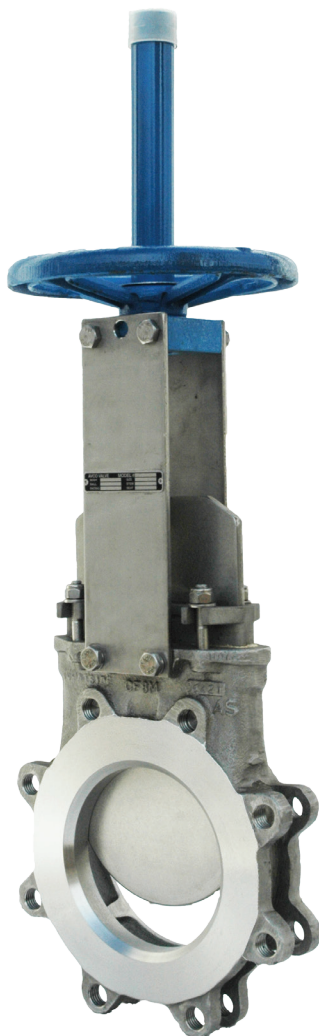


AVCO

Alloy Valves and Control

KNIFEGATE VALVES SERIES 20



Size

2" - 36"

End Connections

150# Lug

Port Types

Standard
V-Port
Deflector Cone

Body & Trim Materials

304 Stainless Steel
316 Stainless Steel
Cast Iron
Various Alloys

Seat Materials

Metal
Buna
EPDM
Hypalon
Neoprene
Viton

Service Applications

Chemical
Food & Beverage
Mining
Power Plants
Pulp & Paper
Waste Water

Applicable Standards

MSS-SP-81
MSS-SP-151
TAPPI TIS 405-8
ASME 16.5
ASME B16.47

Alloy Valves and Control

Series 20 Features

Body

- One piece integrally cast stainless steel body with reinforced ribs in larger diameters for extra body strength.
- Internal cast gate wedges and guides allow tighter shut-off.
- Full port design complying with MSS-SP-81 and TAPPI TIS 405-8
- Internal design reduces build up of solids which could affect valve operation.

Gate

- AISI 316 stainless steel gate as standard.
- Gates are polished and lapped both sides for improved sealing.
- Bottom edge of gates have a machined bevel to cut through solids and provide a tighter seal when closed.

Seat

- Unique design which mechanically locks the seat in the valve body using a stainless steel retainer ring.
- Resilient EPDM seat as standard with different materials available as options.

Packing

- Braided PTFE impregnated fibre and EPDM o-ring as standard for improved stem sealing.
- Long-life braided packing is available in a wide range of materials.

Stem

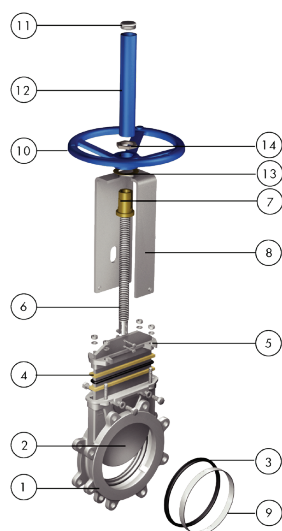
- Long life corrosion resistant stainless steel stem as standard.
- Hand wheel assemblies include a protective cover for the stem to prevent against the ingress of dust.

Actuators

- AVCO supplies actuators which are interchangeable and have standard mounting kits for easy site installation.

Yoke and Support Plates

- Made from Epoxy coated carbon steel with stainless steel available upon request.
- Compact design makes it extremely robust even in severe conditions.



Part	Description
1 Body	CF8M
2 Gate	AISI 316
3 Seat	Metal/Metal or EPDM
4 Packing	PTFE Impreg. Synth. Fibre + EPDM O-Ring
5 Gland follower	CF8M
6 Stem	Stainless Steel
7 Stem nut	Brass
8 Yoke	AISI 304 / Epoxy-coated Carbon Steel
9 Seal retainer ring	AISI 316
10 Handwheel	EN-GJS400
11 Cap	Plastic
12 Stem protector	Epoxy-coated Carbon Steel
13 Friction washer	Brass
14 Nut	Zinc Plated Carbon Steel

Please contact AVCO for size and material combinations not shown in this literature

Alloy Valves and Control

OTHER OPTIONS

Other materials of construction

Ductile iron, carbon steel, special stainless steels (Duplex, ...), special alloys (254SMO, Hastelloys, ...), etc.

