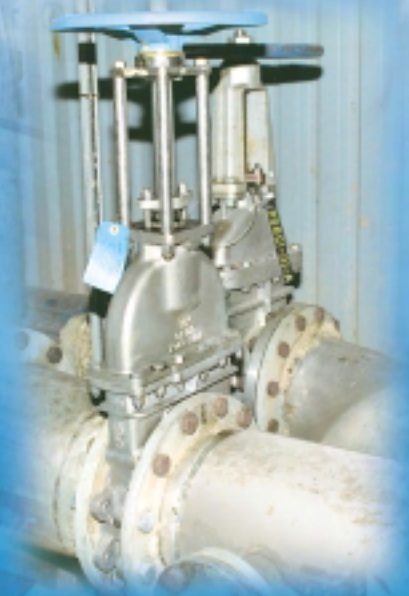
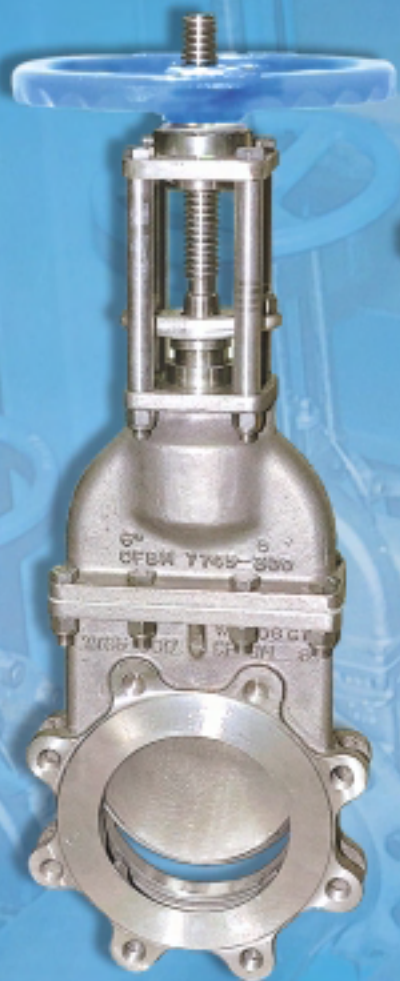


VELAN

KNIFE GATE VALVES

Please note this is a condensed catalog.
For a complete version, contact Velan directly.



2-36" (50-900 mm) • All Stainless Steel

STANDARD KNIFE GATE VALVE DESIGN FEATURES

ADVANTAGES OVER FABRICATED VALVES

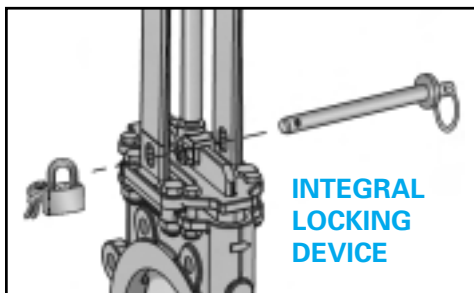
- Cast stainless steel body and investment cast yoke. In fabricated valves, leakage of corrosive medium due to neglected maintenance on the packing, or line pressure surges causes corrosion and failure of most carbon steel or cast iron components.
- An all stainless steel valve offers better corrosion resistance than cast iron lined valves. The total cost of ownership becomes more attractive than the initial savings.:

FIRST ALL STAINLESS STEEL KNIFE GATE VALVE

- **Rugged one-piece body** including flanges. Cast in stainless steel to eliminate corrosion problems that are found with cast iron, or steel valves lined with stainless steel.
- **All stainless steel investment cast yoke.** Up to 12".
- **Investment cast stainless steel packing flange** the space between the blade and the packing flange is very small and critical on smaller size valves. For 2 – 8" Velan Knife Gate Valves feature high precision investment cast packing flanges for a tight "contact-free" fit.

THICKER KNIFE GATE

- **Thicker knife gate** to eliminate distortion under maximum differential pressure and to provide tight seating (see page 12).
- **Precision ground blade** on both sides for tighter packing chamber sealing. Sealing face of the gate is lapped to provide the best possible seat tightness.
- **Precision machined beveled gate end** provides long life of seating components.
- **Gate guides and lugs.** 180° guiding for the moving gate, while jambs at the bottom hold the knife gate to assure proper seating.
- **Integral locking device.**



RAISED FACE SEAT

- The groove around the seat permits the gate to push particles aside and prevents clogging. When the valve is open the flow cleans the groove.
- **Lapped seat** ensures tight closure.

RELIABLE PACKING CHAMBER

- Smooth and uniform chamber.
- Gate ground on both sides.
- Equally distributed gland bolts provide uniform compression of packing.
- Gland bolts easily accessible.

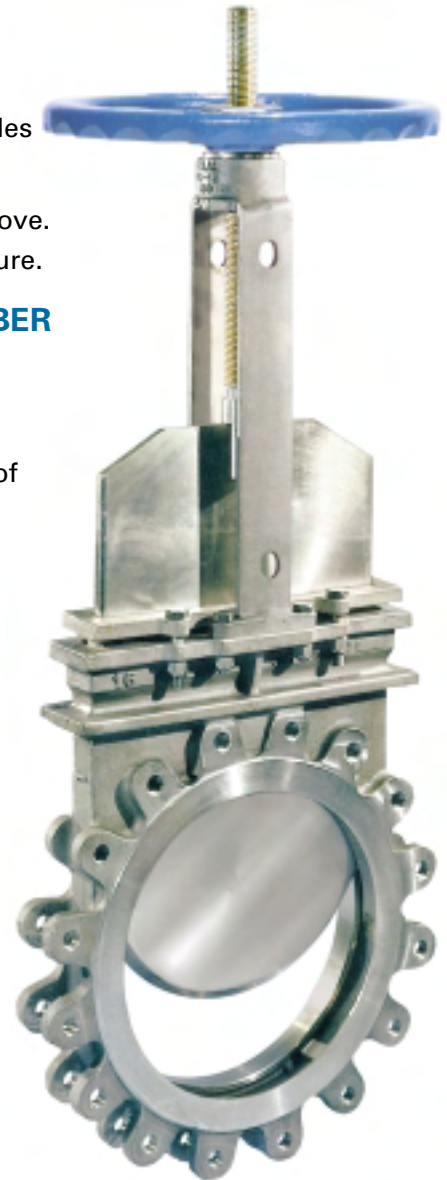
ALL NUTS SELF-LOCKING

LOW TORQUE STEM DRIVE ASSEMBLY

- Ni-resist or bronze thrust bearing to prevent seizure of handwheel hub, 2 – 12" valves.
- **Needle thrust bearings,** 14 – 36" valves.
- **Larger more comfortable malleable iron handwheel** for easier operation.
- Grease fitting.
- Acid resistant Ni-resist or bronze stem nut.

FACTORY TESTING

- **Each valve is pressure tested** for seat tightness, shell and packing integrity including cycling tests to check for reliability of operation.



* For options see page 10.

*Please note this is a condensed catalog.
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**ALL STAINLESS STEEL STANDARD KNIFE GATE VALVES
WAFER-TYPE, METAL SEAT, 2–36" (50–900 mm)
FULLY LUGGED, TYPE 310C TO TAPPI TIS 405-8, LARGE PORT**



PART	STANDARD MATERIALS	
Body ⁽¹⁾	CF8M (SS 316)	CG3M (317L)
Knife	SS 316	SS 317L

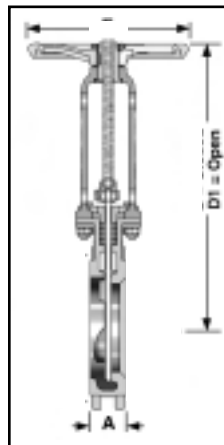
(1) Other materials available (see page 17).

