

# 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 E404 STEAM GENERATOR 400 BHP*



**Clayton**  
INNOVATIVE STEAM SOLUTIONS

S  
A  
V  
E  
S  
  
F  
U  
E  
L  
  
\*  
  
S  
A  
V  
E  
S  
  
S  
P  
A  
C  
E  
  
\*  
  
S  
A  
V  
E  
S  
  
T  
I  
M  
E  
  
\*  
  
S  
A  
V  
E  
S  
  
M  
O  
N  
E  
Y

# SPECIFICATIONS

## MODEL E404

	MODEL E404 Standard	MODEL SE404 with Super Economizer	MODEL E404-FGR with Flue Gas Recirculation	MODEL SE404-FGR with Flue Gas Recirculation and Super Economizer
<b>BOILER HORSEPOWER</b>	400	400	400	400
<b>HEAT INPUT, BTU/hr</b>				
Oil	16,132,530	15,569,767	16,132,530	15,569,767
Gas	16,329,268	15,752,941	16,329,268	15,752,941
<b>NET HEAT OUTPUT, BTU/hr</b>	13,390,000	13,390,000	13,390,000	13,390,000
<b>EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)</b>	13,800 lbs/hr	13,800 lbs/hr	13,800 lbs/hr	13,800 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>	114.7 gph	110.7 gph	114.7 gph	110.7 gph
<b>GAS CONSUMPTION at maximum steam output (see note 3)</b>	16,329 cfh	15,753 cfh	16,329 cfh	15,753 cfh
<b>BURNER CONTROLS modulating</b>	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	25   20	25   20	25   20   7.5	25   20   7.5
design pressure 301-500 psig	25   20	25   20	25   20   7.5	25   20   7.5
<b>ELECTRIC FLA, based on 460 V (see note 5)</b>				
design pressure 15-300 psig	74	74	85	85
design pressure 301-500 psig	74	74	85	85
<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>	2,120 gph	2,120 gph	2,120 gph	2,120 gph
<b>HEATING SURFACE</b>	912 sq.ft.	1,207 sq.ft.	912 sq.ft.	1,207 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	131 in.	157 in.	155	181
<b>WEIGHT</b>				
installed - wet	17,268 lbs	20,250 lbs	17,568 lbs	20,550 lbs
shipping	14,650 lbs	17,040 lbs	14,950 lbs	17,340 lbs
FW pump skid	1,970 lbs	1,970 lbs	1,970 lbs	1,970 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.



**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

ATLANTA • BOSTON • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • KANSAS CITY • NEW YORK/NEW JERSEY • SAN FRANCISCO

Clayton Deutschland GmbH  
Clayton Thermal Products Ltd (UK)

Clayton Scandinavia A.S.  
Clayton Nederland B.V.

Clayton de France S.A.R.L.  
Clayton Sales & Service Canada

**World Leaders in Precision Steam Generators, Fluid Heaters, Heat Recovery Systems and Customer Service**