



GT400-500-600-8400-8500 Conversion Unit Swing Doors with Opus Control Installation Manual

P/N C-00174 Rev 5-23-24

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NABCO hours of Operation: Monday to Friday 8:00 a.m.- 4:30 p.m. (Central Time)

*Associated Manuals Part Numbers: Opus Control Wiring and Programming Manual; P/N C-00139
GT Swing Door Owner's Manual; P/N C-00110 (for Decal Installation)
NABCO Price Book P/N 16-9244-30 (for Sensors, Switches, and Accessories)*

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.

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CHAPTER 1: 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 .

Attention: A situation where material could be damaged or the function impaired .

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.

CHAPTER 2: GENERAL SAFETY RECOMMENDATIONS

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

WARNING Read, study and understand the installation and operating instructions contained in, or referenced in this manual before operating . If you do not understand the instruction, ask a qualified technician . Failure to do so may result in bodily injury, or property damage and will nullify all warranties .

DANGER Disconnect all power to the junction box prior to making any electrical connections . Failure to do so may result in serious personal or fatal injury . When uncertain whether power supply is disconnected, always verify using a voltmeter .

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

CAUTION The Ground wire from the OPUS Control 120 VAC Harness, and the Incoming 120 VAC Ground wire must be connected to the Ground screw located within the Swing door Header .

CAUTION If the door 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 .

Notice: This manual, the owner's manual and all other associated manuals must be given to and retained by the purchasing facility or end user .

Notice: Wiring must meet all local, state, federal or other governing agency codes .

Notice: All electrical troubleshooting or service must be performed by qualified electrical technicians and must comply with all applicable governing agency codes .

CHAPTER 3: SCOPE

SECTION 3.1: To the Installer

The purpose of this manual is to familiarize the installer and purchaser with the proper installation and operation of this system. It is essential that this equipment be properly installed and operational before the door is used by the public. It is the installer's responsibility to inspect the operation of the entrance system to be sure it complies with any applicable standards. In the United States, ANSI Standard 156.10 (Used to cover Full Energy doors) and ANSI Standard 156.19 (Used to cover Low Energy doors) and ANSI Standard Z97.1 covers Glass Installation. Other local standards or codes may apply. Use them in addition to the ANSI standard.

The owner should determine the door is operating properly and should immediately call for service if there is any malfunction. All installation changes and adjustments must be made by qualified, NABCO trained technicians.

If after troubleshooting a problem, a satisfactory solution cannot be achieved, please call NABCO Entrances at 1-877-622-2694 between 8 am – 4:30 pm Central time for additional assistance.

SECTION 3.2: Objective

Swing Door Conversion Units are designed to be installed onto the top surface of the Door Frame. The Operator is controlled by the Opus Control (Standard) or by the Analog Control (Optional). Both Controls offer many features to accommodate most installation options. This manual offers step by step instructions.

CAUTION

A pedestrian Door that does not have its glass sections installed at the Factory shall specify that the glazing material employed is to comply with the requirement in UL 325 par .30.5.1:

"The glazing material in both fixed and sliding panels of all sliding doors and in all unframed swinging doors shall comply with the requirements in the Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings, ANSI Z97.1. Glazing material for other pedestrian doors shall also comply with ANSI Z97.1, except that single strength or heavier glass may be used for those portions of doors involving a glazed area of less than 1ft² (0.9 m²) and having no dimension greater than 18 in (457 mm)".

CHAPTER 4: GETTING STARTED

SECTION 4.1: Associated Manuals

For User convenience there are now (2) ways to obtain associated Manuals:

- ▶ All Associated Manuals are packed within Decal Packets that are placed inside Header.
- ▶ For Electronic copies please log onto: www.nabcoentrances.com → myNABCO portal.

SECTION 4.2: Request a User Name/Password to gain access into the "myNABCO" portal

To gain access into the "myNABCO" portal, the User must first have an assigned User Name and Password. To request a User Name and Password, the following must be done:

1. Open the NABCO Website: www.nabcoentrances.com
2. Enter the "myNABCO" portal → Request Access → Fill out the Request Access Form → Click onto Register
 - a. A User Name and Password will be emailed back to the requestor.

SECTION 4.3: Mechanical Configurations

Base Model	Conversion Unit Bottom Load	Conversion Unit Side Load
Full Power	GT 400	GT 8400
	GT 600	N/A
Low Energy	GT 500	GT 8500

SECTION 4.4: Electrical Standards

Note: It is recommended for the Installer to use an Electrical Conduit to house all incoming 120 VAC wires.

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

Electricity	Description	Current Consumption
Power Input	110 VAC - 130 VAC, AC 50-60 Hz	3A (NABCO recommends min. 5A service)
Available Current for accessories	12 VDC	750mA
Available wire size for incoming power	14 AWG	-

TOTAL current draw from the Opus Control must not exceed 0.7A when providing power to:

- Sensors, Modules, Accessories. Auxiliary Equipment

If TOTAL current draw exceeds 0.7A the installer must utilize an auxiliary power supply such as the NABCO P/N V-00022, 24 VDC, 0.5A.

SECTION 4.5: Installation Specifications

Specification	Measurement	
Minimum Frame Face for Mounting	1-3/4 inches (44 mm)	
Minimum Door Thickness	1-3/4 inches (44 mm)	
Minimum Clearance from Top of Door to Ceiling	Bottom Load	Side Load
	6-1/8" (156 mm)	7-18" (181 mm)
Door Width	Specified when ordered	

SECTION 4.6: Base Unit Types

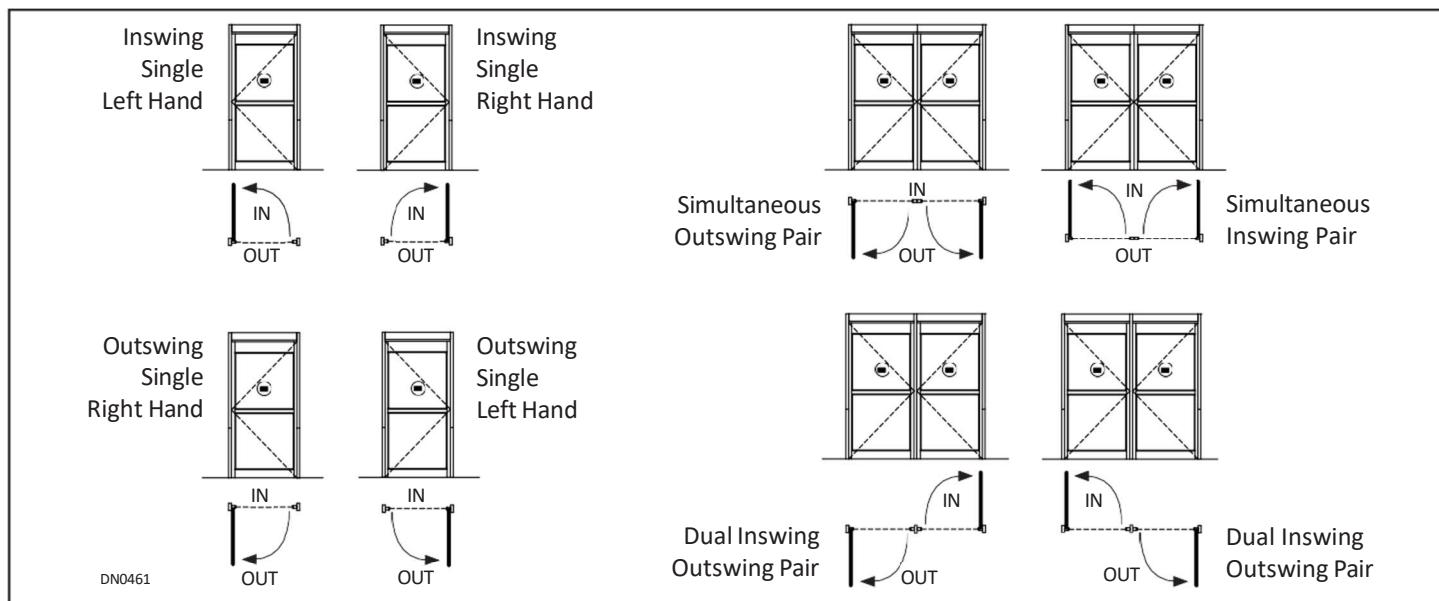
4.4.1: Full Energy Doors

Utilize Sensor(s) to open a Swing door: Sensors activate the Control by detecting motion of pedestrians (or moving objects) coming into range.

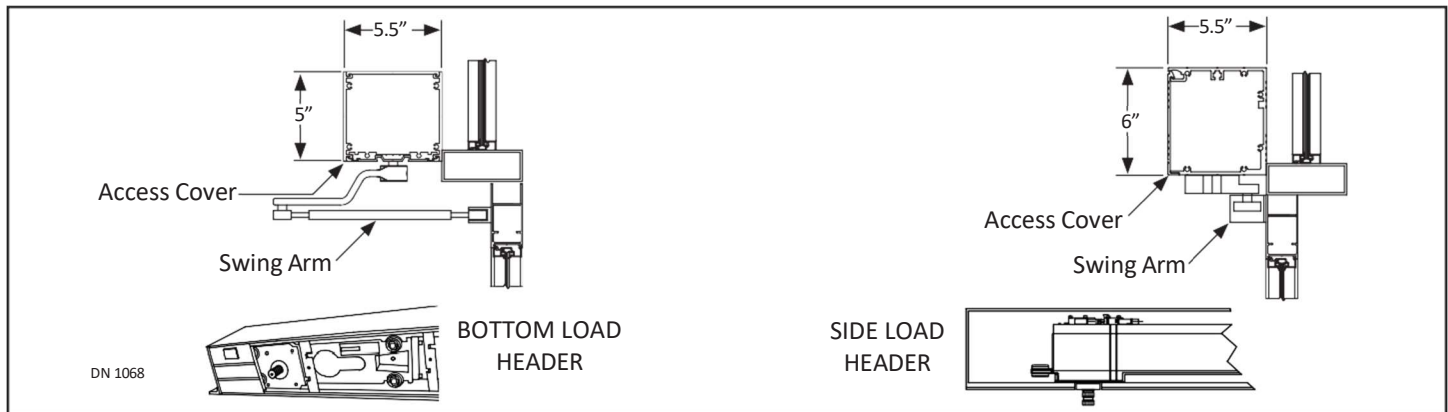
4.4.2: Low Energy Doors

Utilize a Knowing Act to open a Door: A conscious effort that is carried out in many different ways, including (but not limited to): manually opening a Door; pressing various types of Push Plates; turning a Key switch; utilizing a keypad or card reader, etc.

