

NOTES



INSTALLATION, WARNINGS, AND OPERATION INSTRUCTIONS

ARCTIC BUFFER TANK

Model	Volume (Gallons)	Diameter	Height	System Connections	Thermal Well	Weight
ARC 22	22	21"	35"	1 1/4"	NO	42
ARC 40	40	21"	56"	1 1/4"	YES	55
ARC 55	55	21"	73"	1 1/4"	YES	70
ARC 80	80	29"	54"	2"	YES	120
ARC 120	119	29"	74"	2"	YES	145



OPERATION

The primary application of a buffer tank is to reduce heat pump, chiller, or boiler short cycling. Hydronic buffer tanks are used in systems operating below the design load condition, which is most of the time, or in systems having several low BTU cooling or heating loads calling at different times. This can cause the heat pump or the boiler to short cycle, resulting in reduced operating efficiency and shorter equipment life.

WHAT IT DOES

The buffer tanks are built with 4 connections. Two connections can be piped to the heat pump or boiler, and two connections can be piped to the distribution system. If piped correctly, the tank can serve as both a thermal buffer and a hydraulic separator. The heat pump or boiler can be hydraulically decoupled from the distribution system. The tanks are all composite construction that are light and won't corrode, and insulated to reduce heat loss. All tanks have a 1/2" thermal well (40 to 119 gal) located midway on the tank. Buffer tanks available in 22, 40, 55, 80 and 120 gallon capacities.

⚠ WARNING This product must be installed by a **Qualified Professional** following all local and national plumbing and electrical codes. Read and understand fully the instructions included here and those on the Arctic Heat Pump website which are updated on a regular basis. This product must be inspected annually by a qualified professional for any signs of leakage and replaced immediately if these signs are present. Failure to follow these instructions may result in serious injury, death and/or property damage and will void the product warranty.

⚠ WARNING This tank is designed for systems operating up to 180 deg. F at 75 PSI or up to 140 deg. F at 100 PSI. A properly sized pressure relief valve must be installed. This tank must also have a vacuum breaker as any vacuum on the tank will cause it to implode. Failure to install a vacuum breaker will void the warranty.

⚠ WARNING This tank and associated piping will in time leak. This tank must be installed in a location that allows for easy access, visual inspection and where water leakage will not cause property damage. Installation must include a means for adequate drainage. This tank must not be installed in a location that is subject to freezing. The manufacturer of this product is not liable or responsible for any water damage associated with the installation and or failure of this product. Failure to follow these instruction will void the warranty and may result in personal injury, death and/or property damage.

⚠ WARNING This tank is intended for use on potable and non-potable water systems and any other use may be dangerous and will void the warranty. This product's performance and lifespan can be significantly and adversely impacted by aggressive water conditions. A water test should be conducted at regular, periodic intervals specifically looking for corrosive water, acids and other relevant water contaminants which if present, must be treated immediately and appropriately. The system piping must be properly grounded to earth and a dielectric union is recommended in the installation. Failure to follow these instructions may result in serious injury, death and/or property damage.

⚠ WARNING This product is intended for use on non-potable low temperature hydronic systems not exceeding 180F. The products performance and lifespan can be significantly impacted by aggressive water conditions.

⚠ WARNING Do not overtighten sideport fittings. Do not exceed 50 ft. lbs when tightening nipples as this could potentially damage the tank. When possible, back up fittings with a wrench to prevent damage to the tank.



THIS IS THE SAFETY ALERT SYMBOL. IT IS USED TO ALERT YOU TO POTENTIAL PERSONAL IN-JURY HAZARDS. OBEY ALL SAFETY MESSAGES THAT FOLLOW THIS SYMBOL TO AVOID POSSIBLE INJURY OR DEATH.



INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN SERIOUS INJURY, DEATH, AND/OR SIGNIFICANT PROPERTY DAMAGE.

