

Use this guide in conjunction with the Model 399 Instruction Manual that comes with each vending machine or retrofit kit. The pictures and part number identifications in the manual will be used here.

Normal Operation:

The red LED display is alternately showing *PAY*, then *1.00* (or your particular vend price).

A quarter inserted in the coin slot will have the circuit board (#399-19) emit a “beep” and register *.25* credit on the display. Additional quarters will add upwards in the display, until the pre-set vend price is equaled which will then start the motor running to drop a shelf. See page 4 & 5 in the **Instruction Manual** for more explanation of coins, their values, and acceptor programming.

Accepted coins drop through the coin mechanism to be collected in the coin box. When the vend price is met (or exceeded by a high value coin), the vend motor and its attached drive cam will begin a 360° rotation to move the trip bar on the side of the magazine assembly to initiate the dropping of one shelf. See page 7 of the manual for a drawing of the parts described. The vend motor drive cam fits in the center opening of the shelf actuator (#399-A90). The motor rotation time is approximately 3 seconds. After the shelf drops, the LED display will return to showing *PAY*, then *1.00*, the normal display function. No coins will be accepted while the motor is running to drop a shelf. This machine does not make change.

Problem:

The red LED display is not visible.

First step:

Verify that there is 24 volt AC power at the connection point on the circuit board, which is the small terminal block on the lower left corner of the circuit board. After verifying power supply, switch off power for at least 5 seconds, then switch power on. The power down step is the main reset function that may start up the LED display.

If the LED display is still blank, power down again, disconnect the 2 power wires at the circuit board terminal block and unplug the main wire harness (#399-16) from the bottom of the circuit board. Re-connect the power wires only, switch the 24 volt power on, and look for an active LED display. If display is active, then re-attach main wire harness and test with coins.

Second Step:

If the LED display is still blank, switch the power off, disconnect the power wires and the main wire harness. If available, use a different 24 volt AC power source to test the circuit board's ability to power the LED display. Otherwise, reconnect the power wires only, switch on power to see if the LED display will light up.

Last Step:

Replace the circuit board. Call Laurel at 888-528-7358 for options on replacing the board with a refurbished one, buying new or sending yours in for repair. We do have a ‘swap’ program where we immediately send you a refurbished board and you return the defective board back to us for a reduced fee. This ‘swap’ program is the least expensive option.

Problem:

The LED display is active as in the normal operation explained above, but coins are rejected and returned to the customer. This typically indicates a problem with the coin acceptor.

First Step:

Verify that the LED alternates between *PAY* and *1.00* as described above in Normal Operation. If the LED display has *Sold Out*, *E.1*, or is not alternating – coins will not be accepted.

Verify that the coin pathway through the coin acceptor is clear, this will call for removing the coin mechanism frame (#399-C15, 65, or 101) to visually inspect. The power supply wires should remain attached. Verify that the wire harness for the coin acceptor is fully plugged into the main harness receptacle.

Second Step:

If the coin acceptor is a Slugbuster (#399-102) you can try replacing the sample quarter in the coil. Next try adjusting the selectivity adjustment – see the [Slugbuster Instruction Sheet](#) for this information from Parker Engineering.

If the coin acceptor is the MA 800 (#399-64), there is a small LED visible through a round hole on the cover that should be green, not red or flashing green/red. If it is red or flashing the acceptor will need repair. If it is green you can re-program your coins into the MA 800 by following the [MA 800 Instruction Sheet](#), see the ‘Coin Learn Procedure’ section. We have used position #5 for dollar coins and #6 for quarters. You can use position #1 - #4 for reprogramming, it does not matter which one you use nor does it matter if a certain coin is programmed in multiple positions. Contact IDX Inc. at 800-643-1109 for direct repair on this coin acceptor if it is beyond the 1 year warranty period.

If the coin acceptor is a Microcoin QL (#399-101), there is a small LED that should be green. If it is green you can re-program your coins into the QL by following the [QL Instruction Sheet](#), see the ‘Programming Instruction’ section. We have used position #10 for quarters and #11 for dollar coins. Contact Hi-Performance Wash Systems at 877-405-0159 for direct repair on this coin acceptor if it is beyond the 1 year warranty period.

Contact Laurel Metal for any warranty replacement needs or purchase of coin acceptors. Be aware that Parker, IDX and Microcoin produce specialized acceptors for Laurel venders that are wired differently than similar units used in self-service bays and vacuums. The Laurel vender style of acceptors all have 6 wires and a molex connector to plug into the circuit boards. All acceptors are interchangeable in any of the 1, 3 and 5 column Laurel venders.

Problem:

The error message *E...1* shows in the display.

Step 1:

Clear the error message by powering down the vender for at least 5 seconds. Power back up and the display should now appear like the description in Normal Operation. Insert coins, watch for proper totalization in the display, and listen for the vend motor to run for 3-4 seconds as it drops a shelf. The display should return to normal operation mode.

