

# TECHNICAL SPECIFICATIONS

## CLAYTON HIGH TEMPERATURE FLUID HEATERS:

- \* **SAVE FUEL**  
*The unique counter flow, controlled flow design provides higher fuel to steam efficiencies than traditional boilers.*
- \* **ARE SAFE FOR PERSONNEL & EQUIPMENT**  
*The Clayton units inherently eliminate the potential for hazardous steam explosions due to their smaller physical size and low water volume.*
- \* **PROVIDE RAPID RESPONSE**  
*With low water volume and physical size, Clayton units can respond very quickly to load changes*
- \* **PROVIDE FAST START-UP AND LOAD RESPONSE**  
*The units will provide full output from a cold start within ten minutes, without thermal stress.*
- \* **ARE COMPACT AND LIGHTWEIGHT**  
*The Clayton design typically occupies one-third of the floor space and is 75% lighter than a conventional boiler.*
- \* **ENSURE HIGH QUALITY STEAM**  
*Provide greater than 99.5% quality steam.*
- \* **AFFORD FUEL VERSATILITY**  
*Natural gas, propane, light or heavy oil burners are available or in combination.*
- \* **HAVE ADVANCED CONTROLS**  
*Programmable Logic Controllers (PLC) are standard for accurate and reliable operation.*
- \* **ARE AVAILABLE WITH LOW NOx**  
*Industry leading Low NOx burners are available to meet strict environmental regulations.*
- **ARE BACKED BY** *Fast, Expert Factory-Direct service that is available 24 hours per day throughout the U.S., Canada, Mexico, Europe, Asia and service distributors worldwide.*



MODEL E1004-DZ  
FLUID HEATER  
1000 BHP

# CLAYTON FLUID HEATER

# SPECIFICATIONS

## MODEL E1004

	MODEL E1004 Standard	MODEL SE1004 with Super Economizer	MODEL EG1004-FMB with Low NOx Burner	MODEL SEG1004-FMB with Low NOx Burner and Super Economizer
<b>BOILER HORSEPOWER</b>	1000	1000	1000	1000
<b>HEAT INPUT, BTU/hr.</b>				
Oil	40,331,325	38,924,419	NA	NA
Gas	40,823,171	39,382,353	41,327,160	39,382,353
<b>NET HEAT OUTPUT, BTU/hr.</b>	33,475,000	33,475,000	33,475,000	33,475,000
<b>EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)</b>	34,500 lb/hr.	34,500 lb/hr.	34,500 lb/hr.	34,500 lb/hr.
<b>DESIGN PRESSURE (see note 1)</b>	65 - 500 psig	65 - 500 psig	65 - 500 psig	65 - 500 psig
<b>STEAM OPERATING PRESSURE (determined by design pressure)</b>	60 - 450 psig	60 - 450 psig	60 - 450 psig	60 - 450 psig
<b>OIL CONSUMPTION at maximum steam output (see note 2)</b>	286.9 gph	276.8 gph	N/A	N/A
<b>GAS CONSUMPTION at maximum steam output (see note 3)</b>	40,823 cfh	39,382 cfh	41,327 cfh	39,382 cfh
<b>BURNER CONTROLS</b>				
modulating	5 to 1 Turndown	5 to 1 Turndown	4 to 1 Turndown	4 to 1 Turndown
<b>EFFICIENCY</b>				
oil-fired efficiency %	83%	86%	NA	NA
gas-fired efficiency %	82%	85%	81%	85%
<b>ELECTRIC MOTORS, HP</b>				
design pressure 15-300 psig	Blower 75   Pump 100	Blower 100   Pump 100	Blower 100   Pump 100   Cooling 7.5	Blower 100   Pump 100   Cooling 7.5
design pressure 301-500 psig	75   125	100   125	100   125   7.5	100   125   7.5
<b>ELECTRIC FLA, based on 460 V (see note 4)</b>				
design pressure 15-300 psig	252	280	290	290
design pressure 301-500 psig	280	313	333	333
<b>GAS SUPPLY PRESSURE REQUIRED</b>	5 to 10 psig	5 to 10 psig	5 to 10 psig	5 to 10 psig
<b>ATOMIZING AIR REQUIRED (see note 5)</b>				
Capacity	30 scfm	30 scfm	N/A	N/A
Minimum pressure	70 psig	70 psig	N/A	N/A
<b>AIR SUPPLY REQUIRED (FMB -see note 6)</b>	N/A	N/A	5 scfm @ 3 to 150 psig	5 scfm @ 3 to 150 psig
<b>WATER SUPPLY REQUIRED</b>	5,300 gph	5,300 gph	5,300 gph	5,300 gph
<b>HEATING SURFACE</b>	2,890 sq.ft.	3,655 sq.ft.	2,890 sq.ft.	3,655 sq.ft.
<b>EXHAUST STACK DIAMETER, o.d.</b>	43.75 in.	43.75 in.	43.75 in.	43.75 in.
<b>APPROXIMATE OVERALL DIMENSIONS</b>				
<b>Steam Generator</b>				
length	183 in.	183 in.	206 in.	206 in.
width	115 in.	115 in.	115 in.	115 in.
height	206 in.	248 in.	206 in.	206 in.
installed weight- wet	66,500 lbs	72,934 lbs	66,800 lbs	73,234 lbs
shipping weight	47,500 lbs	52,126 lbs	47,800 lbs	52,426 lbs
<b>Pump Skid</b>				
length	103 in.	103 in.	103 in.	103 in.
width	32 in.	32 in.	32 in.	32 in.
height	35 in.	35 in.	35 in.	35 in.
shipping weight - FW pump skid	3,200 lbs	3,200 lbs	3,200 lbs	3,200 lbs

1) Design pressures are available up to 3000 psig. Consult factory for details.

2) Based on No. 2 fuel oil with a High Heat Value (HHV) of 140,600 BTU/Gal.

3) Based on Natural Gas with a High Heat Value (HHV) of 1,000 BTU/Ft.<sup>3</sup>

4) Continuous running. For 575 V multiply by 0.8; for 380 V multiply by 1.1; for 230 V multiply by 2.0; for 208 V multiply by 2.2.

5) Atomizing air required for oil burner.

6) Compressed air required for FMB.

The description and specifications shown were in effect at the time this publication was approved for printing. Clayton Industries, whose policy is one of continuous improvement, reserves the right to discontinue models, or change specifications or design, without notice.



**World Headquarters**  
17477 Hurley Street  
City of Industry, CA 91744  
800.423.4585 tel • 626.435.0180 fax  
email: sales@claytonindustries.com  
www.claytonindustries.com

**Europe, Africa & Middle East Headquarters**  
Rijksweg 30 • B-2880 Bornem, Belgium  
32.3.890.5700 tel • 32.3.890.5701 fax  
email: sales@clayton.be

**Latin America Headquarters**  
Manuel L. Stampa 54 • Nueva Industrial Vallejo  
Mexico D.F., 07700 Mexico  
Toll Free: 01.800.888.4422 • (55)55.86.51.00 tel  
(55)55.86.23.00 fax • email: claytonmexico@clayton.com.mx  
www.claytonmexico.com.mx

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Clayton Deutschland GmbH  
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