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floë



Floë 636 Induratec Integrated 12V DC Water Drainage System Installation and Owner's Manual (For Aftermarket Applications)

Floë Water Drainage Kit	
Part #	Description
809127	Model 636 12V DC water drainage system

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Introduction

Floë is a water drainage device that will remove residual water trapped in water supply systems in RVs, marine vessels and mobile vehicles with a 12V DC electrical system. This will prevent the pipes from freezing in the winter and also flush out stale water in the summer. Additionally, it will remove dirt and lime scale from hot water heaters.

Additional information about this product can be obtained from lci1.com/support or by using the myLCI app. Replacement kits can be ordered from <https://store.lci1.com> or by using the myLCI app.

The myLCI app is available for free on iTunes® for iPhone® and iPad® and also on Google Play™ for Android™ users.

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Safety

This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions.

This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the LCI limited warranty.

⚠ WARNING

THE "WARNING" SYMBOL ABOVE IS A SIGN AN INSTALLATION PROCEDURE HAS A SAFETY RISK AND MAY CAUSE DEATH, SERIOUS PERSONAL INJURY OR SEVERE PRODUCT AND/OR PROPERTY DAMAGE IF NOT PERFORMED SAFELY WITHIN THE PARAMETERS SET FORTH IN THIS MANUAL.

⚠ CAUTION

THE "CAUTION" SYMBOL ABOVE IS A SIGN THAT A PROCEDURE HAS A RISK INVOLVED THAT MAY CAUSE PERSONAL INJURY OR PROPERTY DAMAGE IF NOT PERFORMED SAFELY AND WITHIN THE PARAMETERS SET FORTH WITHIN THIS MANUAL.

Resources Required

- Phillips head screwdriver
- Pipe cutter, garden shears or craft scissors
- Snips or hacksaw blade
- Awl or punch to mark holes for screws
- Pliers

NOTE: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

Parts List

Model 636	
Description	Qty
Floë Induratec 636	1
Air line, 13'	1
CTS one-way double valve tee, 1/2"	1
CTS barbed connectors, 1/2"	2
Hose clamps	2
Shutoff fitting, 3/8"	1
Right angle fitting, 3/8"	1
Barbed connector, 3/8"	1
Anti-vibration washers	4
Pan head screws	4
White retainer washers	4
Black screw caps	4
Fused DC cable, 13'	1
In-line DC switch	1
Cigar/cigarette lighter connector	1
Cable tie	1
Anti-splash cloth	1

Installation Of Model 636

Preparation

NOTE: When cutting the main water line and air lines, use thumb and forefinger to round the ends. Wet ends with damp cloth before inserting air line into connector. This ensures they are smoothly fitted and do not drag on any internal "O" rings inside connectors.

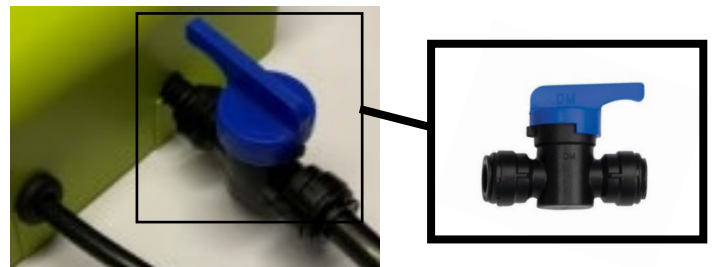


Fig.1

1. Insert end of the shutoff valve onto the air line stump, with the tail of the shutoff valve pointed toward Floë (Fig.1).



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2. The shutoff valve is a second safety valve and should be used as a backup to the first one-way safety valve built into the tee.

3. If the air line needs to be installed horizontally to avoid kinking, fit the elbow joint (Fig.2) onto the air line stump on the Floë box.



Fig.2

4. Cut 2" off the air line to fit onto the end of the elbow and then onto one end of the shutoff valve. (Fig.3).



Fig.3

NOTE: The longer air line will be connected to the shutoff valve after the box is installed on the wall.

Attach Box To Wall

1. Locate a secure surface for installing the Floë box within 13' of a 12V power supply and within 13' of the water supply line from the water tank or outside the wall.

NOTE: The On/Off button on top (Fig.4) must be accessible or the in-line DC switch will need to be used for operation.

NOTE: Toggle bolts or, if necessary, dry wall rawl plugs can be used if installing the Floë box on drywall.

