# Installation/Service/Operations Manual

*Model BO1*
*Bump Out 1*

## Model BO 2
## BUMP OUT 2

## Model BO 4
## BUMP OUT 4

**Pass-Thru Windows**

# TABLE OF CONTENT

## DISCLAIMER

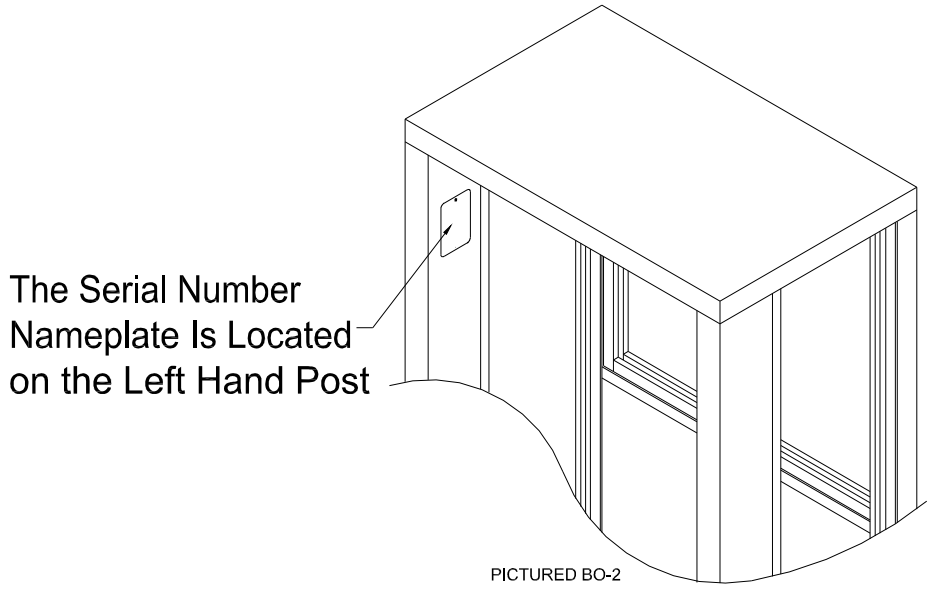
READY ACCESS DISCLAIMS ANY LIABILITY FOR ANY DAMAGE OR HARM CAUSED TO THE BO-2 AND BO-4 DRIVE-THRU WINDOWS, IT'S OPERATOR OR ANY OTHER EQUIPMENT HOWEVER CAUSED IF THE BO-2 DRIVE-THRU WINDOW IS INSTALLED, REPAIRED OR SERVICED BY ANYONE OTHER THAN AN AUTHORIZED SERVICE ENGINEER OR CONTRARY TO THE MANUFACTURERS 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.

| | |
|---|---|
| **Serial Number** | |
| **Date of Installation** | |



PICTURED BO-2

# Contact Information

For sales and service contact

Ready Access
1815 Arthur Drive
West Chicago, Illinois 60185
Email: ready@ready-access.com

Tel: 630-876-7766
Tel: 800-621-5045
Fax: 630-876-7767
Website: www.ready-access.com

# 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 original Ready Access Bump-Out window design is recognized throughout the world as the industry standard with more units installed than any other window of its type. By design, this ruggedly constructed unit combines functional superiority and practicality - all in an attractive window that can match virtually any building exterior.

The BO-2 and BO-4 come in two versions, semi-automatic 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. Electric and Semi-Automatic models meet health department requirements for self-closing units.

## PRODUCT INFORMATION

- **Small 12”W x 18”H Service Opening (BO-1)**
- **Large 19"W x 18"H Service Opening (BO-2)**
  This large service opening is perfect for virtually any size order, from pizza to ribs to beverage cartons.

- **Huge 19"W x 32"H Service Opening (BO-4)**
  This large service opening makes the Bump-Out 4 ideal for the bulkiest of orders.

- **Frame Size**
  Standard window dimensions are 27 3/4"W x 48 3/4"H.

- **Panoramic View**
  The classic Ready Access Bump-out design promotes visibility and personal contact by offering a three sided, 180-degree view of cars and customers.

- **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.

- **Fully Assembled, Ready to Install**
  Ready Access windows are shipped completely pre-assembled, and fully glazed for lower installation costs. Normal installation takes less than two hours.

- **Three to Five Day Shipping**
  Ready Access will ship any standard window order in 3 to 5 days from receipt of order.

- **Warranty and Service Support**
  Your Bump-Out 1, Bump-Out 2 and Bump-Out 4 come with a one year limited warranty on parts and labor. In addition, each unit is backed by a worldwide service organization.

**MANUAL, SEMI-AUTOMATIC OR FULLY-AUTOMATIC SERVICE OPENINGS**

- **Manual – BO1 only** You open and close by hand.

- **Semi- Automatic – BO-1, BO-2 and BO-4**
  In a Semi-Automatic operation, simply release the top lock and push on the "Push Pad" to open the door. Both doors part from the center and easily open. A retrofit kit is available to convert manual models into fully automatic units.

- **Fully Automatic – BO-2 and BO-4 only**
  The operator simply steps into an electronic light beam that opens the door panels automatically. The door panels automatically close when the operator steps away from the electronic light beam.

**AVAILABLE OPTIONS**

- The Bump-Out 1, Bump-Out 2 and Bump-Out 4 are 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.

## 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 Chemical – laden environment.

## WARRANTY:

**Ready Access will only accept responsibility for manufacturing defects in the product's construction and/or materials.**

**Adjustments required during installation are the responsibility of the installer or contractor and will not be covered under warranty.**

**Problems caused by improper installation are the responsibility of the installer or contractor and will not be covered under warranty.**

## SPECIFICATIONS AND PERFORMANCE

Fully-Automatic

| Model Number | Unit Voltage | | Actual Unit Amps | Dimensions In Inches W x H x D | Weight In Shipping Carton |
|---|---|---|---|---|---|
| | USA | International | | | |
| BO-2 - E | 110/120 VAC 60Hz | 220/240 VAC 50/60Hz | 15 A (US) 8 A (Int'l) | 27 ¾" x 48¾ x 15 ¾ | 156 lbs |
| BO-4 - E | 110/120 VAC 60Hz | 220/240 VAC 50/60Hz | 15 A (US) 8 A (Int'l) | 27 ¾" x 48¾ x 15 ¾ | 156 lbs |

### Dimensions

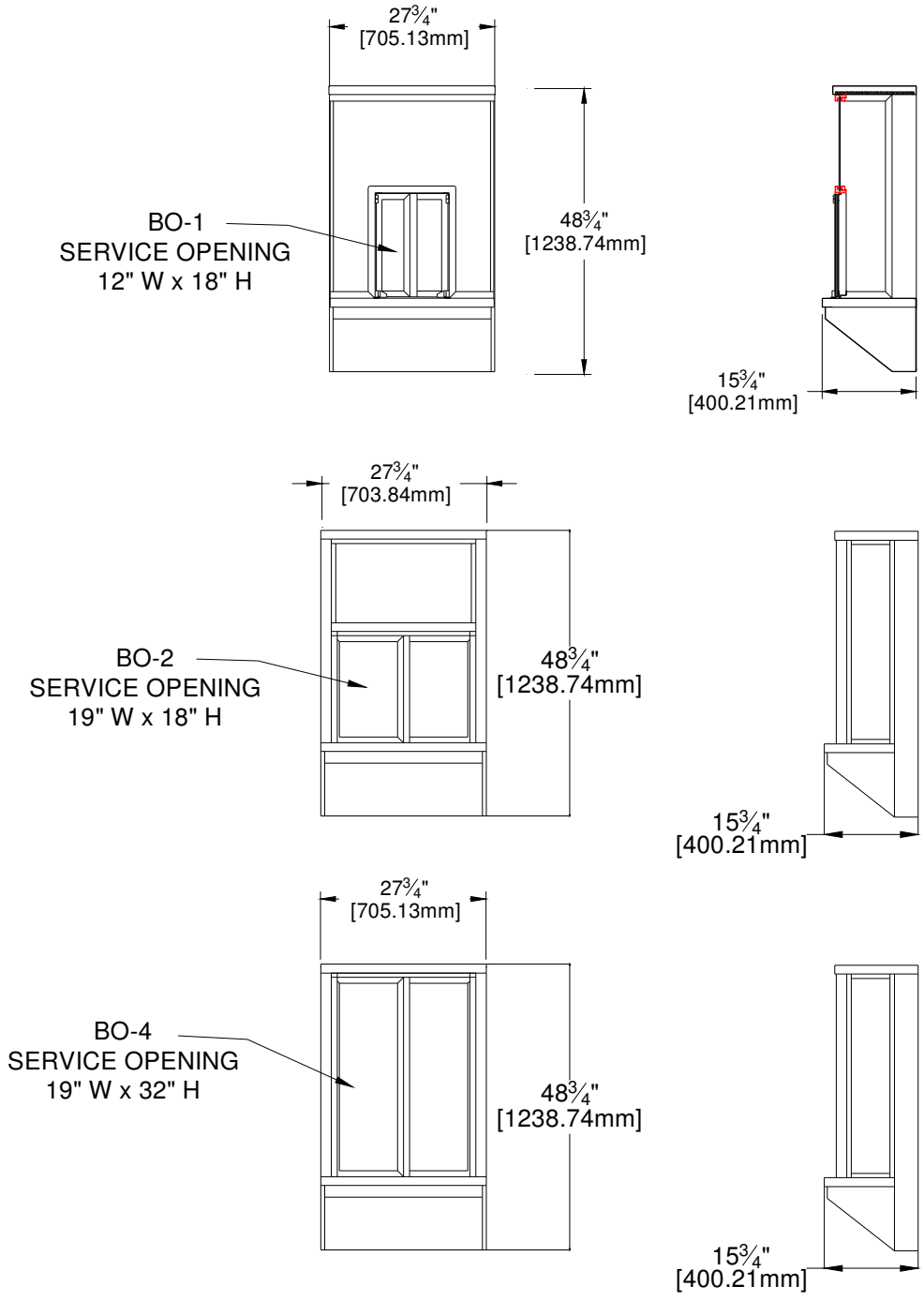

27¾"
[705.13mm]
BO-1
SERVICE OPENING
12" W x 18" H
48¾"
[1238.74mm]
15¾"
[400.21mm]
27¾"
[703.84mm]
BO-2
SERVICE OPENING
19" W x 18" H
48¾"
[1238.74mm]
15¾"
[400.21mm]
27¾"
[705.13mm]
BO-4
SERVICE OPENING
19" W x 32" H
48¾"
[1238.74mm]
15¾"
[400.21mm]

**Figure 1**

# Installation Procedures

## Tools required to perform the installation

- Electric Drill
- Metal Drill bits –
  ⅛" (3mm)
  ¼" (6mm)
  ½" (13mm)
  1" (25mm)
- Screwdrivers – Slotted and Phillips
- Hacksaw
- Jack / Utility Knife
- Flat File – Coarse
- Caulking gun
- ¼" Nut Driver
- Extension Cord
- Masonry drill bit –
  ¼" (6mm)
  1" (25mm)
  1½" (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 ⅛" (3mm) x 1 ¾" (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 to pick which one bests fits your application.

