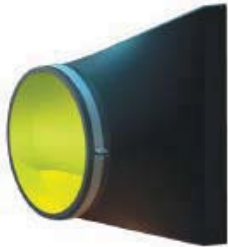
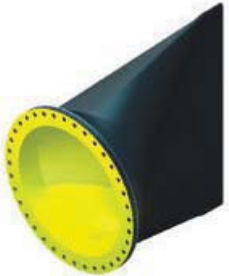


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Made in Canada

FULLER DUCKBILL CHECK VALVES



Contact Power Plant Supply Co



Fuller Valve's Rubber Duckbill Check Valves are an exceptionally reliable and cost effective alternative to flap-gate valves and other conventional check valves.

Rubber Check Valves require minimal maintenance; the simple one-piece design and reinforced rubber construction eliminate the mechanical and metal components that rust and seize in conventional flap-gates and check valves.

Duckbill Check Valves are a passive - reactive device requiring no external mechanisms or power source to operate. The flexible rubber sleeve is normally closed but will react and open with as little as 1 inch of head pressure ensuring maximum flow with minimal pressure drop across the valve. This ease of operation reduces standing water in sewer pipes where mosquitoes and other pests can thrive.

The flexible construction will pass large objects without blockage yet offers exceptional back flow prevention and will even seal around trapped solids.

Features: Quiet operation - Non slamming - Minimal maintenance - Seals around trapped objects - Low head loss - Reliable performance

Materials of Construction: Fuller Valve Duckbill Check Valves are manufactured using a variety of elastomers to suit most applications.

PGR: Pure Gum Natural Rubber has excellent abrasion resistance and flexibility

SBR: Styrene Butadiene Rubber for general purpose use

CR: Chloroprene Rubber – Neoprene resists a wide range of moderate chemicals and inhibits growth of marine organisms

EPDM: Ethylene Propylene Rubber is used for water service and is also available in food grade

CSM: Chlorosulphonated Polyethylene – Hypalon provides excellent resistance to a wide range of strong chemicals and oxidizing agents, ozone, weathering, heat and sunlight

NBR: Nitrile Butadiene Rubber- Buna-N is used for resistance to fuels, oils, grease and other hydrocarbons

CIIR: Chlorobutyl Rubber – Butyl resists oxidizing chemicals, organic oils and greases and heat



- Storm water outfall
- Flood control systems
- Pumping stations / Wet wells
- Sewer interceptor check valve
- CSO / SSO / Effluent discharge
- Submerged effluent diffuser nozzles
- Coarse bubble air diffusers
- Sparging Nozzles

SERIES CVO SLIP-ON DUCKBILL CHECK VALVE

Manufactured with an integral reinforced flexible sleeve end complete with heavy duty clamps the Series CVO can be easily attached directly over the pipe end.

Available in standard sizes up to 96" we will also manufacture any valve size to meet your exact needs.

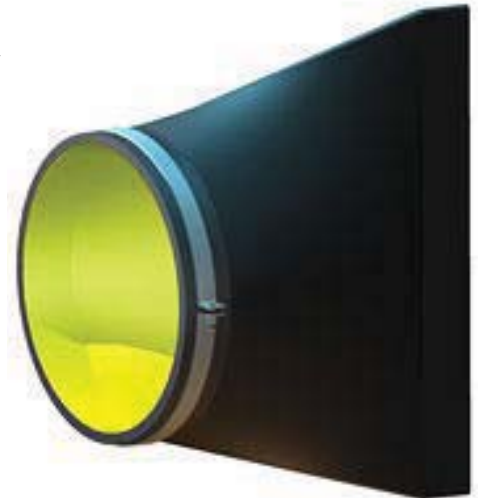
Attachment Sleeve and Clamping Rings

The end of the valve that attaches to the pipe is a flexible rubber sleeve with multiple plies of reinforcing cord. The inside diameter of this sleeve is sized to allow easy installation over the pipe end.

