

TB 254-15R1

RGP-Updated Tank Adapter Introduction

Product: STAR 18TA, STAR 24TA Tank Adapters

Date: September 14, 2015

This bulletin is to announce the availability of an updated Roth Tank Adapter. The part numbers remain unchanged from our previous STAR-18TA and STAR-24TA products. This update is due to a change in the supplier of the manufactured product.

Uses

The STAR-18TA product is designed to adapt an 18 inch N12 Polyethylene (culvert) pipe riser to precast concrete septic tanks for grade access.

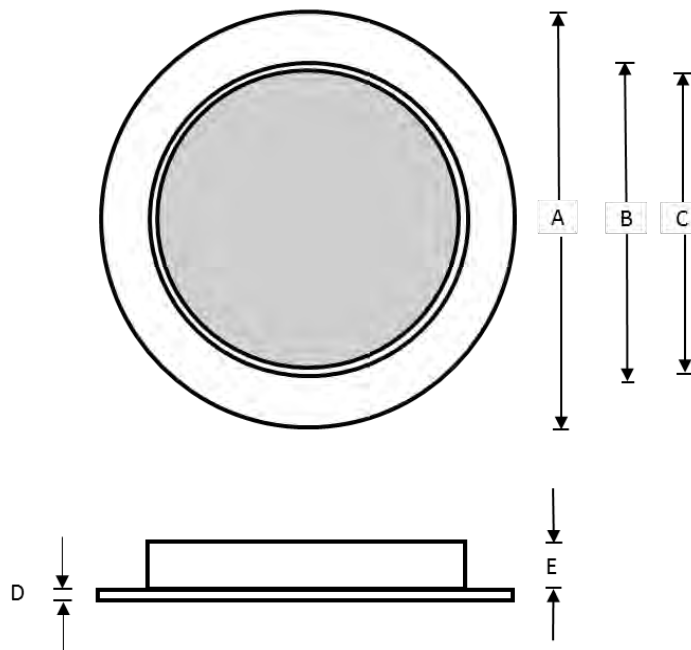
The STAR-24TA product is designed to adapt a 24 inch N12 PE or Ultra Rib PVC pipe riser to precast concrete tanks or Roth RMT tanks (RMT-500 to RMT-1500 sizes) for grade access.

Material of Construction

The STAR tank adapter is constructed from molded polyurethane.

Dimensions ()	A	B	C	D	E	No. Holes	Hole BC
STAR 18TA	27.00	17.50	16.20	0.50	2.20	N/A	N/A
STAR 24TA	30.00	23.25	21.75	0.50	2.20	(8) 5/16	29.00

Dimensions



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Tank attachment

Tank adapter is sealed to the tank opening with butyl mastic rope and secured to the tank using threaded fasteners appropriate for the tank material. Butyl mastic sealants are available from Roth for general purpose and potable water applications

Pipe attachment

Roth recommends the use of a structural adhesive such as Orenco ADH100® to attach the riser pipe to the tank adapter*

Riser closure

The Roth STAR 18P Plug is designed to fit pipe risers constructed of 18 inch N12 PE pipe, and the STAR 24P Plug products to fit pipe risers constructed of 24 inch N12 PE, or Ultra Rib PVC pipe

*Details included in Roth Instruction Sheet-“Assembly and installation instructions-Roth STAR-24/N12”



Please contact the Technical Department at Roth Global Plastics with any questions regarding this bulletin using the contact information below.

Revision1-09-29-15

TB 095-16

Specifications and Technical Details

Roth Hanging Pump Vault

Product: STAR-24 HPV

Date: April 4, 2016

This bulletin provides product specifications, configuration and installation details for the Roth STAR-24 HPV Hanging Pump Vault.

The Roth STAR-24 HPV is a tank insert for the Roth RMT tank products, intended to provide an installation platform for a pump, accessories and controls in the outlet end of the tank. The HPV may be configured for specific system design requirements.

Specifications:

Material	High molecular weight HDPE
Forming process	Blow molded
Attachment to tank	Threaded connection
Wall thickness	0.18-0.22 in/4.6-5.6 mm
Weight	40 lbs./18.5 kg
Inlet/outlet eyebrows	(12)
Pipe connections	4 in pipe dia. Max
Connection sealing	Grommet (Roth) Bulkhead fitting (others)
Liquid capacity (conical section)	45 gal/170.34 Liters
Dimensions	Per page 3 Fig 1&2
Applicable tank sizes	RMT-1060, 1250, 1500
Dose volume	Page 4 Table 1, Fig 3
Typical system configuration	Page 5 Fig 4&5
Vault inlet configurations	
Screened vault	Page 6 Fig 6
Volume dosing	Page 7 Fig 7
In-tank sectional views	Pages 8-10 Fig 8-10
Installation instructions.	Pages 11-12

TB 095-16

Specifications and Technical Details

Roth Hanging Pump Vault

Product: STAR-24 HPV

Date: April 4, 2016

Specifications continued

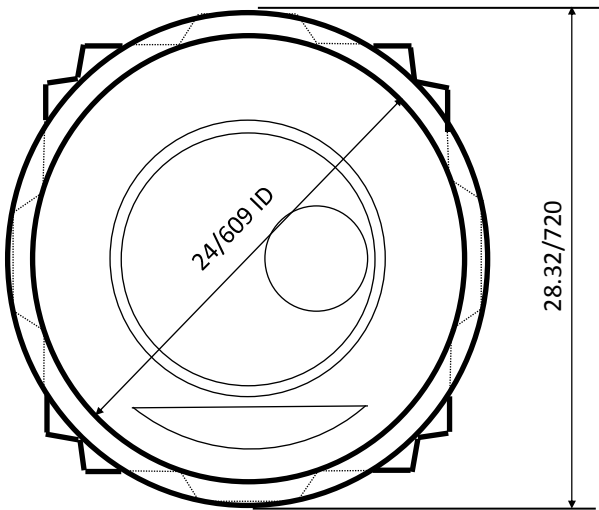
Caution:

1) When using a tank insert of this type, most AHJ's and regulatory personnel will require the designer to subtract the displacement of the insert from the effective volume of the tank for septic tank sizing purposes. The effective volume with the vault displacement considered is included on each of the in-tank views. Pgs.8,9&10.

