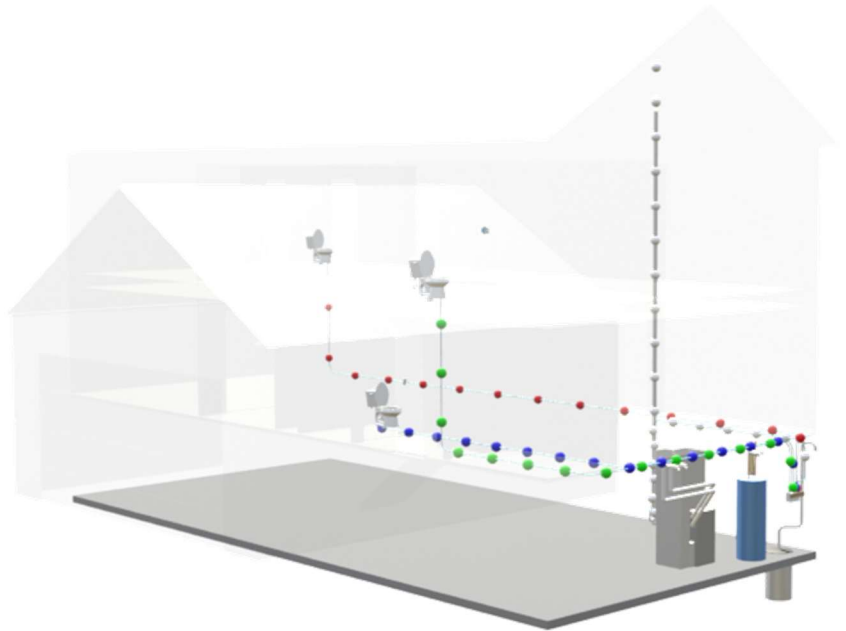


# JEMSMART

## Potty Sniffer

# Whole Home / New Construction Installation Guide



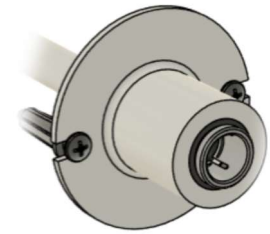
Rev 1.0



File No. 304051  
UL 1450  
CSA C22.2 no. 68

# Sniffer Pump Cluster Installation Guide

- 1/2" OD polyethylene tubing (LDPE) recommended for main lines
  - Not the same as LLDPE or PEX which could be used but are less flexible
  - 3/8" OD is acceptable for main runs less than 45'
- Use 1/2" OD only for horizontal and downward tubing runs
- Avoid vertical and upward slope – potential moisture trap
- Use 3/8" OD tubing at pump and toilet connections and for upward air flow
- Run tubing and switch cable in tandem
  - Use 1/2" tubing clamps or zip ties with mounts to secure routings



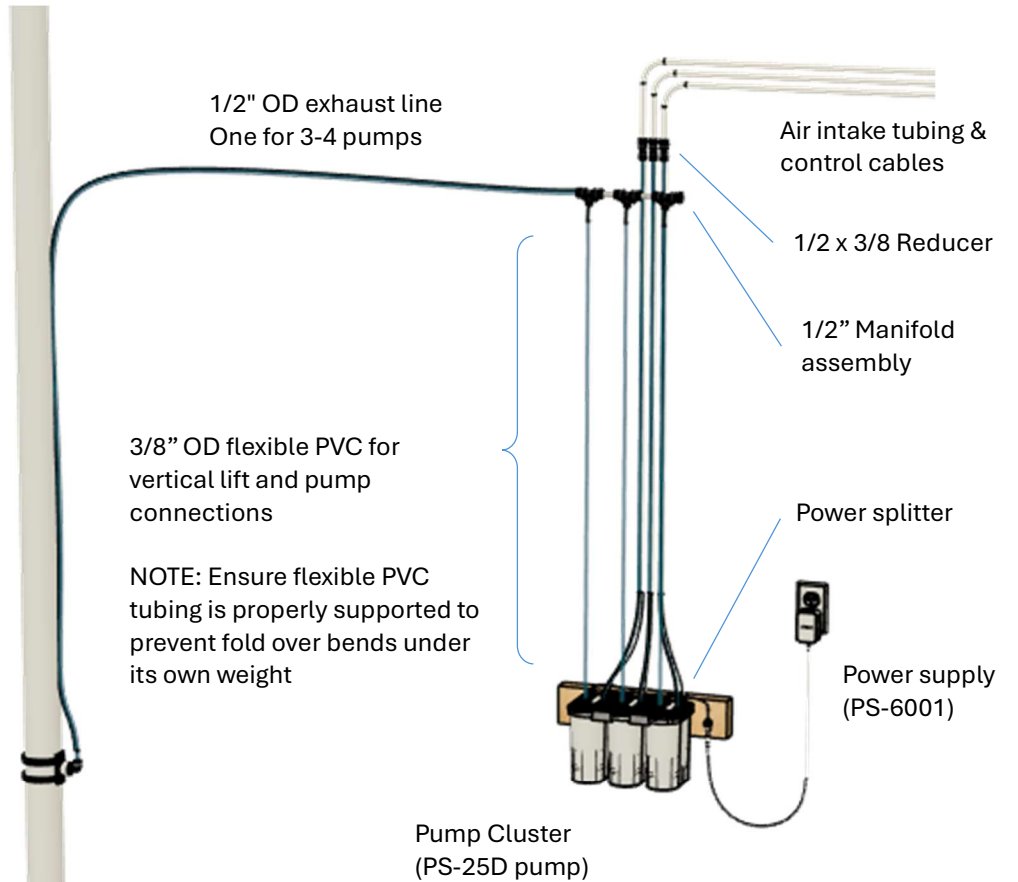
Through wall exhaust – 1/2" (PS-4040)