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

**NOTE:** There are two wall-mounting applications. The mounting space can be surrounded either by sidelights (windows) or masonry. The illustrations below will show both configurations. (Figure 2)

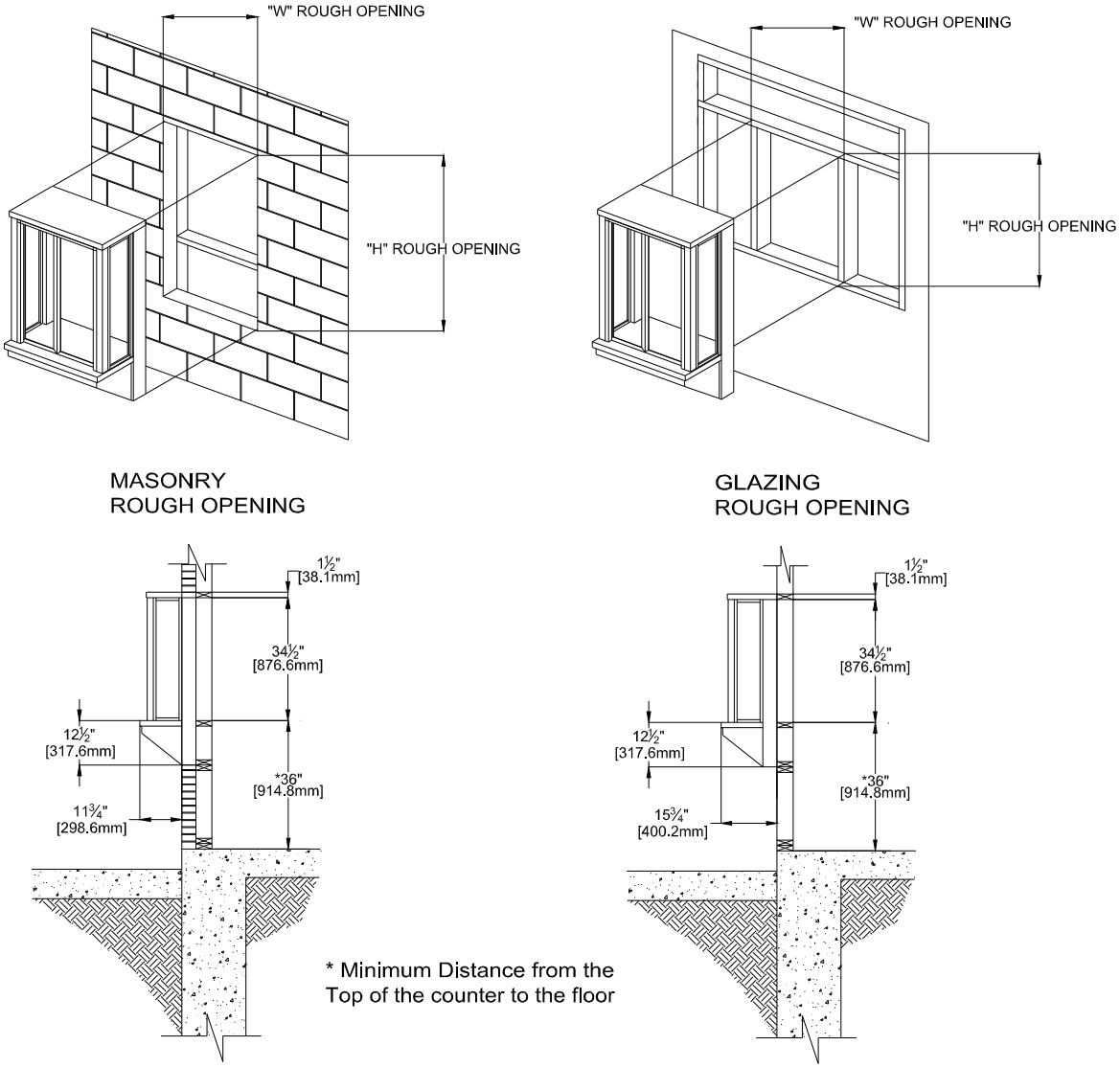



**Figure 2**
**PICTURED BO-4**

1. Confirm that the customer-supplied frame is made to accommodate the dimensions as illustrated on page 6.

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.

5. Once the application has been determined, check the daylight opening of the frame being used. The opening dimensions should be 24 ¼" wide x 34 ½" high.

***6.*** For a Fully-Automatic installation, check for the electrical hook-up***. The AC electric should be installed directly 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 10, ¼" diameter pilot holes for mounting. (See Figure 3) **OUTSIDE ONLY – DO NOT DRILL THROUGH THE FRAME.**

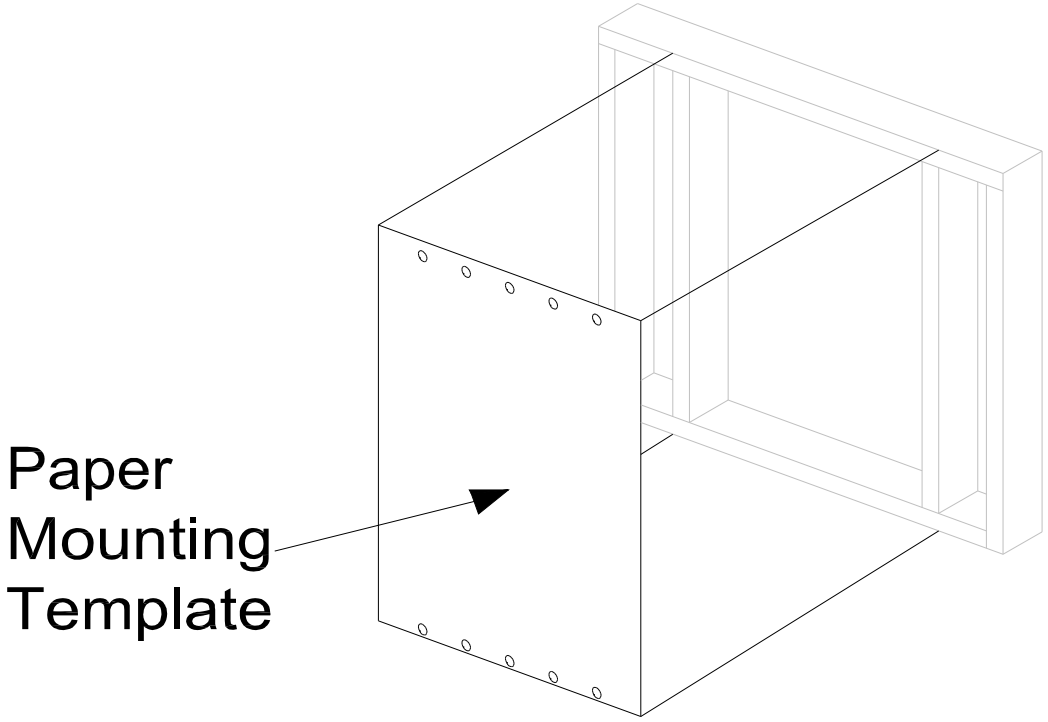



**Figure 3**

8. Remove the template and drill 10, ½" hole using the ¼" pilot holes.
**OUTSIDE ONLY – DO NOT DRILL THROUGHT THE FRAME.**

9. For Semi-Automatic installations, Drill a 1” hole through the wall as illustrated in Figure 4. (The dimensions shown are from the inside of the building.)

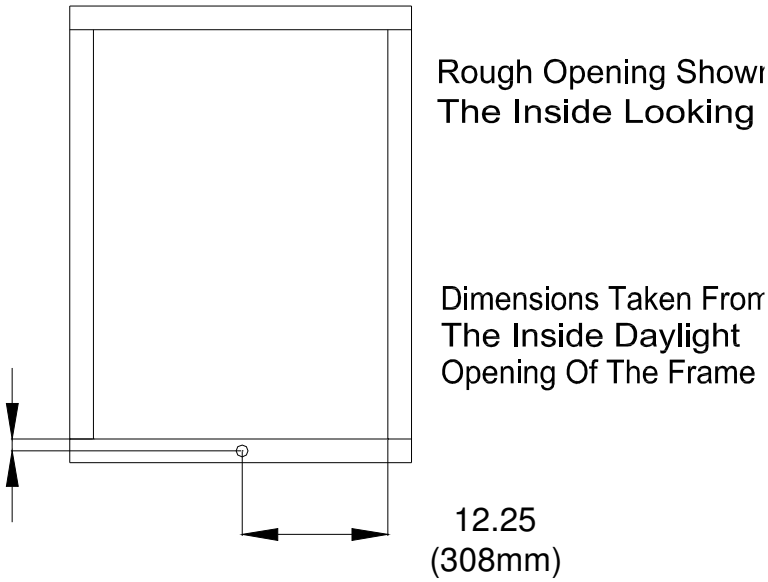



**Figure 4**

10. For Fully-Automatic, Drill a 1 ½” hole through the wall as illustrated in Figure 4. (The dimensions shown are from the inside of the building.)

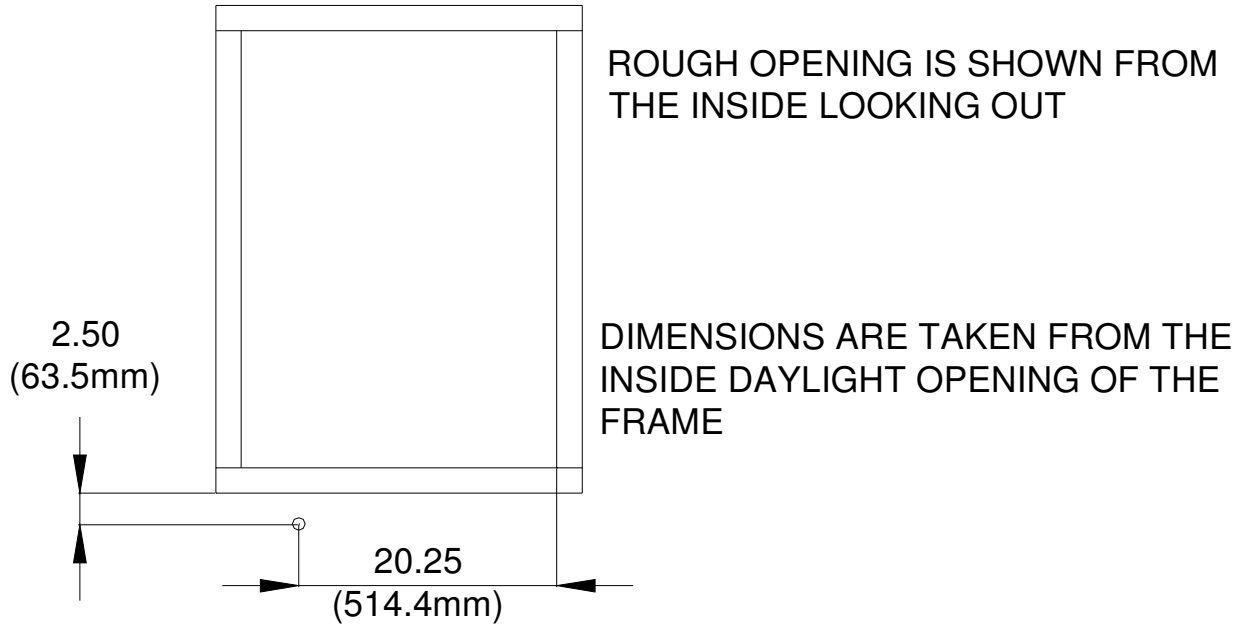



**Figure 5**

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

12. 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.)

