



# Series DB

## DUCKBILL CHECK VALVES

### Four Styles to Suit a Wide Variety of Applications

The Duckbill Series valve allows material to flow through...



Flanged Style DBF



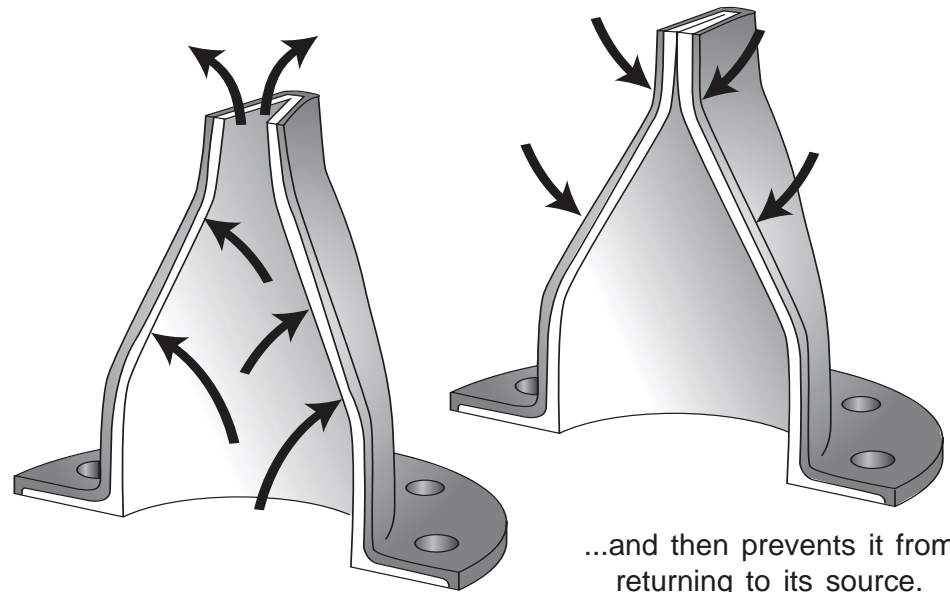
Slip-Over Style DBO



Jacket Style DBJ



Insert Style DBI



...and then prevents it from returning to its source.

#### DESCRIPTION

Cla-Val Series DB Duckbill Check Valves are a flexible sleeve design made of quality fabric-reinforced elastomer materials for maximum resistance to corrosion and wear caused by continuous operation with abrasive slurries, sludge, or effluent. The flexible sleeve provides maximum flow with a minimum pressure drop across the valve at all times.

The "duckbill" concept check valve has been in use for over 100 years in waterworks and commonly accepted for use in industrial process piping systems and in waste and storm water or sewer piping systems.

#### DESIGN

The simple, one-piece "duckbill" sleeve eliminates moving components and intrusive body structures that create problems with conventional check valve designs. There are no mechanical parts that can freeze, corrode, bind, or otherwise inhibit smooth operation. Unlike conventional check and flap gate valves, the Cla-Val Duckbill Check valve does not require regular maintenance to replace worn seats, hinge pins, balls, or flappers.

#### OPERATION

The principal of operation is simple. Upstream pressure in the valve forces the lips or "duckbill" apart to permit flow. As pressure or flow increases, the lips open further, allowing more flow. This feature allows solids to pass unhindered with low pressure loss. When there is backpressure or reverse flow, the lips squeeze tightly together, preventing backflow. Even with some wear, the "duckbill" check sleeve will still function including sealing around entrapped solids.

#### STYLES & MATERIALS

Choice of (4) inlet connection styles allow Cla-Val Series DB Duckbill Check Valves to be installed in a wide variety of applications. The "duckbill" fabric-reinforced elastomer choices include:

Ethylene Propylene, Viton, Buna-N, Hypalon, Butyl, Neoprene, and Natural Rubber for compatibility with most fluids.

When ordering above Elastomers add first letter of the material after the model number ie: 4"-DB-N (N for Neoprene)

## Elastomer Selection Guide

### Ethylene Propylene Rubber

Most effective for applications involving potable water, waste or diluted acids.

