



# Ascent™ CT

## Service Manual



### NOTE:

Please read these instructions before operating the unit. Design and color may differ from the image. The unit specifications are subject to change without prior notice. The rated voltage of this unit is 120 VAC / 60 Hz



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## Before you begin

Please read the information contained in this manual carefully before proceeding with the installation. Failure to do so can cause damage and may void the manufacturer's warranty.

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## Conditions For Use

### CAUTION

DO NOT USE WITH WATER THAT IS MICROBIOLOGICALLY UNSAFE OR OF UNKNOWN QUALITY WITHOUT ADEQUATE DISINFECTION BEFORE OR AFTER THE SYSTEM

THIS DRINKING WATER SYSTEM IS FOR USE ON POTABLE COLD WATER SUPPLIES ONLY

### Source Water Supply

**Municipal/Private:** Potable Water Supply

**System Pressure:** 25-80 PSI (1.7-6.9 bar) (for RO to work properly, water pressure should be between 60-70 PSI)

**Temperature:** 40°-100°F (4°-38°C)

### Warning

A pressure regulator must be installed before the system water inlet if the water pressure or any possible pressure spikes could exceed 80 PSI (5.5 bar) Failure to comply will void all warranties. The manufacturer accepts no liability for any damage caused by excessive water pressure.

### Environmental Conditions

System should be installed in areas that are protected from severe environmental conditions. System is not manufactured or approved for installation in areas that are exposed to direct sunlight, rain/snow and/or extreme temperature variation.

### Compliance

Installation and service must be performed by qualified personnel to ensure compliance with all applicable local, state, federal and international codes.

### Note:

Always check applicable plumbing codes before tapping into a water or drain line.



## System Overview

The Culligan Ascent™ CT Bottleless Cooler comes equipped with features one can expect from a state-of-the-art Bottleless Cooler from Culligan. Highlights include:

- Ergonomic spigots for easy dispense of hot and cold water
- Hot water safety
- Touch free dispensing
- Glass upper front panel for a high-end contemporary design
- 11.75" dispense area
- Cold water dispense pump provides flow at 2.0 lpm, faster and more consistent water flow
- Air filter to help keep airborne particles from the water in the reservoirs
- In tank LED UV light
- Leak stop and leak detection

The Ascent™ CT is available in two filter configurations:

**1. Ascent CT-RO:** This Ascent CT-RO model filters your water through a series of filters and a RO membrane to reduce contaminants. These are:

- A. 10 micron sediment filter (P/N BFC-SED)
- B. Pre-Carbon GAC filter (P/N BFC-PRE)
- C. 80 gallon per day RO membrane (P/N BFC-RO80)
- D. Mineral filter to improve taste and increase alkalinity and electrolytes.(P/N BFC-PH)
- E. GAC post filter with 1 micron mesh (P/N BFC-POST)

**2. Ascent CT-M:** This Ascent CT-M model filters your water through the following filters:

- A. 10 micron sediment filter (P/N BFC-SED)
- B. Pre-Carbon GAC filter (P/N BFC-PRE)
- C. 1 micron carbon block with lead reduction rating (P/N BFC-LR) \*\*NOTE: a 0.5 gpm flow regulator must be used in order to comply with the lead reduction rating.



## Receiving your Equipment

A common carrier will be delivering your Culligan Ascent CT product. Upon receipt you should check the following.

- 1. Are the systems still on the pallet?**
- 2. Count the number of boxes you are signing for.**
- 3. Is there any obvious damage to the product or the boxes?**

If there are any discrepancies or obvious damage to the equipment or boxes, please note it on the “Bill of Lading” and/or refuse shipment.

After receiving the equipment from the carrier, remove packaging and inspect for any hidden freight damage. If freight damage has occurred, call Echo to report the damage and follow their claim process as outlined on Cport. Photograph all damages to be submitted with claim. THIS MUST BE DONE WITHIN 48 HOURS OF DELIVERY. If not reported within 2 business days, CULLIGAN and/or carrier will not be responsible for replacement or repair.



## Safety Precautions

**Warning:**

Do not install or use this drinking water system where the source water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the system.

**Warning:**

A pressure regulator, such as a slow flow regulator, must be installed before the systems water inlet if the water pressure (including any possible spikes) could exceed 80 PSI (5.5 bar). Failure to comply will void all warranties. The manufacturer accepts no liability for damage caused by excessive water pressure.

**Warning:**

These systems are manufactured with r134A refrigerant. Repairs to the refrigeration system must be performed by a certified refrigeration technician only.

**Warning:**

To prevent damage fire or shock hazard, do not expose this system to rain or other extreme elements.



## Safety Precautions

### Caution:

- To prevent electric shock and fire hazards, do not use with other than specified power source.
- Changes or modifications not approved by CULLIGAN will void any product warranty.
- If system begins to leak, unplug, turn off water supply and call service center immediately.
- Before moving the system, disconnect power supply and wait for water to reach ambient temperature before draining.

**Hot water is extremely hot!**

**Do Not dispense hot water directly into hands.**

**Hot water may cause serious injury.**

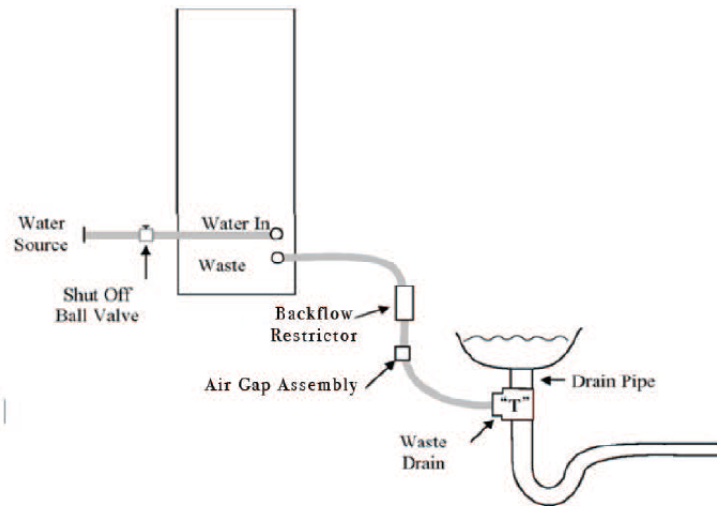
- If system will not be used for an extended period of time (5 days or longer), drain the system completely. Sanitize system prior to re-use.
- Should the system not perform as specified, unplug, turn off water supply and call the service center.
- Do not place any type of water container or heavy item on top of the system.  
**Water may leak into the electrical system causing a fire hazard. Heavy items may fall off causing injury.**

## Installation Procedures

**WARNING: Maximum water pressure (including any potential pressure spikes) of the water supply line to the system must not exceed 80 PSI (5.5 bar). Failure to comply will void the warranty. The manufacturer accepts no liability for damage caused by excessive water pressure.**

1. Always check local plumbing codes before tapping into water supply line and drain line. Tap into the supply line with an approved connector.
2. Once the unit and filtration system flushing procedures are complete, determine the best installation location. Consider user convenience, electrical access and water access. The unit performs optimally if within 20 feet of a cold-water supply line. Connect only to a cold water supply. Do not install feed water assembly on the hot water line. Do not place unit where it will be exposed to rain, freezing temperatures or direct sunlight to the hot water supply.
3. The rear of the unit should be installed at least 2" (5 cm) from any vertical surface to ensure proper air circulation.

4. Use only 1/4" OD copper or plastic tubing to connect your water supply and drain to the cooler water inlet and drain port. The inlet and drain ports are quick connect fittings. Units are shipped with plugs in each fitting. Remove the plugs prior to inserting water supply and drain lines. A water shut off valve is recommended between the inlet connection to the cooler and the water supply connection.



5. The Ascent CT-RO system requires a waste or drain line for the RO membrane. The drain line should include an Air Gap and back flow restrictor. See diagram.
6. Check the available power supply to assure proper electrical service. In the U.S., the voltage specification is 120 volt 60 hertz. Voltage outside of this specification will affect the system performance.
7. Water filtration system will begin operating, verify proper water production.
8. Dispense water from hot tank prior to turning the heating system switch on the back of the unit to the "ON" position.
9. Perform final inspection of all installed water lines to ensure a leak free installation.
10. Instruct user on proper system operation.





## Filter Flushing Procedures – RO

### Filter Flushing Procedures for Ascent CT Filter Configurations

The filters can be flushed either outside of the cooler (External) or within the cooler (Internal). Either method is appropriate and there are instructions below for both External and Internal flushing for both the RO filtration system and the Micro filtration system.

