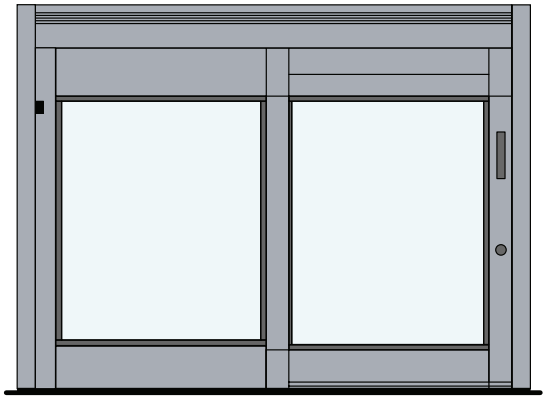
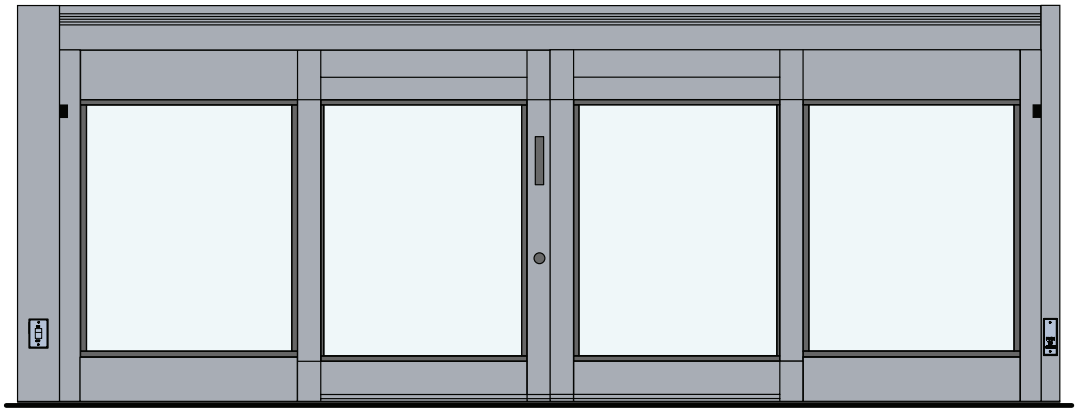
S82 W18717 Gemini Drive
Muskego, Wisconsin 53150
Phone: (877) 622-2694
Fax: (888) 679-3319
www.nabcoentrances.com
Technical Support: (866) 622-8325

GT 1500
Manual and Automatic Convenience Window

Installation Manual





DN 0392

WARNING

- Turn OFF all power to the Automatic Door if a Safety System is not working.
- Instruct the Owner to keep all power turned OFF until corrective action can be achieved by a NABCO trained technician. Failure to follow these practices may result in serious consequences.
- NEVER leave a Door operating without all Safety detection systems operational.

Part #15-9200
Rev. 3/11/13

Table of Contents

CHAPTER 1: SCOPE. 1-1

Section 1a. To the Installer 1-1

Section 1b. Objective 1-1

GETTING STARTED 2-2

Section 2a. Types of Instructions 2-2

Section 2b. Materials Needed 2-2

Section 2c. Electrical Standards for (Automatic Convenience Window) 2-2

Section 2d. Microprocessor Controller 2-4

Section 2e. 12 Port Pin Terminal, Wiring Diagram 2-5

Section 2f. Service Parts 2-5

CHAPTER 3: PREPARE THE ROUGH OPENING 3-6

CHAPTER 4: INSTALL MANUAL WINDOW (IN ROUGH OPENING). 4-7

Section 4a. Shim and Plumb Window Unit. 4-7

Section 4b. Install the Window Unit 4-8

Section 4c. Apply the Caulking 4-11

CHAPTER 5: INSTALL AUTOMATIC WINDOW (IN ROUGH OPENING). 5-12

Section 5a: Prepare the Window Unit 5-13

Section 5b: Shim and Plumb Window Unit 5-14

Section 5c: Secure the Window Unit to the Rough Opening 5-15

Section 5d: Connect Incoming 115 VAC Wires. 5-20

Section 5e: Operating the Automatic Convenience Window 5-21

Section 5f: Adjust the Belt 5-21

Section 5g: Apply Caulking 5-22

CHAPTER 6: INSTALL AUTOMATIC WINDOW (SURFACE MOUNT) 6-24

Section 6a: Prepare the Window Unit 6-25
Section 6b: Mount Window Unit to Surface of Building 6-25
Section 6c: Connect Incoming 115 VAC Wires 6-28
Section 6d: Operating the Automatic Convenience Window 6-29
Section 6e: Adjust the Belt 6-30
Section 6f: Apply Caulking 6-31

CHAPTER 7: ADJUSTMENT PROCEDURES. 7-32

Section 7a: Determine the Handing is Correct. 7-32
Section 7b: Connect the Handy Terminal 7-33
Section 7c: Correct the Handing 7-34
Section 7d: Prepare the Window Unit 7-34
Section 7e: Set the Stroke 7-35
Section 7f: Standard Function Adjustments. 7-36
Section 7g: Feeling Adjustments 7-37
Section 7h: Special Function Adjustments 7-38
Section 7i: History Data 7-41
Section 7j: Programming the Extra Function Adjustments 7-42

CHAPTER 8: TROUBLESHOOTING 8-45

Section 8a: Troubleshooting the Convenience Window 8-45
Section 8b: Handy Terminal Error Messages 8-46
Section 8c: Diagnostic LED's 8-47

WARNING LABELS

Warning labels are universal and used to alert an individual of potential harm to one's self or to others. The following warning labels are listed in a hierarchy order that defines the most potential danger first, and the least potential danger last. Please refer to this page in the event that a warning label is displayed within this manual and further definition needs to be explained.

DANGER — **Indicates potentially dangerous situations. Danger is used when there is a hazardous situation where there is a *high* probability of severe injury or death. It should not be considered for property damage unless personal injury risk is present.**

WARNING — **Indicates a hazardous situation which has *some* probability of severe injury. It should not be considered for property damage unless personal injury risk is present.**

CAUTION — **Indicates a hazardous situation which *may result in a minor injury*. Caution should not be used when there is a possibility of serious injury. Caution should not be considered for property damage accidents unless a personal injury risk is present.**

Notice: **Indicates a statement of company policy as the message relates to the personal safety or protection of property. Notice should not be used when there is a hazardous situation or personal risk.**

Note: *Indicates important information that provides further instruction.*

GENERAL SAFETY RECOMMENDATIONS

WARNING **Do Not install or service this product unless Safety Practices, Warning Labels, Installation Instructions, and Operating Instructions, have been read and fully understood.Failure to so do may result in bodily injury or property damage**

WARNING **Read this "General Safety Recommendations" section before installing, operating or servicing the convenience window. Failure to follow these practices may result in serious consequences.**

Notice: **Read, study and understand the operating instructions contained in, or referenced in this manual before operating. If you do not understand the instruction, ask the installing qualified technician to teach you how to use the convenience window.**

WARNING **Do not install, operate or service this product unless you have read and understand the General Safety Recommendations, Warning Labels, Installation and Operating Instructions contained in this manual. Failure to do so may result in bodily injury, or property damage.**

CAUTION **Handle Glass With Care!!! Use caution when moving and installing the glass panels. These panels are designed to be assembled with tempered glass. Any sharp objects that come in contact with glass may cause the glass to shatter. NABCO Entrances is not responsible for glass that is broken during the installation of this Unit.**

Notice: **This manual and the owner's manual must be given to and retained by the purchasing facility or end user.**

- If the window appears broken or does not seem to work correctly, it should be immediately removed from service until repairs can be carried out or a qualified service technician is contacted for corrective action.
- Disconnect power at the fused disconnect during all electrical or mechanical service. When uncertain whether power supply is disconnected, always verify using a voltmeter.
- All electrical troublshooting or service must be performed by qualified electrical technicians and must comply with all applicable governing agency codes.
- It is the responsibility of the installing window technician to install all warning and instructional labels in accordance with ANSI 156.10.
- It is the responsibility of the purchasing facility or end user to keep warning and instructional labels and literature legible, intact and with the window.
- Replacement labels and literature may be obtained from local NABCO Entrances, Inc. distributors. If the name of the local distrubutor is unknown, contact NABCO Entrances, Inc. at 1-877-622-2694 for assistance.

DANGER **Do not place finger or uninsulated tools inside the electrical controller. Touching wires or other parts inside the enclosure may cause electrical shock, serious injury or death.**

CHAPTER 1: SCOPE

Section 1a. To the Installer

The purpose of this manual is to familiarize the installer and purchaser with the proper installation and operation of this unit (also referred to as "window"). It is essential that this equipment be properly installed and operational before the window is used by the public. To ensure proper installation, all glass should be installed by a qualified glazer. It is the purchaser's responsibility to inspect the operation of the window unit to be sure it complies with any applicable standards.

Instruct the building owners/operator on the essentials of the operation of the window and this device. The owner should follow these instructions to determine whether the window is operating properly and should immediately call for service if there is any malfunction. All installation changes and adjustments must be done by qualified, NABCO trained technicians.

Section 1b. Objective

The GT-1500 is designed to be:

- ► Installed within a wall opening
  - Standard - Single Window Unit
  - Standard - Single Window Unit with Sidelites
- ► Mounted on Surface of interior wall
  - Optional - Single Window Unit with no Sidelites

This manual offers step by step instructions to install the GT-1500 according to the above configurations.

GETTING STARTED

Section 2a. Types of Instructions

There are different instructions according to each type of installation, per unit. Each chapter and section will be labelled accordingly. NABCO Entrances is responsible to ship from the factory:

- ► (1) preassembled GT 1500 Convenience Window.
- ► Glass Stop snap-in channels (packed loose), to be used for glass installation.

It is the responsibility of the installer to supply all other materials.

Section 2b. Materials Needed

List of Materials	
► Window Glass Panel(s) • Sized according to NABCO specifications	► 18-22 Gauge (4) Strand Wire and extra wire nuts ► Straight Edge Levels
► Sidelite Glass Panel(s) • Sized according to NABCO specifications • Glass and glazing material for windows shall comply with requirements for ANSI Z97.1 • Glass thickness should not exceed 1 inch	► Drive Socket Set (Metric and Standard) ► Allen Head Set ► Assorted Closed and Open Face Wrenches ► Fasteners • As required to mount window
► Caulking	► Cordless Drill and Bits
► All Blocking and Curing components required for: • Mount glass panels	► Hole Taps • As required to mount window
• Secure each panel within the glass stop and vinyl	► Tape
► Anchors • As required to mount window to rough opening	► Measurement Tape ► Force Gauge (The Microprocessor Control is preprogammed at the factory. Use the Force Gauge only if re-entering a setting)

Section 2c. Electrical Standards for (Automatic Convenience Window)

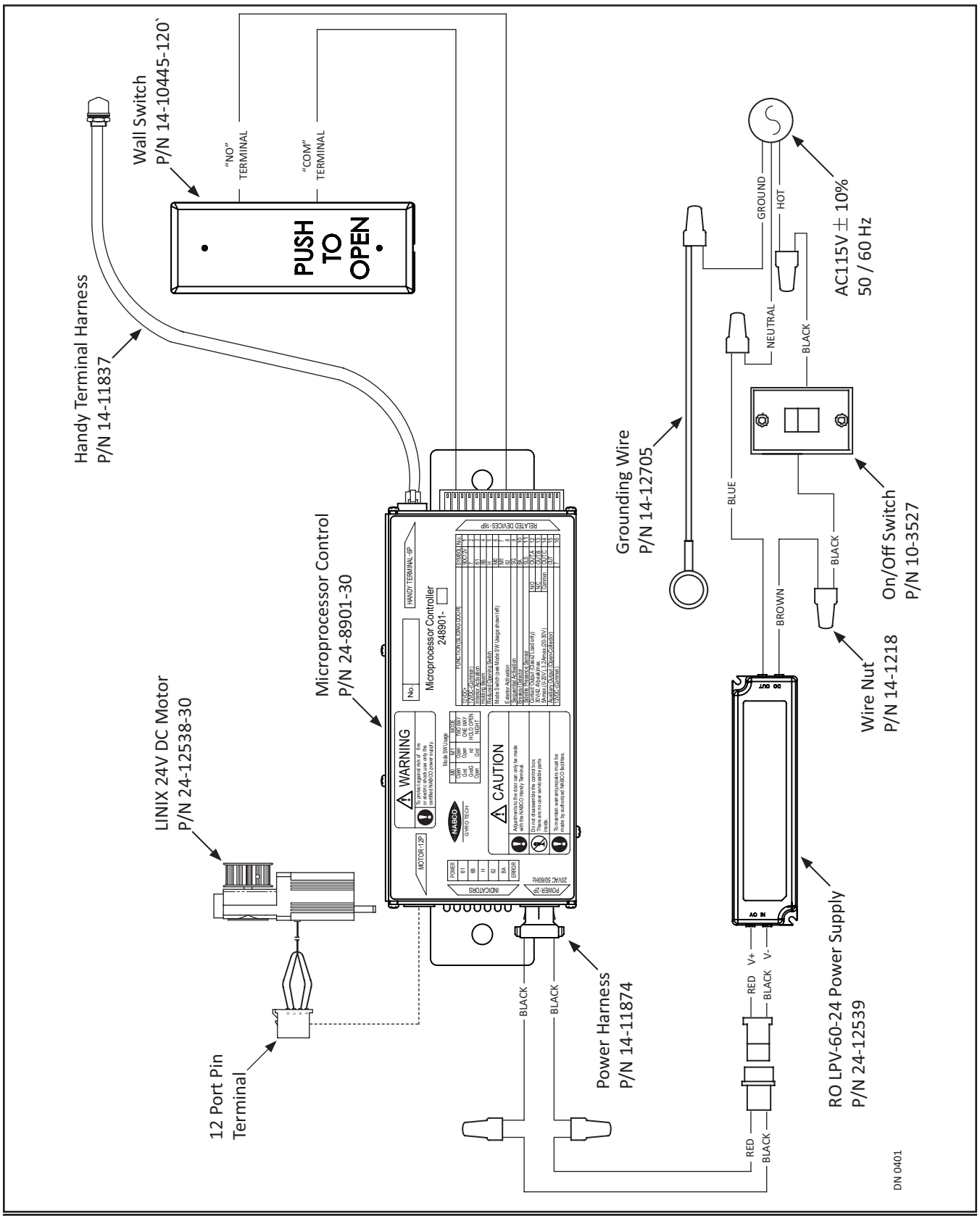
Note: It is recommended for the Installer to use an Electrical Conduit to house all incoming 115 VAC wires.

Note: All wiring must conform to standard wiring practices and be in accordance with national and local electrical codes.

2.c.a: Electrical Specifications

Electricity	Description
Power Input	120 (±10%) AC 50-60Hz, 5 Amps
Available current for accessories	U Series Control 0.35 Amps 12 Volts DC
Available wire size for incoming power	14 AWG

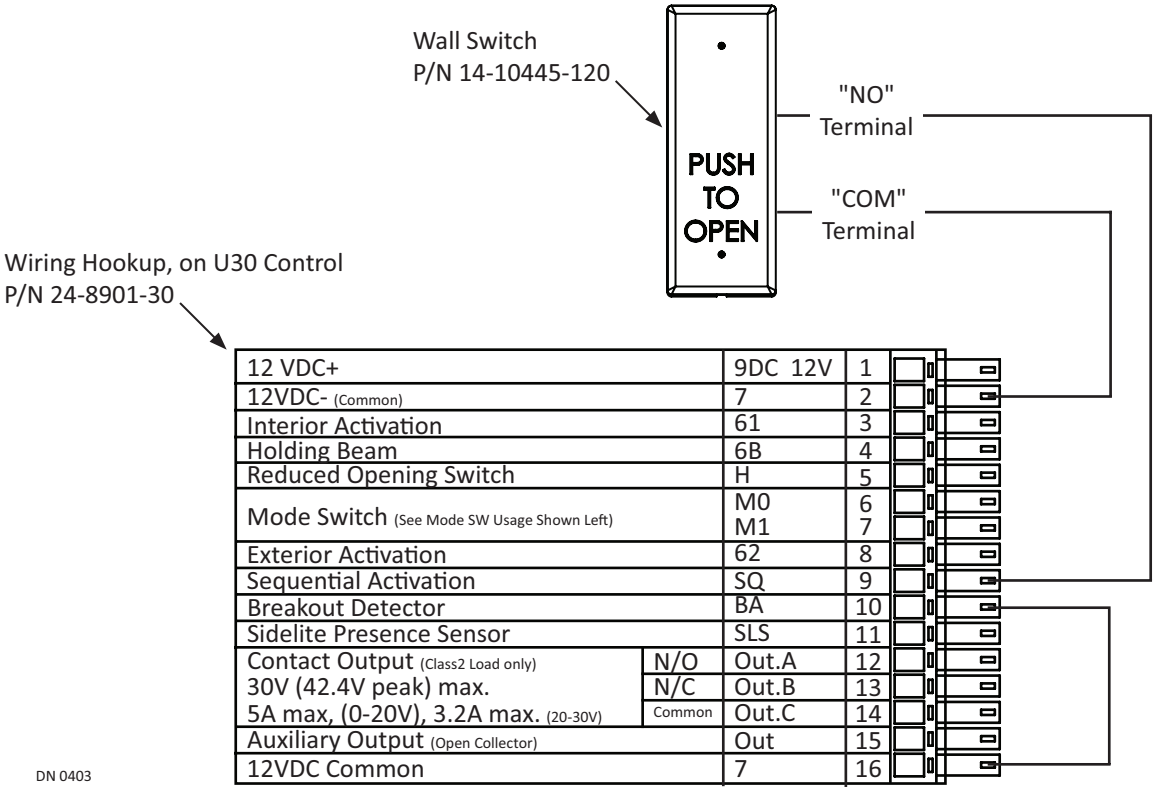
2.c.b: Wiring Diagram



2.c.c: Jamb Switch, Terminal Block Assignments

Note: Use a flat-blade screwdriver to remove the terminal connector from the control.

