

Access Risers and Tank Adapters

Installation Instructions

Access risers provide access to septic tank openings, simplifying inspection and maintenance procedures. It is important that the riser be sized correctly and installed properly (i.e., appropriate tank adapter, attachment method, etc.) to ensure a watertight seal. Without a watertight seal, groundwater or surface water can leak into the tank, reducing the tank's performance. When setting a riser, orient the grommets in the appropriate directions before bonding to the tank.

In this document, metric equivalents are omitted for nominal dimensions, such as riser and pipe diameters. If you are using pipe other than IPS standard sizes, consult your Distributor for adapters you may need.

Riser Sizing

The installed riser should extend about 3 in. (76 mm) above the finished ground level (approximately 2 in. [51 mm] for tank settlement and 1 in. [25 mm] to ensure drainage away from the riser). If the riser is too long, it may be cut to the appropriate height using a circular saw or table saw. Always cut excess length from the bottom of the riser. To ensure a good fit and watertight joint, a square cut is essential. If the riser is too short, a grade ring may be used as an extension.

Selecting a Riser and Tank Adapter Installation Method

To select an appropriate riser and tank adapter installation method, first determine the type of tank being used: concrete or fiberglass. Then refer to the chart below, as you follow these steps:

Concrete Tanks

1. Determine desired riser diameter.
2. Determine if the riser tank adapter will be cast-in or bolted down.
3. Referring to the chart below, pick the appropriate tank adapter for your riser diameter and method of attachment. If the bolt-down method is being used, make sure the adapter you selected will cover the tank's opening.

Orengo Fiberglass Tanks (contact your distributor or Orengo for other fiberglass tanks)

1. For 30-in. riser, choose the FRTA30-FRP tank adapter.
2. For 24-in. riser, no adapter is needed; 24-in. riser fits tank directly.

Riser diameter	Method of attachment	Tank adapter	Maximum tank opening	
24 in.	Bolted down or cast into concrete tank	PRTA24	24 in. round/17 in. square*	* NOTE: For PRTA 24 and PRTA 30 risers, the minimum tank opening is 19 in., but 20 in. is recommended, so that the Biotube Pump Vault (PVU) can rest on the lip of the opening.
30 in.	Bolted down or cast into concrete tank	PRTA30	30 in. round/21 in. square*	
21 or 24 in.	Bolted down to concrete tank or epoxied to top of non-Orengo FRP tank	RRFTA	24 in. round/24 in. square	
30 in.	Bolted down to concrete tank	RRFTA30	30 in. round/30 in. square	
30 in.	Glued onto Orengo FRP tank or PRTA24, allowing it to accept 30-in. riser.	FRTA30-FRP	NA	
12 in.	Bolted down to concrete tank	RUBDKIT	10 in. round/7 in. square	
18 in.	Bolted down to concrete tank	RUBDKIT	16 in. round/11 in. square	

Choosing Your Instruction Set

Following are five different installation instruction sets for adapters, depending on your application, adapter, and method of attachment. Refer to the chart below to determine which instruction set to use. Instructions for installing grommets in risers are also provided.

Instruction set	Adapter type used	Page
1. Orengo FRP Tank Adapter	FRTA30-FRP	3
2. Cast-In Adapters	PRTA24, PRTA30	4
3. Round Bolt-Down Adapters	PRTA24, PRTA30	5
4. Square Bolt-Down Adapters	RRFTA, RRFTA30	6
5. No Adapters: Ultra-Rib Bolt-Down Kit	None, Ultra-Rib pipe	7
Installing Grommets in Risers		8

Installation Instructions (continued)



Clockwise from left: ADH10 (IPS810) quart, SS115, ADH100, SS140, ADH845, ADH10 (IPS810) pint, and MA320

About Adhesives

ADH100 is a single-component adhesive/sealant for sealing pipe grommets and joining PVC or fiberglass risers to ABS or fiberglass PRTA-style tank adapters (where the joint is in shear). Handling strength is achieved within 12 hours, and full cure in 2 to 3 days. It comes in a 10.2-oz (300-mL) cartridge tube for application with a caulking gun.