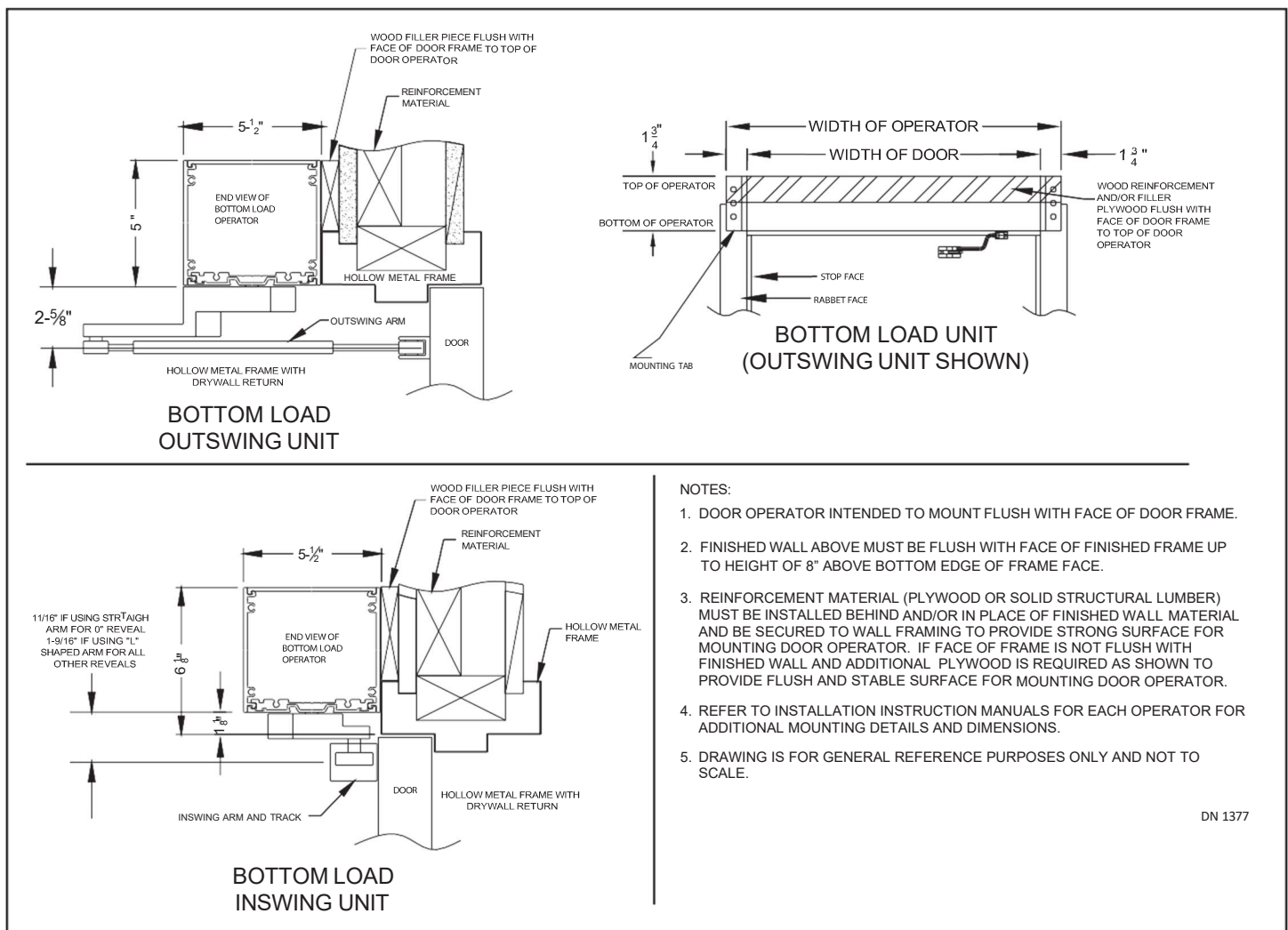
SECTION 4.7: Swing Door Types



SECTION 4.8: Header Types



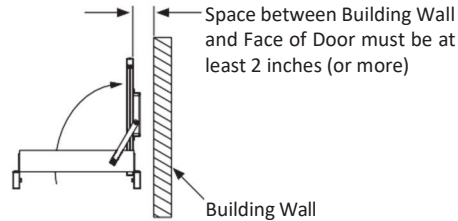
CHAPTER 5: INSTALL THE BOTTOM LOAD HEADER



SECTION 5.1: Measure Distance Between Door and Building Wall

3. Open the Inswing door 90 degrees (Outswing doors do not need to be measured).
4. Measure between the wall and the outside face of the Swing Door. There must be a 2 inch minimum gap.
 - a. If there is less than a 2 inch gap, please call Customer Service at (877) 622-2694.

NOTE:
Measure space for
Inswing Door only

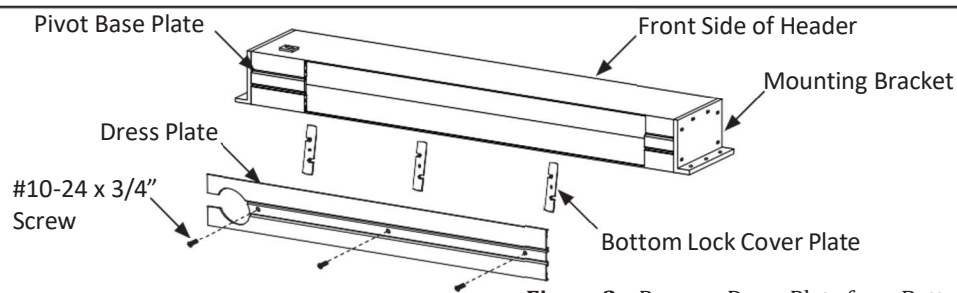


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Figure 1 Inswing Door Gap

SECTION 5.2: Prepare the Header

1. Place Header on flat surface with Bottom facing up. Protect Header from scratches. Remove #10-24 x 3/4 inch screws and Dress Plate, plus boxes and/or parts bags from inside the Header. Set aside.
2. Mark the locations of each Lock Cover Plate to ensure it is reinstalled in the correct position. Remove Lock Cover Plates.



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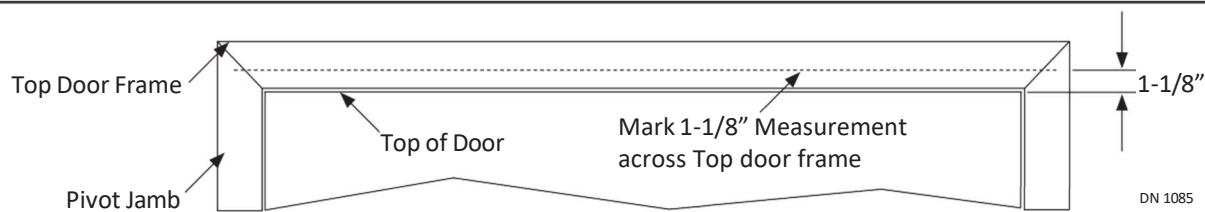
Figure 2 Remove Dress Plate from Bottom Load Header

SECTION 5.3: Install the Bottom Load Header onto Door Frame

Note: The following instructions are for a typical Metal Door and Frame Profile. If the Door Frame is not Metal, ensure the Door Frame being used is of equal strength. It is recommended to use lag bolts.

Note: If the Door Frame is not properly reinforced nor anchored to the building surface, and/or is hollow, reinforce the Door Frame with 1/4-20 blind rivnuts (not provided by NABCO).

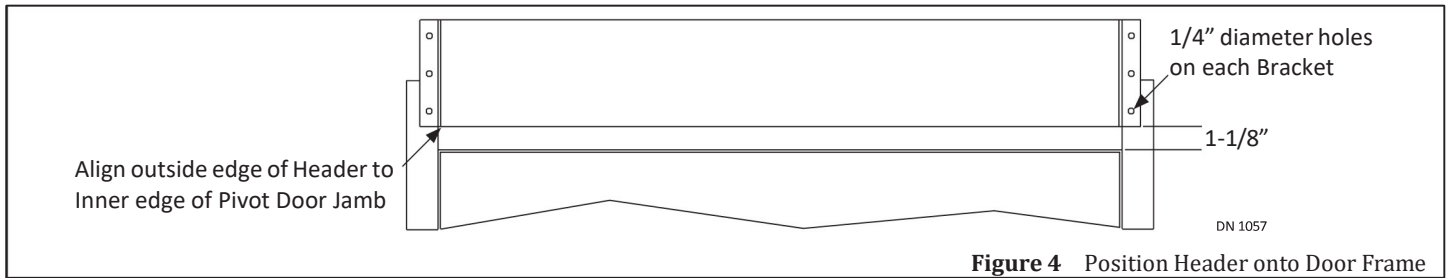
1. Go to the Pivot Side of Swing door. Measure up 1-1/8 inch from the Top of Door to the face of Door Frame.
2. Mark a Horizontal Line on the face of the Top door frame, at both ends.



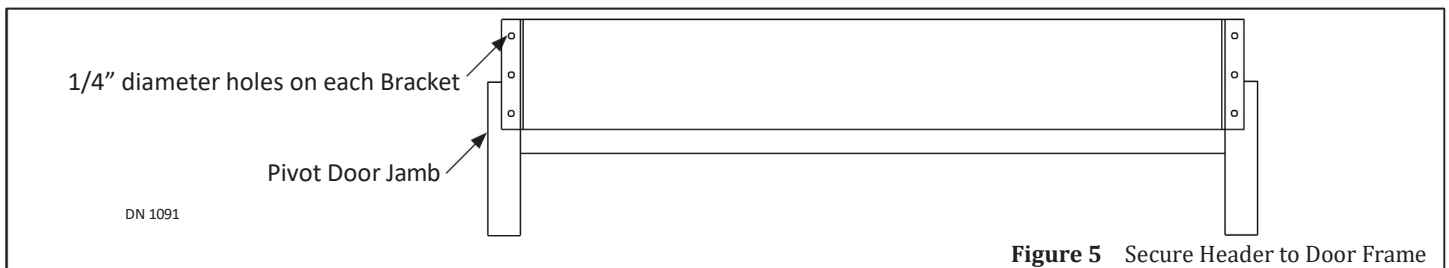
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Figure 3 Mark 1-1/8 inch Measurement on Top Door Frame

3. Lift the Header up against the Top door frame until the bottom edge of Header is butted up against the Horizontal Lines.
4. To ensure proper operation of the Swing Arm:
 - For a Door Jamb that is 1-3/4 inches wide, position the Pivot side of Header so it is flush to the outside edge of the Pivot Door Jamb.
 - For a Door Jamb that is wider than 1-3/4 inches, measure from the inner edge of the Pivot Door Jamb to the center. Mark a vertical line at the 1-3/4 inch measurement. The Pivot side of Header must butt against the 1-3/4 inch mark.
5. Ensure the Header is square and level. Use the Header as a template to mark screw holes onto the face of the door frame.
6. Insert Power Wiring through the 7/8 inch hole located on the side of Header. It is recommended to use a Conduit.
 - a. It is recommended to insert all other Wiring through a separate hole.
7. Butt the bottom edge of Header against the 1-1/8 inch Horizontal Line.

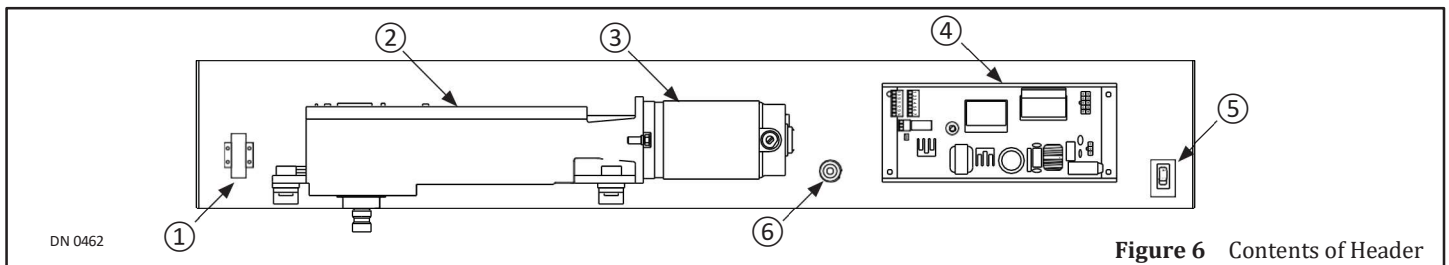
**Figure 4** Position Header onto Door Frame

8. Line up the screw holes. Secure the Header to the Door Frame. It is recommended to use Lag Bolts.
 - a. For additional mounting, secure the Header to the Studs located behind the Shim.

