

Fre-Heater® Heat Recovery Systems



**SAVE ENERGY AND
GET FREE HOT WATER**

Recover up to 60 percent
of wasted energy.

Learn more at PaulMueller.com.

MUELLER

Mueller® Fre-Heater® Heat Recovery System

STANDARD FEATURES

- Each unit has a stainless steel outer jacket, and this rust-resistant exterior requires no maintenance.
- Mueller Temp-Plate® heat transfer surface cools the superheated refrigerant from the condensing units, and harvests the system's wasted heat energy.
- An 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.
- Fre-Heaters comply with CSA regulations for the United States and Canada, and have Canadian Registration Numbers (CRNs).
- The hot water temperature depends on the size of condensing units and cooling time.
- Channel recovered energy into a single Fre-Heater, or multiple Fre-Heaters.
- A five-year limited warranty protects your purchase.



Save Energy and Get *Free* Hot Water



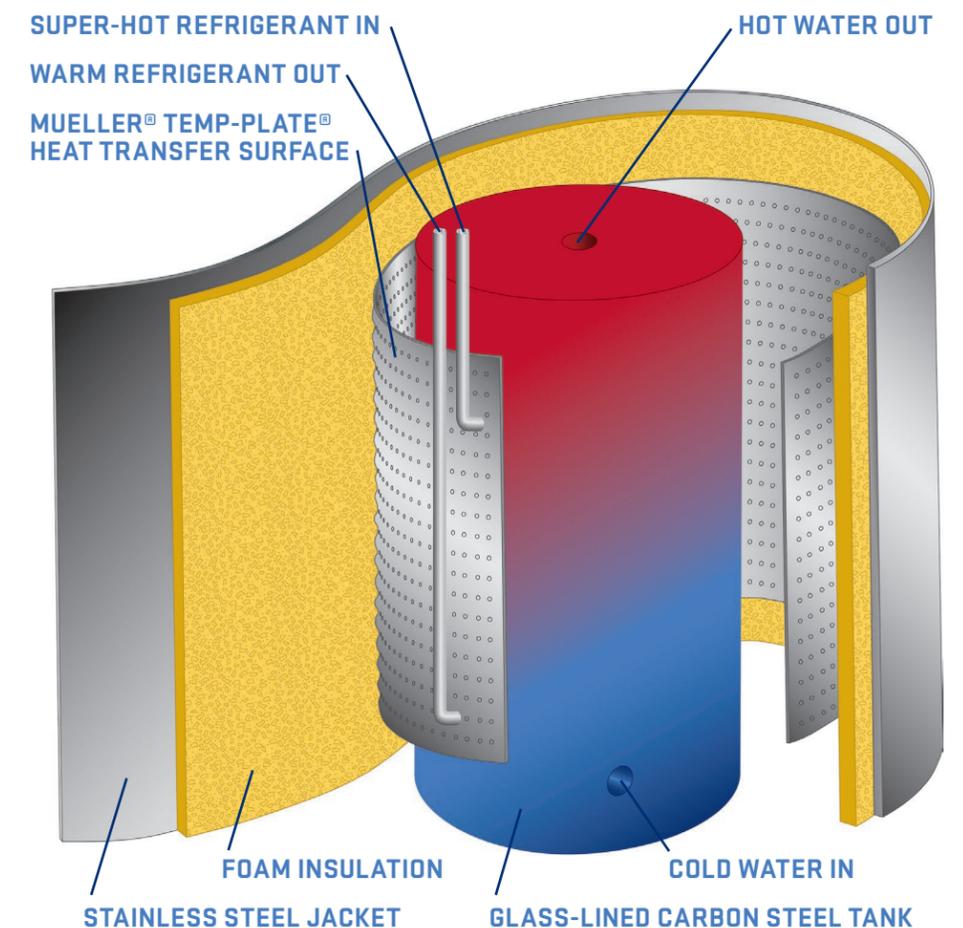
MUELLER FRE-HEATER HEAT RECOVERY SYSTEM

Paul Mueller Company Fre-Heaters can recover up to 60 percent of the wasted energy normally discarded from refrigeration and air-conditioning systems. By transferring the recovered heat energy to water, vast amounts of free hot water can be stored for use when and where the need arises.

