

BUFFER TANK  
STORAGE TANK  
HYDRAULIC SEPARATOR

# buffmax



## OPTIMIZE ANY TYPE OF HYDRONIC SYSTEM

The BuffMax from Thermo 2000 is a 3-in-1 solution that acts as a buffer tank, storage tank and hydraulic separator. It is recommended to optimize the performance of several different types of heating systems: low-mass boilers, biomass systems, geothermal and heat pump applications, multi-zone systems, and solar energy systems



Peak-performance  
heating systems

BY REDUCING ON/OFF CYCLING, IT IMPROVES AND MAXIMIZES THE HEATING SYSTEM'S EFFICIENCY— ALL WHILE REDUCING MAINTENANCE AND REPAIR COSTS.



### Standard equipments

- 2" HFC-free polyurethane insulation
- 150 psi maximum operating pressure (125 psi for ASME units)
- 4 openings for hydraulic separation
- Immersion well with multiple positions
- Tanks available in 8 sizes
- ASME models available
- Adjustable legs
- 10-year warranty for HT application and 5-year for CW application



### Optional equipment

- Extra tapings
- Custom tapping diameters
- Flange connections
- Aquastat control
- Insulation for chilled water

- 1- Automatic air vent
- 2- Boiler water connection
- 3- Temperature and pressure indicator
- 4- 3/4" NPT drain valve
- 5- Immersion well
- 6- 3/4" drain



## The tank that makes all the difference

### BUFFER TANK

The **BuffMax**® optimizes runtimes and limits on/off cycling of the energy source. When the minimum system load is lower than the energy source's minimum capacity, the system will generate short cycles. This causes premature wear of the equipment and substantially decreases the system's energy efficiency.

### STORAGE TANK

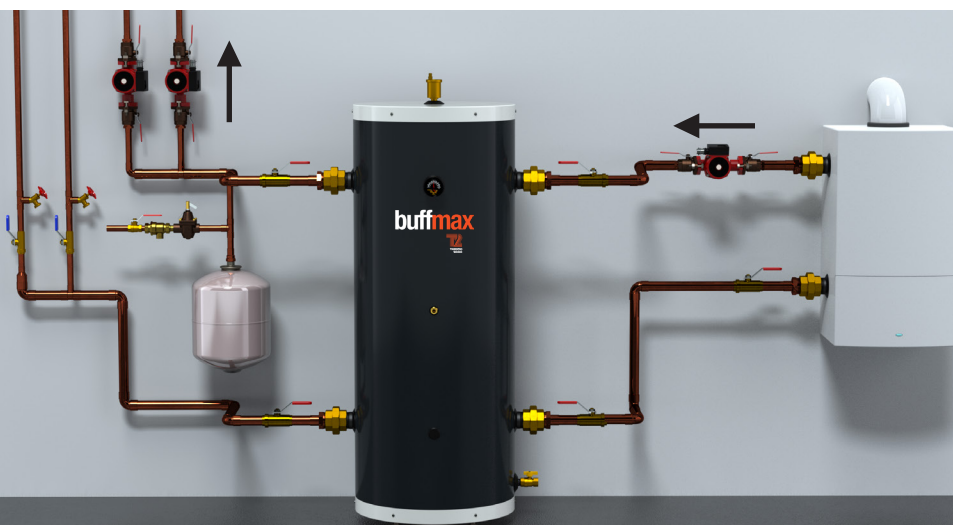
Any hydronic heating system with the **BuffMax**® stores energy like a battery. When a demand is made for limited heating (for example, when there is little difference between indoor and outdoor temperatures) or when it is used with a low-capacity energy source, the energy required will first come from the tank's thermal storage.

### HYDRAULIC SEPARATOR

Adding a **BuffMax**® tank to a hydronic heating system helps to evacuate air, eliminate impurities and ensure the optimal functioning of the pumps—not only for the energy source but also for the distribution system.

