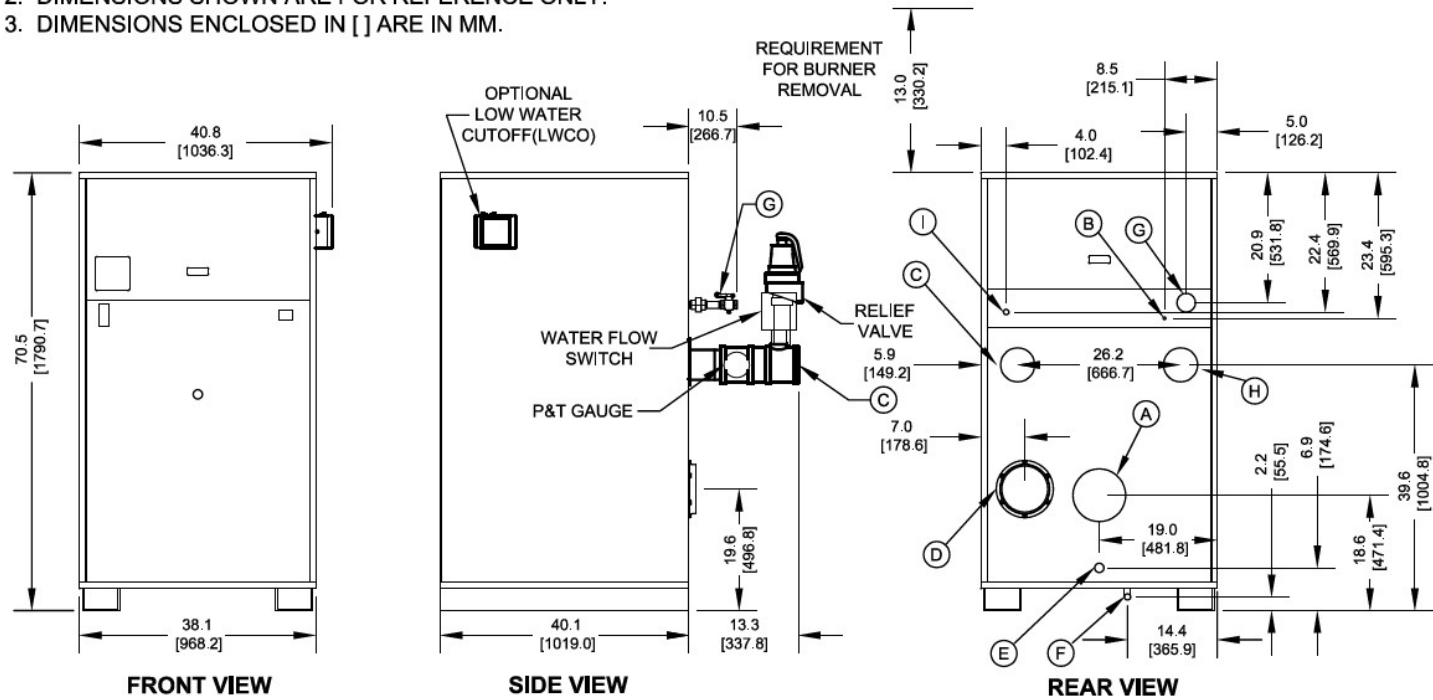


Submittal Data Sheet

NOTES:

1. SEE O&M FOR REQUIRED INSTALLATION CLEARANCES.
2. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.
3. DIMENSIONS ENCLOSED IN [] ARE IN MM.



| KEY | DESCRIPTION | |
|-----|--------------------------------|--|
| A | Flue Outlet | 6" [152.4] Diameter (AL29-4C SS) |
| B | Factory Installed Pilot Gas Li | 1/4" [6/4] O.D. Tube |
| C | Water Supply to System | 4" NPT |
| D | Inlet Air | 8" [203.2] Diameter |
| E | Drain, Startup Condensate | 5/8" [15.9] O.D. Tube SS |
| F | Appliance Drain | 1" NPT |
| G | Gas Supply | 1 1/2" NPT |
| H | Water Return from System | 4" NPT |
| I | Optional Gas Train Vent | 3/4" NPT (D.B.&B & D.B.&B w/ POC Only) |

NOTES:

1. SEE O&M FOR REQUIRED INSTALLATION CLEARANCES.
2. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.
3. DIMENSIONS ENCLOSED IN [] ARE IN MM.