ADH10 (IPS810) adhesive is a white, two-component, self-leveling methacrylate adhesive for bonding PVC, ABS, fiberglass, and concrete. ADH10 comes in pint (500-mL) and quart (1000-mL) kits, consisting of A and B components (adhesive and activator), and requires hand mixing. If a self-leveling adhesive is NOT required or if concrete is NOT being bonded, SS115 or SS140 is preferred over ADH10.

ADH845 adhesive is a tan two-component methacrylate adhesive for bonding PVC, ABS, fiberglass, and concrete. This is our only adhesive formulated to work in wet conditions or even under water, making it ideal for field repairs. Repairs on leaking riser connections are possible, but any water pressure must be removed during the repair. ADH845 has the consistency of molasses, comes in 400-mL cartridges, and requires the manual dispensing gun ADH845-GUN.

MA320 is a white two-component methacrylate adhesive that bonds PVC, ABS and fiberglass to themselves or each other, but does not bond to concrete. It comes in a two-part 200-gram see-through plastic pouch that must be kneaded to mix the two components, then cut open and squeezed to apply adhesive.

SS140 adhesive is a gray two-component methacrylate adhesive for bonding PVC and fiberglass to themselves or each other. It does not bond to concrete. It has the consistency of toothpaste and will sag slightly in warmer temperatures. Surface roughening is recommended and provides the best bond strengths, but is not always necessary. Use SS140 above 65° F (18° C) and SS115 below 50° F (10° C). Working life of mixed adhesive is typically 20 to 30 minutes, and it usually hardens in less than 2 hours, depending on temperature and adhesive thickness. It comes in an 870-mL two-part cartridge and can be dispensed from pneumatic gun SS-MK or, for occasional use, manual gun SS-MK-MANUAL GUN.

SS115 adhesive is a white two-component methacrylate adhesive with properties similar to those of SS140 and comes in the same two-part cartridge, but has a much shorter open time for use in cooler temperatures and jobs where quicker cure times are desired, or for applications where a white color is desired. Working life of mixed adhesive is typically 10 to 15 minutes, and it usually hardens in less than 45 minutes, depending on temperature and adhesive thickness.

Installation Instructions (continued)

Instruction Set 1: Orenco 30-in. FRP Tank Adapter

Adapter type used : FRTA30-FRP
Adhesive used: ADH100, MA320, SS115, or SS140
Bolt-down kit used: None

Step 1a: Apply Adhesive

Apply adhesive to the outside surface of the riser tank adapter.

Hint: If you plan to backfill the same day, the use of MA320, SS115 or SS140 adhesive is recommended because of their quicker cure times. If you have multiple riser installations and do not have bulk adhesive (SS115/SS140), you may want to consider the use of both MA320 and ADH100. Apply just enough MA320 on the outside of the tank adapter for a quick structural joint (cure time is typically less than an hour). A single package of MA320 can be used to provide a structural joint on two or three risers. Then apply ADH100 to the inside of the adapter and the riser joint, for a watertight seal.

Step 1b: Install Riser

The riser may be installed and sealed to the adapter in the same way as with the cast-in adapter. (Refer to Instruction Set 2, steps 2b-2d.)

Note: Adapter is required only with 30-in. risers. Orenco tanks accept 24-in. risers directly, with appropriate adhesive.



Installation Instructions (continued)



Instruction Set 2: Cast-In Adapters

Adapter type used: PRTA24 or PRTA30
Adhesive used: ADH100, MA320, SS115, or SS140
Bolt-down kit used: None

Step 2a: Apply Adhesive

Apply adhesive to the outside surface of the riser tank adapter.

Hint: If you plan to backfill the same day, the use of MA320, SS115 or SS140 adhesive is recommended because of their quicker cure times. If you have multiple riser installations and do not have bulk adhesive (SS115/SS140), consider using both MA320 and ADH100. Apply just enough MA320 on the outside of the tank adapter for a quick structural joint (cure time is typically less than an hour). A single package of MA320 can be used to provide a structural joint on two or three risers. Then apply ADH100 to the inside of the adapter and the riser joint, for a watertight seal.



Step 2b: Place Riser

Orient the riser correctly and carefully slide it onto the adapter before the adhesive cures.