NOTE: It is not recommended to install the Floë unit on an outside wall since it could create bumps on the outside finish of RVs.

NOTE: Floë should be installed upright, not flat. Try to use a corner, door jamb or cupboard to keep Floë straight and level.

2. Use an awl or punch to make indentations to start the screws, beginning with the screws on the bottom of the box.

3. Install white retainer washers on the screws and insert screws through holes in the box tabs (Fig.4).

4. Then place anti-vibration washers on screws (Fig.4) and fasten the box to the wall. Leave box loose to allow for vertical adjustment.

5. Insert the top screws and washers into the tabs on the Floë box and, after making final adjustments, attach the box to the wall.

6. Tighten screws until the white retainer washers can no longer move. Do not overtighten. Overtightening could crack the green box tab.

7. Snap on black caps over the retainers on the screws.

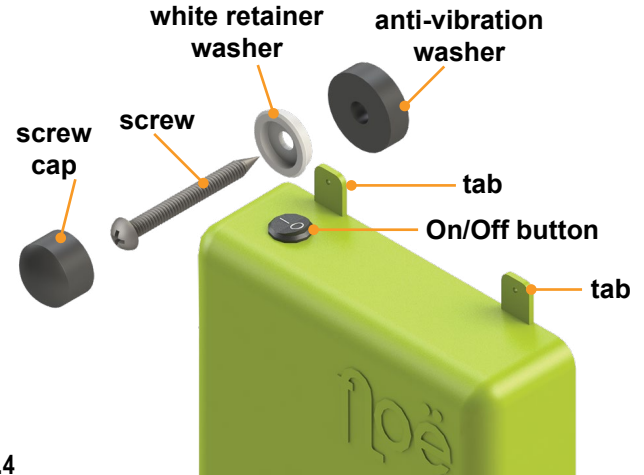


Fig.4

Connect Tee Fittings And Air Line

1. Make sure to switch off the pump and any other electrical devices. Locate the hose leading from the fresh water tank to the filter and pump.

2. Using pipe cutters or shears, cut through the hose near the water tank.

NOTE: Cut the hose 2" from the water tank, or as close as possible, but still allow for fitting of barbed connector. Do not cut the hose in a section that is curved. A curve puts undue pressure on joints and can cause air leaks.



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NOTE: Use a cloth to mop up excess water from the cut water line.

3. Insert teeth end of the barbed connector onto the end of the hose (Fig.5).
4. Slide hose clamp over end and tighten (Fig.5).
5. Repeat process for other side of the cut hose.
6. Fit the ends of the 1/2" air line tee firmly into the connectors, utilizing the tee's push-fit connections (Fig.6). The long side of the tee should extend toward the tank while the shorter side should extend toward the pump (Figs.6, 7).



Fig.5



Fig.6

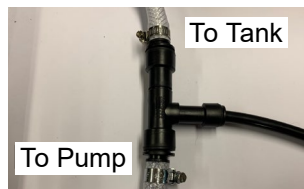


Fig.7

NOTE: If larger or smaller pipes are used, adapters can be purchased from hardware stores. Additionally, the tee can also be fitted to rigid plastic and copper pipes without adding barbed connectors.

NOTE: There are two one-way valves built into the tee. One is to stop water escaping back up into the Floë unit. The other is to stop air traveling back into the water tank, where it would escape out of the tank air vent.

7. Measure the distance from the air line shutoff valve on the Floë box to the tee installed on the water line.
8. Cut air line to length, leaving at least an extra half inch to an inch of air line to slide into the connectors.

Connect To 12V DC Power Supply

1. The supplied 13' DC wire has male and female connectors and a fuse (Fig.8). Connect one end of the connector to the Floë box and the other end to a power supply.

NOTE: The white connector can also be removed to create bare wires on the end. Then it can be fitted to a fuse box or fitted directly to the battery using ring terminals.

NOTE: The fused wire is for a red/positive connection and can also be fitted onto an optional in-line switch included with the kit (Fig.8).

2. The 15A power plug can be fitted to a cigar/cigarette lighter socket (Fig.8). Connect one end to the connector on the Floë box and the other end to a socket.
3. Use a cable tie to hold together excess cord.



