

# THERMOCOIL COIL TUBE STEAM BOILER

Thermogenics Inc.  
6 Scanlon Court, Aurora, ON, Canada, L4G 7B2  
Tel: 905.727.1901 Fax: 905.727.7456  
[www.thermogenics.com](http://www.thermogenics.com)

Thermogenics USA  
4426 Mt Carmel Tobasco Road, Suite A  
Cincinnati, OH, 45244  
Tel: 513.528.0500 Fax: 513.528.0592  
[www.thermogenics.com](http://www.thermogenics.com)

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## SAFETY

- Forced circulation, low water volume eliminates the potential of a steam side catastrophic failure.
- Thermogenics coil tube generators can be used for unattended operation in specific jurisdictions.

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## CAPACITY

- Low and high pressure steam applications from 75 to 600 BHP.

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## FUEL EFFICIENCY

- Up to 86% efficiency with economizers.
- Double walled boiler shell preheats combustion air and cools outer casing, thereby minimizing radiation losses.

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## PRESSURE SPECIFICATIONS

- Standard 15 psig to 350 psig (higher on request).

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## CODE

- ASME, NATIONAL BOARD or as specified. Complies with local code requirements as applicable.
- ASME BPVC SECTION I, CSA B51.

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## FUELS

- Natural Gas
- Number 2 Oil
- Propane
- Combination of any of the above

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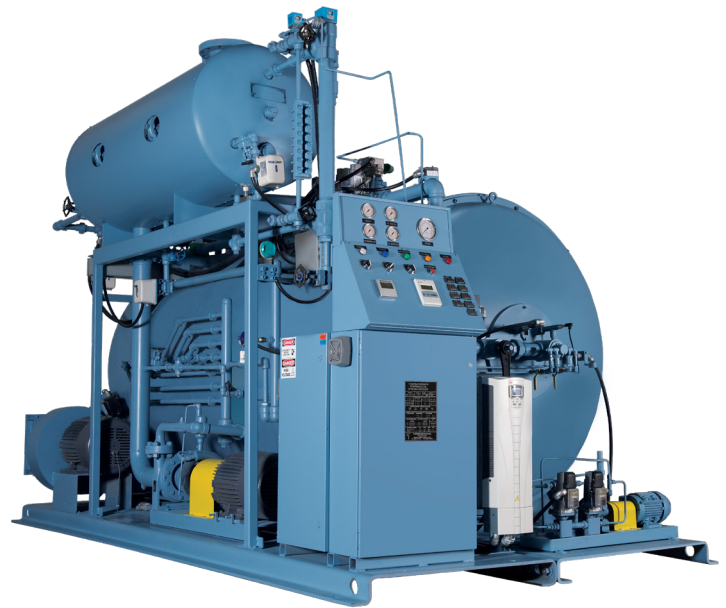
## COMPACT SIZE

- Compact size and low weight for reduced installation and engineering cost.

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## ENVIRONMENTAL COMPLIANCE

- Compliance with current noise and NOx emissions regulations.



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## DESIGN AND OPERATIONAL

- Full output in minutes from cold start.
- Redesigned low NOx burner with increased efficiency.
- Air cooled circulating pump, eliminates wasted cooling water.
- PLC based panel complete with flame safeguard with linkageless control.
- Fully compatible with PLC based lead / lag control.
- Coil temperature system with individual temperature readouts and set points.

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## STANDARD EQUIPMENT FEATURES

- Fully modulating burner with upto 10:1 turndown on Natural Gas, Number 2 Oil and Propane.
- Automatic bottom and surface blowdown standard.
- Steam separation drum provides 99% plus dry saturated steam.
- NEMA 4 enclosures.