Step 2c: Seal Adapter-to-Riser Joint

Apply adhesive to the inside of the adapter and riser joint. Use a putty knife or similar tool to form a continuous fillet between the tank adapter and the inside of the riser.



Step 2d: Cure Adhesive

Allow adhesive to harden before backfilling. For ADH100, handling strength is typically achieved within 12 hours. For MA320, cure time is achieved within 30 minutes to 3 hours, depending on temperature.



Installation Instructions (continued)

Instruction Set 3: Round Bolt-Down Adapters

Adapter type used: PRTA24, PRTA30
Adhesive used: ADH100, MA320, SS115, or SS140
Bolt-down kit used: PRTA24BDKIT, PRTA30BDKIT

Step 3a: Drill Holes into Tank

Place the adapter over the tank opening. Using a 1/4-in. (6 mm) masonry drill bit, drill through the holes in the adapter a minimum 1-3/8 in. (35 mm) deep into the concrete to accept the concrete anchors. Clear holes of debris.

Step 3b: Apply Butyl Tape to Adapter

Apply butyl tape just inboard of the bolt pattern to the underside of the tank adapter. Be sure to thoroughly clean the tape mating surface before applying. While lining up the drilled holes, place tank adapter on tank surface, butyl tape side down.

Step 3c: Assemble Anchor

Install the washer and begin threading the nut on the end of the concrete anchor. Leave nut flush with end of anchor to protect the threads.

Step 3d: Locate Anchor

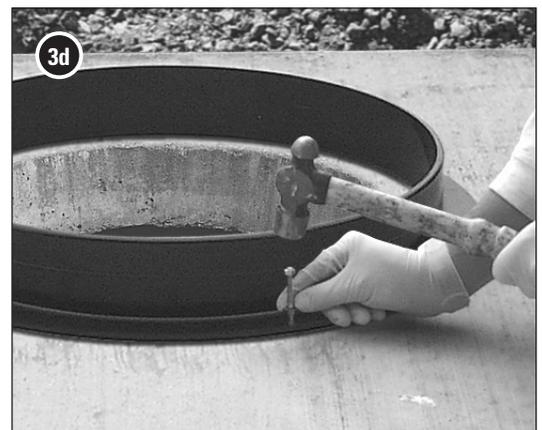
Using a hammer, drive the concrete anchor through the tank adapter mounting holes into the drilled hole in the concrete, until the anchor is bottomed out in the hole.

Step 3e: Secure Adapter

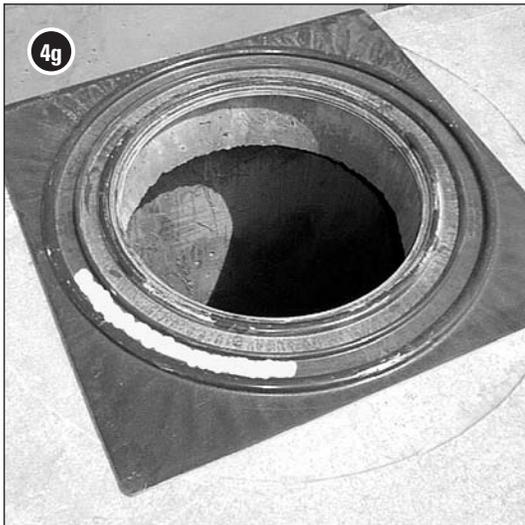
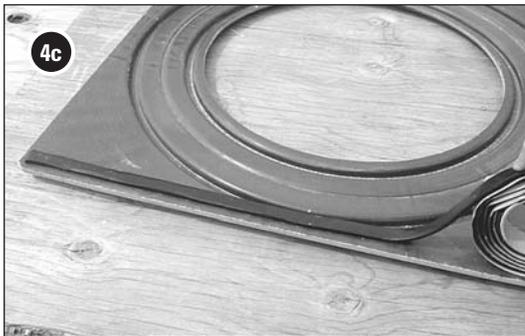
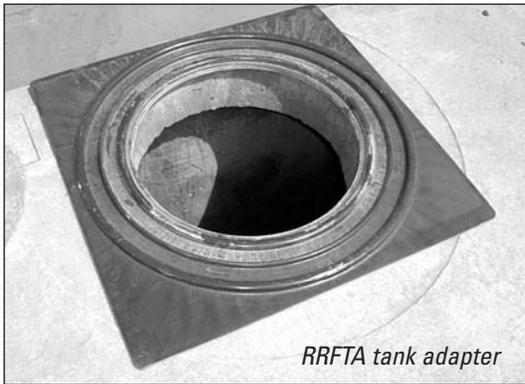
Bolt the tank adapter to the tank by tightening the anchor nut 3 to 5 turns past the hand tight position. Repeat the process until all concrete anchors are firmly attached. The butyl tape should form a watertight seal between the adapter and tank.

