

STEVE
SPIESS
CONSTRUCTION, INC.

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August 29, 2019

Mr. Jon Zabrocki
Robinson Engineering, Ltd.
10045 W. Loncoln Hwy.
Frankfort, IL 60423

**RE: Install Tee in Meter Vault
O'Hara Woods Lift Station
Village of Romeoville**

Dear Jon:

Per your request we offer the following proposal for installing a 20" x 16" tee in the meter vault at the O'Hara Woods lift station to serve as an access point to launch pipeline inspection gauge.

Our price for the labor and equipment to do the installation will be a lump sum of \$5,238.00. This price includes one (1) 10-hour day (8 hours of straight time and 2 hours of overtime) for a 4-man crew, mini excavator, and truck and tools. Additional time, if required, will be billed at \$615.00/hour, which is the overtime rate for this crew.

We have identified three options for the materials that are required for the project. Alternate #1 is to install a 20" x 16" Romac FTS-420 fabricated steel tapping sleeve and a 16" blind flange. The tapping sleeve would be fusion epoxy coated and have 304 stainless steel bolts; the blind flange would not be coated. The total cost for material alternate #1 is \$3,942.00.

Alternate #2 is installation of a 20" x 16" ductile iron flanged tee and a 20" Romac FC400 flanged coupling adapter. The tee would be bolted to the existing 20" flanged valve, and the flanged coupling adapter would be installed on the north side of the tee. The tee would have a cement lining and either a tar coating or an epoxy primer coating. The total cost for material alternate #2 is \$10,184.00.

Alternate #3 is similar to Alternate #2, except that the tee and blind flange would be fabricated steel rather than ductile iron. The tee and blind flange will have a 150# pressure rating, and the flanges on these fittings will have a 125# pressure rating. Both the tee and the blind flange will be uncoated. Alternate #3 also includes installation of the 20" Romac FC400 flanged coupling adapter. The total cost for material alternate #3 is \$8,707.00.

The cost of each of the material alternates includes only materials. Please add the labor and equipment price to determine the total cost for each of the three alternates.


All of the above material alternates include furnishing the required number of flange joint accessories sets with stainless steel nuts and bolts.

Attached please find catalog cuts for the steel tapping sleeve, the ductile iron tee, and the flanged coupling adapter referred to in the above proposal.

Thank you for the opportunity to furnish a proposal for this work. Please feel free to contact me if you have any questions or require additional information.

Very truly yours,

STEVE SPIESS CONSTRUCTION, INC.

A handwritten signature in cursive script that reads "Brian Vander Molen".

Brian Vander Molen

Estimator

xc: Mr. Mark Lammers, Village of Romeoville

FTS420 TAPPING SLEEVE

SUBMITTAL INFORMATION



NSF61 certified upon request.



MATERIALS

BODY

ASTM A36 steel or equivalent unless noted.

FLANGE

AWWA Class D Steel Ring Flange, compatible with ANSI Class 125 and 150 bolt circles, are standard. Other flange styles are available. Designed to fit tapping valve lip per MSS SP-60 where applicable.

BOLTS AND NUTS

High strength low alloy steel bolts and nuts. Steel meets AWWA Standard C111. Type 304 and 316 Stainless Steel bolt material optional.

TEST PLUG

¾ inch NPT type 304 Stainless Steel. Plug threads coated to prevent galling.

FLANGE GASKET

Gaskets 3" through 12" full face proprietary gasket are made from Styrene Butadiene Rubber (SBR) compounded for water and sewer service in accordance with ASTM D 2000. Other compounds available for petroleum, chemicals, or high temperature service.

OUTLET GASKETS

3" through 12" size on size SBR wire reinforced. Larger than 12" size on size are Nitrile Butadiene Rubber (NBR) compounded for water and sewer service in accordance with ASTM D 2000. Other compounds available on request.

COATING

Fusion bonded epoxy in accordance with AWWA C213.

