

PROCO™

STYLES

720/740

ProFlex™ in-line rubber check valves



The PROCO Series 700 ProFlex In-Line Rubber Check Valve is 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, outside sources of power or manual assistance to operate.

The PROCO Series 700 ProFlex In-Line Rubber Check Valves are offered as direct replacements for ineffective and maintenance-ridden check valves, which are commonly known to seize, rust and bind in unwanted positions. Unlike flap type valves, the ProFlex In-Line Rubber Check Valves will handle large obstructions without jamming or having gates binding open. Specify the PROCO Series 700 ProFlex In-Line Rubber Check Valves to provide backflow protection and protect pumps from: (1) Sewage slurries, (2) Outfalls to ocean fronts from heavy rainfall activity. 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.

With current global awareness for clean water and the urgency to have all water treatment plants operating under stricter standards, the PROCO Series 700 ProFlex In-Line Rubber Check Valves will also be available in NSF61 approved Nitrile for all potable water and sewage applications. This will include water treatment plants, direct installation on potable water pump systems and other piping systems directly related to the potable water industry.

The PROCO Series 700 ProFlex In-Line Rubber Check Valves are available in a Flanged Type (Style 720), or a Slip-In Type (Style 740).

• **Style 720 — Flanged Type:** Designed to bolt directly between two existing pipe flanges. Flanges are drilled 150# standard. Other drilling standards such as: ANSI 250/300#, British Standard BS-10, JIS, and DIN as well as square flanges are also available upon request. The Style 720 can be installed in either a vertical or horizontal application.

• **Style 740 — Slip-In Type:** Designed to easily slip into an existing pipe and affixed with a heavy-duty Stainless Steel expandable clamp. The Style 740 can be installed in either a vertical or horizontal application.

Elastomers: All of the PROCO Series 700 ProFlex In-Line Rubber Check Valves are available in a various selection of elastomers (see Table 1 below) and back pressure capabilities to suit most applications.

The PROCO Series 700 ProFlex In-Line Rubber Check Valves will not freeze or deform and function solely on inlet and back pressures which will be present in most applications.

Each valve is carefully constructed using the finest of engineered materials and built by 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 In-Line Rubber Check Valves:

- All rubber construction resists abrasive slurries
- NSF61 approved materials
- Very quiet operation with no water hammer
- Unique design prevents backflow
- Negligible maintenance and energy costs
- Will not warp or freeze
- Quick interchange with any type of check valve
- Available in sizes 1" to 72"
- Available to suit all type IDs

For your complete project requirement PROCO also maintains the largest inventory of expansion joints in the world. Rubber, PTFE Lined, Plastic or Metal Hose — PROCO can ship the products you need when you need them! In fact, when it comes to expansion joints, if PROCO doesn't have them in stock ... nobody does!

Information • Ordering • Pricing • Delivery. Day or night, weekends and holidays ... the PROCO phones are monitored 24 hours around the clock. When you have a question, you can call us.

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Table 1: Available Materials • Temperatures

For Specific Elastomer Recommendations, See: PROCO™ "Chemical To Elastomer Guide"					
PROCO Material Codes	Cover ^{1,2} Elastomer	Tube Elastomer	Maximum Operating Temp. °F (°C)	Branding Label Color	F.S.A. Material Class
BB	Chlorobutyl	Chlorobutyl	250° (121°)	Black	STD. III
EE	EPDM	EPDM	250° (121°)	Red	STD. III
NH	Neoprene	Hypalon®	212° (100°)	Green	STD. II
NN	Neoprene	Neoprene	225° (107°)	Blue	STD. II
PP	Nitrile	Nitrile ³	225° (107°)	Yellow	STD. II
NR	Neoprene	Natural Rubber	180° (68°)	White	STD. I
NV	Neoprene	Viton®	225° (107°)	Orange	STD. III

Notes: Hypalon® and Viton® are registered trademarks of DuPont Dow Elastomers. ProFlex™ is a trademark of PROCO Products, Inc. All products are reinforced with polyester tire cord.
 1. Check Valve "cover" can be coated with Hypalon® on special order.
 2. Styles with Neoprene covers meet all requirements of U.S.C.G.
 3. NSF61 approved material available upon request.



