CLARKSON KNIFE GATE VALVES

FIGURE 952

Lugged style, uni-directional knife gate valves

FEATURES

- Compact design
- Self-aligning gland box
- 316 S/S valve body construction for superior corrosion resistance
- One piece integral cast body, chest and lugs
- Integral cast in gate wedges minimize flow obstructions
- High quality gate finish for optimum sealing
- High flow rates with low pressure drops
- Integral RTFE gate scraper
- Gate guides to support gate
- A range of seat options available
- Complies with MSS SP-81 face-to-face dimensions
- All valves are pressure tested to MSS SP-81.
- Maintenance friendly

GENERAL APPLICATIONS

The Clarkson F952 is designed for a wide range of applications such as:

- Pulp and paper
- Mining
- Effluent handling plants
- Chemical plants
- Food and beverage
- Fly ash handling plants
- Bulk conveying
- Corrosive environments

TECHNICAL DATA

Size range:	DN 50 - 600 (NPS 2 - 24)
Temperature rating:	150°C (300°F) RTFE seated 150°C (300°F) FKM seated 230°C (445°F) 316 S/S seated
Pressure rating:	1000 kPa/10 bar (150 psi) at cold working pressure (non-shock)

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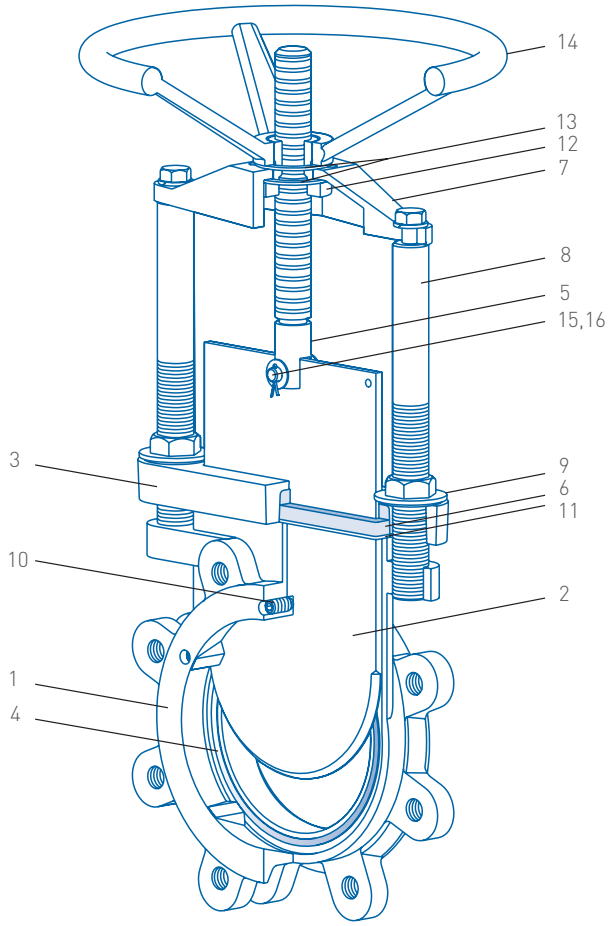
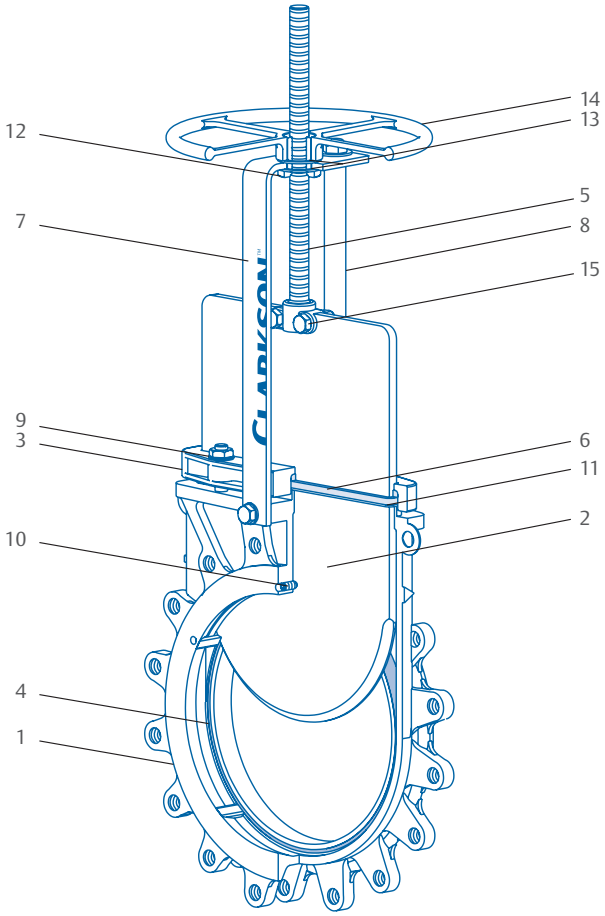
FIGURE 952



Note: DN 50 - 200 (NPS 2 - 8) valve illustrated.