WORKING PRESSURE (PSIG):

NOM PIPE SIZE	WORKING PRESSURE RATING PER OUTLET SIZE (PSI)															
	≤3	4	6	8	10	12	14	16	18	20	24	28	30	36	42	48
6	250	250	250													
8	250	250	250	250												
10	250	250	250	250	175*											
12	250	250	250	250	175*	175*										
14	250	250	250	250	175*	175*	150									
16	250	250	250	250	175*	175*	150	150								
18	250	250	250	250	175*	175*	150	150	150							
20	250	250	250	250	175*	175*	150	150	150	150						
24	250	250	250	250	175*	175*	150	150	150	150	150					
28	200	200	200	200	175*	175*	150	150	150	150	150	150				
30	150	150	150	150	150	150	150	150	150	150	150	150	150			
36	150	150	150	150	150	150	150	150	150	150	150	150	150	150		
42	150	150	150	150	150	150	150	150	150	150	150	100	100	100	100	
>42	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

NOTE:

- Meets requirements of AWWA C223
- Test Pressure = 1.25 X working pressure.
- 3" – 12" outlets are provided with a Romac Tapping Flange Gasket.

- * Class E flanges are required on 10" and 12" outlets for working pressure greater than 175 psi and up to 250 psi. The 28" with 10" and 12" outlets are rated at 200 psi. with class E flanges. For higher pressure ratings consult your representative.

SIZES & RANGES

See Catalog. Other sizes available on request.

This information is based on the best data available at the date printed above. Please check with Romac for any updates or changes.



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INSTALLATION INSTRUCTIONS

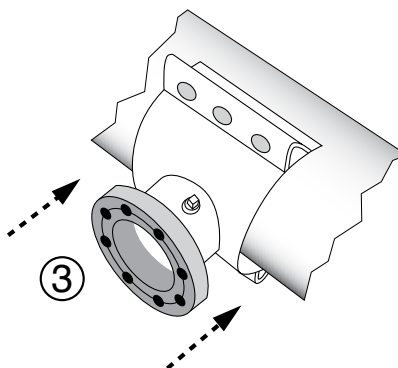
Read installation instructions first before installing. Check parts to ensure that no damage has occurred during transit and that no parts are missing. Also check the diameter of the pipe and the range marked on the tapping sleeve to ensure you have the proper size.

Style FTS 420

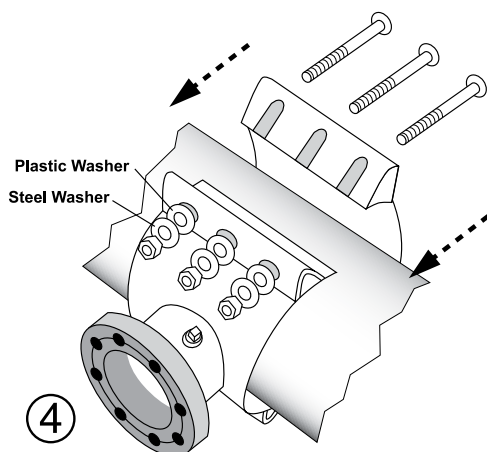
Step 1 • Clean pipe surface, particularly in the gasket sealing area.

Step 2 • Lubricate gasket and pipe surface with a suitable gasket lubricant.

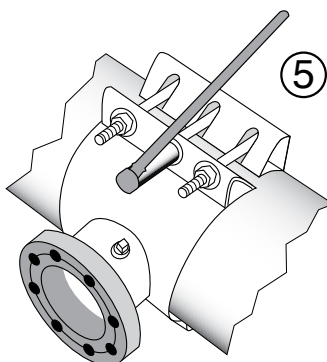
Step 3 • Place the outlet half of sleeve onto the pipe and move into position. Do not slide outlet half of sleeve around pipe.



Step 4 • Bring the back half of sleeve into position and insert the bolts.

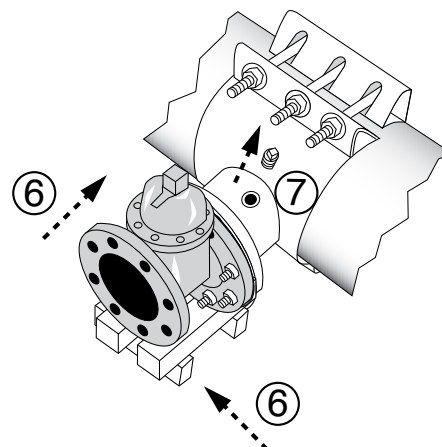


Step 5 • Install washers, (plastic first, then steel) and nuts. Tighten uniformly to a minimum 90 - 100 ft-lbs. torque. The gap between sleeve halves should be equal on both sides when the nuts are fully torqued.



