

One Source

KREBS® Technequip™ knife gate valves



**TG valves for heavy duty
slurry applications**

FLSMIDTH
KREBS

Technequip™ valves

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The Technequip valve group of FLSmidth Krebs has a long history of manufacturing and supplying equipment for the mining and mineral processing industry. Founded in 1957 in Toronto, Canada as Technequip Ltd., acquired by FLSmidth (FFE Minerals) in 1993, and integrated into FLSmidth Krebs of Tucson, AZ in 2007, there is a strong global presence to sell and support our various products.

Building on over 40 years of valve manufacturing experience, FLSmidth Krebs has been successfully manufacturing and supplying the Technequip™ (formerly Technegate™) Knife Gate Valve since 1999.

Designed specifically for the harsh and

abrasive slurries encountered in the mineral processing and power industries, the Technequip knife gate valve can be found installed all over the world.

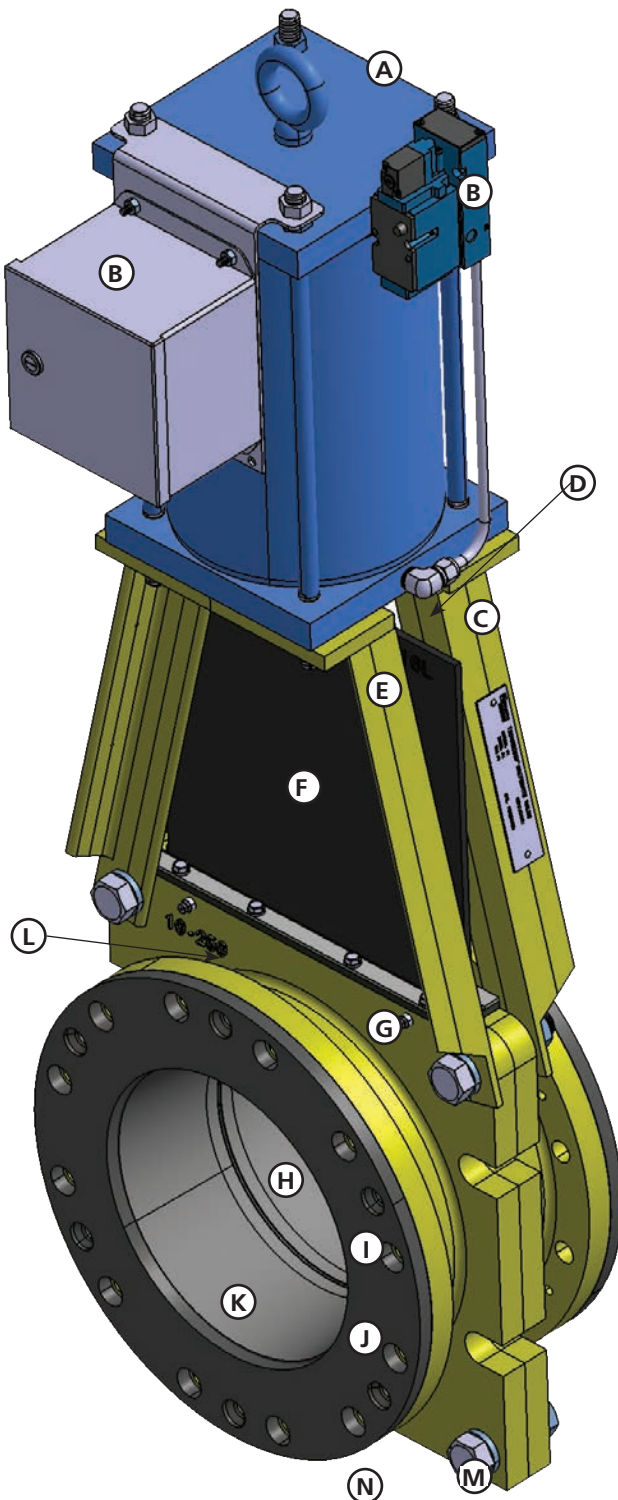
FLSmidth Krebs manufactures both imperial and metric knife gate valves in seventeen sizes, including some unique to Technequip. Ranging from 2-inch (50 mm) to 48-inch (1200 mm), the valves are available with manual handwheel, bevel gear, pneumatic, hydraulic, and electric actuators. Numerous accessories and options are available, including but not limited to, solenoids, limit switches, junction boxes and alternate gate and elastomer materials.

High pressure valves are also available.

Overview

Imperial flange patterns	ANSI B16.5 Class 150, MSS SP-44 Class 150
Metric flange patterns	SABS 1123:1000/3, DIN2501 PN10, AS2129 TBL D, AS2129 TBL E
Pressure ratings up to 150 psi (10.3 bar)	2" (50mm), 3" (75/80mm), 4" (100mm), 6" (150mm), 8" (200mm), 10" (250mm), 12" (300mm), 14" (350mm), 16" (400mm), 18" (450mm), 20" (500mm), 24" (600mm)
Pressure ratings up to 100 psi (6.9 bar)	26" (650mm), 30" (750mm), 32" (800mm), 36" (900mm), 42" (1050mm)
Pressure ratings up to 75 psi (5.1 bar)	48" (1200mm)
Actuator options	Air cylinder, hydraulic cylinder, manual handwheel, manual bevel gear, electro-mechanical and more
Gate Material Options	316L SS, 17-4 PH SS, Duplex 2205, C-276, and more
Sleeve Material Options	Pure gum rubber, chlorobuytl, EPDM, nitrile, neoprene, and more
Optional accessories	Instrumentation and controls, safety options, accessories customized to any application

Valve features



Features

- A** - Manual or automated actuators available
- B** - Factory-installed instrumentation and controls options available
- C** - Two-coat epoxy paint
- D** - High strength steel gate clevis
- E** - Dust boots supplied as standard to protect stem and actuators
- F** - Fluorocarbon gate coating as standard for reduced friction
- G** - No packing gland, which can jam gate
- H** - Full port, bi-directional design
- I** - Metric or imperial flange patterns
- J** - Retainer flanges supplied as standard on all sizes (the retainer flange also functions as a gasket)
- K** - Long-wearing, field replaceable sleeves, create sealing surface
- L** - Machined gate guides. No spacer bars required
- M** - Zinc-nickel dichromate plated hardware for corrosion resistance
- N** - Open body prevents gate damage during activation

Design benefits

Applications

- **Mining and mineral processing**
- **Mineral Sands**
- **Cement**
- **Sand and Gravel**
- **Coal**
- **Phosphate**
- **Ash**
- **Alumina**
- **Power**
- **Pulp and Paper**
- **Chemical**
- **General Industrial**

Proven Design

FLSmidth Krebs's Technequip™ TG knife gate valve has been specifically designed for the most demanding applications. The long-lasting replaceable elastomer sleeves remove the need for packing glands, eliminating associated actuation issues caused by slurry buildup and dewatering, in and around the packing gland. The valve will perform reliably, even in highly abrasive slurry applications.



Long Life

All valves are supplied with dust boots (bellows) as standard to protect the valve stems and actuators.

All manual and electro-mechanical valves are supplied with stem covers as standard for additional stem and actuator protection.

All valves are supplied with zinc-nickel dichromate hardware (nuts, bolts, and washers) for corrosion protection.

Each component is individually epoxy painted prior to assembly.

All gates are coated in fluorocarbon to reduce friction between the gate and the sleeve.

