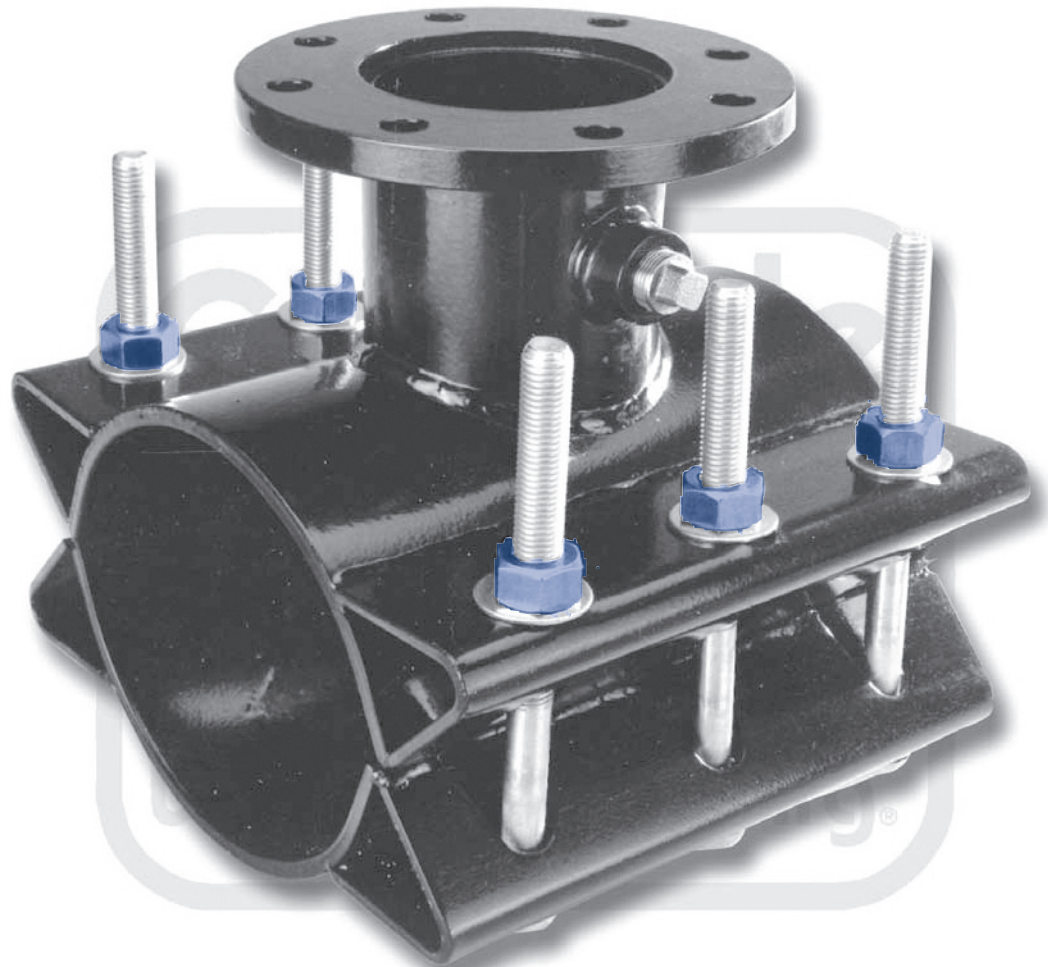
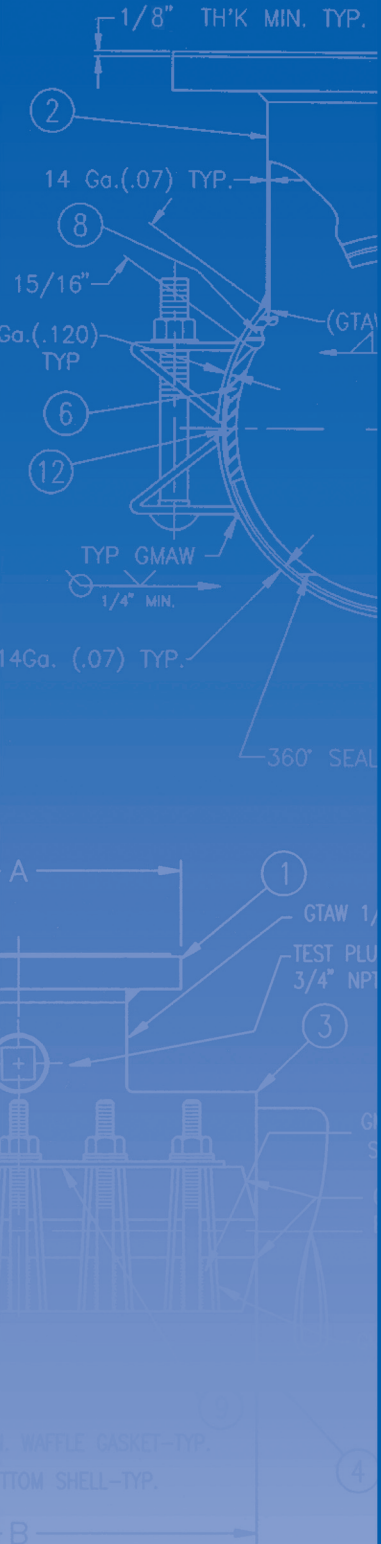




