

# Pump and Discharge Plumbing

## Installation Instructions for 4-in. (100-mm) Pumps and HV-Style Discharge Assemblies

These instructions explain how to install an Orenco 4-in. (100-mm) submersible effluent pump and an HV-style discharge assembly into an Orenco pump vault or flow inducer. For other installation options, contact your Distributor or Orenco. For wiring instructions, see the schematics and wiring diagrams included with the pump's control panel.

### Step 1: Prep Pump and Discharge Stem

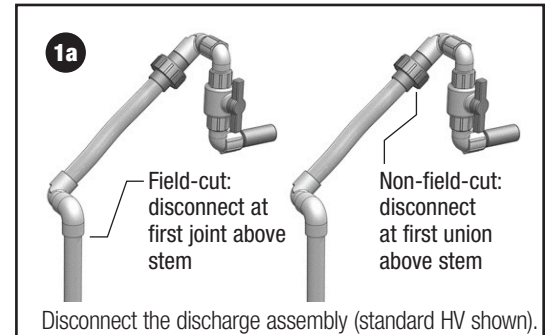
**Step 1a:** Disconnect the discharge assembly above the discharge stem.

- Field-cut assembly: disconnect at the first pipe joint above the stem.
- Non-field-cut assembly: disconnect at the first union above the stem.

**Step 1b:** Apply Teflon® paste or tape to the threads on the stem's bottom fitting.

**Step 1c:** Screw the stem's bottom fitting into the top of the pump.

- Do not tighten the fitting to more than hand-tight.



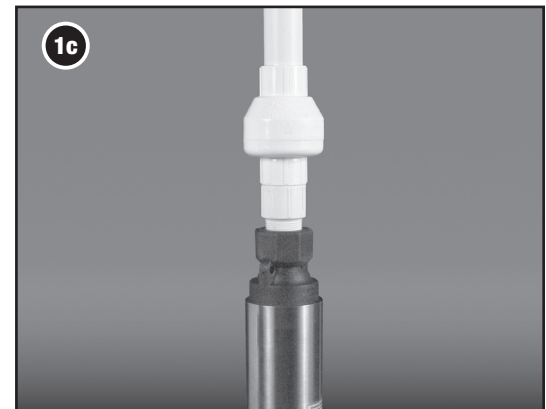
### Step 2: Install Pump and Discharge Stem

**Step 2a:** Make sure that the pump vault or flow inducer has been installed.

**Step 2b:** Lower the pump and stem into the pump vault's flow inducer compartment or into the flow inducer.

**IMPORTANT:** DO NOT lower the pump by the cord! This can damage the pump!

- The base of the pump rests on the bottom of the vault or flow inducer.



### Step 3: Install Upper Discharge Assembly

Install the upper portion of the discharge assembly. Position it to allow the best possible access to the quick disconnect union or ball valve (where used), and to allow easy removal of the float switch assembly and Biotube® filter cartridge.

**Step 3a:** Lubricate the inside of the discharge pipe grommet and the outside of the discharge assembly nipple with petroleum jelly or a similar product.

**Step 3b:** Push the nipple of the discharge assembly through the grommet.

- Make sure there is enough nipple outside the riser to attach a coupling.

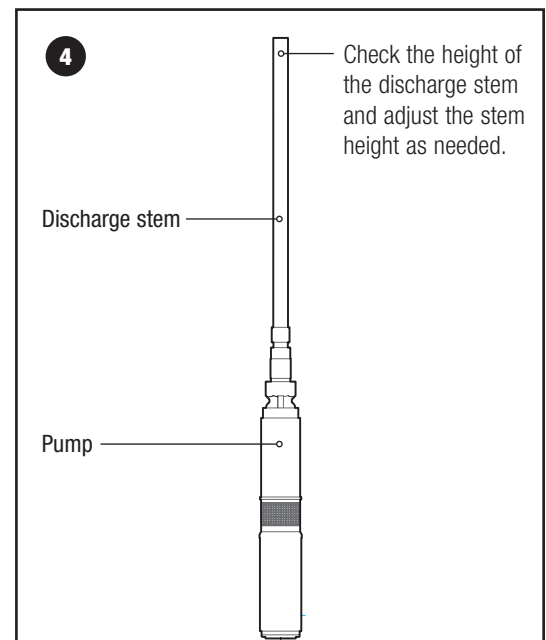
**Step 3c:** Route the discharge assembly to the top of the discharge stem.

- The section of the discharge assembly above the stem should be routed along the riser wall, as close to it as possible.

### Step 4: Adjust Discharge Stem Height (If Necessary)

Before reconnecting the discharge stem to the rest of the discharge assembly, check the height of the stem and adjust it, if necessary.

- Field-cut stems must be measured for height and adjusted as needed.
- Non-field-cut stems may also require adjustment.
- If no adjustment is necessary, go to Step 5.



## Step 4: Adjust Discharge Stem Height (If Necessary), cont.

**Step 4a:** Dry fit the stem to the rest of the discharge assembly.

- If the stem is too long, mark the stem at the location where it needs to be cut in order to provide the best access to key components.
- If the stem is too short, measure the additional distance necessary in order to provide the best access to key components.

