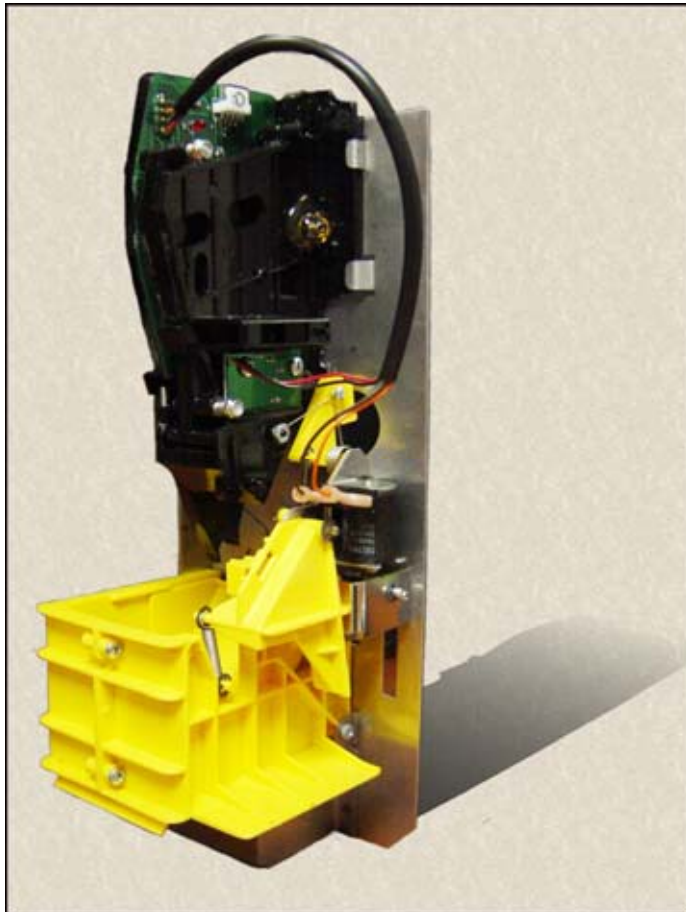# ST-810 plus-mech™

User Manual

The ST-810 plus-mech is designed to fit into your current TK style newsrack. The ST-810 plus-mech accepts nickels, dimes, quarters and dollar coins. It will not accept pennies or half-dollar coins.

Contacting Technical Support

Technical support is available through Bellatrix Systems, Inc. at 1-800-451-9753 Monday through Friday from 8:00am to 5:00pm Pacific Time.

Installation

Recommended Installation Tools
Medium size pliers
Nut driver, size 3/8-inch

The ST-810 plus-mech fits into newsracks on the same mounting system as the ST-211 and mechanical TK totalizer units.

Removal of Existing Coin Mechanism
1. Open the rack head.
2. Remove the coin tray to prevent damage during installation.
3. Open the newsrack paper door and lock it open.
4. Unlatch the existing totalizer and remove it from the newsrack.

Changing the Door Tongue
The ST-810 plus-mech uses a spring-loaded door tongue that is largely self-adjusting. The existing door tongue will not work with the new ST-810 plus-mech and may damage it if not removed.

1. Remove the old door tongue using a 3/8-inch nut driver, saving the nuts and bolts to install the new tongue.

2. Mount the new door tongue assembly onto the door.

3. Position the tongue at the middle position of adjustment (See figure at right). Tighten the three nuts.

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Installing the ST-810 plus-mech

1. Install the new ST-810 plus-mech on the same mounts used by the old coin mechanism.

2. The locking latch is on the upper left corner of the backplate. Slowly close the newsrack door and check that the tongue slides under the metal trip lever housing and snaps up to lock the door. Raise or lower the tongue if needed.

3. Pull on the newsrack door a few times to make sure that it catches properly.

4. Check the solenoid and the reset control by pressing the blue reset button on the coin reader assembly. The red LED will flash, the solenoid will fire, and the trip lever will fall and unlock the newsrack door.

5. Pull the front door to make sure that it unlocks each time the reset button is pushed. If the door will not open, the tongue may need to be raised or lowered.

6. Replace the coin tray inside the newsrack and close the rack head. Do not re-lock the head yet.

7. With the rack door and head closed, check the operation of the ST-810 plus-mech.

8. Set the prices as described in the section **SETTING PRICES** and test the ST-810 plus-mech with coins. Drop enough coins into the coin slot to **equal** the set price and verify that the rack opens. Open and shut the paper door.

9. Insert another coin (not a penny) that is **less** than the set price and pull on the door to verify that it does not unlock on less than the correct amount of money.

10. Press the coin return button to return the coin. Activating the coin return clears the current cash total.

11. Installation and testing are complete and the rack head can be locked.

Setting Prices

The ST-810 plus-mech can store one or two prices.

