

# Specifications

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

## CLAYTON STEAM GENERATORS 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 E1104-DZ  
FLUID HEATER  
1,100 BHP  
Standard and FGR*



**Clayton**  
INNOVATIVE STEAM SOLUTIONS

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# SPECIFICATIONS

## MODEL E1104

	MODEL E1104 Standard	MODEL SE1104 with Super Economizer	MODEL E1104-FGR with Flue Gas Recirculation	MODEL SE1104-FGR with Flue Gas Recirculation and Super Economizer
<b>BOILER HORSEPOWER</b>	1100	1100	1100	1100
<b>HEAT INPUT, BTU/hr.</b>	Oil 44,364,458 Gas 44,905,488	42,816,860 43,320,588	44,364,458 44,905,488	42,816,860 43,320,588
<b>NET HEAT OUTPUT, BTU/hr.</b>	36,822,500	36,822,500	36,822,500	36,822,500
<b>EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)</b>	37,950 lb/hr.	37,950 lb/hr.	37,950 lb/hr.	37,950 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>	316 gph	306 gph	316 gph	306 gph
<b>GAS CONSUMPTION at maximum steam output (see note 3)</b>	44,905 cfm	43,321 cfm	44,905 cfm	43,321 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>	Blower   Pump	Blower   Pump	Blower   Pump   Cooling	Blower   Pump   Cooling
design pressure 15-300 psig	75   125	75   125	75   125   10	75   125   10
design pressure 301-500 psig	75   150	75   150	75   150   10	75   150   10
<b>ELECTRIC FLA, based on 460 V (see note 5)</b>				
design pressure 15-300 psig	292	292	306	306
design pressure 301-500 psig	322	322	336	336
<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>	5,830 gph	5,830 gph	5,830 gph	5,830 gph
<b>HEATING SURFACE</b>	2,890 sq.ft.	3,655 sq.ft.	2,890 sq.ft.	3,655 sq.ft.
<b>EXHAUST STACK CONNECTION, o.d.</b>	44 in.	44 in.	44 in.	44 in.
<b>APPROXIMATE OVERALL DIMENSIONS</b>				
<b>Steam Generator</b>				
length	183 in.	183 in.	183 in.	183 in.
width	115 in.	115 in.	115 in.	115 in.
height	206 in.	248 in.	228 in.	272 in.
installed weight- wet	53,200 lbs.	55,700 lbs.	53,500 lbs.	56,000 lbs.
shipping weight	47,500 lbs	50,000 lbs.	47,800 lbs.	50,300 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) Main FW Pump HP depends on type of pump used - 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.



**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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