



# Condensate Pump Specialty

**ClearVue™ Pump**  
Models: IQP-120, IQP-120T

## Installation Instructions

CONDENSATE MANAGEMENT



## INTRODUCTION

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

Variable Speed and Lift - See below.

### **FLOATLESS SENSOR**

Floatless Sensor™ - See page 4

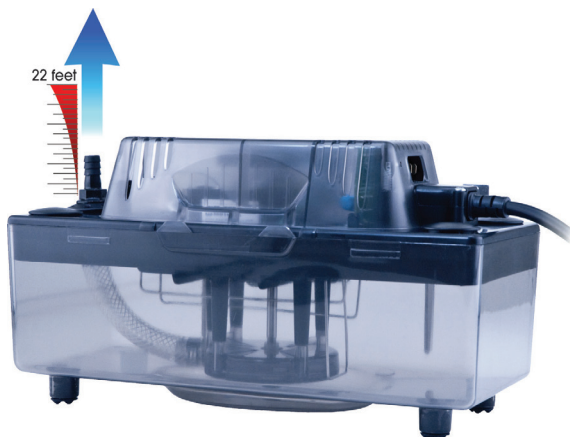
With Floatless Sensor technology, the ClearVue pump eliminates the float switch - one of the most common problems with conventional condensate pumps. ClearVue pump uses patent pending water sensing technology to detect condensate so that there are no more stuck floats! The pump also features a see-through 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.

### **Variable Speed and Lift**

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

The variable lift in ClearVue pump 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.



## 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, the pump is able to detect when a drain line is partially or fully clogged. In these instances, the pump spins a bit faster, pumps a bit harder, and increases the pressure in the drain line to attempt to clear the clog.

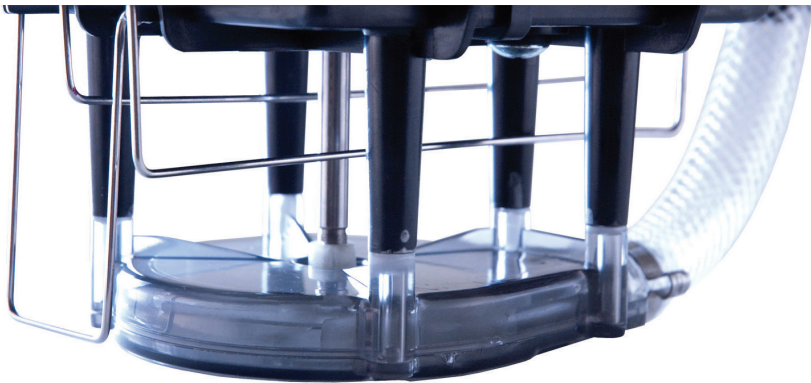
If the clog is particularly stubborn, the ClearVue™ pump continues increasing the pressure until the clog is cleared, or the high-level alarm is activated. Once the high-level alarm is activated, the pump shuts down the cooling system, but continues running to try and clear the clogged drain line. As the pump 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 the pump is successful in clearing the drain line clog, it restarts the cooling system, and returns to normal functioning. If ClearVue pump is not able to clear a very stubborn clog, the pump will remain in the high-level alarm condition and keep the cooling unit in the off position. If enabled, ClearVue pump will activate an external alarm, and will optionally beep 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 patented Floatless Sensor™ eliminates many of the mechanical problems associated with conventional condensate pumps.

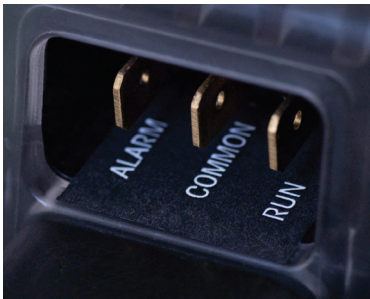


## OTHER FEATURES



**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 (CONTINUED)



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

### SEE-THROUGH TANK



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

### STAINLESS STEEL HANG TABS



- Soft rubber feet offer sound isolation and surface grip.

### RUBBER FEET

# 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™ pump 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.

The pump 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 pump also features sound dampening and antivibration soft rubber feet for installation.