### Viton™

Resists solvents, halogenated hydrocarbons, oxygen, weather, ozone, oils and chemicals.

### Buna N®

Resistant to kerosene, moderate chemicals, fats, oils, grease and many hydrocarbons.

### Natural Rubber

Good abrasion resistance, tensile strength and resiliency. Also suitable for applications with organic acids, alcohols, ketones and most moderate chemicals.

### Hypalon™

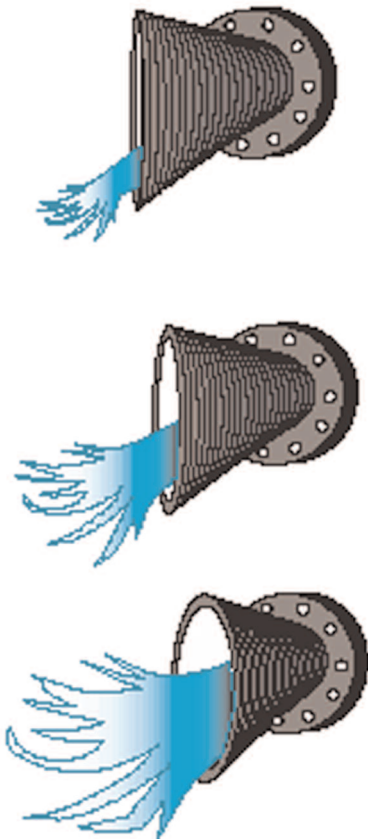
Resists strong acids and bases, ozone, weathering, heat and oxidizing chemicals.

### Butyl

Good resistance to animal and vegetable fats, strong and oxidizing chemicals, oils, heat and greases.

### Neoprene

Generally resistant to oil and grease, moderate chemicals, fats, many hydrocarbons and ozone. Resistant to barnacle growth.

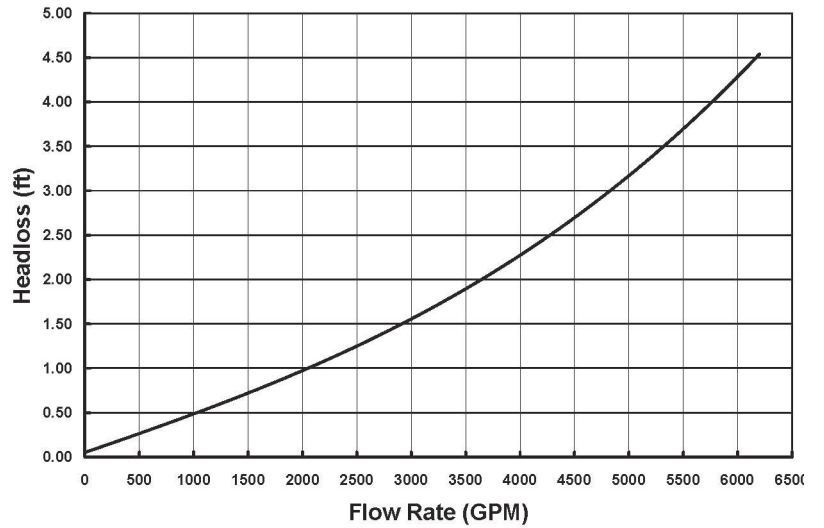


## SPECIFICATIONS

For engineering specifications or when placing your order, please provide the following information:

