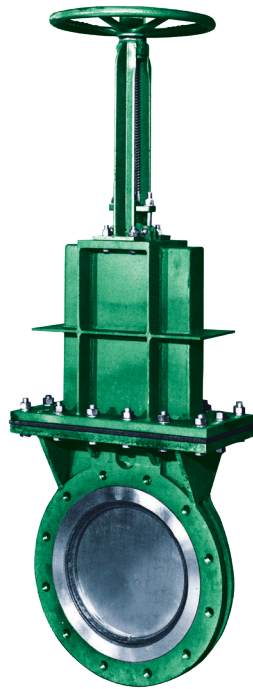




CLARKSON BONNETED KNIFE GATE VALVE

FIGURE 220

Fully rated, bonneted knife gate, for critical services in a variety of industries.



FEATURES

- Fully rated, totally enclosed bonnet.
- Stem-packed design is easier to maintain and provides an excellent atmospheric barrier.
- Can be built for fully buried service.
- Made with cast 304, 316 and 317 solid cast stainless steel body or fabricated from any alloy.
- Precision machined seat with multiple gate guides provides tight one-way shutoff.
- Meets MSS-SP81 leakage requirements, not to exceed 40 cc per inch per minute at 2.8 bar (40 psi).
- Beveled gate cuts through solids.
- Full operation, leakage and cycling tests.
- Certified test reports on request.

Full range of operators and accessories:

- Handwheel (standard)
- Bevel gear
- Lock-Pin for open, closed or both
- Air/Hydraulic/Spring cylinders
- Electric motor operators
- Control accessories
- Extension stems, floorstands, stem guides

GENERAL APPLICATIONS

- For severe service and specialty applications
- Pulp and paper
- Waste water
- Chemical
- Power

TECHNICAL DATA

Size range: DN 50 - 600 (NPS 2 - 24)
1000 kPa (150 psi) CWP

Pressure rating: Designed and tested to MSS-SP81 Above DN 600 (NPS 24) designed to suit application including sizes through DN 600 (NPS 24)

CLARKSON BONNETED KNIFE GATE VALVE

FIGURE 220

ADVANTAGES

Knife gate valves are especially suited for today's process industries. Designed to shut-off liquids, slurries and solids, they are extremely cost effective and offer several advantages over plug valves, butterfly valves and ball valves.

The valves feature a round, unobstructed port which allows more GPM with less wear on the port and seat areas when compared to other valve types. Difficult mediums such as pulp stock, fly ash, sludge and limestone slurries flow through with low pressure drop and minimal valve wear.

SPECIFICATION

Bonneted knife gate valve, 1000 kPa (150 psi) design for 1000 kPa (150 psi) CWP, cast stainless steel one piece body with fabricated fully rated, pressure retaining bonnet. Body to have face-to-face per MSS-SP81 with seating provided by a machined metal seat for tight shut-off in one direction with gate guides and seating wedges adequate to withstand full reverse pressure without damage with gate in fully closed position and lug style port flanges drilled and tapped to ASME B16.5/150 with machined raised gasket faces. Gate to be stainless steel finish ground or machined with 45° bevel. Bonnet to be fabricated from heavy plate and sheet with the wetted parts the same material as the cast body complete with carbon steel or better bonnet flanges and external stiffeners. To prevent atmospheric leakage, the bonnet features an adjustable packing assembly consisting of multiple layers of braided ASBESTOS FREE PTFE IMPREGNATED SYNTHETIC or equal packing around valve stem evenly compressed by a cast stainless steel one-piece packing gland. Valve is equipped with a manual handwheel operator assembly featuring a cast ductile iron handwheel, a heavy-duty foot mounted yoke with an acid resistant bronze stem nut and a stainless steel rising stem the same material as the body. All nonferrous exterior surfaces shall be painted to Emerson standard. Specify **Clarkson Figure 220**.