**Figure 5** Secure Header to Door Frame

SECTION 5.4: Install Bottom Load Components

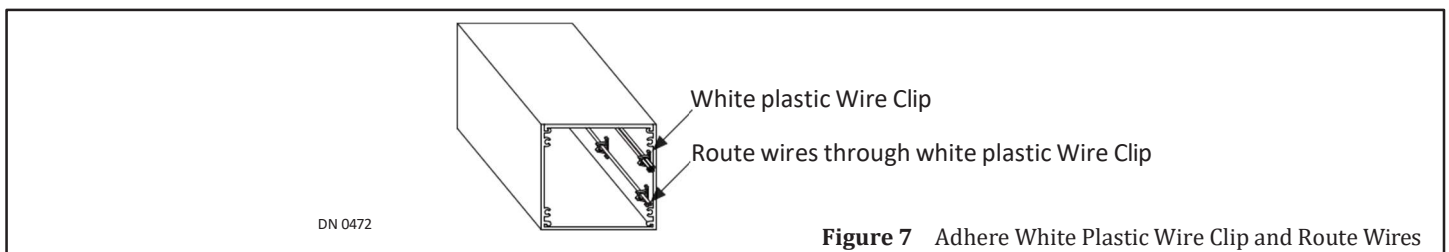
Note: Location of Contents within Header are subject to change according to Swing door specifications.

**Figure 6** Contents of Header

- | | |
|---------------------------|------------------|
| 1. Transformer (Optional) | 4. Control |
| 2. Operator | 5. Rocker Switch |
| 3. Motor | 6. Ground Screw |

5.4.1: Secure Incoming Wires

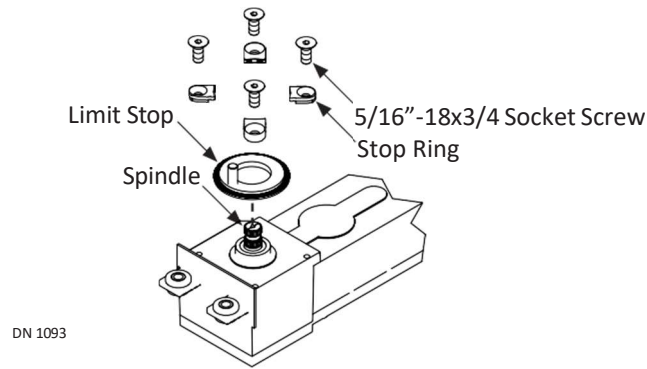
1. Obtain (self sticking) white plastic Wire Clips provided by NABCO.
2. Adhere each Wire Clip to sides of Header. Insert wiring (as deemed necessary).
 - a. 120 VAC Power wires must be routed separate from other wiring, adhere those Wire Clips inside the Header, near the top to prevent pinching.

**Figure 7** Adhere White Plastic Wire Clip and Route Wires

5.4.2: Install the Stop Ring

1. Place the Motor/Operator on a flat surface with the underside facing up.
2. Obtain the Stop Ring Assembly provided by NABCO. Slide the Limit Stop onto the Spindle.

3. Secure (4) Ring Stops onto the Limit Stop with 5/16-18 Socket Head screws. Do not fully tighten at this time.
4. Once the Swing Arm is fully installed and Pre-Load has been tested:
 1. Open the Swing door 90 degrees.
 2. Rotate the Limit Stop Spindle until it hits the Swing Arm.
 3. Tighten down (4) Ring Stops with 5/16-18 Socket Head screws.

**Figure 8** Loosen Stop Ring Brackets

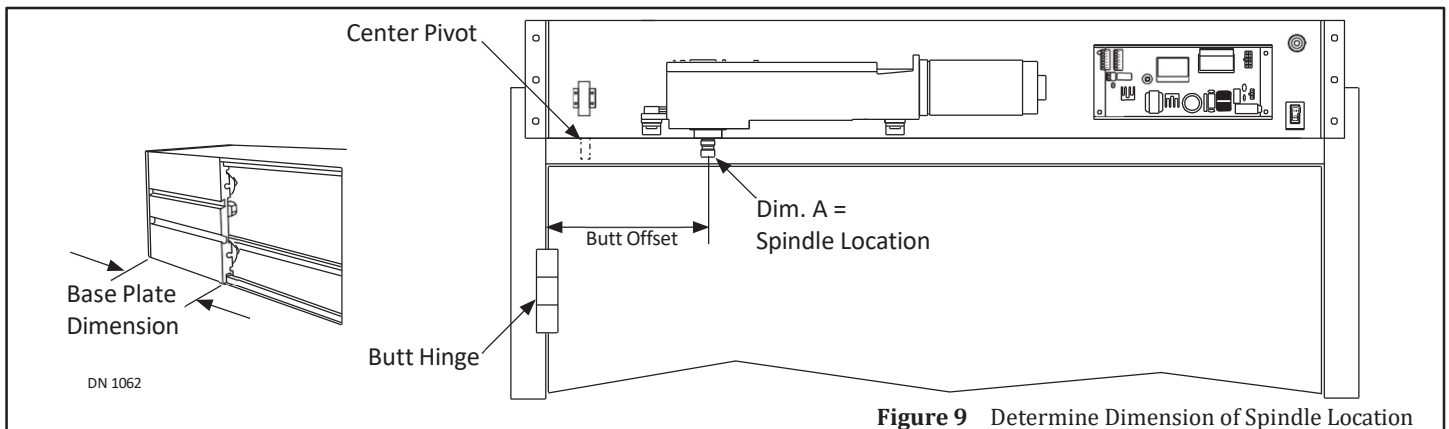
5.4.3: Install the Bottom Load Motor/Operator

1. Go to Table 1 to determine the distance from the center of the Operator Spindle to the Center Pivot or the inside edge of the Pivot Door Jamb.

Table 1 Dimension "A" Spindle Location

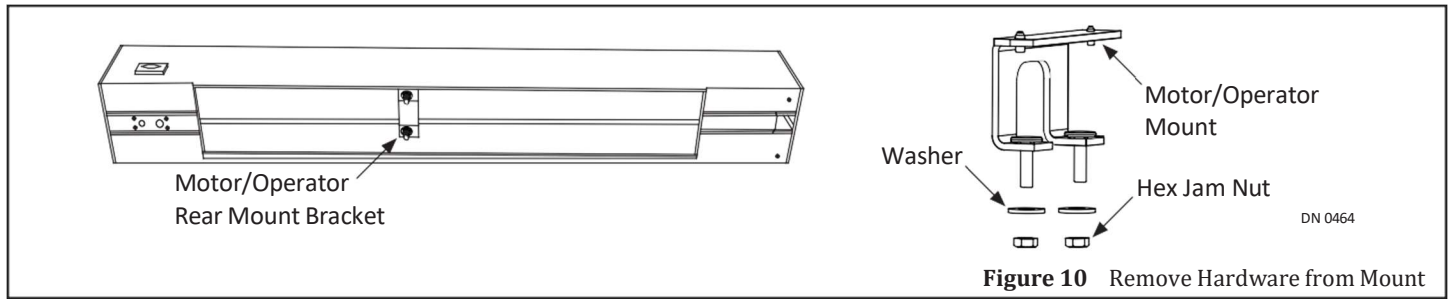
Bottom Load Units		Inswing				Outswing			
		With Fingerguard		No Fingerguard		With Fingerguard		No Fingerguard	
Model	Pivot Type	Spindle Loc.	Base Plate	Spindle Loc.	Base Plate	Spindle Loc.	Base Plate	Spindle Loc.	Base Plate
GT 400	Butt/Offset	N/A	N/A	5"	2-1/2"	N/A	N/A	7-1/4"	4-3/4"
	Center Pivot	6"	3-1/2"	5"	2-1/2"	8-1/4"	5-3/4"	7-1/4"	4-3/4"
GT 500	Butt/Offset	N/A	N/A	5"	2-1/2"	N/A	N/A	5"	2-1/2"
	Center Pivot	6"	3-1/2"	5"	2-1/2"	6"	3-1/2"	5"	2-1/2"
GT 600	Butt/Offset	N/A	N/A	5"	2-1/2"	N/A	N/A	7-1/4"	4-3/4"
	Center Pivot	6"	3-1/2"	5"	2-1/2"	8-1/4"	5-3/4"	7-1/4"	4-3/4"

2. Mark that measurement onto the face of Swing Door.

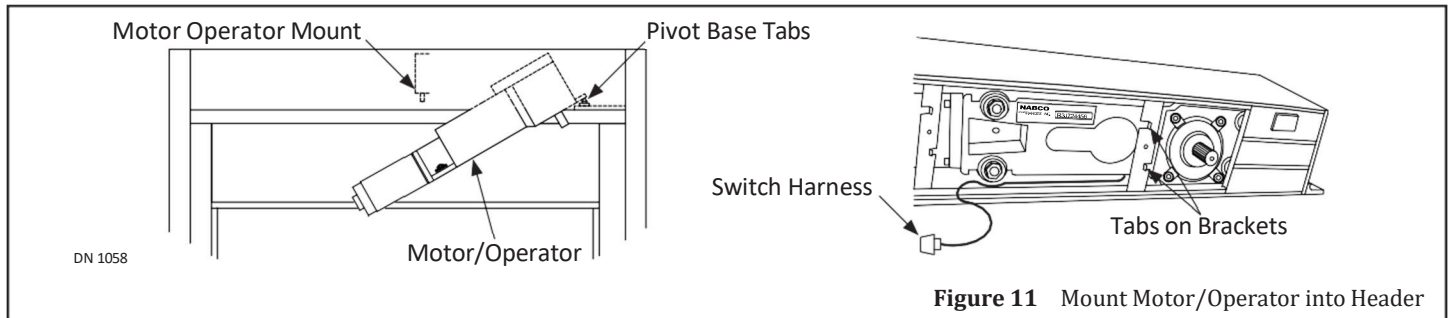
**Figure 9** Determine Dimension of Spindle Location

3. Locate the factory installed Rear Mount Bracket at the top of Header.
4. With a 9/16 inch Deep Well Socket and Ratchet, remove (2) 3/8-16 inch Hex Jam Nuts and (2) 7/16 x 1 inch Washers from (2) Studs extending downward. Set aside.

5. Hold the Front end of Motor/Operator at an upward angle to slide Front Mount onto (2) Pivot Base Tabs located inside the Header.

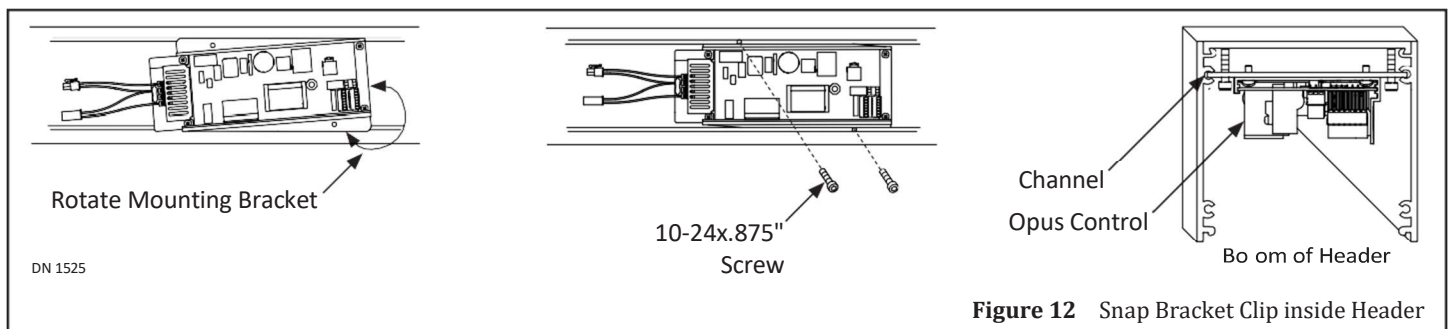


6. Lift the rear of the Motor Operator up onto (2) studs extending downward.
 - a. Ensure the Switch Harness is tucked between the back wall of Header and above the Mounting Bracket.
7. Secure the Motor/Operator with (2) 3/8-16 inch Hex Jam Nuts and (2) 7/16 x 1 inch Washers.
 - a. It is important not to pinch any wiring during the Motor/Operator installation.

