rhinoflex™
duckbill check valves

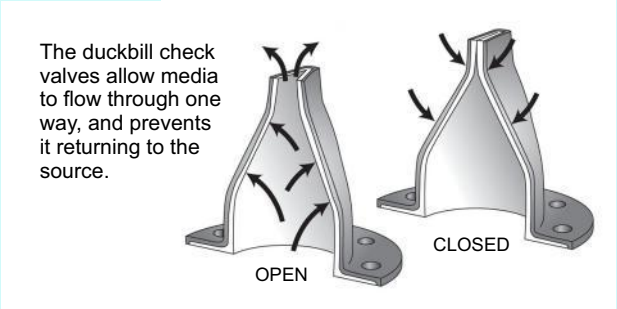
THE SEARCH IS OVER™

RHINOFLEX - Duckbill Check Valves

THE DESIGN

The RHINOFLEX duckbill check valve is a one-way, non-return check valve. No additional energy source is required as they use existing line pressure and back pressure to open and close the valve. The Duck-Bill design is engineered such that the valve will always return to a fully closed position enabling a tight seal, even on suspended solids. They are extremely suitable for aeration and mixing systems, effluent diffuser systems, wastewater treatment, and storm water and wastewater backflow prevention.

These have absolutely no maintenance, with no springs, flaps, seats and seals and will not freeze, warp, rust or malfunction, because they are built from a one piece elastomeric construction and can operate at low flow rates with a low head loss The duckbill check valves are available from 50mm to 3000mm in various designs, and models.

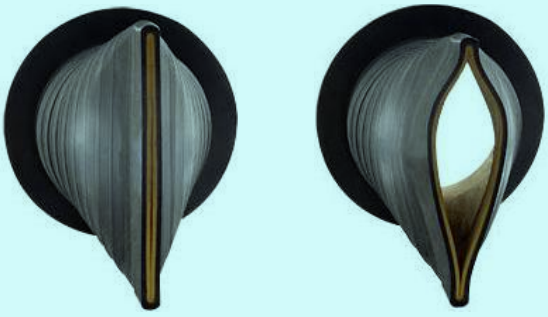


APPLICATIONS

- 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
- Aeration in Mixing Tanks

FEATURES

- Full rubber construction, totally wear resistant to abrasives
- No water hammer and noise, prevents back flow
- No energy costs, actuation or maintenance
- Valve will not deform or freeze
- Easily exchangeable with other check valves
- Designed to suit all diameters and pressure ratings
- Flanged type and Slip On and IN-LINE type available



MATERIALS OF CONSTRUCTION

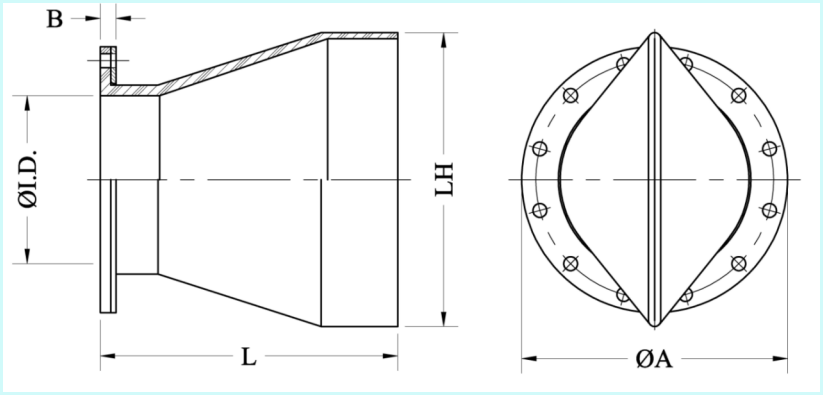
Valves are manufactured using a variety of elastomers to suit most applications:

- ***CR:*** Choroprene Rubber – Neoprene resists a wide range of moderate chemicals and inhibits growth of marine organisms
- ***PGR:*** Pure Gum Natural Rubber has excellent abrasion resistance and flexibility
- ***SBR:*** Styrene Butadiene Rubber for general purpose use
- ***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 oxidizinge and Slip On and IN-LINE type available

Series RFL - FlangedType

The RHINOFLEX "SERIES RFL" Flanged Check Valves are manufactured with an integral reinforced rubber flange complete with metal backing rings. The series RFL can be bolted directly to a headwall, tank wall or pipe flange.

