

WEY®

Full Flange Knife Gate Valves



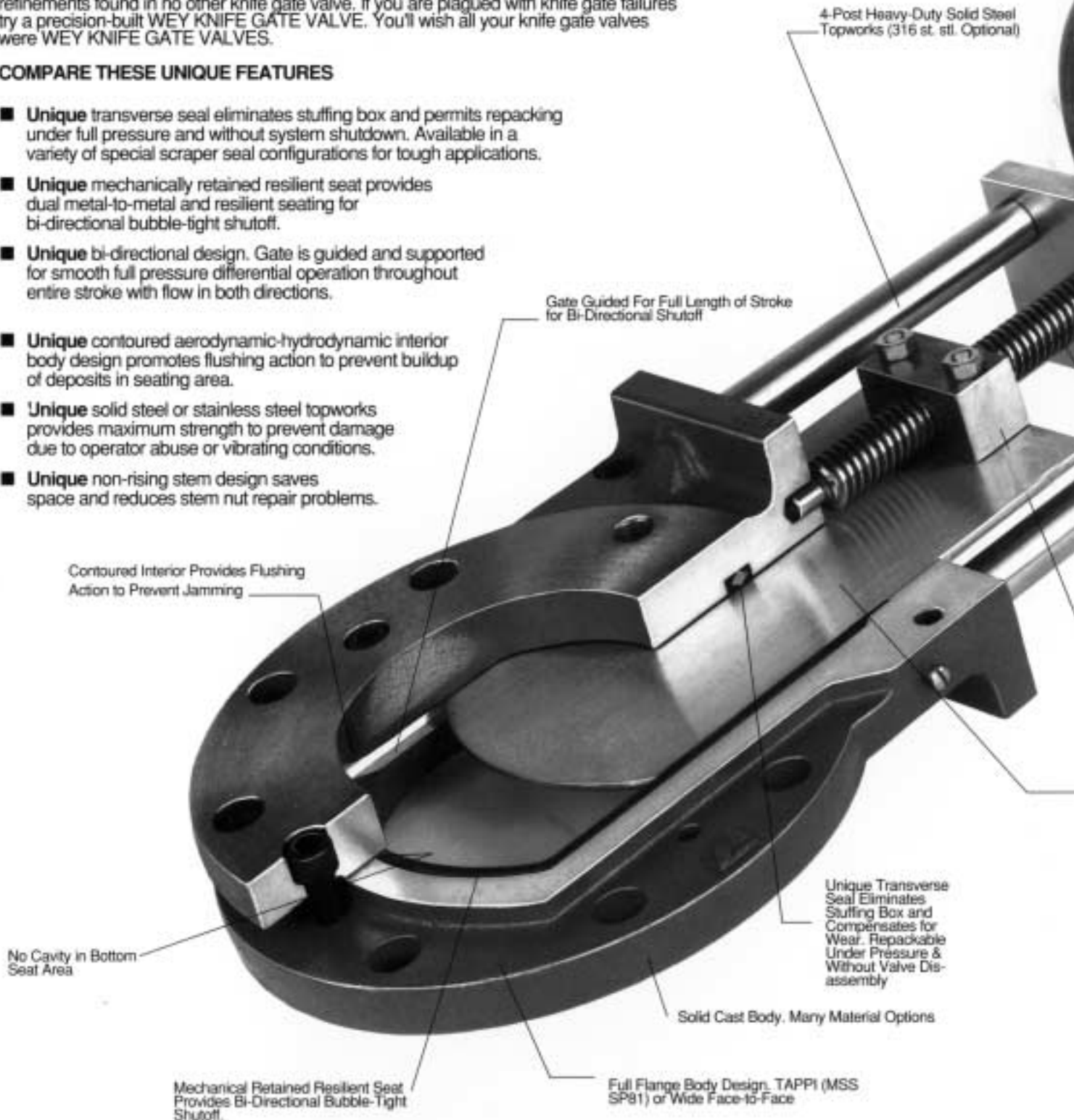
WEY[®] MODELS "NA1" AND "A1" KNIFE GATE VALVES*

NOT JUST ANOTHER KNIFE GATE VALVE

THE WEY KNIFE GATE VALVE combines rugged construction with time tested design refinements found in no other knife gate valve. If you are plagued with knife gate failures try a precision-built WEY KNIFE GATE VALVE. You'll wish all your knife gate valves were WEY KNIFE GATE VALVES.

