

## Installation

#### **Residential Applications**



#### Our Presenter Cody Needles

**Cody Needles** is a Customer Service Representative with Orenco Systems, a company based in Sutherlin, Oregon, that engineers and manufactures innovative infrastructure solutions. In this role, he works with customers to familiarize them with Orenco's products and help them select the appropriate equipment for their projects. He also assists Orenco's technical sales representatives in providing purchase orders and sales quotes.

Before joining the customer service team, Cody spent 15 years working in various Orenco manufacturing departments, including two years as the lead in residential AdvanTex production. That work experience has allowed him to serve as a special resource to the rest of his team regarding residential AdvanTex field repairs and modifications.

When he's not on the job, Cody enjoys spending time with his kids.



### AdvanTex<sup>®</sup> Overview Main Components

- Control panel
- AdvanTex filter with vent
- Recirculating splitter valve
- Biotube<sup>®</sup> pump package
- Processing tank







# **Before Installing the System**

- Installer schedules preconstruction visit with Service Provider and Homeowner to discuss ...
  - System location, including buried conduits
  - System operation/Mode
  - System maintenance
  - Preventive maintenance and Homeowner's Manual
- Installer checks to make sure that water softener Brine is not, and will not be plumbed into the processing tank

# **Step 1: Determine Tank and Pod Position**

Decide how to orient filter

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- Identify position of the system
- Filter often sits on, or immediately adjacent to, tank
- Consider filtrate return line for best filter orientation
- Include electrical conduits and drain lines
- Possible landscaping?





 Outline tank/filter excavation area

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- Follow tank manufacturer's excavation instructions
- If filter pod will be installed in separate hole, make it 4.5' x 8.5'
- If pump basin will be used, determine location and excavate hole
- Determine required elevations
- Excavate to the proper depths
- Make sure the bottom of the excavation is free of debris





#### Step 2: Excavate Site and Set Tank





## Step 2: Excavate Site and Set Tank

 Slope filtrate return line at least 1/4" per foot (minimum 1" drop if <4')</li>





# Step 3: Prep and Set Tank

- Set tank per manufacturer's instructions
- If installation calls for a discharge pump basin, set the pump basin in the excavation next to the tank (if possible)





# **Optional Step: Set Pump Basin**

- Pump basin is used when dispersal requires pumping or dosing
  - Refer to Pump Basin Installation Instructions for details (NIN-PB-1)
  - Contains pump, flow inducer, splice box, and discharge assembly





#### **Steps 4-5: Riser Prep and Orientation Check**

 External splice box (if used) and recirculating splitter valve bracket should be installed on riser before riser is mounted





### **Steps 4-5: Install Risers and Water Test Tank**

- Orient RSV riser to accept filtrate return line
- Orient electrical grommets to minimize bends
- Wipe surfaces to be bonded
- Apply adhesive to the outside and inside of the riser tank adapter
- Orient riser correctly
- Seal riser-adapter joint
- Water test tank and riser connections
- Pull Tank inlet plug to drain excess water







### **Step 6: Set the AdvanTex<sup>®</sup> Pod** Using a Concrete Tank

- Prepare bedding for filter
- Compact fill if placing filter on tank or in separate excavation
- Install anti-flotation flanges onto predrilled fiberglass tabs on bottom corners of filter
- Use backhoe, truck straps if necessary
- Set filter into place





# **Step 7: Install Biotube<sup>®</sup> Pump Package**

- Can use internal or external splice box
- Attach external splice box before installing riser
  - See instructions







### Step 7: Install Biotube<sup>®</sup> Pump Package

- "Earless" vault rests on bottom of tank
- Secure lifting rope to splice box







## Step 7: Install Biotube® Pump Package

- Attach discharge assembly to pump
- Lower pump and discharge assembly into flow inducer





 Install Grommet with sealant to ensure its watertight

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- Lube access riser discharge grommet with non petroleum based product
- Lube discharge nipple and push through grommet





### **Step 7: Install Biotube<sup>®</sup> Pump Package**

- Refer to the document NIN-ATX-DA-1 to calculate float levels
- Verify float elevations
- Snap in float bracket





 Install the pump and discharge assembly

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- Install the float switch assembly
- Watertight test the basin
- Connect the components and wiring





## **Step 9: Install Recirculating Splitter Valve**

- Understand how the RSV works
- Determine if bracket requires installation
- Note quick disconnect





### **Mode 1 RSV Placement**



With Mode 1, RSV is placed in second compartment.



