PROCO

The Expansion Joint and Check Valve People

ProFlex™ Rubber Check Valves Series 700

PROCO SERIES 700

The PROCO Series 700 *ProFlex*™ Rubber Check Valves are a cost effective way to control back pressures from sewage treatment plants, outfalls and tidal operations. They are a fully passive flow device requiring neither maintenance nor any outside sources of power or manual assistance to operate.

The PROCO Series 700 *ProFlex*™ Check valves are offered as direct replacements for ineffective and maintenance ridden flap type check valves, commonly known to seize, rust and bind in unwanted positions. Unlike flap type valves, the *ProFlex*™ rubber check valves will handle large obstructions without jamming or having swing gates binding open. Specify the PROCO Series 700 *ProFlex*™ rubber check valves to provide backflow protection from (1) Sewage slurries, (2) Outfalls to ocean fronts from heavy rainfall activity, (3) Prevention from land erosion due to back flow conditions, (4) Protection from saltwater to fresh water ponds and catch basins and numerous other water based applications. Our history in the manufacture of rubber piping products dates back to 1930. When an engineered solution is needed to solve a piping or backflow problem, call PROCO.

The Proco Series 700 ProFlex™ Rubber Check Valves are available in the following styles:

- **Style 710: Flanged**: Designed to bolt directly to existing flanges or new installations, flanges are drilled to ANSI 125/150# standard. Other drilling standards are also available upon request. The style 710 can be installed in either vertical or horizontal applications.

- **Style 710TT: Flanged Blending System Valves**: The Patented Torsionally twisted valve is designed to bolt directly on existing or any new installations. This valve is supplied to ensure proper mixing in potable water reservoirs and tanks. The torsional design ensures quick and accurate blending which provides a properly blended volume of potable water.

  The Hydraulic Blending Analysis provided by Proco (based on CFD and engineered scale modeling) supplies the contractor/end user with strategic location points for each valve. All valves will be ANSI/NSF-61 certified.

- **Style 711/731 Flanged/Slip-on Slope Bottom Check Valve**s: Designed for installation on pre-existing or new pipe lines such as manholes, outfalls, vaults, where the outfall invert of the pipe is close to the floor of the manhole or outfall. Can be engineered into the pipe layout with little concern for outfall clearance due to its "low slope" design.

Table 1: Available Materials • Temperatures

For Specific Elastomer Recommendations, See: **PROCO™ "Chemical To Elastomer Guide"**

PROCO Material Codes	Cover [3] Elastomer	Tube Elastomer	Maximum Operating Temp. °F (°C)	
BB	Chlorobutyl	Chlorobutyl	250°	(121°)
EE	EPDM	EPDM	250°	(121°)
NH	Neoprene	CSM	212°	(100°)
NN	Neoprene	Neoprene	225°	(107°)
NN-NSF61 [2]	Neoprene	Neoprene	225°	(107°)
PP	Nitrile	Nitrile	212°	(100°)
NR	Neoprene	Natural Rubber	180°	(82°)

Notes: ProFlex™ is a trademark of PROCO Products, Inc.
All products are reinforced with polyester tire cord.
1. Styles with Neoprene covers meet all requirements of U.S.C.G.
2. NN-NSF/61 UL Classified Water Quality
3. Other materials available. Please contact Proco Products

- **Style 720: Flanged In-line**: Designed to fit directly inside of an existing pipe. Supplied with a flat face rubber flange which allows installation between existing pipe flanges eliminating the requirement for a valve body. Flanges are drilled to ANSI 125/150# standard. Other drilling standards are also available upon request.

- **Style 730: Sleeve Type**: Designed to easily slip over an existing pipe, and is affixed with heavy-duty stainless steel clamps. Can be installed in either a vertical or horizontal application.

- **Style 730M: Molded Type**: Molded Type : A economical engineered valve, available in smaller pipe diameter ranging from 3/4" -6" nominal sch 40 pipe size.
  Designed to prevent odors and low back pressures from seeping back up the stream channel. Supplied with stainless steel gear clamps.

- **Style 730CBD: Coarse Bubble Diffusers**: Designed to provide excellent coarse bubble diffusion in settling ponds, tanks, reservoirs, Supplied with a stainless steel Hex nipple, PVC adapter and variable orifices, makes this the valve of choice.

- **Style 740: Slip In-Inline**: Designed to slip directly inside of an existing pipe. Supplied with a stainless steel expandable clamp to secure it in place.

- **Style 750: Jacketed**: Designed with a full metal enclosure which allows easy installation in existing piping systems. Utilizes the Style 710 as the check valve.

- **Style 770/780: Wafer Style**: Designed with a metal or plastic orifice plate and a rubber disk , this valve is an ideal valve to provide high back pressure capability on clean water applications.

- **Style 790: Low Headloss In-Line**: Designed as an all one piece constructed valve, the Style 790 is one of lowest headloss valves on the market. A passive flow device ensuring no delamination.

ELASTOMERS: All of the PROCO Series 700 *ProFlex*™ Rubber Check Valves are available in a various selection of elastomers including ANSI/NSF-61 certified product under UL Certification #MH47689. The PROCO Series 700 *ProFlex*™ Rubber Check Valves will not freeze or deform and function solely on the inlet and back pressures which will be present in each application.

Each valve is carefully constructed using the finest of engineered materials and some of the most experienced rubber technicians in the industry. All check valves are engineered in precise detail to ensure proper operation and will provide years of unhindered operation and trouble free service.

Benefits of the PROCO Series 700 ProFlex™ Rubber Check Valves:

- **All rubber construction resists abrasive slurries**
- **Barnacle resistant Neoprene is standard construction, with ANSI/NSF-61 certified valves also available**
- **Very quiet operation with no water hammer**
- **Its unique design prevents backflow**
- **Negligible maintenance and energy costs**
- **Will not warp or freeze**
- **Quick interchange with any flap type check valve**
- **Available in sizes 1"– 96"**
- **Available with special I.D to suit concrete pipe**

Proco Style 710

ProFlex™ Flanged Rubber Check Valves

Proco Style 710TT

ProFlex™ ANSI/NSF-61 Flanged Blending System Valves

Covered by U.S. Patent No. 11,396,951

Proco Style 711

ProFlex™ Flanged Slope Bottom Check Valves

Covered by US Patent Number 11,221,081

Proco Style 720

ProFlex™ In-line Flanged Rubber Check Valves

Proco Style 730

ProFlex™ Slip-on Rubber Check Valves

Proco Style 730M

ProFlex™ Low Pressure Molded Rubber Check Valves

Proco Style 730CBD

ProFlex™ Coarse Bubble Diffusers

Proco Style 731

ProFlex™ Slip-on Slope Bottom Check Valves

Covered by US Patent Number 11,221,081

Proco Style 740

ProFlex™ Slip-in Style In-line Rubber Check Valves

Proco Style 750

ProFlex™ Jacketed In-line Flanged Rubber Check Valves

Proco Style 770/780

ProFlex™ Wafer Style In-line Flanged Rubber Check Valves

Proco Style 790

ProFlex™ Low Headloss In-line Rubber Check Valves

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PROCO STYLE 710

ProFlex™ Flanged Rubber Check Valves

The *ProFlex*™ 710 is a full port, concentric design Rubber Duckbill Check Valve. The ProFlex™ 710 Rubber Duckbill Check Valves can be supplied with many different flange drilling configurations , including square or rectangular flanges to suit problematic sluice gate or flap gate replacements.

The unique advantage to this valve is its very low 1"- 2" (25mm-50mm) cracking pressure and is often referred to as the lowest head loss valve in the industry.

All ***ProFlex*™ 710** Rubber Duckbill Check Valves are supplied with 316ss retaining rings and can also be supplied with 304ss, Galvanized, Epoxy coated, FRP material if required or Encapsulated Steel Rubber Flange.

The ***ProFlex*™ 710** Rubber Duckbill Check Valves come standard with ANSI 125/150 flange drilling and can also be supplied with DIN, JIS, BS or AS flange patterns.

All ***ProFlex*™ 710** Rubber Duckbill Check Valves are also available from inventory in a Standard Rated (SR) design, and can also be custom manufactured to meet specific head and back pressures.

For higher pressure/vacuum requirements, the ***ProFlex*™ 710** Rubber Duckbill Check Valves can also be manufactured using a unique Internal Vacuum Supports (IVS) design which is homogeneous to the inner reinforced layers of the valve allowing a full flow with no obstructions and yet providing excellent anti-inversion features.

Style 710

Diameter		Standard Valve Dimensions				Standard Drilling ANSI 125/150#							Approx. Weight	
		Length		Duckbill Height		Flange O.D.		Bolt Circle Diameter		No. of Holes	Size of Holes			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm	lbs	kgs
1	25	5.1	130	2.4	62	4.25	108	3.125	79	4	0.625	15.9	3	1.5
1.5	40	6.0	153	3.2	82	5.00	127	3.875	98	4	0.625	15.9	3	1.6
2	50	6.6	168	3.8	97	6.00	152	4.75	121	4	0.750	19.1	4	1.7
2.5	65	7.4	188	4.8	122	7.00	178	5.50	140	4	0.750	19.1	5	2.4
3	75	8.5	216	5.6	142	7.50	191	6.00	152	4	0.750	19.1	6	2.7
4	100	10.5	267	6.9	174	9.00	229	7.50	191	8	0.750	19.1	9	3.9
5	125	11.5	293	9.0	228	10.00	254	8.50	216	8	0.875	22.2	14	6.5
6	150	12.8	326	10.6	268	11.00	279	9.50	241	8	0.875	22.2	15	6.7
8	200	15.0	380	13.7	348	13.50	343	11.75	298	8	0.875	22.2	24	10.7
10	250	17.9	455	16.9	428	16.00	406	14.25	362	12	1.000	25.4	31	14.2
12	300	20.3	515	20.6	522	19.00	483	17.00	432	12	1.000	25.4	51	23.1
14	350	22.8	580	23.7	601	21.00	533	18.75	476	12	1.125	28.6	75	34.2
16	400	24.2	615	27.3	693	23.50	597	21.25	540	16	1.125	28.6	93	42.0
18	450	27.2	690	30.6	778	25.00	635	22.75	578	16	1.250	31.8	104	47.1
20	500	28.4	722	32.6	828	27.50	699	25.00	635	20	1.250	31.8	128	58.0
24	600	38.7	983	38.0	964	32.00	813	29.50	749	20	1.375	34.9	203	92.0
28	700	41.1	1045	45.3	1151	36.50	927	34.00	864	28	1.375	34.9	243	110.0
30	750	43.5	1105	49.4	1254	38.75	984	36.00	914	28	1.375	34.9	300	136.3
32	800	44.5	1130	51.0	1295	41.75	1060	38.50	978	28	1.625	41.3	368	167.0
36	900	53.9	1370	59.5	1512	46.00	1168	42.75	1086	32	1.625	41.3	559	253.6
40	1000	53.9	1370	65.8	1671	50.75	1289	47.25	1200	36	1.625	41.3	697	316.3
42	1050	55.7	1415	67.9	1725	53.00	1346	49.50	1257	36	1.625	41.3	744	337.3
48	1200	63.2	1605	76.2	1935	59.50	1511	56.00	1422	44	1.625	41.3	1019	462.3
54	1350	67.9	1725	84.3	2140	66.25	1683	62.75	1594	44	2.000	50.8	1349	611.7
60	1500	73.8	1874	85.4	2170	73.00	1854	69.25	1759	52	2.000	50.8	1598	725.0
64	1600	76.8	1950	89.8	2280	78.00	1981	74.00	1880	52	2.000	50.8	2069	938.5
66	1650	79.9	2030	92.9	2360	80.00	2032	76.00	1930	52	2.000	50.8	2304	1045.2
72	1800	87.3	2217	112.9	2868	86.50	2197	82.50	2096	60	2.000	50.8	2811	1275.1
78	1950	88.0	2234	113.6	2885	93.00	2362	89.00	2261	64	2.125	54.0	3265	1480.8
84	2100	90.2	2290	117.7	2990	99.75	2534	95.50	2426	64	2.25	57.2	3718	1686.5
96	2400	97.2	2470	127.6	3240	113.25	2877	108.50	2756	68	2.5	63.5	4625	2097.9

