

# ClearVue™ Pump

System Installation



**ClearVue**   
PUMP™

# Contents

## ***Introduction***

- 3 Variable Speed and Lift
- 5 Floatless Sensor™
- 7 Other Features

## ***System Installation***

- 9 Unpacking, Pump Location and Mounting
- 10 Electrical and High Level Alarm Connection
- 11 Inlet and Outlet Tubing Connections
- 12 Electrical Installation Requirements and Safety Switch Connections

## ***Operation***

- 12 Power, Pump Test, and Normal Operation
- 13 Variable Lift, Cleaning, and Homeowner Instruction

## ***Reference and Troubleshooting***

- 14 Button Reference Chart
- 15 LED Indicator Reference Chart

## ***Technical Information***

- 16 Troubleshooting Guide
- 18 General Data and Safety Information

## Introducing.....ClearVue™

Thank you for the purchase of the ClearVue™ condensate pump. ClearVue™ automatically removes condensate water just like a standard condensate pump but with many customer inspired improvements.

Variable Speed and Lift - See page 3 and 4.



Floatless Sensor™ - See page 5.

With DiversiTech's Floatless Sensor™ technology, ClearVue™ eliminates the float switch - one of the most common problems with conventional condensate pumps. ClearVue™ uses patent pending water sensing technology to detect condensate so that there are no more stuck floats! ClearVue™ also features a see-through tank to give the service tech and homeowner a clear view of water, blockage, and buildup in the tank. This clear tank allows for quick troubleshooting due to normal buildup caused by daily condensate generation.

**ClearVue**   
PUMP™

## Variable Speed and Lift

ClearVue™ pump's floatless sensor technology senses how fast water is filling the tank and determines how hard the ClearVue™ needs to pump in a given installation, then pumps only to that height. If there is a partial clog in the drain line, ClearVue™ figures that out, and pumps a little harder. If the clog doesn't clear, ClearVue™ goes into a cleaning cycle and pulses the discharge water to try to dislodge the clog.

The variable lift in ClearVue™ assures that the pump impeller is spinning only as fast as is needed to lift the condensate water to the height needed. A slower spinning impeller means significantly less noise than conventional condensate pumps. Variable speed is a proven, quieting feature in furnace blower motors. This electronically controlled technology is now available in a condensate pump - ClearVue™ by DiversiTech.



## Self Cleaning

One of the most common problems in condensate removal is the blockage of a drain line downstream from the condensate pump. These blockages are typically organic growth of mold, algae, et cetera. Just like DiversiTech's popular clog clearing gun, a little bit of pressure is often all that is needed to clear the clog.

This pressure pulsing control is now available in a condensate pump. By monitoring pumping conditions, ClearVue™ is able to detect when a drain line is partially or fully clogged. In these instances, ClearVue™ spins a bit faster, pumps a bit harder, and increases the pressure in the drain line to attempt to clear the clog.

If the clog is particularly stubborn, ClearVue™ continues increasing the pressure until the clog is cleared, or the high level alarm is activated. Once the high level alarm is activated, ClearVue™ shuts down the cooling system, but continues running to try and clear the clogged drain line. As ClearVue™ runs, in cleaning mode, it tries to break the clog loose, by pulsing the discharge water. This pulsing of the water continues for a couple minutes.



If ClearVue™ is successful in clearing the drain line clog, it restarts the cooling system, and returns to normal functioning. If ClearVue™ is not able to clear a very stubborn clog, ClearVue™ will remain in the high level alarm condition and keep the cooling unit in the off position. If enabled, ClearVue™ will activate an external alarm, and optionally beeps an audible alarm until addressed by a service technician.