Fabricated valves

AVCO designs, produces and delivers special fabricated valves for special process conditions (big sizes and/or high pressures)

Surface treatments

Valve components can be protected or coated for a longer life expectancy, depending on the application of the valves and the valve service conditions. At AVCO we can offer alternative treatments and coatings for the different valve components to improve their properties against abrasion (Stellite, hard-chroming, carbides, ...), against corrosion and against adherence

Bonnet (Fig. 1)

Assures tight sealing to atmosphere. Reduces packing maintenance



Fig.1

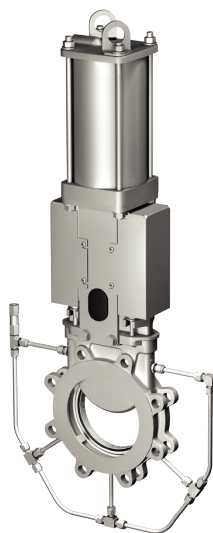


Fig.2



Fig.3



Fig.4

V-Port

60 degree and pentagonal port design. Selection depends on the desired fluid control type

Locking device

The valve can be designed with a locking pin system to block the gate in emergency situations or for maintenance operations

Flush ports (Fig. 2)

Allow for cleaning of solids trapped within the body cavities that can obstruct the flow or prevent the valve from closing. Depending on the process, purging can be made with air, steam, liquids, etc.

Mechanical stops

Mechanical stops can be added to limit stem travel at a certain stroke position

Actuator manual override (Fig. 3)

Pneumatic and electric actuators can be equipped with manual override handwheels to manually operate the actuators in emergency situations or for maintenance operations

Stem extensions and floor stand (Fig. 4)

Extensions for valve operation when valves are installed in positions below operation level are available, including wall brackets and different types of pedestals for actuators

Accessories for pneumatic valve automation

Limit and proximity switches, solenoid valves, positioners, flow regulations, air filter units, silencers, junction boxes

Alloy Valves and Control SEAT/SEAL TYPES

Material	Max.T (°C)	Applications
Metal/Metal	>250	High temp./Low tightness
EPDM (E)	120	Acids and non mineral oils.
NBR (N)	120	Resistance to petroleum products.
FKM-FPM (V)	200	Chemical service / High temp.
VMQ (S)	250	Food service / High temp.
PTFE (T)	250	Corrosion resistance

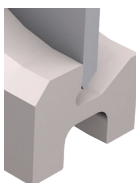
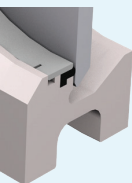
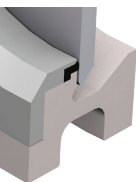
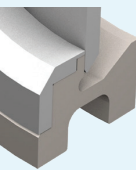
More details and other materials under request

PACKING TYPES

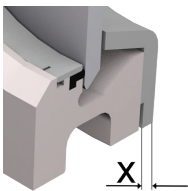
Material	Max.T (°C)	pH
PTFE impregn. synth. fibre (ST)	250	2-13
Braided PTFE (TH)	260	0-14
Graphited (GR)	600	0-14
Ceramic fibre (FC)	1200	- - -

All types include an elastomere O-ring (same material as seal), excluding TH, GR and FC

SEAT CONFIGURATIONS/DESIGNS

Type	Features	
Metal / Metal	- High temperature applications - High density media applications - When full tightness is not required	
A Ring Resilient	- Standard resilient seat - See temperature chart for seat materials - Seat with replaceable ring	
B Ring Resilient	- Reinforced resilient seat design - See temperature chart for seat materials - Seat with replaceable retainer ring - Ring available in different materials: AISI 316, Ni Hard,...	
B Ring Metal / Metal	- High temperature applications - High density media applications - When full tightness is not required - Replaceable ring	