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

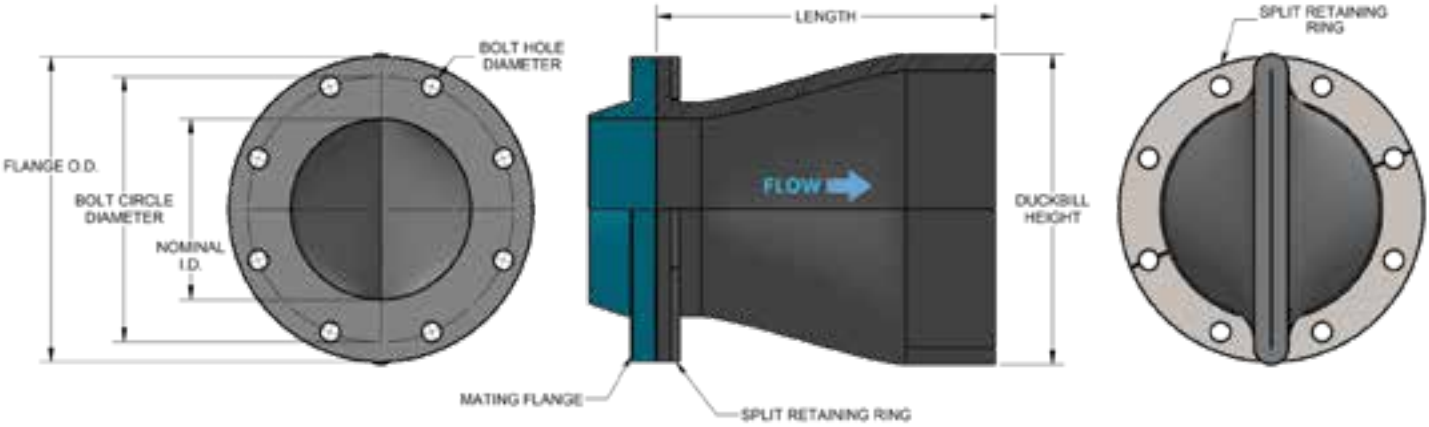
1.Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.

2.Larger sizes available upon request.

3. Weights are approximate.

Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

Detail of the ***ProFlex***™ Flanged Rubber Check Valve; Style 710



(800) 344-3246
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PROCO STYLE 710TT

ProFlex™ ANSI/NSF-61 Flanged Blending System Valves

The ProFlex™ 710TT has been engineered and developed to be the most efficient and specifiable valve to ensure 100% mixing capability in potable water and sewage reservoir/storage tanks.

Under U.S. Patent No. 11,396,951, the new patented torsional flow design of the valve provides a unique spinning motion which has never been offered before and is a stand-alone feature. Its operational values require less head pressure and less pump energy, thus saving the client money as well as less time to mix!

When inlet pressure is applied to the designed manifold in any reservoir, the intent is to ensure an adequate mixing of the media by blending the different temperature variations into one, thus eliminating hot spots which is an ongoing concern in potable water reservoirs.

The ProFlex™ 710TT, with its torsional design, has been found to also require fewer valves to adequately mix a volume of water compared to other valves available on the market.

This has allowed us to engineer, manufacture and provide 3 main pipe diameters of valves, (4", 6" and 8") therefore ensuring that the 710TT will be a readily available "off the shelf" valve.

How It Works

The design as detailed above, allows Proco to create a torsional "twist" of the valve's body ranging from 15-90 degrees which creates a greater thrust(inertia) of media, allowing the distance of rapidity to carry further into the body of water in which the valve(s) are submerged.

Each valve will be manufactured and supplied with a NSF61 Urethane elastomer which also provides a highly efficient, very flexible body which is very resistant to the multiple flexes which happen in the daily operation of these types of valves. (Other elastomers will also be available).

Why Do We Need To Specify This?

Anywhere there is a reservoir containing fluids, we must be concerned with "hot spots" commonly known as areas of media in a tank or reservoir that have the possibility of becoming stagnant water or media settling in the reservoir.

Table 10: Dimensional Data

Diameter		Length		DuckBill Height		Flange Detail
in.	mm	in.	mm	in.	mm	
4	100	10.5	267	7.4	188	ANSI 150#
6	150	12.8	325	10.8	274	ANSI 150#
8	200	15.0	381	13.8	351	ANSI 150#

Other sizes available contact Proco.

The EPA states that, "the concern and intent is to ensure that our drinking water is safe, and we will do all necessary to contribute/ensure our part in doing so."

In being part of this concern, we know that moving water, commonly known as "running water", does not have the opportunity to change temperatures commonly related to "hot spots" or stagnant water.

By installing the ProFlex™ 710TT in specific locations in a tank or reservoir, we ensure and minimize these areas of concern.

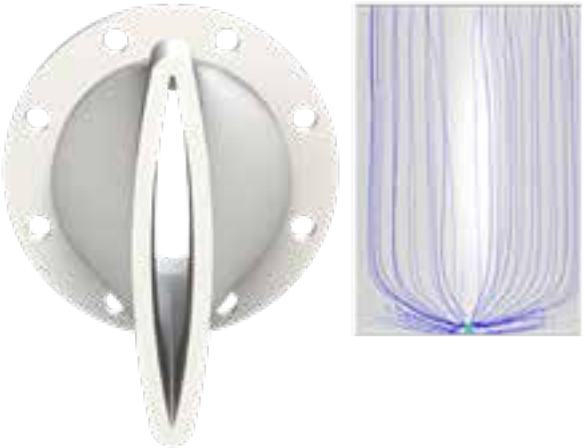
For more information visit: https://www.epa.gov

Where Will We Use These Systems & What Are The Cost Saving Advantages?

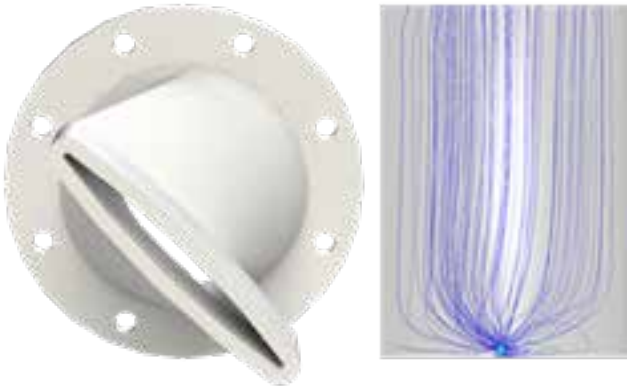
- All potable water reservoirs or tanks require mixing if the concern of foul or stagnant water is possible.
- All sewage reservoirs or tanks also require mixing if sludge settling is a concern.
- All of the ProFlex™ 710TT's along with the ProFlex™ 780/770 valves, use passive energy only to properly mix a system, no additional power sources are required.
- All ProFlex™ 710TT's will have CFD modeling available to validate all tank styles.
- ANSI/NSF-61 certified valves are a standard.
- Zero maintenance/No mechanical parts.
- The intent of the ProFlex™ system is to ensure that all areas of a tank/reservoir are properly mixed without the requirement of additional tank penetrations, ensuring less chance of external leakages and a definite cost savings.
- Life expectancy is 35-50 years

The findings of the **ProFlex™ 710TT** are as follows compared to existing valves available:

Standard Valve Flow Testing



ProFlex™ 710TT Torsional Flow Testing



**Note the immediate robust discharge in the flow path and the constant flow path as elevation increases.*

PROCO STYLE 711

ProFlex™ Flanged Slope Bottom Check Valves

The **Proco Style 711 ProFlex™** check valves are engineered for installation on pre-existing pipe lines such as manholes, outfalls, vaults, where the outfall invert of the pipe is close to the floor of the manhole or outfall. When a new installation is being designed, the 711 valves can be engineered into the pipe layout with little concern for outfall clearance due to its "low slope" design.

The new Style 711 check valves allow the valves to be installed without any costly and labor intensive changes to the existing structure. The 711 is engineered to crack open at 1-2" of head pressure and with its unique engineered sloping bottom, the valve ensures zero potential for standing water. With its all elastomer design, the valve can be installed without concern for the future seizing or rusting which can cause premature failure and maintenance issues.

How Does it Work?

The advantage to the Style 711 is the sloping bottom which has been developed to offset the issues commonly affiliated with other flat bottom valves which often entrap solids and flows due to its design. The 711 has been carefully designed to prevent this issue and has a minimal slope which allows complete drainage yet still ensures easy installs on minimal clearance areas.

The Style 711 has been engineered to provide a full port which is important in dealing with headloss and jet velocities.
The valve is manufactured with 100% algae and barnacle resistant rubber and is also 100% fire resistant.

