

# 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 E604-DZ  
FLUID HEATER  
600 BHP

# CLAYTON FLUID HEATER

# SPECIFICATIONS

## MODEL E604

	MODEL E604 Standard	MODEL SE604 with Super Economizer	MODEL EG604-FMB with Low NOx Burner	MODEL SEG604-FMB with Low NOx Burner and Super Economizer
<b>BOILER HORSEPOWER</b>	600	600	600	600
<b>HEAT INPUT, BTU/hr</b>				
Oil	24,198,795	23,354,651	NA	NA
Gas	24,493,902	23,629,412	24,796,296	23,629,412
<b>NET HEAT OUTPUT, BTU/hr</b>	20,085,000	20,085,000	20,085,000	20,085,000
<b>EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)</b>	20,700 lbs/hr	20,700 lbs/hr	20,700 lbs/hr	20,700 lbs/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</b>	172.1 gph	166.1 gph	NA	NA
at maximum steam output (see note 2)				
<b>GAS CONSUMPTION</b>	24,494 cfh	23,629 cfh	24,796 cfh	23,629 cfh
at maximum steam output (see note 3)				
<b>BURNER CONTROLS</b>	5 to 1 Turndown	5 to 1 Turndown	4 to 1 Turndown	4 to 1 Turndown
modulating				
<b>EFFICIENCY</b>				
oil-fired efficiency %	83%	86%	NA	NA
gas-fired efficiency %	82%	85%	81%	85%
<b>ELECTRIC MOTORS, HP</b>	Blower   Pump	Blower   Pump	Blower   Pump   Cooling	Blower   Pump   Cooling
design pressure 15-300 psig	40   30	40   30	60   30   7.5	60   30   7.5
design pressure 301-500 psig	40   30	40   30	60   30   7.5	60   30   7.5
<b>ELECTRIC FLA, based on 460 V (see note 4)</b>				
design pressure 15-300 psig	103	103	122	122
design pressure 301-500 psig	103	103	122	122
<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	NA	NA
Minimum pressure	70 psig	70 psig	NA	NA
<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>	3,180 gph	3,180 gph	3,180 gph	3,180 gph
<b>HEATING SURFACE</b>	1,253 sq.ft.	1,548 sq.ft.	1,253 sq.ft.	1,548 sq.ft.
<b>EXHAUST STACK DIAMETER, o.d.</b>	31.75 in.	31.75 in.	31.75 in.	31.75 in.
<b>APPROXIMATE OVERALL DIMENSIONS</b>				
length	133 in.	133 in.	156 in.	156 in.
width	131 in.	131 in.	142 in.	142 in.
height	181 in.	207 in.	185 in.	211 in.
<b>WEIGHT</b>				
installed - wet	21,448 lbs	27,230 lbs	21,748 lbs	27,530 lbs
shipping	17,980 lbs	23,170 lbs	18,280 lbs	23,470 lbs
FW pump skid	2,200 lbs	2,200 lbs	2,200 lbs	2,200 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

ATLANTA • BOSTON • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • KANSAS CITY • NEW YORK/NEW JERSEY • SAN FRANCISCO

Clayton Deutschland GmbH  
Clayton Thermal Products Ltd (UK)

Clayton Scandinavia A.S.  
Clayton Nederland B.V.

Clayton de France S.A.R.L.  
Clayton Sales & Service Canada

**World Leaders in Precision Steam Generators, Fluid Heaters, Heat Recovery Systems and Customer Service**