



A CSW Industrials Company

# Aspen<sup>®</sup> Mini White<sup>®</sup> Installation Best Practices

## INTRODUCTION

The following Best Practices are intended to help educate the licensed contractor of Ductless & VRV/VRF equipment about the proper installation, use and maintenance of Aspen mini pumps. These Best Practices were created to arm the installing contractor with technical awareness, set better expectations, create general understanding and drastically reduce installation errors and frustration.

The most commonly asked questions are related to noise, wiring and premature failure. By following these step-by-step procedures, you can confidently perform great Aspen Mini Pump installations and reduce potential failures.

**NOTE:** The following Best Practices are intended as a general guide for “typical” installations. Your installation may vary. Always follow the AC unit & pump manufacturers’ printed recommendations.



**1. Aspen Mini White installation** This pump is designed to be mounted directly below the mini-split indoor wall mount unit to either the left or right side of the unit.

### a. Installing the Pump Body

- I. Turn off the power to the indoor unit before installing the Aspen Mini White.
- II. With the pump cover removed, hold the pump base in the desired location adjacent to the bottom of the AC unit to either the far left or far right side.
- III. Be sure to line up the “knock out panel” on the bottom of the AC cover with the openings on the top of the Mini White.
- IV. The outside edge of the pump housing should be relatively flush with the outside edge of the AC unit.
- V. Once you have chosen the desired location and confirmed the alignment, secure the pump base to the wall using the supplied screws and mollys **\*DO NOT OVER TIGHTEN** - The base unit mounting holes include rubber dampers that should be snug but not compressed against the wall!
- VI. Remove the AC unit’s cover and remove the appropriate knock out panel on the AC unit cover. Removing the knock out panel allows for the following items to be connected between the pump and the AC unit: 1. OEM Drain line 2. Discharge Tubing 3. Pump Wiring Harness
- VII. Position the OEM drain tube with enough slack that it may reach the pump’s reservoir inlet.
- VIII. Run your (field supplied) ¼" id discharge tubing to the appropriate discharge location, leaving enough tubing to connect to the pump (see “Siphoning” below regarding the installation of the Anti-Siphon Device).
- IX. Route the wiring harness of the pump to the terminal block inside the indoor AC unit (see wiring instructions below).



RectorSeal has an excellent pump selector on our website and includes the appropriate PDF wiring diagrams for many specific AC units. <http://www.rectorseal.com/pump-selector/>

Aspen pumps are available in voltage specific 115 V or 230 V and Univolt (100-250 V)



- X. If not already installed, install the cylindrical filter and attach the clear reservoir to the pump base.
- XI. Once the knock out panel is removed and the three items above are installed and secure and it's safe to do so, restore power to the indoor unit.
- XII. Slowly pour water into the high wall unit's drip tray and observe the flow of water into the pump reservoir checking for leaks until the pump activates. Continue slowly pouring water into the reservoir until water is flowing from your discharge termination point for about 30 seconds.
- XIII. Re-connect the OEM drain tube to the pump reservoir inlet.
- XIV. Re-install the AC unit's cover and the pump cover.

**WARNING: Do not use discharge tubing greater than 1/4". All tubing connections should be carefully secured with zip ties.**

## 2. Wiring

- a. **Aspen Pump wiring harnesses have 4 wires; 2 power and 2 safety**
- b. **For a standard 230-V split system with a 4 block terminal, we recommend the following. This scenario assumes lines 1 & 2 from the outdoor unit are power wires and that line 1 is BLACK and line 2 is RED. Shut off the power and following safe electrical handling procedures prior to wiring the pump.**
  - I. Using a wire nut, tie together the **BLACK** power wire & the **GRAY** safety wire from the pumps wiring harness along with the **BLACK** power wire coming from the outdoor unit. The black wire from the outdoor unit may already be installed on terminal 1 of the indoor unit, if it is, remove it so it can be tied into the wire nut as described in this section. The wire nut should have 3 wires in it.
  - II. Locate the **included inline fuse loop**, cut and strip the wires. Using a wire nut, attach one end of the inline fuse to the **RED** power wire from the pumps wiring harness. Now insert the other end of the **RED** fuse wire into terminal 2 of the indoor unit along with the **RED** power wire coming from the outdoor unit.
  - III. Insert the **PURPLE** safety wire from the pump's wiring harness into terminal 1 of the indoor unit all by itself.

## 3. Siphoning

What is it and how does it affect the pump?