Advantages:

- Unique bottom slope design ensures 100% drainage
- Installs in flat outfall designs
- Available in both flanged and slip-on design
- An excellent choice for manholes and outfall installation
- Ensures sealing from rubbish and small solids

Materials of Construction

All ***ProFlex™ 711*** Rubber Duckbill Check Valves are supplied with 316ss retaining rings and can also be supplied with 304ss, Galvanized, Epoxy coated, FRP material if required or Encapsulated Steel Rubber Flange.

Style 711

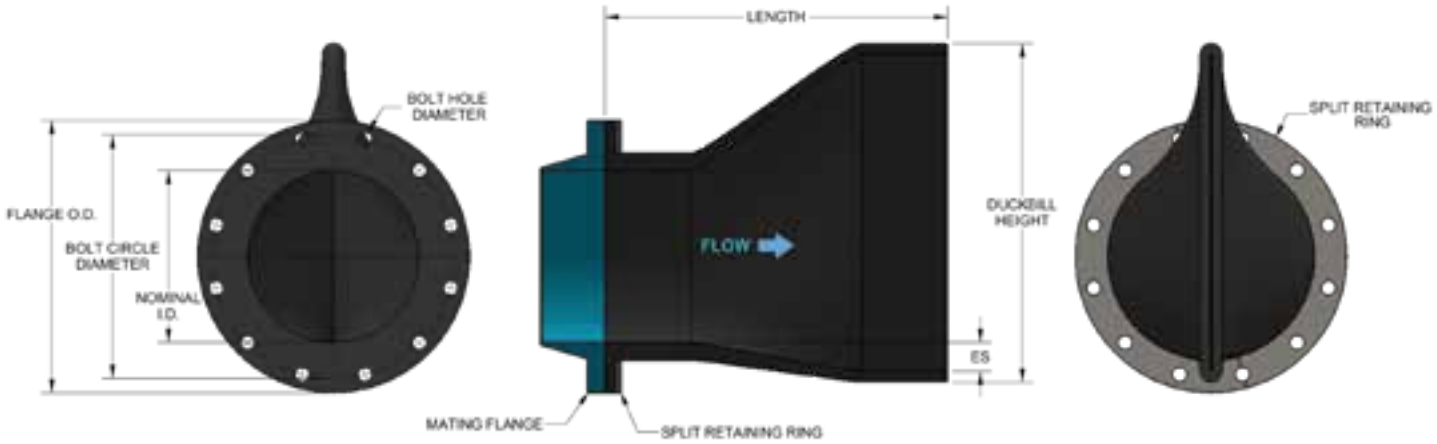
Diameter		Standard Dimensions						Approx. Weight	
		Length		Duckbill Height		Eccentric Slope			
in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs
4	100	10.9	276	8.7	222	1.0	25	15	6.8
6	150	13.3	338	14.9	378	2.0	50	23	10.4
8	200	14.1	359	17.9	454	2.0	50	36	16.3
10	250	17.8	451	20.4	518	2.0	50	52	23.6
12	300	23.8	605	23.9	608	2.0	50	53	24.0
14	350	25.2	640	26.7	678	2.0	50	64	29.0
16	400	27.8	705	31.0	788	2.0	50	93	42.2
18	450	29.9	760	33.0	838	2.0	50	135	61.2
20	500	30.9	785	37.7	958	2.0	50	155	70.3
24	600	38.2	970	43.1	1096	2.0	50	235	106.6
30	750	44.0	1118	53.2	1352	3.0	76	565	256.3
32	800	45.3	1150	54.5	1384	3.0	76	618	280.5
36	900	52.4	1330	66.5	1690	3.0	76	725	328.9
40	1000	52.8	1340	69.5	1766	3.0	76	852	386.3
42	1050	55.0	1398	71.6	1818	3.0	76	915	415.0
48	1200	60.6	1540	81.5	2070	3.9	100	1035	469.5
54	1350	63.6	1615	89.8	2280	3.9	100	1165	528.4
60	1500	67.5	1715	94.9	2410	3.9	100	1255	569.3
64	1600	68.5	1740	101.6	2580	3.9	100	1367	619.9
66	1650	69.7	1770	103.9	2640	3.9	100	1423	645.2
72	1800	74.8	1900	115.9	2945	3.9	100	1590	721.2
78	1950	79.1	2010	124.0	3150	3.9	100	1758	797.2
84	2100	87.8	2230	125.6	3190	3.9	100	1925	873.2
96	2400	94.9	2410	137.4	3490	3.9	100	2260	1025.1

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*

The ProFlex™ Slope-Bottom Style 711 & 731 Check Valves are covered by US PATENT NUMBER 11,221,081

Detail of the ***ProFlex***™ Flanged/Slip-On Slope Bottom Check Valve; Style 711



The ProFlex™ Slope-Bottom Style 711 & 731 Check Valves are covered by US PATENT NUMBER 11,221,081

PROCO STYLE 720

ProFlex™ In-line Flanged Rubber Check Valves

The *ProFlex*™ 720 Flanged In-line Rubber Duckbill Check Valve is designed to fit directly inside of an existing pipe. The unique advantage of this valve is that it can be slipped inside of the pipe and installed between existing pipe flanges, and eliminates the need for a valve body.

The ***ProFlex*™ 720** Flanged Inline Rubber Duckbill Check Valve comes standard with ANSI 125/150# flange drilling and can also be supplied with ANSI 250/300, DIN, JIS, BS or AS flange patterns.

All ***ProFlex*™ 720** Flanged Inline Rubber Duckbill Check Valve are special manufactured valves suited to your pipe I.D. and are available up to 96" in diameter and can also be custom manufactured to meet specific head and back pressures.

For higher pressure/vacuum requirements, the ***ProFlex*™ 720** Flanged In-line Rubber Duckbill Check Valve can also be manufactured using a unique Internal Vacuum Supports (IVS) design which is homogeneous to the inner reinforced layers of the valve allowing a full flow with no obstructions and yet providing excellent anti-inversion features.

Style 720

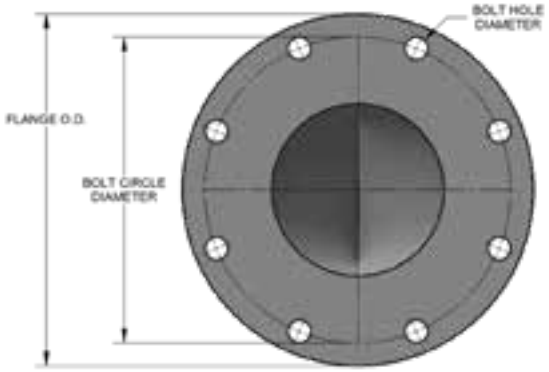
Diameter		Standard Valve Dimensions				Standard Drilling ANSI 125/150#							Max. Working Pressure		Approx. Weight	
		Length		Duckbill Height		Flange O.D.		Bolt Circle Diameter		No. of Holes	Size of Bolt Holes					
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm	PSI	bar	lbs	kgs
2	50	6.3	161	2.0	50	6.00	152	4.75	121	4	0.750	19.1	125	8.6	2.0	0.9
3	75	8.9	225	2.8	70	7.50	191	6.00	152	4	0.750	19.1	125	8.6	3.0	1.4
4	100	10.1	256	3.6	92	9.00	229	7.50	191	8	0.750	19.1	100	6.9	5.0	2.3
6	150	12.2	309	5.6	142	11.00	279	9.50	241	8	0.875	22.2	75	5.2	8.0	3.6
8	200	15.8	402	7.5	190	13.50	343	11.75	298	8	0.875	22.2	75	5.2	11.0	5.0
10	250	17.3	440	9.4	240	16.00	406	14.25	362	12	1.000	25.4	50	3.4	18.0	8.2
12	300	21.0	534	11.0	280	19.00	483	17.00	432	12	1.000	25.4	50	3.4	29.0	13.2
14	350	21.7	552	12.4	315	21.00	533	18.75	476	12	1.125	28.6	50	3.4	48.0	21.8
16	400	22.5	572	14.6	372	23.50	597	21.25	540	16	1.125	28.6	50	3.4	54.0	24.5
18	450	27.2	692	17.0	432	25.00	635	22.75	578	16	1.250	31.8	25	1.7	65.0	29.5
20	500	28.0	712	19.0	482	27.50	699	25.00	635	20	1.250	31.8	25	1.7	95.0	43.1
24	600	31.8	807	22.0	560	32.00	813	29.50	749	20	1.375	34.9	25	1.7	165.0	74.8
28	700	37.2	945	26.5	672	36.50	927	34.00	864	28	1.375	34.9	25	1.7	253.0	114.8
30	750	42.3	1075	28.4	722	38.75	984	36.00	914	28	1.375	34.9	25	1.7	305.0	138.3
36	900	52.0	1320	34.6	879	46.00	1168	42.75	1086	32	1.625	41.3	25	1.7	615.0	279.0
40	1000	54.7	1390	38.7	983	50.75	1289	47.25	1200	36	1.625	41.3	25	1.7	668.3	303.2
42	1050	59.1	1500	40.4	1026	53.00	1346	49.50	1257	36	1.625	41.3	25	1.7	695.0	315.2
48	1200	63.2	1605	46.7	1186	59.50	1511	56.00	1422	44	1.625	41.3	25	1.7	735.0	333.4
54	1350	65.0	1650	52.7	1338	66.25	1683	62.75	1594	44	2.000	50.8	25	1.7	1095.0	496.7
60	1500	69.7	1770	59.2	1504	73.00	1854	69.25	1759	52	2.000	50.8	25	1.7	1255.0	569.3
64	1600	73.2	1860	63.2	1606	78.00	1981	74.00	1880	52	2.000	50.8	25	1.7	1366.7	619.9
66	1650	74.4	1890	65.2	1656	80.00	2032	76.00	1930	52	2.000	50.8	25	1.7	1422.5	645.2
72	1800	80.7	2050	71.5	1816	86.50	2197	82.50	2096	60	2.000	50.8	25	1.7	1590.0	721.2

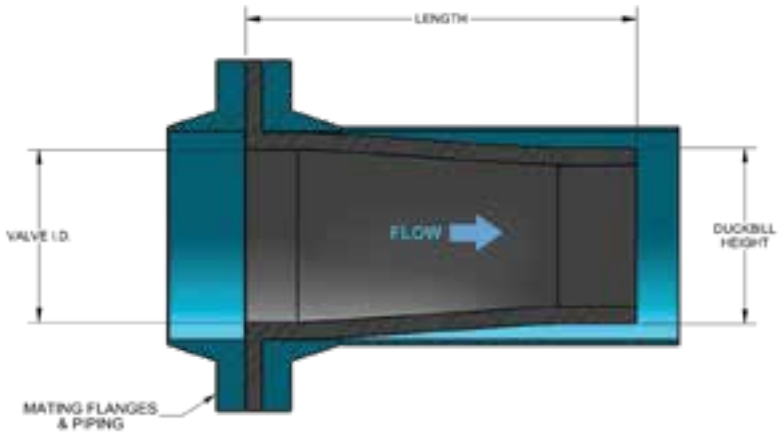
Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*

Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

Detail of the ***ProFlex***™ In-line Flanged Rubber Check Valve; Style 720





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PROCO STYLE 730

ProFlex™ Slip-on Rubber Check Valves

The *ProFlex*™ 730 Slip-on Rubber Duckbill Check Valve is designed to slip directly over an existing pipe, and is supplied with heavy duty stainless steel clamp(s) to secure it in place. Sizes 1" – 10" utilize T-Bolt clamps and sizes above 10" utilize Bolt-On Clamps for securing.