Step 2:

If the *E...1* appears again in the LED display on the first vend, clear the error message as in Step 1, then remove the coin mechanism assembly from the cabinet with the power wires attached and powered. With the coin mechanism in hand, insert coins into the coin chute to get to the vend price, being aware that the coins will be falling out of the bottom of the mechanism. Reaching the vend price, the vend motor should start its rotation and complete movement in 3-4 seconds. After a full revolution of the vend motor, verify that the display appears as in Normal Operation. With the coin mechanism operating properly, assume that there is a misalignment of the coin mechanism and magazine assembly (#399-D1) when attached, or some other hindrance in the movement of the trip bar (#2100-3) on the left side of the magazine assembly. Refer to the diagram on page 7 of the instruction manual to see the parts. The trip bar should move freely back and forth when dropping an individual shelf, this may be tested manually with the coin mechanism removed. If the coin mechanism operates properly outside the cabinet and the magazine assembly will drop shelves manually, then re-attach the coin mechanism to the magazine assembly in the cabinet and pay attention to the

round drive cam (the moving part of the vend motor during a cycle) being in between the two bent flanges of the shelf actuator (#399-A90).

Step 3:

Verify that the power supply to the vender is 24 volts AC (+/- 3 volts) and there is at least ½ amp of power supplied for each vender attached to the power supply. A transformer that is failing, less than 20 volts, undersized, or underpowered for the attached venders will cause the vend motor to run slowly (more than 6 seconds per revolution) and display the *E... I* error message.

Last Step:

Replace the vend motor (#399-10). Contact Laurel to obtain a vend motor. Remove the non-functioning motor from the coin mechanism framework, mark each wire for position, and cut the two wires that attach to the cylindrical vend motor. The replacement vend motor will attach to the coin mechanism the same way as the original and the wires will attach in the same positions. NOTE: the two wires to the vend motor must be secured in place (does not have to be soldered) and the protective rubber cap re-installed over the end of the cylindrical motor.

Problem:

The vend product shelf does not drop, even though all functions happen as described in the Normal Operation.

First Step:

Manually drop 2-3 shelves at the bottom of the section of shelves in vend position (horizontal) by locating the thin, flexible shelf wire and pushing it towards the back of the cabinet to release and drop each shelf. The shelf wire is on the underside of each shelf and runs from the middle to the left side. The flexible portion of the wire is to the far left side and the movement is less than 1/8" towards the back. After dropping shelves manually, try vending with coins.

If there is a need to test the shelf drop on all 24 shelves in the magazine assembly, remove the coin mechanism assembly from the cabinet and operate the unit by moving the trip bar (#2100-3) fully back and forth for each shelf drop with your hand.

Last Step:

If there is a continued shelf drop problem and no physical problem is identified, contact Laurel at 888-528-7358 for further support or replacement of the magazine assembly.

Problem:

The LED display says *Sold Out*

First Step:

Verify that the top shelf in the magazine assembly is in vend position (horizontal, or 'up'). The empty rod (#399-41) sits on top of the top shelf and will operate the empty switch (#399-15) of the coin mechanism when the top shelf drops. Verify that the bottom end of the empty rod is above the empty switch lever and not interacting with the switch. If the *Sold Out* message continues, contact Laurel for further troubleshooting.

Problem:

The LED does not display *Sold Out* when the top shelf drops

First Step:

The lever of the empty switch (#399-15) is most likely bent down and does not activate the switch when the top shelf drops. Bend the lever up so that when the top shelf drops the empty rod will push the lever down to activate the switch. The lever can get bent when the coin mechanism is removed from the vender.

Problem:

Inserting a quarter in the coin mechanism shows as **.50** in the display, or inserting a quarter in the coin mechanism drops a shelf when the vend price is higher than 25 cents, or a dollar coin inserted shows as **.25** in the display.

First Step:

Access the “A” value setting (also called the base coin credit value) in the circuit board by pressing in and holding the **MODE** button on the circuit board for at least 4 seconds. **A .25** should be displayed. If not, you can change it by pressing the **UP** or **DOWN** buttons to get to the correct setting, and then pressing the **MODE** button once to set it.

In most cases, the display should read **A .25**. That setting provides a 25 cent credit from 1 quarter inserted (1 pulse from the coin acceptor) or a \$1.00 credit from a dollar coin inserted (4 pulses). The **UP** and **DOWN** buttons next to the mode button can move the “A” value up and down by .05 increments.

The exception to this is the use of the Slugbuster acceptor (#399-102) with the dollar coin, or a dollar valued token. The “A” value setting should be set at **A 1.00** because the Slugbuster sends one credit pulse for the one type of coin it can accept, whether it is a dollar coin or a token.