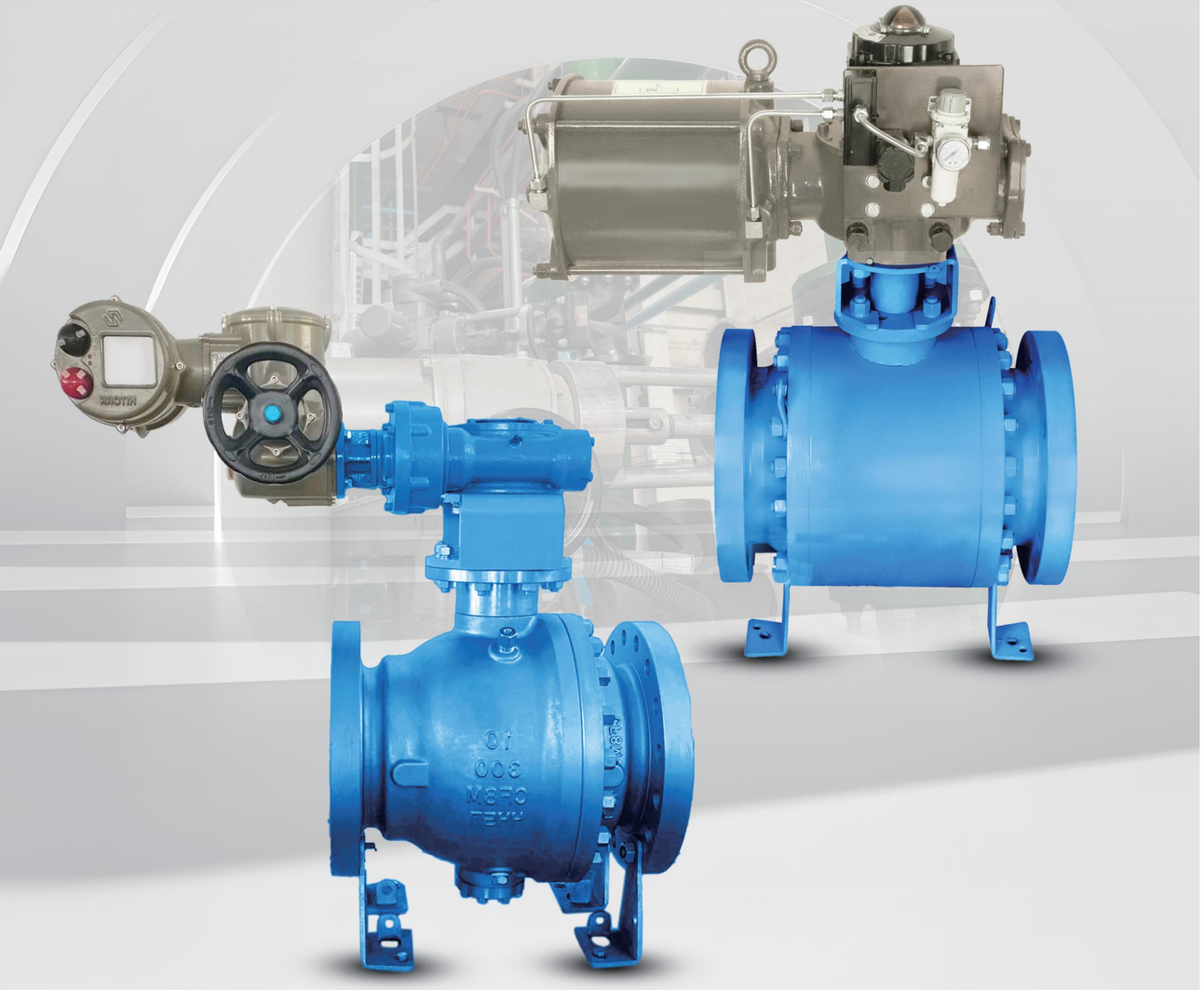
## Pressure Class CLASS 300

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Q941 Series | | | Q641 Series | | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 165 | 178 | 393 | 250 | 182 | 257 | 528 | 125 | 88.9 | 50.8 | 4-18 | 100 |
| 32 | 1-1/4 | 178 | 191 | 412 | 250 | 182 | 262 | 528 | 135 | 98.4 | 63.5 | 4-18 | 100 |
| 40 | 1-1/2 | 190 | 203 | 440 | 250 | 182 | 264 | 601 | 155 | 114.3 | 73 | 4-22 | 100 |
| 50 | 2 | 216 | 232 | 472 | 250 | 182 | 340 | 683 | 165 | 127 | 92.1 | 8-18 | 100 |
| 65 | 2-1/2 | 241 | 257 | 486 | 322 | 248 | 370 | 683 | 190 | 149.2 | 104.8 | 8-22 | 200 |
| 80 | 3 | 283 | 299 | 579 | 322 | 248 | 389 | 683 | 210 | 168.3 | 127 | 8-22 | 300 |
| 100 | 4 | 305 | 321 | 595 | 424 | 346 | 594 | 683 | 255 | 200 | 157.2 | 8-22 | 600 |
| 125 | 5 | 381 | 397 | 650 | 424 | 346 | 646 | 988 | 280 | 235 | 185.7 | 8-22 | 800 |
| 150 | 6 | 403 | 419 | 739 | 424 | 346 | 658 | 988 | 320 | 269.9 | 215.9 | 12-22 | 1200 |
| 200 | 8 | 502 | 518 | 799 | 424 | 346 | 781 | 1451 | 380 | 330.2 | 269.9 | 12-26 | 2500 |

## Pressure Class CLASS 600

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Q941 Series | | | Q641 Series | | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 216 | 216 | 413 | 250 | 182 | 268 | 528 | 125 | 88.9 | 50.8 | 4-18 | 100 |
| 32 | 1-1/4 | 229 | 229 | 422 | 250 | 182 | 275 | 601 | 135 | 98.4 | 63.5 | 4-18 | 100 |
| 40 | 1-1/2 | 241 | 241 | 455 | 322 | 248 | 285 | 683 | 155 | 114.3 | 73 | 4-22 | 200 |
| 50 | 2 | 292 | 292 | 486 | 322 | 248 | 358 | 683 | 165 | 127 | 92.1 | 8-18 | 300 |
| 65 | 2-1/2 | 330 | 333 | 499 | 424 | 346 | 390 | 683 | 190 | 149.2 | 104.8 | 8-22 | 600 |
| 80 | 3 | 356 | 359 | 598 | 424 | 346 | 408 | 683 | 210 | 168.3 | 127 | 8-22 | 800 |
| 100 | 4 | 432 | 435 | 620 | 424 | 346 | 620 | 683 | 275 | 215.9 | 157.2 | 8-26 | 1200 |

# ASME Standard Trunnion-Mounted Ball Valve



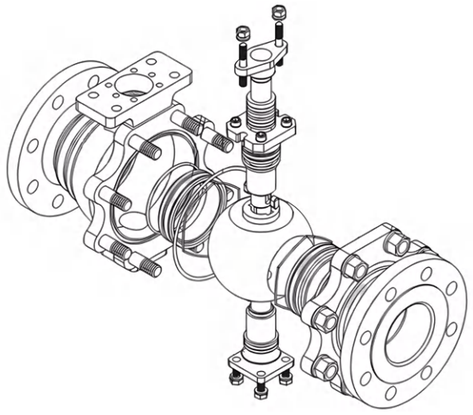
## Material Table

| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB/A105+HCr（ENP） | WCB/304 | WCB/316 | CF8 | CF8M |
| **Body** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Bolt-1** | A192 2H | A192 2H | A192 2H | A194 8 | A194 8M |
| **Nut-1** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **O-Ring-1** | Viton | | | | |
| **Bushing** | Metal backed PTFE | | | | |
| **Gasket** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Stem** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Key-1** | Carbon steel | Carbon steel | Carbon steel | Stainless steel | Stainless steel |
| **Key-2** | Carbon steel | Carbon steel | Carbon steel | Stainless steel | Stainless steel |
| **O-Ring-2** | Viton | | | | |
| **Gasket** | PTFE | | | | |
| **Packing Gland** | A105 | A105 | A105 | A182 F304 | A182 F316 |
| **Screw** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **O-Ring-3** | Viton | | | | |
| **Ball** | A105+HCr(ENP) | A182+F304 | A182+F316 | A182+F304 | A182+F316 |
| **Seat** | RPTFE | | | | |
| **O-Ring-4** | Viton | | | | |
| **Seat** | A105 | A105 | A105 | A182 F304 | A182 F316 |
| **Spring** | SS304/Inoonel 750 | SS304/Inoonel 750 | SS316/Inoonel 750 | SS304/Inoonel 750 | SS316/Inoonel 750 |
| **Gasket** | PTFE | | | | |
| **Bolt-2** | A192 2H | A192 2H | A192 2H | A192 8 | A194 8M |
| **Nut-2** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **Bonnet** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Lower Shaft** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **O-Ring-5** | Viton | | | | |
| **Adjusting Pad** | A182 F6a | A182 F304 | A182 F316 | A182 F304 | A182 F316 |
| **Lower Bonnet** | A105 | A105 | A105 | A182 F304 | A182 F316 |
| **Screw** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |

| Implementation Standard | | | | | |
|---|---|---|---|---|---|
| Adopted Standard | Design Standard | Structure Length | Welding | Flange Connection Dimensions | Testing and Inspection |
| | API 608/API 6D | ANSI B16.10/API 6D | ASME B16.25 | ANSI B16.5 | API1598/API 6D |

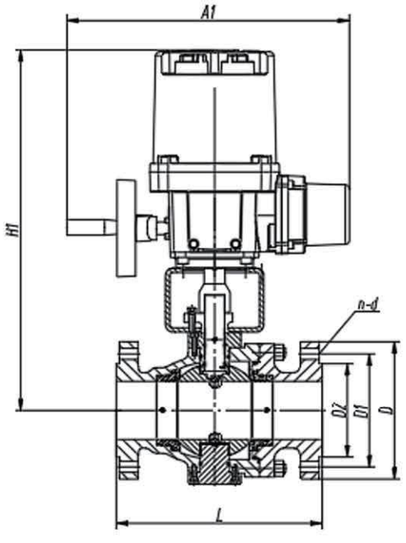
# PRODUCT ADVANTAGE

The trunnion-mounted ball valve operates with a 90-degree rotation,and is primarily designed for on/off service. It features a spring-loaded floating seat mechanism that maintains positive sealing against both upstream and downstream sides, regardless of the valve being fully open or closed. Any trapped medium in the body middle chamber can be discharged through the discharge valve.

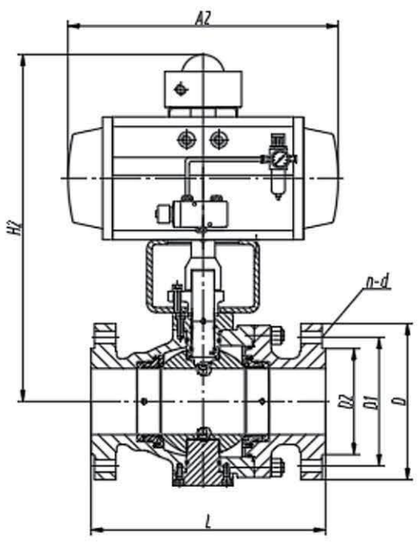


When abnormal pressure buildup occurs in the chamber due to temperature rise, the valve automatically releases pressure through its seat design without relying on a safety valve, significantly enhancing the safety of the pipeline system. The trunnion-mounted ball valves are suitable for industrial applications that requiring tight shut-off and critical positioning.

