

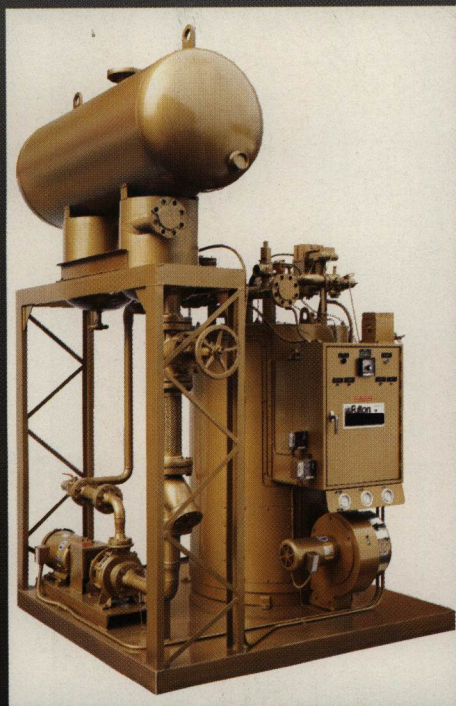


Industrial / Commercial Division
Fulton Thermal Corporation

Vertical Coil Heaters from
800,000 to 12,000,000 BTU

Fulton Fuel-Fired Coil Design Thermal Fluid (Hot Oil) Heaters

All Fulton coil design thermal fluid heaters are
built to ASME Section I Code and many are
UL listed heaters.



Characteristics of the Fulton Coil design thermal fluid system.

Features and advantages of thermal fluid

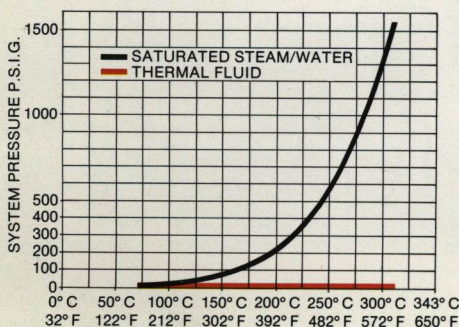
- No Corrosion or Freezing
 - High Operating Temperatures with a Low Pressure System
 - Minimum Maintenance
 - Low Initial Installation Cost
 - Simple Circuit, No Blow-downs, Steam Traps or Condensate Return Systems
 - Automatic Control of Expansion
 - Deaeration and Thermal Buffering
 - ASME Construction Section I
 - Skid Mounted, Self-contained for Fast and Easy Installation
- Optional

