Fitch Fuel Catalyst HO/FHD Natural Gas Series

For reduction of Gas Consumption for any Application
that uses Natural Gas and Propane

www.FitchFuelCat.com info@FitchFuelCat.com (888) 348-2482

Overview

- Reformulating natural gas and propane
- No maintenance
- No moving parts
- No magnets
- Excellent results with low methane concentration gas
- Increase heat output with same amount of gas
- Reduce calcification of deposits in injectors and heat chambers
- Mounting into gas lines with or without bypass
- Direct welding into line or with flange option
- Low pressure loss

www.FitchFuelCat.com info@FitchFuelCat.com (888) 348-2482

Application Range

The FHD-NG series is used in a variety of applications that utilize as primary fuel source natural gas or propane.

Power Generation

The versatility of our technology allows us to work with Steam Burners, Boilers, Furnaces, Turbines and/or Generators.

Industrial

The design and functionality allows our Catalyst to be used in Dryers, Boilers, Furnaces and any application suitable for industrial needs that uses natural gas or propane.

Or any other application not mentioned above.

Operating Principle

Natural gas usually contains a number of different molecules and some microorganisms. The nature of any batch of fuel is based on the source and can contain methane, propane, butane, water, and others. The concentration of each has bearing on the BTU output.

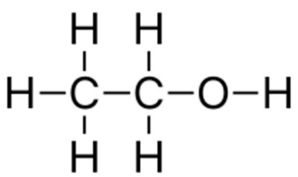
The Fitch Fuel Catalyst induces reactions in the gas at or near the point of use and is easily incorporated into a heating system. This catalyst is novel in that it induces reactions in fuels at temperatures far below where petroleum catalysts have historically been known to function.

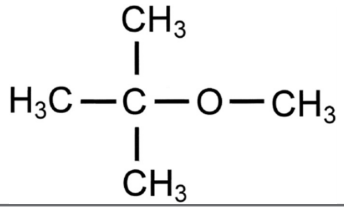
The reactions the Catalyst induces are beneficial and when placed in fuel lines increase combustion efficiency while reducing emissions. The results occur because fuels are reformed and often resuscitated to organic structures that combust fully.

The precise effect of Catalyst is dependent on the concentration of the constituents the Catalyst ineracts with which are present in all fuels to some degree.

The Catalyst process converts the water and non-methane components into molecules with more oxygen and hydrogen which have energy of combustion. These improvements to fuel, result in lower fuel consumption and also in reduced maintenance. These are confirmed by studies performed by Independent Institutions.

Different Hydrocarbons behave differently with the catalysts. For mixtures of straight chains or cyclic hydrocarbons oxygen can be incorporated into the hydrocarbons to form oxygents. Oxygents like Ethanol (left) and MTBE (right) are well known to enhance combustion.

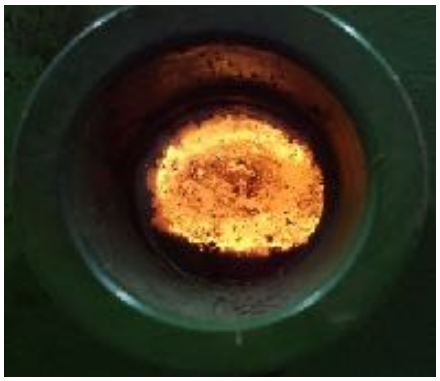


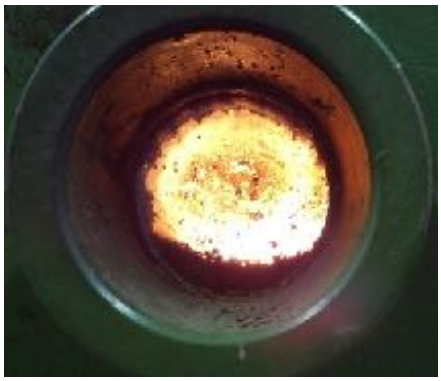


Operating Principle cont.

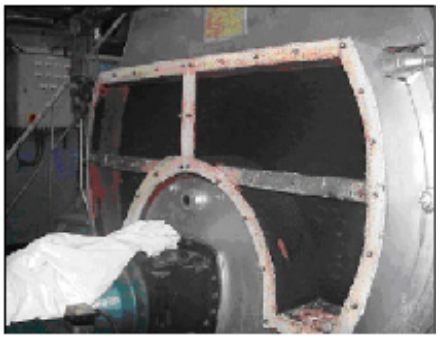
Numerous installations have been performed with the Fitch Fuel Catalyst on industrial, commercial and residential burners/boilers with demonstrated fuel economy improvement between 5 percent and 18 percent and significant emissions reduction. Additional observation show a much brighter flame and an improved heat transfer.