2) The Roth RMT, as with all thermoplastic tanks, includes a compartment divider that is NOT a hydraulic barrier. This means that when you pump out of the outlet compartment, you draw the liquid level down in the entire tank. While the use of a screened vault improves the quality of the effluent and promotes longer pump service life, system designs that include time dosing and larger volume dosing requirements, the entire tank volume must be considered when calculating dose volume/volume over time.

Please contact the Roth Technical Department using the contact information below with any questions regarding this bulletin.

Roth STAR-24 HPV Dimensions



Dimensions- Inches/Millimeters

Fig 1

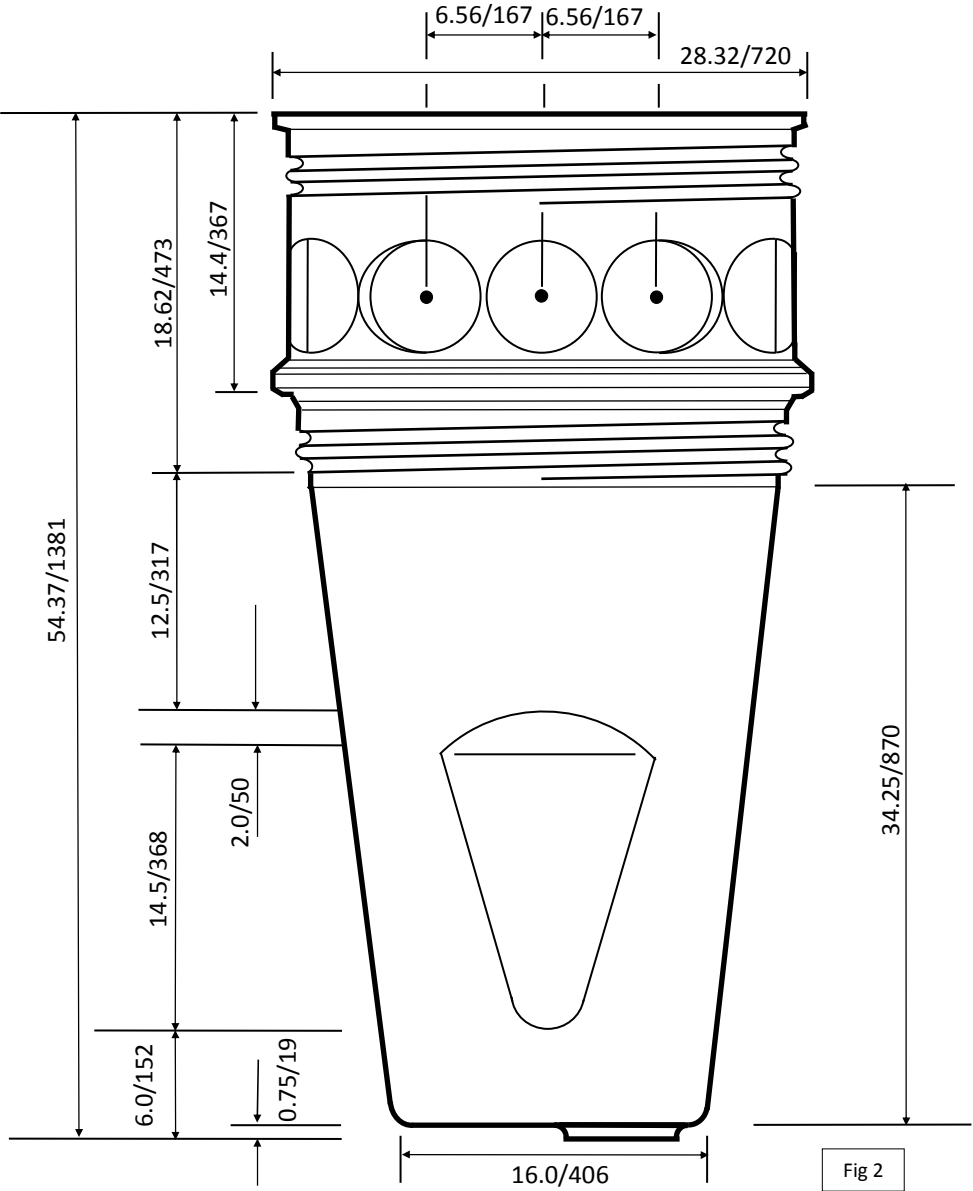


Fig 2

DWG SCALE:
PLOT SCALE:

Roth STAR-24 HPV
Hanging Pump Vault

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Roth STAR-24 HPV

Conical Section Volume Table

<i>Depth In.</i>	<i>Gallons</i>	<i>Liters</i>
35	45.1	170.7
34	43.2	163.5
33	41.3	156.3
32	39.5	149.5
31	37.6	142.3
30	35.8	135.5
29	34.1	129.1
28	32.5	123.0
27	30.8	116.6
26	29.2	110.5
25	27.6	104.5
24	26.1	98.8
23	24.5	92.7
22	23.1	87.4
21	21.6	81.8
20	20.2	76.5
19	19.1	72.3
18	17.8	67.4
17	16.6	62.8
16	15.5	58.7
15	14.3	54.1
14	13.2	50.0
13	12.1	45.8
12	11.0	41.6
11	9.9	37.5
10	8.9	33.7
9	7.9	29.9
8	7.0	26.3
7	6.0	22.7
6	5.1	19.3
5	4.1	15.5
4	3.3	12.5
3	2.4	9.1
2	1.6	6.1
1	0.8	2.8

