

Service Bulletin: TrueSTEAM Installation Best Practices

- Remote Installation
- Plumbing and Draining
- Water Quality

Remote Installation



BEST PRACTICE #1 – Length

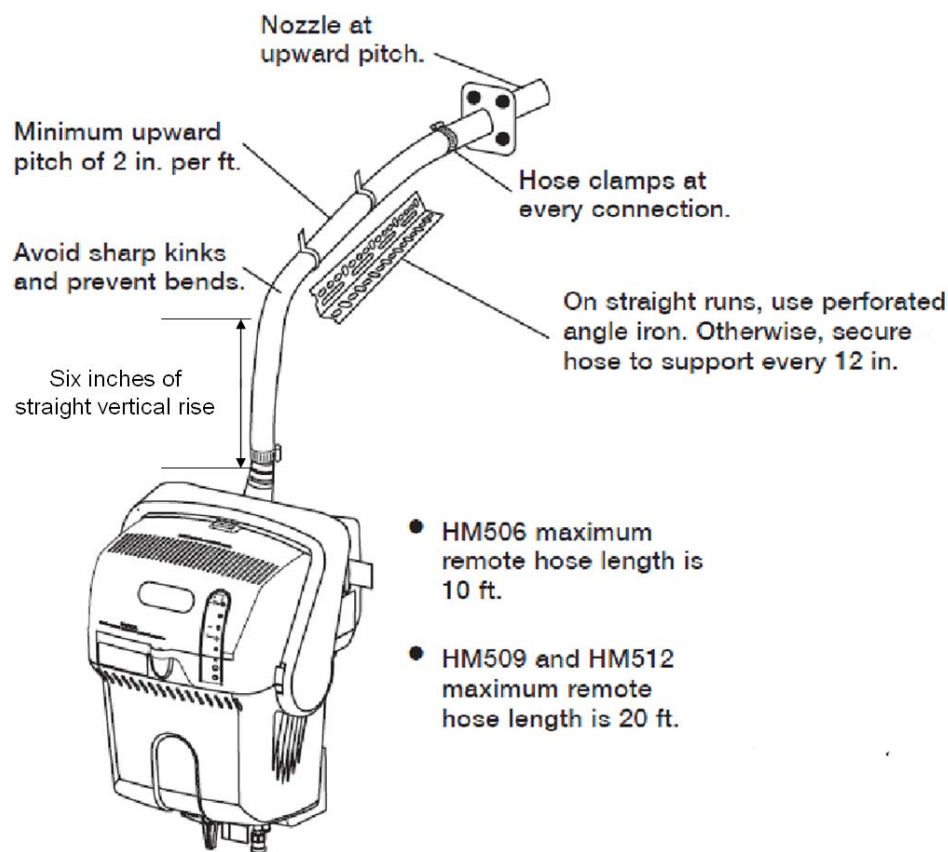
- Mount the humidifier as close as possible to the remote nozzle duct location to minimize required hose length
- Maximum allowable remote hose length
 - HM506 = 10-feet
 - HM509/HM512 = 20-feet

CONSEQUENCE FOR NOT FOLLOWING

Extending remote hose beyond allowable length reduces output, increases the risk of sags and kinks, and increases back pressures on the hose, which may cause leaks.


BEST PRACTICE #2 – Remote Hose Support

- Remote hose must be supported to prevent sags
- Horizontal hose runs must have an upward pitch of at least 2 inches per foot
- Continuous support using rigid material is recommended for horizontal hose runs
 - Honeywell recommends perforated metal angle (1-1/2" x 2-1/4") or 2x4 lumber

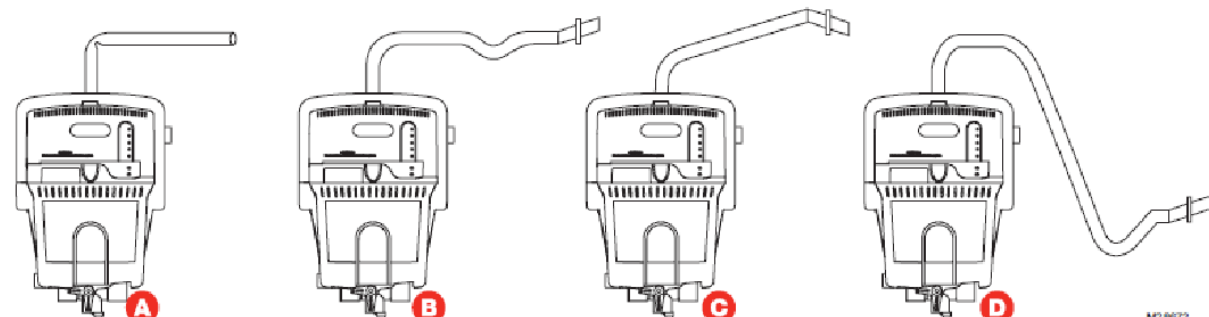


- Provide at least 6 inches of remote hose straight vertical rise coming immediately out of the humidifier. Always make gradual turns and pitches after the initial 6 inch vertical rise
- Never make sharp bends in the steam hose, as this causes kinks. Pay particular attention when routing the steam hose around rafters or joists to avoid sharp bends and kinks
- If continuous support is not possible, anchor the hose every 12 inches with the provided hooks

- Never support the hose by attaching it to materials that sag over time (PVC) or cannot support the remote hose weight



AVOID THESE COMMON MISTAKES



A Bend greater than 45°. Horizontal run does not have minimum pitch of 2 in. per ft.

B Hose not continuously supported at least every 12 in., resulting in hose sag.

C Does not have at least 6 in. vertical rise immediately out of humidifier, and nozzle is not pitched up.

D Horizontal run does not have minimum pitch of 2 in. per ft. Downward pitch does not have trap at its lowest point.