No corrosion or freezing problems

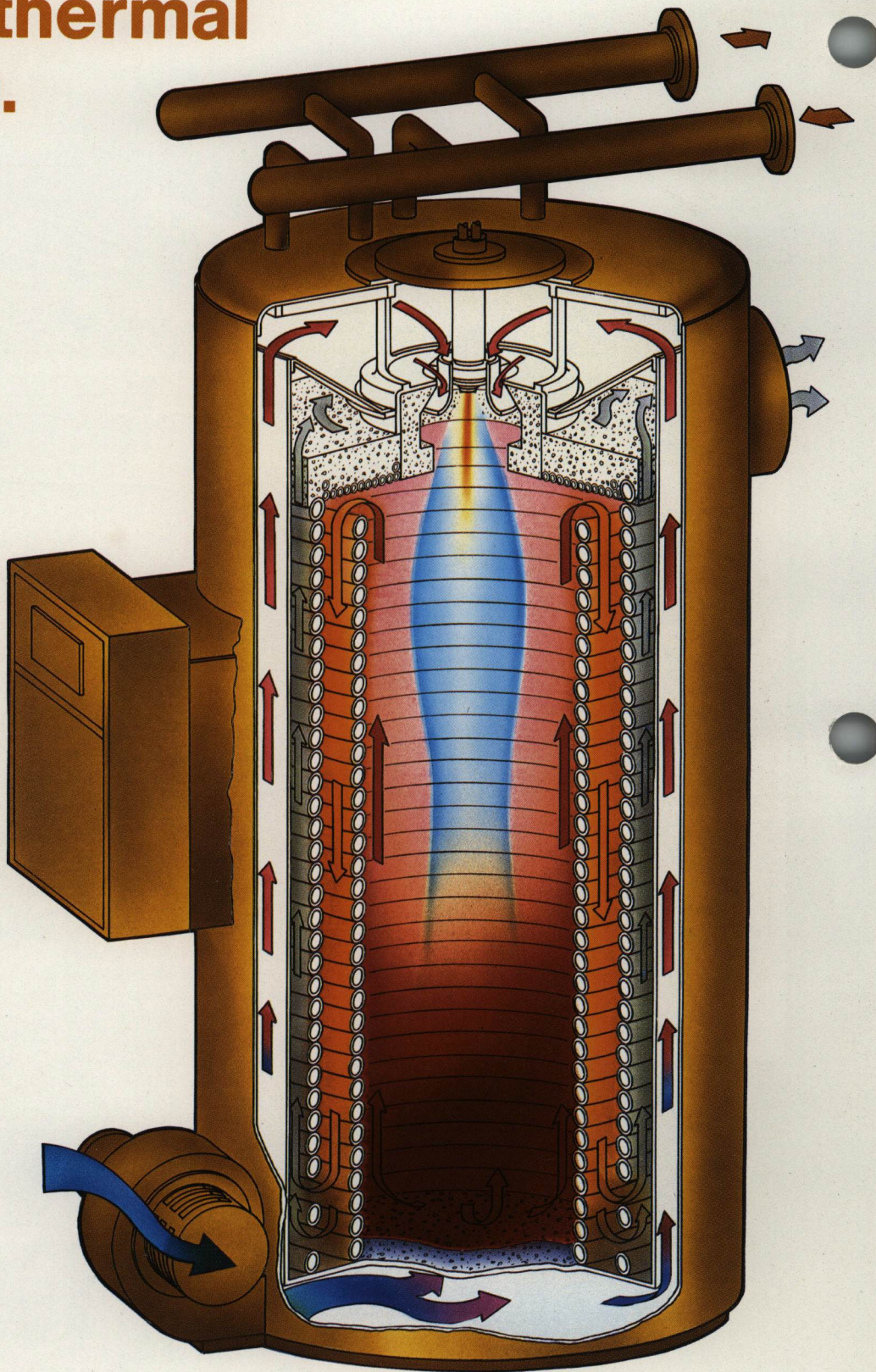
Thermal fluid, unlike water, does not cause scale or corrosion. Thermal fluids contain no solids which precipitate when heated. There is no need for expensive water treatment plants or chemical conditioning as the danger of corrosion within the heater, system pipework, valves and heat exchangers is avoided. Mineral based or synthetic thermal fluids are available through the major oil or chemical companies and are not subject to freezing.

No high pressure with thermal fluid

With steam* at 338°F (170°C) a pressure of 100 PSIG (7 bars) is required and at 572°F (300°C) the pressure rises to nearly 1500 PSIG (105 bars)—see graph. With thermal fluids, these temperatures are achieved at low pressures and system pressure drop for pump circulation of the fluid is the only governing factor.



*Saturated steam or pressurized water



Efficient four pass, over-all even heating, low thermal inertia. Combustion air enters the burner fan inlet, passes upward between the inner and outer jacket and is pre-heated before it enters the top mounted burner. The hot gases are directed through four passes across the heating coils and exit at the flue outlet.

This principle dispenses with the need of large quantities of refractory-insulating materials, resulting in extremely low thermal inertia preventing overheating of the fluid in the event of pump or power failure.



Supplies heat to 4 chemical reactors and the dual steam separator arrangement assures very dry saturated steam for use with steam vacuum injectors.

Thermal fluid heating has distinct advantages.

Thermal fluid heating is energy saving. Thermal fluid heating eliminates the deficiencies of steam, high temperature hot water and direct firing methods of high temperature heating systems.