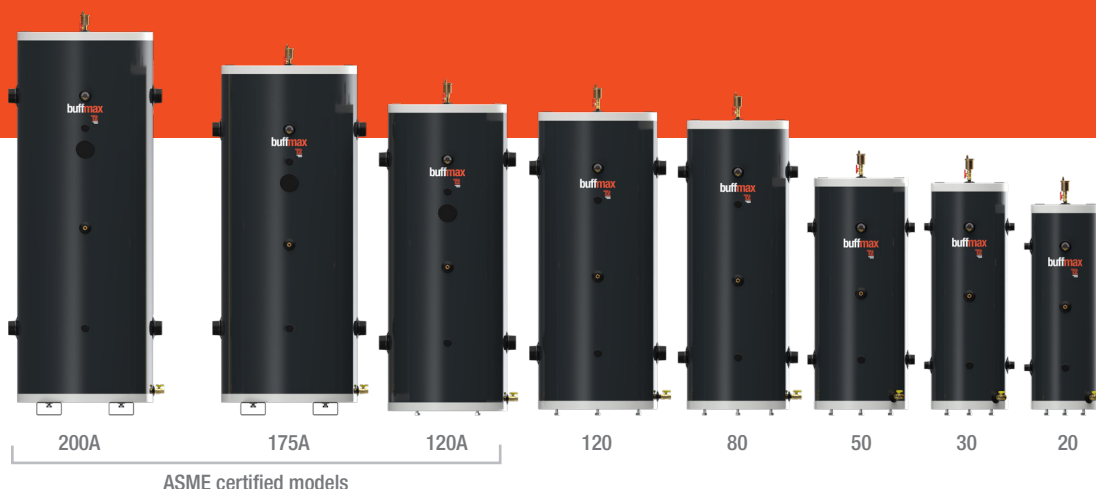
The **BuffMax**® tank is recommended to optimize the performance of several different types of heating systems :

- Low-mass boilers
- Biomass systems
- Geothermal and heat pump applications
- Multi-zone systems
- Solar energy systems





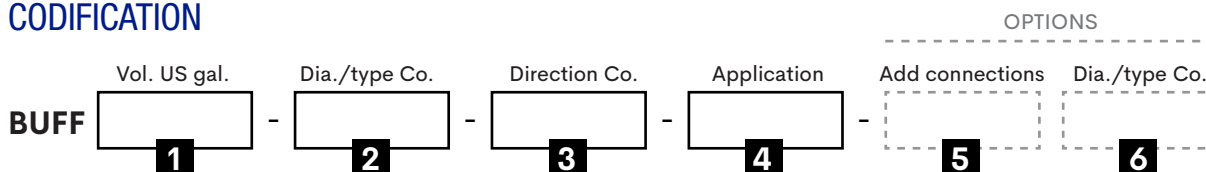
# Build your Buffmax



Try the configurator on our website



## CODIFICATION



### 1 Volume in US gallons

- 20** - 20 US gal.
- 30** - 30 US gal.
- 50** - 50 US gal.
- 80** - 80 US gal.
- 120** - 119 US gal.
- 120A** - 120 US gal. ASME
- 175A** - 175 US gal. ASME
- 200A** - 200 US gal. ASME

### 2 Diameter and type of connections<sup>2</sup>

- 1.25NPT** - 1.25" dia. MNPT thread<sup>1</sup>
- 1.5NPT** - 1.5" dia. MNPT thread<sup>1</sup>
- 2NPT** - 2" dia. MNPT thread
- 2.5NPT** - 2.5" dia. MNPT thread
- 3NPT** - 3" dia. MNPT thread
- 1.25FLG** - Class 150 flanges for 1.25" dia. pipe<sup>1</sup>
- 1.5FLG** - Class 150 flanges for 1.5" dia. pipe<sup>1</sup>
- 2FLG** - Class 150 flanges for 2" dia. pipe
- 2.5FLG** - Class 150 flanges for 2.5" dia. pipe
- 3FLG** - Class 150 flanges for 3" dia. pipe
- 4FLG** - Class 150 flanges for 4" dia. pipe

