

Victaulic® Knife Gate Valve for HDPE Pipe Series 906



1.0 PRODUCT DESCRIPTION

Available Sizes

- 3 – 8" IPS high-density polyethylene (HDPE) and IPS high-density polyethylene of raised temperature (PE-RT)

NOTE

- For use on ISO sized pipe, Victaulic recommends the use of the No. H47 Transition Fitting. Contact Victaulic for additional information.

Maximum Working Pressure

- Rated from full vacuum (29" of Hg/3.4 kPa) to 150 psi/1035 kPa/10 Bar or maximum rating of pipe, whichever is lower

Application

- Designed for fluid lines containing solids and abrasive material
- Intended for use in on-off service (no throttling)
- Offers shutoff isolation without expelling media from the bottom of the valve
- Knife, seat and packing can be replaced without removing valve from pipeline
- Features a unidirectional polyurethane seat
- Lower housing includes a flush port for cleaning out the valve during maintenance

Pipe Material

- HDPE pipe conforming to ASTM D3035 and ASTM F714 (SDR 7 – 21)
- PE-RT pipe conforming to ASTM D3350, cell class PE445574C, ASTM F2619, and ASTM F714 (SDR 7 - 21)

Pipe Preparation

- For use on plain-end HDPE pipe
- For use on plain-end PE-RT pipe

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



1.0 PRODUCT DESCRIPTION (Continued)

Actuation Options

- Manual Handwheel
- Pneumatic Cylinder
- Hydraulic Cylinder
- Multi-Turn Electric Actuator

NOTE

- All references to HDPE within this document are inclusive of PE-RT

2.0 CERTIFICATION/LISTINGS



- Valve meets the zero-leakage performance standard for ANSI FCI 70-2 Leakage Class IV, MSS-SP61, and API 598

3.0 SPECIFICATIONS – MATERIAL

Body/Coupling: Ductile Iron conforming to ASTM A536, Grade 65-45-12

Body coating: Electroless Nickel – Abrasion and corrosion resistance

Seat: Polyurethane

Retaining plate:

For sizes 3 – 4" AISI 1045 Carbon Steel –
Black Alkyd Enamel Coating

For sizes 6 – 8" Ductile Iron conforming to ASTM A536, Grade 65-45-12 – Black Alkyd enamel coating

Knife seal: Polyurethane

Pipe gaskets/Seat gaskets: (specify choice¹)

- ☐ **Grade "E" EPDM ***
EPDM (Green color code). NOT COMPATIBLE FOR PETROLEUM SERVICES. -30°F to 150°F/-34°C to +66°C
- ☐ **Grade "T" Lubricated Nitrile***
Nitrile (Orange color code). NOT RECOMMENDED FOR HOT WATER SERVICES OVER +150°F/+66°C. 0°F to 150°F/18°C to +66°C.

¹ Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest [Victaulic Gasket Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

***NOTE**

- The maximum temperature ratings shown exceed the temperature ratings for HDPE pipe. Consult individual pipe manufacturers for specific temperature limits.

Retaining ring: 300 series Stainless Steel

Packing gland: Ductile Iron conforming to ASTM A536, Grade 65-45-12 – Orange Alkyd enamel coating

Knife: UNS S31600 Stainless Steel

Clean-out plug: UNS S41600 Stainless Steel

Gate connector: Ductile Iron conforming to ASTM A536, Grade 65-45-12 – Electroless Nickel coating

Stem (not shown): UNS S31600 Stainless Steel

Drive nut (not shown): UNS C95400 Aluminum Bronze

Drive nut Spacer (not shown): UNS C95400 Aluminum Bronze

Bushing: UNS S17400 Stainless Steel

Yoke: Ductile Iron conforming to ASTM A536, Grade 65-45-12 - Black Alkyd enamel coating