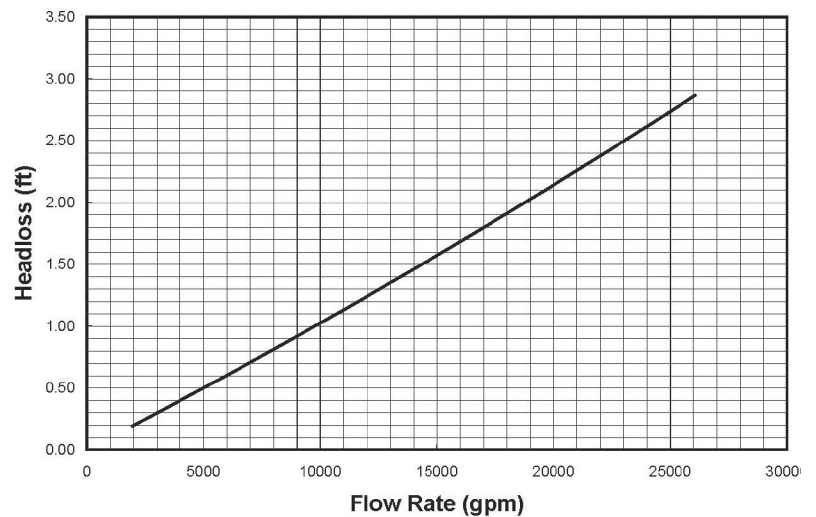
	Minimum	Maximum
Flow Rate (gpm)		
Line Pressure		
Back Pressure		

12" Check Valve (Headloss vs. Flow Rate)

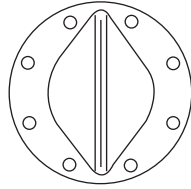
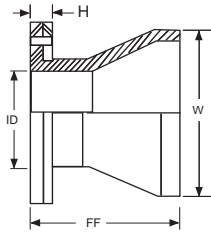


Sample Flow Rate vs Headloss Graphs. Other valve sizes available upon request  
Based on flow testing at Utah State University.

24" Check Valve (Headloss vs. Flow Rate)



Sample Flow Rate vs Headloss Graphs. Other valve sizes available upon request  
Based on flow testing at Utah State University.



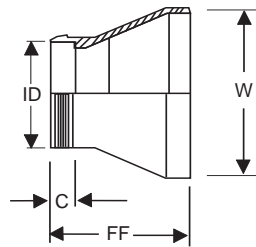
# Series DBF Flanged Style Duckbill

Cla-Val Series DBF Duckbill Flanged Style Check Valves feature an integral, metal-backed, rubber flange for attaching directly to flanged-end connections from tank or head wall. A variety of elastomers allow DBF valves to be used with many different fluids. When ordering, specify Model DBF, valve ID size, flange drilling, and add first letter of elastomer material ie: 4"-DB-N (N for Neoprene)

**Model DBF Dimension Chart (inches)**

Size ID	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	28	30
F/F	3	3 7/8	5 1/4	6 1/4	7 1/2	9	11	12	14	16	18	20	23	25	32	41	44	46
H	7/8	7/8	7/8	7/8	1 1/8	1 1/8	1 1/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 7/8	1 7/8	1 7/8	1 7/8
W	2 1/8	2 5/8	3 7/8	4 5/8	5 1/2	7 3/8	8 3/4	10 1/2	13 3/4	17	19 5/8	24 3/4	26 1/2	29 3/4	31 1/2	43	46	49
Wt. Lbs	2.5	4	5	8	11	15	17	21	25	37	59	75	124	205	315	400	475	551

**Note:** Dimensions are for clearance purposes only. Actual product dimensions may vary based upon specific application requirements. Larger sizes are available, contact factory for details. Series DBF comes with 316 stainless steel backing ring 5/16" thick (other material available upon request).



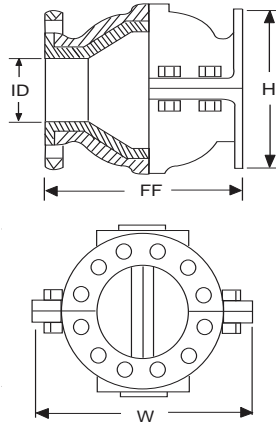
# Series DBO Duckbill Check Valves Slip-Over Style

Cla-Val Series DBO Duckbill Slip-Over Style Check Valves feature a soft sleeve end for slip over connection to pipe end and fastened with stainless steel clamp for low inlet pressure applications. A variety of elastomers allow DBO valves to be used with many different fluids. When ordering, specify Model DBO, pipe OD size, and add first letter of elastomer material. ie: 4"-DBO-N (N for Neoprene)