The trunnion-mounted ball valve features upper and lower bearing supports that significantly reduce friction and eliminate the sealing load torque caused by inlet pressure. This design is particularly suitable for high-pressure working applications and requires relatively low operating torque.




Q947 Series




Q647 Series

## Pressure Class CLASS 150

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 178 | 420 | 250 | 182 | 269 | 405 | 150 | 120.7 | 92.1 | 4-18 | 40 |
| 65 | 2-1/2 | 190 | 440 | 250 | 182 | 379 | 405 | 180 | 139.7 | 104.8 | 4-18 | 100 |
| 80 | 3 | 203 | 459 | 250 | 182 | 452 | 574 | 190 | 152.4 | 127 | 4-18 | 150 |
| 100 | 4 | 229 | 472 | 322 | 248 | 579 | 574 | 230 | 190.5 | 157.2 | 8-18 | 300 |
| 125 | 5 | 256 | 482 | 322 | 248 | 595 | 756 | 255 | 215.9 | 185.7 | 8-22 | 400 |
| 150 | 6 | 394 | 492 | 424 | 346 | 595 | 756 | 280 | 241.3 | 215.9 | 8-22 | 700 |
| 200 | 8 | 457 | 592 | 424 | 346 | 736 | 756 | 345 | 298.5 | 269.9 | 8-22 | 1200 |
| 250 | 10 | 533 | 648 | 424 | 346 | 942 | 1060 | 405 | 362.0 | 323.8 | 12-26 | 2000 |
| 300 | 12 | 610 | 788 | 424 | 346 | 994 | 1060 | 485 | 431.8 | 381.0 | 12-26 | 3000 |
| 350 | 14 | 686 | 822 | 424 | 346 | 1188 | 1360 | 535 | 476.3 | 412.8 | 12-30 | 5000 |
| 400 | 16 | 762 | 922 | 890 | 507 | 1280 | 1360 | 595 | 539.8 | 469.9 | 16-30 | 7000 |
| 450 | 18 | 864 | 1004 | 910 | 571 | 1480 | 2910 | 635 | 577.9 | 533.4 | 16-33 | 10000 |
| 500 | 20 | 914 | 1152 | 984 | 571 | 1554 | 2910 | 700 | 635 | 584.2 | 20-33 | 12000 |
| 600 | 24 | 1067 | 1354 | 984 | 571 | 1580 | 3330 | 815 | 749.3 | 692.2 | 20-36 | 15000 |

## Pressure Class CLASS 300

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 216 | 440 | 250 | 182 | 269 | 405 | 165 | 127 | 92.1 | 8-18 | 100 |
| 65 | 2-1/2 | 241 | 460 | 322 | 248 | 379 | 405 | 190 | 149.2 | 104.8 | 8-22 | 200 |
| 80 | 3 | 283 | 479 | 322 | 248 | 452 | 574 | 210 | 168.3 | 127 | 8-22 | 300 |
| 100 | 4 | 305 | 502 | 424 | 346 | 579 | 574 | 255 | 200 | 157.2 | 8-22 | 600 |
| 125 | 5 | 381 | 512 | 424 | 346 | 595 | 756 | 280 | 235 | 185.7 | 8-22 | 800 |
| 150 | 6 | 403 | 522 | 424 | 346 | 595 | 756 | 320 | 269.9 | 215.9 | 12-22 | 1200 |
| 200 | 8 | 502 | 622 | 424 | 346 | 736 | 756 | 380 | 330.2 | 269.9 | 12-26 | 2500 |
| 250 | 10 | 568 | 678 | 424 | 346 | 942 | 1060 | 445 | 387.4 | 323.8 | 16-30 | 4000 |
| 300 | 12 | 648 | 888 | 424 | 346 | 994 | 1060 | 520 | 450.8 | 381.0 | 16-33 | 5000 |
| 350 | 14 | 762 | 922 | 984 | 571 | 1188 | 1360 | 585 | 514.4 | 412.8 | 20-33 | 9000 |
| 400 | 16 | 838 | 1022 | 984 | 571 | 1280 | 1360 | 650 | 571.5 | 469.9 | 20-36 | 10000 |
| 450 | 18 | 814 | 1104 | 984 | 571 | 1480 | 2910 | 710 | 628.6 | 533.4 | 24-36 | 12000 |
| 500 | 20 | 991 | 1252 | 1060 | 580 | 1554 | 2910 | 775 | 685.8 | 584.2 | 24-36 | 20000 |
| 600 | 24 | 1143 | 1454 | 1060 | 580 | 1580 | 3330 | 915 | 812.8 | 692.2 | 24-42 | 25000 |

## Pressure Class CLASS 600

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q947 Series | | | Q647 Series | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 292 | 500 | 322 | 248 | 269 | 405 | 165 | 127 | 92.1 | 8-18 | 300 |
| 65 | 2-1/2 | 330 | 525 | 424 | 346 | 379 | 405 | 190 | 149.2 | 104.8 | 8-22 | 600 |
| 80 | 3 | 356 | 548 | 424 | 346 | 519 | 574 | 210 | 168.3 | 127 | 8-22 | 800 |
| 100 | 4 | 432 | 560 | 424 | 346 | 636 | 574 | 275 | 215.9 | 157.2 | 8-26 | 1200 |
| 125 | 5 | 508 | 583 | 424 | 346 | 689 | 756 | 330 | 266.7 | 185.7 | 8-30 | 2000 |
| 150 | 6 | 559 | 600 | 424 | 346 | 728 | 756 | 355 | 292.1 | 215.9 | 12-30 | 2500 |
| 200 | 8 | 660 | 652 | 424 | 346 | 839 | 1060 | 420 | 349.2 | 269.9 | 12-33 | 4000 |
| 250 | 10 | 787 | 761 | 890 | 507 | 1014 | 1060 | 510 | 431.8 | 323.8 | 16-36 | 6000 |
| 300 | 12 | 838 | 771 | 984 | 571 | 1120 | 1360 | 560 | 489.0 | 381.0 | 20-36 | 9500 |
| 350 | 14 | 889 | 831 | 984 | 571 | 1224 | 2890 | 605 | 527.0 | 412.8 | 20-39 | 14000 |
| 400 | 16 | 991 | 921 | 1060 | 580 | 1374 | 2890 | 685 | 603.2 | 469.9 | 20-42 | 20000 |
| 450 | 18 | 1092 | 943 | 1060 | 580 | 1450 | 2890 | 745 | 654.0 | 533.4 | 20-45 | 25000 |
| 500 | 20 | 1194 | 1123 | 1170 | 620 | 1490 | 3330 | 815 | 723.9 | 584.2 | 24-45 | 35000 |
| 600 | 24 | 1397 | 1218 | 1245 | 720 | 1615 | 3330 | 940 | 838.2 | 692.2 | 24-51 | 50000 |

# GB Standard Globe Valve

## PRODUCT FEATURES

Bolt connected valve bonnet, rising stem, lifting stem, metal seal.

### Connection of valve body and valve bonnet

The valve body and valve bonnet of globe valves within Class150~Class900 ( PN10~PN160) pressure ratings typically employ a stud-and-nut connection design.

### Actuation Type

Generally, hand-wheel actuation, worm gear actuation, gear actuation, electric and pneumatic actuation are used.

### Packing

Standard packing is flexible graphite formed packing; PTFE, metal wire reinforced flexible graphite formed packing or composite packing can be selected according to actual requirements.

### Backseat structure

The entire series is equipped with a backseat structure. Carbon steel valves generally have replaceable backseat ring, while stainless steel valves feature a formed back-seat through integral machining or overlay welding; The backseat structure ensures reliable sealing when the valve is fully open.

### Seat

Carbon steel globe valves use forged valve seats with spray-welded, user-specified alloy sealing surfaces. For NPS≤10 and DN≤250, the valve seat are default thread-ed connections to the valve body,, with welded connections also available.. Valves with NPS≥12 and DN≥300 typically employ welded connections. Stainless steel globe valves generally feature integral seats (machined from the valve body) or overlay-welded alloy directly on the body. Threaded or welded seats may also be configured based on requirements.

### Design of valve stem

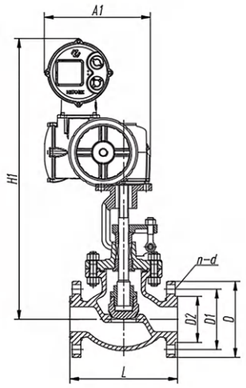
The valve stem is manufactured as an integral forged component, with its minimum diameter strictly adhering to industry standard specifications.

### Implementation Standard

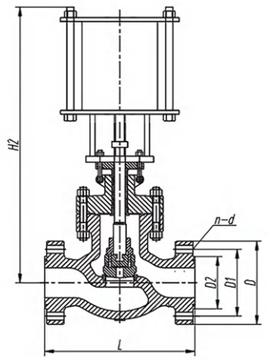
| | Design Standard | Structure Length | Temperature and Pressure Class | Flange Connection Dimensions | Testing and Inspection |
|---|---|---|---|---|---|
| Adopted Standard | GB/T 12235 | GB/T 12221 | GB/T 9131 | JB/T 79<br>GB/T 9113<br>HG 20592 | GB/T 13927<br>JB/T 9094 |

### Material Table

| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB | WC6 | WC9 | CF8 | CF8M |
| **Body** | WCB | WC6 | WC9 | CF8 | CF8M |
| **Trim** | 2Cr13 | 25Cr2MoV | 25Cr2MoV | 1Cr18Ni9Ti | 1Cr18Ni12Mo2Ti |
| **Stem** | 2Cr13 | 25Cr2MoV | 25Cr2MoV | 1Cr18Ni9Ti | 1Cr18Ni12Mo2Ti |
| **Valve Disc Retainer** | 2Cr13 | 25Cr2MoV | 25Cr2MoV | 1Cr18Ni9Ti | 1Cr18Ni12Mo2Ti |
| **Gasket** | Flexible graphite | | | | |
| **Bonnet** | WCB | WC6 | WC9 | CF8 | CF8M |
| **Bolt** | 35Cr2Mo | 35Cr2Mo | 35Cr2Mo | 1Cr18Ni9 | 1Cr18Ni9 |
| **Nut** | 35Cr2Mo | 35Cr2Mo | 35Cr2Mo | 1Cr18Ni9 | 1Cr18Ni9 |
| **Packing** | Flexible graphite | | | | |
| **Plate** | WCB | WC6 | WC9 | CF8 | CF8M |
| **Stem Nut** | Copper alloy | | | | |




J941 Series




J641 Series

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 160 | 692 | 306 | 507 | 353 | 115 | 85 | 68 | 4-14 | 30 |
| 32 | 1-1/4 | 180 | 698 | 306 | 507 | 390 | 140 | 100 | 78 | 4-18 | 50 |
| 40 | 1-1/2 | 200 | 718 | 306 | 507 | 518 | 150 | 110 | 88 | 4-18 | 50 |
| 50 | 2 | 230 | 777 | 306 | 507 | 555 | 165 | 125 | 102 | 4-18 | 50 |
| 65 | 2-1/2 | 290 | 823 | 306 | 507 | 630 | 185 | 145 | 122 | 8-18 | 100 |
| 80 | 3 | 310 | 848 | 306 | 507 | 683 | 200 | 160 | 138 | 8-18 | 200 |
| 100 | 4 | 350 | 891 | 306 | 507 | 745 | 220 | 180 | 158 | 8-18 | 200 |
| 125 | 5 | 400 | 898 | 354 | 571 | 855 | 250 | 210 | 188 | 8-18 | 300 |
| 150 | 6 | 480 | 1053 | 354 | 571 | 870 | 285 | 240 | 212 | 8-22 | 400 |
| 200 | 8 | 600 | 1163 | 354 | 571 | 954 | 340 | 295 | 268 | 12-22 | 600 |
| 250 | 10 | 650 | 1303 | 417 | 668 | 1065 | 405 | 355 | 320 | 12-26 | 900 |
| 300 | 12 | 750 | 1442 | 428 | 668 | 1185 | 460 | 410 | 378 | 12-26 | 1200 |

