

BI-DIRECTIONAL KNIFE GATE VALVE

The **SERIES 11** knife gate is a bi-directional wafer valve designed for general industrial service applications. The design of the body and seat assures a tight shut off in services with suspended solids in industries such as:

- Waste Water Treatment Plants
- Food and Beverage
- Chemical Plants
- etc.

Sizes: 2" to 48" (larger diameters on request)

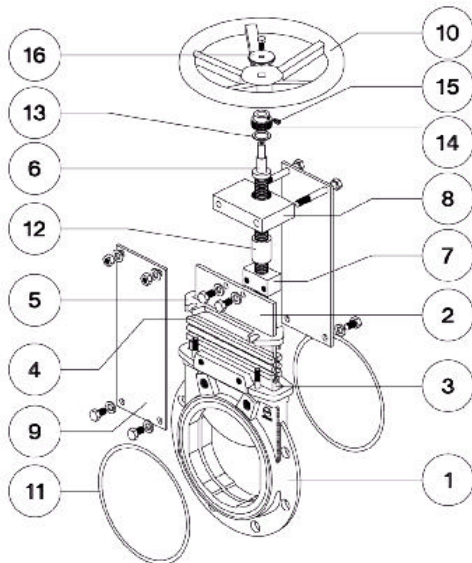
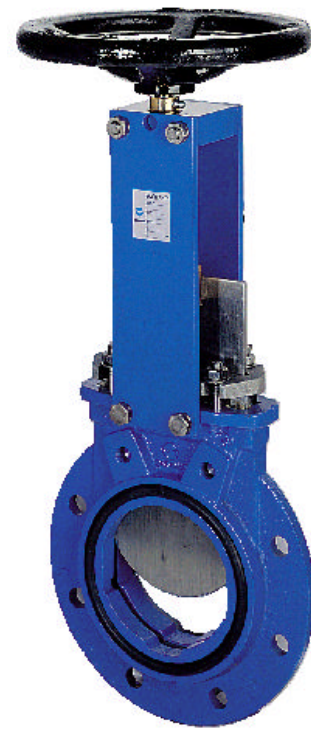
Working Pressure:

Sizes 2" to 10" :	150 PSI
Sizes 12" to 16" :	85 PSI
Size 18" :	70 PSI
Sizes 20" to 24" :	60 PSI
Sizes 28" to 48" :	30 PSI

Standard Flange Connection: ANSI B16.5 (class 150) and DIN PN 10

Face to face dimensions acc. to K1 DIN 3202 up to DN 300.

All valves are tested prior to shipping in accordance with the manufacturers specification developed by the Quality Control department at Orbinox.



STANDARD PARTS LIST

Part:	
1- Body	Cast Iron GG25
2- Gate	AISI 304
3- Seat	EPDM
4- Packing	AH
5- Gland Follower	Aluminum (2" to 24") Cast Iron (28" to 48")
6- Stem	AISI 303
7- Stem Nut	Bronze
8- Yoke	Carbon Steel
9- Support plates	Carbon Steel - Epoxy Coated
10- Handwheel	Cast Iron (2" to 48")
11- O-Ring	EPDM
12- Stopper	Carbon Steel
13- Thrust Washer	Brass
14- Yoke Nut	Brass
15- Grease Nipple	Acc. to DIN 3402
16- Locking Washer	Carbon Steel

DESIGN FEATURES

BODY:

- Wafer style cast monoblock design up to 28” size with reinforced body ribs in larger diameters for extra body strength.
- Internally machined two-part bolted body for sizes 32” and over.
- Full port design for greater flow capacity and minimal pressure drop.
- Internal body gate guides ensure bi-directional shut off.
- Internal design reduces build up of solids that could prevent valve from closing.
- Standard EPDM O-ring on flange connection eliminates installation of gasket.

GATE:

- Blade polished on both sides for a tighter seal in the packing chamber.

SEAT:

- Stainless steel wire reinforced elastomer seal.

PACKING CHAMBER:

- Standard braided cotton with EPDM o-ring for better shut off.
- Long life braided packing is available in a wide range of materials.

NON-RISING STEM:

- Corrosion resistance stainless steel stem.
- Single pitch Acme thread reduces torque on handwheel operator and eliminates installation of a gear operator on larger diameters.

ACTUATORS:

- All Orbinox actuator models are supplied with a standard mounting kit to allow easy installation on site.

