

# Installation/Service/Operations Manual



Model BO-10  
Bump Out 10

**Self Closing & Electric Operation**

**Pass-Thru Window**

# TABLE OF CONTENT

| Topic  | Page |
|--|------|
| Disclaimer   | 3    |
| Serial Number Identification                       | 3    |
| Contact Sheet                                      | 3    |
| Introduction                                       | 4    |
| Product Information                                |      |
| Description  | 4    |
| Specifications                                     | 6    |
| Dimensions   | 6    |
| Safety Information                                 | 6    |
| Installation Procedures                            |      |
| Tools needed                                       | 7    |
| Materials Needed                                   | 7    |
| Physical Installation                              | 8    |
| Electrical Installation                            | 13   |
| Initial Operations and Testing                     | 15   |
| Adjustments and Calibrations                       | 16   |
| Operational Procedures                             |      |
| Modes of Operation                                 | 21   |
| Operations   | 21   |
| Control Identification, Explanation and Function   | 22   |
| Maintenance  |      |
| Maintenance Schedule                               | 23   |
| Daily  | 23   |
| Monthly  | 23   |
| Yearly   | 23   |
| Service  |      |
| Troubleshooting Guide (Cause and Effect)           | 24   |
| Parts Lists  |      |
| Common Replacement Parts (Description/Part Number) | 27   |
| Complete Parts List (Description/Part Number)      | 28   |
| Drawings - Exploded Views / Schematics             | 31   |
| Appendix A – Adjusting or Re-Hanging the Doors     | 39   |

## DISCLAIMER

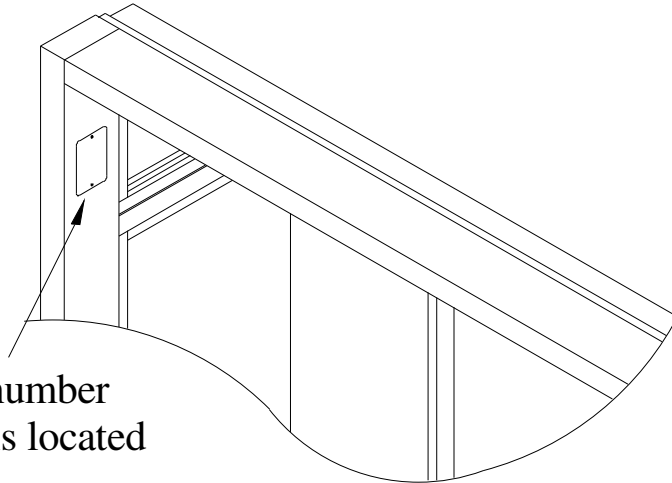
READY ACCESS DISCLAIMS ANY LIABILITY FOR ANY DAMAGE OR HARM CAUSED TO THE BO-10 DRIVE-THRU WINDOW, IT'S OPERATOR OR ANY OTHER EQUIPMENT HOWEVER CAUSED IF THE BO-10 DRIVE-THRU WINDOW IS REPAIRED OR SERVICED BY ANYONE OTHER THAN AN AUTHORIZED SERVICE ENGINEER OR CONTRARY TO THE MANUFACTURERS WRITTEN INSTRUCTION CONTAINED HEREIN.

THIS MANUAL IS INTENDED FOR USE BY THE IN-HOUSE OR AUTHORIZED FIELD SERVICE ENGINEERS AND SALES REPRESENTATIVES

The manufacturer maintains the right to update, add or issue a new service manual at any time without notice, thereby rendering all previous issues obsolete.

Please write the Serial Number and Installation Date for your drive-thru window in the spaces provided.

|                             |  |
|-----------------------------|--|
| <b>Serial Number</b>        |  |
| <b>Date of Installation</b> |  |



The serial number nameplate is located on the post

## CONTACT INFORMATION FOR SALES AND SERVICE CONTACT

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## INTRODUCTION

The Ready Access window is quality designed to give you years of reliable, trouble-free service. Each window is shipped pre-assembled, fully glazed and ready for installation. All Ready Access windows are thoroughly tested prior to shipping.

The BO-10 Bi-Parting Window is the perfect enhancement to the drive-thru concept, offering unobstructed views of customer and crew.

The BO-10 comes in two versions, manual/Self Closing and electric. The electric version is fully automatic with a manual override in case of a power outage. The doors will open and close by stepping into an out of the light beam sensor. Both models meet health department requirements for self-closing units.

This classic bump out design offers a panoramic view of cars and outside activity. Convenience is key with over four feet of inside usable counter space and a large 18"W x 23"H (483mm W x 584mm H) service opening. Available in manual or electric operations, the Bump Out 10 is a practical choice for any business.

## PRODUCT INFORMATION

- **Large 18"W x 23"H (483mm W x 584mm H) Service Opening**  
Perfect for virtually any size order, the Bump-Out 10 features a bi-parting door opening for operating convenience.
- **Panoramic View**  
This original bump-out design offers the operator a 3-sided view of cars and outside activity.
- **Counter Space**  
The Bump-out 10 has over 4 feet of usable inside counter space for condiments and other necessities.
- **Quality Construction**  
Anodized aluminum extrusions, stainless steel and 1/4" tempered glass combine to give you an attractive window that not only enhances building exteriors, but will not rust, pit or weather. Track free bottom sill provides for a contaminant free surface.
- **Double Security Locks**  
Bump-Out 10 Windows automatically lock each time the doors close, providing security when the window is unattended. When the drive-thru is closed, manual security locks help to prevent outside entry. An optional security bar set is available for high risk areas.
- **Fully Assembled, Ready to Install**  
Ready Access windows are shipped completely preassembled, and fully glazed for lower installation costs. Normal installation takes less than two hours.

- **Five Day Shipping**  
Ready Access will typically ship any standard window order 5 days from receipt of order.
- **Warranty and Service Support**  
Your Bump-Out 10 comes with a one year limited warranty on parts and labor. In addition, each unit is backed by a world-wide service organization.

#### **MANUAL/SELF CLOSING OR FULLY-AUTOMATIC SERVICE OPENINGS**

- **Manual/Self Closing**  
In a Manual / Self Closing operation, simply release the self latching handle and pull open the door. Both doors part from the center and easily slide open. To close the window simply let go and gravity will close the window.
- **Fully-Automatic**  
The operator simply steps into an electronic light beam which opens the door panels automatically. The door panels automatically close when the operator steps away from the electronic light beam. By the push of a button, operators can easily adjust the window opening size to either 12"W or 18"W.

#### **AVAILABLE OPTIONS**

- The Bump-out 10 is available in statuary bronze or clear anodized aluminum.
- Tinted glass is available upon request.
- Powder coat painting is available in a wide range of custom colors.

## SPECIFICATIONS AND PERFORMANCE

| Model Number | Unit Voltage        |                     | Actual Unit Amps         | Dimensions In Inches W X H x D | Weight In Shipping Carton |
|--------------|---------------------|---------------------|--------------------------|--------------------------------|---------------------------|
|              | USA                 | International       |                          |                                |                           |
| BO-10 - E    | 110/120 VAC<br>60Hz | 220/240 VAC<br>60Hz | 15 A (US)<br>8 A (Int'l) | 53½" x 48¾" x 14¼"             | 180 lbs                   |

### Dimensions

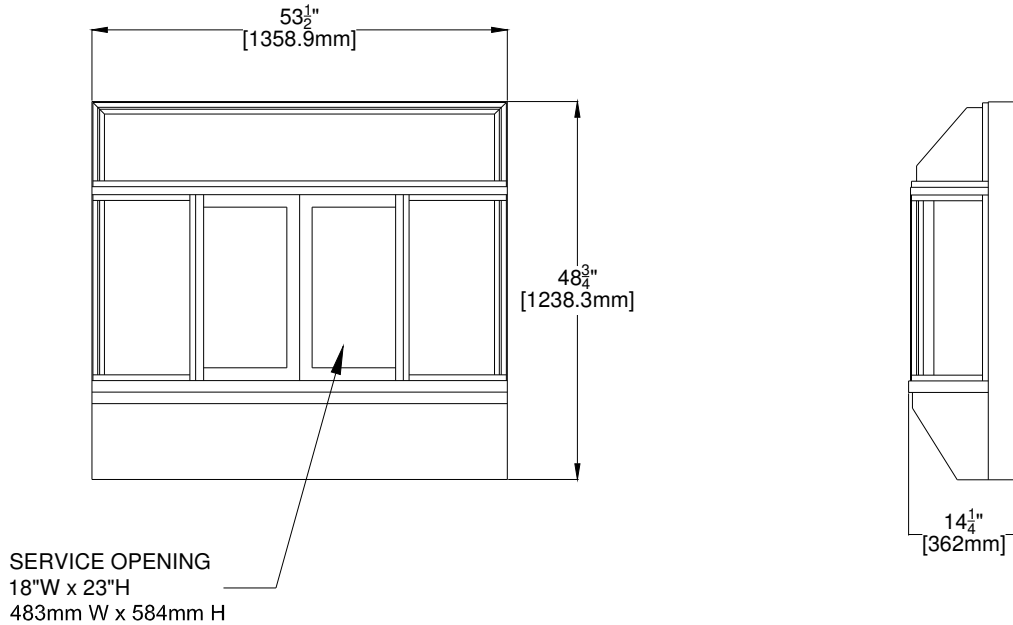


Figure 1

## Safety Information

**WARNING:** To avoid the risk of fire, Electric Shock or injury to persons, observe the following:

1. Before servicing or cleaning the unit, switch the power off at the mechanical switch near the unit (Installed by an Electrician) or the electrical entry service panel/circuit breaker. (Load Center)
  - **OSHA LOCK OUT – TAG OUT** procedures are to be observed to prevent power from being switched on accidentally.
2. Any Installation and / or Electrical work must be done by **QUALIFIED** persons in accordance with all applicable codes / standards and manufacturers recommendations and specifications.
3. **DO NOT** insert fingers and / or foreign objects into the Drive-Thru Window.  
**DO NOT** block or tamper with the unit in any manner while it is in operation.
4. This product must not be used in Potentially Dangerous locations such as Flammable, Explosive or Chemical – laden environment.

## Installation Procedures

### Tools required to perform the installation

- Electric Drill
- Metal Drill bits –
  - 1/8" (3mm)
  - 1/4" (6mm)
  - 1/2" (13mm)
  - 1" (25mm)
- Screwdrivers – Slotted and Phillips
- Hacksaw
- Jack / Utility Knife
- Flat File – Coarse
- Caulking gun
- 1/4" Nut Driver
- Extension Cord
- Masonry drill bit –
  - 1/4" (6mm)
  - 1" (25mm)
  - 1 1/2" (38mm)
- Masonry Hole Saw – 1" (25mm)
- Channel Lock Pliers
- Tape Measurer
- Wire Cutter
- Step Ladder
- Level

### Materials required for installation

- Window framing, architect specified and installed in building.  
(Ready Access recommended material is 1/8" (3mm) x 1 3/4" (44.5mm) x 4" (102mm) hollow aluminum tubing or glazing channel)
- Electrical Tape
- Wire Nuts
- Caulking – silicone (Color specific to the color of window)
- Connectors for conduit as required
- Shingle type shims – as required to level and plum the window

## Physical Installation

Before you begin installing your Ready Access Drive-Thru Window, you must determine what type of installation will be required. Wood Frame, Masonry Framing, etc.

Please refer to the details below and on the next page to pick which one best fits your application.

