DROP ZAPPR

Installation Manual & User Guide

Radon Removal Unit

Available on the App Store

ANDROID APP ON Google play

Home Assistant

amazon alexa

CHANDLER SYSTEMS

INTRODUCTION

Thank You for Purchasing a DROP System!

We know you'll love your improved water quality, leak detection ability and water conservation benefits of your new DROP Water Management System from Chandler Systems. You'll soon wonder how you ever lived without it. Improving your water and protecting your home are just a few of the ways that the DROP Water Management System can improve your water system.

Be sure to check out the dropconnect.com website periodically for more information about additional DROP products as they are released.

833.BUY.DROP
(833.289.3767)

drop.pro

To further help you operate your new DROP system, we have provided you with many other resources for you to learn more. Feel free to call Chandler Systems when you need additional help. We also have many resources located on our website including instructional videos, and images.

DROP Connect is also active on various social media pages! Feel free to follow us for the most up to date information and news!

@dropconnect

Privacy Statement

For more information about privacy, visit our privacy policy online.
(https://dropconnect.com/sites/default/files/DROP-Privacy-Statement.pdf) online.

DROP Patents

For the most up-to-date list of patents, visit our patents on our website: https://dropconnect.com/patents.

FCC Compliance Statement:
https://dropconnect.com/sites/default/files/FCC_Compliance_Statement.pdf

Industry Canada Compliance Statement:
https://dropconnect.com/sites/default/files/Industry_Canada_Compliance_Statement.pdf

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SAFETY FIRST! ENSURE THAT THE FOLLOWING STEPS ARE COMPLETED IN SEQUENCE BY A LICENSED PLUMBER, CONTRACTOR AND ELECTRICIAN OR CERTIFIED WATER TREATMENT SYSTEM SPECIALIST. THE INSTALLER SHOULD BE AWARE OF, AND ADHERE TO, ALL PERTINENT LOCAL AND STATE CODES.

DETERMINE FLOW RATE

Step 1 – Determine Well Pump Flow Rate

To determine the flow rate, you will need:
- A garden hose
- A five-gallon bucket
- A timer or stop-watch
- A calculator, paper and pencil, or a head for figures

It is important that there are no demands on the well pump during this test. Turn off all faucets, sprinklers, hoses, etc., and inform others that you are about to begin a flow rate test.

1. Connect a garden hose to the house pressure tank drain valve.

2. Open the drain valve and collect the water in the bucket.

3. When the electric pump turns on, close drain valve and let pump fill the pressure tank.

4. Once the tank is full, wait until the pump turns itself off.

5. Empty the water from the bucket.

6. With your timer, open the drain valve and collect all the discharged water in the bucket until the pump turns on. Immediately close the drain valve and begin timing the pump cycle.

7. Keep timing until the pump turns off; note the elapsed time in seconds. This is the cycle time.

8. Measure the volume of water (gallons) in the bucket. This is the draw down.

9. Divide the number of gallons collected in #6 by the number of seconds in #7.

10. Multiply the answer by 60 to convert to gallons per minute. This gives you the system's true pumping capacity.

Note: It may be prudent to complete the above exercise twice and average the results.

_____ Gallons / _____ Seconds = _____ X 60 = _____ GPM
(draw down) (cycle time) (pumping rate)

HOW THE ZAPPR WORKS

The ZAPPR features a streamlined, modular design that consists of three tanks: an aeration tank, a pump tank, and a storage tank. These tanks are going to be plumbed in at your point-of-entry, after any other filtration or softening equipment your well may require.

As water enters the first tank, it passes through our proprietary QuadTrain Air Injector nozzle. Due to the pressure differential on either side of the QuadTrain, suction is created to naturally inject air into the pressurized water as it makes its way into the aeration tank, without having to use any kind of pump or air compressor. The QuadTrain has been designed to work at flow rates from 2.5-10 gpm, and can be custom-configured based on your well capacity to give you maximum aeration.