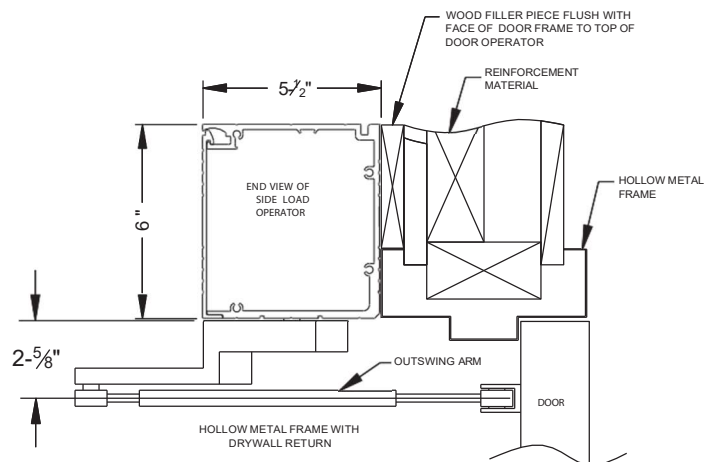


5.4.4: Install the Control

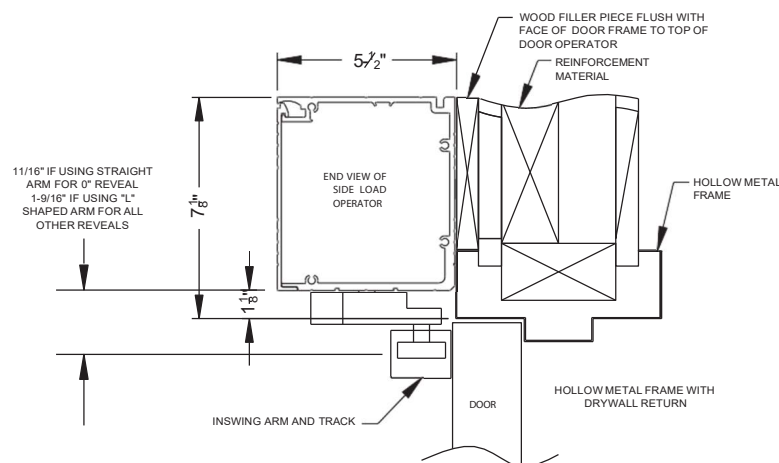
1. Obtain the Opus Control assembly.
2. Locate where the Opus Control needs to be installed within the Header.
3. Insert the Opus Control with the Mounting Bracket at a 90 degree angle (Control will approximately be at a 4 degree angle).
4. Rotate the Opus Control until each side of the Mounting Bracket slides into each Channel located at the top; inside Header.
5. Secure the Mounting Bracket to the Header by tightening (2) 10-24 x.875 inch Socket Head Cap screws, until the tip butts against the inside wall of the Header.



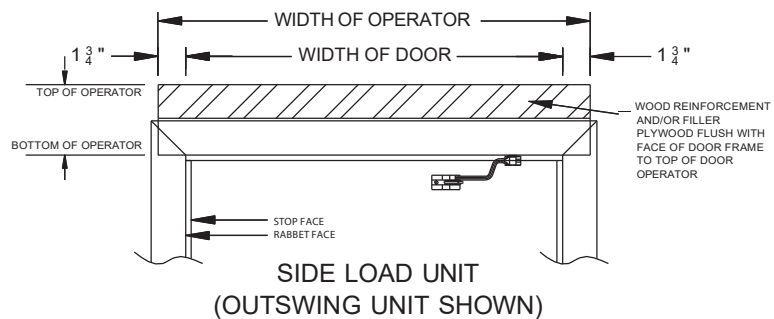
CHAPTER 6: INSTALL THE SIDE LOAD HEADER



**SIDE LOAD
OUTSWING UNIT**



**SIDE LOAD
INSWING UNIT**



NOTES:

1. DOOR OPERATOR INTENDED TO MOUNT FLUSH WITH FACE OF DOOR FRAME.
2. FINISHED WALL ABOVE MUST BE FLUSH WITH FACE OF FINISHED FRAME UP TO HEIGHT OF 8" ABOVE BOTTOM EDGE OF FRAME FACE.
3. REINFORCEMENT MATERIAL (EITHER PLYWOOD OR SOLID STRUCTURAL LUMBER) MUST BE INSTALLED BEHIND AND/OR IN PLACE OF FINISHED WALL MATERIAL AND BE SECURED TO WALL FRAMING TO PROVIDE STRONG SURFACE FOR MOUNTING DOOR OPERATOR. IF FACE OF FRAME IS NOT FLUSH WITH FINISHED WALL, ADDITIONAL PLYWOOD IS REQUIRED AS SHOWN TO PROVIDE FLUSH AND STABLE SURFACE FOR MOUNTING DOOR OPERATOR.
4. REFER TO INSTALLATION INSTRUCTION MANUALS FOR EACH OPERATOR FOR ADDITIONAL MOUNTING DETAILS AND DIMENSIONS.
5. DRAWING IS FOR GENERAL REFERENCE PURPOSES ONLY AND NOT TO SCALE.

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SECTION 6.1: Before Installing the Header

1. Open the Inswing door 90 degrees. Outswing doors do not need to be measured.
2. Measure between the wall and the outside face of the Swing Door.
 - a. There must be a 2 inch minimum gap. If there is less than a 2 inch gap, please call Customer Service at (877) 622-2694.

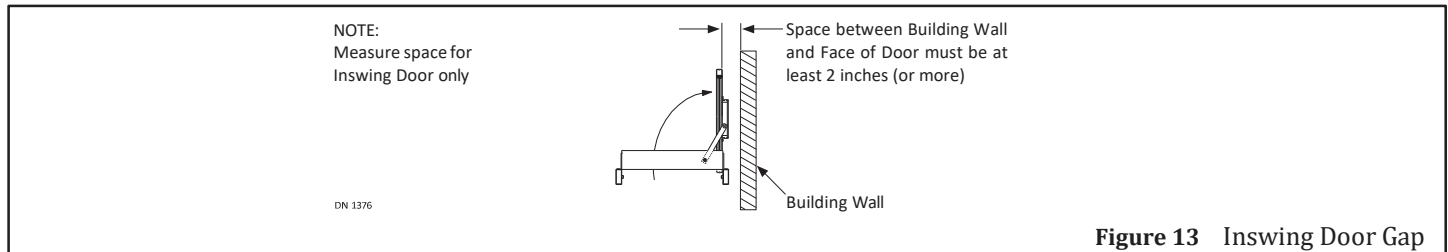


Figure 13 Inswing Door Gap

SECTION 6.2: Secure the Side Load Header to Door Frame

Note: The following instructions are for a typical Metal Door and Frame Profile. If the Door Frame is not Metal, ensure the Door Frame being used is of equal strength. It is recommended to use lag bolts.

1. Go to the Strike side of Header. Drill one 7/8 inch hole through the Header to allow all wiring to be drawn inside.
 - a. The Side Load Header can be ordered with a Knockout hole located at either end of the Header. For details, please call Customer Service at 1-888-679-3319.
2. Go to the back wall inside Header on the Pivot side.
3. Measure 1 inch from the End Cap towards the center of Header. Mark a Horizontal Line.
4. Measure at least 1/2 inch from the bottom of Header towards the top. Mark a Vertical Line across the Horizontal line. This is the center of the first screw hole. Drill 1/4 inch screw hole.
5. Measure at least 1/2 inch from the top of Header towards the bottom. Mark (1) more Horizontal line across the Vertical line directly above the first screw hole. This is the center of the second screw hole. Drill 1/4 inch screw hole.
6. Go to the other End Cap. Repeat steps 3 thru 5.

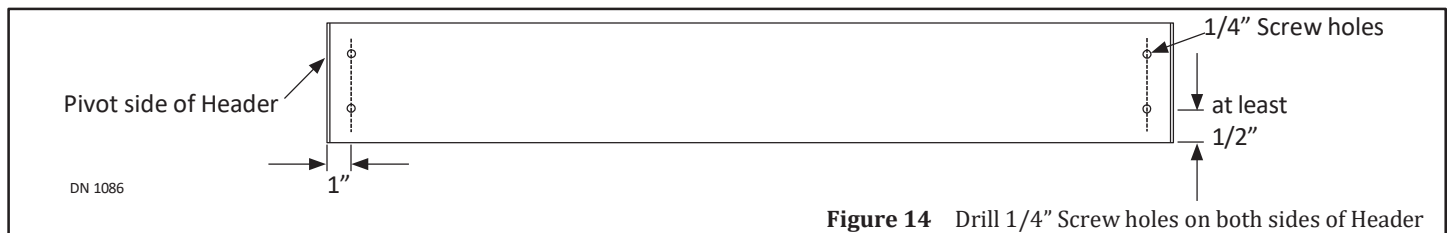


Figure 14 Drill 1/4 inch Screw holes on both sides of Header

Note: If the Door Frame is not properly reinforced nor anchored to the building surface, and/or is hollow, reinforce the Door Frame with 1/4-20 blind rivnuts (not provided by NABCO).

7. Go to the Pivot Side of Swing door. Measure up 1-1/8 inch from the Top of door to the face of Door Frame.
8. Mark a Horizontal Line onto the face of the Top door frame, at both ends.

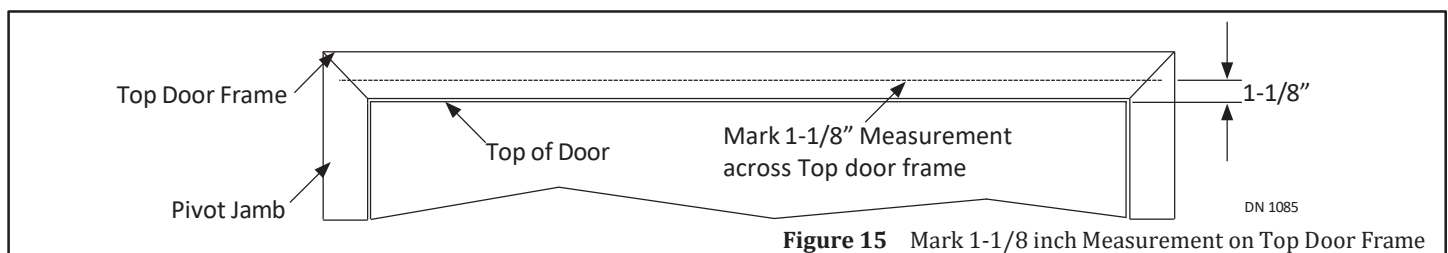


Figure 15 Mark 1-1/8 inch Measurement on Top Door Frame

9. Lift the Header up to butt the bottom edge of Header against the Horizontal Line, at both ends.
10. To ensure proper operation of the Swing Arm:
 - ▶ For a Door Jamb that is 1-3/4 inches wide, flush the Pivot side of Header to the outside edge of the Pivot Door Jamb.
 - ▶ For a Door Jamb that is wider than 1-3/4 inches, measure from the inner edge of the Pivot Door Jamb to the center. Mark a vertical line at the 1-3/4 inch measurement. The Pivot side of Header must butt against the 1-3/4 inch mark.