#### RO Filtration: External Flushing

1. Remove all filters from the unit.
2. Use remotely mounted filter heads for flushing process.
3. Run water through the sediment, pre-carbon, pH filter and post carbon filter according to the instructions on the filter label.
  - 3.1. The sediment and pre-carbon filters may be flushed in series, the other filters should be flushed independently.
    - 3.1.1. The post-carbon filter should be reversed flushed to avoid carbon flowing into the sediment portion of the filter.
  - 3.2. To flush RO, run water through all filters in sequence for no less than 20 minutes or in accordance with the filter label. **CAUTION: Do not run water directly to RO without first running through the pre-filters. Chlorine will damage the RO membrane.**
  - 3.3. Flush for the minimum amount of time in accordance with the instructions on the filter label.
    - 3.3.1. Flush longer to reduce the TDS level.
      - 3.3.1.1. Check the TDS from exit of the post filter.
    - 3.3.2. Drain from output of filter manifold.
    - 3.3.3. TDS after the RO should be approximately a 95% reduction verses the city water TDS level.
    - 3.3.4. The pH filter will add approximately 8 - 10 PPM of TDS to the water.

#### RO Filtration: Internal Flushing

1. Flush pre-filters in a series
  - 1.1. Connect the water source line to the input of the filter manifold.
    - 1.1.1. Top left input
    - 1.1.2. You may also remove the line from the output of the leak stop and connect to this tubing using a coupler
  - 1.2. Connect a drain line to the tubing that is connected to the input of the solenoid valve.
    - 1.2.1. The solenoid valve is placed between the pre-carbon filter and the RO.
      - 1.2.1.1. Connecting the drain line to this tubing will allow the water to flow through the first two filters without passing to the other filters.
        - 1.2.1.1.1. Turn water on for 5 minutes
2. Flush the pH filter
  - 2.1. Remove the pre-carbon filter and replace it with the pH filter
  - 2.2. Turn water on for 5 minutes
    - 2.2.1. This will flush water through the sediment and then the pH filter allowing the pH to be flushed



3. Flush the post-carbon filter
  - 3.1. Remove the pH filter and reinstall in its original filter position
  - 3.2. Move the sediment filter to the pre-carbon position
  - 3.3. Move the post-carbon filter to the sediment position
  - 3.4. Switch the tap water and drain line positions so that the drain is connected at the input of the filter manifold and the supply line is connected to the line that was previously installed to the input of the solenoid valve.
  - 3.5. Turn the water on for 5 minutes
    - 3.5.1. This will allow the water to pass through the sediment filter and then the post-carbon filter without passing carbon into the sediment portion of the post-carbon filter.
4. Flush the RO membrane
  - 4.1. Return all filters to their original positions
    - 4.1.1. Move the sediment filter back to the 1<sup>st</sup> position
    - 4.1.2. Move the post-carbon filter back to the 5<sup>th</sup> position
    - 4.1.3. Move the pre-carbon filter back to the 2<sup>nd</sup> position
    - 4.1.4. Reinstall the water lines to the leak stop and solenoid valve
    - 4.1.5. Connect the source water line to the back of the system into the "Tap water" fitting
    - 4.1.6. Connect a drain line to the back of the unit to the "RO drain" fitting
    - 4.1.7. Connect a secondary drain to the output of the manifold
    - 4.1.8. Plug power into the system
    - 4.1.9. Turn the water on for a minimum of 20 minutes
      - 4.1.9.1. This will allow water to run through all filters
      - 4.1.9.2. This is important to properly flush the RO, balance the pH and remove the higher TDS water in the post filter from previous steps
      - 4.1.9.3. TDS after the RO should be approximately 95% reduction verses the city water TDS level
      - 4.1.9.4. The PH filter will add 8 – 10 PPM of TDS



## Filter Flushing Procedures – Carbon

### Micro Filtration Flushing Procedures

#### Micro Filtration - External Flushing

1. Run water through the sediment, pre-carbon, and lead reduction carbon block filter in accordance with the instructions on the filter labels.
  - 1.1. The sediment and pre-carbon block can be flushed in series, the lead reduction carbon block should be flushed on its own.

#### Micro Filtration - Internal Flushing

1. Flush the sediment and the pre-carbon filters together.
  - 1.1. Connect the water source line to the input of the filter manifold - top left connection.
  - 1.2. Connect the drain to the output of the filter manifold - top right connection.
2. Replace the lead reduction carbon block and install a filter bypass plug in its place.
  - 2.1. Turn water on to flush in accordance with the instructions on the filter label.
3. Flush the lead reduction carbon block in accordance with time on the filter label.
  - 3.1. Remove the filter bypass plug and reinstall the lead reduction carbon block filter.
  - 3.2. Turn the water on to flush in accordance with the instructions on the filter label.
4. Reconnect all water lines to how they were previously installed prior to flushing.



## Flushing the Entire System

**During the following steps you should be checking for any leaks, loose fittings, hot water, cold water and production rate. See Final inspection.**

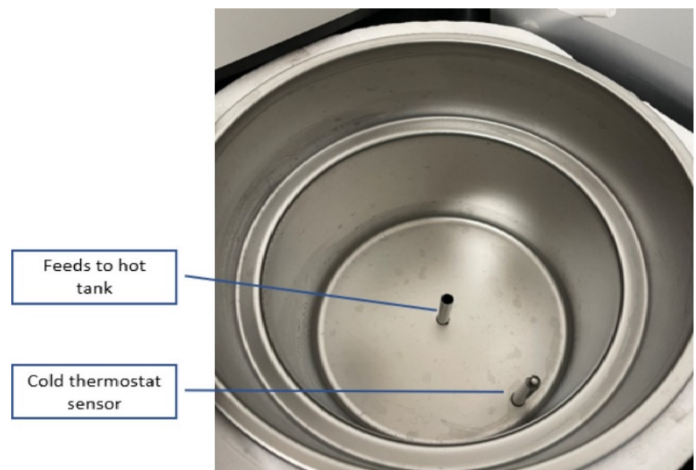
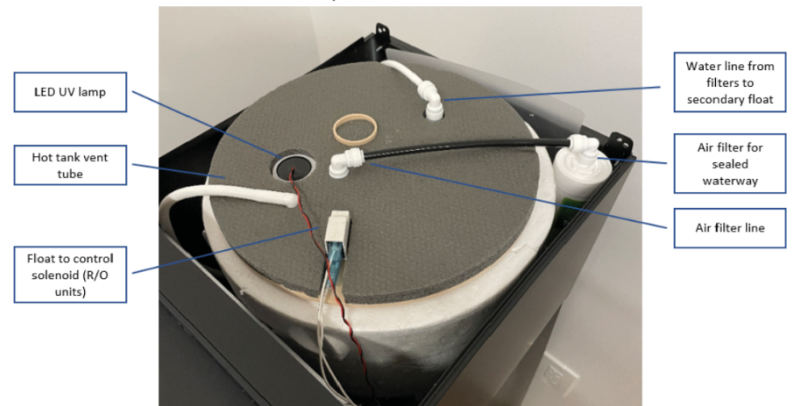
1. Turn the water to the system on, plug the system in and let the reservoir fill. RO systems will fill in one to two hours. Filtration (M) system will fill in 5 to 10 minutes.
2. Wave hand over dispense sensor to verify flow from hot and cold tanks.
3. Drain cold water into container using the dispense nozzle. Activate touchless dispense sensor until water flow ceases or refer to programming section regarding system flush mode.
4. Located on the front behind the front panel is a hot tank drain. Holding a bucket under the drain, remove drain cap and allow the system to drain until water flow stops. Replace drain cap.
5. Allow tanks to fill a second time. Turn on the hot tank switch and let the system heat for 60 minutes.
6. Turn off the hot switch and drain the hot tank from the hot tank drain.
7. Turn the water back on to the system allowing the hot tank to refill.
8. Purge any air from hot tank.
9. Turn hot switch located on back of unit to "ON" position.
10. Allow unit to sit for 4 hours to reach optimal operating temperature.

## Sanitization Instructions

### Sanitizing the Cold Tank:

It is strongly encouraged that all systems are sanitized using Hydrogen Peroxide prior to placing in the field. Please follow these steps to properly perform this important step.

1. Remove two screws on rear of top lid and remove top lid.
2. Remove the cold tank lid.
3. Using 3% or 7% Hydrogen Peroxide, spray the inside of the tank, lid, floats, and all parts visible parts with a heavy mist of spray.
4. Using a clean towel or paper towel, wipe the Hydrogen Peroxide away from the surfaces.
5. Spray a light mist of spray again on all parts and put the lid back onto the unit.
6. Allow one tank full of water to fill up and drain a single time.
7. It is strongly encouraged to perform this step on each annual service call as we





## Final Inspection

### Verify the following:

1. There are no leaks or loose components.
2. The hot water is over 160°F.
3. The cold water is below 50°F.
4. Confirm acceptable product water flow
5. The system exterior is clean and all components are in place.