Table 1

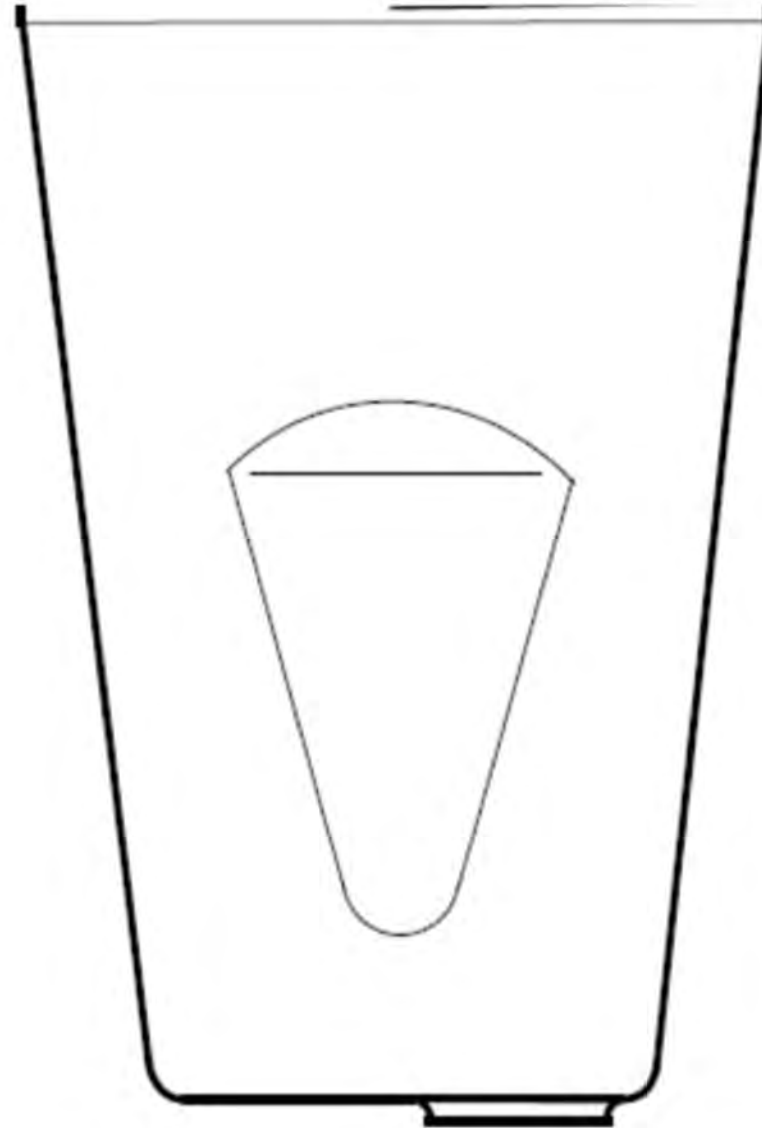


Fig 3

DWG SCALE:

PLOT SCALE:

**Roth STAR-24 HPV
Hanging Pump Vault**

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Roth STAR-24 HPV Typical Installation Configuration

This sheet includes a section and top view of the Roth STAR 24-HPV with a “typical” effluent pump system installed. Typical system components include the pump, check valve, float controls with associated power and control wiring, splice box and fittings, interconnecting piping, watertight pipe and conduit seals.

Specific onsite system designs requirements determine the pump/lift station configuration, pump and pipe sizing, controls etc.

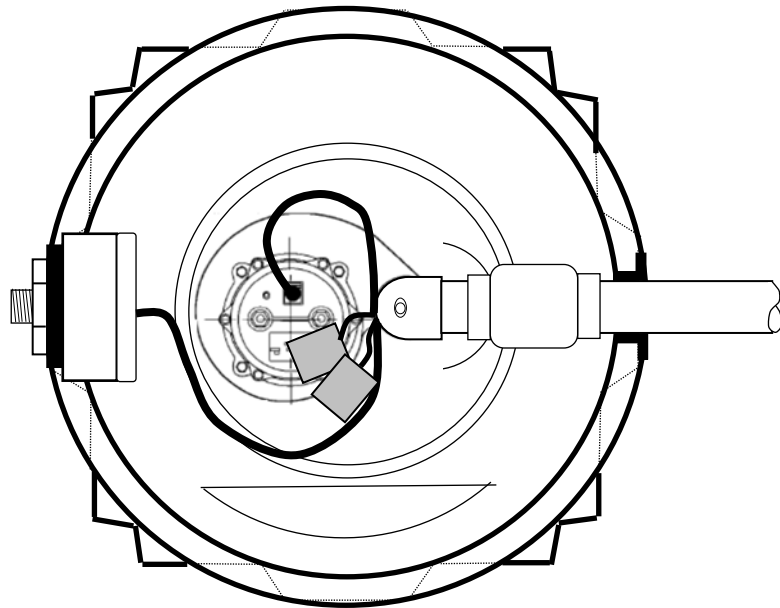


Fig 4

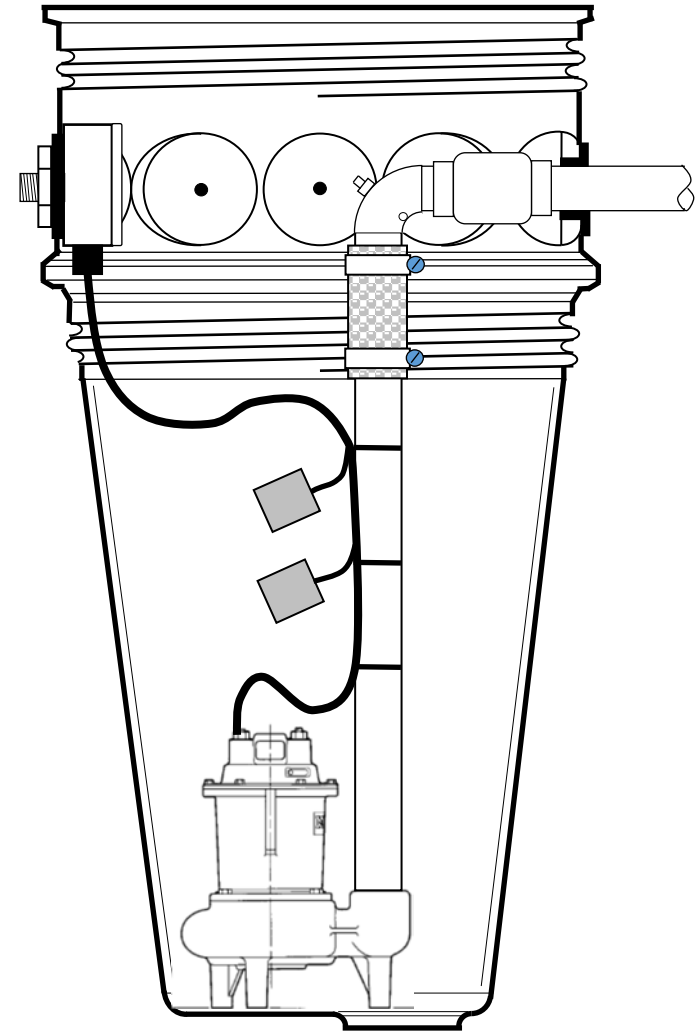


Fig 5

DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV
Hanging Pump Vault

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Roth STAR-24 HPV Vault Inlet Options

