

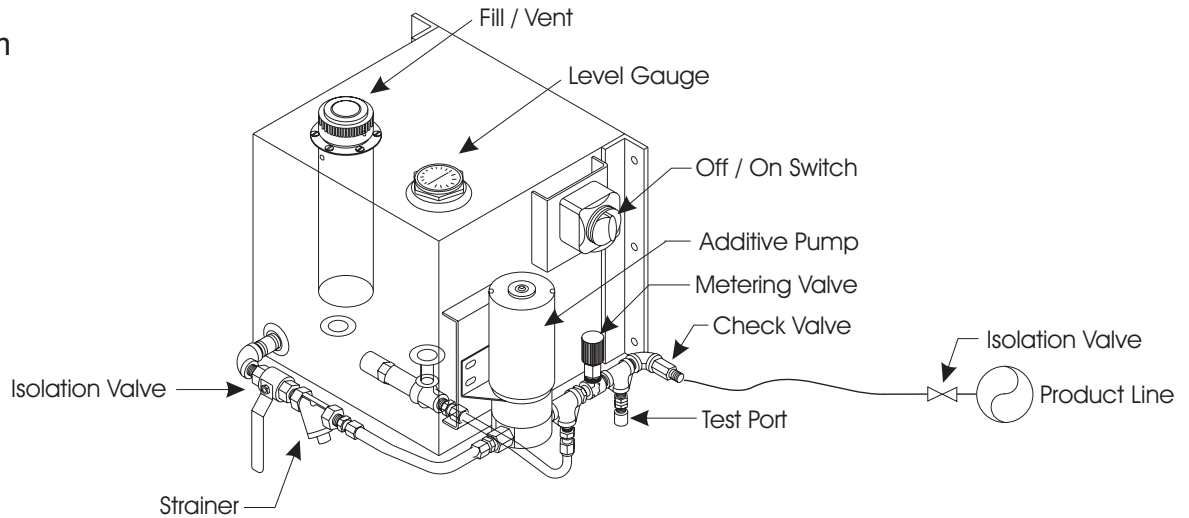


# Installation & Operation Manual

## Electric Operated Injection System

### Single System Application

Additive Systems Inc.  
 407 S. Main  
 Broken Arrow, OK. 74012  
 ph. 918-357-3433  
 fax 918-251-3172  
 www.additivesystems.com



### 1 Mounting:

Attach unit to frame or other area that will provide enough support to carry the weight of the unit when filled with additive.

Locate in an area that is protected from road debris and away from sources of heat.

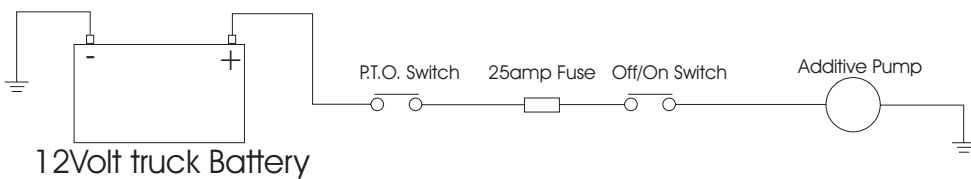
### 2 Electrical:

Unit may be activated by the P.T.O. Switch or by the manual switch on the unit.

A 25 amp in line fuse is included with the unit for overload protection.

The pump is for 12 volt DC only.

Minimum of 12awg. To be used.



### Alternative Operation:

In Lieu of having the driver engage the unit with the PTO, any manual or automatic process that will provide ample power is acceptable. IE. Hand switch, PTO, Scully high flow switch, flow switch ect.

### 3 Plumbing:

Route supply tubing along frame to injection point, avoid sharp bends or exposing tubing to potential Heat sources as well as road debris.

\* A (one) psi cracking pressure check valve is required at the injection point to avoid back flow of product into the additive tank.

\* A block valve (Ball or other style compatible with the additive) should be installed in the discharge Line either at the injection point or at the discharge outlet of the unit. This is to eliminate flow of additive into the product line while calibrating the unit.

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#### 4 **Start up:**

- \* Verify electrical connections are correct.
  - \* Fill tank with additive.
  - \* Open isolation valve up stream of the strainer.
  - \* Start pump and check for leaks. (Do not run pump dry)
  - \* Uncap test port and place the calibrated cylinder under test port.
  - \* Close block valve downstream of unit so all flow is directed to test port.
- Time flow for 60 seconds, read volume dispensed in cylinder and compare to target volume.  
Adjust volume by turning needle valve in or out.  
After calibration is complete cap the test port and then purge the line to the injection Point by letting the pump run.  
This can be verified by removing line from injection point and discharging into a container.