Step 3f: Install Riser

After the riser tank adapter has been securely attached, the riser may be installed in the same way as with a cast-in tank adapter. (Refer to Instruction Set 2, steps 2a - 2d.)



Installation Instructions (continued)



Instruction Set 4: Square Bolt-Down Adapters

Adapter type used : RRFTA, RRFTA30
Adhesive used: ADH10 (IPS810)
Bolt-down kit used: RRFTABDKIT, RRFTA30BDKIT

Step 4a: Mark Bolt Hole Locations

Place the adapter over the tank opening and mark bolt hole locations on the adapter. Use a 1/4-in. (6 mm) drill bit to drill the holes through the adapter.

Step 4b: Drill Holes

Using a 1/4-in. (6 mm) masonry drill bit, drill through the holes in the adapter a minimum 1-3/8 in. (35 mm) deep into the concrete to accept the concrete anchors. Clear holes of debris.

Step 4c: Apply Butyl Tape to Adapter

Apply butyl tape just inboard of the bolt pattern to the underside of the tank adapter. Be sure to thoroughly clean the tape mating surface before applying. While lining up the drilled holes, place tank adapter on tank surface, butyl tape side down.

Step 4d: Assemble Anchor

Install the washer and begin threading the nut on the end of the concrete anchor. Leave nut flush with end of anchor to protect the threads.

Step 4e: Locate Anchor

Using a hammer, drive the concrete anchor through the tank adapter mounting holes into the drilled recess in the concrete, until the anchor is bottomed out in the hole.

Step 4f: Secure Anchor

Bolt the tank adapter to the tank by tightening the anchor nut 3 to 5 turns past the hand tight position. Repeat the process until all concrete anchors are firmly attached. The butyl tape should form a watertight seal between the adapter and tank.

Step 4g: Apply Adhesive to Adapter

Determine which groove in the adapter you will be using by test-fitting your riser. RRFTA adapter accommodates both 21-in. and 24-in. diameter risers and requires one pint (500 mL) of adhesive to fill the locating groove. RRFTA30 has only one groove for 30-in. diameter risers and requires one quart (1 L) of adhesive to fill the locating groove. Before applying adhesive, roughen the groove with sandpaper.

Step 4h: Place Riser

Be sure to orient the riser correctly before adhesive cures. Set the riser in place by twisting gently while working it into the groove. If necessary, use a putty knife on the inside of the riser to shape the bead of displaced adhesive into a continuous, watertight fillet.

Step 4i: Cure Adhesive

Allow adhesive to harden before backfilling.

Installation Instructions (continued)

Instruction Set 5: Ultra-Rib Bolt-Down Kit

Adapter type used :	None, Ultra-Rib Pipe
Adhesive used:	None
Bolt-down kit used:	RUBDKIT (For 12-in. and 18-in. diameter risers only)

Step 5a: Mark Bolt Hole Locations

With the Ultra-Rib Riser in place over the outlet opening, measure 1/2 in. to 3/4 in. (10-20 mm) outward from the outside of the riser's rib, and locate three holes positioned equally around the outside of the riser.

Step 5b: Drill Holes

Using a 1/4-in. (6-mm) masonry drill bit, drill each hole a minimum 1-3/8 in. (35 mm) deep to accept the concrete anchors. Clear hole of debris.

Step 5c: Apply Butyl Tape to Adapter

Apply butyl tape to the underside of the Ultra-Rib Pipe. Be sure to thoroughly clean the tape mating surface before applying. Place Ultra-Rib pipe on the tank surface, butyl tape side down.