Setting Two Prices

1. Open the rack head to access the ST-810 plus-mech body.

2. Press and hold the blue Reset Button for about five seconds until the red LED lights.

3. Release the blue Reset Button and verify that the red LED stays lit.

4. Drop the **Large** Price-Set Token into the coin slot.

5. Insert coins totaling the new Large Price-Set Token price. For example, if the new price is $1.50, insert six quarters. *DO NOT PUSH THE RETURN BUTTON*.

6. Drop the **Small** Price-Set Token into the coin slot.

7. Insert coins totaling the new Small Price-Set Token price. For example, if the new price is $0.50, insert two quarters.

8. Press the Coin Return Button twice. This will load the two new prices into memory, return the coins and tokens, turn off the red LED and unlock the rack.

Setting One Price

1. Open the rack head to access the ST-810 plus-mech body.

2. Press and hold the blue Reset Button for about five seconds until the red LED lights.

3. Release the blue Reset Button and verify that the red LED stays lit.

4. Drop coins into the coin slot, totaling the new price. For example, if the new price is $0.75, insert three quarters.

Press the Coin Return Button twice. This will load the new price into memory, return the coins, turn off the red LED and unlock the rack.

Changing Prices

Changing the current edition price between Daily and Sunday is easy with an ST-810 plus-mech that has been programmed with two prices.

1. Drop the Price-Set Token for the desired price into the coin slot. If changing to the Small Token price, insert the Small Price-Set Token. If changing to the Large Token price, insert the Large Price-Set Token.

2. Press the Coin Return Button twice. This will change the price, return the Token and unlock the rack.

Note: Dropping the Price-Set Token for the price that is currently active or in an ST-810 plus-mech that is programmed with only one price will unlock the rack without changing the price. See the section "Unlocking the Rack".
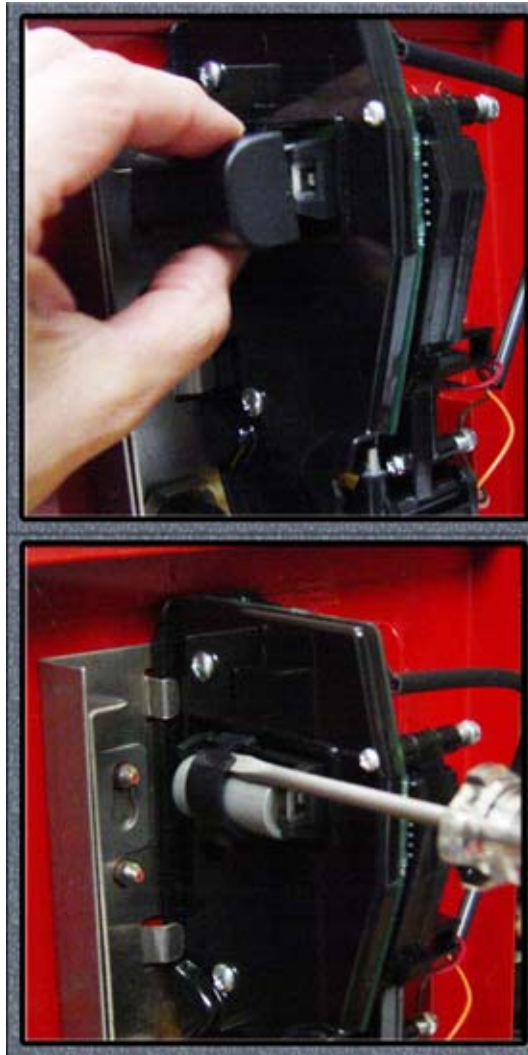
Unlocking the Rack

1. Dropping the Price-Set Token for the price that is currently active or in an ST-810 plus-mech that is programmed with only one price will unlock the rack without changing the price.

2. Drop the Price-Set Token for the current price.

3. Press the Coin Return Button twice. This will return the Token and unlock the rack.

Changing the Battery

The ST-810 plus-mech is designed to maximize battery life. The typical life of the battery is about 4 years under normal operation.

Tools Needed:

- Small Blade Screwdriver

- Duracell Ultra 123 2/3 AA 3-Volt Lithium Battery

Gain access to the ST-810 plus-mech body.

Remove the Battery Cover by squeezing the top and bottom to release it and then lifting it off.

Use a small blade screwdriver to gently pry one end of the Battery Clip up.

Remove the Battery Clip.

Remove the battery.

Insert the new battery with the positive end toward the Mounting Plate.

Press the Blue Reset Button (DO NOT hold) to verify that the Red LED flashes once and the Paper-Access Door unlocks.