#### **Mode 3 RSV Placement**



With Mode 3, RSV is placed in first compartment



# Step 9: Install RSV

- Refer to the document NIN-ATX-DA-1 to calculate stinger length
- Determine the handle pipe length and install in the top of the RSV body



![](_page_23_Picture_0.jpeg)

# Step 9: Install RSV

- Carefully lower RSV body into bracket
  - Push down until it is fully seated

![](_page_23_Picture_4.jpeg)

![](_page_24_Picture_0.jpeg)

### **Step 10: Install Filtrate Return Line**

- Slope filtrate return line at least 1/4" per foot (minimum 1" drop if <4')</li>
- Connect Filtrate return line to one end of tee

![](_page_24_Figure_4.jpeg)

![](_page_25_Picture_0.jpeg)

### **Step 11: Connect Transport Line to Pod**

- Use 1" PVC pipe
- Determine inlet position on pod; two inlet options available
- Drill 1 3/4" hole
- Install 1 1/4" grommet
- Lube grommet and push
  1" elbow through grommet
- Slope Transport line if necessary for cold weather applications

![](_page_25_Figure_8.jpeg)

![](_page_26_Picture_0.jpeg)

 Temporarily disassemble manifold union so that, when the pump first comes on during start-up, debris in the transport line will <u>not</u> be pumped into the manifold

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![](_page_26_Picture_2.jpeg)

#### **Step 12: Install Discharge Line**

 Slope discharge line at least 1/4" per foot (minimum 1" drop if <4')</li>

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 Connect discharge pipe to other end of tee

![](_page_27_Picture_3.jpeg)

![](_page_28_Picture_0.jpeg)

### **Step 13: Install Passive Air Vent**

- 2" vent line: 20' or less
- Consider locating near protective wall or under shrubbery
- Do not allow "low" points in vent piping
- Ensure top of vent is 3" above final grade
- Make sure vent is sloped back ¼" per foot so that it can drain properly.

![](_page_28_Picture_7.jpeg)

![](_page_29_Picture_0.jpeg)

# Step 14: Install Control Panel

- Use Properly Credentialed electrician for wiring
  - Float connections
  - Incoming power to panel
  - Power from panel to recirc pump
  - Power to discharge pump, if applicable
  - Conduit sealoffs outside riser

NOTE: Do not install control panel against the house. Use a 4" X 4" post.

- Recommend:
  - 5' height
  - Within view of system
  - Accessible/Unobstructed

![](_page_29_Picture_13.jpeg)

![](_page_30_Picture_0.jpeg)

# **Step 15: System Functional Test**

- Verify ...
  - Pump operation
  - Filter operation

• First installation by each contractor should be overseen by Dealer

![](_page_31_Picture_0.jpeg)

### Step 15: Functional Test for VeriComm<sup>®</sup> Panel

- 1. Verify system status
- 2. Enable test mode
- 3. Perform manual pump test
- 4. Perform float test signal
- 5. Perform communication test
- 6. Disable test mode (optional)

![](_page_31_Figure_8.jpeg)

For detailed procedures specific to each VeriComm model, refer to the documentation that comes with the panel.

![](_page_32_Picture_0.jpeg)

# **Step 15: System Functional Test**

- Verify pump operation
  - First, ensure proper water level per installation guide
  - Switch is spring loaded
  - Test pump operation in "manual"
  - Pump for 5-10 seconds to flush any debris out of the transport line

![](_page_32_Picture_7.jpeg)

![](_page_33_Picture_0.jpeg)

### **Functional Test for MVP Panel**

- Perform manual pump test
- Perform float test
- Set Timers per Design Criteria

![](_page_33_Picture_5.jpeg)

![](_page_34_Picture_0.jpeg)