BEST PRACTICE #3 - Components

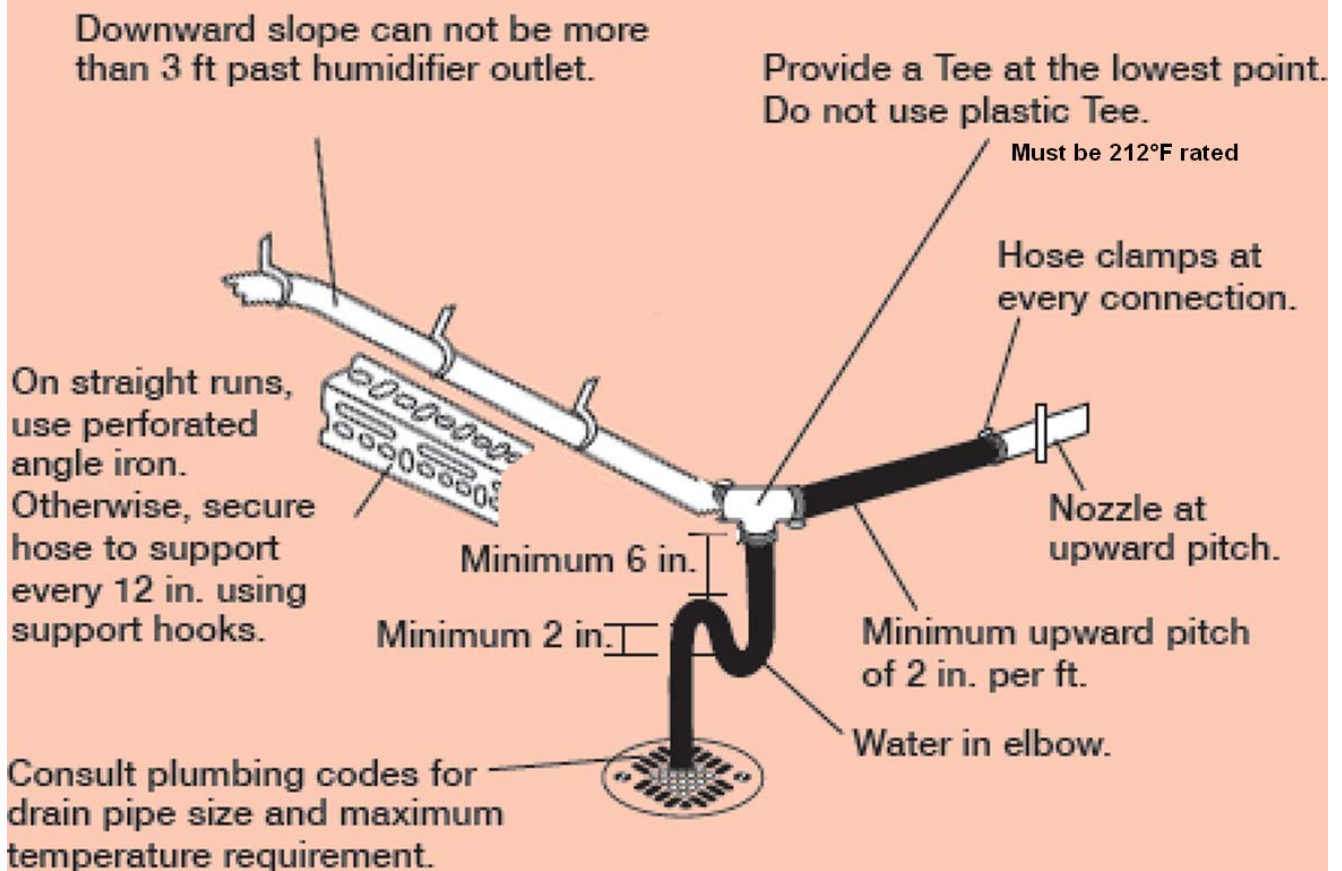
- Use the provided insulated remote hose to sustain output efficiency
- Attach the remote humidifier adaptor nozzle so that it points upward out of the humidifier. Do not attempt to route the hose through the mounting bracket hole
- Always secure the remote hose to the remote nozzles using the provided hose clamps
- Always secure the remote duct nozzle to the sheet metal using the provided sheet metal screws



BEST PRACTICE #4 – Downhill Remote Hose

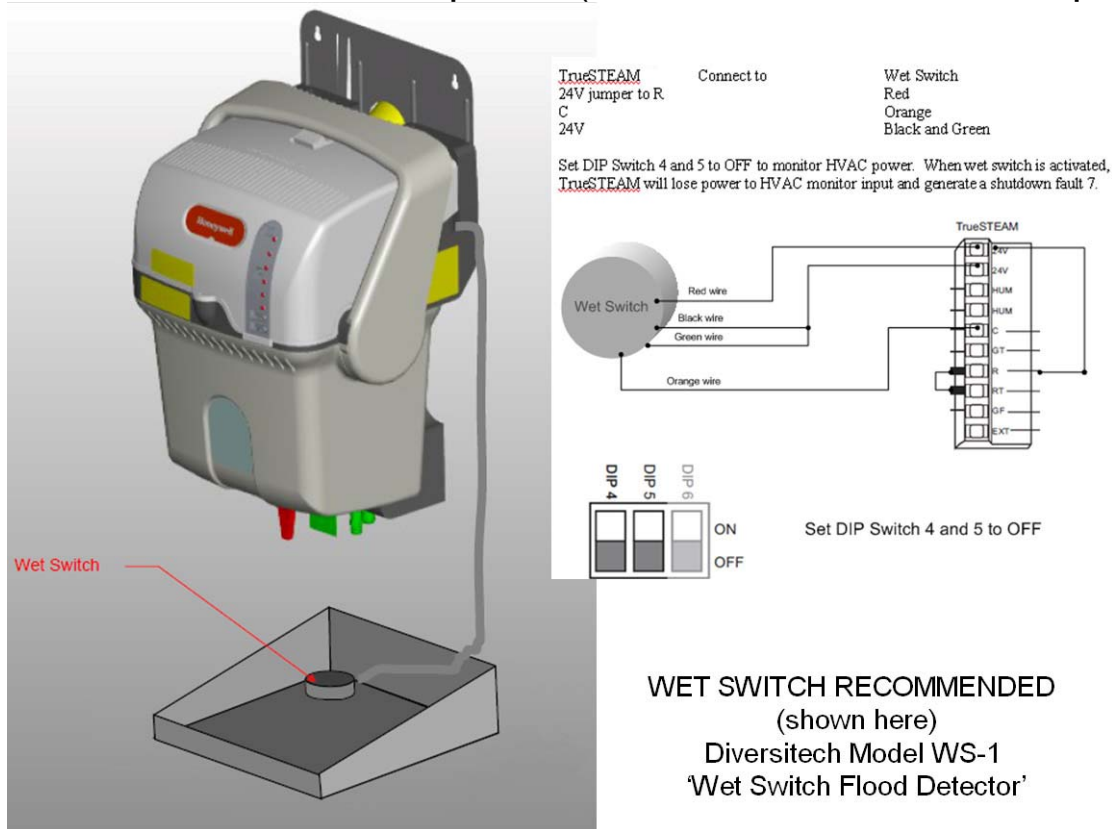
- Down sloping remote hose must have a drain with a wetted trap installed at the lowest point. Use a Tee fitting that is rated for continuous use at 212°F. Do not use plastic Tee fittings and do not have more than one downward slope

If downward slope...



BEST PRACTICE #5 – Finished Space Installation

- Install a drip pan with a water shut-off sensor under the humidifier, the water filter and the back-flow preventer when it is installed in finished spaces (filter and back-flow not in picture)



BEST PRACTICE #6 – Final Comments

- Do not install humidifier in spaces where the ambient temperature is above 104°F during humidifier operation
- If a condensate pump is required for remote installation, use a pump rated at 212°F and has a minimum flow capacity of 1 gallon per minute. Capacity must be rated for the vertical rise of the pump installation. Use a condensate pump with overflow switch in a drip pan
- ALWAYS inspect the hose installation after at least 1 hour of steam production to confirm that there are no sags in the hose or leaks at the connection points. The hose softens with heat so sags may develop after the initial installation.

Plumbing and Draining

- **Honeywell always recommends consulting local plumbing codes before beginning installation.**
- Always use cold water for the inlet water
 - TrueSTEAM's flushing sequence tempers tank water with cold inlet water
 - If using the 'Override' feature of the TrueSTEAM's EMPTY button, ensure the entire drain system can support 212°F water temperature. Refer to the Install Guide for more instruction
- Ensure the provided drain hose is at a continuous downhill slope to the drain outlet for proper drainage
- Always secure the TrueSTEAM drain hose with the provided clamp
- Honeywell recommends draining into a main floor drain
 - Refer to your local plumbing codes for main floor drainage of water temperatures 140°F and up to 212°F
 - Always direct the hose outlet into the main floor drain to prevent hot water pooling around the drain

REFER TO APPENDIX A FOR AUXILIARY DRAIN BEST PRACTICES IF A MAIN FLOOR DRAIN IS NOT AVAILABLE.