As an engineer or an owner seeking energy conservation in conjunction with the high efficiency and productivity, evaluation of thermal fluid heating as the most advanced system in reaching your goals is the answer.

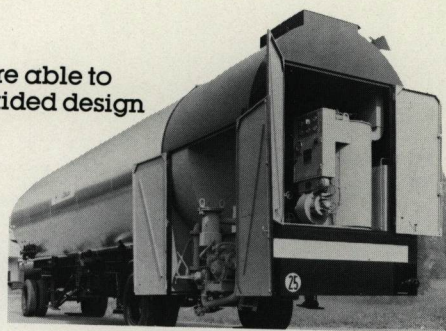
Drawbacks of high pressure steam or high pressure hot water systems requiring costly equipment and the need for water treatment are overcome.

Direct firing is often unsatisfactory because heating is uneven, the temperature is difficult to control and the processing of combustible materials can be extremely hazardous.

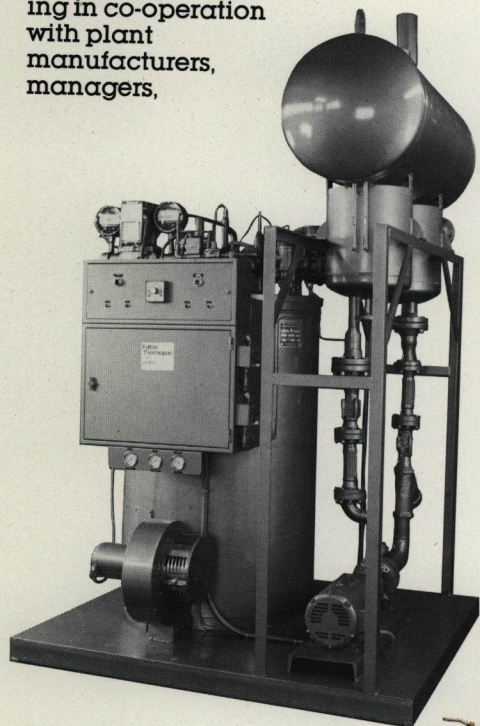
, hot water or direct firing

Fulton Coil design heaters have been applied to diverse process heating applications throughout the USA and many countries overseas. Fulton has assisted in the design of most of these applications, working in co-operation with plant manufacturers, managers,

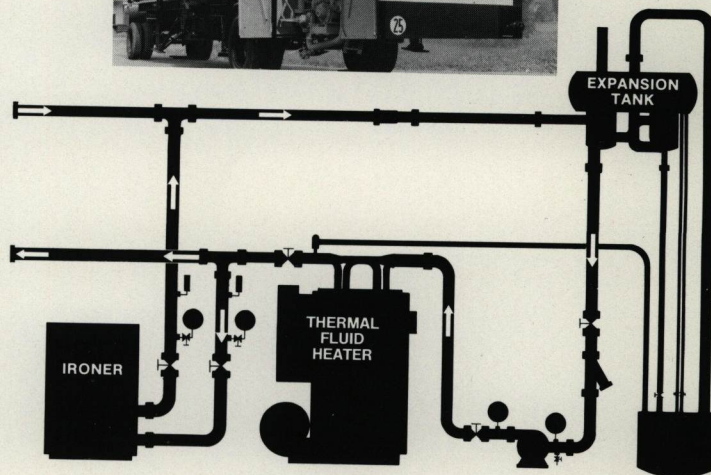
and contractors. We're able to offer you computer-aided design capabilities and specifications for your installation.