DESIGN FEATURES:

- Designed to handle slurries, pulp stock and corrosive fluids in process industries.
- Meets TAPPI standard TIS 405-8 and MSS SP-81 for wafer-type knife gate valves.
- Flanges match ASME B16.5 Class 150. Holes tapped.
- 150 psig (10.3 bar) max. working pressure. 150°F (65°C) max. working temperature. Applications outside of these conditions require special design considerations.
- Factory installed V-port seat insert available for metering or throttling service (page 10).
- These high quality metal-seated knife gate valves with ground knife gates and lapped seating faces have maximum leakage rate 4-10 times less than the permissible rates shown in TAPPI 405-8 & MSS SP-81.
- Needle bearings on 14–36" valves.
- Available with lever, chain, gear, electric, air or hydraulic actuation (see page 14).

DIMENSIONS AND WEIGHTS

SIZE in mm	A	D1
2 50	1.88 48	12.06 306
3 80	2.00 51	15.32 389
4 100	2.00 51	18.60 472
6 150	2.25 57	24.38 619
8 200	2.75 70	30.66 779
10 250	2.75 70	37.19 945
12 300	3.00 76	43.25 1099
14 350	3.00 76	48.69 1237
16 400	3.50 89	55.13 1400
18 450	3.50 89	64.31 1633
20 500	4.50 114	71.31 1811
24 600	4.50 114	81.94 2081
30 750	5.50 140	101.63 2581
36 900	6.00 152	121.75 3092



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PART	STANDARD MATERIALS	
Body ⁽¹⁾	CF8M (SS 316)	CG3M (317L)
Knife	SS 316	SS 317L
Seat ring	SS 316	SS 317L

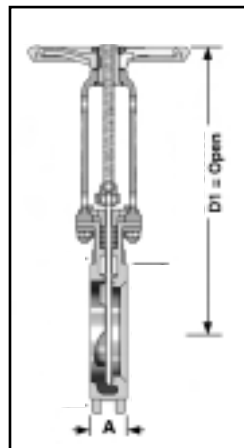
(1) Other materials available (see page 17).

DESIGN FEATURES:

- Designed to handle slurries, pulp stock and corrosive fluids in process industries where applications call for resilient seat with zero leakage to 150 psi (10.3 bar) in main direction and limited tightness in opposite direction, at low pressure.
- Replaceable, resilient crimped seat rings.
- Meets TAPPI standard TIS 405-8 and MSS SP-81 for wafer-type knife gate valves.
- Replaceable seat extends the service life of the valve. Resilient seats can be easily replaced after removing valve from the line (Details on page 12).
- For highly abrasive applications we can supply a replaceable seat ring with a hardfaced knife surface.
- Non-clogging large port.
- 150 psig (10.3 bar) max. working pressure. 150°F (65°C) max. working temperature. Applications outside of these conditions require special design considerations.
- Needle bearings on 14"–36" valves.
- Available with lever, chain, gear, electric, air or hydraulic actuation (see page 14).

DIMENSIONS AND WEIGHTS

SIZE in mm	A	D1
2	1.88	12.06
50	48	306
3	2.00	15.32
80	51	389
4	2.00	18.60
100	51	472
6	2.25	24.38
150	57	619
8	2.75	30.66
200	70	779
10	2.75	37.19
250	70	945
12	3.00	43.25
300	76	1099
14	3.00	48.69
350	76	1237
16	3.50	55.13
400	89	1400
18	3.50	64.31
450	89	1633
20	4.50	71.31
500	114	1811
24	4.50	81.94
600	114	2081
30	5.50	101.63
750	140	2581
36	6.00	121.75
900	152	3092



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**ALL STAINLESS STEEL STANDARD KNIFE GATE VALVES
FLANGED, RESILIENT OR METAL SEAT, 2–24" (50–600 mm)
TYPE 322C THROUGH-BOLTED FLANGES
ASME B16.5 CLASS 150, LARGE PORT**



Resilient seat design shown
integral metal seats also available

PART	STANDARD MATERIALS	
	Body ⁽¹⁾	CF8M (SS 316)
Knife	SS 316	SS 317L
Seat ring ⁽²⁾	SS 316	SS 317

(1) Other materials available (see page 17).
(2) Also available with integral metal seats.

DESIGN FEATURES:

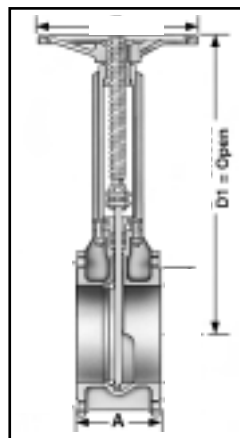
- Designed to handle heavy slurries, pulp stock and corrosive fluids in process industries.
- Cast in austenitic stainless steel (30", 36" may be fabricated).
- Has through-bolted, rigid flanges matching B16.5 Class 150 regular, short-body type.
- Non-clogging full port design (metal seated valve).
- 150 psig (10.3 bar) max. working pressure. 150°F (65°C) max. working temperature. Applications outside of these conditions require special design considerations.
- The high quality metal seated knife valve with ground and lapped seating face have maximum leakage rates 4-10 times less than the permissible rates shown in TAPPI TIS 405-8 and MSS SP-81.
- Available with lever, chain, gear, electric, air or hydraulic actuation (see page 14).

THE DETAIL BELOW
SHOWS THE INTEGRAL
METAL SEAT OPTION



DIMENSIONS AND WEIGHTS

SIZE in mm	A	D1
2 50	5.50 140	16.50 419
3 80	6.00 152	18.19 462
4 100	6.25 159	20.38 518
6 150	6.75 171	28.81 732
8 200	7.00 178	32.25 819
10 250	7.37 187	41.19 1046
12 300	8.00 203	44.75 1137
14 350	8.50 216	53.75 1365
16 400	9.00 229	57.75 1467
18 450	10.00 254	67.63 1718
20 500	10.50 267	72.63 1845
24 600	11.00 279	84.00 2134



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BOLTED BONNET KNIFE GATE VALVE DESIGN FEATURES

NO LEAKAGE TO THE EXTERIOR THROUGH PACKING CHAMBER (UNLIKE STANDARD KNIFE GATE VALVES)

- **Bonnetted design.**
Standard body-bonnet joint with an efficient non-asbestos reinforced fiber or PTFE gasket.
- **Long-life leakproof stem seal.**
Standard packing chamber with 125 RMS wall finish, burnished non-rotating stem and PTFE or graphite packing rings. **Many times the cycle life of a standard knife gate valve.**
- **Virtually no contamination of the environment.**
No dewatering of stock, unlike standard knife gate valves.
- **Easy repacking in-line.** (Valve should be de-pressurized when repacking in-line.)

TIGHTER SEATS WITH PATENTED TORQUE CLOSURE OF KNIFE

- **Beveled knife-stem connection** locks the knife blade tight against the seat. The seat is sealed by **positive torque closure** – not media pressure – unlike any other knife gate valve.
- **Raised-face seat.** A groove around the seat collects particles pushed aside by the knife and prevents clogging. When the valve opens, media pressure cleans the groove.
- **Lapped seat** ensures tight closure.
- **Crimped resilient seat** ensures longer service life (see pg.11).
- **Four seat designs:** Integral, resilient and renewable Stellite 6 (see pg. 10).