Reliable Operation

In the open position, the gate is fully isolated by the sleeves from the process. As the gate closes, it pushes between the two sleeves, discharging a small amount of material out of the bottom of the valve. This serves to prevent material buildup in the seat area, as well as to prevent damage to the gate. When the gate is in the open or closed position, there is a 100% bi-directional bubble tight seal.

Global Support

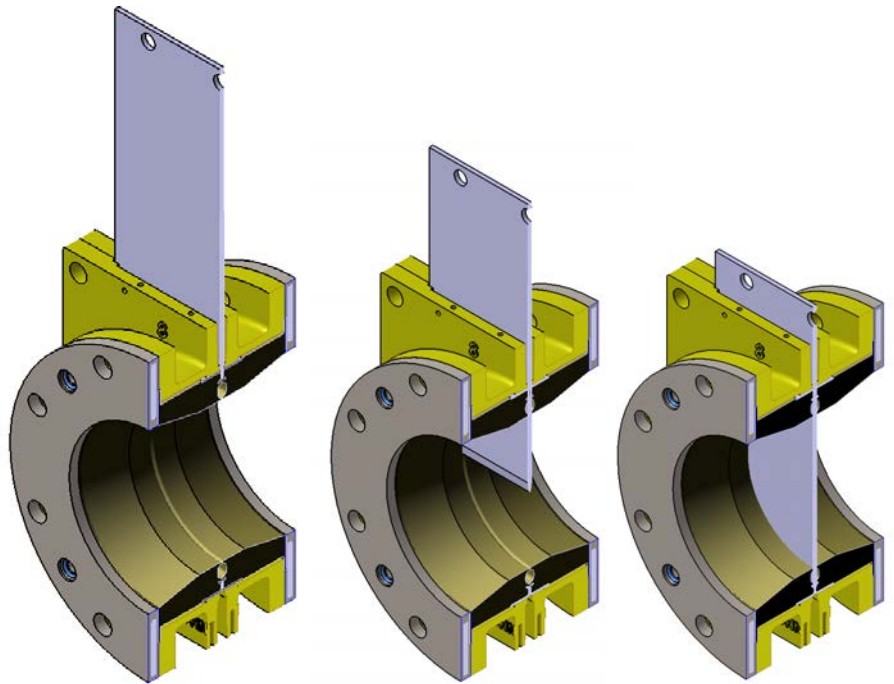
Through a network of global offices and representative alliances, we are able to maintain valve inventory spare parts, and provide service and technical expertise around the world.

Design benefits (cont.)



Advantages of the Krebs Technequip TG Open Body Design:

- Open body design eliminates packing gland, gate is fully out of pipeline when open minimizing pressure drop across the valve
- Open body design allows gate to eject material out of the bottom, ensuring full gate closure and providing a reliable seal unlike traditional closed body valves where material can become trapped and damage the gate or the valve body and cause leakage



Gate is fully out of pipeline when open, minimizing pressure drop across valve.

Advantages of the Krebs Technequip TG Massive Sleeves:

- Designed specifically for heavy-duty slurry applications
- Sleeves are easily changed out in the field prolonging overall valve life and minimizing down time
- Provides 100% bubble tight seal and relies only on the sleeves to seal
- Provides bi-directional flow



Valve materials

Sleeve and Retainer Flange Materials

The long-lasting, field-replaceable Technequip Knife Gate Valve sleeves are constructed of dense molded elastomer, complete with an integral stiffener ring molded into the sleeve (external or internal). Sleeves are available in several different materials, suitable for a range of applications.

For ease of installation and to pre-compress the sleeves, retainer flanges are provided as standard for all sizes of valves. Retainer flanges have a steel core and are elastomer-lined to match the sleeve material

Pure gum rubber is supplied as standard, however, there are many elastomer options available.

Please contact your regional representative to determine which material is best suited for your application.

Elastomer selection	(Based on temperature and slurry chemistry)
Material	Max/Min Service temperature
Pure Gum Rubber - PG (standard)	-60°F to 180°F (-51°C to 82°C)
Neoprene - NE	-40°F to 212°F (-40°C to 100°C)
Nitrile - NI	-40°F to 212°F (-40°C to 100°C)
EPDM - EP	-60°F to 300°F (-51°C to 149°C)
Chlorobutyl - CB	-40°F to 230°F (-40°C to 110°C)

Valve Housing and Flanges

The valve housing is ASTM A536 cast ductile coated with two-coat epoxy paint for added corrosion resistance. The gate guides are machined, eliminating the need for spacer bars. The upper cavity is pre-lubricated with a silicone based grease, to improve actuation and decrease wear. The valve is available in both imperial and metric flange pattern options.

Flange Pattern	Style	Sizes Available
ANSI B16.5 Class 150	Drilled & Tapped	2" to 12"
ANSI B16.5 Class 150	Slotted	14" to 24"
MSS SP-44 Class 150	Slotted	26" to 48"
SABS 1123:1000/3 DIN2501 PN10 BS4504 PN10	Drilled & Tapped	50mm to 1050mm
BS10 TBLD AS2129 TBL D	Drilled & Tapped	50mm to 1050mm
BS10 TBL E AS2129 TBL E	Drilled & Tapped	50mm to 1050mm

Gate Material Options and Pressure Ratings

Technequip Knife Gate Valves are designed to withstand a hydrostatic test of 1.5 times the rated pressure with the gate in the open position and a differential pressure of 1.1 times the rated pressure in the closed position. All gates are standard factory coated with a fluorocarbon coating, to prevent material build-up and to reduce friction between the gate and the sleeve. An optional synergistic gate coating is also available for severe applications.

	2" (50mm) to 14" (350mm)	16" (400mm) to 24" (600mm)	26" (650mm) to 42" (1050mm)	48" (1200 mm)
Standard Gate Materials				
316L		✓	✓	✓
17-4PH	✓			
Gate Material Options				
316L	100 psi (7 bar)	100 psi (7 bar)	75 psi (5 bar)	50 psi (3 bar)
17-4PH	150 psi (10 bar)	150 psi (10 bar)	100 psi (7 bar)	75 psi (5 bar)
2205 Super Duplex	100 psi (7 bar)	100 psi (7 bar)	75 psi (5 bar)	50 psi (3 bar)
C-276 Hastelloy	100 psi (7 bar)	100 psi (7 bar)	75 psi (5 bar)	50 psi (3 bar)
Other Materials	Consult Factory	Consult Factory	Consult Factory	Consult Factory

Actuation options

Air cylinder - double acting (AC)

Technequip valves are available with double acting pneumatic actuators in sizes 2" (50mm) to 30" (750mm). All actuators supplied are Parker VE Series actuators suitable for a minimum of 75 psi (5.2 bar) plant air. The Air Cylinders are manufactured with steel end caps, and a chrome-plated piston rod and are attached to the gate with a machined 17-4 PH SS gate clevis. For superior wear life and reliability, the cylinder tube is constructed of Amalga Composites' Black Amalgon® fiber reinforced thermoset epoxy matrix tubing. All air cylinders are supplied as standard with an internal ring magnet in the piston, so that they can be used with optional externally mounted reed limit switches.

For applications with low or unreliable plant air, an oversized air cylinder (AC60 option) that is suitable for a minimum of 60 psi (4.1 bar) air, can be supplied for valves sized 2" (50mm) to 24" (600mm).

Also available are single-acting, spring-return air cylinders for sizes 2" (50mm) to 14" (350mm). These are available in Fail Open and Fail Close, when this action is required on loss of air.