**Model DBO Dimension Chart (inches)**

Size ID	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	28	30
F/F	2 1/2	3	3 1/4	4 1/2	5 3/4	7 1/2	9	12	13	15	17	18	24	26 1/2	28	31	32	41	44	46
C	1	1	1	1	1 1/2	2	3	3	3	4	4	4	6	6	6	6	8	8	8	10
W	1	1 1/2	2 1/8	2 5/8	3 7/8	4 5/8	5 1/2	7 3/8	8 3/4	10 1/2	13 3/4	17	19 5/8	24 3/4	26 1/2	29 3/4	31 1/2	43	46	49
Wt. Lbs	.25	.75	1.5	4	5	8	11	14	16	20	24	36	56	72	118	195	299	380	451	523

**Note:** Dimensions are for clearance purposes only. Actual product dimensions may vary based upon specific application requirements. Larger sizes are available, contact factory for details.



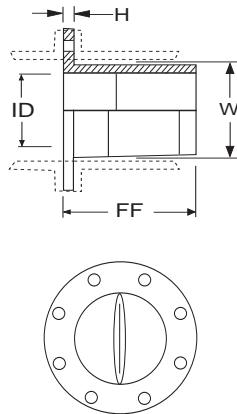
# Series DBJ Jacket Style Duckbill

Cla-Val Series DBJ Duckbill Jacket Style Check Valves feature an all-metal enclosure for the Duckbill valve installed in pipelines as a whisper quiet, non-slamming, low-maintenance, low pressure-drop check valve. A variety of elastomers allow DBJ valves to be used with many different fluids. When ordering, specify Model DBJ, nominal pipe, flange drilling, and add first letter of elastomer material ie: 4"-DBJ-N (N for Neoprene)

**Model DBJ Dimension Chart (inches)**

Size ID	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
F/F	4 1/2	5 1/2	6 1/2	8 1/2	9 1/2	11 1/4	11 3/4	15 3/4	19	21	23
H	4 1/4	4 5/8	5	7 1/8	7 1/2	8 1/8	10 5/8	11 1/2	13 1/2	18	22 3/8
W	5 3/4	6 1/4	6 1/2	8 1/2	9	10	11 3/4	11 3/4	15 1/4	17 1/2	19 3/8
Wt. Lbs	9	11	17	32	40	51	88	137	180	257	440

**Note:** Dimensions are for clearance purposes only. Actual product dimensions may vary based upon specific application requirements. Larger sizes are available, contact factory for details. Series DBJ comes with cast iron body (special coatings or lining available on request)



# Series DBI Duckbill Check Valves In-Line Flanged Style

Cla-Val Series DBI Duckbill In-Line Flanged Style Check Valves are for pressurized pipeline check applications where it is inserted between two pipe flanges. Cla-Val Series DBI Duckbill In-Line Flanged Style Check Valves have an integral, metal-backed, rubber flange for attaching directly to flanged-end pipe connections. A variety of elastomers allow DBI valves to be used with many fluids. When ordering, specify Model DBI, pipe ID size, flange drilling, and add first letter of elastomer material. ie: 4"-DBI-N (N for Neoprene)

**Model DBI Dimension Chart (inches)**

Size ID	2	3	4	5	6	8	10	12	14	16	18	20	24
ID	1 1/4	2 1/4	3	4	5	6 5/8	8 5/8	10	11 1/2	13 1/2	15 1/4	17	20 1/2
F/F	6	7 1/2	13	14 1/2	16	18	20	21	22	24	27	30	33
H	1/2	1/2	3/4	3/4	3/4	3/4	3/4	1	1	1	1	1 3/16	1 3/8
W	1 7/8	2 7/8	3 7/8	4 7/8	5 7/8	7 5/8	9 5/8	11 7/8	12 3/4	14 3/4	16 3/4	18 3/4	22 3/4
Wt. Lbs	5	11	15	17	21	25	37	59	75	124	205	315	400

**Note 1:** Dimensions are for clearance purposes only. Actual product dimensions may vary based upon specific application requirements. Larger sizes are available, contact factory for details.