### 3 Direction of connections

- HRZ** - Horizontal connections
- VRT** - Vertical connections<sup>1-2</sup>

### 4 Application

- HT** - Heating water
- CW** - Heating water and/or cooling water  
(Add elastomeric insulation to prevent condensation)

### 5 Addition of two connections

- BXT** - Addition of two connections positioned at the center of the tank.<sup>1</sup>

### 6 Diameter and type of BXT connections

- 1.25NPT** - 1.25" dia. MNPT thread
- 1.5NPT** - 1.5" dia. MNPT thread
- 2NPT** - 2" dia. MNPT thread
- 2.5NPT** - 2.5" dia. MNPT thread
- 3NPT** - 3" dia. MNPT thread
- 1.25FLG** - Class 150 flanges for 1.25" dia. pipe
- 1.5FLG** - Class 150 flanges for 1.5" dia. pipe
- 2FLG** - Class 150 flanges for 2" dia. pipe
- 2.5FLG** - Class 150 flanges for 2.5" dia. pipe
- 3FLG** - Class 150 flanges for 3" dia. pipe
- 4FLG** - Class 150 flanges for 4" dia. pipe

<sup>1</sup> Not available on ASME models

<sup>2</sup> Limitation of diameters and type of connections when in vertical position.

Available in vertical position :

- 20, 30, 50 US gal. -- 1.25NPT.
- 80, 120 US gal. -- 1.5NPT ou 2NPT

# For fast and cost-effective delivery.

## STANDARD MODEL CODES

**BuffMax 20 STD**  
BUFF20 - 1.25NPT - HRZ - HT

**BuffMax 30 STD**  
BUFF30 - 1.5NPT - HRZ - HT

**BuffMax 50 STD**  
BUFF50 - 2NPT - HRZ - HT

**BuffMax 80 STD**  
BUFF80 - 2.5NPT - HRZ - HT

**BuffMax 120 STD**  
BUFF120 - 3NPT - HRZ - HT

**BuffMax 120A STD**  
BUFF120A - 3NPT - HRZ - HT

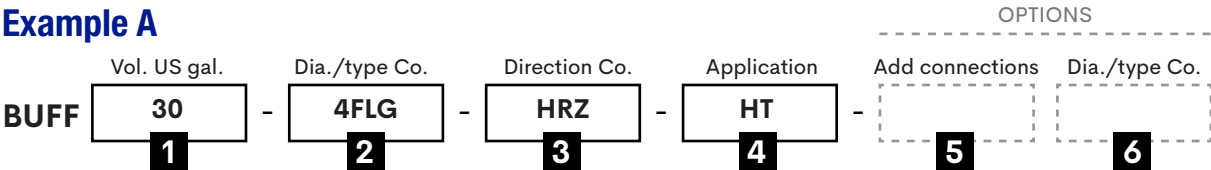
**BuffMax 175A STD**  
BUFF175A - 3NPT - HRZ - HT

