

# ALCOHOL INJECTION CONTROLLER VC-A10



**Vacuum / RPM Activated**

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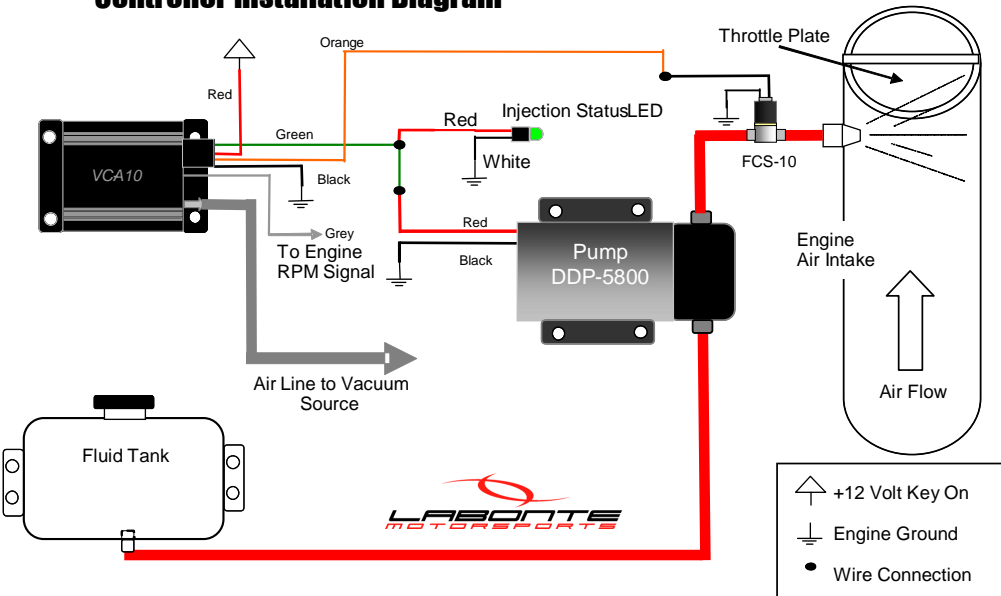
 **CAUTION**

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

## Introduction

The VC-A10 from Labonte MotorSports is engineered to reliably operate Shurflo based alcohol injection systems. The controller will increase injection pressure over a user adjustable range and quickly shut off when boost pressure drops to prevent misfire. No external sensors are required. The small rugged design and easy setup makes the VC-A10 the logical choice for automotive/offroad enthusiast.

## Controller Installation Diagram



## Variable Controller Installation

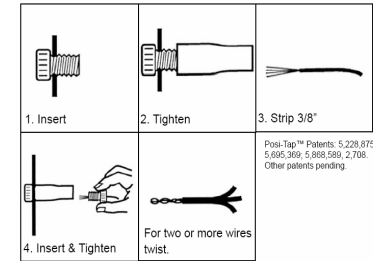
The figure to the right shows the back view of the VC-A10 controller. Attach controller to secure location with easy access in engine bay or passenger compartment. The VC series controllers are designed to withstand engine bay conditions, but should not be mounted directly to the engine block.

Connect vacuum hose from intake manifold to hose barb on 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 4 to Pump Red power wire.
- Connect RED wire at position 3 to +12V key on source.
- Connect ORANGE wire at position 2 to either black wire of FCS-10 solenoid.
- Connect BLACK wire at position 1 to a good Ground location.
- Connect GREY wire to Low voltage side (-) of primary ignition coil or digital engine tachometer signal wire. On some vehicles the low side (ECU side) of a Fuel Injector wire can be used. Use supplied Blue Posi Tap Connector.
- Plug wire harness into back of controller.

Posi-Tap™ installation instructions



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

## Calibrating RPM Switch

The VC-A10 has an internal RPM switch that is programmable. This feature sets the minimum RPM required to enable injection. The RPM switch can be programmed at any time with the following steps:

- Start engine and wait 5 seconds for controller power up delay.
- Rev engine to desired injection RPM point and hold throttle position constant.
- Turn the Start dial all the way counter clock wise to the lowest setting, past 12 inHg. The Solenoid will “buzz” if engine rpm signal is detected (12volt output on Yellow wire).
- After 3 seconds, turn Start dial to 12 inHg or higher and rpm point is saved to controller internal memory.

*The factory programmed RPM point of the VC-A10 is beyond normal vehicle range and MUST be set during install per above procedure before injection will occur.*

## Variable Controller Tuning

The VC-A10 has a built in 5 second power up delay. This feature helps prevents injection during engine starting.



The VC-A10 is designed to control injection based on engine load. Once the RPM switch is calibrated, the controller will activate injection based on engine load whenever the engine RPM is greater than the calibrated RPM.

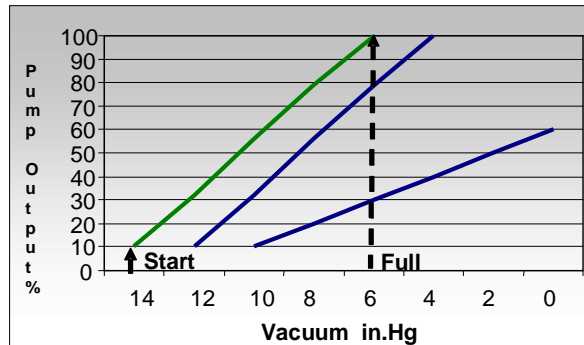
The following steps provide a guideline for initial dial settings. Additional fine tuning of the dial positions might be required based on engine performance and modification.

- Adjust the “Start” point first by turning dial clockwise to about one half of the engines maximum vacuum. This sets the vacuum pressure required to activate the injection system.
- Next, adjust “Full” to the engines minimum vacuum.
- Note - over lapping the settings, where the Full dial is at higher vacuum than Start, will result in max injection at the onset point.
- Adjust Full dial until a smooth power curve is felt with no misfiring.

## Controller Operation Example

The chart to the right plots three different settings for the VC-A10 alcohol injection controller.

For setting 1, GREEN, the chart shows the Start dial at 14 in. Hg and the Full dial at 6 in. Hg. At 14 in. Hg of manifold vacuum, the pump will operate at 10%. At 6 in. Hg of manifold vacuum, the pump will deliver 100% of injection pressure.



For manifold vacuum readings between the Start and Full settings, the controller will linearly adjust the pump pressure as shown on the graph.

## Operating Characteristics

Characteristic	Min	Typ.	Max	Units
Operating Temperature	-20	----	105	deg C
Supply Voltage	9.5	12.5	16.0	Vdc
Drive Current	----	4	15	Amps
Response Time	----	1.5	----	Msec
RPM Input Signal	50	----	1000	Hz

## Install Notes:

Pump Setting \_\_\_\_\_ (psi)

Nozzle Size \_\_\_\_\_ (ml/min)

Controller setting Start: \_\_\_\_\_

Full: \_\_\_\_\_

## Misc:

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## 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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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 though 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

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