

# Precision Gas Products

## SUMMARY OF START UP INSTRUCTIONS

1. Make sure there is **NO POWER** to the Burner.
2. Open main gas valve to Burner.
  - a. Make sure all air is Bled from gas lines including pilot line.
3. Soap check all fittings to ensure no leaks.
4. Prepare to use Gas analyzing equipment (Testo, etc.). Drill a small hole in flue piping so gas analyzing equipment can be inserted.
5. Fill unit with water.
  - a. FPH or FPW-flooded to the top
  - b. Steam FPS-filled to operating level. Feed Pumps will shut off when desired level has been reached.
6. Set controller to desired temperature or steam pressure (according to process needs).
7. Adjust Manual and Auto Reset Limits.
  - a. Steam
    - Auto = 10psi above set point of controller
    - Manual = 20psi above set point of controller
  - b. Hot Water FPW/FPH
    - Auto = 10° above set point of controller
    - Manual = 20° above set point of controller
8. Turn on power to the Burner.
9. For Flex Tube-turn on low fire hold. Run for 30 minutes to burn off any oil or other substances to achieve a CO/CO<sub>2</sub> equilibrium.
10. Reset Low Water and Manual Reset Limits to force Burner into a purge cycle. Rest limit on Gas Train to 5lbs. Note: Honeywell limits need to be set to customer Specific operating limits.
11. With secondary valve closed, Light Pilot.
12. Open main Gas Valve

13. Adjust gas pressure to output rating of burner. Operating levels are on Name Plate of Burner

14. After Burner is operational, readings from the gas analyzer needs to be taken.

A. Readings should be in the following parameters

COMBUSTION PERFORMANCE TARGETS

	Natural Gas Target	#2 Oil Target	Limits	Actual
CO <sup>2</sup> (%)	9	12	6-13	
O <sup>2</sup> (%)	5	5	3-10	
CO ppm	<20	<50	100	
FlueTemp (°F)	350	385	300-900	
Efficiency (%)	82	84	81-84	
Furnace Pressure	½ “WC	½ “WC	0-1 “WC	

B. If Within parameters, PROCEED

C. If Not Within parameters, make adjustments to air dampers to increase or Decrease Air flow to bring the reading to suggested parameters.

15. Allow Burner to operate to bring unit to full temperature or pressure.

16. Watch Burner Cycle complete several times to make sure there are no Flame Failures on the Burner.

17. Test the Equipment (gas analyzer) can be removed from the flu piping and the hole can be plugged with foil or high temperature tape.

**BOILER SHOULD NOW BE FULLY OPERATIONAL**