11. Ensure the Header is square and level. Use the Header as a template to mark screw holes onto the face of the door frame.

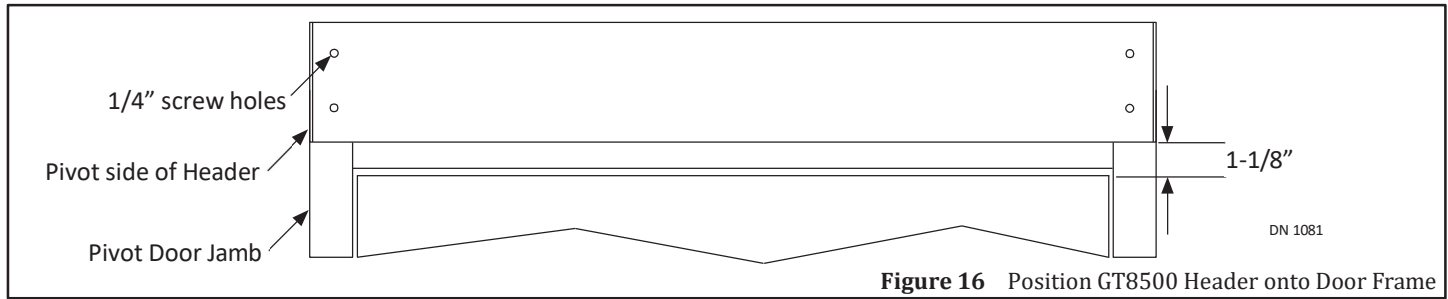


Figure 16 Position GT8500 Header onto Door Frame

12. Insert Power Wiring through the 7/8 inch hole located at the left or right side of Header End Cap.
- It is recommended to use a Conduit.
 - It is recommended to insert all other Wiring through a separate hole.
13. Line up the screw holes. Secure the Header to the Door Frame. It is recommended to use Lag Bolts.

Note: For additional mounting, secure the Header to the Studs located behind the Shim. It is recommended to use Lag Bolts.

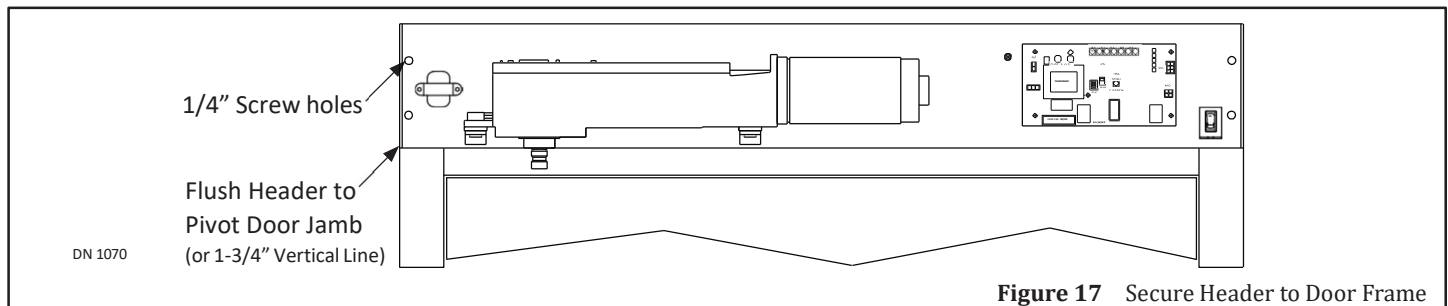


Figure 17 Secure Header to Door Frame

CHAPTER 7: INSTALL THE PANIC LATCH (INSWING DOORS ONLY)

- ▶ During Automatic Operation: The Inswing door opens to the Interior side of the building/room. The Cylinder portion of the Panic Latch is then used as a Door Stop.
- ▶ During Emergency Operation: The Inswing door is manually pushed Out to the exterior side of the building/room (not to exceed 50 pounds of pressure; per ANSI code). The Cylinder portion of the Panic Latch flips to allow emergency egress and immediately shuts the Swing door OFF.

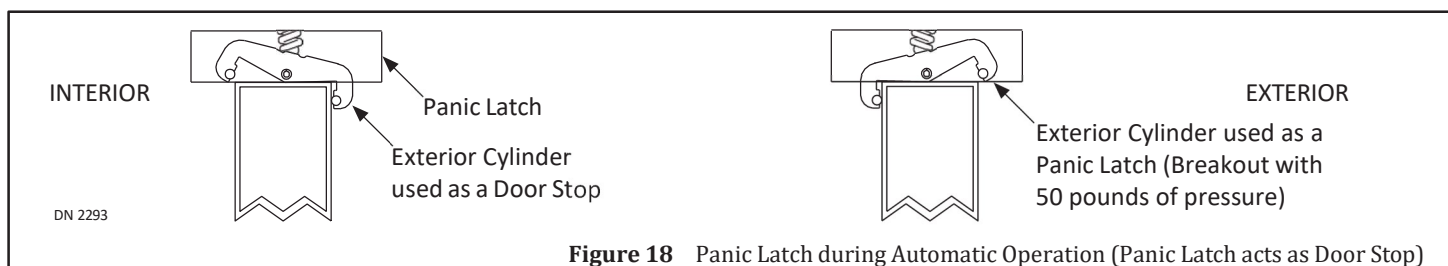
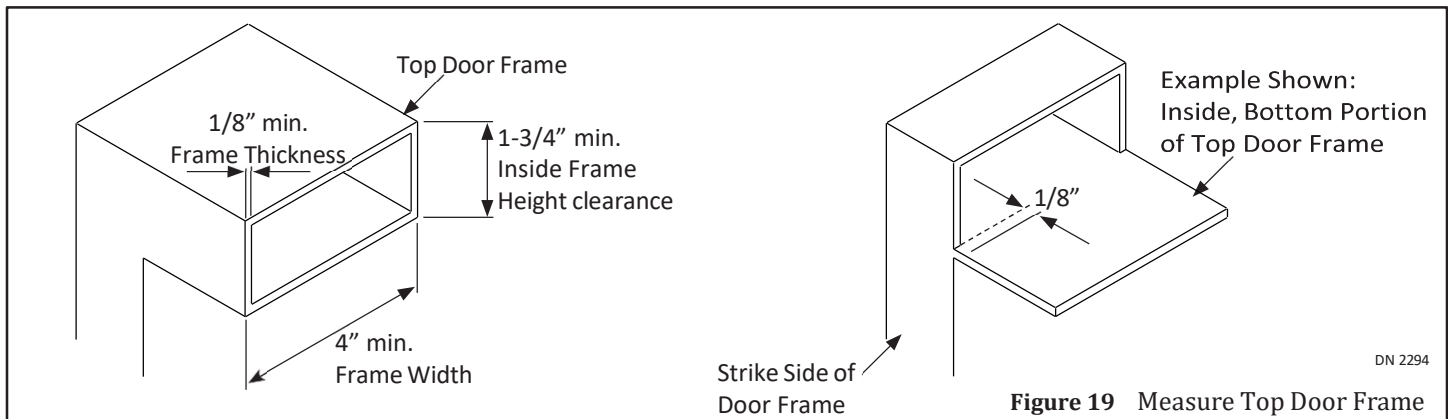


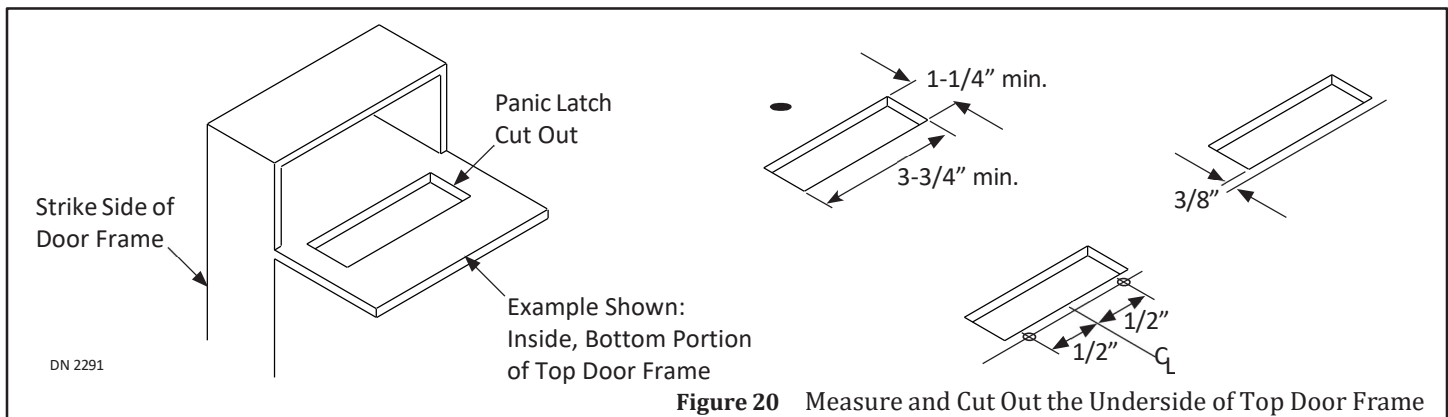
Figure 18 Panic Latch during Automatic Operation (Panic Latch acts as Door Stop)

SECTION 7.1: Create the Cut Out under the Top Door Frame

- Measure the width and height of the Top Door Frame. The Top Door Frame must be at least: (4) inches wide x (1-3/4) inches high. The actual thickness of the Frame must be at least 1/8) inches.
- It is recommended to measure/mark at least (1/8) inch from the Strike Jamb Tube towards the center of the door opening.
- Go to the Exterior side of the Door Frame. Close the Swing Door.
- From the Strike Jamb Tube, trace a line along the Swing Door towards the center. Open the Swing Door.

**Figure 19** Measure Top Door Frame

5. Obtain the Panic Latch. Turn the Panic Latch so the (EXT→) (exit arrow) points to the Exterior side of the Building.
6. Flip the Panic Latch upside down. Butt the long side of the Panic Latch against the (1/8) inch mark and then align the exterior cylinder to the traced line. Please see Figure 18.
7. Hold the Panic Latch in place. Trace around the Panic Latch onto the underside of the Top Door Frame.
8. Measure the traced rectangle to ensure the cut out will be the appropriate size: at least (1-1/4) inch wide x (3-3/4) inch long.

