



LARGEST MANUFACTURER OF FISH HOUSES ON WHEELS IN THE WORLD!

PLUMBING AND REFRIGERATOR OWNER'S MANUAL

IMPORTANT INFORMATION IS ENCLOSED!

All of the information contained in this owner's manual May Not relate to your specific Ice Castle model.

**Thank You for choosing an Ice Castle Fish House
HAPPY FISHING, HUNTING and CAMPING in your new Ice Castle!!**

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PLUMBING

Ice Castle Fish House / RV Units Include the Fresh Water Package Which May Have a:

- 15 Gallon Fresh Water Tank
- 6 Gallon Hot Water Heater
- 30 Gallon Waste Water Tank
- Kitchen Sink
- Bathroom Sink
- Flushable Toilet
- Shower

The location of the Fresh Water Fill Inlet, City Water Connection and the Waste Water Holding Tank drain valve will vary from unit to unit. Generally, they are located near the respective tank with the Fresh Water Fill Inlet being on the passenger (curb or campsite) side, City Water Connection and the Waste Water Holding Tank drain valve being on the drivers (road) side.

Be sure to read the literature supplied with plumbing components, particularly the water pump and water heater, for troubleshooting tips. Also, remember that it is possible for an electrical problem to cause water system problems due to lack of power to the water pump, which can be caused by a variety of reasons.

If you are unsure of how to locate and/or repair a plumbing problem, consult with your Ice Castle Dealer or a qualified plumber who is familiar with RV water systems, to inspect the system and perform any repairs needed.

Fresh Water Decontamination Procedure

Instructions for Disinfection for the Potable Water System on your Ice Castle Fish House / RV.

To assure complete disinfection of your potable water system, it is recommended that the following procedures be followed on a new system, one that has not been used for a period of time, or one that may have become contaminated. This procedure is also recommended before and after long periods of storage, such as over the winter or summer when not in use.

To Sanitize and Decontaminate the Fresh Water System:

1. Prepare a chlorine solution using 1 gallon of water and 1/4 cup of liquid household bleach, (sodium hypo chlorinate solution) for each 15 gallons of tank capacity.
2. With an empty Fresh Water Tank and all faucets and drains closed, pour the solution into the fresh water tank via the Fresh Water Fill Inlet.

3. Completely fill the tank with fresh water.
4. Switch on the water pump. Open all faucets one at a time until all air is purged and the water flows freely, then close all faucets.
5. Add more fresh water to the tank until the water level reaches the top of the fill spout.
6. Allow the solution to stand in the tank, undisturbed, for at least 3 (three) hours.
7. Drain and refill the system with fresh water of drinking quality.
8. Flush the system by opening all faucets and allow the water to flow for several minutes and then completely drain the Fresh Water tank.
9. Drain and Flush the system a second time and then close the tank drain valve and all faucets.
10. Refill the system with water of known drinking quality.

Fresh Water and Waste Water Plumbing System

Your Ice Castle Fish House RV's plumbing system has the dual ability to be a self-contained onboard use and storage system, or use facilities provided by an external pressurized source. The Fresh Water system consists of the items which are used to deliver water for your use, while the Waste Water system is made up of the drains and tank which remove and store the waste water that has been used. Components of the plumbing system consist of strong, lightweight, corrosion resistant materials that provide long life use, and easy cleaning. Following the instructions outlined here and you can expect efficient operation with a minimum of maintenance.

Fresh Water

Fresh Water, also called 'potable water', is supplied by either the Fresh Water tank onboard your RV or from an outside source connected through the City Water Connection. When using the Fresh Water tank, the water is pumped through the water lines by means of the water pump. When utilizing an outside source, such as a campsite water supply, the pump is not needed as the water is already pressurized and will flow through the water supply lines.

External Water Hook-Up

Fresh Water provided from outside your RV via the City Water Connection is pressurized by the City water's system from which it is delivered. When you connect your RV to an outside source, the Fresh Water tank and the Water Pump are not used and are kept separate from the remainder of the system by in-line check valves.

NOTICE: DO NOT turn the Water Pump on if using the External Water Hook-Up with the City Water Connection attached or if the Fresh Water tank is

empty, doing so could cause damage to the Water Pump or overload the Water Pump's electrical circuit.

Connecting To an Outside Water Source (City Water Hook Up)

1. Turn the Water Pump switch 'OFF'.
2. Remove the City Water Inlet fill cap on the exterior of your Ice Castle.
3. **If the City Water line has a pressure greater than 30 psi, install a City Water Pressure Regulator (available at RV stores) to prevent damage to your Ice Castles water system.**

NOTE: Ice Castle recommends you purchase a City Water Pressure Regulator if you plan to hook up to an outside water source (City Water Hook Up).

4. Attach one end of your fresh water hose to the faucet you want to supply water to your Ice Castle.
5. Connect the other end of the hose to your RV City Water Inlet (and Pressure Regulator if needed).
6. Turn on the faucet supplying water to the City Water Inlet on your Ice Castle.
7. On the Hot Water Heater, be sure that the bypass valve is closed and the inlet and outlet valves are open to allow the hot water heater to fill.
8. Gradually open the hot & cold water faucets at the sink(s) and shower to clear air from the lines.
9. Close the faucets when the water is flowing freely.
10. Turn on the Hot Water Heater.

