

# SUBMITTAL DATA SHEET

JOB NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

LOCATION: \_\_\_\_\_

ENGINEER: \_\_\_\_\_

WHOLESALER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

SUBMITTED TO: \_\_\_\_\_

MODEL DESIGNATION: \_\_\_\_\_ FUEL: \_\_\_\_\_

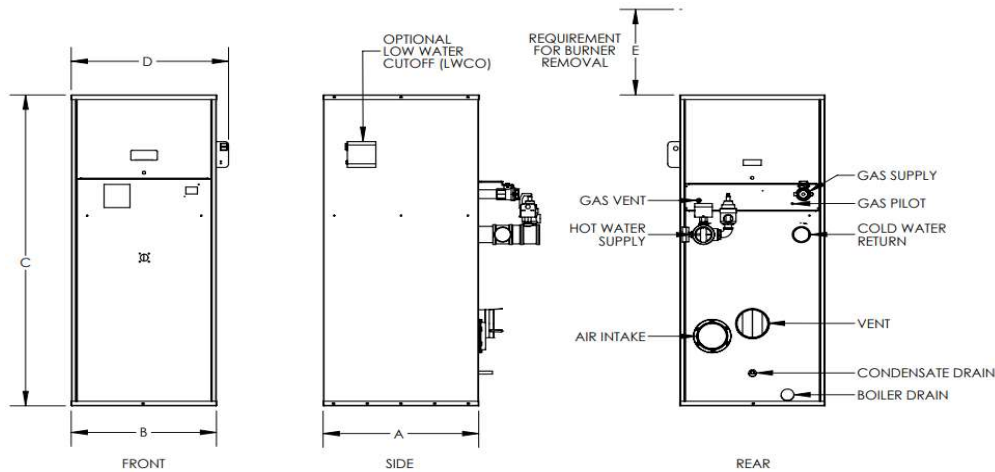


CHECK ONE: \_\_\_\_\_ REFERENCE (NOT FOR PRODUCTION)  
 \_\_\_\_\_ APPROVED (IMMEDIATE PRODUCTION)  
 \_\_\_\_\_ APPROVED WITH CHANGES NOTED (IMMEDIATE PRODUCTION)

| RATINGS AND TECHNICAL DATA |                |                 |                   |                    |                   |                                |                 |
|----------------------------|----------------|-----------------|-------------------|--------------------|-------------------|--------------------------------|-----------------|
| EVOLUTION EVS Models       | INPUT<br>(MBH) | GROSS           | THERMAL           | HEATING            | WATER             | *FUEL                          | SHIPPING        |
|                            |                | OUTPUT<br>(MBH) | EFFICIENCY<br>(%) | SURFACE<br>(SQ/FT) | CONTENT<br>(GAL.) | NAT. GAS / LP Gas<br>MIN / MAX | WEIGHT<br>(LBS) |
| <b>EVS-500</b>             | 500            | 431             | 86.2%             | 123                | 6.1               | 5"-14" WC                      | 772             |
| <b>EVS-750</b>             | 750            | 638             | 85.1%             | 131                | 15.9              | 7"-14" WC                      | 1097            |
| <b>EVS-1000</b>            | 1000           | 850             | 85.0%             | 175                | 16.4              | 7"-14" WC                      | 1185            |
| <b>EVS-1500</b>            | 1500           | 1275            | 85.0%             | 264                | 17.4              | 7"-14" WC                      | 1327            |
| <b>EVS-2000</b>            | 2000           | 1696            | 84.8%             | 352                | 18.5              | 7"-14" WC                      | 1461            |
| <b>EVS-2000S</b>           | 2000           | 1732            | 86.6%             | 411                | 40.1              | 4"-14" WC                      | 1835            |
| <b>EVS-2500</b>            | 2500           | 2170            | 86.8%             | 518                | 41.6              | 4"-14" WC                      | 2052            |
| <b>EVS-3000</b>            | 3000           | 2610            | 87.0%             | 767                | 43.1              | 4"-14" WC                      | 2193            |

*\* Please refer to PRODUCT UPDATE issued June 6, 2024. This data supersedes data found on Table 3 of I&O Manual.*