PROCO™

STYLE 720

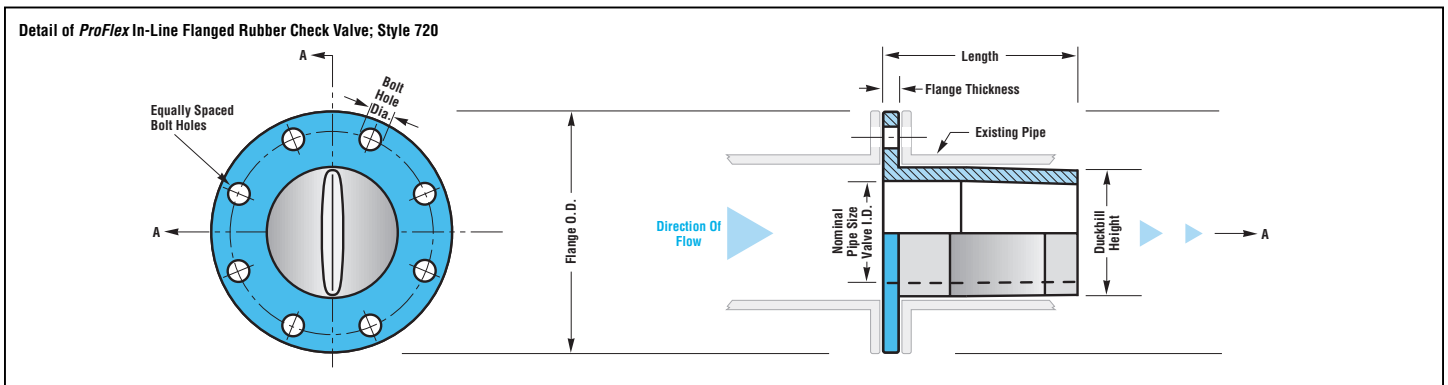


ProFlex™ in-line flanged rubber check valves

Table 2: Sizes • Drilling • Working Pressures • Weights

NOMINAL ¹ PIPE SIZE Inch / (mm)	Standard Dimensions for PROCO Style 720		Standard Drilling for PROCO Style 720				MAXIMUM WORKING PRESSURE (PSIG)	WEIGHT ² lbs / (kgs)	
	Length Inch / (mm)	Duckbill Height Inch / (mm)	Flange O.D. Inch / (mm)	Bolt Circle Inch / (mm)	No. of Holes	Size of Holes Inch / (mm)			
2	(50)	5.75 (146)	1.875 (48)	6.00 (152.40)	4.75 (120.65)	4	0.750 (19.1)	125	5 (2.3)
3	(80)	9 (229)	2.875 (73)	7.50 (190.50)	6.00 (152.40)	4	0.750 (19.1)	125	8 (3.6)
4	(100)	12 (305)	3.875 (98)	9.00 (228.60)	7.50 (190.50)	8	0.750 (19.1)	100	11 (5.0)
5	(125)	15 (381)	4.875 (124)	10.00 (254.00)	8.50 (215.90)	8	0.875 (22.2)	75	13 (5.9)
6	(150)	15.5 (394)	5.875 (149)	11.00 (279.40)	9.50 (241.30)	8	0.875 (22.2)	75	17 (7.7)
8	(200)	16.5 (419)	7.875 (200)	13.50 (342.90)	11.75 (298.45)	8	0.875 (22.2)	75	20 (9.1)
10	(250)	21 (533)	9.875 (250)	16.00 (406.40)	14.25 (361.95)	12	1.000 (25.4)	50	29 (13.2)
12	(300)	26 (660)	11.875 (302)	19.00 (482.60)	17.00 (431.80)	12	1.000 (25.4)	50	47 (21.3)
14	(350)	25 (635)	13.000 (349)	21.00 (533.40)	18.75 (476.25)	12	1.250 (31.8)	50	61 (27.7)
16	(400)	27 (686)	15.000 (400)	23.50 (596.90)	21.25 (539.75)	16	1.250 (31.8)	50	94 (42.6)
18	(450)	29 (737)	17.000 (451)	25.00 (635.00)	22.75 (577.85)	16	1.250 (31.8)	25	158 (71.7)