YOKE & SUPPORT PLATES:

- EPOXY coated steel (stainless steel available on request).
- Compact design makes it extremely robust even in the most severe conditions.

EPOXY COATING:

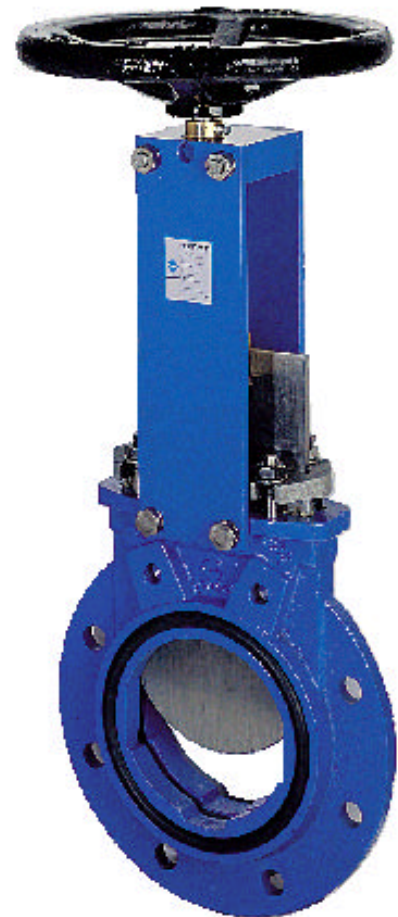
- The electrostatic applied epoxy coating on all ORBINOX cast iron and carbon steel valve bodies and components make the valves corrosion resistant.

GATE SAFETY PROTECTION:

- Gate guards are available upon request for areas where safety is a concern.
- The design feature prevents any objects from getting caught accidentally while the gate is moving.

OTHER MATERIALS:

- Please consult the factory for materials other than standard construction.



ACTUATOR OPTION

- Handwheel (rising or non-rising stem)
- Chainwheel
- Lever
- Bevel Gear (non-rising stem)
- Electric
- Double Acting Pneumatic
- Single Acting Pneumatic
- Hydraulic

All actuators supplied by ORBINOX are interchangeable.

FAIL SAFE SYSTEMS

Used on pneumatic actuated valves.

SINGLE ACTING / SPRING RETURN

Available in sizes 2" to 8", larger on request.

Supply Pressure: Minimum 75 PSI
Maximum 100 PSI

Options: Fail open
Fail close

SINGLE ACTING / VOLUME TANK

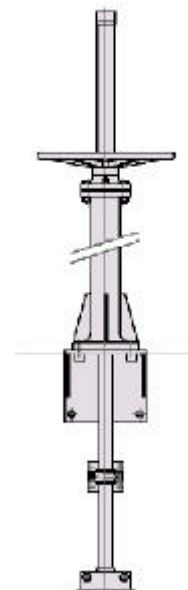
Available in all sizes.

Supply Pressure: Minimum 50 PSI
Maximum 100 PSI

Options: Pneumatic Fail safe
Electro pneumatic Fail safe

ACCESSORIES

- Mechanical Stops
- Locking Device
- Actuator Manual Override
- Solenoid Valves
- Positioners
- Limit Switches
- Electric Controls
- Floor Stands
- Stem Extensions



Wide range of valve extensions available.

For further information about fail safe systems and valve extensions, please refer to SERIES 10 section

For additional information, please consult the factory.

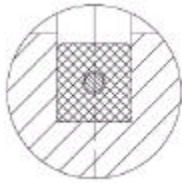


SEAT / SEALS			PACKING		
Material	Max.Temp.(° F)	Applications	Material	Max.Temp.(° F)	pH
EPDM (E)	250	Acids and non mineral oils.	Tallowed cotton (AH)	120	6 - 8
Nitrile (N)	250	Resistance to petroleum products.	Dry cotton (AS)	120	6 - 8
On request:			PTFE impregn. Natural fiber (NT)	250	4 - 12
Viton (V)	390	General chemical service. High temperature.	PTFE impregn. Synth. fiber (ST)	465	2 - 13
			Braided PTFE (TH)	500	0 - 14

More details and other materials on request.

NOTE: Above includes an elastomer O-ring (same material as seal), excluding TH, AG and FC.