The ***ProFlex*™ 730** Slip-on Rubber Duckbill Check Valve can be designed and manufactured to slip over any outside diameter pipe including oval and rectangular configurations.

For higher pressure/vacuum requirements, the ***ProFlex*™ 730** Slip-on Rubber Duckbill Check Valve can also be manufactured using a unique Internal Vacuum Supports (IVS) design which is homogeneous to the inner reinforced layers of the valve allowing a full flow with no obstructions and yet providing excellent anti-inversion features.

All ***ProFlex*™ 730** Rubber Duckbill Check Valves are also available from inventory in a Standard Rated (SR) design, and can also be custom manufactured to meet specific head and back pressures.

Style 730

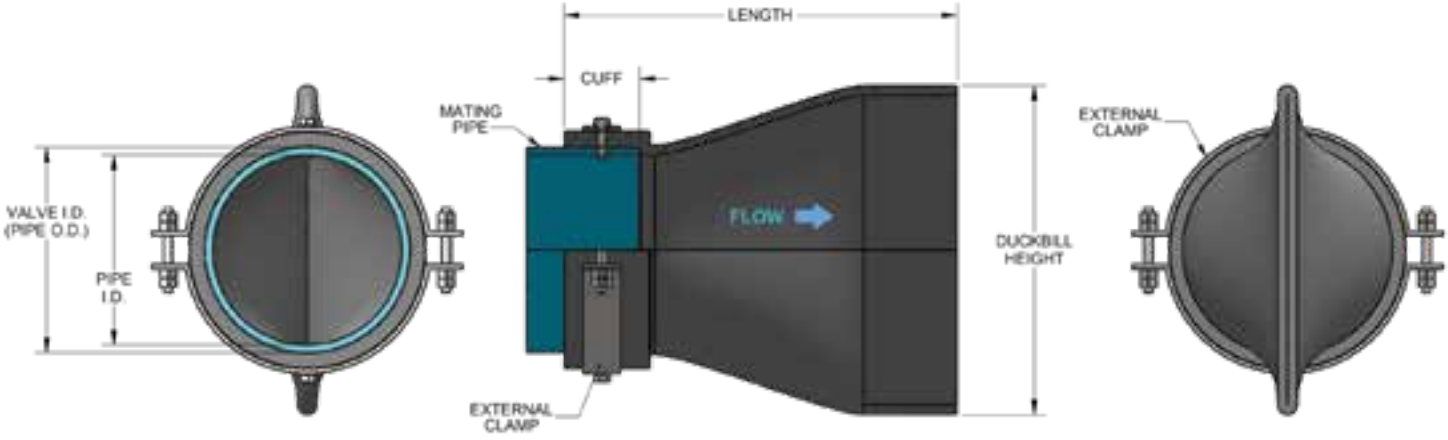
Diameter		Standard Valve Dimensions						Approx. Weight	
		Cuff Width		Length		Duckbill Height			
in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs
1	25	1.0	25	4.1	105	2.4	62	1	0.3
1.5	40	1.0	25	5.0	128	3.2	82	1	0.4
2	50	1.5	38	6.1	156	3.8	97	3	1.2
2.5	65	2.0	51	7.4	189	4.8	122	3	1.4
3	75	3.0	76	9.5	242	5.6	142	5	2.3
4	100	3.0	76	12.3	313	6.9	174	7	3.2
5	125	3.0	76	13.3	339	9.0	228	10	4.5
6	150	4.0	102	15.7	398	10.6	268	13	5.8
8	200	4.0	102	17.8	452	13.7	348	23	10.2
10	250	4.0	102	20.7	527	16.9	428	33	15.0
12	300	6.0	152	26.3	667	20.6	522	59	26.8
14	350	6.0	152	28.8	732	23.7	601	82	37.2
16	400	6.0	152	30.2	767	27.3	693	97	43.8
18	450	6.0	152	33.1	842	30.6	778	209	95.0
20	500	8.0	203	36.4	925	32.6	828	229	104.0
24	600	8.0	203	44.7	1136	38.0	964	215	97.5
28	700	8.0	203	47.2	1198	45.3	1151	365	165.6
30	750	10.0	254	51.5	1309	49.4	1254	460	208.7
32	800	10.0	254	52.5	1334	51.0	1295	495	224.5
36	900	10.0	254	62.0	1574	59.5	1512	585	265.4
40	1000	10.0	254	62.0	1574	65.8	1671	825	374.2
42	1050	12.0	305	65.7	1670	67.9	1725	1075	487.6
48	1200	12.0	305	73.1	1856	76.2	1935	1350	612.3
54	1350	12.0	305	77.8	1976	84.3	2140	1630	739.4
60	1500	12.0	305	83.7	2125	85.4	2170	1715	777.9
64	1600	12.0	305	86.7	2201	89.8	2280	1777	805.9
66	1650	12.0	305	89.8	2281	92.9	2360	1808	819.9
72	1800	12.0	305	97.2	2468	112.9	2868	1900	861.8
78	1950	14.0	356	99.8	2536	113.6	2885	1993	903.8
84	2100	14.0	356	102.0	2592	117.7	2990	2085	945.7
96	2400	16.0	406	111.1	2822	127.6	3240	2270	1029.7

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*

Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

Detail of the ***ProFlex***™ Slip-on Rubber Check Valve; Style 730



PROCO STYLE 730M

ProFlex™ Low Pressure Molded Check Valves

Style 730M									
Diameter		Standard Valve Dimensions							
		Cuff Width		Length		Duckbill Height		Approx. Weight	
in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs
0.75	19	1.00	25	3.00	76	1.88	48	0.1	0.0
1	25	1.25	32	4.50	114	2.50	64	0.3	0.1
1.5	40	1.50	38	5.75	146	3.50	89	0.7	0.3
2	50	1.50	38	6.75	171	4.50	114	1.0	0.4
3	75	1.50	38	7.78	198	6.00	152	1.6	0.7
4	100	2.00	51	9.75	248	7.00	178	2.5	1.1
6	150	1.88	48	11.75	298	10.00	254	5.9	2.7

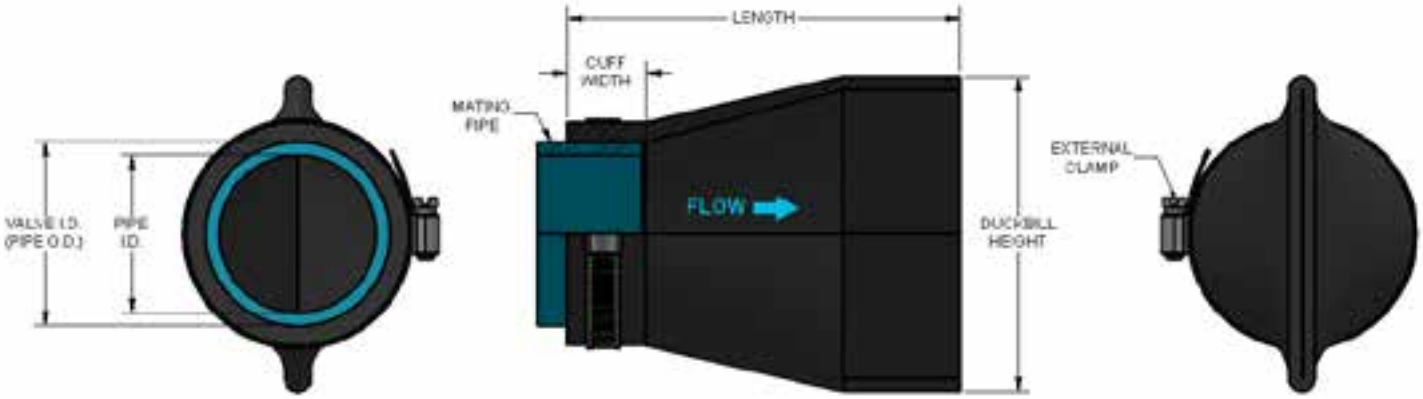
The ProFlex™ 730M The most recent addition to the ProFlex® line of rubber check valves is the introduction of the Series 730 molded rubber light weight check valve.

This type of check valve is available ranging in sizes from 3/4" to 6" pipe diameter and can be directly mounted to the OD of schedule 40 pipe.

The complete size range is supplied with a ¾" -300 Stainless Steel Worm Gear clamp ready for quick set up and installation. Through its rubber bill, media will pass creating a low head loss valve, complete with a zero back flow feature.

Its ability to prevent backflow into the mating pipe system is a quality aspect in "checking" pipes or tanks that often have problems with back flow problems.

Best for odor control.



Detail of the *ProFlex™* Slip-on Rubber Check Valve; Style 730M

PROCO STYLE 730CBD

ProFlex™ Coarse Bubble Diffusers

The ProFlex™ 730CBD Coarse bubble diffusers are a sought after pollution control technology used to aerate or mix wastewater for effluent/ sewage treatment. Coarse bubble diffusers typically produce 1/4 to 1/2 inch (6.4 to 13 mm) bubbles which rise rapidly from the floor of a wastewater treatment plant or sewage treatment plant tank. They are typically used in grit chambers,equalization basins, primary and secondary settling ponds, and many other areas where sediment settling is a concern.

Benefits

When a diffuser system is operational the complete system is charged by an air blower or a compressor , this ensures the volume of air is always exiting the valves outlet, but what happens when the air is suddenly missing, or a power failure occurs?

In other aeration systems including fine bubble elastomeric design, the media can encounter a sudden backflow into the aeration manifold as well as the blower or aircompressors internals. The ProFlex™ 730CBD with its unique elastomeric duck bill design is always in a 100% closed position and relies on static head to open, so the instant there is an absence of inlet pressure the valve is closed bubble tight ensuring unwanted media does not flow back into the manifold.