#### 5 **Calibration:**

The following is an example calculation for an injection rate of 1 gal. Per 20,000 gal.(50ppm)  
And a flow rate of 70 GPM.

50 part per million = 1 gallon per 20,000 gallons  
3785 CC's or ML = 1 gallon

#### **Note:**

1 cc = 1 ml.

3785 = 20,000 or a multiplier of .189

#### **Flow rate:**

Determining flow rate example:

185 gallons delivered in 2.64 minute = 70GPM

The volume of additive in cc's or ml. per minute are as follows:

70 gpm x .189 = 13.23 cc's

In a 1 minute calibration run the pump should dispense 13.23cc's of additive.

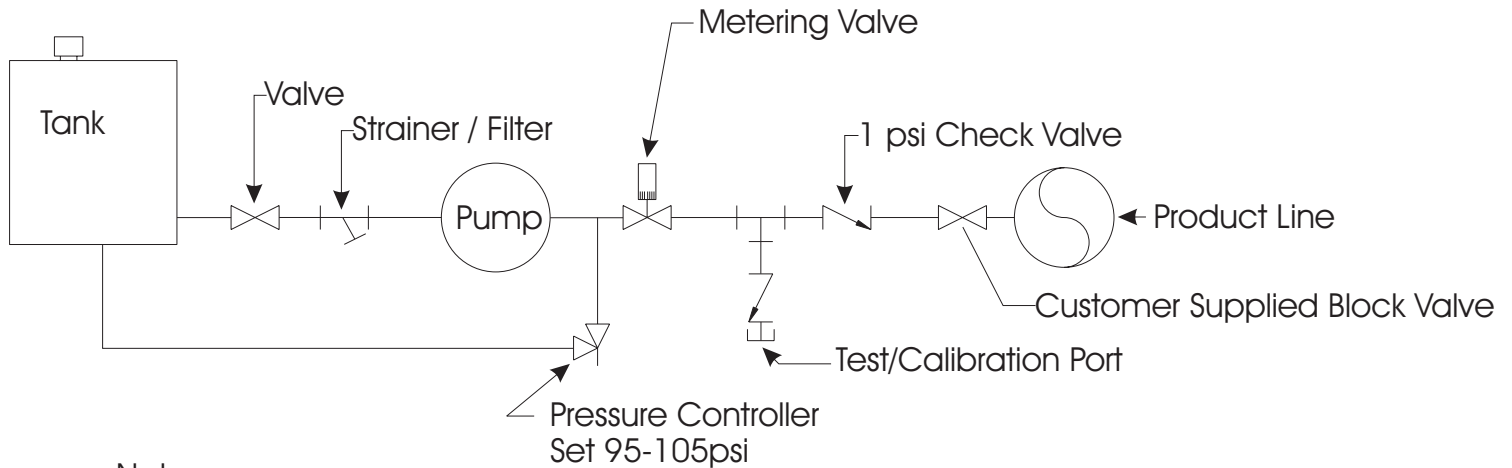
#### 6 **Maintenance:**

- \* Monthly  
Check strainer screen for debris.  
Verify calibration setting.

#### 7 **Spare Parts:**

Additive Pump:  
Mallory # 5110FI  
Off / On Switch:  
BEP 701

# Typical Product Flow Diagram



## Note:

To Calibrate unit, close customer supplied block valve and uncap test port.  
Place calibrated cylinder under test port and run unit for specified time period.  
Adjust volume with metering valve.

## Truck Mounted Injector

The ASI Truck Mounted Injector is designed to provide a trouble free method of injecting additives into truck delivered products. In efforts to keep the design in the simplest form and offer the most economical service for this application, we have intentionally left out any mode of automation. These units can be adapted to provide different levels of automation in several ways.

The most common point of automation for these units will be adapted at the point and method of providing power for the injector. The power supply can be provided from any device in the truck power train that will automatically engage the system and disengage the system, when desired. Some examples of this is to connect to the Scully High Pressure Switch, PTO, install a flow switch, connect to the meter for an output signal, etc.

Alternative automation can be provided by engaging the pump with the PTO and incorporating a solenoid valve in the flow stream to open or close with the above mentioned devices.

These options will need to be considered when ordering your Truck Mount Additive Injection System. As presented, these units are economically designed to be controlled completely at the discretion of the operator, but can be easily automated by ASI before shipment, or by the customer during installation or later.

If you desire for the system to be automated beyond the control of the operator, please advise ASI when ordering for proper application and cost adjustments.