As this heavily aerated water enters the bottom of the aeration tank, it is forced up through a diffuser and is brought to atmospheric pressure, causing the radon particles to separate from the water as it is sprayed into the air pocket at the top of the tank. While this is happening, our blower is working in conjunction with our aeration orbs to maintain a turbulent environment inside this tank , ensuring that all the radon in the water gets released. Most importantly, the force of the blower also works to push all of this off-gassed radon up and out of the top vent, where it is safely released outside of your home.

The radon-free water then flows to the next two tanks, and all three tanks will fill evenly until they reach the full level, which is approximately 48” of water in the tanks. Once the tanks reach this level, as detected by our pressure transducer, a signal is sent to a relay to turn off the blower motor and to close the inlet solenoid, so that no more water enters the system.

The pump tank contains a submersible pump, and as you use water in your house, our pump controller will cycle this pump on and off as needed, supplying water to your home in the same way as the pump inside your well: water flows from the pressure tank until a low pressure is reached, and the pump will then run until the high pressure shutoff point is reached.

When the pump is sending water to your home, all three tanks will deplete evenly until a “low level” is reached, when the tanks are approximately 36” of water. Just as our pressure transducer closes the inlet solenoid and turns off the blower when the tanks are full, when the tanks reach a “low” level, the transducer then sends a signal to open the solenoid and to turn on the blower, and the process begins again.

ZAPPR SET UP

The ZAPPR will come in three large boxes containing the three tank pre assemblies. There is an Aeration tank (Box A), a Pump tank (Box B), and a Storage tank (Box C). There are also three small sub-assemblies. There will be a blower box (Box D, shipped in Box B), a Pump Assembly box (Box E, shipped in Box A)), an Electronics Box (Box F, shipped in Box C), and an Air Manifold Assembly(Shipped in the Bottom of Box B). The DROP Hub & instructions will also be found in Box B.

(Boxes A,B,C) The tanks will be laid out in a Right to Left configuration, with the pump tank in the middle. (Fig 1, Fig 2)

Fig 1

Fig 2

NOTICE: If the ZAPPR is being installed in a location with a lower ceiling it will be necessary to install the Pump Assembly before connecting the tanks as you may need to tip the Pump Tank forward slightly to install it.

ZAPPR SET UP


Fig 3

Using the Quick Connect Manifold unions, connect the tank assemblies together. Once the tanks have been connected and set in their final location, the Air Manifold Assembly will need to be installed. This will go on the top of the Aeration Tank with the open port facing the back and centered on the blower bracket. (Fig 3)

Quad Train Adjustments

Based on your well pump test results from page 4, the ZAPPR Quad Train air injector can be adjusted to match your well pump production. If these changes need to be made, remove the Quad Train assembly from the piping by loosening the quick connect unions. This is preset from the factory at 5gpm but can be configured to four different flow rates with the injector/plug kit provided.

1 injector / 3 black #0 plugs = 2.5 gpm

2 injectors / 2 black #0 plugs = 5.0 gpm

3 injectors / 1 black #0 plug = 7.5 gpm

4 injectors = 10.0 gpm

The injectors can simply be pushed out from the bottom with a large, Philips head, screwdriver, and the desired arrangement can be installed from the top. (Fig 4, Fig 5) Once you have made these changes, if necessary, reinstall the unit with the white air inlet at the bottom, and rotate the assembly so the inlet faces to the Right (Fig 6).