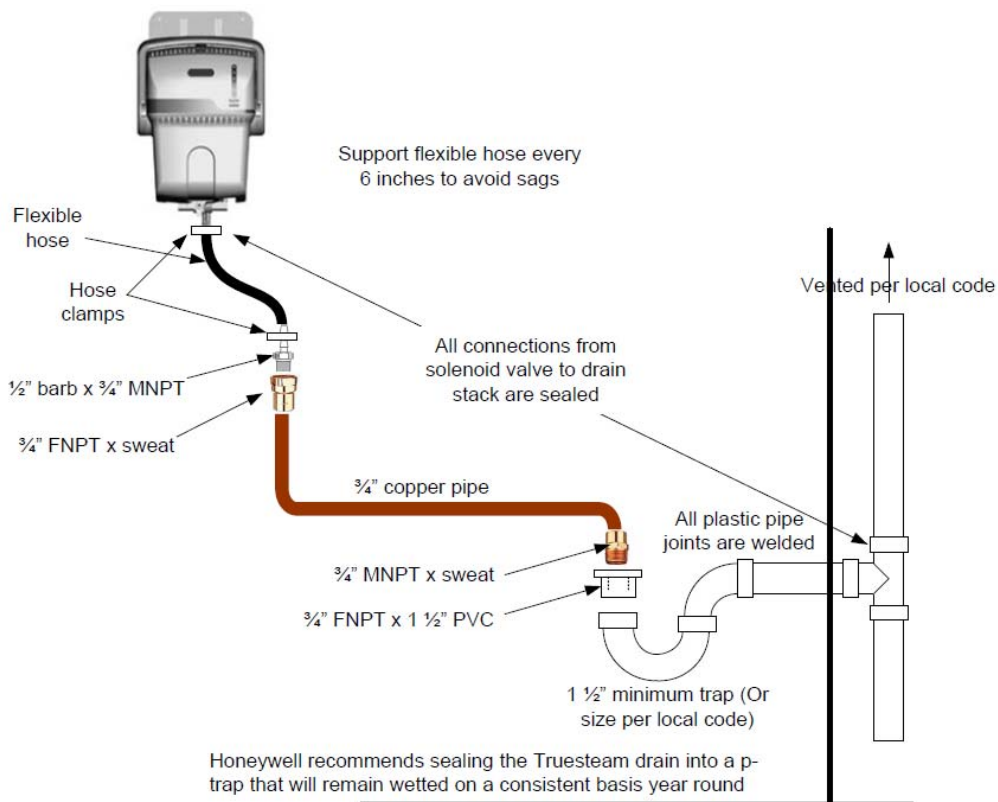
Water Quality – Immediate Recommendations

- Increasing the frequency of the TrueSTEAM flush cycle keeps the mineral concentration level in the tank lower, reducing sedimentation and scaling between manual cleaning cycles. Setting DIP 1 and 2 to the 'up' position sets the TrueSTEAM flush cycle to every 5 operating hours
- Always use cold inlet water
- Always install the provided in-line water filter and change at least once per humidification season.
- Improving the softness of the inlet water prior to entering the water filter improves TrueSTEAM's ability to reduce mineral concentration in the tank, reducing sedimentation and scaling between manual cleaning cycles
- If softening the inlet water prior to entering the water filter is not possible, set homeowner expectation that manual cleaning more than once per humidification season may be required.
- Reference the Manual Cleaning Steps section below for maintenance instruction.

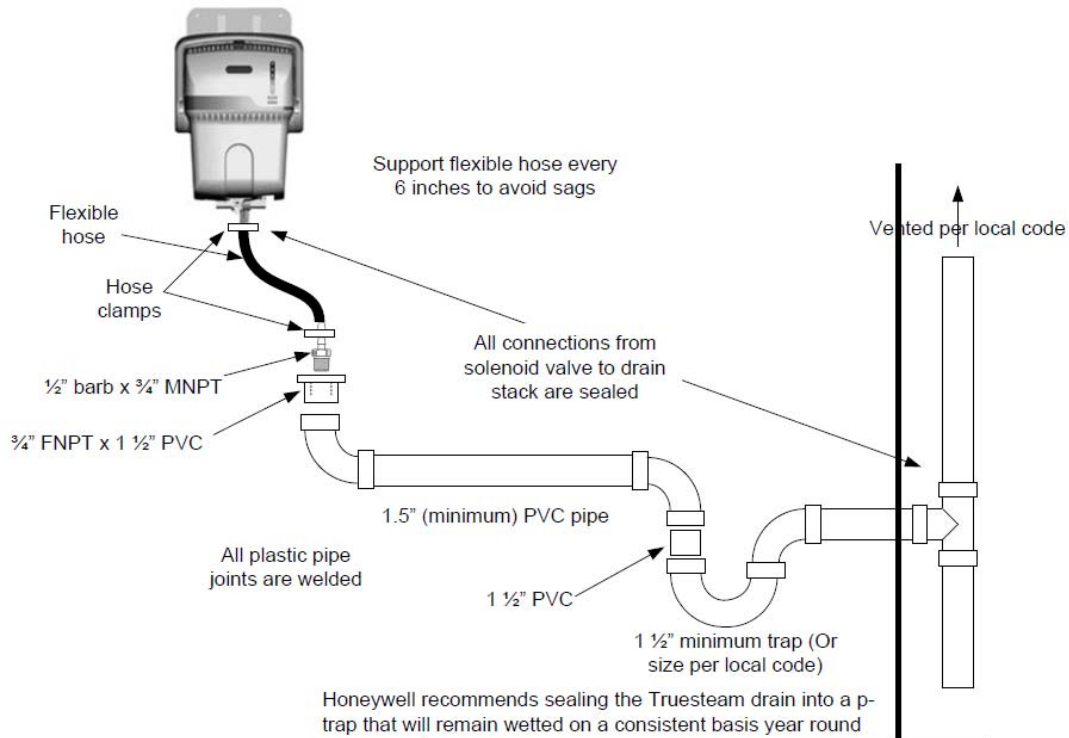
REFER TO APPENDIX B FOR ADDITIONAL INFORMATION ON WATER QUALITY.

APPENDIX A – AUXILIARY PLUMBING BEST PRACTICES

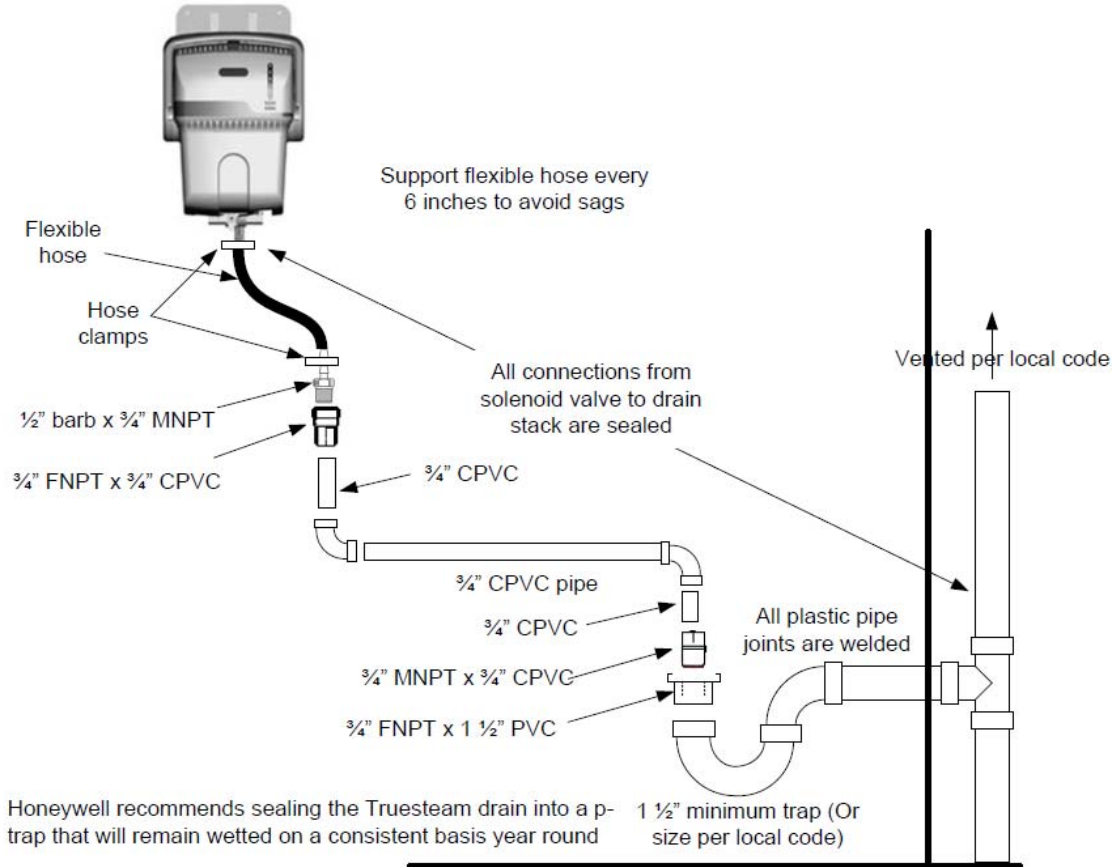
- Option 1a: Plumbing into a drain line with a dedicated trap, using copper piping