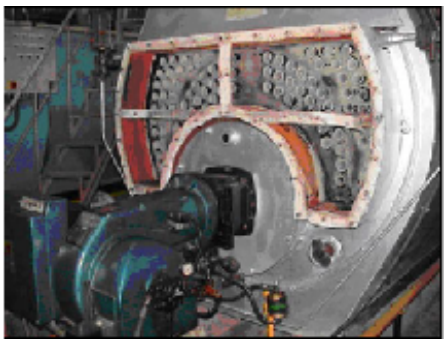
Without Fitch





48 Hours With Fitch





6 Months With Fitch

Technical Specifications

* HO50-NG: 3” OD x 10”
* HO75-NG: 3” OD x 15 1/2”
* 3/4” NPT Threaded End Cap
* Schedule 40 steel for HO-50 to FHD-180
* Nipple Diameters 3/8”, 3/4”, 2”, 3”, 4”, 6”, 8”, 10”, and 12”
* Available NPT or straight for welding with or without flange
* Designed to withstand 350 PSI/24 Bar
* Maximum pressure at 300°F/148°C
* ΔP (Delta P) pressure drop: 1.5psi
* 20,000 operating hours design
* Product is made to customer specification
* Acrylic yellow paint
* Smaller & Larger units available

FHD-25

HO75

Technical Specifications cont.

Gas Flow Capabilities per Model

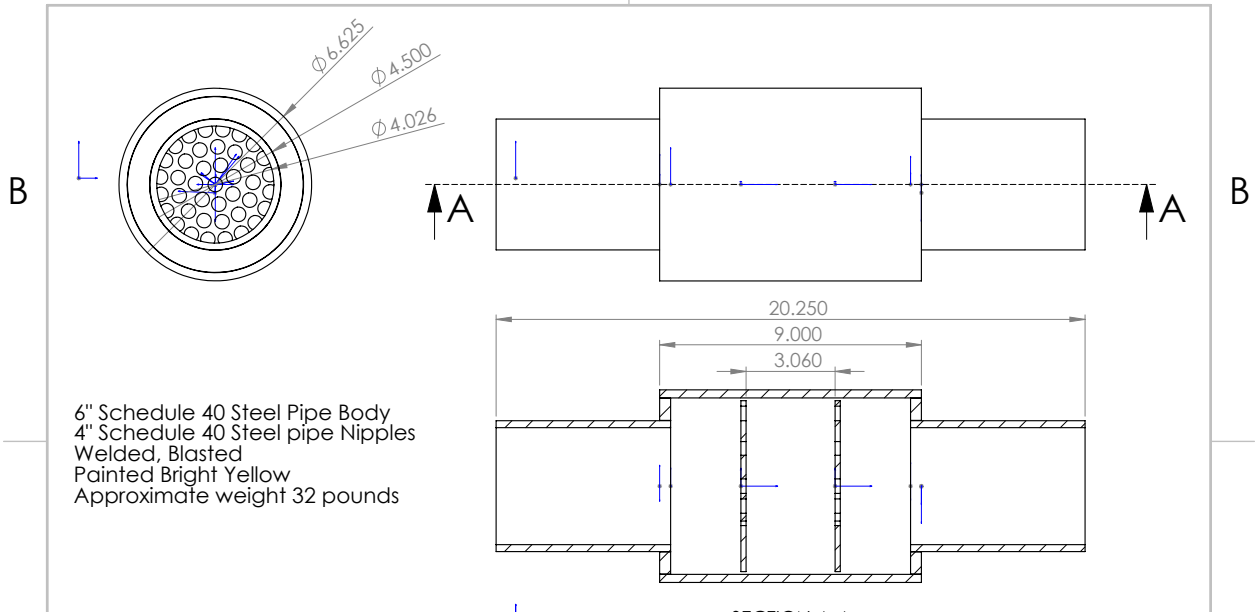
Model	Gas SCM/HR	Gas SCF/HR	Propane SCM/HR	Propane SCF/HR	Maximum Power HP	Maximum Power KW	MBH (Output)	Steam KWH	Steam lbs/Hr (Output)	Steam Kcal/Hour (Output)
HO 50-5-xx NG	134	4,725	59	2,086	80	60	4,134	1,211	3,481	1,041,869
HO 75-5-xx NG	201	7,088	89	3,129	120	89	6,202	1,817	5,222	1,562,794
HO 100-5-xx NG	267	9,450	118	4,173	140	104	8,269	2,423	6,962	2,083,725
FHD 5-6-xx NG	802	28,350	354	12,518	280	209	24,806	7,268	20,887	6,251,175
FHD 10-6-xx NG	1,605	56,700	709	25,035	580	432	49,613	14,536	41,774	12,502,350
FHD 15-6-xx NG	2,407	85,050	1,063	37,553	900	671	74,419	21,805	62,661	18,753,525
FHD 20-6-xx NG	3,209	113,400	1,418	50,070	1,200	895	99,225	29,073	83,547	25,004,700
FHD 25-6-xx NG	4,012	141,750	1,772	62,588	1,500	1,119	124,031	36,341	104,434	31,255,875
FHD 30-10-xx NG	4,814	170,100	2,127	75,105	1,800	1,342	148,838	43,609	125,321	37,507,050

