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FREQUENTLY ASKED QUESTIONS ABOUT ULTRAHEAT® PRODUCTS

When buying a new RV or Caravan, are UltraHeat® products standard equipment?

Most RV Manufacturer's in North American offer UltraHeat® as either a stand alone option or as part of a package (Arctic package, Glacial package, etc.), in some models they are standard equipment. Many European Caravan Manufacturer's also offer UltraHeat®. Before you purchase your RV or Caravan, ask your dealer if the holding tanks have UltraHeat® as an option.

How many UltraHeat® Tank Heaters will be needed to protect my recreational vehicle (RV)?

One (1) UltraHeat® tank heater (sized properly) per holding tank (up to a 60 gal (277 L) maximum). On larger volume holding tanks, multiple heating panels can be used in combination, wired in parallel or independently controlled. The average RV produced in North American has three holding tanks however there could be as many as five tanks and each tank that is located below the floor would require a heater.

What is the lowest temperature the UltraHeat® heat panels are good to?

While each RV or Caravan is different, our overall product design benchmark and testing is -11°F (-23.9°C). This is on an RV holding tank (with the properly sized heat panel), mounted below the floor and totally exposed to the elements. Lower temperatures can be achieved by additional modifications to the RV, once the UltraHeat® system is installed and tested; these are some of the suggested ways to improve the performance:

Enclosing the underbelly or just the area around the Plumbing Systems.

Adding any type of insulation around and covering the plumbing system.

In extended stays, skirting the unit.

It's OK to oversize the holding tank heater, install one for a 60 gal. (227L), on a 40 gal. (151.4L)

My RV has an enclosed underbelly with air from the furnace blowing into it. Do my holding tanks still need UltraHeat® Holding Tank Panels installed?

Ducted Heat into the underbelly is only effective when the furnace is continually running, and only effective down to temperatures around the mid 20's°F (-6°C). RV's that try to use forced air to heat the underbelly will typically use a 2" or 4" flexible duct directly under the furnace to heat the entire underbelly. This would be like trying to heat the bedroom of your RV with the door shut and the only heat

Is regular maintenance required on the UltraHeat® Pipe and Elbow Heaters?

Periodically check all UltraHeat® Heaters for damage, loose wires, etc. Under proper use and care, our Heat Panels are designed to be in operation for 12 Plus years, there are still RV panels produced back in the early 1990's in use today.

After I've installed the UltraHeat® panel, can I put some insulation over it, and in direct contact with the panel?

Yes, insulation will only improve the performance of our heat panels. It's like dressing yourself in cold weather, the warmer you dress, the less body heat you lose. Reducing how fast the tanks and drain pipes loose heat, decreases the need for the sensor in the tank heaters to activate themselves "on", and conserves energy consumption. Our panels are design to direct heat towards the mounting surface; the backing only gets a little warm, there is no known harm in placing any type of insulation over the heat panels.

When do you turn "off" the system?

OFF - when there is **NO** liquid in the tanks or pipes

OFF - when the outside temperature remains above freezing. **OFF** - when the black and gray holding tanks and drain pipes are being dumped.

OFF - when the fresh water holding tanks and supply pipes are being drained for storage or empty.

OFF - when the RV is connected to city sewer and the gate valves are open (free draining is never recommended, especially in cold weather RVing) .

Should liquid be in the drain pipes & elbows or fresh water supply pipes when the UltraHeat® Pipe and Elbow Heaters are "ON"?

Liquid must always be present when UltraHeat® heat panels are 'ON'. With liquid in the holding tanks, there will always be liquid in these pipes do to where they are located, the lowest point of drainage. When your tanks are turned on, turn on the heaters for the associated drain pipes also.

Can damage occur with Pipe Heaters turned "on" and no liquid in the pipes?

The pipe and elbow heaters may soften rigid/hard plastic pipe if they are "ON" and there is no liquid in the pipes, especially in warmer temperatures. Fluids must always be present, and only turned "on" when ambient temperatures

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vent located in the living room.

The temperature control for the furnace is located in the cabin, not below the floor in the basement, once the better insulated and protected cabin space is warmed up to the desired heat the furnace shuts off. Who knows what the temperature is around the holding tanks, was it enough to stop a freeze-up, and how long will it last with the furnace off? What if your using Electric Space Heaters, not Propane to conserve fuel?