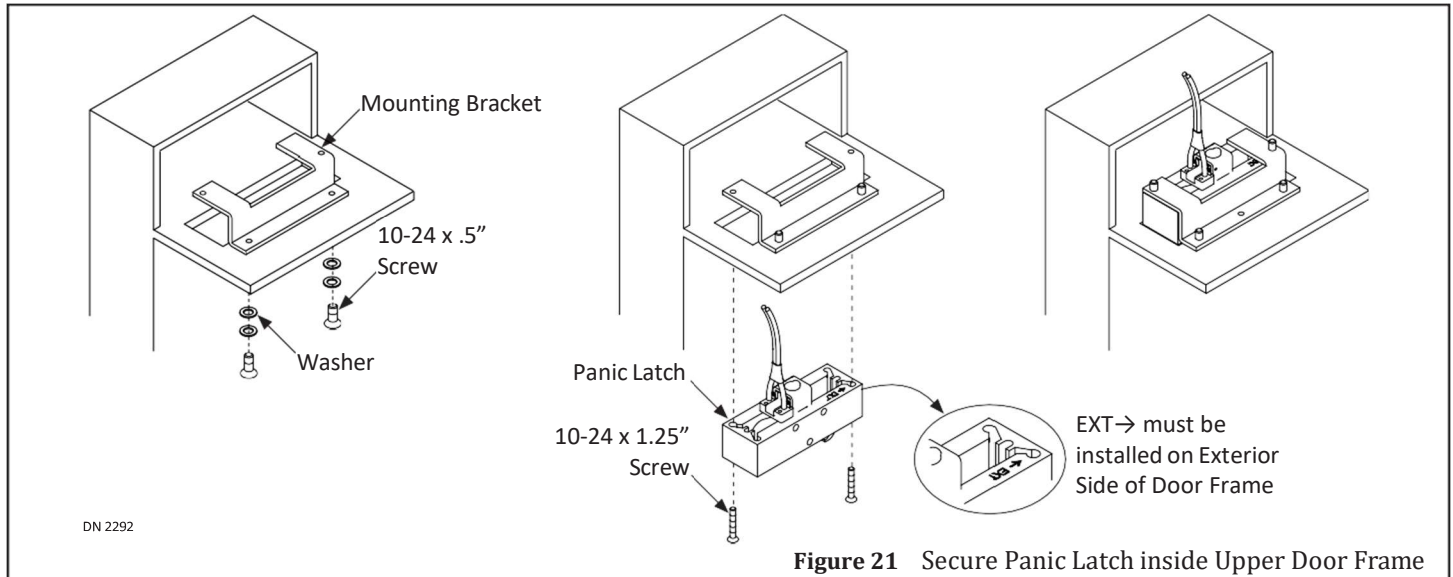
**Figure 20** Measure and Cut Out the Underside of Top Door Frame

9. Cut out the measured rectangle. Ensure Cut Out is big enough for the Bracket to fit.
10. Measure (3/8) inch from the Pivot side of the Cut Out towards the center of the Top Door Frame. Mark that spot with a line that is the full length of the Cut Out.
11. Measure and mark the center of the full length of the Cut Out.
12. Measure (1/2) inch from the center line towards the exterior side of the Top Door Frame. Mark that spot so it crosses over the (3/8) inch line.
13. Measure (1/2) inch from the center line towards the interior side of the Top Door Frame. Mark that spot so it crosses over the (3/8) inch line.

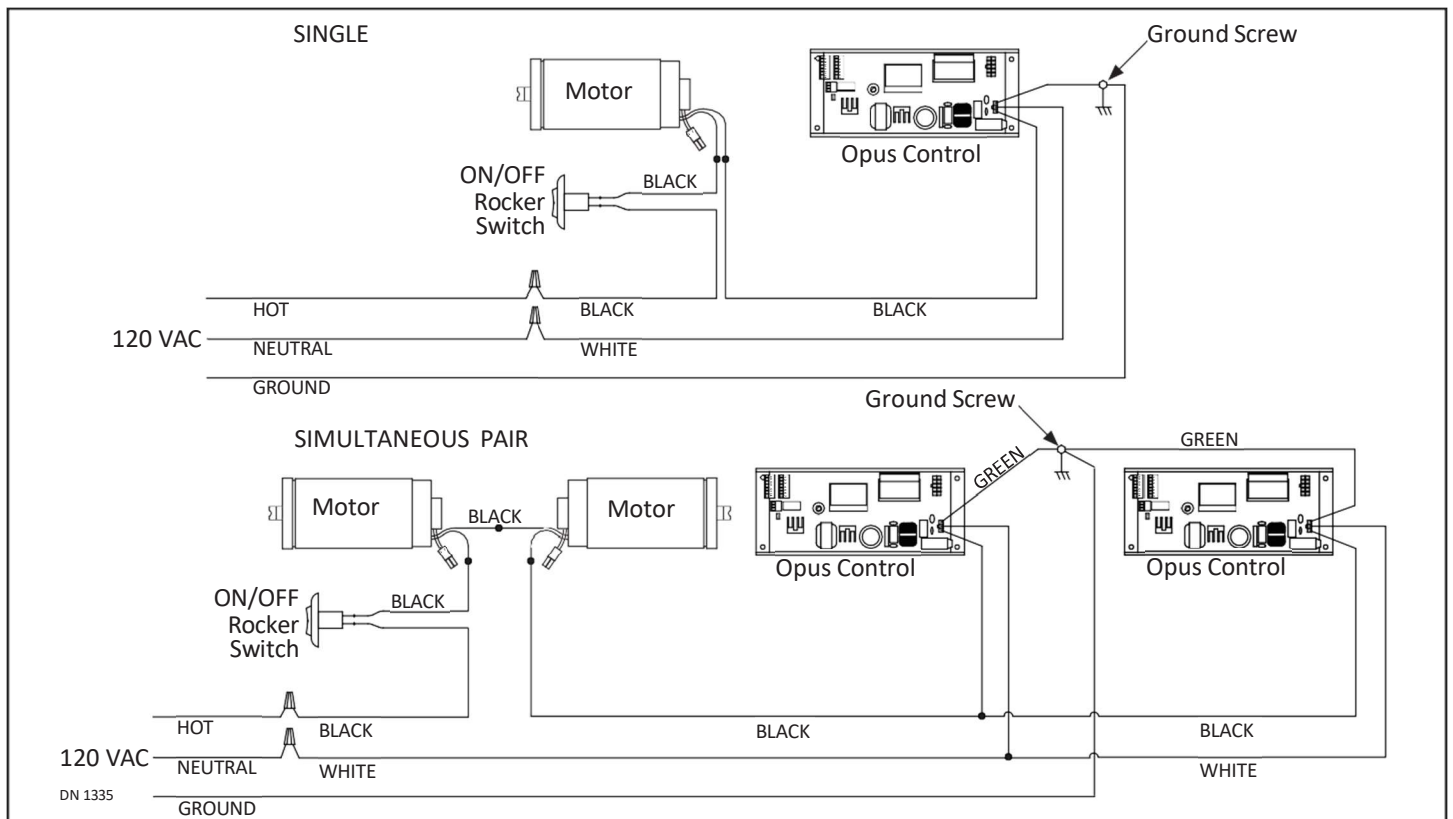
SECTION 7.2: Install the Panic Latch

1. Obtain the Mounting Bracket assembly. Align the (2) screw holes located on the narrow lip of the Mounting Bracket to the center of each marked spot.
 - a. If the screw holes do not align, center and mark again.
2. Drill one (3/8") diameter screw hole at each marked spot.
3. Insert the Mounting Bracket into the Cut Out. Secure the Mounting Bracket with (4) .219 x .375 x .30" Washers and (2) 10-24 x .5" Screws.
4. Obtain and then turn the Panic Latch so the (EXT→) (exit arrow) points to the Exterior side of the Building. Failure to do so, will install the Panic Latch backwards.
5. Insert the Panic Latch into the opening (with the wires and spring coil at the top) until the Panic Latch butts up against the Mounting Bracket. Align the Screw Holes.

6. Secure the Panic Latch to the Mounting Bracket with (2) 10-24 x 1.25" Screws.
7. Do Not wire or test the Panic Latch at this time.
 - a. For wiring instructions please refer to P/N C-00139 Opus Wiring and Programming Manual.



CHAPTER 8: 120 VAC GENERAL WIRING



WARNING

Shut the installation site Circuit Breaker OFF . Failure to do so may result in serious personal or fatal injury . When uncertain whether power supply is disconnected, always verify using a voltmeter .

DANGER

Read and understand the "Opus Control Wiring and Programming Manual" P/N C-00139 before attempting to powerup the Swing Door . Failure to do so may result in damage to the Swing door and/or injury to the installer and will nullify all warranties .

CAUTION

Permanent wiring shall be installed as required by local codes .

CAUTION

Electrical circuit to Nabco operator must not be not shared with other equipment such as lighting, air curtain, ceiling fans, or any device that might cause electrical interference on the circuit.

CAUTION

Keep all incoming 120 VAC wiring separate from low voltage wiring within Header . Do not route 120 VAC wires near the OPUS Control and Motor/Operator .

Attention: Insert all Incoming 120 VAC Power wires into the pre-drilled Electric Service Access Hole located at the left or right side of Header End Cap . It is recommended to house all wires into an Electrical Conduit .

Attention: Any non-factory low voltage wiring added inside the Header must be Type CL2 wire or the equivalent in accordance with Article 725 of the NEC .

Notice: Wiring must meet all local, state, federal or other governing agency codes .

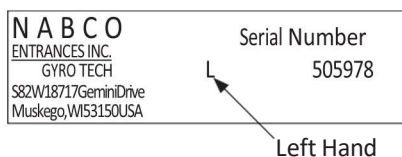
Note: Determine correct supply voltage is 115 VAC $\pm$ 10%.

Note: Ensure the Slide door system is Grounded for safe and consistent operation.

CHAPTER 9: HANDING

SECTION 9.1: How to Determine Handing

Example Shown: Left Hand Operator



DN 1726

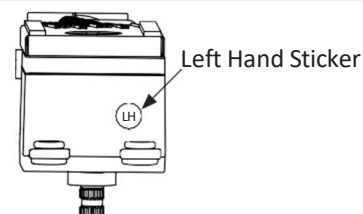
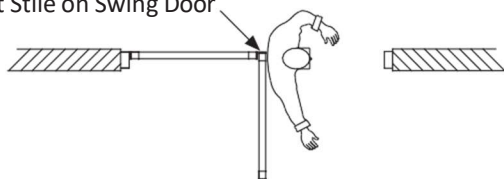


Figure 22 Handing Labeled on Operator

- ▶ The Letter (L) or (R) located in front of the Serial Number indicates the Handing.
- ▶ Red Sticker located on the side of the Operator with the letters (LH) or (RH)

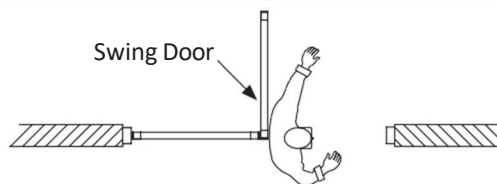
RIGHT HANDING

Pivot Stile on Swing Door



DN 1049

Swing Door



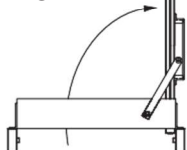
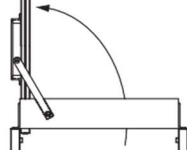
LEFT HANDING

Figure 23 Stand with back against Pivot Side of Swing door

- ▶ Stand underneath the Header and then open the Swing door. Butt your back against the Pivot side of the Swing door. Swing out your (right or left) arm in the direction the Swing door opened. If you swing out your Right Arm the Swing Door is Right Handed. If you swing out your Left arm the Swing Door is Left Handed.

INSWING
LEFT HAND

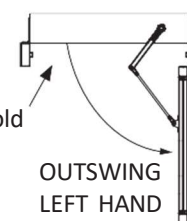
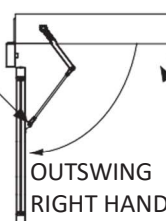
INSWING
RIGHT HAND



Outswing
Arm Mounting Bracket

Inswing Track

EXTERIOR SIDE OF DOOR



Threshold

OUTSWING
RIGHT HAND

OUTSWING
LEFT HAND

DN 1055

Threshold

Figure 24 Open the Fold Door

- ▶ If the Swing Arm does not swing underneath the Header to open, it is an Inswing Unit.
- ▶ If the Swing Arm swings underneath the Threshold to open, it is an Outswing Unit.