To Disconnect from the Outside Water Source

1. Turn off the faucet supplying water to the City Water Inlet.
2. Disconnect the hose from the faucet supplying water to Ice Castle and from your Ice Castle's City Water Inlet.
3. Replace the cap on the City Water Inlet on the exterior of your RV.
4. Drain, rollup and connect the hoses ends to prevent contamination of your fresh water hose while in storage. Store your hose in a clean dry area.

Water Pump Operation

Refer to the Water Pump Manufacturer's information in your Ice Castle Owner's Packet for complete information on usage, care and Manufacturer's warranty.

The Water Pump supplied with your RV is designed to deliver a flow of water while drawing only a low current. When using water from the Fresh Water tank, the system must be pressurized by the self-priming 12V DC Water Pump. The Water Pump's ON - OFF switch is usually located near the kitchen sink in you Ice Castle. The 12V self-priming Water Pump is an on-demand system, meaning the Water Pump will automatically turn on when you open a faucet and the Water Pump will

automatically turn off when you shut the faucet off and the tank has reached the proper pressure level.

Water Pump cycling may be caused by excessive pressure created by one or more of the following, conditions on the Fresh Water plumbing system:

- Low flow from partially open faucet.
- Add on Water filters (if you installed them) not on separate feed lines, or clogged water filters.
- Restrictive elbows and valves in the first 2 feet after the pump.
- Flow restrictors in faucets and showerheads.
- Long lengths of small (inside diameter) water supply lines.

To minimize cycling, consider removing plumbing restrictions or install an accumulator after the pump. Cycling should be minimized to prevent pulsing flow and to achieve maximum pump life.

Filling On-Board Water Tank and Water Heater

When an outside source of water is unavailable, water can be drawn from the fresh water storage tank in your RV. The tank is filled through a gravity Fresh Water Fill inlet on the exterior of your Ice Castle.

To Fill On-Board Water Tank and Water Heater

1. On the Hot Water Heater, be sure that the bypass valve is closed and the inlet and outlet valves are open to allow the Hot Water Heater to fill (see Hot Water Operation and Water Heater By-Pass Valves in the following sections of this manual).
2. Open the Fresh Water Inlet fill cap on the exterior of your Ice Castle, insert the water sources hose and begin filling the water tank.
3. Allow the tank to fill half way with water.
4. Place the Water Pump control switch in the 'ON' position.
5. While continuing to fill the tank, open all faucets (hot and cold) in your Ice Castle (sinks and shower).
6. Allow time for the Hot Water Heater tank to fill, shutting off each faucet as the flow becomes steady and free of air.
7. When the last faucet is turned off, the Water Pump should also shut off.
8. When the tank is full, remove the water supply hose.
9. Reinstall the Fresh Water Inlet fill cap on the exterior of your Ice Castle.
10. Turn the hot water heater switch to the 'on' position (it will take about half an hour to heat the hot water in the Hot Water Heater tank).
11. The system is now ready for use. **Be sure to turn the Hot Water Heater and Water Pump are switched to 'OFF' when not in use or when traveling.**

NOTICE: DO NOT TURN THE WATER PUMP ON WHEN USING WATER FROM AN EXTERNAL SOURCE VIA THE CITY WATER INLET AND WHILE TRAVELING. ONLY USE THE WATER PUMP WHEN OBTAINING WATER STORED IN YOUR FRESH WATER TANK.

Hot Water Heater Operation

Refer to the Hot Water Heater Manufacturer's information in your Ice Castle Owner's Packet for complete information on usage, care and Manufacturer's warranty.

NOTE: The most common cause of problem with your Hot Water Heater is turning it on before the tank is filled with water. Running the Hot Water Heater for even a brief period of time without water in it will damage the electric heating element.

Filling and Operating the Hot Water Heater

1. Prior to operating Ice Castle's Hot Water Heater for the first time, be sure there is water in the Hot Water Heater's tank.
2. Be sure that the Hot Water Heater's By-Pass valve is closed and the Hot Water Heater's inlet and outlet valves are open to allow water flow into and out of the Hot Water Heater (see Hot Water Heater By-Pass Valve in next section of this manual).
3. Connect your RV to a City Water Inlet connection or fill the onboard Water Tank.
4. Turn the onboard Water Pump 'ON'
5. Open a hot-water tap and wait until water is flowing, with no air in the line.
6. When water is flowing from the tap, the Hot Water Heater tank is full, and it is safe to operate the Hot Water Heater.
7. Turn the Hot Water Heater switch 'ON' (usually located on the wall near the Hot Water Heater) and you should have hot water in about a half an hour.
8. The system is now ready for use.

Be sure to turn the Hot Water Heater and Water Pump are switched to 'OFF' when not in use or when traveling.