BYPASS TO PREVENT CLOGGING OF BONNET

- **Bypass** lets pulp circulate inside the bonnet when valve is opened, preventing clogging (*patent # 2093539 CDN and # 5295661 U.S.*).

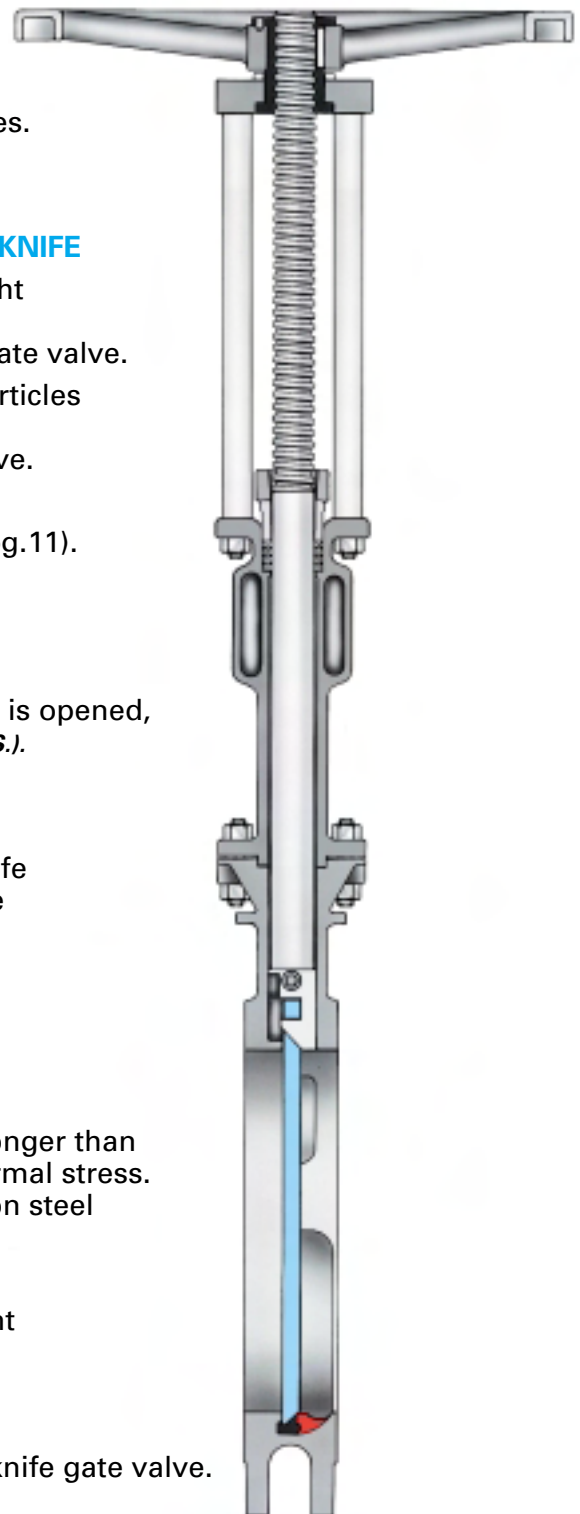
EASY OPERATION

- **Lower running torque** due to reduced friction.
Friction between stem and packing in bolted bonnet knife gate valve is far less than the friction between the blade and the packing in a standard knife gate valve.
- **Low-friction, acid-resistant Ni-Resist stem nut.**
- **Valves can operate with smaller actuators** than standard knife gate valves.

ALL CAST STAINLESS STEEL DESIGN

- **One-piece stainless steel**, fully-lugged, cast body is stronger than welded bodies and less subject to distortion due to thermal stress. Posts are stainless steel instead of chrome-plated carbon steel for longer life.
- **Designed for vertical or horizontal** line operations.
- **Standard wafer, TAPPI face-to-face** for easy replacement of leaky standard knife gate valves.
- **Maintenance and adjustment-free.** Long cycle life.
- **Suitable for most pulp and paper applications.**
Can be used throughout the mill as a general-purpose knife gate valve.

U.S. Patent # 5295661



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THE VELAN BOLTED BONNET KNIFE GATE VALVE

PROVIDES POSITIVE SEATING ON THE BOTTOM AND THE TOP OF THE BLADE

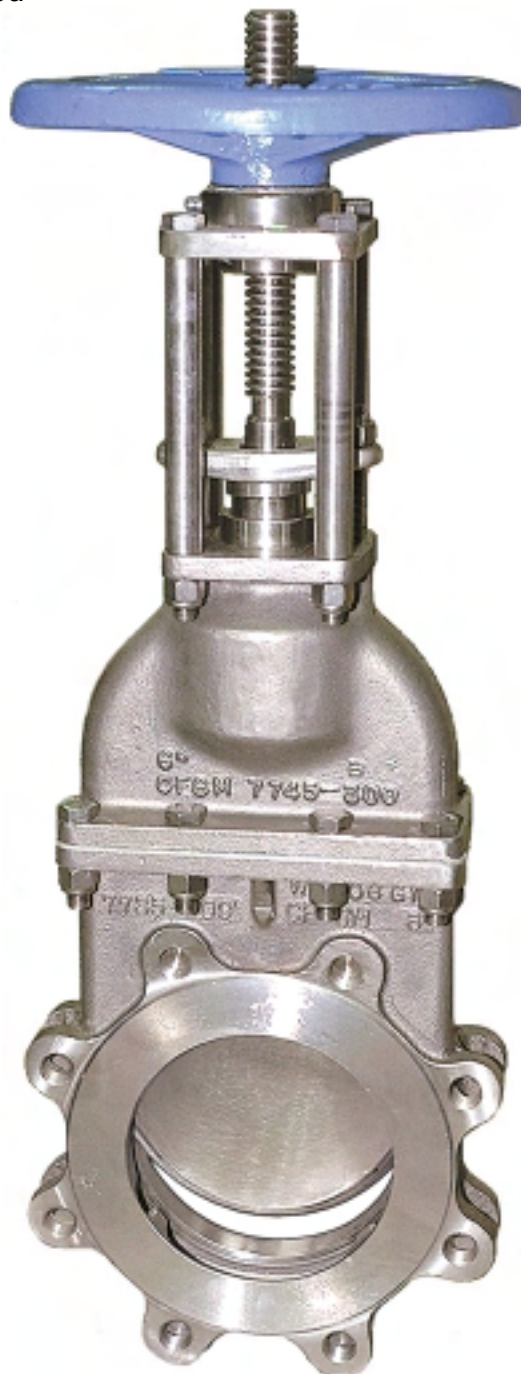
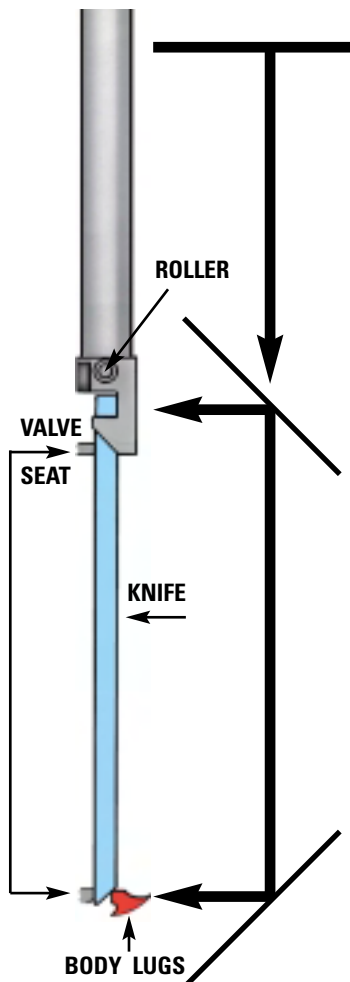
- **Patented knife – stem connection.**

Unlike any other design, the stem head slides inside a circular cavity on the stem guides in the body and bonnet, and is connected to the knife blade by a taper slot. A roller prevents the stem from rotating.