For specific pneumatic requirements not listed, please contact the factory.



Hydraulic - double acting (HYD)

Technequip valves are available with double acting hydraulic actuators in all sizes. All hydraulic actuators supplied are Parker 3L Series actuators. The hydraulic cylinders are manufactured with steel end caps, chrome-plated piston rod, and bronze gland rod, and are attached to the gate with a machined 17-4 PH SS gate clevis.

As an option, hydraulic power units, portable power units, or hydraulic hand pumps can be supplied.

Electric (ELEC)

Technequip valves are available with electric actuators for all sizes. Electric actuators can be specified as Limatorque, AUMA, and Rotork, and can be supplied to meet numerous voltage requirements. All electrically actuated valves are supplied with a 304 SS stem, protected by a stem cover and dust boots.



Bevel gear - double acting (BG)

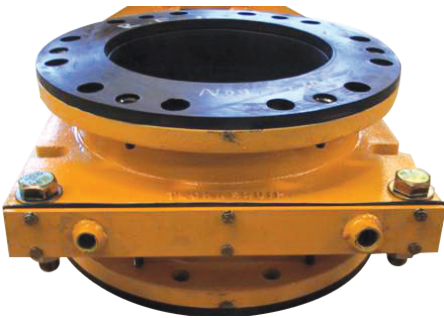
Technequip valves are available with bevel gear actuators in sizes 6" (150mm) to 24" (600mm). All bevel gear operators are manufactured by Dynatorque with 3:1 or 4:1 gear ratios, depending on the size. Supplied where manual actuation is required, but the rim pull of a handwheel actuator would be too high. Caution is advised on the larger sizes due to the large number of turns required to open and close the valves. All bevel gear valves are supplied with a 304 SS stem, protected by a stem cover and dust boots.

Hand Wheel (HW)

Technequip valves are available with hand wheel operators in sizes 2" (50mm) to 10" (250mm). For sizes larger than 10" (250mm), the rim pull is too high for a handwheel valve, and a bevel gear valve is recommended where manual actuation is required. All handwheel valves come standard with a 304 SS stem, protected by a stem cover and dust boots.



Safety options



Splash guard (plate) - SG



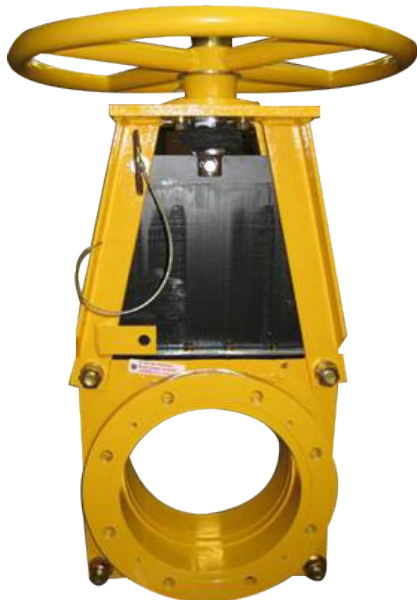
Gate guards - GG



Splash guard (pipe) - SGR



Air lockout - LOCA



Lockout - L

Splash guard (plate) – SG

Flat plate with gasket mounted to the bottom of the valve. Two FNPT fittings can either pipe away slurry or a water pipe added for flushing.

Splash guard (pipe) - SGR

Machined pipe with gasket is mounted to the bottom of the valve, to collect and drain discharge.

Lockout – L

Tabs allow a lock-pin to be placed through the gate, preventing actuation (manual valves only).

Gate maintenance pin – L

Similar to the Lockout option, tabs allow a lock-pin to be placed through the gate, preventing gate movement. (Actuated valves only).

Gate guards – GG

Expanded metal gate guards prevent access to the gate, while allowing for washout of the gate area.

Air lockout - LOCA

Lockable Air valve is installed between air supply and actuator, preventing valve actuation. One required with solenoid. Two required without solenoid (AC valves only).

Instrumentation and controls options

Inline flow control

Adjustable flow fitting mounted on exhaust port of solenoid. (AC only)

Exhaust muffler

Silencer fitting mounted on exhaust port of solenoid. (AC only).

Manual hand lever

Manual actuation control. (AC and HYD)

Pressure reducing valve - PRV

Parker Watts B11 Series Integral Air Filter/Regulator.

Directional control valves - SVH

Parker D1VW Series Directional Control Valves for hydraulic actuators. Please consult factory for available options. (HYD only).

Quick connect hydraulic manifold blocks

Hydraulic manifold blocks, with hydraulic actuators. Please consult factory for available options. (HYD only).

NEMA 4X junction box - NM4X10

Hammons PJ series NEMA 4X fiberglass Junction box mounted on valve, with a 10 place terminal strip. Solenoids and limit switches, if provided, are factory wired to terminal strip.

NM4 junction box – NM410

Similar to above, but as a steel NEMA 4 Junction box.

I/O module

Communication protocol I/O modules for valve addressability can be provided and mounted on the valve. Please consult factory for options available.

For other options not listed here, please consult factory.



Manual hand lever



Pressure reducing valve - PRV



Directional control valves - SVH



Quick connect hydraulic manifold blocks



Junction box - NM4X10

Solenoids

Feature description	Specification		
Spool type	Single (coil) operator - single pressure spring return or dual (coil) operator		
Port size	3/8" NPT or 3/8" BSPP		
Cv factor	1.35		
Voltage	24VDC	120V/60Hz 110V/50Hz	240V/60Hz 220V/50Hz
Operating temperature range	-18C to 50C 0F to 120F		
Operating pressure range	20-150psi 138kPa to 1035kPa		

Single coil solenoid - SV, SV24V, SV220V

MAC Series 82, 4-Way 2-Position Single Coil Solenoid, 3/8" port, 1.35 Cv, with LED and manual override. Aluminum body and spool. Can be installed for fail open or fail closed position on loss of power (AC up to 12", 300mm only).

Single coil solenoid with sandwich flow control - SVFC, SVFC24V, SVFC220V

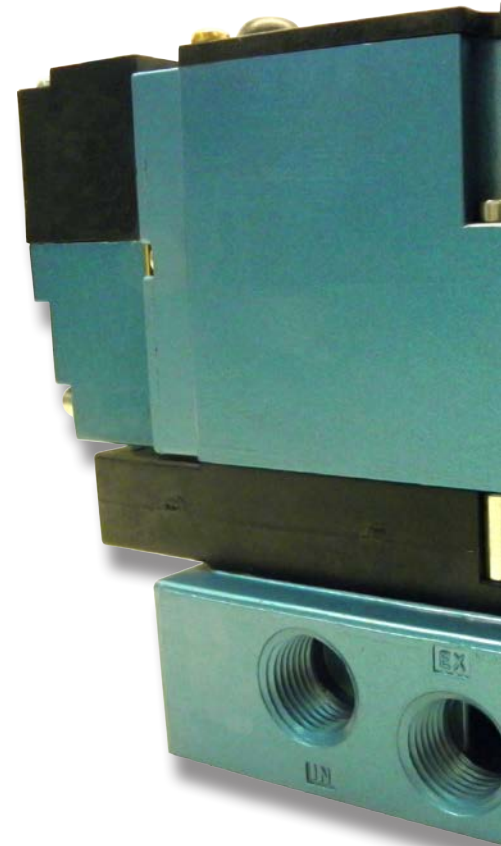
Same as above, but with sandwich flow control (AC up to 12", 300mm only).