No.	Symbol	Type	Description
2	7	Output	Provides common ground for the 12 VDC power and signal source
9	SQ	Input	Allows a sequence of signals to open and close the window
10	BA	Input	Connects directly to (16) during normal operation. When the Rocker Switch is turned to the OFF position, the connection is broken causing the window to stop operating.
16	7	Output	Connects directly to (10) and provides common ground for 12 VDC power and signal source.



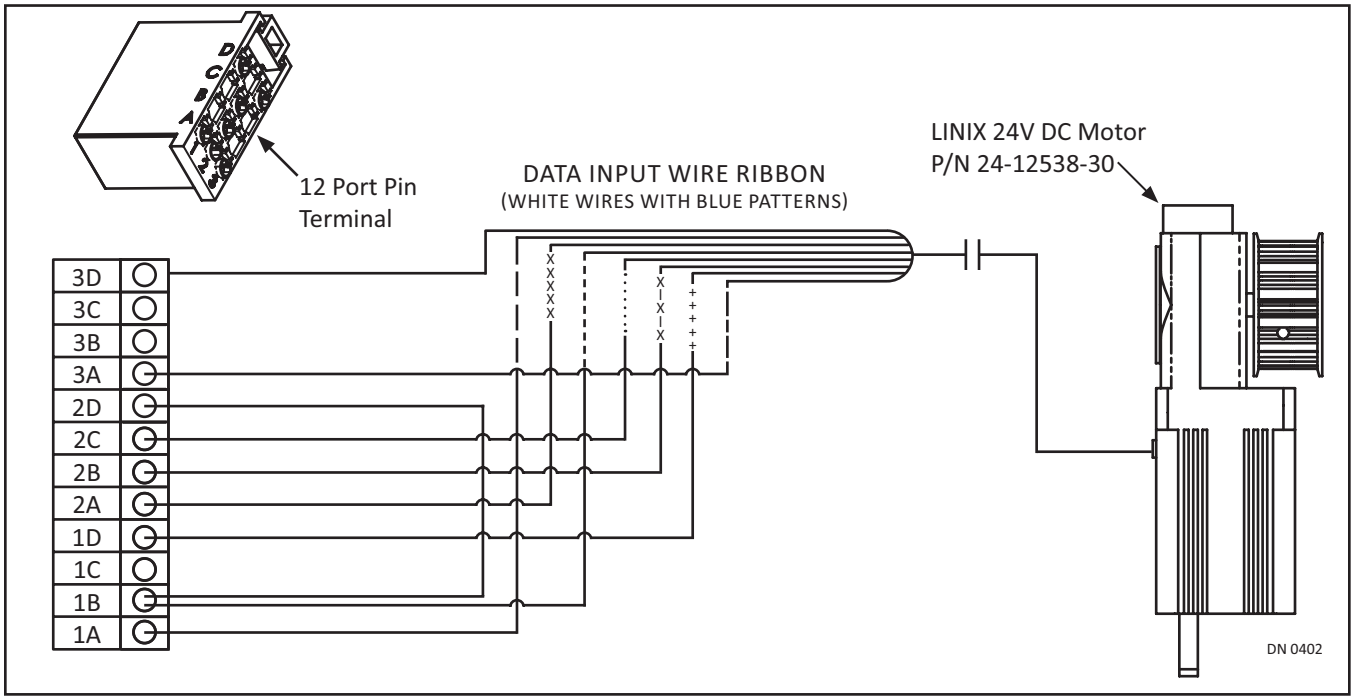
Section 2d. Microprocessor Controller

The Microprocessor Controller has been designed to control the numerous operating characteristics of the Convenience Window including speed, recycling sensitivity and reduced opening width. It will need to be programmed after installation is complete. Please refer to the "Microprocessor Manual", Part Number 15-9000-30 for detailed information.

Section 2a: References

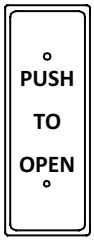
- "U30 Programming Manual", P/N 15-9000-30.

Section 2e. 12 Port Pin Terminal, Wiring Diagram



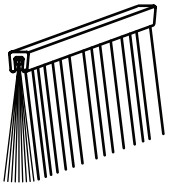
Section 2f. Service Parts

Microprocessor Control
24-8901-30

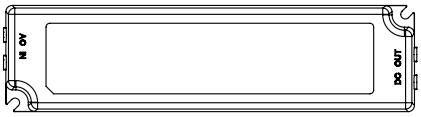


Jamb Switch
14-10445-120

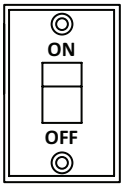
Idler Pulley Assembly
11-10701



Weathering Brush
1” 14-4899-15
1/2” 14-4899-60

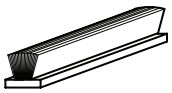


Power Supply
24-12539

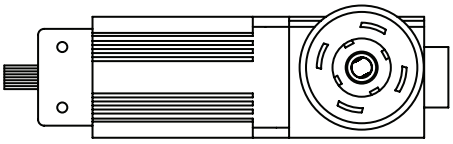


Rocker Switch
10-3527

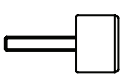
Bottom Guide
Wheel Assembly
11-10733



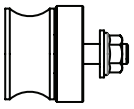
Weathering Pile 1/2”
14-2279-03 (BiPart)
14-2279-05 (All Singles)



Motor / Operator Assy
24-12538-30



Stop Assembly
12-8233



Hanger Roller Assembly
12-13438

Handle
24-3729

DN 0437

CHAPTER 3: PREPARE THE ROUGH OPENING

1. Ensure the Rough Opening is the correct size. Please see Figure 3-1.
   - ► The width of the Rough Opening should equal:
     PACKAGE WIDTH + 1/4 INCH ON EACH SIDE
   - ► The height of the Rough Opening should equal:
     PACKAGE HEIGHT + 1/4 INCH ON EACH SIDE

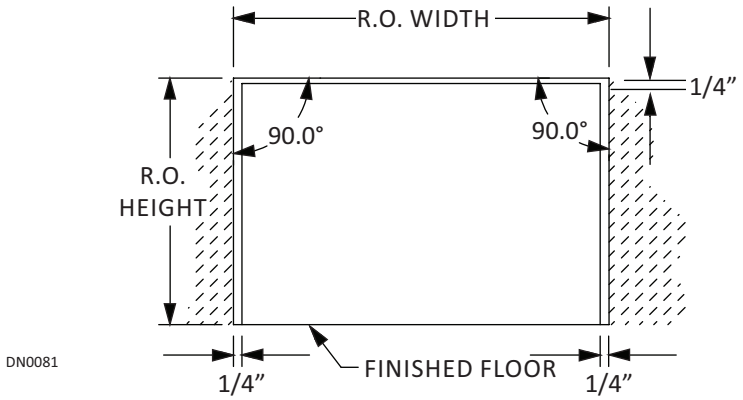


Figure 3-1 Masonry Opening

2. Ensure that the entire Rough Opening is level.
   a. If the bottom is not level, be prepared to shim the unit.
3. Inspect the area around the rough opening.
   a. There should be no obstructions that will interfere with the installation or performance of the unit.
4. Clean away any debris in and around the rough opening.
   a. If there is an existing window, it must be removed safely, and stored away from the installation area.
   b. Any existing debris, metal chips and caulking must be cleared away.

CHAPTER 4: INSTALL MANUAL WINDOW (IN ROUGH OPENING)

CAUTION

Handle Glass With Care!!! Use caution when moving and installing the glass panels. These panels are designed to be assembled with tempered glass. Any sharp objects that come in contact with the glass may cause the glass to shatter. NABCO Entrances is not responsible for glass that is broken during the installation of this Unit.

Notice: The GT-1500 Convenience Window is preassembled at the NABCO Entrances Factory. No disassembly is required.

Notice: If any part of the GT-1500 Manual Convenience Window is disassembled during installation, it will be the responsibility of the Installer to return the Unit back to its original factory condition.

Section 4a. Shim and Plumb Window Unit

1. Lift to position Window unit into Rough Opening so Threshold is inside the building.
2. Plumb Threshold to ensure the Rough Opening allows a 1/4 inch clearance. Please see Figure 4-1.
   a. Shim as required.

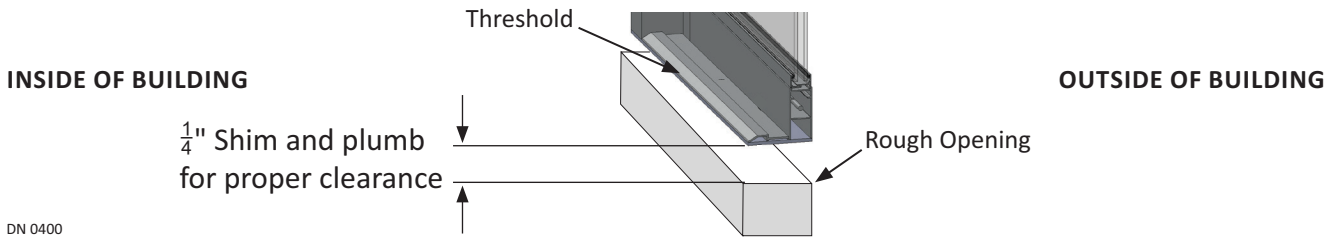


Figure 4-1 Shim and PlumbThreshold

3. Plumb top, and both planes of Window unit to ensure Rough Opening allows 1/4 inch clearance. Please see Figure 4-2.
   a. Shim as required.

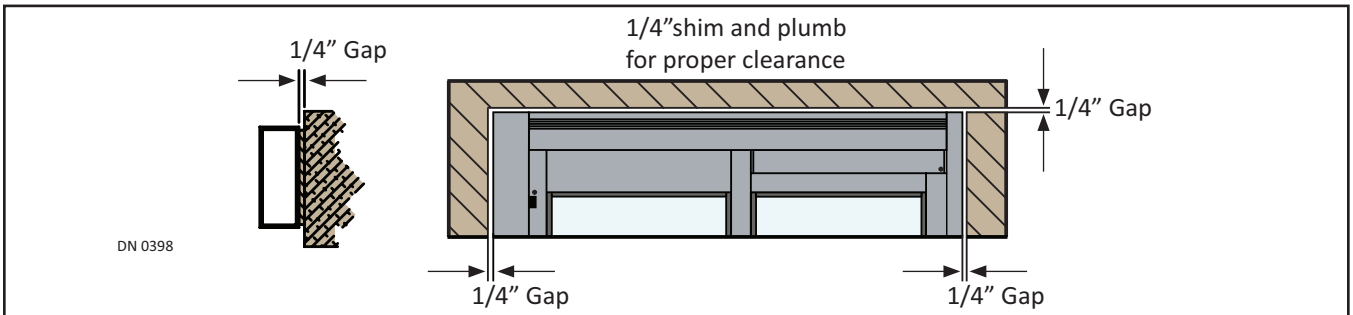


Figure 4-2 Shim and Plumb Window Unit

4. Ensure that:

- ► The entire Window Unit fits squarely into the opening.
- ► Both Window Panels are parallel to exterior surface.
- ► Jambs are plumb to the ground.

Section 4b. Install the Window Unit

Use anchors and fasteners as required to mount Window Unit into Rough Opening. The quantity and type of fasteners used, depend on the::

- ► Type of material the Window unit is being fastened to
- ► Size of the Window unit

1. From inside the building, go to the Drive Jamb (opposite of the Strike Jamb).
2. Mark and drill a minimum of (2) evenly spaced, 1/4 inch diameter fastener holes through the face of the Drive Jamb. Please see Figure 4-3.
   a. It is recommended to countersink each 1/4 inch diameter hole on face of Drive Jamb.
   b. Use an appropriate tap drill to drill a pilot hole.

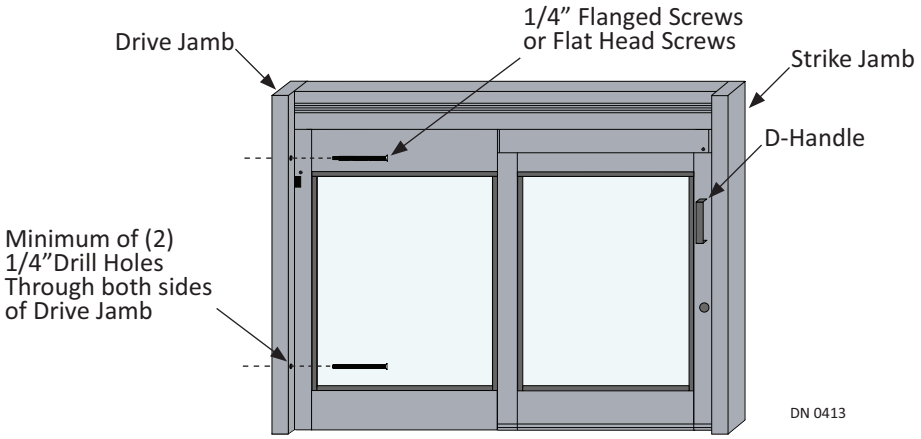


Figure 4-3 Mark and Drill Drive Jamb

3. Secure the Drive Jamb with 1/4 inch diameter fasteners. Please see Figure 4-4.
   a. Fasteners are not provided by NABCO.
   b. Ensure each visible screw head is flush on face of Drive Jamb.
   c. Do not overtighten fasteners to prevent deforming the Drive Jamb.
   d. Ensure screw heads do not come in contact with edges of glass to prevent damage.

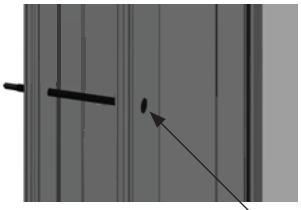


Figure 4-4 Secure Drive Jamb

4. Go to the Lock Cutout on the Strike Jamb.
5. Mark and drill one 1/4 inch diameter screw hole inside the Lock Cutout.
6. Mark and drill a minimum of (1) or more 1/4 inch diameter hole(s) on face of the Strike Jamb. Please see Figure 4-5.
   a. It is recommended to countersink each hole.
   b. Use an appropriate tap drill to drill a pilot hole.
7. Secure the Strike Jamb tube with 1/4 inch diameter fasteners.
   a. Fasteners are not provided by NABCO.
   b. Ensure each visible screw head is flush to the Strike Jamb.
   c. Do not overtighten fasteners to prevent deforming the Strike Jamb.
   d. Ensure anchor heads to not come in contact with edges of glass to prevent damage.

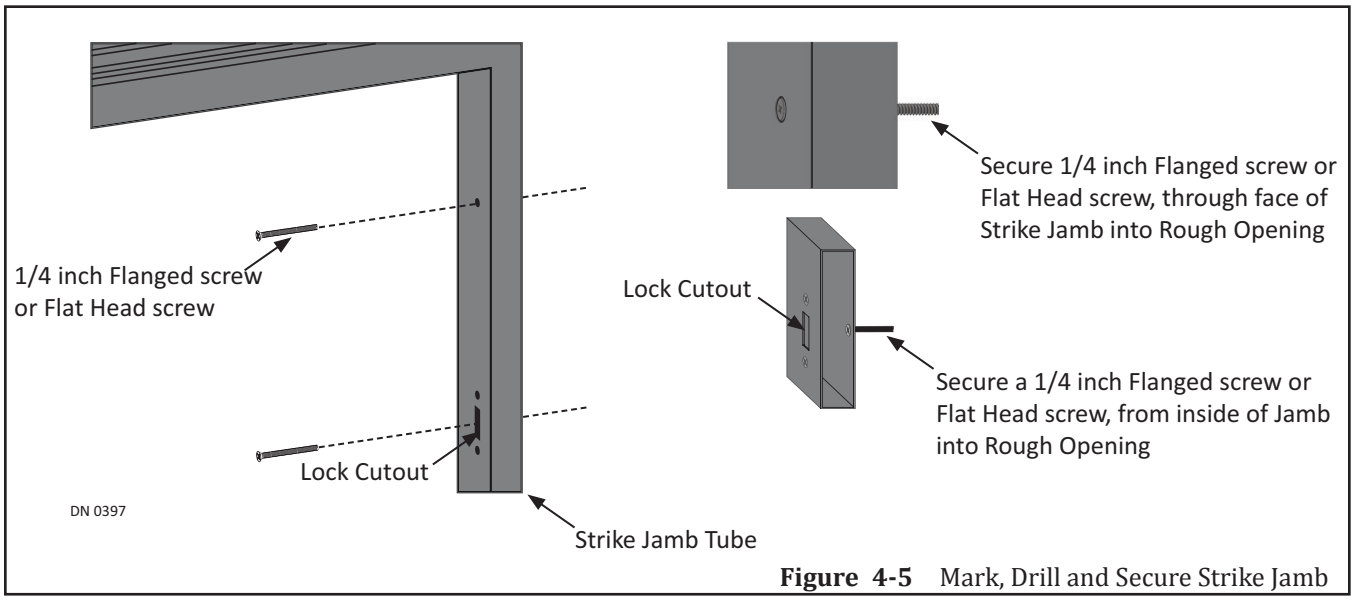


Figure 4-5 Mark, Drill and Secure Strike Jamb

8. Go to the Header.
9. Mark and drill 1/4 inch diameter holes in front of the nut chase located inside the Header.
10. Secure the Header with 1/4 inch diameter fasteners. Please see Figure 4-6.
    a. Do not overtighten fasteners to prevent deforming Header.