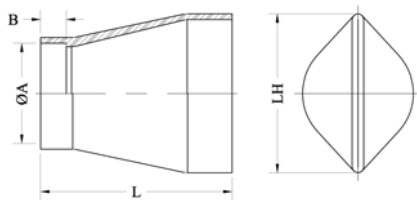
In addition to steel pipe the Series CVO can be easily adapted to plastic, concrete, special dimension conduits or channels and corrugated culverts.

Clamping rings are available in stainless steel only. Depending on the size and application these may be worm gear type, toggle bolt band type or rolled flat-bar with bolted joints. Larger valves with flat-bar clamps are provided with extra holes in the bar through which pins should be inserted through the pipe wall to help keep the valve in place.

Larger diameter valves are supplied with a lifting clevis to assist the installation of the valve. The same clevis can be used to support the valve and water weight when in use.



Design Specifications



| Pipe Size A (in) | B (in) | Maximum Length - L (in) | Maximum Height - LH (in) | Pipe Size A (in) | B (in) | Maximum Length - L (in) | Maximum Height - LH (in) |
|------------------|--------|-------------------------|--------------------------|------------------|--------|-------------------------|--------------------------|
| 2 | 2 | 6 | 4' | 24 | 8 | 40 | 39 |
| 2-1/2 | 2 | 8 | 5 | 26 | 8 | 42 | 42 |
| 3 | 3 | 9 | 6 | 28 | 8 | 44 | 45 |
| 4 | 3 | 12 | 8 | 30 | 10 | 48 | 47 |
| 5 | 3 | 14 | 9 | 32 | 10 | 48 | 52 |
| 6 | 4 | 16 | 11 | 36 | 10 | 58 | 56 |
| 8 | 4 | 17 | 14 | 42 | 12 | 60 | 68 |
| 10 | 4 | 20 | 17 | 48 | 12 | 66 | 77 |
| 12 | 5 | 24 | 22 | 54 | 12 | 72 | 86 |
| 14 | 5 | 28 | 24 | 60 | 12 | 82 | 97 |
| 16 | 5 | 30 | 27 | 66 | 14 | 90 | 99 |
| 18 | 6 | 32 | 30 | 72 | 14 | 98 | 114 |
| 20 | 8 | 34 | 32 | 84 | 18 | 108 | 135 |
| 22 | 8 | 36 | 36 | 96 | 18 | 114 | 150 |



SERIES CVF – FLANGED DUCKBILL CHECKVALVE

Manufactured with an integral reinforced rubber flange complete with metal backing rings the Series CVF can be bolted directly to a headwall, tank wall or pipe flange.

Available in standard sizes up to 96" we will also manufacture any valve size to meet your exact needs.

Flanges and Backing Rings

Flat faced, reinforced rubber flanges with metal backing rings are drilled in accordance with customer specifications.

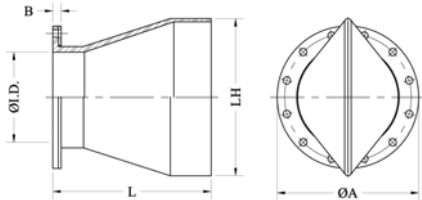
In addition to piping industry standards, unique dimensions and shapes of flanges are also available.

Flange backing rings are available in galvanized steel or painted steel and stainless steels depending on the application. Fuller Valve recommends stainless steel backing rings.

Larger diameter valves are supplied with a lifting clevis to assist the installation of the valve. The same clevis can be used to support the valve and water weight in service.



Design Specifications



MARINE EFFLUENT DIFFUSERS

Duckbill Valves may be used on **marine effluent diffusers** to prevent the intrusion of salt water and sediment. Duckbill valves can be fabricated with integral wire-reinforced rubber risers and elbows to replace hard-piping above the seabed. These components are fabricated similar to the duckbill valves, but incorporate wire reinforcement. They are very durable and are able to deflect and return when subjected to impact loads such as from anchors and nets. Having all rubber components above the bed will minimize or eliminate physical damage to the outfall.