"The Standard of Excellence in the Industry"

FABRICATED STEEL PRESSURE RATED TAPPING SLEEVE

STYLE CFT, CFT-ESS, CFTLP, CFTLP-ESS



1213 BADGER STREET • YORKVILLE, ILLINOIS 60560
(630) 553-0840 • (800) 426-4301 • FAX (630) 553-0181
www.cascademfg.com

FABRICATED STEEL TAPPING SLEEVES

INSTALLATION INSTRUCTIONS

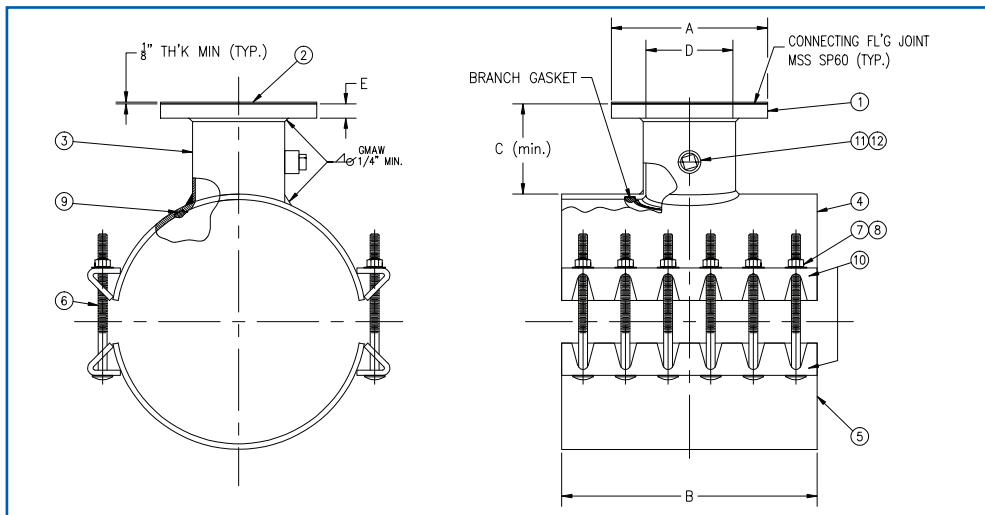
1. Verify pipe O.D. and sleeve range, to ensure proper sleeve is being installed.
 2. Thoroughly clean all gaskets and entire pipe surface to be covered by sleeve. Lubricate both the sleeve gaskets and pipe surface with suitable pipe lubricant.
- LUBRICATE GASKETS THOROUGHLY**
3. Position the tapping sleeve with outlet in the direction of branch pipe, with the Test Outlet facing up. Block the pipe on both sides of tap area to support during operation. Block Outlet area to support during valve connection.
 4. While installing the tapping sleeve, make sure the flaps are extended fully around pipe. Do not rotate tapping sleeve on pipe. (This may cause the gasket to roll.)
 5. Insert a bolt through centermost bolt hole on the top side. Place a nut & washer on the bolt and run the nut down until flush with end of bolt.
 6. Insert second bolt directly across from the first bolt on the bottom side. Place nut & washer on the bolt & run both nuts down (top & bottom sides) until they are **Finger Tight**. Make sure that the gap between shells on both top and bottom are approximately the same.
 7. Level the sleeve to it's final position on main pipe. Adjust blocking as needed.
 8. Install remaining bolts, washers and nuts and bring to **Finger Tight**.
 9. Check inside of sleeve neck to make certain gasket is properly seated and not protruding where the tapping cutter may damage it. **An unseated gasket will create a leak path.**
 10. Snug nuts down, working from top to bottom, and from the center to the outside, making sure the top gap and the bottom gap stays even. **MAINTAIN EVEN GAP BETWEEN SHELLS**
 11. Tighten nuts to final torque, retightening until each nut does not turn.