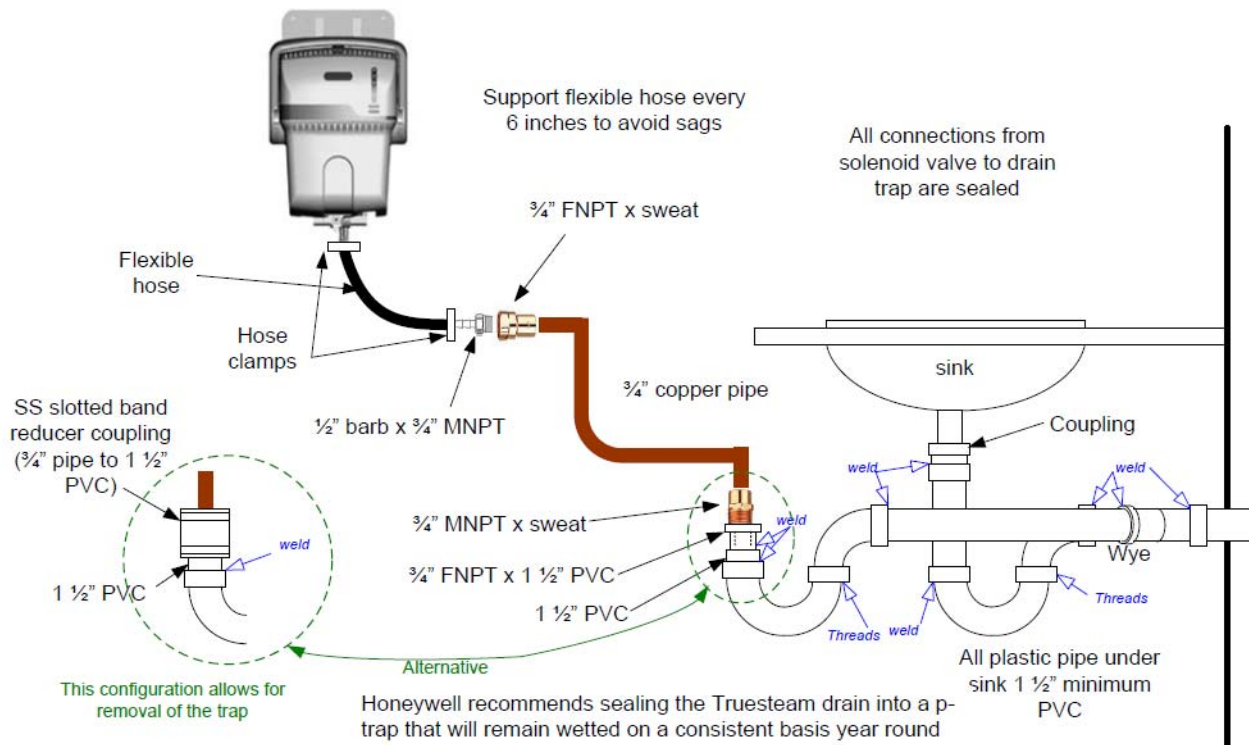
- Option 1b: Plumbing into a drain line with a dedicated trap, using PVC



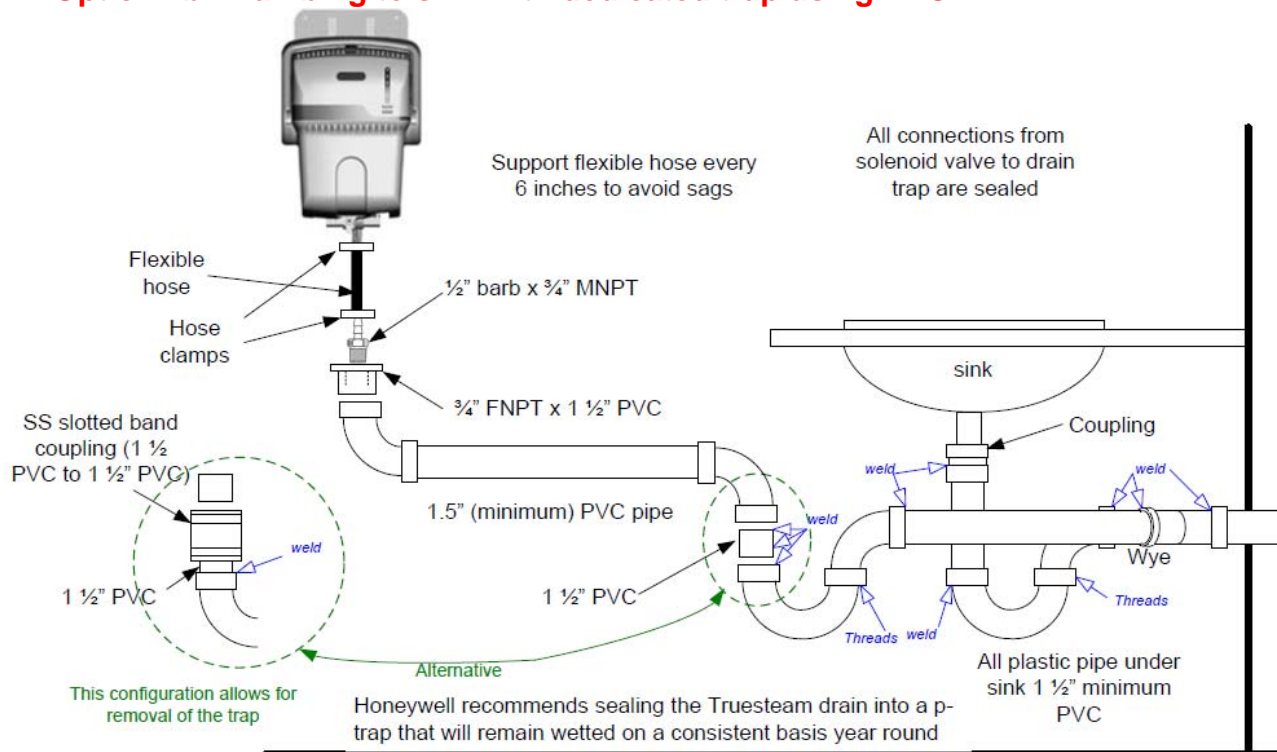
- Option 1c: Plumbing into a drain line with a dedicated trap, using CPVC