- **Handwheel torque or actuator force provides positive seat-knife closure.**

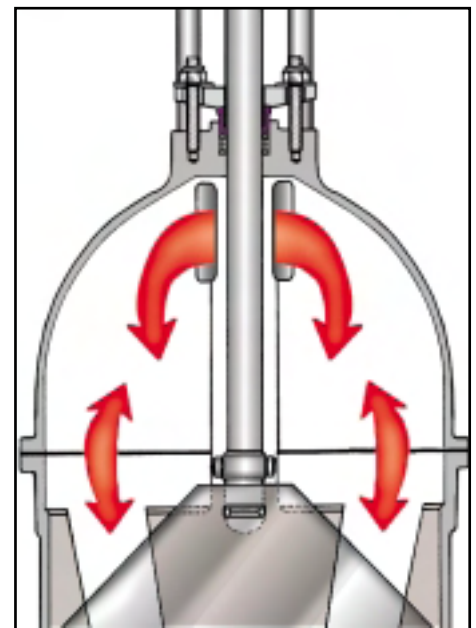
During closure, the stem slides down pushing the knife into contact with the

two bottom lugs. The taper stem head then transfers a vertical closing force to a lateral force which positively seats the knife against the seat face. Stem force, not line pressure, maintains seating contact in this unique design, ensuring tight seating in both directions (see alternative seat designs on page 10). During the opening and closing cycle, the guides ensure proper alignment of the knife.



**THE BONNET & BODY
ARE SPECIALLY
DESIGNED TO PERMIT
PULP CIRCULATION**

**THIS PREVENTS
CLOGGING**



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ALL STAINLESS STEEL BOLTED BONNET KNIFE GATE VALVES, FULL PORT, 4–24" (100–600 mm)

FOR BIDIRECTIONAL SHUTOFF UP TO 150 PSI (10.3 BAR),
FULLY LUGGED, TYPE 310B METAL SEAT

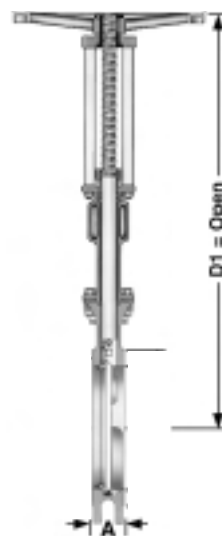


PATENT NO:
5295661

PART	STANDARD MATERIALS		
	Body ⁽¹⁾	CF8M (SS316)	CG8M (SS317)
Bonnet	CF8M	CG8M	
Knife	SS316	SS317	
SEAT	Integral	CF8M (SS316)	CG8M (SS317)
	Hardfaced	Stellite 6	

DESIGN FEATURES:

- All stainless steel construction.
- Seat tightness achieved with torque as opposed to line pressure.
- Thoroughly tested in a variety of applications including: clean pulp up to a consistency of 5%, waste water and secondary effluent.
- Bypass unit cast into the bonnet prevents clogging.
- Conventional packing chamber eliminates leakage problems associated with standard knife valves.
- 150 psig (10.3 bar) max. working pressure.
150°F (65°C) max. working temperature.
Applications outside of these conditions require special design considerations.



DIMENSIONS AND WEIGHTS

SIZE in mm	A	C	D1
4 100	2.00 51	5.91 150	21.00 533
6 150	2.25 57	8.50 216	28.34 720
8 200	2.75 70	10.62 270	35.75 908
10 250	2.75 70	12.75 324	43.68 1109
12 300	3.00 76	15.00 381	50.62 1286
14 350	3.00 76	16.25 413	56.00 1422
16 400	3.50 89	18.50 470	63.00 1600
18 450	3.50 89	21.00 533	70.68 1795
20 500	4.50 114	23.00 584	78.37 1991
24 600	4.50 114	27.25 692	91.53 2325

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**ALL STAINLESS STEEL BOLTED BONNET
KNIFE GATE VALVES, FULL PORT, 4–24" (100–600 mm)**
FOR BIDIRECTIONAL SHUTOFF UP TO 150 PSI (10.3 BAR),
FULLY LUGGED, TYPE 320B RESILIENT SEAT

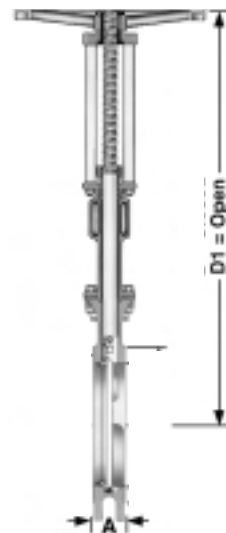


PART	STANDARD MATERIALS	
Body ⁽²⁾	CF8M (SS316)	CG8M (SS317)
Bonnet	CF8M	CG8M (SS317)
Post	SS316	
Knife	SS316	SS317
Seat ⁽¹⁾	PTFE	

(1) PTFE recommended as standard. Other materials available.
(2) Other materials available (see page 17).

DESIGN FEATURES:

- All stainless steel construction.
- Seat tightness achieved with torque as opposed to line pressure.
- Bidirectional shutoff from 0 to 150 psi (10.3 bar).
- Thoroughly tested in a variety of applications including white water and weak black liquor.
- Bypass unit cast into the bonnet prevents clogging.
- Conventional packing chamber eliminates leakage problems associated with standard knife valves.
- 150 psig (10.3 bar) max. working pressure.
150°F (65°C) max. working temperature.
Applications outside of these conditions require special design considerations.



DIMENSIONS AND WEIGHTS

SIZE in mm	A	D1
4 100	2.00 51	21.00 533
6 150	2.25 57	28.34 720
8 200	2.75 70	35.75 908
10 250	2.75 70	43.68 1109
12 300	3.00 76	50.62 1286
14 350	3.00 76	56.00 1422
16 400	3.50 89	63.00 1600
18 450	3.50 89	70.68 1795
20 500	4.50 114	78.37 1991
24 600	4.50 114	91.53 2325

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OPTIONS



"V" orifices

● **"V" ORIFICE**

Flow data on page 12.

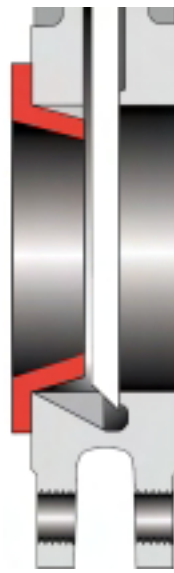
● **OPERATION**

Handwheel, quick lever, chain wheel, bevel gear, on-off cylinder actuators, positioning cylinder actuators, electric actuators.