**BuffMax 200A STD**  
BUFF200A - 3NPT - HRZ - HT

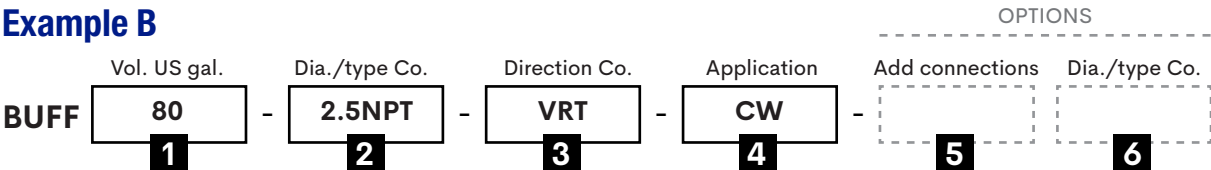
# BuffMax Configuration Examples

## MODELS BUILT TO MEET YOUR NEEDS, YOUR PROJECT.

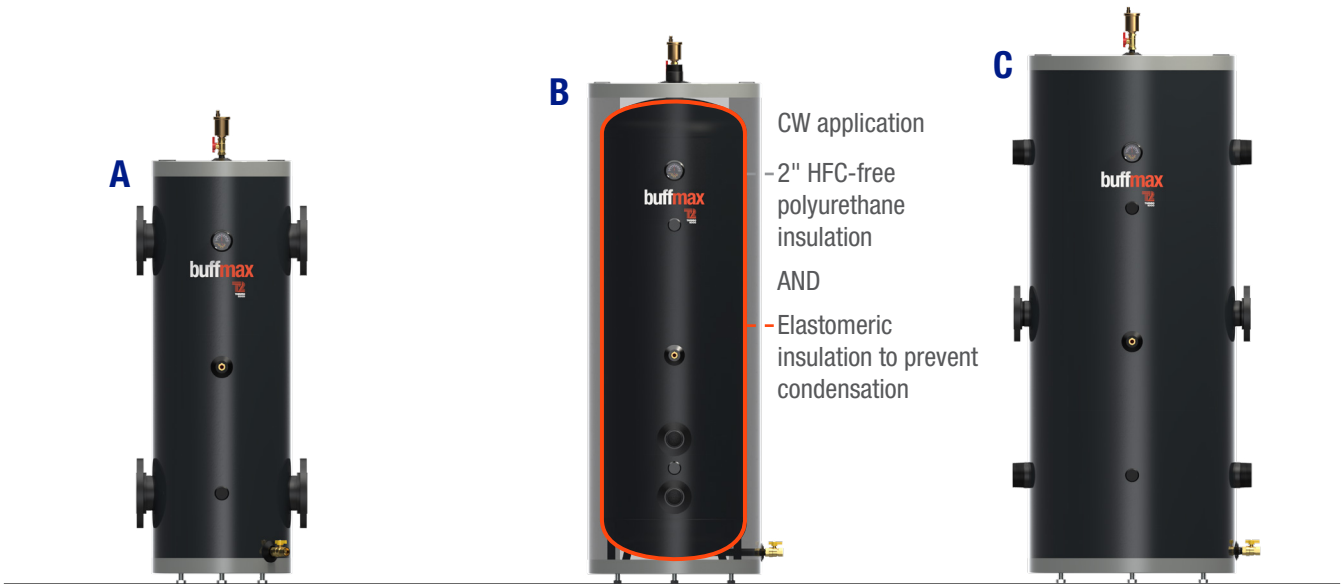
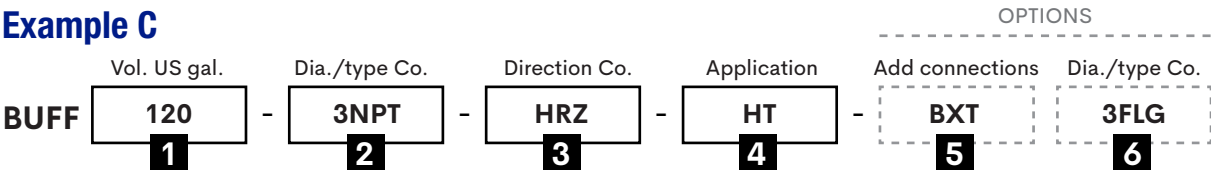
### Example A