| Pipe Size ID (in) | B (in) | Maximum Length - L (in) | Maximum Height - LH (in) | Pipe Size ID (in) | B (in) | Maximum Length - L (in) | Maximum Height - LH (in) |
|-------------------|--------|-------------------------|--------------------------|-------------------|--------|-------------------------|--------------------------|
| 2 | 3/4 | 6 | 4 | 24 | 1 5/8 | 40 | 39 |
| 2 1/2 | 3/4 | 7 | 5 | 26 | 1 5/8 | 42 | 42 |
| 3 | 1 1/8 | 9 | 6 | 28 | 1 5/8 | 42 | 45 |
| 4 | 1 1/8 | 12 | 8 | 30 | 1 5/8 | 44 | 47 |
| 5 | 1 1/8 | 15 | 9 | 32 | 1 5/8 | 52 | 52 |
| 6 | 1 1/8 | 15 | 11 | 36 | 2 | 50 | 56 |
| 8 | 1 3/8 | 16 | 14 | 42 | 2 1/2 | 54 | 68 |
| 10 | 1 3/8 | 21 | 17 | 48 | 2 1/2 | 60 | 77 |
| 12 | 1 3/8 | 26 | 22 | 54 | 2 1/2 | 70 | 86 |
| 14 | 1 3/8 | 26 | 24 | 60 | 2 1/2 | 72 | 97 |
| 16 | 1 3/8 | 31 | 27 | 66 | 2 1/2 | 76 | 99 |
| 18 | 1 5/8 | 30 | 30 | 72 | 2 1/2 | 94 | 114 |
| 20 | 1 5/8 | 32 | 32 | 84 | 2 1/2 | 96 | 135 |
| 22 | 1 5/8 | 35 | 36 | 96 | 2 1/2 | 100 | 150 |

SERIES CVI – INSERTABLE DUCKBILL CHECKVALVE

Fuller Valve Series CVI In-Line Check Valves are designed to fit right inside the pipe. No valve body is required.

This feature not only saves money but also permits installation in otherwise difficult situations such as tank outlets, floor drains, sewer interceptors, overflow systems, retention basins and manhole outlets.



Series CVI-E fits directly inside the pipe and is secured in place by a stainless steel expandable clamp ring.

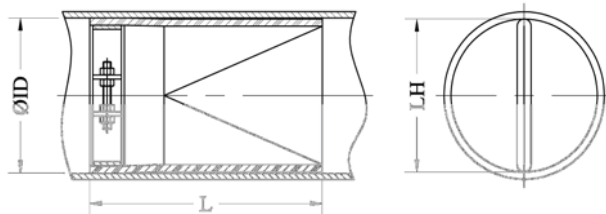
Series CVI-F also fits directly inside the pipe and is bolted in place between the pipe flanges.



Note: Series CVI valves have increased pressure drop because the valve must be smaller to fit inside the pipe. Actual maximum flow area is less than 25% of nominal pipe area.

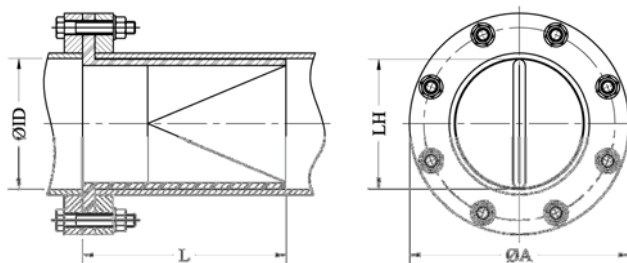
Design Specifications

Series CVI-E



| PIPE - ID (in) | Maximum Length - L (in) | LH (in) | PIPE - ID (in) | Maximum Length - L (in) | LH (in) |
|----------------|-------------------------|---------|----------------|-------------------------|---------|
| 2 | 6 | 1 7/8 | 16 | 23 | 14 3/4 |
| 2 1/2 | 7 | 2 3/8 | 18 | 25 | 16 3/4 |
| 3 | 8 | 2 7/8 | 20 | 32 | 18 3/4 |
| 4 | 12 | 3 7/8 | 24 | 34 | 22 3/4 |
| 5 | 14 | 4 7/8 | 30 | 42 | 28 3/4 |
| 6 | 15 | 5 7/8 | 36 | 46 | 34 3/4 |
| 8 | 17 | 7 7/8 | 42 | 50 | 40 3/4 |
| 10 | 20 | 9 7/8 | 48 | 60 | 46 1/2 |
| 12 | 21 | 11 7/8 | 54 | 66 | 54 1/2 |
| 14 | 22 | 12 3/4 | 60 | 70 | 58 1/2 |