## Pressure Class PN25 (2.5MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 160 | 692 | 306 | 507 | 353 | 115 | 85 | 68 | 4-14 | 50 |
| 32 | 1-1/4 | 180 | 698 | 306 | 507 | 390 | 140 | 100 | 78 | 4-18 | 50 |
| 40 | 1-1/2 | 200 | 718 | 306 | 507 | 518 | 150 | 110 | 88 | 4-18 | 50 |
| 50 | 2 | 230 | 777 | 306 | 507 | 555 | 165 | 125 | 102 | 4-18 | 100 |
| 65 | 2-1/2 | 290 | 823 | 306 | 507 | 630 | 185 | 145 | 122 | 8-18 | 100 |
| 80 | 3 | 310 | 848 | 306 | 507 | 683 | 200 | 160 | 138 | 8-18 | 200 |
| 100 | 4 | 350 | 891 | 306 | 507 | 745 | 235 | 190 | 162 | 8-22 | 200 |
| 125 | 5 | 400 | 917 | 354 | 571 | 855 | 270 | 220 | 188 | 8-26 | 300 |
| 150 | 6 | 480 | 1053 | 354 | 571 | 870 | 300 | 250 | 218 | 8-26 | 400 |
| 200 | 8 | 600 | 1163 | 417 | 668 | 954 | 360 | 310 | 278 | 12-26 | 900 |

## Pressure Class PN40 (4.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 160 | 692 | 306 | 507 | 373 | 115 | 85 | 68 | 4-14 | 50 |
| 32 | 1-1/4 | 180 | 698 | 306 | 507 | 416 | 140 | 100 | 78 | 4-18 | 50 |
| 40 | 1-1/2 | 200 | 718 | 306 | 507 | 530 | 150 | 110 | 88 | 4-18 | 100 |
| 50 | 2 | 230 | 777 | 306 | 507 | 575 | 165 | 125 | 102 | 4-18 | 100 |
| 65 | 2-1/2 | 290 | 823 | 306 | 507 | 656 | 185 | 145 | 122 | 8-18 | 200 |
| 80 | 3 | 310 | 848 | 306 | 507 | 713 | 200 | 160 | 138 | 8-18 | 200 |
| 100 | 4 | 350 | 910 | 354 | 571 | 775 | 235 | 190 | 162 | 8-22 | 300 |
| 125 | 5 | 400 | 917 | 354 | 571 | 892 | 270 | 220 | 188 | 8-26 | 400 |
| 150 | 6 | 480 | 1053 | 354 | 571 | 940 | 300 | 250 | 218 | 8-26 | 600 |
| 200 | 8 | 600 | 1210 | 417 | 668 | 1054 | 375 | 320 | 285 | 12-30 | 900 |

## Pressure Class PN64 (6.4MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 210 | 710 | 306 | 507 | 390 | 140 | 100 | 68 | 4-18 | 50 |
| 32 | 1-1/4 | 230 | 765 | 306 | 507 | 436 | 155 | 110 | 78 | 4-22 | 100 |
| 40 | 1-1/2 | 260 | 792 | 306 | 507 | 550 | 170 | 125 | 88 | 4-22 | 100 |
| 50 | 2 | 300 | 810 | 306 | 507 | 595 | 180 | 135 | 102 | 4-22 | 200 |
| 65 | 2-1/2 | 340 | 850 | 306 | 507 | 675 | 205 | 160 | 122 | 8-22 | 200 |
| 80 | 3 | 380 | 885 | 354 | 571 | 730 | 215 | 170 | 138 | 8-22 | 300 |
| 100 | 4 | 430 | 937 | 354 | 571 | 795 | 250 | 200 | 162 | 8-26 | 400 |
| 125 | 5 | 500 | 1131 | 354 | 571 | 912 | 295 | 240 | 188 | 8-30 | 600 |
| 150 | 6 | 550 | 1166 | 417 | 668 | 940 | 345 | 280 | 218 | 8-33 | 900 |
| 200 | 8 | 650 | 1313 | 428 | 668 | 1075 | 415 | 345 | 285 | 12-36 | 1200 |

## Pressure Class PN100 (10.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 210 | 720 | 306 | 507 | 395 | 140 | 100 | 68 | 4-18 | 50 |
| 32 | 1-1/4 | 230 | 775 | 306 | 507 | 446 | 155 | 110 | 78 | 4-22 | 100 |
| 40 | 1-1/2 | 260 | 802 | 306 | 507 | 560 | 170 | 125 | 88 | 4-22 | 200 |
| 50 | 2 | 300 | 814 | 306 | 507 | 605 | 195 | 145 | 102 | 4-26 | 200 |
| 65 | 2-1/2 | 340 | 880 | 354 | 571 | 685 | 220 | 170 | 122 | 8-26 | 300 |
| 80 | 3 | 380 | 890 | 354 | 571 | 740 | 230 | 180 | 138 | 8-26 | 400 |
| 100 | 4 | 430 | 950 | 354 | 571 | 805 | 265 | 210 | 162 | 8-30 | 600 |
| 125 | 5 | 500 | 1142 | 417 | 668 | 922 | 315 | 250 | 188 | 8-33 | 900 |
| 150 | 6 | 550 | 1240 | 428 | 668 | 950 | 355 | 290 | 218 | 12-33 | 1200 |
| 200 | 8 | 650 | 1425 | 988 | 507 | 1085 | 430 | 360 | 285 | 12-36 | 1800 |

# ASME Standard Globe Valve

## PRODUCT INTRODUCTION

- Globe valve is a linear motion valve mainly designed for fluid isolation or complete shut-off applications. Its trim assembly can be fully retracted from the flow path in the open position or completely seated to block the flow channel when closed.
- Globe valves are mainly used for medium shut-off , and their flow resistance characteristics are higher than those of straight-through valves such as gate valves,making them suitable for applications where pressure drop control is not critical.
- Globe valves are widely used for precise flow regulation. Their design must incorporate critical considerations of flow control range, pressure drop characteristics, and mechanical load distribution to prevent premature valve failure.
- Valves designed specifically for high-pressure differential throttling applications require specially engineered internal trim components.

## APPLICATION STATION

- Cooling water system that requires flow regulation
- Fuel system with flow regulation and water tightness regulation
- When water tightness and safety are the main considerations, high inlet and low outlet configuration is adopted
- Water supply, chemical feed, container air extraction, and extraction drainage system
- Boiler ventilation and drainage pipes, main steam ventilation and drainage pipes, and heater drainage pipes
- Turbine sealing components and drainage pipes
- Turbine lubricating oil system

**Material Table**

| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB/Trim 1 | WCB/Trim 5 | WCB/Trim 8 | CF8/304 | CF8M/316 |
| **Body** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Seat** | A105+13Cr | A105+STL | A105+STL | A351 CF8 | A351 CF8M |
| **Trim** | A216 WCB+13Cr | A216 WCB+STL | A216 WCB+13Cr | A351 CF8 | A351 CF8M |
| **Stem** | A182 F6a | A182 F6a | A182 F6a | A182 F304 | A182 F316 |
| **Valve Disc Retainer** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Nuts for Bonnet** | A194 2H | A194 2H | A194 2H | A194 8 | A194 8M |
| **Bolts for Bonnet** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **Gasket** | Soft Iron+Graphite or 304+Graphite | | | 304+Graphite | 316+Graphite |
| **Upper Sealing Seat** | A182 F6a | A182 F6a | A182 F6a | A351 CF8 | A351 CF8M |
| **Bonnet** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Packing** | Flexible graphite | | | | |
| **Pin** | ASTM A36 | ASTM A36 | ASTM A36 | 304SS | 316SS |
| **Screw** | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| **Bushing** | A182 F6a | A182 F6a | A182 F6a | A182 F304 | A182 F316 |
| **Plate** | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| **Eye Nut** | A194 2H | A194 2H | A194 2H | A194 8 | A194 8M |
| **Stem Nut** | A194 2H | A194 2H | A194 2H | A194 8 | A194 8M |
| **Handwheel** | Cast Iron | | | | |
| **Locking Nut** | Carbon Steel | | | | |

| Implementation Standard | | | | | |
|---|---|---|---|---|---|
| Adopted Standard | Design Standard | Structure Length | Temperature and Pressure Class | Flange Connection Dimensions | Testing and Inspection |
| | API 600/BSS160 | ANSI B16.10 | ANSI B16.34 | ANSI B16.5 | API1598 |

## Pressure Class CLASS 150

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 127 | 140 | 692 | 306 | 507 | 353 | 110 | 79.4 | 50.8 | 4-16 | 30 |
| 32 | 1-1/4 | 140 | 153 | 698 | 306 | 507 | 390 | 115 | 88.9 | 63.5 | 4-16 | 50 |
| 40 | 1-1/2 | 165 | 178 | 718 | 306 | 507 | 518 | 125 | 98.4 | 73 | 4-16 | 50 |
| 50 | 2 | 203 | 216 | 777 | 306 | 507 | 555 | 150 | 120.7 | 92.1 | 4-18 | 50 |
| 65 | 2-1/2 | 216 | 229 | 823 | 306 | 507 | 630 | 180 | 139.7 | 104.8 | 4-18 | 100 |
| 80 | 3 | 241 | 254 | 848 | 306 | 507 | 683 | 190 | 152.4 | 127 | 4-18 | 200 |
| 100 | 4 | 292 | 305 | 891 | 306 | 507 | 745 | 230 | 190.5 | 157.2 | 8-18 | 200 |
| 125 | 5 | 356 | 369 | 898 | 354 | 571 | 855 | 255 | 215.9 | 185.7 | 8-22 | 300 |
| 150 | 6 | 406 | 419 | 1053 | 354 | 571 | 870 | 280 | 241.3 | 215.9 | 8-22 | 400 |
| 200 | 8 | 495 | 508 | 1163 | 354 | 571 | 954 | 345 | 298.5 | 269.9 | 8-22 | 600 |
| 250 | 10 | 622 | 635 | 1303 | 417 | 668 | 1065 | 405 | 362.0 | 323.8 | 12-26 | 900 |
| 300 | 12 | 698 | 711 | 1442 | 428 | 668 | 1185 | 485 | 431.8 | 381.0 | 12-26 | 1200 |