### Example B



### Example C

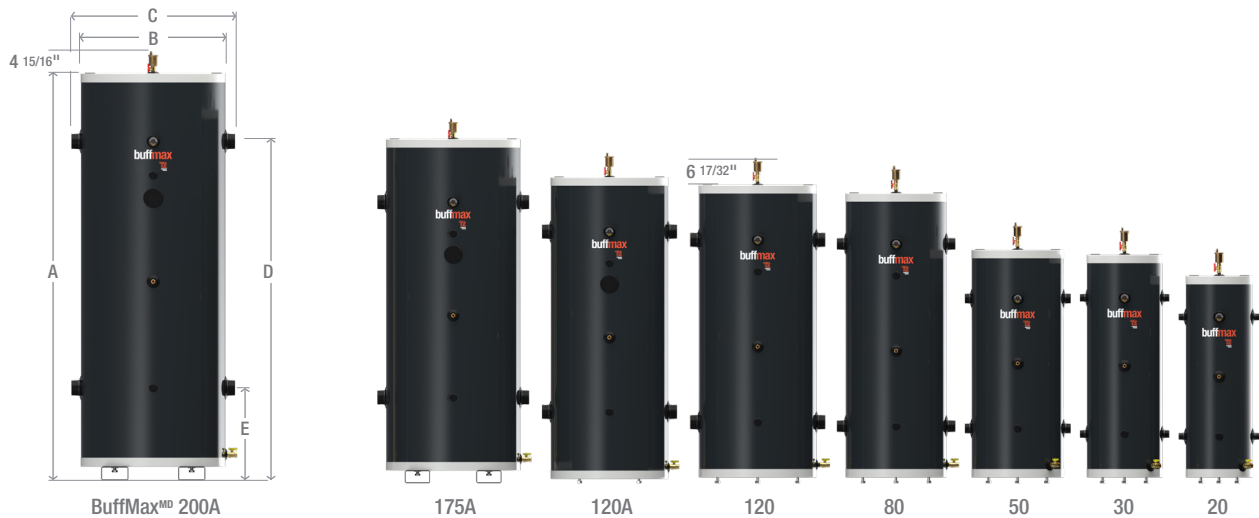


## SELECTING THE RIGHT SIZE

The buffer tank size is selected to ensure a minimum runtime for the boiler. Use the following equation to determine the right size for the application:

$$\text{Tank capacity (US gallon)} = \frac{\text{Desired run time x (Minimum output - Minimum system load)}}{(\text{System Delta T x 500})}$$

- Desired runtime: the minimum runtime of the boiler (in minutes), typically between 5 and 10 minutes
- Minimum output: the boiler's minimum capacity (BTU/h)
- Minimum system load: the building's smallest heat demand (BTU/h)
- System Delta T: the temperature differential in degrees Fahrenheit between the tank's inlet and outlet, typically between 10°F and 20°F.



## MODELS AND SPECS

MODEL	CODE	VOLUME US GAL	A	B	C	D	E	STANDARD CONNECTIONS	WEIGHT LB
BUFFMAX 20	BUFF20 - 1.25NPT - HRZ - HT	20	49 1/2"	16"	19 5/16"	39 11/16"	11 3/16"	1 1/4" NPT	100
BUFFMAX 30	BUFF30 - 1.5NPT - HRZ - HT	30	54 1/2"	18"	21 5/16"	44 3/16"	11 11/16"	1 1/2" NPT	125
BUFFMAX 50	BUFF50 - 2NPT - HRZ - HT	50	55 5/8"	22"	25 5/16"	44"	13"	2" NPT	160
BUFFMAX 80	BUFF80 - 2.5NPT - HRZ - HT	80	69 3/16"	24"	28 1/4"	57 1/16"	13 9/16"	2 1/2" NPT	245
BUFFMAX 120	BUFF120 - 3NPT - HRZ - HT	119	71 1/8"	28"	32 1/4"	58 1/16"	14 9/16"	3" NPT	330
BUFFMAX 120A	BUFF120A - 3NPT - HRZ - HT	120	72 15/16"	28"	32 1/4"	60"	17"	3" NPT	335
BUFFMAX 175A	BUFF175A - 3NPT - HRZ - HT	175	82 1/16"	32"	36 1/4"	67 1/8"	20 1/2"	3" NPT	595
BUFFMAX 200A	BUFF200A - 3NPT - HRZ - HT	200	89 15/16"	32"	36 3/16"	74 15/16"	20 7/16"	3" NPT	650

**10-YEAR WARRANTY FOR HT APPLICATION**  
**5-YEAR WARRANTY FOR CW APPLICATION**  
**ON THE TANK**

**2-YEAR WARRANTY**  
**ON MECHANICAL PARTS**



Only for  
120A, 175A and  
200A models.



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