- a. **Siphoning occurs when the discharge tubing terminates below the pump and reservoir. In this scenario, when the pump stops running, gravity takes over and pulls all the water out of the pump. The next time the pump begins to run, it is dry and must self-prime. When the pump "self-primed" it is functioning "dry," without water. Proper operation of the pump requires that the pump be lubricated and cooled by water and may sustain damage anytime it runs without water.**
- b. **Where to install the anti-siphon device:**
  - I. All Aspen pumps include the anti-siphon device, it is pre-installed at the factory on our **Silent+** models and located inside the box on all other models (**which means that the installer must install the anti-siphon device on those models**).
  - II. The anti-siphon device is an in-line device that can be installed in any orientation; it will have tubing on either side of it when correctly installed. The anti-siphon device must be installed on the discharge side of the pump, **ABOVE THE PUMP** and ideally should be installed 18" from the pump or prior to the drain tube dropping below the level of the pump. (\*this distance may vary to suit your installation) and will have additional 1/4" tubing leading to the desired discharge location.
  - III. The correct use of the anti-siphon device allows the discharge tubing to terminate at any location within discharge distance specification of the pump without causing any potential siphoning effect to reach the pump.

## 4. Maintenance

Yes, pumps require some maintenance just like AC systems.

- a. **Annual inspections are recommended and consist of the following:**
  - I. Inspect all electrical, communication and tubing connections to ensure they are tight.
  - II. Carefully disassemble the reservoir and inspect the mesh filter and inside the reservoir for debris and or organic growth. If necessary, remove and clean the reservoir with warm water and mild soap, rinse thoroughly before re-installing. The float inside the reservoir must be re-installed with magnet on the top side!
  - III. Visually inspect the pump for any signs of tampering or malfunction and ensure it is securely installed.
  - IV. Inspect the anti-siphon device to ensure it is installed and is secure.
  - V. Inspect the termination point of the discharge tubing to ensure it is secure in discharging the condensate to the appropriate location.
  - VI. Do not run any coil (or other) cleaning products through Aspen pumps or reservoirs. **Disconnect the reservoir prior to cleaning coils.**



- b. Environments with heavy airborne debris such as a dentist office or hair salon may require more frequent maintenance. The use of an Aspen reservoir pre-filter (RectorSeal Part # 83893) is recommended for environments with a high concentration of airborne debris.

## 5. Noise

- a. Complaints of noisy pumps are usually not the pump's fault!
- b. These are piston pumps; they contain a rapidly moving piston.
- c. The pumps operate at a normally acceptable decibel level, however, the piston inside the pump is moving rapidly and does vibrate.
- d. Most noise complaints are from improperly installed pumps and can easily be corrected.
  - I. Minor adjustments to the position of the pump often result in quieter operation.
  - II. Some Aspen pumps "buzz" three times when first energized to let the installer know the pump has power.
  - III. Some pump noise is normal during initial set-up when the pump is priming.
  - IV. The use of foam insulation may be used to reduce vibration transfer.
  - V. As long as the pump stays primed, receives proper maintenance, has been correctly specified and is well insulated against vibration, you can expect very few problems.
  - VI. Continued pump noise should decrease with additional water flow.

## 6. "New Construction" Installations

- a. Aspen pumps are intended for use in normal operating conditions in a clean and/or occupied space.
- b. AC units with Aspen Pumps should not be run during construction. If AC units must be run during construction or within other extremely dusty environments, take all necessary precautions to eliminate airborne debris from entering the AC unit. Large amounts of airborne construction debris will require frequent maintenance of Aspen reservoir and pump and may cause pump failure and void the pump warranty. The use of an Aspen inline reservoir pre-filter (RectorSeal Part # 83893) is recommended for environments with a high concentration of airborne debris. Aspen Peristaltic pumps are recommended for high airborne debris environments.

## 7. Replacing an Aspen Pump

- a. When replacing an Aspen Pump, we require the contractor to remove and replace ALL old components; this included (as applicable) The Pump, Reservoir, Power Leads, Communication Cable and ALL Tubing. Pumps can fail for many reasons; failure to remove and replace all components may result in the new pump failing prematurely due to an unknown cause. Replacing all components will eliminate that possibility.



## CELEBRATING 80 YEARS OF QUALITY PRODUCTS

RectorSeal is a leading manufacturer of chemical specialty sealants and other related products designed for professional tradesmen. Our research and marketing team is committed to providing high quality products and services, by aggressively pursuing new and unique technology to solve industrial problems and expand market horizons. We are devoted to providing innovative quality products supported by strong customer and technical service.



RectorSeal 2601 Spenwick Drive - Houston, TX 77055 800-231-3345 rectorseal.com A CSW Industrials Company

RectorSeal, the logos and other trademarks are property of RectorSeal, LLC, its affiliates or its licensors and are protected by copyright, trademark and other intellectual property laws, and may not be used without permission. RectorSeal reserves the right to change specifications without prior notice.  
© 2018 RectorSeal. All rights reserved. R50177-0718