

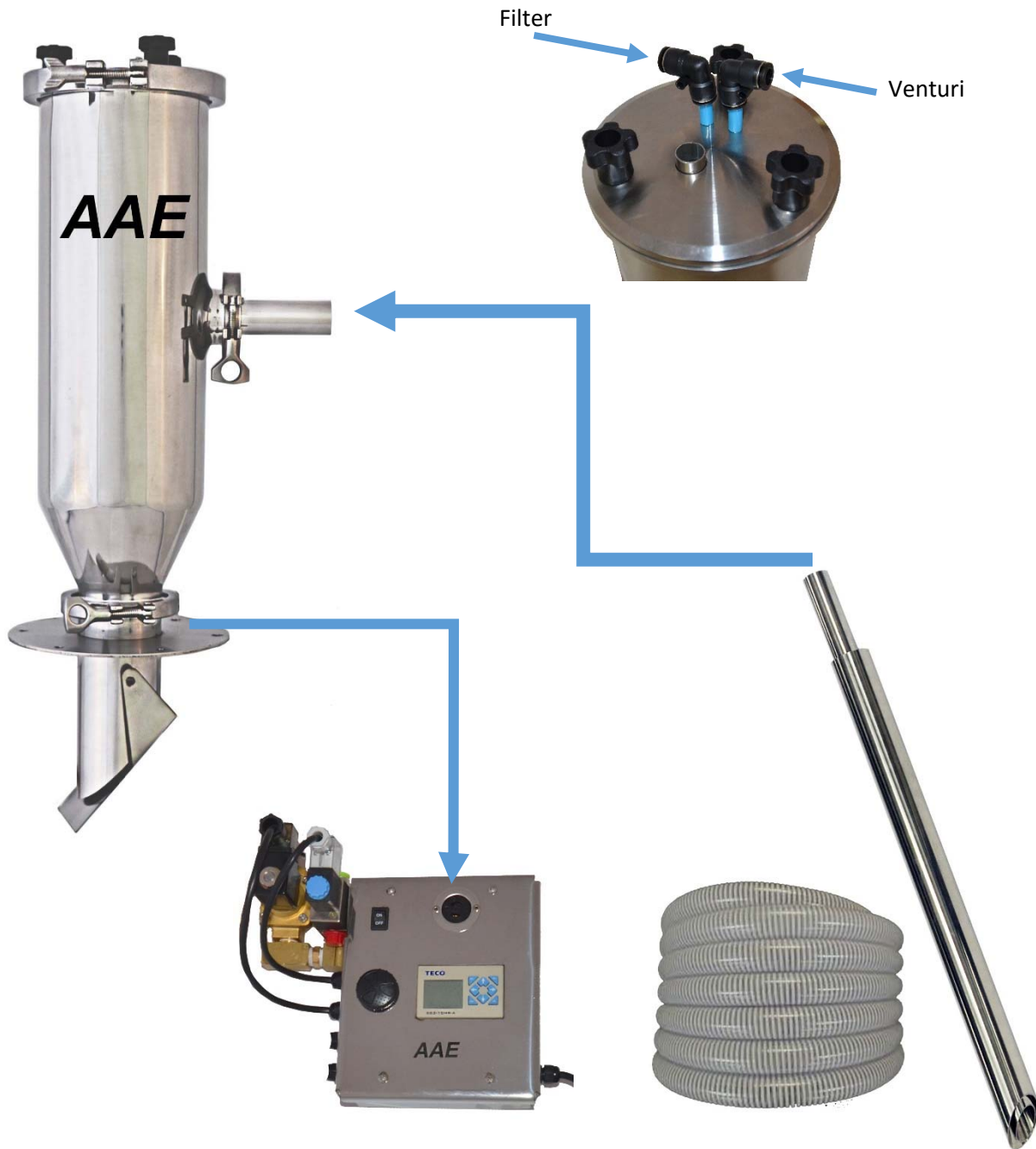
**Operation Manual  
CAV VACUUM LOADERS**

**AAE**



# Operation Manual CAV VACUUM LOADERS BASIC SETUP

# AAE



# Operation Manual CAV VACUUM LOADERS

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## **Prepare for the installation before you assemble the hopper loader parts.**