SECTION 9.2: Install the Handing Harness

Attention: The Handing Harness is used for Right Handed Units only . Left Handed Units do not use a Handing Harness .

1. Connect the (Break Module Harness) Female Pin to the Male Pin Housing (Handing Harness)
2. Connect the (Break Module Harness) Male Pin Housing to the Female Pin (Handing Harness).

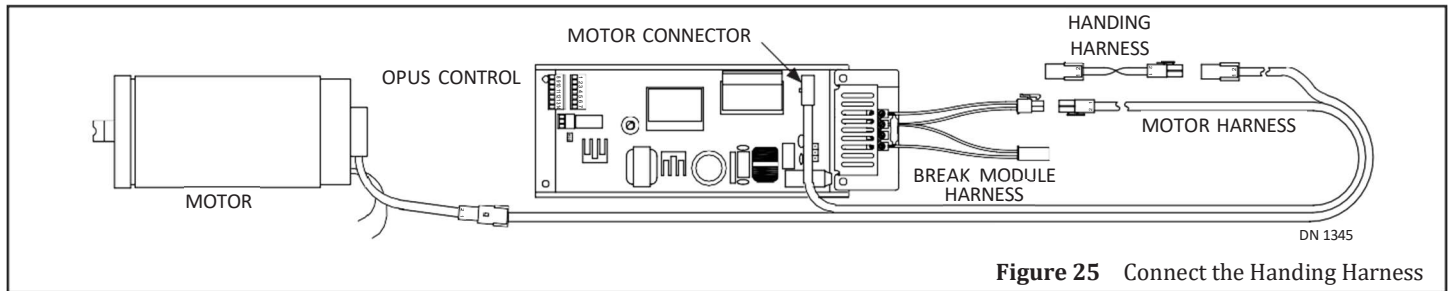


Figure 25 Connect the Handing Harness

CHAPTER 10: INSTALL THE OUTSWING ARM

SECTION 10.1: Prep the Swing Door

1. Measure and mark a Horizontal Line from the (Center Hinge or Butt Offset) to the center of the Face of Door according to Table 2.

Table 2 Dimension "A" Arm Shoe Mounting Locations

Model	Pivot Type	Outswing	
		With Fingerguard	No Fingerguard
GT 400 & 8400	Butt/Offset	N/A	12-7/16"
	Center Pivot	16"	15"
GT 500 & 8500	Butt/Offset	N/A	10-3/16"
	Center Pivot	13-3/4"	12-3/4"
GT 600	Butt/Offset	N/A	12-7/16"
	Center Pivot	16"	15"

2. Measure 1 - 1/2 inches from the Bottom of Door Frame down to the Horizontal Line. Mark a Vertical line across the Horizontal Line. This is the center of the first Sex Bolt hole.
3. Butt the Arm Shoe against the Swing door by aligning the first Sex Bolt hole with the measured Mark.
4. Ensure the Arm Shoe is square and level.
5. Use the Arm Shoe as a Template to mark the second Sex Bolt hole. Set aside.

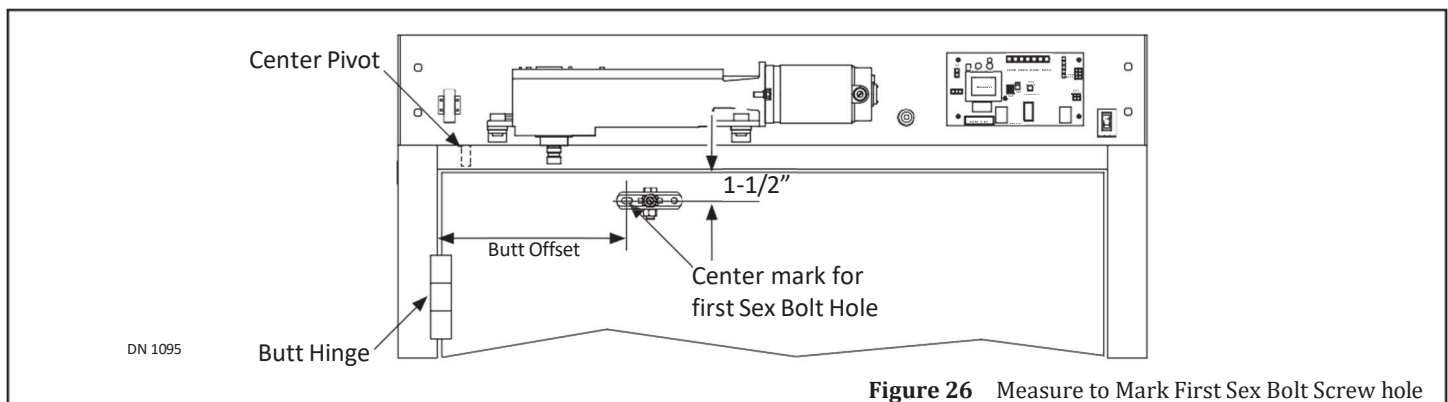


Figure 26 Measure to Mark First Sex Bolt Screw hole

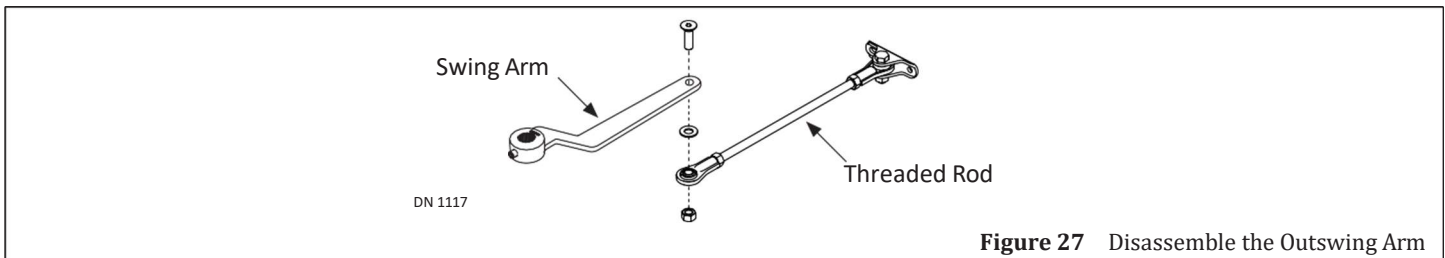
SECTION 10.2: Prep the Outswing Arm Assembly

1. Please refer to Table 3 to obtain the appropriate full-length measurement of the Outswing Arm.

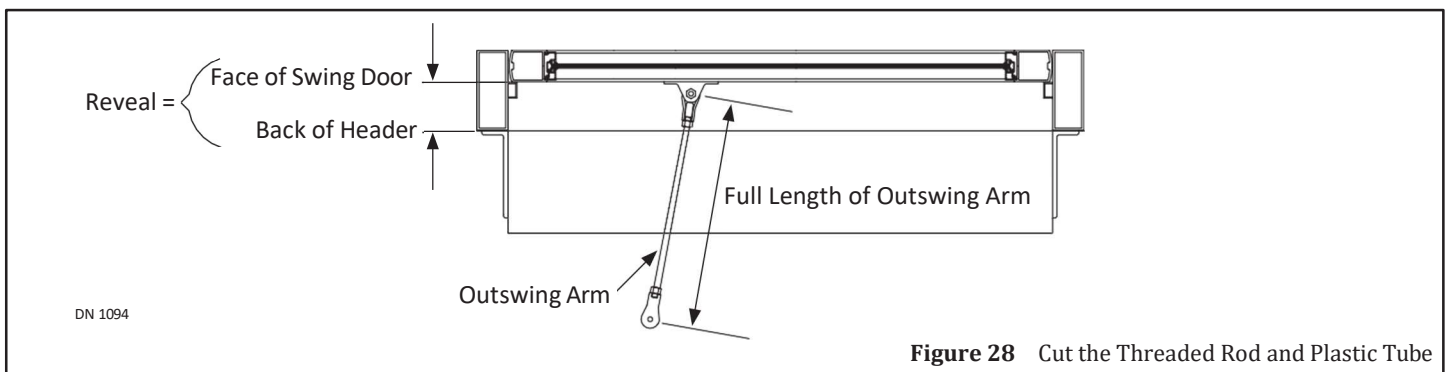
Table 3 Full Length of Outswing Arm

Model	Pivot Type	Reveal					
		1-1/8 inch	2-1/8 inch	3-1/8 inch	4-1/8 inch	5-1/8 inch	6-1/8 inch
GT 400 & 8400	Butt/Offset	11-7/8"	12-7/8"	13-7/8"	14-7/8"	15-7/8"	16-7/8"
	Center Pivot	12-1/2"	13-1/2"	14-1/2"	15-1/2"	16-1/2"	17-1/2"
GT 500 & 8500	Butt/Offset	11-7/8"	12-7/8"	13-7/8"	14-7/8"	15-7/8"	16-7/8"
	Center Pivot	11-7/8"	12-7/8"	13-7/8"	14-7/8"	15-7/8"	16-7/8"
GT 600	Butt/Offset	11-7/8"	12-7/8"	13-7/8"	14-7/8"	15-7/8"	16-7/8"
	Center Pivot	12-1/2"	13-1/2"	14-1/2"	15-1/2"	16-1/2"	17-1/2"

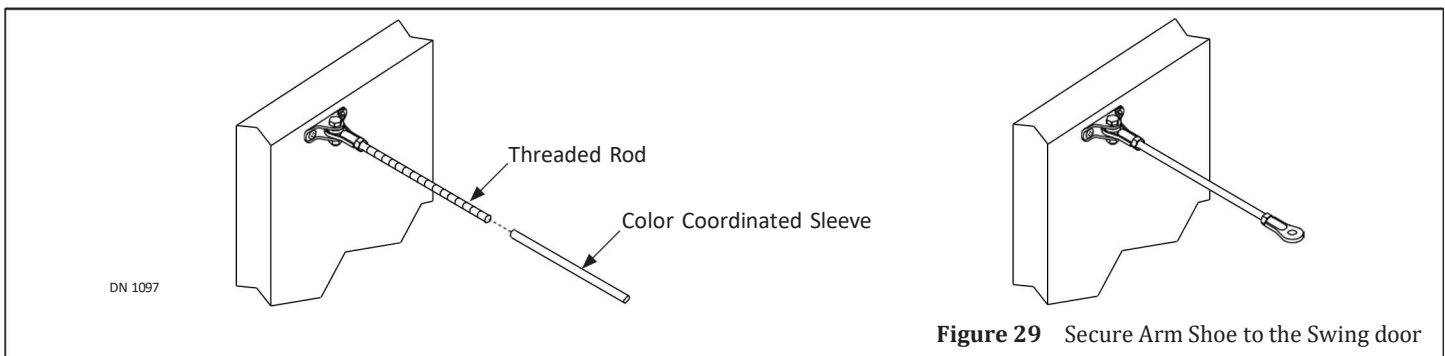
2. Remove the Swing Arm from the Threaded Rod.



3. Measure between the center of each rod end bearing located at each end of the outswing arm.
4. Write that measurement down.



5. Cut the Threaded Rod until the appropriate Full-Length outswing arm measurement is achieved (according to Table 3).
 - a. The Threaded Rod will be approximately 1 inch shorter than the full length measurement.



6. Obtain (1) color coordinated Plastic Tube from the outswing arm assembly.

7. Cut the Plastic Tube to the same length as the exposed Rod (between the Links and Nuts).
8. Slide the Plastic Tube over the Threaded Rod.
9. Replace the Rod Link back onto the Threaded Rod.
10. Tighten the Nut against the Link to prevent the Rod from screwing In or Out.