Automatic Shut Off

The 6 gallon Hot Water Heater is equipped with a high temperature limit switch, which will shut down the Hot Water Heater if the temperature reaches above 180° F. If the limit switch should fail, the water heater is equipped with a pressure relief valve which is designed to open, if the temperature of the water reaches 210° F, or if excessive pressure builds up. The valve will close automatically once the pressure falls below 50 PSI. Until the pressure falls below 50 PSI, dripping will occur, which is normal and indicates the pressure relief valve is

functioning properly by releasing pressure, causing temporary dripping.

Water Odor Caused By Hot Water Heater

Bad water odor is not a Hot Water Heater warranty or service issue. Water supplies, especially well water, contain anaerobic bacteria that react to magnesium and aluminum in the Hot Water Heaters anode rod and produce a hydrogen sulfide gas (H₂S) which has a 'rotten egg' odor. It is not harmful, although it can smell and taste unpleasant. Consider adding a water filtering system to your RV's water system to help correct this problem. There are other solutions such as an aluminum/zinc alloy anodes or even an electrically powered anode, although we have not seen these corrections for the RV size Hot Water Heater used in your Ice Castle Fish House.

Performing the decontamination process on your water system before and after each trip can help to remove this smell. Decontaminating on a regular basis will kill the bacteria causing the smell. Not using well water in your system will also help control this problem. If these do not remove the smell from the water, you may need to replace the anode rod in your water heater.

Winterizing the Hot Water heater

If vehicle is to be stored or heater is going to be turned off while subject to freezing temperature, drain the Hot Water Heater and Fresh Water System, Fresh Water Tank and Waste Water Holding Tank. Refer to your Hot Water Heater Manufacturer's manual and the Winterizing your Ice Castle section in this manual regarding Draining and/or Winterizing your Hot Water Heater.

Draining Hot Water Heater for Storage or Winterizing

If your Ice Castle will be stored for any length of time or during winter months, drain the Hot Water Heater to prevent damage from freezing. Refer to your Hot Water Heater tank's manual or the Winterizing your Ice Castle section in this manual regarding draining and/or winterizing your Hot Water Heater.

To Drain Hot Water Heater (see photos on last page)

1. Turn the Hot Water Heater 'OFF' at the switch (switch is usually located on the wall near the Hot Water Heater).
2. The Water and Drain System on your Ice Castle is a pump and gravity flow system **so you need to park your Ice Castle on level flat surface.**
3. Turn the Water Pump 'OFF' at the switch (switch is usually located on the wall near the kitchen sink).
4. Open both hot and cold water faucets on the sink and shower to allow water to drain from the lines

- and allow air into the Hot Water Heater to drain the water from it.
5. Open the exterior access door to the Hot Water Heater and remove the drain plug/anode rod on the back/outside of your Hot Water Heater and drain all the water from the tank.
 6. Once all the water is drained from the water lines and the Hot Water Heater, close the inlet and outlet valves (A & B or top and bottom valves) on the Hot Water Heater and open the by-pass shutoff valve (C or middle valve) on the Hot Water Heater (see Water Heater Bypass Valve in the next section in this manual).
 7. Inspect the drain plug/anode rod for deterioration and replace if more than 50% deteriorated (refer to Hot Water Heater manual for explanation of how anode rod protects the water heater from deteriorating).
 8. Once the Hot Water Heater is fully drained, apply two layers of Teflon Tape thread sealer to drain plug/anode rod threads and reinstall in Hot Water Heater (do not use thread seal paste as it may make the drain plug/anode rod hard or impossible to remove).

Water Heater By-Pass Valves (see photos on last page)

Your Hot Water Heater plumbing system is equipped with a bypass kit, use it before winterizing water system to close off the water heater, drain it completely and leave it closed, (in the by-passed position). If you are introducing RV anti-freeze into the system, be aware that it can be very corrosive to the anode rod causing premature failure and leaving heavy sediment in the Hot Water Heater's tank.

Winterizing the Water System (See photos on last page)

WARNING: DO NOT USE AUTOMOTIVE ANTIFREEZE TO WINTERIZE POTABLE (DRINKABLE) WATER SYSTEMS OR WASTE WATER HOLDING TANK.

Proper winterization procedures of your Ice Castle's plumbing systems will normally be all that is necessary to prevent the damage caused by freezing. Freeze damage can harm any component of the system, including the water tanks, toilet, water pump, hot water heater, drain 'P' traps and water lines. Be sure to follow the winterization procedures outlined in this manual. Also be sure to discuss with your Ice Castle Dealer or RV repair center any additional precautions that should be taken to winterize your Ice Castle's plumbing system.

To Winterize Your Ice Castle's Water System

1. Empty the Waste Water Holding tank at an approved waste water dump location (see section on Waste Water Holding Tank Emptying).