Dual coil solenoid - SVDC, SV24VDC, SV220VDC

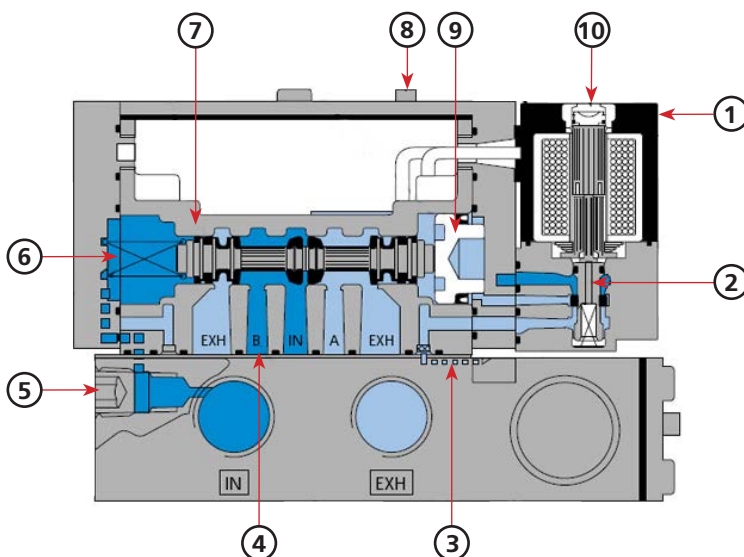
MAC Series 82, 4-Way 2-Position Dual Coil Solenoid, 3/8" port, 1.35 Cv, with LED and manual override. Fail last on loss of power (AC up to 12", 300mm only).

Dual coil solenoid - SVDCFC, SV24VDCFC, SV220VDCFC

Same as above but with sandwich flow control.

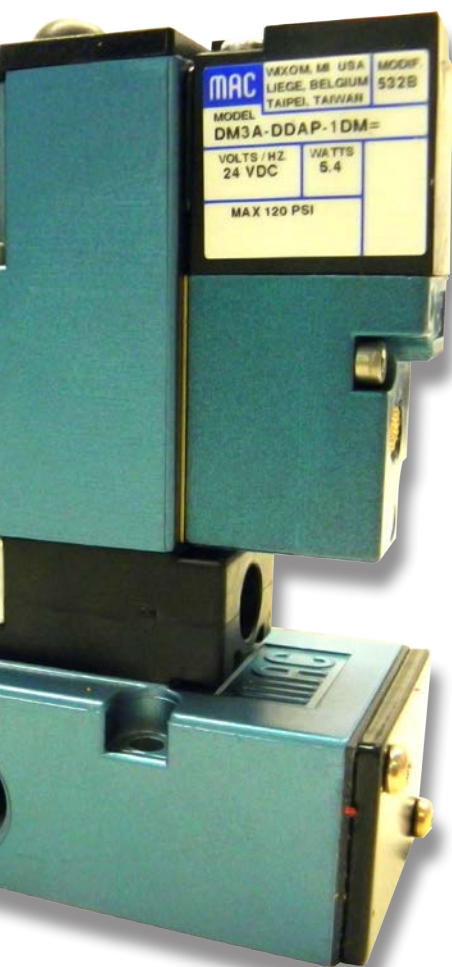


MAC 92 Series Solenoid



1. MACSOLENOID®
2. Poppet Pilot Valve
3. Plug In Design
4. High Flow Ports
5. Optional Common External Pilot
6. Spring Return
7. Mac Spool & Bore
8. Power Indicator Light
9. Piston
10. Non-Locking Manual Operator

Solenoids (cont.)



Feature description	Specification		
Spool type	Single (coil) operator - single pressure spring return or dual (coil) operator		
Port size	1/2" NPT or 1/2" BSPP		
Cv factor	3.0		
Voltage	24VDC	120V/60Hz 110V/50Hz	240V/60Hz 220V/50Hz
Operating temperature range	-18C to 50C 0F to 120F		
Operating pressure range	20-150psi 138kPa to 1035kPa		

Single coil solenoid (high flow) - SVB, SVB24V, SVB220V

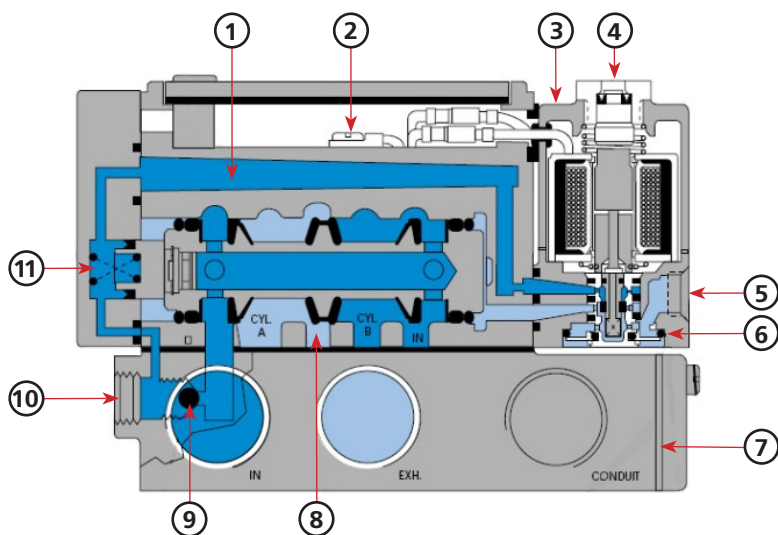
MAC Series 6300, 4-Way 2-Position Single Coil Solenoid, 1/2" port, 3.0 Cv, with LED and manual override. Aluminum body and spool. Can be installed for fail open or fail closed position on loss of power (AC only).

Standard tubing is polyurethane with Comozzi push lock fittings. (AC Only) Option for stainless steel tubing and fittings for piping of solenoids to air cylinder.

Other solenoid options available to include the new MAC 92/93 series, ASCO, Numatics and many more. Please consult factory.

Dual coil solenoid (high flow) - SVBDC, SVBDC24V, SVBDC220V

MAC Series 6300, 4-Way 2-Position Dual Coil Solenoid, 1/2" port, 3.0 Cv, with LED and manual override. Aluminum body and spool. Fail last on loss of power (AC only).



1. Pilot Air Accumulator
2. Integral Ground Wire
3. Sealed Solenoid Enclosure
4. Manual Operator
5. Optional Pilot Exhaust Tapped Port
6. Integral Muffler
7. Sealed Wiring Tuck Space
8. Bonded Flow Seal Spool
9. Internal Pilot Supply Ball Check
10. External Pilot Supply Port
11. Air / Spring Return

