

## **FOR NATURAL GAS ENGINES**

# **FMV6 MIXING VENTURI**

**For Mixing Air and Fuel to Gas Engines**

### **BENEFITS**

**REDUCED MAINTAINENCE**

**REDUCED EMISSIONS**

**REDUCED FUEL  
CONSUMPTION**

**SUPERIOR MIXING**

**LOAD SENSING  
NO MOVING PARTS**

**LESS PRESSURE DROP**



### **GENERAL DESCRIPTION**

The Continental Controls Mixing Venturi is a device designed to precisely mix the fuel and air to be admitted to gas engines. The Venturi also measures the air flow to the engine. It is used with the Continental Controls ECV5 Emissions Control Valve to replace the carburetor and pressure regulator on both Rich-Burn and Lean-Burn gas reciprocating engines.

The FMV6 Mixing Venturi and the ECV5 can be used with any single or dual bank natural gas engine in any application where one or more carburetors are used to meter fuel. The fuel metering is very precise in the Venturi, which means, engines using two or more carburetors can be balanced to provide the same air-fuel mixture from the two or more Venturies. The ECV-5 Emissions Control Valve is used with an appropriate O2 sensor to precisely control the fuel mixture for compliance with the emissions regulations.

### **WHY IT WORKS SO WELL?**

Most carburetors include an air/fuel mixing section that is comprised of a spring mass diaphragm actuator which has the potential to create unstable engine performance due to interaction with the upstream pressure regulator. Mixtures in these carburetors between idle and full-load are controlled by the shape of the gas metering valve. These fuel valves that are included in the carburetor are designed to produce lean mixtures at light loads and increasingly rich mixtures at heavier loads and higher engine speeds. This fuel profile (lean to rich) will cause any air fuel controller that is controlling simply on the oxygen sensor, to constantly chase load changes. By replacing the carburetor with the Venturi Mixer, the fuel profile will become flat with the desired mix of air and fuel throughout the load range. If there is a large load change the Venturi will automatically accommodate the change by allowing just the correct amount of fuel for the amount of air to the engine. No mechanical action is required to make this fuel adjustment.

## IMPROVED MIXING

Traditional Gas Carburetors introduce the fuel into the center of the air stream from a single location. This can create a lean mixture at the outer edges of the flow stream and a richer mixture in the center. This can make it more difficult for the engine to completely burn all of the incoming fuel, which often results in higher exhaust emissions and a reduction in horsepower. The Mixing Venturi has a multitude of fuel inlet vanes and passages evenly dispersed throughout the low-pressure region of its throat. The fuel is more evenly distributed across the flow profile resulting in a homogenous air/fuel mixture entering the engine. The exhaust emissions are lower, easier to control, and the engine runs more efficiently.

## APPLICATIONS

**RICH-BURN ENGINES** - The combination of the Venturi and the ECV5 constitutes a true electronic carburetor for natural gas engines, and when used with an O2 sensor in the exhaust, it is an ideal device to maintain a Stoichiometric fuel mixture required for use with a 3-way catalytic converter.

**LEAN-BURN ENGINES** - The ECV5 and Venturi are also for use with lean-burn engines. In this application, a wide range O2 sensor is used with the ECV-5 and the Venturi to maintain a constant lean mixture, or Lambda. The mixture can be programmed to change with the load signal if required. The wide range O2 sensor is provided by CCC as a part of the system.

## PRECISION CONTROL DEVICE

REPLACES CARBURETOR

CONSISTENT FUEL  
PRESSURE AT ALL LOADS

MIXES FUEL-AIR

## ENGINE BALANCING

Dual bank engines can be easily balanced by measuring the throat pressure of the Venturi using a manometer and the port provided on the Venturi. Adjust the fixed butterfly on the venturi until the two banks are at the same pressure, and the engine will be balanced.



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