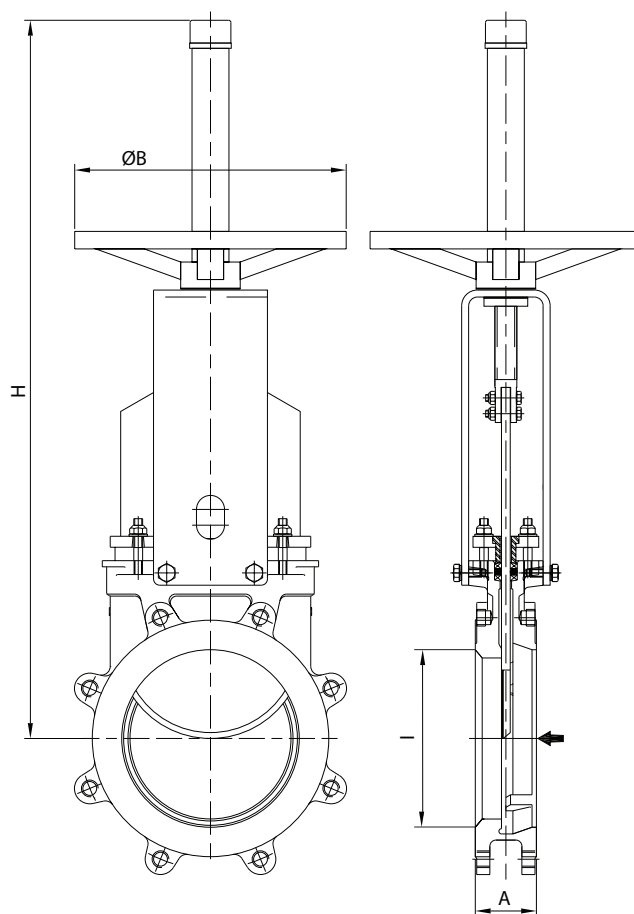
OTHER SEAT FEATURES

Type	Features	
Deflection cone C	- Used to protect valve seats and internals - Material: AISI 316, Ni-Hard, etc. - Face-to-face dimension increases: DN 50 to DN 250, X = 9mm DN 300 to DN 600, X = 12mm Larger diameters on request	

Note: Tightness tests according to MSS-SP-151

MANUALLY OPERATED HANDWHEEL VERSION

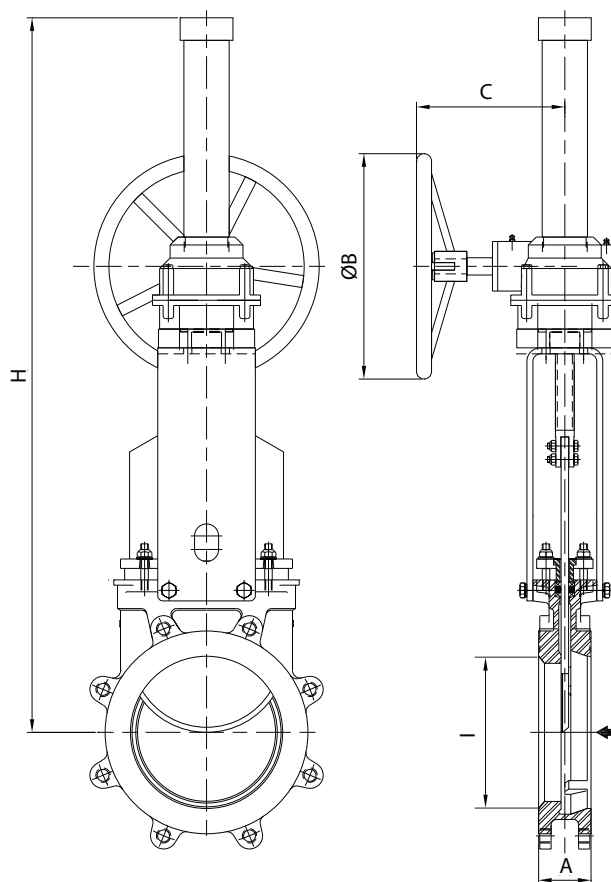
Standard manual actuator available from 2in to 40in available as rising stem and non-rising stem version.
Recommended with gearbox from 12in and above



DN (mm/in)	I	A	ØB	H	Weight (Kg)
50/2	50	48	225	420	9
80/3	80	51	225	470	12
100/4	97	51	225	519	14
125/5	117	57	225	613	16
150/6	140	57	225	642	19
200/8	184	70	310	820	36
250/10	230	70	310	986	46
300/12	275	76	410	1071	65
350/14	305	76	410	1245	91
400/16	351,6	89	410	1325	117
450/18	390	89	550	1510	152
500/20	435	114	550	1617	206
600/24	522	114	550	1883	285

