



JIS10K CAST IRON FLANGE END GATE VALVES

Literature





Figure 1 JIS 10K Cast Iron Gate Valve

Introduction:

Gate valve is used to allow or cut off the fluids flowing through a hydraulic system. By rotating the wheel handle to open or close position which marks on it, the wedge will be lifted up or lifted down. It is designed and manufactured according to ASME B16.10/API 600/API 602/F7364 standard. It will be inspected and tested according to JIS F7400/API 598.

Material and Design:

JIS10K flange end gate valve is available in stainless steel SS316 material or cast iron material. It all comes with bolted bonnets, however they are different in shape due to different design standards. Bolted bonnet type is where a bonnet is attached on the valve body to hold the internal parts into it with screw and nut.

The stem, one of the important components in gate valves, is available in two types: rising stem or non-rising stem. For the rising stem gate valve, the stem will go up when we rotate the handle to open position and go down when we rotate the handle to close position. It can be easily told if the valve is in an open or close position when we look at the amount of stem exposed. For non-rising stem gate valves, the valve is in open position when the handle is rotated as far as possible to "open" direction that mark on handle and in close position when the handle is rotated as far as possible to "close" direction that mark on handle. Non-rising stem gate valves are usually used on tight places where there is not enough space for the stem to raise, such as underground hydraulic systems.

Size and Pressure Rating:

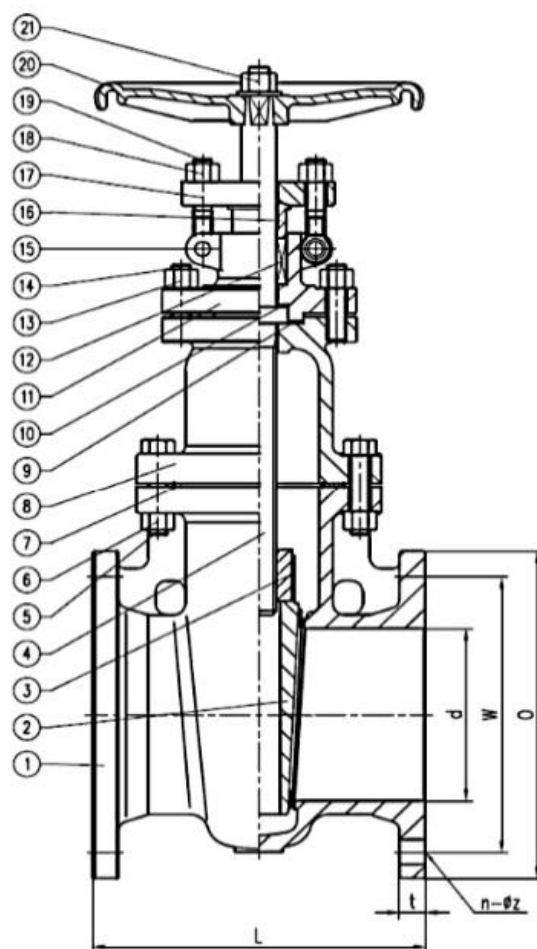
The size for JIS10K gate valve is ranged from 1" to 6", subject to material. JIS10K series flange end gate valves can withstand up to 10 kg/cm² which is equivalent to 150 PSI working pressure.

Connection Type:

For flange end gate valve, the other connection end must be the flange end too. The number of bolt holes depends on the valve size too. There will be 4 bolt holes for size below 4", 8 bolt holes for size above 4". Gasket, bolts and nuts are required to connect the valve body flange to another flange end.



Figure 2 JIS 10K
Cast Iron Gate Valve

JIS 10K Cast Iron Gate Valve 2" – 4" (DN50 – DN100) Drawing:


| No | Part Name | Material |
|----|---------------|-------------------|
| 1 | Body | ASTM A126 B + SS |
| 2 | Wedge | ASTM A126 B + SS |
| 3 | Stem Nut | ASTM A276 410 |
| 4 | Stem | ASTM A276 410 |
| 5 | Bolts | ASTM A29 1035 |
| 6 | Nuts | ASTM A29 1025 |
| 7 | Gasket | SS304+Graphite |
| 8 | Bonnet | ASTM A126 B |
| 9 | Gasket | Flexible Graphite |
| 10 | Thrust Washer | SS |
| 11 | Yoke | ASTM A126 B |