Switches

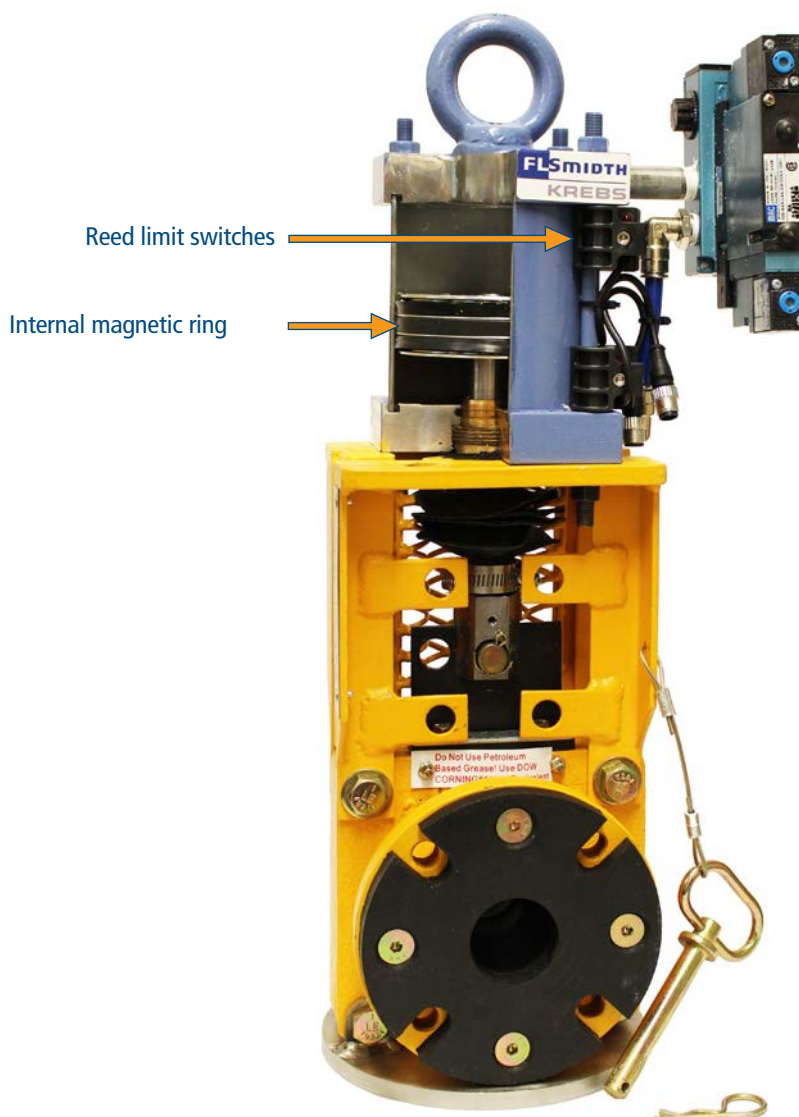
Feature description	Specification	
Switch type	2-Wire reed	3-Wire reed
Output function	Normally open (SPST)	Normally open/closed (SPST)
Operating voltage	6-24 VDC or 5-240 VAC	
Switching power	30 W MAX	
Continuous current	1 mA MAX	
Operating temperature range	-20C to 80C -4F to 176F	

Reed limit switch - LSC

Two Canfield connector reed limit switches SPST or SPDT mounted on the air cylinder, detecting the internal ring magnet on the piston (AC only).

Reed limit switch options

Technequip air-actuated knife gate valves are supplied as standard with Parker pneumatic cylinders that incorporate an internal ring magnet in the piston head. This allows for the reliable and economical Drop-In Reed Sensors to be easily mounted on the cylinder tie-rods. When mounted, the low profile sensor is within the cylinder envelope. By mounting proximity indicators on the cylinder, the sensor is mounted away from all moving parts of the valve, and is well removed from the harsh slurry environment.



Switches (cont.)

Inductive proximity switches - LST

Two Telemecanique OsiSense® XS SPDT inductive proximity switches are mounted on a bracket from the valve frame, detecting a target on the gate clevis.

Feature description	Specification	
Switch type	2/3 wire inductive switch (PNP, NPN, DC)	
Output function	Normally open/closed (SPST)	
Operating voltage	24-240VAC 24-210VDC	12-48VDC
Continuous current	1.5-100mA MAX	200 mA MAX
Sensing range	8mm - 15mm	
Operating temperature range	-25C to 70C -13F to 158F	

Leverless proximity switches - GO

Two Topworx GO Series 73 SPDT Leverless proximity switches are mounted on bracket from the valve frame.

Feature description	Specification	
Switch type	Proximity switch	
Output function	Normally open/closed (SPDT)	
Operating voltage	120-480 VAC	24-250 VDC
Continuous current	4/2 A	3 / 1.25 / .5 A
Operating temperature range	-40C to 105C -40F to 221F	

Leverless proximity switches - GO1

Two Topworx GO Series 81 DPDT Inductive proximity switches are mounted on bracket from the valve frame.

Feature description	Specification	
Switch type	Proximity switch	
Output function	Normally open/closed (DPDT)	
Operating voltage	120-480 VAC	24-250 VDC
Continuous current	10 A MAX	3 A MAX
Operating temperature range	-40C to 105C -40F to 221F	

Mechanical limit switch LSB/LSB1

Two Honeywell Microswitches SPDT or DPDT Mechanical limit switches are mounted on valve frames. The switches lever arm is triggered by a tab on the gate.

Feature description	Specification	
Switch type	Mechanical	
Output function	Normally open/closed (SPDT/DPDT)	
Operating voltage	600 VAC or 250 VDC	
Continuous current	10 A MAX	
Operating temperature range	-12C to 121C 10F to 250F	

For switch options not listed here, please consult factory.

Installation

Valve connection

The pipe line companion flanges should be raised or flat faced to ensure full sleeve support. The following table outlines the standard flange connection and associated hardware details.

Imperial

Imperial Technequip™ knife gate valves have flanged connections with ANSI B16.5 Class 150 bolt drillings up to the 24" valve and as per MSS SP-44 class ISO for 26" valve and above

(all dimensions are in inches)

Valve size	Bolt circle diameter	Bolt diameter x pitch	No. of bolts per valve	Stud or bolt useable length without retainer flange	Stud or bolt useable length with retainer flange	Recommended tightening torque ft-lbs
2"	4 3/4	5/8-11 UNC	8	1 1/2	2	40
3"	6	5/8-11 UNC	8	2	2 1/2	40
4"	7 1/2	5/8-11 UNC	16	2	2 1/2	40
6"	9 1/2	3/4-10 UNC	16	2	2 1/2	70
8"	11 3/4	3/4-10 UNC	16	2 1/4	2 3/4	70
10"	14 1/4	7/8-9 UNC	24	---	3	110
12"	17	7/8-9 UNC	24	---	4	110
14"	18 3/4	1-8 UNC	24	---	4 1/4	170
16"	21 1/4	1-8 UNC	32	---	4 3/4	170
18"	22 3/4	1 1/8-7 UNC	32	---	5 1/2	240
20"	25	1 1/8-7 UNC	40	---	5 1/2	240
24"	29 1/2	1 1/4-7 UNC	40	---	6	240
26"	31 3/4	1 1/4-7 UNC	48	---	7	345
30"	36	1 1/4-7 UNC	56	---	7	345
32"	38 1/2	1 1/4-7 UNC	56	---	7	345
36"	42 3/4	1 1/2-6 UNC	64	---	7	610
42"	49 1/2	1 1/2-6 UNC	72	---	7 1/2	610
48"	56	1 1/2-6 UNC	88	---	8 1/4	610

Note: Bolt usable length is determined using common companion flanges

Installation (cont.)