SEAT



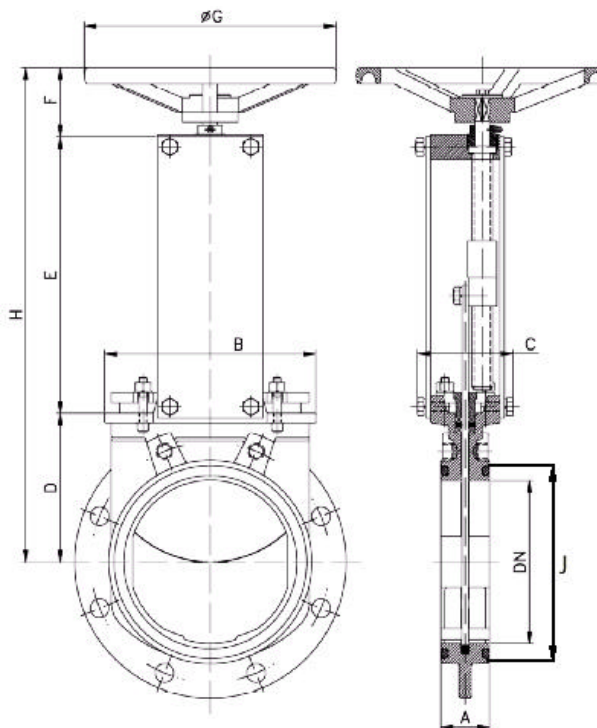
SEAT (Resilient)

A replaceable stainless steel wire reinforced elastomer seal is located in the valve body allowing a bi-directional shut off.



HANDWHEEL (non-rising stem)

- Standard handwheel actuator.
- Options:
 - Locking Device
 - Stem Extension
 - Square Nut Drive
- Valve sizes available in 2" to 24", larger on request.
- For other options and dimensions, please consult our technical department.

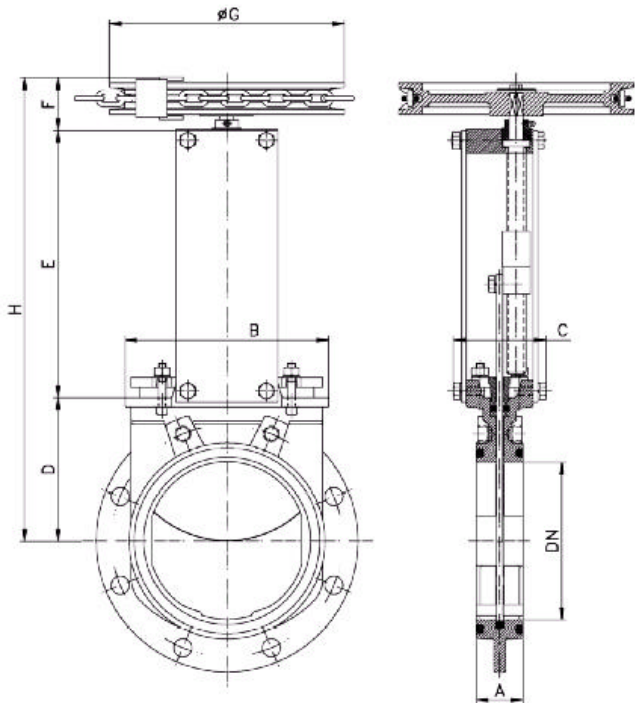


SIZE	A	B	C	D	E	F	OG	H	J	Weight (lbs)
2"	1.7	4.6	3.9	4.1	6.2	2.4	7.9	12.8	2.9	19.8
2.5"	1.8	5.2	3.9	4.5	6.9	2.4	7.9	13.9	3.5	20.9
3"	1.8	5.8	3.9	4.9	7.6	2.4	7.9	14.9	4.1	23.1
4"	2.0	6.6	4.1	5.5	8.5	2.4	7.9	16.5	5.0	28.6
5"	2.2	6.9	4.1	5.9	9.6	2.6	9.8	18.1	6.0	37.4
6"	2.2	7.9	4.1	6.7	10.5	2.6	9.8	19.8	7.0	46.2
8"	2.4	10.2	4.6	7.2	13.4	3.1	11.8	23.7	9.2	72.6
10"	2.7	12.2	4.6	9.0	15.6	3.1	11.8	27.7	11.4	101.2
12"	3.1	14.5	4.6	10.6	17.5	3.1	11.8	31.2	13.4	132.0
14"	3.1	16.7	7.6	12.4	21.8	3.2	16.1	37.4	15.2	198.0
16"	3.1	18.9	7.6	13.8	23.7	3.2	16.1	40.7	17.1	308.0
18"	3.5	20.9	7.8	19.9	25.7	3.2	21.7	48.8	19.2	407.0
20"	3.5	23.4	7.8	17.7	28.1	3.2	21.7	49.0	21.3	448.8
24"	3.9	27.6	7.8	20.1	32.0	3.2	21.7	55.3	25.2	506.0



