

# ARCS

Automated Reclaimed Condensate System



## Includes:

- 4-stage filter unit
- 10' white 1/2" tubing
- 10' blue 3/8" tubing
- Filter Wrench
- Instructions for ARCS and UV

## INSTALLATION GUIDE

### *Automated Reclaimed Condensate System*

This unique system is designed by Hydrologic Purification Systems to completely purify condensate water that is normally discharged from HVAC systems as waste. Reusing this water brings a facility closer to zero discharge by minimizing wastewater. Condensate water is a byproduct of air conditioning, dehumidifiers, cooling towers, etc. This water is relatively clean but has several issues that the ARCS is designed to treat:

1. Dust, sediment, particulates and suspended solids
2. Residual oil from HVAC component's manufacturing process
3. Heavy Metals – zinc, copper, lead, etc
4. Low pH
5. Bacteria and pathogens

### **IMPORTANT NOTE:**

The ARCS system is designed to **ONLY** treat condensate runoff water, **DO NOT** attempt to use ARCS to treat any other water source.

The ARCS consists of a 3 stage cartridge filter followed by UV sterilization. Condensate water enters the system via a customer supplied pump. The stages include:

1. Sediment Cartridge – Removes dirt, oils, and suspended solids
2. Heavy Metal Reduction Cartridge – removes all heavy metals
3. pH Neutralizing / Remineralizing Cartridge – raises pH and adds calcium carbonate
4. Ultra Violet Sterilization - kills pathogens / bacteria

## **IMPORTANT NOTE:**

The pH Neutralizing / Remineralizing Cartridge is there to increase the normally low pH (acidic) condensate water. In order to increase the pH, it also adds a certain amount of calcium carbonate, which increases the PPM/EC of water. As an example, if your condensate water is pH 6.0, the product water from the ARCS will be between 7.0-7.4 pH. Since the Heavy Metal Reduction Cartridge (stage 2) removes all PPM/EC, the product water after stage 3 will be between 40-75 PPM (0.06-0.1 EC) of calcium carbonate. If you find your condensate water is within an acceptable range of pH before treatment and/or if you do not want any calcium carbonate in the product water, simply remove the stage 3 cartridge and leave that canister empty.

## **INSTALLATION**

Every ARCS consists of the 3 stage Cartridge assembly with a UV mounted to the top of the bracket. The ARCS is designed to be placed on a level surface via its heavy duty floor stand or mounted to the wall as an option. The customer supplied pump should be placed within a 10-foot range of the ARCS.

1. Prior to installation, inspect the ARCS for damage during shipping and call Hydrologic to report any issues.
2. Determine the ideal location of the system in the facility. The system may be mounted to a wall but floor stand is preferred.
3. Shut down the HVAC system prior to plumbing. **\*NOTE\* Brand new HVAC systems can contain a fair amount of oil from the manufacturing process. In order to not clog the ARCS filters, please discard the first 100 gallons of condensate water from the HVAC down the drain, and not through the ARCS.**
4. Redirect the condensate runoff of the HVAC system(s) into a reservoir or storage tank of your choice. The customer supplied pump can be either a submersible or inline style. The ideal flow rate of this pump should be 2 gallons per minute (GPM). The ARCS has a flow restrictor that is set for 2 GPM so the water has enough contact time with the filters.
5. Install UV bulb. The quartz sleeve is already installed in the body of UV.

6. Plumb the outlet from the UV Filter to the reservoir or storage tank using all or part of the included blue 3/8" tubing. This is the purified water line. **\*NOTE\* Depending on the style pump used, if there is no high-pressure switch, ensure that the reservoir has an emergency high-level overflow drain. An emergency overflow drain will allow the treated water to safely go down the drain if the product water reservoir or storage tank becomes too full. If the pump has a high-pressure switch, you can install a float valve in the reservoir or storage tank.**
7. Upon turning the system on, it will take several gallons to fill the canisters of the 3-stage cartridge system and the UV. Flush the filtration system with condensate water or RO water prior to using the treated water. **DO NOT** use raw city or well water, as this will drastically reduce the life of the filters in each stage. Run the product water line to the drain for this flush. We recommend running at least 5 gallons through the ARCS to drain.
8. After the flush is done, run the product water line to the reservoir and use the water for irrigation or any other application.

## MAINTENANCE:

In order for the ARCS to produce quality water, it is necessary to monitor the amount of water produced by the system. This can be done with an inline flow meter/filter monitor that is available as an accessory. Without regular filter changes, the quality of the product water will drastically drop, allowing harmful bacteria and metals to be discharged into product water.

Stage 1) Sediment Cartridge- replace every 5,000 gallons. This is an average. If you notice the condensate water is unusually dirty you may need to replace this more often. We suggest replacing it a minimum of every 6 months, as good practice.

Stage 2) Heavy Metal Reduction Cartridge – replace every 10,000 gallons

Stage 3) Ph Neutralizing / Remineralizing Cartridge - replace every 10,000 gallons

Stage 4) The UV Sterilizer is always on. Bulb lasts 1 year. Ballast indicates when to change. Follow the instruction manual for the UV system.

## MAXIMUM CAPACITY:

The condensate water feed flow rate shall not exceed 2.0 GPM. Upon a higher condensate flow rate, another ARCS can be added to increase filtration capacity. Additional ARCS retain the same basic installation instructions; **do not plumb additional ARCS in line. They should be plumbed parallel.**

## WARRANTY:

A One Year Warranty comes with each 4 stage filter unit against manufacturer's defects. This does not include clogged filters due to lack of regular maintenance or excessive sediment and/or contaminants in water. This warranty also excludes damage to units caused by using the unit outside of the specified parameters. For UV, please see included manuals for warranty info.

pure water's not **magic...**  
...it's **logic**



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