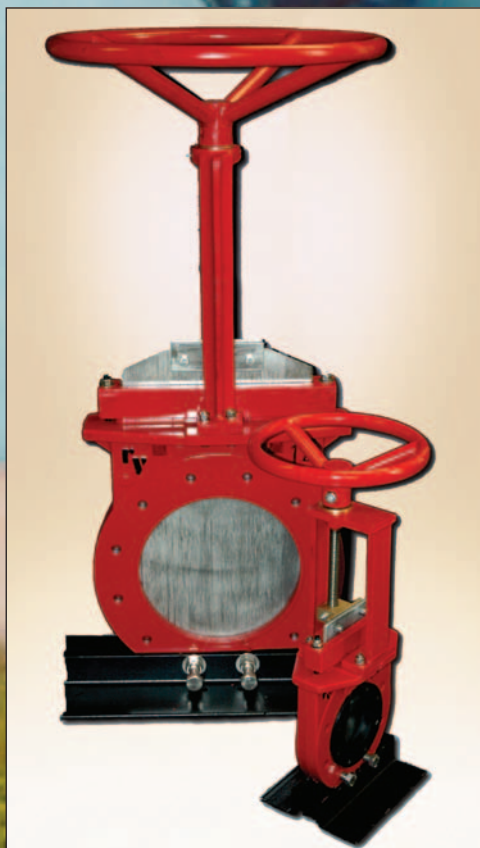


# Red Valve

FLEXGATE VALVE Bi-directional Slurry Knifegate Valve

---



# Flexgate Slurry Knife Gate Valves

Specially designed for use on slurries

① Cast Iron or Ducted Body through 30"  
Fabricated Steel 30"- 60"

② Bi-Directional,  
Drop-Tight Shutoff

③ Durable Slurry Sleeves  
(sleeves are replaceable without  
disassembling the valve)

④ Seat Locking Ring (optional)