INSTALLATION

LOCATION

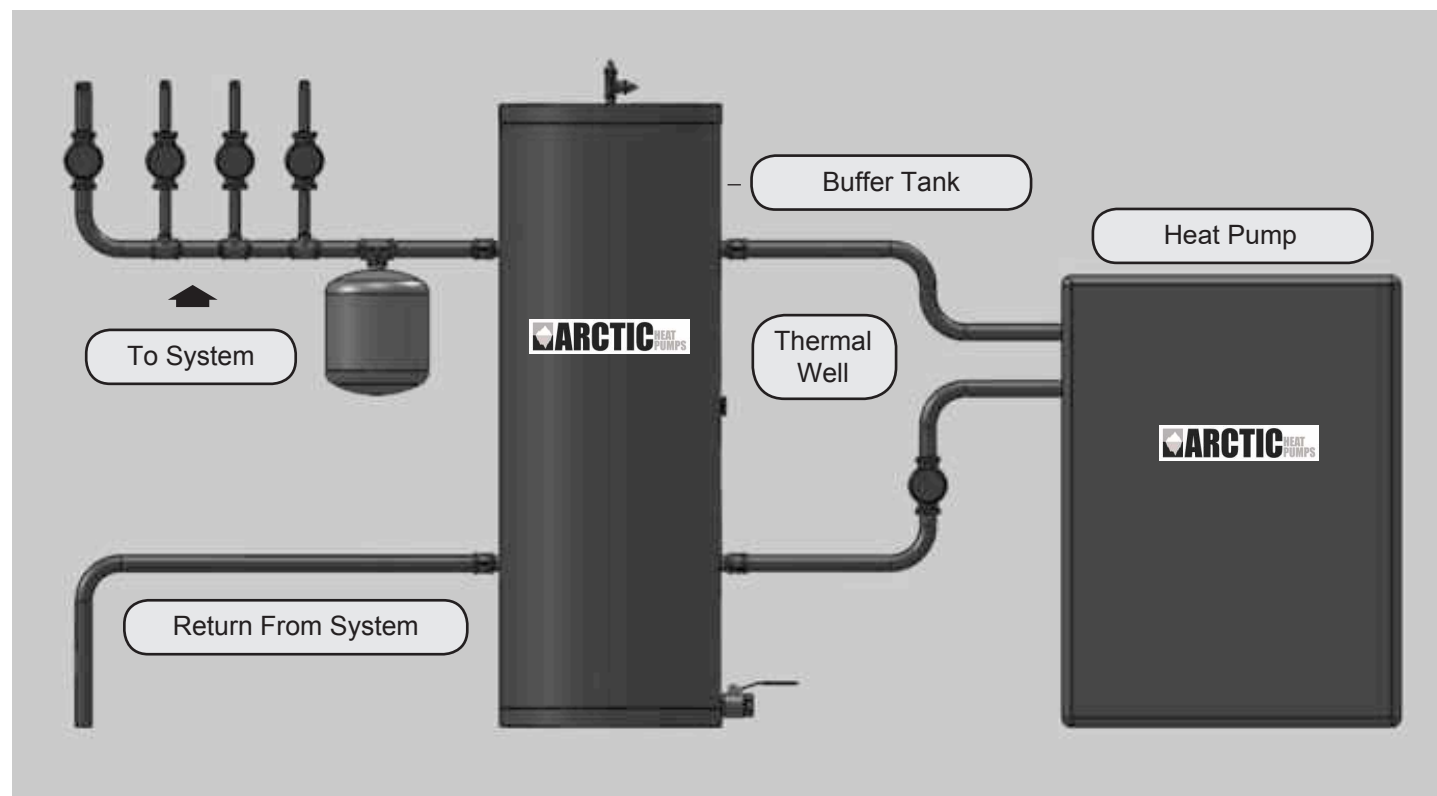
Select a location where a water leak will not cause property damage and provides adequate means for water drainage. This Buffer tank and the associated piping may in time leak. The manufacturer is not responsible for any water damage that may occur in association with the buffer tank installation. This tank has been designed to be mounted on a level surface and must be adequately supported around the entire base.

TYPICAL INSTALLATION

When installing, please back up side port fittings and do not overtighten. Do not exceed 50 ft. lbs. when tightening side port nipples. Always install a vacuum breaker to prevent collapse of the tank due to a vacuum. Failure to install a vacuum breaker will void the warranty.

ATTENTION

All polypropylene female pipe fittings should be pre-conditioned with Loctite 7649 primer. Loctite 567 anaerobic thread sealant should be applied to male threads before assembly. Joints should then be torqued to 30 ft-lbs.



