

ALCOHOL INJECTION CONTROLLER VC-MAF



Universal Mass Air Flow Activated

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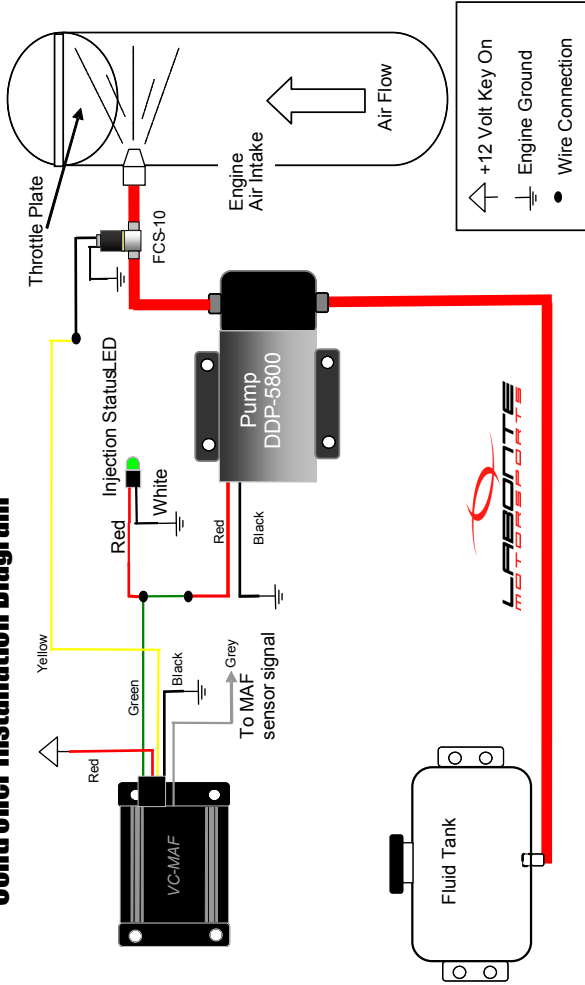
CAUTION

You must completely read though these instructions before installing and operating this product. Failure to due so can result in damage to this product and the vehicle.

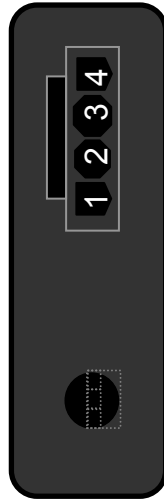
Introduction

The VC-MAF from Labonte MotorSports is engineered to reliably operate a Methanol Injection pump on gasoline engines with a Mass Air Flow Sensor. The controller will increase injection pressure over a user adjustable range and quickly shut off when airflow drops to prevent misfire.

Controller Installation Diagram



Variable Controller Installation



The figure above shows the back view of the variable controller. Attach controller to secure location with easy access in engine bay or passenger compartment. The VC series controllers are designed to withstand engine bay conditions, but should not be mounted directly to the engine block. Connect vacuum/boost hose from intake plenum to hose barb on back of controller. Plug wire harness into back of controller. Note the terminal positions are numbered on the bottom side of wire harness connector.

Your controller has an internal self resetting fuse such that an external automotive type fuse is not required. In the case of a fault the internal fuse will attempt to reset after about 1 minute.

- Connect GREEN wire at position 3 to +12V key on source. When selecting a 12V key-on source, try to find a dedicated circuit with at least a 15 AMP capability.
- Connect YELLOW wire at position 2 to either black wire of FCS-10 Fluid Control Solenoid.
- Connect GREY wire to MAF sensor output using supplied blue Posi-Tap Connector.
- Connect BLACK wire at position 1 to a good Ground location.



CAUTION: Always insure to have a good electrical ground connection. Poor ground will result in erratic operation of controller.

Selecting MAF sensor type

The VC-MAF controller is designed to work with four different types of vehicle MAF sensors. A three position switch located inside the VC-MAF allows the selection of the MAF sensor type. The VC-MAF only reads the selection switch on power up to determine the mode of operation. The switch selection can be changed at any time, but power to the VC-MAF needs to be cycled before the new selection will be used.