COMPARE THESE UNIQUE FEATURES

- **Unique** transverse seal eliminates stuffing box and permits repacking under full pressure and without system shutdown. Available in a variety of special scraper seal configurations for tough applications.
- **Unique** mechanically retained resilient seat provides dual metal-to-metal and resilient seating for bi-directional bubble-tight shutoff.
- **Unique** bi-directional design. Gate is guided and supported for smooth full pressure differential operation throughout entire stroke with flow in both directions.
- **Unique** contoured aerodynamic-hydrodynamic interior body design promotes flushing action to prevent buildup of deposits in seating area.
- **Unique** solid steel or stainless steel topworks provides maximum strength to prevent damage due to operator abuse or vibrating conditions.
- **Unique** non-rising stem design saves space and reduces stem nut repair problems.





Dual Heavy-Duty Bronze Thrust Bearings

Precision Machined Chrome Steel Stem

High Strength Bronze Stem Connector for Long Life & Operating Ease

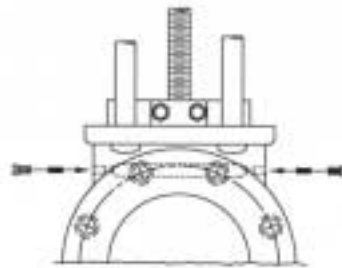
316 St. Stl. Gate, Ground Finish

*Body Styles

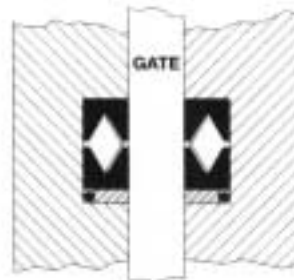
Model NA1- Standard face-to-face with threaded flange bolt holes. (Drill-thru flange bolt holes optional.)

Model A1- Wider face-to-face with drill-thru flange bolt holes for back-flange bolt nut connection. (Threaded flange bolt holes optional.)

See page 3 for details.

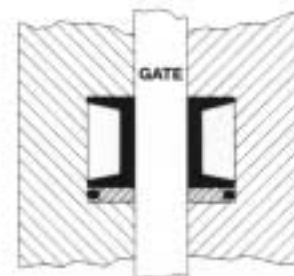


Section of transverse seal illustrating how sealing compound is inserted into seal chamber to repack valve while valve is in service.



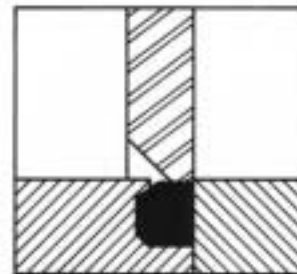
Resilient Transverse Seal

Various elastomeric seal materials. Includes compression loaded scraper blades to wipe gate clean and protect seal. Repackable in service and under pressure/vacuum.

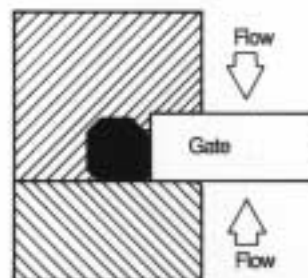


Polymeric Transverse Seal

Various polymers available (i.e., TFE, PFE, etc.) Includes compression loaded scraper blades to wipe gate clean and protect seal. Repackable in service and under pressure/vacuum.



Section view - bottom of valve. Mechanically retained resilient seal insures bubble-tight shutoff with pressure on either side of gate. Seal will not pull out of specially machined groove.



Section view - sides of valve. Gate is guided in machined groove with large diameter seal mechanically retained to seal gate edge. This design provides dual metal/resilient seating and gate support with pressure from either side of gate.



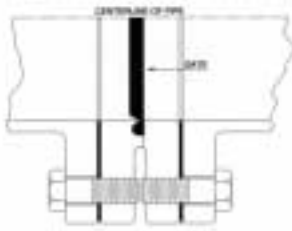
Contoured seat flushes out solids which are pushed ahead of the gate in the seat groove during closing cycle.