Screened Vault Configuration

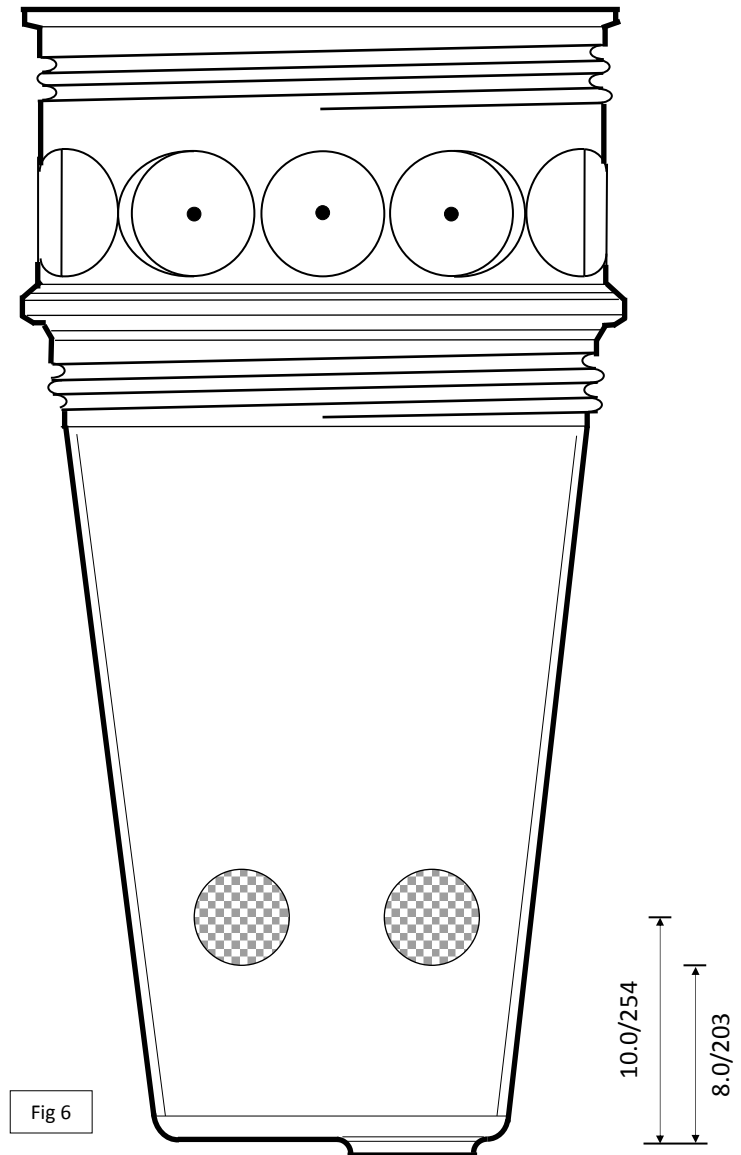
Suggested Openings:

Qty (4) 4 inch inlet ports equally spaced around the bottom of the tapered vault section, a maximum of 8 inches above the bottom of the vault to the bottom of the ports. Mark the hole centerline at 10 inches from the vault bottom, drill centered on the mark with a 4 inch hole saw

Screening:

304 Stainless Steel Wire Cloth 5x5 mesh, .041 or .047 wire diameter. Wire cloth is cut into 5 inch squares that are centered over the 4 inch port and secured with (4) stainless steel sheet metal screws each: #10-3/4" washer head type.

Dimensions- Inches/Millimeters



DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV
Hanging Pump Vault

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Roth STAR-24 HPV Vault Inlet Options

Volume Dosing Vault Configuration

Suggested Openings:

Qty (1) 5 inch opening located 8 inches above the bottom of the vault to the invert of the elbow (mark opening centerline 10.5 inches above the vault bottom). Drill a 5 inch hole on centered on the mark using a 5 inch hole saw.

Seal:

