

# FRE-HEATER®



**MUELLER**®

THE MILK COOLING SYSTEMS SPECIALISTS™

# Mueller® Fre-Heater®

## Convert Wasted Heat into Free Hot Water with a Fre-Heater®!

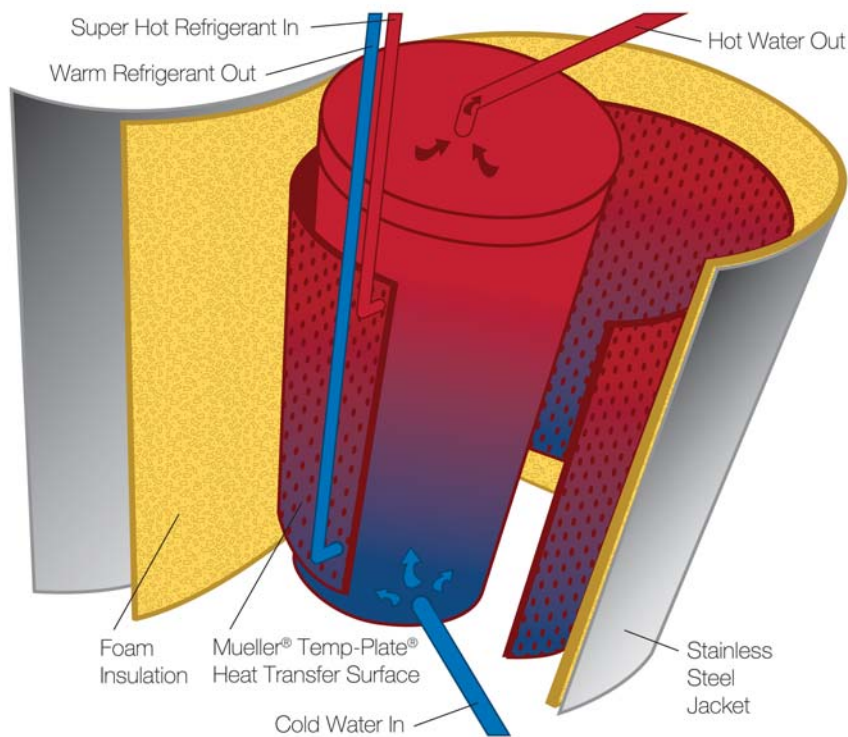
Whether your dairy farm operation is large or small, you need plenty of hot water for equipment cleanup, cow prepping, and feeding calves. What better way is there to meet your everyday needs than with **free** hot water? The Mueller® Fre-Heater® recovers wasted heat from your milk cooler's condensing unit and uses it to heat water you can use for feeding calves and cleaning. Adding a Fre-Heater to your milk cooling system will drastically reduce the cost of hot water in your operation, thereby lowering your cost of production and enhancing your profitability.

A Model D Fre-Heater consists of a heavy-duty, glass-lined storage tank surrounded by our stainless steel Temp-Plate® heat transfer surface for maximum heating efficiency. Two-inch foam surrounds the Temp-Plate

surface, keeping heat within the tank. A rust-resistant, stainless steel outer jacket houses the entire assembly for protection and appearance. The Model D recovers 45–60% of your system's wasted heat energy, depending on the refrigerant type. It is available in 50-, 80-, and 120-gallon sizes to meet your specific hot water needs.



The Mueller Model DE Fre-Heater is similar in construction to the Model D Fre-Heater, and they, too, automatically recover up to 60% of your system's wasted heat energy. A 4.5 kW heating element is included for maintaining 120° to 170°F water. The Model DE Fre-Heater is available in a 120-gallon size. The Model DE may be ordered with an optional 6 kW heating element for the fastest heat recovery.



