McGunn Safe

Easy120

Service Manual

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EASY120 SPECIFICATIONS

Footprint — 32”H x 20”W x 20”D
Panel Depth — 5”
Weight — 270 lbs (approx., empty); 320 lbs (approx. ship)
Boltwork — 5 Point
Hinge — Continuous, heavy duty full length
Manual Drop — Drawer, 4.5” x 1.5”
Inner Compartment — Key locked
Tube Capacity — 120 Tubes (10 columns, 12 tubes/column); Internally loaded
Vend Mechanism — Solenoid activated release for hand operated knob cycle vending
Vend Delay — 2 Minutes default (adjustable by DIP switch 0 to 15 minutes)
Alt Vend — 30 Second Vend Delay (MGR key must be ON)
Door Delay — 10 Minute default (adjustable by DIP switch 0 to 15 minutes)
Armor Car Support — Key override of door delay for instant access
Keys — MGR, VEND, ACO (Armored Car), and Inner Compartment

EASY120 OPERATION

LOADING TUBES

- Open the outer door.
- Put rolled coin or bills into empty tubes.
- Insert full tubes into appropriate columns. *Stickers on the interior of the vend assembly indicate the number of tubes in each column. Tubes may be loaded with either end facing forward.*

VENDING TUBES

- Insert the VEND key and turn to ON.
- Press the number button corresponding to the column you want to vend from.
- Rotate the release knob for the selected column.
- Collect your tube from the dispensing tray.
- The vend delay cycle must finish before you may vend again (the default delay is 2 minutes unless using the ALT VEND feature).

ALT-VEND FEATURE

Note: This proceedure is used to enable a 30 second vend delay.

- Insert the MGR key and turn to ON.
- Press the ALT VEND button.
- The vend delay switches to 30 seconds.
- Press the ALT VEND button again to switch back to the normal vend delay.
- Switch the MGR key to OFF to disable the 30 second delay feature.

MANUAL DROPS

- Pull out the manual drop drawer.
- Insert drop envelope into drawer.
- Push manual drop in fully. *The drop envelope will fall into a secure inner compartment*.

OPENING THE OUTER DOOR

- Insert the MGR key and turn to ON.
- Press the DOOR button.
- The DELAY/READY indicator will turn red (this indicates a delay is in progress).
- The MGR key may be removed during the delay cycle if desired.
- At the end of delay cycle both indicators turn green.
- Insert the MGR key and turn to ON.
- Press the DOOR button.
- The DOOR indicator will turn off.
- IMMEDIATELY turn the handle and open the door.
- The door will automatically lock when you close the outer door.

ARMORED CAR ACCESS

- Insert and turn the ACO key.
- While holding the ACO key, IMMEDIATELY turn the handle and open the door.
- The door will automatically lock when you close the outer door.

OPENING THE INNER DOOR

- Open the outer door by normal or Armored Car proceedure.
- Insert the inner door key into the inner door lock and turn.
- The inner door pulls down to allow access to the inner compartment.

EASY120 INSTALLATION

SITE PREPARATION

Before installing, make sure there is adequate clearance for the body and base of the safe as well as proper electrical power.

Space Requirements

Space must be provided for mounting the safe, plus required clearance for access. A minimum gap of one inch must be provided on both sides and four inches at the rear of the safe. Clearance must be provided so that the safe door is allowed to swing open at least 90°.

- 1 Inch Side Clearance
- 4 Inches Rear Clearance
- 90° Door Swing Clearance
- Body Height Clearance

Power Requirements

A standard NEMA 15A $115V_{AC}$ grounded outlet must be provided within 6 feet of the hinge side of the safe. The unit may share its AC circuit with other point of sale electronic equipment, but must not be on the same circuit as rotating machinery such as a cooler or other refrigeration equipment.

- Standard $115V_{AC}$ Grounded Outlet
- No Rotating or Heavy Loads on AC Circuit
- Outlet Within Six Feet of Hinge Side

INSTALLATION PROCEDURE

Before proceeding, make sure the space and power requirements listed above are met for the mounting location. The safe is shipped with the outer door locked in the open position with rubber bumpers preventing accidental door closure.