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.

    With one person holding the front of the window from falling forward, the other person from the inside will start inserting 5 of the well nuts with the washers and bolts through the inside top of the window into the building frame. (Figure 6)
    (If mounting through wood, use lag bolts. If mounting to masonry, use mason anchors)

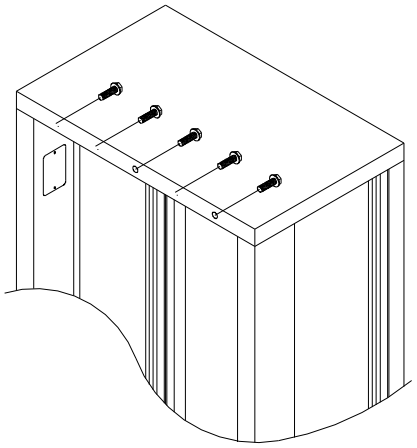


Figure 6

From the outside, insert the remaining 4 well nuts and fasten with the bolts and washers provided, through the bottom, underneath the counter, into the building frame.

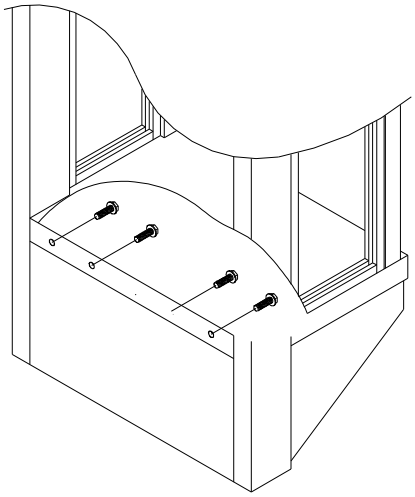


Figure 7

14. DO NOT TIGHTEN - Shim unit to be square and plum. Once this has been done, tighten mounting hardware.

15. When the window is fully secured, seal the outside of the window to the frame or building using silicone caulk.

## Semi Automatic Instructions

Push Pad Assembly

1. Mount the guide block retainer to the interior side of the wall. (Figure 8)

2. From the inside, slide the push-pad assembly through the guide block into the bottom of the window. (Figure 9)

3. From the outside, underneath the window attach the push-pad shaft to the slide rider with the clevis pin and hitch pin. (Figure 10)

4. Test the unit by pushing on the push-pad. Secure the cover to the outside of the window.

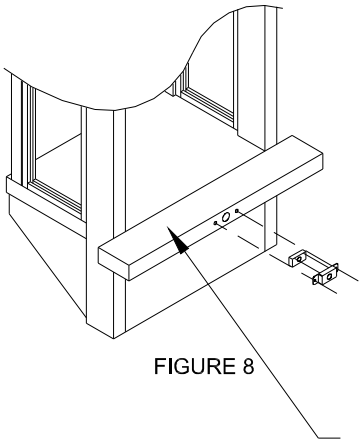


FIGURE 8

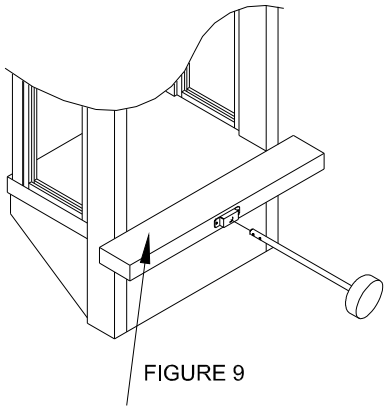


FIGURE 9

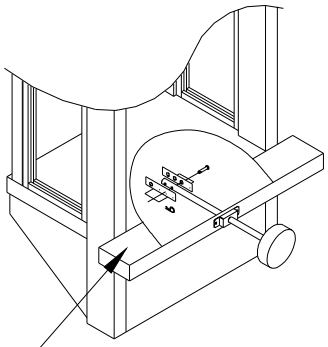


FIGURE 10

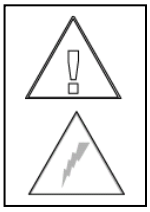
The mounting frame is pictured for the purpose of illustration only.
(IT IS NOT PART OF THE WINDOW.)

# Fully-Automatic Instructions (BO2 & BO4 Only)

## 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 – 50/60Hz 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 110/120 volts of electrical power form 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 located underneath the window countertop. (See Figure 11)

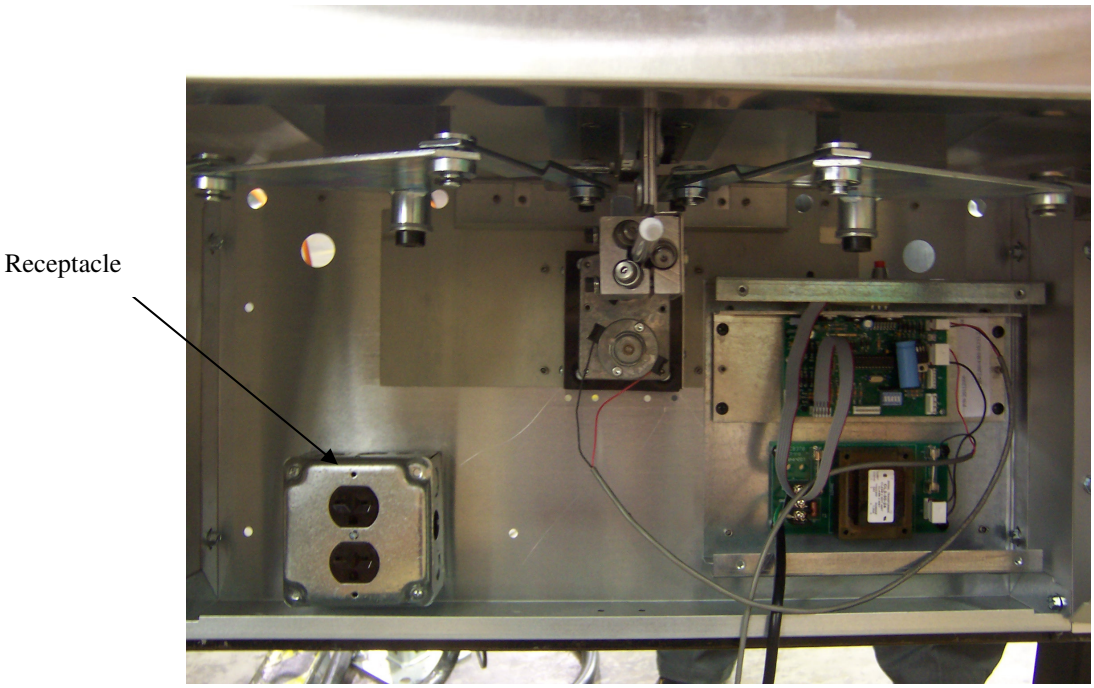



Figure 11

**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 - ¼" (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.

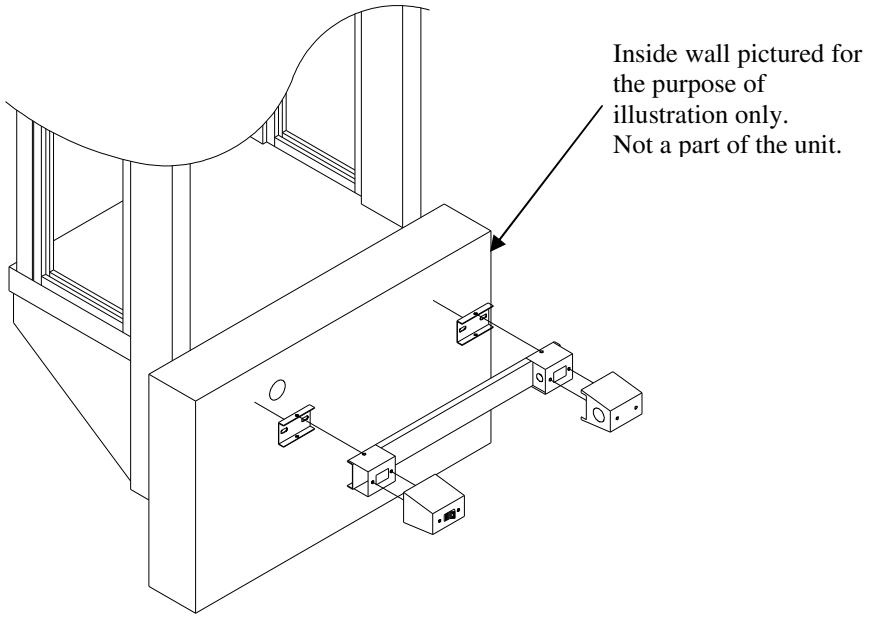



Figure 12

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
### Semi Automatic Operations

| Action | Reaction |
|---|---|
| Press your hip against the push-pad cushion and push into the window. | The doors will open |
| When you step away from the push-pad | The doors will self-close and the push-pad will extend back into position. |

### Fully - Automatic Operations (Electric)

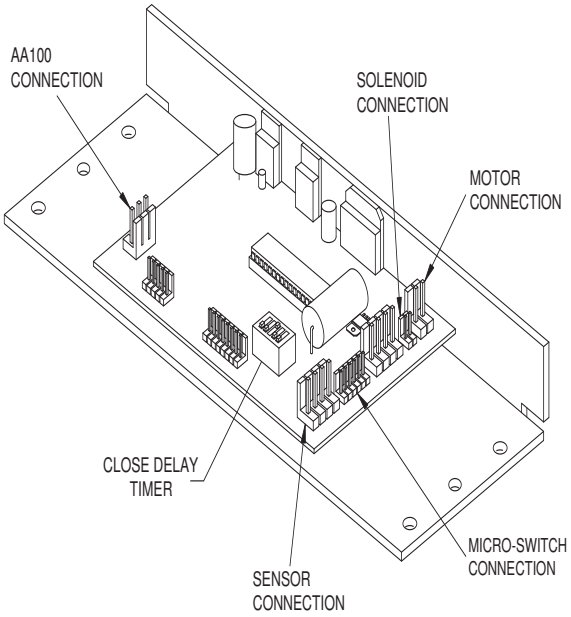
| Action | Reaction |
|---|---|
| Turn the power **"OFF"** at the rocker switch located on the controller unit.<br>Manually open and close the doors several times. | When the doors are opening, the "MOTOR RUN" lamp will illuminate green. When the doors are closing, "MOTOR RUN" lamp will illuminate red. 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 **"ON"** at the rocker switch located on the controller unit.<br>Break the electric eye beam to open the door. | The doors will open to an 18" (457.2mm) opening. |
| With the power **"ON"** 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 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 **"ON"** 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