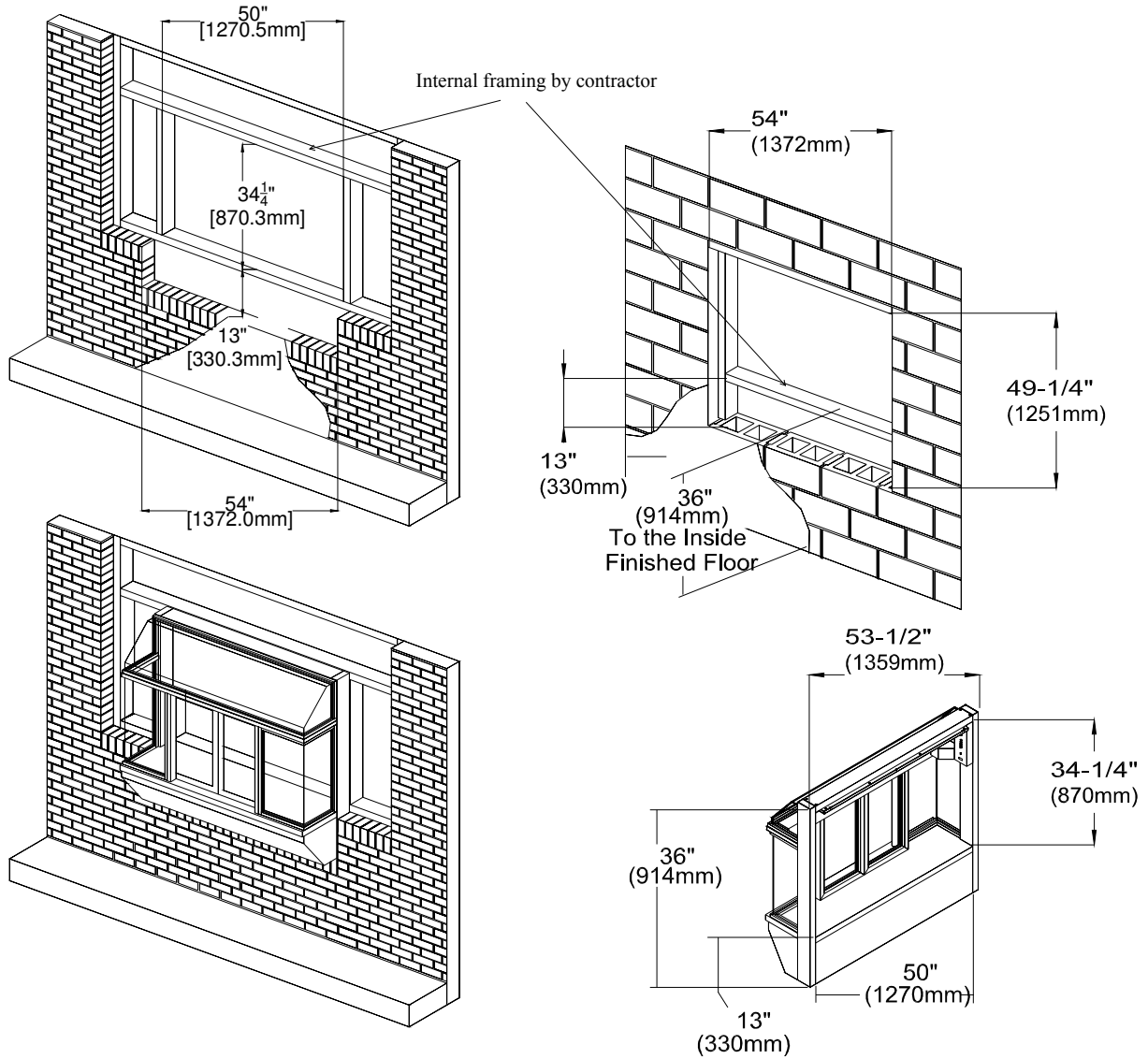


FIGURE 2A

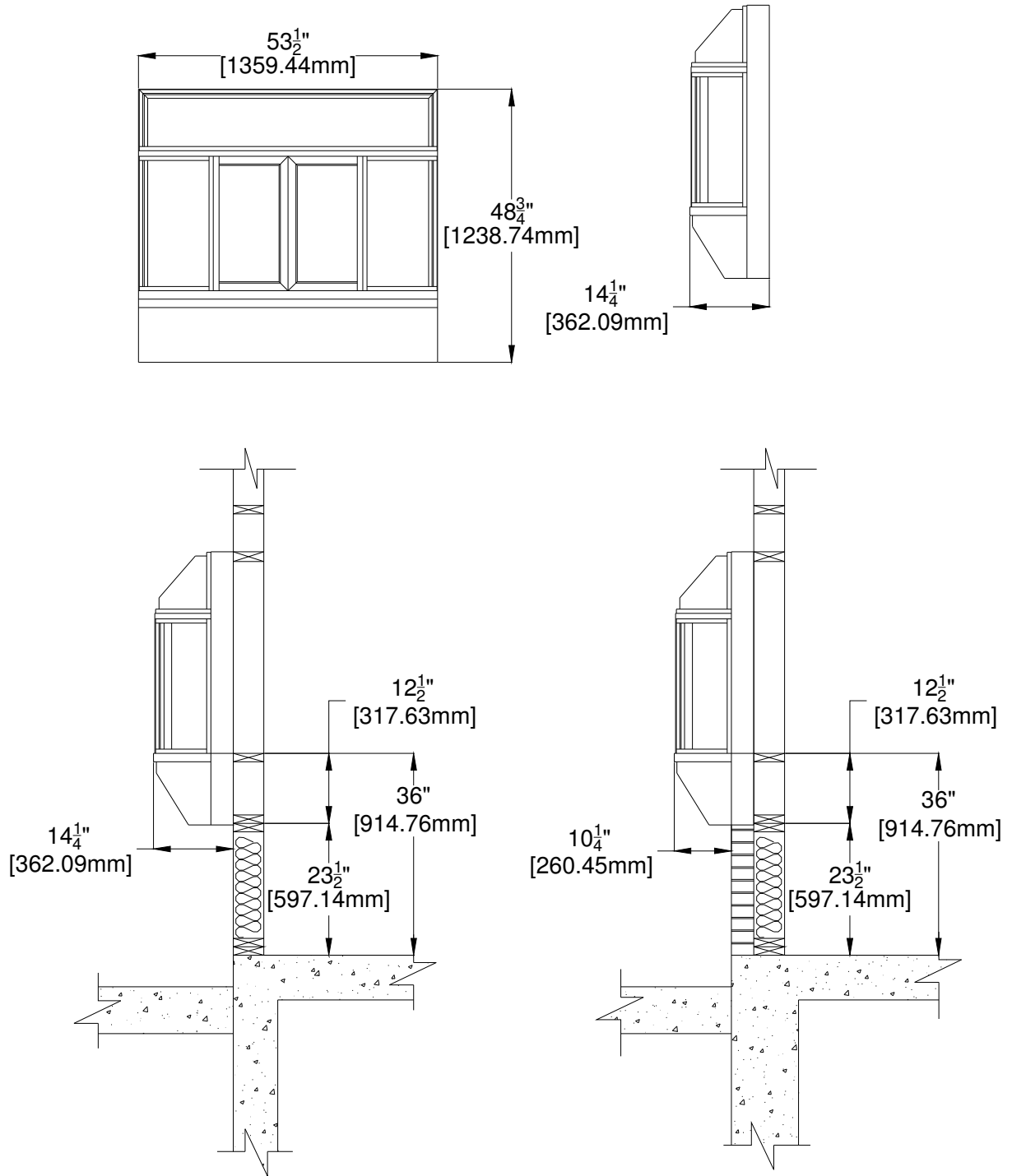


FIGURE 2B

**WARNING:**

**TWO PEOPLE ARE REQUIRED FOR THE LIFTING AND INSTALLATION OF THE WINDOW.**

1. Confirm that the customer-supplied frame is made to accommodate the dimensions as illustrated on page 9.
2. Confirm that AC power has been run and is ready for connection to the window.
3. Check shipping carton for any shipping damage and remove window from the carton.
4. Check window for any shipping damage.

**NOTE:** There are two wall-mounting applications. The mounting space can be surrounded either by sidelights (windows) or masonry. The illustrations will show both configurations. (Figure 3)

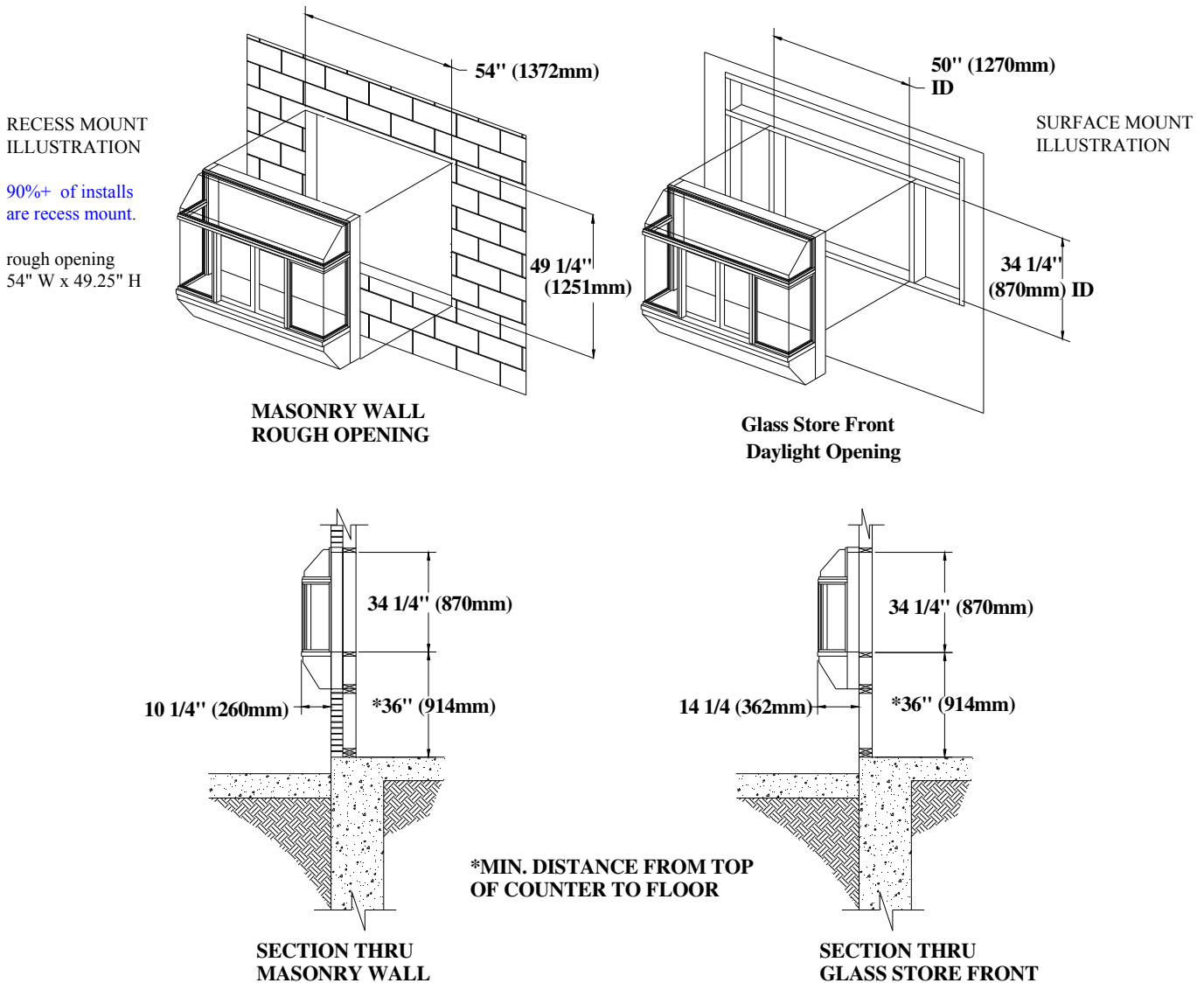
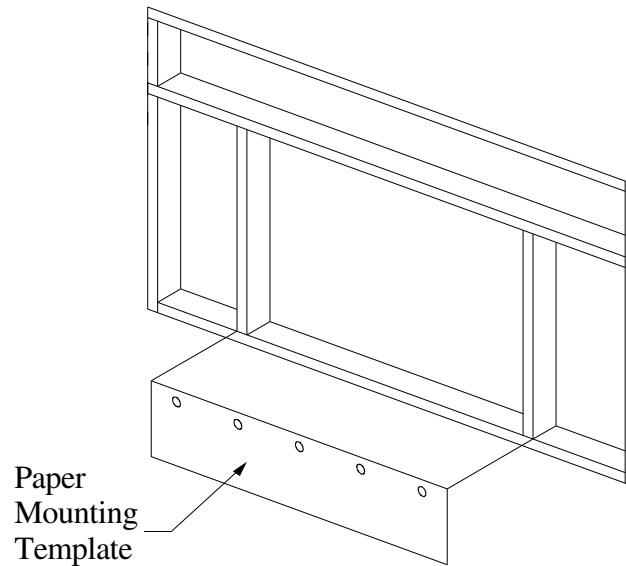


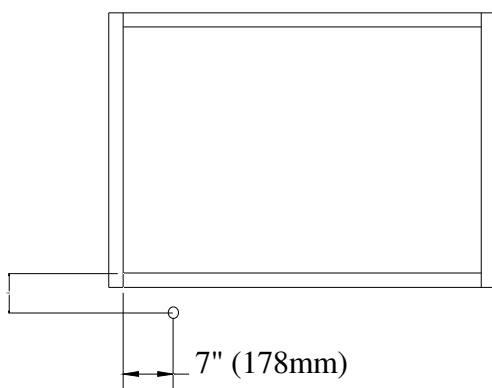
Figure 3

5. Once the application has been determined, check the daylight opening of the frame being used. The opening dimensions should be 50" wide x 34-1/2" high.
6. For a Fully-Automatic installation, check for the electrical hook-up. The AC electric should be installed from the breaker box (Load Center) to the window opening before the installation of the window.
7. Using the paper mounting template, drill a quantity of 5, 1/4" diameter pilot holes for mounting. (See Figure 5) **OUTSIDE ONLY – DO NOT DRILL THROUGH THE FRAME.**



**Figure 5**

8. Remove the template and drill 5, 1/2" holes using the 1/4" pilot holes. **OUTSIDE ONLY – DO NOT DRILL THROUGH THE FRAME.**
9. For Fully-Automatic installations, Drill a 1 1/2" hole through the wall as illustrated in Figure 6. (The dimensions shown are from the inside of the building.)



