


Technical Requirements

1. Design & manufacture conform to MSS SP-81
2. Face-to-Face conforms to MSS SP-81
3. Flange dimensions conform to ANSI B16.5
4. Test & Inspect conform to MSS SP-81

| Size | Main Dimension (mm)CLASS150 | | | | | |
|--------|-----------------------------|-----|-------|-------|--------------|-----|
| Inch | DN | D | D1 | D2 | n-M | L |
| 2" | 50 | 150 | 120.7 | 92.1 | 4-5/8"UNC | 48 |
| 2 1/2" | 65 | 180 | 139.7 | 104.8 | 4-5/8"UNC | 48 |
| 3" | 80 | 190 | 152.4 | 127 | 4-5/8"UNC | 51 |
| 4" | 100 | 230 | 190.5 | 157.2 | 8-5/8"UNC | 51 |
| 5" | 125 | 255 | 215.9 | 185.7 | 8-3/4"UNC | 57 |
| 6" | 150 | 280 | 241.3 | 215.9 | 8-3/4"UNC | 57 |
| 8" | 200 | 345 | 298.5 | 269.9 | 8-3/4"UNC | 70 |
| 10" | 250 | 405 | 362 | 323.8 | 12-7/8"UNC | 70 |
| 12" | 300 | 485 | 431.8 | 381 | 12-7/8"UNC | 76 |
| 14" | 350 | 535 | 476.3 | 412.8 | 12-1"UNC | 76 |
| 16" | 400 | 595 | 539.8 | 469.9 | 16-1"UNC | 89 |
| 18" | 450 | 635 | 577.9 | 533.4 | 16-1 1/8"UNC | 89 |
| 20" | 500 | 700 | 635 | 584.2 | 20-1 1/8"UNC | 114 |
| 24" | 600 | 815 | 749.3 | 692.2 | 20-1 1/4"UNC | 114 |

| | | | |
|----|---------------|-----------------|---------|
| 17 | Lock Nut | Carbon Steel | |
| 16 | Hand wheel | Malleable Iron | |
| 15 | Pin | Alloy Steel | |
| 14 | Grease Nipple | Brass | |
| 13 | Stem Nut | Brass | |
| 12 | Stem | A276 316 | |
| 11 | Pin | Stainless Steel | |
| 10 | Yoke | Carbon Steel | |
| 9 | Gland Bolt | A193 B8 | |
| 8 | Gland | A351 CF8M | |
| 7 | Yoke Bolt | Stainless Steel | |
| 6 | Gasket | EPDM | |
| 5 | Packing | PTFE | |
| 4 | Knife | SS316 | |
| 3 | Retainer Ring | SS316 | |
| 2 | Seat Ring | EPDM | |
| 1 | Body | A351 CF8M | |
| NO | PART NAME | MATERIAL | REMARKS |

| Nominal pressure | Inch | | | MPa |
|------------------|---------------------|---------|---------|-----|
| | 2"~10" | 12"~18" | 20"~24" | |
| Shell Test | 1.5 | 0.9 | 0.6 | |
| Closure Test | 1.1 | 0.66 | 0.44 | |
| Air Test | / | | | |
| Temperature | -29~80°C | | | |
| Applicable Media | wast water, slurry. | | | |

| | | | |
|---|--|-------------------------|------------|
| DESIGNED BY | | WTR Valves | |
| CHECKED BY | | | |
| STANDARDIZED BY | | DRAWING NO | REV |
| APPROVED BY | | PZ73X-150 | 0 |
|  | | Manual Knife Gate Valve | |
| | | DATE | 2018-07-31 |

WTR Knife Gate Valves

Design Standards

- ◆ MSS-SP 81/TAPPI TIS 405-8
- ◆ Size Range – 2”-48” Standard; 54”-72” Special
- ◆ Custom Fabricated – Cast Single Piece-Bonneted
- ◆ Pressure Rating – 150 PSI and Higher
- ◆ Seat Designs –
 - Metal to Metal
 - Metal to Resilient Rubber
 - Metal to PTFE
 - Metal to “O” Ring
- ◆ Non-Clogging Full Port Design
- ◆ Factory Test – MSS SP-81
- ◆ Pressure/Temperature Rating – ASME B16.34
- ◆ Square Bottom • Round Bottom
- ◆ Full Port Inside Diameter
- ◆ Unidirectional – Bi-Directional
- ◆ Drip Tight Shutoff
- ◆ Gate Guides/Jams
- ◆ Precision Machined Gate
- ◆ Rising Stem & Non- Rising Stem
- ◆ Integral Lug Body
- ◆ Full Lug/ANSI B16.5 150 lb Flanges
- ◆ Smooth Flow – Minimal Pressure Drop
- ◆ Factory Test – 150% of Design Pressure

Materials of Construction

- | | |
|---------------------------------------|----------------------|
| ◆ <u>Body Bonnet and Knife Gate</u> – | ◆ <u>Seat-Seal</u> – |
| • Cast Iron | • Metal – SS |
| • Stainless Steel | • NBR |
| • Hastelloy | • Viton |
| • Monel | • Nitrile |
| • Ductile Iron | • EPDM |
| • Carbon Steel | • PTFE |
| • Titanium | • FKM |
| | • CR |

- ◆ Stem – Stainless Steel/Other
- ◆ Stem Nut – Aluminum Bronze/Other
- ◆ Packing – PTFE/Graphite/Viton/FKM/Teflon

Operator Options

- ◆ Manual - Lever
- ◆ Handwheel
- ◆ Chainwheel
- ◆ Bevel Gear
- ◆ Electric Motor
- ◆ Hydraulic Cylinder – Single/Double Acting

Accessory Options

- ◆ Stem Extensions
- ◆ 60°/90° V Port
- ◆ Flush Port, Purge & Drain Ports
- ◆ Special Protective Coatings
- ◆ Positioners
- ◆ Mechanical Stops
- ◆ High Temperature/High Design Pressure

Applications

- | | | | |
|---|----------|--------------------|---------------------|
| ◆ Pulp & Paper | ◆ Mining | ◆ Food Processing | ◆ Abrasive Slurries |
| ◆ Power | ◆ Coal | ◆ Water/Wastewater | ◆ Chemicals |
| ◆ Full Line of Special Industrial Designs | | ◆ Petroleum | ◆ Cement |
| ◆ Full Line of Slide/Sluice/Flap/Penstock Gates | | | |

Sample Drawings are included on our Website. Please contact WTR for Specific Dimensions, Details, Specifications, and other Additional Documentation including:

- | | | |
|------------------|-------------------|---------------------|
| ◆ Flow Curves | ◆ Headloss Charts | ◆ Installation List |
| ◆ Case Histories | ◆ Photos | ◆ Design Options |