Series CVI-F



| PIPE - ID (in) | Maximum Length - L (in) | T | LH (in) | PIPE - ID (in) | Maximum Length - L (in) | T | LH (in) |
|----------------|-------------------------|-----|---------|----------------|-------------------------|-------|---------|
| 2 | 6 | 1/2 | 1 7/8 | 16 | 23 | 1 | 14 3/4 |
| 2 1/2 | 7 | 1/2 | 2 3/8 | 18 | 25 | 1 | 16 3/4 |
| 3 | 8 | 1/2 | 2 7/8 | 20 | 32 | 1 1/4 | 18 3/4 |
| 4 | 12 | 3/4 | 3 7/8 | 24 | 34 | 1 3/8 | 22 3/4 |
| 5 | 14 | 3/4 | 4 7/8 | 30 | 42 | 1 3/8 | 28 3/4 |
| 6 | 15 | 3/4 | 5 7/8 | 36 | 46 | 1 1/2 | 34 3/4 |
| 8 | 17 | 3/4 | 7 7/8 | 42 | 50 | 1 1/2 | 40 3/4 |
| 10 | 20 | 3/4 | 9 7/8 | 48 | 60 | 1 1/2 | 46 1/2 |
| 12 | 21 | 1 | 11 7/8 | 54 | 66 | 1 1/2 | 54 1/2 |
| 14 | 22 | 1 | 12 3/4 | 60 | 70 | 1 1/2 | 58 1/2 |

SERIES CVJ – IN-LINE DUCKBILL CHECKVALVE

Fuller Valve Series CVJ In-Line Check Valves allow full flow with minimum pressure drop. The flexible rubber sealing lips are silent when opening and closing, compensate for wear and will seal around material trapped in the sealing area.

Fuller Valve Series CVJ In-Line Check Valves are a cost effective and reliable alternative to conventional check valves.

There are no internal mechanical components to break or seize, maintenance is virtually zero. Series CVJ valves are furnished with flush and cleanout ports to remove any build-up which may occur.



Available in standard sizes up to 24" we can also manufacture any valve size to meet your exact needs.

Construction Available

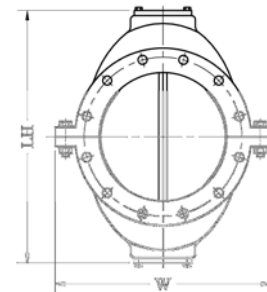
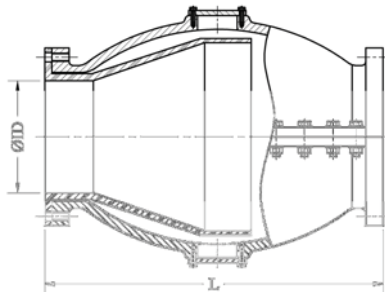
Valve bodies are made of cast ductile iron, welded steel or stainless steel as determined by size or application, all valves are provided with flush and clean-out ports.

Valve bodies are flanged in accordance with requirements or in some cases may be plain pipe end for welding or compression couplings.

Valve bodies are coated inside and out with products that best meet the needs of the application. Paint, epoxy, urethane, rubber and hot dipped zinc are available.

