

# 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 size marked on the coupling to ensure you have the proper size.

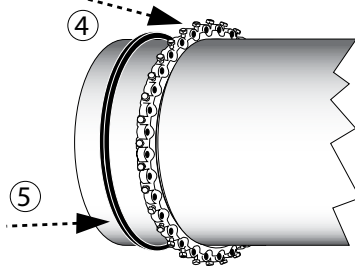
## FC400RG-PVC Restrained Flanged Coupling 12" - 24" with RomaGrip-PVC™

**Step 1** • Identify the pipe. The FC400RG-PVC is for use with PVC pipe. Check the compatibility chart on the back of these instructions and make sure the pipe you are using is listed.

**Step 2** • Check the FC400RG-PVC parts to insure that no damage has occurred during transit and that no parts are missing.

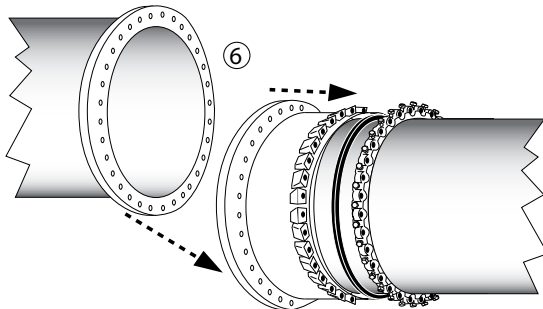
**Step 3** • Clean and lubricate the pipe end with soapy water or other approved pipe lubricant per ANSI/AWWA C111/A21.11 for a distance of 2" greater than the length of the FC400RG-PVC.

**Step 4** • Place RomaGrip-PVC gland on pipe end with the nose extension toward the plain end.



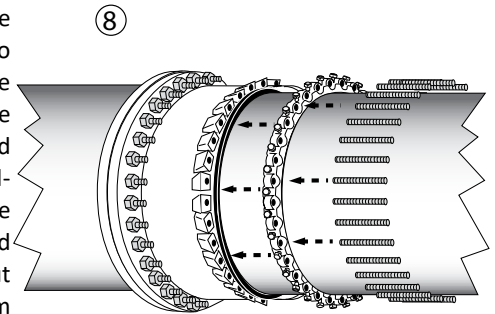
**Step 5** • Lubricate the gasket. Place the gasket over the pipe so the flat side is toward the RomaGrip gland.

**Step 6** • Slide the FC400RG-PVC on to the pipe. Position the pipe and flanged coupling against the mating flange, inserting the flange gasket between the flange faces. Assemble the flange joint using flange bolts.

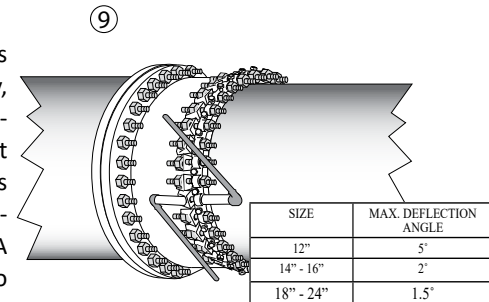


**Step 7** • The pipe should be centered such that the space between the OD of the pipe and the ID of the FC400RG-PVC is even all around the pipe. Slide the FC400RG-PVC gasket into position with the beveled edge engaging the beveled end of the FC400RG-PVC body.

**Step 8** • Slide the RomaGrip-PVC into position against the gasket until the nose touches the gasket, and insert the all-thread-rod. Make any pipe deflection after hand tightening the nuts but before tightening them to the proper torque specifications.

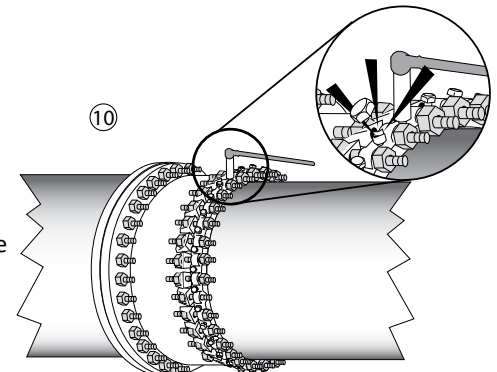


**Step 9** • Tighten nuts on all-thread-rod evenly, alternating to diametrically opposite position at approximately 20 ft-lbs increments to the recommended torque per AWWA C111 see table below. Two wrenches will be required.



For best results, wait 10 minutes and retighten bolts to proper torque.