Note: DN 250 - 600 (NPS 10 - 24) valve illustrated.

PARTS LIST

No.	Description	Material
1	Body	316 S/S
2	Gate#	316 S/S, SAF 2205 or SAF2507
3	Gland box	304 S/S
4	Seat	RTFE, Metal or FKM
5	Spindle	304 S/S
6	Gland packing	K-LON•
7	Bridge (DN 50 - 200 / NPS 2 - 8)	304 S/S
	Upstand (DN 250 - 600 / NPS 10 - 24)	Painted mild steel
8	Pillar	304 S/S or painted mild steel
9	Glandbox washer	Nylon
10	Gate guide	S/S RTFE tipped
11	Gate scraper	RTFE
12	Handwheel nut	Leaded gunmetal
13	Thrust washer	Nylon
14	Handwheel	S/S (non-rising) or S.G Iron (rising)
15	Clevis pin	304 S/S
16	Split pin	304 S/S
17	All fasteners	304 S/S

OPTIONS

- F738 Pneumatic actuators
- Electric actuators
- Bevel gear operators
- Chainwheels
- F459 Quick acting lever (DN 50 - 200 / NPS 2 - 8)
- F791 Solenoid valves
- Limit switches
- F793 Positioners
- F493 Pneumatic failsafe
- Deflection cones
  - Chrome iron
  - Polyurethane (DN 50 - 300 / NPS 2 - 12)
- Safety guards and shrouds

NOTES

\# Gate is PTFE coated when used with FKM seat.

• Other packing materials available on request.

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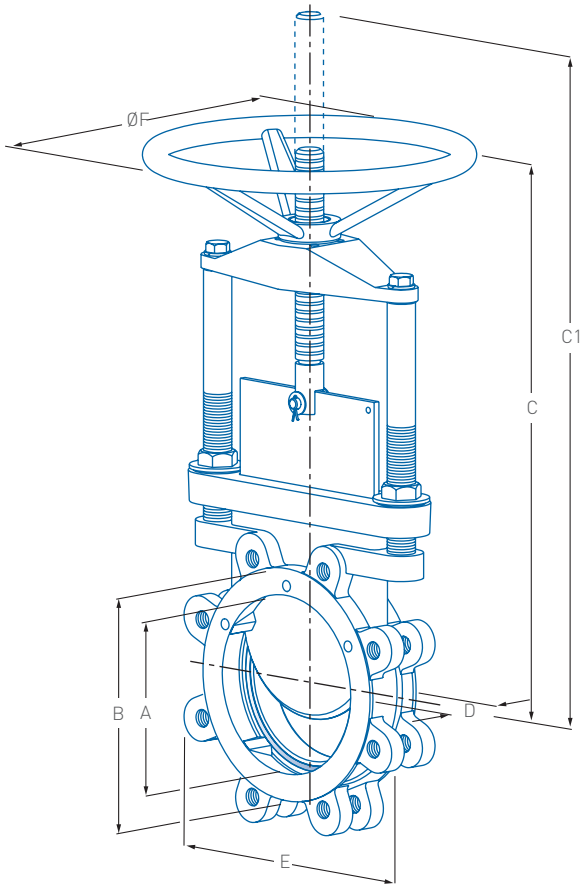
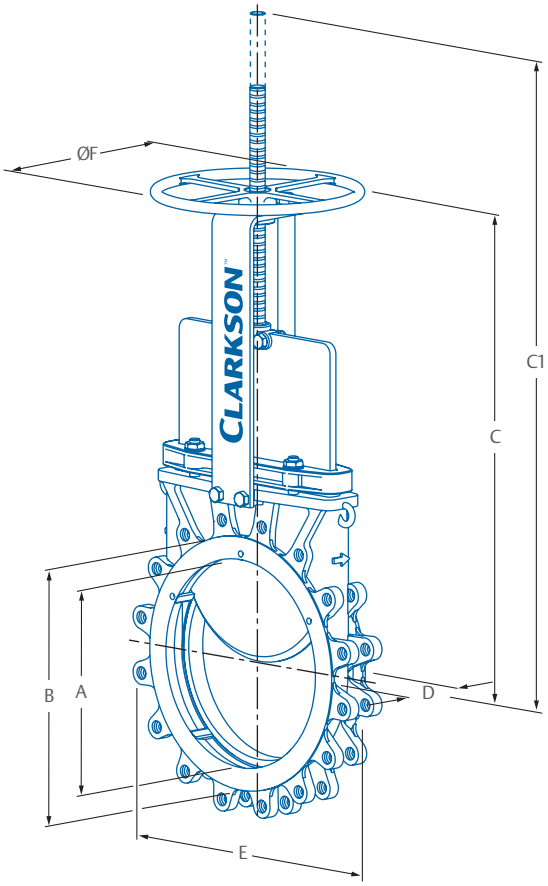
FIGURE 952