VALVE MATERIAL AND ORDERING INFORMATION

Valve Size	Material Code (Body and Gate)	Body Style (Model)	Body Seat/Seal Material	Transverse Seal Material	Packing
2" 3" 4" 6" 8" 10" 12" 14" 16" 18" 20" 24" 30" 36" 48" 54" 60" 66" 72" 84" 96"	CI = Cast Iron CN = Cast Ni-Resist 316 = Type 316 St. Stl. (316 St. Stl. Gate as Standard) Note: Other alloy body & gate materials available on request, i.e., 317 St. Stl. Alloy - 20 Hastelloy - C Titanium Etc.	NA1 = TAPPI & MSS SP81 Face-to-Face, Full Flat Face Flanges with Threaded Flange Bolt Holes. (ANSI 150 Bolt Pattern.) A1 = Optional Wider Face-to-Face, Full Flat Face Flanges With Drill- Thru Flange Bolt Holes. (ANSI 150 Bolt Pattern.) See Below For Details	S1= NBR (230°F) S2= FPM (400°F) S3= TFE (400°F) S4= EPDM (260°F) S5= AFLAS (500°F) S6= HYPALON (200°F) S7= POLY- URETHANE (130°F) S8= NBR BUNA-N (230°F) S9= FOOD GRADE EPDM (260°F) S10= TEFZEL (310°F) S11= FEP (400°F)	-1= NBR -2= FPM -3= TFE -4= EPDM -5= AFLAS -9= FOOD GRADE EPDM -11= FEP	P2= TFE Compound (400°F) P4= Food Grade TFE (400°F) P5= TFE for Chlorine Service (400°F)
Ordering Example:					
6"	CN,	NA1,	S4,	-4,	P2.

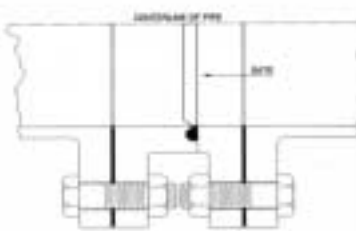
BODY STYLES

MODEL NA1



Per illustration to the left, valve body has TAPPI, MSS-SP81 face-to-face with threaded flange bolt holes. Pipe flanges attach to valve with machine bolts from both sides without the use of bolt nuts, suitable for dead-end service. Optional drill-thru flange body style (not illustrated) permits use of long bolts which pass through both pipe flanges and valve flanges with bolt nuts to secure flanges and valve assembly together, but not suitable for dead-end service.

MODEL A1



Per illustration to the left, model A1 body style is slightly wider face-to-face with drill-thru flange bolt holes. Wider face-to-face permits pipe flange connection with bolt nuts tightened against back faces of valve body flanges suitable for dead-end service with either pipe flange removed. Optional threaded valve flange bolt holes (not illustrated) also available.

VALVE SIZING

VALVE SIZE	O-PORT (Cv)	HEADLOSS (Ft. of Pipe)	V-PORT (Cv)	HEADLOSS (Ft. of Pipe)
2"	220	2.2	185	3.7
2-1/2"	350	2.7	295	4.8
3"	500	3.3	425	6.0
4"	960	4.3	750	8.1
6"	2,220	6.5	1,680	14.1
8"	4,120	8.7	3,000	20.0
10"	6,600	10.8	4,700	24.0
12"	9,700	13.0	6,800	30.0
14"	14,200	15.0	9,250	32.0
16"	18,800	17.0	12,000	35.0
18"	24,200	19.5	15,200	38.0
20"	30,200	22.0	18,750	42.0
24"	43,500	26.0	27,250	54.0
30"	69,000	33.0	42,500	70.0
36"	101,000	39.0	61,000	88.0
48"	185,000	52.0	109,000	120.0

Cv = Flow Coefficient = Flow Through Valve in G.P.M. at a 1 psi Pressure Differential.