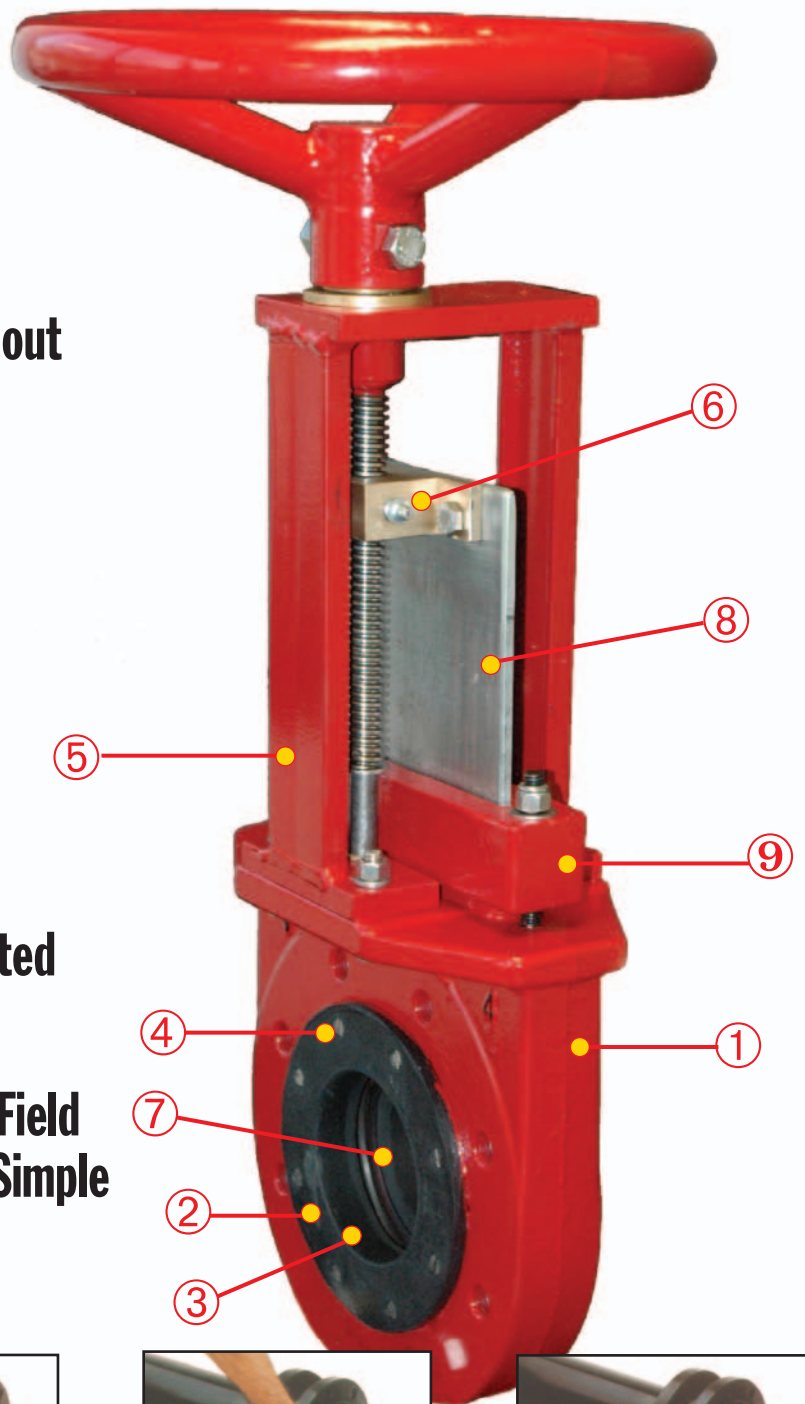
⑤ Heavy-Duty Top Works

⑥ Non-Rising Stem Feature  
for Limited Spaces

⑦ 100% Full-Port Design

⑧ Heavy-Duty High Pressure Rated  
Stainless Steel Gate

⑨ Inverted Packing Box Makes Field  
Replacement of the Packing Simple







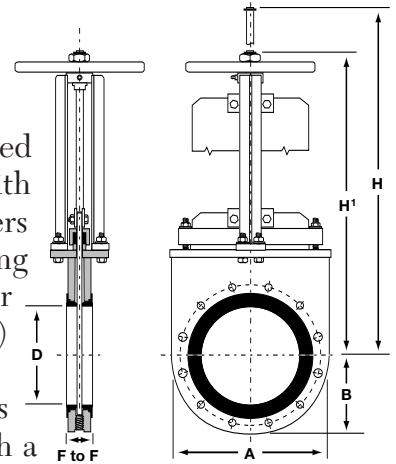
# Flexgate Manual



Red Valve's Flexgate Slurry Knife Gate Valve is built with a cast iron or fabricated steel body and features a heavy-duty stainless steel gate. Removable rubber cartridge seats on either side of the gate provide a bi-directional seal and excellent wear resistance. The seats are metal reinforced and available in a wide variety of elastomers for abrasion resistance and chemical compatibility. A port at the base of the valve allows for flushing.

The Flexgate Valve provides a bi-directional shutoff. A heavy-duty topworks is standard. The relatively simple design eliminates expensive overhauls, unscheduled shutdowns and costly replacement parts – the only replacement parts are the slurry seats and packing.

Flexgate Valves of 3" - 12" are provided with standard hand-wheel mechanisms featuring cast iron handwheels, machined 303 stainless steel stems with yoke sleeves and thrust washers designed to reduce operating torque. Flexgates 14" and larger feature fabricated (tubular) handwheels. It is recommended that manual Flexgate Valves 12" and larger be specified with a 4:1 bevel gear actuator to reduce rim pull. Pneumatic and electric operators are available.



## 3 Materials of Construction

- ▶ Cast iron body through 30"; fabricated steel 36" - 72"; optional 304 SS or 316 SS body
- ▶ Gate ASTM A240 T-316 Optional 17-4 pH, Hastelloy C or teflon-coated 316 stainless steel
- ▶ Slurry sleeves available in Pure Gum Rubber, Buna-N, EPDM and Viton®