Notes: DN 50 - 200 (NPS 2 - 8) valve illustrated.
Number of lugs is dependent upon flange drilling.



Notes: DN 250 - 600 (NPS 10 - 24) valve illustrated.
Number of lugs is dependent upon flange drilling.

DIMENSIONS mm (inches)

Valve size DN (NPS)	Bore (downstream) A	B	Rising spindle (closed) C	(open) C1	Non-rising C	D	E	ØF	Nom. mass manual kg (lbs)	K_v* (C_v❖) at full open
50 (2)	50 (1.97)	92 (3.62)	264 (10.39)	295 (11.60)	-	49 (1.90)	159 (6.30)	200 (8)	7 (15)	223 (258)
65 (2½)	65 (2.60)	108 (4.25)	284 (11.18)	316 (12.45)	-	49 (1.90)	177 (6.80)	200 (8)	8 (18)	368 (425)
80 (3)	80 (3.15)	127 (5.00)	324 (12.76)	391 (15.40)	-	52 (2.00)	192 (7.50)	200 (8)	10 (22)	557 (643)
100 (4)	100 (3.94)	157 (6.20)	358 (14.10)	425 (16.75)	-	52 (2.00)	222 (8.75)	200 (8)	12 (26)	909 (1050)
125 (5)	125 (4.92)	186 (7.32)	450 (17.72)	519 (20.43)	-	58 (2.25)	256 (10.00)	300 (12)	18 (40)	1416 (1635)
150 (6)	150 (5.91)	212 (8.35)	487 (19.17)	579 (22.80)	-	58 (2.25)	285 (11.10)	300 (12)	22 (48)	2112 (2439)
200 (8)	200 (7.87)	270 (10.63)	602 (23.70)	746 (29.37)	-	71 (2.75)	325 (13.40)	300 (12)	34 (75)	4065 (4695)
250 (10)	250 (9.84)	326 (12.83)	726 (28.60)	908 (35.75)	693 (27.30)	71 (2.80)	406 (16.00)	400 (14)	47 (103)	6850 (7912)
300 (12)	300 (11.81)	380 (15.00)	825 (32.50)	1057 (41.60)	793 (31.22)	76 (3.00)	474 (11.65)	400 (14)	74 (163)	9863 (11392)
350 (14)	330 (13.00)	452 (17.80)	881 (34.70)	1144 (45.04)	848 (33.40)	76 (3.00)	520 (20.47)	400 (14)	93 (205)	11858 (13696)
400 (16)	378 (14.88)	480 (18.90)	968 (38.10)	1281 (50.43)	935 (36.81)	89 (3.50)	584 (23.00)	400 (14)	121 (266)	15590 (18006)
450 (18)	425 (16.73)	540 (21.25)	1095 (43.10)	1450 (57.10)	1084 (42.68)	89 (3.50)	628 (24.72)	600 (24)	170 (374)	20165 (23291)
500 (20)	475 (18.70)	585 (23.03)	1192 (46.93)	1598 (62.91)	1181 (46.50)	114 (4.50)	696 (27.40)	600 (24)	212 (466)	25117 (29010)
600 (24)	571 (22.48)	692 (27.25)	1400 (55.12)	1881 (74.06)	1369 (53.90)	114 (4.50)	822 (32.36)	600 (24)	312 (686)	36896 (42615)

NOTES

D = The face to face dimension

E = The maximum valve or upstand clearance dimension for installation

K_v* = The flow rate of water in m^3/hr that will pass through a valve with a differential pressure of 1 bar (100 kPa) at 20°C

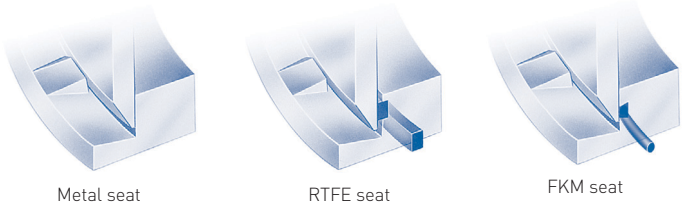
C_v❖ = The volume of water in US gpm that will pass through a valve with a differential pressure of 1 psi at 60°F

C_v = 1.155 K_v

Dimensions are nominal.