CHAINWHEEL

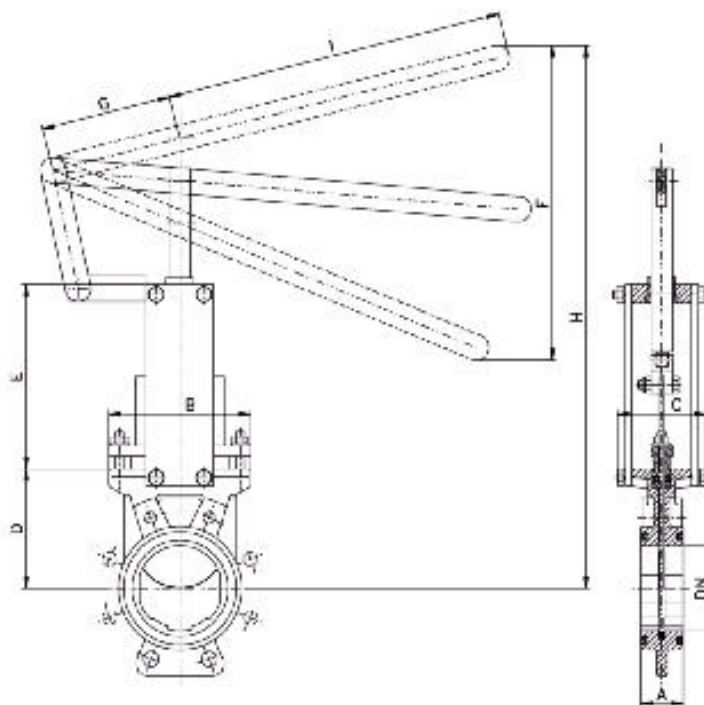
- Recommended for elevated installations.
- Options:
 - Locking Device
 - Stem Extension
- Valve sizes available in 2" to 24", larger on request.
- For other options and dimensions, please consult our technical department.



SIZE	A	B	C	D	E	F	OG	H
2"	1.7	4.6	3.9	4.1	6.2	2.4	8.9	12.7
2.5"	1.8	5.2	3.9	4.5	6.9	2.4	8.9	13.8
3"	1.8	5.8	3.9	4.9	7.6	2.4	8.9	14.8
4"	2.0	6.6	4.1	5.5	8.5	2.4	8.9	16.4
5"	2.2	6.9	4.1	5.9	9.6	2.4	8.9	17.8
6"	2.2	7.9	4.1	6.7	10.5	2.4	8.9	19.5
8"	2.4	10.2	4.6	7.2	13.4	2.7	11.8	23.3
10"	2.7	12.2	4.6	9.0	15.6	2.7	11.8	27.2
12"	3.1	14.5	4.6	10.6	17.5	2.7	11.8	30.7
14"	3.1	16.7	7.6	12.4	21.8	3.0	17.9	37.1
16"	3.1	18.9	7.6	13.8	23.7	3.0	17.9	40.5
18"	3.5	20.9	7.8	19.9	25.7	3.0	17.9	48.5
20"	3.5	23.4	7.8	17.7	28.1	3.0	17.9	48.7
24"	3.9	27.6	7.8	20.1	32.0	3.0	17.9	55.0

LEVER

- Recommended for quick opening and closing.
- Options:
 - Locking Device
- Valve sizes available in 2" to 6".



SIZE	A	B	C	D	E	F	G	H	I
2"	1.7	4.6	3.9	4.1	6.2	8.3	5.9	16.3	12.4
2.5"	1.8	5.2	3.9	4.5	6.9	8.3	5.9	17.5	12.4
3"	1.8	5.8	3.9	4.9	7.6	10.1	5.9	20.5	12.4
4"	2.0	6.6	4.1	5.5	8.5	14.5	5.9	25.1	16.3
5"	2.2	6.9	4.1	5.9	9.6	17.9	5.9	28.0	16.3
6"	2.2	7.9	4.1	6.7	10.5	19.7	5.9	33.7	16.3