MAINTENANCE

Excessive draining of the Arctic Buffer tank is not recommended, as it introduces more material into the system. Routine maintenance of the system should be performed once per year, or sooner as per manufacturer recommendations.

LIMITED PRODUCT WARRANTY

PRODUCTS COVERED: ARCTIC BUFFER TANKS MANUFACTURED FOR AND DISTRIBUTED BY ARCTIC HEAT PUMPS

Important: Read carefully the installation, operating and maintenance instructions manual ("Manual") to avoid serious personal injury and/or property damage and to ensure safe use and proper care of this Product.

Warranty - Warranty is extended to all purchasers of the new product. The warranty is non-transferable. Arctic Heat warrants to the purchaser or first user of the new Product that at the time of manufacture, the Product is free from defect in material or workmanship for five (5) years from the date of manufacture. Any warranty claim must be made within five (5) years (unless another time period is set forth in the Manual), measured from the date of manufacture.

In the event of a breach of the foregoing warranty and upon proper and timely notification to Arctic Heat, Arctic Heat will at its option either: make repairs to correct any defect in material or workmanship, or supply and ship either new or used replacement parts or products. Arctic Heat will not accept any claims for, nor will Arctic Heat be responsible for, any other costs including labor.

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

- If the Product is not correctly installed, operated, repaired or maintained as described in the Manual provided with the Product.
- To any failure or malfunction resulting from (i) misuse or abuse, (ii) improper or negligent handling, shipping (by anyone other than Arctic Heat), storage, use or operation, or (iii) damages to the tank caused by lightning, floods, fire, freezing or any other environmental condition.
- To damages caused by any unauthorized alteration to the Product, or any attempt to repair tank leaks or parts.
- To any failure or problem resulting from the use of the Product for any purpose other than those specified in the Manual.
- If the Product is used anywhere except the United States, its territories or possessions, or Canada.
- To labor costs, shipping charges, service charges, delivery expenses, administrative fees or any costs incurred in removing or reinstalling the Product.
- To any claims submitted to Arctic Heat or a Arctic Heat authorized distributor or dealer more than 30 days after expiration of the applicable warranty time period described in this Warranty.
- To any repair or replacement costs not authorized in advance by Arctic Heat.

Warranty Limitations - All implied warranties including the implied warranties of merchantability and fitness for a particular purpose are specifically disclaimed.

Limitations of Remedies - The remedies contained in this warranty are the purchaser's or first user's exclusive remedies. In no circumstances will Arctic Heat be liable for more than, and purchaser's first user's remedies shall not exceed, the price paid for the Product. In no case shall Arctic Heat be liable for any special, indirect, incidental or consequential damages, whether resulting from non-delivery or from the use, misuse, or inability to use the Product or from defects in the product or from Flexcon's own negligence or other tort. These exclusions apply regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, strict liability, in tort or under any other legal theory. Excluded damages include, but are not limited to, inconvenience, loss or damage to property, mold, 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.

What To Do If You Have a Problem Covered By This Warranty - You must notify the authorized Arctic Heat distributor or dealer who sold you the Product within 30 days of the event leading to the Warranty claim. Any covered Warranty service must be authorized by the Arctic Heat distributor or dealer which sold you the Product. If you do not receive a prompt response, call Arctic Heat directly at 800.317.9054. Notice of a Warranty claim should be submitted within 60 days of the event leading to the claim by the authorized distributor/dealer to Arctic Heat at the following address:

Northern Lights Solar Solutions, 835 Kapelus Drive, Canada R4A 5A4

Before Arctic Heat determines to provide any replacement part or Product, it may, as a pre-condition to making such a determination, require that the warranty claimant ship the Product, postage prepaid, to an authorized Arctic Heat distributor, or to Arctic Heat, and provide proof of purchase evidenced by the original sales receipt.

Replacement Product Warranty - In case of replacement of a Product or any component part, Arctic Heat reserves the right to make changes in the design, construction, or material of the substitute components or products, which shall be subject to all of the terms and limitations of this Warranty, except that the applicable warranty periods shall be reduced by the amount of time the warranty claimant owned the product prior to submitting notification or the warranty claim.

Owners Record Keep for later use

Serial number (see tank data label at bottom of tank): _____

Model (see tank data label at bottom of tank): _____

Date Installed: _____

Installer Name: _____

Telephone number: _____

Retain copy of cancelled check and installation receipt