

# 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 E504 STEAM GENERATOR 500 BHP*



**Clayton**  
INNOVATIVE STEAM SOLUTIONS

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# SPECIFICATIONS

## MODEL E504

	MODEL E504 Standard	MODEL SE504 with Super Economizer	MODEL E504-FGR with Flue Gas Recirculation	MODEL SE504-FGR with Flue Gas Recirculation and Super Economizer
BOILER HORSEPOWER	500	500	500	500
HEAT INPUT, BTU/hr	20,165,663	19,462,209	20,165,663	19,462,209
	Oil			
	20,411,585	19,691,176	20,411,585	19,691,176
	Gas			
NET HEAT OUTPUT, BTU/hr	16,737,500	16,737,500	16,737,500	16,737,500
EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)	17,250 lbs/hr	17,250 lbs/hr	17,250 lbs/hr	17,250 lbs/hr
DESIGN PRESSURE (see note 1)	65 - 500 PSIG	65 - 500 PSIG	65 - 500 PSIG	65 - 500 PSIG
STEAM OPERATING PRESSURE (determined by design pressure)	60 - 450 PSIG	60 - 450 PSIG	60 - 450 PSIG	60 - 450 PSIG
OIL CONSUMPTION	143.4 gph	138.4 gph	143.4 gph	138.4 gph
at maximum steam output (see note 2)				
GAS CONSUMPTION	20,412 cfm	19,691 cfm	20,412 cfm	19,691 cfm
at maximum steam output (see note 3)				
BURNER CONTROLS				
modulating	5 to 1 Turndown	5 to 1 Turndown	4 to 1 Turndown	4 to 1 Turndown
EFFICIENCY				
oil-fired efficiency %	83%	86%	83%	86%
gas-fired efficiency %	82%	85%	82%	85%
ELECTRIC MOTORS, HP (see note 4)	Blower   Pump	Blower   Pump	Blower   Pump   Cooling	Blower   Pump   Cooling
design pressure 15-300 psig	25   20	25   20	25   20   7.5	25   20   7.5
design pressure 301-500 psig	25   30	25   30	25   30   7.5	25   30   7.5
ELECTRIC FLA, based on 460 V (see note 5)				
design pressure 15-300 psig	74	74	85	85
design pressure 301-500 psig	85	85	96	96
GAS SUPPLY PRESSURE REQUIRED	5 to 10 psig	5 to 10 psig	5 to 10 psig	5 to 10 psig
ATOMIZING AIR REQUIRED (see note 6)				
Capacity	30 scfm	30 scfm	30 scfm	30 scfm
Minimum pressure	70 psig	70 psig	70 psig	70 psig
AIR SUPPLY REQUIRED (FMB -see note 7)	N/A	N/A	N/A	N/A
WATER SUPPLY REQUIRED	2,650 gph	2,650 gph	2,650 gph	2,650 gph
HEATING SURFACE	912 sq.ft.	1,207 sq.ft.	912 sq.ft.	1,207 sq.ft.
EXHAUST STACK CONNECTION, o.d.	32 in.	32 in.	32 in.	32 in.
APPROXIMATE OVERALL DIMENSIONS				
length	133 in.	133 in.	156	156
width	131 in.	131 in.	142	142
height	131 in.	157 in.	155	181
WEIGHT				
installed - wet	17,408 lbs	20,400 lbs	17,708 lbs	20,700 lbs
shipping	14,790 lbs	17,190 lbs	15,090 lbs	17,490 lbs
FW pump skid	2,000 lbs	2,000 lbs	2,000 lbs	2,000 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

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.



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