### OTHER ITEMS

1. Once a system has been flushed it should remain plugged in and water dispensed occasionally.
2. Always drain the system before moving it. It is not necessary to drain the hot tank completely through the front hot tank drain. Leaving water in the hot tank will allow turning on the hot tank immediately after installation of the system.
3. Never lay the system on its side.



## Filter Changing Procedure

### Filter Changing Procedure

1. Verify filter configuration required for servicing. Flush the appropriate filters prior to installation using a filter pre-flush station. Protect flushed filters from extreme cold temperatures and potential sources of contamination.
2. Dispose of replaced filters in accordance with local laws, after removing filtration media.
3. Periodic replacement of the air filter is required. This should be done a minimum of every two years.

Filter change schedule		
Filter		Time or gallons
Sediment	(D1042447)	1 year or 1500 gallons
Pre-Carbon	(D1042448)	1 year or 1500 gallons
RO	(D1042449)	When TDS indicates
PH	(D1042450)	1 year or 1000 gallons
Post-Carbon	(D1042451)	2 years or 1500 gallons
LR Carbon Block	(D1042452)	1 year or 1500 gallons
Air filter	(D1042467)	2 years

### System Inspection

When changing filters or performing service, the following items should be completed.

1. Visual Inspection
2. Hose & fitting inspection
3. Electrical inspection
4. Pressure & flow test
5. Filter monitoring system reset
6. Clean the exterior of system and condenser coils on rear of system.
7. Temperature check (Cold water should be below 50°F, Hot water should be above 160°F)
8. TDS check
9. Hot tank switch On
10. Site clean up



## System Programming Instructions

### Circuit board schematics and Dip Switch Settings

This system allows for the dealer to adjust the following by using dip switches:

1. Filter life measurement in time or gallons
2. Filter alert active/disabled
3. LED UV run time settings
4. Cold temperature range

\*Yellow blocks indicate default settings\*

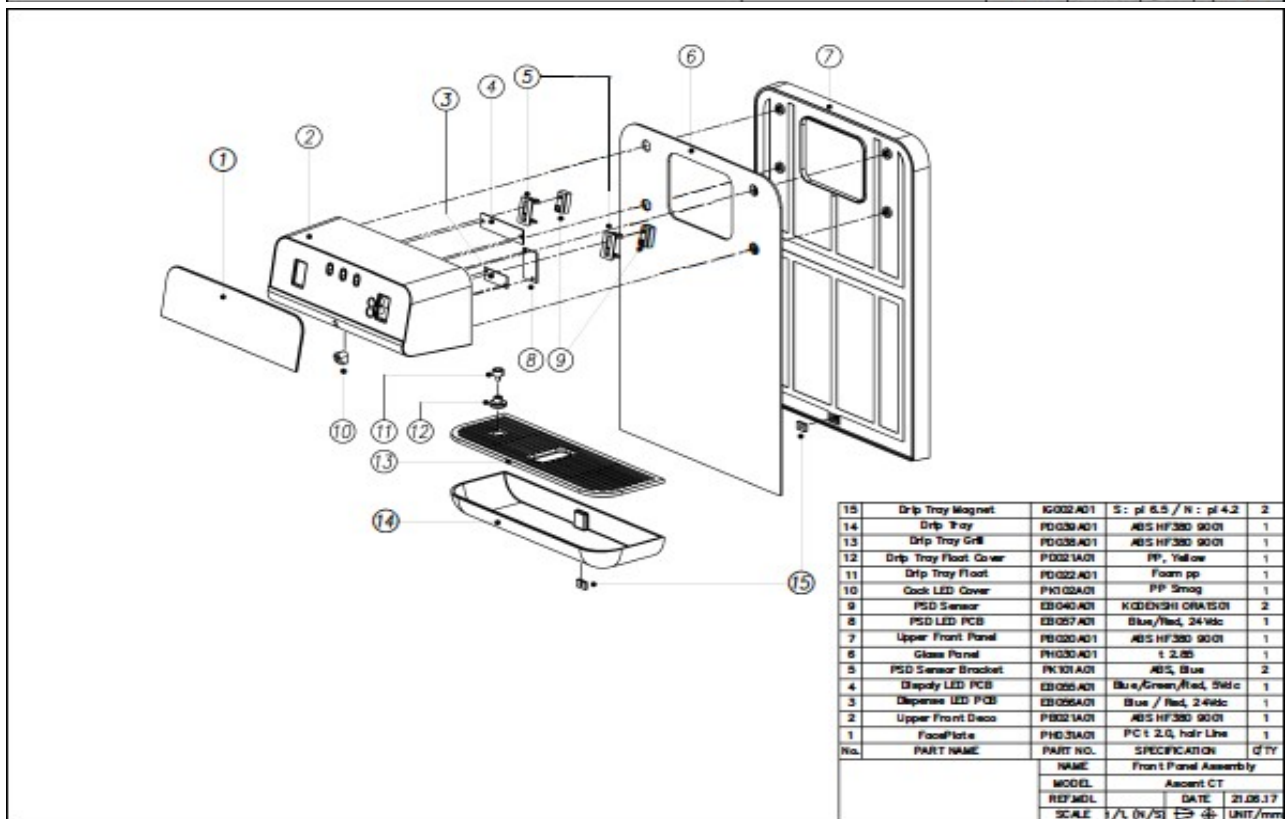
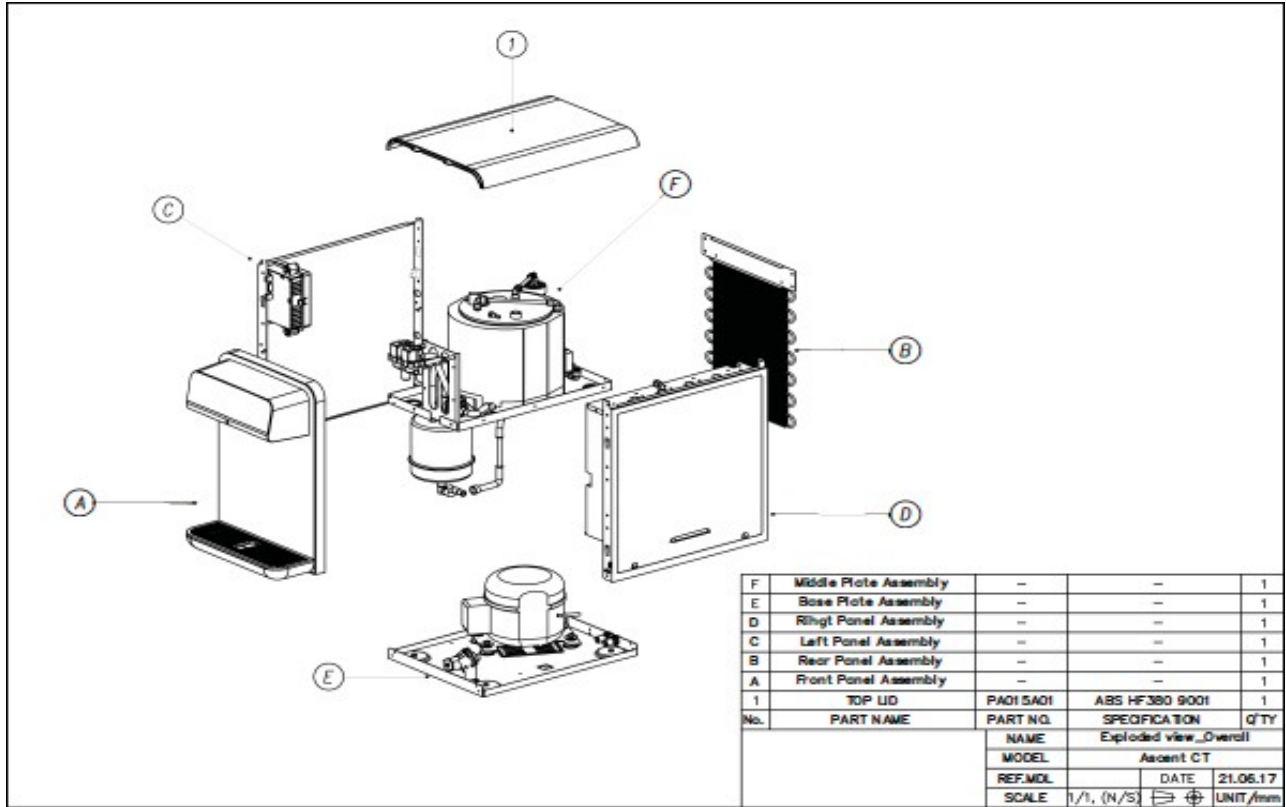
DIP Switch Number	Feature	Comment
<b>DIP S/W1</b>	<b>Filtration Installed</b>	
On	RO	Select Installed Filtration
Off	M	
<b>DIP S/W2</b>	<b>Service Life Indicator</b>	
On	Filter Alarm ON	Select ON to show illuminated 'service' light when filters reach capacity. *
Off	Filter Alarm OFF	
<b>DIP S/W3</b>	<b>RO</b>   <b>M</b>	
On	Lifetime: 24 Months	Select a time of capacity for filter life of RO/M
Off	Lifetime: 12 Months	
<b>DIP S/W4</b>	<b>RO</b>   <b>M</b>	
On	Capacity: 1,000gal (3,785L)	Select filter life duration indicator of RO/M
Off	Capacity: 1,500gal (5,678L)	
<b>DIP S/W5</b>	<b>Cold Temperature</b>	
On	ON: 46.4°F (8°C) / OFF: 40.1°F (4.5°C)	Change cold water range if too cold or freezing
Off	ON: 42.8°F (6°C) / OFF: 37.4°F (3°C)	
<b>DIP S/W6</b>	<b>UV Runtime Interval</b>	
On	1 hour ON/ 2 hour off	Change UV runtime interval if desired (impacts bulb life) **
Off	Always ON (24 hour)	
<b>DIP S/W7</b>	<b>Model</b>	
On	Must be off	Do not touch these settings
Off	Acscnt 80	
<b>DIP S/W8</b>	<b>Model</b>	
On	Acscnt 80	
Off	Must Be On	
<b>DEFAULT (DIP S/W)</b>		

