

# 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 E304 STEAM GENERATOR 300 BHP*



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# SPECIFICATIONS

## MODEL E304

	MODEL E304 Standard	MODEL SE304 with Super Economizer	MODEL E304-FGR with Flue Gas Recirculation	MODEL SE304-FGR with Flue Gas Recirculation and Super Economizer
BOILER HORSEPOWER	300	300	300	300
HEAT INPUT, BTU/hr	12,099,398	11,677,326	12,099,398	11,677,326
Oil				
Gas	12,246,951	11,814,706	12,246,951	11,814,706
NET HEAT OUTPUT, BTU/hr	10,042,500	10,042,500	10,042,500	10,042,500
EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)	10,350 lbs/hr	10,350 lbs/hr	10,350 lbs/hr	10,350 lbs/hr
DESIGN PRESSURE (see note 1)	15 - 500 psig	15 - 500 psig	15 - 500 psig	15 - 500 psig
STEAM OPERATING PRESSURE (determined by design pressure)	13 - 450 psig	13 - 450 psig	13 - 450 psig	13 - 450 psig
OIL CONSUMPTION	86.1 gph	83.1 gph	86.1 gph	83.1 gph
at maximum steam output (see note 2)				
GAS CONSUMPTION	12,247 cfh	11,815 cfh	12,247 cfh	11,815 cfh
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	Blower   Pump	Blower   Pump	Blower   Pump   Cooling	Blower   Pump   Cooling
design pressure 15-300 psig	15   10	15   10	15   10   5	15   10   5
design pressure 301-500 psig	15   15	15   15	15   15   5	15   15   5
ELECTRIC FLA, based on 460 V (see note 4)				
design pressure 15-300 psig	44	44	52	52
design pressure 301-500 psig	51	51	59	59
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 5)				
Capacity	25 scfm	25 scfm	25 scfm	25 scfm
Minimum pressure	70 psig	70 psig	70 psig	70 psig
AIR SUPPLY REQUIRED (FMB -see note 6)	N/A	N/A	N/A	N/A
WATER SUPPLY REQUIRED	1,590 gph	1,590 gph	1,590 gph	1,590 gph
HEATING SURFACE	594 sq.ft.	796 sq.ft.	594 sq.ft.	796 sq.ft.
EXHAUST STACK CONNECTION, o.d.	24 in.	24 in.	24 in.	24 in.
APPROXIMATE OVERALL DIMENSIONS				
length	114 in.	114 in.	160	160
width	104 in.	104 in.	116	116
height	114 in.	137 in.	138	161
WEIGHT				
installed - wet	10,566 lbs	12,297 lbs	10,766 lbs	12,497 lbs
shipping	9,140 lbs	10,530 lbs	9,340 lbs	10,730 lbs
FW pump skid	1,150 lbs	1,150 lbs	1,150 lbs	1,150 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.



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