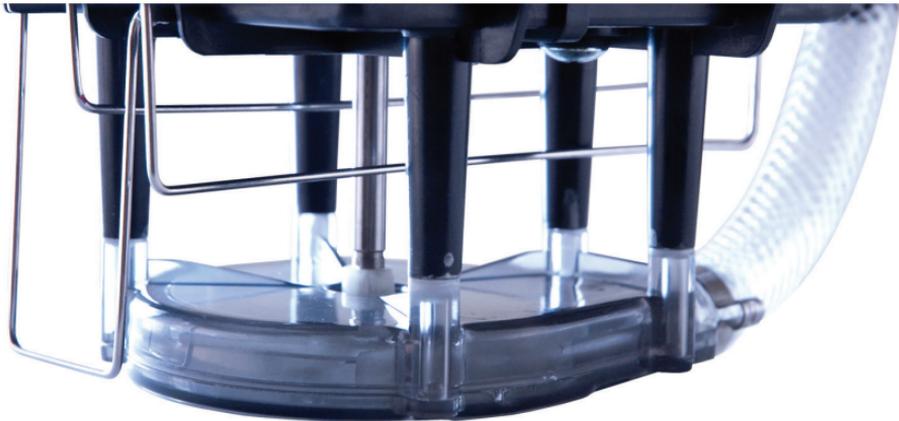
## Floatless Sensor™

### **FLOATLESS SENSOR.**



No float, No movement, No problem

Conventional pumps use an electro-mechanical float switch to turn a condensate pump on and off, and to detect a potential overflow condition with a high level alarm. Electromechanical float switches are prone to mechanical failure, debris fouling, and misalignment. DiversiTech's patent pending Floatless Sensor™ eliminates many of the mechanical problems associated with conventional condensate pumps.



## Other Features



Single Button Drainage

- A simple push of a button drains the tank manually.



Alarm Terminals

- Terminal tabs come integrated into the pump as an easy means to connect an external alarm into the system.



Reversible Deck

- The top deck can be switched to face either direction to give more installation options.

## Other Features



See-Through Tank

- Easy to view the tank contents for diagnostics or cleaning.



Stainless Steel  
Hang Tabs

- Integrated, corrosion resistant, stainless steel hang tabs offer a new dimension of mounting possibilities.



Rubber Feet

- Soft rubber feet offer sound isolation and surface grip.

## Installation Location Consideration



**CHECK FOR  
SHIPMENT  
DAMAGE**

Carefully open the carton to avoid damage to the pump. Do not use a knife or other sharp object that may scratch the pump's cover. After opening carton, look for damage. If damage is found file a claim with the freight carrier.

Do not use this pump in the presence of spraying or standing water, it may cause a shock.

This pump is not suitable for use in Class I or Class II (explosive gas or dust locations).

Do not cover the pump air vents located on the top or sides of the pump housing. The pump is air cooled. The pump may be operated continuously as long as the air vents are not covered.

## Mounting

ClearVue™ is equipped with metal mounting tabs which allow the tank to be attached to a wall or equipment side panel. The screw-to-screw distance is 8". When mounting into drywall or concrete walls the screws must have anchors which provide the necessary support in the wall material.

ClearVue™ should be mounted level for optimum results, but the Floatless Sensor™ in ClearVue™ enables operation when mounted at an angle of up to 10 degrees.

ClearVue™ also features sound dampening and anti-vibration soft rubber feet for floor installation.

The ClearVue™ top is reversible. It may be turned around to allow easy access to the pump outlet or power connection as may be required by the particular installation.



## Electrical connection

Supply voltage and frequency must match what is shown on the pump nameplate. Source voltages lower than rated supply can reduce performance and cause the pump to overheat.

Plug the pump into a properly grounded outlet capable of providing power that exceeds the requirements listed on the pump nameplate. Avoid the use of extension cords wherever possible. The pump must be operated by a continuous source of power and must not be connected to switched outlets or other power supplies that may be inadvertently or automatically turned off. All aspects of the installation must conform to requirements of the NEC, and any applicable local codes.

**WARNING:** Risk of electric shock – This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.

## High Level Alarm Connection

The ClearVue™ safety switch must be used on Class II control circuits only. The ClearVue™ high level alarm connections are made with standard 1/4" quick connect terminals located just above the power cord connection. Supplied with the ClearVue™ are two yellow wires with pre-crimped connectors. Single pole, double throw (SPDT) isolated relay contacts are provided for cooling system interruption and external alarm connection. These features are activated when the high level alarm is triggered.

Connecting the common and run terminals in the call for cool wire from the thermostat enables ClearVue's capability to shut down the cooling system if there is a high level alarm. Connecting the common and alarm contacts to an external alarm enables ClearVue's capability to trigger an external alarm, such as DiversiTech's Universal Alarm (UA-1).



## Inlet Connections

4 inlet holes are located in the top deck of ClearVue™. Flexible vinyl tubing or PVC may be connected to any of the pump inlets. Pop out covers are provided to cover unused inlets. Be sure to cover the unused holes to prevent the pump from collecting debris or insects.