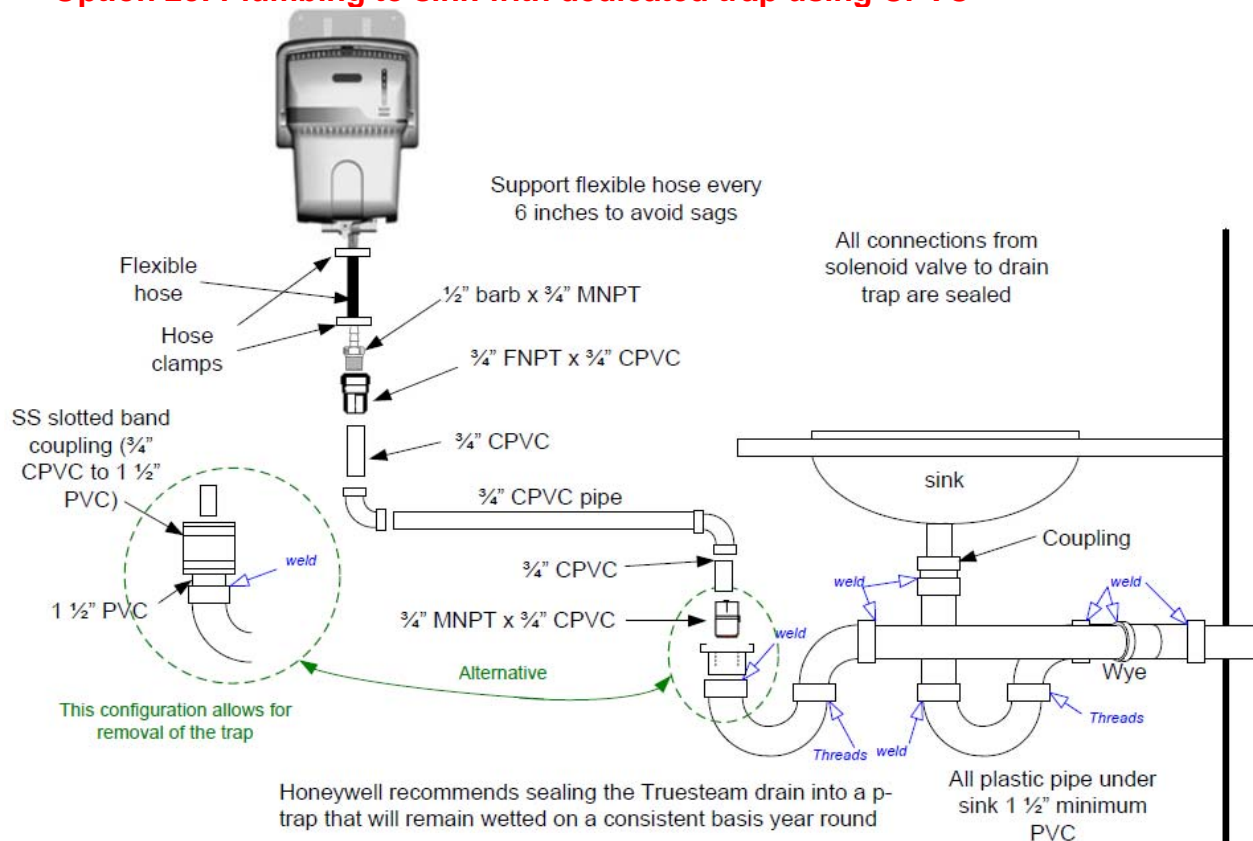
- Option 2a: Plumbing to sink with dedicated trap using copper piping



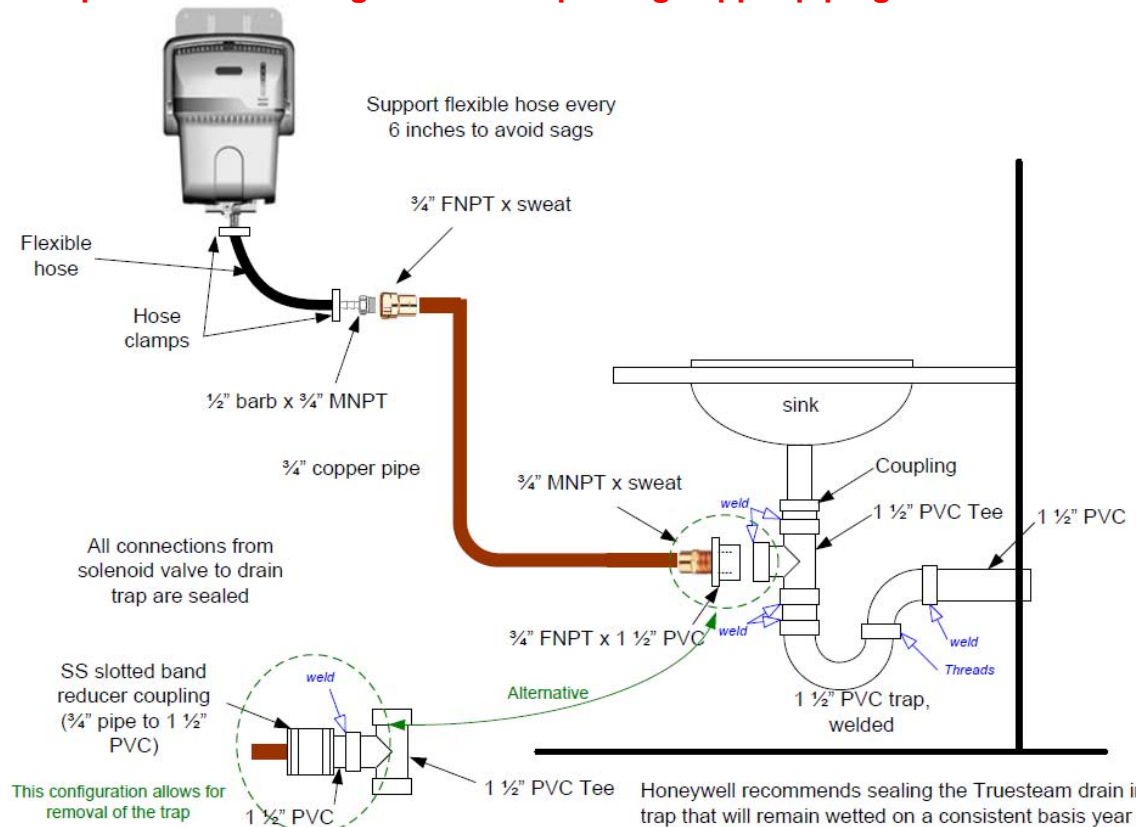
- Option 2b: Plumbing to sink with dedicated trap using PVC