**Calibration:**

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

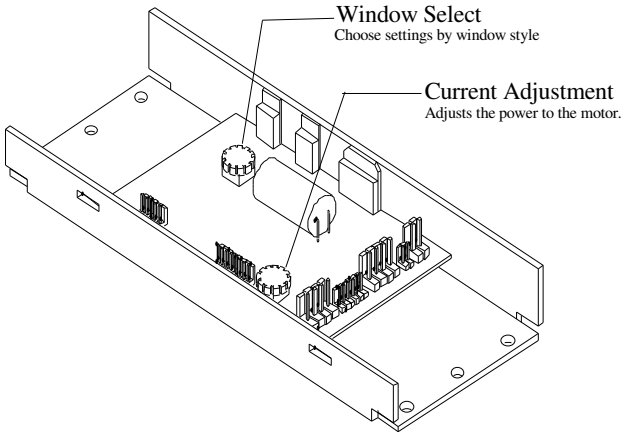
The CLOSE DELAY TIMER is default set at 3 seconds




Follow the Chart Below for Changing the Close Delay Time Settings

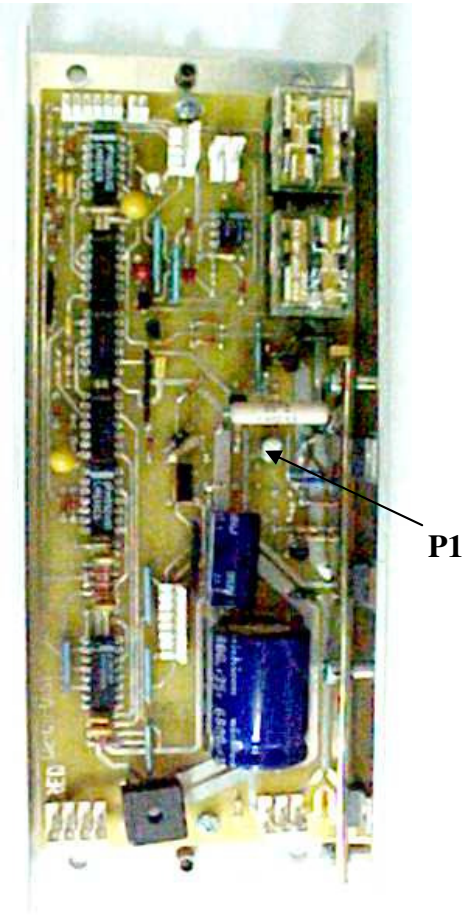
| Dip Switch Settings | | | | | |
|---|---|---|---|---|---|
| Time in Seconds | Switch Position | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 1 | **ON** | OFF | OFF | OFF | OFF |
| 2 | OFF | **ON** | OFF | OFF | OFF |
| 3 | OFF | OFF | **ON** | OFF | OFF |
| 4 | OFF | OFF | OFF | **ON** | OFF |
| 5 | OFF | OFF | 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 manors.

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-1 is Manual and Semi-Automatic, the BO-2 and BO-4 windows have two modes of operation, Semi-Automatic and Automatic.

**Semi-Automatic Operations**

Press your hip against the push-pad cushion and push into the window. The doors will open. When you step away from the push-pad, the doors will self-close and extend the push-pad back into position.

**Fully-Automatic Operations**

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 Bump-Out model Semi-Automatic or Electric Sliding window, completion of the testing procedures and the installation of the decorative covers, the window is ready for normal use

**Semi – Automatic**

1. Using your hip. Lean in on the orange push pad. And then step aside.
2. The doors should open and close smoothly.
3. 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**

**Electric (Fully – Automatic)**

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.
4. Step out of the beam path and wait 3 to 6 seconds for the doors to close.
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**

**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.**

# Maintenance

## Maintenance Schedule

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

### Daily

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

### 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 LUBRICATE THE DRIVE SHAFT OR LINEAR ACTUATOR.**

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

**NOTE: DO NOT LUBRICATE THE DRIVE SHAFT OR LINEAR ACTUATOR.**

### Semi Annual (6 Months)

- Check the front cover and side panels to ensure that they are not rubbing on the moving mechanism.
- Check the lock bar and door locks. Inspect for missing parts and smooth operations
- Lubricate the locks with silicone.
- Inspect the hinges and bushings for any wear or damage.
- Inspect the weather stripping around the doors for wear or damage.
- Check the setscrews on the locking plate to ensure that they are tight and properly aligned with the locking plate.
- Inspect all the bolts on the slide to make sure that they are in place.
- Check all the “Tru-arc” retaining rings to make sure that they are in place.
- Lubricate all the linkage and pivot points with silicone.

### Yearly

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

**IF NEEDED, CONTACT YOUR READY ACCESS SERVICE AGENT FOR SERVICE.**

# SERVICE

## Troubleshooting Guide
**Semi Automatic**

| Issue | Probable Cause | Resolution |
|---|---|---|
| The doors do not open. | • Broken Hinge | • Replace Hinge |
| | • Tru-Arc retaining ring popped off | • Check for missing or broken Tru-Arc Ring<br>• Reattach or replace the ring |
| | • Push Pad assembly not connected | • Check for a missing or broken clevis or hinge pin<br>• Reattach or replace the pin |
| Only one door opens and the other door goes in the opposite direction. | • Roller bearing on the top of the doors broken or fell off | • Check the roller bearing<br>• Repair or replace |
| Door binds when trying to open. | • Door hinges are no longer square | • Repair or replace the hinges |
| | • Unit may have been hit by a car | • Inspect the counter top<br>• Replace if damaged |
| Doors hang loose. | • Shoulder screws have come loose and fallen off the hinges | • Check for the shoulder screws being in place<br>• Repair or replace as needed |
| Doors do not close. | • The pull back spring has come loose or broke | • Check for mounting hardware<br>• Reattach or replace the pull-back spring |
| Doors slam shut. | • Pneumatic closer worn out | • Adjust the screw on the end of the closer<br>• Replace if needed |

# SERVICE

## Troubleshooting Guide
**Fully Automatic**

| Issue | Probable Cause | Resolution |
|---|---|---|
| When the beam is broken, the doors do not open. | • Defective motor assembly | • Replace the motor assembly |
| | • Dirty drive shaft | • Clean the drive shaft. It must be free from dirt and lubricants |
| | • Broken Hinge | • Replace Hinge |
| | • Tru-Arc retaining ring popped off | • Check for missing or broken Tru-Arc Ring.<br>• Reattach or replace the ring |
| | • Linear actuator is slipping | • Clean shaft and adjust tension from the block |
| | • Dirty or defective electric eye<br>➢ Dirt or other material is blocking eye<br>➢ Defective electric eye | ➢ Clean the dirt off the eye and reflector<br>➢ Replace the electric eye |
| | • Defective PCB Assembly | • Replace the PCB Assembly |
| Only one door opens and the other door goes in the opposite direction. | • Roller bearing on the top of the doors broken or fell off | • Check the roller bearing<br>• Repair or replace |
| Door binds when trying to open. | • Door hinges are no longer square | • Repair or replace the hinges |
| | • Unit may have been hit by a car | • Inspect the counter top<br>• Replace if damaged |
| Doors hang loose. | • Shoulder screws have come loose and fallen off the hinges | • Check for the shoulder screws being in place<br>• Repair or replace as needed |
| Unit works intermittently. | • Defective PCB Assembly | • Replace the PCB Assembly |
| Doors open as soon as the switch is turned “ON”. | • Bad connection to the electronic eye | • Check and tighten connectors |
| | • Bad PCB Assembly | • Replace PCB Assembly |

# SERVICE

## Troubleshooting Guide
**Fully Automatic**

| Issue | Probable Cause | Resolution |
|---|---|---|
| Power switch in the "ON" position but the light is not illuminated. | • No power to the controller unit<br>➢ Main Circuit breaker is defective or not "ON"<br>➢ The fuse on the power supply is blown<br>➢ Main power rocker switch is defective<br>➢ AC wiring is defective | ➢ Reset or replace the main circuit breaker in the load center<br>➢ Replace the fuse on the power supply<br>➢ Test rocker switch with an ohmmeter. Replace if necessary<br>➢ Check AC wiring for opens. Replace if necessary |
| | • Red Lamp/s not illuminating | • Replace the switch |
| | • The 4 pin power connector to the main PCB assembly is not secure | • Secure the connector/s to the power supply |
| | • The connector/s to the rocker switch are not secure | • Secure the connector/s to the rocker switch |
| Motor runs but the doors will not open or close. | • Linear actuator is slipping | • Clean shaft and adjust tension from the block |
| Doors do not close completely. | • There is dirt and/or lubricant on the drive shaft or linear actuator | • Clean the drive shaft and actuator |
| | • The linear actuator is loose | • Tighten the linear actuator |

# Parts Lists

## Complete Parts List (Description/Part Number) – Common to both model windows

| Description | Current Part Number | Previous Part Number | Status | Note |
|---|---|---|---|---|
| "J"-NUT KIT BO SERIES | 85078900 | 65078901 | Current | |
| Alignment block (aligns hinges) | 20220010 | N/A | Current | |
| Angle - Reinforcement - Door | 20220012 | N/A | Current | |
| Angle - Reinforcement – Door | 00650228 | N/A | Current | (Hinge-Large) |
| Cable - Motor | 20112150 | N/A | Current | |
| Cable - Power | 20112149 | N/A | Current | |
| Ceiling Tile | 85077700 | 65077701 | Current | |
| Clevis Pin for Push Rod Assy | 10300003 | N/A | Current | |
| Coupling | 00651100 | N/A | Current | |
| Cover - Front - Bronze | 85065801 | 65065801 | Current | |
| Cover - Front - Clear | 85065802 | 65065802 | Current | |
| Door Handle (order in eachs) | 95064401 | 65064401 | Current | |
| Drive Shaft Kit BO-1,2,4 E | 85104100 | 65104101 | Current | |
| Electric Eye Assy - BO-1,2,4 | 85040000 | 65240001 | Current | |
| Electric Eye/Reflector Kit | 85000200 | 00651144 | Current | Waist level operation |
| Eye Switch Retrofit | 84000300 | N/A | Current | |
| Center Stop - Door BO-2 L/O | 85079100 | 65079101 | Current | |
| Hitch Pin Clip for Push Rod Assy | 10300004 | N/A | Current | |
| Latch Spring | 00650269 | N/A | Current | |
| Linear Actuator Kit | 85000500 | 20110043 | Current | |
| Linkage - Straight | 95062200 | 65062201 | Current | |
| Linkage Nyliner & Retaining Ring | 85000400 | N/A | Current | |
| Linkage Pan Assy – BO-2 | 85098000 | 65098001 | Current | |
| Linkage Pan Assy – BO-4 | 85098500 | N/A | Current | |
| Linkage Plate Assy (Triangle Shape) | 95061800 | 65061801 | Current | |
| Lock - Top (1 each) SMALL Doors | 85088200 | 65088201 | Current | |
| Lock Bar - Bottom - Bronze | 85078301 | 65078301 | Current | |
| Lock Bar - Bottom - Clear | 85078302 | 65078302 | Current | |
| Lock Bar – Bottom Powder Painted | 85078303 | N/A | Current | |
| Mtg Hardware Kit | 10706201 | N/A | Current | |
| Nylon Guide Block - Rod Assy | 50020018 | N/A | Current | |
| Offset Linkage | 95062100 | 65062101 | Current | |
| Locking Plate | 95061900 | 65061901 | Current | |
| Motor DC - After 8/99 | 20110245 | N/A | Current | |
| MOTOR REPAIR KIT BO-1,2,4 E | 85138700 | 65138701 | Current | |
| Pan Slide Sub Assy - BO-2,4 | 85097800 | 65097801 | Current | |