MANUALLY OPERATED GEAR VERSION

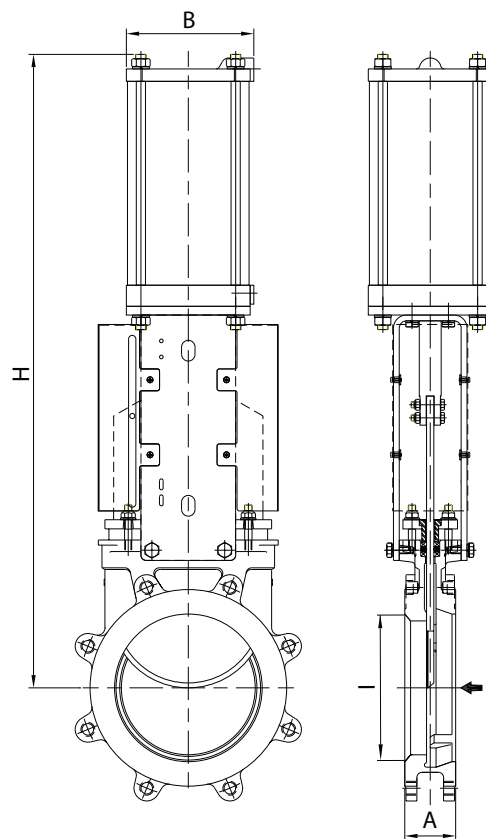
Manual actuator recommended for valves larger than 12in. Available for rising stem and non-rising stem configurations



DN (mm/in)	I	A	ØB	C	H	Weight (Kg)
200/8	184	70	300	200	992	52
250/10	230	70	300	200	1060	64
300/12	275	76	300	200	1143	79
350/14	305	76	450	270	1489	105
400/16	351,6	89	450	270	1570	134
450/18	390	89	450	270	1615	164
500/20	435	114	450	280	1810	248
600/24	522	114	650	290	1879	327
750/30	670	117	650	413	2650	-
900/36	810	117	650	442	3135	-

PNEUMATIC CYLINDER VERSION

Double-acting and single-acting pneumatic cylinders available. Available in sizes 2in to 36in. Actuators sized for 85psi air supply. For valves installed in a horizontal position, actuator supports are recommended.

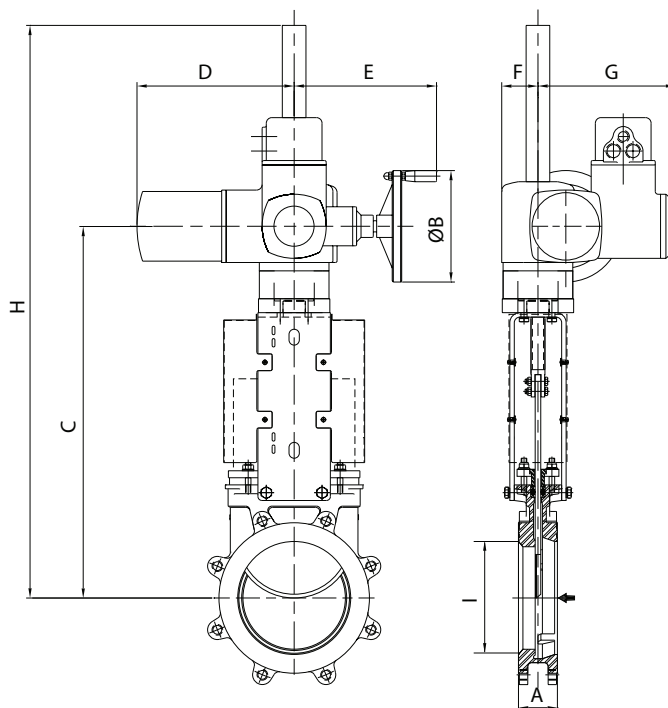


DN (mm/in)	I	A	B	H	Connect.	Weight (Kg)
50/2	50	48	115	412	1/4" NPT	9
80/3	80	51	115	492	1/4" NPT	12
100/4	97	51	115	557	1/4" NPT	14
125/5	117	57	140	644	1/4" NPT	20
150/6	140	57	140	698	1/4" NPT	24
200/8	184	70	175	870	1/4" NPT	43
250/10	230	70	220	1006	3/8" NPT	58
300/12	275	76	220	1141	3/8" NPT	77
350/14	305	76	277	1320	3/8" NPT	120
400/16	351,6	89	277	1424	3/8" NPT	148
450/18	390	89	382	1647	1/2" NPT	214
500/20	435	114	382	1791	1/2" NPT	270
600/24	522	114	382	2028	1/2" NPT	355
750/30	670	117	444	2549	3/4" NPT	645
900/36	810	117	515	3077	3/4" NPT	780

Note: pneumatic cylinder sizing for sizes 12in and above are based on Series 10 pressure ratings

ELECTRIC ACTUATOR VERSION

Designed with a yoke flange for the actuator according to ISO 5210. Available from 2in to 36in, rising and non-rising stems, and with manual overrides. For valves installed in a horizontal position, actuator supports are recommended.