20	(500)	34 (864)	19.000 (502)	27.50 (698.50)	25.00 (635.00)	20	1.250 (31.8)	25	234 (106.1)
24	(600)	44 (1118)	23.000 (603)	32.00 (812.80)	29.50 (749.30)	20	1.375 (34.9)	25	308 (139.7)
28	(700)	47 (1194)	27.000 (687)	36.50 (927.10)	34.00 (863.60)	28	1.375 (34.9)	25	362 (164.2)
30	(750)	49 (1245)	29.000 (737)	38.75 (984.25)	36.00 (914.40)	28	1.375 (34.9)	25	417 (189.1)
32	(800)	54 (1372)	31.000 (787)	41.75 (1060.45)	38.50 (977.90)	28	1.625 (41.3)	25	454 (206.0)
36	(900)	59 (1499)	35.000 (889)	46.00 (1168.40)	42.75 (1085.85)	32	1.625 (41.3)	25	499 (226.3)
42	(1050)	63 (1600)	41.000 (1041)	53.00 (1346.20)	49.50 (1257.30)	36	1.625 (41.3)	25	729 (330.7)
48	(1200)	74 (1880)	47.000 (1194)	59.50 (1511.30)	56.00 (1422.40)	44	1.625 (41.3)	25	754 (342.0)
54	(1350)	75 (1905)	53.000 (1346)	66.25 (1682.75)	62.75 (1593.85)	44	2.000 (50.8)	25	813 (368.8)
60	(1500)	83 (2108)	59.000 (1499)	73.00 (1854.20)	69.25 (1758.95)	52	2.000 (50.8)	25	964 (437.3)
72	(1800)	99 (2515)	71.000 (1803)	86.50 (2197.10)	82.50 (2095.50)	60	2.000 (50.8)	25	1125 (510.3)

Notes: Higher back pressures can be obtained by using Internal Supports, contact PROCO.
 Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.
 1. Larger sizes available upon request.
 2. Weights are approximate.



PROCO™

STYLE 740



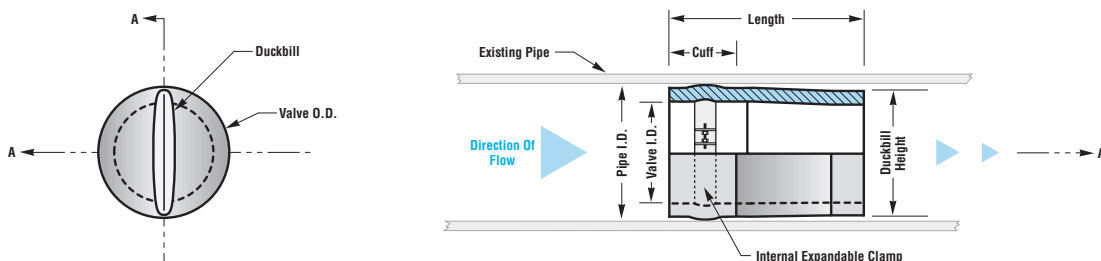
ProFlex™ in-line slip-in rubber check valves