Design Specifications

| Pipe Size ID | L (in) | LH (in) | W (in) | Working Pressure (psig) |
|--------------|--------|---------|--------|-------------------------|
| 3 | 11 1/2 | 8 1/4 | 10 | 125 |
| 4 | 11 3/4 | 10 3/4 | 11 3/4 | 125 |
| 6 | 19 | 13 3/4 | 15 3/8 | 100 |
| 8 | 21 | 18 | 17 1/2 | 100 |
| 10 | 23 | 22 | 19 1/2 | 75 |
| 12 | 25 | 26 | 21 1/2 | 75 |
| 14 | 29 | 27 3/4 | 24 | 50 |
| 16 | 33 | 29 | 25 | 50 |
| 18 | 38 | 32 3/4 | 28 | 50 |
| 20 | 41 1/2 | 36 | 29 | 50 |
| 24 | 49 1/2 | 47 | 38 | 50 |



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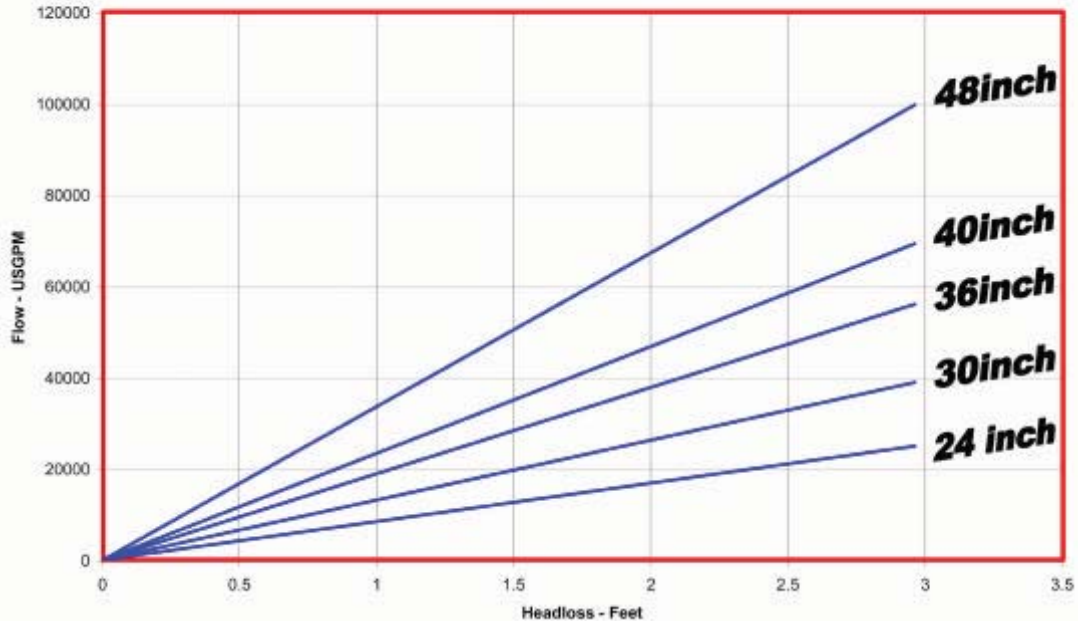
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Technical data- Flow vs Headloss

Examples of Typical Flow vs Headloss
for Fuller Valve Series CVF / CVO Duckbill Check Valves



Fuller Valve manufactures Duckbill Check Valves for different applications where elastomer selection and backpressure rating will affect flow capacity. Contact our sales office for design assistance.

For engineering and design purposes or when writing specifications or placing an order please provide the following information:

| Flow Data | Minimum | Maximum |
|----------------|---------|---------|
| Flow Rate | | |
| Inlet Pressure | | |
| Back Pressure | | |

| Installation Data | (Check one) | Application & Connection Details | |
|----------------------|-------------|----------------------------------|--|
| (Select valve type) | | Application | |
| Flanged Series CVF | | Fluid | |
| Slip-On Series CVO | | Location | |
| In-Line Series CVI-E | | Pipe Material | |
| In-Line Series CVI-F | | Pipe OD & ID | |
| In-Line Series CVJ | | Flange Dimensions | |

Please complete and Fax this form along with any relevant drawings or specifications

| | |
|----------------------|--|
| Company | |
| Contact Name / Title | |
| Address | |
| Contact Phone # | |
| Contact Fax # | |
| Contact e-mail | |

Expansion Joints and Pump Connectors are used to absorb pipe motion, compensate for misalignment and isolate vibration.



Elastomeric and Composite type expansion joints and isolators for flue gas ducting and fans

- Elastomeric up to 200°C
- Composite for 1000°C and higher with special design.