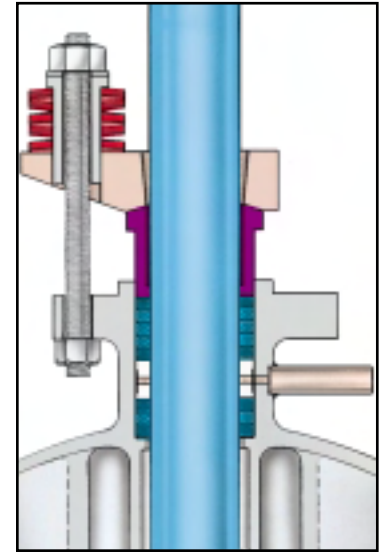
● **DEFLECTION CONES**

In stainless steel or other materials are available to divert the flow of abrasive slurries and protect valve seat from abrasion.

Typical applications include dry solids, storage bins, bottom valves, mining slurries, fly ash, filters, cyclons, etc. The cone is installed between valve and pipe flange.



Deflection Cones



Double Packing Lantern Ring
Live-loading and leak-off

● **BONNET PURGE CONNECTORS**

For very fine slurry lines, purge connections are recommended. Purging is used to prevent packing of material in bonnet areas.

● **BODY PURGE CONNECTIONS**

For higher density pulp applications consult factory.

Stem protectors available upon request.

ALTERNATIVE SEAT DESIGNS

①

① **Integral Seat**

- Pulp and paper
- Chemical industry
- Food processing
- Agriculture
- Petrochemical industries
- Sugar industry
- Textile industry fibers and waste water

②

② **Polyurethane Seat & Deflector**
(available on Standard Knife Gate Valves only)

- Waste water treatment
- Water plants
- Abrasive mining slurries
- Pipelines

③

③ **Resilient Seat**

- Pulp & paper
- Chemical industry
- Food processing
- Petrochemical industries
- Textile industry

④

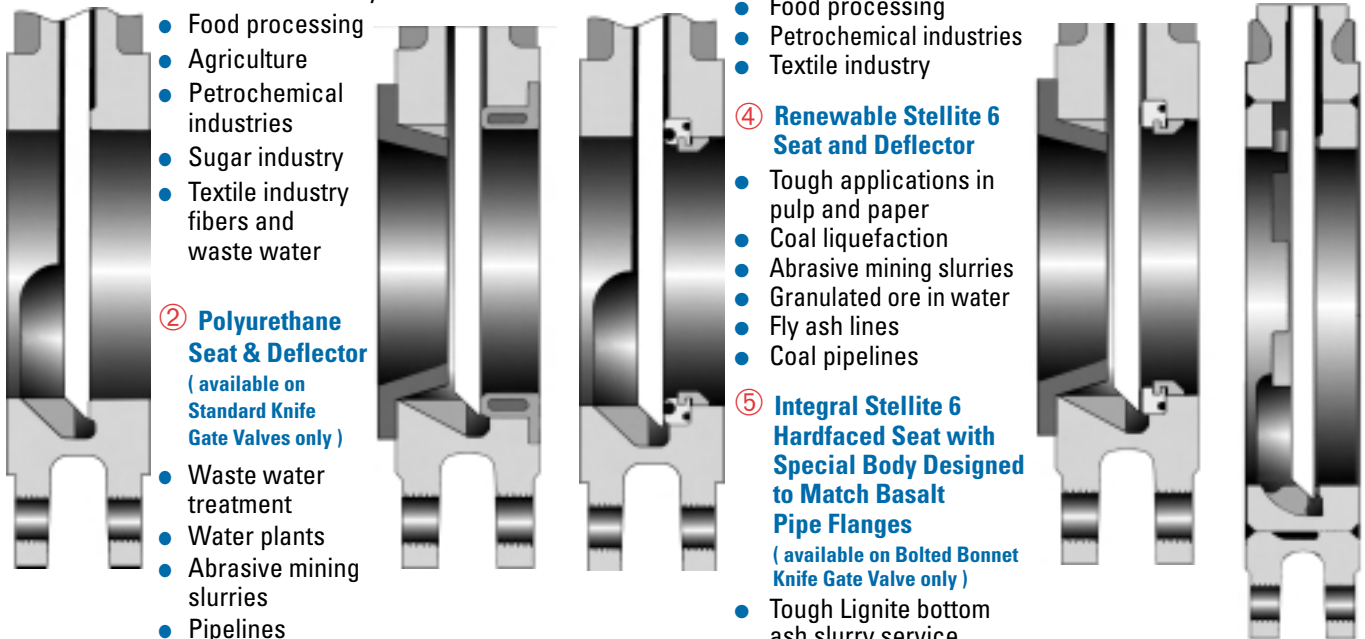
④ **Renewable Stellite 6 Seat and Deflector**

- Tough applications in pulp and paper
- Coal liquefaction
- Abrasive mining slurries
- Granulated ore in water
- Fly ash lines
- Coal pipelines

⑤

⑤ **Integral Stellite 6 Hardfaced Seat with Special Body Designed to Match Basalt Pipe Flanges**
(available on Bolted Bonnet Knife Gate Valve only)

- Tough Lignite bottom ash slurry service



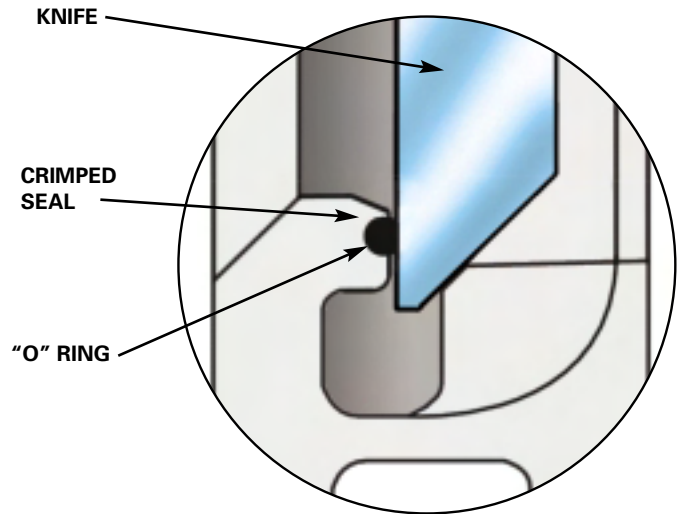
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2-16" STANDARD KNIFE GATE VALVE

INTEGRAL CRIMPED RESILIENT SEAT

A NEW INTEGRAL CRIMPED RESILIENT SEAT IS NOW STANDARD ON 2-12" STANDARD KNIFE GATE VALVE

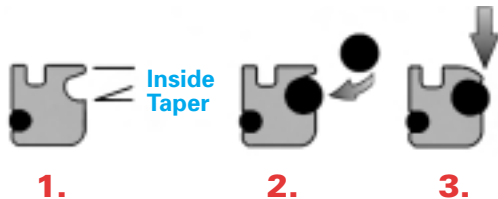
Old "snap-in" style seats could be too easily extracted accidentally by friction caused by heavy or infrequent cycling. Velan's new "crimped seat" makes accidental extraction virtually impossible. The seat will wear normally but the crimped design keeps it tight inside the seat retainer ring for a longer cycle life.