Remove the Safe From the Pallet

1. Remove wrapping material from the safe.
2. Remove the contents of the safe.
3. Unbolt the safe from the pallet.

Verify Safe Operation

1. Locate the power supply unit packaged inside the unit. Unwrap the power supply.
2. Plug the power supply cable into the power supply jack at the rear of the safe.
3. Plug the standard grounded power plug into a standard $115V_{AC}$ outlet.
4. Wait for the display to stabilize (about 10 seconds).
5. Using the OPENING OUTER DOOR procedure (see Operating Instruction section), unlock the outer door.
6. Using the VENDING TUBES procedure (see Operating Instruction section), operate one column's vend knob as if a tube were present.
7. These steps verify operation of critical Easy120 features. **If the door or vending system cannot be operated, contact McGunn Technical Support immediately prior to bolting the safe down (1-800-452-4655).**

Safe Installation

1. Obtain the anchor wedge kit from inside the safe and set aside.
2. Obtain the footprint template (shipped inside the safe).
3. Using a pencil, mark the mounting hole locations on the floor.
4. Drill four 1/2 inch holes to a depth of 3 inches. The holes must be clean. Use a vacuum to clean the holes. *Do not use water to clean the holes.*
5. Position the safe so that the bolt-holes align with the holes drilled in the floor. While doing so, feed the power supply cable and alarm cable through cabinet openings (if applicable) for routing access.
6. Drive each anchor wedge in until 1/4 inch to 1 inch of the top protrude through the floor of the safe.
8. Slide the washers down over each anchor wedge.
9. Put the nuts on each anchor wedge by hand until finger tight. Turn approximately three to four full turns by wrench to complete the tightening.

EASY120 THEORY OF OPERATION

MGR KEYSWITCH

This switch is a key controller switch that activates all Manager functions. Manager functions include enabling the ALT VEND function and opening the outer door. When the key switch is ON you may activate the ALT VEND function by simply pressing the ALT VEND button. You may also open the door by pressing the DOOR button while this key is ON. This key does not enable normal vending.

VEND KEYSWITCH

This switch is a key controlled switch that activates the vending feature. When this key is in the ON position, a user can vend tubes from the safe. Each time a tube is vended a delay must be satisfied before another tube may be vended. When this key is in the OFF position, no vending can take place on this system.

ACO KEYSWITCH

This switch is a key controlled momentary switch that allows an armored car carrier (or any other user that has this key) to immediately open the door by bypassing the door delay. When this key is activated, the door will immediately unlock, the DOOR LED will turn on, and you turn the handle to open the safe. There is a 30 second interval between periods this key can be used. So, if you turn the key and do not open the door, you have to wait 30 seconds to turn the key again.

DOOR LED

The DOOR LED on the display panel illuminates when either the ACO key has been activated or the door time delay has been reached and the door is ready to be opened. If a manager presses the DOOR button of the safe while the MGR key is in the ON position, the door delay will begin. Once this delay has been reached the DOOR LED will illuminate and the manager will have 10 minutes to come back to the safe and press the DOOR button to open the door. Once the door has been opened, or the 10 minutes period has expired, the DOOR LED will then turn off.

READY/WAIT LED

There is a Bi-Color (Red or Green) LED that serves as the READY or WAIT LED. Any time the system is in a delay, this LED will turn RED. When there is no delay in progress this LED will be GREEN. This LED also serves as a feedback for button presses. Since there is no buzzer on the system, each time a key is pressed this LED will blink an ORANGE color whether or not the LED was GREEN or RED before the button was pressed.

VEND BUTTONS 1-10

If the VEND Key is in the ON position, when a VEND button is pressed then (1) tube may be vended from the associated column. After the tube is vended, the system will then go into delay. The duration of the delay depends on a DIP switch setting (factory default is two minutes).

DOOR BUTTON

If the MGR key is in the ON position, when the door button is pressed the system will start the door delay (if a delay is set on the dip switch). After the delay has ended, when the door button is pressed within a 10 minute period while the MGR key is ON, the door will open.