Fig 4

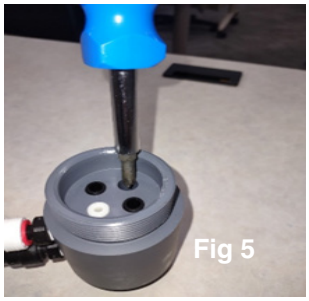
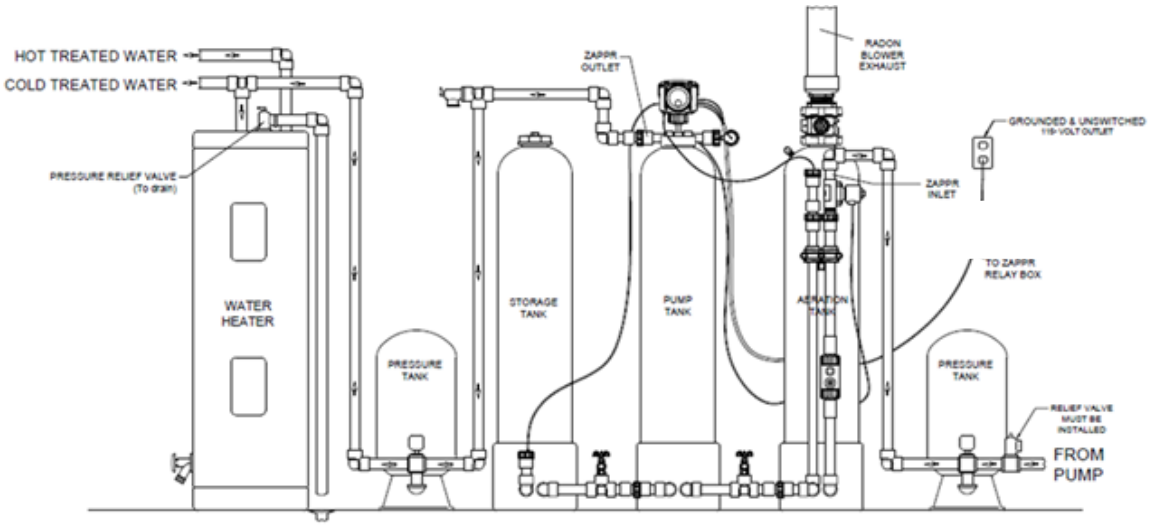


Fig 5


Fig 6

ZAPPR SET UP



This is a standard drawing of how the ZAPPR installation may look. If your water requires pretreatment for Iron or other contaminants it would typically be sized for the injector flow rate based on well production. This closed well system is what provides water for the ZAPPR, Radon Removal System. A pressure tank, preferably a 32 gallon tank with around a 9 gallon draw down, will need to be installed after the ZAPPR to act as the expansion device for the repressurization pump supplied with the Unit.

NOTE: Your installation may vary.
Follow all local plumbing codes.

INSTALLATION INSTRUCTIONS

(Box D) The Blower will need to be mounted onto the Blower Bracket, with the flow going up, using the four 8/32x1/2" screws supplied. The Blower piping will then need to installed into the top of the blower, this is a press fit, and the other end connected to the upper manifold. The filter is then installed onto the bottom of the blower using the supplied clamp. (See Fig 7, Fig 8, Fig 9)

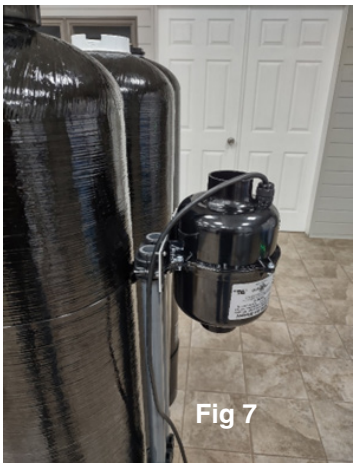


Fig 7


Fig 8


Fig 9

(Box E) The Pump Assembly is shipped assembled for quick installation. Depending on the ceiling height, you may have to tip the Pump Tank forward slightly to install the Pump. The gauge and the 1"npt discharge fitting can be swapped for ease of installation. (See Fig 10, Fig 11)


Fig 10


Fig 11

INSTALLATION INSTRUCTIONS

(Box F) the Electronics will need to be mounted next. The relay box can be hung on the supplied bracket located towards the bottom of the blower mounting pipe assembly. The Pump Controller then gets mounted onto the top of the Pump Assembly using the quick connect union. (See Fig 12, Fig 13).