Mueller Temp-Plate is the heart of the Fre-Heater system. This highly efficient heat transfer surface is constructed of 100 percent stainless steel. Thoroughly tested and listed by CSA United States and Canada, Fre-Heaters meet all codes required for double-wall heat exchanger construction.

Mueller Fre-Heater's industrial-grade, glass-lined water storage tank resists rust and features two replaceable magnesium anodes for extra protection against natural water corrosion, increasing the tank life. A Fre-Heater heats and stores in one unit, plus it operates on any potable water supply because it is virtually immune to corrosion.

Walk-in coolers, freezers, commercial air-conditioning systems, ice machines, and other refrigeration systems all waste enough heat energy to produce hot water on a large scale. A Mueller Fre-Heater pays for itself while reducing your energy costs proportionately to your hot water usage.





Mueller Fre-Heater Heat Recovery System

Mueller Model D Fre-Heater heat recovery systems channel recovered energy into single or multiple Fre-Heater units, producing ample hot water to satisfy your needs. The dual jacketing on the Fre-Heater means you do not have to worry about refrigerant leakage, and our industrial-grade, fully-insulated glass-lined storage tank assures potable water and minimal heat loss.

- Model D Fre-Heaters are available in 50-, 80-, and 119-gallon capacities.
- Model D-120 has two anodes, and Models D-50 and D-80 each have one anode.
- Units are designed for 150 psi maximum water working pressure and 426 psi maximum refrigerant working pressure.
- Model DE Fre-Heaters offer all of the features of standard Model D Fre-Heaters with the addition of a 4,500-watt, 240-volt electric element. Model DE Fre-Heaters are available in 80- and 119-gallon sizes.



Model DHS Fre-Heater

Mueller Model DHS Fre-Heaters channel recovered energy into single or multiple Fre-Heater units, producing plentiful hot water to meet your needs. With our dual jacket, there are no concerns about refrigerant leakage, and our industrial-grade, fully-insulated glass-lined storage tank assures potable water and minimal heat loss.

- The Model DHS Fre-Heater has a 119-gallon capacity.
- Units are designed for 150 psi maximum water working pressure and 500 psi maximum refrigerant working pressure.
- Model DHSE Fre-Heaters offer all of the features of standard Model DHS Fre-Heaters with the addition of a 4,500- or 6,000-watt, 240- or 460-volt electric element.

Mueller Fre-Heater Technical Specifications

Model Number	Part Number	No. of Refrig. Circuits	Refrigerant Connection Size	Per Circuit Refrig. Capacity ⁵	Water Connection Size	Height (in)	Diameter (in)	Water Tank Capacity (gal)	Approx. Shipping Weight (lb)	Approx. Loaded Weight (lb)
D-50	8828038	1	.625" ODM	.5 thru 4	.75" FPT	54	21.75	50	225	600
D2-50	8828037	2	.625" ODM	.5 thru 4	.75" FPT	54	21.75	50	225	600
D-80	8828036	2	.75" ODM	1 thru 5	.75" FPT	59	25.25	80	320	940
D-120	8828032	2	.75" ODM	1 thru 7.5	1.5" FPT	62	29.5	119	475	1,350
D2-120	8828030	2	1.125" ODM	3 thru 15	1.5" FPT	62	29.5	119	475	1,350
D2-120A ³	8828031	2	1.125" ODM	3 thru 15	1.5" FPT	62	29.5	119	475	1,350
DE-120 ¹	8828034	2	1.125" ODM	3 thru 15	1.5" FPT	62	29.5	119	960	1,350
DH-120 ³	8828029	2	1.625" ODM	7 thru 35	1.5" FPT	62	29.5	119	475	1,350
DHS-120	8825141	1	1.625" ODM	14 thru 70	1.25" FPT	62	29.5	119	440	1,300
DHSE-120A ⁴	8825142	1	1.625" ODM	14 thru 70	1.25" FPT	62	29.5	119	440	1,300
DHSE-120A ⁶	8825213	1	1.625" ODM	14 thru 70	1.25" FPT	62	29.5	119	440	1,300
DHSE-120B ⁶	8825214	1	1.625" ODM	14 thru 70	1.25" FPT	62	29.5	119	440	1,300
DA-120 ⁴	8828033	2	1" MPT	5 thru 25	1.5" FPT	62	29.5	119	475	1,350