Alignment dowel pins (not shown): ASME B18.8.2

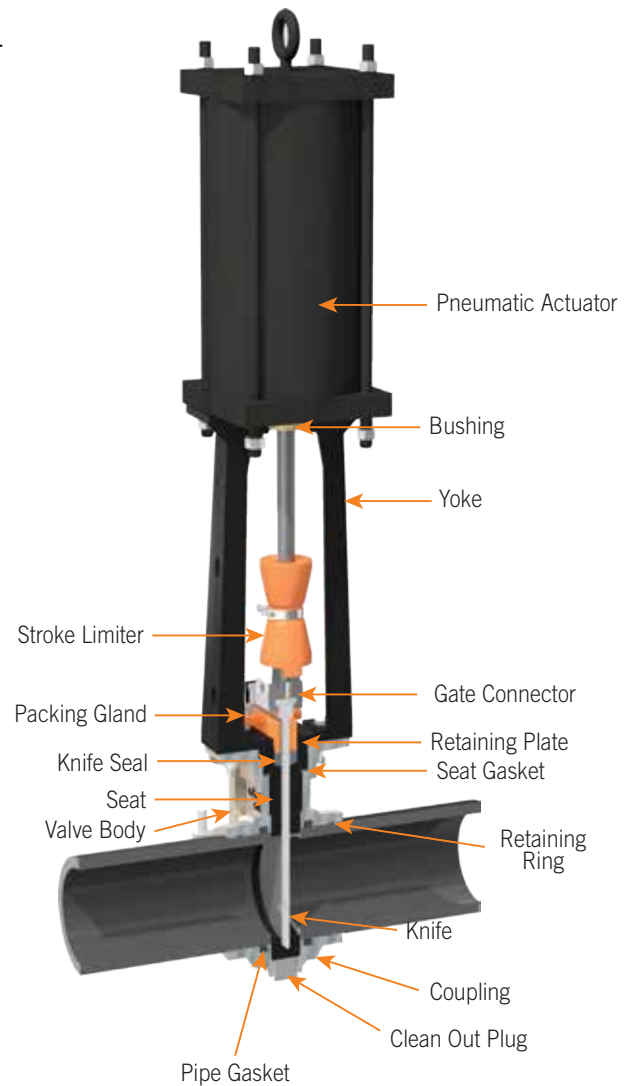
Handwheel key (not shown): CD Steel, Key Stock

Handwheel (not shown): S235JR Structural Steel – Black Alkyd enamel coating

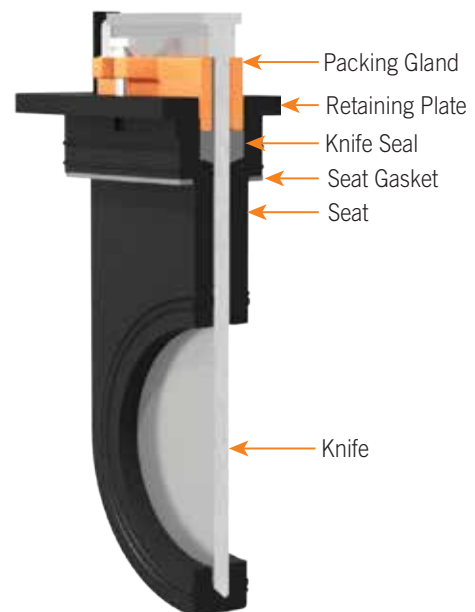
Hardware:

- ☐ Standard: Carbon Steel Zinc plated
- ☐ Optional: Stainless Steel

Stroke limiter: Ductile Iron conforming to ASTM A536 Grade 65-45-12 - Orange Alkyd enamel coating