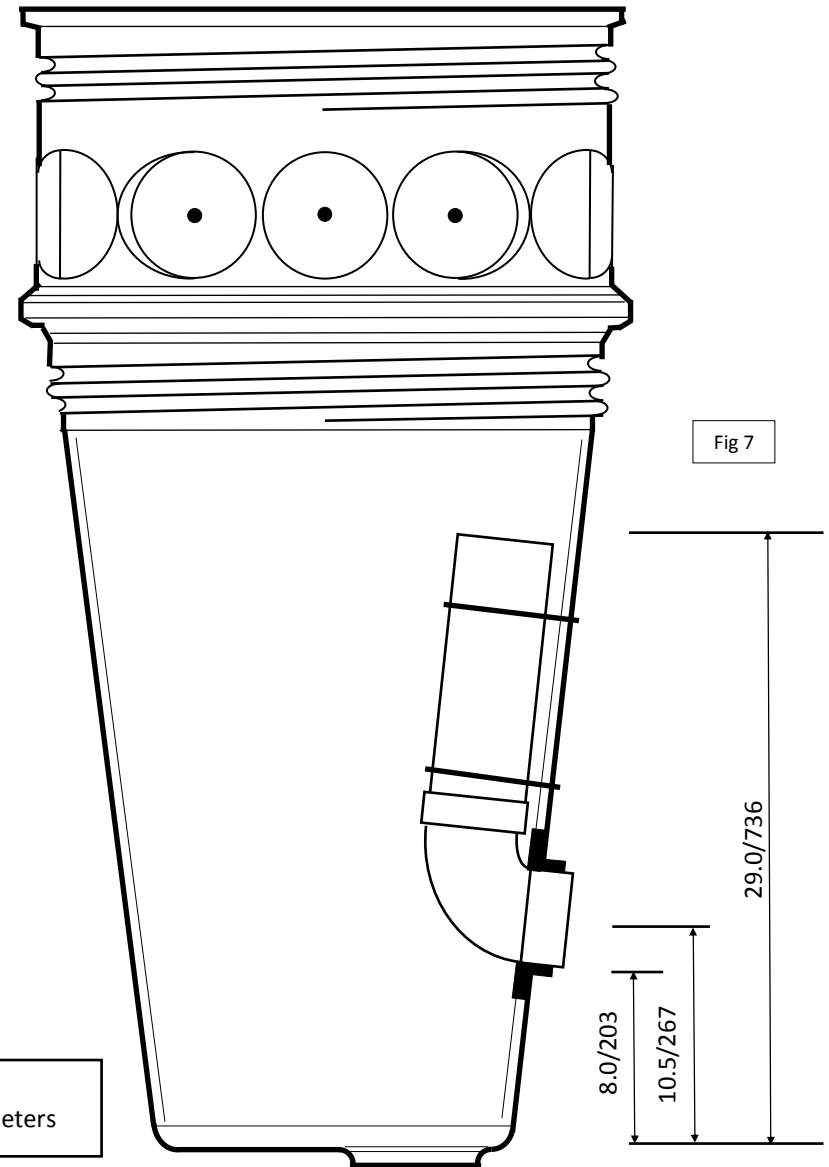
Install a Roth 4 inch water tight Pipe Seal PN PG4-2 (Sch. 40) or PG4 (Sch. 35) from inside the vault.

Upturned baffle:

Use a 4 inch 90 deg street elbow and pipe nipple sized in overall length to insure the top of the baffle will extend no greater than 29 inches from the vault bottom. This provides a 3 inch invert drop between the tank inlet invert (43 inches) and the vault inlet invert above the tank bottom of 40 inches. Install the street elbow in the Pipe Seal and attach the baffle to the wall of the vault with commercial zip ties or straps.

Dose volume:

Maximum dose volume will be determined by the vertical displacement in the vault between the top of the baffle and the top of the pump. See volume table for the conical section of the vault to calculate dose volumes.



DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV Hanging Pump Vault

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RMT-1060-2C-P-HPV

Effective septic tank capacity @ 40 inch liquid level- 1026 Gal

Roth STAR-24 HPV is applicable to either single or dual compartment tanks. **Stiffening posts are required for HPV installation.**

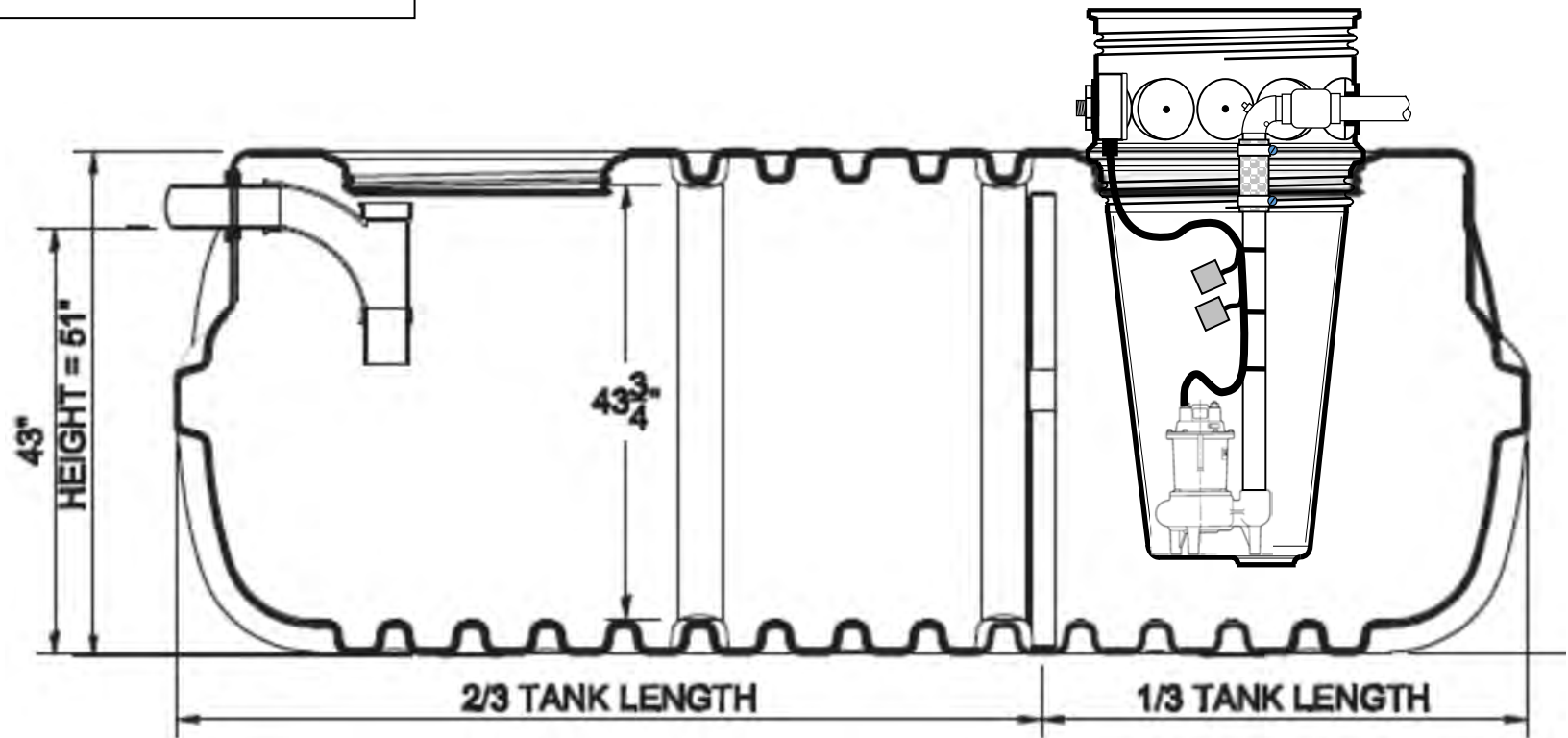


Fig 8

DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV Hanging Pump Vault

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RMT-1250-2C-P-HPV

Effective septic tank capacity @ 40 inch liquid level– 1216 Gal

Roth STAR-24 HPV is applicable to either single or dual compartment tanks. **Stiffening posts are required for HPV installation.**

