

# Victaulic® Knife Gate Valve for HDPE Pipe Series 906



19.06



Manual  
Patent Pending

Pneumatic  
Patent Pending

Hydraulic  
Patent Pending

## 1.0 PRODUCT DESCRIPTION

### Available Sizes

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

### 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)

### 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

### Operating Temperature

- Dependent upon pipe manufacturer rating and gasket selection
- Reference section 3.0 for gasket performance options
- Consult pipe manufacturer for pipe material performance limitations

### Function

- Provides leak-tight unidirectional shutoff service
- Utilizes Installation-Ready™ technology
- Enables in-line service and maintenance with replaceable cartridges containing knife, seat, and packing
- Offers shutoff isolation without expelling media from the bottom of the valve

### 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.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	



## 1.0 PRODUCT DESCRIPTION (Continued)

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### Actuation Options

- Manual Handwheel (3 – 8")
- Pneumatic Cylinder (3 – 8")
- Hydraulic Cylinder (3 – 8")
- Multi-Turn Electric Motor (3 – 8")

### Application

- This product is designed for fluid lines containing solids, slurry, and/or abrasive media
- This product is intended for on-off service

### NOTE

- All references to HDPE within this document are inclusive of PE-RT
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## 2.0 CERTIFICATION/LISTINGS

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### 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 choice<sup>1</sup>)**

**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.

<sup>1</sup> 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

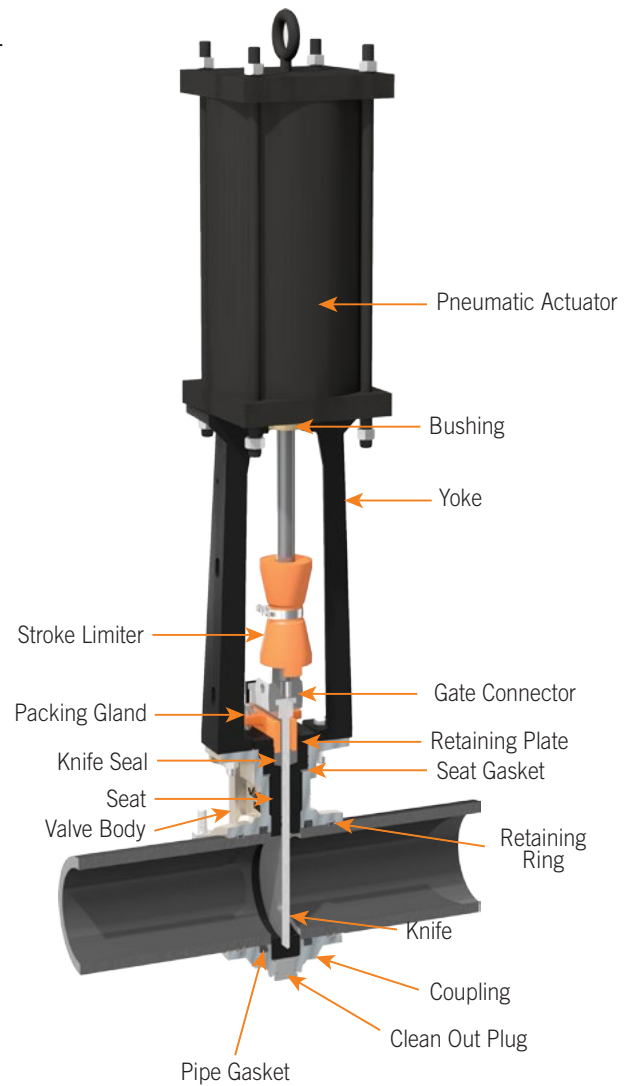
**Handwheel (not shown):** S235JR Structural Steel – Black Alkyd Enamel Coating

