

ThermoCon™ Buffer Storage Tanks

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NAS200 Series

Installation, commissioning and servicing instructions

Function



ThermoCon™ buffer storage tanks are multi-use tanks designed to be used for wood fired boilers, solar and geothermal storage, plus in heating systems with low-mass boilers, chilled water systems and low-mass radiation. These fully-insulated, porcelain-coated steel tanks are ideal for chilled, hot water, or potable water applications (anode rod required, included with tank). Short-cycling in boilers and chillers is a common problem that reduces the efficiency of hydronic equipment and shortens its lifespan. In addition, solar thermal and geothermal systems often need more thermal storage in order to keep up with the peak thermal demands of a building. ThermoCon tanks maximize the efficiency of any hydronic system by providing thermal storage and can also serve as a hydraulic separator to prevent pump conflict. In plumbing applications, it is a hot water storage tank for water that is heated from another source including a traditional boiler, wood fired boiler, heat pump or solar.

Product range

NAS20025	Thermal buffering tank	25 gallon
NAS20050	Thermal buffering tank	50 gallon
NAS20080	Thermal buffering tank	80 gallon
NAS20120	Thermal buffering tank	119 gallon

Technical specifications

Tank materials:	porcelain glass coated steel
Tank insulation:	2" non-CFC foam
Tank external cover:	powder-coated steel (20-24 ga.)
Insulation thermal conductivity:	R16
Connections:	
25 gal.	top (2) 1½" & (1) ¾" NPT
25 gal.	side (4) 1½" & (1) ¾" NPT female
50, 80, 119 gal.	top (3) ¾" NPT female
50, 80, 119 gal.	side (7) 2" NPT female

Max. working pressure:	150 psi (10 bar)
Working temperature:	35 to 180° F (2 to 80° C)
Testing pressure:	300 psi (20 bar)
Max. tank temperature:	180° F (80° C)
Recommended max. delivery hot water temperature:	120° F (50° C)

Reduction of Lead in Drinking Water Act Compliant: 0.25% Max. weighted average lead content. Reduction of Lead in Drinking Water Act Certified through Underwriters Laboratory (UL) in accordance with NSF/ANSI 372. Meets CSA 309.



SAFETY INSTRUCTION

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.**



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



CAUTION: All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes and ordinances.



CAUTION: Over-tightening and breakage can occur with the use of Teflon® pipe joint compounds. Teflon® provides lubricity so that care must be exercised not to over-tighten joints. Failure to follow these instructions could result in property damage and /or personal injury.



WARNING: System fluids are under pressure or temperature can be hazardous. Be sure the pressure has been reduced to zero and the system temperature is below 100°F (38°C). Failure to follow these instructions could result in property damage and/or personal injury.



CAUTION: If the this product is not installed, commissioned and maintained properly, according to the instructions contained in this manual, it may not operate correctly and may endanger the user.



CAUTION: Make sure that all the connecting pipework is water tight.



WARNING: Anode rods must be used for potable water application.

Caleffi shall not be liable for damages resulting from stress corrosion, misapplication or misuse of it products.

LEAVE THIS MANUAL FOR THE USER.



CONSIGNE DE SÉCURITÉ

Ce symbole d'avertissement servira dans ce manuel à attirer l'attention sur la sécurité concernant instructions. Lorsqu'il est utilisé, ce symbole signifie. **ATTENTION! DEVENEZ ALERTE ! VOTRE SÉCURITÉ EST EN JEU ! NE PAS SUIVRE CES INSTRUCTIONS PEUT PROVOQUER UN**



AVERTISSEMENT: Ce produit peut vous exposer à des produits chimiques comme le plomb, qui est connu dans l'État de Californie pour causer le cancer, dommages à la naissance ou autre. Pour plus d'informations rendez-vous www.P65Warnings.ca.gov.



ATTENTION: Tous les travaux doivent être effectués par du personnel qualifié formé à la bonne application, installation et maintenance des systèmes conformément aux codes et règlements locaux.