| Description | Current Part Number | Previous Part Number | Status | Note |
|---|---|---|---|---|
| Panel - L/H - Bronze BO-1,2,4 | 85065601 | 65065601 | Current | |
| Panel - R/H - Bronze BO-1,2,4 | 85065602 | 65065602 | Current | |
| PC Board - DC3 as of 12/14/01 | Call for # | | Current | Provide Serial # |
| Pivot block - Door Frame | 20220040 | N/A | Current | |
| Pivot Bracket for Door Closer | 65063101 | N/A | Current | |
| Pivot Support for Door Closer | 65063201 | N/A | Current | |
| Plastic Switch Hsg - After 5/95 | 65199901 | N/A | Current | |
| Pneumatic Closer | 85134100 | 65134101 | Current | |
| Power Supply Int'l , BO1,2,4,275 Int'l | Call for # | N/A | Current | Provide Serial # |
| Power Supply, BO-1,2,4, 275 | Call for # | N/A | Current | Provide Serial # |
| POWER SWITCH - BO-1, BO-2, BO-4 | 85002800 | N/A | Current | |
| Push Pad SEMI AUTO | 85077900 | 65077901 | Current | |
| Push Rod Assy - 16" LG / BO-1,2,4 | 85078016 | 65078001 | Current | |
| Push Rod Assy - 22" LG / BO-1,2,4 | 85078022 | 65078022 | Current | |
| Push Rod Assy - 30" LG / BO-1,2,4 | 85078030 | 65078030 | Current | |
| Push Rod Assy - 38" LG / BO-1,2,4 | 85078038 | 65078038 | Current | |
| Retainer Bottom Lock Bar | 65024001 | N/A | Current | |
| Retro Fit Kit - BO-2,4 | 84000800 | N/A | Current | SEMI TO ELEC. 220V |
| Retro Fit Kit - Semi to Auto | 84000100 | N/A | Current | Semi to Electric DC - DC Power as of 1/26/00 Includes PC Board |
| Rivet | 10180009 | N/A | Current | |
| Rocker Switch for PCBA Cover | 20110214 | N/A | Current | 8/99 BO1,2,4 after 2/27/02 |
| Rollers - Top Track (2 doors w/blocks) | 85089300 | 65089301 | Current | |
| Rubber Glass Channel | 65028601 | N/A | Current | |
| Screw | 10010061 | N/A | Current | |
| Screw for inside cover, sensor striker | 10010114 | N/A | Current | |
| Screw for Top Block | 10010154 | N/A | Current | |
| Screw Kit - Shoulder Screw - BO-2,4 | 85103800 | 65103801 | Current | |
| Screws w/lock washers for roller blocks | 10010107 | N/A | Current | |
| Set Screw for Locking Plate | 10040004 | N/A | Current | |
| Shoulder Screw for Manual Release | 10010204 | N/A | Current | |
| Spacer Door Hinge | 20200062 | N/A | Current | |
| Spring & Ball Knob Kit (3 ea. kit) | 85000300 | 00650284 | Current | |
| Spring - Extension (for top track) | 20060017 | N/A | Current | |
| Spring Kit - Extension - BO-2,4 | 85103700 | 65103701 | Current | |
| Spring Mtg Angle | 65064001 | N/A | Current | |
| Stop Full Open Window (Blk Neop) | 65073301 | N/A | Current | |
| Striker Angle - Top Lock | 65023701 | N/A | Current | |
| Top Track Kit BO-2,4 | 85073800 | 65073801 | Current | |
| Weather Strip Kit - BO-2,4,10, 275 | 85104000 | 65104001 | Current | |

## Model Specific Parts ( BO-2)

| Description | Current Part Number | Previous Part Number | Status | Note |
|---|---|---|---|---|
| Door Assy - L/H - Bronze - BO-2 | 85078701 | 65078701 | Current | |
| Door Assy - L/H - Clear- BO-2 | 85078703 | 65078703 | Current | |
| Door Assy - R/H - Bronze - BO-2 | 85078702 | 65078702 | Current | |
| Door Assy - R/H - Clear - BO-2 | 85078704 | 65078704 | Current | |
| Hinge bushing - Bronze | 20010008 | N/A | Current | |
| Hinge Cover - Bronze | 85058401 | 65058401 | Current | |
| Hinge Cover - Clear (BO-2) | 85058402 | 65058402 | Current | |
| Hinge w/lock Plate BO-2 | 85094500 | 65094501 | Current | |
| Mounting Block - Upper Hinge - Bronze | 65108001 | 20220011 | Current | |
| Mounting Block - Upper Hinge - Clear | 65108002 | 20220011 | Current | |
| Upper Hinge Bearing (Door Guide) | 00651271 | N/A | Current | |

## Model Specific Parts ( BO-4)

| Description | Current Part Number | Previous Part Number | Status | Note |
|---|---|---|---|---|
| Door Assy - L/H - Bronze - BO-2 | 85078701 | 65078701 | Current | |
| Door Assy - L/H - Clear- BO-2 | 85078703 | 65078703 | Current | |
| Door Assy - R/H - Bronze - BO-2 | 85078702 | 65078702 | Current | |
| Door Assy - R/H - Clear - BO-2 | 85078704 | 65078704 | Current | |
| Hinge bushing- Bronze | 20220016 | N/A | Current | |
| Hinge Cover - Bronze | 85058401 | 65058401 | Current | |
| Hinge Cover - Clear (BO-2) | 85058402 | 65058402 | Current | |
| Hinge w/lock Plate BO-2 | 85094500 | 65094501 | Current | |
| Mounting Block - Upper Hinge - Bronze | 65108001 | 20220011 | Current | |
| Mounting Block - Upper Hinge - Clear | 65108002 | 20220011 | Current | |
| Upper Hinge Bearing (Door Guide) | 00651271 | N/A | Current | |

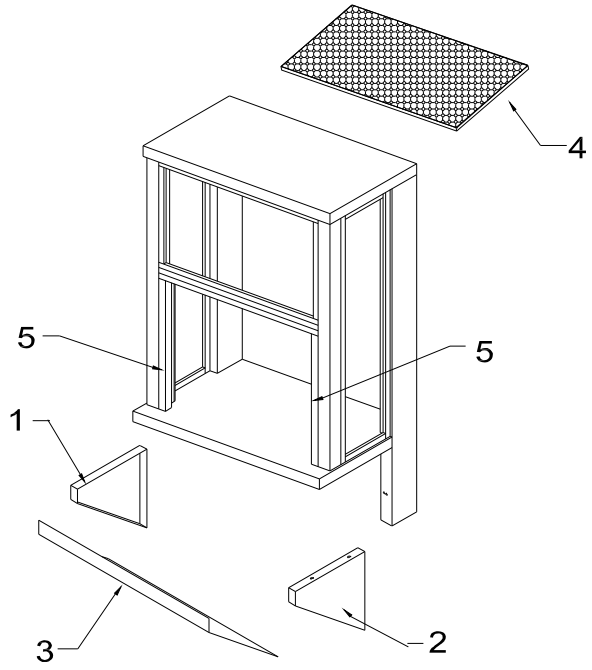
# Drawings

## Exploded Views

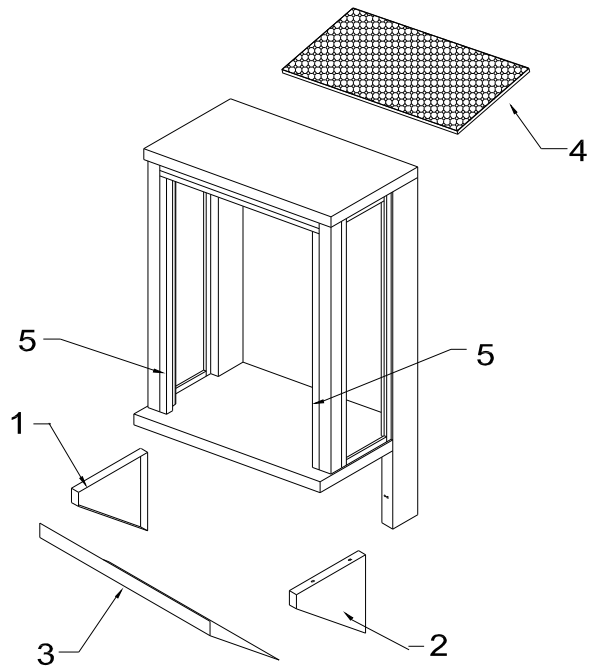
| Page | Part Number If Applicable | Description |
|---|---|---|
| 28 | N/A | Frame – Exploded View |
| 29 | N/A | Door Assembly – Exploded View |
| 30 | 85098000 | Pan and Linkage Assembly BO-2 – Exploded View |
| 30 | 85098500 | Pan and Linkage Assembly BO-4 – Exploded View |
| 31 | N/A | Semi Automatic – Exploded View |
| 32 | N/A | Fully Automatic – Exploded View |
| 33 | N/A | Component layout - Photo |

## Schematics

| Page | Part Number If Applicable | Description |
|---|---|---|
| 34 | N/A | Pre – DC-3 PCB Assembly - Electrical Schematic |
| 35 | N/A | DC-3 PCB Assembly - Wiring Layout |
| 36 | N/A | Electric Eye Wiring |