NOTES

Conditions for the capacities are: 30°F evaporator, 110°F condensing temperature, and 50°F discharge gas superheat.

Pressure drop through the Fre-Heater refrigeration circuit will be approximately 15 psi at the maximum tonnage application.

Pressure drop at the midrange tonnage will be approximately 5 to 7 psi.

The highest percentage of heat recovered per ton is usually obtained at or below the midrange of the refrigeration tonnage capacity.

¹ Units have one 4,500-watt electric element ("A" = 208-230/60/1 and "B" = 460/60/1).

² Units have one 6,000 watt electric element ("A" = 208-230/60/1 and "B" = 460/60/1).

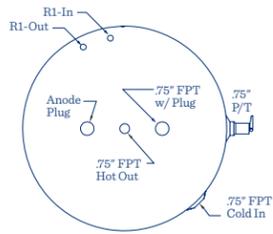
³ An Aquastat is included.

⁴ Ammonia only.

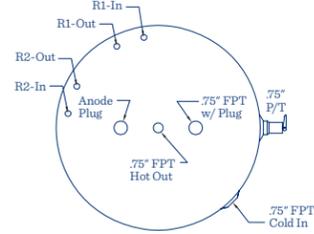
⁵ Refrigeration tonnage capacities are evaporator tons and not heat of rejection tons.



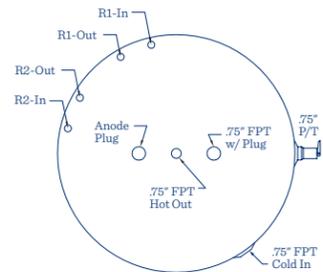
Mueller Fre-Heater Top Head Layout



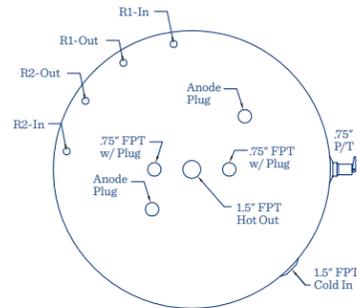
**50-GALLON
MODEL D FRE-HEATER**
.75" FPT Water Connections
.625" ODM Refrigeration Connections



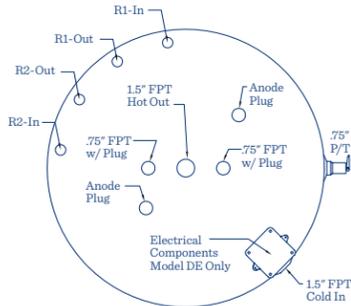
**50-GALLON
MODEL D2 FRE-HEATER**
.75" FPT Water Connections
.625" ODM Refrigeration Connections



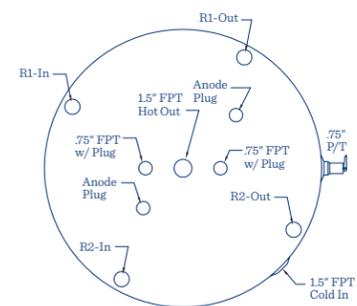
**80-GALLON
MODEL D FRE-HEATER**
.75" FPT Water Connections
.75" ODM Refrigeration Connections