\*Caution: We strongly advise leaving this off to avoid unwanted service calls.

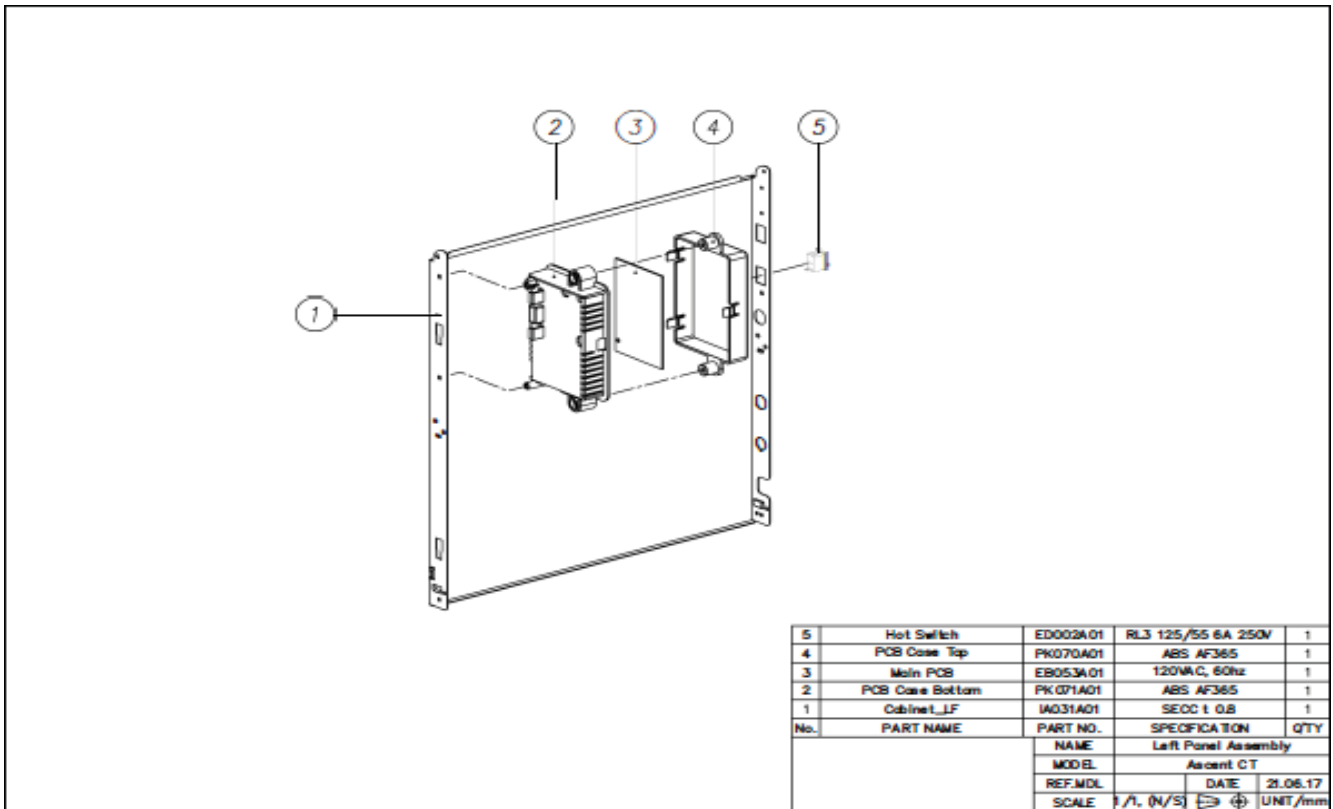
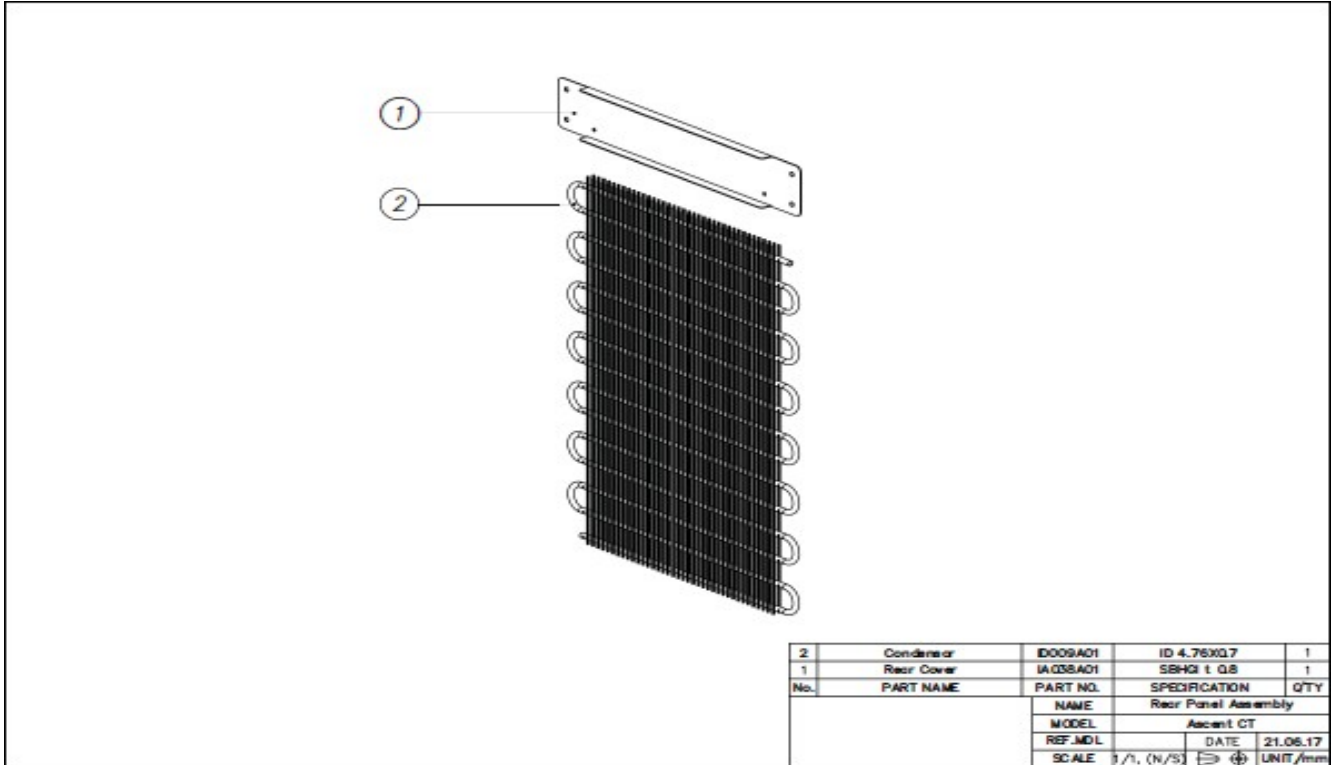
\*\*UV light life based on setting, default setting 5 year life, always on 2 year life.