Submittal Data Sheet

RATINGS AND CAPACITIES

| | | |
|--------------------------|------------------------------|---------|
| Input (MBH): | 2,000,000 | BTU/HR |
| Output (MBH): | 1,732,000 | BTU/HR |
| Boiler Horsepower: | 51.7 | BTU/HR |
| Thermal Efficiency: | 86.6% | BHP |
| Heating Surface: | 411 | Sq.Ft. |
| Water Content: | 40.1 | Gallons |
| Fuel: | Natural Gas or LP Gas | |
| Firing Rate: | Reliable Modulation | |
| Burner Turndown: | 3:1 | |
| Low NOx Emissions: | <10 ppm | |
| Inlet Gas Pressure (NG): | See Chart at right | |
| Inlet Gas Pressure (LP): | See Chart at right | |

* This data supercedes data found on Table 3 of I&O Manual, per PRODUCT UPDATE issued June 6, 2024.

Shipping Weight, Approximate: **1,835** lbs

ASME Section IV (Max 160 PSIG / 250°F)

Setpoint range is 145-230°F

Adjustable, manual reset high limit setting of ≤ 240°F.

ASME H stamp MAWT is 250°F for the vessel. (For max setpoint, see Setpoint range.)

UL Certified to ANSI Z21.13 / CSA 4.9

UL Certified to UL 795 / CSA 3.1



DIMENSIONS / CONNECTIONS

| | | |
|--|-----------------------------|---------------------|
| Height: | 70 1/2" | (Note 1) |
| Width: | 38 1/8" | (Note 2) |
| Length: | 40 1/8" | (Note 3) |
| Supply Connection: | 4" | |
| Return Connection: | 4" | |
| Vent / Air Intake Connections: | 6" Vent | 8" Intake |
| Condensate / Appliance Drain Connection: | 5/8" Condensate Tube | 1" NPT Drain |
| Gas Connection: | 1 1/2" | |

NOTES:

1. Height dimension is from floor to top of jacket.

2. Length is from jacket front to jacket rear.

3. Dimensions shown are for reference only

FLows AND PRESSURE DROPS

| Delta T | Flow (GPM) | ΔP (Ft. Hd) |
|---------|------------------|-------------|
| 20°F ΔT | 173 (Max) | 4.27 |
| 40°F ΔT | 87 (Min) | 1.36 |

Electrical Supply Options

| | | |
|--------------------------|--------------------------|----------|
| <input type="checkbox"/> | 120v/60hz/1ph (Standard) | 7.5 amps |
| <input type="checkbox"/> | 208v/60hz/1ph | 6.6 amps |
| <input type="checkbox"/> | 230v/60hz/1ph | 6.4 amps |
| <input type="checkbox"/> | 208v/60hz/3ph | 6.0 amps |
| <input type="checkbox"/> | 230v/60hz/3ph | 6.0 amps |
| <input type="checkbox"/> | 460v/60hz/3ph | 3.0 amps |

Blower Motor (hp)

1-1/2

Relief Valve Options

| | | | | | |
|--------------------------|---------|--------------------------|---------|--------------------------|---------|
| <input type="checkbox"/> | 30 psi | <input type="checkbox"/> | 50 psi | <input type="checkbox"/> | 60 psi |
| <input type="checkbox"/> | 75 psi | <input type="checkbox"/> | 100 psi | <input type="checkbox"/> | 125 psi |
| <input type="checkbox"/> | 150 psi | | | | |

Inlet Gas Pressure

| SIZE | Nat. Gas Min. ("w.c.) | LP Min. ("w.c.) | Max |
|-------|--------------------------|--------------------|------------|
| 500 | 5.0" w.c. | 8.0" w.c. | 14.0" w.c. |
| 750 | 7.0" w.c.* | | |
| 1000 | 7.0" w.c.* | | |
| 1500 | 7.0" w.c.* | | |
| 2000 | 9.0" w.c.* | 9.0" w.c. | |
| 2000s | 7.0" w.c. | 8.0 | |
| 2500 | 6.0" w.c. | | |
| 3000 | 6.0" w.c. | | |

* NOTE: Optional natural gas train with 4" w.c. minimum inlet gas pressure
ONLY AVAILABLE on sizes 750, 1000, 1500 & 2000.

