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## Manufacturer's Guidelines for the Installation of Fitch Fuel Catalyst on Natural Gas

### Equipment needed:

**4 Gas Combustion Analyzer** - [Bacharach 2412-1310 PCA 400 w/ O<sub>2</sub>, CO, NO, NO<sub>2</sub>, 12 in. Probe with 7.5 ft. Viton Tubing and Case | TEquipment](#)  
(or another comparable brand)

**Flow Meter** – accurate and reliable, **MUST** be installed at the point of consumption, if not in place already. This will allow accurate consumption of fuel before and after Fitch installation.

- In preparation for installation of the Fitch units, the flowmeter(s) should be installed on the supply line(s) to the burner(s) and fuel consumption verses exhaust stack temperature(s) recorded for a period of 1 or 2 weeks under normal operating conditions while noting any data collected under heavier than normal operating conditions.
- A burner combustion analysis should also be performed to record levels of O<sub>2</sub>, CO<sub>2</sub>, CO, NO<sub>x</sub>, combustion air temperature and most importantly, the exhaust stack temperature.

\*\* The customer or service technician would likely have a flow meter and a 4-gas combustion analyzer.

**Test # 1:** This data will provide baseline performance versus fuel consumption data. Next, piping/bypass will be modified to permit the installation of the Fitch Fuel Catalyst. After Fitch installation has been completed, engage Fitch unit and restarted burner. Run burner/furnace for 1 hour period so the system will reach same operation temperature as when the baseline data was acquired.

**Test #2:** Conduct another combustion analyst test to collect O<sub>2</sub> levels, CO<sub>2</sub>, CO, NO<sub>x</sub>, combustion air temperature and most importantly, the exhaust stack temperature must be documented. Please note higher exhaust stack temperature which typically occurs with the Fitch Fuel Catalyst engaged.

**Test #3:** The service technician performing the testing, must make an adjustment to the fuel flow (reduce flow) and combustion air mixture, returning the burner to the pre- Fitch installation data reading in Test #1. Record this data: O<sub>2</sub> levels, CO<sub>2</sub>, CO, NO<sub>x</sub>, combustion air temperature and most importantly, the exhaust stack temperature must be documented.

The exhaust gas temperature, {stack} will be the same after adjustments and the O<sub>2</sub> and CO<sub>2</sub> should be improved also. This will result in lower emissions, reduced fuel consumption and improved combustion efficiency.

All 3 Tests must be performed, adjustments must be made, and data collected to validate the benefits of the Fitch Fuel Catalyst

**Test #1:** Baseline prior to Fitch installation

**Test #2:** Analysis of burner after Fitch installation no adjustment.

**Test #3:** Final Analysis of burner performance after adjustment and tuning of burner to take advantage of the hotter burning fuel and returning to the same heat output level as documented in Test#1, reducing stack to pre-Fitch levels.

The natural gas consumption will be reduced, and data will be collected over an agreed period of time, generally over 15 days, using the same heat output parameters. After an agreed monitoring period fuel saving will be calculated.

**Fitch Installation:**

Manufacturer recommends the Fitch fuel Catalyst be installed prior to the regulator of the natural gas line pressure to the burner. This way the NORMAL pressure drop through the catalyst will not affect the line pressure of the consumer. If not possible, it is **REQUIRED** that the customer raise pressure after the catalyst to the same pressure downstream of the Catalyst. Refusal or inability to perform this adjustment will result in non-conformity of manufacturer criteria and Fitch evaluation should not take place.

**Data Collection Required:**

This data must be collected pre-Fitch and after Fitch installed to be reviewed by APSI (manufacturer) or Agent. Client is responsible for making any adjustments to systems as recommended by the Fitch manufacturer/agent to optimize Fitch benefits or product warranty may be VOIDED if Client refuses direct advice from Authorized Agent or Fitch manufacturer. Natural Gas, Diesel, Fuel Oil Applications require a Combustion Analysis Report containing Efficiency, CO, CO<sub>2</sub>, Excess air, O<sub>2</sub>, NOX, Stack Temp before Fitch is installed and after Fitch is installed. Adjustments to fuel and air may be needed to gain maximum benefits from Fitch.

Fitch product will **NOT** be provided without a signed agreement from prospective customers and end users, along with dealer or distributor signing and acknowledging these requirements.