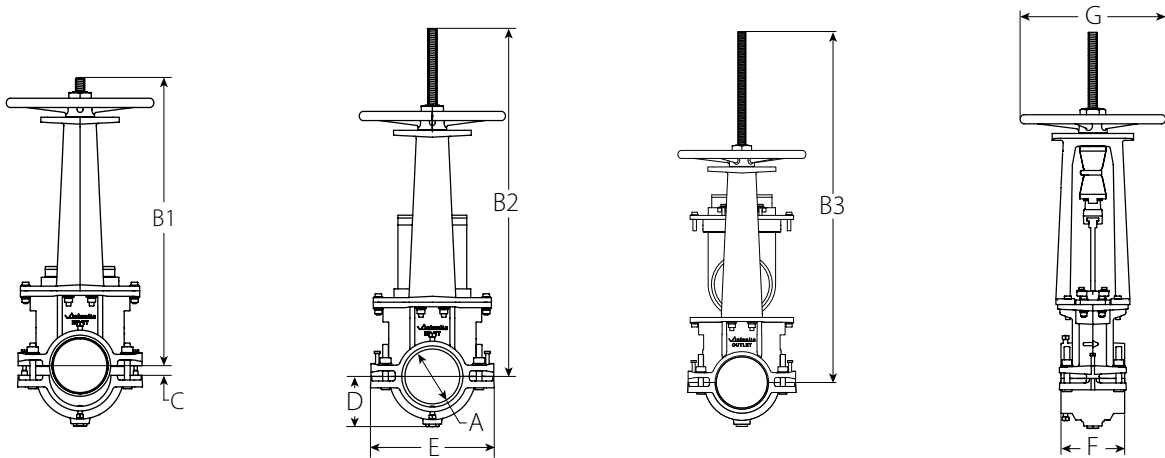
Valve



Seat Cartridge

4.0 DIMENSIONS

Manual Handwheel



Closed Uninstalled

Open Installed

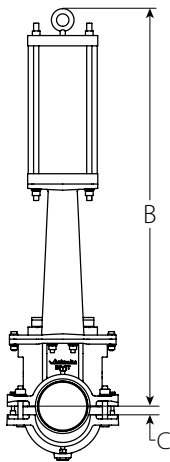
Maintenance Installed

Open Installed

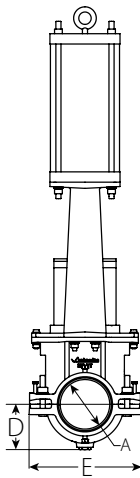
IPS Size		Dimensions									Weight
Nominal inches	Actual Outside Diameter inches mm	A inches mm	B1 Closed inches mm	B2 Open inches mm	B3 Maintenance inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	Approx. (Each) lb kg
3	3.500 88.9	3.25 83	24.75 629	28.50 724	33.38 848	0.88 22	3.75 95	10.25 260	6.75 171	16.00 406	113.0 51.3
4	4.500 114.3	4.00 102	25.50 648	30.25 768	35.25 895	0.88 22	4.50 114	11.25 286	6.75 171	16.00 406	122.0 55.3
6	6.625 168.3	6.00 152	31.25 794	38.25 972	43.88 1114	1.13 29	5.50 140	13.75 349	7.00 178	16.00 406	166.0 75.3
8	8.625 219.1	8.00 203	37.50 953	46.50 1181	53.50 1359	1.63 41	6.75 171	15.50 394	7.00 178	20.00 508	237.0 107.5

4.1 DIMENSIONS

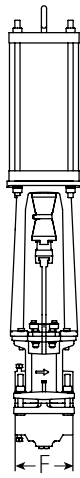
Pneumatic Cylinder



Closed Uninstalled



Open Installed

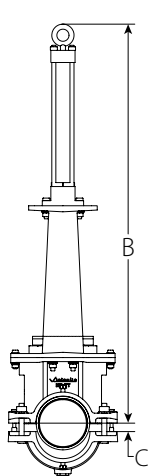


Open Installed

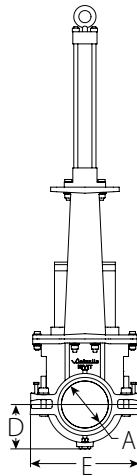
IPS Size		Dimensions						Weight
Nominal inches	Actual Outside Diameter inches mm	A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	Approx. (Each) lb kg
3	3.500 88.9	3.25 83	38.25 972	0.88 22	3.75 95	10.25 260	6.75 171	126.0 57.2
4	4.500 114.3	4.00 102	40.00 1016	0.88 22	4.50 114	11.25 286	6.75 171	133.0 60.3
6	6.625 168.3	6.00 152	48.25 1226	1.13 29	5.50 140	13.75 349	7.00 178	215.0 97.5
8	8.625 219.1	8.00 203	59.00 1499	1.63 41	6.75 171	15.50 394	7.00 178	348.0 157.9