* Smaller unit: HO2 with capability to handle up to 5 SCM/H - 189 SCF/H
* Larger unit: FHD180 with capability to handle up to 32,092 SCM/H - 1,134,000 SCF/H

Popular Models Dimensions and Weight Characteristics

Model	Diameter Inches	Length Inches	XX (Nipple Size)	Weight LBS.
HO50-5-xxNG	5"	$13^{1/2}$	2/3/4"	19
HO75-5-xxNG	5"	$14^{3/5}$	2/3/4"	23
HO100-5-xxNG	5"	$15^{3/5}$	2/3/4"	28
FHD5-6-xxNG	6"	19	2/3/4"	35
FHD10-6-xxNG	6"	$23^{1/2}$	2/3/4"	50
FHD15-6-xxNG	6"	25	2/3/4"	75
FHD20-6-xxNG	6"	29	2/3/4"	140
FHD25-6-xxNG 6"	6"	$29^{1/2}$	2/3/4"	147
FHD30-10-xxNG	10"	$32^{1/2}$	2/3/4/6"	158

FHD-5 - Sample Diagram



Installation Instructions Example

Installations — Take all necessary precautions relitive to installing on gas fired system. Locate a suitable location in the gas line supply line.

Always install the Fitch with an optional bypass valve to allow for cleaning/replacement. For gas installations a bypass is not required.

1. Clean the boiler then establish a baseline. Measure the exhaust gas composition and combustion efficiency and ensure the system is functioning to the burner manufacturer's recommendation before installing or engaging gas flow through the Fitch Fuel Catalyst.

2. Install the Fitch Fuel Catalyst at the selected location in compliance with building/piping codes.

3. Once installed, check for leaks and let the burner run at 100 percent for approx. 48 hours and take new exhaust gas and combustion efficiency measurements.

Typical Performance Indicators we track

I) Stack Temperature
II) O_2
III) CO
IV) CO_2
V) NOx
VI) SO_2
VII) Excess Air
VIII) Efficiency
IX) Particulate
X) Fuel Flow

Typical Observations

I) Excess air may change
II) Stack temperature may change
III) All gases may change
IV) Particulate may decrease
V) Flame color may change

4. After at least **120 Hours or 1 week** in operation, make the necessary adjustments to bring the burner to manufacturer's recomendation and maximum combustion efficiency.

Installation Instructions Example cont.