## Pressure Class CLASS 300

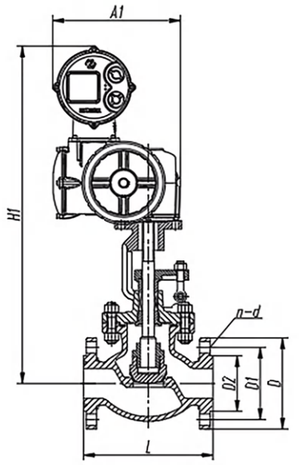
| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 203 | 216 | 692 | 306 | 507 | 353 | 124 | 89 | 51 | 4-19 | 50 |
| 32 | 1-1/4 | 216 | 229 | 698 | 306 | 507 | 390 | 133 | 98.5 | 64 | 4-19 | 100 |
| 40 | 1-1/2 | 229 | 241 | 718 | 306 | 507 | 518 | 156 | 114.5 | 73 | 4-22 | 100 |
| 50 | 2 | 267 | 283 | 777 | 306 | 507 | 555 | 165 | 127 | 92 | 8-19 | 100 |
| 65 | 2-1/2 | 292 | 308 | 823 | 306 | 507 | 630 | 190 | 149 | 105 | 8-22 | 200 |
| 80 | 3 | 318 | 333 | 848 | 306 | 507 | 683 | 210 | 168 | 170 | 8-22 | 300 |
| 100 | 4 | 356 | 371 | 910 | 354 | 571 | 745 | 254 | 200 | 157 | 8-22 | 400 |
| 125 | 5 | 400 | 416 | 917 | 354 | 571 | 855 | 279 | 235 | 186 | 8-22 | 600 |
| 150 | 6 | 444 | 460 | 1053 | 354 | 571 | 870 | 318 | 270 | 216 | 12-22 | 900 |
| 200 | 8 | 559 | 575 | 1210 | 417 | 668 | 954 | 381 | 330 | 270 | 12-25 | 1200 |
| 250 | 10 | 622 | 638 | 1260 | 417 | 668 | 1020 | 444 | 387.4 | 324 | 16-28.5 | 1800 |
| 300 | 12 | 711 | 727 | 1350 | 417 | 668 | 1130 | 521 | 450.8 | 381 | 16-31.8 | 2500 |

## Pressure Class CLASS 600

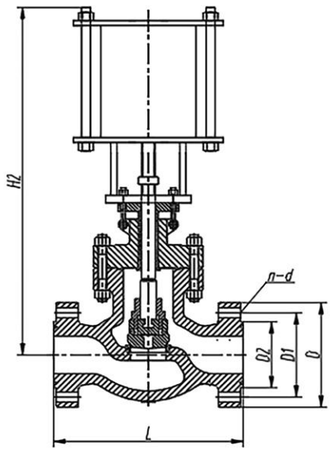
| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 25 | 1 | 216 | 219 | 720 | 306 | 507 | 373 | 125 | 88.9 | 50.8 | 4-18 | 50 |
| 32 | 1-1/4 | 229 | 232 | 775 | 306 | 507 | 416 | 135 | 98.4 | 63.5 | 4-18 | 100 |
| 40 | 1-1/2 | 241 | 243 | 802 | 306 | 507 | 530 | 155 | 114.3 | 73 | 4-22 | 200 |
| 50 | 2 | 292 | 295 | 814 | 306 | 507 | 575 | 165 | 127 | 92.1 | 8-18 | 200 |
| 65 | 2-1/2 | 330 | 333 | 880 | 354 | 571 | 656 | 190 | 149.2 | 104.8 | 8-22 | 300 |
| 80 | 3 | 356 | 359 | 890 | 354 | 571 | 713 | 210 | 168.3 | 127 | 8-22 | 400 |
| 100 | 4 | 432 | 435 | 950 | 354 | 571 | 775 | 255 | 200 | 157.2 | 8-22 | 600 |
| 125 | 5 | 508 | 511 | 1142 | 417 | 668 | 892 | 280 | 235 | 185.7 | 8-22 | 900 |
| 150 | 6 | 559 | 562 | 1240 | 428 | 668 | 940 | 320 | 269.9 | 215.9 | 12-22 | 1200 |
| 200 | 8 | 660 | 664 | 1425 | 988 | 507 | 1054 | 380 | 330.2 | 269.9 | 12-26 | 1800 |

## Pressure Class CLASS 900

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | J941 Series | | | J641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 368 | 371 | 814 | 306 | 507 | 605 | 165 | 127 | 92.1 | 8-18 | 200 |
| 65 | 2-1/2 | 419 | 422 | 880 | 354 | 571 | 685 | 190 | 149.2 | 104.8 | 8-22 | 300 |
| 80 | 3 | 381 | 384 | 890 | 354 | 571 | 740 | 210 | 168.3 | 127 | 8-22 | 400 |
| 100 | 4 | 457 | 460 | 950 | 354 | 571 | 805 | 275 | 215.9 | 157.2 | 8-26 | 600 |
| 125 | 5 | 559 | 562 | 1142 | 417 | 668 | 922 | 330 | 266.7 | 185.7 | 8-30 | 900 |
| 150 | 6 | 610 | 613 | 1240 | 428 | 668 | 950 | 355 | 292.1 | 215.9 | 12-30 | 1200 |




J941 Series

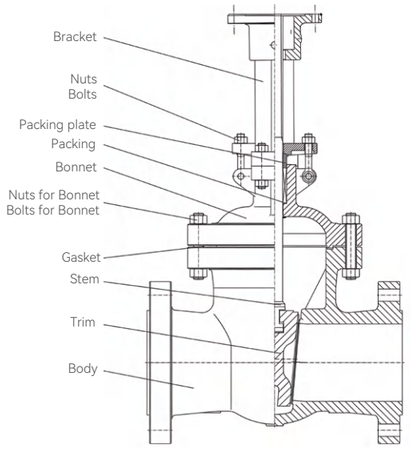



J641 Series

# GB Standard Gate Valve

## Pressure Testing MPa

| Nominal pressure | 1.6 | 2.5 | 4.0 | 6.4 | 10.0 | 16.0 | 25.0 | 42.0 |
|---|---|---|---|---|---|---|---|---|
| The shell pressure testing | 2.4 | 3.75 | 6.0 | 9.6 | 15.0 | 24.0 | 37.5 | 63.0 |
| Water seal pressure testing | 1.76 | 2.75 | 4.4 | 7.04 | 11.0 | 17.6 | 27.5 | 46.2 |
| Backseat pressure testing | 1.76 | 2.75 | 4.4 | 7.04 | 11.0 | 17.6 | 27.5 | 46.2 |
| Air seal pressure testing | 0.4~0.7 | | | | | | | |

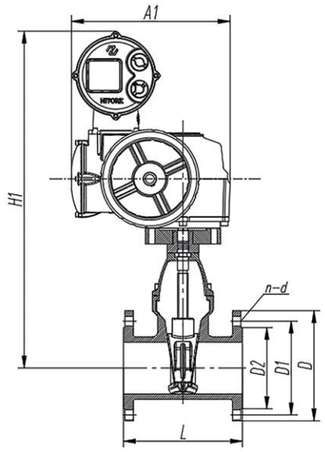



## Implementation Standard

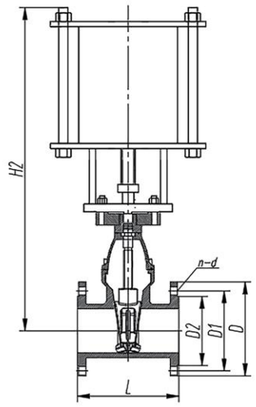
| | Design Standard | Structure Length | Temperature and Pressure Class | Flange Connection Dimensions | Testing and Inspection |
|---|---|---|---|---|---|
| Adopted Standard | GB/T 12234 | GB/T 12221 | GB/T 9131 | JB/T 79<br>GB/T 9113<br>HG 20592 | GB/T 13927<br>JB/T 9094 |

## Material Table

| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | A216 WCB | A217 WC6 | A217 WC9 | A351 CF8 | A351 CF8M |
| **Body** | A216 WCB | A217 WC6 | A217 WC9 | A351 CF8 | A351 CF8M |
| **Trim** | WCB+13Cr | WC6+STL | WC9+STL | A351 CF8 | A351 CF8M |
| **Seat** | WCB+13Cr | WC6+STL | WC9+STL | A351 CF8 | A351 CF8M |
| **Stem** | 2Cr13 | 25Cr2MoV | 25Cr2MoV | 1Cr18Ni9Ti | 1Cr18Ni12Mo2Ti |
| **Bolt** | 35CrMo | 35CrMo | 35CrMo | 1Cr18Ni9 | 1Cr18Ni9 |
| **Nut** | 35CrMo | 35CrMo | 35CrMo | 1Cr18Ni9 | 1Cr18Ni9 |
| **Gasket** | Flexible graphite | | | | |
| **Upper Sealing Seat** | 2Cr13 | 25Cr2MoV | 25Cr2MoV | 1Cr18Ni9Ti | 1Cr18Ni12Mo2Ti |
| **Bonnet** | A216 WCB | A217 WC6 | A217 WC9 | A351 CF8 | A351 CF8M |
| **Packing** | Flexible graphite | | | | |
| **Bushing** | 2Cr13 | 1Cr18Ni9Ti | 1Cr18Ni9Ti | 1Cr18Ni9Ti | 1Cr18Ni12Mo2Ti |
| **Plate** | A216 WCB | A217 WC6 | A217 WC9 | A351 CF8 | A351 CF8M |
| **Stem Nut** | Copper alloy | | | | |




Z941 Series




Z641 Series

## Pressure Class PN16 (1.6MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 250 | 618 | 306 | 507 | 950 | 165 | 125 | 102 | 4-18 | 100 |
| 65 | 2-1/2 | 265 | 670 | 306 | 507 | 1050 | 185 | 145 | 122 | 8-18 | 100 |
| 80 | 3 | 280 | 700 | 306 | 507 | 1080 | 200 | 160 | 138 | 8-18 | 100 |
| 100 | 4 | 300 | 785 | 306 | 507 | 1145 | 220 | 180 | 158 | 8-18 | 200 |
| 125 | 5 | 325 | 845 | 306 | 507 | 1210 | 250 | 210 | 188 | 8-18 | 200 |
| 150 | 6 | 350 | 990 | 306 | 507 | 1300 | 285 | 240 | 212 | 8-22 | 200 |
| 200 | 8 | 400 | 1080 | 354 | 571 | 1660 | 340 | 295 | 268 | 12-22 | 300 |
| 250 | 10 | 450 | 1150 | 354 | 571 | 1790 | 405 | 355 | 320 | 12-26 | 350 |
| 300 | 12 | 500 | 1415 | 354 | 571 | 1990 | 460 | 410 | 378 | 12-26 | 450 |

## Pressure Class PN25 (2.5MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 250 | 618 | 306 | 507 | 950 | 165 | 125 | 102 | 4-18 | 100 |
| 65 | 2-1/2 | 265 | 670 | 306 | 507 | 1050 | 185 | 145 | 122 | 8-18 | 100 |
| 80 | 3 | 280 | 700 | 306 | 507 | 1080 | 200 | 160 | 138 | 8-18 | 150 |
| 100 | 4 | 300 | 785 | 306 | 507 | 1145 | 235 | 190 | 162 | 8-22 | 200 |
| 125 | 5 | 325 | 845 | 306 | 507 | 1210 | 270 | 220 | 188 | 8-26 | 200 |
| 150 | 6 | 350 | 990 | 354 | 571 | 1300 | 300 | 250 | 218 | 8-26 | 300 |
| 200 | 8 | 400 | 1080 | 354 | 571 | 1660 | 360 | 310 | 278 | 12-26 | 300 |
| 250 | 10 | 450 | 1150 | 354 | 571 | 1790 | 425 | 370 | 335 | 12-30 | 350 |
| 300 | 12 | 500 | 1415 | 354 | 571 | 1990 | 485 | 430 | 395 | 16-30 | 600 |