Nominal Pipe Size	CFT		CFT-LP	
	Min.	Max.	Min.	Max.
4 - 8	75 ft.-lbs.	120 ft.-lbs.	55 ft.-lbs.	85 ft.-lbs.
10 - 12	100 ft.-lbs.	150 ft.-lbs.	80 ft.-lbs.	100 ft.-lbs.
Not listed	Consult Factory			

Correct torque indicated by use of torque wrench.

12. After final checking of bolt torque on both the sleeve and valve connections, you must use the 3/4" test port to pressurize sleeve and check seals. Re-torque nuts as necessary.

NOTE: FAILURE TO TEST ALL SEALS PRIOR TO TAP VOIDS ALL WARRANTIES. SIZE ON SIZE REQUIRES 1/2" UNDERSIZE SHELL CUTTER.



1 Flange	ASTM A36 (optional T-304 SST) ANSI/AWWA C207, Class D150, ANSI B16.5-150, MSS SP60	7 Nuts	High Strength Low Alloy Steel per ASTM A242 3/4-10 Heavy Hex (Opt. 18-8 T-304 SST, Xylan Coated)
2 Flange Gasket	Virgin SBR	8 Bearing Washers	High Strength Low Alloy Steel per ASTM A242
3 Branch	Carbon Steel ASTM A36 (or ASTM A285 Gd C)	9 Branch Gasket	EPDM, ASTM D2000, BA508 (Other Compounds available)
4 Top Shell (Branch Side)	Carbon Steel ASTM A36 (or ASTM A285 Gd C)	10 Bolt Lugs	Carbon Steel ASTM A36 (or ASTM A285 Gd C)
5 Back Shell	Carbon Steel ASTM A36 (or ASTM A285 Gd C)	11 Test Plug Outlet	Carbon Steel ASTM A36 (or ASTM A285 Gd C)
6 Bolts	High Strength Low Alloy Steel per ASTM A242 AWWA C111 ANSI A21.11 (opt. 18-8 T-304 SST) 3/4-10 x 7-1/2" NC Rolled Thread	12 Test Plug	3/4" NPT Brass (optional T-304 SST)

Flange Size	DIMENSIONS					Number of Bolts	Test Pressure (psi) min.
	A	B	C	D	E		
4"	5 1/16"	12"	3 3/4"	4 1/2"	.62"	6	350
6"	7 1/16"	12"	4 1/4"	6 1/2"	.68"	6	250
8"	9 1/16"	16"	4 3/4"	8 1/2"	.68"	8	250
10"	11 3/32"	20"	5 1/4"	10 1/2"	.68"	10	150
12"	13 3/32"	24"	6 1/4"	12 1/2"	.81"	12	150

For higher pressures or special requirements, consult factory.

Tapping Sleeve shall meet or exceed AWWA C223

SAMPLE SPECIFICATIONS

STYLE CFT or CFTLP (WITH STAINLESS HARDWARE - CFT-ESS OR CFTLP-ESS)

1. FLANGE Shall be steel flat face. Recessed for standard tapping valve-ANSI/AWWA C207 CLASS D. Bolt holes straddle pipe center line
2. FLANGE GASKET Shall be virgin SBR full face type and shall be attached to flange with contact cement.
3. BRANCH Shall be Carbon Steel A36 (ASTM A285, Grade C).
4. TOP SHELL Shall be Carbon Steel A36 (ASTM A285, Grade C).
5. BACK SHELL Shall be Carbon Steel A36 (ASTM A285, Grade C).
6. BOLTS Shall be Low Alloy per ASTM A242 and AWWA C-111 ANSI A21.11 (optional 18-8/T304 SST by adding -ESS suffix).
7. NUTS Shall be Low Alloy per ASTM A242 (optional 18-8/T304 SST Fluoropolymer coated by adding -ESS suffix).
8. BEARING WASHERS Shall be Low Alloy per ASTM A242 (optional 18-8/T304 SST by adding -ESS suffix).
9. BRANCH GASKETS Shall be EPDM per ASTM D2000 BA508, compounded for use with water, salt solutions, mild acid bases. Other compounds available.
10. BOLT LUGS Shall be Carbon Steel ASTM A36 (ASTM A285, Grade C).
11. TEST PLUG OUTLETS Shall be Carbon Steel ASTM A36 (ASTM A285, Grade C).
12. TEST PLUG ¾" NPT, Brass (optional 18-8/T304 SST).
13. WELDS All welds shall be free from pinholes and other defects.
14. TESTING All sleeves shall be hydrostatically tested to 1.5 times the rated working pressure at the factory.
15. FINISH NSF/ANSI 61 Compliant Epoxy Coating.
16. MARKINGS Each sleeve shall bear indelible markings indicating
 1. Manufacturers Name
 2. Part Number
 3. Date of Manufacture
 4. Serial Number
 5. Rated Working Pressure
 6. Test Pressure
17. INSTALLATION INSTRUCTIONS Each sleeve shall have installation instructions attached.
18. WARRANTY The Manufacturer shall warrant the sleeves to be free from defects and to perform as advertised for a period of 1 year from the date of manufacture.
19. TAPPING SLEEVES Shall be Style CFT, CFT-ESS or CFTLP, CFTLP-ESS as manufactured by Cascade Waterworks Mfg. Co. of Yorkville.