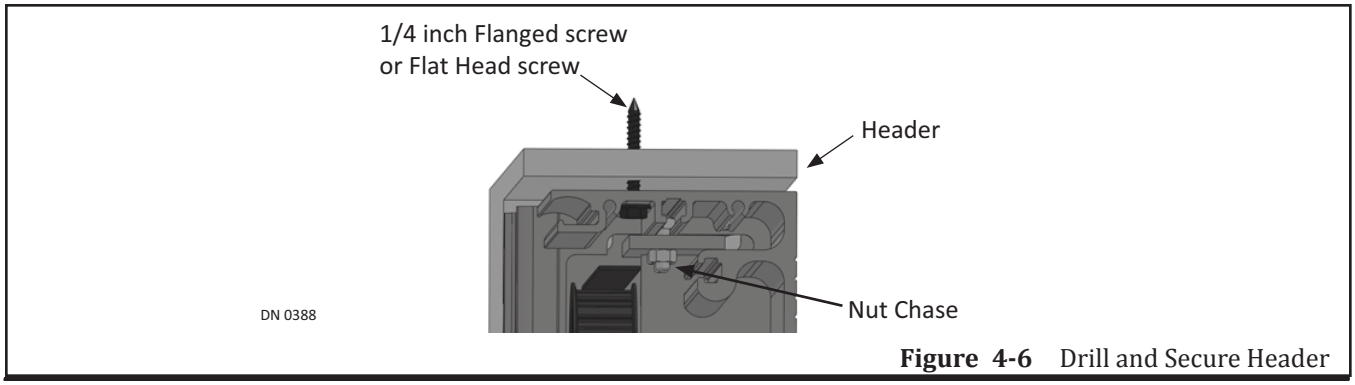


Figure 4-6 Drill and Secure Header

11. Go to the Threshold. Locate where each bolt was used to secure the Threshold components. Please see Figure 4-7.
    a. There should be a total of four bolts.
12. Remove all (4) bolts that were used to keep the Threshold Components together.
    a. If only removing (2) bolts, it is recommended to remove the (2) middle bolts, or the (2) end bolts.

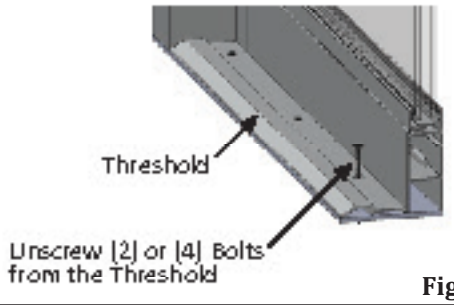


Figure 4-7 Remove Bolts from Threshold

13. Drill 1/4 inch diameter holes through existing screw holes approximately 1-1/2 inch down the flat surface. Please see Figure 4-8.

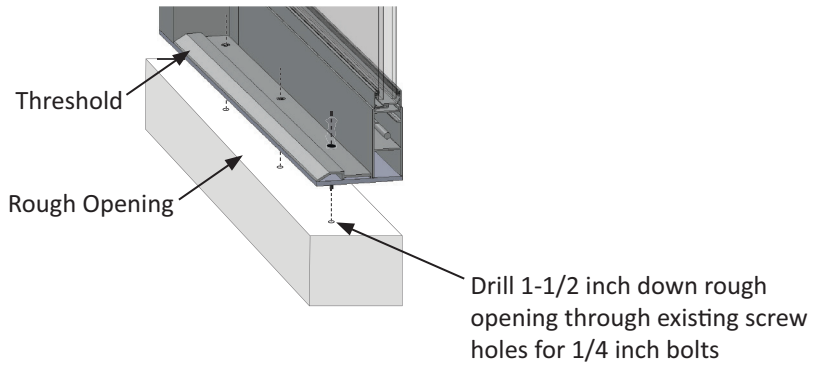


Figure 4-8 Drill 1-1/2 inch down into Rough Opening

14. Secure Threshold to the Rough Opening with (1/4 x 1-1/2 inch) Flange screws or Flat Head screws. Please see Figure 4-9.
    a. Fasteners are not provided by NABCO.
    b. Ensure each visible screw head is flush to the Threshold.
    c. Do not overtighten fasteners to prevent deforming Threshold.

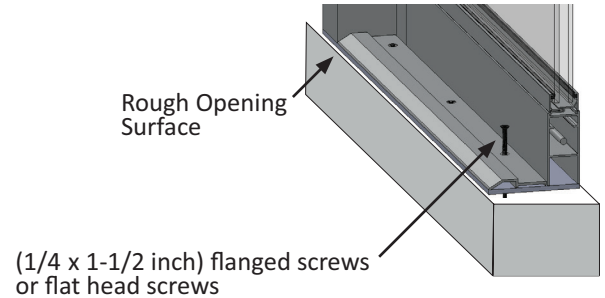


Figure 4-9 Secure Threshold to Rough Opening

Section 4c. Apply the Caulking

1. Ensure the entire Window unit is properly secured to the Rough Opening.
2. Fully insulate the Window unit by applying a caulking bead between:

► Window unit and Masonry opening (inside and outside)

- Please see Figure 4-10, caulk is shown with heavy line.

► Between the top of the Sidelite panel and the Header

- Please see Figure 4-10, caulk is shown with heavy line.

► Sidelite panel and the Cutout in the Threshold

- Please see Figure 4-11, caulk is shown with heavy line.

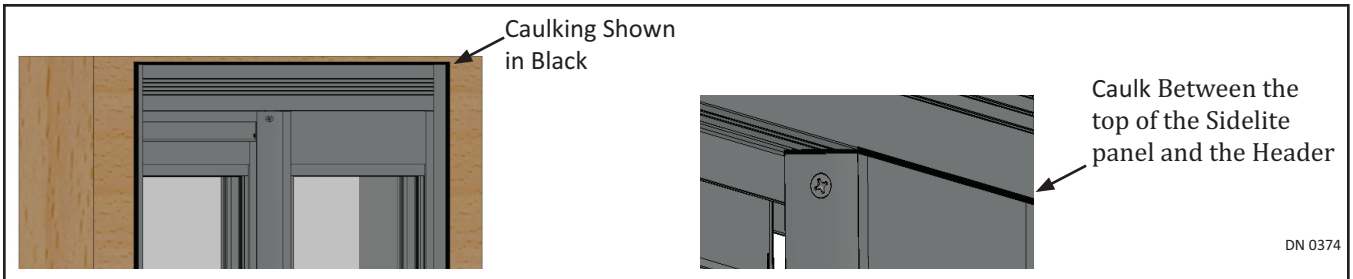


Figure 4-10 Caulk Window Frame and Window Top

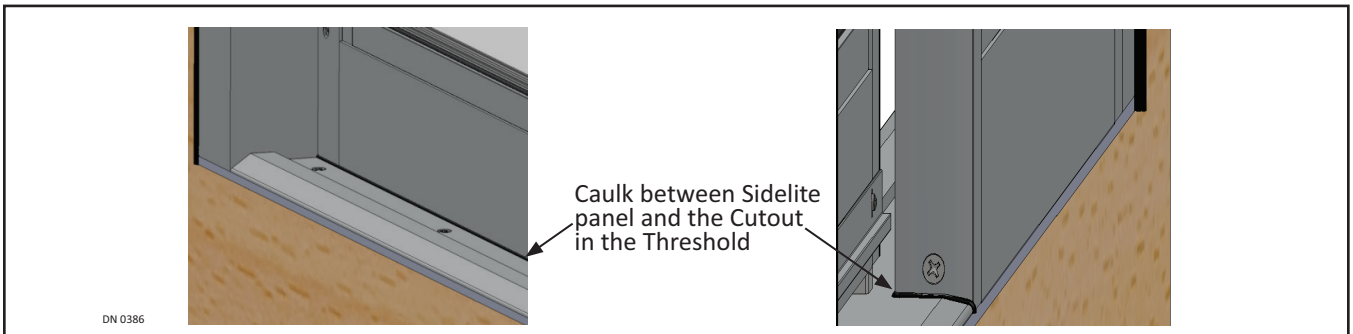


Figure 4-11 Caulk the Sidelite Panel and Threshold

CHAPTER 5: INSTALL AUTOMATIC WINDOW (IN ROUGH OPENING)

CAUTION

Handle Glass With Care!!! Use caution when moving and installing the glass panels. These panels are designed to be assembled with tempered glass. Any sharp objects that come in contact with glass may cause the glass to shatter. NABCO Entrances is not responsible for glass that is broken during the installation of this Unit.

Notice: **The GT-1500 Convenience Window is preassembled, wired and programmed at the NABCO Entrances Factory. No disassembly is required.**

Notice: **If any part of the GT-1500 Manual Convenience Window is disassembled during installation, it will be the responsibility of the Installer to return the Window Unit back to its original factory condition.**

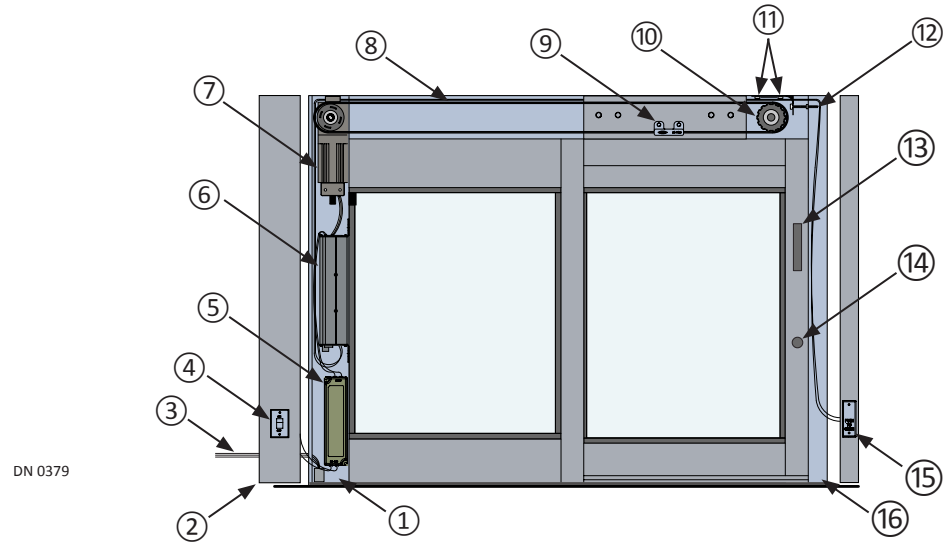


Figure 5-1 Contents of Automatic Convenience Window

1. Inside Drive Jamb
2. Drive Jamb Hinged Cover
3. Incoming 115 VAC Power Supply
4. On/Off Switch
5. Power Supply
6. Microprocessor Control
7. Motor Operator Assembly
8. Drive Belt
9. Belt Clip
10. Idler Pulley
11. Locking Nuts
12. Belt Adjustment Bolt
13. Manual Handle
14. Manual Lock
15. Jamb Switch
16. Inside Strike Jamb (No Hinged Cover)

Section 5a: Prepare the Window Unit

1. Locate the UL Label.
   a. The UL Label is located on the exterior side of the Convenience Window, underneath the Header, in the clear opening. Please see Figure 5-2.

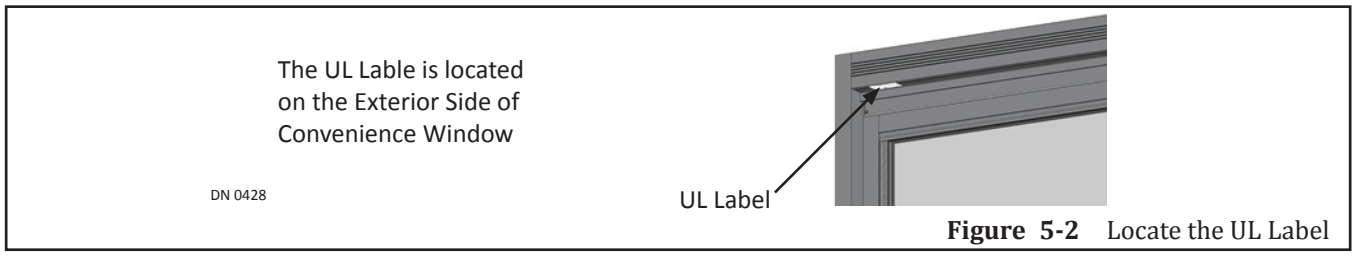


Figure 5-2 Locate the UL Label

2. Inspect the location and grade of all incoming 115 VAC power cables.
3. Go to the side of the Drive Jamb and remove the Dome Plug. Please see Figure 5-3.
4. Insert all incoming 115 VAC power cables into the predrilled 7/8 inch diameter hole.
   a. It is recommended for the installer to house all incoming 115 VAC wires within an Electrical Conduit.
   b. The electrician and the installer must provide adequate wiring to connect all 115 VAC low voltage wires to the existing wires inside the Drive Jamb.
   c. Do Not connect the incoming wires at this time.

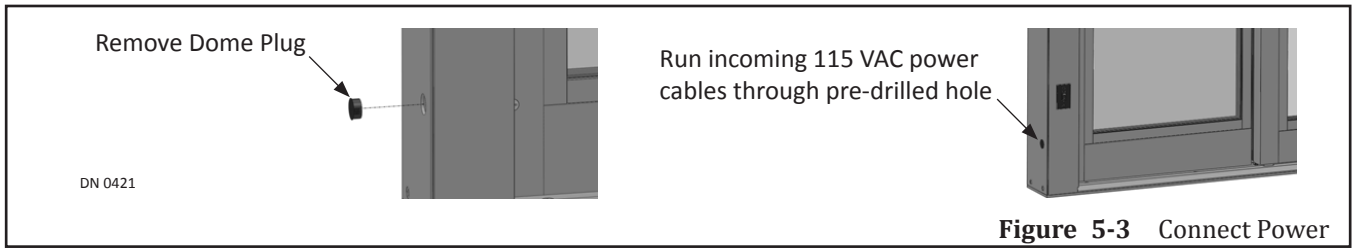


Figure 5-3 Connect Power

5. Go to the top of Strike Jamb. Please see Figure 5-4.
   a. The top of Strike Jamb is not covered.
6. Look into the Strike Jamb to locate (2) wires that are connected to the Jamb Switch.
7. Move the (2) wires so they will not be in the way when drilling holes and screwing bolts.
   a. Keep the (2) wires together.
   a. Ensure to keep both wires intact with the Jamb Switch.
8. Tape the wires in place.

Note: It is the responsibility of the Installer not to damage any Drive components or Wires while drilling.

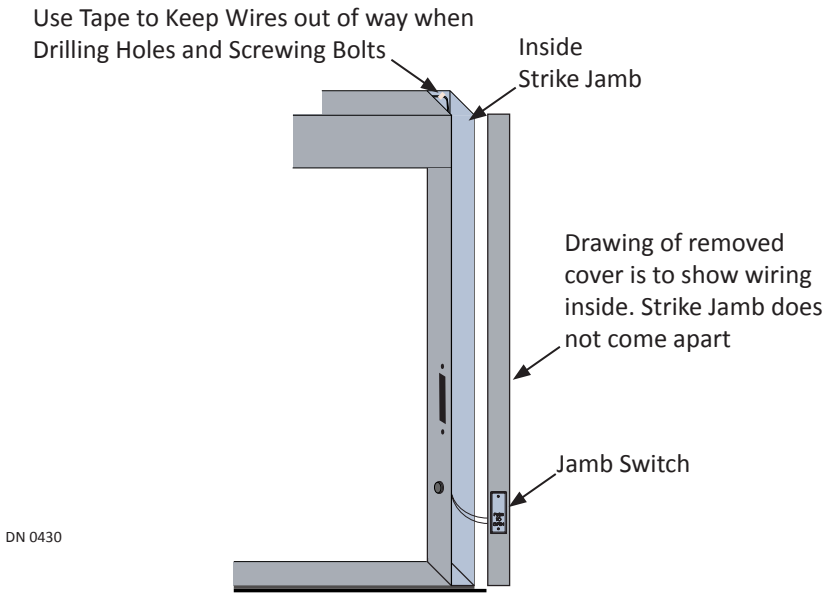


Figure 5-4 Tape Wires

9. Ensure that the (2) wires inside the Strike Jamb travel through the upper cavity of the Header Extrusion, down into the Drive Jamb, and are connected to the U-30 Microprocessor. Please see Figure 5-5.
   a. If/when low voltage 115 VAC wires are installed within the Strike Jamb by an installer, ensure that those wires stay clear of being damaged and are also concealed within the upper cavity of the Header Extrusion, before travelling down the Drive Jamb.