Metric

Technequip™ knife gate valves have flanged connections with DIN PN10 and AS2129

(All dimensions below are in mm)

Valve Size	Bolt circle diameter		Bolt diameter x pitch		Number of bolts per valve		Stud or bolt useable length without retainer flange		Stud or bolt useable length with retainer flange		Recommended tightening torque (N-m)
	*DIN PN10	AS2129 TABLE D/E	*DIN PN10	AS2129 TABLE D/E	*DIN PN10	AS2129 TABLE D/E	*DIN PN10	AS2129 TABLE D/E	*DIN PN10	AS2129 TABLE D/E	
50mm	125	114	M16x2.0	M16x2.0	8	8	40	40	50	50	50
75mm	160	145	M16x2.0	M16x2.0	16	8	45	40	50	50	50
100mm	180	178	M16x2.0	M16x2.0	16	8 / 16	45	45	55	55	50
150mm	240	235	M20x2.5	M16x2.0 / M20x2.5	16	16	50	45	65	60	95
200mm	295	292	M20x2.5	M16x2.0 / M20x2.5	16	16	50	50	65	65	95
250mm	350	356	M20x2.5	M20x2.5	24	16 / 24	---	---	70	70	155
300mm	400	406	M20x2.5	M16x2.0 / M20x2.5	24	24	---	---	75	75	155
350mm	460	470	M20x2.5	M24x3.0	32	24	---	---	80	80	230
400mm	515	521	M24x3.0	M24x3.0	32	24	---	---	80	85	230
450mm	565	584	M24x3.0	M24x3.0	40	24 / 32	---	---	95	95	325
500mm	620	641	M24x3.0	M24x3.0	40	32	---	---	95	100	325
600mm	725	756	M27x3.0	M27x3.0 / M30x3.5	40	32	---	---	100	105	325
*650mm	780	---	M30x3.5	---	48	---	---	---	100	---	465
*750mm	900	927	M30x3.5	M30x3.5 / M33x3.5	48	40	---	---	110	115	465
800mm	950	987	M30x3.5	M33x3.5	48	40	---	---	---	---	465
900mm	1050	1092	M30x3.5	M33x3.5	56	48	---	---	125	125	465
1200mm	1300	1410	M36x4.0	M33x3.5 M36x4.0	64	64	---	---	170	160	465

Note: Bolt usable length is determined using common companion flanges.

*650mm, 750mm, valve sizes call out SABS1123:1000/3 drilling as DIN PN10 does not exist

Operating specifications

Operating warnings

Ensure that the stainless steel gate is always fully opened or fully closed. DO NOT use the valve to “throttle” the flow, as premature wear of the gate and sleeves will result which can render the valve inoperable. It is normal during valve actuation for a small amount of slurry/liquid to be discharged. If slurry/liquid is harmful in any way or slurry containment is necessary please inquire about a splash guard option. If using the splash guard do not block both splash guard ports. For proper operation of a valve please see table below to ensure your conditions are within the operating specifications.

Imperial			Air actuated			Hydraulic actuated			Manually actuated	
Valve size (inches)	Maximum valve operating pressure (psi)	Nominal cylinder stoke (inches)	Nominal air cylinder bore (inches)	Air min/max pressure (psi)	Continuous cycling free air consumptions at 80 psi (SCFM)	Nominal hyd. cylinder bore (inches)	Hyd. min/max Pressure (psi)	Hyd. cylinder displacement (gal)	Handwheel # of rotations to stoke valve	Bevel gear # of rotations to stoke valve
2	150	2.813	4.0	80/150	2.8	1.5	800/1200	0.022	7	---
3	150	3.625	5.0	80/150	4.4	2.0	800/1200	0.049	9	---
4	150	4.75	6.0	80/150	6.2	2.5	800/1200	0.131	12	---
6	150	7.25	8.0	80/150	11.1	2.5	800/1200	0.154	18	87
8	150	9.0	8.0	80/150	11.1	2.5	800/1200	0.191	23	108
10	150	11.125	8.0	80/150	11.1	3.25	800/1200	0.399	28	134
12	150	13.188	12.0	80/150	25.2	4.0	800/1200	0.717	---	158
14	150	15.0	12.0	80/150	25.2	4.0	800/1200	0.816	---	180
16	150	17.375	14.0	80/150	34.3	4.0	800/1200	0.945	---	209
18	150	19.25	14.0	80/150	34.3	5.0	800/1200	1.635	---	308
20	150	21.75	16.0	80/150	44.7	5.0	800/1200	1.848	---	432
24	150	27.0	16.0	80/150	44.7	6.0	800/1200	3.303	---	---
26	100	29.0	18.0	80/150	56.7	4.0	1800/3000	1.577	---	---
30	100	33.0	---	---	---	5.0	1800/3000	2.804	---	---
32	100	35.0	---	---	---	5.0	1800/3000	2.975	---	---
36	100	39.0	---	---	---	6.0	1800/3000	4.771	---	---
42	100	48.0	---	---	---	6.0	1800/3000	5.875	---	---
48	75	53.0	---	---	---	6.0	1800/3000	6.437	---	---

Metric			Air actuated			Hydraulic actuated			Manually actuated	
Valve size (mm)	Maximum valve operating pressure (kPa)	Nominal cylinder stoke (mm)	Nominal air cylinder bore (mm)	Air min/max pressure (kPa)	Continuous cycling free air consumptions at 550kPa (m ³ /hr)	Nominal hyd. cylinder bore (mm)	Hyd. min/max Pressure (kPa)	Hyd. cylinder displacement (L)	Handwheel # of rotations to stoke valve	Bevel gear # of rotations to stoke valve
50	1034	71	100	550/1030	4.8	38	5520/8270	0.083	7	---
75	1034	92	127	550/1030	7.5	50	5520/8270	0.185	9	---
100	1034	121	150	550/1030	10.5	65	5520/8270	0.382	12	---
150	1034	184	200	550/1030	18.9	65	5520/8270	0.583	18	87
200	1034	229	200	550/1030	18.9	65	5520/8270	0.723	23	108
250	1034	283	200	550/1030	18.9	83	5520/8270	1.51	28	134
300	1034	335	300	550/1030	42.8	100	5520/8270	2.714	---	158
350	1034	381	300	550/1030	42.8	100	5520/8270	3.088	---	180
400	1034	441	350	550/1030	58.3	100	5520/8270	3.577	---	209
450	1034	489	350	550/1030	58.3	127	5520/8270	6.189	---	308
500	1034	552	400	550/1030	75.9	127	5520/8270	6.995	---	348
600	1034	686	400	550/1030	75.9	150	5520/8270	12.503	---	432
650	690	737	460	550/1030	96.3	100	12420/20700	5.969	---	---
750	690	838	---	---	---	127	12420/20700	10.613	---	---
800	690	887	---	---	---	127	12420/20700	11.261	---	---
900	690	991	---	---	---	150	12420/20700	18.058	---	---
1050	690	1155	---	---	---	150	12420/20700	22.239	---	---
1200	517	1346	---	---	---	150	12420/20700	24.556	---	---