STYLE CFT TAPPING SLEEVES

Manufactured with two sections of heavy steel shells and side lugs which bolt together on the main pipe line and seals against a broad throat gasket with a hydro-mechanical lip to assure a positive seal.

The flange is recessed to mate with standard tapping valves to MSS SP60 up through 12", for larger flange sizes consult factory.

BENEFITS:

Built In Corrosion Resistance

- CFT Tapping Sleeves — standard black epoxy coat — NSF/ANSI 61 compliant, 10-12 mil.
- CFT-ESS Tapping Sleeves — same as above with T304 Stainless Steel hardware.

EXTRA WIDE FOR SUPPORT AND STABILITY

CFT sleeves are designed for reinforcement on the pipeline to spread the load over a wider area and to provide stability during the tapping process.

STRONGER - YET LIGHTER THAN CAST SLEEVES

Extra strength provides an extra margin of safety against damage to the sleeve in handling, installation, or due to concentrated stress. Reduced weight compared to cast sleeves speeds installation and reduces the load placed on the pipe.

EASE OF ASSEMBLY ASSURES PROPER INSTALLATION

Simplicity of design permits CFT Tapping Sleeves to be installed with a minimum of crew, equipment, time and experience.

- CFT ranges can be custom-fit. Should you need something special, call the factory for information.

STYLE CFT-LP TAPPING SLEEVES

Specifically designed by Cascade for tapping and branching C900 and IPS sized PVC. The benefits of this design include specific diameter sizing to help resist against ovaling of the PVC. For the best possible fit on PVC pipe, see Style CSTSL.

- When ordering CFT-LP's, all sleeve part numbers reflect only diameter of pipe and show no range.
- On PVC, thin wall, and flexible pipe, the bolting torque should be a minimum of 50 ft.-lbs., maximum of 60 ft.-lbs.
- Model CFT-LP-ESS : CFT-LP with Epoxy Coating and Stainless Steel Bolts.

STYLE CFT



Nominal Pipe Size (Inches)	Sleeve O.D. Range (Inches)	Catalog Number		Approx Ship Weight		
		Sleeve	Flange Size			
4	4.50	CFT-450	4*	51		
	4.80	CFT-480				
6	6.57-6.73	CFT-673		56		
	6.83-7.16	CFT-716	4			
	7.20-7.60	CFT-760	6*		60	
	7.40-7.73	CFT-773				
	7.95-8.05	CFT-805				
8	8.36-8.75	CFT-875	4	59		
	8.73-9.12	CFT-912	6		63	
	8.89-9.37	CFT-937	8*			83
	9.27-9.69	CFT-969				
	9.95-10.10	CFT-1010	4		87	
10.45-10.88	CFT-1088	6	81			
11.03-11.47	CFT-1147	8		121		
11.36-11.80	CFT-1180	10*				150
11.76-12.20	CFT-1220	4	96			
12.42-12.88	CFT-1288	6		100		
13.14-13.60	CFT-1360	8			133	
13.60-14.09	CFT-1409	10				165
14.10-14.58	CFT-1458	12*		208		
14.59-15.08	CFT-1508	4	113			
15.23-15.72	CFT-1572	6			117	
15.73-16.22	CFT-1622	8				155
14-16	16.30-16.73	CFT-1673	10		193	
	16.74-17.26	CFT-1726	12	242		