2. The Water System is a pump and gravity flow system **so you need to park your Ice Castle on level flat surface**,
3. Turn the Hot Water Heater 'OFF' at the switch (switch is usually located on the wall near the Hot Water Heater).
4. Close the inlet and outlet valves on the Hot Water Heater (see previous section on Water Heater By-Pass Valves).
Notice: Do not allow RV antifreeze to enter Water Heater as it will damage the anode rod.
5. Open the by-pass shutoff valve (middle valve) on the Hot Water Heater.
6. Remove the drain plug/anode rod on the back/outside of your Hot Water Heater and drain all the water from the tank. Inspect and replace if more than 50% deteriorated (see Hot Water Heater Manufacturer's manual or preceding Hot Water Heater section of this manual for more on this).
7. Once the Hot Water Heater is fully drained, apply two layers of Teflon Tape thread sealer to drain plug/anode rod threads and reinstall it into the Hot Water Heater.
8. Pump the Fresh Water tank dry by running one or more of the faucets **being sure to shut off the water faucet as soon as you are no longer get water out of the faucet or you will damage the water pump.**
9. Turn the Water Pump 'OFF' at the switch (switch is usually located on the wall near the kitchen sink).
10. Pour four gallons of RV antifreeze into the fresh water inlet on the exterior of your Ice Castle.
11. Close valve "A" Insert the hose into a container of RV antifreeze and open valve "B".
12. Turn on Water Pump.
13. Pump RV antifreeze through the entire system by running the sink and shower, hot and cold water faucets until the RV antifreeze comes out of the faucet.
14. Be sure to run at least a quart of RV antifreeze into sink(s) and shower drain to ensure 'P' traps has only RV antifreeze in them and that they are full so the holding tank gases don't enter back into your Ice Castle Fish House.
15. Operate the toilet flush/fill valve until RV antifreeze comes into the toilet bowl.
16. Flush the RV antifreeze from the toilet bowl and add about 2 gallons of RV antifreeze to Waste Water Holding tank via the toilet to dilute any water that may have drained into it.
17. Shut Water Pump switch 'OFF'.
18. Briefly turn on each faucet (hot & cold) and briefly flush the toilet to relieve any pressure from the Fresh Water system. Wipe off any RV antifreeze from sinks, shower and toilet.
19. Close all faucets and the shower faucets. Close valve "B"

20. Your Ice Castle Fish House RV is now winterized.

WINTERIZING WITH COMPRESSED AIR (With By-pass kit Installed on the water heater)

NOTICE: Before using the compressed air method, you will need a special adapter known as a 'blowout plug'. The blowout plug allows compressed air to be delivered through the City Water Connection on the outside of your Ice Castle. This small, inexpensive adapter may be available from your Ice Castle Dealer or at most RV centers.

1. Purchase 3 gallons of **RV non-toxic antifreeze**.
2. Pour 1 quart of RV anti-freeze into each sink and shower drain 'P' trap to flush out any water and prevent them from freezing (see following 'P' Trap section for more on this).
3. Drain the Fresh Water Tank and empty the Waste Water Holding Tank.
4. Turn the Hot Water Heater 'OFF' and the bypass valves to the 'bypass' position. (These valves are located near the water heater incoming lines at the rear of the water heater – see preceding Winterizing section in this manual for correct bypass positions of these valves).
5. Drain the Hot Water Heater by removing the drain plug/anode rod on the back/outside of your Hot Water Heater and drain all the water from the tank. Inspect and replace if more than 50% deteriorated (see Hot Water Heater Manufacturer's manual or preceding Hot Water Heater section of this manual for more on this).
6. Once the Hot Water Heater is fully drained, apply two layers of Teflon Tape thread sealer to drain plug/anode rod threads and reinstall it into the Hot Water Heater.
7. If you have a water filter system installed, remove the filter from the assembly and discard (purchase a new filters and install them when de-winterizing your unit).
8. Open all faucets, including, sinks, shower head sprayer, (if applicable), toilet flushing handle and any other water lines that are closed.
9. Turn the Water Pump 'ON' for about 15 seconds to clear any water from the lines and tank.
10. Turn the Water Pump 'OFF'.
11. Connect an air hose with an adapter (blowout plug) to the City Water Connection on the outside of your Ice Castle.
12. Set the compressor's line pressure to no greater than 30# (pounds).
NOTICE: Failure to set the air at 30# or less will damage water lines and faucets.
13. Blowout the water lines until no water can be seen coming out of the fixtures.

14. Flush toilet until no more water comes out of toilet fill line.
15. Remove blowout plug from the City Water Connection on the outside of your Ice Castle.
16. Pour an additional 1 pint of RV anti-freeze into each sink and shower drain 'P' trap to replenish any antifreeze that may have sloshed out of the 'P' trap on your way back from dumping your Waste Water Holding Tank. This will prevent odors and gases from the Holding tank from entering your Ice Castle.
17. Pour 1 gallon of RV anti-freeze into the Waste Water Holding tank (via the toilet) to dilute any remaining water or sewage and keep it from freezing and hardening to the inside of the Waste Water Holding tank.
18. Pour 1 gallon of RV anti-freeze into Fresh Water tank to dilute any remaining water in the tank and keep it from freezing.

NOTE: DO NOT ATTEMPT TO START THE WATER HEATER OR USE THE PLUMBING SYSTEM AFTER THE SYSTEM HAS BEEN WINTERIZED.