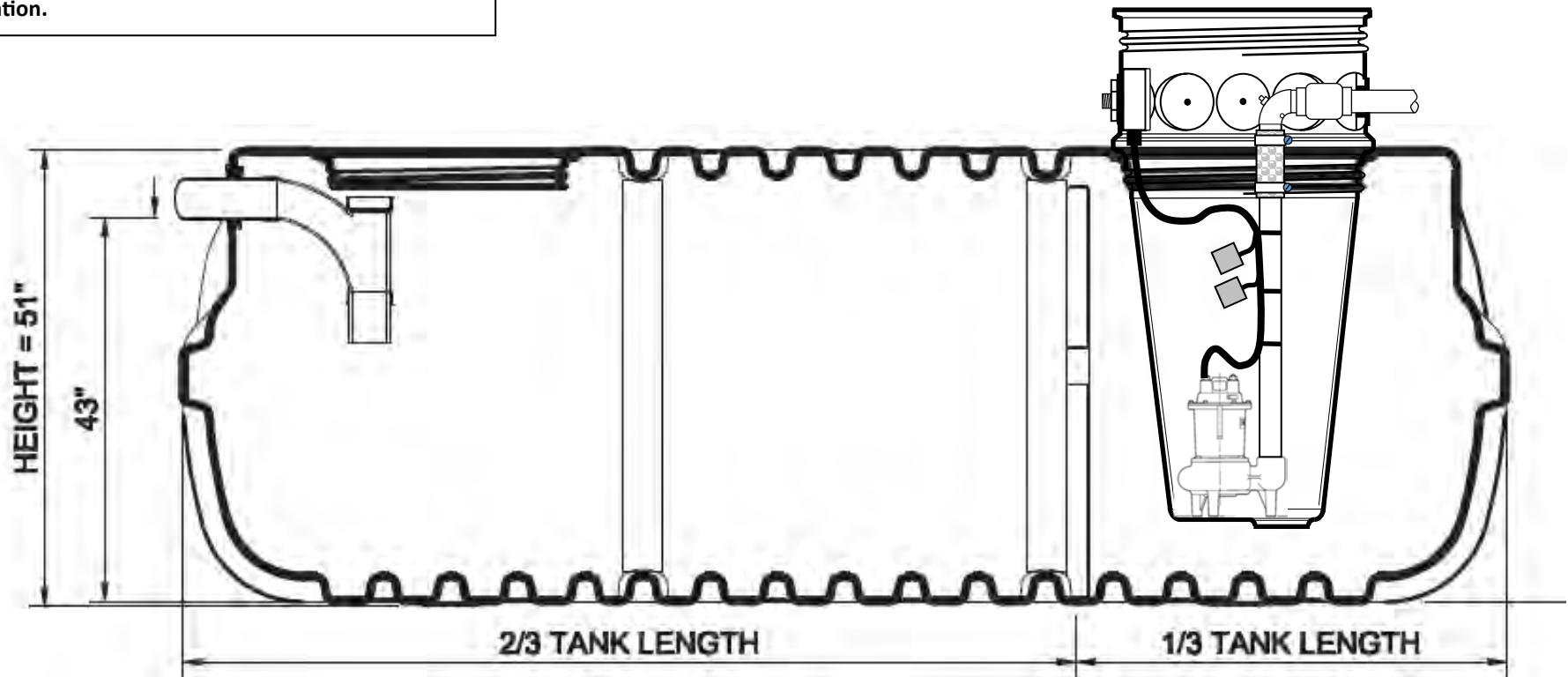


Fig 9

DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV Hanging Pump Vault

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RMT-1500-2C-P-HPV

Effective septic tank capacity @ 40 inch liquid level- 1466 Gal

Roth STAR-24 HPV is applicable to either single or dual compartment tanks. **Stiffening posts are required for HPV installation.**