With the ProFlex™ 730CBD being an all-elastomeric design, there is no concern for maintenance or costly down-time resulting in a perfect diffuser system, designed to provide long life features.

The ProFlex™ 730CBD also features a 3/4" NPT SS Hex nipple instead of a standard SS pipe nipple, this feature allows the owner/contractor a hassle-free install experience, ensuring a positive seal on the manifold without worry of breaking the adapter or the manifold's inlet fitting.

EPDM or Neoprene is the most specified elastomer, and both offer superb flexibility along with long life expectancy (other elastomers are available).

When to use

To prevent backflow of media and fluids into the diffuser and manifold piping. Exiting airflow is designed to discharge towards the floor of the chamber eliminating accumulation of solids. This in turn creates a complete overturn loop which ensures high mixing of the reservoir, once again resulting in minimal maintenance.

Another benefit is the economics of the ProFlex™ 730CBD design, with its simplistic yet engineered models the Customer can see huge savings over a more costly maintenance ridden design. The ProFlex™ 730CBD design provides the engineers with SCFM information for each orifice size which will allow the Engineer/Municipality to design and implement their air pump/compressor flow data and engineer their own system which greatly lowers design costs.

Style 730CBD

Diameter		Standard Valve Dimensions				Flow Range
		Length		Duckbill Height		
in.	mm	in.	mm	in.	mm	
1.5/0.75	40/19	7.50	191	3.50	89	0-12 SCFM or 89.8 USGPM
2.0/0.75	50/19	8.70	221	4.50	114	0-18 SCFM or 134.7 USGPM
3.0/0.75	80/19	9.50	241	6.00	152	0-24 SCFM or 179.5 USGPM

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PROCO STYLE 731

ProFlex™ Slip-On Slope Bottom Check Valves

The **Proco Style 731 ProFlex™** check valves are engineered for installation on pre-existing pipe lines such as manholes, outfalls, vaults, where the outfall invert of the pipe is close to the floor of the manhole or outfall. When a new installation is being designed, the 731 valves can be engineered into the pipe layout with little concern for outfall clearance due to its "low slope" design.

The new Style 731 check valves allow the valves to be installed without any costly and labor intensive changes to the existing structure. The 731 is engineered to crack open at 1-2" of head pressure and with its unique engineered sloping bottom, the valve ensures zero potential for standing water. With its all elastomer design, the valve can be installed without concern for the future seizing or rusting which can cause premature failure and maintenance issues.

How Does it Work?

The advantage to the Style 731 is the sloping bottom which has been developed to offset the issues commonly affiliated with other flat bottom valves which often entrap solids and flows due to its design. The 731 has been carefully designed to prevent this issue and has a minimal slope which allows complete drainage yet still ensures easy installs on minimal clearance areas.

The Style 731 has been engineered to provide a full port which is important in dealing with headloss and jet velocities.
The valve is manufactured with 100% algae and barnacle resistant rubber and is also 100% fire resistant.

Advantages:

- Unique bottom slope design ensures 100% drainage
- Installs in flat outfall designs
- Available in both flanged and slip-on design
- An excellent choice for manholes and outfall installation
- Ensures sealing from rubbish and small solids

Materials of Construction

Neoprene, ANSI/NSF-61 certified product elastomers, EPDM and other elastomers available.

Mounting Clamps

304 or 316 Stainless Steel

Style 731

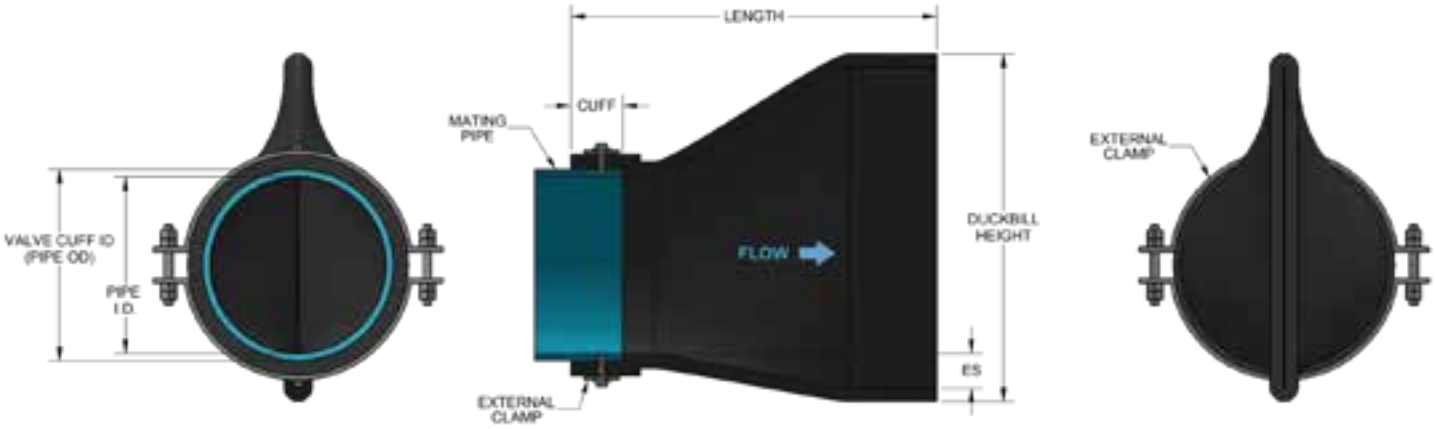
Diameter		Standard Valve Dimensions								Approx. Weight	
		Cuff Width		Length		Duckbill Height		Eccentric Slope			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs
4	100	3.0	76	12.8	326	8.7	222	1.0	25	15	6.8
6	150	4.0	102	16.3	414	14.9	378	2.0	50	23	10.4
8	200	4.0	102	19.1	485	17.9	454	2.0	50	36	16.3
10	250	4.0	102	22.7	577	20.4	518	2.0	50	52	23.6
12	300	6.0	152	27.8	707	23.9	608	2.0	50	59	26.8
14	350	6.0	152	29.2	742	26.7	678	2.0	50	76	34.5
16	400	6.0	152	31.8	807	31.0	788	2.0	50	90	40.8
18	450	6.0	152	33.9	862	33.0	838	2.0	50	130	59.0
20	500	8.0	203	36.9	938	37.7	958	2.0	50	200	90.7
24	600	8.0	203	44.2	1123	43.1	1096	2.0	50	215	97.5
30	750	10.0	254	48.1	1223	52.7	1339	3.0	76	460	208.7
32	800	10.0	254	52.0	1322	53.2	1352	3.0	76	502	227.6
36	900	10.0	254	53.3	1354	54.5	1384	3.0	76	585	265.4
40	1000	10.0	254	59.2	1504	66.5	1690	3.0	76	912	413.5
42	1050	12.0	305	62.4	1584	69.5	1766	3.0	76	1075	487.6
48	1200	12.0	305	63.2	1605	71.6	1818	3.0	76	1350	612.3
54	1350	12.0	305	73.6	1870	89.8	2280	3.9	100	1630	739.4
60	1500	12.0	305	77.6	1970	94.9	2410	3.9	100	1715	777.9
64	1600	12.0	305	78.5	1995	101.6	2580	3.9	100	1777	805.9
66	1650	12.0	305	79.7	2025	103.9	2640	3.9	100	1808	819.9
72	1800	12.0	305	84.8	2155	115.9	2945	3.9	100	1900	861.8
78	1950	14.0	356	91.2	2316	124.0	3150	3.9	100	1993	903.8
84	2100	16.0	406	99.8	2536	125.6	3190	3.9	100	2085	945.7
96	2400	16.0	406	106.9	2716	137.4	3490	3.9	100	2270	1029.7

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*

The ProFlex™ Slope-Bottom Style 711 & 731 Check Valves are covered by US PATENT NUMBER 11,221,081

Detail of the ***ProFlex***™ Flanged/Slip-On Slope Bottom Check Valve; Style 731



The ProFlex™ Slope-Bottom Style 711 & 731 Check Valves are covered by US PATENT NUMBER 11,221,081

PROCO STYLE 740

ProFlex™ Slip-in Style In-line Rubber Check Valves

The *ProFlex*™ 740 In-line Rubber Duckbill Check Valve is designed to fit directly inside of an existing pipe, and is supplied with a stainless steel internal expandable clamp to secure it in place.

For higher pressure/vacuum requirements, the ***ProFlex*™ 740** In-line Rubber Duckbill Check Valve can also be manufactured using a unique Internal Vacuum Supports (IVS) design which is homogeneous to the inner reinforced layers of the valve allowing full flow with no obstructions and yet providing excellent anti-inversion features.