## Pressure Class PN40 (4.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 250 | 618 | 306 | 507 | 950 | 165 | 125 | 102 | 4-18 | 100 |
| 65 | 2-1/2 | 280 | 670 | 306 | 507 | 1050 | 185 | 145 | 122 | 8-18 | 200 |
| 80 | 3 | 310 | 700 | 306 | 507 | 1080 | 200 | 160 | 138 | 8-18 | 200 |
| 100 | 4 | 350 | 785 | 306 | 507 | 1145 | 235 | 190 | 162 | 8-22 | 200 |
| 125 | 5 | 400 | 845 | 354 | 571 | 1210 | 270 | 220 | 188 | 8-26 | 300 |
| 150 | 6 | 450 | 990 | 354 | 571 | 1330 | 300 | 250 | 218 | 8-26 | 300 |
| 200 | 8 | 550 | 1080 | 354 | 571 | 1660 | 375 | 320 | 285 | 12-30 | 400 |
| 250 | 10 | 650 | 1150 | 354 | 571 | 1820 | 450 | 385 | 345 | 12-33 | 450 |
| 300 | 12 | 750 | 1415 | 354 | 571 | 1990 | 515 | 450 | 410 | 16-33 | 600 |

## Pressure Class PN64 (6.4MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 250 | 667 | 306 | 507 | 980 | 180 | 135 | 102 | 4-22 | 150 |
| 65 | 2-1/2 | 280 | 685 | 306 | 507 | 1080 | 205 | 160 | 122 | 8-22 | 200 |
| 80 | 3 | 310 | 748 | 306 | 507 | 1130 | 215 | 170 | 138 | 8-22 | 200 |
| 100 | 4 | 350 | 845 | 354 | 571 | 1190 | 250 | 200 | 162 | 8-26 | 300 |
| 125 | 5 | 400 | 920 | 354 | 571 | 1250 | 295 | 240 | 188 | 8-30 | 300 |
| 150 | 6 | 450 | 1009 | 354 | 571 | 1390 | 345 | 280 | 218 | 8-33 | 400 |
| 200 | 8 | 550 | 1253 | 354 | 571 | 1710 | 415 | 345 | 285 | 12-36 | 600 |
| 250 | 10 | 650 | 1449 | 417 | 668 | 1840 | 470 | 400 | 345 | 12-36 | 900 |
| 300 | 12 | 750 | 1867 | 417 | 668 | 2030 | 530 | 460 | 410 | 16-36 | 900 |

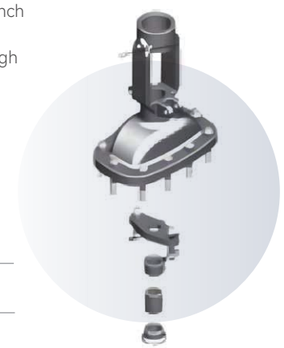
## Pressure Class PN100 (10.0MPa)

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque (Nm) |
| 50 | 2 | 250 | 697 | 306 | 507 | 1020 | 195 | 145 | 102 | 4-26 | 200 |
| 65 | 2-1/2 | 280 | 715 | 306 | 507 | 1150 | 220 | 170 | 122 | 8-26 | 200 |
| 80 | 3 | 310 | 768 | 354 | 571 | 1170 | 230 | 180 | 138 | 8-26 | 300 |
| 100 | 4 | 350 | 870 | 354 | 571 | 1210 | 265 | 210 | 162 | 8-30 | 300 |
| 125 | 5 | 400 | 955 | 354 | 571 | 1270 | 315 | 250 | 188 | 8-33 | 400 |
| 150 | 6 | 450 | 1060 | 354 | 571 | 1430 | 355 | 290 | 218 | 12-33 | 600 |
| 200 | 8 | 550 | 1285 | 417 | 668 | 1740 | 430 | 360 | 285 | 12-36 | 900 |
| 250 | 10 | 650 | 1490 | 428 | 558 | 1860 | 505 | 430 | 345 | 12-39 | 1200 |
| 300 | 12 | 750 | 1899 | 998 | 507 | 2050 | 585 | 500 | 410 | 16-42 | 1800 |

# ASME Standard Gate Valve


## Standard and Specification

| | |
|---|---|
| Design and Manufacture | **Casting Gate Valve**<br>API 600 Steel Gate Valves - Flanged and Butt-welding Ends, Bolted Bonnets<br>ISO 10434 Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries<br>API 6D Specification for Valves<br>**Cast stainless steel gate valve**<br>API 603 Corrosion - resistant, Bolted Bonnet Gate Valves - Flanged and Butt-welding Ends<br>ISO 10434 Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries<br>API 600 Steel Gate Valves - Flanged and Butt-welding Ends, Bolted Bonnets<br>**Forged Steel Gate Valve**<br>API 602 Gate, Globe, and Check Valves for Sizes DN 100 (NPS 4) and Smaller for the Petroleum and Natural Gas Industries<br>ISO 15761 Steel gate, globe and check valves for sizes DN 100 and smaller, for the petroleum and natural gas industries |
| Connection size | **For gate valves NPS≤24**<br>ASME B16.5 Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24, Metric/Inch Standard<br>**For gate valves NPS > 24**<br>ASME B16.47 Large Diameter Steel Flanges: NPS 26 through NPS 60, Metric/Inch Standard<br>API 605 Large-Diameter Carbon Steel Flanges (Nominal Pipe Sizes 26 Through 60, Classes 75, 150, 300, 400, 600, and 900)<br>MSS SP-44 Steel Pipeline Flanges<br>**Butt-welding ends gate valve**<br>ASME B16.25 Butt-welding Ends<br>BS 12627 Industrial valves. Butt welding ends for steel valves<br>**Socket-welding and threaded gate valve**<br>ASME B16.11 Forged Fittings, Socket-Welding and Threaded |
| Structure Length | ASME B16.10 Face-to-Face and End-to-End Dimensions of Valves |
| Pressure Test | API 598 Valve inspection and testing<br>API 6D Specification for Pipeline Valves<br>API 600 Steel Gate Valves - Flanged and Butt-welding Ends, Bolted Bonnets<br>ISO 10434 Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries |



## PRODUCT INTRODUCTION

Gate valves are used for full opening or full closing, as isolation valves, and not used as control valves.

The gate valve is closed (CTC) or opened (CTO) by rotating the valve stem clockwise, and the gate plate moves upward or downward through the valve stem thread.

Gate valves are suitable for applications requiring minimum pressure drop and a full-bore design. When fully opened, the unobstructed flow path ensures low pressure loss, and their full-bore configuration allows compatibility with pipeline pigging operations.

The gate valve adopts the multi-turn threaded stem operation, which requires multiple rotations to fully open and close. Its slow actuation effectively prevents water hammer effect.

# PRODUCT FEATURES

### Gate structure

For NPS≥2 gate valve adopts flexible wedge; NPS<2 gate valves adopts solid wedge.

### Connection of valve body and valve bonnet

For Class 150 to Class 900 and PN10 to PN160 gate valves, the valve body and bonnet are generally connected by double-ended stud bolts with nuts.For gate valves of Class 1500~Class 2500, the body and bonnet generally adopt a pressure-energized sealing structure.

### Flange sealing gasket(Between body and bonnet)

Class150、PN10: Carbon steel or stainless steel+flexible graphite composite gasket;
Class300、PN16 ~ PN100: Stainless steel+flexible graphite wrapped gasket;
Class600: Stainless steel+flexible graphite wrapped gasket or metal ring gasket;
Class900、PN160: Metal ring gasket;
Class1500 ~ 2500: Pressure-energized sealing structure.

### Actuation type

Generally, handwheel actuation, pneumatic actuation, and electric actuation are used.

### Packing

Flexible graphite formed packing can be used, with options for PTFE packing, metal wire-reinforced flexible graphite formed packing or composite packing. The stem area in contact with the packing undergoes precision machining followed by roller burnishing, enhancing surface finish (Ra 0.8 μm) and density.

### Belleville spring-loaded packing glands

The use of belleville spring-loaded packing glands makes the sealing of the packing more durable and reliable.

### Backseat structure

Gate valve is equipped with a backseat structure. Carbon steel valves generally have replaceable backseat ring, while stainless steel valves feature a formed backseat through integral machining or overlay welding; The backseat structure ensures reliable sealing when the valve is fully open.

### Seat

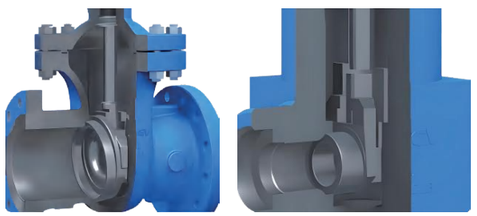
Carbon steel gate valve: forged valve seat with spray-welded alloy sealing surface; For NPS≤10 and DN ≤250 replaceable threaded connections or welded connections are commonly used; For NPS≥12 and DN≥ 300 welded connections are commonly used;
Stainless steel gate valve: generally adopts integral seat (machined from the valve body)seat, or the over-lay-welded alloy directly on the body, threaded or welded seats may also be configured based on requirements.

### Design of valve stem

The valve stem adopts an integral forging structure. The minimum diameter of the valve stem meets the standard requirements. The valve stem and gate are connected via a T-slot joint, and the strength at the connection is greater than that at the trapezoidal thread of the valve stem. The strength testing of the stem-to-gate connection complies with API 591 requirements.

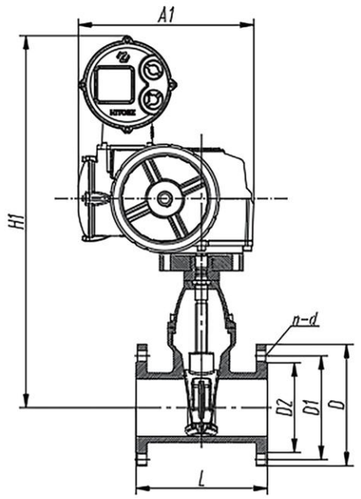
### Stem nut

Pound-class and K-class gate valves: generally made of ASTM A439 D2 material, optional copper alloy;
Nominal pressure grade (GB standard) gate valve: generally made of copper alloy material, but can also be made of ASTM A439 D2 material.
Large caliber gate valve: equipped with thrust roller bearings, effectively reducing the operating torque of the gate valve.