Step 6 • Bolt tapping valve to flange. The inside of the flange accepts the tapping valve locator. The flange gasket is provided on 3" - 12" outlet sizes. Block or otherwise support valve.

Step 7 • Remove test plug and pressure test assembly to determine a tight joint. Test at pressures up to 1.25 times the pressure shown in the table below.



NOM. PIPE SIZE	WORKING PRESSURE RATING PER OUTLET SIZE (PSI)															
	<=3	4	6	8	10	12	14	16	18	20	24	28	30	36	42	48
6	250	250	250													
8	250	250	250	250												
10	250	250	250	250	250 ¹											
12	250	250	250	250	250 ¹	250 ¹										
14	250	250	250	250	250 ¹	250 ¹	150									
16	250	250	250	250	250 ¹	250 ¹	150	150								
18	250	250	250	250	250 ¹	250 ¹	150	150	150							
20	250	250	250	250	250 ¹	250 ¹	150	150	150	150						
24	250	250	250	250	250 ¹	250 ¹	150	150	150	150	150					
28	200	200	200	200	200 ¹	200 ¹	150	150	150	150	150	150				
30	150	150	150	150	150	150	150	150	150	150	150	150	150			
36	150	150	150	150	150	150	150	150	150	150	150	150	150	150		
42	150	150	150	150	150	150	150	150	150	150	150	150	150	150	100	100
>42	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

¹ Class E flanges are required on 10" and 12" outlets for working pressure requirements greater than 200 psi and up to 250 psi. For higher pressure ratings consult your representative.

Step 8 • When it is ascertained that sleeve is leak-tight, proceed with the tapping operation.

Step 9 • Tapping equipment must be supported so that its weight is not supported by the sleeve.

Style FTS 420

Fabricated Steel Tapping Sleeve

PRECAUTIONS

1. Check diameter of pipe to make sure you are using the correctly sized sleeve.
2. Clean pipe to remove as much dirt and corrosion as possible from the surface.
3. Make sure no foreign materials stick to the gasket as it is brought around the pipe, nor become lodged between gasket and pipe as nuts are tightened.
4. Avoid loose fitting wrenches, or wrenches too short to achieve proper torque.
5. Keep threads free of foreign material to allow proper tightening.
6. Bolts are often not tightened enough when a torque wrench is not used. Take extra care in this situation to make sure proper tightening occurs.
7. Install tapping sleeve with outlet in the direction of the branch pipe. Do not spin or rotate tapping sleeve on pipe.
8. Pressure test for leaks before tapping pipe.
9. Backfill and compact carefully around sleeve.
10. Caution, when reinstalling parts with stainless steel hardware there may be a loss in pressure holding ability due to worn or damaged threads during the original installation.
11. For personal safety reasons, do not use a compressible fluid (such as air) to check for water tightness.

COMMON INSTALLATION PROBLEMS

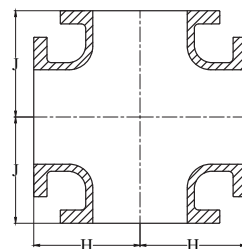
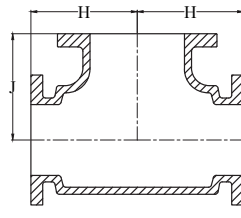
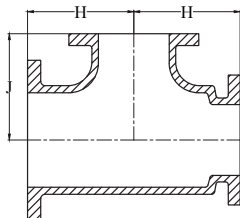
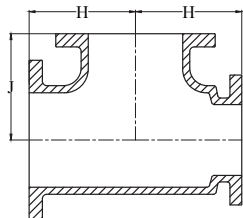
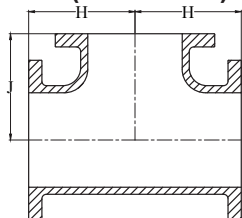
- | | |
|--|---|
| 1. Not enough torque on bolts. | 6. When insufficiently restrained and supported, pipe pullout or movement may occur. To prevent movement, sufficient support must be provided using: thrust blocks, anchors, soil friction, or other restraint devices. |
| 2. Rocks or debris cutting gasket. | |
| 3. Dirty threads on bolts or nuts. | |
| 4. Allowing tapping sleeve to support the cantilever load of the valve, tapping machine or pipe. | |
| 5. Not using the proper size sleeve for the pipe. | 7. Spinning or rotating tapping sleeve on the pipe. |

NOTE: Tapping sleeves are designed for sealing purposes only, not structural support or restraint.