Submittal Data Sheet

| STANDARD EQUIPMENT | | OPTIONAL 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 | BOILER EQUIPMENT High limit w/ manual reset safety temperature control Water flow switch Low water cut-off with manual reset safety controller Outlet temperature sensor Combustion air switch Pressure and temperature gauge Safety relief valve (Optional pressure 30 - 150 PSI; See details above.) Single point electrical supply: (Available in: 1 and 3 phase options. See details above.) | Low gas pressure venturi, 4" wc (AVAILABLE ONLY on Models 750-2000) [FACTORY INSTALLED OPTION ONLY] <input type="checkbox"/> Honeywell 7800 Series display with ModBus Module <input type="checkbox"/> Line Reactor Adds voltage / spike protection for the blower's VFD. (For areas with dirty voltage) <input type="checkbox"/> Outdoor Air Sensor <input type="checkbox"/> Condensate neutralizer: <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> 850 MBH <input type="checkbox"/> 1,200 MBH </div> <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> 2,000 MBH <input type="checkbox"/> 5,000 MBH </div> <input type="checkbox"/> Pump Kit (Boiler Circulation Pump, Pump Flange Kit Sized based on a 20°F Delta T) <input type="checkbox"/> Annual Maintenance Kit <input type="checkbox"/> System Temperature Sensor <input type="checkbox"/> Universal com. gateway (BacNet MS/TP, BacNet/IP, LonWorks) <input type="checkbox"/> Local / Remote Switch for Enable / Disable <input type="checkbox"/> Alarm bell with silencing switch <input type="checkbox"/> Relays: <input type="checkbox"/> General Alarm <input type="checkbox"/> Boiler Status <input type="checkbox"/> Conductor Sequencing Panel: (Contact Regional Manager with Questions.) | | | | | | | | | | | | |
| COMBUSTION DESIGN Maintenance-free ceramic burner Ultra-low NOx emissions (<10ppm) Whisper quiet operation (<50 dBA) Easy to service, 99% efficient industrial air filter Industrial cast aluminum blower assembly VFD Driven Blower Reliable electric spark-to-pilot ignition 10-year burner warranty Honeywell UV-Scanner | 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 | | | | | | | | | | | | | |
| VENTING Sealed or room air combustion Direct vent (sidewall or vertical) (Cat IV) Conventional venting (Cat II) NOTE: This is NOT a Cat I Vent appliance. | TSBC Control Features Advanced Boiler Modulation or Setpoint Intelligent Multiplier Boiler Staging (8 Boilers) Building Management (BMS) Interface Outdoor Air Temperature Reset Warm Weather Shutdown Domester Hot Weather Priority Auxiliary Device Control <div style="margin-left: 20px;"> <input type="checkbox"/> Boiler Pump <input type="checkbox"/> System Pump </div> Adjustable setpoint or burner modulation with 1-9vDC input from BMS | The Conductor Sequencing Panel manages multiple condensing & non-condensing, small & large heat output, new and/or existing boilers (full modulation), 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 Options Available: | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th></th> <th><u>3-Year</u></th> <th><u>5-Year</u></th> <th><u>10 Year</u></th> </tr> </thead> <tbody> <tr> <td><u>Parts Only</u></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><u>Parts and Labor</u></td> <td>N/A</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> | | <u>3-Year</u> | <u>5-Year</u> | <u>10 Year</u> | <u>Parts Only</u> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <u>Parts and Labor</u> | N/A | <input type="checkbox"/> | <input type="checkbox"/> |
| | <u>3-Year</u> | <u>5-Year</u> | <u>10 Year</u> | | | | | | | | | | | |
| <u>Parts Only</u> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | |
| <u>Parts and Labor</u> | N/A | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | |

TSBC CONTROL FEATURES



Flexible, Field Selectable Control

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

Boiler Monitoring and Diagnostic Displays

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

Modulation Rate

- Modbus or 1-9VDC input boiler modulation control options
- Choice of six different control modes
- Adjustable PID for local or remote control

Advanced Availability

- If optional header sensor fails, TSBC automatically reverts back to the outlet sensor to allow continued 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
- Pump Overrun for Heat Dissipation
- Boiler Pump

Peer-to-Peer Network

- Boilers used primarily for building heat will automatically shut down when outdoor temp reaches programmable WWSD setpoint.
- Saves energy by preventing boiler, pump and / or system pump from starting

Warm Weather Shutdown (WWSD)

- Boilers used primarily for building heat will automatically shut down when outdoor temp reaches programmable WWSD setpoint.
- 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)
- Rotation enable and disable
- 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