**Hardware:**

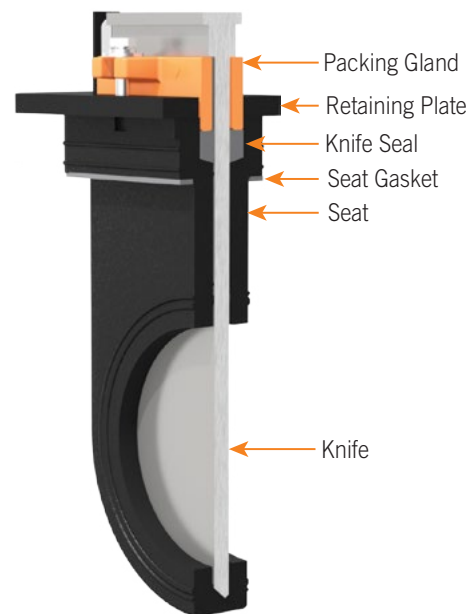
Standard: Carbon Steel Zinc Plated

Optional: Stainless Steel

**Stroke Limiter:** Ductile Iron conforming to ASTM A536 Grade 65-45-12 - Orange Alkyd Enamel Coating



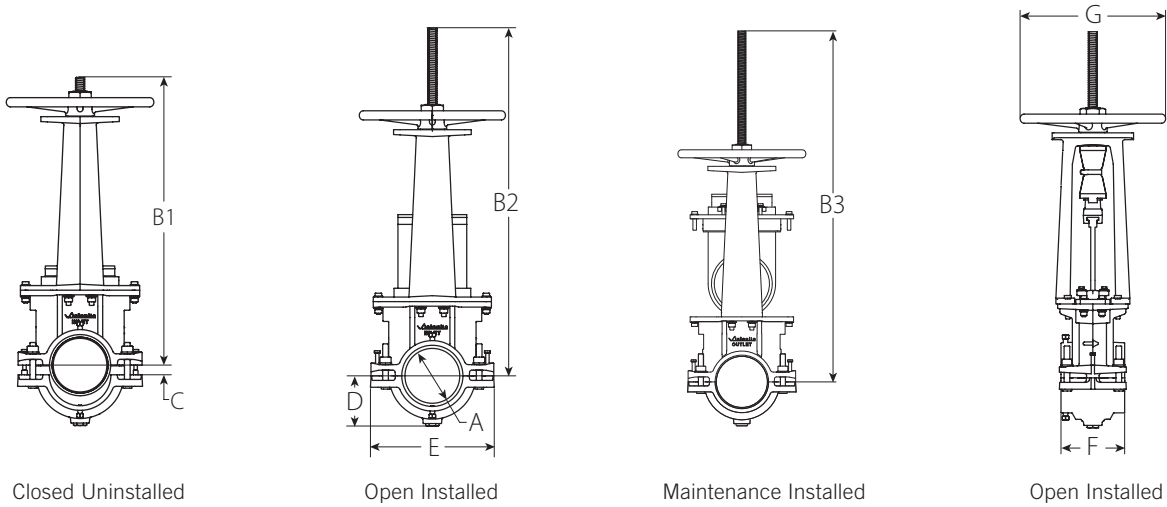
**Valve**



**Seat Cartridge**

## 4.0 DIMENSIONS

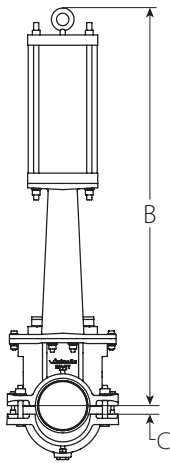
### Manual Handwheel



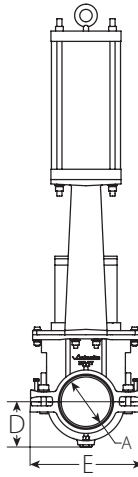
IPS Size		Dimensions									Weight
Nominal inches	Actual Outside Diameter inches mm	A inches mm	B1 Closed inches mm	B2 Open inches mm	B3 Maintenance inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	Approx. (Each) lb kg
3	3.500 88.9	3.25 83	24.75 629	28.50 724	33.38 848	0.88 22	3.75 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	16.00 406	237.0 107.5

## 4.1 DIMENSIONS

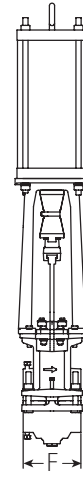
### Pneumatic Cylinder



Closed Uninstalled



Open Installed

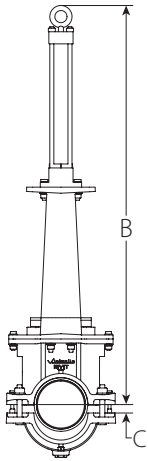


Open Installed

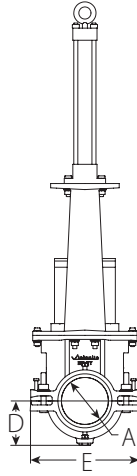
IPS Size		Dimensions						Weight
Nominal inches	Actual Outside Diameter inches mm	A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	Approx. (Each) lb kg
3	3.500 88.9	3.25 83	38.25 972	0.88 22	3.75 95	10.25 260	6.75 171	126.0 57.2
4	4.500 114.3	4.00 102	40.00 1016	0.88 22	4.50 114	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

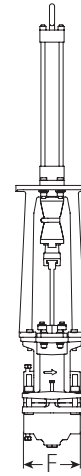
### Hydraulic Cylinder



Closed Uninstalled



Open Installed

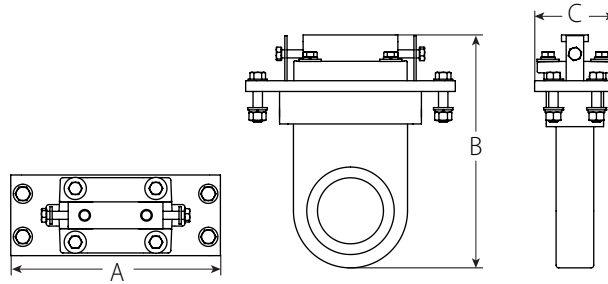


Open Installed

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

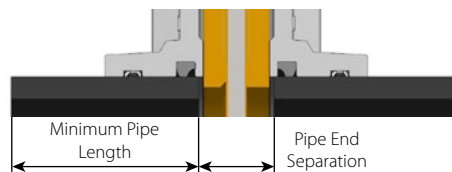
#### Seat Cartridge



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 <sup>1</sup> psi kPa	Allowable Tensile Load <sup>2</sup> lb N	Pressure Rating <sup>1</sup> psi kPa	Allowable Tensile Load <sup>2</sup> lb N	Pressure Rating <sup>1</sup> psi kPa	Allowable Tensile Load <sup>2</sup> lb N	Pressure Rating <sup>1</sup> psi kPa	Allowable Tensile Load <sup>2</sup> lb N	Pressure Rating <sup>1</sup> psi kPa	Allowable Tensile Load <sup>2</sup> lb N	Pressure Rating <sup>1</sup> psi kPa	Allowable Tensile Load <sup>2</sup> 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

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

<sup>2</sup> 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	11	16	16
	6672	14	406	71
4	2100	15	16	23
	9341	20	406	102
6	3000	22	16	34
	13344	30	406	151
8	4600	32	16	49
	20461	44	406	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, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions may cause joint failure, resulting 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 HDPE Product Installation and Assembly Manual](#)

[I-795/906: Victaulic Series 795 and 906 Installation-Ready™ Knife Gate Valves Installation and Maintenance Instruction Manual](#)

[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 making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning 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, installation guide, or this disclaimer.

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### Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

### Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of 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 [www.victaulic.com](http://www.victaulic.com).

### Warranty

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

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