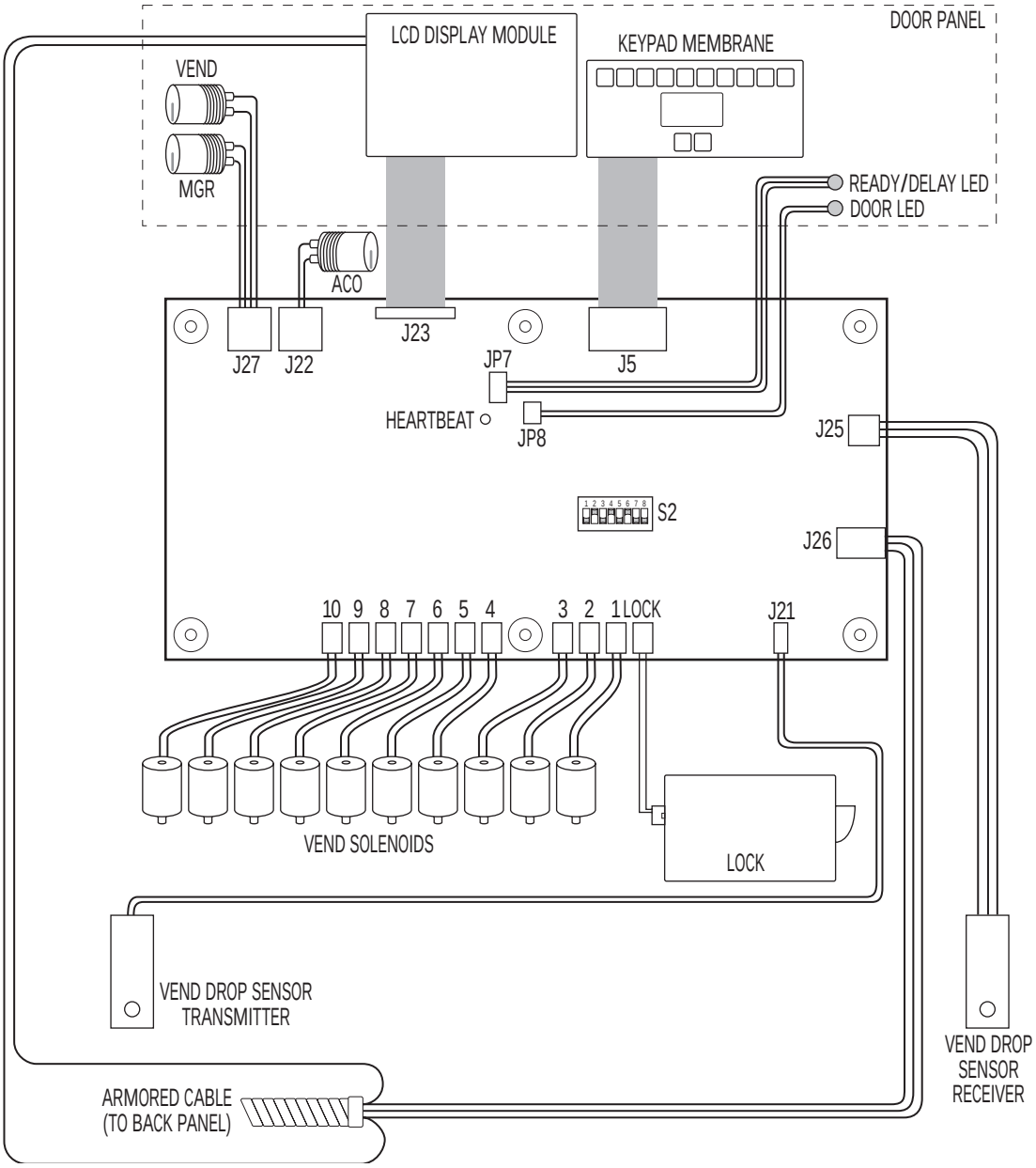
ALT VEND BUTTON

If the MGR key is in the ON position, when this button is pressed the system will either have its normal vend delay or a 30 second vend delay (depending on which state it was in before the press, it alternates states). While the system is in the ALT VEND state, no matter what the dip switch delay is set to, the vend delay will immediately go to 30 seconds. It will continue in this state until either power is removed, or the ALT VEND mode is turned off.

ACCOUNTING

There is no accounting on the system. It does not track door or vending events. The system will, however, only allow one tube to vend per request.

EASY120 WIRING DIAGRAM



Easy120 Wiring Diagram

Armored Cable: Red, Blue, and Black to J26; Red and Black to LCD module.
Vend Key Switch: Orange wires to J27.
MGR Key Switch: White wires to J27.
ACO Key Switch: Red and black wires to J22.
LCD Module Data: Flat ribbon cable to J23.
Keypad Membrane: Flat ribbon cable to J5.
Ready/Delay LED: Red (top), black, white wires to JP7.
Door LED: Black (top) and white wires to JP8.
Vend Solenoids: Blue wire pairs to associated J7 connector.
Lock: Orange and Black (top two wires of RJ45 at lock) to J7 LOCK1 connector.
Vend Drop Sensor Transmitter: Yellow and Black wire harness to J21.
Vend Drop Sensor Receiver: Yellow, Black, and Yellow wire harness to J25.

