

FLUE GAS ANALYZER PROTOCOL

Water Heaters

- Turn on the tap and run hot water until the water heater comes on, or turn up the temperature setting of the water heater, letting burners combust for at least three minutes.
- Drill a sampling hole in the diverter if there is not one in the collar of the water heater.
- Position the flue gas analyzer near the units being tested and turn On while the water is running.
- Wait for the analyzer to warm up (60 seconds).
- Select the correct fuel source being tested (ex.: natural gas). Numbers corresponding to fuel source can be found on the back of the analyzer or in the manual.
- Once the flue gas analyzer unit is On **AND** the water heater is in a **steady state of combustion**, insert the probe into the sampling hole below the draft diverter/regulator (into collar, below draft intake), making sure ambient draft air intake is not being tested.
- Allow test reading to stabilize and record combustion efficiency from the warmest point registering on the analyzer.
- After recording the readings on a Service Buy-Down Application, or printing out the results, allow the flue gas analyzer to “purge” to zero parts per million before performing test on additional units. (In the case of a ppm reading of over 1000, take the analyzer out of the building to let it purge outdoors for 10 minutes).

Furnaces/ Boilers

- Turn on the furnace or boiler, letting the burners combust for at least three minutes.
- If the furnace/boiler utilizes unassisted/natural draft, or a power assisted ventilation system with galvanized vent piping, a sampling hole will need to be drilled in the ventilation pipe directly above the furnace breeching.
- Position the flue gas analyzer near the units being tested and turn On.
- Wait for the analyzer to warm up (60 seconds).
- Be sure to select the correct fuel source being tested (ex.: natural gas). Numbers corresponding to fuel source can be found on the back of the analyzer or in the manual.
- Once the flue gas analyzer unit is On **AND** the furnace or boiler is in a **steady state of combustion**, insert the probe into the sampling hole below the draft diverter/regulator (into collar, below draft intake) or into the sampling hole, making sure ambient draft air intake is not being tested.
- Allow test reading to stabilize and record combustion efficiency from the warmest point registering on the analyzer.
- After recording the readings on a Service Buy-Down Application, or printing out the results, allow the flue gas analyzer to “purge” to zero parts per million before performing test on additional units. (In the case of a ppm reading of over 1000, take the analyzer out of the building to let it purge outdoors for 10 minutes).

Focus on Energy will not reward tune and clean services that do not increase combustion efficiency resulting in a decreased therm usage.

Focus on Energy will reward only \$50 per burner for in-house combustion efficiency testing.