# **Step 15: System Functional Test**

- Verify filter operation
  - Reconnect and hand-tighten the manifold union
  - Open each lateral individually to flush debris
  - Switch to "manual" position, flush lateral, then close ball valves
  - Remove several orifice shields
  - Check squirt height: 3' to 5' typical
  - Record residual head measurement

![](_page_34_Picture_9.jpeg)

![](_page_35_Picture_0.jpeg)

# **Step 15: System Functional Test**

- Verify proper liquid flow and drainage
- Verify no leaks at plumbing joints

![](_page_36_Picture_0.jpeg)

# Step 16: Backfill Installation

- Backfill tank per manufacturer's guidelines
- Backfill filter in max. 12" lifts
- Bedding under pipes should be packed well and as tight to pod to prevent settling
- Ensure bottom of lid is a min. of 2" to 3" above grade
- Slope ground away from filter

![](_page_36_Picture_7.jpeg)

![](_page_37_Picture_0.jpeg)

- Dealer, Installer, or Service Provider fills out emergency contact information on back of Homeowner's Manual
- Homeowner is given Homeowner's Package, along with additional documentation, including ...
  - Copy of service contract

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- Copy of invoice with serialized pod #
- Copy of equipment list, bill of materials, if available
- Copy of as-built, if available

![](_page_38_Picture_0.jpeg)

# AdvanTex RT

Installation

![](_page_39_Picture_0.jpeg)

### **Overview**

![](_page_39_Picture_2.jpeg)

![](_page_40_Picture_0.jpeg)

### **Before You Begin**

- Installer schedules preconstruction visit with Service Provider and Homeowner to discuss ...
  - System location, including buried conduits
  - System operation
  - System maintenance
  - Preventive maintenance and Homeowner's Manual

![](_page_41_Picture_0.jpeg)

- Existing primary tank must be approved
  - Existing primary tank must be structurally sound
  - Existing primary tank must have at least 1000 gal capacity
  - Existing primary tank must have at grade access
- Primary tank must be watertight tested
- Orenco effluent filter must be installed in primary tank
- Existing primary tank must allow for a fall of at least 1/8 in. per foot from the outlet of to the inlet of the AX20-RT\*
- You must be a trained AdvanTex Installer before installing system

![](_page_42_Picture_0.jpeg)

### **Important Considerations**

- All tanks must be prequalified
- Installer checks to make sure that water softener Brine is not plumbed into the processing tank
- All pipe diameters are given in US nominal IPS pipe sizes

![](_page_43_Picture_0.jpeg)

# Steps 1-4

- Review or Sketch Site Planes
- Excavate and Set Septic Tank
- Be sure that you will have 1/8" per ft. of fall from outlet of primary tank to the RT
- If RT is following the septic tank then it needs to have a minimum 2ft of separation between them
- If RT is installed parallel to the septic tank then it needs to be offset from the tank by 6ft if Anti-buoyancy beams are used

![](_page_43_Figure_7.jpeg)

![](_page_44_Picture_0.jpeg)

# Steps 5 & 6

#### Excavate and Set AX-RT Unit

- Prep and Install Anti-buoyancy/deadmen if needed
- Partially backfill AX-RT Excavation

![](_page_44_Picture_5.jpeg)

![](_page_44_Figure_6.jpeg)

![](_page_45_Picture_0.jpeg)

# **Step 7-9**

- Install Adapters and Risers (If needed)
- Test Tank and and Adapter seams
- Test Water tightness of AX20-RT Unit

![](_page_45_Picture_5.jpeg)

![](_page_45_Figure_6.jpeg)

![](_page_46_Picture_0.jpeg)

# Step 10 - 16

- Install effluent filter
- Connect Transport Line
- Connect Passive Air Vent
- Connect AX-RT discharge line
- Install and Test Control Panel
- Test System Function
- Complete Final Backfilling

![](_page_46_Picture_9.jpeg)

![](_page_47_Picture_0.jpeg)

### **Return Line installation**

 Mode 3 return line used for De-Nitrification

![](_page_47_Figure_3.jpeg)

![](_page_48_Picture_0.jpeg)

### **Questions?**

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