



START-UP OF PRIMERA® GAS FIRED HOT WATER SUPPLY BOILERS & WATER HEATERS

FOR DETAILED INFORMATION SEE INSTALLATION AND 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) The Primera unit should be installed and tested by qualified personnel.
- 2) Turn off all electrical power to the appliance.
- 3) Check all electrical connections for tightness, proper voltage and proper grounding.
- 4) Fill the unit with water. Open the relief valve and vents until a steady water flow is observed flowing from the highest point in the tank or system. Close the relief valve and continue filling the system at a rate that permits air to vent out of the piping.
- 5) With the unit turned off, run the system and/or circulating pump for at least 3 minutes. Open all strainers in the system (if applicable) and check for debris.
- 6) Verify that the unit is supplied with the type of gas specified on the rating plate.
- 7) Remove the unit's top cover to access the gas train components.
- 8) Before beginning test, make sure the main manual gas valve is in the "OFF" position.
- 9) Measure the inlet gas pressure at the tapping located at the main gas cock. The maximum inlet gas pressure must not exceed the value specified on the information label.
- 10) Turn on all electrical power to the appliance. Reset all safety devices (high limit, pressure switch, Low-Water-Cutoff, etc.).
- 11) Set the digital Temperature Control on the front control panel to the desired unit inlet water temperature.
- 12) Turn the manual gas valve to the "ON" position.
- 13) The Ignition Control should go through its "Call For Heat" process and ignite the burner (see sequence of operation in manual).
- 14) Measure the manifold gas pressure at the tapping located on the gas cock nearest the burner to confirm the factory recommended set point (check while firing at both low fire and high fire, if applicable).
- 15) Drill hole in vent pipe 12" to 24" from appliance flue outlet, but below draft regulator (for combustion analysis equipment).
- 16) Perform flue gas analysis while unit is in stable operation (approximately 2 to 5 minutes)
 - a. Net stack temperature should be 275°F to 375°F (read in stack all units)
 - b. O₂ should be from 5½% to 7%. (target 6½%)
 - c. CO₂ should be from 7½% to 9% (target 8%)
 - d. CO should not exceed 200 PPM
- 17) Check vent draft in stack (must be within negative .01" w.c. to negative .08" w.c.)
- 18) Adjust water flow through unit to achieve a temperature rise between the inlet and outlet of the heat exchanger of: model 400 - 23°F; model 750 - 21°F; model 1000 - 23°F; model 1200 - 45°F; model 1600 - 45°F; model 2000 - 45°F. (Adjustment instructions are detailed in the appliance Installation and Operation Manual.)
- 19) Measure the water temperature entering the appliance inlet and make bypass or valve additions/adjustments as necessary to obtain an inlet water temperature of at least 130°F. Adjustments must not change the temperature rise set in step 18 above.
- 20) Replace any covers, access panels, or other components or connectors loosened or removed during appliance startup.

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

PRIMERA GAS-FIRED BOILERS or WATER HEATERS

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

Model Number: _____ Serial Number: _____

Job Name: _____

Address: _____

GENERAL INFORMATION

Installation is: New Replacement or Renovation Indoor Outdoor
Is the Safety Relief Valve plumbed to a suitable drain? Yes No
Primary voltage supply to appliance: _____ VAC Voltage from neutral to earth ground: ____ (should be zero)
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 - Primary / Secondary Piping System Is Required

Boiler water supply and return piping size _____
Primary (boiler bypass) loop contains: Modulating 3-way valve Manual valve No valve
What is the horsepower of the primary (boiler loop) circulator pump? _____
What is the location of the primary circulator pump? Downstream from boiler Upstream from boiler
Is there a balancing valve (circuit setter) in the primary loop? Yes No
What is the horsepower of the secondary (main heating loop) circulator pump? _____
What is the location of the secondary circulator pump? Downstream from boiler Upstream from boiler
Is there a balancing valve (circuit setter) in the secondary loop? Yes No
Supply water temperature °F ____ Return water temperature °F _____ (must be 130°F minimum)
Limit Settings: _____ °F _____ °F Secondary Loop Temp (ST-1) °F _____
Temperature Rise °F _____ (See manual for minimum setpoint)

WATER HEATER INSTALLATIONS - Do Not Install As Instantaneous Heater. Tank Is Required.

Type of piping connected to heater: Copper Brass Galvanized
Primary (heater bypass) loop contains: Modulating 3-way valve Manual valve No valve
Is there a check valve in the supply water piping? Yes No
Is there a water softener on the cold water supply? Yes No
Is there a mixing valve on the hot water supply? Yes; temperature setting _____°F No
Is there expansion relief in the cold water supply? Yes, type: tank valve No

Model Number: _____ Serial Number: _____

WATER HEATER INSTALLATIONS - Continued

What is the GPM of the appliance to tank circulating pump? _____ Storage Tank Temp (ST-1) _____ °F
 Outlet water temperature: _____ °F Inlet water temperature: _____ °F (must be 130°F minimum)
 Temperature rise: _____ °F (See manual for minimum setpoint) Limit Settings: _____ °F _____ °F

VENTING and COMBUSTION AIR (For Indoor Installation Only)

Vent Material: _____ Vent Type: Through-the-roof Through Sidewall
 Vent Diameter: _____ inches; Vent Length Horizontal: _____ feet; Vent Length Vertical: _____ 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 unit? Yes No Louvers connected to which unit terminals: _____

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
Purge Pressure					
Manifold Pressure					
Carbon Dioxide CO ₂ (7½ - 9%)					
Oxygen O ₂ (5 ½ - 7%)					
Carbon Monoxide CO (should not exceed 200 PPM)					
Nitrogen Oxide NO _x (should not exceed 30 PPM)					
Vent draft W.C. (Negative, .01" to .08" W.C.)					
Gross Vent Temperature °F					
Ambient Air Temperature °F					
Net Stack Temperature °F (gross vent less ambient air)					
Combustion Efficiency %					
Combustion Data (Single or 2- Stage)	1 st stage				2 nd stage

IMPORTANT - When startup is complete, the temperature sensor must be moved from the inlet piping of the appliance to the secondary loop (boiler) or storage tank (heater): Sensor Moved? Yes No

Comments: _____

Service Company Name: _____ Phone: _____

Service Co. Address: _____

Start-up Performed By: _____ Date: _____

Customer Representative: _____ Date: _____