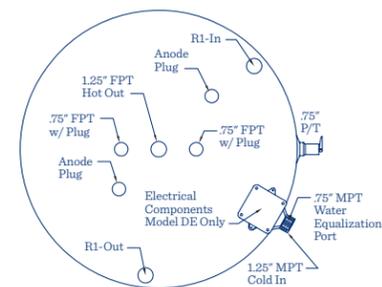
**120-GALLON
MODEL D FRE-HEATER**
1.5" FPT Water Connections
.75" ODM Refrigeration Connections



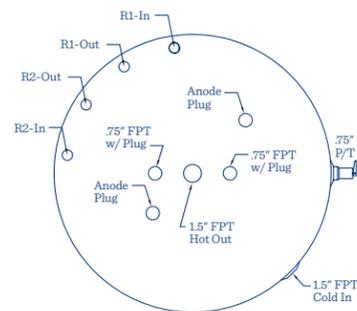
**120-GALLON
MODEL D2 & DE FRE-HEATER**
1.5" FPT Water Connections
1.125" ODM Refrigeration Connections



**120-GALLON
MODEL DH FRE-HEATER**
1.5" FPT Water Connections
1.625" ODM Refrigeration Connections



**120-GALLON
MODEL DHS & DHSE FRE-HEATER**
1.25" FPT Water Connections
1.625" ODM Refrigeration Connections



**120-GALLON
MODEL DA FRE-HEATER**
1.5" FPT Water Connections
1" MPT Refrigeration Connections

“ While it’s one of our oldest products, it’s also one of our most durable and popular for its budget-saving capabilities. ”

JORDAN BLUNT,
NATIONAL SALES MANAGER



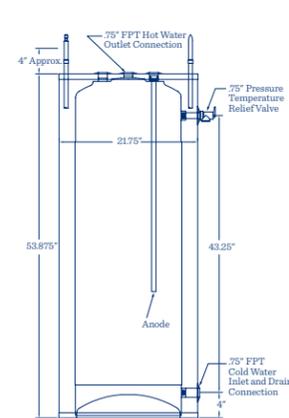


Mueller Fre-Heater Dimensions

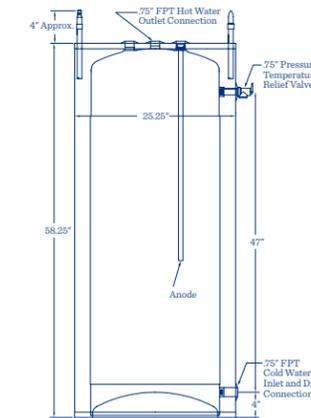
Often used in grocery stores, supermarkets, and convenience stores, Mueller Fre-Heaters are de-superheaters that remove most or all of the sensible heat from the compressor's hot discharged gas, and use the existing condenser to remove the remaining heat to condense the refrigerant.

These efficient systems save energy costs within a small footprint, making Fre-Heaters easy to incorporate into your current operation.

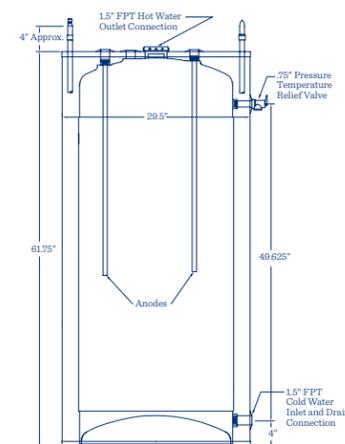
Consult a Paul Mueller Company Refrigeration Products expert to help you determine the correct model and unit size for your unique heat recovery application.