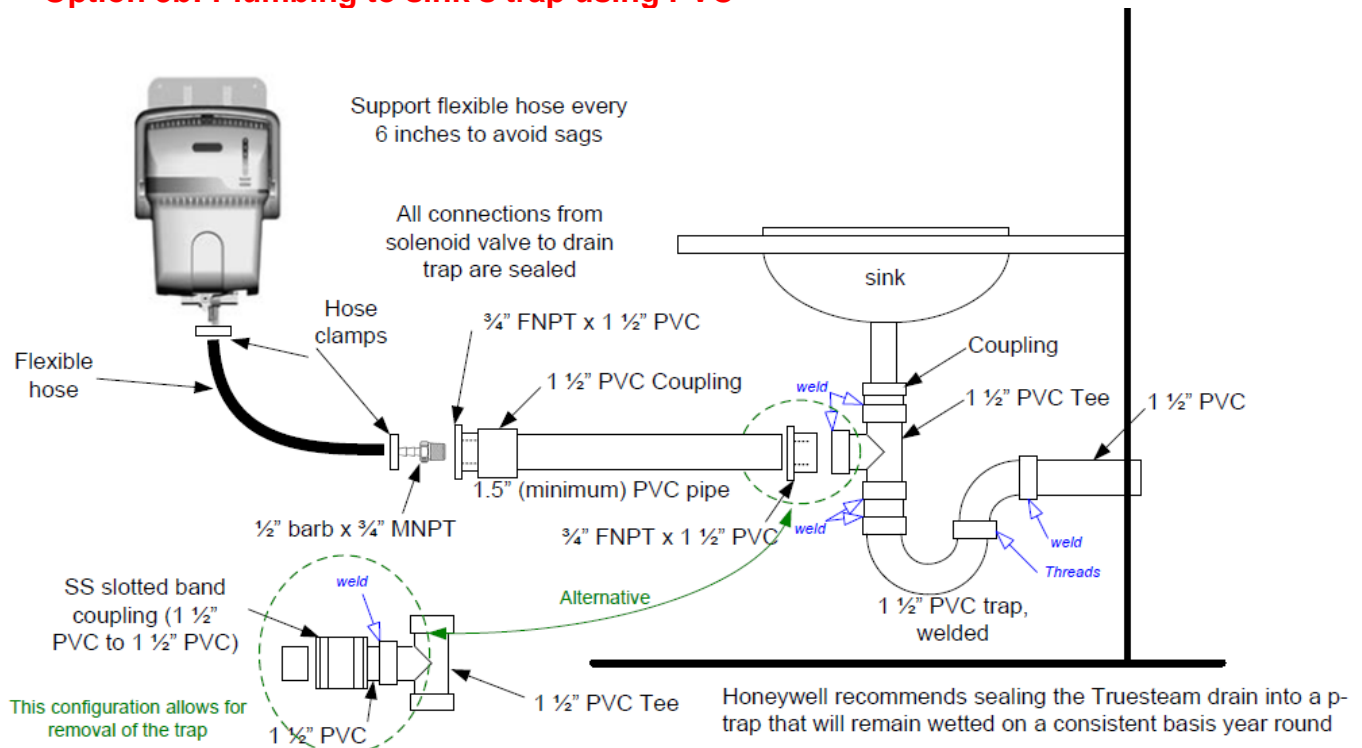
- Option 2c: Plumbing to sink with dedicated trap using CPVC



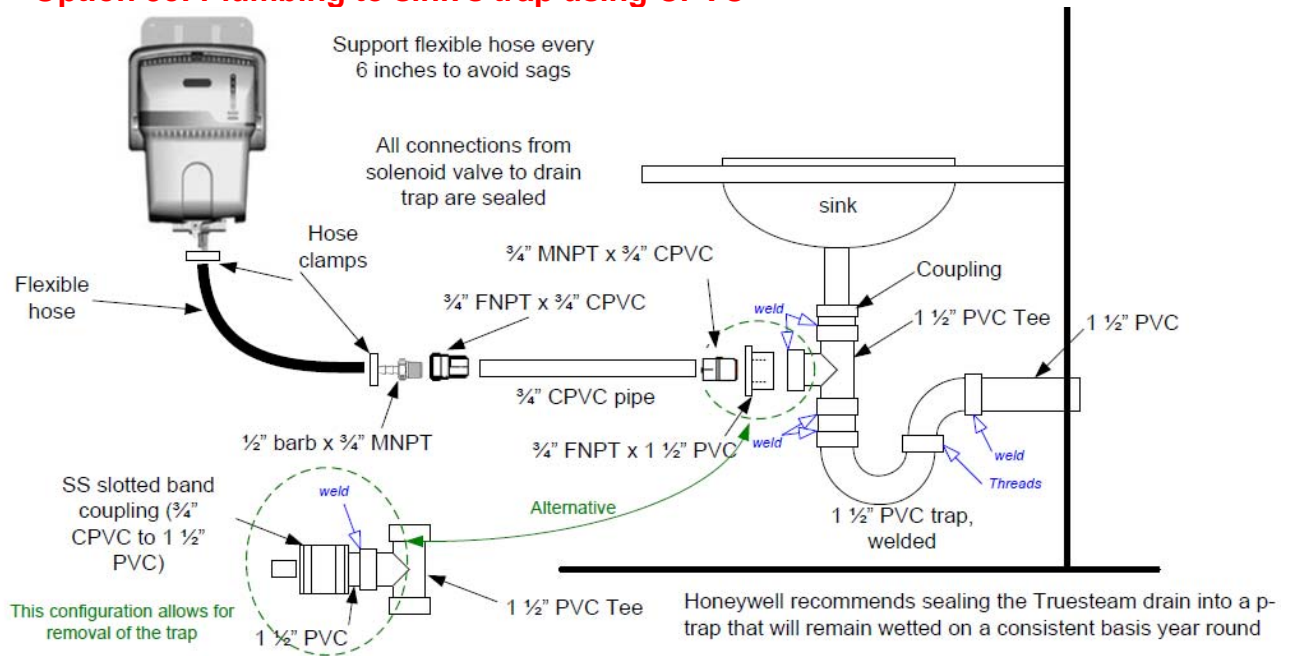
- Option 3a: Plumbing to sink's trap using copper piping



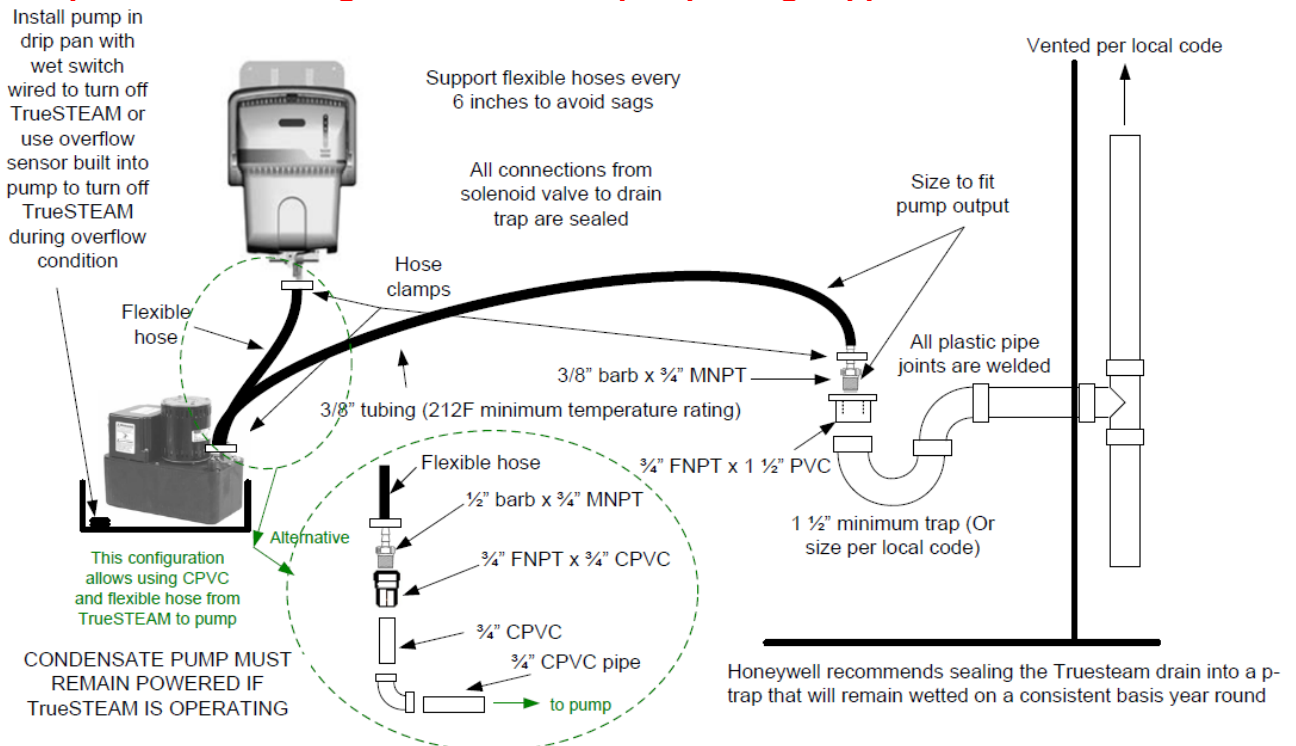
- Option 3b: Plumbing to sink's trap using PVC



