
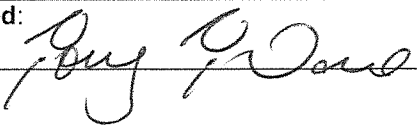


CONTRACTOR SUBMITTAL FORM

Project Name: Navajo Gallup Water Supply Project Reach 26.3	<input checked="" type="checkbox"/> M (Materials)	Submittal No. M010
SMA Project No: 6921307	<input type="checkbox"/> T (Testing)	
Date: 06/27/2019	<input type="checkbox"/> A (Administrative)	
Contractor: Navajo Engineering and Construction Authority	No. of Copies: 1	

Supplier: Core & Main	Manufacturer: Pipestone
Specification No.: 33 12 16-2.7B1b	Drawing No.: DT-30
Bid Item No(s): 34, 39	
Submittal Checklist No(s): M247	
Product Description: Proco for Tank Site and Control Valve Vault Drainlines	
Are there any deviations from the Contract Documents? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Explain:	
Contractor's certification that product meets requirements of Contract Documents: <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Certified with variations as noted on shop drawings and/or attached sheets.	
Signed:  Quentin Benally	Date: 06/28/2019

Engineer's Comments: <input type="checkbox"/> No Exception Taken <input checked="" type="checkbox"/> Approved as Corrected <input type="checkbox"/> Exceptions as Noted <input type="checkbox"/> Submittal Rejected <input type="checkbox"/> Revise and Resubmit to Engineer <input type="checkbox"/> Contractor to Submit Specified Information - 10" $\frac{1}{2}$ 6" Procos approved. - 4" Proco not approved. Where does contractor propose to use this fitting? <div style="border: 1px solid red; padding: 2px; display: inline-block;">Corrected 7/17/19</div>	Review is limited to check for compliance with design concept. No changes from provisions of Contract Documents are intended and Contractor remains responsible for compliance with revisions therein. The Contractor is solely responsible for quantities; correctness of dimensions; verification of physical interrelation of elements of the work as required by the drawings and specifications and by field determination; fabrication procedures, construction methods, techniques and sequences. This review does not relieve the Contractor from these responsibilities. Non-conformities and errors detected have been noted but such markings, or lack thereof, shall not relieve the Contractor from compliance with all requirements of the contract drawings and specifications.
Signed: 	Date: 7/3/19



676 Moss Street, Unit A
Golden, CO 80401
Phone: 303-579-9658
Fax: 303-567-2861

Navajo Gallup Reaches 26.3
Reach 26.3 to Torreon, NM

DT30

Qty

Product Description

1	10" Proco Style 710 Duckbill Check Valve, 150# Flanged, Neoprene, 316 Stainless Steel Retaining Rings
2	6" Proco Style 710 Duckbill Check Valve, 150# Flanged, Neoprene, 316 Stainless Steel Retaining Rings
1	4" Proco Style 710 Duckbill Check Valve, 150# Flanged, Neoprene, 316 Stainless Steel Retaining Rings

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 a Flanged (Style 710 or 720), Sleeved (Style 730 or 740), Jacketed (Style 750). Inline orifice (style 770/780), or low headloss in-line (Style 790)

- **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 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 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 insuring no delamination.

ELASTOMERS: All of the PROCO Series 700 ProFlex™ Rubber Check Valves are available in a various selection of elastomers including NSF/ANSI 61 certified material and back pressure capabilities to suit most applications.

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 NSF61 material 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.

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	CSM	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° (82°)	White	STD. I

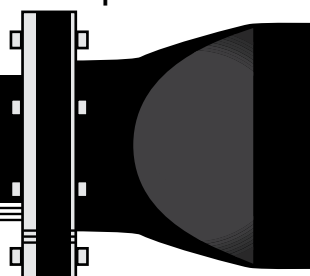
Notes: ProFlex™ is a trademark of PROCO Products, Inc.

All products are reinforced with polyester tire cord.

1. Check Valve "cover" can be CSM coated on special order.

2. Styles with Neoprene covers meet all requirements of U.S.C.G.

3. NSF/ANSI Standard 61 certified materials available upon request.



PROCO Office hours are:
5:30 am to 5:15 pm (PST) • Monday thru Friday

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 or FRP material if required.

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 up to 24in (600mm), 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.