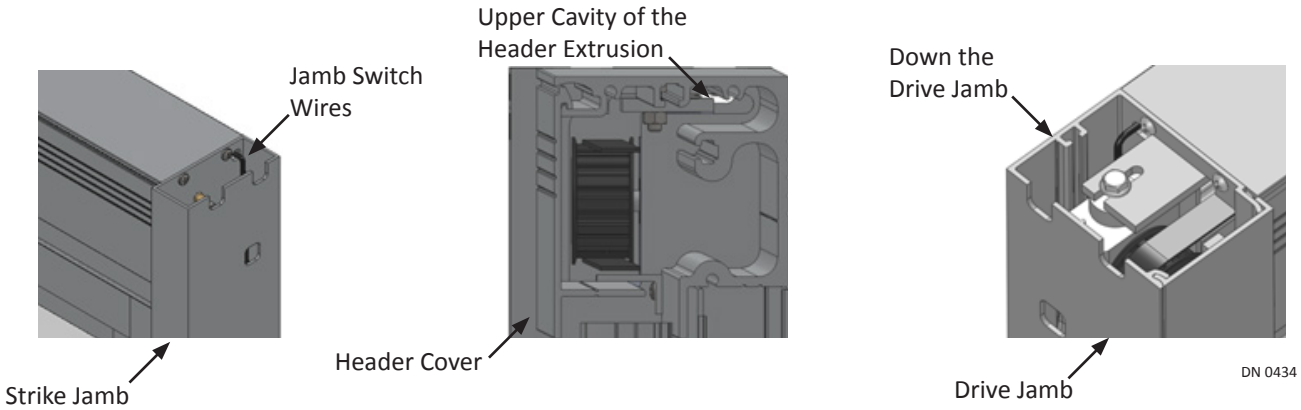


Figure 5-5 Strike Jamb Wires

Section 5b: Shim and Plumb Window Unit

1. Lift to position the Window Unit into rough opening so Threshold is inside the building.
2. Plumb the Threshold to ensure the rough opening allows a 1/4 inch clearance. Please see Figure 5-6.
   a. Shim as required.

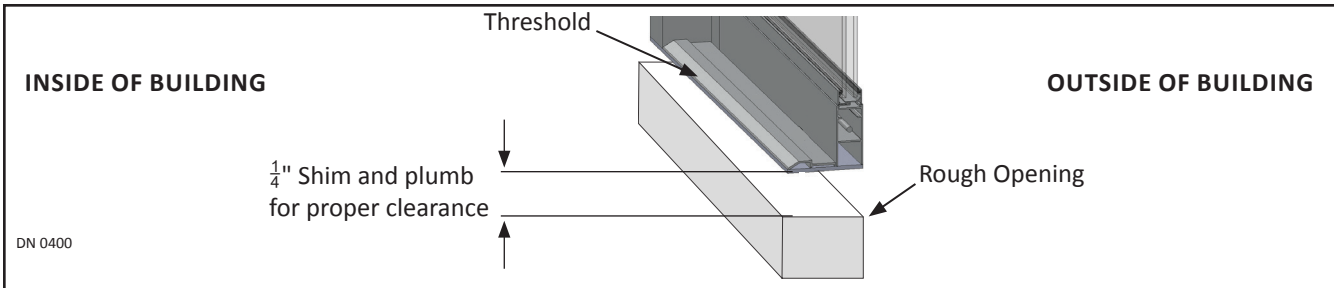


Figure 5-6 Shim and PlumbThreshold

3. Plumb the top and both planes of Window Unit to ensure rough opening allows 1/4 inch clearance. Please see Figure 5-7.
   a. Shim as required.

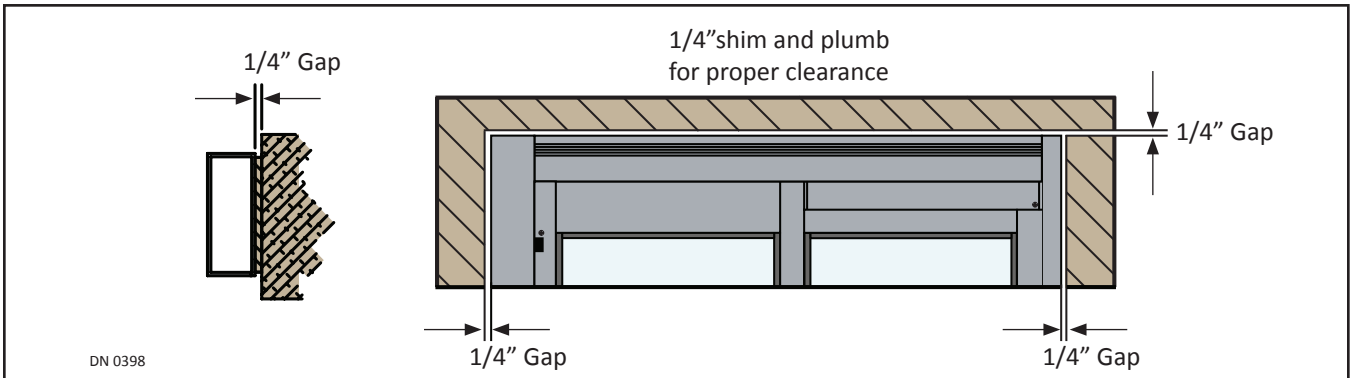


Figure 5-7 Shim and Plumb Window Unit

4. Ensure that:
   - The entire Window Unit fits squarely into the opening.
   - Both Window Panels are parallel to the exterior surface.
   - Jambs are plumb to the ground.

Section 5c: Secure the Window Unit to the Rough Opening

Use anchors and fasteners as required to Install the Window Unit. The quantity and type of fasteners used, depend on the:

- Type of material the Window Unit is being fastened to
- Size of the Window Unit

5.c.a: Instructions

1. From inside the building, go to the Drive Jamb.
2. Remove Hinged Cover Plate by opening it from the right side and then lifting it out of the Drive Jamb channel. Please see Figure 5-8.
   a. Save Hinged Cover for reinstallation.

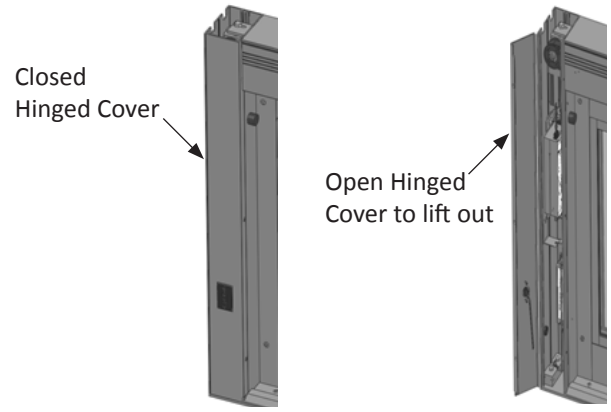


Figure 5-8 Remove the Hinged Cover

3. Mark and drill a minimum of (2) evenly spaced 1/4 inch diameter screw holes on face of Drive Jamb. Please see Figure 5-9.
   a. Temporarily secure loose wires with Tape.
   b. Do Not drill into any major components or cut wiring inside.
   c. When moving wires, ensure to keep wires intact with components.
   d. It is recommended to countersink each screw hole.
   e. Use an appropriate tap drill to drill a pilot hole.

Note: It is the responsibility of the Installer not to damage any Drive components or Wires while drilling.

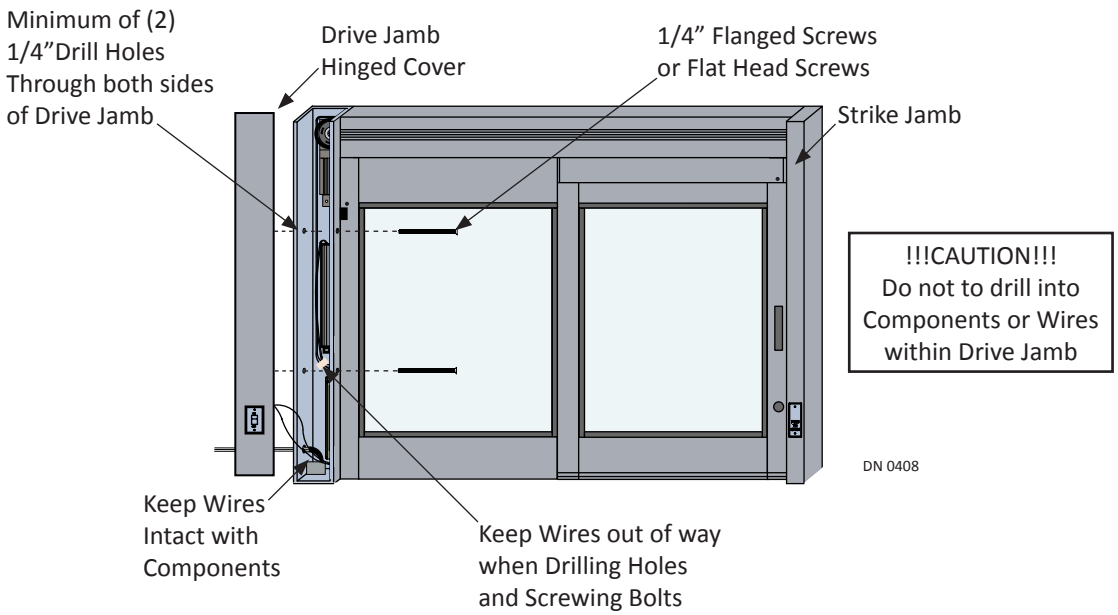


Figure 5-9 Mark and Drill Drive Jamb

4. Secure Drive Jamb with 1/4 inch diameter fasteners. Please see Figure 5-10.
   a. Fasteners are not provided by NABCO.
   b. Ensure each visible screw head is flush to the Drive Jamb.
   c. Do not overtighten fasteners to prevent deforming the Drive Jamb.
   d. Ensure screw heads to not come in contact with edges of glass to prevent damage.

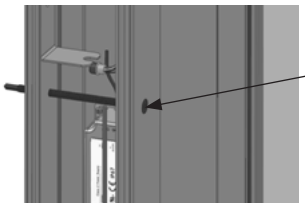


Figure 5-10 Secure Drive Jamb

5. Insert Hinged Cover back onto the Drive Jamb channel.
6. Go to the Strike Jamb. Locate the Lock Cutout.
7. Mark and drill one 1/4 inch diameter hole inside the Lock Cutout. Please see Figure 5-11.
   a. Do Not drill into any major components or cut wiring inside.
   b. When moving wires, ensure to keep wires intact with components.
   c. It is recommended to countersink each screw hole.
   d. Use an appropriate tap drill to drill a pilot hole.

Note: It is the responsibility of the Installer not to damage any Drive components or Wires during drilling.

8. Mark and drill a minimum of (1) or more 1/4 inch diameter hole(s) evenly spaced on face of Strike Jamb. Please see Figure 5-11.

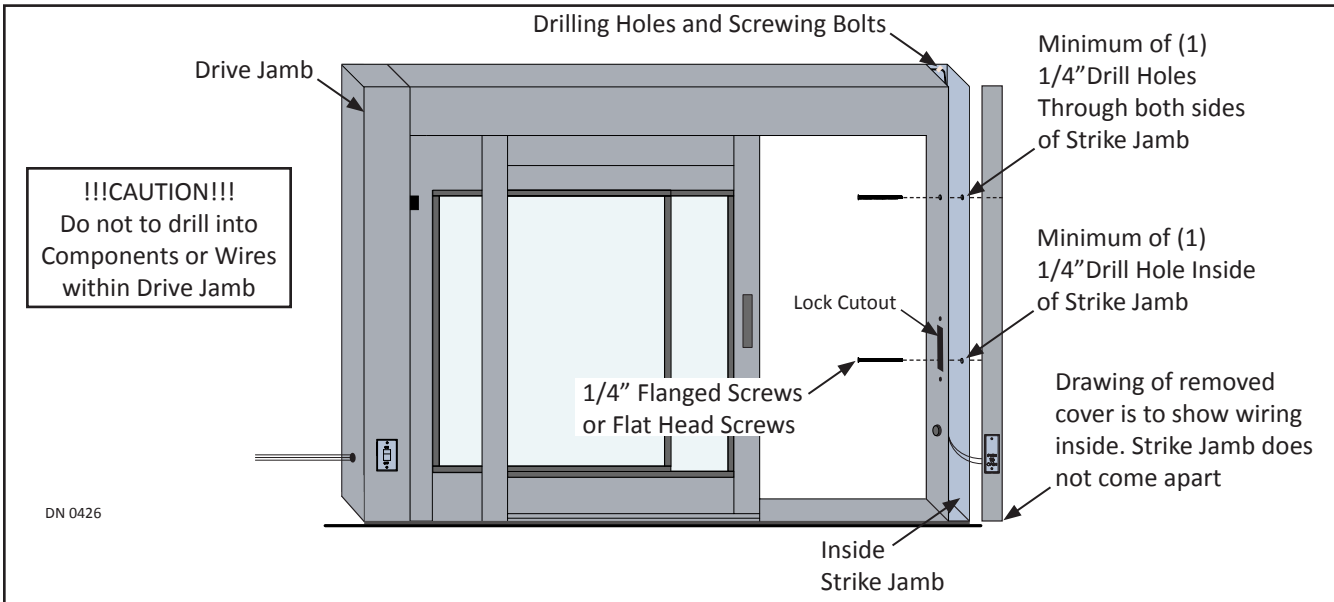


Figure 5-11 Mark and Drill Strike Jamb

9. Secure Strike Jamb tube with 1/4 inch diameter fasteners. Please see Figure 5-12.
   a. Fasteners are not provided by NABCO.
   b. Ensure each visible screw head is flush to the Strike Jamb.
   c. Do not overtighten screw heads to prevent deforming the Strike Jamb.
   d. Ensure screw heads do not come in contact with edges of glass to prevent damage.

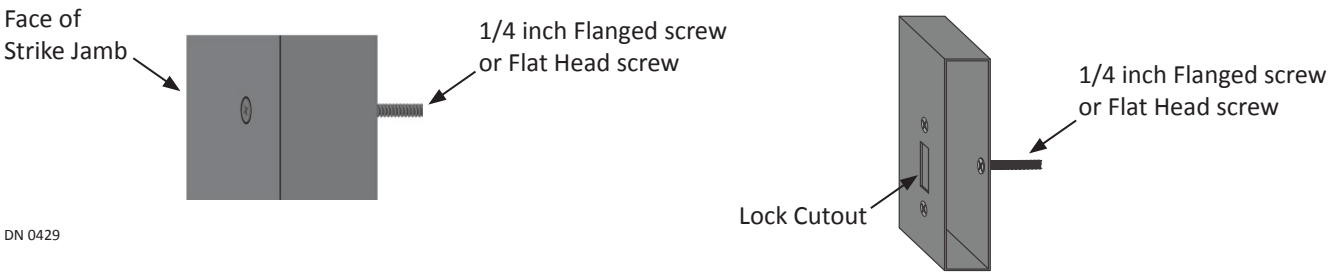


Figure 5-12 Secure Strike Jamb

10. Go to the Header.
11. Mark and drill 1/4 inch diameter holes in front of the nut chase located inside the Header. Please see Figure 5-13.
12. Secure the Header with 1/4 inch fasteners. Please see Figure 5-13.
    a. Fasteners are not provided by NABCO.
    b. Do not overtighten screw heads to prevent deforming Header.

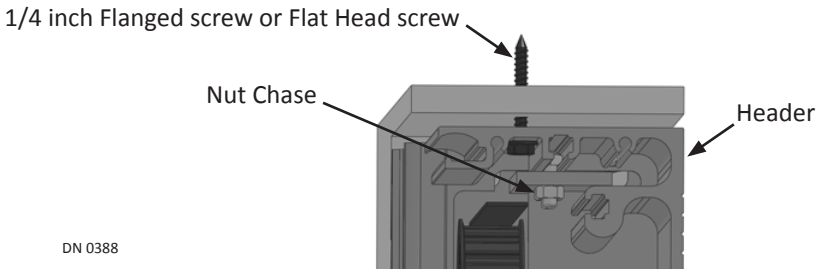


Figure 5-13 Drill and Secure Header

13. Go to the Threshold. Locate where each bolt was used to secure the Threshold components. Please see Figure 5-14.
    a. There should be a total of four bolts.
14. Remove all (4) bolts that were used to keep the Threshold Components together.
    a. If only removing (2) bolts, it is recommended to remove the (2) middle bolts, or the (2) end bolts.

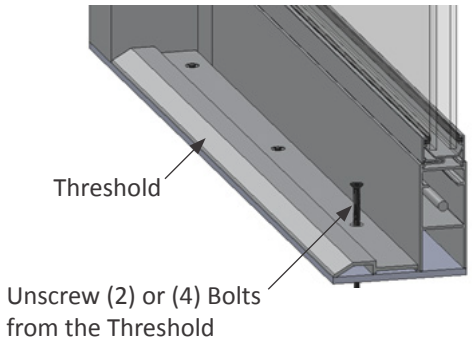


Figure 5-14 Remove Bolts from Threshold

15. Drill 1/4 inch diameter holes through existing screw holes approximately 1-1/2 inch down flat surface. Please see Figure 5-15.