ATTENTION: Un serrage excessif et la rupture peut se produire avec l'utilisation de composés à joint de tuyau en Téflon®. Pouvoir lubrifiant Teflon® permet de sorte qu'il faut prendre soin de ne pas trop serrer les articulations. Le non-respect de ces instructions peut entraîner des dommages matériels et/ou des blessures.



AVERTISSEMENT: Les liquides du système sont sous pression ou de la température peuvent être dangereux. Être sûr que la pression a été réduite à zéro et la température du système est inférieure à 100°F (38°C). Le non-respect de ces instructions peut entraîner des dommages matériels et/ou des blessures. Le non-respect de ces instructions peut entraîner des dommages matériels et/ou des blessures.



ATTENTION: Si le produit, n'est pas installé, mis en service et entretenu correctement, selon les instructions contenues dans ce manuel, il peut ne pas fonctionner correctement et peut mettre en danger l'utilisateur.



ATTENTION: S'assurer que tous les raccordements sont étanches.



AVERTISSEMENT: Les tiges d'anode doivent être utilisées pour l'application d'eau potable.

Caleffi ne pourra être tenue responsable des dommages résultant de la corrosion, d'une mauvaise utilisation ou une mauvaise utilisation des produits.

LAISSEZ CE MANUEL AVEC L'UTILISATEUR

Construction details

The ThermoCon 25 gallon tank is engineered with six (6) 1½" NPT connections. Two top connections can be piped right below a wall hung modulating / condensing boiler. One of the top connections has a 1½" NPT male thread with a dip tube to draw cooler water from the bottom of the tank. The other top 1½" NPT connection is female. The four side 1½" NPT female connections can be piped to the load.

The ThermoCon 50, 80 & 119 gallon tanks are engineered with seven (7) 2" NPT connections. Two connections can be piped to the solar, boiler or chiller side and two connections can be piped to the distribution system. Two additional connections are 90 degrees from another which allows for positioning the tank into a corner with the piping at a right angle. The tank has one 2" NPT connection for connecting an external heat exchanger in the middle of the tank.

NOTE: Anode rod(s) is required for potable water applications.

Anode rods are packaged with tanks, for onsite installation if needed:

- for 25 gallon tank.....one anode rod, ¾" NPT x 18" long.
- for 50 gallon tank.....two anode rods, ¾" NPT x 30" long.
- for 80 gallon tank.....two anode rods, ¾" NPT x 40" long.
- for 119 gallon tank...two anode rods, ¾" NPT x 40" long.

Maintenance

Potable water applications

Anode Rods

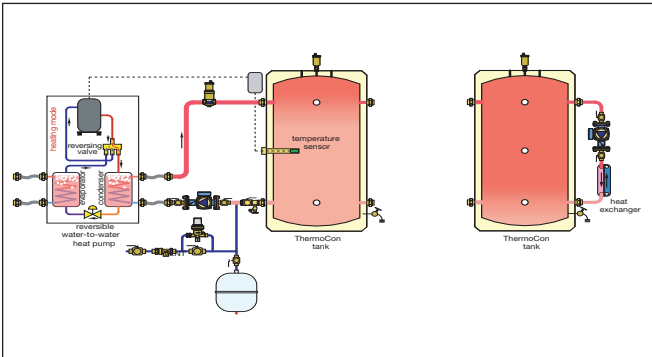
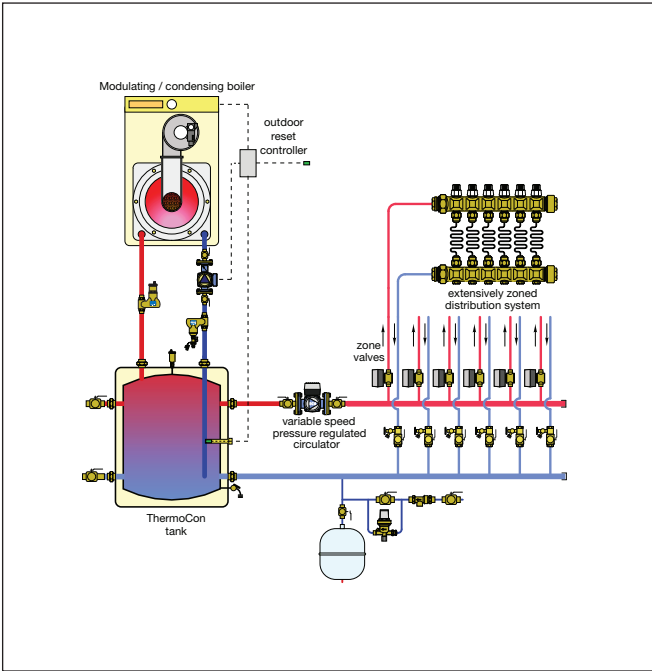
Anode rods should be inspected twice in the first year and at least yearly once a time interval for inspection has been developed. It is recommended to check the rod(s) six months after the heater is installed. If the anode rod has reduced in size by two-thirds of its original diameter of 3/4" or shows signs of pitting, it is time for replacement. Take the following steps when changing the anode rod(s):