4.2 DIMENSIONS

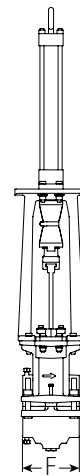
Hydraulic Cylinder



Closed Uninstalled



Open Installed

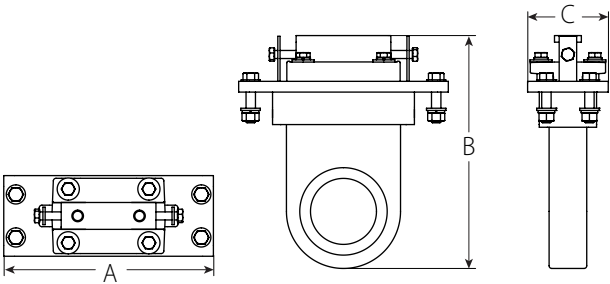


Open Installed

IPS Size		Dimensions						Weight
Nominal inches	Actual Outside Diameter inches mm	A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	Approx. (Each) lb kg
3	3.500 88.9	3.25 83	40.13 1020	0.88 22	3.75 95	10.25 260	6.75 171	115.0 52.2
4	4.500 114.3	4.00 102	42.00 1067	0.88 22	4.50 114	11.25 286	6.75 171	125.0 56.7
6	6.625 168.3	6.00 152	49.50 1257	1.13 29	5.50 140	13.75 349	7.00 178	172.0 78.0
8	8.625 219.1	8.00 203	59.75 1518	1.63 41	6.75 171	15.50 394	7.00 178	259.0 117.5

4.3 DIMENSIONS

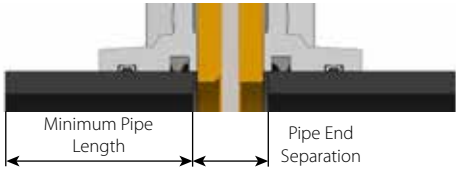
Seat Cartridge



IPS Size inches	A inches mm	B inches mm	C inches mm	Approx. Weight (Each) lb kg
3	9.88 251.0	10.88 276.4	3.88 98.6	16.3 7.4
4	10.75 273.1	12.13 308.1	3.88 98.6	19.7 8.9
6	13.00 330.2	15.00 381	3.88 98.6	28.9 13.1
8	15.50 393.7	18.25 463.6	3.88 98.6	40.7 18.4

4.4 DIMENSIONS

Pipe End Separation



Exaggerated for Clarity

Valve Size inches	Minimum Pipe End Separation inches mm	Minimum Pipe Length inches mm
3 – 6	1.88 47.6	4.88 124.0
8	1.88 47.6	5.13 130.3

5.0 PERFORMANCE

Pressure Rating and Allowable Tensile Load

IPS Size		PE4710 HDPE Pipe DR											
Nominal inches	Actual Outside Diameter inches mm	7		9		11		13.5		17		21	
		Pressure Rating ¹ psi kPa	Allowable Tensile Load ² lb N	Pressure Rating ¹ psi kPa	Allowable Tensile Load ² lb N	Pressure Rating ¹ psi kPa	Allowable Tensile Load ² lb N	Pressure Rating ¹ psi kPa	Allowable Tensile Load ² lb N	Pressure Rating ¹ psi kPa	Allowable Tensile Load ² lb N	Pressure Rating ¹ psi kPa	Allowable Tensile Load ² lb N
3	3.5 88.9	150 1034	5146 22889	150 1034	4151 18464	150 1034	3473 15449	150 1034	2882 12821	125 862	2327 10349	100 690	878 3906
4	4.5 114.3	150 1034	8507 37839	150 1034	6861 30520	150 1034	5741 25539	150 1034	4765 21195	125 862	3846 17108	100 690	1906 8478
6	6.625 168.3	150 1034	18347 81607	150 1034	14871 66151	150 1034	12444 55353	150 1034	10327 45938	125 862	8336 37081	100 690	3151 14016
8	8.625 219.1	150 1034	31200 138784	150 1034	25200 112095	150 1034	21100 93857	150 1034	17500 77844	125 862	14100 62720	100 690	4815 21418

¹ HDPE pipe conforming to ASTM D3035 and F714 at 73°F/23°C. Reference plastic pipe manufacture data for derating factors at other temperatures.