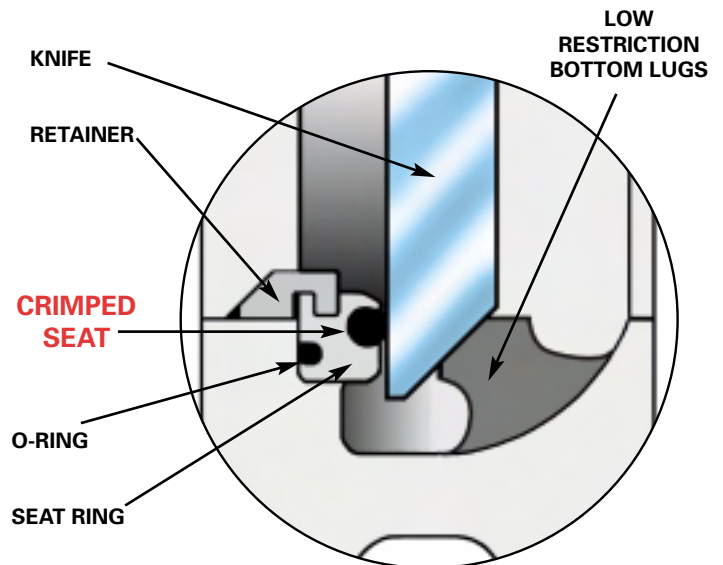
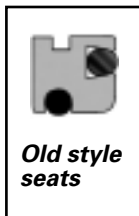
18-36" STANDARD KNIFE GATE VALVE & BOLTED BONNET KNIFE GATE VALVE ALL SIZES

STAINLESS STEEL SEAT RING WITH REPLACEABLE CRIMPED RESILIENT SEAT OPTION PREVENTS ACCIDENTAL EXTRACTION

CRIMPING THE SEAT STEP BY STEP



1. The stainless steel seat ring is manufactured with a slight inside taper.
2. The O-ring is inserted.
3. Seat ring is progressively crimped on a lathe to imprison the O-ring in it.



LOW RESTRICTION LUGS BOTTOM

An important breakthrough in bottom lug design for Pulp and Paper applications, the Velan Bolted Bonnet Knife Gate valve features a bottom lug that permits longer fibers to circulate on each side preventing clogging during closing. This improvement is currently available on most sizes.

RESILIENT SEAT MATERIAL		
TYPE	MAX. TEMP.	USE
Black neoprene	180°F	Alkaline
Off-white neoprene	180°F	Prevent color contamination
Viton, standard on bolted bonnet knife gate valve	400°F	Chemicals
EPDM	250°F	Food
PTFE	400°F	Food
Polyurethane	210°F	Waste water

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SUPERIOR KNIFE

OUR KNIVES ARE THICKER, STRONGER AND HAVE A BETTER SEATING FINISH

- **Thicker knife.** Our valves have thicker, stronger knives, to prevent deflection under heavy pressure and to ensure a tight seal.

The minimum knife thickness for Velan knife gate valves are based on the ASME VIII formula for plate thickness.

- **Precision-machined, bottom and top edges** provide shearing action for pulp stock and slurry.
- **Lapped seating face** for maximum tightness.



EASY MAINTENANCE



Easy seat maintenance due to replaceable seat retainer ring on standard knife gate valves from 8–36" and bolted bonnet knife gate valves from 6–24" .

Simply grinding off the seat ring retainers on the valve body permits extraction of the seat through the packing chamber. Since Velan features a crimped

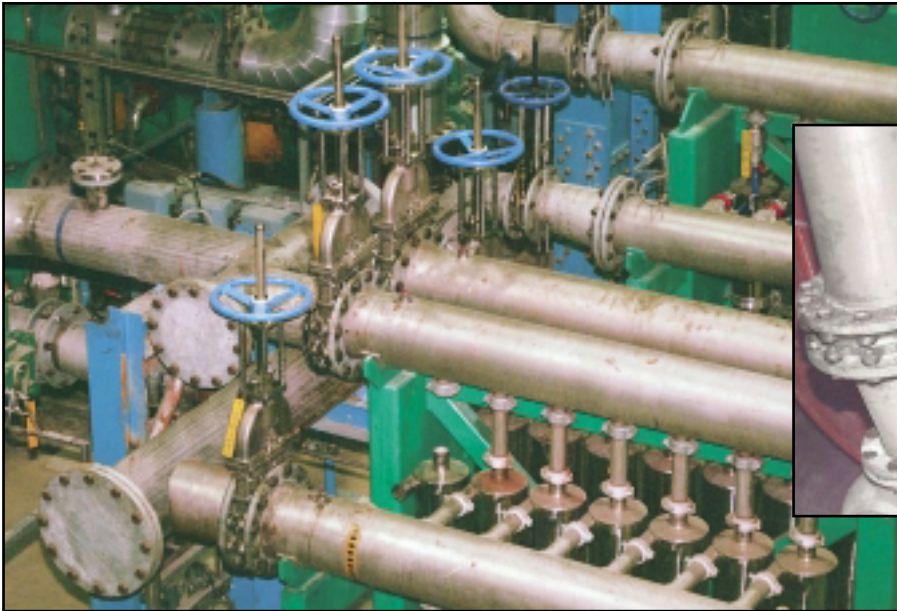
seat, the O-ring cannot be replaced. A new seat ring, including a crimped in O-ring can easily be put back into place and secured there by tack welding the retainers.

This operation can be done many times insuring that the Velan knife gate valve gives years of reliable service.

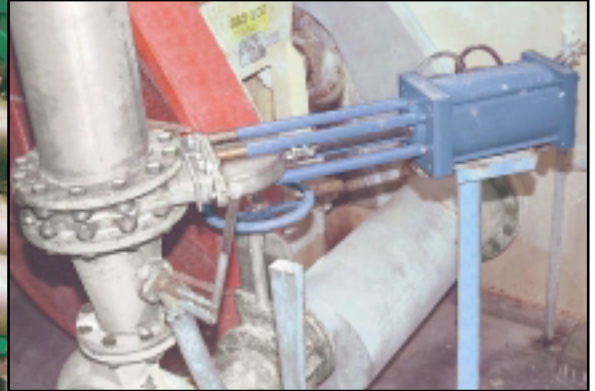
For complete maintenance procedure including important pipe flange bolt torquing specifications, please refer to the Knife Gate Valve Maintenance Manual VEL-KGVM-99

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For a complete version, contact Velan directly.*

IN-SERVICE PHOTOS

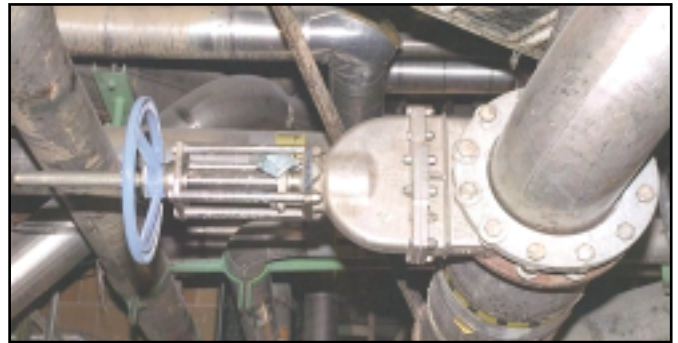


Centrifugal cleaner isolation. Pressure around 25-35 psi (1.7-2.4 bar) 2.5% pulp.



Pump discharge shutoff
5% pulp at 70 psi (4.8 bar) cycling
over 75 times a day.

Due to unique torque closure of its' seat, the Velan Bolted Bonnet Knife Gate Valve is an ideal solution for low pressure, high cycling, environmentally sensitive services and bidirectional applications.



Post refiner line isolation.



Multiple pump discharge isolation with pressure 70-90 psi (4.8-6.2 bar) white water.



Filter isolation installation.