Make sure there is a lid with adequate support for the weight of the loader.  
Cut out the holes for the bolts and the loader in the center of the lid.  
Make sure there is clearance for proper operation of the loader.  
Provide compressed air at 80 - 90 PSI using a 3/8" line to the top of the loader.  
Compressed air fittings on top of loader ARE 3/8" push connects.  
Provide 115 VAC power within 6 ' of the control

## **Installing the vacuum chamber**

Install the magnet switch onto the mounting flange 1/8<sup>th</sup> inch from the magnet at level rest.  
Install the mounting flange onto the hopper. (1/4-20 bolts)  
Mount the chamber onto the mounting flange with clamp.  
Make sure the outlet faces the desired direction.  
Mount the lid onto the chamber.  
Connect the material hose onto the inlet tube. The deflector must face down. Place the hose clamp on the top of the hose with the deflector facing down to provide an external visual reference.  
Clamp the inlet tube onto the chamber.  
Connect the filter compressed air to the filter blow tube on the lid.  
Connect the venturi compressed air to the venturi inlet tube on the lid.  
Connect the suction wand to the material hose.

## **Installing the Control**

Use the proved hook and loop tape to install control.  
Mount the control within reach of the material switch cable.  
Plug in the cable for the material switch.

## **Start-UP**

Place the material wand in the material to be loaded.  
Put the control into STOP Mode  
Set the LOAD TIME at 5 seconds.  
Put the control into RUN Mode.  
Slowly increase the LOAD TIME until the loader seems to stall.  
Reduce the LOAD TIME 3 seconds or until the loader does not stall.

### **\*\*Installing Ground Wire\*\***

When loading coffee a ground wire must be installed from the wand around the material hose to ground to prevent static electrical shock.

Run a bare copper wire under a hose clamp in contact with the wand. Wrap the wire around the hose up to the chamber. The chamber end of the wire must be attached to a good ground.

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**BEFORE APPLYING POWER TO THE LOADER BE SURE YOU READ THE CONTROL OPERATING MANUAL AND OR WATCH THE GENERAL PLC CONTROL VIDEO AND THE CAV OPERATION VIDEO ON OUR WEB SITE.**

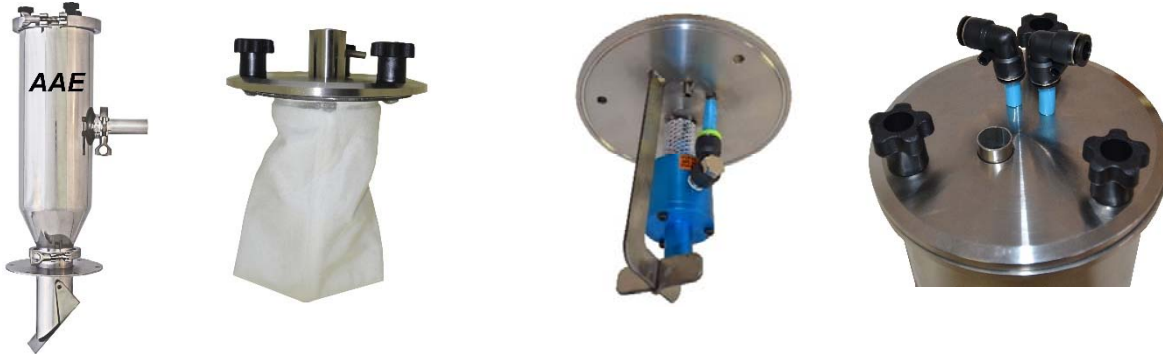
Adjust the control variables.

Adjust the material wand. Loosen the clamp and place the internal material tube so that you get a constant flow of material. Pushing the internal tube down will give you more material and out will give you less. Too much material will cause chugging and plugging to little material will reduce your conveying rate. Properly adjusted you should hear a constant material flow while conveying.

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## Vacuum chamber



Vacuum chambers are constructed of polished stainless steel. All flanged surfaces are machined stainless steel. Gaskets are glued in place for easy clamping. Do not over tighten clamps

## Inlet Tubes



The inlet tubes feature a hardened stainless steel wear plate. They are designed to contain material so that following material impacts on material and not the wear plate. This design is time tested showing no wear on even the most abrasive materials. Always place the hose clamp screw on the top of the tube with the deflector facing down. That make it possible to see that the deflector is properly placed from outside the chamber.

