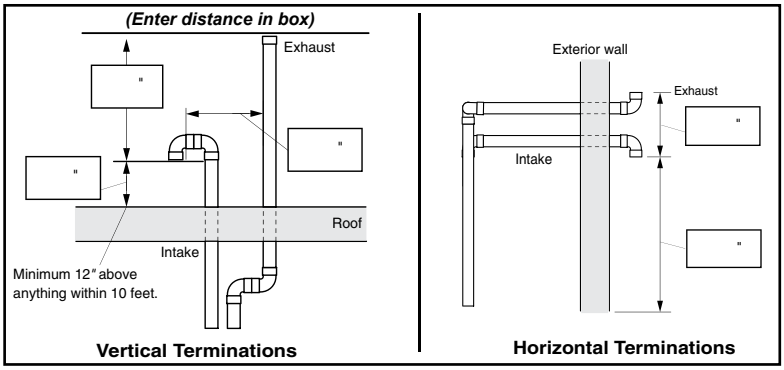
ABH Start-Up Checklist

Distributor/Salesperson: _____Model:_____Date:_____
Location: _____ Serial: _____Tag:_____
Installation Date: _____Pictures: Yes ☐ No ☐ Requested: Yes ☐ No ☐
Site Name: _____ Site Phone: _____
Site Contact (owner/end user): _____ Installer (Service Company):_____
Distributor (Service Person):_____

Venting

Primary concern is that the venting (both intake & exhaust) match exactly to one of the two following diagrams.

1. **Distance** from the closest exhaust to combustion air intake: _____
2. **Distance** exhaust is from:
   Other ABH's _____ Dryers _____
   Heating Equipment _____
3. **Distance** from closest wall to exhaust: _____
4. **Height** of the adjoining wall above exhaust:_____
5. Does **venting slope back** to appliance? Y☐ N☐
   If so, total drop (inches): _____
6. Possibility of chemicals drawn into intake air? Y☐ N☐
7. Total length of inlet & exhaust piping: _____
8. Qty. of elbows: 90º_____ 45º_____ Qty. of tees: _____
9. Exhaust pressure: _____ Inlet pressure: _____ W.C. (Inches): _____(measured at vent connections at appliance)



Water Circulation & Temperature Regulation

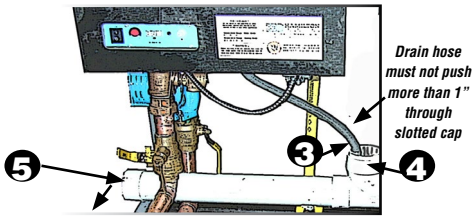
1. Piping Diameter_____"
2. Total length of straight pipe between heater & tank (or boiler and primary loop): _____'
3. Qty. of elbows: _____ Qty. of Tees: _____
4. Temperature rise between heater inlet & outlet after 5 min. of firing at high fire: _____°F _____°C
   Second Test: _____°F _____°C
5. Water temperature set point: _____
6. Test of Water Flow Switch: Y☐ N☐

Condensate Drain

Primary concern is that we have the ability to freely drain condensate.

1. Inside piping diameter: _____"
2. Total Length: _____'
3. Depth of gray drain line into condensate neutralizer (white PVC) piping _____"
4. Is there a definite air gap after heater and before connection to drain line? Y☐ N☐
5. Total drop in height from heater drain outlet to drain piping exit point:_____
6. Any additional trap points? Y☐ N☐
7. Check the level of the heat exchanger; it should be level to insure that the condensate drains correctly. **(Models 79-599 may tilt slightly to the rear)**
8. Perform pH Test. _____pH of condensate leaving neutralizer

Condensate Removal



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Ohm Readings *(from confirmed earth ground; please note that number will never be zero. Use lowest range on meter.)*