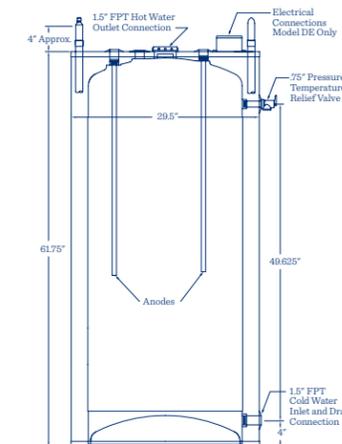
**50-GALLON
MODEL D FRE-HEATER**
.75" FPT Water Connections
.625" ODM Refrigeration Connections



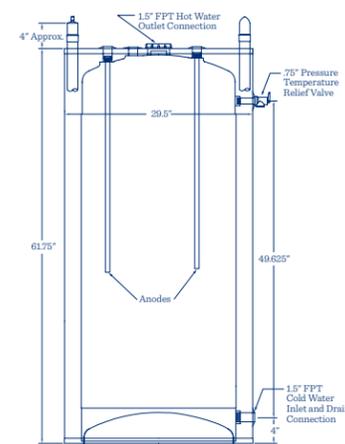
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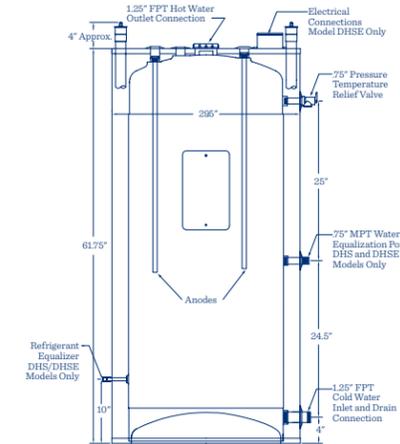
**120-GALLON
MODEL D FRE-HEATER**
1.5" FPT Water Connections
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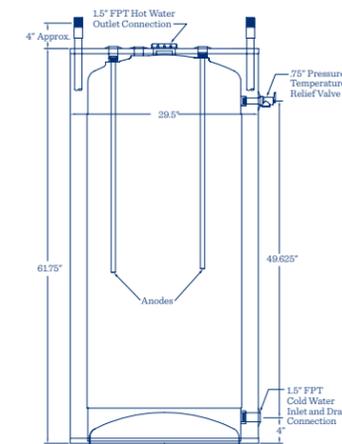
**120-GALLON
MODEL D2 & DE FRE-HEATER**
1.5" FPT Water Connections
1.125" ODM Refrigeration Connections