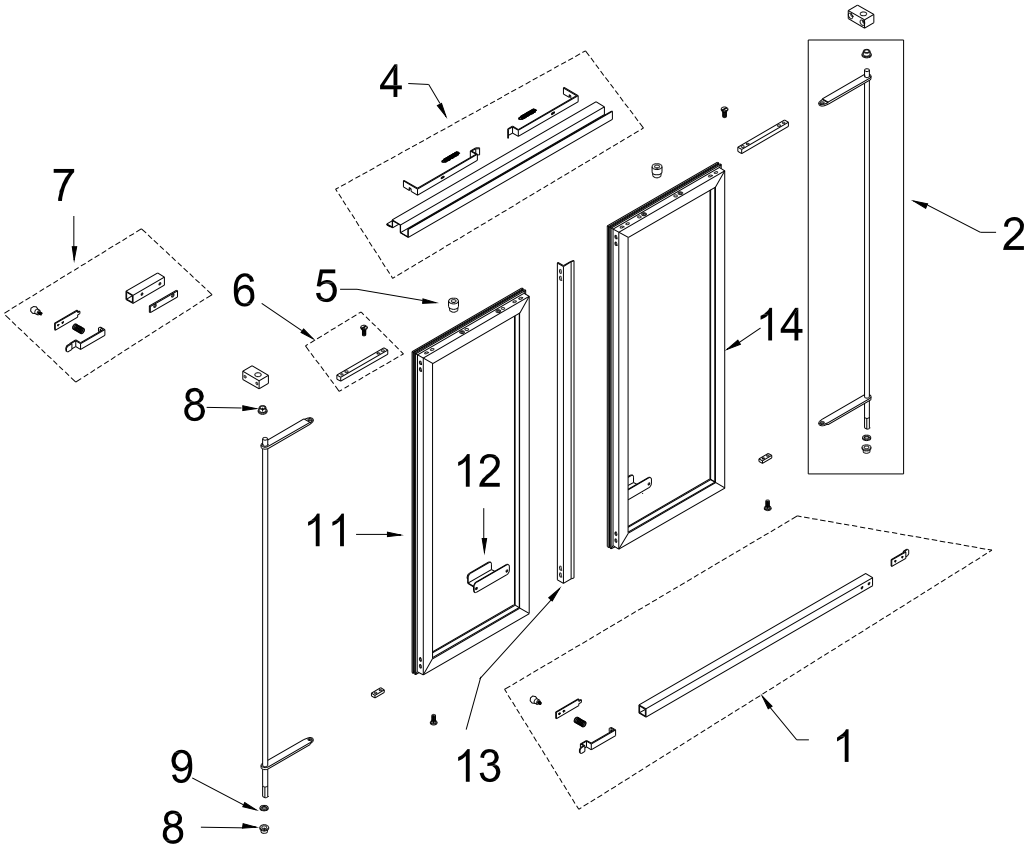

BO-2




BO-4

| REF ID # | PART NUMBER | DESCRIPTION | | REF ID # | PART NUMBER | DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | 85065601 | Panel L/H BRZ | | 3 | 85065801 | Panel Front BRZ |
| 1 | 85065701 | Panel L/H CLR | | 3 | 85065802 | Panel Front CLR |
| 2 | 85065602 | Panel R/H BRZ | | 4 | 85077700 | Ceiling Tile |
| 2 | 85065702 | Panel R/H CLR | | | | |

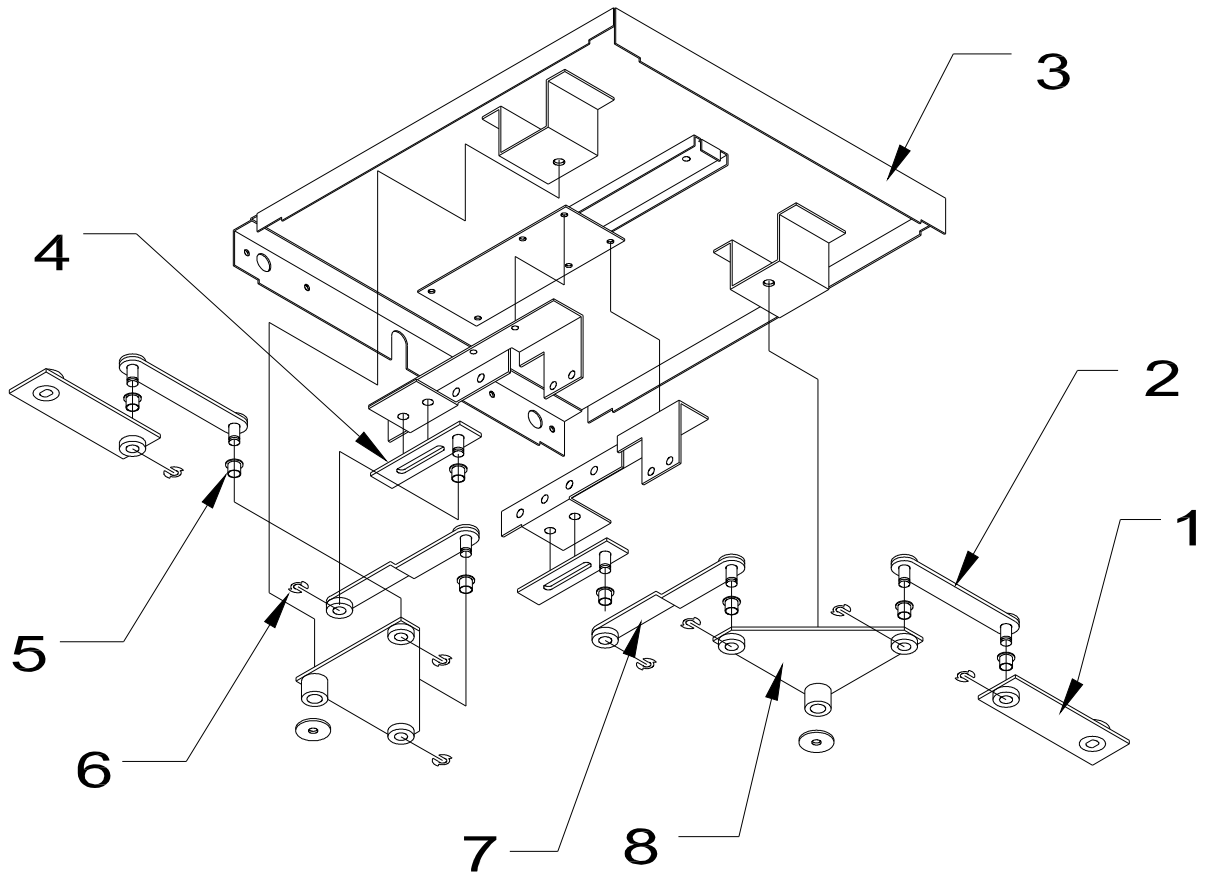
| Model Specific Parts | | | | | | |
|---|---|---|---|---|---|---|
| BO-2 | | | | BO-4 | | |
| 5 | 85058401 | Hinge Cover BRZ | | 5 | N/A | Hinge Cover BRZ |
| 5 | 85058402 | Hinge Cover CLR | | 5 | N/A | Hinge Cover CLR |




| REF ID # | PART NUMBER | DESCRIPTION | | REF ID # | PART NUMBER | DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | 85078301 | Lock Bar Assy BR | | 6 | 85103800 | Shoulder Screw Kit (4 Screws / 4 blocks) |
| 1 | 85078302 | Lock Bar Assy CL | | 7 | 85088200 | Top Lock Assembly |
| 4 | 85073800 | Top Track Assembly | | 12 | 95064401 | Handle |
| 5 | 85089300 | Roller – Top Track | | | | |

**Model Specific Parts**

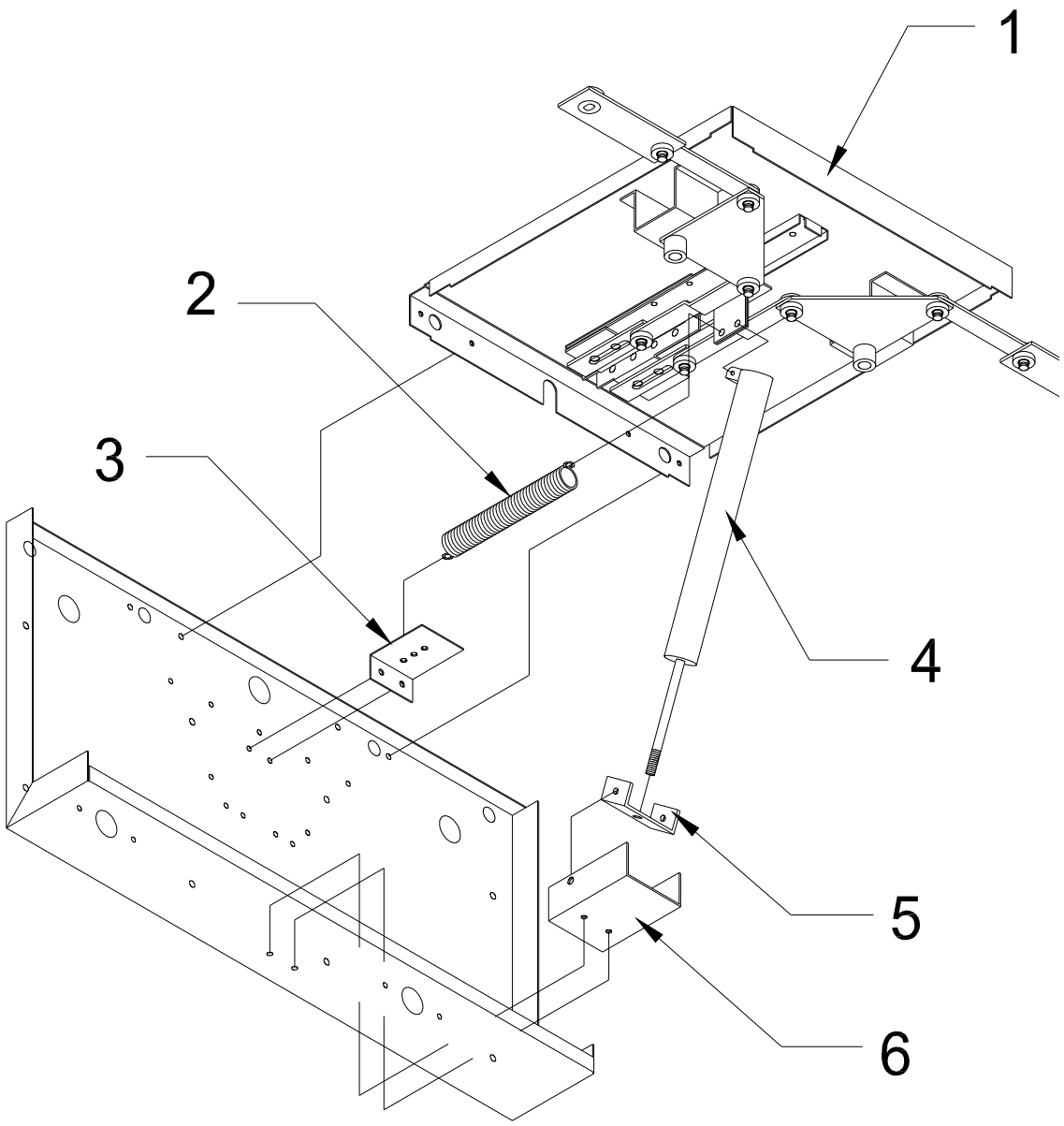
| BO-2 | | | | BO-4 | | |
|---|---|---|---|---|---|---|
| 2 | 85094500 | Hinge Assembly | | 2 | 85067500 | Hinge Assembly |
| 9 | 20200062 | Hinge Spacer | | 9 | 10230102 | Hinge Spacer |
| 8 | 20010008 | Upper/ Lower Hinge Bearing | | 8 | 20010005 | Upper/ Lower Hinge Bearing |
| 11 | 85078701 | Door Assy L/H BRZ | | 11 | 85067401 | Door Assy L/H BRZ |
| 11 | 85078703 | Door Assy L/H CLR | | 11 | 85067403 | Door Assy L/H CLR |
| 13 | 85079100 | Center Stop | | 13 | 65068101 | Center Stop |
| 14 | 85078702 | Door Assy R/H BRZ | | 14 | 85067402 | Door Assy R/H BRZ |
| 14 | 85078704 | Door Assy R/H CLR | | 14 | 85067404 | Door Assy R/H CLR |