EASY120 TROUBLESHOOTING

INTRODUCTION

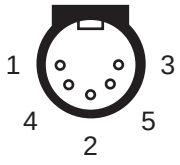
Most problems will fall into one of these categories: mechanical/door operation, vending, power, or electronics. If you can successfully determine the nature of the problem you can greatly reduce the number of possible causes.

POWER

If the unit has no power, the display will be off, both LEDs will be off, and there will be no response from the keypad.

External Power

The unit is powered by an external DC power supply (Part 15000346). Measure the output voltage to determine power supply operation up to the back of the safe (only +12 V_{DC} and +5 V_{DC} and common are used). If the problem is external verify the outlet has power and replace the power supply if faulty. If the power supply output is good and everything is connected properly, the problem is inside the safe.



1 = COM
2 = COM
3 = +5 V_{DC}
4 = –12 V_{DC}
5 = +12 V_{DC}

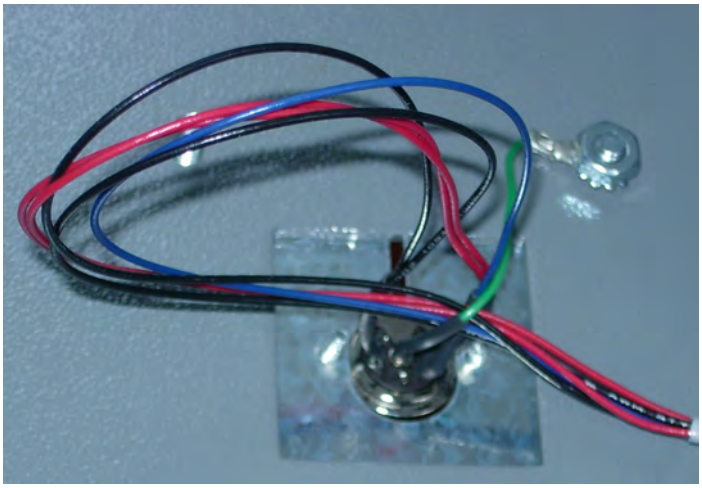
Power Supply Output

Internal Power

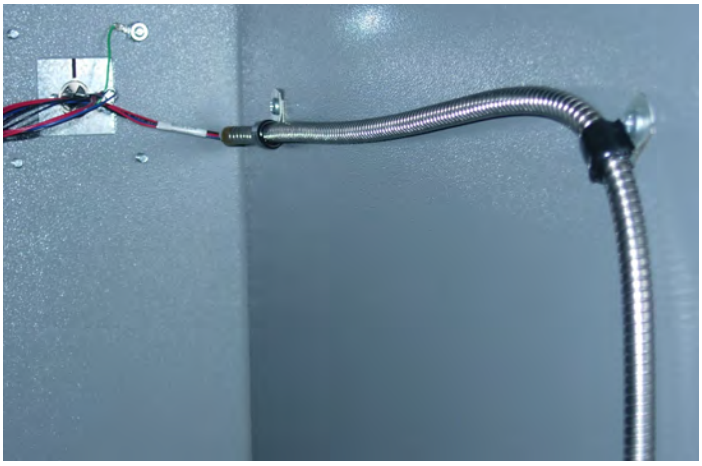
Possible problems include the cable harness, the LCD display module, or the main board.

Internally power runs on two sets of wires from the rear of the safe through an armored cable to the door.

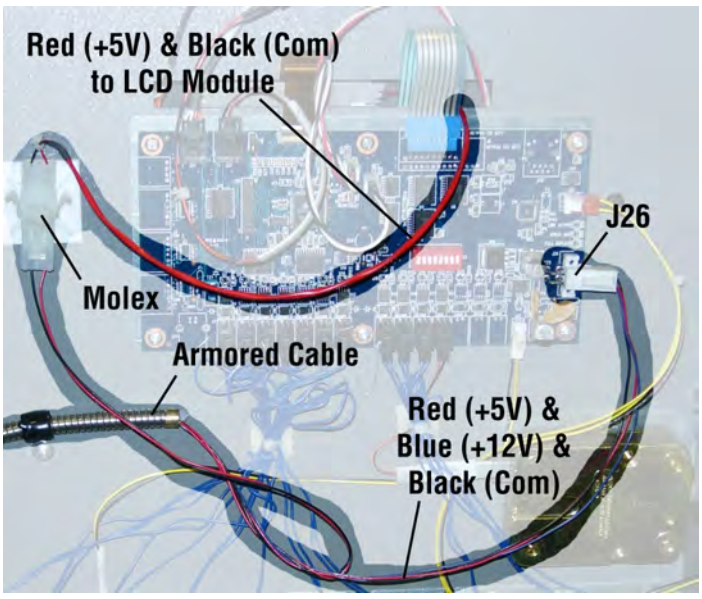
Inside the back of the safe: two black wires carry power common from Pin 1 of the jack to J26 (main board) and the LCD module. A blue wire carries +12 V_{DC} from Pin 3 on the jack to J26 on the main board. Two red wires carry +5 V_{DC} from Pin 5 of the jack to the LCD module and main board J26.



