

START-UP OF EPV SERIES CONDENSING WATER BOILERS

FOR DETAILED INFORMATION SEE INSTALLATION & MAINTENANCE MANUAL

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- 1) Visually inspect boiler and components for damage and proper installation.
- 2) Check all electrical connections for tightness, proper voltage, and proper grounding.
- 3) Check tank to make sure it is full of water.
- 4) Attach voltmeter to controller to record flame signal.
- 5) Connect a manometer at the manual gas shutoff valve located at the inlet of the gas train. Check inlet static gas pressure (**must not exceed minimum listed on decal**). Leave manometer in place throughout testing.
- 6) Connect another manometer to the manifold test port at the shutoff valve closest to the burner.
- 7) Turn off main manual gas valve.
- 8) Turn unit on at rocker switch on side of control enclosure. The burner blower should come on. If nothing happens check flame control reset and thermostat set points.
- 9) Start burner on pilot. Adjust gas pressure just enough to reliably light and produce a good flame signal.
- 10) **NOTE: If there is no pilot, set gas pressure (guideline on burner tag).**
- 11) Slowly open main gas and set manifold gas pressure (**guideline on burner tag**).
- 12) Check inlet flow gas pressure (**should meet or exceed minimum listed on decal**).
- 13) Drill hole in vent several inches downstream of the fan outlet connection (for flue gas analysis equipment).
- 14) Insert 0-6" manometer into test opening in vent. Pressure in stack should not exceed 2" W.C.
- 15) When water in tank is above 120°F, insert analyzer in test opening; take O₂ reading in percentage.
- 16) Increase manifold gas pressure at the **main** gas pressure regulator taking O₂ reading at each adjustment of gas regulator until optimum O₂% (5-7%) is reached. If O₂% decreases, reduce the gas pressure to last reading where the greatest reading is achieved.
- 17) CO should not exceed 200 ppm. A reading greater than 200 ppm indicates lack of air. Reduce **manifold** gas pressure slightly and take readings until CO is within proper range. Optimum reading is no CO.
- 18) If manifold pressure was changed during startup, take a final CO and O₂ reading.
- 19) Record CO₂ and NO_x if applicable. (See I&M if NO_x measurement is required).
- 20) Insert vent temperature gauge in test opening and read gross vent temperature; maximum gross stack is to be 275°F. If an excessively high gross vent temperature is recorded, consult the factory.
- 21) Check each operating and limit control to be sure they function properly by lowering and raising the temperature setting on each of the controls, causing burner to cycle on and off.
- 22) **NOTE: During the initial firing of the burner, smoke that is not related to the burner will be emitted from the heater. This is normal during "burn in" and could possibly continue for several hours.**
- 23) Complete the attached startup report.

Note: A complete and proper start-up of this equipment is necessary to ensure its safe and reliable operation. The attached startup form must be filled out completely and immediately provided to your Riverside Hydronics® representative. Report all discrepancies to Riverside Hydronics® Customer Service Department at 1-800-990-5918.

START-UP REPORT EPV Series Condensing Water Boilers

Warning: Startup must be performed by a qualified service installer, service agency or the gas supplier.

Model Number: _____ Serial Number: _____

Job Name: _____

Address: _____

GENERAL INFORMATION

Restart? Yes No Installation is: New Replacement/Renovation Indoor Outdoor
Primary operating voltage supply: _____ VAC Voltage from neutral to earth ground: _____ (should be zero)
Thermostat Setting: _____ °F Thermostat Setting: _____ °F Hi-Limit Setting _____ °F
Is the Pressure Relief Valve plumbed to a suitable drain? Yes No
Is the boiler condensate drain connection plumbed to a suitable drain? Yes No
Energy management System (EMS) Interface? Yes No Mfg./Model: _____
EMS Function(s): Remote On-Off Staged- Firing Outdoor Reset Other: _____
EMS connected to which boiler terminals: _____
EMS Field wiring - Wire Gauge: _____ Distance from EMS panel: _____ Ft.

BOILER INSTALLATIONS (Closed Loop Heating System)

Boiler water supply and return piping size _____
Supply water temperature: _____ °F Return water temperature: _____ °F
What is the GPM of the building loop circulator pump? _____ VFD? Yes No
What is the location of the circulator pump? Downstream from boiler Upstream from boiler
Is there a balancing valve (circuit setter) in the boiler loop? Yes No

VENTING and COMBUSTION AIR

Vent Material: _____ (Designed for use with AL29-4C stainless steel, positive pressure rated)
Vent Type: Through-the-roof Through Sidewall Vent Diameter: _____ inches; Vent Length: _____ feet
Does vent have condensate drain? Yes No Draft Regulator? Yes No
Does vent have elbows? Yes No; Qty / Type: _____
Does vent contain any of these devices? Power Vent Draft Inducer Other _____
Is vent device interlocked with boiler? Yes No Vent device connected to which boiler terminals: _____
Direct-ducted combustion air? Yes No Duct diameter _____ inches. Duct length _____ feet.
Duct Material: _____ Does duct have elbows? Yes No; Qty / Type _____
Is combustion air supplied by louvers or openings Qty: _____ Size: _____
Are louvers interlocked with boiler? Yes No Louvers connected to which boiler terminals: _____

Model Number: _____ Serial Number: _____

GAS SUPPLY

Type of Gas: Natural LP Gas Supply Pipe Size: _____
 Max available gas pressure: _____ Lb/Oz Gas Regulator Model: _____ Range: _____
 Inlet Static Gas Pressure: _____ " W.C. (See rating decal for maximum inlet gas pressure)
 Inlet Flow Gas Pressure: _____ " W.C. (See rating decal for minimum inlet gas pressure)
 Combination Gas Pressure Switch Setting: High _____ " W.C. Low _____ " W.C.

COMBUSTION ANALYSIS

Combustion Data (Full modulation)	Low fire	25%	50%	75%	High fire
Flame Safeguard model:					
Flame Signal					
Oxygen O ₂ (5 - 7%)					
Manifold Gas Pressure					
Carbon Monoxide CO (should not exceed 200 PPM)					
Carbon Dioxide CO ₂ (8 - 9%)					
Nitrogen Oxide NO _x (ppm)					
Vent Pressure (should not exceed 2" W.C.)					
Gross Stack Temperature °F					
Ambient Air Temperature °F					
Net Stack Temperature °F (gross stack minus ambient air)					
Combustion Efficiency %					
Combustion Data (Single or 2- Stage)	1 st stage				2 nd stage

Important: You must submit the original copy of the completed form to your Riverside Hydronics representative before the warranty will become effective on this product.

Comments: _____

Service Company Name: _____ Phone: _____

Service Co. Address: _____

Start-up Performed By: _____ Date: _____

Customer: _____ Phone No.: _____ Date: _____