**120-GALLON
MODEL DH FRE-HEATER**
1.5" FPT Water Connections
1.625" ODM Refrigeration Connections

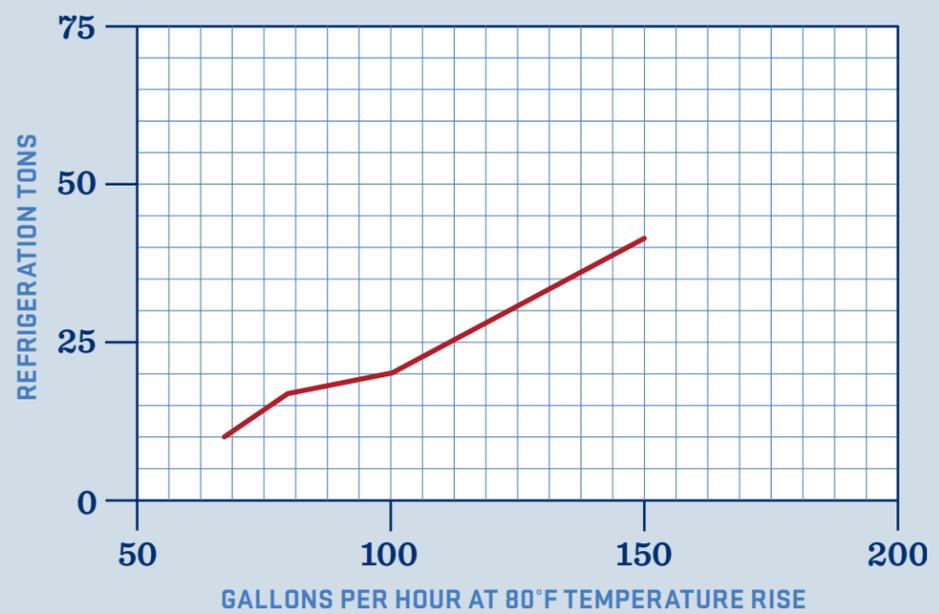


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MODEL DHS & DHSE FRE-HEATER**
1.25" FPT Water Connections
1.625" ODM Refrigeration Connections



**120-GALLON
MODEL DA FRE-HEATER**
1.5" FPT Water Connections
1" MPT Refrigeration Connections

Fre-Heater Recovery Rate



Visit our website for more details about Mueller Fre-Heaters.



PAUL MUELLER COMPANY

Our Products and Services

Skids and Integrated Systems

- Small Scale to Custom Automated Systems
- Modular Process Systems
- Water-for-Injection Distribution Skids

Custom Tanks and Vessels

- Mixing, Storage, and Process
- Design and Fabrication
- Routine to Extreme Specialty Process

Refrigeration Solutions

- Falling Film Chillers
- Batch Chillers
- Packaged Chillers
- Air-Cooled Condensing Units
- Heat Recovery
- Controls

Clean Utilities

- Pure Steam Generators
- Multiple-Effect Still
- Water-for-Injection Distribution Systems

Heat Transfer Solutions

- Heat Transfer Surfaces
- Preformed Heat Transfer Panels
- Plate Heat Exchangers
- Replacement Parts
- Service and Repair

Component Products

- Tank Heads
- Tank Shells
- Manways
- Agitators

Cleaning Systems

- Clean-in-Place (CIP) Systems
- Chemical Dosing Systems

Specialty Hauling with Mueller Transportation, Inc.

- Door-to-Door Specialty Handling
- Oversized Hauling Capabilities

Who We Are

At Paul Mueller Company, we are united by a belief that the only quality that matters is quality that works for life. With every piece of processing equipment we build, our goal is to have lasting impact. This collective vision has led us from a small sheet metal shop to a global supplier of heating, cooling, processing, and storage solutions. Our equipment allows farmers, brewers, and engineers to keep their products fresh and their inventory strong. Whether our equipment preserves milk in rural areas or helps manufacture medicine with broad health benefits, we are making an impact across the globe.

Creating Quality
for *Life*

Industries We Serve

- Animal Health
- Battery Production and Recycling
- Beverage
- Brewing
- Chemical
- Dairy Farm
- Dairy Processing
- Data Centers
- Food
- Heat Transfer
- HVAC
- Mining
- Oil and Gas
- Personal Care
- Pharmaceutical
- Refrigeration
- Tank Fabrication
- Wine
- And More

Facilities and Resources

- Domestic Facilities With Nearly One Million Square Feet Under Roof
- Comprehensive Test Facilities for Factory Acceptance Testing
- Expert Fabricators and Manufacturing Staff
- Onsite, Experienced Engineering Department

Project Support Services

- Comprehensive, Customizable Documentation Packages
- IQ/OQ Protocols and Execution
- Seamless Shipping with Mueller Transportation, Inc.
- Expanded Scope Facility Construction and Expansion
- Installation Supervision and Site Acceptance Testing

Quality and Process Certification

- ASME (American Society of Mechanical Engineers)
- ASME BPE (American Society of Mechanical Engineers Bioprocessing Equipment Standard)
- API (American Petroleum Institute)
- UL (Underwriters Laboratories)
- CSA (Canadian Standards Association)
- PED CE (Pressure Equipment Directive Certification)
- UKCA (United Kingdom Conformity Assessed)
- CRN (Canadian Registration Number)
- TSSA (Technical Standards and Safety)

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