Fig 12

Fig 13

Electrical Connections

Once the Electronics have been mounted, it's time to connect the cables. There are three 120v cords that will need to be plugged into the bottom of the relay box. The Pump and the Solenoid both plug into the marked locations on the bottom of the relay box. The blower cord will be plugged into the bottom of the blower speed controller. (Fig 14). **IMPORTANT, once the system is powered up and functioning the Blower Speed Control will need to be adjusted to 45-Volts.** The smaller control cables should then be connected to the Pump Controller housing on top of the pump tank. The Level Transducer, make sure that the transducer is facing upward, will plug into the left side of the Pump Controller (Fig 15, Fig 16). The Safety Float will plug into the bottom of the Pump controller (Fig 17, Fig 18). The two conductor and three conductor cables from the Relay Box will plug into their respective spots on the right side of the Pump Controller (Fig 19).

INSTALLATION INSTRUCTIONS

Fig 14


Fig 15

Fig 16


Fig 17

Fig 18

Fig 19

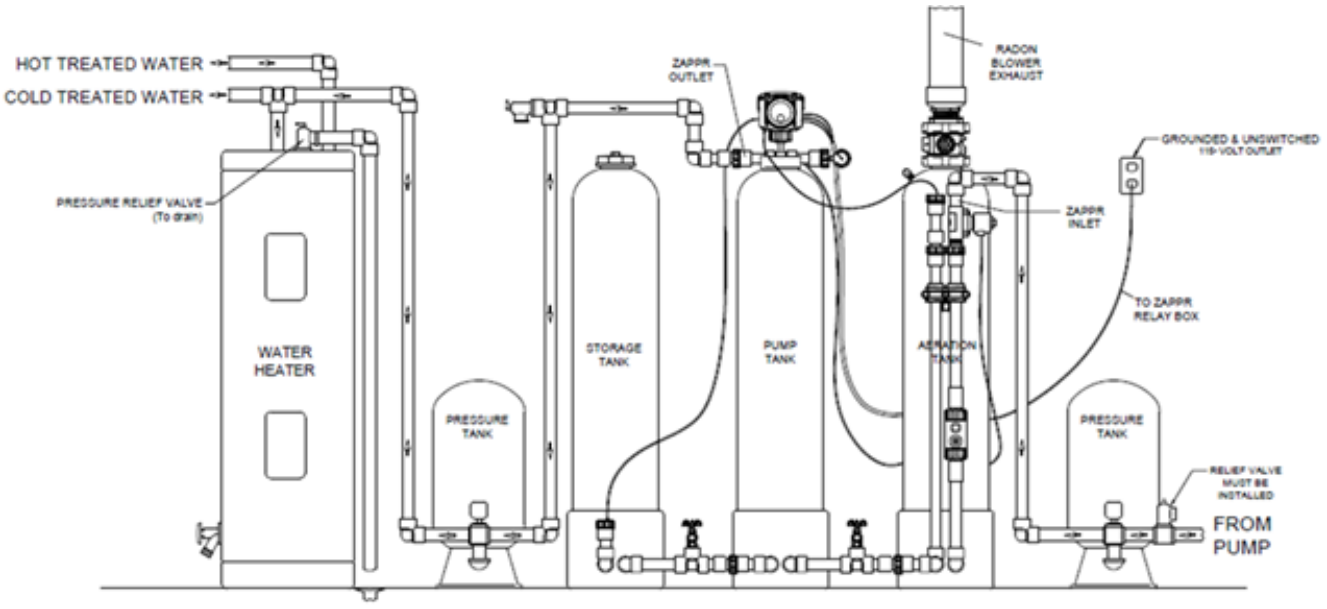
SYSTEM CONNECTIONS

Now that the unit is fully assembled and internal connections have been made. The incoming water supply needs to be connected to the water inlet solenoid. This is a ¾" FIPT connection (Fig 20). The outlet connection to the pressure tank and the house is a 1" MPT connection (Fig 21). On the top of the Aeration tank there is a 2" PVC spigot fitting to attach too for the Radon Ventilation system (supplied and installed by others) (Fig 22)