**Figure 6**

Rough Opening Shown from the Inside looking Out.

Dimensions are taken from the inside daylight opening of the frame.

10. Requiring 2 people, remove Ready Access Window from carton and place on top of carton lid to prevent scratching.

11. Person number 1 should remove the bottom cover from the window and organize the mounting hardware.

Person number 2 should apply a bead of caulk to the outside surface of the building window frame. (Reference 1/2" drilled holes for mounting window.)

12. Mount the mullion mounting strip provided to the underneath side of the header frame of the window. Pilot holes are provided in the header frame of the window unit.

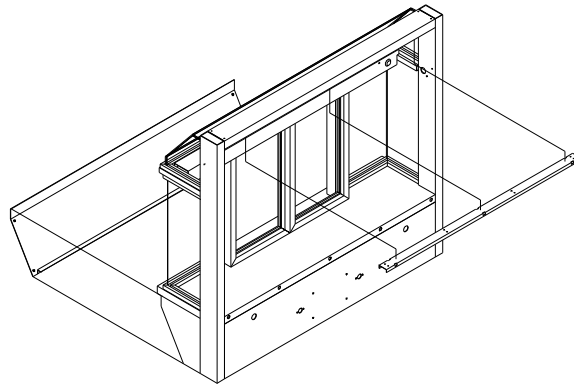


Figure 7

13. Requiring 2 people, stand window upright. With one person on each side of the window, lift the window into position, aligning the counter top with the building frame sill and the mullion mounting strip going underneath the rough opening header.

With one person holding the front of the window from falling forward, the other person from the inside will start inserting mounting screws through the mullion strip that has been mounted to the window in step 12.

From the outside, insert the 5 well nuts and fasten with the bolts and washers provided, through the bottom, underneath the counter, into the building frame. (Mounting into wood, use lag bolts. Mounting into masonry, use mason anchors.)

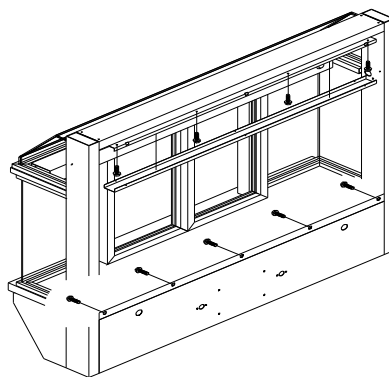


Figure 8

14. DO NOT TIGHTEN - Shim unit to be square and plum. Once this has been done, tighten mounting hardware and snap on mullion mounting strip cover.
15. When the window is fully secured, seal the outside of the window to the frame or building using silicone caulk.

## Fully-Automatic Instructions

### Electrical Installation

All power must be connected and wired by a **qualified electrician** and must be in compliance with all state and local codes.

The incoming AC power line must be connected to the receptacle located underneath the counter top. (Per Standard electrical code.) The green “grounding” wire is to be attached to the frame of the unit.

**WARNING:** Use only 110/120VAC – 60Hz source with a dedicated 15Amp circuit.  
International power: 220/240VAC – 60Hz with a dedicated 8amp branch circuit.

**WARNING:** This must be a dedicated circuit. Other electrical equipment must not share the same line from the 15Amp circuit breaker.

**WARNING:** Turning off the front panel rocker switches does not remove the AC voltage from the unit

**WARNING:** To disconnect the power completely from this unit, turn OFF the mechanical switch near the unit (Installed by an Electrician) or the electrical entry service panel/circuit breaker panel (Load Center) for this unit.

- **OSHA LOCK OUT – TAG OUT** procedures are to be observed to prevent power from being switched on accidentally.

1. Remove the screws holding on the front cover.
2. Wire the AC source line to the receptacle. (See Figure 9)

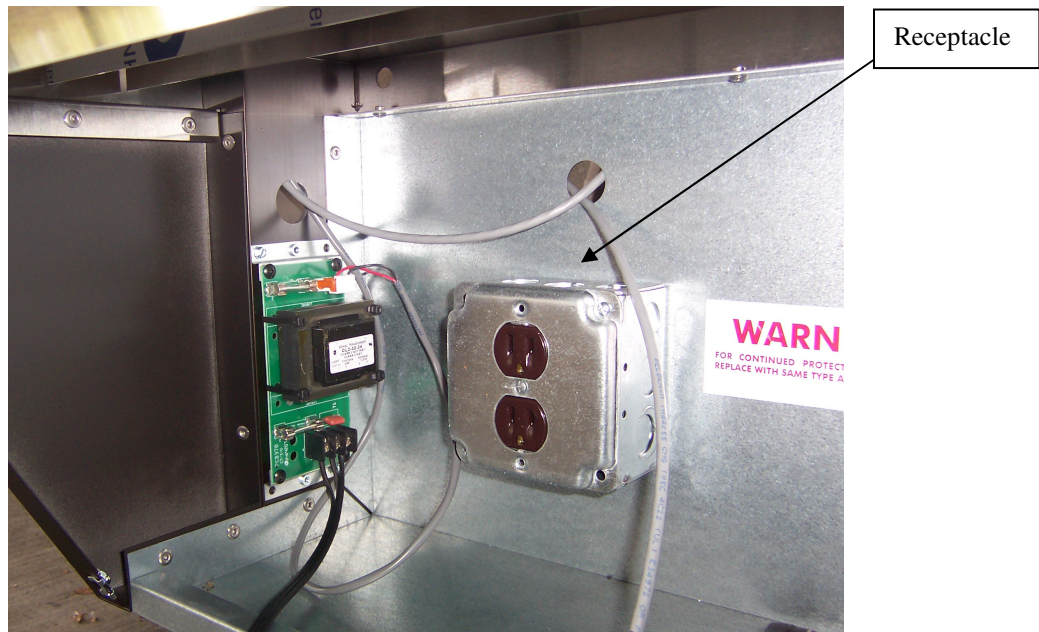


Figure 9

## Mounting Electric Eye Housing

1. Position eye housing on the interior wall covering the 1-1/2" hole drilled through for electric cable passage way.
2. Align the wall mounting brackets on inside finished wall. Use as a template to scribe holes for drilling 1/4" holes for plastic mounting anchors.
3. Drill 4 - 1/4" (6.5mm) holes using the masonry drill bit.
4. Insert the plastic anchors and mount the brackets with the #10 or #12 screws.
5. Attach electric eye mounting channel to the wall mounting brackets with the (4) 8-32 x 1/2" screws provided.
6. Attach the sensor to the brackets and secure.
7. Take electric eye cable and pass through 1" hole into the bottom of the window unit and connect to the cable marked "ELEC.EYE".
8. Assemble plastic electric eye housings to the electric eye mounting channel.

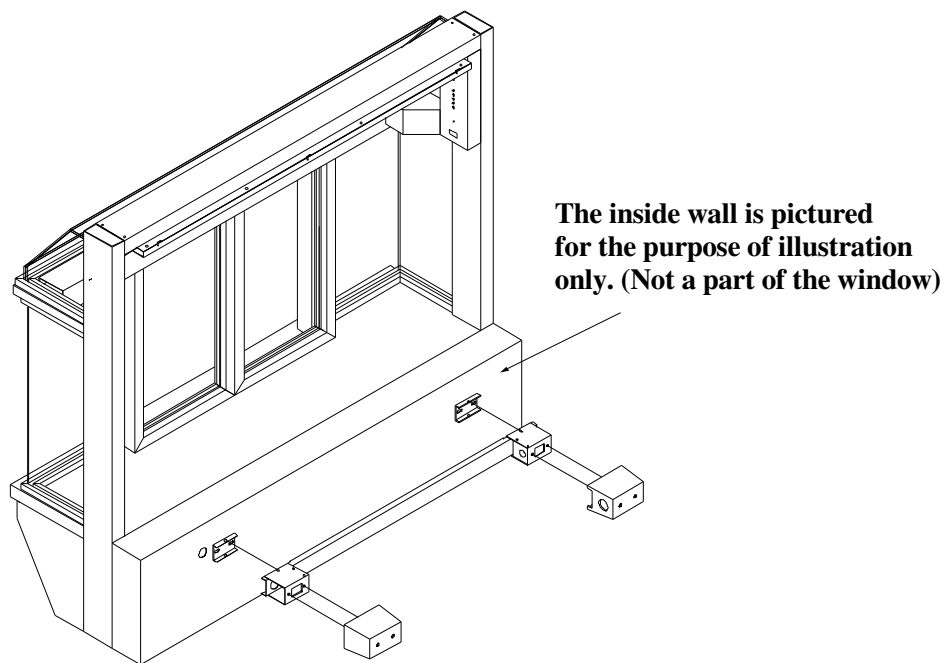


Figure 10

9. Turn "ON" the power to the unit. (Load center circuit breaker and power switch on the "Control unit".)
10. Test window operations. See "Testing Procedures".

## Initial Window Operation

### Testing Procedures

| Action   | Reaction   |
|--|--|
| Turn the power “ <b>OFF</b> ” at the rocker switch located on the controller unit.<br>Manually open and close the doors several times.   | When the doors are opening, the “MOTOR RUN” lamp will illuminate green. When the doors are closing, “MOTOR RUN” lamp will illuminate red. The “POWER” lamp must illuminate during both operations. If neither of these lamps illuminate during any of the processes, proceed to the “Troubleshooting” section. |
| Turn the power “ <b>ON</b> ” at the rocker switch located on the controller unit.<br>Break the electric eye beam to open the door.   | The doors will open to either a 12” (304.8mm) opening or to an 18” (457.2mm) opening.  |
| With the power “ <b>ON</b> ” press the opening size button located on the controller unit once and break the electric eye beam to open the doors.                                    | The opening size of the doors will change from the previous setting. (12” to 18” or 18” to 12”)  |
| With the power “ <b>ON</b> ” break the electric eye beam momentarily to open and close the doors.  | The doors will open. They will remain in the open position for either approximately 1.5 or 3.0 seconds before closing.<br>NOTE: The DC-3 PCB allows for longer close delay times.<br>(See the Adjustments and Calibration Section)   |
| With the power “ <b>ON</b> ” press the “CLOSE DELAY” button located on the controller unit once and break the electric eye beam to open the doors.                                   | The doors will open and the length of time that the doors remain open will toggle between 3 and 6 seconds before closing.  |
| With the power “ <b>ON</b> ” break the electric eye beam momentarily to open and close the doors. Insert an object at least 4” (101.6mm) wide between the doors as they are closing. | The doors will automatically reverse their action (the doors will open), when an object is caught between or restricting the closing of the doors.   |

# Adjustments and Calibrations

## Door Alignment

Adjustments to the door's height and alignment are accomplished by turning one or both of the eccentric adjusting nuts located at the top of the doorframe where it mounts to the slide track. (Figure 11)

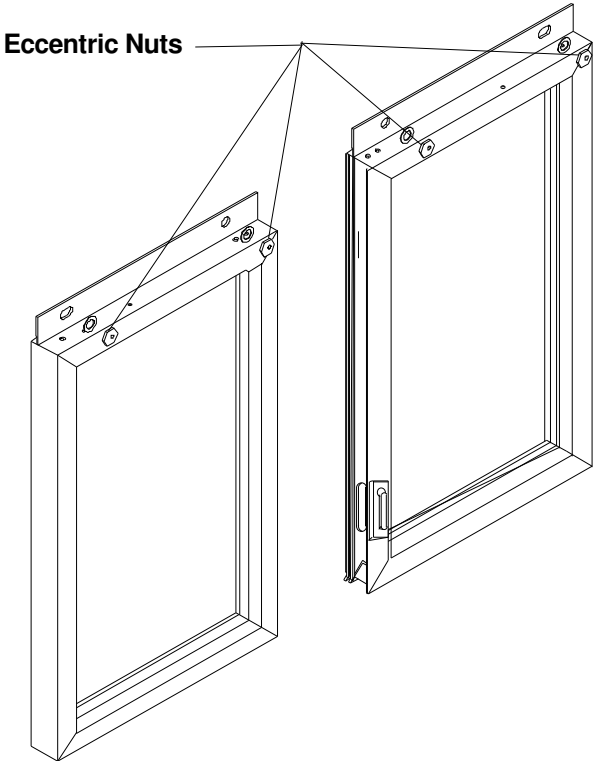


Figure 11

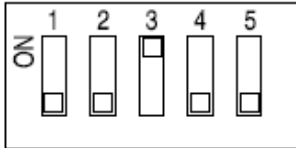


Eccentric Adjusting nut

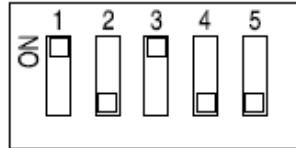


## CLOSE DELAY TIMER INFORMATION

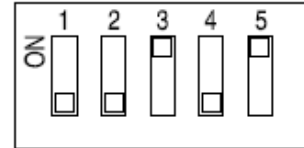
The close delay timer is used to adjust the amount of time that the door will stay open after stepping out of the sensor range. The factory preset is 3 seconds. The range of setting is from 0 to 45 seconds. If the close delay button is activated on the control panel, this time will be doubled. Example: Timer setting is 5 seconds, press close delay button and the new time is 10 seconds. Press the close delay button again and the time is restored back to 5 seconds. The following diagrams are examples of timer settings:



Equals 3 second delay

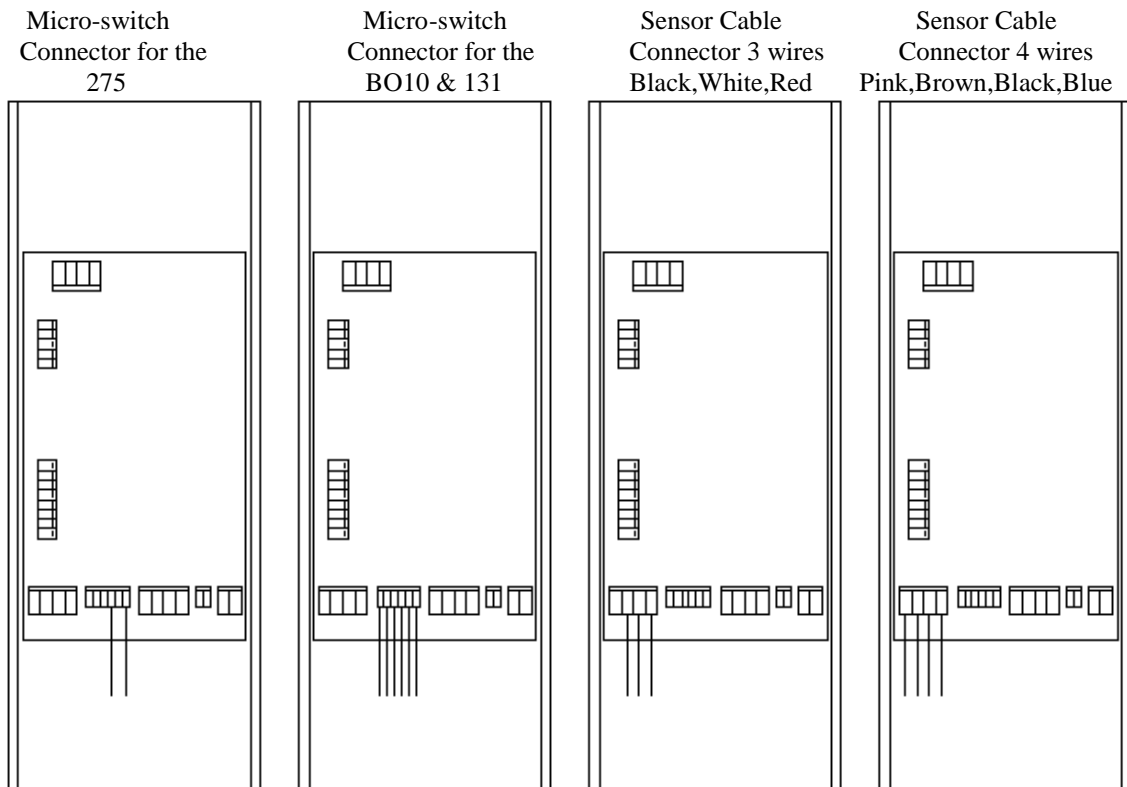


Equals 13 second delay



Equals 35 second delay

THE FOLLOWING WIRING DIAGRAMS ARE FOR REFERENCE FOR THE DIFFERENT MODELS OF READY ACCESS PASS THRU WINDOWS.



### 3 Wire Instruction:

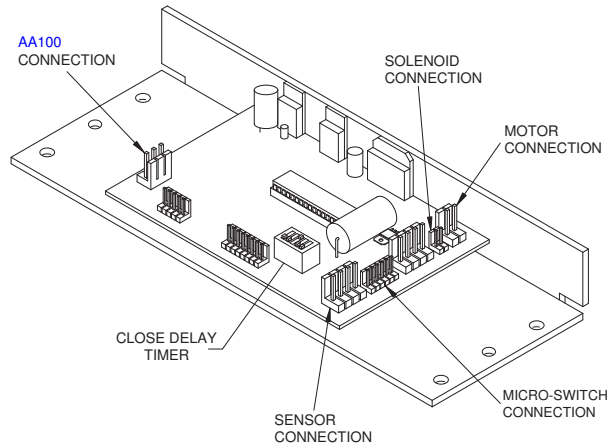
Connect wires for eye to wires on eye cable

|            |                  |
|------------|------------------|
| <u>Eye</u> | <u>Eye Cable</u> |
| Brown      | Black            |
| Black      | White            |
| Pink/Blue  | Red              |

**Calibration:**

The only calibration available on the DC-3 PC board is setting the close delay timer using the dip switch package mounted near the ribbon cable connector.

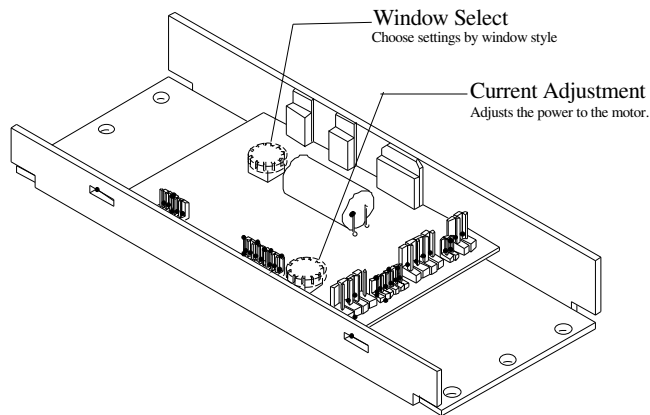
The CLOSE DELAY TIMER is default set at 3 seconds



Follow the Chart Below for Changing the Close Delay Time Settings

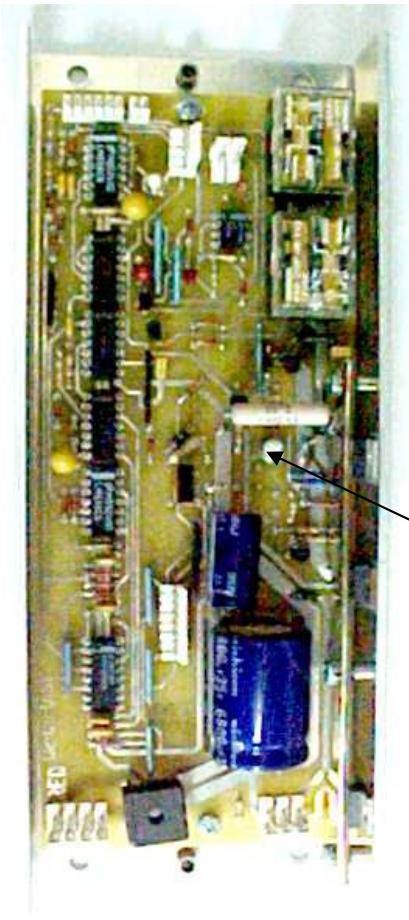
| Dip Switch Settings |                 |     |     |     |     |
|---------------------|-----------------|-----|-----|-----|-----|
| Time in Seconds     | Switch Position |     |     |     |     |
|                     | 1               | 2   | 3   | 4   | 5   |
| 1                   | ON              | OFF | OFF | OFF | OFF |
| 2                   | OFF             | ON  | OFF | OFF | OFF |
| 3                   | OFF             | OFF | ON  | OFF | OFF |
| 4                   | OFF             | OFF | OFF | ON  | OFF |
| 5                   | OFF             | OFF | OFF | OFF | ON  |
| 12                  | ON              | ON  | OFF | OFF | OFF |
| 13                  | ON              | OFF | ON  | OFF | OFF |
| 14                  | ON              | OFF | OFF | ON  | OFF |
| 15                  | ON              | OFF | OFF | OFF | ON  |
| 23                  | OFF             | ON  | ON  | OFF | OFF |
| 24                  | OFF             | ON  | OFF | ON  | OFF |
| 25                  | OFF             | ON  | OFF | OFF | ON  |
| 34                  | OFF             | OFF | ON  | ON  | OFF |
| 35                  | OFF             | OFF | ON  | OFF | ON  |
| 45                  | OFF             | OFF | OFF | ON  | ON  |

The DC-2 PCB has two potentiometers



The Window Select Dial is used to set the type of door configuration for the model of window.

The Current Dial is used to increase or decrease the power to the motor. This is adjusted to insure proper operation.



**Preliminary Information:**

The P1 potentiometer (Pot) is used to adjust the point of detection of the motor current. When the motor current detection occurs, the “Current Detect” lamp on the front panel will illuminate. If the “Close Detect” is lit when the “Current Detect” lamp turns on, the closing of the doors will be halted and the doors will auto-reverse and re-open.

Properly adjusting the pot allows the doors to close completely and shuts off the power to the motor the moment the doors make contact with each other.

If improperly set, the doors will respond in one of the two separate and distinctive manners.

1. If the pot is set too far clockwise, the doors will close and come together completely. The motor will continue to run for about a second or two after.
2. If the pot is set too far counter-clockwise, the doors will start to close. Stop anywhere from 2 to 6 inches apart then auto reverse and reopen the door.

**Adjustment Procedure:**

The adjustment procedure begins by carefully turning the pot to the stop position in the full clockwise position. Then turn the pot in a counter clockwise direction until the screwdriver slot is about halfway.

Turn the power “ON” and break the beam. The window will probably operate properly. Continue the adjustments as follows.

1. Continue to cycle the window and with each opening, turn the pot clockwise in small increments until the doors come together completely while closing and the motor continues to run for about a half of a second. (MAKE A MENTAL NOTE OF THIS POSITION.)
2. Return the screwdriver slot back to the approximate halfway position.
3. Continue to cycle the window and with each opening, turn the pot counter-clockwise in small increments until the doors start to close and then stop anywhere from 2 to 6 inches apart then auto reverse and reopen the door. (MAKE A MENTAL NOTE OF THIS POSITION.)
4. Now position the screwdriver slot to a position approximately halfway between the two positions noted in steps 1 and 3. The potentiometer is now properly adjusted.

# Operation Procedures

## Modes of Operation:

The BO-10 bi-parting window has two modes of operation, Manual/Self Closing and Fully-Automatic.

### Manual

The **Manual/Self Closing Mode**: To open the window pull both doors evenly, to close simply let go and gravity will close.

**(DO NOT OPEN OR CLOSE THE DOORS WITH ANY UNDUE FORCE)**

### Manual/Self Closing Operations:

1. Unlock the Thumb-Turn Lock on the door.
2. Release the manual's latch and push the door open.
3. Let go of the doors and gravity will close.
4. Relock the Thumb-Turn Lock.

### Fully-Automatic

The **Manual Mode** is reached by turning "OFF" the main power to the window. The opening and closing of the window is done by hand. **(DO NOT OPEN OR CLOSE THE DOORS WITH ANY UNDUE FORCE.)**

The Automatic Mode is reached by turning "ON" the main power to the window. Stepping in and out of the sensor's range opens and closes the doors.

## Operations

After installation of the model #BO-10 Manual or Electric Sliding window, completion of the testing procedures and the installation of the decorative covers, the window is ready for normal use.