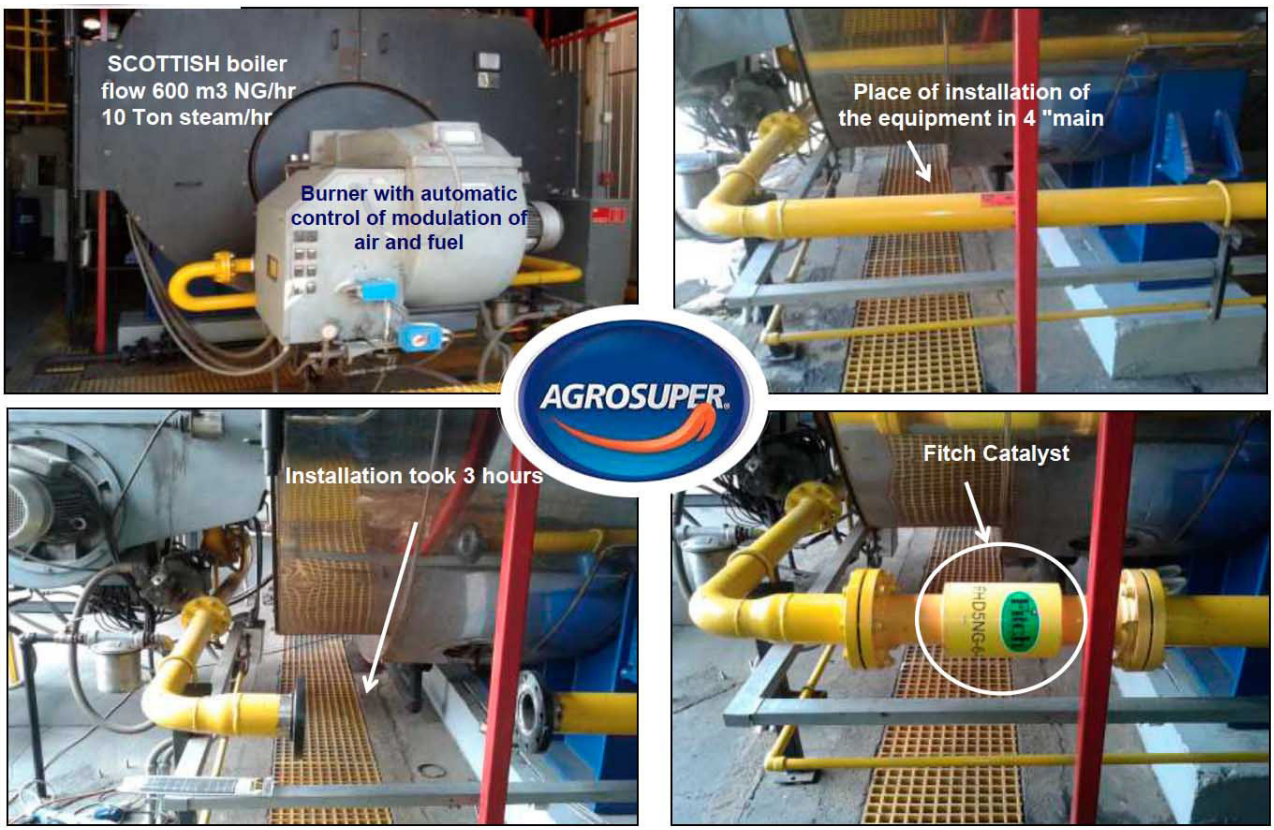
Typical Adjustments

I) **For pressure systems** reduce pump pressure and the nozzle size to reduce gas flow and stack temperature
II) **For air atomizing systems** adjust modulation to reduce gas flow and stack temperature.
III) Adjust for optimal stack temp, minimal soot and minimal CO.
IV) Change air flow to optimum excess air.

Typical for Commercial Boiler applications

5. Take a new exhaust gas and combustion efficiency measurement.

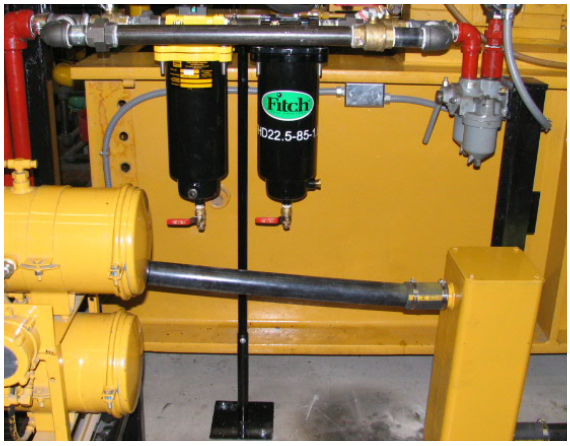
6. Make the necessary adjustments to bring the burner to manufacturer's recommended reading.



Sample Customers

Be apart of a selective group of companies that are business leaders not business followers and get "competitive edge" by implementing our technology

Product Line



FHD Models for applications that use diesel or biodiesel.

FHD-UL Models for applications that use Heating Oil or Heavy Fuel Oil.

FHD-HP Models for high pressure and high temperature applications that use Diesel, Biodiesel, Heating Oil or Heavy Fuel Oil.