The UltraHeat® Heat Panels are still necessary to give your RV's system of holding tanks, drainage pipes and gate valves protection from freezing down to -11°F (-24°C) and lower with additional modifications. The right heat, right were it's needed!

How does the Model 3600 (dual voltage) Tank Heater work?

The Model 3600 Tank Heater is actually two separate tank heaters in one, a 12 Volt (DC) heating element and an isolated 120 Volt (AC) heating element. Each heating element operates independent of the other. Both are rated for holding tank volumes of 40 gal maximum (151 L).

The advantage the Model 3600 Tank Heater over a single voltage heater is when you are parked, the 120v (AC) side of the heater can be used eliminating any undo stress to be placed on the 12v converter. When traveling, the Tank Heater can utilize the 12v (DC) power from the alternator of the vehicle allowing you to maintain liquidity in the tanks.

When should the UltraHeat® Tank Heaters be turned "ON"?

Only when liquid is present in the holding tanks and the outside temperature approaches freezing and remains.

Why do the heaters need to be turned "OFF" if they are sensor controlled?

The heaters must be turned off when there is **NO** liquid present (empty), or when ambient temperatures rise to and remain above freezing. The built-in sensor monitors the temperature of liquid within the holding tank, it will power cycle the heat panel "on/off" to maintain the tank contents between 44°F and 64°F (6.6°C - 17.8°) and conserve power consumption. The sensors are not designed to monitor only air, nor are the heat panels designed to operate in warmer temperatures. For this reason all UltraHeat® heat panels must be turned "off" when the holding tank systems have been vacated of fluids, or ambient temperatures rise and remain above freezing. For this reason, we recommend each tank system (I.E. Black, Grey and Fresh) has a separate switch to control power independently.

Will the UltraHeat® Tank Heater damage the holding tank if no liquid is in the tank when the Tank Heater is "ON"?

If the holding tank is completely empty there is a possibility that damage could occur, especially if the ambient temperature is above freezing. When there is liquid in the tank it absorbs and distributes heat away from the heater and mounting surface. Without liquid in the

approach freezing.

When should my Gate Valve Heaters be turned on?

The gate valve heaters should be controlled independently from all the other heaters. A separate on/off switch just for the gate valves. We recommend installing it inside a compartment close to the dump valves. Turn the Gate Valve heater "ON" approximately 10 to 15 minutes before dumping in freezing temperatures (if needed). Evacuate the tanks, and close the gates, turn "OFF" the gate valve heaters. These heat panels are designed for short term use, and only in freezing cold weather.

What does the Ambient Temperature Master Power Control Kit do, and do we need it?

This kit known as the Amb-Ray Kit was developed by us to basically take the guess work out of when to power "on" and "off" the UltraHeat® heat panels. It uses an electronic sensor to monitor the air temperature either outside the RV or can be mounted within an enclosed underbelly.

Once the air temperature drops to 35°F (1.7°C), the sensor will activate a power contact relay(s), and complete the circuit and supply power from the source to the total UltraHeat® system. Power will remain "on" to the system until the sensor monitors a rise in air temperature to 45°F (7.2°C), at which time the power relay(s) de-activate and power to the UltraHeat® system is turned "off".

Please note that is Kit does not eliminate the need to independently switch each plumbing system (i.e. gray, black or fresh). If one or more are void of fluids they each must still be have the ability to be manually switched "off" or separated from the system, and "on" or added back to the system as the utilities have been used.

This master control kit gives you the peace-of-mind that the entire system will be automatically powered "on/off" when it needs to be based on temperature, keeping the UltraHeat® system working just outside the freezing zone. Great if on occasion you are away from your unit for extended lengths of time, looking for added control over energy consumption or just don't want to be bothered continuously monitoring the outside temperature and manually powering "on/off" the system.

This Kit is a recommended option to any new UltraHeat® system, and can be easily added to an existing one.

Is the Ambient Temperature Master Power Control Kit only for 12 VDC systems, or can it be used with the 120 VAC models?