1. On the controller unit, turn the power rocker switch to the "ON" position.
2. Check that the red portion of the rocker switch is visible and that the red power lamp is illuminated.
3. Break the electronic eye beam or step into the sensor beam path. The red beam break and green motor run lamps go on.
4. Step out of the beam path and wait 3 to 6 seconds for the doors to close. The red motor run lamp and red close detect lamps will illuminate. After the doors close note that the red power lamp and the current detect lamps are "ON".
5. If the doors do not operate correctly, go to the troubleshooting guide in this manual. If the doors still do not operate properly, then call Ready Access at

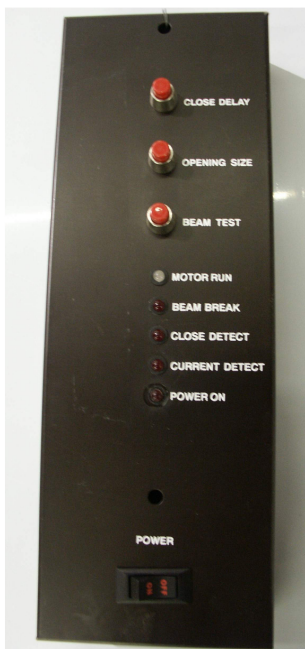
**1-800-621-5045**

6. The doors can be operated manually by pulling the manual release located at the top of the door.

**NOTE:** Turn the power off to the window to prevent any damage to the PCB.

**Each operator must read the operations manual before operating the unit.**

## Controls Identification, Explanation and Function



Controller Unit

| Lamps and Switches | Function  |
|--------------------|---|
| Power Lamp         | This lamp indicates that the power rocker switch is on and the controller is receiving power.   |
| Motor Run Lamp     | <p>The “MOTOR RUN” lamp indicates that power is being applied to the motor. When the doors are opening, lamp will illuminate green. When the doors are closing, the lamp will illuminate red.</p> <p>The lamp also allows for the diagnostic checking of the motor and motor wiring. To test, turn the power “OFF” at the rocker switch and manually open and close the doors. This will cause the lamp to illuminate either green or red. The “POWER” lamp must illuminate during both operations. If neither of these lamps illuminate during any of the processes, proceed to the “Troubleshooting” section.</p> |
| Beam Break Lamp    | This lamp indicates that the electric eye beam or presence sensor beam has been broken and/or the “CLOSE DELAY” timer is still timing out.  |

|                     |  |
|---------------------|--|
| Close Detect Lamp   | This lamp is red and indicates that a “CLOSE” sequence has been initiated. It will always light during a door closure and will go out just before the doors come together. When the lamp is out, the automatic reverse feature is disabled.  |
| Current Detect Lamp | This lamp is red and indicates an overload has been detected. This lamp may light on opening but is automatically disabled. The lamp will come on when the doors are fully closed or when an obstruction has been encountered.   |
| Beam Test Switch    | <p>Pressing the “BEAM TEST” button once will test the operations of the doors without using the electric eye or presence sensor. To test, the operator should not be in the path of the light beam or presence sensor.</p> <p>Standing in the light beam while pressing the button will put the window into a test mode. This will make the window continuously operate (open and close) automatically. You must turn the power off and back on to reset the window.</p> |
| Close Delay Switch  | Pressing this button will toggle the length of time that the doors remain open between 1.5 and 3.0 seconds before closing.   |
| Opening Size Switch | Pressing this button will toggle the opening size of the doors from 12” to 18” or 18” to 12”.  |

# Maintenance

## Maintenance Schedule

Scheduled maintenance should be performed on a regular basis. This is to assure proper operation and performance of the BO-10 windows.

### Daily

Check the sill for foreign materials and/or syrup. (Anything that might cause the window to bind up and not operate smoothly).

Use warm soapy water or carbonated water to clean the window.

### Monthly

Follow safety procedures before opening the unit.

Check the interior of the unit for any build up of any foreign materials using a dry cloth.

**NOTE: KEEP ANY LIQUIDS OFF THE INTERIOR COMPONENTS.**

Clean moving parts and lubricate with silicone or Teflon spray.

NOTE: Do NOT use Grease or Oils. Do NOT lubricate the motor clutch assembly.

### Yearly

Have a service technician come in and perform a maintenance check on the unit.

## Trouble Shooting

|                    |  |
|--------------------|--|
| Problem:           | Window is sluggish   |
| Solution:          | -Is the Cable sheathing or tearing?<br>Replace cable/ chain and pulley. The pulley is not turning correctly causing the cable to move against the pulley. This causes friction, ruining the cable and causing a sluggish window. |
| Replacement Parts: | Pulley- <a href="#">20200142</a><br>Cable and chain- <a href="#">85153600</a>  |

|                    |  |
|--------------------|--|
| Problem:           | The Chain or cable is dangling below the header cover  |
| Solution:          | <a href="http://www.ready-access.com/Videos.html">http://www.ready-access.com/Videos.html</a><br>The Chain hopped off the sprockets of the motor due to being rushed open or closed. Follow video link above to reinstall. |
| Replacement parts: |  |

|                    |  |
|--------------------|--|
| Problem:           | Window opens and closes by itself.   |
| Solution:          | 1. There is a video to Adjust striker plate at <a href="http://www.ready-access.com/Videos.html">http://www.ready-access.com/Videos.html</a> |
| Replacement Parts: |  |

|                    |  |
|--------------------|--|
| Problem:           | Window won't open. When it does open works fine, but sometimes it doesn't do anything  |
| Solution:          | 1. Our windows need a dedicated circuit. Something else may be plugged in to its circuit. This pulls power from the window. Turn everything you have on and shut down the breaker to window. What else shuts off?<br>2. Adjustment of Doors<br>3. Clean weather stripping under window pane. |
| Replacement Parts: |  |

|                    |  |
|--------------------|--|
| Problem:           | Window opens ok but is jerking when closes/ jumps close, or rolls and inch.  |
| Solution:          | <ol style="list-style-type: none"> <li>1. Make sure everything is aligned and clean</li> <li>2. check chain/cable and pulley. Is it sheathing? Need to replace</li> <li>3. unplug everything on control board but MC1 and MC5. Shut window turn power off and on. Short Pins 1 &amp;2 on MC2. Does it do something different/ does it open and close?</li> </ol> <p style="text-align: center;"><b>YES-</b> start plugging molex connectors back in one at a time.<br/>Shut window. Turn power off and on and hit the beam test button after each plug. This way we can isolate where the problem is.</p> <p style="text-align: center;">MC2- Electric Eye<br/>MC6- Microswitch Assembly<br/>MC8- flyfan<br/>MC3 &amp; MC4- Wired Switch cover</p> <p style="text-align: center;"><b>NO-</b> Take the Voltage of MC5. Are you getting 12dc volts?<br/>Yes- You need a new Motor<br/>No – you need a new DC Board</p> |
| Replacement Parts: | <p>Electric Eye- <a href="#">85000200</a><br/>Microswitch Assembly- <a href="#">85151300</a><br/>Wired Switch Cover – Bronze- <a href="#">65150001</a><br/>Clear-<a href="#">65150002</a></p> <p>Motor- <a href="#">85152600</a><br/>DC Board- <a href="#">85002001</a></p>  |

|                    |   |
|--------------------|---|
| Problem:           | Air coming in under the window.   |
| Solution:          | <ol style="list-style-type: none"> <li>1. The restaurant has too much negative air in it, most of the time that's coming from the vents over oven.</li> <li>2. Check the weather stripping</li> </ol> |
| Replacement Parts: | <p>HVAC company service call to neutralize the air<br/>Weather Strip Kit- <a href="#">85104000</a></p>  |

|                    |  |
|--------------------|--|
| Problem:           | Door opens fine and closes ok but stops about an inch short  |
| Solution:          | <ol style="list-style-type: none"> <li>1. Check to make sure door is not dragging/ or there is a blockage</li> <li>2. take header cover off and pull down on cable to release some tension in the spring.</li> <li>3. turn blue dial on control board counter clockwise all the way to reduce amp draw- if applicable</li> </ol> |
| Replacement Parts: |  |

|                    |   |
|--------------------|---|
| Problem:           | Window is opening, then stays open.   |
| Solution:          | <p>The electric eye is not getting its signal back to itself.<br/> Check if reflector is still there.<br/> Check if reflector and eye are lined up<br/> Adjust electric eye by taking off bracket (make sure there isn't dirt or grim on lens). Screw eye tight</p> |
| Replacement Parts: |   |

## Parts Lists

### Common Parts (Description/Part Number)

| Description                              | Part Number              | Notes                                      |
|--|--------------------------|--|
| Bracket – Handle - Manual                | 85002600                 | Door Handle Kit including all parts needed |
| Cable & Chain Assy                       | <a href="#">85153600</a> |  |
| Dome - Acrylic Atrium - Brz              | <a href="#">85000601</a> | (Bronze Caulk)                             |
| Dome - Acrylic Atrium - Clr              | <a href="#">85000602</a> | (Gray Caulk)                               |
| Door Assy - Left Br                      | Call for part #          |  |
| Door Assy - Left Cl                      | Call for part #          |  |
| Door Assy - Right Br                     | Call for part #          |  |
| Door Assy - Right Cl                     | Call for part #          |  |
| Electric Eye / Reflector Replacement Kit | <a href="#">85000200</a> | Waist level operation                      |
| Electric Eye w/housing                   | <a href="#">85099000</a> |  |
| Handle Kit – Manual Release              | 85002600                 |  |
| Hanging Hardware Kit                     | <a href="#">85183400</a> | One set to mount and adjust one door       |
| Housing - Electric eye                   | <a href="#">00650929</a> |  |
| Latch - Lock-Dead Vertical Position      | <a href="#">85004200</a> |  |
| Latch - Thumb Turn - Long -              | <a href="#">85004500</a> |  |
| Latch Catch Assy                         | <a href="#">85152100</a> |  |
| Motor & Sprocket Assy                    | <a href="#">85152600</a> |  |
| Power Supply - 120V                      | Call for #               | Provide Serial #                           |
| Pulley - Kilrol (cable)                  | <a href="#">20200142</a> |  |
| Slide Replacement Kit                    | <a href="#">85000100</a> |  |
| Solenoid & Hook Assy R/L                 | <a href="#">85150510</a> | R/L Style Only In the Bi-Part windows      |
| Spring & Ball Knob Kit                   | <a href="#">85000300</a> | 3 in sets in each kit                      |
| Spring - Ext (Chain & Cable)             | <a href="#">20060025</a> |  |
| Striker - Sensor                         | <a href="#">65151101</a> |  |
| Switch - Eye - Retrofit Kit              | <a href="#">84000300</a> |  |
| Switch - Rocker                          | <a href="#">20110214</a> | (for PCBA Cover) 8/99 to after 2/27/02     |
| Switch Assy - Micro                      | <a href="#">85151300</a> |  |
| Universal Control Board                  | <a href="#">85002001</a> |  |

### Complete Parts List (Description/Part Number)

| Description                            | Part Number              | Notes                        |
|--|--------------------------|------------------------------|
| Bracket - Cable Clamp                  | <a href="#">95151001</a> |                              |
| Bracket - Solenoid                     | 95150301                 |                              |
| Bracket - Solenoid -                   | 65150301                 | w/Bracket - Order 65150501   |
| Bumper - 1x1 w/blk Lvl                 | <a href="#">40010003</a> |                              |
| Bumper - w/washer Gry                  | <a href="#">40010023</a> |                              |
| Cable & Chain Assy                     | <a href="#">85153600</a> |                              |
| Cable Assembly - Auto Latch            | <a href="#">20112141</a> | (Solenoid). ( Electric)      |
| Cable Assembly - BEA Sensor (Electric) | <a href="#">20112148</a> |                              |
| Cable Assembly - Eye                   | <a href="#">20112143</a> | (Waist High) (Electric)      |
| Cable Assembly - Motor                 | <a href="#">20112144</a> | (Electric)                   |
| Cable Assembly - Power                 | <a href="#">20112142</a> | (Electric)                   |
| Cable Assembly - Sensor                | <a href="#">20112147</a> | Bi-Parting Units (Electric)  |
| Caulk - Silicone - Aluminum            | <a href="#">80050029</a> | 8oz Tube                     |
| Caulk - Silicone - Bronze              | 80050020                 | 8oz Tube                     |
| Caulk - Silicone - Clear               | 80050021                 | 8oz Tube                     |
| Channel - Rubber Glass                 | 65028601                 |                              |
| Channel - Slide                        | 65130301                 | (Housing Slide)              |
| Clamp - Cable                          | <a href="#">95150900</a> |                              |
| Cover - Front                          | 65149601                 | - (10-1/2") New Bronze       |
| Cover - Front                          | 65149602                 | - (10-1/2") New Clear        |
| Cover - Motor                          | <a href="#">65152201</a> |                              |
| Cover - Slide - Manual - Brz           | <a href="#">65163201</a> | (BO-10 Manual)               |
| Cover - Slide - Manual - Clr           | <a href="#">65163202</a> | (BO-10 Manual)               |
| Cover - Slide Channel - Brz            | <a href="#">65151801</a> | (BO-10 Electric)             |
| Cover - Slide Channel - Clr            | <a href="#">65151802</a> | (BO-10 Electric)             |
| Cover - Wired PCBA -Brz                | <a href="#">65150001</a> |                              |
| Cover - Wired PCBA -Clr                | <a href="#">65150002</a> |                              |
| Dome - Acrylic Atrium - Brz            | <a href="#">85000601</a> | (Bronze Caulk)               |
| Dome - Acrylic Atrium - Clr            | <a href="#">85000602</a> | (Gray Caulk)                 |
| Door Assy - Left Br                    | Call for Part #          |                              |
| Door Assy - Left Cl                    | Call for Part #          |                              |
| Door Assy - Right Br                   | Call for Part #          |                              |
| Door Assy - Right Cl                   | Call for Part #          |                              |
| Electric Eye / Reflector Kit           | <a href="#">85000200</a> | Waist level operation - Repl |
| Electric Eye w/housing                 | <a href="#">85099000</a> |                              |