Scraper Blade Material	Yoke Assembly	Actuator Options	Accessories	Design Options
BX= No Scraper Blades B1= UHMW Polyethylene (325°F) B2= Glass Filled Phenolic (400°F) B3= Brass B4= 316 St. Stl. B5= Hard Chrome Plated 316 St. Stl.	Y1= Carbon Steel (Vinyl-Chloride Painted) Y2= 316 St. Stl.	A1= Handwheel A2= Manual Lever (sizes 2" - 6" Only) <small>Consult factory for Delta-P limitations</small> A3= Chainwheel A4= Manual Bevel Gear A5= Cylinder <small>(specify size below)</small> A5 - C2 = 2" DIA. CYL. A5 - C3 = 3" DIA. CYL. A5 - C4 = 4" DIA. CYL. A5 - C6 = 6" DIA. CYL. A5 - C8 = 8" DIA. CYL. A5 - C10 = 10" DIA. CYL. A5 - C12 = 12" DIA. CYL. A5 - C14 = 14" DIA. CYL. <small>(Note: Consult factory for larger cylinder sizes)</small> A9= Electric Motor <small>(Complete Electric Motor Application Data Sheet.)</small> A10= Hydraulic Cylinder <small>(Consult factory for sizing.)</small> A11= Spring Return Cylinder	A6-4 = Dual NEMA-4 Limit Switches <small>(Micro LSA3K)</small> A6-7 = Dual NEMA-7 Limit Switches <small>(Micro LSXA3K)</small> A7-P = 3-15 PSI Positioner A7-E = 4-20 MA Positioner <small>(Note: For positioner orders specify valve to open or valve to close on increasing signal.)</small> A8-4 = 4-Way Solenoid, NEMA-4 <small>(Numatics L23BA4520)</small> <small>(Note: Specify valve to open or valve to close when solenoid is energized.)</small> A8-7 = 4-Way Solenoid, NEMA-7 <small>(Numatics L23XA4520)</small> <small>(Note: Specify valve to open or valve to close when solenoid is energized.)</small>	D1 = V-port insert D2 = Powder Relief Chamber D4 = Ni-hard wear ring M1 = Position indication scale M8 = Powder-pac option M9-C = Gate lock-down (Closed Pos.) M9-O = Gate lock-down (Open Pos.) M20 = OSHA yoke guard MLC = Lexan yoke cover M5 = Stem extension
B2.	Y1.	A5-C6.	A8-4.	M1, M8, M9-C, M9-O

DESIGN OPTIONS



Position Indicator Scale
 Valve furnished with graduated indicator scale and "safety orange" pointer.



Lexan Covers
 These plastic covers keep dirt and spillage out of drive nut area. This keeps the stem threads clean for ease of operation and improves drive nut position visibility.



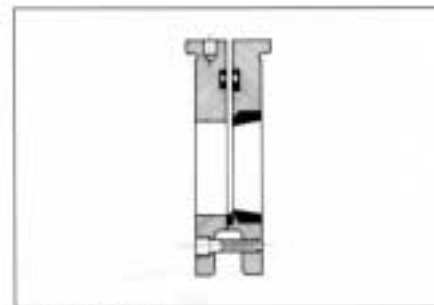
OSHA Guard
 Protects plant personnel from moving parts on valve.



V-Port
 V-Port design is offered for throttling applications where a more linear flow characteristic is desired.



Unique Safety Gate Lock-Down
 Provides gate lockout in any position from fully closed to open. Assures bubble-tight shut-off in handwheel closed position for personnel safety. Neither yoke nor handwheel can be removed when lock-out is in place.



Ni-Hard Wear Ring
 A replaceable ni-hard wear ring is available for abrasive applications.

ACTUATOR OPTIONS



CYLINDER ACTUATOR



BEVEL GEAR ACTUATOR



CHAINWHEEL ACTUATOR



MOTOR ACTUATOR

PNEUMATIC CYLINDER SIZING

Numbers listed in charts below denote cylinder diameter in inches

Clean Liquid and Pulp Stock to 3% Consistency

Pulp Stock Consistencies Greater than 3% but less than 8%

Dry Solids, Slurries with Tendency to Dry Out or Bond, Pulp Stock Consistencies Greater than 8%

