### Figure 67B KNIFE GATE VALVES



# STAINLESS STEEL METAL SEATED KNIFE GATE VALVE

The figure 67B is an all cast stainless steel body and yoke design. The 67B is designed to handle dense mixtures of stock and slurries with unidirectional shut off. The shearing action of the knife gate cuts through solids and cleans the seat as it closes.

#### Features:

- · Unidirectional Shutoff
- Cast Stainless Steel Body, Yoke and Packing Gland
- Thrust Ball Bearing Yoke Bushing (14" & Larger)
- Ductile Iron Handwheel
- Bonnetless, Outside Screw & Yoke
- · Rising Stem
- Meets MSS SP-81 Specification for 150 PSI CWP
- · Smooth Flow, Non-clogging Step Seat Design
- Available in sizes from 3" to 30"

#### Standards:

- Design: MSS SP-81
- Flange Drilling: ANSI B16.5
- Seat/Shell Test: MSS SP-81
- Material: ASME B16.34



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#### **Options**

20

21

22

23-1

23-2

**Bearing Housing** 

Thrust Ball Bearing

Bearing Gland

**Bearing Housing Bolt** 

**Bearing Housing Nut** 

FNW Valve Company offers many options and modifications for valves. These include, but are not limited to:

- · Actuation including ratchets, chain wheels, AWWA nuts, gear-operators, pneumatic & hydraulic cylinders, and electric actuators
- Packing options for pH and temperature requirements
- Back seat stops for low ΔP or reverse operation applications, or to prevent knife blade deflection.
- V-ports for reduced plugging in metering applications
- · Stem extensions in carbon and stainless steel
- Conversion to non-rising stem (NRS)
- · Deflection cones in Ni-Hard and HDPE for added seat and gate protection in abrasive services
- · Flush ports to clear suspended matter from the valve chest or seat pocket area
- Quick opening levers
- · Gate scraper
- · Open and close position lockout lugs

Contact FNW for knife gate valve options.

| Description   | Material   | Qty  | Remarks   |
|---------------|--|--|---|
| Body          | A351 CF8M  | 1  |   |
| Disc          | A240 316SS   | 1  |   |
| Yoke          | A351 CF8   | 1  |   |
| Stem          | A276 304   | 1  |   |
| Body Seat     | A351 CF8M  |  | Integral  |
| Packing       | PTFE/FIBER   | 1 Set  | Non-Asbestos  |
| Packing Gland | A351 CF8   | 1  |   |
| Gland Bolt    | A193 B8  | 1 Set  |   |
| Gland Nut     | A194 8   | 1 Set  | Nylon Lock Nut  |
| Yoke Bolt     | A193 B8  | 4  |   |
| Yoke Nut      | A194 8   | 4  |   |
| Clevis Bolt   | A193 B8  | 2  |   |
| Clevis Nut    | A194 8   | 2  | Nylon Lock Nut  |
| Yoke Sleeve   | BRASS  | 1  |   |
| Thrust Washer | BRASS  | 1  |   |
| Hand Wheel    | DUCTILE IRON   | 1  |   |
| Name Plate    | ALUMINUM   | 1  |   |
| Lock Washer   | A240 304   | 1  |   |
| Wheel Nut     | STEEL  | 1  |   |
| Bottom Wedge  | A351 CF8M  |  | Integral  |
| Rivet         | ALUMINUM   | 2  |   |
| Grease Nipple | ASS'Y  | 1  |   |
|               | Body<br>Disc<br>Disc<br>Yoke<br>Stem<br>Body Seat<br>Packing<br>Packing Gland<br>Gland Bolt<br>Gland Bolt<br>Gland Nut<br>Yoke Bolt<br>Yoke Bolt<br>Clevis Bolt<br>Clevis Bolt<br>Clevis Bolt<br>Clevis Nut<br>Yoke Sleeve<br>Thrust Washer<br>Hand Wheel<br>Name Plate<br>Lock Washer<br>Wheel Nut<br>Bottom Wedge<br>Rivet | BodyA351 CF8MDiscA240 316SSYokeA351 CF8StemA276 304Body SeatA351 CF8MPackingPTFE/FIBERPacking GlandA351 CF8Gland BoltA193 B8Gland NutA194 8Yoke BoltA193 B8Clevis BoltA193 B8Clevis NutA194 8Yoke SleeveBRASSThrust WasherBRASSHand WheelDUCTILE IRONName PlateALUMINUMLock WasherA240 304Wheel NutSTEELBottom WedgeA351 CF8MRivetALUMINUM | BodyA351 CF8M1DiscA240 316SS1YokeA351 CF81YokeA351 CF81Body SeatA351 CF8M1Body SeatA351 CF8M1PackingPTFE/FIBER1 SetPacking GlandA351 CF81Gland BoltA193 B81 SetGland NutA194 81 SetYoke BoltA193 B84Yoke NutA194 82Clevis BoltA193 B82Clevis NutA194 82Yoke SleeveBRASS1Hand WheelDUCTILE IRON1Name PlateALUMINUM1Lock WasherA240 3041Wheel NutSTEEL1Bottom WedgeA351 CF8M2 |

#### **Packing Options**

| Туре                              | Temperature<br>Limit |
|-----------------------------------|----------------------|
| PTFE Impregnated Fiber (Standard) | 425°F                |
| Pure TFE                          | 425°F                |
| TFE Fiber (Ultra)                 | 500°F                |
| Graphite Filament Yarn            | 1000°F               |