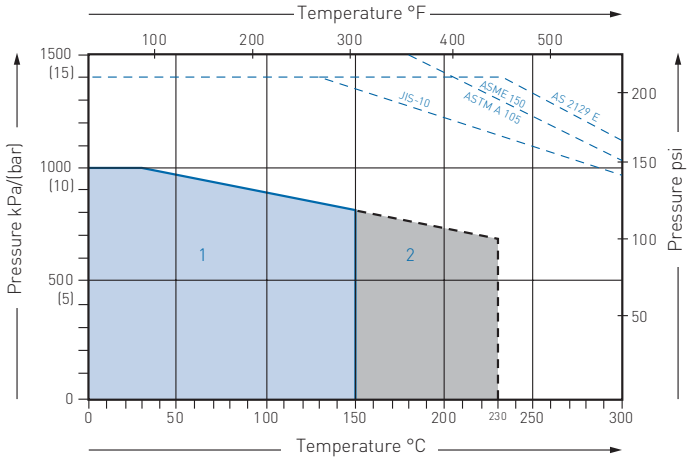
Larger sizes are available upon request.

STANDARD SEAT DETAIL



Metal seat | RTFE seat | FKM seat

PRESSURE/TEMPERATURE GRAPH



NOTES

1. RTFE seated valve trim code number is 176.
   FKM seated valve trim code number is 180.
2. Metal - 316 S/S seated valve trim code number is 170.
   Trim code 170 valves are available in a high temperature configuration which increases allowable valve operating temperature up to 650°C (1200°F) with certain limitations on pressure rating and sealing performance. Material substitutions for high temperature construction:
   - 316 S/S Gate Scraper
   - Graphite-based Gland Packing
   - 316 S/S Backpressure Ring (replaces Gate Guides)
   - LG2 Bronze Thrust Washers
   - 316 S/S Glandbox Washers

   Consult Emerson's engineering department on all applications with expected temperatures 427°C (800°F) and above.
   Metal - 304 S/S seated valve trim code number is 185.

PRESSURE/TEMPERATURE RATINGS

Metal seated
1000 kPa/10 bar (150 psi) at 20°C (68°F)
700 kPa/7 bar (100 psi) at 230°C (445°F)

RTFE seated
1000 kPa/10 bar (150 psi) at 20°C (68°F)
770 kPa/7.7 bar (110 psi) at 150°C (300°F)

FKM seated
1000 kPa/10 bar (150 psi) at 20°C (68°F)
770 kPa/7.7 bar (110 psi) at 150°C (300°F)

SELECTION GUIDE

Example:		250	F952	170	AS 2129 E
Valve size	DN 50 - 600 (NPS 2 - 24)				
Figure number					
F952	Lugged style rising spindle uni-directional valve				
Trim	See table				
End connections (to suit)					
AS 2129	Table C, D, E metric threads				
ASME B16.5	Class 125 and 150 UNC threads				
BS 4504	PN 10 and 16				
JIS B2210	Table 5, 10				
DIN 2501	Table 10, 16				
ASME B16.5	Class 125 and 150 metric threads (for N.Z.)				

Trim code	Body	Gate	Seat	Gland box	Bridge	Spindle	Packing
170	316 S/S	316 S/S	316 S/S	304 S/S	304 S/S	304 S/S	K-LON
176	316 S/S	316 S/S	RTFE	304 S/S	304 S/S	304 S/S	K-LON
180	316 S/S	316 S/S / PTFE*	FKM	304 S/S	304 S/S	304 S/S	K-LON

NOTES

* Gates are 316 S/S, coated with PTFE.

Non-rising spindle design available upon request.

Vertical Pipe and Back Pressure Applications

An optional backpressure ring is available to replace gate guides. It is strongly recommended for applications where the unidirectional F952 valve may be subjected to backpressure from downstream process media or installed in a horizontal orientation (vertical pipe) where gate weight is not supported by the seating surface. Installing the product in one of these applications without the backpressure ring may lead to gate galling, increased thrust requirements to actuate the valve, and reduced product life.

NOTE

To minimize risk to personnel, Emerson recommends the use of purpose built guards and shrouds.
Refer to the Emerson data sheet or consult factory for details.

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