Nominal Pipe Size (Inches)	Sleeve O.D. Range (Inches)	Catalog Number		Approx Ship Weight		
		Sleeve	Flange Size			
16-18	17.33-17.87	CFT-1787	4	121		
	17.88-18.43	CFT-1843	6		125	
	18.46-19.03	CFT-1903	8			166
	18.87-19.45	CFT-1945	10			
	19.41-20.01	CFT-2001	12		259	
19.88-20.48	CFT-2048	4	129			
20.29-20.92	CFT-2092	6		134		
20.93-21.57	CFT-2157	8				177
18-20	21.40-22.13	CFT-2213	10	221		
	22.16-22.81	CFT-2281	12		276	
	22.78-23.45	CFT-2345	4			151
	23.46-24.16	CFT-2416	6		155	
20-24	24.15-24.85	CFT-2485	8	195		
	24.82-25.52	CFT-2552	10			257
	25.71-26.41	CFT-2641	12		319	
	26.55-27.25	CFT-2725	4			152
24	27.26-27.96	CFT-2796	6	157		
	28.14-28.84	CFT-2884	8		199	
	29.78-30.48	CFT-3048	10			
	30.48-31.18	CFT-3118	12		322	
30	31.52-32.22	CFT-3222	4	160		
			6			166
			8			
			10			270
		12	335			

*Indicates size-on-size sleeves within this range require a 1/2" undersize cutter.

To Order: Choose Style of Sleeve, O.D. Range and Flange size.

Examples: A Fabricated Steel sleeve with a 6" flange for 12" D.I.P. would be **CFT-1360-6**.

STYLE CFT-LP

RECOMMENDED FOR
PVC AND STEEL PIPE



Type & Class of Pipe	Nominal Pipe Size (Inches)	Pipe O.D. (Inches)	Catalog Number		Approx. Ship. Weight
			Sleeve	Flange Size	
PVC Pipe IPS Sized SDR 26,21 SCH 40 Class 200 Class 160	4	4.50	CFT-LP-450	4*	51
	5	5.56	CFT-LP-556	4	54
	6	6.63	CFT-LP-663	4	56
				6*	60
				4	59
				6	63
	8	8.63	CFT-LP-863	6	63
				8*	83
4				87	
6				91	
10	10.75	CFT-LP-1075	8	121	
			10*	150	
			4	96	
			6	100	
Steel Pipe IPS Sizes schedule pipe	12	12.75	CFT-LP-1275	8	133
				10	165
				12*	208

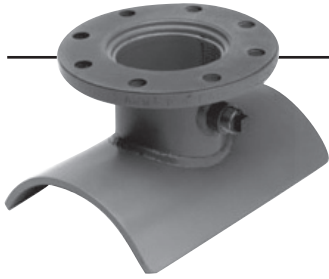
Type & Class of Pipe	Nominal Pipe Size (Inches)	Pipe O.D. (Inches)	Catalog Number		Approx. Ship. Weight
			Sleeve	Flange Size	
AWWA C-900 All Classes	4	4.80	CFT-LP-480	4*	51
				4	56
	6	6.90	CFT-LP-690	6*	60
				4	59
				6	63
				8*	83
	8	9.05	CFT-LP-905	4	87
				6	91
				8	121
				10*	150
	10	11.10	CFT-LP-1110	4	96
				6	100
8				133	
10				165	
12	13.20	CFT-LP-1320	8	165	
			12*	208	

*Indicates size-on-size sleeves within this range require a 1/2" undersize cutter.

To Order: Choose Style of Sleeve, Pipe O.D. and Flange size.

Examples: A Fabricated Steel sleeve with a 4" flange for 8" C900 pipe would be **CFT-LP-0905-4**.

Note: Other sizes and ranges available upon request.



MATERIAL SPECIFICATIONS



Flange: Low Alloy AWWA C207

Body: ASTM A-36 Steel

Other sizes available upon request

Branch Sizes: 3"-12": 150 psi RWP; 14"-16": 100 psi RWP

Pressure capacity may be application sensitive. Consult factory for specific applications.

Weld on sleeve for installation on steel pipe.

Sized for steel O.D.'s

Nominal Size (Inches)	O.D.Range	Catalog Number	Outlet (Inches)
4	4.50	CFT-WO-4.50	3 4 *
6	6.63	CFT-WO-6.63	4 6
8	8.63	CFT-WO-8.63	4 6 8 *
10	10.75	CFT-WO-10.75	4 6 8 10 *
12	12.75	CFT-WO-12.75	4 6 8 10 12 *
14	14.00	CFT-WO-14.00	4 6 8 10 12 14 *
16	16.00	CFT-WO-16.00	4 6 8 10 12 14 16 *

*Indicates size on size sleeves within this range require a 1/2" undersize cutter. Full size cutter will damage the sleeve.