Table 3: Sizes • Working Pressures • Weights

NOMINAL ¹ PIPE SIZE Inch / (mm)	Standard Dimensions for PROCO Style 740				MAXIMUM WORKING PRESSURE (PSIG)	WEIGHT ² lbs / (kgs)	
	Valve I.D. Inch / (mm)	Length Inch / (mm)	Duckbill Height Inch / (mm)				
2	(50)	1.250 (32)	6.750 (171)	1.875 (48)	125	4	(1.8)
3	(80)	2.250 (57)	9.000 (229)	2.875 (73)	125	9	(4.1)
4	(100)	3.000 (80)	13.000 (330)	3.875 (98)	100	10	(4.5)
5	(125)	4.000 (100)	16.000 (406)	4.875 (124)	75	12	(5.4)
6	(150)	5.000 (125)	17.000 (432)	5.875 (149)	75	15	(6.8)
8	(200)	6.625 (168)	19.000 (483)	7.875 (200)	75	18	(8.2)
10	(250)	8.625 (219)	21.000 (533)	9.875 (251)	50	28	(12.7)
12	(300)	10.000 (250)	27.000 (686)	11.875 (302)	50	43	(19.5)
14	(350)	11.500 (292)	28.000 (711)	13.000 (349)	50	55	(24.9)
16	(400)	13.500 (343)	31.000 (787)	15.000 (401)	50	92	(41.8)
18	(450)	15.250 (387)	33.000 (838)	17.000 (451)	25	152	(68.9)
20	(500)	17.000 (432)	35.000 (889)	19.000 (502)	25	236	(107.0)
24	(600)	20.500 (521)	37.000 (940)	23.000 (603)	25	300	(136.1)
28	(700)	24.500 (622)	46.000 (1168)	27.000 (686)	25	364	(165.1)
30	(750)	26.500 (673)	51.000 (1295)	29.000 (737)	25	423	(191.9)
32	(800)	28.500 (724)	58.000 (1473)	31.000 (787)	25	466	(211.4)
36	(900)	32.500 (826)	63.000 (1600)	35.000 (889)	25	501	(227.2)
42	(1050)	38.250 (972)	65.000 (1651)	41.000 (1041)	25	728	(330.2)
48	(1200)	44.250 (1073)	74.000 (1880)	47.000 (1194)	25	762	(345.6)
54	(1350)	50.250 (1276)	77.000 (1956)	53.000 (1346)	25	820	(371.9)
60	(1500)	56.000 (1422)	85.000 (2159)	59.000 (1499)	25	969	(439.5)
72	(1800)	68.000 (1727)	102.000 (2591)	71.000 (1803)	25	1089	(494.0)

Notes: Higher back pressures can be obtained by using Internal Supports, contact PROCO.
 Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.
 1. Larger sizes available upon request.
 2. Weights are approximate.

Detail of ProFlex In-Line Slip-In Rubber Check Valve; Style 740



FAQS

Frequently Asked Questions to help you understand the ProFlex™ In-Line Rubber Check Valves

1. Does the ProFlex In-Line Rubber Check Valve have to be installed in a certain position?

The ProFlex In-Line Rubber Check Valve can be installed in any position although it is suggested that if installed in a horizontal plane, the bill should be vertical to the plane.

2. In which degree can the ProFlex In-Line Rubber Check Valve be installed?

Because the valve is not reliant on any hinges, gates, or weights the ProFlex In-Line Rubber Check Valve can be installed in any angle from vertical to horizontal.

3. What is "Back Pressure"?

When the ProFlex In-Line 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 to which the valve will be subjected.

4. What is the cracking pressure to allow the valve to open?

Required head pressure will be slightly higher on the in-line valve due their shape.

5. What back pressures can the ProFlex In-Line 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 In-Line Rubber Check Valve is manufactured to the exact line pressure, back pressure and flow rates which we require from you for manufacture.

6. What are the most common installations?

The ProFlex 720 In-Line Flanged Rubber Check Valve is bolted between two pipe flanges replacing typical internal swing type check valves, the ProFlex 740 In-Line Slip-In Rubber Check Valves are clamped internally utilizing a stainless steel expanding clamp. The in-line valves are commonly used as pump protection and can be used in vacuum applications.