Power Supply Jack Wiring at Rear Inside of Safe



Armored Cable Routing



Power Wires from Armored Cable
To: J26 at Main Board
To: LCD Module via Molex Connector

Disconnect J26 and the molex connector to the LCD panel and check for correct voltages at each plug (blue = +12 V_{DC} and red = +5 V_{DC} relative to black). If the armored cable is okay, the problem is either the LCD module or the main board. Plug J26 in and see if the Heartbeat LED on the main board blinks. If not, the problem is definitely the main board. If the Heartbeat indicator does blink, the problem is more likely to be the LCD module.

VENDING

Vending problems may include an empty column, a tube jam, a solenoid problem, a vend drop sensor problem, or an electronics problem.

Tube Jam or Empty Column

Open the door and visually inspect to make sure there are tubes in the column and there is no jam. If the column is jammed clear the jam.

Solenoid or Main Board

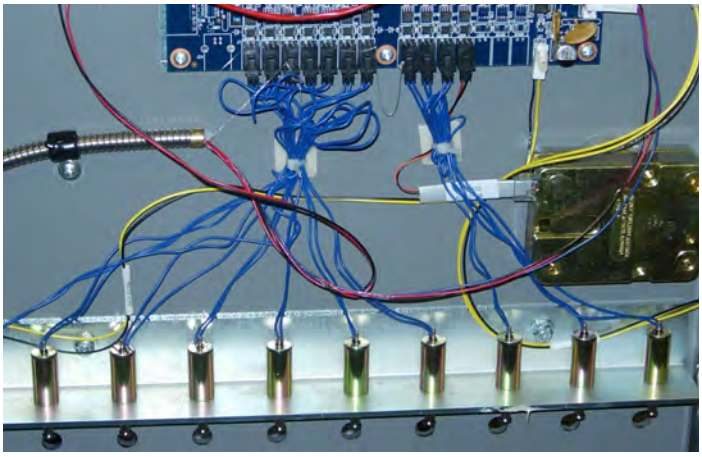
While attempting to vend from the problem column, verify the solenoid energizes (pin pulls up) when the screen indicates it should. If the solenoid does not, check the connection to the main board. Check the voltage to the solenoid at the main board connection while attempting to vend to determine if the problem is the solenoid or the main board.

Vend Drop Sensor

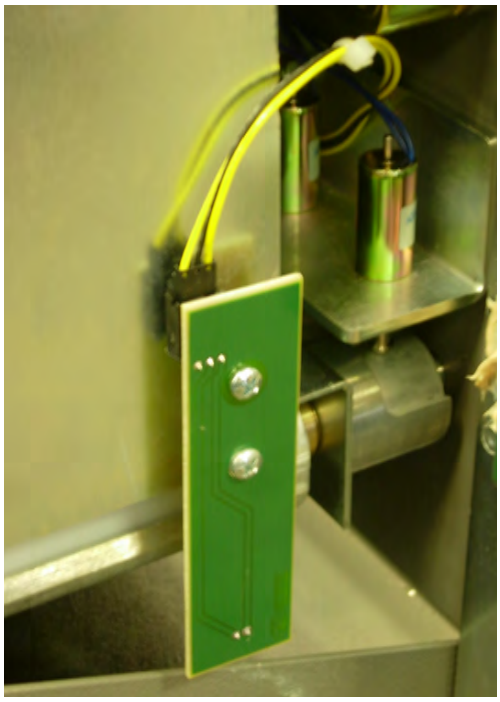
If the safe vends properly but the tube count does not decrement or if the solenoid remains energized even after you physically vend a tube there is a problem with the vend drop sensor. Check the physical mounting of the vend drop sensor transmitter and receiver boards and check for any obstructions of the beam across the tray area. Check electrical connections at sensor boards (transmitter on hinge side, receiver on open side) and main board J21 and J25. Check continuity of sensor cables. Replace both boards only if no other problem is found.