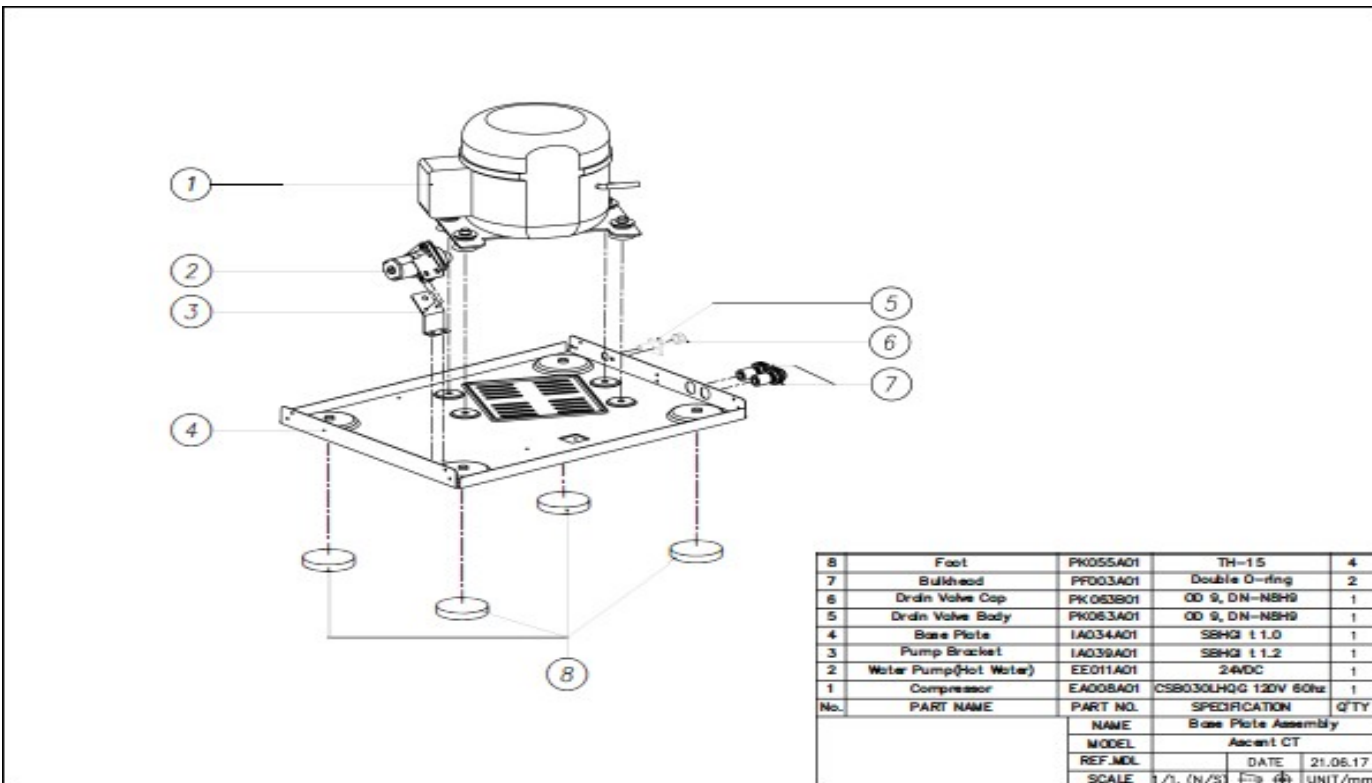
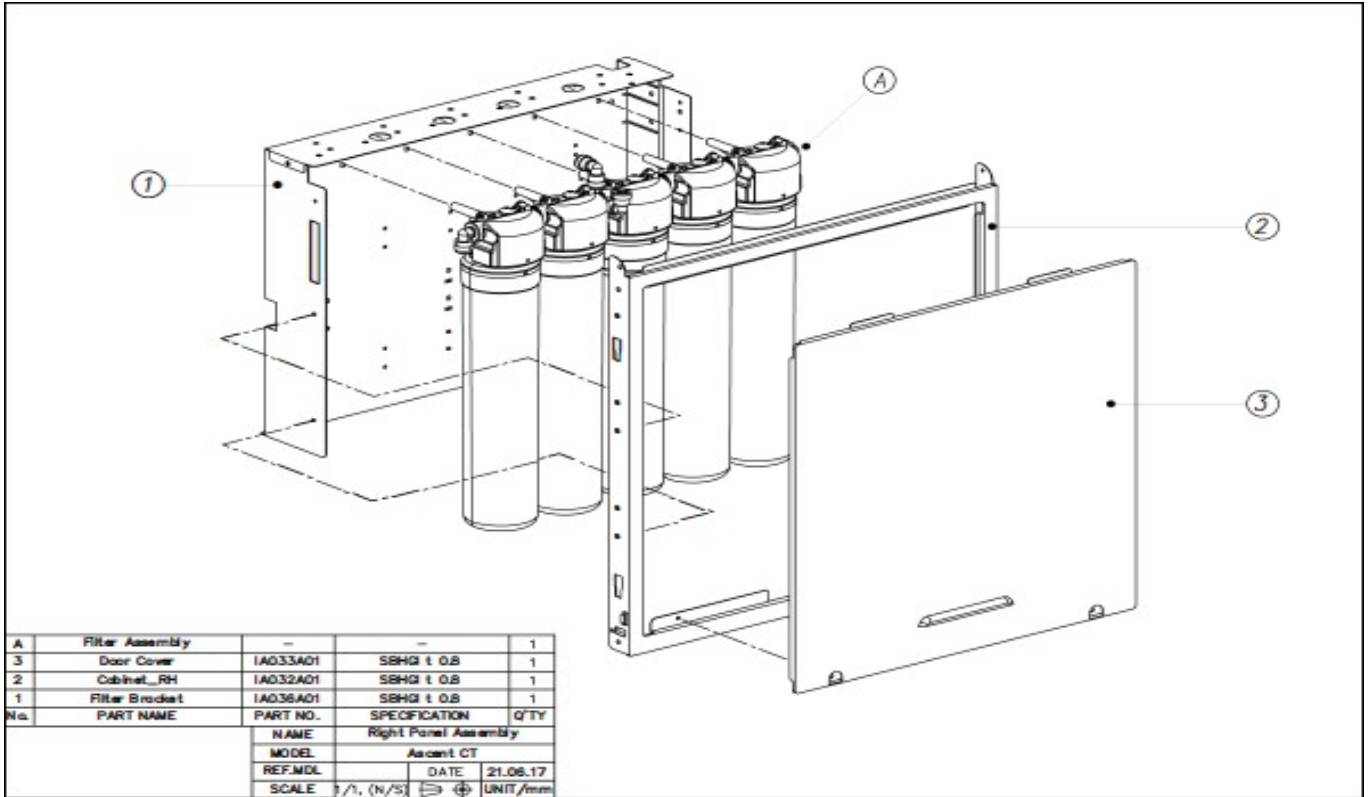
## Parts Diagrams