\* Consult factory

Valve Size D	Length F to F	Width A	Height B	Height Closed H	Open H'	Height Pneumatic Actuated	Stem Diameter	Gate Thickness	Max. Working Pressure (psi)	
									Gate Material	
									316 SS	17-4 pH
3"	2"	8"	3 7/8"	17 1/8"	20 3/8"	27 1/2"	3/4"	1/4"	150	150
4"	2"	9 1/4"	4 3/4"	18 1/4"	22 5/8"	29 1/2"	3/4"	1/4"	150	150
6"	2 1/4"	11 1/2"	5 7/8"	21 1/16"	27 3/16"	33 1/2"	1"	1/2"	150	150
8"	2 3/4"	14"	7"	26 9/16"	34 9/16"	38 5/8"	1"	1/2"	150	150
10"	2 3/4"	16 3/4"	8 3/8"	32 7/16"	43 5/8"	49 7/8"	1"	1/2"	150	150
12"	3"	20 1/8"	10 1/16"	37"	50 7/8"	55"	1"	1/2"	100	150
14"	3"	21 1/2"	11"	43 5/8"	57 5/8"	59"	1"	9/16"	100	150
16"	3 1/2"	24"	12 1/2"	47 1/2"	63"	63"	1 1/2"	5/8"	100	150
18"	3 1/2"	25 3/4"	13 1/4"	52 5/8"	70"	83 3/4"	1 1/2"	3/4"	100	150
20"	4 1/2"	27 1/2"	13 3/4"	57 15/16"	74 1/8"	*	1 1/2"	7/8"	100	150
24"	4 1/2"	32 1/2"	16"	66 11/16"	86 15/16"	*	1 1/2"	1"	100	150
30"	5"	38 3/4"	19"	88 5/8"	120 5/8"	*	2"	1 1/8"	75	125
36"	5 1/8"	46"	23"	96"	134 7/8"	*	2"	1 1/4"	75	125
42"	5 1/8"	53"	26 1/2"	100"	137 1/4"	*	2 1/2"	1 1/4"	50	75
48"	6 3/8"	59 1/2"	29 3/4"	108 3/4"	154 1/4"	*	2 3/4"	1 1/2"	50	75
54"	9"	66 1/4"	33 1/4"	135"	195"	*	3 1/2"	1 1/2"	40	50
60"	9"	73"	36 1/2"	150"	216"	*	3 1/2"	1 1/2"	30	50
66"	9"	80"	40"	165"	237"	*	4"	1 1/2"	25	50
72"	9 1/4"	86 1/2"	43 1/4"	180"	258"	*	4"	1 3/4"	25	50

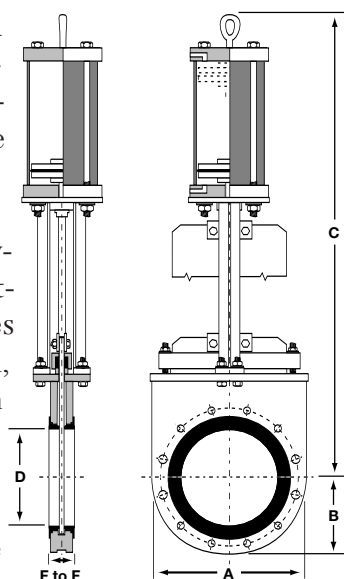
# Flexgate Pneumatic/Electric



Red Valve's Flexgate Valves are available with pneumatic, electric or hydraulic actuators. Other options include limit switches, solenoids and air regulators.

Red Valve manufactures its pneumatic actuators using a fiberglass-reinforced epoxy resin. The actuator material is inert to most corrosive chemicals, hydraulic fluids, water and oil. It has an operating temperature range from -90°F to 225°F and can withstand maximum working pressures of 250 psi. Inside actuator walls are polished and impregnated with molydisulfide for reduced friction and wear.

Electrically actuated Flexgate valves are actuated by AUMA electric operators as a standard. These operators can be supplied with either 220-volt or 440-volt three-phase service and have a NEMA 4 rating. Standard features include Class F insulation, a double-lead ACME stem thread, bronze drive nut, declutchable handwheel override, opening and closing torque and stroke limit switches, three push-button station with selector switch and position indicator.



4

## Elastomer Slurry Sleeve Selection \*

	Pure Gum Rubber	EPDM	Viton®	Buna-N
Continuous Temperature (°F)	165°	250°	300°	180°
Intermittent Temperature (°F)	185°	300°	400°	240°
Minimum Temperature (°F)	-60°	-60°	-10°	-40°
Abrasion Resistance	Excellent	Excellent	Good	Good

\*Consult the Red Valve chemical compatibility charts for final selection.