## DIMENSIONS



| Evolution EVS Model | "A"      | "B"      | "C"      | "D"       | "E"            | VENT / AIR INTAKE |            | GAS      | SUPPLY   | RETURN |
|---------------------|----------|----------|----------|-----------|----------------|-------------------|------------|----------|----------|--------|
|                     | LENGTH   | WIDTH    | HEIGHT   | WIDTH     | BURNER REMOVAL | VENT              | AIR INTAKE |          | OUTLET   | INLET  |
|                     | (Inches) | (Inches) | (Inches) | (w/ LWCO) | (Inches)       | (Inches)          | (Inches)   | (Inches) | NPT Male | NPT    |
| <b>EVS-500</b>      | 30 3/8   | 28 3/8   | 71 1/4   | 31        | 16             | 4                 | 4          | 1        | 2        | 2      |
| <b>EVS-750</b>      | 30 3/8   | 28 3/8   | 60 15/16 | 31        | 16             | 4                 | 6          | 1        | 3        | 3      |
| <b>EVS-1000</b>     | 30 3/8   | 28 3/8   | 67 3/8   | 31        | 16             | 6                 | 6          | 1 1/2    | 3        | 3      |
| <b>EVS-1500</b>     | 30 3/8   | 28 3/8   | 79 7/16  | 31        | 19             | 6                 | 8          | 1 1/2    | 3        | 3      |
| <b>EVS-2000</b>     | 30 3/8   | 28 3/8   | 91 7/8   | 31        | 31             | 6                 | 8          | 1 1/2    | 3        | 3      |
| <b>EVS-2000S*</b>   | 40 1/8   | 38 1/8   | 70 1/2   | 40 3/4    | 13             | 6                 | 8          | 1 1/2    | 4        | 4      |
| <b>EVS-2500*</b>    | 40 1/8   | 38 1/8   | 77 1/2   | 40 3/4    | 20             | 8                 | 8          | 2        | 4        | 4      |
| <b>EVS-3000*</b>    | 40 1/8   | 38 1/8   | 84 1/2   | 40 3/4    | 16.5           | 8                 | 8          | 2        | 4        | 4      |

*\* Features Double Row of Copper Fin Tubes!*

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## STANDARD EQUIPMENT

### PRESSURE VESSEL DESIGN

Copper Fin-tube construction  
Carbon steel or cast iron header design  
Gasketless heat exchanger  
ASME Section IV certified "H" stamp  
MAWP 160 PSI & max design temp 250°F  
5-year heat exchanger warranty  
20-year thermal shock warranty

### COMBUSTION DESIGN

Maintenance-free ceramic burner  
Ultr-low NOx emissions (<10ppm)  
Whisper quiet operation (<50 dBA)  
Industrial-grade combustion air filter, 99% efficient  
Industrial cast aluminum blower assembly  
Variable frequency drive  
Electric spark-to-pilot ignition system  
10-year burner warranty  
Robust UV-Scanner

### VENTING

Sealed or room air combustion  
Direct vent (sidewall or vertical) (Cat IV)  
Conventional venting (Cat II)  
**NOTE: This is NOT a Cat 1 Vent appliance.**

### BOILER EQUIPMENT

Thermal Solutions Boiler Control (TSBC) [24 Vac]  
High limit w/ manual reset safety temperature control  
Water flow switch  
Low water cut-off with manual reset safety controller  
Inlet & Outlet temperature sensor  
Combustion air switch  
Pressure and temperature gauge  
Safety relief valve (optional pressures 30-150 PSI)  
Single point electrical supply (Available in 1 or 3 phase; See below for details).

### BURNER EQUIPMENT

UL/FM/CSD-1 gas train  
Reliable Turndown  
Natural or LP gas  
Pilot gas valve / Pilot gas regulator  
Siemens SKP-75 gas valve  
Low and high gas pressure switches with manual reset

### TSBC Control Key Features

Advanced Boiler Modulation  
Building Management System Interface  
Outdoor air temperature reset  
Remote system temperature monitoring

## OPTIONAL EQUIPMENT

Low gas pressure venturi, allows operation down to 4" wc (Available on Models 750-2000 Only)

Double block & bleed (DB&B) Gas Train - (1) motorized & (1) solenoid valve & N.O. vent valve

IRI with Proof of Closure Gas Train - (2) motorized valves w/ POC & N.O. vent valve

Honeywell 7800 Series display with ModBus Module

Line Reactor Adds voltage / spike protection for the blower's VFD. (*Highly recommended*.)

