

# Installation Instructions

## Tru-Vend sensor instructions Rowe and AP

### **Sensor system principles of operation and troubleshooting:**

The sensing system includes 2 red leds for information purposes.

The detector board controls the emitter board. On power up the detector board status led will blink. The detector board has 4 states, rest, looking, reporting, and test. The status led is off during rest, blinking slowly while looking and rapidly during reporting. Typically, looking ends when product is seen or a maximum of 7 seconds and reporting lasts 3 seconds. During looking the emitter board ON led should glow.

A vend confirmation cycle begins with a start pulse sent from the control board just prior to motor run. The detector board responds by performing a beam test and sends back a signal to the control board that either it is looking or reporting a failure.

For 7 seconds the detector board looks for the beam to be blocked by falling product. The cycle ends with rapid blinking of the status led while the result is sent to the control system. A "seen" signal begins as soon as product is seen. A "not seen" indicates the board timed out with no product seen. In normal operation the status indicator will switch to fast blink as soon as product breaks the beam. If no product is seen, it will blink fast at the end of the 7-second period. If the beam system test fails, it will blink fast immediately.

The sensing system may be used with the Greenwich VB4900 Rowe or VB107 AP replacement board or as part of a retrofit product. Those products determine what happens in response to the messages.

The VB4900 (Rowe) and VB107 (AP) will put full credit back on the machine if product is "not seen" (payout does not occur until the end of a vend—no vend -no payout). No limits on number of times. If the beam is blocked at start or product is seen, the vend completes as if product was seen. The system will not activate on a gum or mint vend.

The retrofit product determines the vended product value (credit minus payout) and will reapply that value twice. If a product is not detected on the 3<sup>rd</sup> try the value will be lost.

### Test mode:

To test the system, short the 2 exposed pins beside the emitter board connector with a coin or screwdriver. The status led should blink then light when the beam is broken. It will blink again at the end of test mode (15 seconds). If the status led stays on check for a glow on the emitter board's red led.

Condition	Blinking	Reporting
Looking	slow	—
Beam test failed	fast immediately	seen
Product seen	fast after beam broken	seen
No product seen	fast after 7 seconds	not seen

### Parts bag contents-Rowe:

8 6-32 5/16 screws

8 6-32 1 plastic nuts

4 6-32 kep nuts

4- 3" tie wrap

2- mounting brackets Rowe

### Parts bag contents-AP:

4 6-32 5/16 screws

8 6-32 plastic nuts

2 #7 sheet metal screws

4- 3" tie wrap

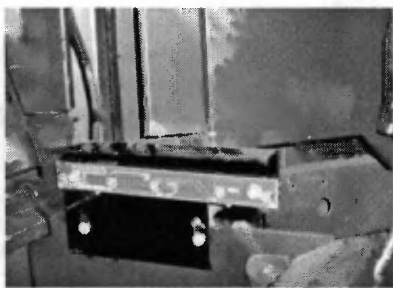
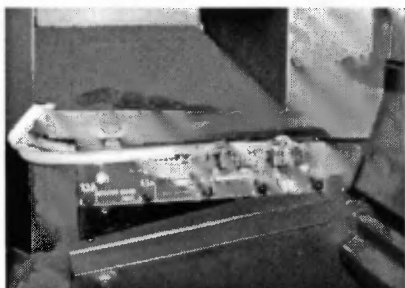
2- mounting brackets AP

### Rowe Assembly:

The emitter board attaches to the inside of the hinge side of the delivery bin. Using the emitter bracket holes as drill guides drill 2 holes and mount the board using the bracket, 2 standoffs, and nuts and bolts.

The detector board attaches on the far side of the bin above the gusset approximately 1/4 inch in from the machine edge.

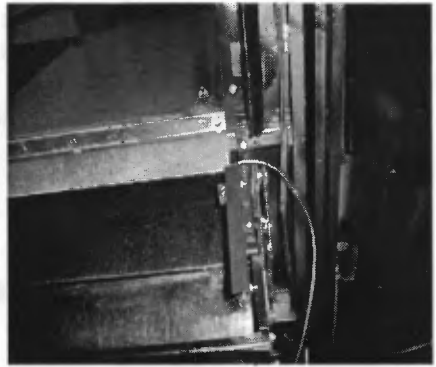
In the Rowe machine, there are two potential problems with the mechanical installation. One is that when the door closes the bracket may hit the bottom of a gusset on the side of the machine or that the bin side may be deformed. Either of these may cause the beam to point into the bin and give intermittent results. Please notch the gusset and check the bin side.



Rowe detector and emitter board mounting. Note emitter side gusset cut. THE PICTURE SHOWS THE EMITTER SIDE BRACKET INSIDE THE BIN. This may cause a problem with the flapper!!! **Mount the bracket on the outside.**

**AP mounting:**

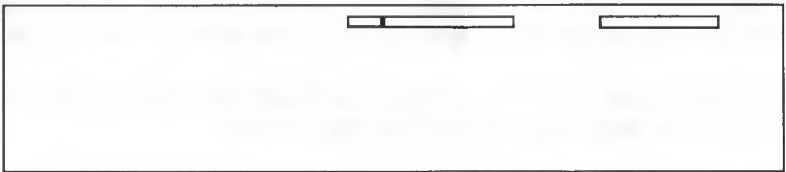
The brackets mount under the angled metal piece that hold the bin to the door. The emitter board mounts on the hinge side of the bin. Attach the PC board to the bracket using the nuts, bolts and standoffs. Remove the angle bracket screw and slide the optic bracket under the angle bracket. Reattach and insert #6 sheet metal screw through lower bracket hole into the existing hole in the bin. SLIDE THE BRACKET TOWARD THE TRAY BEFORE TIGHTENING.



AP detector and emitter mounting

Detector board connectors:

	To Emitter board	from control system
		Upgrade 7 pins
short to test		Retrofit 6 pins



NOTE: Some products (bags) may be slow to drop and not fall until after the sensor has stopped looking. You may need to install "pushers" on the spirals to speed the ejection.

# Reflections!

*There are reports of problems in AP machines and few in Rowe. It has been traced to the smooth shiny black paint around and above the bin area. It only happens with the door closed and was first reported on cheetos bags and toasted cheese packages. Since then the AP bracket has been changed to have an overhang. It may have helped, but it has NOT eliminated the problem. Flat black paint or contact paper is needed on the sides above the brackets.*

At this writing, there are more Rowe units installed than AP's but few reports of problems in Rowe machines. Rowe has a textured, dark brown finish which helps. If the Rowe has been repainted, use flat black.

**Plan on flat black paint or contact paper!**

**WILL IT WORK? Or give away product?**

**It's up to the installer.**

**Test for a reflection problem!**

Product placement may also be a problem. I have reports of popcorn and Hershey bars sliding away from the shelf and flat down the front window where it does not break the beam. Move to a lower tray.

If you call with a report of a problem of unseen product, the first thing I'll ask about is the flat black paint and the placement discussion above.

You cannot just install this product, test it with the door open and walk away. You must check for the reflection problem.

**If this is a new product for you do not give the job to a junior serviceman.**

**If you do not properly test, it will give away product.**