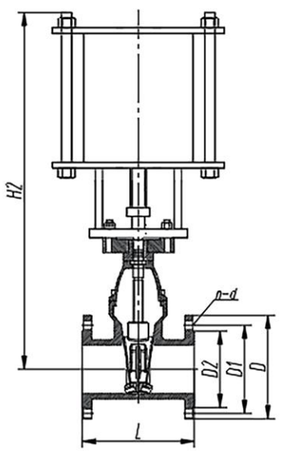


### Material Table

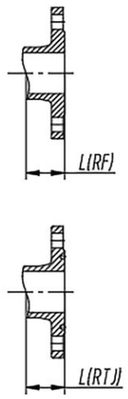
| Component Name | Material | | | | |
|---|---|---|---|---|---|
| | WCB/Trim 1 | WCB/Trim 5 | WCB/Trim 8 | CF8/304 | CF8M/316 |
| Body | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| Gasket | Soft Iron + Graphite or 304 + Graphite | | | 304 + Graphite | 316 + Graphite |
| Seat | A105+13Cr | A105+STL | A105+STL | A351 CF8 | A351 CF8M |
| Trim | A216 WCB+13Cr | A216 WCB+STL | A216 WCB+13Cr | A351 CF8 | A351 CF8M |
| Stem | A182 F6a | A182 F6a | A182 F6a | A182 F304 | A182 F316 |
| Upper Sealing Seat | A182 F6a | A182 F6a | A182 F6a | A182 CF8 | A182 CF8M |
| Packing | Flexible graphite | | | | |
| Bushing | A182 F6a | A182 F6a | A182 F6a | A182 F304 | A182 F316 |
| Screw | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| Nut | A194 2H | A194 2H | A194 2H | A194 8 | A194 8M |
| Pin | ASTM A36 | ASTM A36 | ASTM A36 | 304SS | 316SS |
| Plate | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| Bolt | A193 B7 | A193 B7 | A193 B7 | A193 B8 | A193 B8M |
| Nut | A194 2H | A194 2H | A194 2H | A194 8 | A194 8M |
| Bonnet | A216 WCB | A216 WCB | A216 WCB | A351 CF8 | A351 CF8M |
| Oil Cup | Carbon Steel | | | | |
| Stem Nut | A439 D2 | | | | |
| Gland Nut | Carbon Steel | | | | |




Z941 Series




Z641 Series



## Pressure Class CLASS 150

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 178 | 191 | 618 | 306 | 507 | 950 | 150 | 120.7 | 92.1 | 4-18 | 100 |
| 65 | 2-1/2 | 190 | 203 | 670 | 306 | 507 | 1050 | 180 | 139.7 | 104.8 | 4-18 | 100 |
| 80 | 3 | 203 | 216 | 700 | 306 | 507 | 1080 | 190 | 152.4 | 127 | 4-18 | 100 |
| 100 | 4 | 229 | 241 | 785 | 306 | 507 | 1145 | 230 | 190.5 | 157.2 | 8-18 | 200 |
| 125 | 5 | 254 | 267 | 845 | 306 | 507 | 1210 | 255 | 215.9 | 185.7 | 8-22 | 200 |
| 150 | 6 | 267 | 279 | 990 | 306 | 507 | 1300 | 280 | 241.3 | 215.9 | 8-22 | 200 |
| 200 | 8 | 292 | 305 | 1080 | 354 | 571 | 1660 | 345 | 298.5 | 269.9 | 8-22 | 300 |
| 250 | 10 | 330 | 343 | 1150 | 354 | 571 | 1790 | 405 | 362.0 | 323.8 | 12-26 | 350 |
| 300 | 12 | 356 | 368 | 1415 | 354 | 571 | 1990 | 485 | 431.8 | 381.0 | 12-26 | 450 |

## Pressure Class CLASS 300

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 216 | 232 | 618 | 306 | 507 | 950 | 165 | 127 | 92.1 | 8-18 | 100 |
| 65 | 2-1/2 | 241 | 257 | 670 | 306 | 507 | 1050 | 190 | 149.2 | 104.8 | 8-22 | 100 |
| 80 | 3 | 283 | 298 | 700 | 306 | 507 | 1080 | 210 | 168.3 | 127 | 8-22 | 150 |
| 100 | 4 | 305 | 321 | 785 | 306 | 507 | 1145 | 255 | 200 | 157.2 | 8-22 | 200 |
| 125 | 5 | 381 | 397 | 845 | 306 | 507 | 1210 | 280 | 235 | 185.7 | 8-22 | 200 |
| 150 | 6 | 403 | 419 | 990 | 354 | 571 | 1300 | 320 | 269.9 | 215.9 | 12-22 | 300 |
| 200 | 8 | 419 | 435 | 1080 | 354 | 571 | 1660 | 380 | 330.2 | 269.9 | 12-26 | 300 |
| 250 | 10 | 457 | 473 | 1150 | 354 | 571 | 1790 | 445 | 387.4 | 323.8 | 16-30 | 350 |
| 300 | 12 | 502 | 518 | 1415 | 354 | 571 | 1990 | 520 | 450.8 | 381.0 | 16-33 | 600 |



## Pressure Class CLASS 600

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 292 | 295 | 667 | 306 | 507 | 980 | 165 | 127 | 92.1 | 8-18 | 150 |
| 65 | 2-1/2 | 330 | 333 | 685 | 306 | 507 | 1080 | 190 | 149.2 | 104.8 | 8-22 | 200 |
| 80 | 3 | 356 | 359 | 748 | 306 | 507 | 1130 | 210 | 168.3 | 127 | 8-22 | 200 |
| 100 | 4 | 432 | 435 | 845 | 354 | 571 | 1190 | 275 | 215.9 | 157.2 | 8-26 | 300 |
| 125 | 5 | 508 | 511 | 920 | 354 | 571 | 1250 | 330 | 266.7 | 185.7 | 8-30 | 300 |
| 150 | 6 | 559 | 562 | 1009 | 354 | 571 | 1390 | 355 | 292.1 | 215.9 | 12-30 | 400 |
| 200 | 8 | 660 | 664 | 1253 | 354 | 571 | 1710 | 420 | 349.2 | 269.9 | 12-33 | 600 |
| 250 | 10 | 787 | 791 | 1449 | 417 | 668 | 1840 | 510 | 431.8 | 323.8 | 16-36 | 900 |
| 300 | 12 | 838 | 841 | 1867 | 417 | 668 | 2030 | 560 | 489.0 | 381.0 | 20-36 | 900 |

## Pressure Class CLASS 900

| Nominal diameter DN | | Structure length (Standard) | | Overall dimension (Reference) | | | | Connection dimension (Standard) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Z941 Series | | | Z641 Series | | | | | |
| mm | inch | L (RF) | L (RTJ) | H1 | A1 | B1 | H2 | D | D1 | D2 | n-d | Torque(Nm) |
| 50 | 2 | 368 | 371 | 697 | 306 | 507 | 1020 | 215 | 165.1 | 92.1 | 8-26 | 200 |
| 65 | 2-1/2 | 419 | 422 | 715 | 306 | 507 | 1150 | 245 | 190.5 | 104.8 | 8-30 | 200 |
| 80 | 3 | 381 | 384 | 768 | 354 | 571 | 1170 | 240 | 190.5 | 127 | 8-26 | 300 |
| 100 | 4 | 457 | 460 | 870 | 354 | 571 | 1210 | 290 | 235 | 157.2 | 8-33 | 300 |
| 125 | 5 | 559 | 562 | 955 | 354 | 571 | 1270 | 350 | 279.4 | 185.7 | 8-36 | 400 |
| 150 | 6 | 610 | 613 | 1060 | 354 | 571 | 1430 | 380 | 317.5 | 215.9 | 12-33 | 600 |
| 200 | 8 | 737 | 740 | 1285 | 417 | 668 | 1740 | 470 | 393.7 | 269.9 | 12-39 | 900 |
| 250 | 10 | 838 | 841 | 1490 | 428 | 558 | 1860 | 545 | 469.9 | 323.8 | 12-39 | 1200 |
| 300 | 12 | 965 | 968 | 1899 | 998 | 507 | 2050 | 610 | 533.4 | 381.0 | 20-39 | 1800 |

# Single-Seat Control Valve (Plug Type)



## PRODUCT INTRODUCTION

The single seat valve is a compact control valve with few internal components, small volume, and excellent shut-off performance.

Single-seat control valve, easier to maintain.

Widely applicable, it can have various valve trim configurations and provide a larger flow range. Its lighter plug weight ensures reduced vibration.

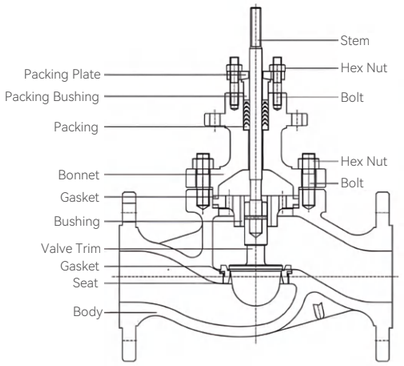



**Table 1: Body Material is CS**

| | | | |
|---|---|---|---|
| **Body** | WCB | LCB | WC9 |
| **Seat** | 304 | 304 | 304 |
| **Valve trim** | 304 | 304 | 304 |
| **Gasket** | 316+Graphite/PTEF | | |
| **Bushing** | 304 | 304 | 304 |
| **Bonnet** | WCB | LCB | WC9 |
| **Packing** | PTEF/Flexible graphite | | |
| **Packing Bushing** | 304 | 304 | 304 |
| **Packing plate** | WCB | WCB | WCB |
| **Stem** | 304 | 304 | 304 |
| **Bolt** | 45 | 40MnB | 25Cr 2Mo1VA |
| **Nut** | 35 | 35 | 25Cr 2Mo1VA |

**Table 2: Body Material is SS**

| | | | |
|---|---|---|---|
| **Body** | CF8 | CF8M | CF3M |
| **Seat** | 304 | 316 | 316L |
| **Valve trim** | 304 | 316 | 316L |
| **Gasket** | 316+Graphite/PTEF | | |
| **Bushing** | 304 | 316 | 316L |
| **Bonnet** | CF8 | CF8M | CF3M |
| **Packing** | PTEF/Flexible graphite | | |
| **Packing Bushing** | 304 | 316 | 316L |
| **Packing plate** | CF8 | CF8M | CF3M |
| **Stem** | 304 | 316 | 316L |
| **Bolt** | 304 | 316 | 316L |
| **Nut** | 304 | 316 | 316L |

Note:

- The above describes the standard configuration structure featuring a metal-to-metal seat. A PTFE soft seat with Class VI sealing is an optional component. Hardened valve trim components coated with stellite alloy can also be provided.
- The PTFE V-ring stem packing is a standard configuration and flexible graphite can also be an optional alternative.. An extended bonnet equipped with graphite packing can be used in applications where the temperature exceeds 232°C (450 Fahrenheit).
- The standard valve body materials are carbon steel and stainless steel, and a variety of alloy materials are available for for highly corrosive applications.

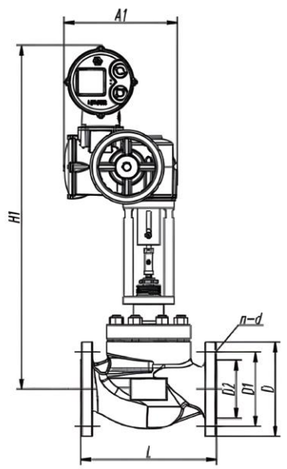
## Performance

| | |
|---|---|
| **Characteristic** | Linear, EQ(%), Quick Open |
| **Adjustable Range** | 50:1 （CV<6.3 30:1） |
| **Rated CV** | EQ(%) CV1.6-630， Linear CV1.8-690 |
| **Leakage Class** | Class IV: (0.01% of the valve's rated capacity)<br>Class VI: (Bubble level) leakage |

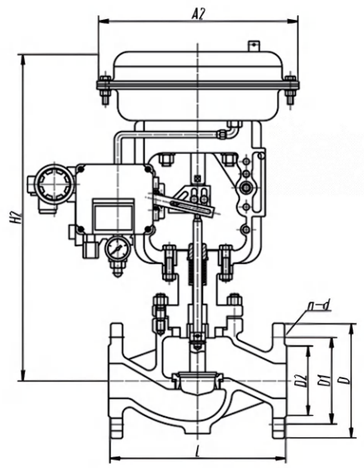
| | **Pneumatic** | **Electric** |
|---|---|---|
| Intrinsic error% | ±1.5 | ±1.0 |
| Hysteresis error% | ≤1.5 | ≤1.0 |
| Dead zone% | <0.6 | <1.0 |
| Initial tolerance% | ±2.5 | ±2.5 |
| Standard travel tolerance% | ≤2.5 | ≤2.5 |