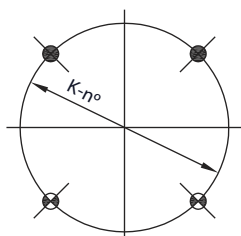
DN (mm/in)	I	A	C	ØB	H	D	E	F	G	Torque (Nm)	Weight (Kg)
50/2	50	48	377	160	454	265	249	62	238	10	67
80/3	80	51	424	160	501	265	249	62	238	10	69
100/4	97	51	469	160	546	265	249	62	238	10	71
125/5	117	57	516	160	593	265	249	62	238	15	74
150/6	140	57	545	160	1122	265	249	62	238	20	77
200/8	184	70	667	160	1255	265	249	62	238	30	93
250/10	230	70	733	160	1321	265	249	62	238	45	-
300/12	275	76	793	200	1381	283	254	65	248	40	90
350/14	305	76	875	200	1463	283	254	65	248	70	-
400/16	351,6	89	955	315	1543	389	336	91	286	90	-
450/18	390	89	1142	315	1870	389	336	91	286	110	-
500/20	435	114	1222	400	1950	389	339	91	286	95	-
600/24	522	114	1444	400	2172	389	339	91	286	140	358
750/30	670	117	1779	500	2832	430	365	117	303	140	-
900/36	810	117	2035	500	3080	430	365	117	303	220	-

Note: torque values for sizes 12in and above are calculated based on Series 10 pressure ratings. For full differential pressure, check with AVCO representative.

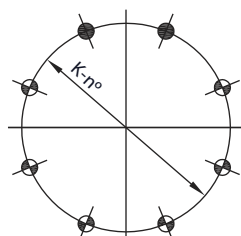
FLANGE AND BOLTING DETAILS ASME B16.5, CLASS 150 *

DN	K	n°	M	T	
2"	4 3/4"	4	5/8" - 11 UNC	7/16"	2 - 2
3"	6"	4	5/8" - 11 UNC	11/32"	2 - 2
4"	7 1/2"	8	5/8" - 11 UNC	11/32"	2 - 6
5"	8 1/2"	8	3/4" - 10 UNC	3/8"	2 - 6
6"	9 1/2"	8	3/4" - 10 UNC	3/8"	2 - 6
8"	11 3/4" 3/4"	8	3/4" - 10 UNC	15/32"	2 - 6
10"	14 1/4"	12	7/8" - 9 UNC	15/32"	4 - 8
12"	17"	12	7/8" - 9 UNC	15/32"	4 - 8
14"	18 3/4"	12	1" - 8 UNC	19/32"	4 - 8
16"	21 1/4"	16	1" - 8 UNC	19/32"	4 - 12
18"	22 3/4"	16	1 1/8" - 7 UNC	19/32"	6 - 10
20"	25"	20	1 1/8" - 7 UNC	7/8"	6 - 14
24"	29 1/2"	20	1 1/4" - 7 UNC	7/8"	6 - 14
30"	36"	28	1 1/4" - 7 UNC	1 1/8"	10 - 18
36"	42 3/4"	32	1 1/2" - 6 UNC	1 1/4"	10 - 18

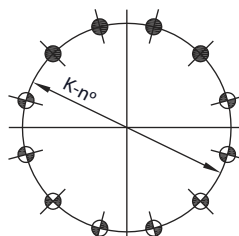
* From NPS 24, acc. to ASME B16.47 Series A (class 150)



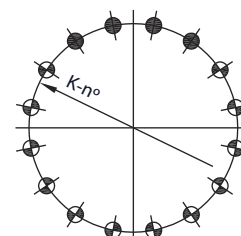
DN 2" - 3"



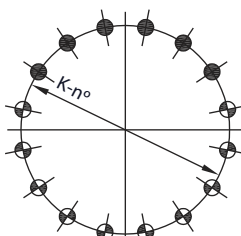
DN 4" - 8"