K_v^* (C_v❖) VALUES

Size DN (NPS)	Area of opening	Flow
50 (2)	20.0 (3.1)	1.09 (288)
80 (3)	45.8 (7.1)	2.46 (649)
100 (4)	81.3 (12.6)	4.37 (1154)
150 (6)	182.6 (28.3)	9.83 (2596)
200 (8)	324.5 (50.3)	17.48 (4618)
250 (10)	506.5 (78.5)	25.00 (6605)
300 (12)	729.0 (113)	36.19 (9561)
350 (14)	941.3 (145.9)	48.02 (12686)
400 (16)	1217.4 (188.7)	56.32 (14878)
450 (18)	1551.6 (240.5)	69.62 (18391)
500 (20)	1926.4 (298.6)	81.10 (21424)
600 (24)	2798.1 (433.7)	116.79 (30852)

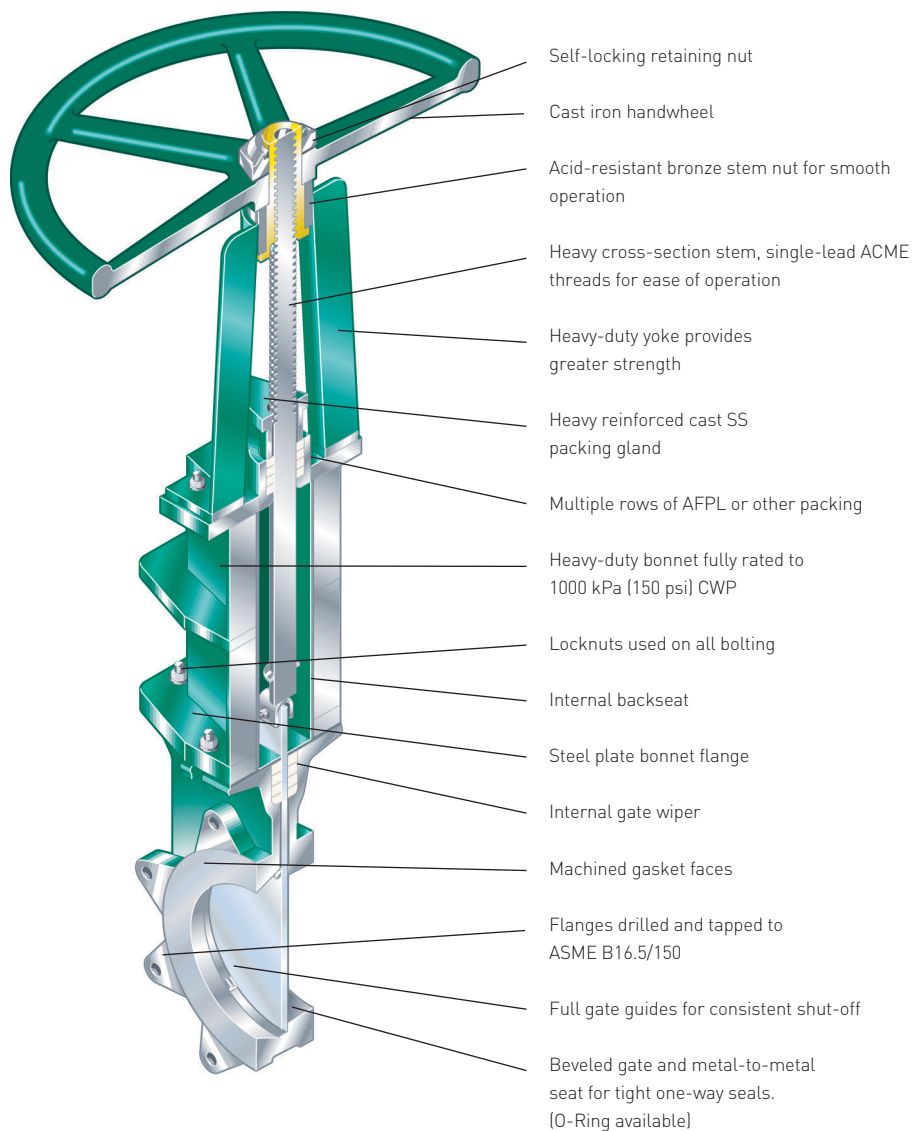
NOTES

* Area is in square centimeters. Flow is in cubic meters per minute of water at 0.07 bar pressure drop.

❖ Area is in square inches. Flow is gallons per minute (GPM) of water at 1 psi pressure drop.

CLARKSON BONNETED KNIFE GATE VALVE

FIGURE 220



* Sizes DN 50 (NPS 2) thru DN 600 (NPS 24) use a solid cast stainless steel body with a fabricated bonnet; fully fabricated versions feature a smooth-flowing die-formed body.