**Please note this is a condensed catalog.
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ACTUATORS



GEAR ACTUATORS

Our standard handwheels suffice to reduce rimpull to acceptable levels. An optional oversized handwheel or VT-20 gear actuator can be supplied for 16" to 24" valves.

ELECTRIC ACTUATORS

Motorized controls may be applied to valves of any size, for operation in practically any position or location. All units, whether installed directly on a valve or on a floor stand, can be manually operated in case of power failure. The units are available for either alternating or direct current and are sized for specified conditions of operation. Motor units are available with limit switches and push button controls which can be selected to meet customers' requirements.

CYLINDER ACTUATORS

Various types of cylinders are available for operating Velan knife gate valves. The most commonly-used cylinders are operated by air, but oil and water types are available if required.

In most designs, the valve stem serves as a piston rod, with the knife fastened directly to the actuator. Actuators with double-ended piston rod option can be supplied to install position indicators or limit switches and for connecting an emergency device for manual actuation of the valve.

Handwheels and gear boxes can be mounted on top of the cylinders for emergency operation due to loss of operating medium in the cylinder.

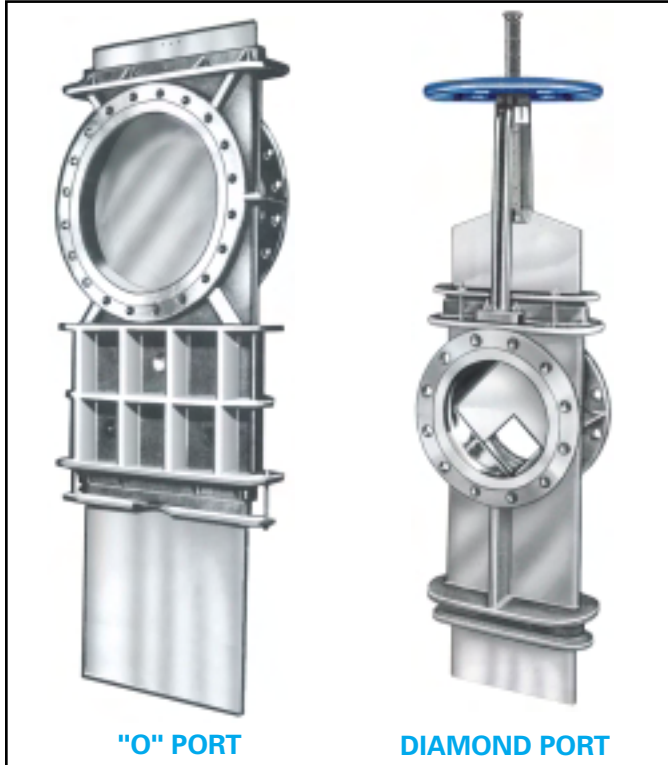
If specified by the customer, Velan valves can be furnished with mounting pads for most steel cylinders or valve positioners for throttling control.

*Please note this is a condensed catalog.
For a complete version, contact Velan directly.*



ALL STAINLESS, FABRICATED OR CAST TYPE 33 KNIFE GATE VALVE FOR THROTTLING 3–24" (80–600 mm)

"O" OR DIAMOND PORT, FULL PORT, 150 PSIG (10.3 BAR)



MATERIALS

ITEM	MODEL	
	A	B
Knife	T316	T317ELC
Body	T316	T317ELC

DESIGN FEATURES:

- Linear flow from low to full opening.
- Non-plugging bonnet and throttle orifice.
- Machined seat allows tight shutoff.
- Beveled gate provides positive shearing action.
- Port closure directly proportional to stem travel for throttling.
- Throttles dense solutions of paper mill stock for headbox flow control, etc.
- All interior surfaces exposed to piped liquid are stainless steel. Full stainless gasket surfaces.
- Deep packing glands eliminate leakage.
- Simple single yoke construction eliminates outside gearing and bearings.

Gear, pneumatic or electric actuators available

DIMENSIONS AND WEIGHTS

SIZE in mm	A Face to Face	DI Center to Top Open
3 80	2 51	19.25 489
4 100	2 51	23.75 603
6 150	2.25 57	28.75 730
8 200	2.75 70	35.25 895
10 250	2.75 70	41.25 1048
12 300	3 76	48 1219
14 350	3 76	52.25 1327
16 400	3.5 89	59 1499
18 450	3.5 89	65.25 1657
20 500	4.5 114	72.25 1835
24 600	4.5 114	81 2057

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TILTING DISC CHECK VALVES THROUGH-BOLTED FLANGES, 2½-24" (65-600 mm)

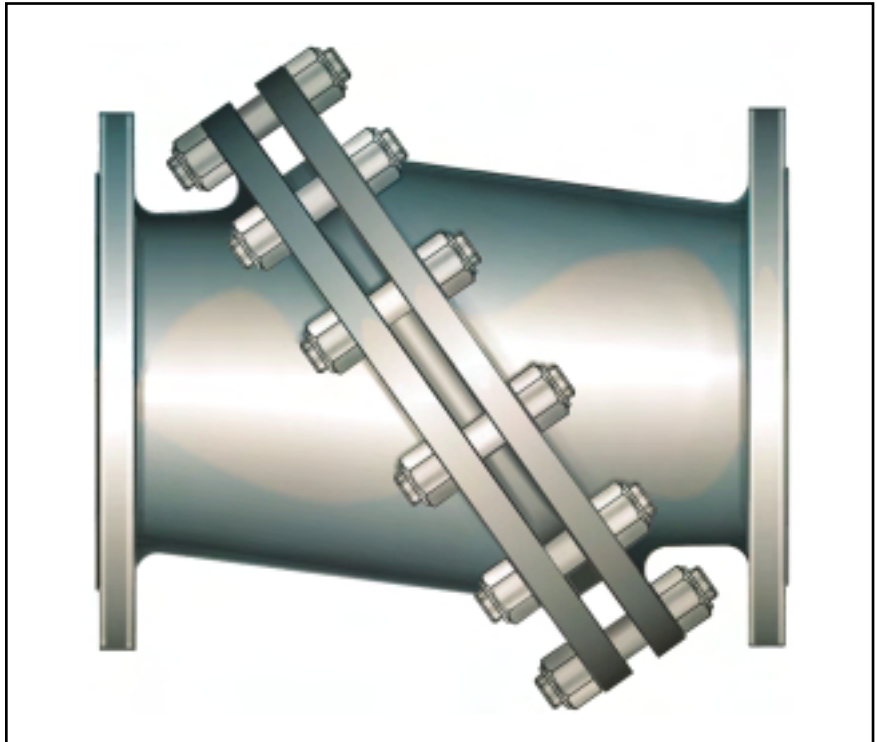
ASME B16.5 CLASS 150, TYPE 34

STANDARD MATERIALS

PART	MATERIAL	
	Body	CF8M
Seat ring	CF8M	CG3M
Disc	CF8M	CG3M

DESIGN FEATURES:

- Manufactured in corrosion-resistant stainless steel.
- Precision machined tilting disc and seat for tight shutoff in reverse flow direction.
- Designed with an off-center pivot to prevent the disc from slamming against the seat and to aid operation at low pressure differentials.
- Can be installed in both the horizontal or vertical positions, provided fluid flow is upward.
- Rugged construction, simple and lightweight.
- 150 psig (10.3 bar) max. working pressure. 150°F (65°C) max. working temperature. Applications outside of these conditions require special design considerations.
- Flanges meet ASME B16.5, Class 150.
- Serrated gasket faces.