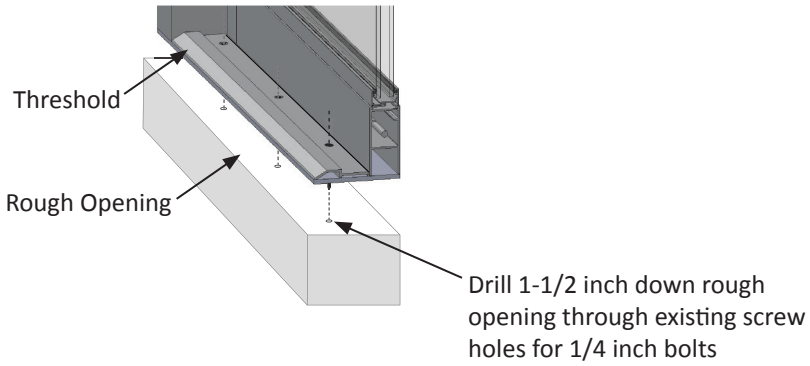


Figure 5-15 Drill 1-1/2 inch down into Rough Opening

16. Secure Threshold to the rough opening with (1/4 x 1-1/2 inch) Flange screws or Flat Head screws (per manufacturer's specifications). Please see Figure 5-16.
    a. Screws are not provided by NABCO.
    b. Ensure each visible screw head is flush to the Threshold.
    c. Do not overtighten screw heads to prevent deforming Threshold.

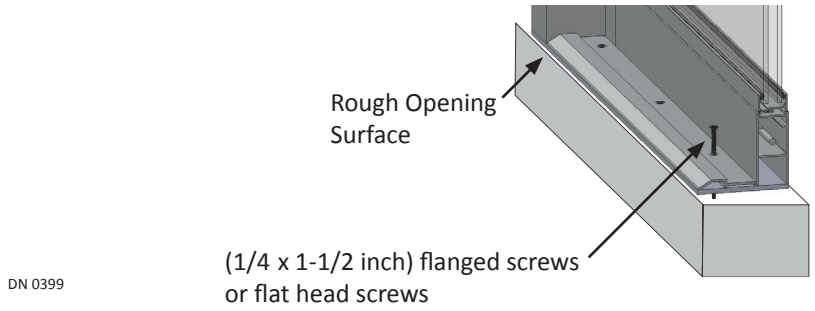


Figure 5-16 Secure Threshold to Rough Opening

Section 5d: Connect Incoming 115 VAC Wires

Note: All wiring must conform to standard wiring practices and be in accordance with national and electrical codes.

1. Ensure that all power to the Convenience Window is Off.
2. Refer to Figure 5-17 for steps 3-6.
3. Connect the incoming 115 VAC (Neutral) White wire to the Blue (AC/N) wire that is connected to the power supply.
4. Connected to the ON/OFF switch are (2) Black wires. Connect the incoming 115 VAC (Hot) Black wire to the Top Black wire.
5. Connected to the ON/OFF switch are (2) Black wires. Connect the Bottom Black wire to the Brown Wire that is connected to the Power Supply.
6. Connect the incoming 115 VAC (Ground) Green wire to the Green wire that is connected to the Ground Box.
   a. For some models, the Ground Wire may be located at bottom of the Drive Jamb Cover.

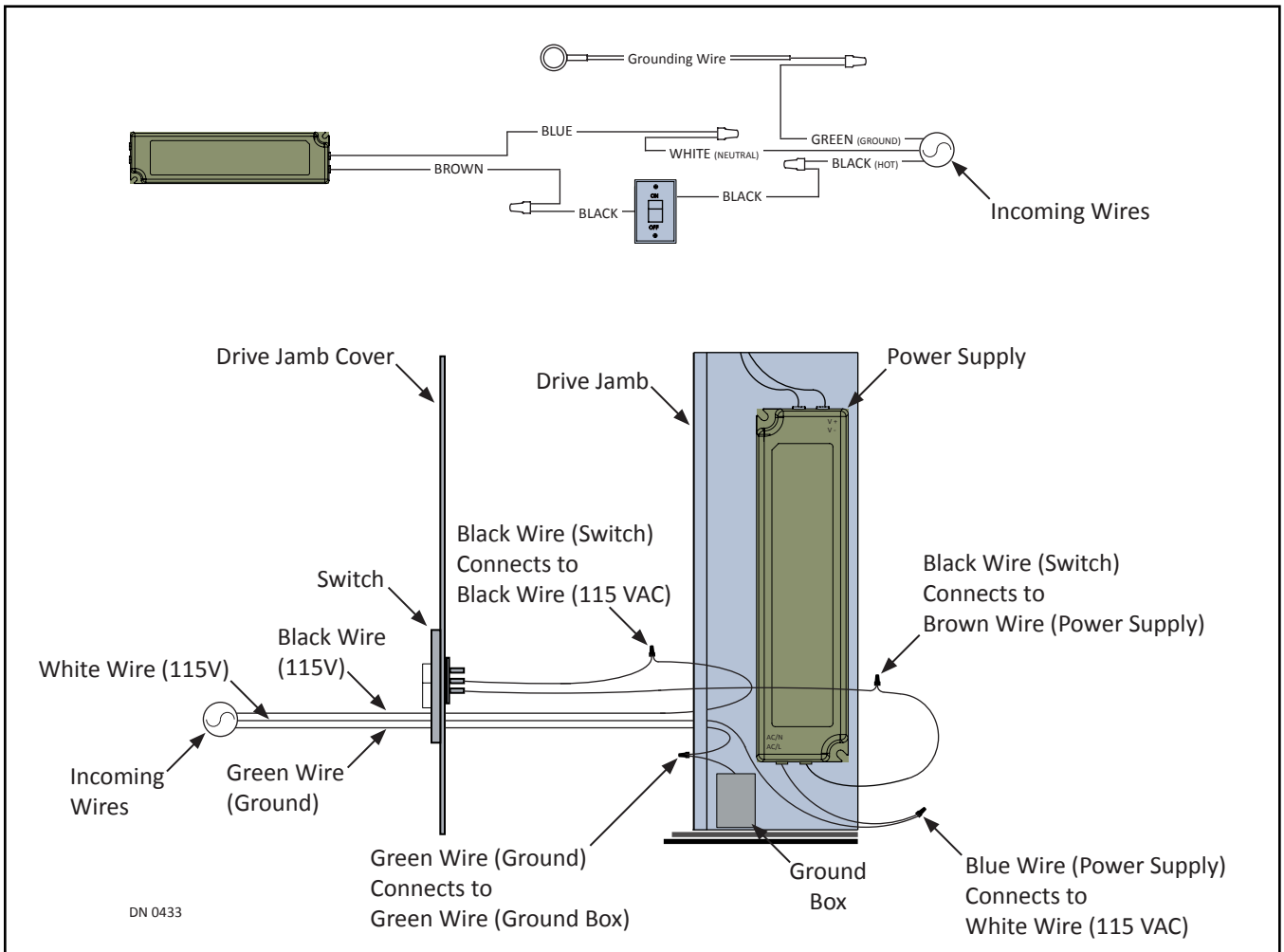


Figure 5-17 Connect the Incoming Wires

Section 5e: Operating the Automatic Convenience Window

1. Turn on all Power to the Convenience Window.
2. Test the ON/OFF Switch and the Jamb Switch to ensure they operate correctly.
3. Test the Manual Lock to ensure it locks/unlocks correctly.

Note: Do not manually open/close the automatic window while the power is ON.

5.e.a: On/Off Switch

The On/Off Switch controls the electrical current to the power supply and all other components located within the Drive Jamb. It is connected to an incoming 115 VAC (Hot) Black wire and the Power Supply component.

5.e.b: Jamb Switch

The Push Plate Jamb Switch is used to Open or Close the Automatic Convenience Window. It is hard wired at the NABCO Entrances factory to stay in Sequential Mode. Sequential Mode is used to separate the opening and closing of the Automatic Convenience Window.

- If a window is closed and the Push Plate Jamb Switch is pressed one time, the opening cycle will fully open the window. If the Push Plate Jamb Switch is pressed again the closing cycle will fully close the window.
- If a window is in a closing cycle and an object interferes with the motion, the window will stall and then go back to it's original open position. If a window is in a opening cycle and an object interferes with the motion, the window will stall and then go back to it's original closed position.

5.e.c: Manual Lock

The Manual Lock is a standard thumb turn locking assembly, which latches onto the Strike Jamb. The manual rotation of the lever unlocks and locks the window shut. If there is a need to automatically lock or unlock the window, please contact the NABCO Entrances sales department for more information.

Section 5f: Adjust the Belt

The Belt assembly has already been adjusted at the factory. Adjust the Belt only if it is too slack causing the Convenience Window not to open/close properly.

1. Turn OFF all power to the Convenience Window.
2. Go behind the Idler Pulley and loosen both Bracket Locking Nuts located on the Idler Pulley Bracket. Please see Figure 5-18.
3. Go to the Adjustment Bolt and loosen the Locking Nut. Please see Figure 5-18.
4. Screw the Adjustment Bolt into or out of the Strike Jamb. Please see Figure 5-18.
   a. This will allow the Idler Pulley Bracket to slide (towards or away from) the Strike Jamb. Do this until the Belt is properly adjusted.
5. Tighten the Adjustment Bolt Locking Nut.

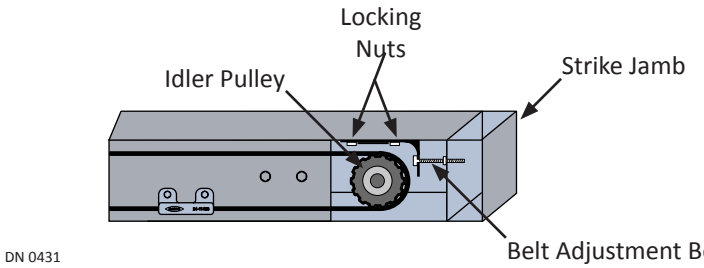


Figure 5-18 Adjust the Belt

6. Level the Idler Pulley to ensure that it is square and not twisted out of place. Please see Figure 5-19.

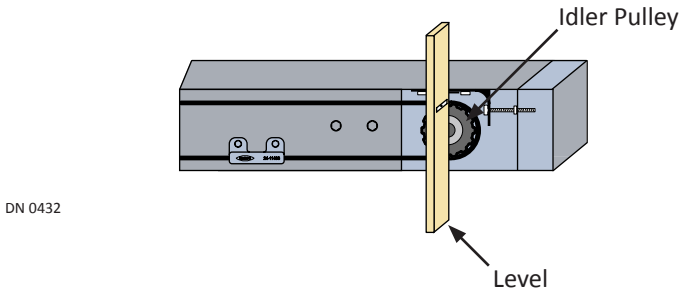


Figure 5-19 Level Idler Pulley

7. Tighten both Bracket Locking Nuts.
8. Level the Idler Pulley again to ensure that it is square and not twisted out of place.

Section 5g: Apply Caulking

1. Please follow instructions listed in “Section 4c. Apply the Caulking” on page 4-11.

CHAPTER 6: INSTALL AUTOMATIC WINDOW (SURFACE MOUNT)

CAUTION

Handle Glass With Care!!! Use caution when moving and installing the glass panels. These panels are designed to be assembled with tempered glass. Any sharp objects that come in contact with glass may cause the glass to shatter. NABCO Entrances is not responsible for glass that is broken during the installation of this Unit.

Notice: **The GT-1500 Convenience Window is preassembled, wired and programmed at the NABCO Entrances Factory. No disassembly is required.**

Notice: **If any part of the GT-1500 Manual Convenience Window is disassembled during installation, it will be the responsibility of the Installer to return the Window Unit back to its original factory condition.**

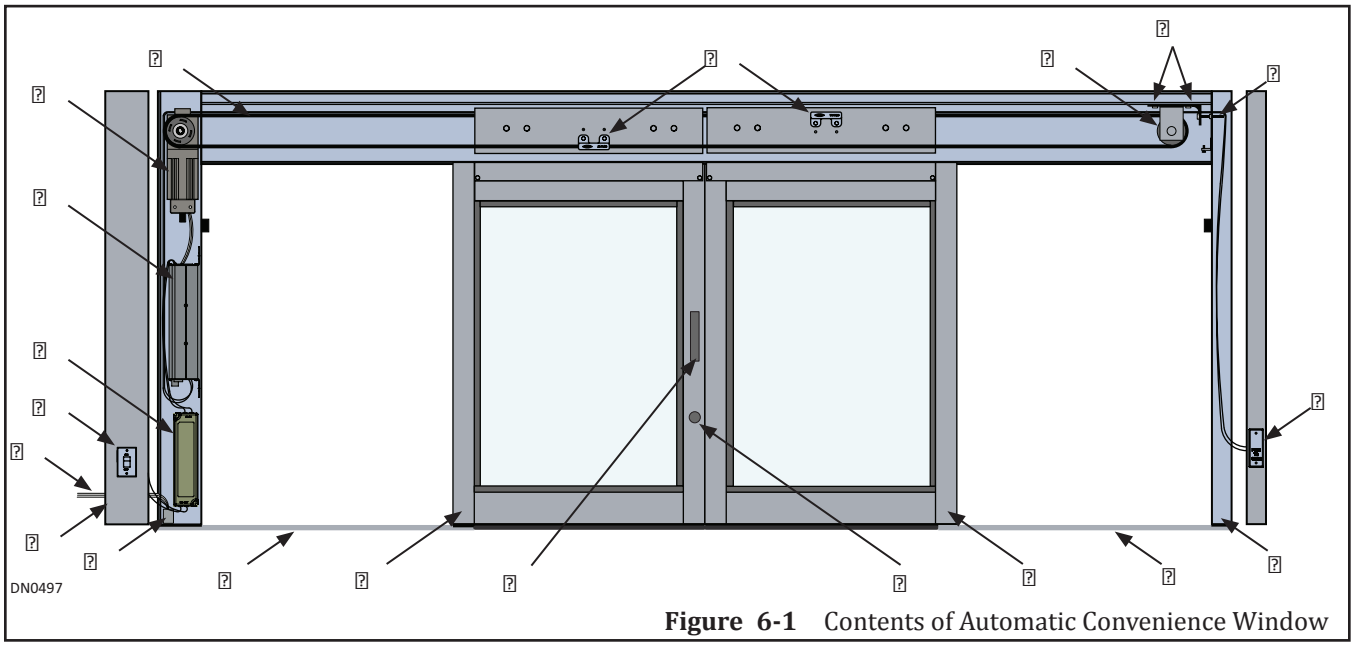


Figure 6-1 Contents of Automatic Convenience Window

1. Inside Drive Jamb
2. Drive Jamb Hinged Cover
3. Incoming 115 VAC Power Supply
4. On/Off Switch
5. Power Supply
6. Microprocessor Control
7. Motor Operator Assembly
8. Drive Belt
9. Belt Clips
10. Idler Pulley
11. Locking Nuts
12. Belt Adjustment Bolt
13. Jamb Switch
14. Inside Strike Jamb (No Hinged Cover)
15. Bottom Plate
16. Vertical Stile
17. Manual Lock
18. Manual Handle
19. Vertical Stile
20. Bottom Plate

Section 6a: Prepare the Window Unit

1. From inside the building, lift Automatic Window Unit to place onto flat surface.
2. Locate the UL Label.
   a. The UL Label is located on the exterior side of the Convenience Window, underneath the Header, in the clear opening. Please see Figure 6-2.

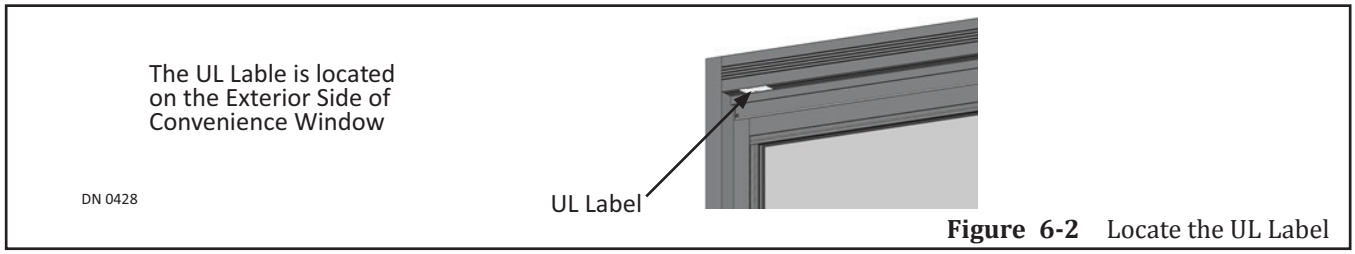


Figure 6-2 Locate the UL Label

3. Inspect the location and grade of all incoming 115 VAC power cables.
4. Turn Window Unit so exterior side is facing towards opening in wall.
5. Go to Drive Jamb. Remove the Dome Plug located on the lower side of Drive Jamb. Please see Figure 6-3.
6. Insert all incoming 115 VAC power cables into the predrilled 7/8 inch diameter hole.
   a. It is recommended for the installer to house all incoming 115 VAC wires within an Electrical Conduit.
   b. The electrician and the installer must provide adequate wiring to connect all 115 VAC low voltage wires to the existing wires inside the Drive Jamb.
   c. Do Not connect the incoming wires at this time.