Vend Key Switch

If the vend key switch or its wires fail, the keypad will not respond to any attempts to vend even though the display will work and the door will still operate.



Blue Wire Pairs from Solenoids to Main Board



Vend Drop Sensor (Receiver Side Shown)

Keypad Membrane
MGR Key Switch (far right)
VEND Key Switch (to the left)

Keypad

If the keypad membrane is damaged one or more columns may not respond when you attempt to vend.

OUTER DOOR

Possible outer door problems preventing operation may include handle/cam failure, stuck or blocked bolt work, lock failure, main board failure, key switch failure, or a wiring problem with a switch or the lock.

MECHANICAL

Pressure on the inside of the door from items stuffed inside can make it very difficult to open the door. The best solution if this happens is to apply pressure to the front of the door while turning the handle. Damaged or jammed bushings can cause similar symptoms. If the handle cam is loose the handle will turn without moving the bolt work.

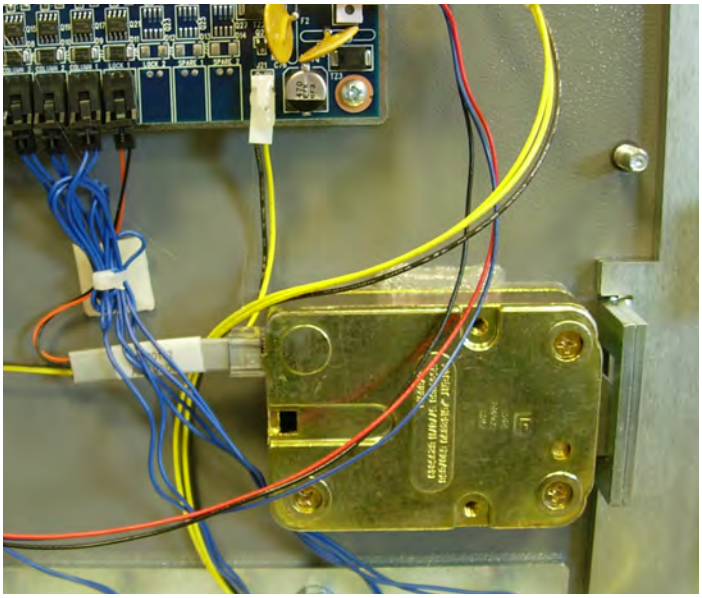
ELECTRICAL

Using the normal door procedure attempt to open the door. If nothing happens when you press the DOOR button, the problem is the keypad. If both LEDs turn green at the end of the delay but the DOOR LED does not go off when you turn the MGR key, the problem is the MGR keyswitch. If either of the above are the problem, the ACO key should still be able to open the door. If the LEDs respond properly to the MGR keyswitch yet you cannot open the door using the Normal or Armored Car Door Procedure the problem is probably either a lock failure or lock cable.

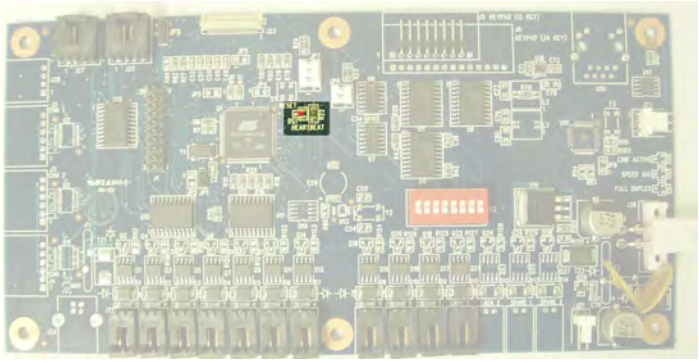
MAIN ELECTRONICS

The main board is the heart of the Easy120. Component failure on the main board can manifest in any number of ways ranging from intermittent door or vending problems to complete display failure, garbled display, inability to count tubes, or otherwise failure to properly respond. The main board constantly checks itself as evidenced by a flash of the Heartbeat LED about once per second. If the Heartbeat LED does not blink the main board should be replaced.

Handle Shaft with Cam (left) and a Guide Bushing (right)



Outer Door Lock



Main Board (Heartbeat LED Highlighted)