These are custom made from a variety of elastomeric rubbers, and built as per the application and the line pressure and back pressure concerned. They are available from 2 inch to 96 inch in diameter, and are widely used for storm-water-wastewater and sub-sea diffuser applications.

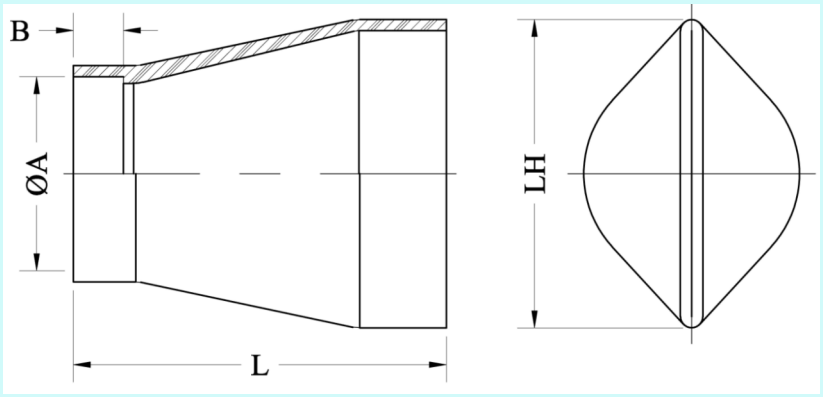


Pipe Size ID (in)	B (in)	Maximum Length - L (in)	Maximum Height - LH (in)	Pipe Size ID (in)	B (in)	Maximum Length - L (in)	Maximum Height - LH (in)
2	¾	6	4	24	1 ⅝	40	39
2 ½	¾	7	5	26	1 ⅝	42	42
3	1 ⅛	9	6	28	1 ⅝	42	45
4	1 ⅛	12	8	30	1 ⅝	44	47
5	1 ⅛	15	9	32	1 ⅝	52	52
6	1 ⅛	15	11	36	2	50	56
8	1 ⅜	16	14	42	2 ½	54	68
10	1 ⅜	21	17	48	2 ½	60	77
12	1 ⅜	26	22	54	2 ½	70	86
14	1 ⅜	26	24	60	2 ½	72	97
16	1 ⅜	30	27	66	2 ½	76	99
18	1 ⅝	31	30	72	2 ½	94	114
20	1 ⅝	32	32	84	2 ½	96	135
22	1 ⅝	35	36	96	2 ½	100	150

Series RFS - Slip On Type

The Rhinoflex Series RFS- Slip-on type Duckbill check valve is a one way non return valve that are designed and engineered with a built-in flange that are part of the one piece elastomeric valve.

This enables the valve to be slipped on to the stub end of a pipe and clamping it around the pipe with Stainless steel clamps.

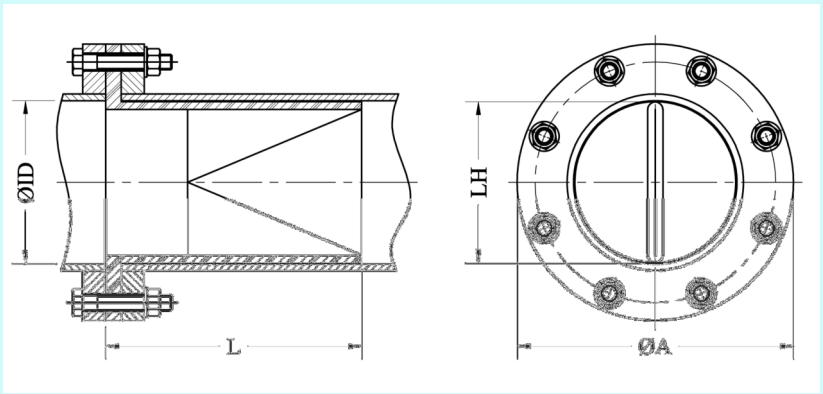


Pipe Size ID (in)	B (in)	Maximum Length - L (in)	Maximum Height - LH (in)	Pipe Size ID (in)	B (in)	Maximum Length - L (in)	Maximum Height - LH (in)
2	2	6	4	24	8	40	39
2 ½	2	8	5	26	8	42	42
3	3	9	6	28	8	44	45
4	3	12	8	30	10	48	47
5	3	14	9	32	10	48	52
6	4	16	11	36	10	58	56
8	4	17	14	42	12	60	68
10	4	20	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 RFIN-F - Flanged Inline Type

The Rhinoflex Series RFIN-INLINE Duckbill check valve is a one way non return valve that are designed and engineered with a built-in flange that are part of the one piece elastomeric valve. This model is suitable when there is a requirement that prevents backflow, inside a pipe line.