NOTE: DEWINTERIZE, FLUSH AND DECONTAMINATE THE FRESH WATER SYSTEM PRIOR TO USE.

Before using your Hot Water Heater, pump fresh water through the lines by opening all faucets and fixtures until clear water appears, removing all antifreeze. Perform decontamination on Fresh Water system. Open the two shutoff valves (A & B) on the water heater, and close the by-pass valve (C).

De-Winterizing the Water System

1. Drain all holding tanks, (fresh water and sewage).
2. Attach garden hose to Fresh Water fill and fill Fresh Water tank.
3. Turn 'ON' Water Pump switch and open cold water side of all faucet/shower fixtures and leave them open until the water runs clear, (no pink residue).
4. Flush toilet until clear water runs into bowl.
5. Decontaminate the Fresh Water system (refer to Decontaminate the Fresh Water system section in this manual).
6. If a water filter has been installed, drain the lines, remove the assembly, clean and reinstall new filter.
7. When ready to use the Hot Water Heater, Open the inlet and outlet valves (A & B or top and bottom valves) on the Hot Water Heater (see previous section on Water Heater By-Pass Valves). Close the by-pass shutoff valve (C or middle valve) on the Hot Water Heater.

Waste Water

The 30 gallon Waste Water Holding tank in your Ice Castle is a single holding tank for both your black (toilet) and gray (sinks and shower) waste water. The Waste Water Holding tank is self-contained and allows disposal of waste water at a designated dump stations at your convenience.

Waste Water Holding Tank Vent

The Waste Water Holding tank is vented through the top of your Ice Castle Fish House to equalize air pressure in the tank and drains while also to allowing gases and odors from the Waste Water Holding tank out of the tank and drains to the outside atmosphere above your RV.

Waste Water Holding Tank Vent Maintenance

NOTICE: There is a cap on the top of the waste water holding tank vent on the roof of your RV that must be periodically checked for blockage of debris and insects such as spiders, spider webs, wasps, wasps nest, leaves and sticks.

NOTICE: IF CONNECTING TO A CITY OR CAMPSITE SEWER SYSTEM, DO NOT LEAVE THE TERMINATION VALVES OPEN ON YOUR WASTE WATER HOLDING TANK. WAIT UNTIL THE WASTE WATER HOLDING TANK IS $\frac{3}{4}$ FULL BEFORE EMPTYING TANK. Waste should NOT be flushed directly into the waste sewer system after each use of the toilet or the liquid waste will be drained. Waste water and waste solids must accumulate in Waste Water Holding tank and have time for the RV toilet digesters to breakdown the solids before they can be released into the sewer. Failure to comply with this requirement will cause the solid waste in the holding tank to remain in the tank and will clog and/or block the sewer drain hose during draining process.

Waste Water Holding Tank

The Waste Water Holding tank is located beneath the toilet. The Waste Water Termination drain valve (and the City Water Connection) are usually located on the driver's side or directly behind the toilet.

The Waste Water Holding tank is constructed of strong, light-weight polyethylene, which minimizes both weight and maintenance.

The tank should be emptied only at approved dump station designated for this purpose. These dump stations are usually found at most campgrounds, RV centers, truck stops.

Never dump Waste Water Holding tank until it is $\frac{3}{4}$ full. This practice ensures that enough water is in the tank to flush all wastes through the sewer line. If necessary, fill the tank $\frac{3}{4}$ full with additional water before draining.

Dumping the Waste Water Holding tank before each trip will reduce the gross vehicle weight. Enough water should be kept in the Waste Water Holding tank to cover the bottom to prevent hardening of any residue or solids that may remain.

Never put anything in the Waste Water Holding tank other than normal drain water, wastes and biodegradable products. Paper wrappers, feminine hygiene products, gum, cigarettes, etc., no matter how small, should NEVER be placed into the Waste Water Holding tank. Use only RV Biodegradable paper products in your Ice Castle's holding tank.

NOTE: Harmful and toxic gases and bad odors will accumulate in the holding tank. Regularly draining, thoroughly rinsing and adding RV holding tank deodorizers and RV holding tank waste digesters into the waste water holding tank after each cleaning will reduce odors and keep the tank free flowing.

To Empty the Waste Water Holding Tank

1. You will need to purchase a sewer drain hose. There are many styles to choose from. Consider one with caps on each the ends of sewer drain hose.
2. Only empty your waste water at an approved waste water dump station.
3. Remove the sewer drain hose you purchased from its storage area.
4. Remove the cap from the Waste Water drain on the outside of your Ice Castle and connect your sewer drain hose to it.
5. Attach the other end of the flexible drain line to the dump station inlet. Be sure both ends of the flexible drain line are securely attached.
6. Drain the Waste Water tank by pulling the Waste Water Termination valve handle toward you (located just above the Waste Water drain on you RV). Be sure to allow sufficient time for the tank to completely drain, which could tank several minutes.
7. Rinse the tank with several gallons of water by depressing and holding the toilet's flush pedal.
8. Power flush the toilet several times by lifting the flush pedal on the toilet 'up', let the toilets bowl fill about $\frac{3}{4}$ full of fresh water, then depress the toilet's flush pedal. This will create additional force to help flush the tank more completely.
9. If you purchased a dedicated sewer wash out hose use that to further rinse and flush the tank.
10. When the tank is empty, close the termination valve by pushing the handle back into the closed position.
11. Remove flexible drain hose from the side of your RV and wash it thoroughly with clean water.
12. Drain any remaining water from the sewer drain hose into the sewer inlet.