## Flapper Valves

Check to make sure there is enough room for the flapper to work correctly in small hoppers and glass tubes. The 3 inch flapper requires a 6 inch diameter that extends down 7 inches. The 2 inch flapper requires a 4 inch diameter that extends down 4 inches.

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## STANDARD CONTROL OPERATION



### I/O Screen

I – Inputs digits are highlighted when activated.  
Q- Outputs digits are highlighted when activated  
Run/Stop indicates control operating status. Must be in Run.

```
I.123456789ABC
Z.1234          ×
Q.12345678
STOP Mon. 10 42
```

### CONTROL MUST BE IN RUN MODE TO OPERATE!

Change Run/Stop Mode  
Press the **escape** button until the run option appears  
Use the arrow key to highlight RUN or STOP  
Press **OK**  
Select the mode you want – RUN or STOP  
Press **escape** to return to main menu

```
FBD
PARAMETER
■RUN
DATA REGISTER
```

### Navigating Control Screens

Press **escape** until you get the I/O Screen  
Press **Select** to enter the control screens.  
You use the **up** and **down** keys to move from one screen to another.  
Once you find the screen you want press **Select**

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## CAV – SINGLE MATERIAL LOADER CONTROL

\*\*\*\*\*ALL TIMES ARE SET IN .1 SCECOND, 100=10 SECONDS\*\*\*\*\*

### Set Load Time

Use the **down** arrow key to highlight the digit you want to change on line D01

Press **Select** to highlight that digit.

Use the **up** and **down** arrow key to change the value of that digit.

Press **OK** to confirm

```
LOAD TIME
D01= 00005
DUMP TIME
D02= 00010
```

Load time is the time that the loader fills set in seconds. It should be set with enough time to fill the chamber but not enough time to over fill the chamber. Overfilling the chamber will cause plugging and filter problems. Too short of a load time will reduce the life of the motor and the total loading capacity. Five seconds is a good place to start. Load time will vary depending on the material and the distance being loaded.

### DUMP TIME

Dump time is the delay time set in seconds that allows the chamber to empty before trying to load again. Normal stings are 3-5 seconds. Dump time can be used to limit the conveying rate. If the dump time is set at 600 seconds the chamber will only load every 10 minutes.

### FILTER ON TIME

Filter on time is the number of seconds that the filter cleans after each loading cycle. Filter on time is normally set at 4 seconds.

### FILTER SKIP

Filter skip, skips the filter cleaning cycle to save air and time. If set at 1 it will loader every cycle

```
FILTER TIME
DR0E= 00030
FILTER SKIP
DR05= 00001
```

### FILTER PULSE ON

Filter pulse on time is the .1 seconds that the filter cleaning pulse is on. It is normally set at 8 for .8 seconds.

### FILTER PULSE OFF

Filter pulse off time is the time the filter pulse is off to recharge the air pressure.

When filter pulse on is set at 4 and filter pulse off is set at 8 you get a pulse every 1.2 seconds, resulting in 3 pulses in 4 seconds.

```
FILTER PULSE ON
D04= 00008
FILTER PULSE OFF
D05= 00005
```