Fig.8

Test For Air Leaks

At this point Floë has been dry fit. Test that all joints leading up to the main water line are fitted correctly without air leaks. Locate the main water line tee and remove the barbed connector from the short end of the tee leading to the faucets, NOT the water tank long end. The barbed connector is removed by pulling back on the collar of the tee that holds the barbs in place.

Place a finger into the tee to seal this end and switch on Floë. Floë should be tricked into stopping at 15 psi. If Floë stops, then the joints leading to the water system are fine. If Floë doesn't stop, then remove, wet and reseal the air line into the connectors leading back to Floë. It is essential there is a good seal on the open end of the tee to allow this test to work.



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Operation

⚠ CAUTION

MODEL 636: DO NOT CARRY OUT A DRAINDOWN WITHOUT FIRST DRAINING THE FRESH WATER TANK AND HOT WATER HEATER.

⚠ CAUTION

DO NOT CARRY OUT MORE THAN ONE COMPLETE DRAINDOWN WITHOUT LETTING THE FLOË SYSTEM REST FOR 30 MINUTES.

⚠ CAUTION

DO NOT PRESSURIZE THE SYSTEM FOR MORE THAN ONE MINUTE WITHOUT RELEASING WATER OR AIR.

⚠ CAUTION

DO NOT SWITCH OFF FLOË WITHOUT ALSO TURNING OFF THE BLUE SHUTOFF VALVE AFTERWARD.

⚠ CAUTION

DO NOT DISCONNECT THE SYSTEM WITHOUT INSTRUCTION FROM THE MANUFACTURER AND DO NOT USE THE SYSTEM FOR ANYTHING OTHER THAN THE INTENDED USE.

What Is Floë

After the water has been switched off and the water removed from the hot and cold water tanks in the RV, marine vessel and mobile vehicle, Floë 636 is a water drainage system with an internal automated compressor that will remove all residual water left in the water pipes leading to the faucets, showers, toilets and other outlets.

This will prevent pipes and components from freezing in the winter and clean pipes of stale, unused water in the summer.

In addition, Floë is scientifically proven to clean the water system to 99.95% with just fresh compressed air, which is as good as a sterilizer but without the aftertaste. Regular draindowns through the summer season will keep the water system in showroom condition. There is no more need for bottled water in the summer or the need for antifreeze in the fresh water system in the winter.

Two complete draindowns are recommended initially to identify any individual outlets that may require draining a second time. Different homes and vehicles have different layouts, so a second draindown will determine which outlets to return to, if any.

A complete draindown is the removal of water from all outlets. For instance, if there are 10 water outlets, draining all 10 would be considered a complete draindown.

Draining one or two additional outlets a second time is acceptable during the first draindown. However, do not complete a second complete draindown without first switching off Floë and letting it cool down for 30 minutes.

Importance Of A Sealed System For Draining

Floë works on a sealed system to build up the air pressure to 15 psi (1BAR). It is similar to inflating a tire. If there is a puncture in the tire, the air pressure will not build and the tire will not inflate.

Similarly, should there be any leaks in a water system, Floë will not be able to build up pressure and a draindown will not be possible.

All faucets, tank dump valves, city water inlet and assorted outlets must be closed to seal the system completely. It is only then that the air can be inserted and pressure will rise to the prescribed amount to push water out of the system.

Also, make sure the system is set to drawing water from the onboard water tank and not the city water inlet.

NOTE: Although some may question whether 15 psi of air pressure is enough to remove all of the water in an RV, note that 15 psi with the volume of all the pipes is more than enough to drain a large house or office block.



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General Guidelines For Model 636

It is advisable to drain the RV, marine vessel or mobile unit after most trips in order to maintain a clean, fresh water system while also offering frost protection in the winter.

For extended periods between use, add sterilizer as a backup. Draw some sterilized water through the faucets and outlets and leave to activate for a couple of hours. Afterward, draindown water system again and leave empty and sterile for the next trip.

Floë works on a sealed system to build up the air pressure to 15 psi. Should there be any air leaks, Floë will not be able to build up pressure and it will prevent a draindown.

A typical draindown occurs when:

- Floë is properly connected;
- the blue shutoff valve is in the open position.
- the fresh water and hot water tanks have been drained.
- all water tank dump valves and all faucets and outlets are closed again to seal the system and the toilets have not been flushed.

Additionally, make sure the system is set to draw water from the onboard water tank and not the city water inlet. It is only then that air can be inserted and pressure will rise to the prescribed amount to push water out of the system.