| Description                             | Part Number              | Notes                           |
|---|--------------------------|---------------------------------|
| Fuse - .250 AMP                         | 20110524                 |                                 |
| Guide Kit - Door                        | <a href="#">85003500</a> | Contains guides for both doors. |
| Handle Kit – Manual                     | 85002600                 | BO-10M                          |
| Hanging Hardware Kit                    | <a href="#">85183400</a> | (Adj. Nut) (2)                  |
| Hook - S                                | <a href="#">20240016</a> |                                 |
| Housing - Electric eye                  | <a href="#">00650929</a> |                                 |
| Latch - Lock-Dead Vertical Position     | <a href="#">85004200</a> | After 2/97                      |
| Latch - Thumb Turn - Long -             | <a href="#">85004500</a> | After 2/97                      |
| Latch Catch Assy                        | <a href="#">85152100</a> |                                 |
| Latch Spring                            | <a href="#">00650269</a> |                                 |
| Motor & Clutch Assy                     | <a href="#">85152600</a> |                                 |
| Nut - "J" - Repl Kit                    | <a href="#">85078900</a> |                                 |
| Nut - Well                              | 10300007                 |                                 |
| Panel - Left Side                       | <a href="#">65149501</a> | (10-1/2") New Style Bronze      |
| Panel - Left Side                       | <a href="#">65149503</a> | (10-1/2") New Style Clear       |
| Panel - Right Side                      | <a href="#">65149502</a> | (10-1/2") New Style Bronze      |
| Panel - Right Side                      | <a href="#">65149504</a> | (10-1/2") New Style Clear       |
| Power Supply - 120V Cable Drive         | Call for #               | Provide Serial #                |
| Power Supply - 220 Cable Drive - Int'l  | Call for #               | Provide Serial #                |
| Pulley - Kilrol (cable)                 | <a href="#">20200142</a> |                                 |
| Receptacle - Power                      | <a href="#">20110241</a> |                                 |
| Reflector - Mini                        | Call for Part #          |                                 |
| Reinforcement Angle                     | <a href="#">95119900</a> |                                 |
| Rivet - Bearing Slides - Long Shank     | <a href="#">10180010</a> |                                 |
| Rivet - Door Guide                      | <a href="#">10180024</a> |                                 |
| Rivet - Pop                             | <a href="#">10180009</a> |                                 |
| Screw                                   | 10010061                 |                                 |
| Screw - Motor to Bracket                | <a href="#">10010039</a> |                                 |
| Screw - PCB Cover                       | <a href="#">10010033</a> |                                 |
| Screw for Cable Clamp                   | <a href="#">10010026</a> |                                 |
| Screw for inside cover - sensor striker | <a href="#">10010114</a> |                                 |

| Description                   | Part Number | Notes                                  |
|-------------------------------|-------------|--|
| Slide Replacement Kit         | 85000100    |  |
| Solenoid & Hook Assy R/L      | 85150510    |  |
| Spring & Ball Knob Kit        | 85000300    | (3 ea. kit) - Repl                     |
| Spring - Ext (Chain & Cable)  | 20060025    |  |
| Standoff - 1/4 OD Hex         | 20110283    | x m.f 6-32 THRD (Electric)             |
| Striker - Sensor              | 65151101    |  |
| Switch - Eye - Retrofit Kit   | 84000300    |  |
| Switch - Micro                | 20110281    |  |
| Switch - Rocker               | 20110214    | (for PCBA Cover) 8/99 to after 2/27/02 |
| Switch Assy - Micro           | 85151300    |  |
| Template - Drill - Door Slide | 65134401    |  |
| Universal Control Board       | 85002001    |  |
| Washer                        | 10230017    |  |
| Washer - Flat (Electric)      | 10230108    |  |
| Weather Strip Kit             | 85104000    |  |

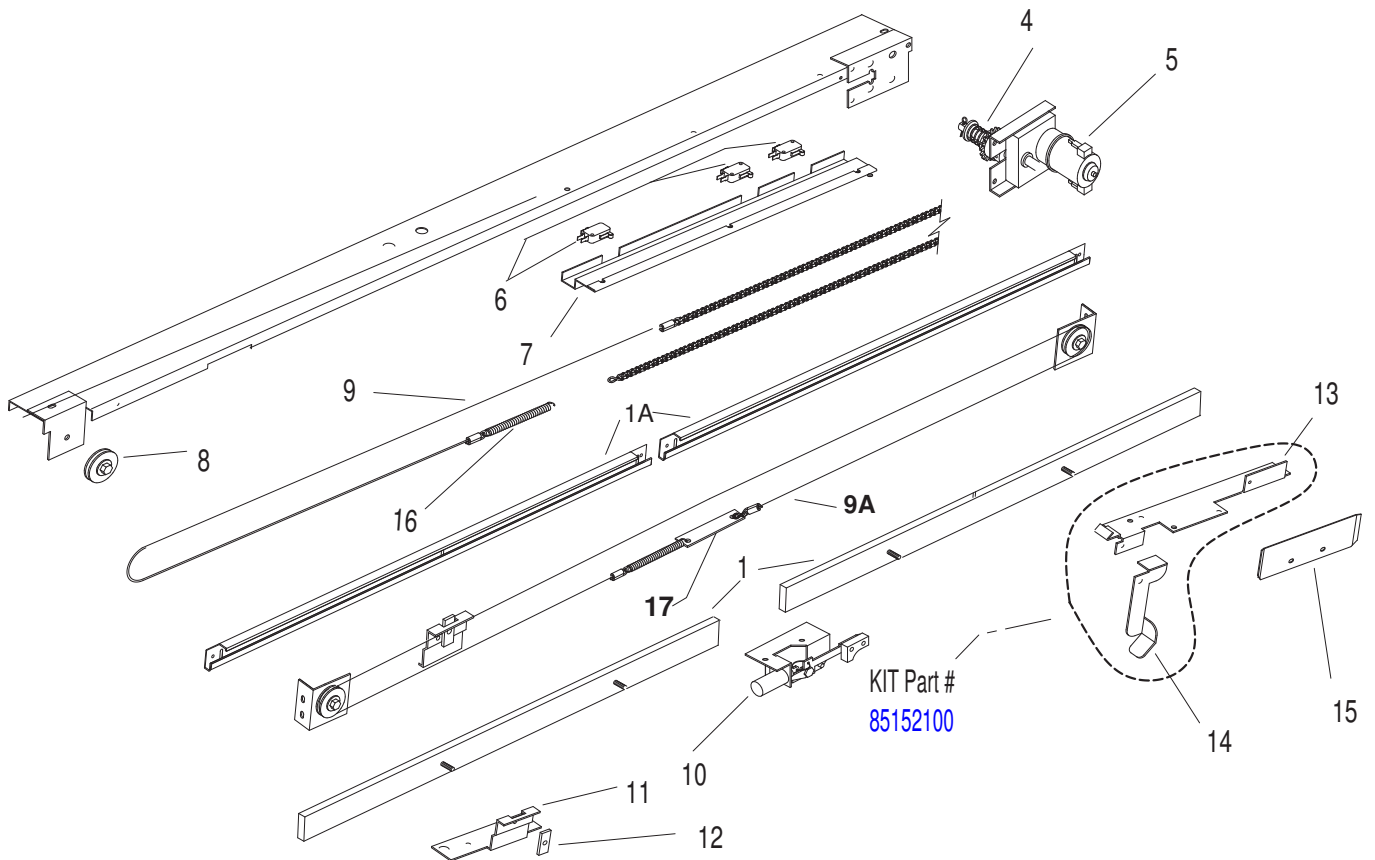
## Drawings

### Exploded Views

| <b>Part Number<br/>If Applicable</b> | <b>Description</b>                                       | <b>Page</b> |
|--------------------------------------|--|-------------|
| N/A                                  | Header Assembly (Automatic) – Exploded View              | 30          |
| N/A                                  | Header Assembly (Manual) – Exploded View                 | 30          |
| N/A                                  | Door and Slide Channel – Exploded View                   | 31          |
| <a href="#">85178200</a>             | Motor  | 31          |
| <a href="#">85150510</a>             | Solenoid and Hook Assembly                               | 31          |
| N/A                                  | Window Assembly (Less Doors and Header)<br>Exploded View | 32          |

### Schematics

| <b>Part Number<br/>If Applicable</b> | <b>Description</b>            | <b>Page</b> |
|--------------------------------------|-------------------------------|-------------|
| N/A                                  | Electrical Schematic          | 33          |
| N/A                                  | Wiring Layout (New Style PCB) | 34          |
| N/A                                  | Wiring Layout (Old Style PCB) | 35          |
| N/A                                  | Electric Eye Wiring           | 36          |



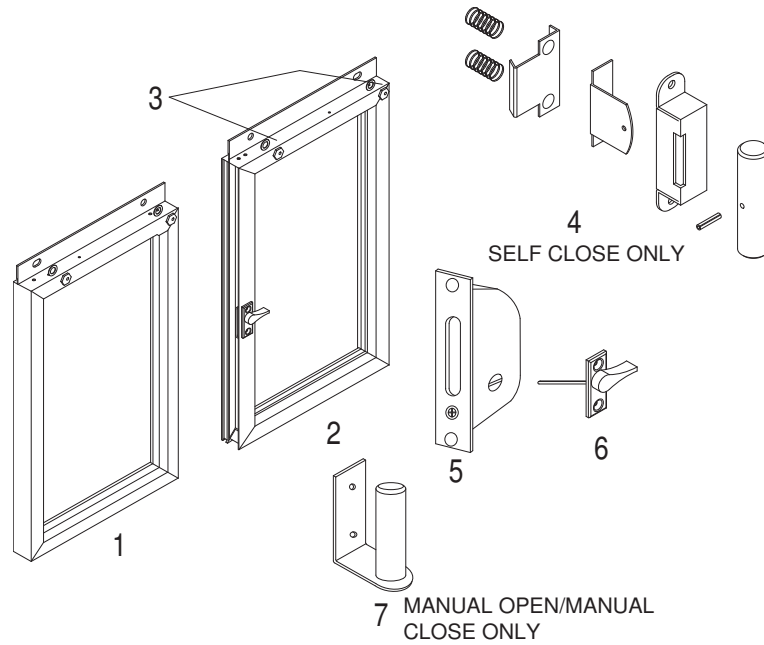
**BO-10 MANUAL/SELF CLOSE & ELECTRIC  
HEADER ASSEMBLY EXPLODED VIEW**

BO-10E Header Parts Listing

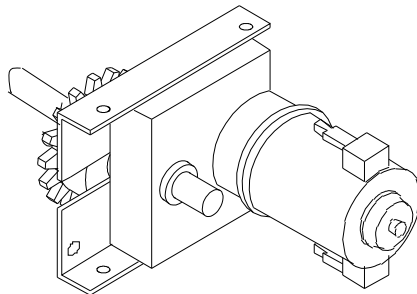
| REF ID # | PART NUMBER              | DESCRIPTION                        | REF ID # | PART NUMBER              | DESCRIPTION                   |
|----------|--------------------------|------------------------------------|----------|--------------------------|-------------------------------|
| 1        | <a href="#">85000100</a> | Door Slide Kit ( 2 Slide Channels) | 10       | <a href="#">85150510</a> | Solenoid and Hook Assy        |
| 4        | <a href="#">85152700</a> | Clutch Assy                        | 11       | <a href="#">95151001</a> | Cable Clamp Bracket           |
| 5        | <a href="#">85152600</a> | Motor & Sprocket Assy              | 12       | <a href="#">95150900</a> | Cable Clamp                   |
| 6        | <a href="#">20110281</a> | Micro switch                       | 13/14    | <a href="#">85152100</a> | (Handle and Bracket in a Kit) |
| 7        | <a href="#">85151300</a> | Micro switch Assy                  | 15       | <a href="#">65151101</a> | Striker Plate (Sensor)        |
| 8        | <a href="#">20200142</a> | Kilrol Pulley                      | 16       | <a href="#">20060025</a> | Tension Spring                |
| 9        | <a href="#">85153600</a> | Cable and Chain Assy               |          |                          |                               |

BO-10 Manual & Self Close Header Parts Listing

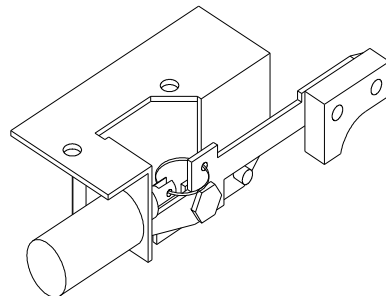
| REF ID # | PART NUMBER              | DESCRIPTION            | REF ID # | PART NUMBER              | DESCRIPTION             |
|----------|--------------------------|------------------------|----------|--------------------------|-------------------------|
| 1A       | <a href="#">85000150</a> | Door TRACK Kit         | 12       | <a href="#">95150900</a> | Cable Clamp             |
| 8        | <a href="#">20200142</a> | Kilrol Pulley          | 16       | <a href="#">20060025</a> | Extension Spring        |
| 9A       | <a href="#">85153700</a> | SC Cable Assembly PVC  | 17       | <a href="#">95151700</a> | Cable Connector Bracket |
| 11A      | <a href="#">95151300</a> | SC Cable Clamp Bracket |          |                          |                         |