Style 740

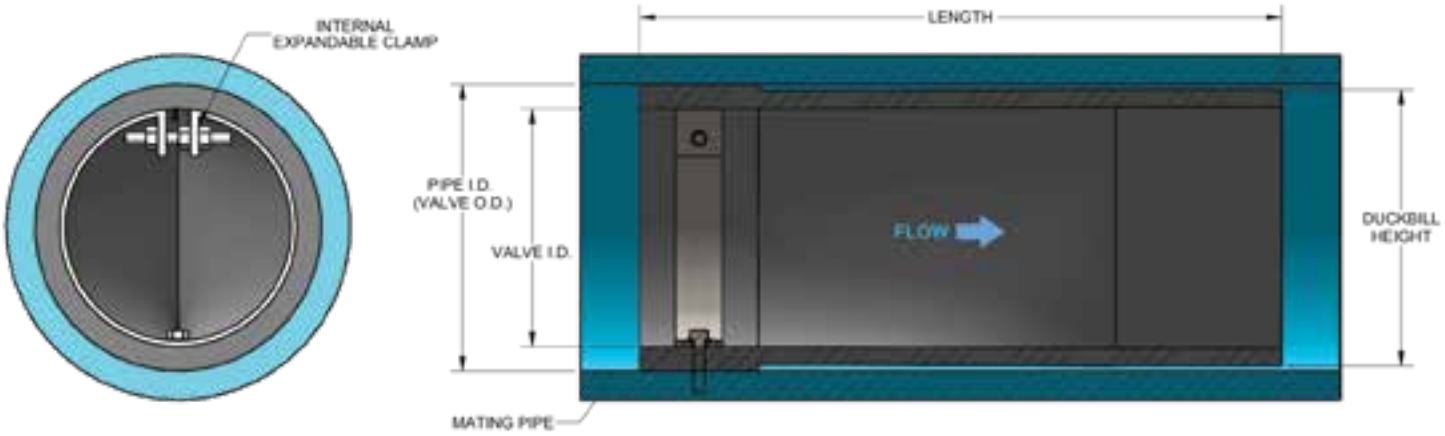
Diameter		Standard Valve Dimensions						Max. Working Pressure		Approx. Weight	
		Cuff Width		Length		Duckbill Height					
in.	mm	in.	mm	in.	mm	in.	mm	PSI	bar	lbs	kgs
2	50	1.5	38	7.2	184	2.0	50	125	8.6	2.9	1.3
3	75	3.0	76	11.3	286	2.8	70	125	8.6	3.5	1.6
4	100	3.0	76	11.5	292	3.6	92	100	6.9	4.4	2.0
6	150	4.0	102	14.6	371	5.6	142	75	5.2	8.4	3.8
8	200	4.0	102	18.3	464	7.5	190	75	5.2	10.8	4.9
10	250	4.0	102	20.4	517	9.4	240	50	3.4	16.5	7.5
12	300	6.0	152	26.0	661	11.0	280	50	3.4	34.0	15.4
14	350	6.0	152	26.7	679	12.4	315	50	3.4	44.1	20.0
16	400	6.0	152	27.5	699	14.6	372	50	3.4	52.9	24.0
18	450	6.0	152	32.2	819	17.0	432	25	1.7	68.3	31.0
20	500	8.0	203	34.1	865	19.0	482	25	1.7	101.4	46.0
24	600	8.0	203	37.8	960	22.0	560	25	1.7	149.9	68.0
28	700	8.0	203	43.2	1098	26.5	672	25	1.7	205.0	93.0
30	750	10.0	254	51.3	1304	28.4	722	25	1.7	396.8	180.0
36	900	10.0	254	60.7	1541	34.6	879	25	1.7	330.7	150.0
40	1000	10.0	254	62.8	1594	38.7	983	25	1.7	448.3	203.3
42	1050	12.0	305	66.1	1679	40.4	1026	25	1.7	507.1	230.0
48	1200	12.0	305	73.3	1863	46.7	1186	25	1.7	648.2	294.0
54	1350	12.0	305	77.8	1976	52.7	1338	25	1.7	720.9	327.0
60	1500	12.0	305	83.7	2125	59.2	1504	25	1.7	859.8	390.0
64	1600	12.0	305	84.4	2145	63.2	1606	25	1.7	949.5	430.7
66	1650	12.0	305	85.6	2175	65.2	1656	25	1.7	994.3	451.0
72	1800	12.0	305	97.2	2468	71.5	1816	25	1.7	1128.8	512.0

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate..*

Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

Detail of the ***ProFlex***™ Slip-in In-line Rubber Check Valve; Style 740



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PROCO STYLE 750

ProFlex™ Jacketed In-line Flanged Rubber Check Valves

Unique Features

- Maintenance free
- Will seal even with solids entrapment
- Designed to withstand wear
- Quiet operation, no water hammer!
- 100% backflow prevention
- Tough enough for abrasive slurries
- No body halves with problematic sealing issues

The ***ProFlex™ 750*** is designed to be the answer to enclosed body check valve requirements for slurry applications. It requires no external power sources, thereby making operation costs obsolete.

The valve's unique design means there are no mechanical parts to break down or wear therefore reducing maintenance costs.

The ***ProFlex™ 750*** easily allows flow of abrasive materials such as raw sewage, sludges or slurries. The elastomer's flexible design allows the media to flow without significant head losses and will seal around solids trapped in the valve.

The ***ProFlex™ 750*** valves are versatile and can be installed either horizontally or vertically and are designed within industry standards for flange size and drilling.

Vacuum supports can be supplied independent to the valve as well as internal supports which can ensure back pressures up to 600 psi depending on pipe size.

Applications

Potable Water Outfalls – Stand Pipes - Sewer Interceptors - Wet Wells - Mine Tailing Pipeline outfalls - Dredging – Scrubber Pipe Systems - Outfall Lines – Pneumatic Conveying- Pump Backflow Protection

Construction

The solid carbon steel body (optional materials are available) and one-piece rubber valve provide lasting durability. The unique feature is the pull through design which provides a tamper proof valve required for Homeland Security Issues. The 2 flush ports allows for easy cleaning of the valve's interior body.

Replacement Costs?

Cost Effective and Simple! The inner sleeve is a modified ProFlex™ 710 available for quick replacement if the sleeve does need unlikely replacement.

Style 750

DIAMETER		D Length		C Height (Max. Dimension)		W Width (Max. Body O.D.)		Working Pressure	
in.	mm	in.	mm	in.	mm	in.	mm	PSI	Bar
1	25	8.4	214	5.5	140	7.9	200	125	8.6
1.25	32	8.8	224	5.5	140	7.9	200	125	8.6
1.5	40	9.2	233	5.5	140	7.9	200	125	8.6
2	50	9.8	250	8.6	219	11.8	300	125	8.6
2.5	65	10.7	271	8.6	219	11.8	300	125	8.6
3	80	12.6	321	9.6	243	12.8	325	125	8.6
4	100	16.9	429	10.5	267	13.7	347	125	8.6
6	150	22.0	559	12.9	327	16.7	423	100	6.9
8	200	24.4	619	16.0	407	19.8	503	100	6.9
10	250	26.6	676	21.2	538	25.0	634	75	5.2
12	300	28.0	711	25.4	646	29.2	742	75	5.2
14	350	34.3	872	26.8	680	30.6	776	50	3.4
16	400	37.2	946	30.7	780	34.5	876	50	3.4
18	450	38.4	975	34.6	880	40.2	1022	50	3.4
20	500	39.4	1002	36.6	930	40.4	1026	50	3.4
24	600	51.0	1295	43.0	1091	46.7	1187	50	3.4

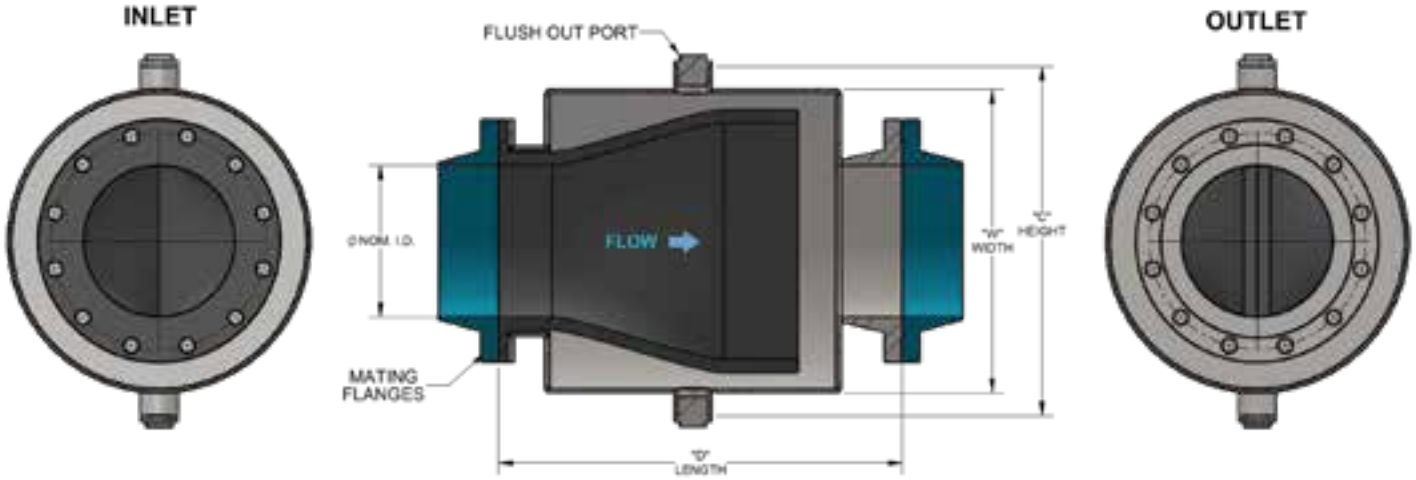
Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*
4. *Two piece bodies are available upon request.*

Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

Vacuum and high back pressure supports ensure continued protection in severe back flow conditions

Detail of the *ProFlex*™ Jacketed In-line Flanged Rubber Check Valve; Style 750



(800) 344-3246
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PROCO STYLE 770

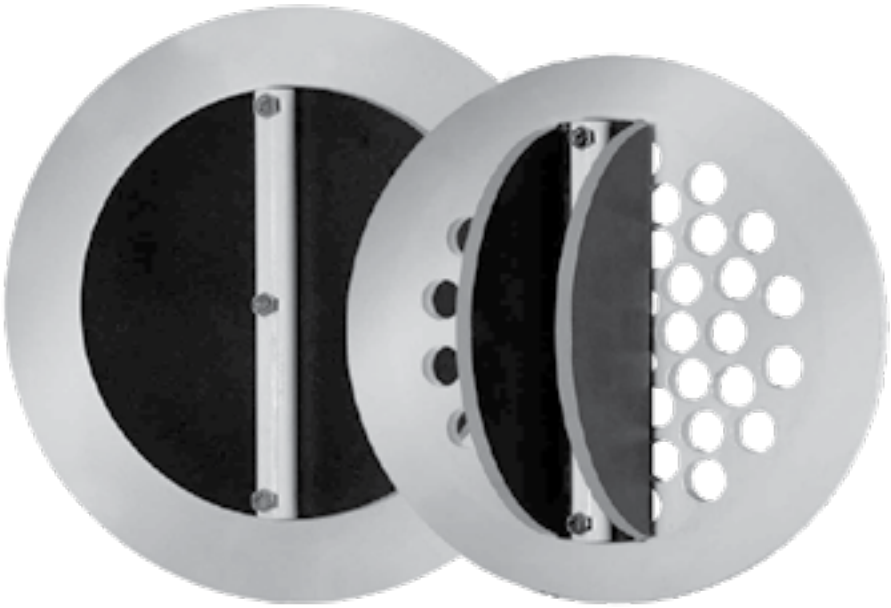
ProFlex™ Wafer Style In-line Rubber Check Valves

Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

The *ProFlex*™ 770/780 Wafer Style In-line Rubber Check Valves are designed to offer space saving dimensions as opposed to other flap type check valves.

The ***ProFlex*™ 770** Wafer Style In-Line Rubber Check Valve is designed to be installed between two mating flanges and to fit securely inside the bolt circle of the mating flanges.

The ***ProFlex*™ 780** Wafer Style In-line Rubber Check Valve comes standard with ANSI 125/150# flange drilling and can also be supplied with ANSI 250/300, DIN, JIS, BS or AS flange patterns.