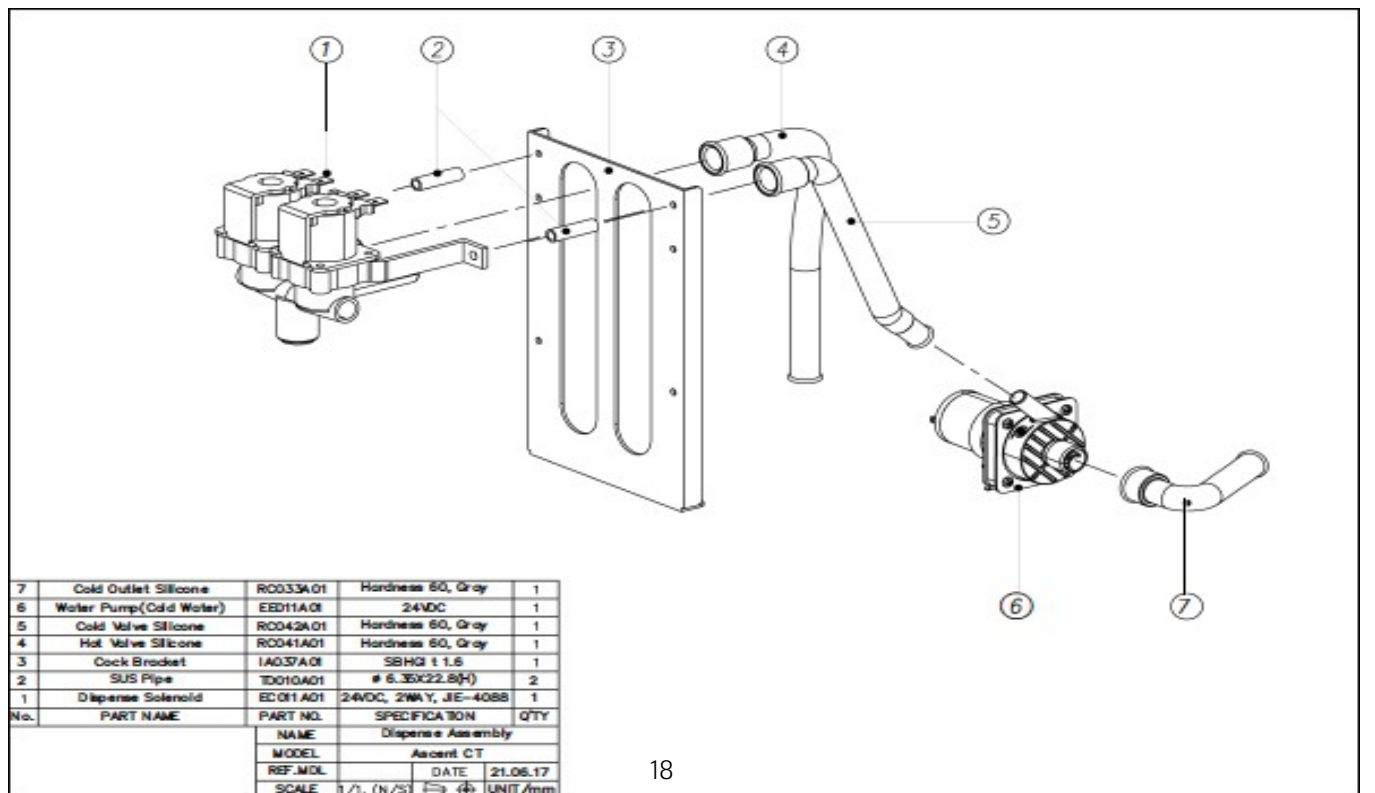
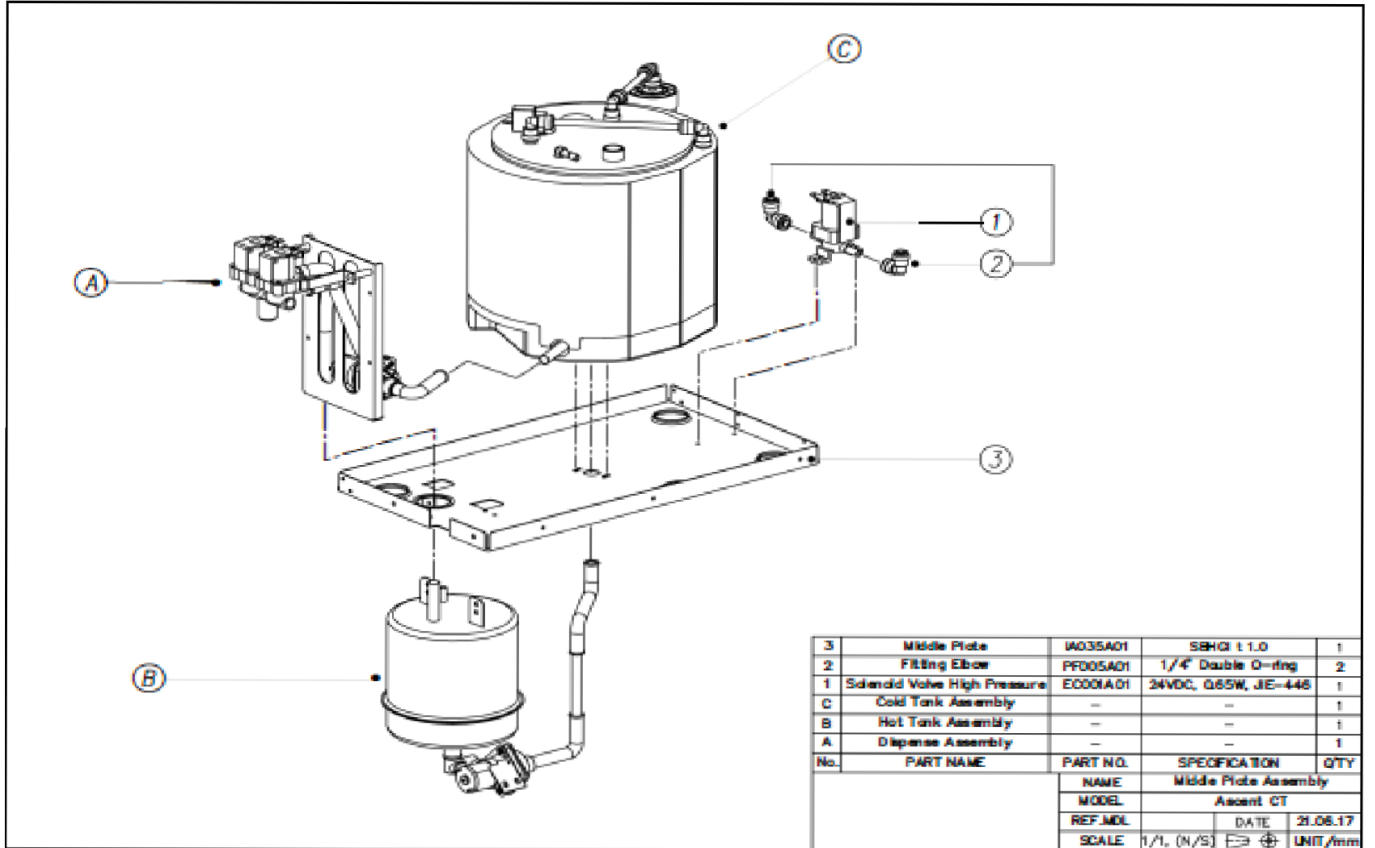
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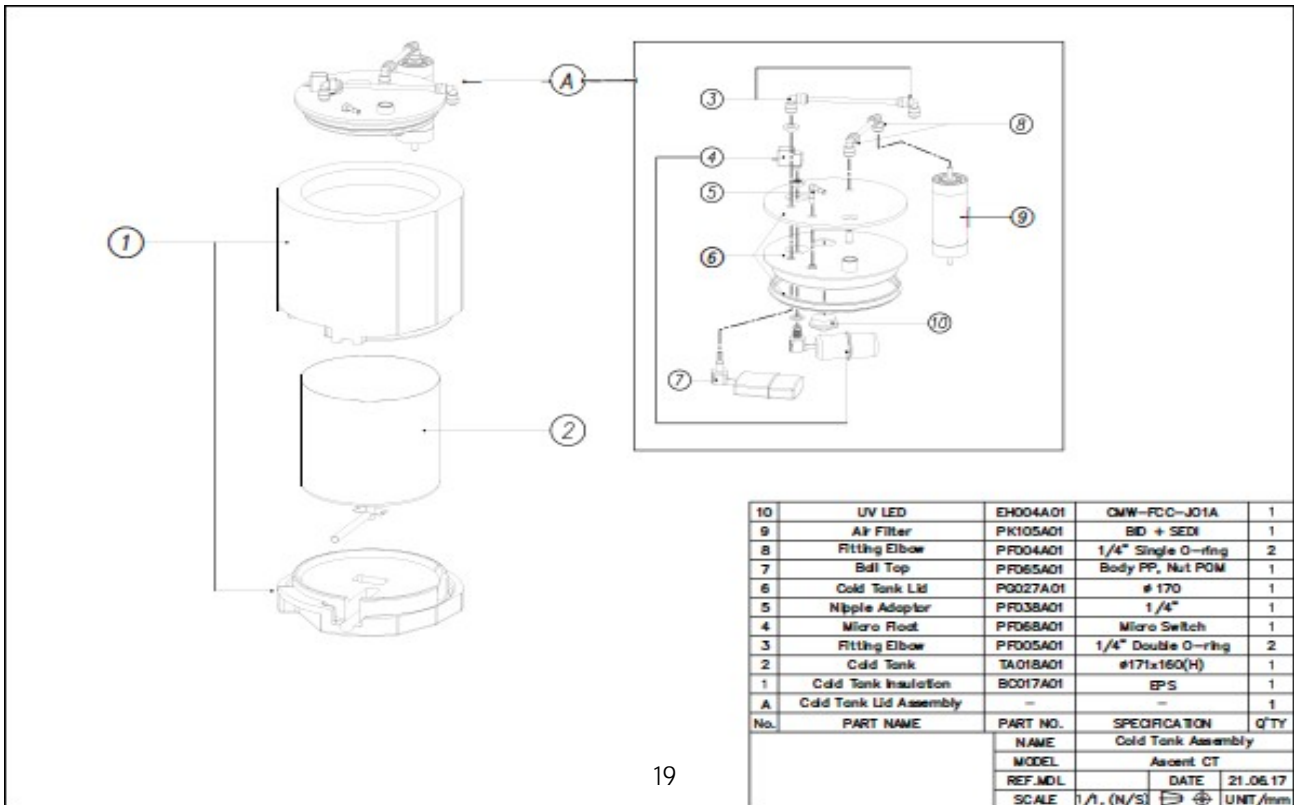