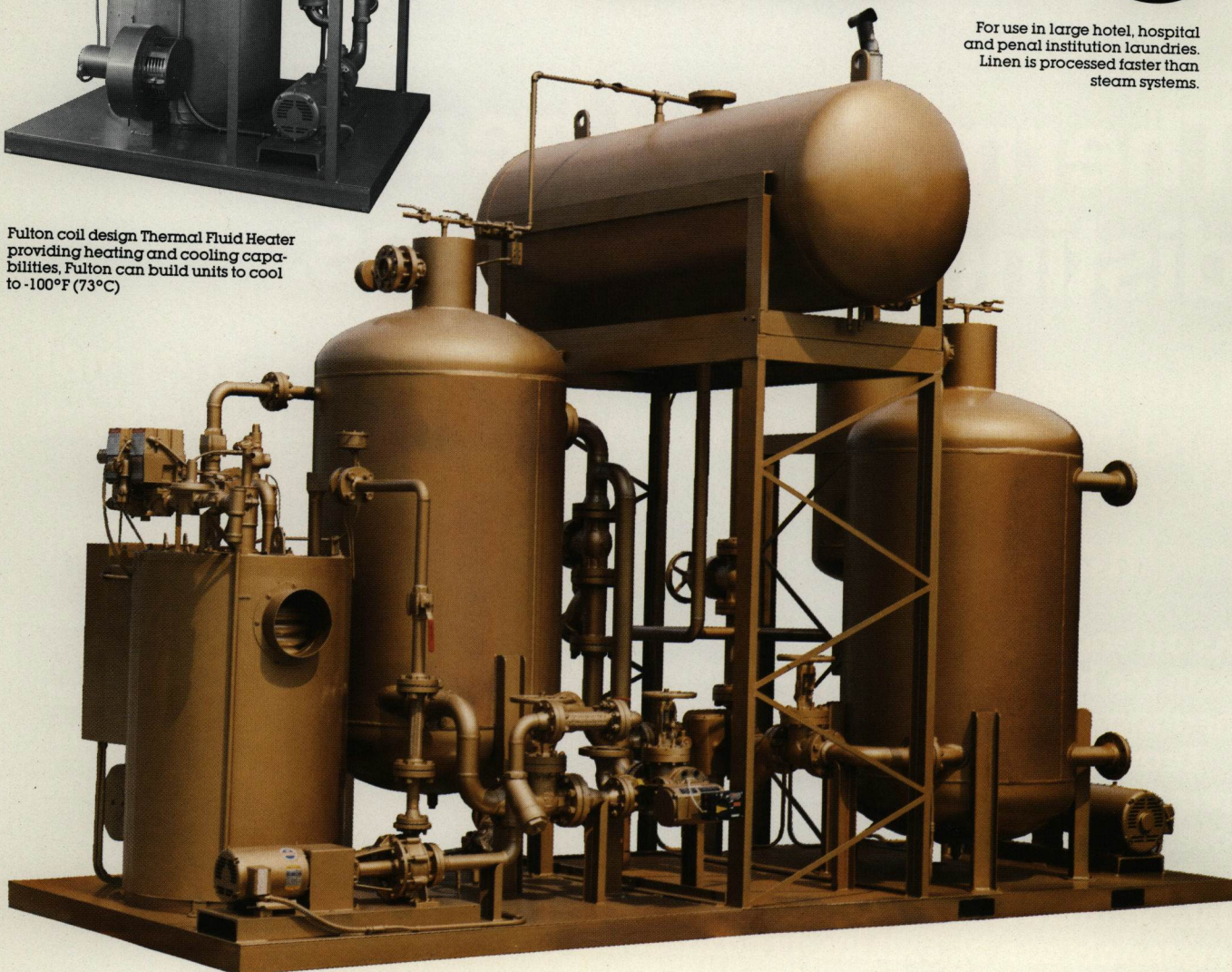
Portable installation on a mobile unit for soil remediation, PCB removal, and other various processing needs.



Fulton coil design Thermal Fluid Heater providing heating and cooling capabilities. Fulton can build units to cool to -100°F (73°C)



For use in large hotel, hospital and penal institution laundries. Linen is processed faster than steam systems.



Demonstrated to be superior to steam for process heat.

Very low maintenance with thermal fluid

Maintenance is limited to burner, pump, controls and an annual thermal fluid check. The licensed boiler engineer is no longer required for this low pressure system.