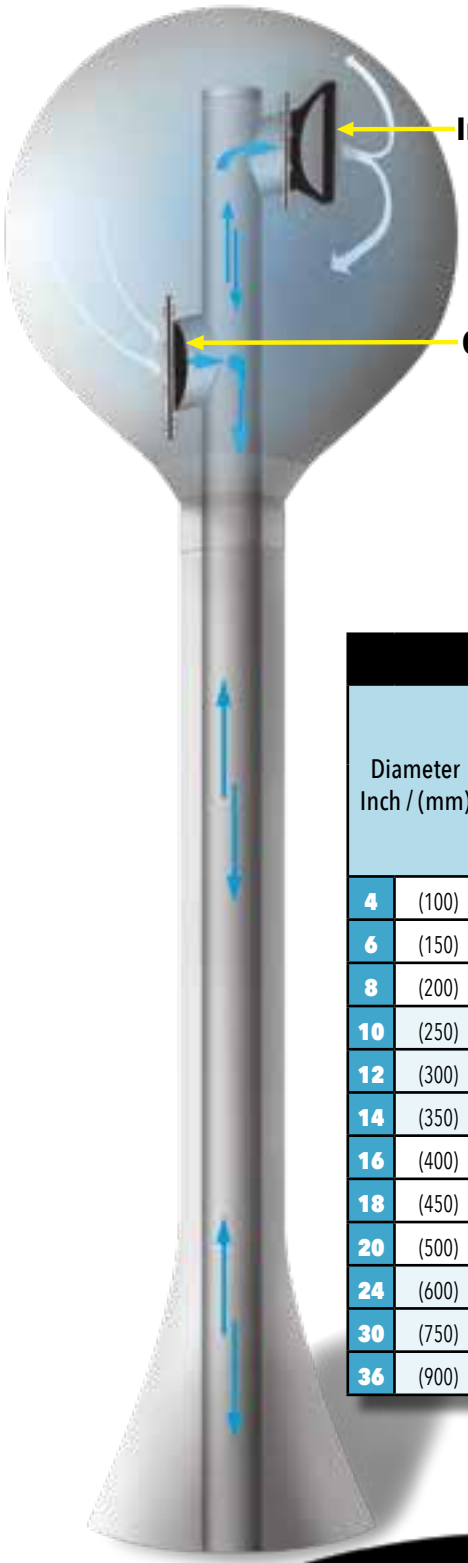
Style 770

Diameter Inch / (mm)		Standard Valve Dimensions				Back Pressure PSIG / (bar)		VELOCITY (ft/s) vs. HEADLOSS (ft) [2]					
		Plate Thickness Inch / (mm)		Plate O.D. Inch / (mm)				1	2	4	6	8	10
4	(100)	0.250	(6.35)	6.19	(157.23)	150	(10.0)	0.40	1.29	3.97	6.18	8.17	9.83
6	(150)	0.250	(6.35)	8.50	(215.90)	150	(10.0)	0.44	1.48	4.31	6.54	8.50	10.16
8	(200)	0.375	(9.53)	10.63	(270.00)	150	(10.0)	0.48	1.67	4.64	6.91	8.84	10.48
10	(250)	0.375	(9.53)	12.75	(323.85)	150	(10.0)	0.52	1.86	4.98	7.27	9.17	10.81
12	(300)	0.500	(12.70)	15.00	(381.00)	150	(10.0)	0.56	2.05	5.32	7.63	9.51	11.14
14	(350)	0.500	(12.70)	16.25	(412.75)	150	(10.0)	1.18	2.77	5.82	8.02	9.79	11.37
16	(400)	0.750	(19.05)	18.00	(457.20)	150	(10.0)	1.80	3.50	6.33	8.41	10.08	11.60
18	(450)	0.750	(19.05)	19.88	(504.95)	150	(10.0)	2.42	4.23	6.84	8.79	10.37	11.83
20	(500)	0.750	(19.05)	22.00	(558.80)	150	(10.0)	2.82	4.69	7.17	9.05	10.56	11.98
24	(600)	1.000	(25.40)	27.25	(692.15)	150	(10.0)	2.86	4.75	7.24	9.12	10.64	12.06
30	(750)	1.000	(25.40)	34.50	(876.30)	150	(10.0)	2.93	4.84	7.35	9.21	10.75	12.17
36	(900)	1.000	(25.40)	41.00	(1041.40)	150	(10.0)	2.99	4.93	7.46	9.31	10.86	12.28

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.
1.Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.
2.Larger sizes available upon request.
3. Weights are approximate.

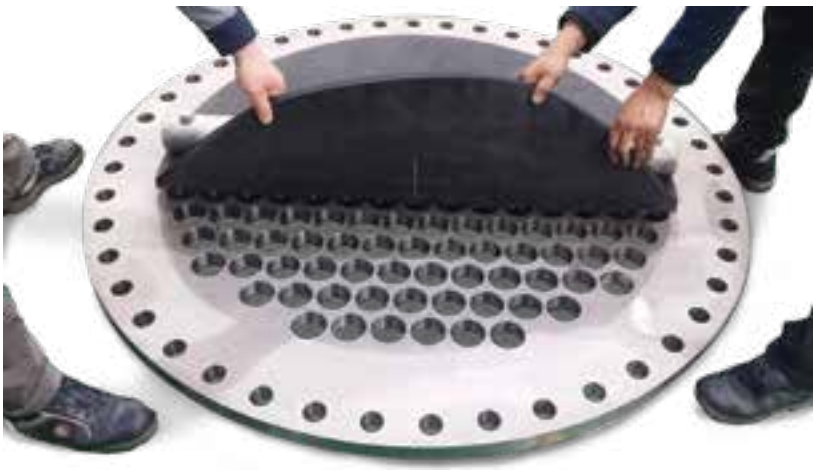
PROCO STYLE 780

ProFlex™ Wafer Style In-line Flanged Rubber Check Valves



Inlet Valves
- *ProFlex™ Style 710TT*
- *Opens during tank filling*
- *Provides complete mixing with optimal jet velocities*
- *Closed during tank draining*

Outlet Valves
- *ProFlex™ Style 780*
- *Closed during tank filling*
- *Opens for tank draining*



Style 780															
Diameter Inch / (mm)		Standard Valve Dimensions						Back Pressure PSIG / (Bar)	VELOCITY (ft/s) vs. HEADLOSS (ft) [2]					
		Plate Thickness Inch / (mm)		Flange O.D. Inch / (mm)		Bolt Circle Inch / (mm)	No. of Holes	Size of Holes Inch / (mm)		1	2	4	6	8	10
4	(100)	0.250	(6.4)	9.00	(229)	7.50 (191)	8	0.750	(19.1)	150 (10.0)	0.40	1.29	3.97	6.18	8.17	9.83
6	(150)	0.250	(6.4)	11.00	(279)	9.50 (241)	8	0.875	(22.2)	150 (10.0)	0.44	1.48	4.31	6.54	8.50	10.16
8	(200)	0.375	(9.5)	13.50	(343)	11.75 (299)	8	0.875	(22.2)	150 (10.0)	0.48	1.67	4.64	6.91	8.84	10.48
10	(250)	0.375	(9.5)	16.00	(406)	14.25 (362.)	12	1.000	(25.4)	150 (10.0)	0.52	1.86	4.98	7.27	9.17	10.81
12	(300)	0.500	(12.7)	19.00	(483)	17.00 (432)	12	1.000	(25.4)	150 (10.0)	0.56	2.05	5.32	7.63	9.51	11.14
14	(350)	0.500	(12.7)	21.00	(533)	18.75 (476)	12	1.250	(31.8)	150 (10.0)	1.18	2.77	5.82	8.02	9.79	11.37
16	(400)	0.750	(19.0)	23.50	(597)	21.25 (540)	16	1.250	(31.8)	150 (10.0)	1.80	3.50	6.33	8.41	10.08	11.60
18	(450)	0.750	(19.0)	25.00	(635)	22.75 (578)	16	1.250	(31.8)	150 (10.0)	2.42	4.23	6.84	8.79	10.37	11.83
20	(500)	0.750	(19.0)	27.50	(699)	25.00 (635)	20	1.250	(31.8)	150 (10.0)	2.82	4.69	7.17	9.05	10.37	11.98
24	(600)	1.000	(25.4)	32.00	(813)	29.50 (749)	20	1.375	(34.9)	150 (10.0)	2.86	4.75	7.24	9.12	10.56	12.06
30	(750)	1.000	(25.4)	38.75	(984)	36.00 (914)	28	1.375	(34.9)	150 (10.0)	2.93	4.84	7.35	9.21	10.75	12.17
36	(900)	1.000	(25.4)	46.00	(1168)	42.75 (1086)	32	1.625	(41.3)	150 (10.0)	2.99	4.93	7.46	9.31	10.86	12.28

Notes: Higher back pressures can be provided by using internal vacuum supports and/or engineered Hi-Tensile reinforcement, contact PROCO.

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*

(800) 344-3246
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PROCO STYLE 790

ProFlex™ Low Headloss In-Line Rubber Check Valves

The *ProFlex*™ 790 Low Headloss In-line Rubber Duckbill Check Valve design allows for a passive flow and allows the valve to be installed without having to do any modifications to existing structures or costly pre-install planning. The unique fold away design of the inner sleeve also allows for a near full port flow, allowing for quick drainage.

The ***ProFlex*™** 790 Low Headloss In-line Rubber Duckbill Check Valve is the valve of choice for municipalities, airport runway runoffs, railway washouts, highway flood damage prevention and odor control. The 790's unique design provides rapid dispersion of head pressures and with its low cracking pressure, it prevents upstream flooding.

The ***ProFlex*™** 790 Low Headloss In-line Rubber Duckbill Check Valve's ZERO backflow design, make it the perfect fit for:

- **Combined Sewer Overflows (CSO'S):**
  A combined sewer is a sewage collection system of pipe and tunnels designed to also collect surface runoff. Combined sewers can cause serious water pollution problems during combined sewer overflow (CSO) events when wet weather flows exceed the sewage treatment plant capacity.
- **Sanitary Sewer Overflow:**
  A condition in which untreated sewage is discharged from a sanitary sewer into the environment prior to reaching sewage treatment facilities.
- **Outfalls:**
  An outfall is the discharge point of a waste stream into a body of water; alternatively, it may be the outlet of a river, drain or a sewer where it discharges into a body of water.