**Step 4b:** If necessary, make adjustments to the stem length.

- To cut the stem ...
  - ~ Remove the pump and stem from the vault or flow inducer.
  - ~ Cut the stem off at the mark.
  - ~ Deburr the cut on the stem.
- To add length to the stem ...
  - ~ Cut a section of pipe equal to the additional necessary distance for an easy-to-service installation.
  - ~ Deburr the cuts on the pipe section.
  - ~ Glue the section to the stem with an appropriately sized pipe coupling.

**Step 4c:** Dry fit the stem to the rest of the discharge assembly.

**Step 4d:** If the pump and stem have been removed, lower the pump and stem back into the pump vault's flow inducer compartment or into the flow inducer.

**IMPORTANT:** DO NOT lower the pump by the cord! This can damage the pump!

## Step 5: Reassemble Discharge Assembly

**Step 5a:** Reconnect the discharge assembly.

- Field-cut type assemblies: glue the stem to the rest of the discharge assembly at the first pipe joint above the top of the stem.
- Non-field-cut type assemblies: reconnect the stem and discharge assembly at the first union above the stem.

**Step 5b:** Check and tighten all of the fittings on the discharge assembly.

- Hand-tighten all threaded connections to snug — do not overtighten.
- Make sure all slip-fit connections are glued and secure.

**Step 5c:** Install the external flex extension, if necessary.

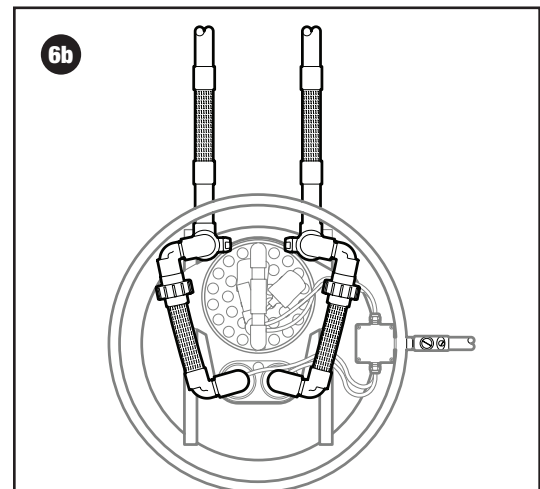
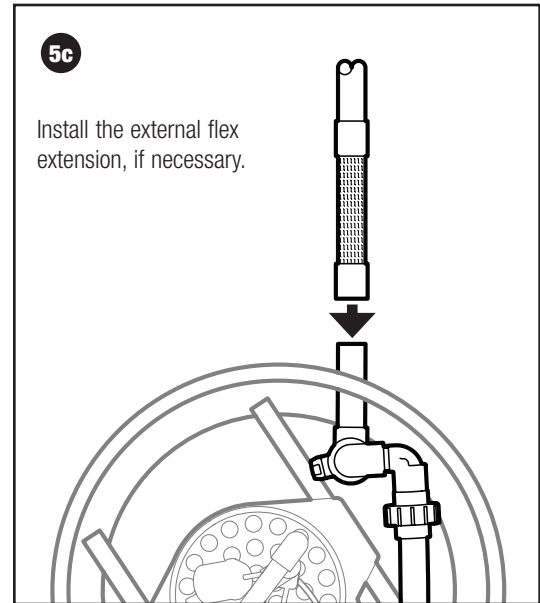
- Clean the lubricant off of the discharge nipple.
- Glue the external flex extension to the end of the discharge nipple.

## Step 6: Final Installation Checks

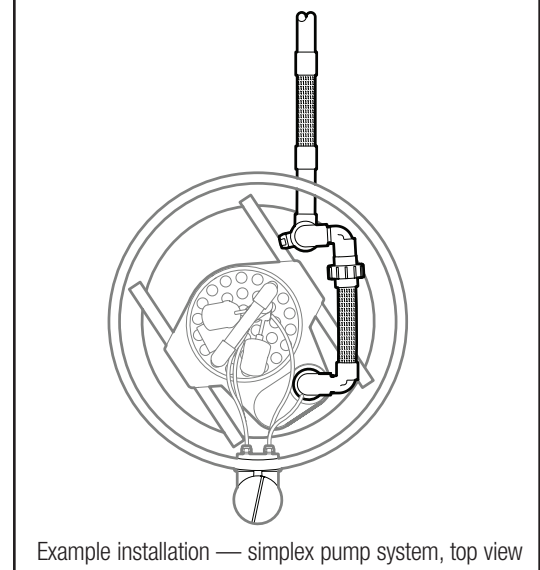
**Step 6a:** Neatly coil the pump cord and secure it inside of the riser.

**Step 6b:** Make sure the pump vault or flow inducer and discharge assembly are positioned for easy access to key components.

- Check for easy access to the ...
  - ~ Float switch assembly
  - ~ Biotube® filter cartridge
  - ~ Pump vault or flow inducer



Example installation — duplex pump system, top view



Example installation — simplex pump system, top view