**Step 10** • Hand tighten the restrainer bolts until the restraining pads touch the surface of the pipe. Continue to tighten in a uniform criss-cross pattern, referring to the table below for torque recommendation.



**Step 11** • Pressure test for leaks before backfilling.



# INSTALLATION INSTRUCTIONS

## FC400RG-PVC 12-24"

PIPE MATERIAL	PIPE SIZE	WORKING PRESSURE	RECOMMENDED TORQUE FOR ALL-THREAD ROD	RECOMMENDED TORQUE FOR RESTRAINING BOLTS
PVC - SCHED. 40 ASTM D 1785	12"	130 PSI 2	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - SCHED. 80 ASTM D 1785	12"	175 PSI 1,2	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - "CLASS PIPE" (IPS Size ASTM D 2241 Class 160)	12"	160 PSI	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - "CLASS PIPE" (IPS Size ASTM D 2241 Class 200)	12"	175 PSI 1	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. SIZE (C900 Class 165)	12"	165 PSI	45 - 60 FT-LBS	30 - 40 FT-LBS
PVC - D.I. SIZE (C900 Class 235 & 305)	12"	175 PSI 1	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. SIZE (C909)	12"	150 PSI	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. Size (C900 Class 100, DR 41)	14"	80 PSI	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. Size (C900 Class 100, DR 41)	16" - 24"	100 PSI	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. Size (C900 Class 125, DR 32.5)	14" - 24"	125 PSI	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. Size (C900 Class 165, DR 25)	14" - 24"	150 PSI 1	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. Size (C900 Class 235, DR 18)	14" - 24"	150 PSI 1	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. Size (C900 Class 305, DR 14)	14" - 24"	150 PSI 1	75 - 90 FT-LBS	TORQUE OFF HEADS
PVC - D.I. SIZE (C909 > 12")	NOT COMPATIBLE WITH FC400RG-PVC			
PVC - "CLASS PIPE" (IPS SIZE > 12")				
DUCTILE IRON				
STEEL				
ASBESTOS CEMENT				
FIBERGLASS				
HDPE				

<sup>1</sup> HIGHER WORKING PRESSURES CAN BE ACCOMODATED WITH AWWA CLASS E OR F FLANGES. CONSULT YOUR REPRESENTATIVE.

<sup>2</sup> PRESSURE RATINGS ARE FOR USE ON PVC1120, PVC1220, AND PVC2120 PIPE MATERIALS PER ASTM D1785. FOR OTHER SCH 40 & 80 PIPE MATERIALS, PRESSURE RATING FOR THE PRODUCT MAY BE LIMITED BY PIPE PRESSURE RATING. SEE ASTM D1785 FOR DETAILS.

\* PRESSURE RATINGS ARE DESIGNED WITH A 2:1 SAFETY FACTOR

## PRECAUTIONS

1. Check flange to make sure the bolt holes match the FC400RG-PVC.
3. Make sure a flange gasket is used between the mating flanges.
3. Check diameter of pipe to make sure you are using the correct size FC400RG-PVC; also check gasket to make sure it is the size required.
4. Be sure to clean pipe of as much dirt and corrosion as possible in the area that the gasket will seal.
5. Lubricate both the gasket and the pipe end with soapy water or approved pipe lubricant per ANSI/AWWA C111/A21.11.
6. Make sure no foreign materials lodge between gasket and pipe.
7. Avoid loose fitting wrenches, or wrenches too short to achieve proper torque.
8. Keep threads free of foreign material to allow proper tightening.
9. Take extra care to follow proper bolt tightening procedures and torque recommendations. Bolts are often not tightened enough when a torque wrench is not used.
10. Be sure that the gland is centered around the pipe.
11. Pressure test for leaks before backfilling.
12. Backfill and compact carefully around pipe and fittings.
13. Do not use on pipe below 32°F.

## COMMON INSTALLATION PROBLEMS

1. Flange gasket not installed.
2. Bolts are not tightened to the proper torque.
3. Rocks or debris between pipe and gasket.
4. Dirt or debris between pipe and restraining pad.
5. Dirt on threads of bolts or nuts.
6. Restraining bolt heads not snapped off.
7. Not enough pipe inserted into bell.
8. Using the FC400RG to PVC on PVC pipe not allowed in compatability chart.

## IF FC400RG-PVC MUST BE REMOVED

1. Make sure pipe is not pressurized. Removing the restrainer could cause the pipe joint to separate.
2. To remove the RomaGrip, use a 5/8" hex wrench or socket to loosen the restraining bolts.
3. To reassemble, follow installation procedures and tighten the restraining bolts to the proper torque, see table above.