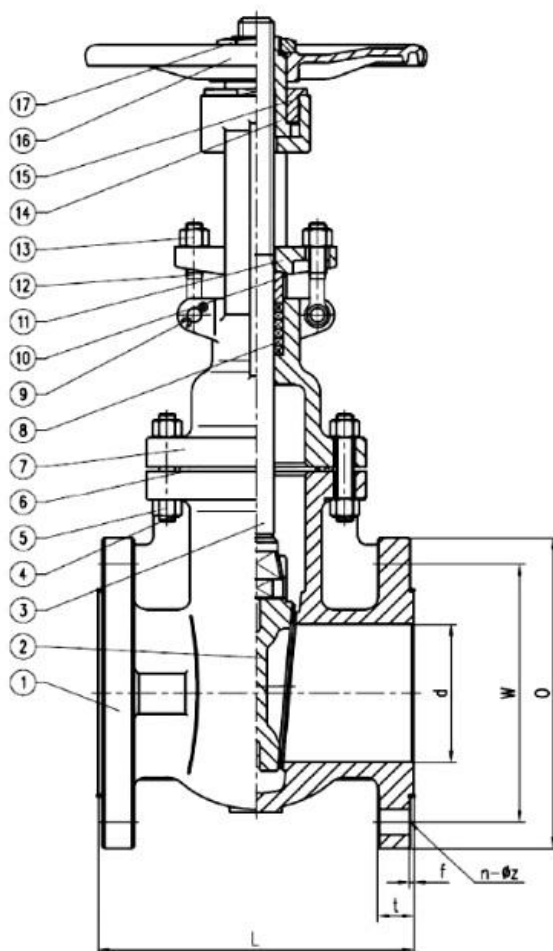
| | | |
|----|---------------|-------------------|
| 12 | Packing | Flexible Graphite |
| 13 | Nuts | ASTM A29 1025 |
| 14 | Bolts | ASTM A29 1035 |
| 15 | Pin | ASTM A29 1025 |
| 16 | Packing Gland | ASTM A276 410 |
| 17 | Gland Flange | ASTM A126 B |
| 18 | Nuts | ASTM A29 1025 |
| 19 | Eye Bolts | ASTM A29 1035 |
| 20 | Handwheel | ASTM A47 32510 |
| 21 | Nut | ASTM A29 1025 |

Main Technical Parameter:

| | |
|-----------------------------|----------|
| Normal Pressure | 10K |
| Hydraulic Body Test | 2.06 MPa |
| Seal Test | 1.57 MPa |
| Hermetical Seal Test | 0.6 MPa |
| Max Working Pressure | ≤ 429°C |

Technical Specifications:

1. Basic design and manufacture according to ASME B16.10
2. Face to face dimension: ASME B16.10
3. Flange End: JIS B2212
4. Inspection and test: API 598

JIS 10K Cast Iron Gate Valve 5" – 6" (DN125 – DN150) Drawing:


| No | Part Name | Material |
|----|---------------|---------------------|
| 1 | Body | ASTM A126 B + SS304 |
| 2 | Wedge | ASTM A126 B + SS304 |
| 3 | Stem | ASTM A276 304 |
| 4 | Bolts | ASTM A29 1035 |
| 5 | Nuts | ASTM A29 1025 |
| 6 | Gasket | SS304+Graphite |
| 7 | Bonnet | ASTM A126 B |
| 8 | Packing | Flexible Graphite |
| 9 | Pin | ASTM A29 1045 |
| 10 | Packing Gland | ASTM A276 304 |

| | | |
|----|--------------|----------------|
| 11 | Gland Flange | ASTM A126 B |
| 12 | Eye Bolts | ASTM A29 1035 |
| 13 | Nuts | ASTM A29 1025 |
| 14 | Stem Nut | ASTM A276 410 |
| 15 | Cover | ASTM A29 1025 |
| 16 | Handwheel | ASTM A47 32510 |
| 17 | Nut | ASTM A29 1025 |

Main Technical Parameter:

| | |
|-----------------------------|----------------------------|
| Normal Pressure | 10K |
| Hydraulic Body Test | 2.06 MPa |
| Seal Test | 1.57 MPa |
| Hermetical Seal Test | 0.6 MPa |
| Max Working Pressure | $\leq 429^{\circ}\text{C}$ |

Technical Specifications:

1. Basic design and manufacture according to ASME B16.10
2. Face to face dimension: ASME B16.10
3. Flange End: JIS B2212
4. Inspection and test: API 598

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