Tubing installed into the inlet holes must be straight. The tubing must not bend inward where it will interfere with the pump or sensor wire mechanism. When using rigid tubing such as PVC, be sure to cut the end at an angle. This will allow the condensate water to drain freely and keep the tubing end from being blocked by the tank bottom. It may be desirable to use a "P" or "U" trap between the AC unit and ClearVue™ to provide a liquid barrier to air flow from the air conditioner. These types of "traps" always contain some water which blocks the flow of air from the AC unit which is wasteful and can cause other problems such as accelerated algae growth.

## Outlet Tubing Connections

ClearVue™ is equipped with a combination barb-type fitting and check valve. The fitting allows the connection of 3/8" flexible tubing. Attach the tubing by pressing it over the barb fitting and secure with a screw type hose clamp. Route the tubing up and away from the pump. Avoid compressing or kinking the tubing. For best results and to ensure the quietest operation, the tube route should be the shortest possible distance from the pump to the building exterior or other drain location.

## Power

Apply power by plugging in ClearVue™. The lights will flash and an audible startup tone will be heard. An internal blue LED will blink indicating that the Floatless Sensor™ is operating.

Ensure that the green LED is illuminated indicating that the pump is ready and the HVAC unit is enabled.

The default mode for the audible high level alarm is disabled. If an audible high level alarm is desired, press and hold the drain button while applying power. Alarm on will be indicated by three brief flashes of the alarm light and a beeping confirmation tone. Repeating this procedure will disable the alarm (if activated). Alarm off is indicated by another beep tone and the alarm light illuminating for 2 seconds.



## Pump Test Operation

To test the pump, wait for condensate drainage, or manually fill the pump with water and the pump will run automatically. Test the operation of the pump and leak check all connections. The motor can be tested in a partially full or “dry” condition by pressing the “Drain” button located on the top of the ClearVue™.

## Normal Functions

The ClearVue™ is smart and is designed to run quietly and maintain itself over time with virtually no homeowner interaction once the pump is installed. ClearVue™ is equipped with sensor technology that knows exactly when to run the pump and how much pumping it needs to ensure the quietest operation. ClearVue™ even senses when water has remained stagnant in the tank for extended periods of time, and will run a complete tank drain to reduce buildup and slime growth in the tank. However, a manual drain cycle or a manual clean cycle can be run at any time by pressing one of the two buttons on the tank and by following the table on page 14.

## Variable Lift

ClearVue™ pump features variable speed and lift. ClearVue™ pumps only as hard as it needs to, in a given installation, to lift the condensate water away. The lower the lift, the slower the pump runs, and the quieter the operation.

## Cleaning Function – Automatic and Manual

ClearVue™ will periodically enter a routine cleaning cycle to reduce the potential for a drain line clog. This cycle pulses water in the drain line and agitates the water in the tank in order to prevent buildup of algae and other organic materials. If desired, a manual cleaning cycle can be started by pressing the Clean button. The cleaning cycle will begin automatically when there is sufficient water in the tank. The white “clean” indicator will flash, indicating that a clean cycle is pending.



## End of Season

At the end of the cooling season, ClearVue™ detects the lack of new condensate, and empties the tank almost completely, thus eliminating a significant source of algae growth and future startup problems.

## Instruction to Homeowner

Instruct the homeowner about the pump's general operation. Inform them to look for the Alarm light and listen for an alarm tone (if enabled) if they think that there is system trouble.

## Button functions

Button	Function
Press the "Drain" button.	Manually test motor operation
Press the "Drain" button with water in tank. Tank will drain until empty.	Manually drain water from pump
Press the "Clean" button. Clean cycle will run once a sufficient volume of water is in the tank. Press the "Clean" button again to cancel function.	Run a clean cycle
Press the "Drain" button while plugging in the pump	Activate or deactivate the audible alarm
Press the "Drain" button when pump is in alarm mode to silence the alarm.	Silence the audible alarm (when enabled)

## LED Indications

<b>LED Indicator Light</b>	<b>Status</b>
Solid Green LED	Indicates that the A/C system circuit is enabled and the pump is ready.
Solid Amber LED	Indicates that the pump is running and removing condensate from the tank.
Solid Amber LED & Flashing Red LED	Indicates that the pump is in alarm mode and that the A/C system circuit is disabled. An optional alarm tone (if enabled) will sound.
Solid Amber LED & Flashing Red LED & Flashing White LED	Indicates that the pump has started a clean cycle due to high level alarm.
Flashing White LED	Indicates that the pump is preparing to run a clean cycle once a sufficient volume of water is in the tank.
Flashing White LED & Solid Amber LED	Indicates that the pump is running a clean cycle.
Flashing Blue LED	Indicates that pump sensors are operational.