Fig 20

Fig 21

Fig 22



INSTALLATION INSTRUCTIONS

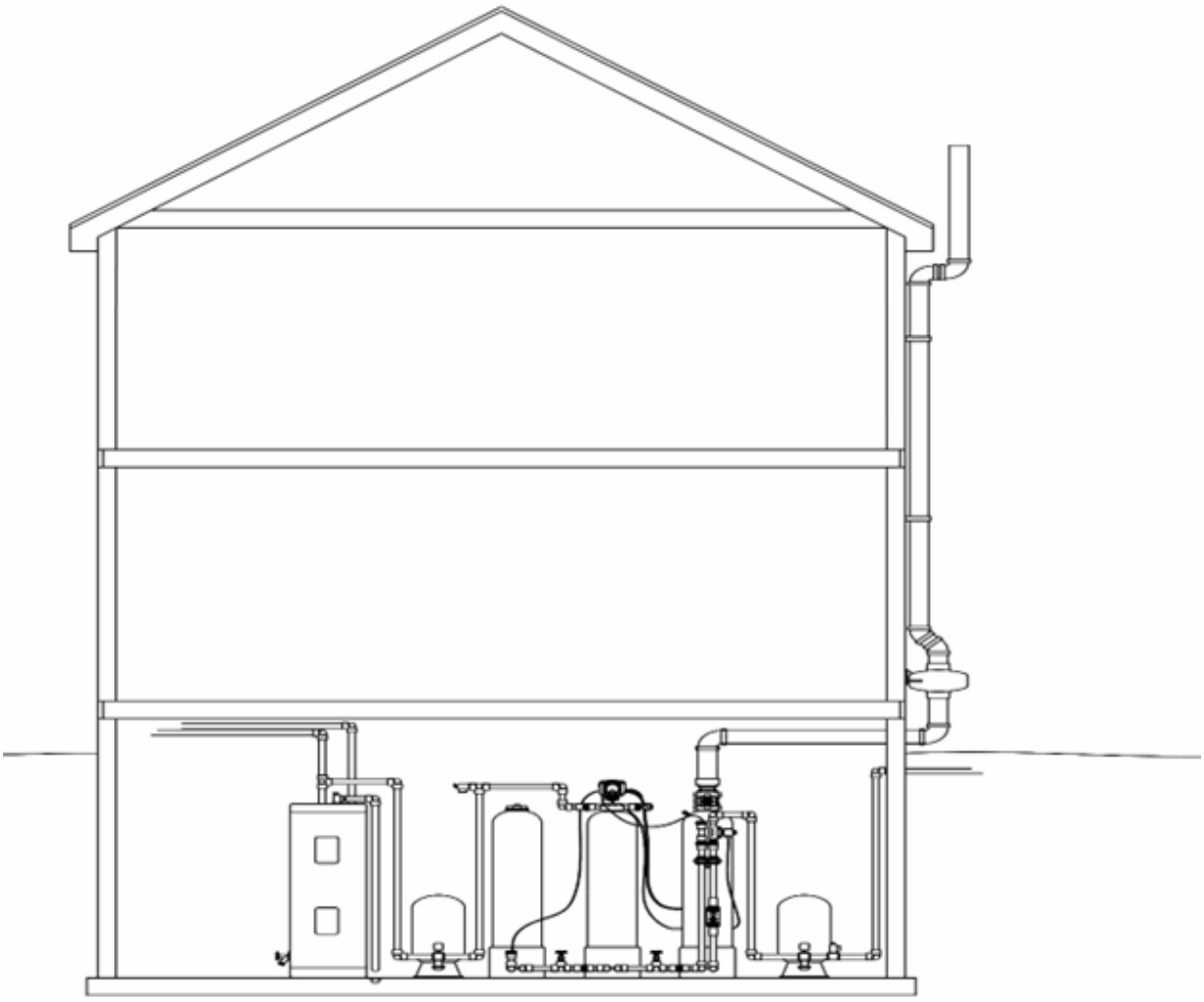
As complex as the ZAPPR Radon Removal System seems, installation is simplified due to the Modular design of the tanks and controls. There are a few items that are sold separately depending on the installation of the unit.