ORBINOX reserves the right to change specifications without notice. OBX 1/01 4TH EDITION



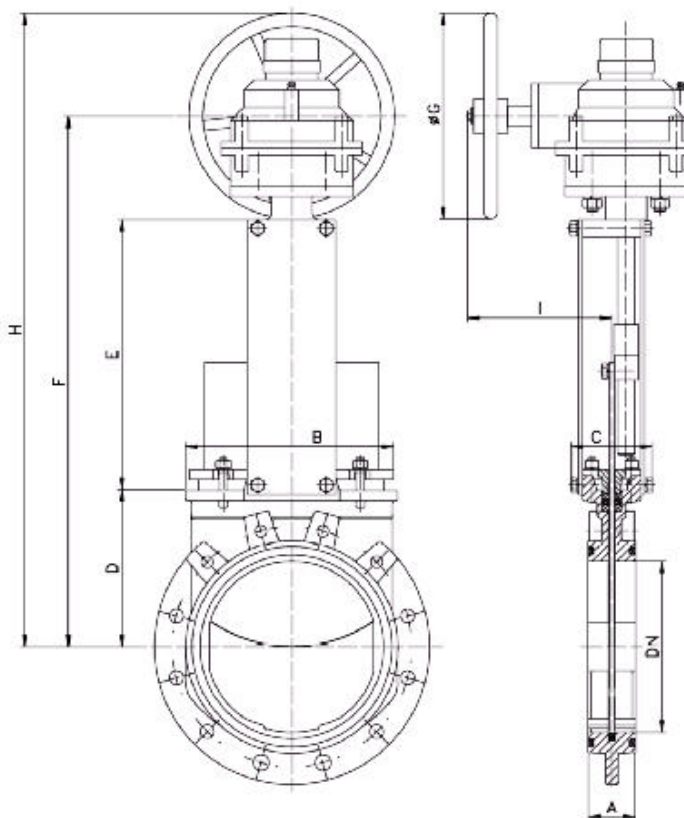
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GEAR, non-rising stem (4;1 Ratio)

- Recommended for valves larger than 14" and working pressures greater than 50 PSI.
- Options:
 - Locking Device
 - Stem Extensions
 - Chainwheel
 - Non-rising Stem
- Valve sizes available in 8" to 48".
- For other options and dimensions, please consult our technical department.



SIZE	A	B	C	D	E	F	OG	H	I
8"	2.4	10.2	4.6	7.2	13.4	26.0	11.8	31.9	9.8
10"	2.7	12.2	4.6	9.0	15.6	29.9	11.8	35.8	9.8
12"	3.1	14.5	4.6	10.6	17.5	33.5	11.8	39.4	9.8
14"	3.1	16.7	7.6	12.4	21.8	40.9	17.7	49.8	9.8
16"	3.1	18.9	7.6	13.5	23.7	44.3	17.7	53.1	9.8
18"	3.5	20.9	7.8	19.9	25.7	52.4	17.7	61.2	9.8
20"	3.5	23.4	7.8	17.7	28.1	52.6	17.7	61.4	9.8
24"	3.9	27.6	7.8	20.1	32.0	58.9	17.7	67.7	9.8
28"	4.3	35.0	15.7	24.0	38.5	69.5	17.7	78.3	9.8
32"	4.3	39.8	12.6	27.6	42.4	76.8	25.6	89.6	9.8
36"	4.3	43.8	12.6	30.9	43.9	81.7	25.6	94.5	9.8
40"	4.3	48.8	12.6	44.1	48.0	99.0	25.6	111.	9.8
48"	5.9	57.9	17.7	52.8	57.3	118. 3	31.5	134. 1	9.8

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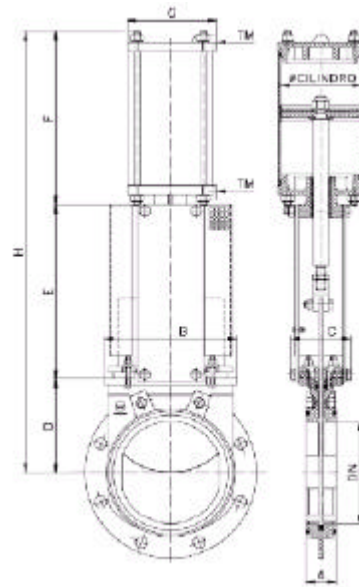
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PNEUMATIC CYLINDER