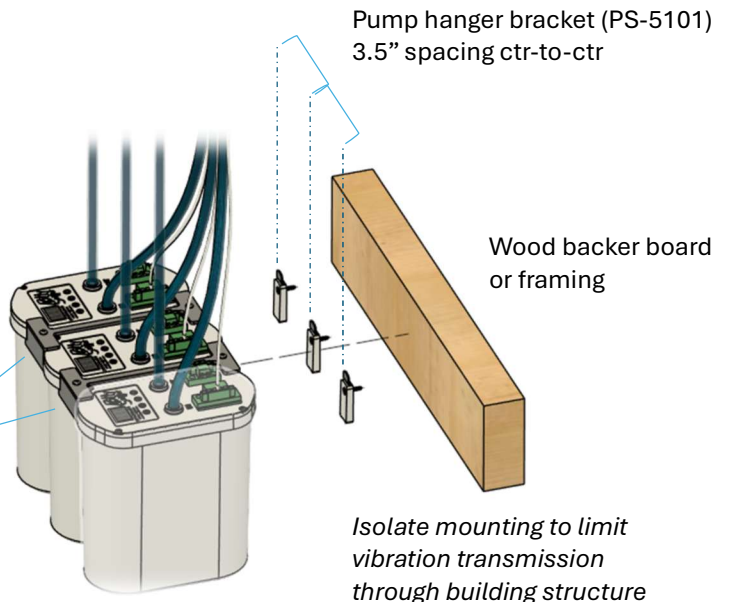
Sanitary pipe exhaust – 1/2" For vertical or horizontal (PS-4030)



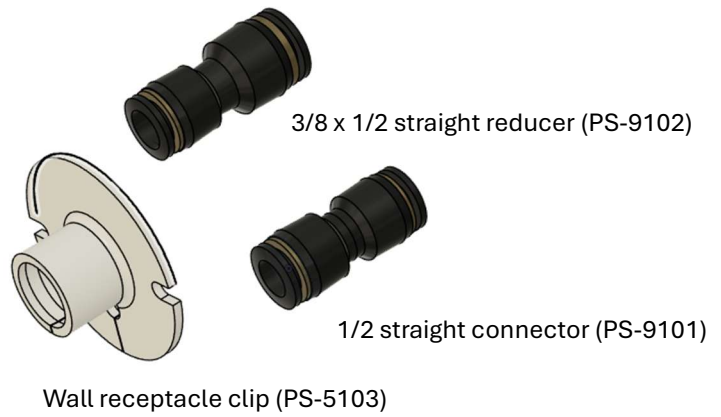
DWV 3in cleanout exhaust – 1/2" (PS-4050)



Pump cluster joining bracket (PS-5102)



# Toilet Fixture Connection Guide



Install correct connector for tubing into receptacle clip  
MAX wall cutout size is 1.5"

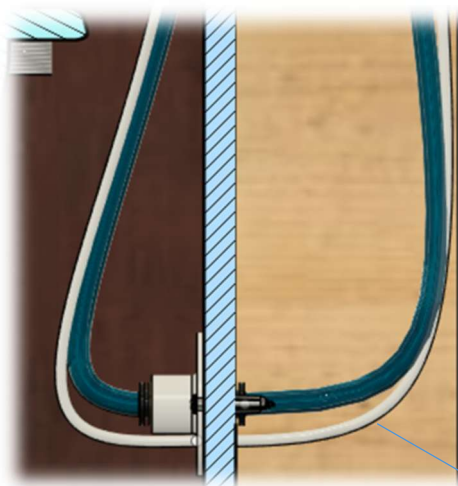
Option: Install 1" dia. Escutcheon (split cover) for cleaner finish