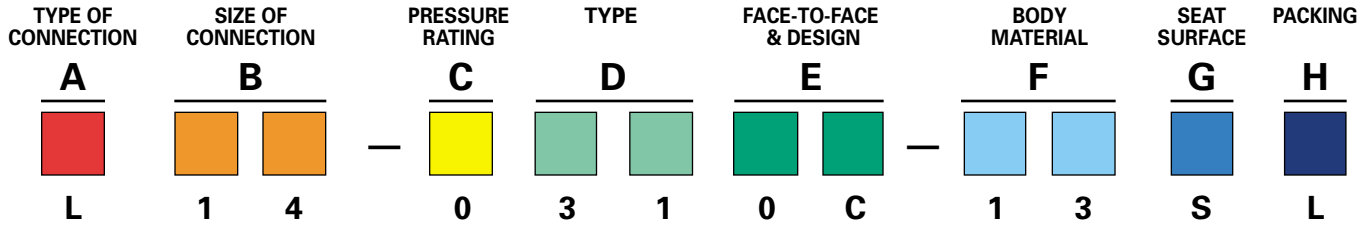
DIMENSIONS AND WEIGHTS

SIZE in mm	A Face to Face	Maximum Width
2.5 65	8.50 216	8.75 222
3 80	9.50 241	9.75 248
4 100	11.50 292	11.50 292
6 150	14.00 356	13.50 343
8 200	18.00 457	16.00 406
10 250	21.75 552	19.00 483
12 300	25.25 641	21.75 552
14 350	28.00 711	25.00 635
16 400	30.00 762	28.00 711
18 450	31.00 787	29.50 749
20 500	32.50 826	32.75 832
24 600	34.00 864	38.75 984

NOTE:
Flanges drilled
to match
ASME B16.5 Class 150.

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HOW TO ORDER



Example: 6", lug, 150 class, metal-seated, cast, stainless steel knife gate valve.

A TYPE OF CONNECTION																				
B - Butt weld C - Combination (socket weld/threaded) D - DIN flanged E - Welded stubs butt weld F - Flanged B16.5 (B16.47 series A) G - Small tongue and groove H - Hub ends L - Lug N - Wafer P - Flanged B16.47 series B (API 605) R - Flanged ring joint S - Threaded T - Studded drilled & tapped U - Undrilled flanges X - Butt weld (intermediate class) W - Socket weld Z - Welded stubs socket weld																				
B SIZE OF CONNECTION																				
Customers have the choice of specifying valve size as part of the valve figure number (B) using the numbers below, or indicating valve size separately. EXAMPLES: L14-0310C-13SL (valve size is part of figure number) 6"L-0310C-13SL (valve size is shown separately)																				
<table border="0"> <tr> <td>08 - 2" (50 mm)</td> <td>15 - 8" (200 mm)</td> <td>21 - 18" (450 mm)</td> <td>28 - 28" (700 mm)</td> </tr> <tr> <td>09 - 2½" (65 mm)</td> <td>16 - 10" (250 mm)</td> <td>22 - 20" (500 mm)</td> <td>30 - 30" (750 mm)</td> </tr> <tr> <td>10 - 3" (80 mm)</td> <td>18 - 12" (300 mm)</td> <td>23 - 22" (550 mm)</td> <td>32 - 32" (800 mm)</td> </tr> <tr> <td>12 - 4" (100 mm)</td> <td>19 - 14" (350 mm)</td> <td>24 - 24" (600 mm)</td> <td>34 - 34" (850 mm)</td> </tr> <tr> <td>14 - 6" (150 mm)</td> <td>20 - 16" (400 mm)</td> <td>26 - 26" (650 mm)</td> <td>36 - 36" (900 mm)</td> </tr> </table>	08 - 2" (50 mm)	15 - 8" (200 mm)	21 - 18" (450 mm)	28 - 28" (700 mm)	09 - 2½" (65 mm)	16 - 10" (250 mm)	22 - 20" (500 mm)	30 - 30" (750 mm)	10 - 3" (80 mm)	18 - 12" (300 mm)	23 - 22" (550 mm)	32 - 32" (800 mm)	12 - 4" (100 mm)	19 - 14" (350 mm)	24 - 24" (600 mm)	34 - 34" (850 mm)	14 - 6" (150 mm)	20 - 16" (400 mm)	26 - 26" (650 mm)	36 - 36" (900 mm)
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14 - 6" (150 mm)	20 - 16" (400 mm)	26 - 26" (650 mm)	36 - 36" (900 mm)																	
C PRESSURE RATING																				
0 - 150																				

D TYPE
31 - Metal seat 32 - Soft seat 33 - Throttling stock valve 34 - Tilting disc check valve 37 - V-port 38 - Knife gate with seat insert
E FACE TO FACE
0 - Tappi standard (wafer) 1 - ASME/ANSI standard (flanged) 2 - Regular (flanged)
DESIGN
B - Cast (bolted bonnet) C - Cast (bonnetless) F - Fabricated
F BODY MATERIAL
02 - A105, WCB 11 - F304, CF8 12 - F304L, CF3 13 - F316, CF8M 14 - F316L, CF3M 23 - Alloy 20 28 - F317, CG8M 29 - F317L, CG3M 34 - F91, C12A 35 - F44, 254 5MO
G SEAT SURFACE
B - Viton C - Black Neoprene E - EPDM F - PTFE M - Stellite P - Polyurethane S - Integral W - White Neoprene
H PACKING
C - Graphite/Inconel F - PTFE 0-14 pH L - Spun synthetic 4-10 pH G - Graphite 0-14 pH T - PTFE/Graphite 0-14 pH

The figure numbers shown on this key are designed to cover essential features of Velan valves. Please use figure numbers to ensure prompt and accurate processing of your order. A detailed description must accompany any special orders.

MATERIAL SPECIFICATIONS

ASTM DESIGNATION	CAST				BAR STOCK		PLATE
	316	316L	304	317L	316	304	316
	A351 CF8M	A351 CF3M	A351 CF8	A351 CG3M			
COMPOSITION %							
Carbon	0.08	0.03	0.08	0.03	0.08	0.08	0.08
Manganese	1.50	1.50	1.50	1.50	2.00	2.00	2.00
Phosphorus	0.04	0.04	0.04	0.04	0.045	0.04	0.045
Sulphur	0.04	0.04	0.04	0.04	0.030	0.03	0.03
Silicon	1.50	1.50	2.00	1.50	1.00	1.00	0.75
Nickel	9.00-12.00	9.00-13.00	8.00-11.00	11.5-13.5	10-14	8.00-10.50	10.00-14.00
Chromium	18.00-21.00	17.00-21.00	18.0-21.00	20.5-23.5	1-18	18.00-20.00	16.00-18.00
Molybdenum	2.00-3.00	2.00-3.00	—	3.00-4.00	2.00-3.00	—	2.00-3.00
Heat Treatment	Solution anneal						
Tensile ksi min.	70	70	70	75	75	75	75
Yield ksi min.	30	30	30	35	30	30	30
Elong. % min.	30	30	35	25	30	30	40
R. area % min.	—	—	—	36	40	40	—
Hardness HB max.	—	187	—	185	187	187	217
Parts	Body, bonnet, yoke				Stem, post		Knife

NOTICE

- Knife Gate valves should preferably not be opened or closed against pressure.
- Lugs should not be used to adjust misalignment in piping.
- Velan reserves the right to take exception to warranty when misapplications / 3rd party automation and other operations are carried out without Velan's prior knowledge.
- Consult Velan sales for standard factory warranty.