13. Remove the other end of the sewer drain hose from the dump station inlet, cap the ends of the hose and replace it in your storage area. Rinse the waste water drain outlet on the RV and replace the cap.
14. If you are NOT winterizing the RV add about a gallon of fresh water, an RV grade holding tank deodorizer and/or an RV grade holding tank waste digester to your Waste Water Holding Tank to prevent unpleasant odors and hardening of any waste residue that may remain in the tank.

To Winterize the Waste Water Holding Tank

- Empty the Waste Water Holding tank per the preceding instructions.
- Add a gallon of RV antifreeze. This will assist in preventing any water or waste residue, that may have remained in the tank after draining the tank, does not freeze, harden or solidify and stick to the inside of the tank.

Water System Maintenance and Troubleshooting

As with any mechanical system, your plumbing is subject to the development of problems. Most of these problems can be, prevented, greatly reduced, or eliminated, by following a schedule of planned inspections and maintenance.

Note: Neglect of proper maintenance procedures is the usual cause of most water system problems.

Follow these guidelines to help ensure trouble-free operation:

- Never put anything in your Waste Water Holding tank other than biodegradable RV toilet paper, RV Grade cleaners, RV grade deodorizers and water.
- Only use RV grade chemicals in the Waste Water Holding tank that are made especially for this purpose.
- **DO NOT put Automotive antifreeze, household toilet or drain cleaners, famine hygiene products, personal sanitary wipes or any solid material into the waste water system, as this WILL damage the holding tank and could clog the Waste Water Holding drain or tank.**
- When cleaning components (toilet, shower, sink) of the system, use cleaners made only for RV systems.
- Always keep the Waste Water drain cap in place and the termination valve closed.
- After every time the holding tank is emptied, fill and flush the tank with clean, fresh water several time to keep it clear and clean.

Road vibrations and shocks, as well as excessive pressure from some city water sources are the main physical causes of water system damage. It is important to inspect all plumbing joints and fittings often, for cracks

and leaks. If left unchecked, water leaking from a plumbing joint can cause considerable damage.

A leak in the fresh water system should be suspected if the pump is running and all faucets and valves are closed. When the leaking fitting has been identified, attempt to stop the leak by tightening the fitting by hand. **DO NOT over tighten.** Plastic drain fittings rarely need to be tightened with a wrench. If these fittings leak after tightening by hand, disconnect the fitting and check for, damage, dirt, scale, or other foreign substances which may be causing the leak. Clean the fitting thoroughly and reinstall.

If leaking persists, shut off the water supply until the fitting can be properly repaired or replaced. Check with your Ice Castle dealer for the correct method of replacement and replacement parts.

Your Ice Castle Dealer or local RV center can assist with any issues that arise with your Ice Castle's Fresh and Waste Water systems.

Toilet Operation Procedures

The toilet in your Ice Castle is connected to the Fresh Water system.

A single lever controls both flushing and the flow of water into the bowl.

- Add water to the toilet before using by lift the flush lever until the desired water level is reached.
- As a general rule, more water is required only when flushing solids.
- To flush the toilet, push the lever all the way down until the sewage leaves the toilet.
Be sure to hold the flush lever down long enough to release the contents of the bowl, but not longer than necessary as this will result in excessive water usage.
- Release the flush lever.
- **Prior to travel** you should turn 'OFF' the Water Pump, push the toilets flush lever all the way to release the water pressure on toilet's water line, when the water stops and the bowl is drained, release the lever. This will ensure there is no water in the bowl that could spill will your RV is in motion.
- Unnecessary, frequent flushing of the toilet will quickly deplete your Fresh Water supply and fill your Waste Water Holding tank. If the Waste Water Holding tank becomes full, you will no longer be able to flush the toilet until the tank can be drained.
- Be sure all users understand these toilet usage procedures and precautions.

Only use RV grade biodegradable tissue paper, RV grade deodorizing agent and an RV grade digester in your Ice Castle's Waste Water Holding tank.

NEVER use chlorine or caustic chemicals such as drain openers or laundry bleach in your toilet.

NEVER allow foreign objects (non-dissolving items) to be flushed through the toilet.

NOTE: Don't allow a problem with the toilet or water systems to go unsolved. When a problem is noticed, take immediate steps to correct them.

Sink and Shower Drain Line 'P' Traps

Components of sinks and showers have drain 'P' traps which are designed to hold water in the trap and prevent the Waste Water Holding tank's gases and odors from entering through the drains back into your Ice Castle.

To prevent and stop the holding tank gases and odors from entering through the drains back into your RV add about a pint of water to each drain after each leg of your trip to refill the 'P' traps.