The way we've designed this control kit it can work with either voltage or both at the same time. The electronic sensor itself only operates on 12 VDC, however it controls one or more power relays, the built-in contact switches of the relays are each rated for 30 Amps at 120/277 VAC or 20 Amps at 12 VDC. Each relay has two independent set of contacts, one can be used for 12 VDC and the other for 120 VAC, both for 12 VDC or both for 120 VAC. You can add another relay (or more if needed) by wiring the relay coils in parallel and add more sets of contacts to wire in any

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tank, it would be like putting an empty pot on your stove. The pot will get hot and scorch or possibly burn if left unattended.

How do you know if the UltraHeat® Tank Heater is working?

With power on and liquid in the tank (close to freezing), the tank heater will activate and deactivate, based on the temperature of the liquid in the tank. Check the tank heater periodically by touching the black foam pad, in the center of the tank heater, for warmth. This warmth indicates that the tank heater is working properly. (for a more detailed troubleshooting see Technical Questions page)

The UltraHeat® Tank Heater I have on my RV is not listed anywhere on your website. How can I find information about the heater on my RV?

All of the Tank Heaters shown on our web site are for Retail Sales, we also have a complete line of heat panel models sold only to the RV and Caravan Manufactures as O.E.M. only equipment, and not packaged for general retail sales and not shown here.

For information on heaters or products not found on this website please [contact us by clicking here](#).

Do UltraHeat® Tank Heaters have third party certifications for U.S.A., Canada and European safety standards?

Yes, all UltraHeat® products carry certifications by accredited testing laboratories.

Testing Engineers International (TEI) certify that all UltraHeat® products meet the appropriate testing and safety requirements for U.S. safety standards.

Quality Auditing Institute (QAI) certifies that UltraHeat® 12 Volt DC powered tank heaters meet the appropriate testing and safety requirements for Canadian safety standards.

European Union (EU) certify that all UltraHeat® products meet the appropriate testing and safety requirements for European safety standards.

And more, our products are currently being used in other Countries Worldwide, our products also need to meet their safety standards as well.

Does the UltraHeat® Tank Heater come with a warranty?

ONE-YEAR LIMITED WARRANTY. Extended and expanded warranties are available [here](#).

Will my drainage pipes freeze with only UltraHeat® Tank Heaters on my holding tanks?

The drain pipes between the holding tank and the termination valve (Gate Valve) need to be protected. Because of their location, the lowest point of drainage, these pipes fill first before the holding tank and will freeze first. Drain pipes filling the holding tank do not need freeze protection, unless they hold fluids (like a below floor shower drain trap). With frozen pipes, the RV's tanks

combination.

This kit only controls the main power feeds to the overall UltraHeat® system from the power source, powering it "on/off" based on the ambient temperature. Independently switching each plumbing system (i.e. fresh, gray and black), and also separating each voltage type 12 VDC and 120 VAC, you can manually remove any section out of the controlled system by switching them "off".

Example: you are using the [Model 3600](#), dual voltage and dual element holding tank heaters. One side of the heat panel is 12 VDC and the other is 120 VAC, your RV is parked and attached to 120 VAC shore power and there is some fluids in all your holding tanks, you only want to use the 120 VAC sides of the tank panels. Manually switch "off" the 12 VDC switches independently controlling each tank, and switch "on" each 120 VAC switch associated with the same. When the temperature drops and the sensor activates the relays, only the heat panels that are manually switched to "on" will allow power continue through and flow to them. You're hitting the road again and disconnecting from 120 VAC shore power, manually switch "off" each 120 VAC plumbing system and switch "on" the 12 VDC as needed (only if fluids are present).

My holding tank is sitting on a plate or platform, can I sandwich the heat panel between the tank and the plywood platform?

Yes, pressure applied to the heat panel itself will not damage the panel. There are some precautions that do have to be made: The built-in sensor may be affected by the pressure, we do require that were the sensor is located against the platform, a valley is carved or a hold drilled out to relieve the pressure when the tank is full. The sensor is easy to find on the tank heater panel, were the power leads entering the heat panel you'll feel a hard lump approx. 0.25" X 0.75" (6.35mm X 19.05mm), that's the sensor.