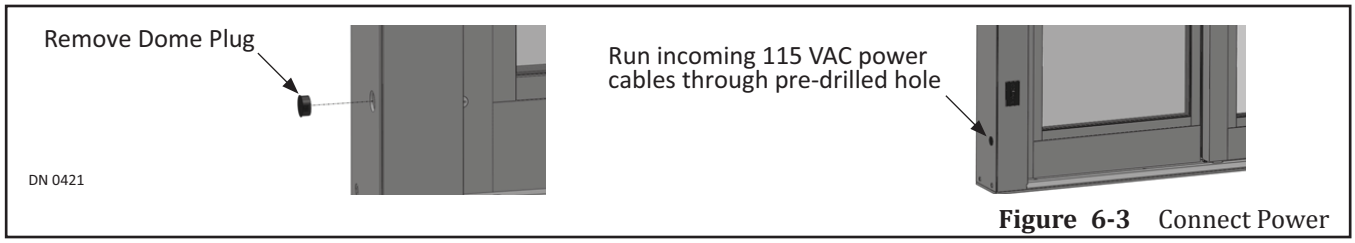


Figure 6-3 Connect Power

Section 6b: Mount Window Unit to Surface of Building

Use anchors and fasteners as required to Surface Mount the Window Unit. The quantity and type of fasteners used, depend on the:

- Type of material the Window Unit is being mounted to
- Size of the Window Unit

Note: Anchors and Fasteners are not provided by NABCO. The Installer must decide whether or not to use Anchors.

6.b.a: Instructions

1. Center Window Unit with the center of opening in wall of building.
2. Ensure that the:
   - ► Opening in wall of building does not exceed width of vertical Stiles (same as glass stop). Please see Figure 6-4.
   - ► Opening in wall of building does not exceed height of vertical Stiles.
   - ► Window Panels fit squarely into opening in wall.
   - ► Jambs are plumb to the flat surface.

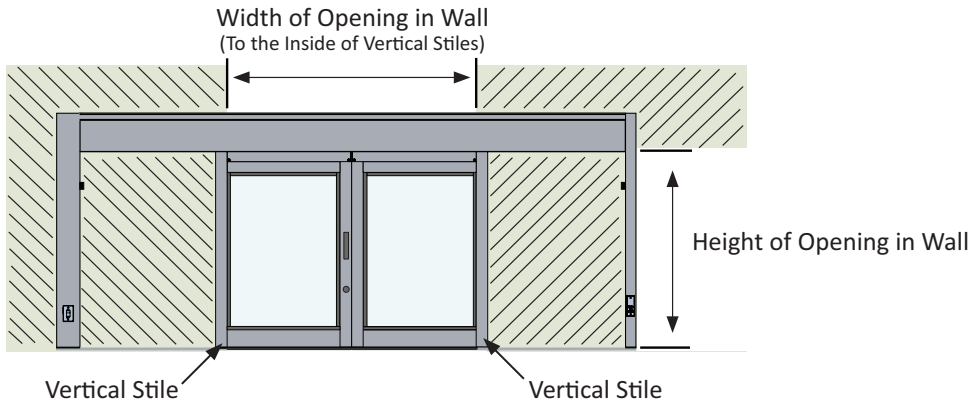


Figure 6-4 Position Window Unit to Opening in Wall

3. Go to bottom of Window Unit. Remove each screw that was used to secure wood to bottom plates as protection during shipping. Please see Figure 6-5.
4. Obtain (4) (1/4 x 1-1/2 inch) flat head screws, and (4) anchors (if required).
   d. Hardware is not provided by Nabco.
   e. Screws and anchors must be appropriate for the type of structure being fastened into.

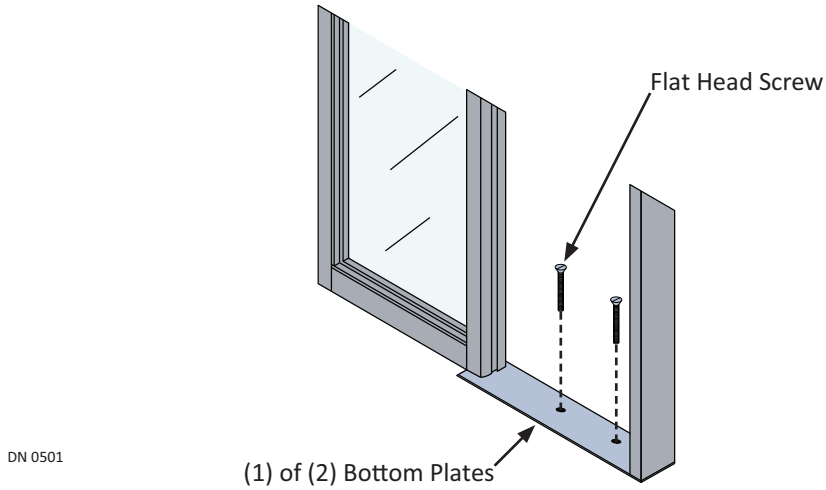


Figure 6-5 Remove existing Screws replace with Flat Head Screws

5. Position Window Unit until the exterior side is flush against the surface of the interior wall.
   a. Ensure Window Unit is centered and Window Panels fit squarely into opening in wall.
6. Go to screw holes that already exist in each bottom plate. Mark drill holes on flat surface.
7. Set Window Unit aside.
8. Drill 1/4 diameter holes, down into flat surface approximately 1-1/2 inches.
   a. If installing anchors into flat surface:
      i. Drill holes for anchors to install anchors before mounting Bottom Plates with screws.
9. Position Window Unit so screw holes in bottom Plates are aligned with drilled holes.
10. Mount each bottom plate to flat surface with (1/4 x 1-1/2 inch) Flat Head screws. Please see Figure 6-5.
    a. Do Not tighten down at this time. Screws may need to be removed one more time.
11. Go to Header.
12. Remove Hinged Cover Plate by opening it and then lifting it out of the Header channel. Please see Figure 6-6.

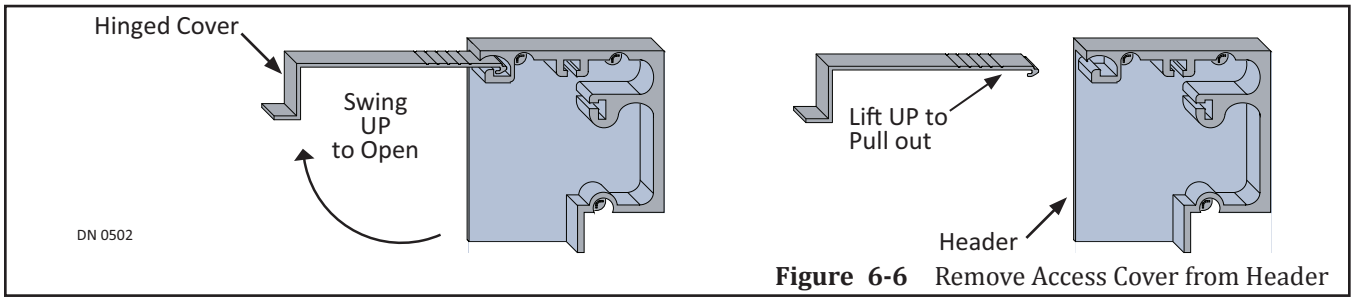


Figure 6-6 Remove Access Cover from Header

13. Go to Back Wall of Header.
    a. The Back Wall of Header must be flush against interior wall of building.
14. Mark drill holes with a minimum of 3 per Header, with a maximum 48 inches on center. First flat head fastener maximum is 36 inches from each end of the Header.
15. Drill 1/4 inch diameter holes approximately 1-1/2 inches into interior wall. Countersink each hole.
    a. Hardware is not provided by Nabco.
    b. Fasteners and anchors must be appropriate for the type of structure being fastened into.
    c. If installing anchors into interior wall:
       i. Remove Flat Head Screws from bottom panels.
       ii. Set Window Unit aside.
       iii. Drill holes for anchors and install anchors before mounting Header with appropriate fasteners.
16. Mount Header to interior wall with appropriate fasteners. Please see Figure 6-7.

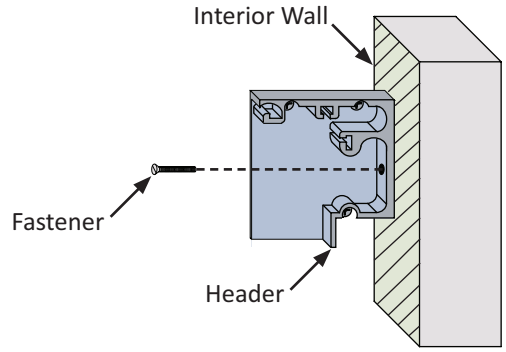


Figure 6-7 Mount Header to Interior Surface of Wall

17. Go to Bottom Plates. Tighten down each (1/4 x 1-1/2 inch) Flat Head screw.
    a. Ensure each screw head is flush to the Bottom Plate.
    a. Ensure screw heads to not come in contact with edges of glass to prevent damage.
    b. Do not overtighten screws to prevent deforming bottom plates.

Section 6c: Connect Incoming 115 VAC Wires

Note: All wiring must conform to standard wiring practices and be in accordance with national and electrical codes.

1. Ensure that all power to the Convenience Window is OFF.
2. Connect incoming 115 VAC (Neutral) White wire to the Blue (AC/N) wire that is connected to the power supply. Please see Figure 6-8.
3. Connected to the ON/OFF switch are (2) Black wires. Connect the incoming 115 VAC (Hot) Black wire to the Top Black wire.
4. Connected to the ON/OFF switch are (2) Black wires. Connect the Bottom Black wire to the Brown Wire that is connected to the Power Supply.
5. Connect the incoming 115 VAC (Ground) Green wire to the Green wire that is connected to the Ground Box.
    a. For some models, the Ground Wire may be located at bottom of the Drive Jamb Cover.

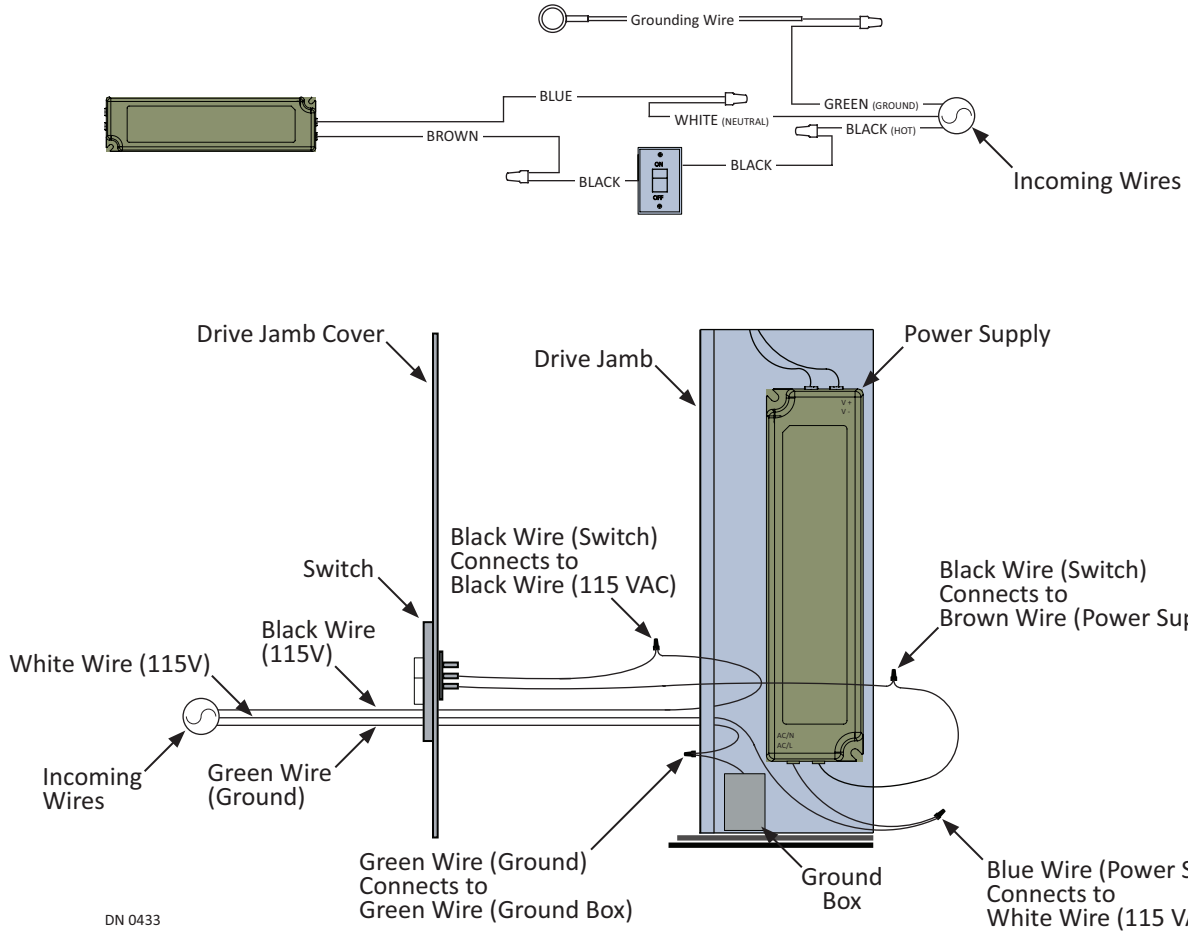


Figure 6-8 Connect the Incoming Wires

Section 6d: Operating the Automatic Convenience Window

1. Turn ON all Power to the Convenience Window.
2. Test the ON/OFF Switch and the Jamb Switch to ensure they operate correctly.
3. Test the Manual Lock to ensure it locks/unlocks correctly.

Note: Do not manually open/close the automatic window while the power is ON.

6.d.a: On/Off Switch

The On/Off Switch controls the electrical current to the power supply and all other components located within the Drive Jamb. It is connected to an incoming 115 VAC (Hot) Black wire and the Power Supply component.

6.d.b: Jamb Switch

The Push Plate Jamb Switch is used to Open or Close the Automatic Convenience Window. It is hard wired at the NABCO Entrances factory to stay in Sequential Mode. Sequential Mode is used to separate the opening and closing of the Automatic Convenience Window.

- If a window is closed and the Push Plate Jamb Switch is pressed one time, the opening cycle will fully open the window. If the Push Plate Jamb Switch is pressed again the closing cycle will fully close the window.
- If a window is in a closing cycle and an object interferes with the motion, the window will stall and then go back to it's original open position. If a window is in a opening cycle and an object interferes with the motion, the window will stall and then go back to it's original closed position.

6.d.c: Manual Lock

The Manual Lock is a standard thumb turn locking assembly, which latches onto the Strike Jamb. The manual rotation of the lever unlocks and locks the window shut. If there is a need to automatically lock or unlock the window, please contact the NABCO Entrances sales department for more information.

Section 6e: Adjust the Belt

The Belt assembly has already been adjusted at the factory. Adjust the Belt only if it is too slack causing the Convenience Window not to open/close properly.

1. Turn OFF all power to the Convenience Window.
2. Go behind the Idler Pulley and loosen both Bracket Locking Nuts located on the Idler Pulley Bracket. Please see Figure 6-9.
3. Go to the Adjustment Bolt and loosen the Locking Nut. Please see Figure 6-9.
4. Screw the Adjustment Bolt into or out of the Strike Jamb. Please see Figure 6-9.
   a. This will allow the Idler Pulley Bracket to slide (towards or away from) the Strike Jamb. Do this until the Belt is properly adjusted.
5. Tighten the Adjustment Bolt Locking Nut.

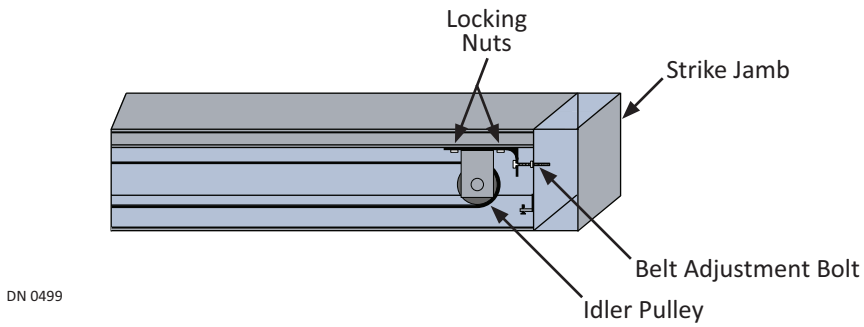


Figure 6-9 Adjust the Belt

6. Level the Idler Pulley to ensure that it is square and not twisted out of place. Please see Figure 6-10.

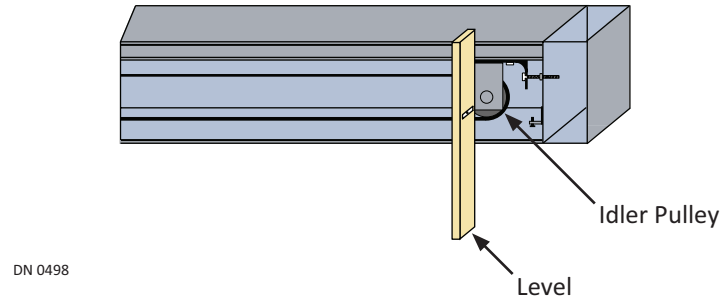


Figure 6-10 Level Idler Pulley

7. Tighten both Bracket Locking Nuts.
8. Level the Idler Pulley again to ensure that it is square and not twisted out of place.

Section 6f: Apply Caulking

1. Ensure the entire window unit is properly secured to the opening in wall.
2. Go outside to fully insulate the Window Unit by applying a caulking bead between:
   - ► Window unit and Masonry opening (outside only).
     - Please see Figure 6-11, caulk is shown with heavy line.

Figure 6-11 Caulk Window Frame

CHAPTER 7: ADJUSTMENT PROCEDURES

Note: Do Not use the Handy Terminal in temperatures that are colder than 10° Fahrenheit, for extended periods of time. Store the Handy Terminal at room temperature.

