

# 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 E1004 STEAM GENERATOR 1,000 BHP*



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# 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</b>	286.9 gph	276.8 gph	N/A	N/A
at maximum steam output (see note 2)				
<b>GAS CONSUMPTION</b>	40,823 cfh	39,382 cfh	41,327 cfh	39,382 cfh
at maximum steam output (see note 3)				
<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 (see note 4)</b>				
design pressure 15-300 psig	Blower 75   Pump 125	Blower 75   Pump 125	Blower 125   Pump 125   Cooling 10	Blower 125   Pump 125   Cooling 10
design pressure 301-500 psig	75   150	75   150	125   150   10	125   150   10
<b>ELECTRIC FLA, based on 460 V (see note 5)</b>				
design pressure 15-300 psig	292	292	382	382
design pressure 301-500 psig	322	322	396	396
<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	N/A	N/A
Minimum pressure	70 psig	70 psig	N/A	N/A
<b>AIR SUPPLY REQUIRED (FMB -see note 7)</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.	248 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) 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.



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