Reinstall the Battery Clip. Align the ends of the Battery Clip with the slots in the center of the battery holder and push the Battery Clip over the battery until it clicks into place on both ends.

Reinstall the Battery Cover. Align the Battery Cover with the cutout and gently push it in until it snaps in place.

Press the Blue Reset Button again to verify that the Red LED flashes once and the Paper-Access Door unlocks.

Maintenance

Any electromechanical device that has moving parts is subject to interference from the buildup of dirt, grime, etc. The ST-810 plus-mech has very few moving parts, but still requires maintenance. It is helpful to have a supply of spare parts on hand to make quick easy repairs.

Cleaning the coin path and door assemblies occasionally will prevent most problems. In most cases, cleaning with compressed air once or twice a year should be adequate. In very dusty, salty or windy climates, cleaning will be required more often.

Dirt buildup can cause additional friction as the coin slides through the coin path. This can cause coins to move too slowly through the coin path and be misread or become jammed. To clean the coin path, use compressed air or open the coin reader and wipe out dirt with a clean cloth, Q-tip or small brush.

> ### *CLEANING NOTE:*
> *Do NOT use oils, lubricants or solvents when cleaning the ST-810 plus-mech. These products can cause damage or may leave a film that attracts dust and dirt that will cause malfunctions. These types of cleaners should always be avoided. Use Windex™ or a similar cleaner and a cloth, Q-tip or brush to clean the coin path.*

Check all springs on the ST-810 plus-mech. If springs are stretched or missing, the ST-810 plus-mech will not function properly.

The coin box assembly doors should open freely when the coin return button is pressed the accept arm is moved.   Do NOT test the coin return door by pushing down on it. This can cause the lower return spring to become stretched.

LED

The red LED (Light Emitting Diode) is located on the upper left side of the ST-810 plus-mech circuit board.

The LED will flash when a coin is read and when the reset button is pressed. If the LED does not flash when the coins are dropped, try cleaning the coin path.   If this doesn't help, press the reset button. If the LED does not flash when the reset button is pressed, check the battery connection and try again. If the LED still does not flash, try replacing the battery. If it still fails to flash return the ST-810 plus-mech to Bellatrix for repair.
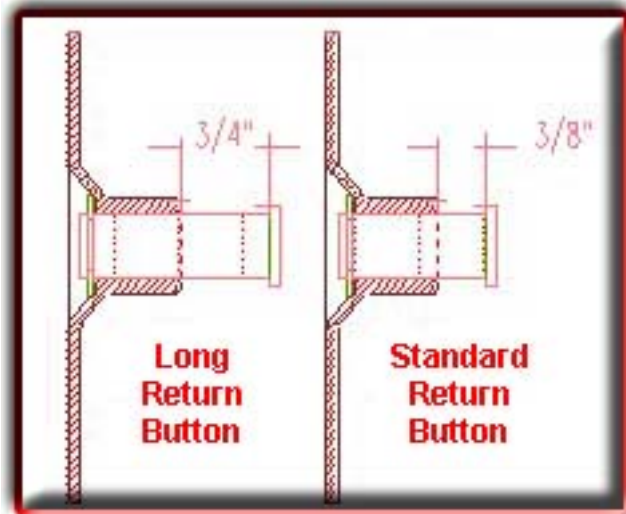
Reset Button

The reset button is positioned just above the LED.

Pressing the reset button re-initializes the micro controller on the ST-810 plus-mech circuit board. Reset the ST-810 plus-mech when reprogramming, when the battery has been unplugged, or when the ST-810 plus-mech is otherwise operating abnormally.

Coin Return Buttons

Some racks may have a coin return button that is too long or an E-ring/C-clip that is too large. These can interfere with the coin return mechanics on the ST-810 plus-mech and cause the coin return button to stick or fail to return coins. Small E-rings/C-clips can be purchased from Bellatrix.

Solenoid

Reset the ST-810 plus-mech while watching the solenoid and trip lever. The solenoid should fire and the trip lever fall.

If the solenoid does not fire or fires weakly check for burrs, dirt, spider webs etc. on or around the solenoid plunger and trip lever area. Use compressed air and/or a Q-Tip with Windex or electronics cleaner to clean the solenoid plunger and surrounding area. **Never** use any type of lubricant or cleaner that leaves a residue on the solenoid plunger or any other part of the ST-810 plus-mech

A leaky capacitor, broken capacitor lead or dead battery will also prevent the solenoid from firing.

Testing the ST-810 plus-mech Out of the Rack

If a rack or test head is not available for testing the ST-810 plus-mech, it can be held in the hand.

Shipping and Transport

During shipping or transport ensure that the nylon damper tab is inserted into the coin path or remove the battery. This will keep the damper lever from bouncing and discharging the battery.

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