Keeping the sink's drain plugs in place during travel will also assist in preventing the 'P' traps from allowing holding tank gases and odors from entering through the drains back into your RV.

Sink and Shower Drain Line 'P' Traps Winterizing

Pour about a quart of RV antifreeze down each sink and shower drain to flush out the water and fill 'P' traps with RB antifreeze to prevent the trap from freezing the holding tank gases and odors from enter through the drains back into your RV.

Kitchen Sink Drain Atmospheric Vent

The kitchen sink has an atmospheric vent located on the drain line under the countertop near the kitchen sink. Due to the long drain line from the sink to the holding tank, this atmospheric vent is necessary to prevent the sink's waste water from creating a vacuum when draining the sink and emptying (sucking the water out of) the sinks 'P' trap.

Kitchen Sink Drain Atmospheric Vent Maintenance and Replacement

The atmospheric vent must be inspected annually for blockage of debris and insects such as spiders and spider webs. The atmospheric vent should be periodically replaced as the rubber one-way diaphragm may dry out over an extended period of time due to the aging of the rubber. If you notice that gases or odors from the holding tank is present in the sink cabinet, the blockage of or aged rubber of the diaphragm in the atmospheric vent may be the cause of this problem and you may need to replace the atmospheric vent.

Sink and Shower Operation

Your Ice Castle's sink and shower faucets operate the same as the faucet in your home.

Follow your Ice Castle Winterization procedures to be sure all water is flushed from the faucets to prevent freezing damage to the faucets.

Refrigerator, Refueling Tow Vehicle & Cold Weather Operation

WARNING: Before Refueling Your Tow Vehicle !!

Extinguish all pilot lights, turn refrigerator, stove and oven off before fueling your tow vehicle!

FAILURE TO COMPLY COULD RESULT IN EXPLOSION RESULTING IN DEATH OR SERIOUS INJURY.

If You Smell Gas:

- Extinguish any open flame.
- Evacuate all persons from the vehicle.
- Shut off the gas supply at the gas container or source.
- Do not touch any electrical switch or use the phone or radio in the vehicle.
- Do not start a generator.
- Contact the nearest gas supplier or qualified service center for repairs.
- If you cannot reach a gas supplier or qualified service center, call the fire department.

NOTICE: DO NOT TURN ON THE GAS SUPPLY UNTIL THE GAS LEAK(S) HAS BEEN REPAIRED.

REFRIGERATOR

Most RV refrigerators operate on the absorption system. In an absorption refrigeration system, ammonia is liquefied in the finned condenser coil at the top rear of the refrigerator. The liquid ammonia then flows into the evaporator (inside the freezer section) and is exposed to a circulating flow of hydrogen gas, which causes the ammonia to evaporate, creating a cold condition in the freezer.

Leveling Ice Castle for proper Refrigerator Operation

Leveling your Ice Castle Fish House / RV is one of the requirements for proper operation with absorption refrigerators. Any time the vehicle is parked for more than a few minutes with the refrigerator operating, the vehicle should be leveled to prevent loss of cooling. If the refrigerator is operated when it is not level and the vehicle is not moving, liquid ammonia will accumulate in sections of the evaporator tubing. This will slow the circulation or in severe cases, completely block it,

resulting in a loss of cooling and could permanently damage the refrigerators cooling system. When the vehicle is moving, the rolling and pitching movement of the vehicle will help to keep the liquid ammonia from accumulating.

NOTICE: When starting the refrigerator for the first time, the cooling cycle may require up to four hours of running time before the cooling unit is fully operational.

NOTICE: The manufacturer recommends that you NOT use your refrigerator when the temperature outside is below freezing. Dometic's manual says *"Refrigerator performance may be reduced in extremely cold (subzero) temperatures. This temporary condition is normal for absorption refrigerators and does not indicate product failure. In the event that performance is reduced in such conditions, turn the refrigerator off. As the ambient temperatures rise, please restart your refrigerator according to the instructions before requesting service."*

Automatic Energy Selector (AES) System

The refrigerator may be equipped with an automatic energy selector system, either a 2 way or 3 way system. The system can be set by the user to be fully automatic when AUTO Mode is selected or to operate on LP Gas Only Mode (when AUTO Mode is OFF), or if you have a 3 way system - DC Mode (battery).

Refrigerator Auto Mode

If you turn the refrigerator on in AUTO Mode, the AES system will automatically select the most suitable energy source available, either 120 volt or LP gas, or if you have a 3 way system - DC Mode.

When on AUTO mode, the control system will automatically select between 120 volt (AC) and LP gas, or on a 3 way system, DC current. DC current has priority over both AC (electricity) or GAS. AC (electricity) has priority over GAS.

NOTICE: 'CHECK' INDICATOR LAMP is 'ON' when a problem occurs.

This usually happens when power is removed or gas runs out while refrigerator is operating. Correct the condition by either plugging your Ice Castle Trailer into External Power, recharge the batteries or fill LP tanks and then depress the ON/OFF button OFF and then ON again to reset the CHECK indicator lamp. The lamp will not turn off until the ON/OFF button is pressed OFF and then ON again.