To Order: Select pipe diameter and outlet size. A weld on sleeve with a 6" outlet for 12" steel would be CFT-WO-12.75-6

PIPE OUTSIDE DIAMETER GUIDE

Outside diameter of pipe may change from time to time. The information contained in this chart is the best available from various manufacturers at the time of printing. An O.D. tape should be used to confirm actual diameters prior to ordering fittings.

Nominal Pipe Size (inches)		Nominal Pipe Size (inches)																Nominal Pipe Size (inches)												
CAST IRON PIPE		CAST IRON PIPE																CAST IRON PIPE												
Ductile Iron Pipe		Ductile Iron Pipe																Ductile Iron Pipe												
Class 100-250 AWWA Centrifugal		Class 100-250 AWWA Centrifugal																Class 100-250 AWWA Centrifugal												
Class A AWWA Pit Cast		Class A AWWA Pit Cast																Class A AWWA Pit Cast												
Class B AWWA Pit Cast		Class B AWWA Pit Cast																Class B AWWA Pit Cast												
Class C AWWA Pit Cast		Class C AWWA Pit Cast																Class C AWWA Pit Cast												
Class D AWWA Pit Cast		Class D AWWA Pit Cast																Class D AWWA Pit Cast												
Copper Tubing		Copper Tubing																Copper Tubing												
Steel Pipe - ANSI Schedule 40/80		Steel Pipe - ANSI Schedule 40/80																Steel Pipe - ANSI Schedule 40/80												
Pressure Rated		Pressure Rated																Pressure Rated												
C900 & C905		C900 & C905																C900 & C905												
Schedule 40 / 80		Schedule 40 / 80																Schedule 40 / 80												
Plastic Irrigation Pipe (PIP)		Plastic Irrigation Pipe (PIP)																Plastic Irrigation Pipe (PIP)												
Sewer		Sewer																Sewer												
IPS		IPS																IPS												
DIPS		DIPS																DIPS												
Dual PRINSCO		Dual PRINSCO																Dual PRINSCO												
Wall HANCOR		Wall HANCOR																Wall HANCOR												
(Storm) ADS		(Storm) ADS																(Storm) ADS												
Ultra-Rib		Ultra-Rib																Ultra-Rib												
Nominal Pipe Size (inches)		Nominal Pipe Size (inches)																Nominal Pipe Size (inches)												
ASBESTOS-CEMENT PIPE		ASBESTOS-CEMENT PIPE																ASBESTOS-CEMENT PIPE												
Class 100		Class 100																Class 100												
Class 150		Class 150																Class 150												
Class 200		Class 200																Class 200												
Machined End		Machined End																Machined End												
Fluid-Tite Rough Barrel		Fluid-Tite Rough Barrel																Fluid-Tite Rough Barrel												
Finlite Rough Barrel		Finlite Rough Barrel																Finlite Rough Barrel												
Ring-Tite Rough Barrel		Ring-Tite Rough Barrel																Ring-Tite Rough Barrel												
Permatflex Rough Barrel		Permatflex Rough Barrel																Permatflex Rough Barrel												
Minimum Std. Rough Barrel		Minimum Std. Rough Barrel																Minimum Std. Rough Barrel												
Maximum Std. Rough Barrel		Maximum Std. Rough Barrel																Maximum Std. Rough Barrel												
Machined End		Machined End																Machined End												
Fluid-Tite Rough Barrel		Fluid-Tite Rough Barrel																Fluid-Tite Rough Barrel												
Finlite Rough Barrel		Finlite Rough Barrel																Finlite Rough Barrel												
Ring-Tite Rough Barrel		Ring-Tite Rough Barrel																Ring-Tite Rough Barrel												
Permatflex Rough Barrel		Permatflex Rough Barrel																Permatflex Rough Barrel												
Minimum Std. Rough Barrel		Minimum Std. Rough Barrel																Minimum Std. Rough Barrel												
Maximum Std. Rough Barrel		Maximum Std. Rough Barrel																Maximum Std. Rough Barrel												
Machined End		Machined End																Machined End												
Fluid-Tite Rough Barrel		Fluid-Tite Rough Barrel																Fluid-Tite Rough Barrel												
Finlite Rough Barrel		Finlite Rough Barrel																Finlite Rough Barrel												
Ring-Tite Rough Barrel		Ring-Tite Rough Barrel																Ring-Tite Rough Barrel												
Permatflex Rough Barrel		Permatflex Rough Barrel																Permatflex Rough Barrel												
Minimum Std. Rough Barrel		Minimum Std. Rough Barrel																Minimum Std. Rough Barrel												
Maximum Std. Rough Barrel		Maximum Std. Rough Barrel																Maximum Std. Rough Barrel												
Nominal Pipe Size (inches)		Nominal Pipe Size (inches)																Nominal Pipe Size (inches)												
1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6	8	10	12	14	15	16	18	20	21	24	27	30	36	42	48	54	60	64	65.67	
