



## START-UP OF OIL-FIRED WATER HEATERS

**\*\*FOR DETAILED INFORMATION SEE INSTALLATION & MAINTENANCE MANUAL \*\***

1. Visually inspect water heater and components for damage and proper installation.
2. Check all electrical connections for tightness and proper voltage.
3. Check water heater tank to make sure it is full of water. **(Remove air through T&P valve).**
4. Pull nozzle assembly from burner and check gap settings on electrodes **(see I&M).**
5. While nozzle is removed, look inside through burner for obstructions.
6. Check fan rotation and purge air from oil pump by bumping motor contactor.
7. Check air shutter setting **(guideline on burner tag).**
8. Drill hole in vent pipe 12" to 24" from heater flue outlet but below draft regulator
9. **(for analysis equipment).**
10. Attach voltmeter to controller to record flame signal.
11. Connect a 300-psi gauge to pressure side of oil pump. Connect vacuum gauge to supply side of oil pump (15" hg maximum allowed).
12. Set oil pressure to pressure on data decal (refer to I&M manual for two stage burner).
13. Check flame signal **(should be in range called for by control 14-18 VDC or 4-6 VDC if UV).**
14. Check vent draft in stack **(should be negative .02" to negative .06" W.C.).**
15. Perform flue gas analysis after achieving water temperatures above 120°F.
  - a) Net stack temperature should be 300°F - 400°F on high fire.
  - b) O<sub>2</sub> should be from 4% to 7%. *NOTE: Both low and high fire reading.*
  - c) CO<sub>2</sub> should be from 10.5% to 12.7%. *NOTE: Both low and high fire reading. CO should not exceed 200 PPM.*
  - d) Smoke should be less than #2.

**NOTE: A complete and proper start-up includes checking the operation of all controls and limits (i.e. airflow switch, LWCO, thermostats, and modulating controls), and filling out the entire start-up report. All discrepancies should be reported to the PVI Customer Service Department (800-433-5654) from the job site and detailed on the comment section of the start-up report. Attach notes to report if needed. Also, please call if you have any questions or need assistance.**



# START-UP REPORT

## OIL FIRED NON-CONDENSING WATER HEATERS

### MAXIM® - TURBOPOWER®

**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: \_\_\_\_\_ VAC      Voltage from neutral to earth ground: \_\_\_\_\_ (should be zero)  
Lower Thermostat Setpoint: \_\_\_\_\_ °F      Upper Thermostat Setpoint: \_\_\_\_\_ °F      Hi-Limit Setpoint \_\_\_\_\_ °F  
T & P Relief Valve(s) plumbed to a suitable drain?  Yes  No

#### WATER HEATER INSTALLATIONS

Type of piping connected to heater:  Copper  Brass  Galvanized  
Is there a check valve in the supply water piping?  Yes  No  
Is there a water softener on the cold water supply?  Yes  No      Operational?  Yes  No  
Is there a mixing valve on the hot water supply?      If yes; temperature setting: \_\_\_\_\_ °F  No  
Is there expansion relief in the cold water supply? If yes, what type:  tank  valve  No  
Is there a recirculation loop?  Yes      Circulating pump horsepower: \_\_\_\_\_  No  
Is there a floor drain in the room?  Yes  No

#### VENTING and COMBUSTION AIR

Vent Material: \_\_\_\_\_      Vent Type:  Through-the-roof  Through Sidewall  
Vent Diameter: \_\_\_\_\_ inches; Vent Length: \_\_\_\_\_ feet      Does vent have elbows?  Yes; Qty \_\_\_\_\_  No  
Does vent have condensate drain?  Yes  No  
Does vent contain any of these devices?  Power Vent  Draft Inducer  Draft Regulator  Flue Damper  
Combustion air louvers or openings?  Yes; Qty: \_\_\_\_\_ Size: \_\_\_\_\_  No      Interlocked?  Yes  No  
Have direct-ducted combustion air?  Yes; duct diameter \_\_\_\_\_ inches, Duct length \_\_\_\_\_ feet.  No  
Duct Material: \_\_\_\_\_      Does duct have elbows?  Yes; Qty \_\_\_\_\_  No



Model Number: \_\_\_\_\_ Serial Number: \_\_\_\_\_

**OIL SUPPLY**

Type of OIL:  No.1  No.2 Oil Supply Pipe Size: \_\_\_\_\_ Pump Inlet Pressure/Vacuum: \_\_\_\_\_ PSI / Hg  
Oil Pump Outlet Pressure: \_\_\_\_\_ PSI Bypass Return Pressure: \_\_\_\_\_ PSI Two-pipe Return System?  Yes  No  
Remote Oil Pump?  Yes  No Day Tank  Lift in feet \_\_\_\_\_ Filter/Strainer installed?  Yes  No

**COMBUSTION ANALYSIS**

BURNER MODEL NO.: _____		BURNER SERIAL NO.: _____			
(For fixed rate burner, use High Fire column)	Low Fire		Mid Fire		High Fire
Smoke (less than #2)					
Carbon Dioxide CO <sub>2</sub> (10-12%)					
Oxygen O <sub>2</sub> (4-6%)					
Carbon Monoxide CO (less than 200 ppm)					
Nitrogen Oxide NO <sub>x</sub> (if available)					
Vent Pressure (-.02" to -.06" W.C.)					
Gross Vent Temperature °F					
less Room Temperature °F					
= Net Vent Temperature °F					

**Important: You must submit the original copy of the completed form to your PVI representative before the warranty will become effective on this product. Contact Customer Service for assistance at 1-800-433-5654.**

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Service Company Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Service Company Address: \_\_\_\_\_  
Start-up Performed By: \_\_\_\_\_ Date: \_\_\_\_\_  
Customer Representative: \_\_\_\_\_ Date: \_\_\_\_\_