All settings for the U-30 Microprocessor Controller have been programmed at the NABCO Factory. The only time these settings need to be re-entered is if:

- The U-30 Microprocessor Controller is being replaced
- A customer requests a custom setting

In either case, only a NABCO approved Installer or Technician can re-enter a programmed setting by using the Handy Terminal. Please see Figure 7-1.

The Handy Terminal is used to test, change and/or reset programming for the U-30 Microprocessor Controller software system which is used to operate the Convenience Window and manage History Data that stores:

- Maintenance Count: Indicates how many times a Handy Terminal was connected to the U-30 Microprocessor Controller (up to 255 connections).
- Operation Counts: Indicates how many times Full Window Operations were performed (updated every 100 cycles; up to 6,553,500 cycles)
- Recycle Counts: Indicates how many times a Window reversed direction after sensing an object or the amount of friction that surpassed the recycle sensitivity setting. (up to 255 recycles). Recycle Counts can be reset by the Handy Terminal.
- Run Away Counts: Indicates when operation of the CPU becomes erratic. If this happens the CPU is reset by a Watchdog Feature, and the run away count is increased.

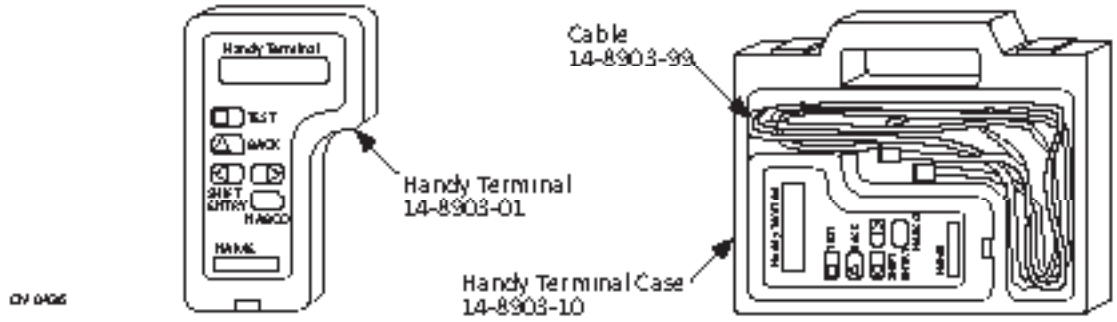


Figure 7-1 Handy Terminal

Section 7a: Determine the Handing is Correct

1. Ensure that the power source is at least 120VAC ±10%.
2. Determine that all components are wired and set properly.
   a. The Convenience Window must be grounded for safe and consistent operation.
3. Manually slide the Convenience Window half way open.

4. Turn power ON.
   a. The window will slowly close.
   b. If the window slowly opens, the Handing is reversed. To correct the Handing follow Section 7b and Section 7b before proceeding further.
   c. Handing must be corrected before any other adjustment can be made.
   d. Do not turn power Off when proceeding to next Section.

Section 7b: Connect the Handy Terminal

1. With the power still ON, obtain the Cable from the Handy Terminal Case. Please see Figure 7-1.
2. Go to the Handy Terminal Harness and remove the protective Cap. Set aside. Please see Figure 7-2.
   a. The Handy Terminal Harness should already be connected to the bottom of the U-30 Microprocessor Controller, via a telephone jack.
3. Connect the plug end of the Cable (that is protected with a metal sleeve), to the socket of the Handy Terminal Harness. Please see Figure 7-2.
   a. The plug end of the Cable has multiple prongs that need to line up with the socket. Gently turn the plug end clockwise while trying to insert it until a connection can be made.
4. Obtain the Handy Terminal from the Handy Terminal Case. Please see Figure 7-1.
5. Go to the bottom of the Handy Terminal and insert the (black) plug end of the Cable into the socket. Please see Figure 7-2.
   a. The Handy Terminal will begin to initialize the programming mode.

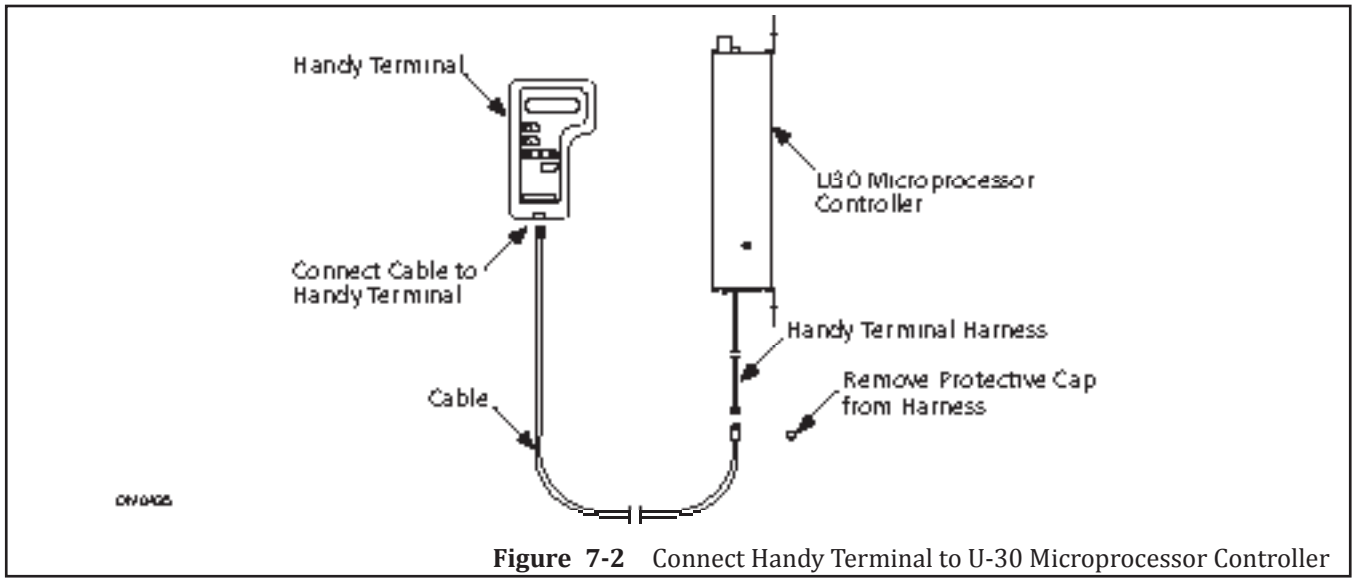


Figure 7-2 Connect Handy Terminal to U-30 Microprocessor Controller

6. A message will automatically display:

   GYRO TECH HANDY TERMINAL

   a. This message will only be displayed for a brief period of time.

7. On ***newer*** Handy Terminals, the following message ***might*** be displayed:

   BUZZER Y/N

8. If the message **BUZZER Y/N** is displayed, press the Shift Buttons to highlight **Y** or **N**, press:

   ENTRY

   a. **Y** allows audible feedback to be heard as Handy Terminal buttons are pressed, **N** does not allow audible feedback to be heard as Handy Terminal buttons are pressed.

Section 7c: Correct the Handing

1. Press the Entry button or the Back button until the following option is displayed:

   SPECIAL FUNCTION Y N

2. Press the Shift button to highlight **Y**, press:

   ENTRY

3. Continue to press the Entry Button until the following message is displayed:

   RECYCLE Y N

   a. At the far right of the message window either a **Y** or a **N** will be displayed, indicating what default mode the window is set to.

4. Press the Shift button to highlight the opposite of what is already displayed, then press:

   ENTRY

5. Disconnect the Handy Terminal.

   a. To temporarily disconnect the Handy Terminal, pull out the Cable Plug from the bottom of the Handy Terminal.

Section 7d: Prepare the Window Unit

Note: Do not turn power OFF before disconnecting the Handy Terminal.

1. To permanently disconnect the Handy Terminal, pull out the Cable Plug from the socket of the Handy Terminal Harness by sliding back the metal sleeve *first*, so the plug will pull out without causing damage to the Terminal Harness. Place protective cap back onto the Handy Terminal Harness socket.

CAUTION **Slide back the metal sleeve FIRST and keep it pulled back while disconnecting the Cable plug from the Terminal Harness. Failure to do so will cause damage to both the Cable and Terminal Harness.**

2. Turn Power OFF.

3. Manually slide the Convenience Window half way open.

4. Turn power ON.

   a. The window will slowly start to close, proving that the Handing had been corrected.

Section 7e: Set the Stroke

1. A message will automatically be displayed:

   SLIDE/SWING/STRK Y N

2. Press the Shift Button to highlight **Y**, press:

   ENTRY

3. A message will automatically be displayed:

   SWING DOOR Y N

4. Press the Shift Button to highlight **N**, press :

   ENTRY

5. A message will automatically be displayed:

   FULL OPEN POINT PRESS TEST

6. Manually slide the Convenience Window to full open, press:

   TEST

   a. The Convenience Window will slowly close while the U-30 Microprocessor Controller measures the stroke of the window.

7. Once the Convenience Window is fully closed, a message will automatically be displayed:

   STD FUNCTION Y N

8. Press:

   TEST

   a. The Convenience Window will open according to the factory settings and slow down at the Latch Check and Back Check points.

   b. The Convenience Window will stay open for approximately 2 seconds, then close.

9. After the Test is complete, a message will automatically be displayed:

   STD FUNCTION Y N

10. Press the Shift Buttons to highlight **N**, press :

    ENTRY

11. Wait until the screen has stabilized, then turn **OFF** power before disconnecting the Handy Terminal.

12. Permanently disconnect the Cable Plug from the socket of the Handy Terminal Harness by sliding back the metal sleeve *first* so the plug will pull out without causing damage to the Terminal Harness.

Section 7f: Standard Function Adjustments

1. Upon initialization of the Handy Terminal, press the **ENTRY** button until the following message is displayed:

   STD FUNCTION Y N

2. To start the Standard Functions program, press the Shift buttons to select:

   Y

3. Press:

   ENTRY

Table 7-1 Standard Function Adjustments

Adjustment	Description
Opening Speed	Message will read: **OPEN SPEED 3** ► Eight options are available from 0 to 7. ► Speeds range 2 inches per second (.06 meters per second) to 31 inches per second (.80 meters per second). Seven is the fastest, 0 is the slowest. ► For incremental open speed adjustments please refer to "Table 7-5 Extra Function Adjustments" on page 7-41.
Closing Speed	Message will read: **CLOSE SPEED 2** ► Eight options are available from 0 to 7. ► Speeds range 2 inches per second (.06 meters per second) to 24 inches per second (.60 meters per second). Seven is the fastest, 0 is the slowest. ► For incremental close speed adjustments please refer to "Table 7-5 Extra Function Adjustments" on page 7-41.
Time Delay	Message will read: **TIME DELAY 2** ► Eight options are available with time delays of 0 to 7 seconds. ► Determines the number of seconds the Slide door will stay open after both the Activating and Safety signals are cleared. ► For longer time delays please refer to "Table 7-3 Special Function Adjustments" on page 7-37.

Section 7g: Feeling Adjustments

1. Upon initialization of the Handy Terminal, press the **ENTRY** button until the following message is displayed:

   FEELING ADJUST Y N

2. To start the Feeling Adjustments program, press the Shift buttons to select:

   Y

3. Press:

   ENTRY

Table 7-2 Feeling Adjustments

Adjustment	Description
Start Power	Message will read: **START POWER 3** ► Eight options are available. ► Accelerates the door at the start of the opening and closing cycles. ► Option 0 provides the slowest acceleration. Higher settings should be used on: • Heavier doors • Where high speed operation for opening is desired
Check Power	Message will read: **CHECK POWER 6** ► Eight options are available. ► Adjusts braking power to reduce door speed to the check or latch speed. ► Zero provides gradual braking, and 7 provides abrupt braking.
Reaction Power	Message will read: **REACTION POWER 4** ► Eight options are available. ► Controls how fast the door will react to an activating signal (Example: how long it takes a closing Slide door to reverse direction). ► Zero (0) provides the slowest reaction, 7 the fastest.
Back Check Speed	Message will read: **BACK C. SPEED 1** ► Four speeds are available. ► Speed of the door just before it reaches the fully open position. ► Zero (0) is the slowest setting at 1.4 inches per second (4 centimeters per second), and 3 is fastest at 4 inches per second (10 centimeters per second).
Latch Check Speed	Message will read: **LATCH C. SPEED 1** ► Four speeds are available. ► Speed of the door just before it reaches the fully closed position. ► Zero (0) is the slowest setting at 1.4 inches per second (4 centimeters per second), and 3 is fastest at 4 inches per second (10 centimeters per second).

Section 7h: Special Function Adjustments

1. Upon initialization of the Handy Terminal, press the **ENTRY** button until the following message is displayed:

   SPECIAL FUNCTION Y N

2. To start the Special Function Adjustments program, press the Shift buttons to select:

   Y

3. Press:

   ENTRY

Table 7-3 Special Function Adjustments

Adjustment	Description	
Hold Close (Using Motor Power)	Message will read: **HOLD CLOSE Y**	
	Y	Directs the U30 Microprocessor Control to hold the Slide door closed.
	N	Leaves Slide door free at closed position.
Holding Beam	Message will read: **HOLDING BEAM Y**	
	Y	Opens Slide door when the Holding Beam is activated and door is in the closed position.
	N	Keeps Slide door closed when the Holding Beam is activated.
Power On	Message will read: **POWER ON 0** ► Determines how the door will react when the power is turned on after having been turned off or interrupted. A typical example would be if the owner unlocks the door and opens it manually before turning on power. ► The following (4) options are available:	
	Zero	Slide door will slowly reach full closed position and is ready for normal operations.
	One	If Slide door is activated while closing slowly, the door will slowly reach the full open position and then close.
	Two	Slide door will slowly reach the full open position then close.
	Three	Slide door stays in manual-open position until activated, then opens slowly and closes.
Manual Opening	Message will read: **MANUAL OPEN 0** ► After the Slide door system has been completely set up and operating, a choice is offered on how the door will act if manually opened from the fully closed position. ► The following (4) options are available:	
	Zero	Slide door will remain in the same position it was manually opened to.
	One	When the Slide door is opened manually, it will power open.
	Two	After the Slide door has been manually opened, it will slowly close.
	Three	Slide door will power close while is being opened manually.
Reduced opening	Message will read: **RED. OPENING Y N** ► Enables the reduced opening of the door by following the instructions listed below: Select **Y** and press the **Entry** button. Manually slide the door to the desired open width and press the **TEST** button. a. Slide door will close slowly, memorizing the point of reduced width. ► Reduced opening will only work after the Handy Terminal is disconnected and Reduced Opening is selected on the Rocker Switch.	

<table>
<tr><th>Adjustment</th><th colspan="4">Description</th></tr>
<tr><td>Recycle</td><td colspan="4">On the U30 Microprocessor Control:
► Recycle is used to set the direction of motor rotation for hand of the Slide door. On previous U series controls, Recycle was associated with the RECYCLE function.
► Motor Rotation function is set to N, counterclockwise. Select Y for the opposite hand, clockwise rotation.
► RECYCLE function is automatically set to always reopen the door if it strikes an object during the closing cycle.</td></tr>
<tr><td rowspan="5">Recycle Sensitivity</td><td colspan="4">Message will read: RECYCLE SENS. 1
► Adjusts how hard the door will push against an object before it recycles.
► The following (4) options are available:</td></tr>
<tr><td>Zero</td><td colspan="3">DO NOT USE THIS SETTING!</td></tr>
<tr><td>One</td><td colspan="3">Soft</td></tr>
<tr><td>Two</td><td colspan="3">Medium</td></tr>
<tr><td>Three</td><td colspan="3">Hard</td></tr>
<tr><td rowspan="3">After Recycle</td><td colspan="4">Message will read: AFTER RECYCLE Y
► Adjusts for operation after the Slide door reaches the full open position caused by a recycle.</td></tr>
<tr><td>Y</td><td colspan="3">Closes Slide door after the time delay expires.</td></tr>
<tr><td>N</td><td colspan="3">Keeps Slide door in the open position; it will take another activating signal for it to close.</td></tr>
<tr><td rowspan="8">Auxiliary Output 1 then:
Output Timer 1</td><td colspan="4">Message will read: AUX. OUTPUT 0
► Output timer 1 selection is required only when selecting 0 or 2 on the Auxiliary output 1.
► Determines when the internal form C relay connected to OUT A (Normally Open) or OUT B (Normally Closed) and OUT C (Common) terminals is picked.
► This internal relay is used for the operation of an electric lock or to signal another controller, relay or other device.
► If Zero is chosen, the next message will read OUTPUT TIMER 3. This option has(4) sub-options:</td></tr>
<tr><td rowspan="5">Zero</td><td colspan="3">► Message will read: AUX. OUTPUT 0
► Enables operation of the electric lock and sets the time delay between release of the lock and door movement.
► Upon activation, the internal relay closes via the “OUT A” or “OUT B” and “OUT C” wires for the operation of the electric lock. Then, according to the setting of OUTPUT TIMER below, the door will begin opening.
► If Zero is chosen, then the next message will read OUTPUT TIMER 3. This option has four sub-options:</td></tr>
<tr><td>Zero</td><td>1/4 second</td><td rowspan="3">For Magnetic Locks
► The selected Time Delay for Lock Release is also used for Time Delay to set the lock after the Slide door reaches the Fully closed position
► (1) second is recommended for Magnetic Locks.</td></tr>
<tr><td>One</td><td>1/2 second</td></tr>
<tr><td>Two</td><td>1 second</td></tr>
<tr><td>Three</td><td>1 second</td><td>For Electric Strikes
► Will engage or disengage a jammed lock up to 10 times before an error message reads “Error_4”.
► Select Power Reset to cancel the error message.
► The Strike releases for (3) seconds then re-engages.</td></tr>
<tr><td>One</td><td colspan="3">Message will read: AUX. OUTPUT 1
► The air lock option will instruct the relay to close to prevent a second door from opening until the first door is closed, in a passageway situation.</td></tr>
</table>