							3.96	4.80	6.90	9.05	11.10	13.20	15.30	17.40	19.50	21.60	25.80	25.80	25.80	25.80	25.80	25.80	32.00	38.30	44.50	50.80	57.56	61.61	65.67	
							3.96	4.80	6.90	9.05	11.10	13.20	15.30	17.40	19.50	21.60	25.80	25.80	25.80	25.80	25.80	25.80	32.00	38.30	44.50	50.80	57.56	61.61	65.67	
					2.50		3.80	4.80	6.90	9.05	11.10	13.20	15.30	17.40	19.50	21.60	25.80	25.80	25.80	25.80	25.80	25.80	32.00	38.30	44.50	50.80	57.56	61.61	65.67	
							3.96	5.00	7.10	9.30	11.40	13.50	15.65	17.80	19.92	22.06	26.32	26.32	26.32	26.32	26.32	26.32	32.74	39.16	45.58	51.98	58.39	64.80	71.21	
							3.96	5.00	7.10	9.30	11.40	13.50	15.65	17.80	19.92	22.06	26.32	26.32	26.32	26.32	26.32	26.32	32.74	39.16	45.58	51.98	58.39	64.80	71.21	
							2.63	3.13	4.13	5.13	6.13	7.13	8.13	9.13	10.13	11.13	12.13	13.13	14.13	15.13	16.13	17.13	18.13	19.13	20.13	21.13	22.13	23.13	24.13	
							2.38	3.50	4.50	5.56	6.63	7.70	8.77	9.84	10.91	11.98	13.05	14.12	15.19	16.26	17.33	18.40	19.47	20.54	21.61	22.68	23.75	24.82	25.89	
							2.38	3.50	4.50	5.56	6.63	7.70	8.77	9.84	10.91	11.98	13.05	14.12	15.19	16.26	17.33	18.40	19.47	20.54	21.61	22.68	23.75	24.82	25.89	
							2.38	3.50	4.50	5.56	6.63	7.70	8.77	9.84	10.91	11.98	13.05	14.12	15.19	16.26	17.33	18.40	19.47	20.54	21.61	22.68	23.75	24.82	25.89	
							4.13	4.13	6.14	8.16	10.20	12.24	14.28	16.32	18.36	20.40	22.44	24.48	26.52	28.56	30.60	32.64	34.68	36.72	38.76	40.80	42.84	44.88	46.92	48.96
							4.22	4.22	6.28	8.40	10.50	12.60	14.70	16.80	18.90	21.00	23.10	25.20	27.30	29.40	31.50	33.60	35.70	37.80	39.90	42.00	44.10	46.20	48.30	50.40
							3.50	4.50	5.56	6.63	7.70	8.77	9.84	10.91	11.98	13.05	14.12	15.19	16.26	17.33	18.40	19.47	20.54	21.61	22.68	23.75	24.82	25.89	26.96	28.03
							3.96	4.80	6.90	9.05	11.10	13.20	15.30	17.40	19.50	21.60	25.80	25.80	25.80	25.80	25.80	25.80	32.00	38.30	44.50	50.80	57.56	61.61	65.67	69.72
							4.60	4.60	6.80	9.50	11.60	14.20	17.70	21.20	24.70	28.20	31.70	35.20	38.70	42.20	45.70	49.20	52.70	56.20	59.70	63.20	66.70	70.20	73.70	77.20
							4.70	4.70	6.90	9.40	11.90	14.40	17.90	21.40	24.90	28.40	31.90	35.40	38.90	42.40	45.90	49.40	52.90	56.40	59.90	63.40	66.90	70.40	73.90	77.40
							4.78	4.78	6.92	9.11	11.36	14.45	17.57	21.20	24.80	28.40	32.00	35.60	39.20	42.80	46.40	50.00	53.60	57.20	60.80	64.40	68.00	71.60	75.20	78.80
									8.81	11.02	13.10	15.91	19.45	22.98	26.51	29.14	32.37	35.90	39.43	42.96	46.49	50.02	53.55	57.08	60.61	64.14	67.67	71.20	74.73	78.26
1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6	8	10	12	14	15	16	18	20	21	24	27	30	36	42	48	54	60	64	65.67	
							3.74	4.64	6.91	9.11	11.24	13.44	15.07	17.15	19.91	22.12	26.48	26.48	26.48	26.48	26.48	26.48	33.12	39.84	46.56	53.28	60.00	66.72	73.44	80.16
							3.93	5.05	7.16	9.32	11.46	13.70	15.36	17.50	19.64	21.78	25.92	25.92	25.92	25.92	25.92	25.92	33.12	39.84	46.56	53.28	60.00	66.72	73.44	80.16
							3.94	4.90	7.13	9.33	11.30	13.42	15.45	17.60	19.75	21.90	26.04	26.04	26.04	26.04	26.04	26.04	33.80	40.60	47.40	54.20	61.00	67.80	74.60	81.40
							3.95	4.92	7.19	9.39	11.47	13.74	15.51	17.65	19.85	22.05	26.19	26.19	26.19	26.19	26.19	26.19	33.80	40.60	47.40	54.20	61.00	67.80	74.60	81.40
							4.84	4.84	7.15	9.35	11.47	13.74	15.55	17.55	19.75	21.95	26.09	26.09	26.09	26.09	26.09	26.09	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							4.00	4.79	7.05	9.22	11.25	13.37	15.36	17.50	19.64	21.78	25.92	25.92	25.92	25.92	25.92	25.92	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							4.00	5.26	7.40	9.57	11.77	14.04	15.80	17.94	20.44	22.50	27.17	27.17	27.17	27.17	27.17	27.17	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							3.84	4.81	6.91	9.11	11.66	13.92	16.22	18.46	20.94	23.28	27.96	27.96	27.96	27.96	27.96	27.96	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							4.03	5.14	7.12	9.32	11.85	14.11	16.41	18.65	21.14	23.64	28.32	28.32	28.32	28.32	28.32	28.32	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							4.04	5.01	7.13	9.33	11.88	14.14	16.48	18.72	21.30	23.64	28.32	28.32	28.32	28.32	28.32	28.32	35.42	42.22	49.02	55.82	62.62	69.42	76.22	83.02
							4.13	5.07	7.17	9.37	11.92	14.18	16.48	18.72	21.30	23.64	28.32	28.32	28.32	28.32	28.32	28.32	35.42	42.22	49.02	55.82	62.62	69.42	76.22	83.02
							5.00	5.00	7.20	9.40	11.92	14.20	16.50	18.75	21.30	23.54	28.22	28.22	28.22	28.22	28.22	28.22	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							4.10	4.97	7.07	9.27	11.82	14.08	16.38	18.62	21.20	23.54	28.22	28.22	28.22	28.22	28.22	28.22	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60
							4.10	5.32	7.37	9.62	12.12	14.38	16.73	18.97	21.20	23.54	28.22	28.22	28.22	28.22	28.22	28.22	35.00	41.80	48.60	55.40	62.20	69.00	75.80	82.60