The top of the pump 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 switch 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™ pump safety switch must be used on Class II control circuits only. The high level alarm connections are made with standard ¼" quick connected terminals located just above the power cord connection. Supplied with the pump 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 the pump's capability to shut down the cooling system if there is a high-level alarm. Connection of the common and alarm contacts to an external alarm enables the pump's capability to trigger an external alarm, such as Diversi-Tech's Universal Alarm (UA-1).





## INLET CONNECTIONS

There are four inlet holes located in the top deck of ClearVue™ pump. Flexible vinyl tubing or PVC may be connected to any of the ClearVue™ 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 the pump 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

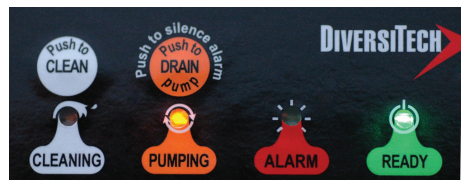
ClearVue pump is equipped with a combination barb-type fitting and check valve. The fitting allows the connection of 3/8” flexible tubing. Attach the tubing by pressing it over the barb fitting and securing it with a screw-type hose clamp. Route the tubing up and away from the pump. Avoid compressing 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 pump. 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™ pump.

## **NORMAL FUNCTIONS**

The ClearVue pump is smart and 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 it needs to pump 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. The ClearVue pump 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 pump 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.



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## END OF SEASON

At the end of the cooling season, the ClearVue™ pump 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)

## BUTTON FUNCTIONS

LED Indicator Light	Status
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

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Unit does not start when full of condensate	<ol style="list-style-type: none"> <li>1. Power is not supplied to pump.</li> <li>2. Water is not touching sensors</li> <li>3. Pump impeller is not turning.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure that power is supplied to pump. A green LED indicator on top of pump cover will show that power is supplied and that pump is ready.</li> <li>2. The tank must be at least 1/2 full in order to run a pumping cycle</li> <li>3. Clear any blockage in impeller housing. If problem persists, motor is stuck. Contact the manufacturer. There are no user serviceable parts.</li> </ol>
Condensate is overflowing from unit	<ol style="list-style-type: none"> <li>1. Power is not supplied to pump.</li> <li>2. Pump is in overflow condition.</li> <li>3. Pump is not level.</li> <li>4. Outlet flow is blocked.</li> <li>5. Pump impeller is not turning.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure that power is supplied to pump. A green LED indicator on top of pump cover will show that power is supplied.</li> <li>2. The inlet flow to condensate pump is exceeding outlet flow. Check to ensure that pump safety switch (alarm circuit) is connected to appliance. The safety switch connection will shut off appliance in this condition.</li> <li>3. Check to ensure that pump is level. If pump is not level, it may not activate, causing water to overflow from tank. Place unit on a flat and level surface.</li> <li>4. Check outlet tubing to ensure that it is not kinked or blocked. Clear blocked tubing of slime and debris. Clean inlet and outlet piping.</li> <li>5. Clear any blockage in impeller housing. If problem persists, motor is stuck. Return pump to place of purchase if under warranty.</li> </ol>
Pump will not shut off	<ol style="list-style-type: none"> <li>1. The pump is in overflow condition.</li> <li>2. Outlet flow is blocked.</li> </ol>	<ol style="list-style-type: none"> <li>1. The inlet flow to condensate pump is exceeding outlet flow. Check to ensure that pump safety switch (alarm circuit) is connected to A/C or dehumidifier unit. The safety switch connection will shut off A/C or dehumidifier unit.</li> <li>2. Check outlet tubing to ensure that it is not kinked or blocked. Clear blocked tubing of slime and debris. Clean inlet and outlet piping.</li> </ol>
A/C unit is not running	<ol style="list-style-type: none"> <li>1. Power is not applied to the pump</li> <li>2. High level alarm is activated</li> </ol>	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Check the red Alarm light. If the red Alarm light is flashing, check the drain line and pump function.</li> </ol>

## 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

## TECHNICAL DATA (CONTINUED)

230 Volt version	
<b>Rated Voltage</b>	230 Volts / 60 Hz
<b>Rated Current Draw</b>	1.0 Amps
<b>Input Type</b>	NEMA 6-15 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>	Brown - Live/Hot Blue - Neutral Green/Yellow - Ground
All installations must conform to NEC and local code requirements	



CONDENSATE MANAGEMENT



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