# 450 BHP THERMOCOIL COIL TUBE STEAM BOILER



## THERMOCOIL PACKAGED RE-CIRCULATING STEAM GENERATORS

### DESIGN DETAILS

#### General Information

<b>BOILER TYPE</b>	Watertube
<b>RATED CAPACITY</b>	450 BHP
<b>EQUIVALENT EVAPORATION</b>	15,525 lbs/hr from and at 212°F
<b>THERMAL OUTPUT</b>	15,063,000 Btu/hr
<b>HEATING SURFACE</b>	851 ft <sup>2</sup>
<b>CONSTRUCTION CODES</b>	ASME, BPVC Sec I, CSA B51
<b>BOILER SHELL</b>	Combustion Air Cooled

### PRESSURE psig (kPag)

<b>DESIGN:</b>	<b>OPERATING:</b>
250 (1725)	5-220 (35-1520)
350 (2413)	221-320 (1525-2210)
Contact factory for up to 500 psig (3450 kPag)	

### CONTROLS

- Siemens LMV5X linkageless burner control
- Siemens PLC and touch screen including the following:
  - Excess Steam Pressure
  - Flame Failure Protection
  - Coil Temperature Limits
  - Additional Low Water Boiler Protection
  - High Water Valve and High Water Cut-Off

### BURNER

<b>MANUFACTURER</b>	Thermogenics Inc.
<b>FUELS</b>	Natural Gas, Number 2 Oil, Propane or Combination
<b>BURNER TYPE: OIL</b>	Air atomization
<b>BURNER TYPE: GAS</b>	Multiple Zone Orifice Nozzle
<b>GAS PRESSURE REQUIRED</b>	5 psig (or 10 psig optional)
<b>IGNITION TYPE</b>	Electric Spark Interrupted
<b>IGNITION FUEL</b>	Natural Gas, Propane

### POWER REQUIREMENTS

<b>MAIN POWER</b>	• 208/240/460/575 VAC, 3 ph, 60 Hz • 380 VAC, 3 ph, 50 Hz
<b>CONTROL POWER</b>	120 VAC, 1 ph, 60 Hz
<b>HP REQUIRED BY:</b>	
CIRCULATING PUMP	15 HP
FD FAN	20 HP

### OVERALL DIMENSIONS

<b>LENGTH X WIDTH X HEIGHT</b>	148" x 98" x 107"
<b>APPROX. SHIPPING WEIGHT</b>	19,300 lbs

### PERFORMANCE DATA

#### Fuel Consumption at Rated Output\*

<b>OIL</b>	132 US gph
<b>OIL RECIRCULATION RATE</b>	180 US gph
<b>NATURAL GAS</b>	18,369 SCFH
<b>PROPANE</b>	7,301 SCFH
<b>TURNDOWN</b>	10:1

\* Up to 86% with Economizer

### CUSTOMER CONNECTIONS

<b>STACK OUTLET:</b>	26" O.D.
<b>STEAM OUTLET:</b>	
15 psig	10" RF ASME B16.5 Class 150
150, 250 psig	6" RF ASME B16.5 Class 300
350, 500 psig	6" RF ASME B16.5 Class 300
<b>MAIN GAS SUPPLY</b>	2" NPT
<b>PILOT GAS SUPPLY</b>	½" NPT (INTERNAL)
<b>OIL SUPPLY</b>	1" NPT
<b>OIL RETURN</b>	¾" NPT
<b>ATOMIZING AIR SUPPLY</b>	½" NPT
<b>FEEDWATER INLET</b>	1 ¼" NPT
<b>BLOWDOWN OUTLETS:</b>	
Surface	½" NPT
Bottom	1" NPT
Manual	1" NPT

### SAFETY VALVE OUTLET

15 psig	3" NPT
150, 250 psig	2 ½" NPT
350 psig	2 ½" NPT

Built to meet strict ASME standards, Thermogenics Steam Generators are skid-mounted and completely packaged; all burners, and required safety and operating devices, are supplied and installed at the factory.

#### Additionally, the advantages of our Steam Generators are:

- Fast Start-up
- High Pressure
- Compact Size & Low Weight
- Safe Operation
- Modulating Output