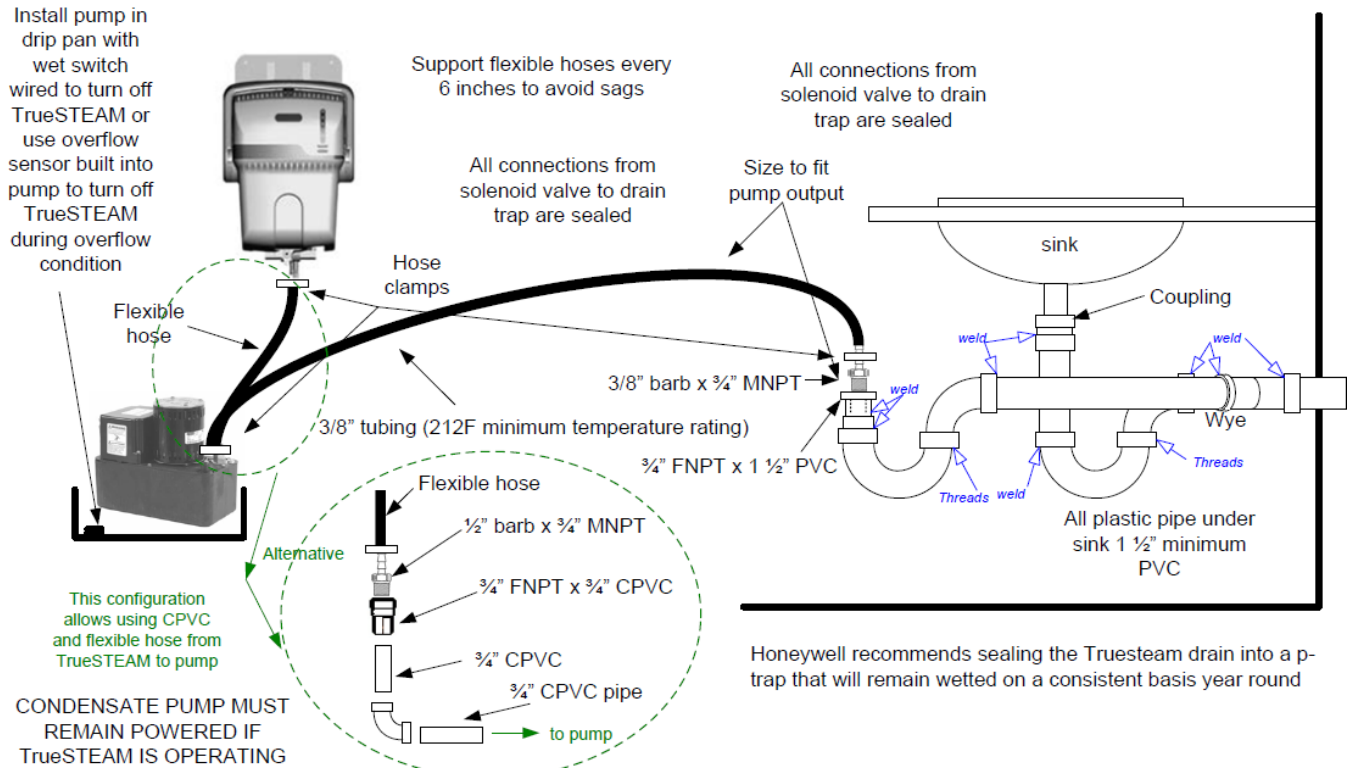
- Option 3c: Plumbing to sink's trap using CPVC**



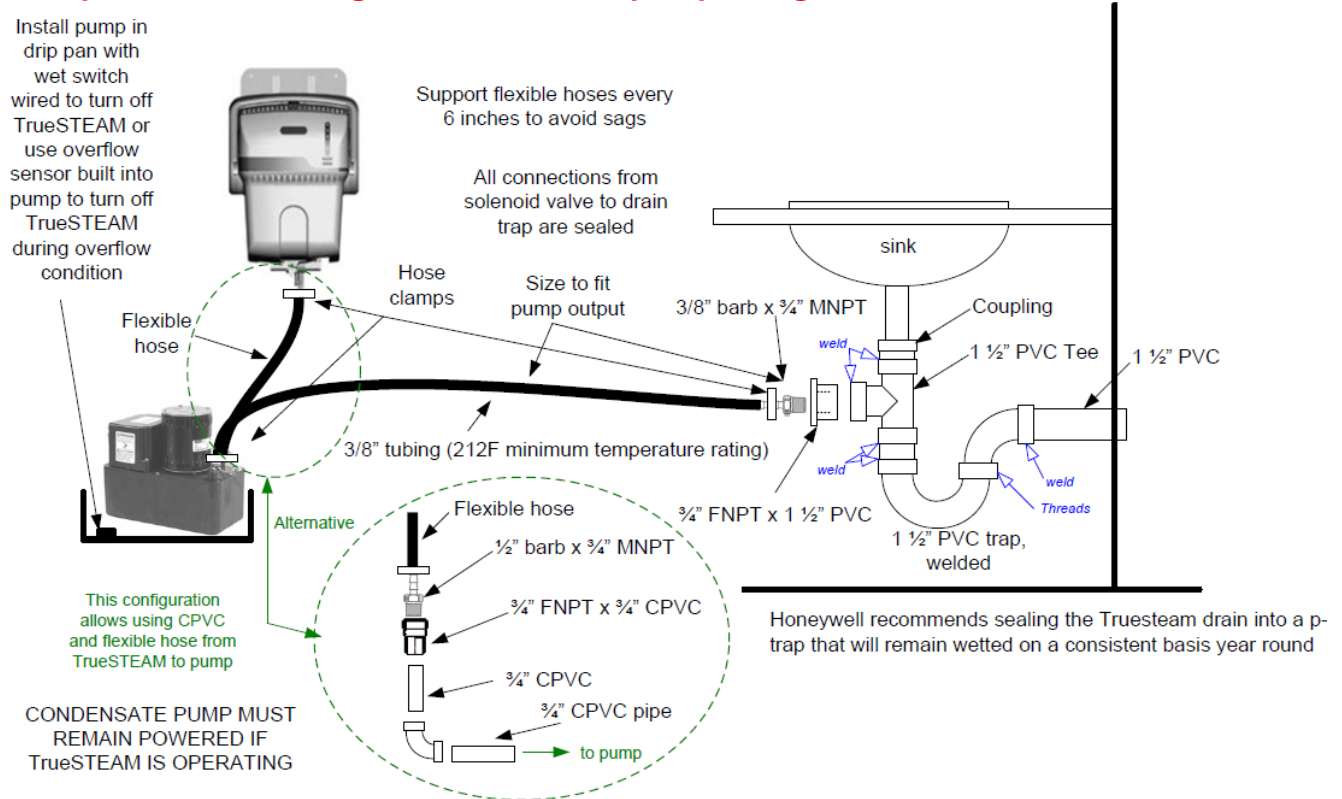
- Option 4a: Plumbing to a condensate pump using copper**



• Option 4b: Plumbing to a condensate pump using PVC



• Option 4c: Plumbing to a condensate pump using CPVC



Appendix B - Water Quality Information

TrueSTEAM is designed with the end user in mind, automatically flushing itself during operation to dilute mineral concentration in the tank, which reduces the amount of scaling and sedimentation.