7. Can I use the ProFlex In-Line Rubber Check Valve on potable water applications?

The standard material for the ProFlex In-Line Rubber Check Valve is NSF61 approved Nitrile. Due to the large demand for clean water and potable applications, PROCO will be the leader in supplying NSF61 as its check valve material of choice. This will eliminate the concerns commonly affiliated with contaminants or leaching of elastomers in potable water systems.

8. Can the ProFlex In-Line Rubber Check Valve be installed on an "out-of-round" pipe?

Yes, the 740 Slip-In Style is especially suited for out-of-round or badly worn pipe as the expandable clamp applies pressure to the I.D. of the check valve forcing complete sealing against the pipe I.D.

9. Can the ProFlex In-Line Rubber Check Valves be used to create back pressure?

Due to their designs, the 720 and 740 ProFlex In-Line Rubber Check Valves will inevitably create back pressure. The valves have been designed to fit inside an existing pipe, therefore the nominal pipe I.D. has been reduced by at least one pipe diameter creating higher head loss and higher inlet pressure to open the valve.

10. Can PROCO make a special design to suit my requirements?

In most instances the ProFlex In-Line Rubber Check Valve can be fabricated to suit different applications. Contact PROCO for your requirements.

11. What types of elastomer are available?

The ProFlex In-Line Rubber Check Valve can be manufactured and supplied to withstand almost any type of media. Most commonly supplied are Nitrile (NSF61 approved), Neoprene, Gum Rubber, Hypalon®, Chlorobutyl, EPDM, and Viton®.

12. What types of materials are available for the internal clamps?

The ProFlex In-Line Slip-In Rubber Check Valves (Style 740) are supplied with 316 stainless steel internal expanding clamps. Other materials are available upon request. The In-Line Flanged Rubber Check Valve (Style 720) does not require a backing ring as it is installed between mating pipe flanges. A gasket is not required as the Style 720 creates its own sealing face.

13. Can the ProFlex 720 In-Line Flanged Rubber Check Valve 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, and square flanges are available upon special request.

14. Can I install a ProFlex In-Line Rubber Check Valve near a residential area?

Yes, one of the unique features of the ProFlex In-Line 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.

15. Can the ProFlex In-Line Rubber Check Valve be used to prevent the common problem often affiliated with manhole flooding?

Yes. The ProFlex In-Line Rubber Check Valve is uniquely designed to fit directly inside a manhole which will prevent reverse flow from flooded manholes.

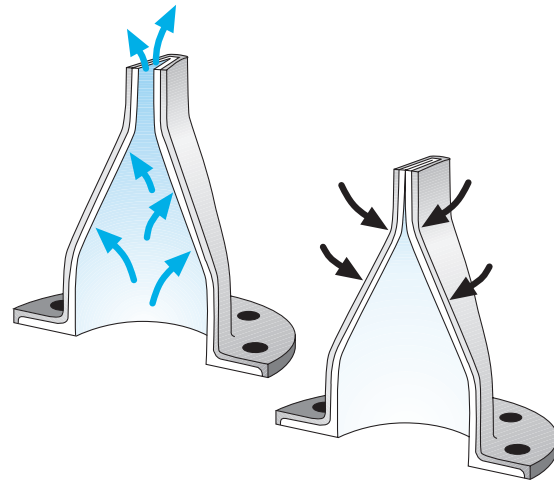
16. Can I use a ProFlex In-Line Rubber Check Valve in winter conditions?

Yes, as in any installation the ProFlex In-Line 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.

17. What is the maximum temperature that the ProFlex In-Line Rubber Check Valve can handle?

Temperature capabilities can range from -65° F (-54° C) to +250 (+121° C) depending on the specified elastomer.

The specified Inlet Pressure opens the ProFlex In-Line Rubber Check Valve allowing flow.



The specified Back Pressure forces the ProFlex In-Line Rubber Check Valve to close preventing backflow.



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