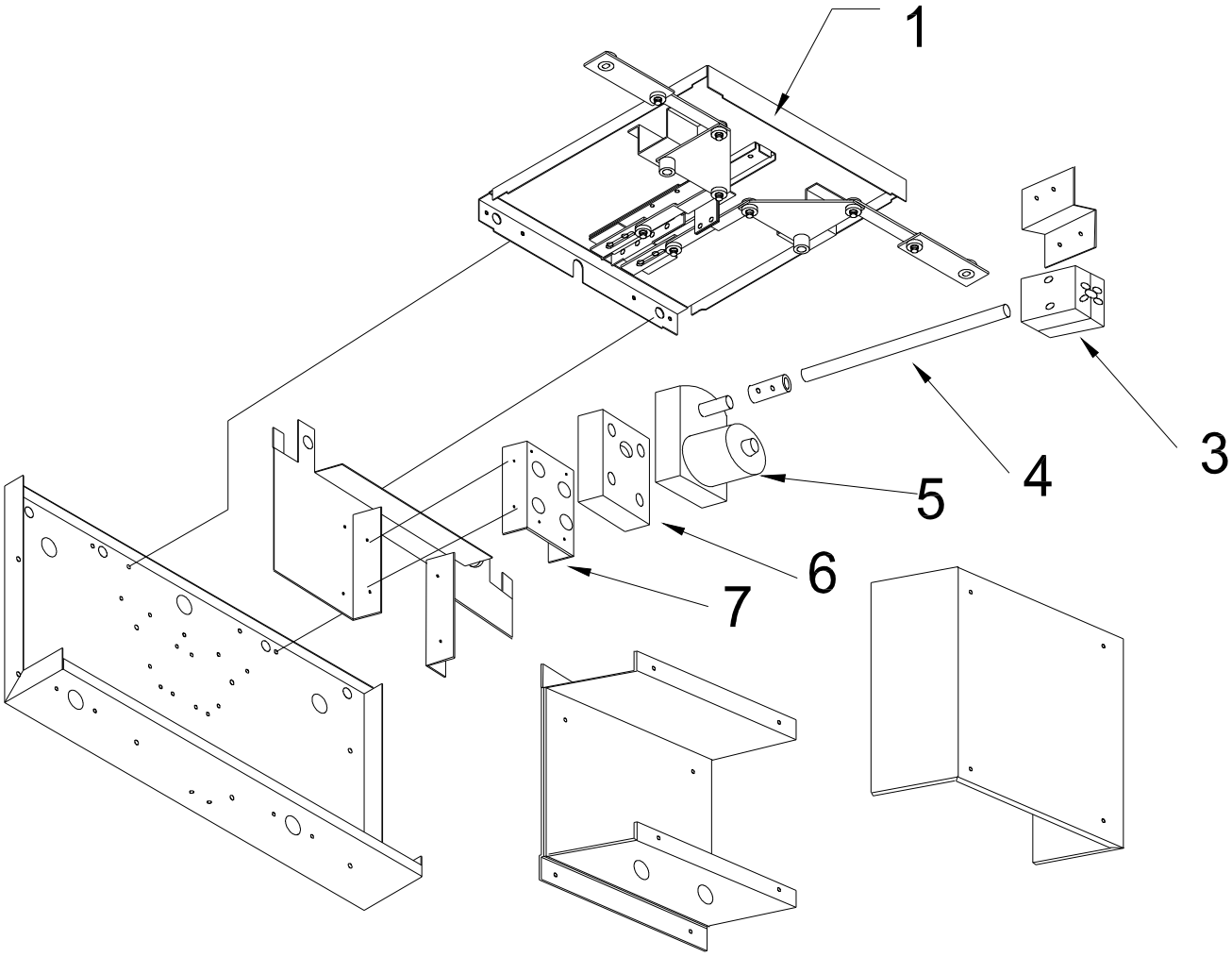

**PAN AND LINKAGE ASSEMBLY**
**Part Number- BO-2 – 85098000**
**Part Number – BO-4 - 85098500**

| REF ID # | PART NUMBER | DESCRIPTION | | REF ID # | PART NUMBER | DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | 95061900 | BO-2 Locking Plate Assembly | | 5 | ** | Nylon Sleeve Bearing |
| 1 | 95069000 | BO-4 Locking Plate Assembly | | 6 | 85000400 | Tru-Arc Retaining Ring |
| 2 | 95062200 | Straight Linkage | | 7 | 95062100 | Offset Linkage |
| 3 | 85097800 | Slide Sub-Assembly | | 8 | 95061800 | Linkage Plate |
| 4 | 95062000 | Linkage Mounting Plate | | | | |

** Order – Bearing / Linkage Nyliner Retaining Ring Kit # 85000400

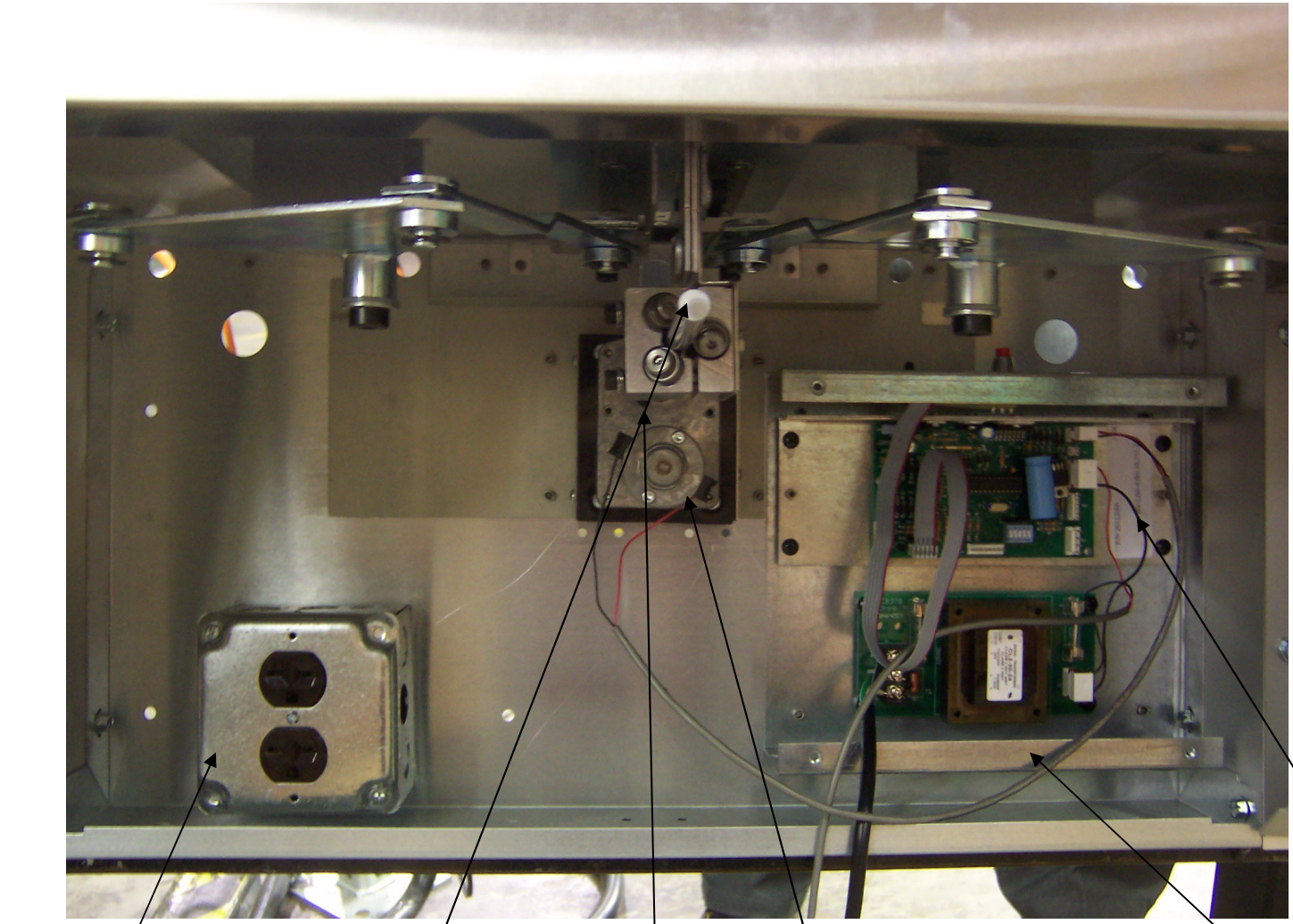



| REF ID # | PART NUMBER | DESCRIPTION | | REF ID # | PART NUMBER | DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | 85098000 | Pan and Linkage Assembly – BO-2 | | 4 | 85134100 | Pneumatic Closer |
| 1 | 85098500 | Pan and Linkage Assembly – BO-4 | | 5 | 65063101 | Closer Pivot Bracket |
| 2 | 85103700 | Extension (Pull Back) Spring | | 6 | 65063201 | Closer Pivot Support |
| 3 | 65064001 | Spring Mount Angle | | | | |