1) Pressure Tank for the repressurization pump, preferably a 32 gallon tank with around a 9 gallon draw down.

2) A radon ventilation blower.

3) PVC Radon ventilation pipe and fittings depending on application and distance. Please check with your local code requirements for proper ventilation.

TYPICAL RADON VENTING DIAGRAM



SETTINGS

The ZAPPR has defaulted to a 40/60 pump setting for optimal performance from the factory. Like all DROP appliances it can easily be changed using the DROP CONNECT APP. As with All DROP units you can get a live view of the status of the system (Fig23). The history of the performance of the unit and the number of cycles (Fig 24). The advanced screen is where you can adjust your pressure settings for the internal booster pump (Fig 25)

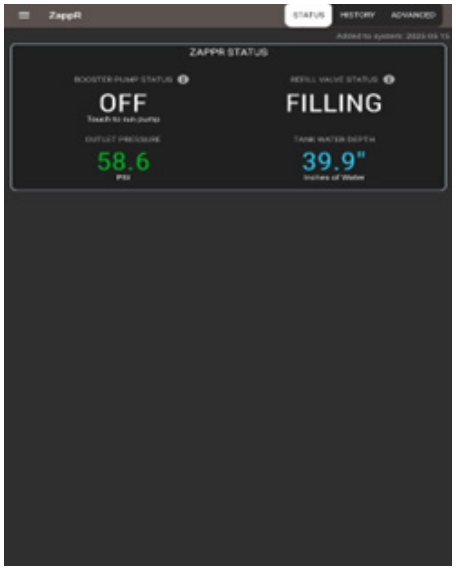


Fig 23

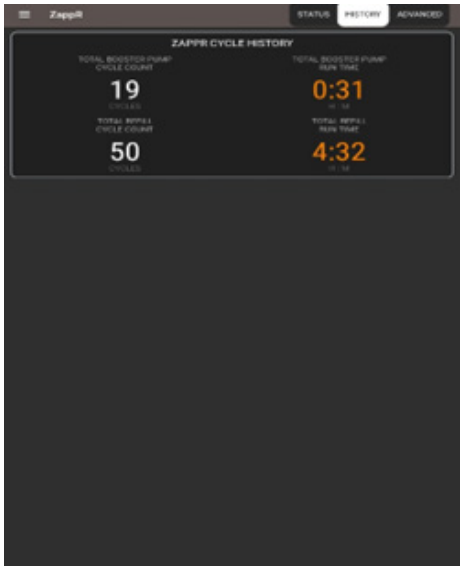


Fig 24

Fig 25

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

This product may be covered by one or more patents. (https://dropconnect.com/patents)

Chandler Systems Inc.
710 Orange St.
Ashland, OH 44805

P. 1 833 BUY-DROP
www.dropconnect.com

DROP Limited Warranty

WATER MANAGEMENT SYSTEMS

This warranty cannot be transferred - it is extended only to the original purchaser or first user of the product. By accepting and keeping this product, you agree to all of the warranty terms and limitations of liability described below.

Important Warning: Read carefully the DROP Water Management Systems Equipment Installation, Operating and Maintenance Instructions Manual to avoid serious personal injury and property HAZARDS and to ensure safe and proper care of this product.