### SWITCH DELAY

Switch delay is a buffer to prevent the loader from starting a load cycle due to vibrations and false signals. When set at 2 the signal is delayed .2 seconds.

```
SWITCH DELAY
DR04= 00002

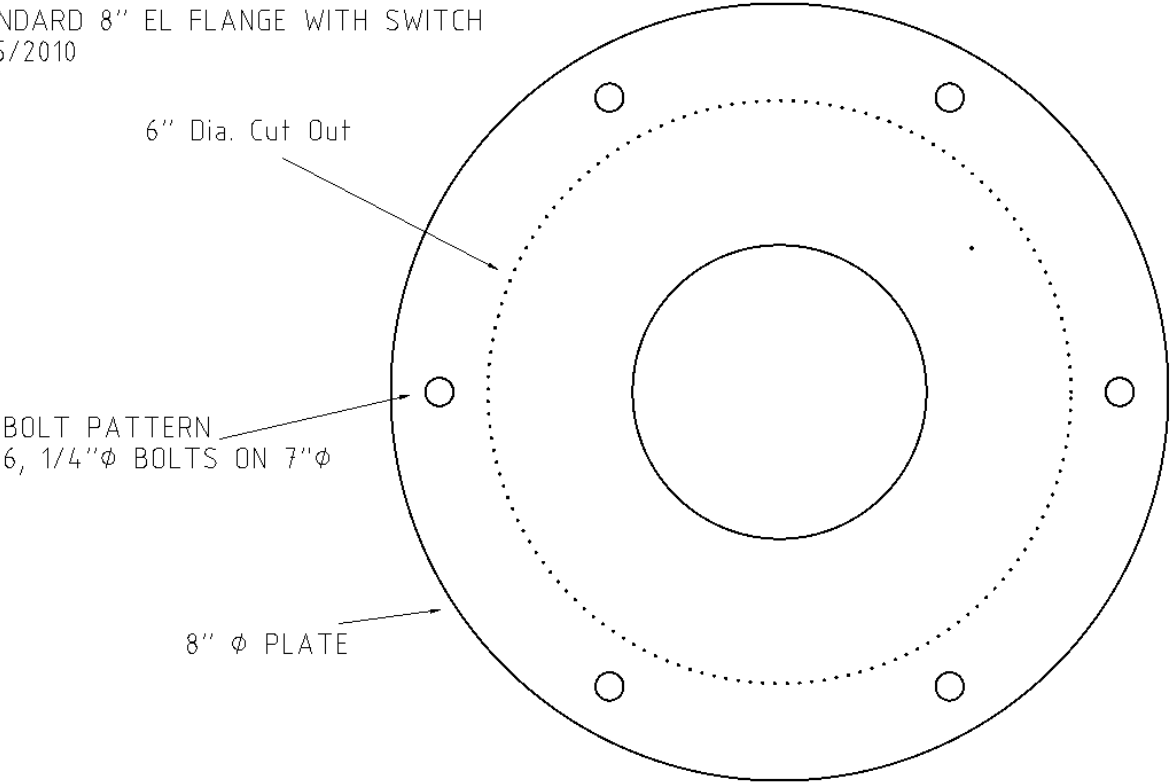
CAV082916
```

# Operation Manual CAV VACUUM LOADERS



Mounting cut outs for 8" round flange.  
Loaders with sight glasses have 6" X 6" flanges.

ADVANCED AUXILIARY EQUIPMENT  
STANDARD 8" EL FLANGE WITH SWITCH  
10/15/2010

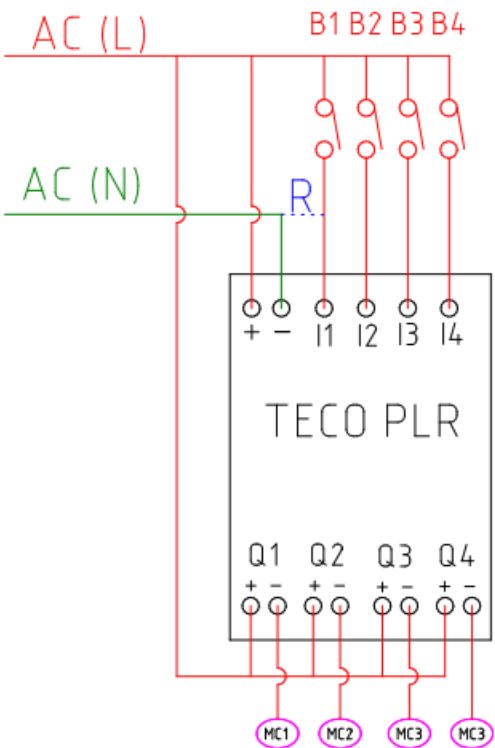




# Operation Manual CAV VACUUM LOADERS



## Appendix B



- B1 MATERIAL SWITCH
- B2 NOT USED
- B3 NOT USED
- B4 NOT USED
  
- M1 VENTURI
- M2 NOT USED
- M3 FILTER PULSE
- M4 NOT USED