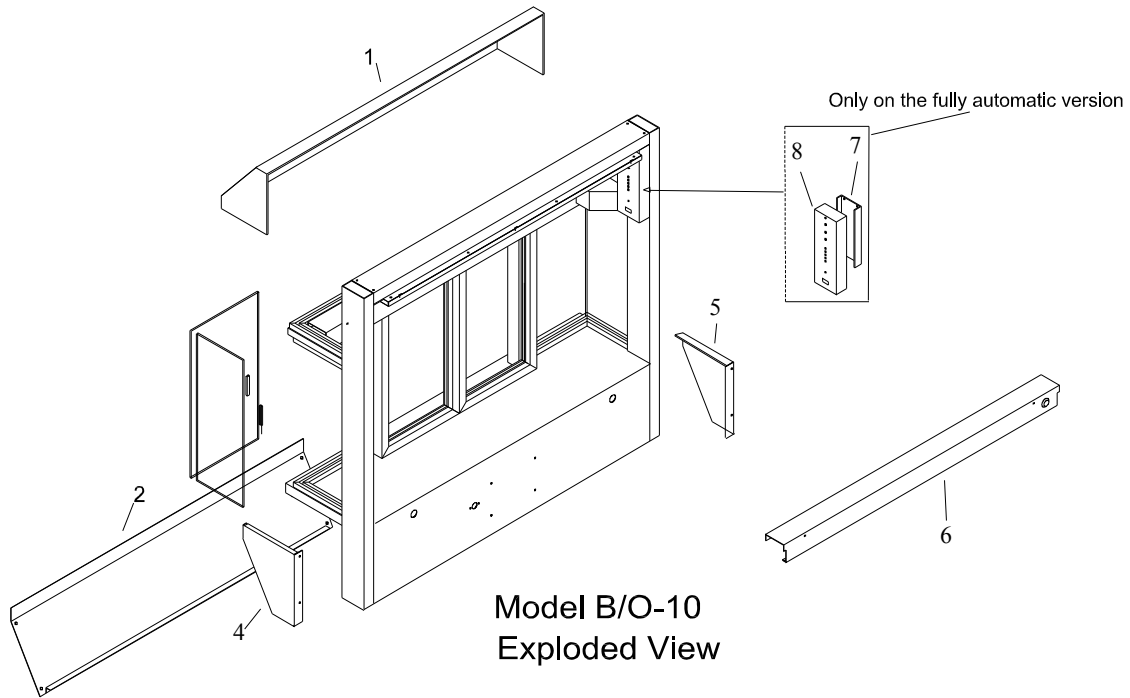
| REF ID # | PART NUMBER              | DESCRIPTION          | REF ID # | PART NUMBER              | DESCRIPTION                           |
|----------|--------------------------|----------------------|----------|--------------------------|---------------------------------------|
| 1        | Call for part #          | Door Assy R/H BR     | 4        | <a href="#">85197000</a> | Door Handle Kit – Manual & Self Close |
| 1        | Call for part #          | Door Assy R/H CL     | 5        | <a href="#">85004200</a> | Latch Lock (DEAD BOLT)                |
| 2        | Call for part #          | Door Assy L/H BR     | 6        | <a href="#">85004500</a> | Thumbturn                             |
| 2        | Call for part #          | Door Assy L/H CL     | 7        | 85002600                 | Door Handle Kit – BO-10M              |
| 3        | <a href="#">85183400</a> | Hanging Hardware Kit |          |                          |                                       |



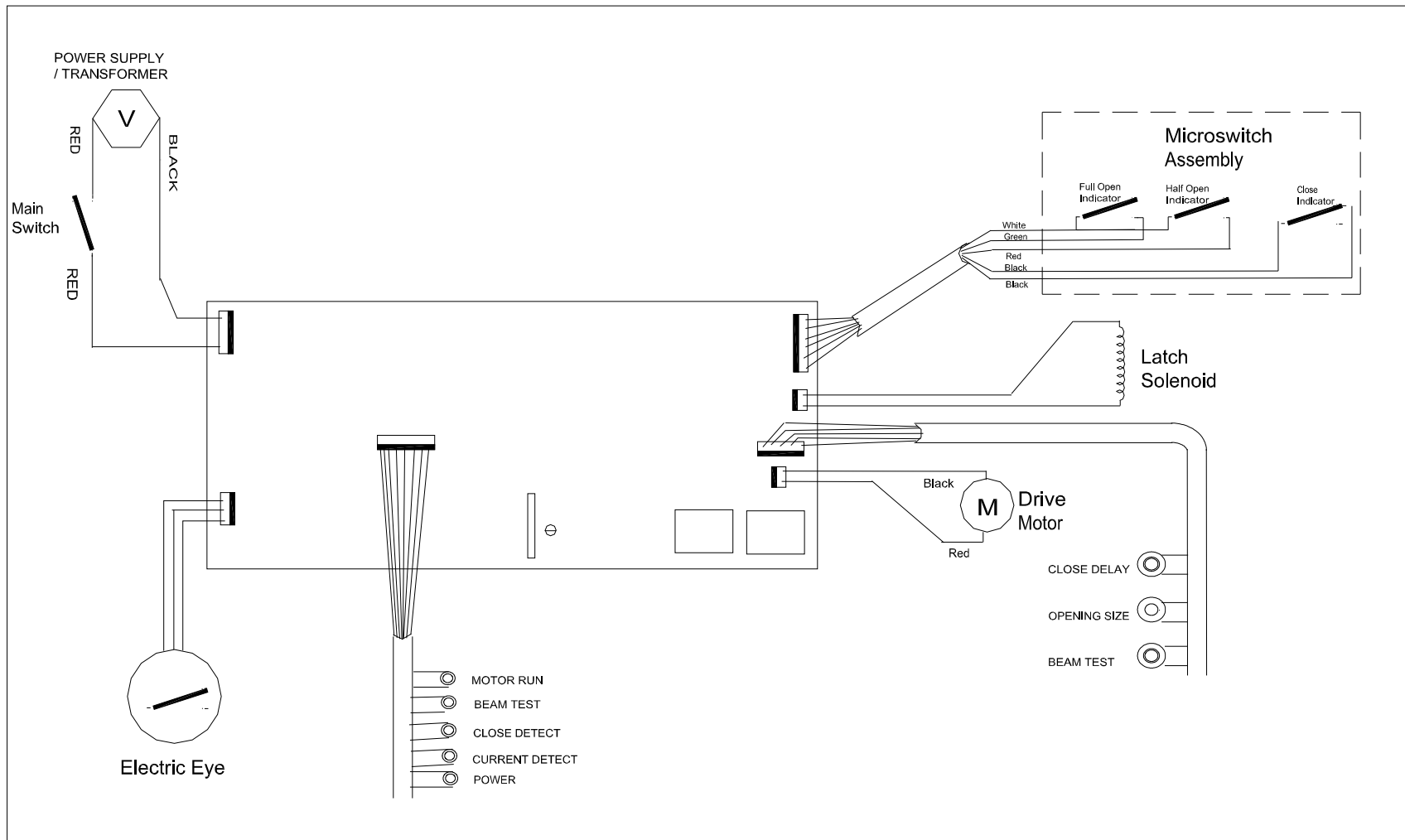
MOTOR ASSEMBLY  
[85152600](#)




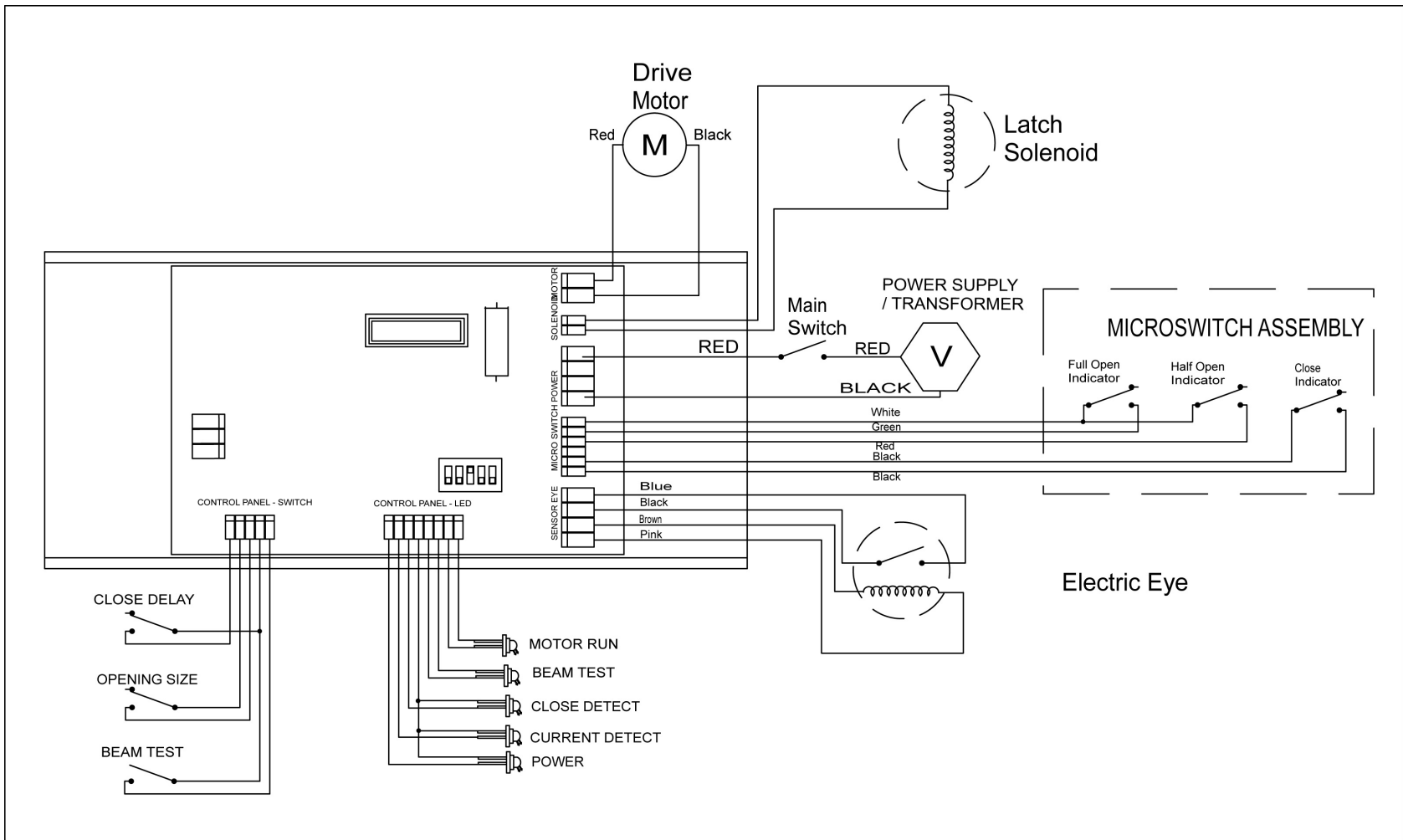
R/L SOLENOID/ HOOK ASSEMBLY  
[85150510](#)