When Floë is switched on, the motor should only run for 30 to 60 seconds before reaching 15 psi and shutting off. This time will change slightly after draining the first pipe leading to the first faucet. As water is being removed, more air will be inserted to fill the space. Floë will now take slightly longer to build up pressure for each faucet and outlet that are drained.

Model 636 Operation

NOTE: Reference figure 9 during the operational procedures.

1. Manually drain water tanks and water heater and close dump valves for all.
2. Set valves to bypass water heater, as if using antifreeze for the system.

3. Close all faucets and outlets to seal water system (Fig.9). Make sure the system is set to draw water from the onboard water tank and not the city water inlet. Make sure the city water inlet is closed and sealed. Do not yet flush toilets.

4. Open the blue shutoff valve under Floë and switch on the Floë unit to push compressed air into the system. Once 15 psi is reached, the motor will stop. This takes about 30 to 60 seconds. If it takes longer than 90 seconds for the motor to stop, switch off Floë and consult the Troubleshooting section.

5. Go to any faucet and open it. The compressed air will push out the water until only a spray mist of water and air remains. Floë will automatically restart to help push out any remaining water.

6. Once drained, close the faucet.

7. When 15 psi of pressure has been reached again, the Floë motor will stop. This will take about 30 seconds for every outlet.

8. Repeat steps 5 and 6 for all remaining hot and cold faucets and showers inside and out. Showers or faucets may have mixer valves and therefore two pipes leading to them, both hot and cold. Both need drained, so remember to switch to cold and drain and then over the hot side and drain.

9. Drain water tank-fed toilets by pushing down the flush handle or pedal.

10. Residual water can be drained from the water heater by building up pressure and reopening the valves that bypassed the water heater and opening the outside dump valve. After draining the water, again set valves to bypass water heater.

11. When finished draining the main system, build up pressure again and pull out the city water filter plug outside and drain any residual water. When removing the filter, remember to step out of the way of spraying water. It may be necessary to switch to drawing water from the city water main.



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12. Once all faucets and outlets have been drained, switch off Floë and close the blue shutoff valve. Leave all faucets and outlets in the open position since fresh air is a good sterilizer. Showers or faucets may have mixer valves and therefore two pipes leading to them, both hot and cold. Remember to leave in the open position but leave it set to the middle between hot and cold.

13. Make sure to remove the water filter and empty residual water since some filters have a drop bowl and the pressurized air may drift over the top of the water.

14. In the winter, pour half a cup of antifreeze into the sink and shower drain holes. Wipe off any spilled antifreeze to avoid staining the chrome/gold finish.