For vertical up tubing installation, use 3/8" OD to maintain air speed and avoid trapped moisture

Use continuous tubing runs - avoid fittings inside of enclosed walls

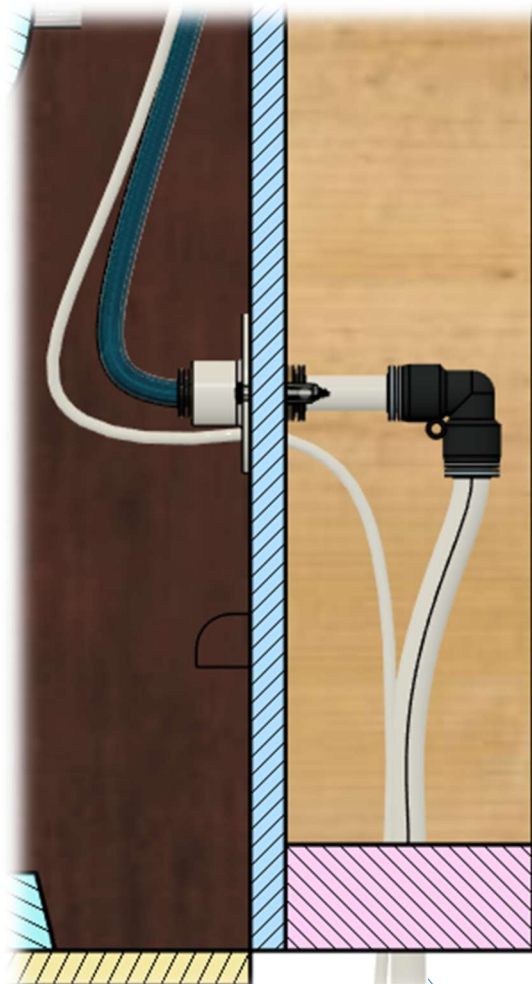
Use elbow fitting for 1/2" tubing for receptacle

Rough in TUBING: 12" stub extension  
Rough in SWITCH CABLE: 48" lead



3/8" OD tubing

Switch cable



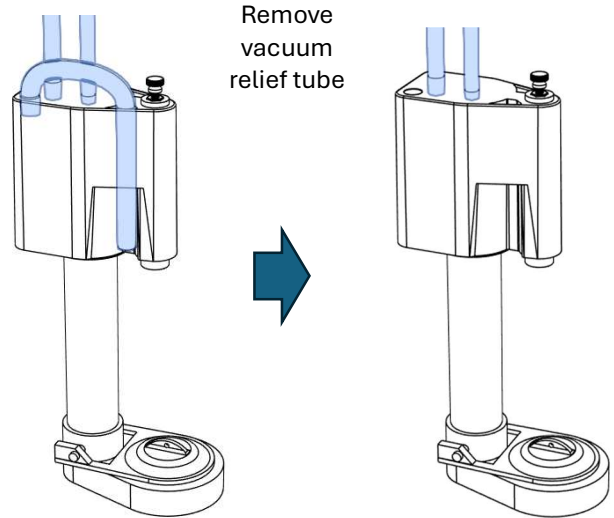
1/2" or 3/8" OD tubing

## Air Intake and Motion Sensor Setup Guide

For builder installations, we recommend removing the intake shroud vacuum relief tube to greatly reduce the need for future adjustments due to water suction issues.

Total airflow from the toilet bowl will be reduced (typically 30%-50%) due to reduced vacuum pressure, but the system will normally still be effective at removing the minimum 0.8 CFM of air needed to achieve ANSI Z9.5-2012 laboratory fume hood performance standards.

A Sniffer pump is rated at 1.6 CFM with 15' tubing.



For motion sensor kit (PS-3100), position the PIR-8 sensor in a manner that minimizes false trigger occurrences.

Cables can be re-terminated to the required cable lengths or coiled and stored away behind the toilet tank.

PIR-8 motion sensor

## Required Install Materials

The following items will be needed in preparation for a Sniffer system whole home installation. Determine required lengths and quantities based on building designs.

- LDPE tubing
- Low voltage, multi-conductor cable
- Tubing clamps or zip-ties and mounts
- Fastening screws (or hardware)
- Electrical tape

## Installation Tools

- Measuring tape
- Wire cutter & wire stripping tool
- Mini flathead screwdriver (1/8" tip)
- Drill motor
- Drill bit assortment – 3/8" size required
- Spade or hole cutting bit – 3/4"
- Utility knife or flexible tube cutter – recommended
- Wire fishing tape - recommended



# Sniffer Pump Cluster Installation Guidelines

## *Pump Cluster Location and Mounting*

Pump clusters should be located with the building HVAC equipment or in a location where pump noise can be contained or isolated from regularly occupied living areas. Pumps may also be located in a garage, shed, or even in a sheltered location

Pumps may be joined together to form a cluster using a pump cluster joining bracket assembly (PS-5102) and mounted to the wall using pump hanger brackets (PS-5101).