1. Piping near appliance: _____ ohms
2. Heat Exchanger: _____ ohms
3. Cabinet: _____ ohms

Power Supply

1. Incoming 208 - 240 volts single phase _____Voltage
2. Control Board Version _____ (marked on transformer)
3. Is there a ground connection to the building ground system? Y☐ N☐

Altitude

1. Elevation: _____ ft.
2. Elevation setting on display: _____ _____ _____

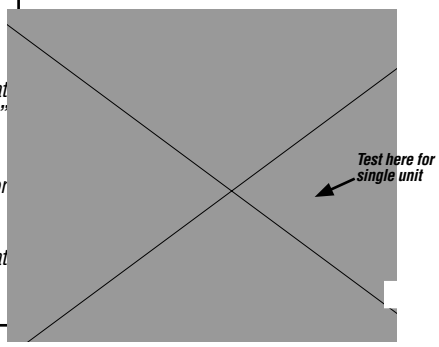
Gas Supply *(See table on the following page for recording gas pressures)*

1. Gas piping to heater is:
   - Rigid Metal:_____
   - Flexible : _____
   - Flexible Brand: _____
2. Piping ID _____"
3. Is there a secondary regulator? Y☐ N☐
4. Pressure Regulator Rating / Size _____
5. Incoming pressure to regulator _____
6. Distance from heater: _____'
7. Model & Brand: _____

There are three types of measurements that must be taken to provide the data to ensure product performance.

- ***Lock-up pressure*** *- pressure in gas piping at appliance inlet with no load,* ***may not exceed 14" wc. at any time!***
- ***Minimum load*** *- at ignition of a single unit (or first on unit in a multiple unit rack).*
- ***Maximum load*** *- all appliances on at full fire that are connected to the same regulator.*

How and where to measure:



Sensor Tests

1. Verify the temperature readings before the system is operational by following these steps:
   a. Remove front cover to access terminal blocks
   b. Turn system on, let the pump cycle, then remove yellow jumper on terminal 13-14
   c. Cycle thru sensors, using the reset button, and record the readings
   d. Re-install the jumper on terminal 13-14

Record readings:
- Controlling sensor location: _____
- FL: _____ • rE: _____
- dH: _____ • cA: _____

Outdoor Air (OA) Reset *(Testing can be done using canned air, commonly used for dusting electronics)*

1. Verify location of OA sensor: _____

OA sensors should be located on the north side of building or have a northern exposure. Sensors exposed to direct sunlight should be shielded to prevent false readings. Please note that radiant heat from exterior building materials can also cause false readings.

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Outdoor Air (OA) Reset continued

2. Verify existence of parameters within software. Verify reset ramp by spraying OA sensor with compressed air to falsely reset OA temperature, causing system to reset to new setpoint and verify operation.

Pre-Test	***During Test***	
• ou: _____	• ou: _____	
• Setpoint: _____	• Setpoint: _____	*(Read by pressing reset after ou. Setpoint is calculated by controller)*

Combustion and Gas Pressure Tests

	LEAD	LAG 1	LAG 2	LAG 3	LAG 4
HIGH FIRE CO_2					
LOW FIRE CO_2					

LOCK-UP PRESSURE:	MINIMUM LOAD:	FULL LOAD:

Gateway Communication *(if equipped or connected)*

Written verification from temperature control contractor of Gateway status and communication operation is required.

Safety Controls *(if equipped or connected)*

1. Test additional safety controls.
   - Adjustable manual reset high limit: _____
   - Low water cut off: _____
   - High pressure gas switch: _____
   - Low pressure gas switch: _____

Alarms *(if equipped or connected)*

Induce fault condition to test alarm function.

1. Turn off gas supply to appliance and attempt to fire. When F5 appears, does the alarm circuit close? Y☐ N☐

Field Changes/Comments:

Please upload digital pictures of installation to dropbox.

1. Go to www.hamiltonengineering.com/serviceupload
2. Login
   - Username: HEI Service
   - Password: Hamilton34000

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