Installation costs are lower with thermal fluids

The initial cost of a thermal fluid system is comparable to a steam installation. But without water treatment condensate return and blow-downs, a considerable cost savings is realized. Low pressure system reduces cost of heat exchanger and pipe work.

Circuit simplicity

Thermal fluid heaters require a simple closed circuit. The thermal fluid is circulated by a pump throughout the heater and the piping system to the users and then returned through the deaerator cold seal expansion tank back to the heater, as outlined below.

Expansion, deaeration and thermal buffering

Fulton's patented deaerator cold seal expansion tank controls: Expansion of thermal fluid volume vacates vapors and air automatically from the system and buffers (cools) the system temperature of the thermal fluid to an acceptable level in the expansion tank, avoiding oxidation.

Fulton Heaters are built and tested to the requirements of ASME Section I

To assure our customers of the highest quality standards, all Fulton Thermal Fluid Heaters are built and tested to the requirements of the ASME code, Section I.

Fulton Heaters can be skid-mounted for fast installation

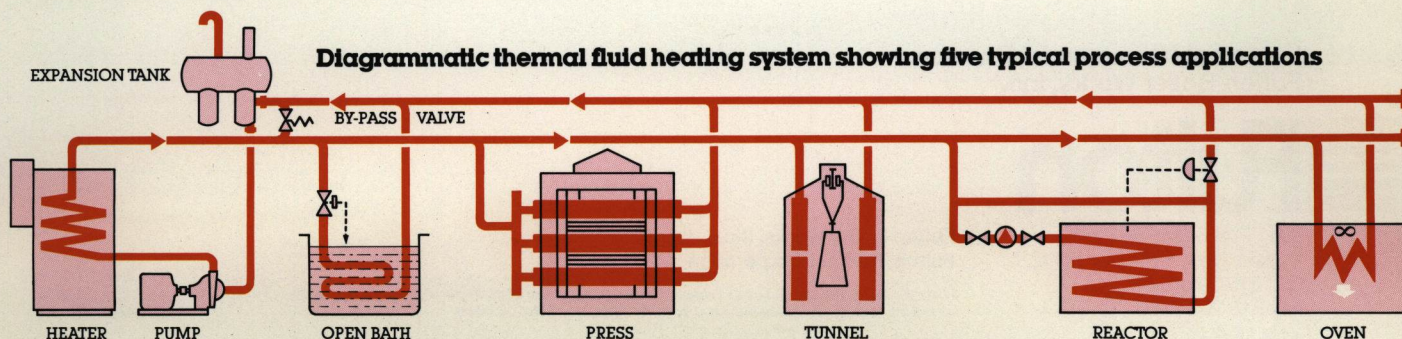
Pumps and deaerator cold seal expansion tanks for Fulton coil design heaters are manufactured individually for maximum flexibility, or can be skid-mounted to specifications by the owner to optimize the simplicity and ease of a particular system installation.



The Fulton patented combination expansion/deaerator thermal buffer tank.

Fulton heaters have been successfully used in these various applications:

- Autoclaves
- Building materials
- Chemical reaction vessels
- Confectionery machinery
- Deodorizing
- Distillation
- Food processing
- Laundry
- Marine liquid cargo heating and shipboard services
- Metal processing and recovery
- Ovens
- Paint and varnish manufacture
- Paper and converting machinery
- Plastics
- Printing and packaging machinery
- Surface pretreatment and finishing
- Tank farms and pipe and pump tracing
- Textile machinery
- Timber kilns and presses
- Unfired steam raising and water heating
- Wax processing and space heating by radiant pipes, warm air (including make-up air systems) and low pressure hot water.