Style 790

Diameter		No. of Internal Clamps	Standard Valve Dimensions						Approx. Weight	
			Cuff Width		Length		Back pressure			
in.	mm		in.	mm	in.	mm	ft.	m	lbs	kgs
3	75	1	1.5	38	8.0	204	39.4	12	1.5	0.7
4	100	1	1.5	38	9.0	229	39.4	12	2.2	1.0
6	150	1	2.0	50	12.0	305	39.4	12	10.6	4.8
8	200	1	2.0	50	14.0	356	39.4	12	14.3	6.5
10	250	1	2.0	50	16.1	410	39.4	12	24.3	11.0
12	300	1	2.0	50	20.0	508	39.4	12	33.5	15.2
14	350	1	3.9	100	26.0	661	19.7	6	56.0	25.4
15	375	1	3.9	100	27.6	700	19.7	6	72.8	33.0
16	400	1	3.9	100	29.0	737	19.7	6	83.8	38.0
18	450	1	3.9	100	31.0	788	19.7	6	96.6	43.8
20	500	2	7.9	200	43.0	1093	19.7	6	156.5	71.0
24	600	2	7.9	200	48.0	1220	19.7	6	206.4	93.6
30	750	2	7.9	200	55.9	1420	19.7	6	410.1	186.0
36	900	2	7.9	200	63.8	1620	19.7	6	643.7	292.0
40	1000	2	7.9	200	67.7	1720	16.4	5	780.4	354.0
42	1050	2	7.9	200	71.0	1804	16.4	5	846.6	384.0
48	1200	2	7.9	200	80.3	2040	16.4	5	1499.1	680.0
54	1350	2	7.9	200	86.6	2200	16.4	5	1962.1	890.0
60	1500	2	12.0	305	102.0	2590	16.4	5	2866.0	1300.0
64	1600	2	12.0	305	105.1	2670	16.4	5	3395.1	1540.0
66	1650	2	12.0	305	109.4	2780	16.4	5	3527.4	1600.0
72	1800	3	12.0	305	114.2	2900	13.1	4	4321.1	1960.0
78	1950	3	12.0	305	120.3	3056	13.1	4	5114.7	2320.0

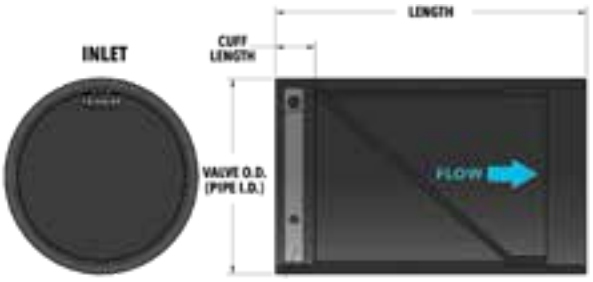
Notes:

1. *Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.*
2. *Larger sizes available upon request.*
3. *Weights are approximate.*
4. *Higher back pressures are available.*

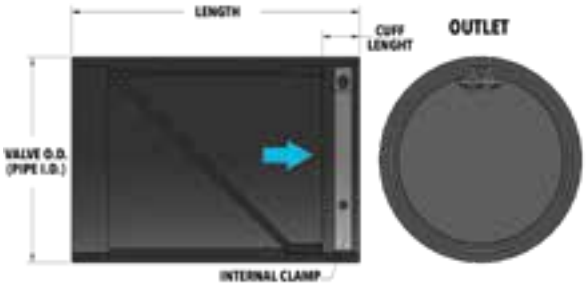
Available Elastomers
Neoprene (Barnacle and Algae Resistant), ANSI/NSF-61, EPDM, Nitrile, Natural Rubber, CSM and Chlorobutyl.

Detail of the ***ProFlex***™ Low Headloss In-line Rubber Check Valve; Style 790

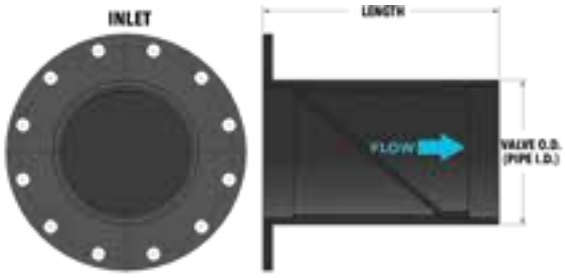
Upstream Clamp



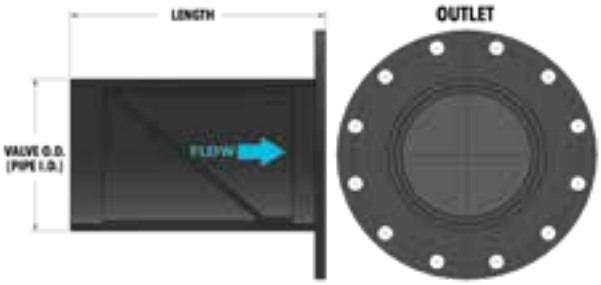
Downstream Clamp



Upstream Flanged



Downstream Flanged



Elliptical valves are available as shown below

Frequently Asked Questions

ProFlex™ Check Valves

1. Does the *ProFlex*™ rubber check valve have to be installed in a certain position?
Yes; it should be installed in a vertical position with the bill being the vertical. In zero clearance situations the valve can be rotated up to 30-35 Deg to gain bottom clearance if required.

2. In which degree can the *ProFlex*™ rubber check valve be installed?
Because the valve is not reliant on any hinges, gates, or weights the *ProFlex*™ rubber check valve can be installed in any angle from vertical to horizontal.

3. What is "Back Pressure"?
When the *ProFlex*™ rubber check valve is submerged in a liquid it is subjected to external pressure. It is critical that the maximum depth that the valve will be submerged is specified as this will be considered the maximum back pressure that the valve will be subjected to.

4. What is the cracking pressure to allow the valve to open?
It typically takes 1" to 2" of head pressure over back pressure to crack open all 700 series valve(s). For the Series 790 it will take approximately 33-50% of pipe diameter to flush the valve completely. Contact Proco for further assistance.

5. What back pressures can the *ProFlex*™ rubber check valve withstand?
Back pressures are in direct relation to the size of the valve, on the smaller diameters it is acceptable to specify up to 200 psi of back pressure and on larger diameters a back pressure limitation would be approximately 12 psi. Each *ProFlex*™ rubber check valve is manufactured to the exact line pressure, back pressure and flow rates which we require from you for manufacture. Proco can even supply valves up to 650 psi utilizing internal back pressure supports.

6. What are the most common installations?
The *ProFlex*™ 710 flanged rubber check valve is bolted directly to a head wall replacing an existing flap gate, the *ProFlex*™ 730 sleeved type rubber check valves are clamped directly to a fabricated flanged nipple or clamped directly to an existing pipe.

7. Can I use the *ProFlex*™ rubber check valve on potable water applications?
The *ProFlex*™ rubber check valves are available with an ANSI/NSF-61 certified elastomer. Due to the large demand for clean water and potable applications, this will eliminate the concerns commonly affiliated with contaminants or leaching of elastomers in potable water systems.

8. Can the *ProFlex*™ rubber check valve be installed on an "out of round" pipe?
Yes, please have the approximate dimensions from 4 different angles to provide proper sizing.

9. Can river currents and ocean waves damage the valves?
In most cases river currents and ocean waves will not damage the *ProFlex*™ rubber check valves, but if currents or waves in question are of an abnormal nature, it is suggested that side walls or rock pilings are utilized.

10. Can the *ProFlex*™ rubber check valve be used as a pressure relief valve?
The *ProFlex*™ rubber check valves have been designed to offer superior service as a backflow preventer and can also be considered as a pressure relief valve. Often used on reservoirs to prevent hydraulic lifting or floating of tanks.

11. Can PROCO make a special design to suit my requirements?
In most instances the *ProFlex*™ rubber check valve can be fabricated to suit different applications. Contact PROCO for your requirements.

12. What types of elastomer are available?
The *ProFlex*™ rubber check valves can be manufactured and supplied to withstand almost any type of media. Most commonly supplied is a barnacle and algae resistant Neoprene. Other common elastomers are EPDM, Nitrile, Natural Rubber, and elastomers to meet ANSI/NSF-61 and ANSI/NSF-372 specifications.

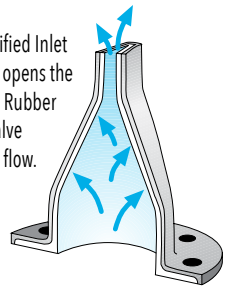
13. What types of materials are available for the backing rings and banding clamps?
ProFlex™ rubber check valves are supplied with 316 stainless steel backing rings and 304 stainless steel clamps as a standard. Other materials are available upon request.

14. Can the *ProFlex*™ 710 be supplied with special flanges or drilling?
Yes, the standard drilling pattern is ANSI 125/150# drilling, other drilling standards such as: ANSI 250/300#, BS-10, DIN NP-10 and DIN NP-16, JIS-5k and JIS-10K are available upon special request.

15. Can I install a *ProFlex*™ rubber check valve near a residential area?
Yes, one of the unique features of the *ProFlex*™ rubber check valve is the design of the bill section. While the bill will open and allow passage of fluid when head pressure is present, the bill will close and not allow children or animals to crawl inside when there is no head pressure.
Since the *ProFlex*™ rubber check valve is manufactured entirely of rubber compounds there is no chance of loud banging which is commonly heard from flap type valves.

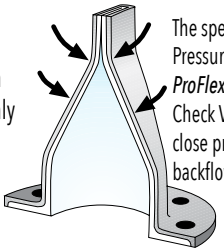
16. Can I use a *ProFlex*™ rubber check valve in winter conditions?
Yes, as in any installation the *ProFlex*™ rubber check valve will not be hindered by winter or sub-zero installations. If the valve is installed in a running water application the valve will continue to operate satisfactorily, due to the elastomers unique chemical makeup. If unusual circumstances occur the *ProFlex*™ rubber check valve will freeze without any damage and will return to operation upon thaw.

17. Will the *ProFlex*™ rubber check valve operate if buried in sand or sediment?
In normal conditions the discharge flow will create a small flow pattern which will then be followed by the flow velocity of the media. This velocity will flush the rest of the sediment away from the valve opening. This has been found to be unique only to the straight bill design as supplied by Proco.


The specified Inlet Pressure opens the *ProFlex*™ Rubber Check Valve allowing flow.

18. What is the maximum temperature that the *ProFlex*™ rubber check valve can handle?
Temperature can range from – 65 Deg to +400 Deg depending on the specified elastomer.

19. What is the life expectancy of the *ProFlex*™ Rubber check valves?
All of the *ProFlex*™ valves are manufactured with the highest grade of elastomers, which commonly are known to supply 35-50 years of service life.


The specified Back Pressure forces the *ProFlex*™ Rubber Check Valve to close preventing backflow.

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