**CLASS 125 FLANGE DUCTILE IRON
C110 FULL BODY FITTINGS
UL and FM Listed**

Tees (continued)



**Straight Tees, Reducing
on Branch Tees**

*** Reducing
on Run**

*** Reducing on
Run and Branch**

*** Bullhead
Tees**

**Straight and
Reducing Crosses**

Domestic							Non-Domestic	
Sizes					Weight		Weight	
Run	Run	Branch	H	J	Tee	Cross	Tee	Cross
12	12	4	12.0	12.0	322	310	290	310
12	12	6	12.0	12.0	297	326	295	320
12	12	8	12.0	12.0	346	351	310	345
12	12	10	12.0	12.0	394	415	360	415
12	12	12	12.0	12.0	369	438	385	460
*14	14	4	14.0	14.0	419
14	14	6	14.0	14.0	420	450	375	400
14	14	8	14.0	14.0	435	475	390	425
14	14	10	14.0	14.0	450	...	400	460
14	14	12	14.0	14.0	470	543	425	505
14	14	14	14.0	14.0	500	595	435	550
*16	14	4	15.0	15.0	525
16	16	6	15.0	15.0	573	565	465	490
16	16	8	15.0	15.0	534	590	475	520
16	16	10	15.0	15.0	565	620	495	555
16	16	12	15.0	15.0	590	665	520	605
16	16	14	15.0	15.0	592	...	530	620
16	16	16	15.0	15.0	635	755	550	665
18	18	6	13.0	15.5	780	...	480	505
18	18	8	13.0	15.5	609	...	495	535
18	18	10	13.0	15.5	568	...	510	560
18	18	12	13.0	15.5	638	706	535	610
18	18	14	16.5	16.5	726	...	630	720
18	18	16	16.5	16.5	760	...	650	765
18	18	18	16.5	16.5	865	895	665	795
20	20	6	14.0	17.0	773	...	610	635
20	20	8	14.0	17.0	720	...	620	665
20	20	10	14.0	17.0	735	...	635	685
20	20	12	14.0	17.0	816	834	660	735
20	20	14	14.0	17.0	744	...	665	745
20	20	16	18.0	18.0	1054	1065	810	915
20	20	18	18.0	18.0	965	...	820	945
20	20	20	18.0	18.0	966	1175	855	1015
24	24	6	15.0	19.0	1040	...	845	875
24	24	8	15.0	19.0	1060	...	860	895
24	24	10	15.0	19.0	1004	...	880	930
24	24	12	15.0	19.0	986	1100	890	960
24	24	14	15.0	19.0	1021	1125	900	975
24	24	16	15.0	19.0	1013	1160	915	1010
24	24	18	22.0	22.0	1416	...	1220	1365
24	24	20	22.0	22.0	1510	1695	1255	1430
24	24	24	22.0	22.0	1536	1850	1330	1570

* Not included in AWWA C110

FC400 COUPLING CLASS D FLANGE

SUBMITTAL INFORMATION



STANDARD

The Romac Series 400 style couplings meet all specifications set forth in the AWWA Standard C219.

MATERIALS

FLANGE

AWWA Class D Steel Ring Flange, compatible with ANSI Class 125 and 150 bolt circles.

END RING AND BODY

The end ring and body are made from ASTM A 36 steel or ductile (nodular) iron meeting or exceeding ASTM A 536, Grade 65-45-12. When anchor pins are requested on FC400's, the wall thickness of the body will be 3/8".

GASKETS

Nitrile Butadiene Rubber (NBR) compounded for water and sewer service also resistant to hydrocarbons. Meet-

ing the requirements of ASTM D 2000. Other compounds available on request.

BOLTS AND NUTS

High strength low alloy steel bolts and nuts. Steel meets AWWA Standard C111. Type 304 and 316 Stainless Steel bolt material optional.

COATINGS

Shop coat applied to parts for corrosion protection in transit. Fusion bonded epoxy, liquid epoxy and other coatings available on request.

PRESSURE

When properly installed on a pipe that is within the coupling manufacturer's tolerances, Romac style FC400 Flanged Coupling Adapters can work at pressures up to the maximum rating of the flange. AWWA Class D flanges are rated for 175 psi in 4" through 12" sizes and 150 psi in 14" and larger. Test pressures are one and a half time that of working pressure. Higher working pressures can be accommodated with AWWA Class E or F flanges. Consult your representative.

