

# TECHNICAL SPECIFICATIONS

## CLAYTON HIGH TEMPERATURE FLUID HEATERS:

### \* **SAVE FUEL**

The unique counter flow, controlled flow design provides higher fuel to steam efficiencies than traditional boilers.

### \* **ARE SAFE FOR PERSONNEL & EQUIPMENT**

The Clayton units inherently eliminate the potential for hazardous steam explosions due to their smaller physical size and low water volume.

### \* **PROVIDE RAPID RESPONSE**

With low water volume and physical size, Clayton units can respond very quickly to load changes

### \* **PROVIDE FAST START-UP AND LOAD RESPONSE**

The units will provide full output from a cold start within ten minutes, without thermal stress.

### \* **ARE COMPACT AND LIGHTWEIGHT**

The Clayton design typically occupies one-third of the floor space and is 75% lighter than a conventional boiler.

### \* **ENSURE HIGH QUALITY STEAM**

Provide greater than 99.5% quality steam.

### \* **AFFORD FUEL VERSATILITY**

Natural gas, propane, light or heavy oil burners are available or in combination.

### \* **HAVE ADVANCED CONTROLS**

Programmable Logic Controllers (PLC) are standard for accurate and reliable operation.

### \* **ARE AVAILABLE WITH LOW NOx**

Industry leading Low NOx burners are available to meet strict environmental regulations.

- **ARE BACKED BY** Fast, Expert Factory-Direct service that is available 24 hours per day throughout the U.S., Canada, Mexico, Europe, Asia and service distributors worldwide.



MODEL E304-DZ  
FLUID HEATER  
300 BHP

# CLAYTON FLUID HEATER

# SPECIFICATIONS

## MODEL E304

	MODEL E304 Standard	MODEL SE304 with Super Economizer	MODEL EG304-FMB with Low NOx Burner	MODEL SE304-FMB with Low NOx Burner and Super Economizer
<b>BOILER HORSEPOWER</b>	300	300	300	300
<b>HEAT INPUT, BTU/hr</b>				
Oil	12,099,398	11,677,326	NA	NA
Gas	12,246,951	11,814,706	12,398,148	11,814,706
<b>NET HEAT OUTPUT, BTU/hr</b>	10,042,500	10,042,500	10,042,500	10,042,500
<b>EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)</b>	10,350 lbs/hr	10,350 lbs/hr	10,350 lbs/hr	10,350 lbs/hr
<b>DESIGN PRESSURE (see note 1)</b>	15 - 500 psig	15 - 500 psig	15 - 500 psig	15 - 500 psig
<b>STEAM OPERATING PRESSURE (determined by design pressure)</b>	13 - 450 psig	13 - 450 psig	13 - 450 psig	13 - 450 psig
<b>OIL CONSUMPTION</b>				
at maximum steam output (see note 2)	86.1 gph	83.1 gph	N/A	N/A
<b>GAS CONSUMPTION</b>				
at maximum steam output (see note 3)	12,247 cfh	11,815 cfh	12,398 cfh	11,815 cfh
<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</b>				
design pressure 15-300 psig	Blower 15   Pump 10	Blower 15   Pump 10	Blower 20   Pump 10   Cooling 5	Blower 20   Pump 10   Cooling 5
design pressure 301-500 psig	15   15	15   15	20   15   5	20   15   5
<b>ELECTRIC FLA, based on 460 V (see note 4)</b>				
design pressure 15-300 psig	36	38	52	58
design pressure 301-500 psig	47	47	58	58
<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 5)</b>				
Capacity	25 scfm	25 scfm	NA	NA
Minimum pressure	70 psig	70 psig	NA	NA
<b>AIR SUPPLY REQUIRED (FMB -see note 6)</b>	N/A	N/A	5 scfm @ 3 to 150 psig	5 scfm @ 3 to 150 psig
<b>WATER SUPPLY REQUIRED</b>	1,590 gph	1,590 gph	1,590 gph	1,590 gph
<b>HEATING SURFACE</b>	594 sq.ft.	796 sq.ft.	594 sq.ft.	796 sq.ft.
<b>EXHAUST STACK DIAMETER, o.d.</b>	23.88 in.	23.88 in.	23.88 in.	23.88 in.
<b>APPROXIMATE OVERALL DIMENSIONS</b>				
length	114 in.	114 in.	160 in.	160 in.
width	104 in.	104 in.	116 in.	116 in.
height	114 in.	137 in.	121 in.	144 in.
<b>WEIGHT</b>				
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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