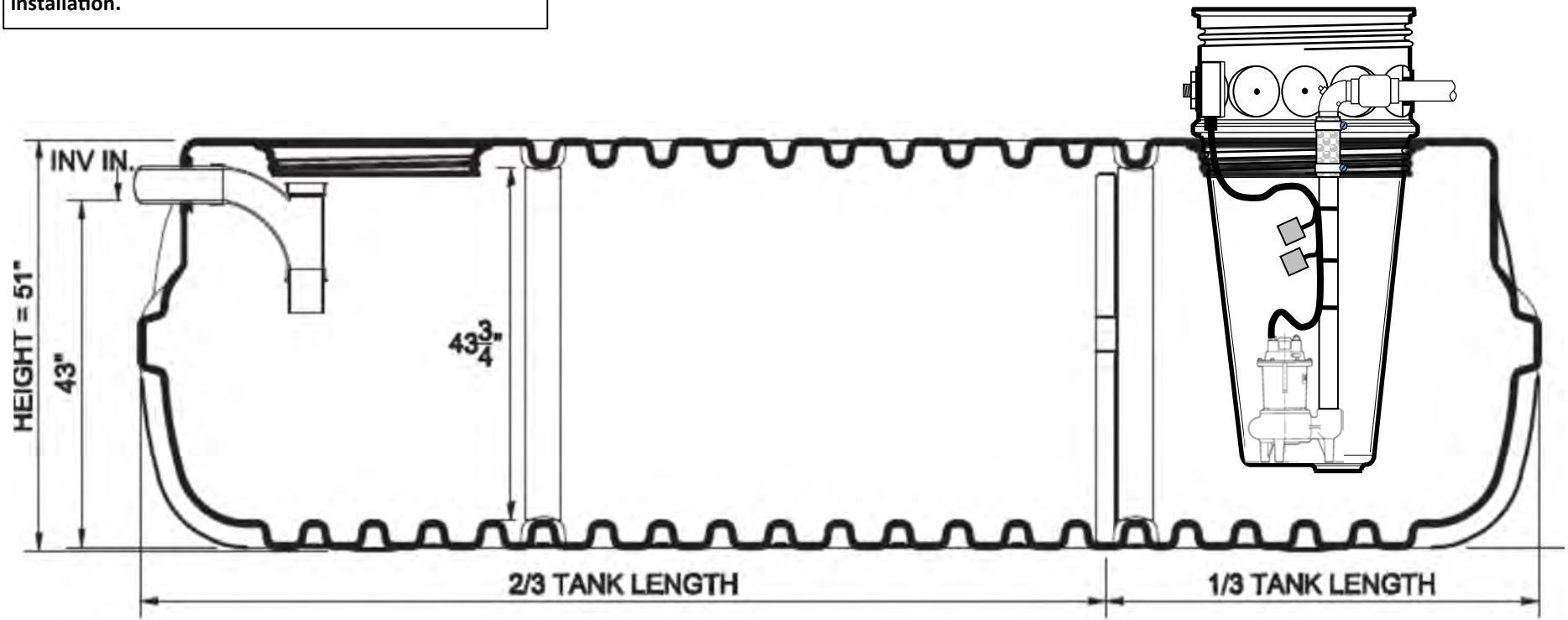


Fig 10

DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV Hanging Pump Vault

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Installation Instructions-Roth STAR-24 HPV

The installation procedure for the STAR-24 HPV is identical to the Roth STAR-24R6/R12 Threaded Riser System.

- 1) Clean dirt and debris manway opening to insure gasket adhesion.
- 2) Remove gasket backing and apply to the innermost flat ring on the tank surface
- 3) Trim gasket to length
- 4) Thread Hanging Pump Vault into tank



Fig 11

- 3) Trim gasket to length

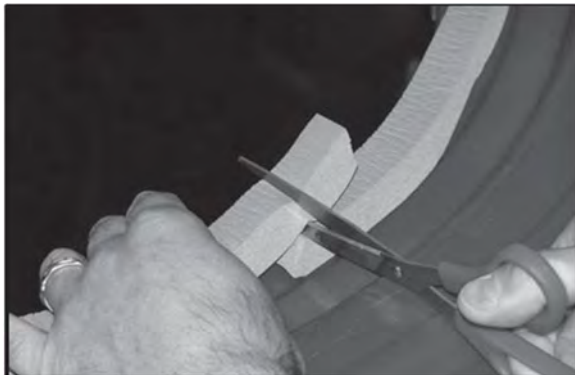


Fig 12



Fig 13

DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV Hanging Pump Vault

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Installation Instructions-Roth STAR-24 HPV

5) Seal HPV to Tank joint with Butyl Mastic Rope



Fig 14

7) Seal HPV to Riser joint with Butyl Mastic Tape



Fig 16

6) Additional risers may be added to the HPV to meet depth of bury requirements. Add gaskets per steps 2&3.



Fig 15

DWG SCALE:

PLOT SCALE:

Roth STAR-24 HPV
Hanging Pump Vault

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TB 265-14

Cisterns/Rainwater Tanks-Bulkhead Fitting Installation-

Product: Roth MultiTank

Date: September 22, 2014

This Technical Bulletin provides instructions for installation of bulkhead fittings in Roth RMT tanks for rainwater harvesting/potable water storage applications.

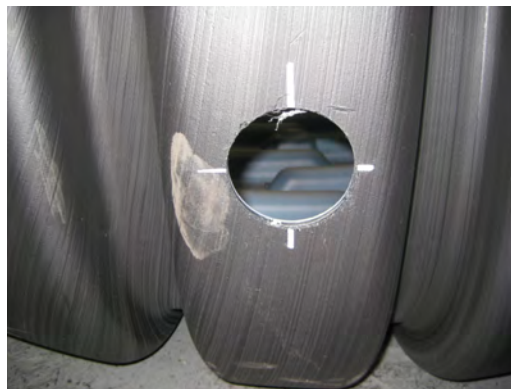
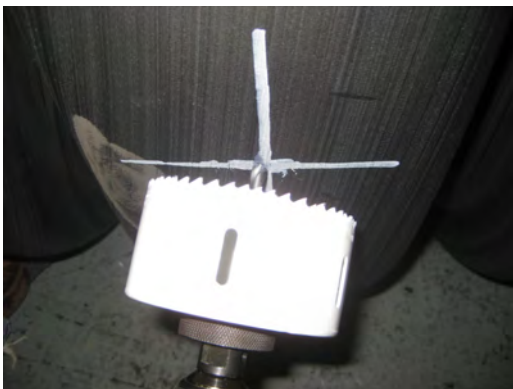
1) Opening location-

The lowest practical location for installing a tank interconnecting point is 12 to 13 inches below the lateral rib or vertical centerline of the tank. The widest rib section available is the end of the tank, either side of the tank centerline. Mark the elevation of the opening centerline and center on the rib section.



2) Cut opening-

Select a hole saw that is slightly larger than the diameter of the bulkhead fitting hub. Bulkhead fitting manufacturer may specify hole saw size for the specific fitting. De-burr the opening to insure a clean gasket seating surface.



TB 265-14

Cisterns/Rainwater Tanks-Bulkhead Fitting Installation

Product: Roth MultiTank

Date: September 22, 2014

3) Install Bulkhead Fitting

Insert bulkhead fitting hub with gasket into the opening from inside of the tank. Install the fitting nut on the outside of the tank to the fitting manufacturer's specifications.



Notes:

-Take care in bedding and compacting fill around interconnecting piping to protect against damage from settling.

-Install partial compacted backfill around the tank up to the elevation of the fitting then add water to the tank to test fitting for leaks.