Electrical Power Supply:

120/60/1 (*Sizes 500-2000 ONLY*)

208/60/1

230/60/1

208/60/3

230/60/3

460/60/3

Safety Relief Valve Options:

30 PSI

50 PSI

60 PSI

75 PSI

100 PSI

125 PSI

150 PSI

Outdoor Air Sensor

Condensate neutralizer:

850 MBH

1,200 MBH

2,000 MBH

5,000 MBH

Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer) Sized based on a 20°F ΔT

Annual Maintenance Kit

Supply system temperature sensor

ModBus communication for Siemens RWF55 and Honeywell Flame Safeguard Control (Boiler to BMS System)

Universal communications gateway (BacNet MS/TP, BacNet/IP, LonWorks)

Local / remote switch

Alarm bell with silencing switch

Relays:

General Alarm

Boiler Status

Conductor Sequencing Panel: (Required for multiple EVA boiler applications without BMS); Contact Regional Manager with Questions.)

The Conductor manages multiple condensing & non-condensing, small & large heat output, new and/or existing boilers (full modulation or on-off), and steam or hot water applications. It helps improve system efficiency by selecting and modulating the right boiler to match operating conditions. The Conductor offers a single point boiler plant Energy Management System (EMS) interface including Modbus TCP/IP, Modbus RTU RS485, BACnet/IP and BACnet MSTP standard. If Lonworks needed, add for the separate Lonworks gateway.

Extended Warranty:

3 Year Parts

5 Year Parts

10-Year Parts

5-Yr. Prts/Lbr

10 Yr. Prts/Lbr

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## TCBC CONTROL FEATURES



### Flexible, Field Selectable Control

- Remote Setpoint Control
- Factory defaults simplify field programming
- Eleven settings to help control oversizing

### Temperature Demand Inputs

- Time of Day Setback Capability  
(Envirocom Thermostat must be installed)

### Boiler Monitoring and Diagnostic Displays

- Boiler inlet and outlet sensors
- (OPTIONAL) System header sensor
- (OPTIONAL) Outdoor air sensor
- Modulation rate setpoint & modulating percent
- Mixing valve demand percent
- Boiler sequencing messages, alarms, hold & lockout messages
- Event history - Up to 10 alarm messages & data

### Modulation Rate

- Various boiler modulation control options
- Choice of six different control modes
- Adjustable PID for local or remote control

### Advanced Availability

- If an optional header sensor fails, TSBC automatically changes to a control mode to allow continued boiler operation

### Outdoor Air Reset

- Fine tune the water temp based on outdoor air temp for maximized comfort and fuel savings. Requires optional outdoor air temp sensor.

- Frost protection enabled with optional outdoor air sensor

### Pump Control

- Domestic Hot Water (DHW) Pump
- System Pump
- Alternative Control to Combustion Air Damper or Standby Loss Damper

- Pump Overrun for Heat Dissipation
- Pump Exercise
- Pump Rotor Seizing Protection

### Peer-to-Peer Network

- Lead-lag sequencing for up to eight (8) boilers.
- Selectable Lead boiler rotation, 8-720 hours
- RJ45 plug in connections between units (Requires splitter)
- Rotation off feature for complex installations

### Warm Weather Shutdown (WWSD)

- Boilers used primarily for building heat automatically shutdown when outdoor air temperature is warm.

- Saves energy by preventing boiler, pump and / or system pump from starting

- Requires the optional outdoor air sensor

### Other Features

- Domestic Hot Water Priority (DHWP)
- Combustion Air damper Outputs
- Factory configured RS485 Modbus interface for EMS or SCADA available
- Rotation enable and disable
- Low fire only w/external contact closure
- Setpoint adjustable up to 230F for boilers and 200F for water heaters
- Defineable min setpoint to reduce chance of condensing
- 3 pump control capable, Boiler, DHW, System