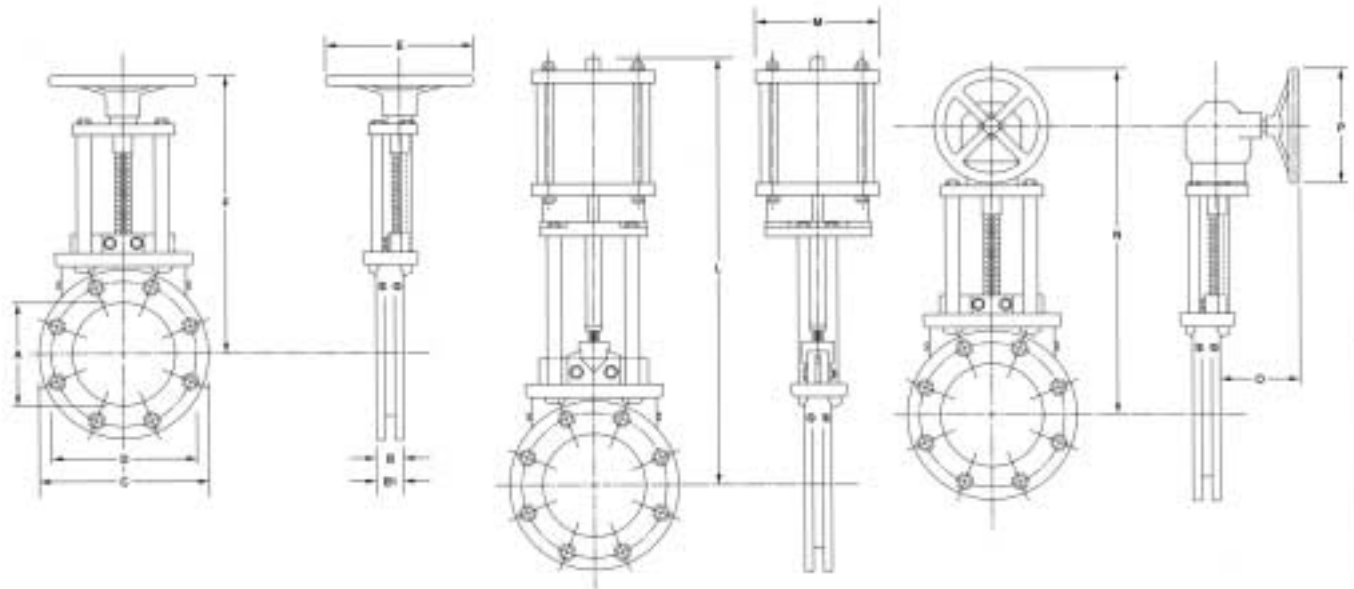
Valve Size	Cyl. Air Press	Differential Pressure					
		30	50	80	100	125	150
2"	80	3	3	3	3	3	3
	60	3	3	3	3	3	4
	40	3	3	4	4	4	6
3"	80	3	3	3	4	4	4
	60	3	3	4	4	6	6
	40	3	4	6	6	6	6
4"	80	3	3	4	4	6	6
	60	3	4	6	6	6	6
	40	4	6	6	6	6	8
6"	80	4	4	6	6	6	6
	60	4	6	6	6	8	8
	40	6	6	8	8	10	10
8"	80	4	6	6	8	8	8
	60	6	6	8	8	10	10
	40	6	8	10	10	12	12
10"	80	6	6	8	8	10	10
	60	6	8	10	10	10	12
	40	8	10	10	12	16	16
12"	80	6	8	10	10	12	12
	60	6	8	10	12	12	16
	40	8	10	12	16	16	16
14"	80	6	8	10	12	12	16
	60	8	10	12	12	16	16
	40	10	12	16	16	20	20
16"	80	8	10	12	12	16	16
	60	8	10	12	16	16	16
	40	10	12	16	20	20	20
18"	80	8	10	12	16	16	16
	60	10	12	16	16	20	20
	40	12	16	20	20	0	0
20"	80	10	12	16	16	20	20
	60	10	12	16	20	20	20
	40	12	16	20	20	0	0
24"	80	10	16	16	20	20	0
	60	12	16	20	20	0	0
	40	16	20	0	0	0	0

Valve Size	Cyl. Air Press	Differential Pressure					
		30	50	80	100	125	150
2"	80	3	3	3	3	3	4
	60	3	3	3	4	4	4
	40	3	3	4	4	6	6
3"	80	3	3	4	4	6	6
	60	3	4	6	6	6	6
	40	4	6	6	6	6	6
4"	80	3	4	6	6	6	6
	60	4	4	6	6	6	6
	40	6	6	6	6	8	8
6"	80	4	6	6	6	8	8
	60	6	6	6	8	8	10
	40	6	6	8	10	10	12
8"	80	6	6	8	8	10	10
	60	6	8	8	8	10	12
	40	8	8	10	12	12	16
10"	80	6	8	8	10	10	12
	60	6	8	10	12	12	16
	40	8	10	12	16	16	16
12"	80	6	8	10	12	12	16
	60	8	10	12	12	16	16
	40	10	12	16	16	20	20
14"	80	8	10	12	12	16	16
	60	10	10	16	16	16	20
	40	10	16	16	20	20	20
16"	80	8	10	12	16	16	16
	60	10	12	16	20	20	20
	40	12	16	20	20	0	0
18"	80	10	12	16	16	20	20
	60	10	16	16	20	20	0
	40	16	16	20	0	0	0
20"	80	10	12	16	20	20	20
	60	12	16	20	20	0	0
	40	16	20	0	0	0	0
24"	80	12	16	20	20	0	0
	60	16	20	20	0	0	0
	40	16	20	0	0	0	0