Step 5d: Assemble Anchor

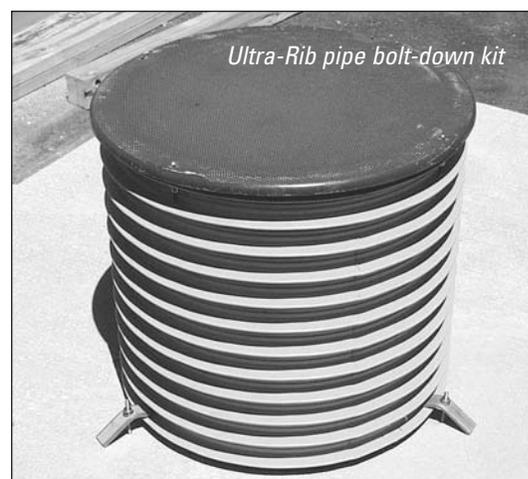
Install the washer and begin threading the nut on the end of the concrete anchor. Leave nut flush with end of anchor to protect the threads.

Step 5e: Locate Anchor and Mount Strap

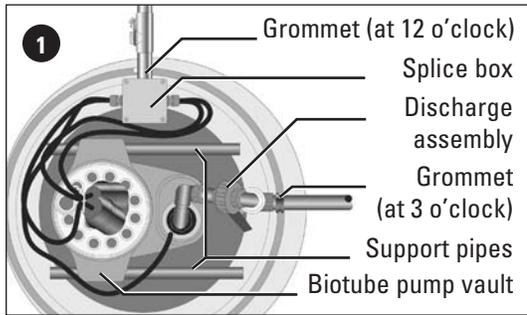
Slide anchor through the slotted hole in the stainless steel mount strap. Using a hammer, drive the concrete anchor into the drilled recess in the concrete, until the anchor is bottomed out in the hole.

Step 5f: Secure Riser

Bolt the Ultra-Rib pipe to the tank by tightening the anchor nut 3 to 5 turns past the hand tight position. Repeat the process until all concrete anchors are firmly attached. The butyl tape should form a watertight seal between the adapter and tank.



Installation Instructions (continued)



Installing Grommets

Step 1: Mark the Riser

To install grommets in the field, first mark the riser for location of the grommets. (For Perma-Loc risers, you should try to avoid cutting through the pipe seam — the extra thick rib — unless it is unavoidable.)



Step 2: Notch the Ribs

Using a 4-in. (100-mm) grinder or other cutting tool, notch through the PVC ribs to the wall of the PVC riser. Remove an area of ribbing equal to approximately 1 in. (25 mm) larger than the grommet diameter.



Step 3: Remove the Ribs

Using a hammer and chisel, break the notched ribs from the riser. Use a grinder to remove any remaining rib material so that you are left with a smooth area, ensuring a watertight fit. (Hole saws with attached pocket cutters are available from Orenco; they cut away the ribs as the hole is cut, eliminating the need to notch and break the ribs.)



Step 4: Cut the Hole

Using the Grommet Hole Saw Sizing Chart below, select a hole saw for the grommet installation and drill out the opening. (If you are using pipe and grommets other than U.S. nominal sizes, ascertain the correct hole size for your grommet.) Use a deburring tool or knife to deburr the edges of the opening, being careful not to enlarge the opening.

Grommet Hole Saw Sizing Chart

Grommet size (in.)	Hole size (in.)
1/2	1
3/4	1-1/4
1	1-9/16
1-1/4	1-3/4
1-1/2	2-1/8
2	2-3/4
3	3-7/8
4	5

NOTE:

Grommet size = nominal (IPS) pipe size. For more information about grommet dimensions and actual pipe O.D., see Orenco's Grommet Submittal (NSU-RLA-PG-1), available from the Document Library at www.orenco.com.



Step 5: Glue in the Grommet

Install the grommet in the riser. Apply a bead of ADH100 adhesive to the groove of the grommet before inserting it into the riser hole. This will make the grommet more secure and will overcome any imperfections in the drilled hole.