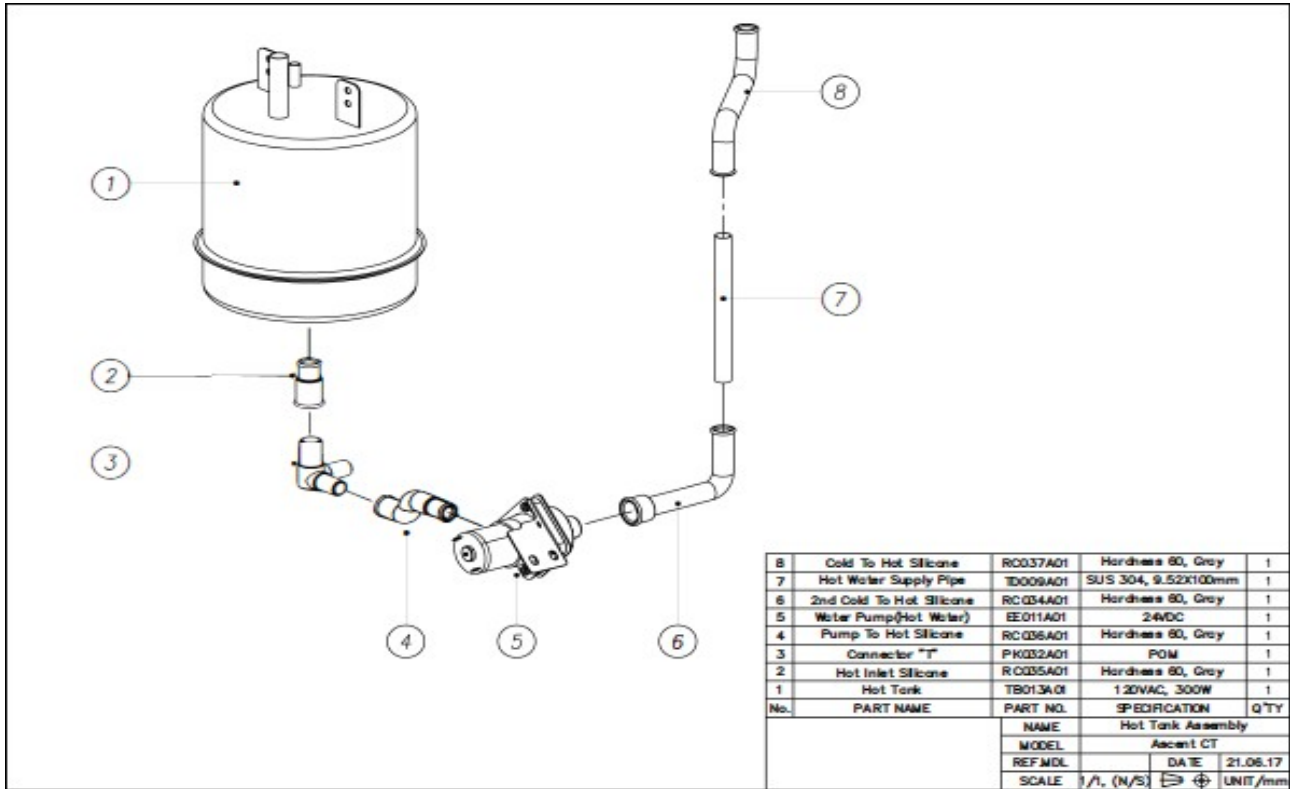
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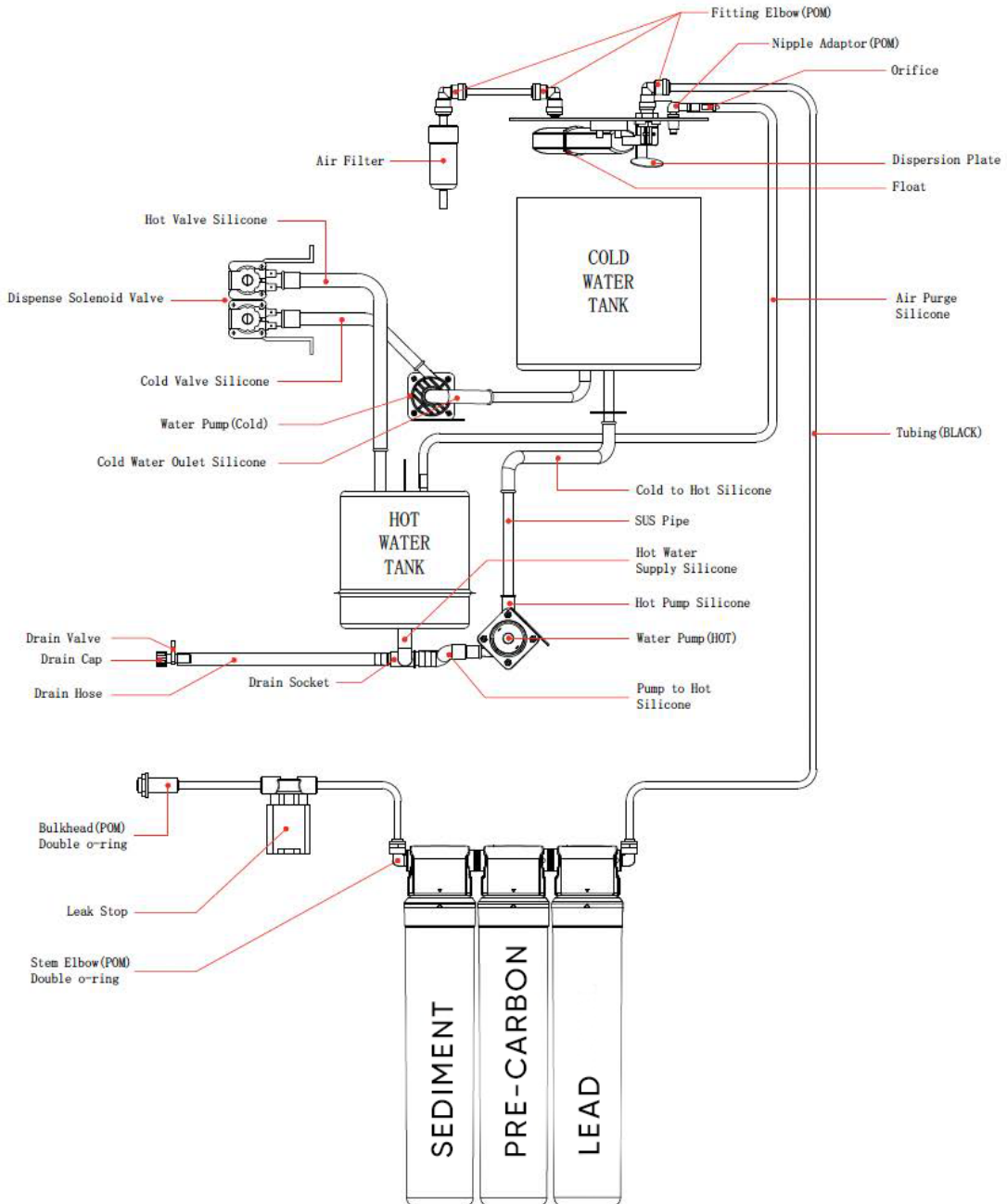