Table 2: Sizes • Flange Drilling • Weights

NOMINAL ¹ PIPE SIZE Inch / (mm)	Standard Dimensions for PROCO Style 710		Standard Drilling for PROCO Style 710				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)	
1 (25)	6 (130)	2.60 (66)	4.25 (108.0)	3.13 (79.4)	4	0.625 (15.9)	2.0 (0.91)
1.5 (40)	7 (153)	3.20 (82)	5.00 (127.0)	3.88 (98.4)	4	0.625 (15.9)	2.50 (1.14)
2 (50)	7 (168)	3.90 (98)	6.00 (152.4)	4.75 (120.7)	4	0.750 (19.1)	5.00 (2.27)
2.5 (65)	8 (188)	5.10 (130)	7.00 (177.8)	5.50 (139.7)	4	0.750 (19.1)	6.00 (2.73)
3 (80)	9 (216)	5.50 (140)	7.50 (190.5)	6.00 (152.4)	4	0.750 (19.1)	8.00 (3.63)
4 (100)	11 (262)	7.40 (187)	9.00 (228.6)	7.50 (190.5)	8	0.750 (19.1)	11.00 (4.99)
5 (125)	12 (293)	9.40 (240)	10.00 (254.0)	8.50 (215.9)	8	0.875 (22.2)	13.00 (5.90)
6 (150)	13 (326)	10.50 (267)	11.00 (279.4)	9.50 (241.3)	8	0.875 (22.2)	17.00 (7.72)
8 (200)	15 (380)	13.70 (349)	13.50 (342.9)	11.75 (298.5)	8	0.875 (22.2)	27.00 (12.25)
10 (250)	18 (455)	17.30 (440)	16.00 (406.4)	14.25 (362.0)	12	1.000 (25.4)	40.00 (18.15)
12 (300)	21 (517)	20.50 (520)	19.00 (482.6)	17.00 (431.8)	12	1.000 (25.4)	53.00 (24.05)
14 (350)	24 (600)	24.20 (615)	21.00 (533.4)	18.75 (476.3)	12	1.150 (28.6)	64.00 (29.04)
16 (400)	25 (617)	27.60 (700)	23.50 (596.9)	21.25 (539.8)	16	1.150 (28.6)	93.00 (42.19)
18 (450)	27 (676)	31.10 (790)	25.00 (635.0)	22.75 (577.9)	16	1.250 (31.8)	135.00 (49.44)
20 (500)	30 (742)	32.30 (820)	27.50 (698.5)	25.00 (635.0)	20	1.250 (31.8)	155.00 (61.24)
24 (600)	39 (966)	38.60 (980)	32.00 (812.8)	29.50 (749.3)	20	1.375 (34.9)	235.00 (70.31)
28 (700)	42 (1060)	44.90 (1140)	36.50 (927.1)	34.00 (863.6)	28	1.375 (34.9)	420.00 (106.60)
30 (750)	44 (1097)	49.20 (1250)	38.75 (984.3)	36.00 (914.4)	28	1.375 (34.9)	565.00 (190.52)
32 (800)	45 (1140)	51.60 (1310)	41.75 (1060.5)	38.50 (977.9)	28	1.625 (41.3)	595.00 (256.29)
36 (900)	53 (1337)	59.40 (1510)	46.00 (1168.4)	42.75 (1085.9)	32	1.625 (41.3)	725.00 (269.90)
40 (1000)	54 (1353)	65.70 (1670)	50.75 (1289.1)	47.25 (1200.2)	36	1.625 (41.3)	845.00 (328.86)
42 (1050)	57 (1428)	67.30 (1710)	53.00 (1346.2)	49.50 (1257.3)	36	1.625 (41.3)	915.00 (383.29)
48 (1200)	64 (1613)	75.20 (1910)	59.50 (1511.3)	56.00 (1422.4)	44	1.625 (41.3)	1035.00 (415.05)
54 (1350)	68 (1726)	83.10 (2110)	66.25 (1682.8)	62.75 (1593.9)	44	2.000 (50.8)	1165.00 (469.48)
60 (1500)	74 (1875)	85.00 (2160)	73.00 (1854.2)	69.25 (1759.0)	52	2.000 (50.8)	1255.00 (569.27)
72 (1800)	87 (2197)	111.40 (2830)	86.50 (2197.1)	82.50 (2095.5)	60	2.000 (50.8)	1590.00 (721.22)

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.

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?

1" to 2" of water column over back pressure will normally drain a pipe.

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 available are ANSI/NSF-61, ANSI/NSF-372 & EPDM. Contact Proco for other available elastomers.

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.

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.