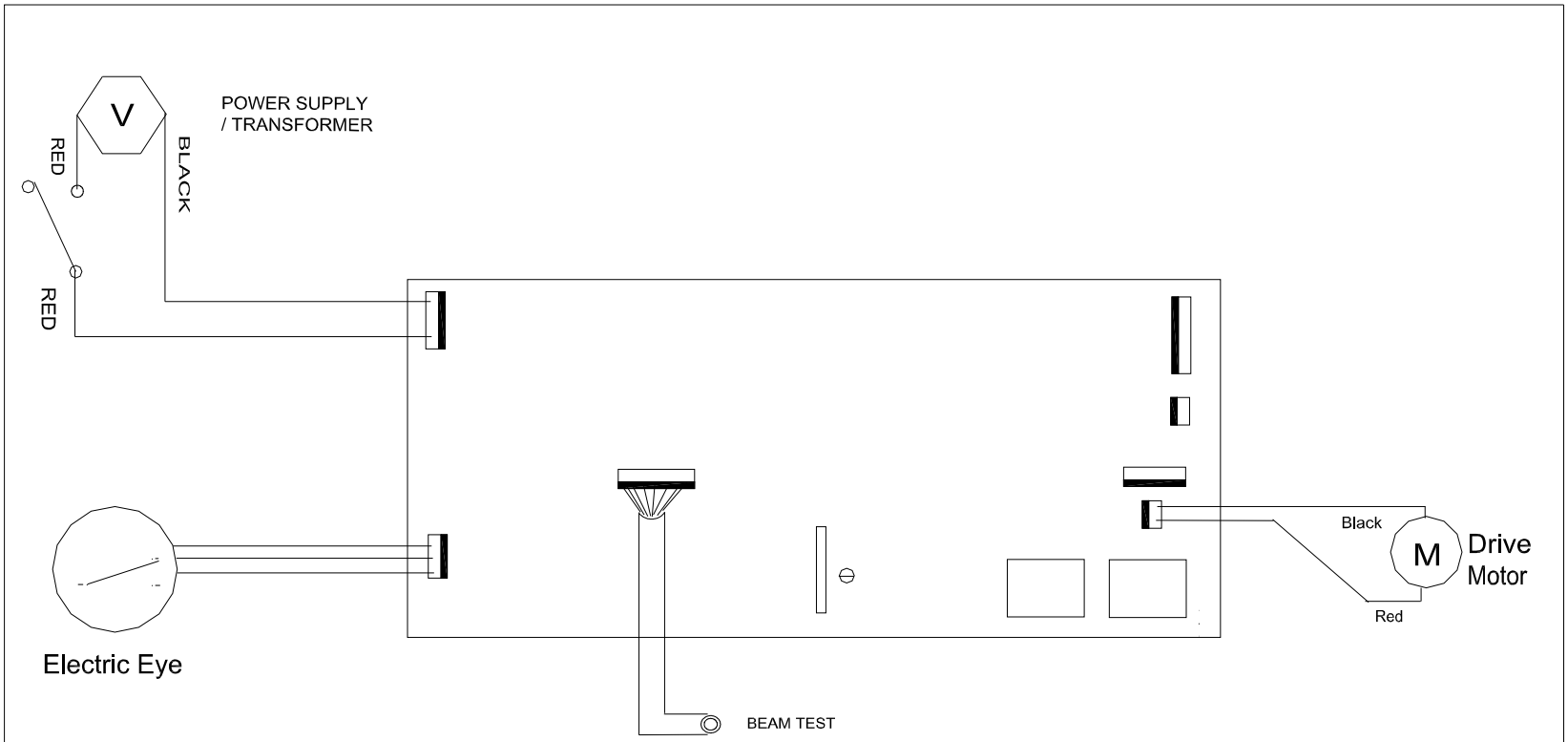



| REF ID # | PART NUMBER | DESCRIPTION | | REF ID # | PART NUMBER | DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | 85098000 | Pan & Linkage Assembly – BO-2 | | | ** | Coupling |
| 1 | 85098500 | Pan & Linkage Assembly – BO-4 | | 5 | 20110254 | Motor (Only DC available) |
| 3 | 85000500 | Linear Actuator | | 6 & 7 | ** | Flexible Motor Mount & Bracket |
| 4 | 85104100 | Drive Shaft | | | | |

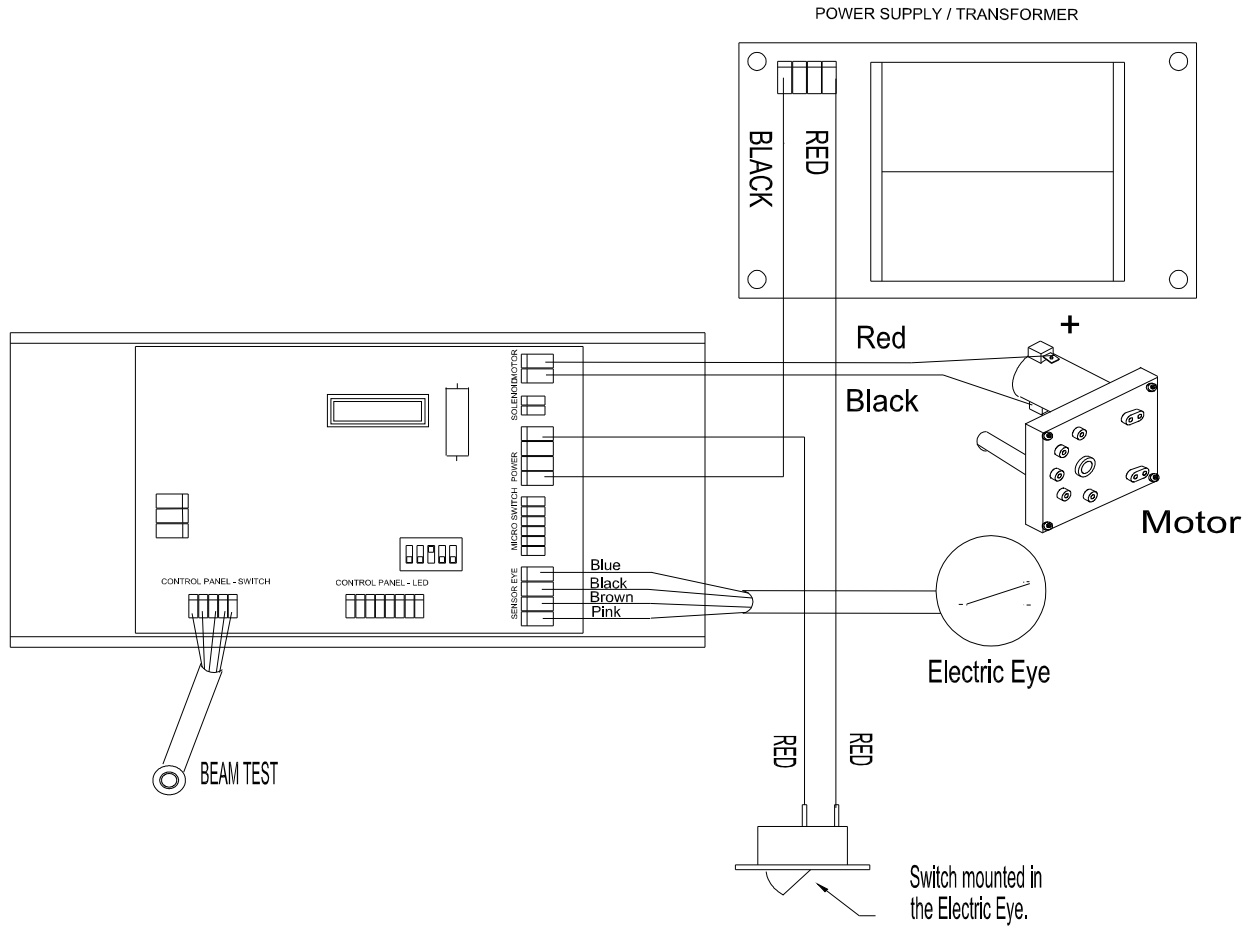
** Order – Motor Interim Repair Kit # 85138700



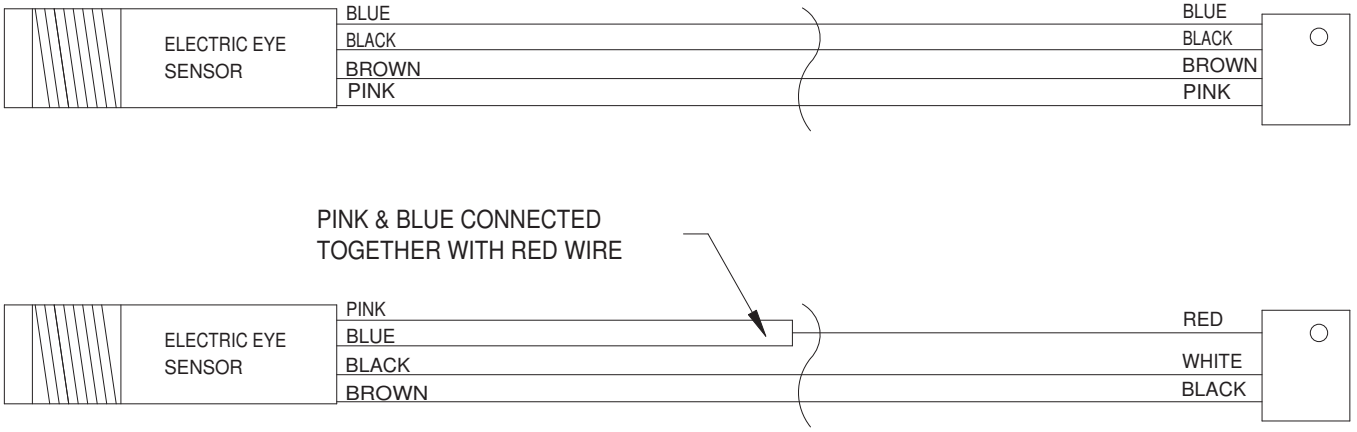

## Component Placement




| | | | | |
|---|---|---|---|---|
| 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 Series Windows<br>REVISION: B<br>REVISION DATE: 2/13/04 | DESIGN BY: SRH<br>DATE: 2/13/04<br>DRAWN BY: SC<br>DATE: 2/13/04 | MATERIAL: Elec Component s<br>MATERIAL SPEC:<br><br>GAUGE: | READY ACCESS®<br>1815 Arthur Drive • West Chicago, IL • 800-621-5045 •630-876-7766 • Fax 630-876-7767 |
| | LATEST REVISION NOTE:<br>Service Manual Drawing | | | DESCRIPTION: Pre – DC –3 Wiring<br>PART. NO.: N/A |




| | | | | |
|---|---|---|---|---|
| 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 Series Windows<br>REVISION: B<br>REVISION DATE: 2/13/04 | DESIGN BY: SRH<br>DATE: 2/13/04<br>DRAWN BY: SC<br>DATE: 2/13/04 | MATERIAL: Elec Component s<br>MATERIAL SPEC:<br><br>GAUGE: | READY ACCESS®<br>1815 Arthur Drive • West Chicago, IL • 800-621-5045 • 630-876-7766 • Fax 630-876-7767 |
| | LATEST REVISION NOTE:<br>Service Manual Drawing | | | DESCRIPTION: DC-3 PSC Wiring Diagram<br>PART. NO.: N/A |




| | | | | |
|---|---|---|---|---|
| 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>WAIST HIGH BEAM BREAK | DESIGN BY: SC<br>DATE: 11/08/05 | MATERIAL: OMRON ELECTRIC EYE<br>MATERIAL SPEC: | READY ACCESS®<br>1815 Arthur Drive West Chicago, IL ■ 800-621-5045 630-876-7766 Fax 630 0-876-7767 |
| | REVISION: OR<br>REVISION DATE: 11/8/05 | DRAWN BY: SC<br>DATE: 11/08/05 | GAUGE: | |
| | LATEST REVISION NOT E: | | | DESCRIPTION: ELECTRIC EYE<br>PART. NO.: WIRING DIAGRAM |

Ready Access, 1815 Arthur Drive, West Chicago, Illinois 60185, Tel: 630-876-7766, Tel: 800-621-5045
Fax: 630-876-7767, Email: ready@ready-access.com, Website: www.ready-access.com