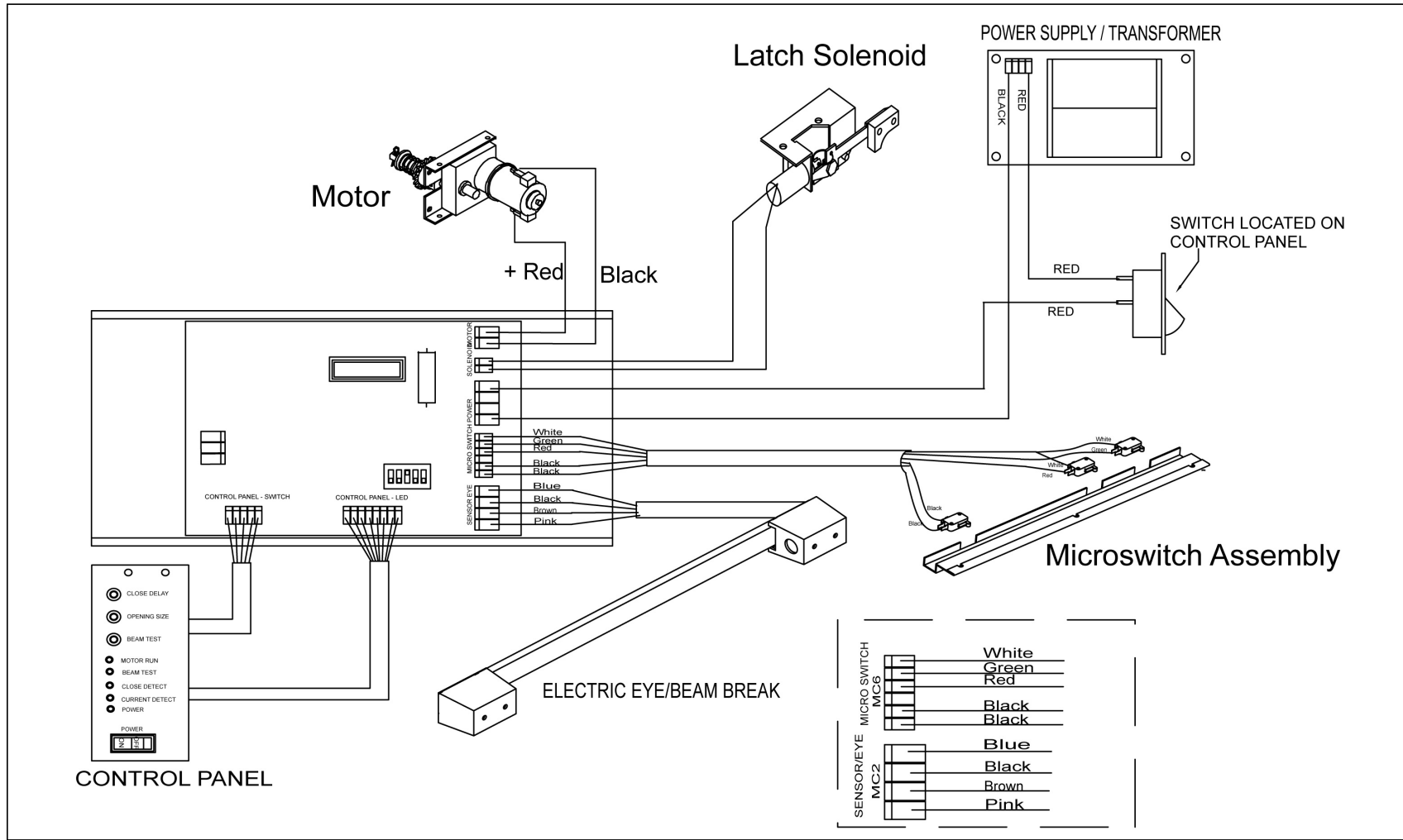
| REF ID # | PART NUMBER | DESCRIPTION                           | REF ID # | PART NUMBER | DESCRIPTION                         |
|----------|-------------|---------------------------------------|----------|-------------|-------------------------------------|
| 1        | 85000601    | Dome Atrium - BR                      | 5        | 65149501    | Side Panel – L/H<br>10-1/2” BR -New |
| 1        | 85000602    | Dome Atrium - CL                      | 5        | 65149503    | Side Panel – L/H<br>10-1/2” CL -New |
| 2        | 65149601    | Front Cover – BR<br>10 1/2” New Style | 6        | 65152201    | Motor Cover                         |
| 2        | 65149602    | Front Cover – CL<br>10 1/2” New Style | 7        | 85002001    | Universal Control Board             |
| 4        | 65149502    | Side Panel – R/H<br>10-1/2” BR -New   | 8        | 65150001    | Cover – Wired<br>PCBA               |
| 4        | 65149504    | Side Panel – R/H<br>10-1/2” CL -New   |          |             |                                     |




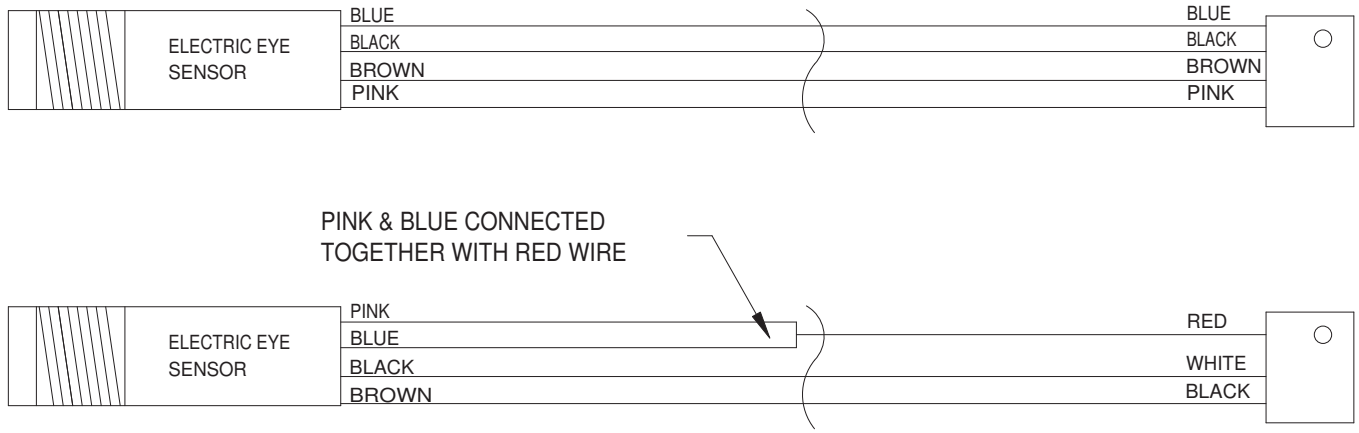
|   |  |  |  |  |
|---|--|--|--|--|
| WORK TO DIMENSIONS-DO NOT SCALE<br>TOL. UNLESS SPECIFIED<br>XXXX TOL. NOT REQ'D<br>TOL. CLASS ± .030<br>ANGULAR TOL. ± 1° | <b>USED IN PRODUCTS:</b><br>BO-10                    | <b>DESIGN BY:</b> SRH<br><b>DATE:</b> 11/08/05 | <b>MATERIAL:</b> PCB                       | <br>1815 Arthur Drive • West Chicago, IL • 800-621-5045 • 630-876-7766 • Fax 630-876-7767 |
|   | <b>REVISION:</b> OR<br><b>REVISION DATE:</b> 2/13/04 | <b>DRAWN BY:</b> SC<br><b>DATE:</b> 11/08/05   | <b>MATERIAL SPEC:</b><br><br><b>GAUGE:</b> |  |
|   | <b>LATEST REVISION NOTE:</b>                         |  | <b>DESCRIPTION:</b> PRE DC3 WIRING DIAGRAM |  |
|   |  |  | <b>PART. NO.:</b> BO-10 E                  |  |




|  |  |                                  |                                   |   |
|--|--|----------------------------------|-----------------------------------|---|
| WORK TO DIMENSIONS-DO NOT SCALE<br>TOL. UNLESS SPECIFIED<br>XXXX TOL. NOT REQ'D<br>TOL. CLASS ±.030<br>ANGULAR TOL. ± 1° | USED IN PRODUCTS:<br>BO-10                                   | DESIGN BY: SRH<br>DATE: 11/08/05 | MATERIAL: PCB<br>MATERIAL SPEC:   | <br><small>1815 Arthur Drive West Chicago, IL • 800-621-5045 630-676-7766 Fax 630-676-7167</small> |
|  | REVISION: OR   | DRAWN BY: SC<br>DATE: 11/08/05   | GAUGE:                            |   |
|  | REVISION DATE: 2/13/04                                       |                                  |                                   |   |
|  | LATEST REVISION NOTE:<br>ORIGINAL FOR SERVICE MANUAL RELEASE |                                  |                                   |   |
|  |  |                                  | DESCRIPTION: ELECTRICAL SCHEMATIC |   |
|  |  |                                  | PART NO.: BO-10 E                 |   |



|   |                             |                                  |                |  |
|---|-----------------------------|----------------------------------|----------------|--|
| WORK TO DIMENSIONS-DO NOT SCALE<br>TOL. UNLESS SPECIFIED<br>XXXX TOL. NOT REQ'D<br>TOL. CLASS ± .030<br>ANGULAR TOL. ± 1° | USED IN PRODUCTS:<br>BO-10  | DESIGN BY: SRH<br>DATE: 11/08/05 | MATERIAL: PCB  | <br>1815 Arthur Drive West Chicago, IL • 800-621-5045 630-576-7166 Fax 630-576-7167 |
|   | REVISION: OR                | DRAWN BY: SC                     | MATERIAL SPEC: |  |
|   | REVISION DATE: 2/13/04      | DATE: 11/08/05                   | GAUGE:         |  |
| LATEST REVISION NOTE:   | DESCRIPTION: WIRING DIAGRAM |                                  |                |  |
| PART NO.: BO-10 E   |                             |                                  |                |  |



|   |                        |                |                              |   |
|---|------------------------|----------------|------------------------------|---|
| WORK TO DIMENSIONS-DO NOT SCALE<br>TOL. UNLESS SPECIFIED<br>XXXX TOL. NOT REQ'D<br>TOL. CLASS ± .030<br>ANGULAR TOL. ± 1° | USED IN PRODUCTS:      | DESIGN BY: SC  | MATERIAL: OMRON ELECTRIC EYE | <br><small>1815 Arthur Drive West • Chicago, IL • 815-421-5545 • 876-7766 Fax • 876-7767</small> |
|   | WAIST HIGH BEAM BREAK  | DATE: 11/08/05 | MATERIAL SPEC:               |   |
|   | REVISION: OR           | DRAWN BY: SC   | GAUGE:                       |   |
|   | REVISION DATE: 11/8/05 | DATE: 11/08/05 |                              |   |
|   | LATEST REVISION NOT E: |                | DESCRIPTION: ELECTRIC EYE    |   |
|   |                        |                | PART. NO.: WIRING DIAGRAM    |   |

## Appendix A Adjusting or Re-hanging the Doors

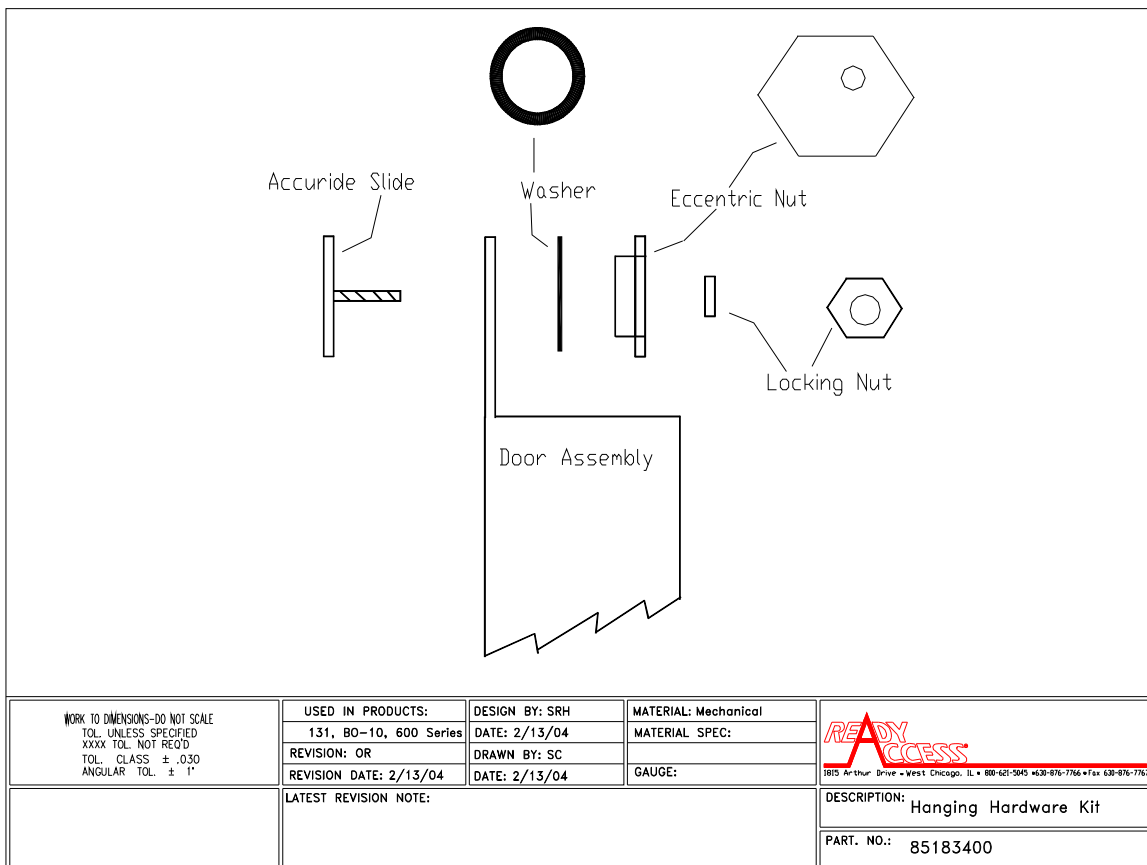
The distance of the door(s) above the mullion or counter top is adjusted by turning the eccentric nuts located in the corners at the top of each door. (See figure 11 – page 16) The exploded view of the assembly is shown in Figure 1 below.

When a door has dropped, such that it impedes the movement of the doors, it is necessary to re-adjust both doors to a given distance above the counter top. This is accomplished by loosening the two Locking / Eccentric Nut combinations at the top of each door. Loosening the small locking nuts allows both doors to drop down and rest on the counter top.

Slide the doors inward to the closed position and lock using the night lock. Insert two shims about 0.100” in thickness under each door. One at each end of the doors is suggested. A standard coffee stir or a tongue depressor is a bout 0.100” thick. This allows the doors to set at a preset distance off the counter top.

Starting with one of the Locking / Eccentric Nut combinations turn the eccentric nut with until you feel resistance and/or notice that the door is beginning to rise. Keeping the eccentric nut in that position, tighten the locking nut down to approximately 30 lbs/in<sup>2</sup> of torque.

Repeat the above step for each of the remaining Locking / Eccentric Nut combinations. Remove the shims. The doors should now be at the proper height as well as being square with each other.





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