² Allowable tensile loads shown are for straight pulling for a maximum period of one half hour at ambient temperature (68°F/20°C).

NOTE

- Victaulic coupling gaskets have been demonstrated to seal under full (29" of Hg/760mm Hg) vacuum requirements. Consult specific HDPE pipe manufacturer for their recommended limitations regarding maximum vacuum as well as the effects of temperature and pipe ovality.

Actuation Forces and Torques







Valve Size inches	Thrust Load lb N	Max. Torque Required ft. / lb N / m	Handwheel Size inches mm	Rim Pull Effort lb N
3	1500 6672	11 14	16 406	16 71
4	2100 9341	15 20	16 406	23 102
6	3000 13344	22 30	16 406	34 151
8	4600 20461	32 44	16 406	49 218

Operating Torques and Pressures:

- Pneumatic Air Cylinders – Designed to be operated with 80 psi/552 kPa minimum supply air pressure and 150 psi/1034 kPa maximum supply air pressure. Please contact Victaulic if your system air pressure is less than 80 psi/552 kPa or more than 150 psi/1034 kPa.
- Hydraulic Cylinders – Designed to be operated with 1500 psi/10342 kPa minimum supply hydraulic pressure and 3000 psi/20684 kPa maximum supply hydraulic pressure. Please contact Victaulic if your system hydraulic pressure is less than 1500 psi/10342 kPa or more than 3000 psi/20684 kPa.
- Handwheel/Bevel Gear Operator – Reference chart above.

6.0 NOTIFICATIONS

⚠️ WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, foot protection, and hearing protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

V - 060 - 906 - H - N - E - 1 - P - 1 - A - 1

Product Class	Size	Style	Housing	Coating	Pipe/Seat Gasket	Gate Material or Coating	Actuation Type	Actuation Control Options	Control Options	Hardware
V	030 - 3" 040 - 4" 060 - 6" 080 - 8"	906	H - HDPE x HDPE Plain End	N - Standard - Electroless Nickel	E - EPDM T - Nitrile	1 - 316 Stainless Steel	P - Pneumatic H - Hydraulic E - Electric M - Handwheel 9 - Special	0 - None 1 - Pneumatic with Solenoid Valve (24VDC) 2 - Pneumatic with Limit Switches (5-240V AC/DC) 3 - Pneumatic with Solenoid Valve (110-120 VAC) 4 - Pneumatic with Solenoid Valve (24VDC) and Limit Switches 5 - Pneumatic with Solenoid Valve (110-120 VAC) and Limit Switches 6 - Pneumatic with Positioner/ Transducer (4→20 mA) 7 - Hydraulic with Transducer 8 - Stem Guard for M and B Actuators 9 - Special	0 - None A - Weatherproof Enclosure B - Hazardous Location Enclosure 9 - Special	1 - Standard - Carbon Steel Zinc Plated 2 - Stainless Steel

NOTE: Electric actuation and other special actuation control options can be quoted upon request. Contact Victaulic for pricing and availability.

- [I-900: Victaulic Field Installation Handbook for HDPE Products](#)
- [I-795/906: Victaulic Series 795 and 906 Installation-Ready™ Knife Gate Valves](#)
- [05.01: Victaulic Gasket Selection Guide](#)
- [29.01: Victaulic Terms and Conditions/Warranty](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Intellectual Property Rights

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Note

All products bearing a Victaulic trademark are manufactured by Victaulic or to Victaulic specifications. All products are to be installed only in accordance with the applicable Victaulic installation instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.