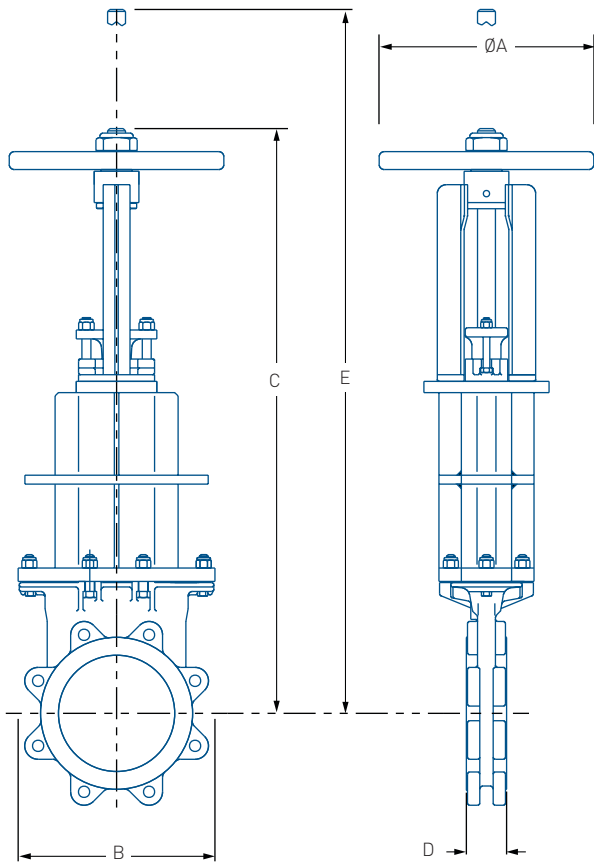
CODE OF MATERIAL

Item	A	B	C	D	F	H	K
Seat	304	316	304	316	304	317L	317L
Wetted body and bonneted parts	304	316	304	316	Carbon steel	317L	317L
Gate	304	316	304	316	304	317L	317L
Stem	304	316	304	316	304	317L	317L
Flange faces	304	316	304	316	Carbon steel	317L	317L
Flanges/gussets	Carbon steel	Carbon steel	304	316	Carbon steel	Carbon steel	317L
Packing gland	316	316	316	316	316	316	317L
Packing	AFPL	AFPL	AFPL	AFPL	AFPL	AFPL	AFPL
Bolting	Plated steel	Plated steel	304	304	Plated steel	Plated steel	304
Yoke	Carbon steel	Carbon steel	304	304	Carbon steel	Carbon steel	304
Handwheel	Cast ductile	Cast ductile	Cast ductile	Cast ductile	Cast ductile	Cast ductile	Cast ductile

AFPL is an asbestos free PTFE impregnated synthetic packing suitable for services up to 260°C (500°F) and a pH of 3-11, other packings are available.

CLARKSON BONNETED KNIFE GATE VALVE

FIGURE 220



DIMENSIONS mm (inches)

Size DN (NPS)	ØA	B	C	D	E	Weight kg (lbs)
50 (2)	300 (12.00)	152.40 (6.00)	543.05 (21.38)	47.63 (1.88)	609.60 (24.00)	30 (66.00)
80 (3)	300 (12.00)	190.50 (7.50)	543.05 (21.38)	50.80 (2.00)	609.60 (24.00)	31 (68.20)
100 (4)	300 (12.00)	228.60 (9.00)	612.90 (24.13)	50.80 (2.00)	704.85 (27.75)	35 (77.00)
150 (6)	300 (12.00)	279.40 (11.00)	758.95 (29.88)	57.15 (2.25)	901.70 (35.50)	49 (107.80)
200 (8)	300 (12.00)	342.90 (13.50)	917.70 (36.13)	69.85 (2.75)	1111.25 (43.75)	85 (187.00)
250 (10)	400 (16.00)	406.40 (16.00)	1047.75 (41.25)	69.85 (2.75)	1292.35 (50.88)	114 (250.80)
300 (12)	400 (16.00)	482.60 (19.00)	1212.85 (47.75)	76.20 (3.00)	1511.30 (59.50)	161 (354.20)
350 (14)	500 (20.00)	533.40 (21.00)	1466.85 (57.75)	76.20 (3.00)	1813.05 (71.38)	198 (435.60)
400 (16)	500 (20.00)	596.90 (23.50)	1625.60 (64.00)	88.90 (3.50)	2025.65 (79.75)	263 (578.60)
450 (18)	500 (20.00)	635.00 (25.00)	1778.00 (70.00)	88.90 (3.50)	2222.50 (87.50)	299 (657.80)
500 (20)	500 (20.00)	698.50 (27.50)	1882.90 (74.13)	114.30 (4.50)	2368.55 (93.25)	368 (809.60)
600 (24)	500 (20.00)	812.80 (32.00)	2219.45 (87.38)	114.30 (4.50)	2806.70 (110.50)	521 (1146.20)

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