To access the MAF selector switch, remove the clear plastic plug located to the left of the wire harness connector on the back of the VC-MAF. The default setting is all switches in the OFF or Up position. This selects a 0-5volt output type of MAF sensor.

Switch Position	MAF Type
1	
2	
3	
OFF	0-5v Hotwire
ON	Karman 1998 and up GM
OFF	Karman Mitsubishi/Dodge
OFF	Hotfilm pre-98 GM

Note: Only one switch can be in the ON or Down position at a time. If more than one switch is in the ON position, the VC-MAF will not control injection properly.

Testing the Controller

The VC-MAF has a built in test mode.

NOTE: Remove hose from nozzle holder and place in bucket or bottle to catch fluid during testing.



Turn Full dial counter clockwise so dial arrow is at lowest setting (below .8)

Controller will activate pump at 50% capacity and solenoid will open. Turn Full dial clockwise to .8 or greater to stop test mode.

Inspect lines and fittings for secure connections and repair if needed.

Controller Operation Example

The chart to the right plots three different settings for the VC-MAF water/methanol injection controller.

For setting 1, green, the chart shows the Start dial at 2 volts and the Full dial at 4 volts. At 2 volts from the MAF, the pump will operate at 10%. At 4 volts from the MAF, the pump will deliver 100% of injection pressure.

For MAF voltage readings between the Start and Full settings, the controller will linearly adjust the pump output as shown on the graph.

Variable Controller Tuning

- With vehicle running, slowly turn the Start dial lower (counter clock wise) until the pump activates. If the lowest setting is reached without pump activating, it may be necessary to rev engine to increase airflow signal to the controller. Set Start dial to about 1 volt higher then idle activation point
- Next, adjust "Full" level to the Air Flow sensors max voltage or frequency output.

- Note - over lapping the settings, where the Full dial is lower then Start, will result in max injection at the onset point.
- Road test vehicle and adjust Full dial until a smooth power curve is felt with no mistfiring.

Operating Characteristics

Characteristic	Min	Typ.	Max	Units
Operating Temperature	-20	----	105	deg C
Supply Voltage	9	13.8	16	Vdc
MAF Input: SW0	0	----	5	Vdc
SW1	2000	----	14,000	Hz
SW2	200	----	2200	Hz
SW3	40	----	220	Hz
Pump Driver	----	4	15	Amps
Solenoid Diver	.1	.5	3	Amps

Install Notes

Pump Setting _____ (psi)
 Nozzle Size _____ (ml/min)
 Controller setting Start: _____
 Full: _____

Misc:

Limited Warranty

Labonte MotorSports Warranties this product to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Labonte MotorSports will at its sole option repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation costs. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

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Labonte MotorSports retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

To obtain warranty service, contact Labonte MotorSports for shipping instructions and an RMA tracking number. The unit should be securely packed with the tracking number clearly written on the outside of the package. The unit should then be sent, freight charges paid, to Labonte MotorSports. A copy of the original sales receipt is required as the proof of purchase for warranty repairs.

Online Auction Purchases:

Products sold through online auctions are not eligible for rebates or other special offers from Labonte MotorSports. Online auction confirmations are not acceptable for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Labonte MotorSports will not replace missing components from any package purchased through an online auction.

The unit has no user-serviceable parts. Should you ever encounter a problem with your unit contact Labonte MotorSports for repairs.

The unit is fastened shut with screws. Any attempt to open the case to change or modify the unit in any way will void your warranty and may result in permanent damage to the equipment.

Disclaimer

Labonte MotorSports shall not be liable for any consequential or incidental damage, personal injury, or replacement of equipment and or property resulting from the misuse or improper installation of Labonte MotorSports products. Labonte MotorSports is not responsible for damage to your vehicle as a result of failed components or improper installation. Always check to make sure your system is operating correctly. Double check all the wiring and installation prior to starting.



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Patent Pending: US29/291,846