*FOR AS LONG AS YOU OWN AND LIVE IN YOUR SINGLE FAMILY HOME, this warranty covers your water treatment equipment, if you are the first user of this DROP Water Treatment Systems equipment and purchased it for single family home use - subject to all of the conditions, limitations and exclusions listed below. Purchasers who buy the DROP equipment for other purposes, and other component parts are subject to more limited warranties and you should read all of the terms included in this form to make sure you understand your warranty.

What is covered by this warranty?
Chandler Systems, Inc. warrants that at the time of manufacture, the DROP equipment shall be free from defects in material and workmanship as follows:

Product	Warranty
Residential Mineral Tank	10 Years
DROP Control Valves	5 Years
DROP Pump Controllers	5 Years
DROP Home Protection Valve	5 Years
Brine Tank	5 Years
DROP Hub and Remote	1 Year
DROP Wireless Low Salt Alarm	1 Year
Other Accessories and Parts	1 Year
Brine Tank Components	1 Year

* This warranty does not include media and/or cartridge filter elements.

Additional Terms & Conditions
What Chandler Systems Inc will do if you have a covered warranty claim; Chandler Systems Inc will at its discretion either make repairs to correct any defect in material or workmanship or supply and ship either new or used replacement parts or products. Chandler Systems, Inc. will not accept any claims for labor or other costs.

Additional Exclusions and Limitations
This warranty is non-transferable and does not cover any failure or problem unless it was caused solely by a defect in material or workmanship. In addition, this warranty shall not apply:

- If the equipment is not correctly installed, operated, repaired and maintained as described in the Installation, Operating & Maintenance Instructions Manual provided with the product.
- Defects caused as a direct result of the incoming water quality
- If the DROP equipment is not sized appropriately for the intended job.
- To any failure or malfunction resulting from abuse (including freezing), improper or negligent; handling, shipping (by anyone other than DROP)
- If the unit has not always been operated within the factory recommended temperature limits, and at a water pressure not exceeding 125 psi, during storage, use, operation, accident; or alteration, lightning, flooding or other environmental conditions.
- To any failure or malfunction resulting from failure to operate the system with potable water, free to circulate at all times; and free of damaging water sediment or scale.
- This warranty does not cover labor costs, shipping charges, service charges, delivery expenses, property damage, administrative fees or any costs incurred by the purchaser in removing or reinstalling the water management equipment.
- The warranty does not cover any claims submitted more than 30 days after expiration of the applicable warranty, and does not apply unless prompt notice of any claim is given to an authorized DROP Dealer or to DROP or a designated contractor is provided access to the installation and to the water treatment equipment.

THESE WARRANTIES ARE GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. NO DROP REPRESENTATIVE OR ANY OTHER PARTY IS AUTHORIZED TO MAKE ANY WARRANTY OTHER THAN THOSE EXPRESSLY CONTAINED IN THIS WARRANTY AGREEMENT.

Additional Warranty Limitations
ANY IMPLIED WARRANTIES THE PURCHASER MAY HAVE, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE APPLICABLE TIME PERIODS SPECIFIED ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

Limitations of Remedies
The remedies contained in this warranty are the purchaser's exclusive remedies. In no circumstances will Chandler Systems, Inc. or the seller of the product be liable for more than, and purchaser-user's remedies shall not exceed, the price paid for the product. In no case shall Chandler Systems, Inc. or seller be liable for any special, incidental, contingent or consequential damages. Special, incidental, contingent and consequential damages for which Chandler Systems, Inc. is not liable include, but are not limited to, inconvenience, loss or damage to property, consequential mold damage, loss of profits, loss of savings or revenue, loss of use of the products or any associated equipment, facilities, buildings or services, downtime, and the claims of third parties including customers. Some states do not allow the exclusion or the limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.

What to do if you have a problem covered by this warranty
Any warranty coverage must be authorized by Chandler Systems, Inc.. Contact the person from whom you purchased the product, who must receive authorization from a DROP Dealer.

If your product is new and not used and you wish to return it, contact your DROP Dealer.

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