<table>
<tr><th>Adjustment</th><th colspan="4">Description</th></tr>
<tr><td rowspan="6">Auxiliary Output 1 then:
Output Timer 1
(continued)</td><td rowspan="5">Two</td><td colspan="3">Message will read: AUX. OUTPUT TIMER 2
► The sequential door operation option will instruct the relay to close thereby activating a second Slide door for a set time period. It requires selecting the time delay between the first and second Slide door operations.
► The following (4) sub-options are available:</td></tr>
<tr><td>Zero</td><td>2 seconds</td><td rowspan="4"></td></tr>
<tr><td>One</td><td>4 seconds</td></tr>
<tr><td>Two</td><td>6 seconds</td></tr>
<tr><td>Three</td><td>8 seconds</td></tr>
<tr><td>Three</td><td colspan="3">Message will read: AUX. OUTPUT 3
► A Relay Signal indicating a fully closed position will be provided.
► Used by the Gyro Tech Access Control Panel or other similar security controls.</td></tr>
<tr><td rowspan="8">Extended Time Delay</td><td colspan="4">Message will read: EXT. TIME DELAY 7
► Enables an extended time delay beyond the 0 to7 seconds standard time delay that was set in the Standard Function Adjustments program.
► Time delay is measured after the loss of the activation signal.
► The following (7) options are available:</td></tr>
<tr><td>Zero</td><td colspan="3">Standard 0 to 7 second delay</td></tr>
<tr><td>One</td><td colspan="3">10 seconds longer than standard (10-17 seconds)</td></tr>
<tr><td>Two</td><td colspan="3">20 seconds longer (20-27 seconds)</td></tr>
<tr><td>Three</td><td colspan="3">30 seconds longer (30-37 seconds)</td></tr>
<tr><td>Four</td><td colspan="3">40 seconds longer (40-47 seconds)</td></tr>
<tr><td>Five</td><td colspan="3">50 seconds longer (50-57 seconds)</td></tr>
<tr><td>Six</td><td colspan="3">60 seconds longer (60-67 seconds)</td></tr>
<tr><td>Seven</td><td colspan="3">Slide door will open to the full open point before closing even if the time delay has expired during the opening cycle. The standard time delay of 0 to 7 seconds applies after the door reaches the open position.</td></tr>
</table>

Section 7i: History Data

1. Upon initialization of the Handy Terminal, press the **ENTRY** button until the following message is displayed:

   HISTORY DATA Y N

2. To start the History Data program, press the Shift buttons to select:

   Y

3. Press:

   ENTRY

Table 7-4 History Data

Adjustment	Description
Maintenance Cnt	Indicates number of times a Handy Terminal has been connected to the Terminal Connector (Records up to 255 connections).
Operation Cnt	► Indicates number of full door operations. ► Updated every 100 door cycles. ► Counter displays up to 6,553,500 cycles.
Recycle Cnt	► Indicates number of times the Slide door reversed direction after sensing: • An object was struck. • The amount of friction that surpassed the recycle sensitivity setting. ► Displays up to 255 recycles. ► The Recycle Count can be reset by using the Handy Terminal: Go to Handy Terminal. Press the Shift buttons to select **RECYCLE CNT**. Press the **L** button. a. CLR RECYCLE CNT message will automatically be displayed. Select **Y** and press the **Entry** button. a. The Recycle Count will clear.
Run Away Cnt	In the event the CPU operation becomes erratic, a Watchdog Feature is used to reset the CPU. If such a phenomenon happens, the count will increase.

Section 7j: Programming the Extra Function Adjustments

Extra Functions Adjustments settings are only available with the use of the ***Blue*** Handy Terminal.

1. Upon initialization of the Handy Terminal, press the **ENTRY** button until the following message is displayed:

   EXTRA FUNCTION Y N

2. To start the History Data program, press the Shift buttons to select:

   Y

3. Press:

   ENTRY

Table 7-5 Extra Function Adjustments

Adjustment	Description	
Signal Input for: Orange 61 on Terminal 3	Message will read: **FUNCTION(1) N** ► Determines the normal state of input for Black 61 wire. ► Black 61 wire is normally connected to the interior activation sensor.	
	Y	Normally Open Circuit
	N	Normally Closed Circuit
Signal Input for: Orange/White 62 on Terminal 8	Message will read **FUNCTION(2) N** ► Determines the normal state of the input for the Black/Red 62 wire. ► Black/Red 62 wire is normally connected to the exterior activation sensor.	
	Y	Normally Open Circuit
	N	Normally Closed Circuit
Signal Input for: White 6B on Terminal 4	Message will read **FUNCTION(3) N** ► Determines the normal state of the input for the White 6B wire. ► White 6B wire is normally connected to the holding beams.	
	Y	Normally Open Circuit
	N	Normally Closed Circuit
Signal Input for: Green/White SLS on Terminal 11	Message will read **FUNCTION(4) N** ► Determines the normal state of the input for the Green/White SLS wire. ► Green/White SLS wire is used for miscellaneous devices (example: sidelite sensors, emergency switches, etc.)	
	Y	Normally Open Circuit
	N	Normally Closed Circuit
Convenience Window Option	Message will read **FUNCTION(5) N** ► Sets RECYCLE sensitivity for a Slider Door or a Convenience window.	
	Y	GT-1500 Convenience Window
	N	GT-1175 Slide Door

<table>
<tr><th>Adjustment</th><th colspan="4">Description</th></tr>
<tr><td rowspan="5">Back-check Position</td><td colspan="4">Message will read: FUNCTION(11) 0
► Determines where back-check starts in the opening cycle.
► The following (4) options are available:</td></tr>
<tr><td>Zero</td><td colspan="3">2 inch prior to the full open position.</td></tr>
<tr><td>One</td><td colspan="3">3 inch prior to the full open position.</td></tr>
<tr><td>Two</td><td colspan="3">4 inch prior to the full open position.</td></tr>
<tr><td>Three</td><td colspan="3">5 inch prior to the full open position.</td></tr>
<tr><td rowspan="5">Latch-check Position</td><td colspan="4">Message will read FUNCTION(12) 0
► Determines where latch-check starts in the closing cycle.
► The following (4) options are available:</td></tr>
<tr><td>Zero</td><td colspan="3">2 inch prior to the full open position.</td></tr>
<tr><td>One</td><td colspan="3">3 inch prior to the full open position.</td></tr>
<tr><td>Two</td><td colspan="3">4 inch prior to the full open position.</td></tr>
<tr><td>Three</td><td colspan="3">5 inch prior to the full open position.</td></tr>
<tr><td rowspan="8">Miscellaneous Input</td><td colspan="4">Message will read FUNCTION(13) 1
► Programs Input Terminal # 11 to receive signals from various devices.
► The following Settings (0 - 3) are available:</td></tr>
<tr><td>Settings = 1 or 0</td><td colspan="3">Sidelite Sensor
► Indicates to the U30 Microprocessor Control that a Sidelite Sensor is present. Please refer to the Sidelite Sensor Setting chart (option 1 or 0) that defines the Slide door behavior, shown below:</td></tr>
<tr><td></td><td>Function Setting</td><td>Door Position</td><td>Door reaction when Sidelite Sensor is Activated</td></tr>
<tr><td></td><td rowspan="2">Option set to “0”</td><td>Fully Closed</td><td>Door stays closed</td></tr>
<tr><td></td><td>Opening</td><td>Door continues opening</td></tr>
<tr><td></td><td rowspan="2">Option set to “1”</td><td>Fully Closed</td><td>Door opens slowly</td></tr>
<tr><td></td><td>Opening</td><td>Door opens slowly</td></tr>
<tr><td>Settings = 2
(Used for emergency purposes only)</td><td colspan="3">Emergency Close and Lock
► Instructs the U30 Microprocessor Control to immediately close and lock the Slide door (if lock equipped). In that event:
• The Slide door will close at normal speed provided an activation signal is not present on Wires 61, 62 or 6B.
• If an activation signal is present on Wires 61, 62 or 6B, the Slide door will close at creep speed.
► Once the activation signal is removed from Terminal 11, the Slide door will resume normal operation.
► If the Slide door is already fully closed, it will stay closed.</td></tr>
<tr><td>Settings = 3</td><td colspan="3">All Mode Activation
► Instructs the U30 Microprocessor Control to open the Slide door in any Rocker Switch position except OFF.
► The U30 Microprocessor Control will ignore One Way, Two Way, or Night mode settings on the Rocker Switch and open the Slide door.</td></tr>
</table>

<table>
<tr><th>Adjustment</th><th colspan="3">Description</th></tr>
<tr><td>Output Timer 2</td><td colspan="3">Message will read FUNCTION(14) 0
► Output Timer 2 selection is required only when selecting Option 2 on the “Auxiliary Output 2” adjustment.
► The following (4) options are available:</td></tr>
<tr><td></td><td>Zero</td><td colspan="2">2 seconds</td></tr>
<tr><td></td><td>One</td><td colspan="2">4 seconds</td></tr>
<tr><td></td><td>Two</td><td colspan="2">6 seconds</td></tr>
<tr><td></td><td>Three</td><td colspan="2">8 seconds</td></tr>
<tr><td>Incremental
Open Speed Adjustment</td><td colspan="3">Message will read FUNCTION (21) 0
► Ranges are 0 - 7 (Setting 0 has no effect).
► Allows Open speed to be set in between the Standard Open Speed settings found in Standard Function Adjustments.
Example Given:
After setting up the Slide door, it was found that Open Speed Setting (3) was too slow and open Speed Setting (4) was too fast. It was possible to achieve an open speed setting halfway between 3 and 4 by setting the Incremental open speed FUNCTION (21) to setting 4. Thus allowing the Slide door to open at a speed that was approximately equal to 3.5.</td></tr>
<tr><td>Incremental Close Speed Adjustment</td><td colspan="3">Message will read FUNCTION(22) 0
► Ranges are 0 - 7 (Setting 0 has no effect).
► Allows close speed to be set in between the Standard Close Speed settings found in Standard Function Adjustments.</td></tr>
<tr><td>Auxiliary Output 2</td><td colspan="3">Message will read FUNCTION(23) 3
► Determines when the internal transistor connected to OUT on terminal 15 (BRN/YEL) and 7 on terminal 16 (RED) turns on for the operation of another controller, relay or other device.
► The following (7) options are available:</td></tr>
<tr><td></td><td>Zero</td><td>Signal at Full Open</td><td>Transistor will turn ON at the full open position.</td></tr>
<tr><td></td><td>One</td><td>Air Lock Option</td><td>In a passageway situation, Option (1) instructs the Transistor to turn ON to prevent a second Slide door from opening before the first Slide door reaches the fully closed position.</td></tr>
<tr><td></td><td>Two</td><td>Sequential Door Operation</td><td>Instructs the Transistor to turn ON thereby sequentially activating a second Slide door for a set time period. This requires adjusting “Output Timer 2” to select the time delay between the first and second door operations. Please see "Output Timer 2" on page 7-43.</td></tr>
<tr><td></td><td>Three</td><td>Signal at Full Closed</td><td>Transistor will turn ON to indicate the Slide door reached a fully closed position.</td></tr>
<tr><td></td><td>Four</td><td>Break Away</td><td>The transistor will turn ON if the door is broken out.</td></tr>
<tr><td></td><td>Five</td><td>Break away or Door Open Condition</td><td>Transistor will turn ON if:
► Slide door is broken out
► Slide door is not fully closed</td></tr>
<tr><td></td><td>Six</td><td>Error Detection</td><td>Transistor will turn ON if the U30 Microprocessor Control detects any error except Error 5.</td></tr>
<tr><td></td><td>Seven</td><td>No Output</td><td></td></tr>
</table>

CHAPTER 8: TROUBLESHOOTING

Note: The fuse can be reset and is located within the Power Supply module. Do Not attempt to repair the U-30 Microprocessor Controller or the Power Supply module other than resetting the fuse.

Section 8a: Troubleshooting the Convenience Window

Problem	Solution
Window is recycling on its own	► Obstructions during the closing cycle will cause the window to recycle open. Operation should continue as soon as recycling is done. Check for any obstructions that are preventing the window from closing, such as tight weather stripping, binding rollers or guides, debris in the floor track etc. The U-30 Controller will count every recycle and indicate the count on the Handy Terminal. ► Obstructions during the opening cycle will cause the window to stop. After losing the activating signal and time delay, the window will close. If the activation signal continues, the window remains open in stopped position.
Window does not open	► Set the Rocker Switch to ON. ► Check the wiring. LED indicators (61, 6B, 62) will light once the activation occurs. Try shorting out Terminals 2 (Red) and 3 (Black) to simulate an activation signal. ► Connect the Handy Terminal to the U-30 Control Unit and press "TEST" to simulate an activation signal. • Measure the voltage between terminals 2 (Red) and 10 (Blue). • For normal operation, the Blue wire follows a series circuit through the ON/OFF switch, and then to Red (common). • With the Rocker Switch in the ON position, voltage should equal 0 VDC. If voltage is 12 VDC, the circuit is open. Check Blue wire and determine where the circuit is open. LED indicator (BA) may help.
Trouble detected by the U-30 Control Unit	► If the U-30 Control Unit does not operate at all: • Check all wiring connections and activation devices. LED indicators on the U-30 Control Unit may help. • Ensure that there is 120 VAC to the Power Supply and 20 VAC to the U-30 Control Unit. • Connect the Handy Terminal to the U-30 Control Unit to read error messages, and to clear and repair the problem. • Replace the U-30 Microprocessor Controller or Motor, if clearing the errors fail to get control operational.
Abnormal Window operation	Check or reset the stroke and check the R-hand/L-hand setting. Check the other Handy Terminal settings.
Display does not move from "GYRO TECH HANDY TERMINAL"	► Ensure the Rocker Switch is set to ON. ► Measure the voltage between terminals 2 (Red) and 10 (Blue). • For normal operation, the Blue wire follows a series circuit through the ON/OFF switch and then to Red (common). • With the Rocker Switch in the ON position, the voltage should equal 0 VDC. If voltage is 12 VDC, the circuit is open. Check the Blue wire to determine where the circuit is open. LED indicator (BA) may help. ► Install jumpers in all exposed blue wire connectors.

Problem	Solution
The Handy Terminal buttons or Display does not work.	► The U-30 Control Unit is too cold. Bring the U-30 Control Unit up to room temperature. ► The Handy Terminal or Cable may be defective. Try using both the Handy Terminal and the Cable on another Window to determine which component is defective. ► The Cable or Harness that connects the U-30 Control Unit to the Handy Terminal is defective. Replace the Cable and/or Harness.
Power Failure	► A power failure lasting less than one second will not affect operation. ► A power failure of one second or more will cause the U-30 Control Unit to brake the window fully. ► When the power is turned on, the U-30 Control Unit will operate. Settings to the window operation remain in effect.

Section 8b: Handy Terminal Error Messages

Note: For more details on Error Messages and Programming of the U-30 Microprocessor Controller, please refer to the U-30 Programming Manual P/N 15-9000-30.

Error codes may be generated as the result of a hardware problem. If resetting the software (by turning Off/On the 120 VAC Power) does not resolve the problem, the cause of the hardware malfunction must be determined and corrected.

Error Message	Definition	Behavior	Solution
ROM ERROR	Internal memory error	Window does not work	► Reset the U-30 Control Unit by turning Off/On the 120VAC Power ► Connect the Handy Terminal to the U-30 Control Unit and clear the Error message
EEPROM ERROR	Internal memory error	Window does not work	► Reset the U-30 Control Unit by turning Off/On the 120VAC Power ► Connect the Handy Terminal to the U-30 Control Unit and clear the Error message
ERROR RESET AGAIN	Loss of Communication between the U-30 Control Unit and the Handy Terminal	U-30 Control Unit does not retain new settings from Handy Terminal	► Reset the U-30 Control Unit by turning Off/On the 120VAC Power ► If problem persists the following may be defective: • Handy Terminal Cables • U-30 Control Unit • Handy Terminal ► Tip: • Use the Handy Terminal and its Cable on a different window.
ERROR_5	Recycle was detected more than three times at the same window position; continuously	Window works as normal	► Connect the Handy Terminal to the U-30 Control Unit and clear the Error message

Section 8c: Diagnostic LED's

Symbol	LED Color	Description	
POWER	RED	Indicates that the power is On	
BA	GREEN	Indicates that the power is OFF.	
ERROR	RED	1 Flash	Window is in Recycle mode
ERROR	RED	2 Flashes	12 VDC output is overloaded
ERROR	RED	3 Flashes	Diagnostic error: Connect Handy Terminal to check error details
ERROR	RED	1 Flash and 2 Flashes	Recycle and 12 VDC overload
ERROR	RED	1 Flash and 3 Flashes	Recycle and Diagnostic Error
ERROR	RED	2 Flashes and 3 Flashes	12 VDC Overload and Diagnostic Error
ERROR	RED	1 Flash, 2 Flashes and 3 Flashes	Recycle, 12 VDC overload and diagnostic error