Maintenance & Storage

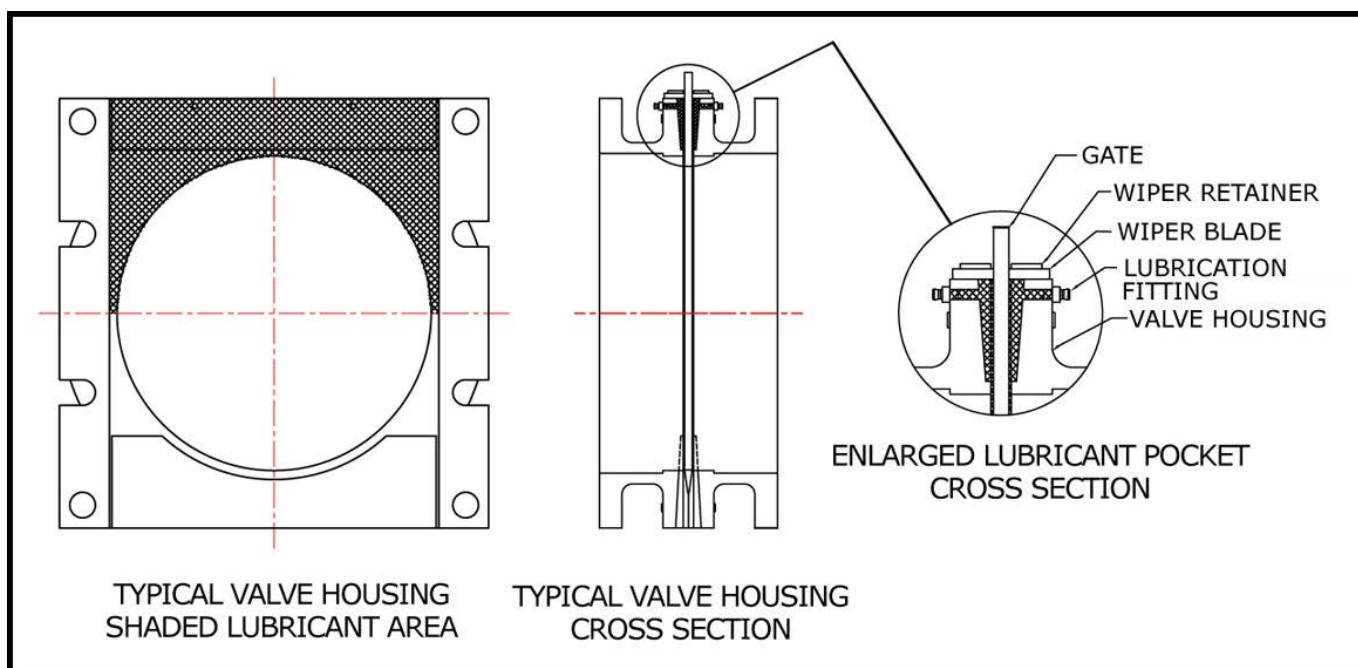
Required lubricating procedure

The Technequip™ knife gate valves require regular lubrication using a silicone based lubricant (see below for acceptable lubricants). DO NOT USE HYDROCARBON BASED LUBRICANTS as they may damage the replaceable wear sleeves. Lubricate both sides of the valve approximately every 50 cycles or after long periods of infrequent cycling. Lubrication fittings are located on the top of the valve housing (see schematic below). The table below outlines the approximate volume of lubricant needed per valve. Please note that all valves are lubricated when assembled and do not require initial lubrication.

Recommended lubricant Approved Alternatives

DOW#111

Rhone-Poulenc Rhodorsil III, General Electric compound G661, DOW 4, DOW 44

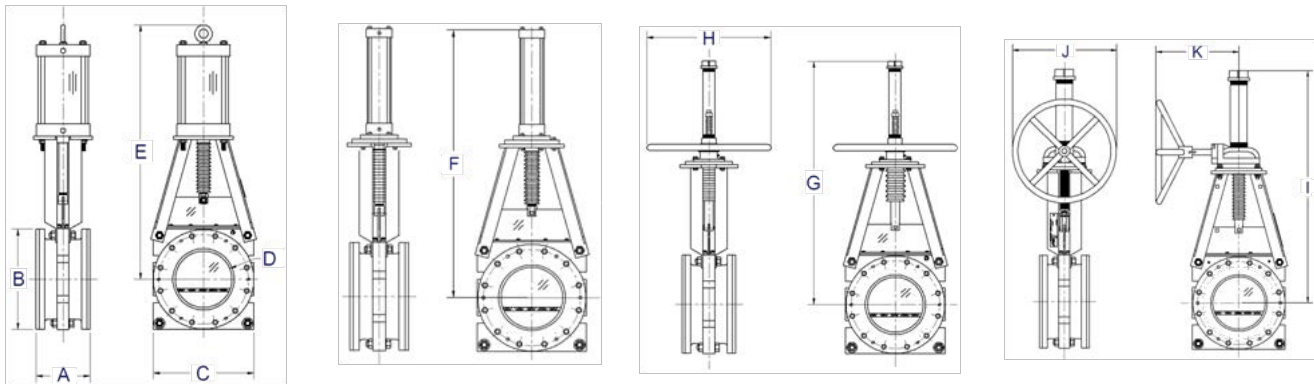


Volume of lubricant required per valve size																		
Valve size in inches		2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	26"	30"	36"	42"	48"
Valve size in mm		50	75	100	150	200	250	300	350	400	450	500	600	650	750	900	1050	1200
Lubricant volume per valve side	in ³	0.4	0.9	1.5	1.6	2.9	6.9	13.4	13.5	16.3	15.2	30.8	43.9	29.3	31.5	53.8	65.3	198
	cm ³	6.5	15	25	26	47	113	220	221	267	249	505	719	481	516	882	1070	3195
Total lubricant volume per valve	in ³	0.8	1.8	3.0	3.2	5.8	13.8	26.8	27.0	32.6	30.4	61.6	87.8	58.6	63.0	107.6	130.6	390
	cm ³	13	30	50	52	94	226	440	442	534	598	1010	1438	962	1032	1764	2140	6391

Storage

The Technequip™ knife gate valves should always be stored with the gate in the open position. The valve must be stored away from direct sunlight, heat and any sources of ozone because these cause premature deterioration of all rubber valve components.

Sizing



Imperial Sizing (in)

Valve size	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)	J (in)	K (in)
2	6 1/2	6	6 3/8	1 3/4	18 7/16	18	16 1/16	8	-	-	-
3	6 3/4	7 1/2	9	2 13/16	21 1/2	19 5/8	22	12	-	-	-
4	6 3/4	9	10	3 7/8	24 5/16	22 7/16	23 11/16	12	-	-	-
6	6 7/8	11	12 3/4	5 13/16	30 3/8	28 3/16	29 7/8	16	31 1/8	18	14 1/2
8	7 1/8	13 1/2	15	7 3/4	35 1/8	33 7/16	33 7/8	20	34 7/16	18	14 1/2
10	8 3/4	16	16 3/4	9 13/16	40 1/2	40 1/8	39 5/8	20	40 1/6	18	14 1/2
12	10	19	20	11 1/2	49 1/8	47 1/16	-	-	49 1/2	24	16 5/8
14	10	21	22 5/16	13 1/4	53 3/8	51 3/4	-	-	53 1/4	24	16 5/8
16	10 7/8	23 1/2	25	14 3/4	59 7/8	57 7/8	-	-	57	24	16 5/8
18	12 1/8	25	26 1/2	16 3/4	67 7/8	66	-	-	66 1/2	24	19 3/8
20	14 1/8	27 1/2	28 3/8	18 1/2	73 3/8	74 1/16	-	-	72 1/2	24	19 3/8
24	14 5/8	32	33 3/4	23	87 15/16	86 11/16	-	-	85 11/16	30	21
26	14 3/8	34 1/4	37	25	92 5/16	91 13/16	-	-	-	-	-
30	15 1/2	38 1/4	41 1/2	29	-	104 11/16	-	-	-	-	-
32	15 1/2	41 3/4	43 7/8	29	-	113 1/8	-	-	-	-	-
36	18 3/8	46	48 1/2	35	-	120 9/16	-	-	-	-	-
42	21 1/8	53	56 3/4	41 1/2	-	-	-	-	-	-	-
48	21 1/8	59 1/2	62 1/2	46 7/8	-	161 3/16	-	-	-	-	-