Valve Size	Working Pressure						Plant Air (psi)
	25 psi	50 psi	75 psi	100 psi	125 psi	150 psi	
3"-4"	RD-4	RD-4	RD-4	RD-4	RD-4	RD-4	60
	RD-4	RD-4	RD-4	RD-4	RD-4	RD-4	80
6"	RD-4	RD-4	RD-4	RD-6	RD-6	RD-6	60
	RD-4	RD-4	RD-4	RD-4	RD-6	RD-6	80
8"	RD-4	RD-6	RD-6	RD-6	RD-6	RD-8	60
	RD-4	RD-4	RD-6	RD-6	RD-6	RD-6	80
10"	RD-6	RD-6	RD-8	RD-8	RD-8	RD-10	60
	RD-4	RD-6	RD-6	RD-6	RD-8	RD-8	80
12"	RD-6	RD-8	RD-8	RD-8	RD-10	RD-10	60
	RD-6	RD-6	RD-8	RD-8	RD-8	RD-10	80
14"	RD-6	RD-8	RD-8	RD-10	RD-10	RD-12	60
	RD-6	RD-6	RD-8	RD-8	RD-10	RD-10	80
16"	RD-6	RD-8	RD-10	RD-10	RD-12	RD-12	60
	RD-6	RD-8	RD-8	RD-10	RD-10	RD-12	80
18"	RD-8	RD-10	RD-10	RD-12	RD-14	RD-14	60
	RD-6	RD-8	RD-10	RD-10	RD-12	RD-12	80

Electric actuators recommended for valve sizes 20"-72" – contact factory for dimensions.

# Non-Rising Flexgate



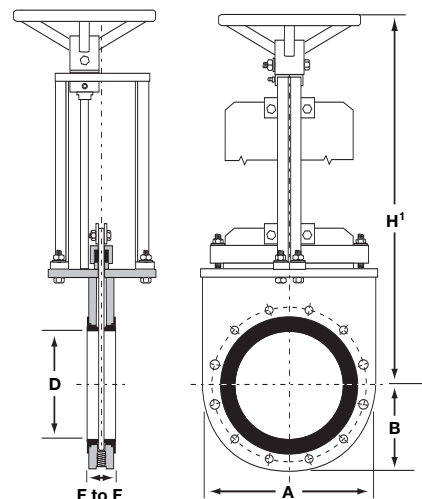
## 5 Materials of Construction

- ▶ Cast iron body through 30"; fabricated steel 36" - 72"; optional 304 SS or 316 SS body
- ▶ Gate ASTM A240 T-316 Optional 17-4 pH, Hastelloy C or teflon-coated 316 stainless steel
- ▶ Slurry sleeves available in Pure Gum Rubber, Buna-N, EPDM and Viton®

Red Valve's Non-Rising Stem Slurry Knife Gate Valve is built to the same engineering standards as the traditional Rising Stem Flexgate Valve. The Non-Rising Stem feature allows this valve to be used in applications where space is limited. Removable rubber cartridge seats on either side of the gate provide a bi-directional seal and excellent wear resistance. The seats are metal reinforced and available in a wide variety of elastomers for abrasion resistance and chemical compatibility. A port at the base of the valve allows for flushing.

The Non-Rising Stem Flexgate Valve provides a bi-directional shutoff. A heavy-duty topworks is standard. The relatively simple design eliminates expensive overhauls, unscheduled shutdowns and costly replacement parts – the only replacement parts are the slurry seats and packing.

Flexgate Valves of 3" - 12" are provided with standard handwheel mechanisms featuring fabricated aluminum tubular handwheels, machined 303 stainless steel stems with yoke sleeves and thrust washers designed to reduce operating torque. It is recommended that manual Flexgate Valves 12" and larger be specified with a 4:1 bevel gear actuator to reduce rim pull. Pneumatic and electric operators are available.