## Parameter Selection Table

| **Seat diameter** | | **10** | **12** | **15** | **20** | **25** | **32** | **40** | **50** | **65** | **80** | **100** | **125** | **150** | **200** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated CV** | EQ(%) | 1.6 | 2.5 | 4.0 | 6.3 | 10 | 16 | 25 | 40 | 63 | 100 | 160 | 250 | 400 | 630 |
| | Linear | 1.8 | 2.8 | 4.4 | 6.9 | 11 | 17.6 | 27.5 | 44 | 69 | 110 | 176 | 275 | 440 | 690 |
| **Nominal Dameter** | **Travel** | **Optional KVs(★Standard ●Recommend ○Customized)** | | | | | | | | | | | | | |
| **DN20** | **16mm** | ● | ● | ● | ★ | | | | | | | | | | |
| **DN25** | | ● | ● | ● | ● | ★ | | | | | | | | | |
| **DN32** | **25mm** | ○ | ○ | ○ | ○ | ○ | ★ | | | | | | | | |
| **DN40** | | | ○ | ○ | ○ | ○ | ● | ★ | | | | | | | |
| **DN50** | | | | ○ | ○ | ○ | ● | ● | ★ | | | | | | |
| **DN65** | **40mm** | | | | | | ○ | ○ | ○ | ★ | | | | | |
| **DN80** | | | | | | | ○ | ○ | ○ | ● | ★ | | | | |
| **DN100** | | | | | | | ○ | ○ | ○ | ● | ● | ★ | | | |
| **DN125** | **60mm** | | | | | | | | | ○ | ○ | ○ | ★ | | |
| **DN150** | | | | | | | | | | | ○ | ○ | ● | ★ | |
| **DN200** | | | | | | | | | | | ○ | ○ | ● | ● | ★ |




T944 Series




T644 Series

## Pressure Class PN16 (1.6MPa) / ANSI 150

| **Nominal diameter DN** | | **Structure length (Standard)** | **Overall dimension (Reference)** | | | | | | **Connection dimension (Standard)** | | | | **Weight(Reference)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **T944 Series** | | | **T644 Series** | | | | | | | |
| **mm** | **inch** | **L** | **H1** | **A1** | **B1** | **H2** | **A2** | **B2** | **D** | **D1** | **D2** | **n-d** | **T944 Series/ T644 Series** |
| 20 | 3/4 | 181 | 825 | 507 | 354 | 431 | 200 | 200 | 105/100 | 75/69.9 | 55/42.9 | 4-14/4-16 | 16/21 |
| 25 | 1 | 184 | 837 | 507 | 354 | 440 | 200 | 200 | 115/110 | 85/79.4 | 65/50.8 | 4-14/4-16 | 17/22 |
| 32 | 1-1/4 | 200 | 848 | 507 | 354 | 451 | 200 | 200 | 138/115 | 100/88.9 | 78/63.5 | 4-14/4-16 | 24/24 |
| 40 | 1-1/2 | 222 | 852 | 507 | 354 | 475 | 200 | 200 | 145/125 | 110/98.4 | 85/73 | 4-14/4-16 | 32/32 |
| 50 | 2 | 254 | 859 | 507 | 354 | 482 | 200 | 200 | 160/150 | 125/120.7 | 100/92.1 | 4-18/4-18 | 38/38 |
| 65 | 1-1/2 | 276 | 918 | 507 | 354 | 735 | 240 | 240 | 180/180 | 145/139.7 | 120/104.8 | 4-18/4-18 | 52/62 |
| 80 | 3 | 298 | 930 | 507 | 354 | 647 | 240 | 240 | 195/190 | 160/152.4 | 135/127 | 8-18/4-18 | 57/67 |
| 100 | 4 | 352 | 938 | 507 | 354 | 655 | 240 | 240 | 215/230 | 180/190.5 | 155/157.2 | 8-18/8-18 | 73/83 |
| 125 | 5 | 420 | 1014 | 507 | 354 | 784 | 350 | 350 | 245/255 | 210/215.9 | 185/185.7 | 8-18/8-22 | 136/132 |
| 150 | 6 | 451 | 1081 | 507 | 354 | 851 | 350 | 350 | 280/280 | 240/241.3 | 210/215.9 | 8-23/8-22 | 164/160 |
| 200 | 8 | 600 | 1126 | 571 | 354 | 866 | 350 | 350 | 335/345 | 295/298.5 | 265/269.9 | 12-23/8-22 | 249/245 |

## Pressure Class PN25&40 (2.5&4.0MPa) / ANSI 300

| **Nominal diameter DN** | | **Structure length (Standard)** | **Overall dimension (Reference)** | | | | | | **Connection dimension (Standard)** | | | | **Weight(Reference)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **T944 Series** | | | **T644 Series** | | | | | | | |
| **mm** | **inch** | **L** | **H1** | **A1** | **B1** | **H2** | **A2** | **B2** | **D** | **D1** | **D2** | **n-d** | **T944 Series/ T644 Series** |
| 20 | 3/4 | 194 | 825 | 306 | 507 | 431 | 200 | 200 | 105/115 | 75/82.6 | 55/42.9 | 4-14/4-18 | 17/22 |
| 25 | 1 | 197 | 837 | 306 | 507 | 440 | 200 | 200 | 115/125 | 85/88.9 | 65/50.8 | 4-14/4-18 | 19/24 |
| 32 | 1-1/4 | 200 | 848 | 306 | 507 | 451 | 200 | 200 | 135/135 | 100/98.4 | 78/63.5 | 4-18/4-18 | 26/26 |
| 40 | 1-1/2 | 235 | 852 | 306 | 507 | 475 | 200 | 200 | 145/155 | 110/114.3 | 85/73 | 4-18/4-22 | 35/35 |
| 50 | 2 | 267 | 859 | 306 | 507 | 482 | 200 | 200 | 160/165 | 125/127 | 100/92.1 | 4-18/8-18 | 42/42 |
| 65 | 1-1/2 | 292 | 918 | 306 | 507 | 735 | 240 | 240 | 180/190 | 145/149.2 | 120/104.8 | 8-18/8-22 | 57/67 |
| 80 | 3 | 317 | 930 | 306 | 507 | 647 | 240 | 240 | 195/210 | 160/168.3 | 135/127 | 8-18/8-22 | 64/74 |
| 100 | 4 | 368 | 968 | 306 | 507 | 655 | 240 | 240 | 230/255 | 190/200 | 160/157.2 | 8-23/8-22 | 79/89 |
| 125 | 5 | 420 | 1014 | 306 | 507 | 784 | 350 | 350 | 270/280 | 220/235 | 188/185.7 | 8-25/8-22 | 144/134 |
| 150 | 6 | 473 | 1081 | 306 | 507 | 851 | 350 | 350 | 300/320 | 250/269.9 | 218/215.9 | 8-25/12-22 | 150/166 |
| 200 | 8 | 600 | 1126 | 354 | 571 | 866 | 350 | 350 | 360&375/380 | 310&320/330.2 | 278&282/269.9 | 12-25&12-30/12-26 | 259/255 |

## Pressure Class PN63&100 (6.3&10.0MPa) / ANSI 600

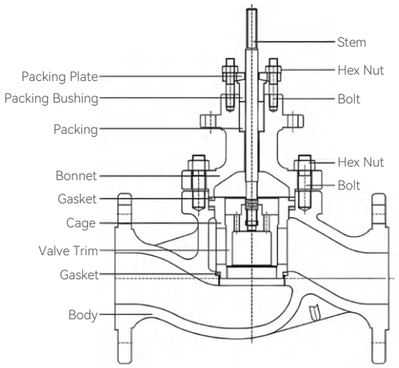
| **Nominal diameter DN** | | **Structure length (Standard)** | **Overall dimension (Reference)** | | | | | | **Connection dimension (Standard)** | | | | **Weight(Reference)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **T944 Series** | | | **T644 Series** | | | | | | | |
| **mm** | **inch** | **L** | **H1** | **A1** | **B1** | **H2** | **A2** | **B2** | **D** | **D1** | **D2** | **n-d** | **T944 Series/ T644 Series** |
| 20 | 3/4 | 206 | 828 | 306 | 507 | 431 | 200 | 200 | 125/115 | 90/82.6 | 68/42.9 | 4-18/4-18 | 20/24 |
| 25 | 1 | 210 | 837 | 306 | 507 | 440 | 200 | 200 | 135/125 | 100/88.9 | 78/50.8 | 4-18/4-18 | 20/25 |
| 32 | 1-1/4 | 251 | 848 | 306 | 507 | 451 | 200 | 200 | 150/135 | 110/98.4 | 82/63.5 | 4-23/4-18 | 30/30 |
| 40 | 1-1/2 | 251 | 852 | 306 | 507 | 475 | 200 | 200 | 165/155 | 125/114.3 | 95/73 | 4-23/4-22 | 42/42 |
| 50 | 2 | 286 | 859 | 306 | 507 | 482 | 200 | 200 | 175&195/165 | 135&145/127 | 105&112/92.1 | 4-23&4-25/8-18 | 52/52 |
| 65 | 1-1/2 | 311 | 918 | 306 | 507 | 735 | 240 | 240 | 200&220/190 | 160&170/149.2 | 130&138/104.8 | 8-23&8-25/8-22 | 68/78 |
| 80 | 3 | 337 | 980 | 306 | 507 | 647 | 240 | 240 | 210&230/210 | 170&180/168.3 | 140&148/127 | 8-23&8-25/8-22 | 72/82 |
| 100 | 4 | 394 | 988 | 306 | 507 | 655 | 240 | 240 | 250&265/275 | 200&210/215.9 | 168&172/157.2 | 8-25&8-30/8-26 | 92/102 |
| 125 | 5 | 500 | 1044 | 354 | 571 | 784 | 350 | 350 | 295&310/330 | 240&250/266.7 | 202&210/185.7 | 8-30&8-34/8-30 | 174/170 |
| 150 | 6 | 508 | 1111 | 354 | 571 | 851 | 350 | 350 | 340&350/355 | 280&290/292.1 | 240&250/215.9 | 8-34&12-34/12-30 | 194/190 |
| 200 | 8 | 650 | 1146 | 354 | 571 | 866 | 350 | 350 | 405&430/420 | 345&360/349.2 | 300&312/269.9 | 12-34&12-41/12-33 | 289/285 |

# Single-Seat Control Valve (Cage Type)




## PRODUCT INTRODUCTION

Single-seat control valve (Cage Type) is a mainly used in situations where high pressure differentials such as flash/cavitation may occur. Due to its robust guiding mechanism and cage-protected valve body construction, the cage type control valve is an ideal choice to protect valve body from erosion damage .The S-shaped flow path configuration delivers excellent flow characteristics with low pressure loss and enhanced flow capacity.




The cage-type single-seated valve incorporates a top-guided plug design, thereby delivering exceptional vibration resistance.The flow related-control specifications comply with IEC or JIS standards.

The cage type single-seated control valve is widely used for reliable flow control under high temperature, low temperature, and high pressure differential conditions.