- Standard pneumatic actuator:
 - Carbon steel construction
 - Stainless steel tie rods and nuts
 - Nitrile Seals
- Valve sizes available in 2" to 32", larger on request.
- Supply Pressure: minimum 40 PSI - maximum 150 PSI
- **All valves installed in a horizontal position, pneumatic actuators must be supported.**
- NOTE: Depending on the application and service conditions, Orbinox can supply larger bore size cylinders. The table below shows the most commonly used bore sizes. Please consult our technical department for maximum differential pressure and minimum air supply for all pneumatic operated knife gate valves.
- Instrumentation and options on request:

INSTRUMENTS: Positioners / Solenoid valves / Flow regulators
Limit switches / etc.

OPTIONS: Aluminum / Stainless steel / Fiberglass construction
Manual override / Fail safe system / Travel stop / AWWA spec.

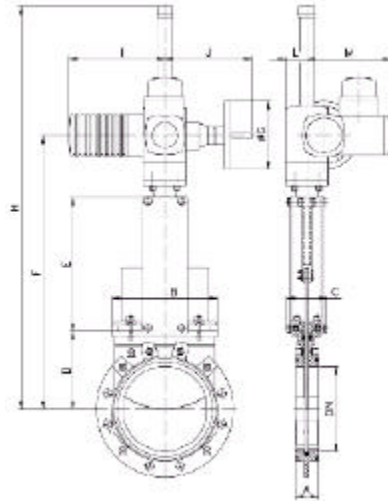


SIZE	A	B	C	D	E	F	G	H	Weight (lbs)	Standard Cyl.	Connect.
2"	1.7	4.6	3.9	4.1	6.2	6.3	3.7	16.7	24	4" Bore	1/4" NPT
2.5"	1.8	5.2	3.9	4.5	6.9	6.9	3.7	18.3	25	4" Bore	1/4" NPT
3"	1.8	5.8	3.9	4.9	7.6	7.5	3.7	20.0	28	4" Bore	1/4" NPT
4"	2.0	6.6	4.1	5.5	8.5	8.3	4.5	22.4	35	4" Bore	1/4" NPT
5"	2.2	6.9	4.1	5.9	9.6	9.9	5.5	25.4	48	5" Bore	1/4" NPT
6"	2.2	7.9	4.1	6.7	10.5	10.9	5.5	28.0	62	5" Bore	1/4" NPT
8"	2.4	10.2	4.6	7.2	13.4	13.3	6.9	33.9	103	6" Bore	1/4" NPT
10"	2.7	12.2	4.6	9.0	15.6	15.6	8.7	40.1	152	7" Bore	3/8" NPT
12"	3.1	14.5	4.6	10.6	17.5	17.5	8.7	45.6	185	8" Bore	3/8" NPT
14"	3.1	16.7	7.6	12.4	21.8	20.4	10.9	54.6	286	10" Bore	3/8" NPT
16"	3.1	18.9	7.6	13.8	23.7	22.4	10.9	59.9	398	10" Bore	3/8" NPT
18"	3.5	20.9	7.8	19.9	25.7	25.5	15.0	71.1	517	10" Bore	1/2" NPT
20"	3.5	23.4	7.8	17.7	28.1	27.4	15.0	73.2	664	12" Bore	1/2" NPT
24"	3.9	27.6	7.8	20.1	32.0	31.4	15.0	83.5	693	12" Bore	1/2" NPT
28"	4.3	35.0	15.7	24.0	38.5	37.1	17.5	99.7	1056	14" Bore	3/4" NPT
32"	4.3	39.8	12.6	27.6	42.4	41.1	17.5	111.0	1287	14" Bore	3/4" NPT



ELECTRIC ACTUATOR (rising stem)

- Options:
 - Electric Motor
 - Rising Stem
 - Motor Support Yoke Flange
(Acc. To ISO 5210 / DIN 3338)
- The standard electric motor is equipped with:
 - Manual Emergency Operation
 - Limit Switches (open / close)
 - Torque Switches
- Valve sizes available in 2" to 48".
- Wide range of types and marks available to meet customer's needs.