Metric Sizing (mm)

Valve size	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)
50	165	152	162	45	468	457	408	203	-	-	-
75	172	191	229	71	546	499	559	305	-	-	-
100	172	229	254	98	618	570	602	305	-	-	-
150	175	279	324	148	772	732	759	406	791	457	368
200	181	343	381	197	892	849	860	508	875	457	368
250	222	406	426	250	1029	1019	1006	508	1020	457	368
300	254	483	508	292	1247	1195	-	-	1257	610	422
350	254	533	567	337	1356	1314	-	-	1353	610	422
400	276	597	635	375	1522	1469	-	-	1448	610	422
450	308	635	673	425	1624	1676	-	-	1689	610	492
500	359	699	721	470	1863	1881	-	-	1842	610	492
600	371	813	857	584	2234	2202	-	-	2176	762	533
650	365	870	940	635	2345	2332	-	-	-	-	-
750	394	984	1054	737	-	2659	-	-	-	-	-
800	394	1060	1114	737	-	2873	-	-	-	-	-
900	467	1168	1232	889	-	3062	-	-	-	-	-
1050	537	1346	1441	1054	-	-	-	-	-	-	-
1200	537	1511	1588	1191	-	4094	-	-	-	-	-

Valve specification



Heavy duty, wide body, slurry knife gate valve shall be designed specifically for highly abrasive applications. The valve shall be double flat-faced flanged, bi-directional, full port design. The valve body shall be designed such that the gate passes between two inserted massive elastomer sleeves so that the gate expels slurry solids in the path of the gate through an opening in the bottom of the valve. Sleeves shall be held in place by elastomer-lined retainer flanges for all sizes of valves. Valve design shall not include packing glands. The valve shall provide 100% bubble-tight seal in the open or closed position.

Valve bodies shall be constructed of two-coat epoxy-painted ASTM A536 cast ductile iron. Valve bodies shall be designed with machined gate guides;

spacer bars shall not be used. Valve components, including actuators, shall be individually epoxy coated. All hardware shall be zinc-nickel dichromate plated.

Valve gate material shall be 17-4 PH stainless steel for sizes 2" (50 mm) through 14" (350 mm), and 316L stainless steel for sizes 16" (400 mm) and larger. Gates shall be coated with a fluorocarbon coating to prevent buildup of material and to decrease friction between the gate and the sleeves. When open, the gate shall be fully removed from the flow, and when closed, the gate shall act as blind flange. Valve gate shall be attached to actuators with a fabricated 304 or 17-4 PH stainless steel gate clevis. The valve shall be equipped with dust boots

(bellows) and all manual and electric valves shall be equipped with stem covers.

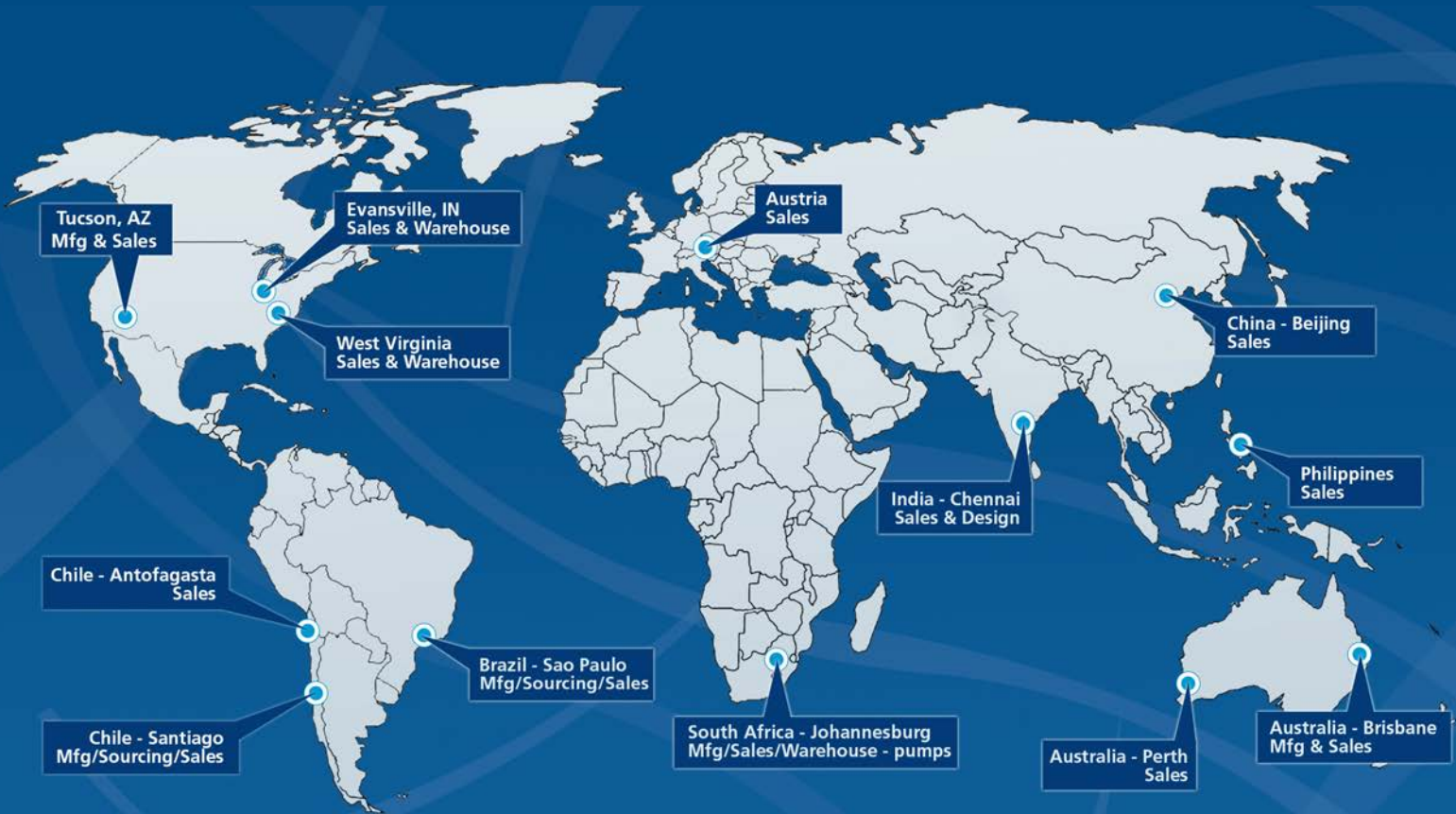
The valve gate and body shall be designed with a wiper/seal to prevent leakage out the top of the gate valve during travel. The wiper blade shall be easily maintained. It shall be replaceable in the field, without removing the valve from its installed location.

All valves with pneumatic actuators shall be supplied with internal ring magnet integral to the piston head so that reed limit switches can be used for proximity indication.

Specify Technequip Knife Gate Valve manufactured by FLSmith Krebs.

Global locations

www.flsmidthkrebs.com



World-class Service

The Krebs' customer service philosophy is to consistently exceed the expectations of our customers when it comes to providing technical support, processing orders and maintaining parts availability. Starting with the sales process, and extending throughout the life of the supplied process solution, we strive to provide an unmatched, world-class customer experience.

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