ANCHOR PINS

Anchor pins (12L14 carbon steel) to restrain fitting, available as option.

SIZES & RANGES

See Catalog.

This information is based on the best data available at the date printed above. Please check with Romac for any updates or changes.

INSTALLATION INSTRUCTIONS

Read installation instructions first before installing. Check parts to ensure that no damage has occurred during transit and that no parts are missing. Also check the diameter of the pipe and the range marked on the coupling to ensure you have the proper size.

Style FC400 Steel Flanged Coupling

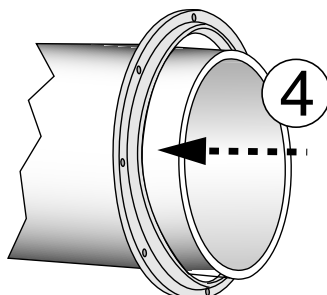
Step 1 • Check the flanged coupling parts to insure that no damage has occurred during transit and that no parts are missing.

Step 2 • Clean pipe end for a distance of 2" greater than the length of the flanged coupling.

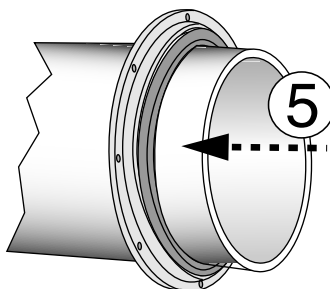


Step 3 • Check area where gaskets will seat on pipe and flange faces to make sure there are no dents, projections, gouges, etc. that will interfere with the gasket seals. Welds must be ground flush.

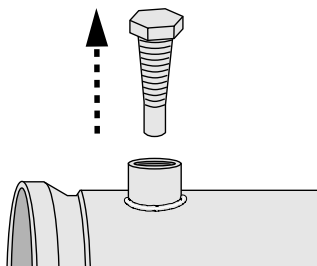
Step 4 • Place end ring on pipe end.



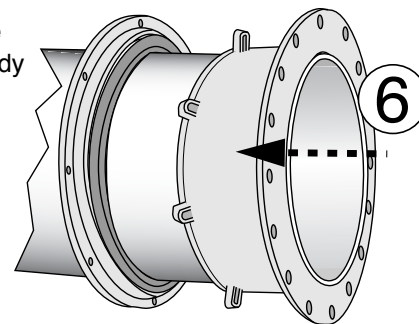
Step 5 • Clean the gasket. Lubricate the gasket and pipe surface with a suitable gasket lubricant. Place gasket next to end ring with beveled edge toward the pipe end.



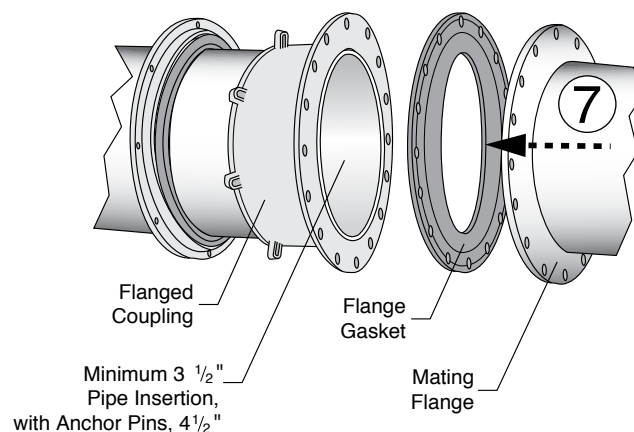
If using Anchor Pins, remove the anchor pins from the half couplings on the flanged coupling body.



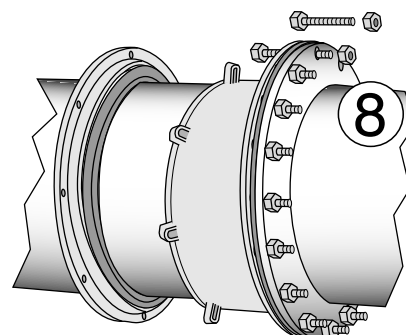
Step 6 • Slide the flanged coupling body onto the pipe end.