## Features and Benefits

- Stainless steel outer jacket. Rust resistant exterior requires no maintenance.
- Mueller Temp-Plate heat transfer surface cools the super-heated refrigerant from the milk cooling condensing units and harvests the system's wasted heat energy.
- Industrial-grade, fully insulated, glass-lined storage tank assures minimal heat loss and long-term reliability.
- Factory-installed anode(s) provides superior galvanic corrosion protection for the water storage tank. Model D-120 has 2 anodes, and Models D-50 and D-80 each have 1 anode.
- Five-year limited warranty protects your purchase.
- Complies with CSA regulations.



### Mueller Fre-Heater Specifications

Model No.	Part No.	Water Connection (in)	No. of Refrig. Circuits	Refrig. Connection Size (in)	Per Circuit Refrig. Application Capacity*	Height (in)	Diameter (in)	Approx. Shipping Weight (lb)
D-50	8823750	3/4 MPT	1	5/8 ODM	1/2 to 4 ton R-22	53 <sup>7</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>4</sub>	225
D2-50	8823751	3/4 MPT	2	5/8 ODM	1/2 to 4 ton R-22	53 <sup>7</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>4</sub>	225
D-80	8823780	3/4 MPT	2	3/4 ODM	1 to 5 ton R-22	58 <sup>5</sup> / <sub>8</sub>	25 <sup>1</sup> / <sub>4</sub>	320
D-120	8823821	1 <sup>1</sup> / <sub>2</sub> FPT	2	3/4 ODM	1 to 7 <sup>1</sup> / <sub>2</sub> ton R-22	61 <sup>3</sup> / <sub>4</sub>	29 <sup>1</sup> / <sub>2</sub>	475
D2-120	8823820	1 <sup>1</sup> / <sub>2</sub> FPT	2	1 <sup>1</sup> / <sub>8</sub> ODM	3 to 15 ton R-22	61 <sup>3</sup> / <sub>4</sub>	29 <sup>1</sup> / <sub>2</sub>	475
DH-120	8823823	1 <sup>1</sup> / <sub>2</sub> FPT	2	1 <sup>5</sup> / <sub>8</sub> ODM	7 to 35 ton R-22	61 <sup>3</sup> / <sub>4</sub>	29 <sup>1</sup> / <sub>2</sub>	475
DE-120	8823822	1 <sup>1</sup> / <sub>2</sub> FPT	2	1 <sup>1</sup> / <sub>8</sub> ODM	3 to 15 ton R-22	61 <sup>3</sup> / <sub>4</sub>	29 <sup>1</sup> / <sub>2</sub>	475

\*Refrigeration tonnage capacities are 30°F evaporator ton loads, not total heat of rejection tons. Pressure drop through a Fre-Heater refrigeration circuit will be approximately 15 psi at the maximum tonnage application. Pressure drop at the mid-range of tonnage application will be approximately 5 to 7 psi. The best overall refrigeration/heat recovery system efficiency is usually obtained at or below the mid-range tonnage application.

# Mueller® Fre-Heater® Energy Savings and Payback Worksheet

Use the following worksheet to estimate the yearly energy savings provided by a Mueller Fre-Heater.

## Estimated Amount of Hot Water Possible

1. Pounds milk per day  x degrees of cooling =  total available Btus.
2.  available Btus x 60%\* efficiency (R-22) =  Btus for heat recovery.
3.  Btus available ÷ 830\*\* Btus/gallon =  gallons of water per day raised 100 degrees.

## Estimated Electrical Savings

4.  Btus available ÷ 3,414\*\*\* Btus/kWh =  kWh savings.
5.  kWh savings x  kWh cost =  savings per day.
6.  savings per day x 365 days/year =  yearly savings.

## Investment Recovery

7.  Mueller Model "D" cost ÷  yearly savings =  years to recover investment.
8.  yearly savings ÷  Mueller Model "D" cost =  percent return on investment.

\*45% energy efficiency with R-507 HFC refrigerant.

\*\*830 Btus/gallon required to raise one gallon of water 100 degrees.

\*\*\*3,414 Btus/kWh is amount of Btus necessary to save one kWh.



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