Select a wall or mounting point that is structurally solid and resistant to vibration or where vibrations being transmitted through the wall will not pose a noise/vibration concern for the homeowner.

Pumps can also be placed on a shelf or floor on top of a foam pad for added vibration isolation.

## *Power Supply Setup*

Our pump cluster kits include a 12VDC/5A power supply and 15' power cable assembly for each Sniffer pump and is the configuration approved to meet FCC Class B compliance. This configuration also provides extra 12VDC power capacity for additional low voltage devices to be supplied from the system. (See switch cable wiring notes for wire size requirements)

It is possible to power up to three Sniffer pumps from a single power supply if the probability of all three running at the same time is low and the airline routings have relatively low resistance. Two pumps will operate within the power output capacity of the power supply under full load conditions (ex. at maximum tubing lengths or accidental water suction)

Powering three Sniffer pumps from a single power supply may also be possible if the tubing lengths used in the system does not create excessive air resistance, the system is properly adjusted to prevent accidental water suction, and the likelihood of all three pumps being used at the same time is low.

Power cable jumper assemblies for two (PS-5112) or three (PS5113) pumps are supplied with each kit in case a multi-pump power configuration is employed.

## *Switch Cable Wiring*

Our standard UL listed 4-conductor 26AWG telephone cable can be used for cable run lengths of 125' for basic switch button functionality and is rated VW-1 for in-wall applications. The illuminated LED button switch uses very little power and will continue to operate normally even with significant voltage drop allowing for the use of thinner gage wires.

However, for whole home installations we recommend using multi-conductor thermostat wire (18AWG with a minimum of 4 conductors) for better durability, current carrying capacity, and wider in-wall application rating. Any extra conductors may be used for additional current carrying capacity for the main +ve (red) and -ve (black) power supply wires by increasing to 2 or 3 wires per conductor.

## *Recommended Tubing and Fittings*

Standard tubing that comes with a Potty Sniffer kit is: 3/8" O.D. - 1/4" I.D. clear, flexible PVC with added antimicrobial resistance. This is the recommended tubing for the air intake connection at the toilet.

For Sniffer system installation, oversize tubing is defined as: 1/2" O.D. – 3/8" I.D.

For new home construction in-wall tubing runs, we recommend tubing made of a harder material for better durability and resistance to kinking and pinching such as LDPE or LLDPE tubing. Note that tubing size is typically described by outside diameter while pipe is sized by inside diameter. Use the previously defined O.D. and I.D. dimensions for clarification.

To transition between standard and oversize tubing, joining same size tubing, or transitioning between different tubing materials, air or liquid type push-to-connect tube fittings may be used.

Do not use barb style fittings or fittings that can cause air flow restriction due to reduced inside diameter.

Push-to-connect fittings, which are non-permanent, should not be used in a “closed out” section of the tubing run that can’t be accessed after installation. Where necessary, use an approved permanent fitting and joining method.

### *Air Exhaust Methods*

Three pumps can operate at the same time when sharing a single 1/2" O.D. oversize tubing exhaust line. It is possible to connect more than three pumps to a single line if the likelihood of more than three pumps being used at the same time is low.

A manifold assembly made up of 1/2" x 3/8" x 1/2" reducer tee push-to-connect fittings, 3/8" PEX-A pipe sections, and an end plug is included with our pump cluster kits and can be connected to one or two separate 1/2" O.D. exhaust lines.

**DISCLAIMER:** Before connecting to the home DWV system for air exhaust with one of our connection fittings options, check with your plumbing inspector to ensure that the selected method is acceptable. A through wall exhaust may be used to avoid plumbing code concerns.

**NOTE:** Sniffer pumps are self-checking to prevent backflow of sewer gases under normal condition. Exhaust connection fittings to the DWV system can be plugged for DWV system pressure testing.

For through wall exhaust, keep in mind that accidental suction of toilet tank water may occur during setup or if the water level in the tank rises over time due to worn fill and flush valves. Position the through wall exhaust tube to account for potential water spray.

### *Tubing Installation Guidelines*

For tubing lengths longer than 45', oversized 1/2" O.D. tubing should be used for the main portion of the tubing run to reduce the loss of pressure due to resistance.

Water drainage in the event of accidental suction is the main concern when installing the tubing run for each toilet.

- Water flow through standard 3/8" O.D. tubing is normally not an issue since there is enough vacuum pressure and airspeed to keep water moving through the tube and drying up any residual water left behind.
- Air speed is reduced with oversized 1/2" O.D. tubing and not all the water will make it through uphill or vertical sections of the tubing run.