Having a basic understanding of water hardness is important since it can affect the performance of TrueSTEAM and its water filter.

Water hardness varies greatly from source to source, even within the same municipality, since neighborhoods are often fed by water treatment plants drawing water from multiple wells with differing water hardness. Water hardness also varies from season to season from natural causes, such as rain and snow run-off.

Mineral concentration is also known as water hardness. Hard water contains dissolved minerals, primarily Calcium and Magnesium, and is often classified in 'parts per million' (PPM) or 'grains per gallon' (GPG).

$$\text{PPM} = \text{GPG} * 17.1$$

Chart 1: General Definition of Soft to Hard water in GPD and PPM

Definition	Grains per Gallon (GPG)	Part Per Million (PPM)
Soft water	0 – 1	0 – 17.1
Moderately hard water	1.1 – 7.0	18.8 – 119.7
Hard water	7.1 – 10.5	121.4 – 179.6
Extremely hard water	10.6 – 30+	181.3 – 513

Industry water quality experts recommend that homes with over 1.0 GPG hardness install a water softener to increase the life expectancy of the home's plumbing and appliances that use the water source.

TrueSTEAM Interaction with Water

To generate steam, TrueSTEAM goes through several cycles of boiling and filling. The tank does not flush these minerals every time it goes through a cycle of boil and fill. As a result, the concentration of minerals in the tank increases over time until the unit flushes. As this concentration increases, dissolved minerals begin to 'fall out' of the water as solids. Once a mineral becomes solid, it does not go back into the dissolved state. This process is known as sedimentation. The TrueSTEAM flush cycle dilutes the water concentration to reduce the sedimentation of mineral solids.

Honeywell supplies a polyphosphate filter with every TrueSTEAM which filters out large particles from the inlet water and treats the water with polyphosphate. At high concentrations, polyphosphate combines with the dissolved minerals to treat the water. This causes sedimentation to precipitate as brittle or loose solids that break up to exit TrueSTEAM during the flush cycle.

Hard Water Effects on TrueSTEAM Operation

The harder the home's water, the faster the mineral concentration increases inside the TrueSTEAM tank during each boil-fill cycle. The faster this mineral concentration increases, the faster dissolved minerals become solid and settle as sediment at the bottom or scaling on the heating element, water level sensors, or tank walls.

Immediate Steps that can Improve Operation in Hard Water Applications and extend time between manual cleaning cycles

- Set DIP 1 and 2 to the 'up' position to change the flush cycle to every 5 operating hours. Increasing the frequency of the TrueSTEAM flush cycle keeps the mineral concentration level in the tank lower, reducing sedimentation and scaling between manual cleaning cycles
- ALWAYS use cold water for the inlet water

- Improving the softness of the inlet water prior to entering the water filter will improve TrueSTEAM's ability to remove concentrate, reducing sedimentation and scaling between manual cleaning cycles
- If softening the inlet water prior to entering the water filter is not possible, set the homeowner expectation that manual cleaning more than once per humidification season may be required

TrueSTEAM's Automatic Flush Sequence

- When the automatic flush cycle begins, cold inlet water is drawn into the tank immediately to temper the water temperature prior to draining. Additional cold inlet water is drawn intermittently into the device throughout the flush cycle. The flush cycle may take up to 30 minutes to complete.
- During the flush cycle, if water drains slower than desired, the TrueSTEAM's 'PRESS EMPTY' light begins blinking to indicate manually cleaning may be needed soon. TrueSTEAM will still operate as normal, and if during the next flush cycle, the flush timing is normal, the PRESS EMPTY light will cease blinking with no manual action taken by end user.
- If homeowner calls to report the 'PRESS EMPTY' light is blinking, one of two actions may be taken
 1. Press and hold 'Reset' until the Empty light ceases blinking. This resets the device.

OR

2. Follow the steps below to clean the TrueSTEAM

Manual Cleaning Steps

- Press and hold the EMPTY button until the 'CLEAN TANK' light begins blinking. Release the EMPTY button and allow 30 minutes for TrueSTEAM to complete the manual flush cycle.
 - Note: The OVERRIDE feature is engaged if the user presses and holds the EMPTY button a second time; while the CLEAN TANK light is already blinking. Override forces

TrueSTEAM to empty the tank immediately, regardless of water temperature in the tank. If using this Override feature, ensure the drain system utilized can handle up to 212°F water temperature

- Once the CLEAN TANK light goes from blinking to continuously lit, the tank is emptied of water and the user can proceed with the manual removal of the tank.
 - Rotate red handle at bottom of the tank from 'Lock' to 'Unlock'
 - Grip the solenoid white handle with one hand and the red handle with the other. Push the white handle away from you, while pulling the red handle toward you.
 - Next, firmly grip the bottom of the water tank, while using your other hand to press the latch release and pull the latch forward. This allows the tank to slide free for cleaning
- Use warm, soapy water to clean the tank reservoir, the sediment screen, the bottom of the frame, and the heating element.
- Visually inspect the black plastic compartment that hangs down next to the heating element. Two outlet holes are located on the bottom right-side of this compartment. If significant sedimentation is noticeable in these outlet holes upon inspection, call your HVAC contractor for service. If sedimentation is not noticeable, proceed to next step.
- Reconnect the water tank with the latch
- At the bottom of TrueSTEAM, grip the white valve handle with one hand and the red handle with the other. Pull the white handle

toward you while pushing the red handle away from you. This will push the black tank spool into the white valve opening.

- Rotate the red handle from the Unlock to Lock position, ensuring the black tank spool arms secure into the white valve slot.
- Reapply power to TrueSTEAM, and press/release the 'Reset' button to restart TrueSTEAM operation.
- Replace the in-line water filter. Doing this on a regular basis will help to ensure effective polyphosphate delivery to hard water,

reducing sedimentation and scaling and lengthening the time between manual cleaning cycles.

- Ensure that all water line connections are firmly connected without leaks.

Additional ANNUAL cleaning meant only for HVAC contractors

- Unplug TrueSTEAM and remove the cover
- Inspect and clean the water level sensor compartment
 - Disconnect the water level sensor plug
 - Remove T-30 Torx screw and lift sensor hinge to remove the water level sensor
 - Inspect the water level sensor metal contacts for scaling.
 - If significant scaling is present, replace the water level sensor assembly (Honeywell part #50027998-001)
 - Clean the inside compartment that seats the water level sensors with warm, soapy water.
- Inspect the drain valve seat and drain hose
 - Remove the hose clamp
 - Clean out any accumulated sedimentation or scaling inside and out.