This enables the valve to be mounted in between two mating pipe flanges, using the flanges to secure the valve flange between them, there by having the duckbill valve inside the pipe.

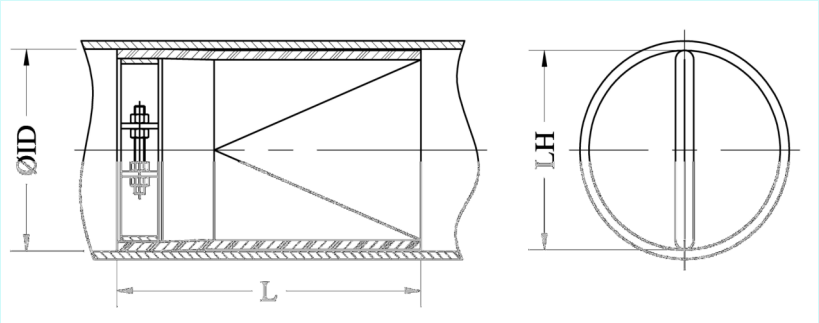


Note: Inline check valves have increased pressure drop because the valve must be smaller to fit inside the pipe. Actual maximum flow area is less than 25% of nominal pipe area.

Pipe Size ID (in)	Maximum Length - L (in)	T	LH (in)	Pipe Size ID (in)	Maximum Length - L (in)	T	LH (in)
2	6	½	1 ⅞	16	23	1	14 ¾
2 ½	7	½	2 ⅜	18	25	1	16 ¾
3	8	½	2 ⅞	20	32	1 ¼	18 ¾
4	12	¾	3 ⅞	24	34	1 ⅜	22 ¾
5	14	¾	4 ⅞	30	42	1 ⅜	28 ¾
6	15	¾	5 ⅞	36	46	1 ½	34 ¾
8	17	¾	7 ⅞	42	50	1 ½	40 ¾
10	20	¾	9 ⅞	48	60	1 ½	46 ½
12	21	1	11 ⅞	54	66	1 ½	54 ½
14	22	1	12 ¾	60	70	1 ½	58 ½

Series RFIN-E - Inline Expander Type

The Rhinoflex Series RFIN-E- Inline / expander type Duckbill check valve is a one way non return valve that are designed and engineered with a soft cuff that suits the Inside Diameter of the pipe.This consists of a round internal clamp, that when tightened, it clamps outward, onto the wall in the pipe. This enables the valve to be mounted on the inside of a pipeline, if there is no other way to secure the valve.



Note: Inline check 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.

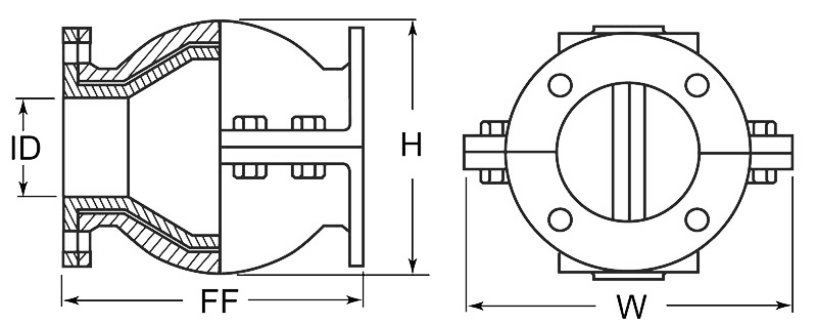
Pipe Size ID (in)	Maximum Length - L (in)	LH (in)	Pipe Size ID (in)	Maximum Length - L (in)	LH (in)
2	6	1 ⅞	16	23	14 ¾
2 ½	7	2 ⅜	18	25	16 ¾
3	8	2 ⅞	20	32	18 ¾
4	12	3 ⅞	24	34	22 ¾
5	14	4 ⅞	30	42	28 ¾
6	15	5 ⅞	36	46	34 ¾
8	17	7 ⅞	42	50	40 ¾
10	20	9 ⅞	48	60	46 ½
12	21	11 ⅞	54	66	54 ½
14	22	12 ¾	60	70	58 ½