Valve Size	Cyl. Air Press	Differential Pressure					
		30	50	80	100	125	150
2"	80	3	3	3	4	4	4
	60	3	3	4	4	6	6
	40	4	4	6	6	6	6
3"	80	3	4	6	6	6	6
	60	4	6	6	6	6	6
	40	6	6	6	6	8	8
4"	80	4	6	6	6	6	6
	60	6	6	6	6	8	8
	40	6	6	8	8	10	10
6"	80	6	6	6	8	8	10
	60	6	6	8	10	10	10
	40	6	8	10	10	12	12
8"	80	6	8	8	10	10	12
	60	6	8	10	10	12	12
	40	8	10	12	16	16	16
10"	80	6	8	10	12	12	16
	60	8	10	12	12	16	16
	40	10	12	16	16	20	20
12"	80	8	10	12	16	16	16
	60	10	12	16	16	16	20
	40	12	16	16	20	20	0
14"	80	10	12	16	16	16	20
	60	10	12	16	16	20	20
	40	12	16	20	20	0	0
16"	80	10	12	16	16	20	20
	60	12	16	16	20	20	0
	40	16	16	20	0	0	0
18"	80	12	16	16	20	20	0
	60	12	16	20	20	0	0
	40	16	20	0	0	0	0
20"	80	12	16	20	20	0	0
	60	16	16	20	0	0	0
	40	16	20	0	0	0	0
24"	80	16	20	0	0	0	0
	60	16	20	0	0	0	0
	40	20	0	0	0	0	0

Consult factory for cylinder sizing on larger valve sizes.

DIMENSIONS



HANDWHEEL

CYLINDER

BEVEL GEAR

G= Number of blind tapped holes in chest area of valve.
 H= Depth of blind tapped holes in chest area of valve.
 J= Thread spec for tapped flange bolt holes.
 K= Optional drill-thru flange bolt hole size.
 M= This dimension varies with cylinder size. See page 5 for recommended cylinder sizes.

CYL. SIZE	M
3"	4 $\frac{1}{2}$ "
4"	5 $\frac{1}{2}$ "
6"	7"
8"	8 $\frac{1}{2}$ "
10"	10 $\frac{1}{2}$ "
12"	12 $\frac{1}{2}$ "
14"	14 $\frac{1}{2}$ "
16"	17"