Complete design and supply service including frames & duct flanges.



Pinch Valve Replacement Sleeves are manufactured using top grade elastomers and high strength reinforcing fabrics, offering superior performance and longevity.

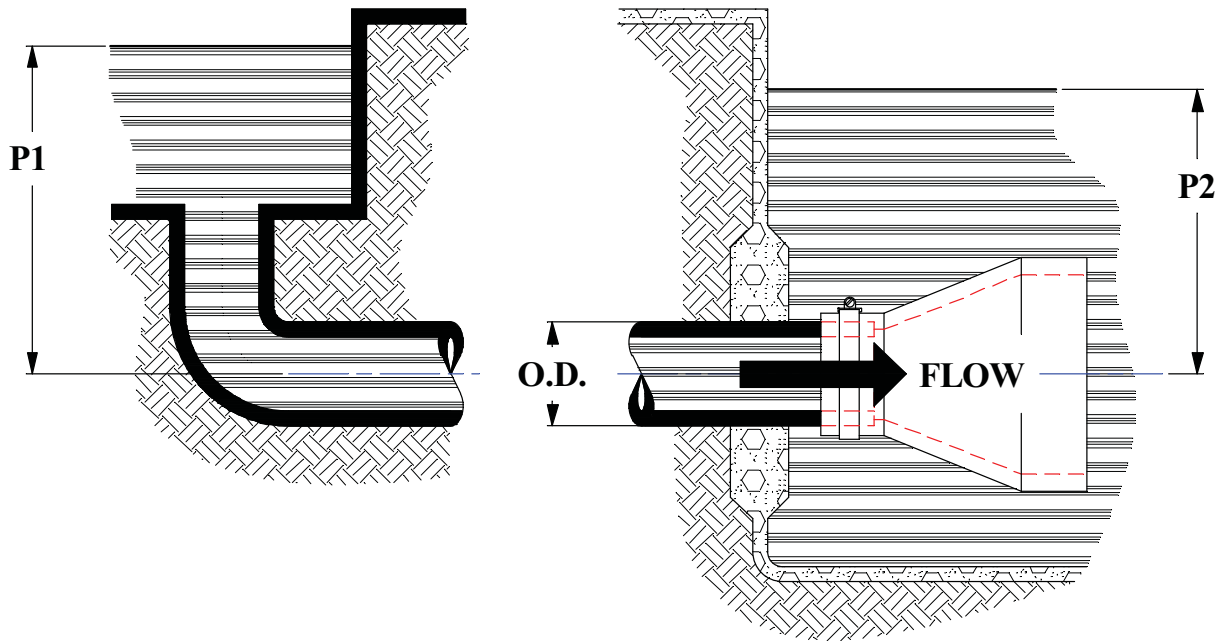
Various sleeve connection styles are manufactured including Flanged, Slip-On and Beaded End.

Sleeve configuration can be adjusted according to flow conditions and control requirements, Full port, Reduced Port, Conical Port and Double Wall all all available.

Fuller Valve manufactures quality replacement sleeves to fit most brands of pinch valve... Red Valve, RKL, Larox, Linatex / Jaco, Elasto-Valve, Flexible Valve, Onyx, and more.



**Power Plant Supply Co Quick Quote
Duckbill Check Valve Data Sheet**



| | MIN LEVEL | NORMAL LEVEL | MAX LEVEL |
|-------------------------------|-----------|--------------|-----------|
| P1, HEAD PRES-SURE (IN FEET) | | | |
| P2, HEAD PRES-SURE (IN FEET) | | | |

| | | | |
|------------|--------------------|---------------------------|--|
| CONNECTION | FLANGED CONNECTION | MATERIAL OF BACK-UP RINGS | |
| | | FLANGE(PIPE) SIZE | |
| | | SLEEVE ELASTOMER | |
| | SLIP-ON CONNECTION | MATERIAL OF CLAMPS | |
| | | PIPE SIZE SPECIFIC O.D. | |
| | | SLEEVE ELASTOMER | |

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