We also recommend that between the heat panel and the platform, you place something like a sheet of Styrofoam, something to cushion against friction, vibration and rubbing when the RV is bouncing down the road.

Why do the 12 Volt Tank Heaters draw so many amps?

We work within two scientific areas of rules that don't change, Ohm's Law (basic laws of Electricity) and General Physics. It takes 'X' amount of heat to heat 'X' amount of water so it won't freeze. In order to produce this amount of heat to do this down to our benchmark of -11°F (-23.9°C), it takes 'X' amount of energy or in our case, electricity.

Ohm's law teaches that when producing this amount of electrical energy or power, as you reduce the amount of force used (i.e. voltage); you have to increase the amount of flow or amps to retain the same amount of energy.

Basically, to accomplish the same heat output; the lower the voltage the higher the amps, and vice versa.

This is why we consider how we consume this energy, and one reason why our Tank Heaters (our largest Amp draw items) are sensor controlled. Once powered "on", the built-in sensor will power cycle the heat panel "on/off" based on the temperature of the tank's contents. The

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cannot dump which will prevent the use of the toilet, shower and sinks. This is a major inconvenience, not to mention the potential costly damage that could occur from expanding ice or something as simple as a jarring bump in the road. To completely protect your systems against freezing, holding tanks and all plumbing between the tanks and termination valve must have heat panels installed.

My holding tank has a metal strap holding it up, right where I would place the tank heater, can I install the holding tank heater over the metal strap?

Our heat panels for RV and Caravan use are not designed for direct installation to an electrically conductive surface, so the answer is NO, this would most likely short out the heating element and cause the heat panel not to work.

We recommend that you temporarily drop the strap away from the tank (please ensure that the tank is empty), install the heat panel, and re-install the metal strap over the top of the heat panel. A couple of things to keep in mind, when deciding where to place the heat panel, make sure that the sensor (hard lump approx. 0.25" X 0.75" (6.35mm X 19.05mm) were the power leads enter the heat panel) is not going to be under the metal strap when you've completed the project.

We also recommend that you place something like a thick rubber strip between the metal strap and the heat panel, something to reduce the friction and possible cutting into the heat panel by the metal strip from vibration when traveling down the road.

Are 120 Volt (AC) UltraHeat® Pipe and Elbow Heaters available?

All UltraHeat® Pipe and Elbow Heaters are only powered with 13.5 VDC (12 Volt). Frankly we haven't found much of a sales market for 120 or 240 VAC pipe and elbow heat panels.

Do UltraHeat® Pipe and Elbow Heaters work with sensors?

Pipe and Elbow Heaters do not have a built-in sensor to control when they activate and deactivate. For this reason Pipe and Elbow heaters must be controlled with a switch. (On/OFF)

Pipes have smaller volumes of fluid, and changes in temperature will occur much faster and many more times within a shorter period than in a large volume holding tank. They would be turning "on/off" all the time, with no advantage in the energy savings we see in our RV Tank Models. As the temperature drops, testing has proven that it's best to just throw continuous heat at the pipes.

sensor will cycle "on" once the contents drop to approx. 44°F (6.7°C), heating up the contents up to approx. 64°F (17.8°C), then cycling "off" and allowing the volume of fluids to slowly lose temperature back down to approx. 44°F (6.7°C), limiting the amount of time they are drawing power. There are many variables that will determine how long this temperature drop will take; amount of fluids present, ambient temperature, and most important is the rate of heat loss. If you are looking to conserve energy, there are a couple of common sense ways we would recommend.

- First, reduce the rate of heat lost by enclosing and insulating your plumbing systems after installing and testing the UltraHeat® system.
- Wait to vacate your tanks until they are almost full, larger volumes of fluid take longer to change in temperature than lower volumes do.
- Then you're sure the ambient temperature will remain above freezing, power "off" the system as soon as you can. ([We suggest you look at our ambient master power control kit or Amb-ray Kit](#))

Using your RV or Caravan in cold weather you're going to consume energy in order to keep yourself and unit heated. With a little forethought, preparation and planning you'll be able to do so in comfort, safely and without major damage or expense. Otherwise, there's always a good local hotel, we hear Motel6 keeps a light on.

IF YOU HAVE A QUESTION NOT ANSWERED, JUST ASK!

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