TB 238-16

Septic Tank Plumbing Kits

Product: Roth RMT MultiTank products

Date: August 25, 2016

The purpose of this bulletin is to provide necessary details for selection and installation of Tee-baffles for inlet and outlet fittings used in Roth RMT products.

Inlet fitting

Due to the geometry of the Roth RMT-500 through RMT-1500 tanks, only a long radius sweep wye fitting may be used on the inlet end of the Roth RMT tank. Roth provides this fitting with all tanks ordered with the plumbing kit option except where regulatory requirements exclude it.

Inlet fitting installation

Step one

The sewer pipe installs with a watertight pipe seal (provided with tank) in the inlet end of the tank at the prescribed invert position (A dimple for 40 in LL and B dimple for 42" LL). The sewer pipe must project into the tank to a depth of 5.00 to 5.50 inches. (Fig 1 Dimension A)

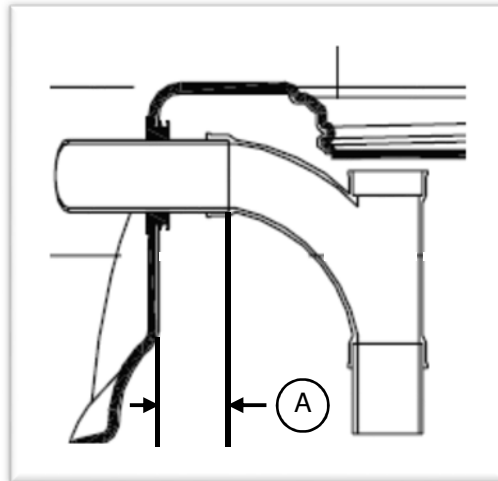


Fig 1

Step two

Solvent weld the sweep wye inlet fitting to the end of the sewer line such that the vertical stack is just inside the manway ID and the extension is on the bottom of the fitting. (Fig 1)

TB 238-16 Septic Tank Plumbing Kits

Outlet fitting

The plumbing kit provided with the Roth RMT tank includes a Tuf-Tite TB 4 sanitary tee baffle compatible with the Tuf-Tite EF 4 effluent filter screen, also available from Roth.

Outlet fitting installation

Step one

The effluent pipe installs with a watertight pipe seal (provided with tank) in the outlet end of the tank at the prescribed invert position (A dimple for 40 in LL and B dimple for 42" LL). The effluent pipe must project into the tank to a depth of 11.00 to 11.50 inches. (Fig 2 Dimension B)

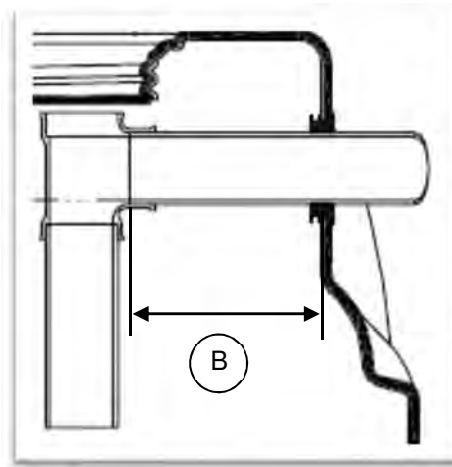


Fig 2

Step two

Solvent weld the Tuf-Tite tee outlet fitting to the end of the effluent pipe such that the vertical stack is just inside the manway opening and the extension is on the bottom of the tee. (Fig 2)

Gas baffles

Many AHJs recommend or require that septic tank outlet tees include a gas or bubble baffle attached to the lower extremity of the outlet fitting. This baffle prevents gas bubbles that rise from accumulated sludge in the bottom of the tank from entering the outlet fitting. The concern is that these bubbles will carry with them tiny amounts of solid material and over time, these will find their way into the soil treatment system if the bubbles are not diverted away from the outlet fitting.

TB 238-16 Septic Tank Plumbing Kits

Gas baffles cont.

Roth plumbing kits include a gas baffle where state regulations include a recommendation or requirement for their use. Tuf-Tite gas baffle GB 1 straps around the bottom of the TB 4 baffle and is secured with a plastic thumb screw. Fig 3 & 4



Fig 3



Fig 4

Please reference complete installation instructions and installation key facts for additional tank installation guidance.

Please contact Roth Technical Department using the contact information below with any questions regarding this bulletin.

Product: Roth RMT Tanks

Subject: Risers for Cistern/Potable Water Storage installations

Date of issue: June 20,2014

Effective immediately, all Roth RMT tanks applied as Cisterns or any RMT installation storing potable water, shall be equipped with a riser system using a flanged tank adapter to attach the riser to the tank. All such systems shall use a non-toxic butyl mastic sealant for the primary joint between the tank adapter and the tank mounting surface.

Roth tested and approved riser products with flanged tank adapter:

- A) Orenco Riser System: with OR-ADP adapter and OR-BDK hardware kit. (Adapter and hardware kit available from Orenco or Roth Global Plastics, Inc.)
- B) Tuf-tite Riser System: with 24 TAR adapter ring.
- C) Polylok Riser System: with 3009-ARF FRALO-Roth adapter ring.
- D) SIM/TECH Riser System: 24 inch adapter ring for Roth RMT available.

Non-Toxic Butyl Mastic Sealant for Potable Water service:

Concrete Sealants Inc.– ConSeal CS-665 Non-Toxic Butyl Rubber Sealant. This is available in 1/2 and 3/4 inch rope x 21 ft length. Roth Global Plastics will inventory a quantity of this material in the future.

It is worthwhile to note that there are many sources of water contamination other than infiltration and ANY cistern storing potable water should be provided with downstream filtration and disinfection as required by prevailing codes and industry best practices. Links to resources that describe and recommend appropriate treatment technologies include the following:

<http://extension.uga.edu/publications/detail.cfm?number=B939>

<http://www.cdc.gov/healthywater/drinking/private/wells/treatment.html>

http://www.watersystemscouncil.org/VAiWebDocs/WSCDocs/8335688INSERT_3D.pdf

Other Riser products may be suitable, please consult Roth Global Plastics-Technical Department for assistance in determining suitability of riser or sealant products other than those listed above.

Please contact Roth's Technical Department at the address/phone number below with any questions.