

# Specifications

*Advanced Steam Boiler Technology  
that is Safe, Efficient and Reliable*

## **CLAYTON FLUID HEATERS OFFER:**

- **COMPACT SIZE**

Clayton steam generators will normally fit in any available area while also reducing construction costs on new building installations.

- **FUEL EFFICIENT**

High efficiency which is inherent with the clayton design translates into lower operating costs and improved overall system operation

- **RESPONSIVE**

Very rapid response to changing steam loads. Clayton steam generator will automatically modulate to match your steam load profile while maintaining system steam pressure

- **SAFE**

Our once through design eliminates the possibility of a steam or water side explosion. The Clayton steam generator is simply the safest steam boiler on the market.

- **LESS WATER WASTE**

Clayton's design concentrates TDS blow down significantly which reduces wasted fuel, water and chemical costs.

- **FAST START**

Full steam pressure and output in minutes from a cold start-up saves fuel and labor cost over conventional designs. Eliminates wasted fuel from idling.

- **AUTOMATIC**

Operation is automatically controlled and the Clayton steam generator can be started from a single switch or remotely using an automatic start option.

- **LOW WEIGHT**

The relatively light weight means that all sizes of Clayton steam generators can be easily moved and installed even in areas with limited structural support.

- **RELIABLE**

Reliability of the Clayton steam generator is field proven and unsurpassed. This results in greatly reduced maintenance and attendance.

- **HIGH QUALITY STEAM**

Steam Quality in excess of 99.5% dry is assured at all times. This is the highest steam quality of any competitive design. Less water and impurities further increase your energy efficiency.

## *MODEL E604-DZ FLUID HEATER 600 BHP*



**Clayton**  
INNOVATIVE STEAM SOLUTIONS

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# SPECIFICATIONS

## MODEL E604

	MODEL E604 Standard	MODEL SE604 with Super Economizer	MODEL E604-FGR with Flue Gas Recirculation	MODEL SE604-FGR with Flue Gas Recirculation and Super Economizer
<b>BOILER HORSEPOWER</b>	600	600	600	600
<b>HEAT INPUT, BTU/hr</b>				
Oil	24,198,795	23,354,651	24,198,795	23,354,651
Gas	24,493,902	23,629,412	24,493,902	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 at maximum steam output (see note 2)</b>	172.1 gph	166.1 gph	172.1 gph	166.7 gph
<b>GAS CONSUMPTION at maximum steam output (see note 3)</b>	24,494 cfm	23,629 cfm	24,494 cfm	26,629 cfm
<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%	83%	86%
gas-fired efficiency %	82%	85%	82%	85%
<b>ELECTRIC MOTORS, HP (see note 4)</b>				
design pressure 15-300 psig	Blower 40   Pump 30	Blower 40   Pump 30	Blower 40   Pump 30   Cooling 7.5	Blower 40   Pump 30   Cooling 7.5
design pressure 301-500 psig	40   30	40   30	40   30   7.5	40   30   7.5
<b>ELECTRIC FLA, based on 460 V (see note 5)</b>				
design pressure 15-300 psig	111	111	122	122
design pressure 301-500 psig	111	111	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 6)</b>				
Capacity	30 scfm	30 scfm	30 scfm	30 scfm
Minimum pressure	70 psig	70 psig	70 psig	70 psig
<b>AIR SUPPLY REQUIRED (FMB -see note 7)</b>	N/A	N/A	N/A	N/A
<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 CONNECTION, o.d.</b>	32 in.	32 in.	32 in.	32 in.
<b>APPROXIMATE OVERALL DIMENSIONS</b>				
length	133 in.	133 in.	156	156
width	131 in.	131 in.	142	142
height	181 in.	207 in.	205	231
<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) Oil fired units also use a separate motor driven fuel oil pump - 3/4 HP

5) 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.

6) Atomizing air required for oil burner.

7) 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.



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