Refrigerator LP 'Gas' Only Mode

This mode provides LP gas only. The control system activates the ignition system and attempts to light the burner for a period of approximately 45 seconds, at 2

minute intervals. If unsuccessful, the CHECK indicator lamp will illuminate. If the CHECK indicator lamp is illuminated on the control panel, the controls have failed to ignite the burner. To force the refrigerator to restart an ignition attempt when the CHECK lamp is illuminated (or to turn off the CHECK lamp), press the ON/OFF button to OFF and back to ON again. The control system activates the ignition system and makes three attempts to light the burner. If, after the 3 attempts, it fails to ignite, restart the ignition sequence by again pressing the ON/OFF button to OFF and then back to ON. If this third attempt fails, you will need to trouble shoot the gas system and refrigerator or contact your Ice Castle Dealer or authorized RV center for repairs.

Refrigerator 'DC' Mode

When DC mode is chosen, the refrigerator will operate by pulling power from the battery(s). This will cause a drain on the battery(s). In most cases, the refrigerator controls will continue to operate when the battery is down to 9.6V DC. WHEN IN AUTO MODE, IF THE REFRIGERATOR FAILS TO OPERATE ON DC BATTERY, REFER TO THE MANUFACTURER'S USER MANUAL PROVIDED IN YOUR ICE CASTLE OWNER'S PACKET.

Purging Air From The Gas Lines To Refrigerator

If the refrigerator has not been used for a long period of time or if the LP tanks have just been refilled, air may be trapped in the supply lines. Check to make sure the LP tanks are not empty and that all manual shutoff valves in the lines are open. Purge the air from the lines by pressing the ON/OFF button to OFF and then back to ON, wait 3 minutes and try again, repeat 3-4 times until refrigerator Gas operation starts. If repeated attempts fail to start the LP Gas operation, check to make sure the LP tanks are not empty and that all manual shutoff valves in the lines are open.

DO NOT continue to reset GAS operation if the CHECK indicator lamp continues to be illuminated after several tries. If the problem persists, please contact Ice Castle Dealer your Refrigerator Manufacturer's Authorized RV Service Center for assistance.

Refrigerator Cold Weather Operation

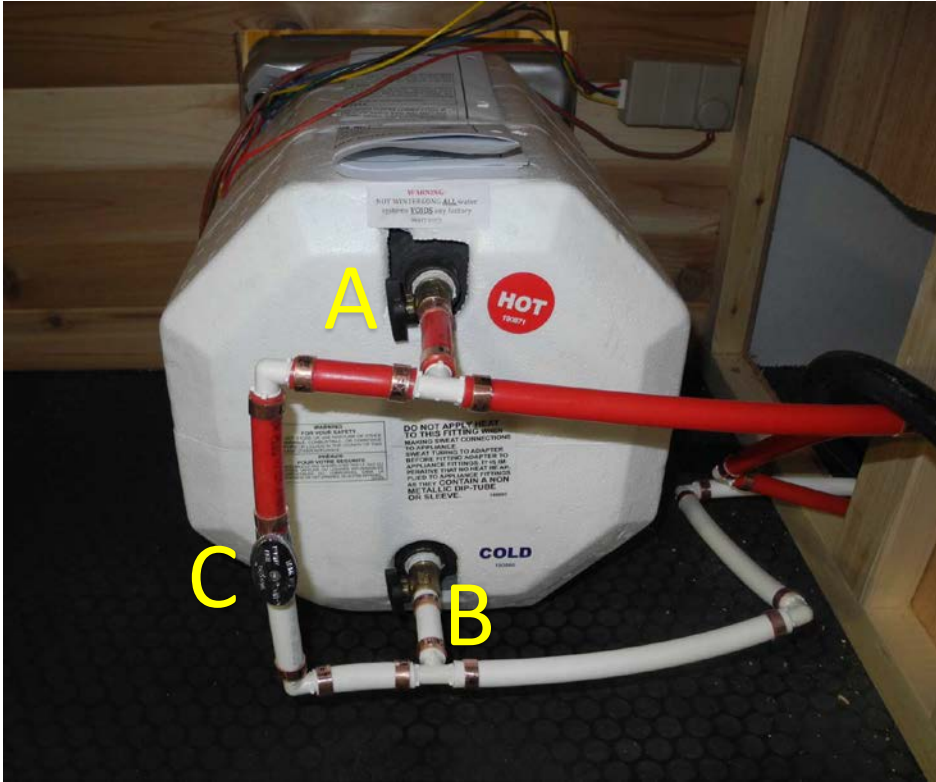
Follow the Refrigerator Manufacturer's for operating your refrigerator below 32°F.

Refrigerator Storage Preparation Procedures

Follow the Refrigerator Manufacturer's directions for shut down and storing your refrigerator. Defrost the refrigerator, clean the interior and install the 'Door Stay Storage Clip(s)' that hold the door(s) open to prevent mold and mildew from forming on this inside of the refrigerator.

Water Heater

NOTICE: **DO NOT** put RV Antifreeze into the water heater.



Water Pump and hose used to winterize the system.