VALVE SIZE

IN.	MM	A	B	B-1	C	D	E	F	G	H	J	K	L	N	O	P
2"	50	2	1 $\frac{1}{4}$	2 $\frac{1}{2}$	6	4 $\frac{1}{2}$	7 $\frac{1}{2}$	10	—	—	$\frac{1}{2}$ -11	$\frac{1}{2}$	20 $\frac{1}{2}$	—	—	—
3"	80	3 $\frac{1}{2}$	2	2 $\frac{1}{2}$	7 $\frac{1}{2}$	6	7 $\frac{1}{2}$	13 $\frac{1}{2}$	2	$\frac{3}{8}$	$\frac{1}{2}$ -11	$\frac{3}{8}$	25 $\frac{1}{2}$	—	—	—
4"	100	4	2	2 $\frac{1}{2}$	9	7 $\frac{1}{2}$	7 $\frac{1}{2}$	15 $\frac{1}{2}$	2	$\frac{3}{8}$	$\frac{1}{2}$ -11	$\frac{3}{8}$	27	—	—	—
6"	150	6	2 $\frac{1}{2}$	3 $\frac{1}{4}$	11	9 $\frac{1}{2}$	9 $\frac{1}{2}$	20	2	$\frac{1}{2}$ $\frac{1}{8}$	$\frac{3}{4}$ -10	$\frac{3}{4}$	33 $\frac{1}{2}$	—	—	—
8"	200	7 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$	13 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{8}$	24	4	$\frac{1}{2}$ $\frac{1}{8}$	$\frac{3}{4}$ -10	$\frac{3}{4}$	36 $\frac{1}{2}$	—	—	—
10"	250	9 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{3}{8}$	16	14 $\frac{1}{4}$	11 $\frac{1}{8}$	26	4	1	$\frac{1}{2}$ -9	1	46 $\frac{1}{2}$	—	—	—
12"	300	11 $\frac{1}{2}$	3	4 $\frac{1}{2}$	19	17	15 $\frac{1}{2}$	31	4	1	$\frac{1}{2}$ -9	1	54	—	—	—
14"	350	13 $\frac{1}{2}$	3	4 $\frac{1}{2}$	21	18 $\frac{1}{2}$	15 $\frac{1}{2}$	34	4	$\frac{1}{2}$ $\frac{1}{8}$	1-8	$\frac{1}{2}$	59	43 $\frac{1}{2}$	13 $\frac{1}{4}$	18
16"	400	15 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	23 $\frac{1}{2}$	21 $\frac{1}{2}$	15 $\frac{1}{2}$	39	4	$\frac{1}{2}$ $\frac{1}{8}$	1-8	$\frac{1}{2}$	67	48 $\frac{1}{2}$	13 $\frac{1}{4}$	18
18"	450	17 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	25	22 $\frac{1}{2}$	19 $\frac{1}{2}$	43	4	$\frac{3}{8}$	1 $\frac{1}{2}$ -7	$\frac{1}{2}$	73 $\frac{1}{2}$	52 $\frac{1}{2}$	13 $\frac{1}{4}$	18
20"	500	19 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{3}{8}$	27 $\frac{1}{2}$	25	19 $\frac{1}{2}$	46 $\frac{1}{2}$	6	$\frac{1}{2}$ $\frac{1}{8}$	1 $\frac{1}{2}$ -7	$\frac{1}{2}$	79	56	14 $\frac{1}{2}$	24
24"	600	23 $\frac{1}{2}$	4 $\frac{1}{2}$	6 $\frac{1}{8}$	32 $\frac{1}{2}$	29 $\frac{1}{2}$	19 $\frac{1}{2}$	56 $\frac{1}{2}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$ -7	1 $\frac{1}{2}$	85	66	14 $\frac{1}{2}$	24
30"	750	30	—	8 $\frac{1}{4}$	38 $\frac{1}{2}$	36	19 $\frac{1}{2}$	72	10	1 $\frac{1}{2}$ $\frac{1}{8}$	1 $\frac{1}{2}$ -7	1 $\frac{1}{2}$	102	82 $\frac{1}{2}$	14 $\frac{1}{2}$	24
36"	900	35 $\frac{1}{2}$	—	9 $\frac{1}{2}$	46	42 $\frac{1}{2}$	19 $\frac{1}{2}$	82 $\frac{1}{2}$	10	1 $\frac{1}{2}$ $\frac{1}{8}$	1 $\frac{1}{2}$ -6	1 $\frac{1}{2}$	120	98 $\frac{1}{2}$	14 $\frac{1}{2}$	24

Consult factory for valve size 42"-96" dimensions

*NAI Model Valve (conforms to TAPPI and MSS SP81 Face-to-Face standard.)

**Optional A1 Model Valve Face-to-Face

Important note: All dimensions subject to change. Consult factory for certified dimensions.

ACCESSORIES



Limit Switches

- Totally enclosed (SPDT)
- NEMA 4 or NEMA 7
- Optional proximity switches available.



Solenoid Valve

- NEMA 4 or NEMA 7 (single coil, 120D)
- 3 - Way or 4 - Way
- Rigid copper tubing (standard)
- Rigid St. Stl. Tubing (optional)
- Note: Specify valve to open or valve to close when solenoid is energized.



Positioners

- 3 -15psi or 4 - 20ma
- Note: Specify valve to open or valve to close on increasing signal.
- Note: Valve shown with optional V-Port insert.

OTHER SPECIALTY WEY VALVES



Model VL
High Performance Lug Body Design



Model VS
High Performance Semi-Lug Body Design



Model SG
Shear Gate Valve



Model VK
Square and Rectangle Valves



Model T13
Transmitter Isolation Valve



Model DBB
Double Block & Bleed Valve



Model SLX
High Speed Explosion Isolation Valve



Model HD
High Pressure Knife Gate Valve
(To 1440 psi)

All information in this publication presented for reference only and subject to change.

REPRESENTED BY:



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