1. Shut off water supply.
2. Open any faucet to relieve tank pressure.
3. Remove caps on water heater top; push insulation aside.
4. Remove rod(s) and replace with new rod(s).
5. Turn water supply back on and leave faucet open until air is out of line.
6. Turn faucet off and check that new rod(s) doesn't leak.
7. Snap caps back into place.

Flush the tank

The ThermoCon buffer storage tank is glass lined. Elements in the water such as lime, iron and other minerals may accumulate. It is recommended that the tank be drained and flushed thoroughly once a year to prevent buildup in the tank.

Application diagrams



Accessories



551

DISCALAIR®

High discharge automatic air vent.

Brass body.

Stainless steel float guide pin and linkage.

Max. working pressure: 150 psi (10 bar)

Working temperature range:

32 - 250° F (0 - 120° C)

Code	Description
551004A	1/2" NPT female



Pipe nipple for attaching air vent to top of storage tank with reducing bushing.

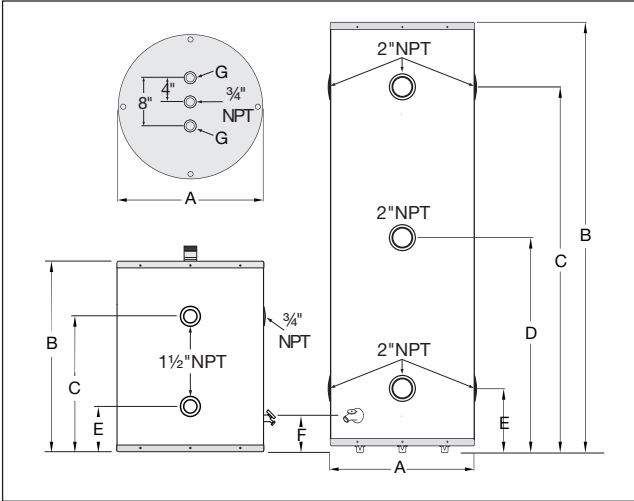


Reducer bushing for installing into 2" NPT female connection in storage tank providing a 3/4" NPT female thread.

Code	Description
NA10234	2" M NPT x 3/4" F NPT, brass

NOTES

Dimensions



Code	Gal.	A	B	C	D	E	F	G	Wt. lbs
NAS20025	25	22"	28½"	20½"	—	6¾"	4"	1½"	100
NAS20050	50	22"	48¼"	39½"	23½"	7¾"	4½"	¾"	200
NAS20080	80	24"	64"	53"	32"	11"	5"	¾"	250
NAS20120	119	28"	65"	53"	32"	11"	7"	¾"	350



Caleffi North America, Inc.
3883 W. Milwaukee Road
Milwaukee, WI 53208
T: 414.238.2360 F: 414.238.2366