Step 7 • Using a flange gasket, position the flanged coupling against the mating flange, making sure there is a minimum 3 1/2" of pipe insertion. If using Anchor Pins, the minimum pipe insertion is 4 1/2".



Step 8 • Assemble the flanged joint using flange bolts.

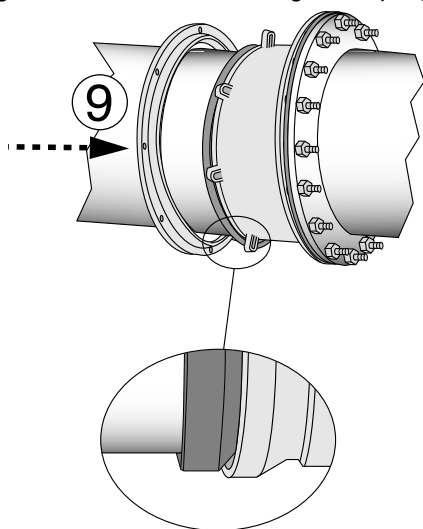


Installation Instructions continued on back

INSTALLATION INSTRUCTIONS

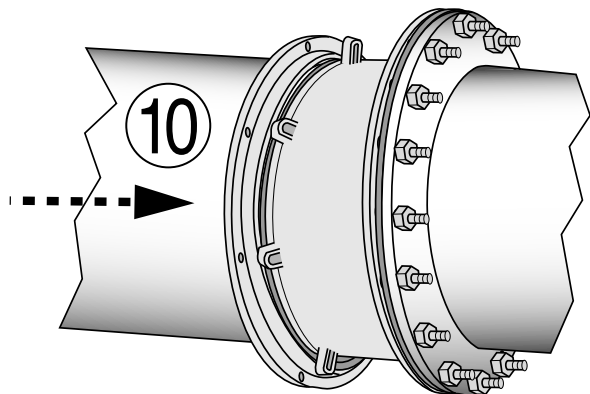
Style FC400 (continued from front)

Step 9 • Slide the ring gasket into position with the beveled edge engaging the flared end of the flanged coupling body.

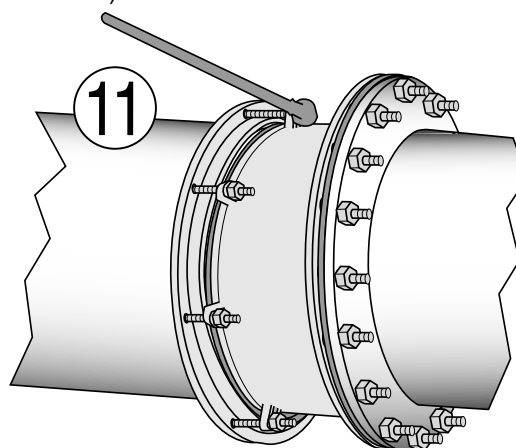


Make sure the beveled edge of the gasket engages the flared end of the flanged coupling body.

Step 10 • Slide the end ring into position against the gasket. Be sure to match weld in end ring with weld in body.



Step 11 • Insert the bolts through the end ring into the anchor loops and tighten. Bolt tightening should be done evenly, alternating to diametrically opposite positions to bring bolts to recommended tightness. (60-70 ft-lbs. for $\frac{5}{8}$ " bolts and 85-95 ft-lbs. for $\frac{3}{4}$ " bolts.)



STEP 12 • IF USING ANCHOR PINS

1. Remove Anchor Pins from flanged coupling body.
2. Slide the flanged coupling body onto the pipe end.
3. Position the flanged coupling against the mating flange. Assemble the flanged joint.
4. Thread a short pipe nipple into the threaded Anchor Pin hole. Using the largest drill bit that will fit into the pipe nipple, drill a center mark on the pipe. Do not drill through. Remove the pipe nipple.
5. Use a $\frac{5}{16}$ " diameter drill to drill through the center mark made in step 4.
6. Complete the hole by drilling through the pipe with drill size per the table below.
7. Install the Anchor Pins. Apply a suitable thread sealant and tighten to prevent leakage.

Pin Size	Thread Size	Drill Size for Pipe	Torque (ft-lbs.)
$\frac{7}{8}$ "	$\frac{3}{4}$ " NPT	$\frac{29}{32}$ "	80
1"	1" NPT	1 $\frac{1}{32}$ "	100

For best results, after pipe is pressurized check for leakage and re-torque as necessary.