RV Water System Diagram

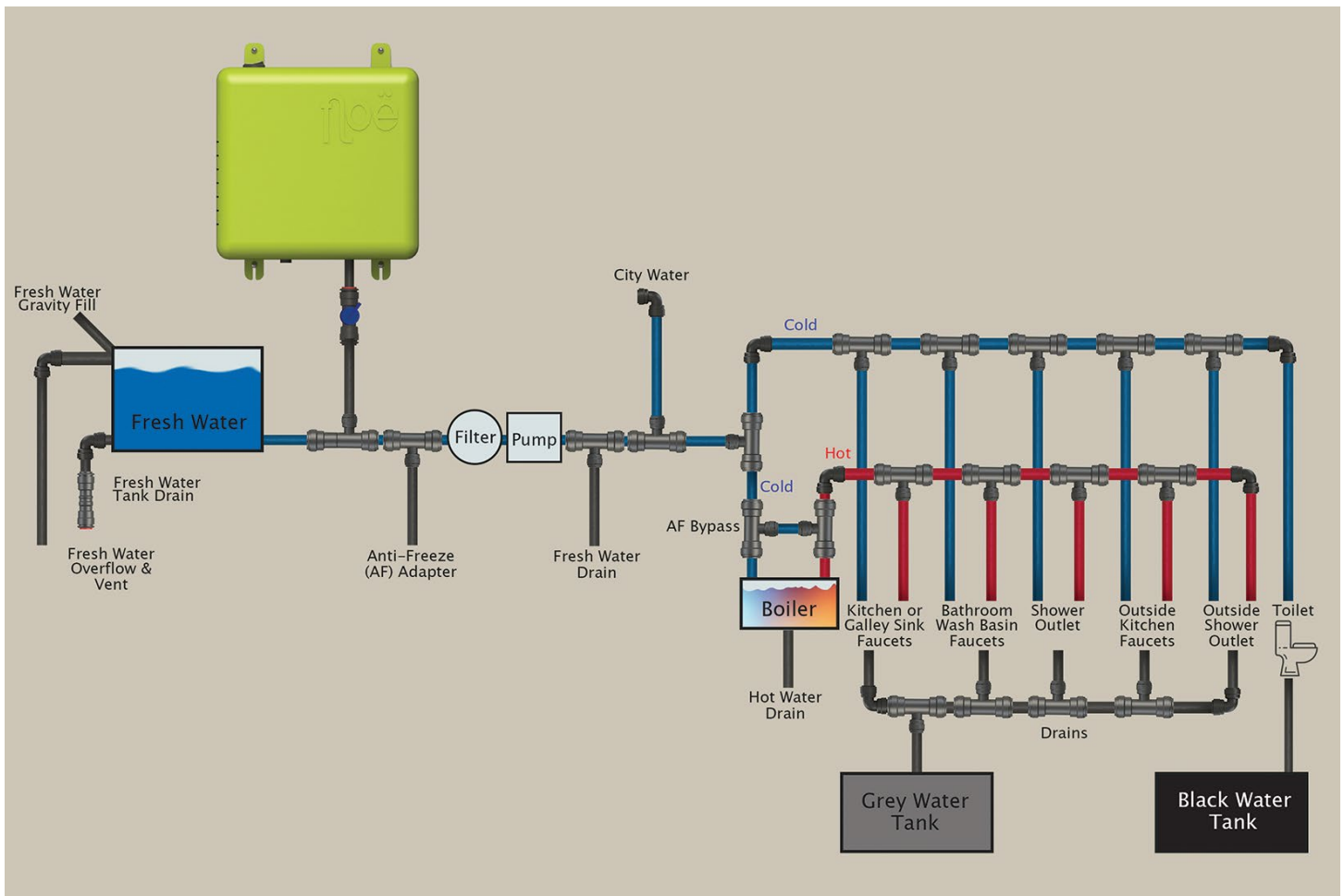


Fig.9



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Troubleshooting

Model 636		
What is happening?	Why?	What should be done?
Floë does not stop.	Malfunction or air leaking from one of the connections.	All air line pipes need to be rounded off with thumb and forefinger, ends wet and inserted straight into push-fit connectors. This gives it the best air tight seal possible. Should Floë not stop at 15 psi, it is most likely because there is a tiny air leak somewhere preventing it from reaching this pressure. Therefore, start testing at Floë and work toward the main water tee continuously testing along the way.
		First, remove the connector from under Floë and press thumb tightly over the end of the short stump of air line to make a good seal. This is the only way to determine if Floë is functioning properly; it should stop after one second with a tight seal. If Floë does not stop, contact customer service. If Floë stops, the unit is fine, so wet the end of air line and reinsert into connector. Move to the end of the air line, where it enters the main water valve tee and remove air line from tee. Hold thumb over end of air line and switch Floë on. If Floë stops, the joints are good leading back to Floë. If not, then the leak is with one of the connectors before and leading back to Floë, so remove, check, wet and re-insert each connection, testing each time until Floë does stop,
		To test the main water tee, remove the water line barbed connector from the short end of the tee leading toward the faucets, NOT the long end to the water tank. Insert little finger into tee to make an air-tight seal. This will test that all joints are secure, while making sure that air is not escaping from the tee. If Floë stops, then move on. If Floë does not stop, recheck and tighten both barbed connectors, wet and reseal connectors into tee. Note that this is the only connector that will seal by inserting finger. The rest of the time, only test the ends of the air line. Leaks can also be determined by spraying soapy water on the joints and watching for bubbles.
If all air line connections are sealed and Floë still does not stop after 90 seconds.	Small air leak.	If all connections up to and including the water valve tee are fine yet Floë does not stop, then the problem is likely to be in the vehicle or vessel. So switch off Floë and make sure all faucets, outlets and dump valves for the water heater and city water connections are closed. Also, make sure the water heater has been bypassed. While Floë is running, listen for escaping air from all faucets, toilets and hot water tank and all dump valves. Make sure the system is set to draw water from the onboard water tank and not from the city water inlet. Try switching Floë on again and, if it stops, the system is pressurized. If not, call customer service.



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