## Troubleshooting Guide

Symptom	Possible Condition
Unit does not start when full of condensate	Power is not applied to the pump
	Water is not touching sensors
	Pump impeller is not turning, amber light on
Condensate is overflowing from the unit	Power is not applied to the pump
	The pump is in overflow condition
	Pump is not level
	Outlet flow is blocked
	Pump impeller is not turning
Pump will not shutoff	The pump is in overflow condition
	Outlet flow is blocked
A/C unit is not running	Power is not applied to the pump
	High level alarm is activated

## Corrective Action

Ensure that power is supplied to the pump. A green LED indicator on the top of the pump cover will show that power is supplied and that the pump is ready.

The tank must be at least 1/2 full in order to run a pumping cycle.

Clear any blockage in the impeller housing. If the problem persists, the motor is stuck. Contact the manufacturer. There are no user serviceable parts.

Ensure that power is supplied to the pump. A green LED indicator on the top of the pump cover will show that power is supplied.

The inlet flow to the condensate pump is exceeding the outlet flow. Check to ensure that the pump safety switch (alarm circuit) is connected to the A/C unit. The safety switch connection will shut off the A/C unit in this condition.

Check to ensure that the pump is level. If the pump is not level, it may not activate, causing water to overflow from the tank. Place unit on a flat and level surface.

Check outlet tubing to ensure that it is not kinked or blocked. Clear blocked tubing of slime and debris. Clean inlet and outlet piping.

Clear any blockage in the impeller housing. If the problem persists, the motor is stuck. Contact the manufacturer. There are no user serviceable parts.

The inlet flow to the condensate pump is exceeding the outlet flow. Check to ensure that the pump safety switch (alarm circuit) is connected to the A/C unit. The safety switch connection will shut off the A/C unit in this condition.

Check outlet tubing to ensure that it is not kinked or blocked. Clear blocked tubing of slime and debris. Clean inlet and outlet piping.

The pump is a fail safe device. Power must be supplied to the pump to turn on the relay that activates the A/C unit.

Check the red Alarm light. If the red Alarm light is flashing, check the drain line and pump function.

## Technical Data

### 120 Volt version

<b>Rated Voltage</b>	120 Volts / 60 Hz
<b>Rated Current Draw</b>	1.9 Amps
<b>Input Type</b>	USA 3-prong plug
<b>Head Height</b>	22 ft. maximum
<b>Flow Rate at Zero Head</b>	1.6 GPM
<b>Maximum Rated Inlet Flow Rate</b>	500mL/min
<b>Temperature Rating</b>	<ul style="list-style-type: none"> <li>• Continuous duty 140F°</li> <li>• Max inlet temperature 160F°</li> <li>• Not suitable for contact with steam or gasses that exceed 160F°</li> </ul>
<b>Product Dimensions</b>	11.8" x 5.9" x 6.7"
<b>Product Weight</b>	5 lbs.
<b>Inlet Height from Base</b>	4.4"
<b>Included Accessories</b>	<ul style="list-style-type: none"> <li>• Instruction Sheet</li> <li>• Stainless Steel Hang Tabs</li> <li>• Plug Protector</li> <li>• 4' Remote Shutoff Leads with Insulated Terminals</li> <li>• Polyethelene Inlet Covers (3)</li> </ul>
<b>Wiring Color References</b>	Black - Live/Hot White - Neutral Green - Ground
	All installations must conform to NEC and local code requirements





6650 Sugarloaf Parkway  
Duluth, GA 30097

**678.542.3600**  
**800.995.2222**  
**678.542.3700 Fax**



## About DiversiTech

DiversiTech Corporation is North America's largest manufacturer of equipment pads and a leading manufacturer and supplier of components and related products for the heating, ventilating, air conditioning, and refrigeration (HVACR) industry.

Headquartered in the Atlanta, GA metropolitan area, DiversiTech manufactures a suite of products which includes a wide range of mechanical, electrical, chemical, and structural parts for HVACR and electrical systems, and swimming pool installations. The company maintains manufacturing and distribution facilities in key U.S. locations, Europe, and in the Far East. DiversiTech has enjoyed a continued history of successful growth and has acquired industry-recognized names including Devco® Enterprises, Wagner® Manufacturing, The Black Pad®, Hef-T-Pad™, and Specialty Chemical.

DOC00039

Send edits / corrections / comments on this catalog to [feedback@diversitech.com](mailto:feedback@diversitech.com)

©2013 DiversiTech Corporation

Patents Pending