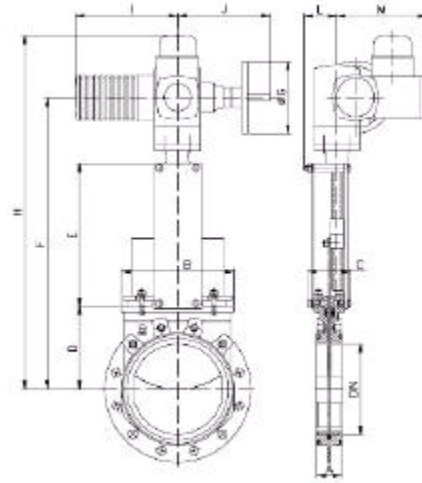


SIZE	A	B	C	D	E	F	OG	H	I	J	L	M	Stem0xpitch	Torque(ft/lbs)
2"	1.7	4.6	3.9	4.1	6.2	16.4	5.5	30.9	10.4	9.2	3.0	9.3	20 x 4	20
2.5"	1.8	5.2	3.9	4.5	6.9	17.4	5.5	32.0	10.4	9.2	3.0	9.3	20 x 4	25
3"	1.8	5.8	3.9	4.9	7.6	18.5	5.5	33.1	10.4	9.2	3.0	9.3	20 x 4	30
4"	2.0	6.6	4.1	5.5	8.5	20.1	5.5	34.6	10.4	9.2	3.0	9.3	20 x 4	40
5"	2.2	6.9	4.1	5.9	9.6	21.5	6.3	36.1	10.4	9.8	3.0	9.3	20 x 4	50
6"	2.2	7.9	4.1	6.7	10.5	23.2	6.3	37.8	10.4	9.8	3.0	9.3	20 x 4	60
8"	2.4	10.2	4.6	7.2	13.4	27.8	7.9	42.7	11.1	10.1	3.2	9.7	25 x 5	70
10"	2.7	12.2	4.6	9.0	15.6	31.7	7.9	46.7	11.1	10.1	3.2	9.7	25 x 5	80
12"	3.1	14.5	4.6	10.6	17.5	35.2	7.9	50.2	11.1	10.1	3.2	9.7	25 x 5	90
14"	3.1	16.7	7.6	12.4	21.8	42.8	7.9	68.6	11.1	10.1	5.0	9.7	35 x 6	105
16"	3.1	18.9	7.6	13.8	23.7	46.1	7.9	71.9	11.1	10.1	5.0	9.7	35 x 6	120
18"	3.5	20.9	7.8	19.9	25.7	55.2	12.4	82.2	15.2	12.8	5.1	11.2	35 x 6	160
20"	3.5	23.4	7.8	17.7	28.1	55.4	12.4	82.4	15.2	12.8	5.1	11.2	35 x 6	180
24"	3.9	27.5	7.8	20.1	32.0	61.7	12.4	88.7	15.2	12.8	5.1	11.2	35 x 6	210
28"	4.3	35.0	15.7	24.0	38.5	72.4	12.4	114.9	15.2	12.8	8.0	11.2	40 x 7	250
32"	4.3	39.8	12.6	27.6	42.4	79.7	15.7	119.7	15.2	13.1	8.0	11.2	50 x 8	400
36"	4.3	43.8	12.6	30.9	43.9	83.8	15.7	124.6	15.2	13.1	8.0	11.2	50 x 8	450
40"	4.3	48.8	12.6	44.1	48.0	100.9	15.7	141.9	15.2	13.1	8.0	11.2	50 x 8	500
48"	5.9	57.9	17.7	52.8	57.3	121.2	19.7	172.8	20.1	14.0	11.2	12.1	50 x 8	700



ELECTRIC ACTUATOR (non-rising stem)

- Options:
 - Electric Motor
 - Non Rising Stem
 - Motor Support Yoke Flange
(Acc. To ISO 5210 / DIN 3338)
- The standard electric motor is equipped with:
 - Manual Emergency Operation
 - Limit Switches (open / close)
 - Torque Switches
- Valve sizes available in 2" to 48".
- Wide range of types and marks available to meet customer's needs.