## Parts Diagrams



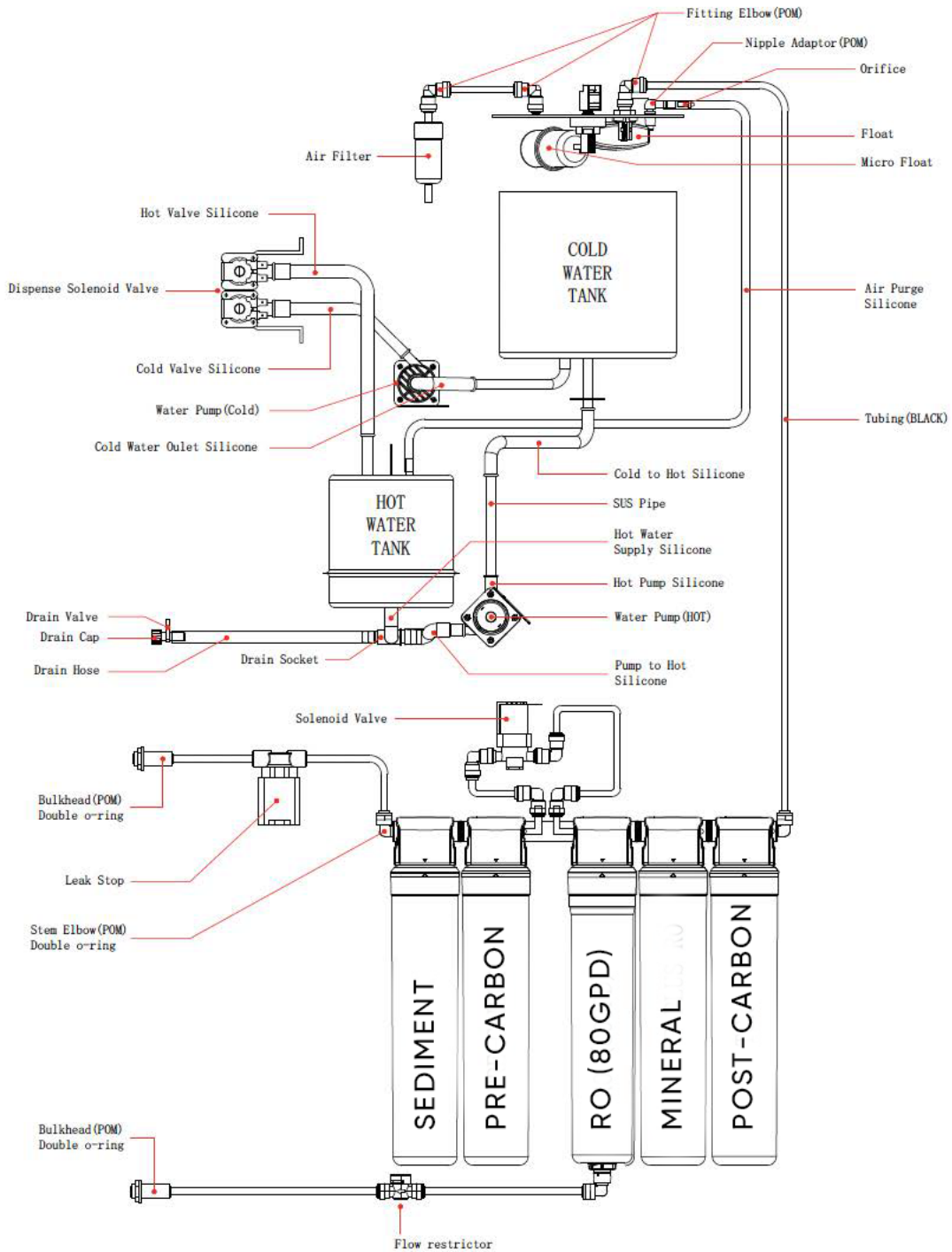
## Water Flow Diagrams

### WATER FLOW Ascent CT-M



## Water Flow Diagrams

### WATER FLOW Ascent CT-RO





## Specifications

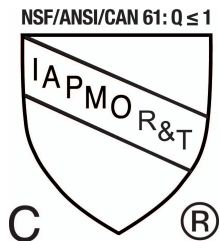
- **Voltage:** 120 volt: 60 Hertz; 3.6 Amp
- **Dimensions:** 14.5" W x 22" D x 20" H
- **Shipping Weight (Approx.):** 49 lbs
- **Cold Water Capacity:** 1 gallon
- **Hot Water Capacity:** 0.6 gallons (2 Liters)
- **HP Compressor (Full Load):** 1.1 Amps
- **Compressor with Hot (Full Load):** 5.5 Amps

Specifications subject to change without notice.

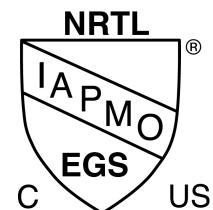
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### Certification Conformance



The Culligan Ascent CT-M system is certified by IAPMO R&T against NSF/ANSI/CAN 61: Q ≤ 1, NSF-372 and CSA B483.1 for material safety, structural integrity, and lead free requirements. The system also is certified to NSF/ANSI-53 for the reduction of lead and cyst, and NSF/ANSI-42 for the reduction of chlorine, and Taste and Odor.



Certified to UL Standard 399, Drinking Water Coolers and CSA C22.2 No. 120-13 (R2018), 4th Edition, CSA Standard for Refrigeration Equipment.





## Product Limited Warranty

### **Domestic Initial Limited Warranty:**

CULLIGAN promises the original Dealer/Distributor to repair or, at CULLIGAN's sole discretion, to replace any part of the water cooler which proves to be inoperative due to a defect in material or workmanship under normal use, for a period of one year from the date of shipment of the machine from CULLIGAN to Dealer/Distributor. During the term of this initial warranty, CULLIGAN, at its sole discretion, will supply parts to the installing Dealer/Distributor to correct the defect. In case of a refrigeration sealed system repair, CULLIGAN will instruct the Dealer/Distributor to use an approved service center or, at CULLIGAN's sole discretion, return the unit to CULLIGAN for repair or replacement. The cost of any service call required to disconnect, reconnect, or transport the system will be the sole responsibility of the Dealer/Distributor. This warranty does not extend to any customer of Dealer/Distributor.

### **Additional Warranty through Fifth year:**

CULLIGAN promises that after the end of the initial warranty through the fifth anniversary of the initial limited warranty to supply a new compressor if proven defective by a qualified CULLIGAN approved technician.

CULLIGAN will provide the compressor to the Dealer/Distributor at no charge. This warranty does not include any costs, including labor charges, travel time, or miscellaneous expenditures incurred by the Dealer/Distributor.

### **General Provision and Exclusions:**

This warranty only applies in the fifty (50) United States and Canada.

This warranty does not apply, and no agreement, either written or implied, shall be applicable if the affixed serial number is removed, defaced or obliterated. This warranty does not apply to the filters or Ultra-Violet system after exposure to water. Refer to service manual for filter requirements and expected performance. This warranty does not apply if parts used as original or replacement equipment, including filters, are not obtained or authorized through CULLIGAN, and such unauthorized usage shall void this warranty. This warranty does not apply to any wetted parts that become inoperative due to lime, scale or other water quality conditions. This warranty does not apply to any machine or components that become inoperable due to a failure by Dealer/Distributor or the end-user to satisfy standards or regulations adopted by any governmental agency. This warranty does not cover performance, failure or damages of any part resulting from external causes such as alterations, abuse, misuse, misapplication, neglect, accident, installation, operation contrary to printed material, corrosion or acts of God.

This warranty only applies to the operative components of the machine and does not apply to the exterior shell or frame to which the shell is attached and the appearance of the machine.



## Product Limited Warranty

### **Warning:**

This warranty and any applicable industry certifications for this machine are automatically voided if the machine is altered, modified, or combined with any other machine, equipment or device. Alteration or modification of the machine may cause serious flooding and/or hazardous electrical shock or fire. Except as set forth herein, CULLIGAN makes no other warranty, guarantee or agreement expressed, implied or statutory, including any implied of merchantability or fitness for a particular purpose.

The foregoing is in lieu of all other agreements expressed, implied or statutory and all other obligations or liabilities of CULLIGAN. CULLIGAN does not assume or authorize any person to assume any obligations of liability in connection with this product. In no event will CULLIGAN be liable for special, incidental, consequential or punitive damages, or for any delay in performance of this warranty agreement due to causes beyond its control.

### **Export Warranty:**

The CULLIGAN export warranty shall apply to all area outside of the Continental limits of the United States and Canada. The export warranty shall mirror the domestic warranty set forth above in all respects except that a) the export warranty shall be limited to the Initial Term and there is no coverage for the additional warranty through the fifth year and b) the Dealer/Distributor shall be responsible for any and all transportation charges to implement the repairs.

**ALL WARRANTY REPAIRS SUBJECT TO PRIOR APPROVAL BY CULLIGAN'S SERVICE DEPARTMENT IN ORDER TO VALIDATE THAT THE DEFECTIVE COMPONENT IS STILL UNDER WARRANTY.**

### **Warranty Procedure:**

Procedure for Ascent Bottleless Cooler Warranty evaluation. Contact CULLIGAN technical supportProvide the following information:

1. Serial number
2. Failure
3. Full details around failure
4. Water pressure into the system
5. Tap TDS
6. TDS out of the cold and hot tanks
7. Pictures

Depending on the situation, technical support may request more information. Upon approval, CULLIGAN will process warranty credit or replacement part to be fulfilled. Dealer must maintain possession of the part or system until authorized to discard, failure to do so may result in a denial of warranty. For system credits, technical support will provide a credit number which may be given to the account management team on the next qualifying system order. The account management team will then provide a system credit.