#### **Figure Number Matrix**

| FN    | FNW 67 B <u>Size</u> |         |  |  |  |  |
|-------|----------------------|---------|--|--|--|--|
|       | SIZE CODE            |         |  |  |  |  |
| 3 = M | 10 = 10              | 18 = 18 |  |  |  |  |
| 4 = P | 12 = 12              | 20 = 20 |  |  |  |  |
| 6 = U | 14 = 14              | 24 = 24 |  |  |  |  |
| 8 = X | 16 = 16              | 30 = 30 |  |  |  |  |

#### Flow Coefficients, Port Areas, & Weights

A351 CF8

ASS'Y

A351 CF8

A193 B8

A194 8

1

2

1

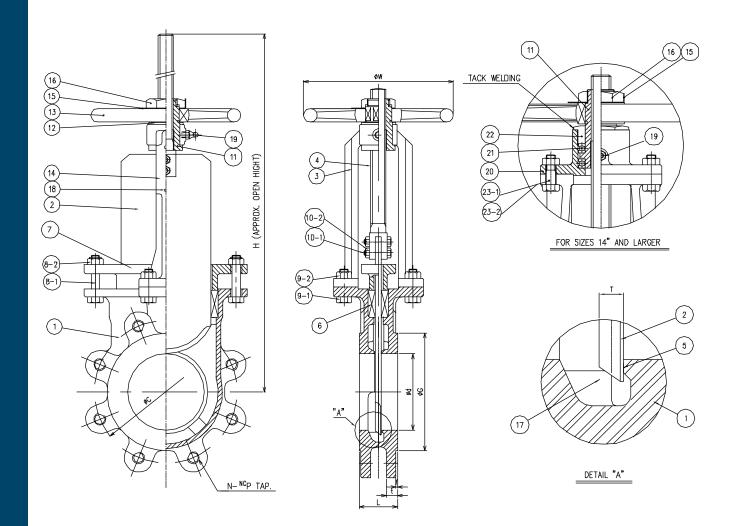
4

4

Tack Weld

| Size | Cv     | Port Area (in <sup>2</sup> ) | Wt. (Lbs) |  |
|------|--------|------------------------------|-----------|--|
| 3    | 290    | 6.65                         | 24        |  |
| 4    | 550    | 12.69                        | 36        |  |
| 6    | 1,220  | 28.07                        | 47        |  |
| 8    | 2,070  | 47.76                        | 70        |  |
| 10   | 3,250  | 74.78                        | 116       |  |
| 12   | 4,880  | 112.48                       | 153       |  |
| 14   | 5,960  | 137.4                        | 204       |  |
| 16   | 7,830  | 180.41                       | 305       |  |
| 18   | 10,130 | 233.32                       | 364       |  |
| 20   | 12,580 | 289.68                       | 534       |  |
| 24   | 18,380 | 423.61                       | 680       |  |
| 30   | 29,150 | 671.62                       | 1330      |  |

#### **Standard Materials**



#### **Dimensions (inches)**

| Size | L    | Ød    | ØG    | ØC    | Ν  | №Р         | t    | f    | Т     | ØW    | Н      |
|------|------|-------|-------|-------|----|------------|------|------|-------|-------|--------|
| 3    | 2.00 | 2.91  | 5.00  | 6.00  | 4  | 5/8" - 11  | 0.59 | 0.08 | 0.315 | 7.09  | 17.32  |
| 4    | 2.00 | 4.02  | 6.18  | 7.50  | 8  | 5/8" - 11  | 0.59 | 0.08 | 0.315 | 9.84  | 20.51  |
| 6    | 2.25 | 5.98  | 8.50  | 9.50  | 8  | 3/4" - 10  | 0.63 | 0.10 | 0.315 | 9.84  | 25.91  |
| 8    | 2.75 | 7.80  | 10.63 | 11.75 | 8  | 3/4" - 10  | 0.75 | 0.10 | 0.315 | 11.81 | 31.42  |
| 10   | 2.75 | 9.76  | 12.76 | 14.25 | 12 | 7/8" - 9   | 0.83 | 0.10 | 0.39  | 13.78 | 38.94  |
| 12   | 3.00 | 11.97 | 15.00 | 17.00 | 12 | 7/8" - 9   | 0.87 | 0.10 | 0.39  | 15.75 | 45.16  |
| 14   | 3.00 | 13.23 | 16.26 | 18.75 | 12 | 1" - 8     | 0.94 | 0.12 | 0.55  | 15.75 | 50.63  |
| 16   | 3.50 | 15.16 | 18.50 | 21.25 | 16 | 1" - 8     | 1.06 | 0.12 | 0.55  | 19.69 | 58.19  |
| 18   | 3.50 | 17.24 | 20.98 | 22.75 | 16 | 1-1/8" - 7 | 1.06 | 0.12 | 0.55  | 19.69 | 64.29  |
| 20   | 4.50 | 19.21 | 22.99 | 25.00 | 20 | 1-1/8" - 7 | 1.18 | 0.12 | 0.71  | 21.65 | 71.30  |
| 24   | 4.50 | 23.23 | 27.24 | 29.50 | 20 | 1-1/4" - 7 | 1.18 | 0.12 | 0.71  | 21.65 | 82.76  |
| 30   | 4.75 | 29.25 | 33.74 | 36.00 | 28 | 1-1/4" - 7 | 1.26 | 0.12 | 0.71  | 23.62 | 104.33 |



# Figure 67B **KNIFE GATE VALVES**

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DOC: FNW67B05 Ver. 4/2012

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