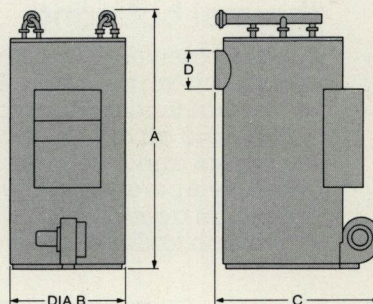


Specifications

Model FT-C		0080	0120	0160	0240	0400	0600	0800	1000	1200
Heat Output	1000 BTU/Hr.	800	1200	1600	2400	4000	6000	8000	10000	12000
	1000 KCAL/Hr.	200	300	400	600	1000	1500	2000	2500	3000
Thermal Fluid Content	Gallons	10	21	19	31	76	132	171	290	383
	Liters	38	80	72	116	288	498	648	1097	1448
Recommended Flow Rate	GPM	50	75	100	150	250	375	500	615	730
	M ³ /HR	11.4	17	22.7	34	56.8	85.2	113	139	167
Typical Circulating Pump Motor	HP	7.5	10	10	15	20	30	40	50	50
	KW	7.5	7.5	11.2	11.2	14.9	22.4	29.8	37.3	37.3
Typical Burner Motor	HP	1½	3	3	3	7½	7½	15	20	20
	KW	1.1	2.2	2.2	2.2	5.6	5.6	11.2	11.2	15
Fuel Consumption @ Full Output No. 2 Oil	GPH	7.1	10.7	14.3	21.4	35.3	53	69.7	87.1	104.5
	Liter/HR	27	40.6	54.1	81	136	201	263.7	329.6	395.5
Natural Gas	FT ³ /HR	998	1498	1998	2999	4997	7498	9997	12496	14998
	M ³ /HR	28.3	42.4	56.5	84.9	141.5	212.3	283.0	353.8	424.6

- Voltage 3 Phase for Burner and Pump - 115 V Single Phase 20 Amp for Control Circuit.
- Fuel up to No. 6 Oil Available for Large Units.
- Efficiency: up to 80% min. Based on High Heating Value of the Fuel. (No. 2 Oil @ 140,000 BTU/G HHV: Natural Gas @ 1000 BTU/ft³ HHV.)

- Modulation 3 to 1 Turn Down Ratio. Optional on FT-0080, 0120, and 0160. - Standard on all others.
- Circulating pump motor sizes based on standard pressure (55 PSIG) and viscosity 1 cs, with 25-37 PSID available head for installation, depending on model.
- Available up to 750 Deg. F.



The dimensional diagram shown here is for guidance purposes only. Comprehensive details of dimensions, connections, etc., for each model of heater are given on general arrangement sheets which are available from Fulton.

Dimensions and Weights

Model FT-C		0080	0120	0160	0240	0400	0600	0800	1000	1200
Fluid Supply/Return Piping Connections	IN	1¼	1½	2	2½	3	4	4	6	6
	MM	32	40	50	65	80	100	100	150	150
(A) Overall Height	IN	60	67½	67	74½	105½	129	131	133¼	131¼
	MM	1524	1715	1702	1892	2680	3277	3327	3385	3334
(B) Heater Diameter	IN	25	34	34	40	49	57	71	90	108
	MM	635	865	865	1015	1245	1450	1805	2285	2745
(C) Overall Depth	IN	41	54	54	60	70	78	103	126	140
	MM	965	1370	1370	1524	1780	1980	2615	3200	3556
(D) Flue Outlet Diameter	IN	10	10	10	12	14	18	20	20	22
	MM	250	250	250	300	350	450	500	500	550
Recommended Vertical Stack Diameter	IN	10	12	12	14	18	22	24	24	26
	MM	250	300	300	350	450	550	600	600	650
Approximate Net Weight	LB	1550	2100	2550	3400	5300	8250	11450	19250	21700
	KG	700	950	1150	1550	2400	3750	5200	8750	9850

Note: MM= Metric equivalent

There are times when perhaps a boiler is best suited for your application. Fulton also manufactures a complete line of oil, gas and electric steam and hot water boilers up to 100 HP.

The policy of Fulton Thermal Corporation is one of continuous improvement. We reserve the right to change specifications and dimensions at any time without prior notice.

Built in USA

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Fulton Boiler Works, Inc.
Fulton Thermal Corporation

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FFC
1L-09094
2.5M PP 5/99
37638
PRINTED IN USA