**Table 1: Body Material is CS**

| | | | |
|---|---|---|---|
| **Body** | WCB | LCB | WC9 |
| **Valve trim** | 304 | 304 | 304 |
| **Gasket** | 316+Graphite/PTEF | | |
| **Cage** | 304 | 304 | 304 |
| **Bonnet** | WCB | LCB | WC9 |
| **Packing** | PTEF/Flexible graphite | | |
| **Packing Bushing** | 304 | 304 | 304 |
| **Packing plate** | WCB | WCB | WCB |
| **Stem** | 304 | 304 | 304 |
| **Bolt** | 45 | 40MnB | 25Cr 2Mo1VA |
| **Nut** | 35 | 35 | 25Cr 2Mo1VA |

**Table 2: Body Material is SS**

| | | | |
|---|---|---|---|
| **Body** | CF8 | CF8M | CF3M |
| **Valve trim** | 304 | 316 | 316L |
| **Gasket** | 316+Graphite/PTEF | | |
| **Cage** | 304 | 316 | 316L |
| **Bonnet** | CF8 | CF8M | CF3M |
| **Packing** | PTEF/Flexible graphite | | |
| **Packing Bushing** | 304 | 316 | 316L |
| **Packing plate** | CF8 | CF8M | CF3M |
| **Stem** | 304 | 316 | 316L |
| **Bolt** | 304 | 316 | 316L |
| **Nut** | 304 | 316 | 316L |

Note:

- The above describes the standard configuration structure featuring a metal-to-metal seat. A PTFE soft seat with Class VI sealing is an optional component. Hardened valve trim components coated with stellite alloy can also be provided.
- The PTFE V-ring stem packing is a standard configuration and flexible graphite can also be an optional alternative.. An extended bonnet equipped with graphite packing can be used in applications where the temperature exceeds 232°C (450 Fahrenheit).
- The standard valve body materials are carbon steel and stainless steel, and a variety of alloy materials are available for for highly corrosive applications.

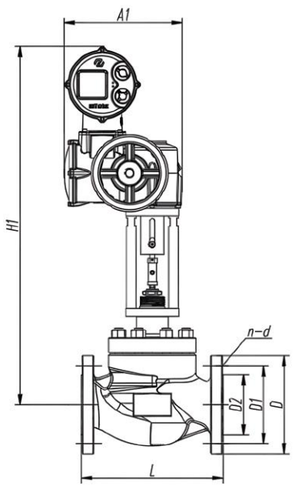
## Performance

| | |
|---|---|
| **Characteristic** | Linear, EQ(%), Quick Open |
| **Adjustable Range** | 50:1 |
| **Rated CV** | EQ(%)CV 10-1400，Linear CV11-1500 |
| **Leakage Class** | Class IV: (0.01% of the valve's rated capacity)<br>Class VI: (Bubble level) leakage |

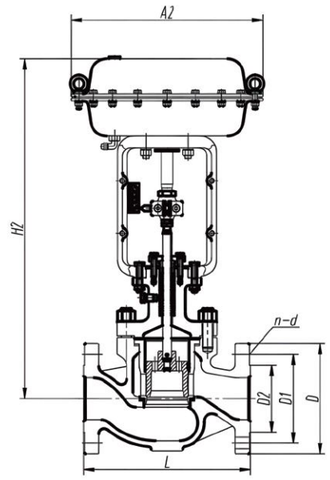
| | Pneumatic | Electric |
|---|---|---|
| Intrinsic error% | ±1.5 | ±1.0 |
| Hysteresis error% | ≤1.5 | ≤1.0 |
| Dead zone% | <0.6 | <1.0 |
| Initial tolerance% | ±2.5 | ±2.5 |
| Standard travel tolerance% | ≤2.5 | ≤2.5 |

## Parameter Selection Table

| Seat Diameter | | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated CV** | EQ(%) | 10 | 16 | 25 | 40 | 63 | 100 | 160 | 250 | 400 | 630 | 1000 | 1400 |
| | Linear | 11 | 17.6 | 27.5 | 44 | 69 | 110 | 176 | 275 | 440 | 690 | 1100 | 1500 |
| **Nominal Diameter** | **Travel** | **Optional KVs( ⋆ Standard ● Recommend ○ Customized)** | | | | | | | | | | | |
| **DN25** | **16mm** | ⋆ | | | | | | | | | | | |
| **DN32** | **25mm** | ○ | ⋆ | | | | | | | | | | |
| **DN40** | | ○ | ● | ⋆ | | | | | | | | | |
| **DN50** | | ○ | ● | ● | ⋆ | | | | | | | | |
| **DN65** | **40mm** | | ○ | ○ | ○ | ⋆ | | | | | | | |
| **DN80** | | | ○ | ○ | ○ | ● | ⋆ | | | | | | |
| **DN100** | | | ○ | ○ | ○ | ● | ● | ⋆ | | | | | |
| **DN125** | **60mm** | | | | | ○ | ● | ○ | ⋆ | | | | |
| **DN150** | | | | | | | ○ | ○ | ● | ⋆ | | | |
| **DN200** | | | | | | | | ○ | ● | ● | ⋆ | | |
| **DN250** | **100mm** | | | | | | | | ○ | ● | ● | ⋆ | |
| **DN300** | | | | | | | | | | ○ | ● | ● | ⋆ |




T947 Series




T647 Series

## Pressure Class PN16 (1.6MPa) / ANSI 150

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | | Connection dimension (Standard) | | | | Weight(Reference) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | T947 Series | | | T647 Series | | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | B2 | D | D1 | D2 | n-d | T944 Series/ T644 Series |
| 25 | 1 | 184 | 837 | 306 | 507 | 440 | 200 | 200 | 115/110 | 85/79.4 | 65/50.8 | 4-14/4-16 | 17/22 |
| 32 | 1-1/4 | 200 | 848 | 306 | 507 | 451 | 200 | 200 | 138/115 | 100/88.9 | 78/63.5 | 4-14/4-16 | 24/24 |
| 40 | 1-1/2 | 222 | 852 | 306 | 507 | 475 | 200 | 200 | 145/125 | 110/98.4 | 85/73 | 4-14/4-16 | 32/32 |
| 50 | 2 | 254 | 859 | 306 | 507 | 482 | 200 | 200 | 160/150 | 125/120.7 | 100/92.1 | 4-18/4-18 | 38/38 |
| 65 | 1-1/2 | 276 | 918 | 306 | 507 | 735 | 240 | 240 | 180/180 | 145/139.7 | 120/104.8 | 4-18/4-18 | 52/62 |
| 80 | 3 | 298 | 930 | 306 | 507 | 647 | 240 | 240 | 195/190 | 160/152.4 | 135/127 | 8-18/4-18 | 57/67 |
| 100 | 4 | 352 | 938 | 306 | 507 | 655 | 240 | 240 | 215/230 | 180/190.5 | 155/157.2 | 8-18/8-18 | 73/83 |
| 125 | 5 | 420 | 1014 | 306 | 507 | 784 | 350 | 350 | 245/255 | 210/215.9 | 185/185.7 | 8-18/8-22 | 136/132 |
| 150 | 6 | 451 | 1081 | 306 | 507 | 851 | 350 | 350 | 280/280 | 240/241.3 | 210/215.9 | 8-23/8-22 | 164/160 |
| 200 | 8 | 600 | 1126 | 354 | 571 | 866 | 350 | 350 | 335/345 | 295/298.5 | 265/269.9 | 12-23/8-22 | 249/245 |

## Pressure Class PN25&40 (2.5&4.0MPa) / ANSI 300

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | | Connection dimension (Standard) | | | | Weight(Reference) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | T947 Series | | | T647 Series | | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | B2 | D | D1 | D2 | n-d | T944 Series/ T644 Series |
| 25 | 1 | 197 | 837 | 306 | 507 | 440 | 200 | 200 | 115/125 | 85/88.9 | 65/50.8 | 4-14/4-18 | 19/24 |
| 32 | 1-1/4 | 200 | 848 | 306 | 507 | 451 | 200 | 200 | 135/135 | 100/98.4 | 78/63.5 | 4-18/4-18 | 26/26 |
| 40 | 1-1/2 | 235 | 852 | 306 | 507 | 475 | 200 | 200 | 145/155 | 110/114.3 | 85/73 | 4-18/4-22 | 35/35 |
| 50 | 2 | 267 | 859 | 306 | 507 | 482 | 200 | 200 | 160/165 | 125/127 | 100/92.1 | 4-18/8-18 | 42/42 |
| 65 | 1-1/2 | 292 | 918 | 306 | 507 | 735 | 240 | 240 | 180/190 | 145/149.2 | 120/104.8 | 8-18/8-22 | 57/67 |
| 80 | 3 | 317 | 930 | 306 | 507 | 647 | 240 | 240 | 195/210 | 160/168.3 | 135/127 | 8-18/8-22 | 64/74 |
| 100 | 4 | 368 | 968 | 306 | 507 | 655 | 240 | 240 | 230/255 | 190/200 | 160/157.2 | 8-23/8-22 | 79/89 |
| 125 | 5 | 420 | 1014 | 306 | 507 | 784 | 350 | 350 | 270/280 | 220/235 | 188/185.7 | 8-25/8-22 | 144/134 |
| 150 | 6 | 473 | 1081 | 306 | 507 | 851 | 350 | 350 | 300/320 | 250/269.9 | 218/215.9 | 8-25/12-22 | 150/166 |
| 200 | 8 | 600 | 1126 | 354 | 571 | 866 | 350 | 350 | 360&375/380 | 310&320/330.2 | 278&282/269.9 | 12-25&12-30/12-26 | 259/255 |

## Pressure Class PN63&100 (6.3&10.0MPa) / ANSI 600

| Nominal diameter DN | | Structure length (Standard) | Overall dimension (Reference) | | | | | | Connection dimension (Standard) | | | | Weight(Reference) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | T947 Series | | | T647 Series | | | | | | | |
| mm | inch | L | H1 | A1 | B1 | H2 | A2 | B2 | D | D1 | D2 | n-d | T944 Series/ T644 Series |
| 25 | 1 | 210 | 837 | 306 | 507 | 440 | 200 | 200 | 135/125 | 100/88.9 | 78/50.8 | 4-18/4-18 | 20/25 |
| 32 | 1-1/4 | 251 | 848 | 306 | 507 | 451 | 200 | 200 | 150/135 | 110/98.4 | 82/63.5 | 4-23/4-18 | 30/30 |
| 40 | 1-1/2 | 251 | 852 | 306 | 507 | 475 | 200 | 200 | 165/155 | 125/114.3 | 95/73 | 4-23/4-22 | 42/42 |
| 50 | 2 | 286 | 859 | 306 | 507 | 482 | 200 | 200 | 175&195/165 | 135&145/127 | 105&112/92.1 | 4-23&4-25/8-18 | 52/52 |
| 65 | 1-1/2 | 311 | 918 | 306 | 507 | 735 | 240 | 240 | 200&220/190 | 160&170/149.2 | 130&138/104.8 | 8-23&8-25/8-22 | 68/78 |
| 80 | 3 | 337 | 980 | 306 | 507 | 647 | 240 | 240 | 210&230/210 | 170&180/168.3 | 140&148/127 | 8-23&8-25/8-22 | 72/82 |
| 100 | 4 | 394 | 988 | 306 | 507 | 655 | 240 | 240 | 250&265/275 | 200&210/215.9 | 168&172/157.2 | 8-25&8-30/8-26 | 92/102 |
| 125 | 5 | 500 | 1044 | 354 | 571 | 784 | 350 | 350 | 295&310/330 | 240&250/266.7 | 202&210/185.7 | 8-30&8-34/8-30 | 174/170 |
| 150 | 6 | 508 | 1111 | 354 | 571 | 851 | 350 | 350 | 340&350/355 | 280&290/292.1 | 240&250/215.9 | 8-34&12-34/12-30 | 194/190 |
| 200 | 8 | 650 | 1146 | 354 | 571 | 866 | 350 | 350 | 405&430/420 | 345&360/349.2 | 300&312/269.9 | 12-34&12-41/12-33 | 289/285 |