Series RFIN-J - Inline Jacketed Type

The Rhinoflex Series RFIN- J (Jacketed) INLINE Duckbill check valve is a one way non return valve that are designed and engineered for higher pressures, with a built-in flange that are part of the one piece elastomeric valve. This model is suitable when there is a requirement that prevents backflow, inside a pipe line. Suitable for higher line and back pressures.

It consists of an egg/dome shape cast housing, made from Aluminum or Cast Iron, and the Inline Duckbill check valve is inserted inside the housing. This enables the valve to be mounted in between two mating cast body halves, using the flanges on the valve body, there by having the duckbill valve inside the cast housing.

Body Construction Available: Valve bodies are made of cast ductile iron, aluminium,welded steel or stainless steel as determined by size or application, and all valves are provided with flush 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.



Pipe Size ID (in)	FF (in)	H (in)	W (in)	Working Pressure (psig)
3	11 ½	8 ¼	10	125
4	11 ¾	10 ¾	11 ¾	125
6	19	13 ¾	15 ⅜	100
8	21	18	17 ½	100
10	23	22	19 ½	75
12	25	26	21 ½	75
14	29	27 ¾	24	50
16	33	29	25	50
18	38	32 ¾	28	50
20	41 ½	36	29	50
24	49 ½	47	38	50

Innovative Engineering Design and Development

Rhinoflex Duckbill check valves in Diffuser Outfalls and Aeration in Mixing Tanks. The possibilities of a wide variety of applications for subsea/ and on shore diffuser systems and a proven track record, make the Duckbill check valve, the valves of choice for outfall diffuser systems.

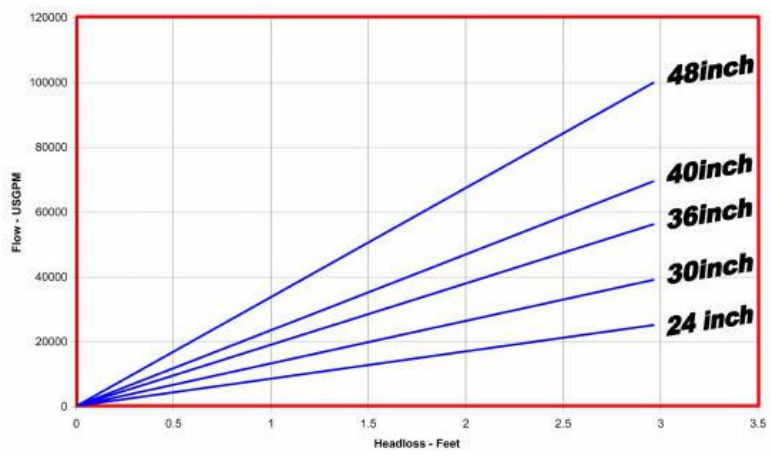
Widely used on manifolds inside mixing tanks for aeration during mixing, and used for bubble jet air discharge, for slurries and water mixing. Rhinoflex can design and engineer a custom made check valve tailor made to suit your specific applications.

We have a worldwide customer list that have been happy to continue to use our products for the last 15 years in sub-sea and onshore diffusing projects, and mixing tanks.

From manifolds as small as 1 inch to 4 Metres in diameter, Rhinoflex can engineer and design your next manifold for your diffuser systems , Aeration , and mixing tank applications.

Rhinoflex Duckbill Check Valves can be custom built to suit different applications where elastomer selection and backpressure rating will affect flow and hydraulic capacity. Contact our sales office for any specific assistance in design and engineering, and we will be happy to work with you.

EXAMPLE OF TYPICAL FLOW vs HEADLOSS



Please consult RHINOFLEX to discuss your specific application, for dimensions and pressure ratings.

CONTACT US

Rhinoflex Australia Pty. Ltd. 4/7 Holder Way Malaga, Western Australia 6090

Phone: +61 8 92758584 | Mobile: +61 4 05505073 | sales@rhinoflex.com.au