WARRANTY

Cascade Warrants all model CFT, CFTLP, CFT-ESS, and CFTLP-ESS Fabricated Steel Tapping Sleeves to be free from defects in material or workmanship and to perform as advertised for a period of 1 year from date of shipment from Cascade's factory. Cascade will replace any uninstalled sleeve provided that the buyer returns the sleeve freight pre-paid to Cascade for inspection. Freight expenses will be reimbursed should the sleeve be found defective. Cascade will replace any sleeve that is found to be defective while in service, provided that an on-sight, under pressure inspection is performed by an authorized representative of Cascade, and that the sleeve was installed according to Cascade's instructions and was properly supported and blocked. Cascade's liability in such a case shall be limited

to the replacement of the sleeve. Any other costs are excluded. This warranty specifically excludes any sleeve that is damaged during shipment, handling or installation. Cascade is not responsible for any loss, damage or injury to any property or person directly or indirectly arising from the use or inability to use the product. User shall determine the suitability of the product prior to its use. Unless stated in writing by Cascade, said sleeves are to be for cold water service on DIP, CIP, Steel, PVC, or A/C pipes. No claims for labor or damage will be allowed. Buyer must advise Cascade within 30 days of discovery of the alleged defect or the claim will be barred. This warranty is exclusive and in lieu of all others, whether written, oral or implied.



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Cascade Waterworks Mfg. continually improves, modifies, and updates our product literature. It is important that before any installation occurs that you refer to Cascade's latest brochures for the appropriate product and its latest application recommendations.