Valve Size D	Length F to F	Width A	Height B	Height Open or Closed H	Stem Diameter	Gate Thickness	Max. Working Pressure (psi)	
							Gate Material	
							316 SS	17-4 pH
3"	2"	8"	3 7/8"	20 1/8"	3/4"	1/4"	150	150
4"	2"	9 1/4"	4 3/4"	21 1/4"	3/4"	1/4"	150	150
6"	2 1/4"	11 1/2"	5 7/8"	24 1/16"	1"	1/2"	150	150
8"	2 3/4"	14"	7"	29 9/16"	1"	1/2"	150	150
10"	2 3/4"	16 3/4"	8 3/8"	35 7/16"	1"	1/2"	150	150
12"	3"	20 1/8"	10 1/16"	40"	1"	1/2"	100	150
14"	3"	21 1/2"	11"	46 5/8"	1"	9/16"	100	150
16"	3 1/2"	24"	12 1/2"	50 1/2"	1 1/2"	5/8"	100	150
18"	3 1/2"	25 3/4"	13 1/4"	55 5/8"	1 1/2"	3/4"	100	150
20"	4 1/2"	27 1/2"	13 3/4"	60 15/16"	1 1/2"	7/8"	100	150
24"	4 1/2"	32 1/2"	16"	69 11/16"	1 1/2"	1"	100	150
30"	5"	38 3/4"	19"	91 5/8"	2"	1 1/8"	75	125

# Packing Replacement Made Easy

In comparison to other knife gate valves, Red Valve's Flexgate design excels in the harshest of slurry services.

Packing used in a Flexgate is captured in an external stuffing box. When the packing first starts to leak, simply tighten the packing stuffer bolts to extend packing life. When the packing needs replaced, the valve can be left in line.

Packing can be changed by following six simple steps:



**1.** Bring the line pressure to zero.

**2.** Detach the gate clevis bolts.



**3.** Rotate the handwheel to provide clearance for the removal of the packing gland.



**4.** Remove the packing gland bolts and lift the packing box off the gate.



**5.** Replace the packing gland assembly.

**6.** Re-fasten the gate and packing gland bolts.

6

## Applications



### Water and Wastewater Treatment Plants

Large-diameter flexgate valves are regularly specified for use in sludge, grit, WAS, RAS and stormwater pumping stations. The bi-directional positive shutoff and reliable performance of Red Valve flexgates make them ideal for a variety of applications, especially is space is limited.

Eight 60" motor-operated knife gate valves have been performing flawlessly at this pump station in Texas since 1986.



# A Complete Line Of Quality Products . . . Built To Beat Slurries



Red Valve Company, Inc.®

600 N. Bell Avenue  
Building 2  
Carnegie, PA 15106

PHONE:  
412/279-0044

FAX:  
412/279-7878

[www.redvalve.com](http://www.redvalve.com)

The information presented in this catalog is provided in good faith. Red Valve Company, Inc. reserves the right to modify or improve its design specifications without notice and does not imply any guarantee or warranty for any of its products from reliance upon the information contained herein. All orders are subject to Red Valve's standard terms and warranty and are subject to final acceptance by Red Valve. Red Valve cannot be held responsible for typographical or printer errors.

Viton and Hypalon are registered trademarks of DuPont Dow Elastomers. Teflon is a registered trademark of the DuPont Company. Redflex, Red Valve and the Red Valve "rv" logo are registered trademarks of Red Valve Company, Inc.

© Red Valve Company, 2001, all rights reserved. Red Valve is a registered trademark of Red Valve Company, Inc.



RECYCLABLE  
PAPER

RVSGNR 3/05

Red Valve's Flexgate Slurry Knife Gate Valve is a heavy-duty, bi-directional valve engineered for operator dependability, low maintenance and excellent abrasion resistance.



Providing a full 360° pressure reading, Red Valve pressure sensors are the industry standard for protecting instrumentation and ensuring accurate, dependable pressure measurement.



*Mr. Spiros G. Raftis, founder  
of Red Valve Company*

Red Valve large-diameter influent control valves are ideal for wastewater treatment plants. Benefits include full-port, no-hang-up design and accurate control.

Red Valve's Series 75 Manual Pinch Valve has the same face-to-face as gate, plug and ball valves. The valve's full-port sleeve is the only wetted part.



Redflex® expansion joints, reducers, rubber pipe, vibration pipe and rubber fittings are the industry standard and are manufactured to 96 inches in diameter.