SIZE	A	B	C	D	E	F	OG	H	I	J	L	M	Stem0xpitch	Torque(ft/lbs)
2"	1.7	4.6	3.9	4.1	6.2	16.4	5.5	23.1	10.4	9.2	3.0	9.3	20 x 4	20
2.5"	1.8	5.2	3.9	4.5	6.9	17.4	5.5	24.1	10.4	9.2	3.0	9.3	20 x 4	25
3"	1.8	5.8	3.9	4.9	7.6	18.5	5.5	25.2	10.4	9.2	3.0	9.3	20 x 4	30
4"	2.0	6.6	4.1	5.5	8.5	20.1	5.5	26.8	10.4	9.2	3.0	9.3	20 x 4	40
6"	2.2	6.9	4.1	5.9	9.6	21.5	6.3	28.2	10.4	9.8	3.0	9.3	20 x 4	50
8"	2.2	7.9	4.1	6.7	10.5	23.2	6.3	29.9	10.4	9.8	3.0	9.3	20 x 4	60
10"	2.4	10.2	4.6	7.2	13.4	27.1	7.9	33.8	11.1	10.1	3.2	9.7	25 x 5	70
12"	2.7	12.2	4.6	9.0	15.6	31.0	7.9	37.7	11.1	10.1	3.2	9.7	25 x 5	80
14"	3.1	14.5	4.6	10.6	17.5	34.6	7.9	41.3	11.1	10.1	3.2	9.7	25 x 5	90
16"	3.1	16.7	7.6	12.4	21.8	42.0	7.9	48.7	11.1	10.1	5.0	9.7	35 x 6	105
18"	3.1	18.9	7.6	13.8	23.7	45.3	7.9	52.0	11.1	10.1	5.0	9.7	35 x 6	120
20"	3.5	20.9	7.8	19.9	25.7	55.2	12.4	62.3	15.2	12.8	5.1	11.2	35 x 6	160
24"	3.5	23.4	7.8	17.7	28.1	55.4	12.4	65.5	15.2	12.8	5.1	11.2	35 x 6	180
28"	3.9	27.6	7.8	20.1	32.0	61.7	12.4	68.8	15.2	12.8	5.1	11.2	35 x 6	210
32"	4.3	35.0	15.7	24.0	38.5	72.4	12.4	80.2	15.2	12.8	8.0	11.2	40 x 7	250
36"	4.3	39.8	12.6	27.6	42.4	79.7	15.7	87.6	15.2	13.1	8.0	11.2	50 x 8	400
40"	4.3	43.8	12.6	30.9	43.9	83.8	15.7	91.7	15.2	13.1	8.0	11.2	50 x 8	450
48"	4.3	48.8	12.6	44.1	48.0	100.9	15.7	108.8	15.2	13.1	8.0	11.2	50 x 8	500
	5.9	57.9	17.7	52.8	57.3	121.2	19.7	131.1	20.1	14.0	11.2	12.1	50 x 8	700



FLANGE AND BOLTING DETAILS

DIN PN10

DN	K	n°	M	T	
50	125	4	M-16	10	2 - 2
65	145	4	M-16	10	2 - 2
80	160	8	M-16	12	2 - 6
100	180	8	M-16	12	2 - 6
125	210	8	M-16	12	2 - 6
150	240	8	M-20	14	2 - 6
200	295	8	M-20	14	2 - 6
250	350	12	M-20	18	4 - 8
300	400	12	M-20	18	4 - 8
350	460	16	M-20	18	8 - 8
400	515	16	M-24	18	8 - 8
450	565	20	M-24	20	12 - 8
500	620	20	M-24	20	12 - 8
600	725	20	M-27	20	12 - 8
700	840	24	M-27	20	16 - 8
800	950	24	M-30	20	16 - 8
900	1050	28	M-30	20	20 - 8
1000	1160	28	M-33	20	20 - 8
1200	1380	32	M-36	35	22 - 10
1400	1590	36	M-39	35	20 - 16

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DN	K	n°	M	T	
2"	4 3/4"	4	5/8" UNC	3/8	2 - 2
2 1/2"	5 1/2"	4	5/8" UNC	3/8	2 - 2
3"	6"	4	5/8" UNC	3/8	2 - 6
4"	7 1/2"	8	5/8" UNC	3/8	2 - 6
5"	8 1/2"	8	3/4" UNC	3/8	2 - 6
6"	9 1/2"	8	3/4" UNC		
8"	11 3/4"	8	3/4" UNC		
10"	14 1/4"	12	7/8" UNC		
12"	17"	12	7/8" UNC		
14"	18 3/4"	12	1" UNC		
16"	21 1/4"	16	1" UNC		
18"	22 3/4"	16	1-1/8" UNC		
20"	25"	20	1-1/8" UNC		
24"	29 1/2"	20	1-1/4" UNC		
28"	24"	28	1-1/4" UNC		
30"	36"	28	1-1/4" UNC		
36"					
40"					
48"					
55"					