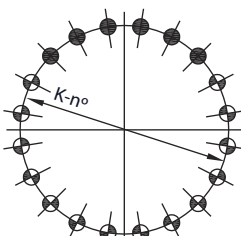
DN 10" - 14"



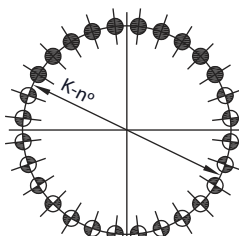
DN 16"



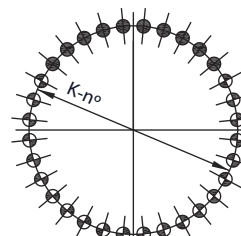
DN 18"



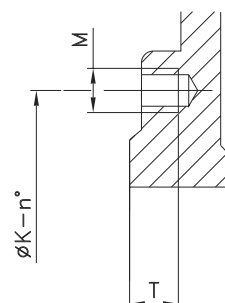
DN 20" - 24"



DN 30"



DN 36"

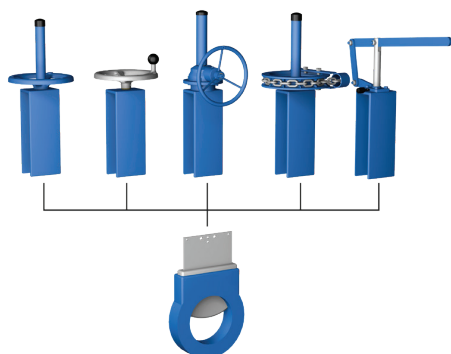


 BLIND TAPPED HOLES

 TAPPED THROUGH

Alloy Valves and Control

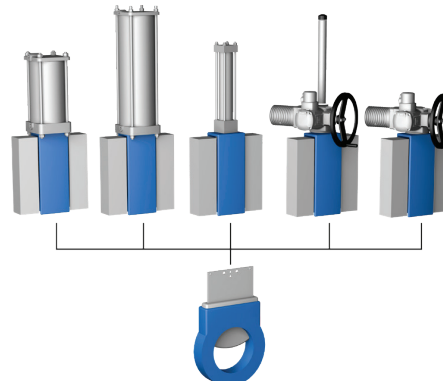
Manual RS Manual NRS Bevel Gear Chainwheel Lever



Manual Valves

Handwheel
Bevel Gear
Lever
Chainwheel
Custom Extensions
Lock Out

Pneumatic Double Acting Pneumatic Single Acting Hydraulic Electric RS Electric NRS



Actuated Valves

Pneumatic
Hydraulic
Double Acting/Spring Return
Solenoid Valves
Limit Switches
Positioners 4-20 mA/3-15 psi
Intelligent Positioner

HOW TO ORDER

AV20	36	36	M	-	2.0
Series	Body	Seat	Seat Material	Options	Size
Series 20 Lug Type Knifegate Valve*	304SS - 34	304SS - 34	M - Metal	SSY - Stainless Steel Yoke	2" - 2.0
	316SS - 36	316SS - 36	RB - Resilient Buna	HT - High Temperature Packing	3" - 3.0
	317SS - 37	317SS - 37	RE - Resilient EPDM	BP - Backing Pins	4" - 4.0
	210 SMO - 25	250 SMO - 25	RN - Resilient Neoprene	BGO - Bevel Gear Operator	5" - 5.0
	Titanium - Ti	Titanium - Ti	RH - Resilient Hypalon	DA - Double Acting Pneumatic Actuator	6" - 6.0
	Hastelloy C276 - HC	Hastelloy C276 - HC	RV - Resilient Viton	SA - Spring Return Pneumatic Actuator	8" - 8.0
	Cast Iron - 21	Carbon Steel - 24		HW - Handwheel	10" - 10.0
	Ductile Iron - 23			BG - Bevel Gear	12" - 12.0
	Carbon Steel - 24			HW/C - Chainwheel on Handwheel	14" - 14.0
				BG/CW - Chainwheel on Gear	16" - 16.0
				EL120 - Electric 120vac	18" - 18.0
				EL460 - Electric 460vac	20" - 20.0
				DAH - Hydraulic Cylinder	24" - 24.0
				LV - Lever Handle	26" - 26.0
				SRFC - Spring fail close	28" - 28.0
				SRFO - Spring fail open	30" - 30.0
					36" - 36.0

* Valves by Orbinox

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