SECTION 10.3: Secure the Arm Shoe to the Swing Door

1. Butt the Arm Shoe against the Swing door. Align the first Sex Bolt hole to the measured Mark.
2. Ensure the Arm Shoe is square and level. Use the Arm Shoe as a Template to mark the second Sex Bolt hole. Set aside.
3. Drill (2) 3/8 inch bolt holes all the way through the Swing door.
4. Go to the back of the Swing door. Insert each Sex Bolt into the drilled holes.
5. Go to the front of the Swing door. Secure the Arm Shoe to the Swing Door with (2) 1/4-20 x 2-1/4" Screws.

SECTION 10.4: Set Pre-Load

CAUTION

Power must be turned OFF during the Swing Arm installation .

DANGER

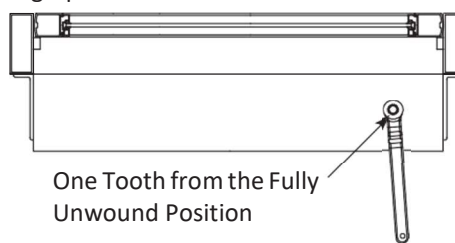
Ensure the Motor/Operator is plugged into the Controller . This needs to be done so the Swing Arm will not swing back as fast, if accidentally let go .

Note: On Low energy Operators (GT500, 8500), minimum preload must be used.

Full Energy 400/600/8400	Low Energy 500/8500
20 degrees to 140 degrees	20 degrees to 140 degrees
Not to exceed 15 to 30 pounds of closing force per ANSI 156.10	Not to exceed 15 pounds of closing force per ANSI 156.19

Notice: Since there are no micro-switches or cams, preloading an Operator is not crucial . Greater preloads may be used to overcome wind, door seals, or stack pressure . But in most cases, minimal preload is all that's needed . Preload helps to ensure that the door is easy to open manually . However, in all cases, final adjustments must conform to the applicable ANSI standards .

Example Shown: Right Hand Operator Outswing Operator



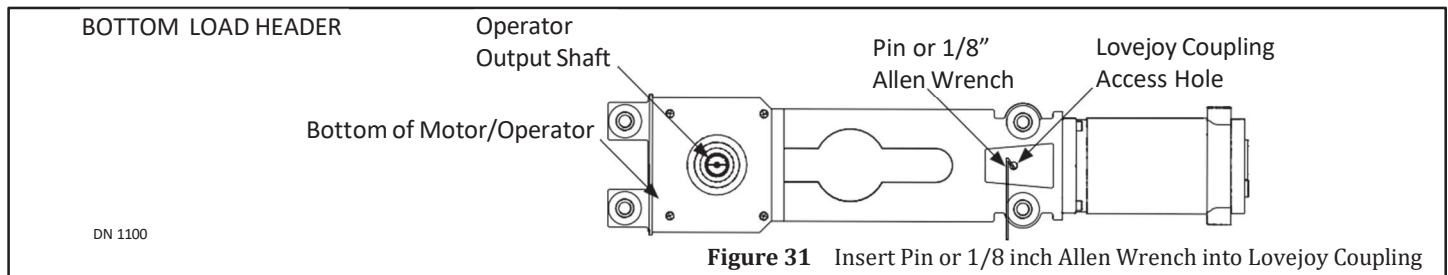
DN 1069

Figure 30 Preload for Right Hand, Outswing Operator

1. Determine Handing by locating the (L) or (R) next to the Serial Number on top of the Operator, or a Red Sticker located on the side of the Operator with the letters (LH) or (RH).
1. Ensure the Spring on the Operator is in the Unwound (Factory Shipped) position.
2. Obtain (1) Pin or 1/8 inch Allen Wrench. Go underneath the Header. Locate the Operator Spindle.
3. Slide the Swing Arm onto the Spindle so it is (1) Tooth from the fully unwound position.
4. With a firm grip, from the Unwound (0 degree) position, rotate the Swing Arm approximately 20 - 140 degrees.
 - a. On GT500/8500 rotate the arm no more than (1) Tooth on the operator output shaft. (1) Tooth equals 20 degrees.

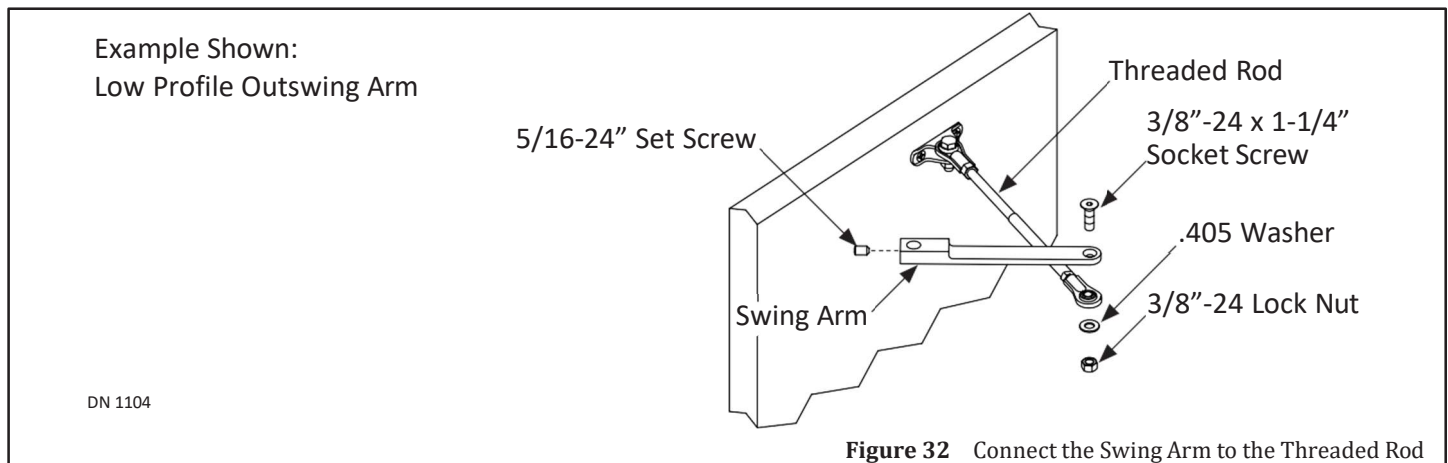
DANGER

Do not allow the Pin or 1/8 inch Allen Wrench to drop out of the Love joy Coupling Access hole at any time during installation . The Swing Arm will spring back to its original location and can result in personal injury or damage .



SECTION 10.5: Secure the Outswing Arm to Door

1. Align the Screw hole at the end of Swing Arm to the Screw hole at the end of Threaded Rod.
 - a. It may be necessary to remove and then slide the Swing Arm back onto the Operator Spindle.
2. Secure the Swing Arm to the Threaded Rod with (1) 3/8"-24 x 1-1/4" Socket Screw, (1) .405 Washer, and (1) 3/8"-24 Lock Nut.



CHAPTER 11: INSTALL THE INSWING ARM

SECTION 11.1: Secure Guide Track

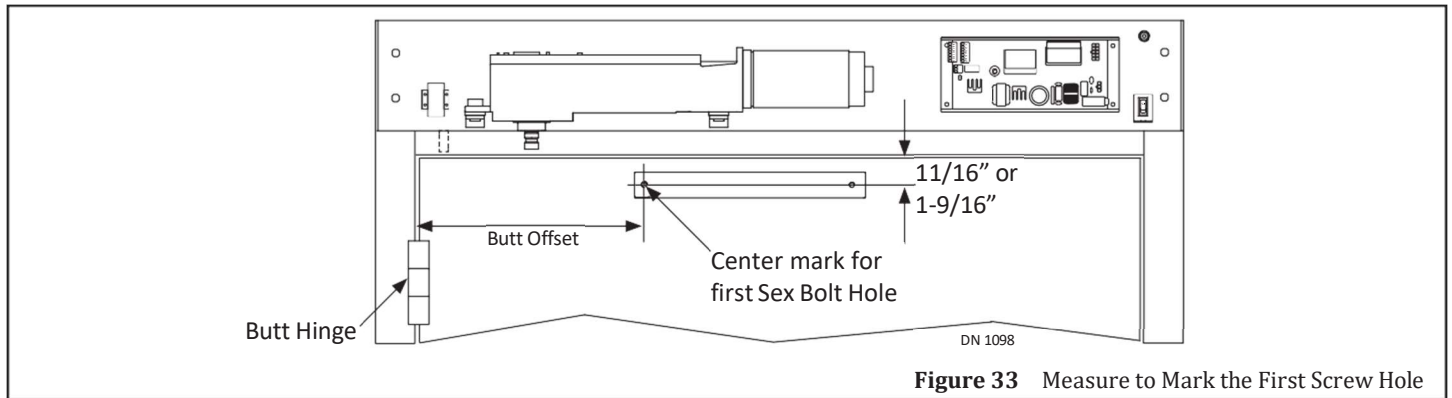
1. Measure and mark a Horizontal Line from Center Hinge or Butt Offset to the center of the Face of Door according to Table 4.

Table 4 Track Mounting Locations

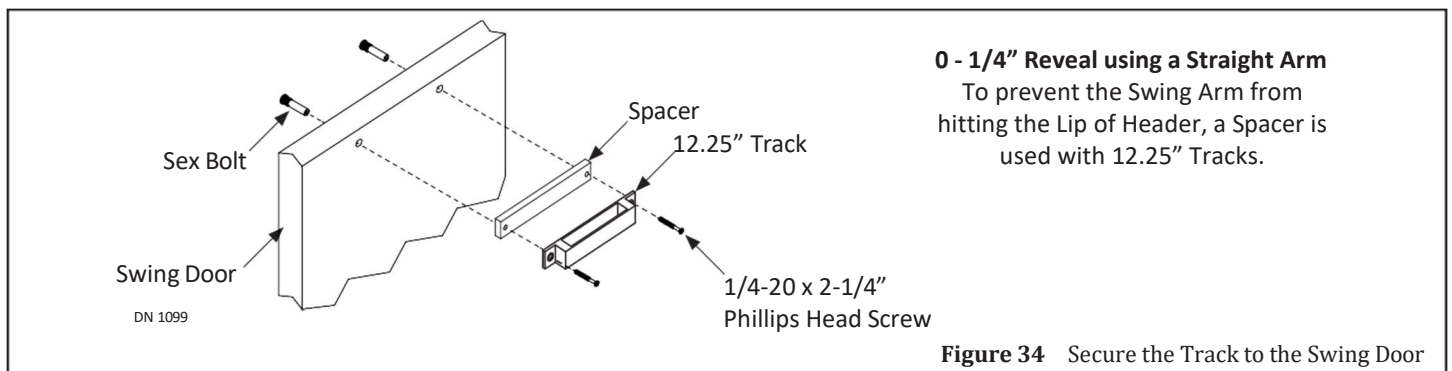
Model	Pivot Type	Inswing Standard Track (ST) 12-1/4"		Inswing Standard Track (PT) 21"	
		With Fingerguard	No Fingerguard	With Fingerguard	No Fingerguard
GT 400 & 8400	Butt/Offset	N/A	8-1/4"	N/A	N/A
	Center Pivot	13"	12"	3-3/4"	2-3/4"
GT 500 & 8500	Butt/Offset	N/A	8-1/4"	N/A	N/A
	Center Pivot	13-3/4"	12"	3-3/4"	2-3/4"
GT 600	Butt/Offset	N/A	8-1/4"	N/A	N/A
	Center Pivot	13"	12"	3-3/4"	2-3/4"

11.1.1: Reveal Greater than Zero

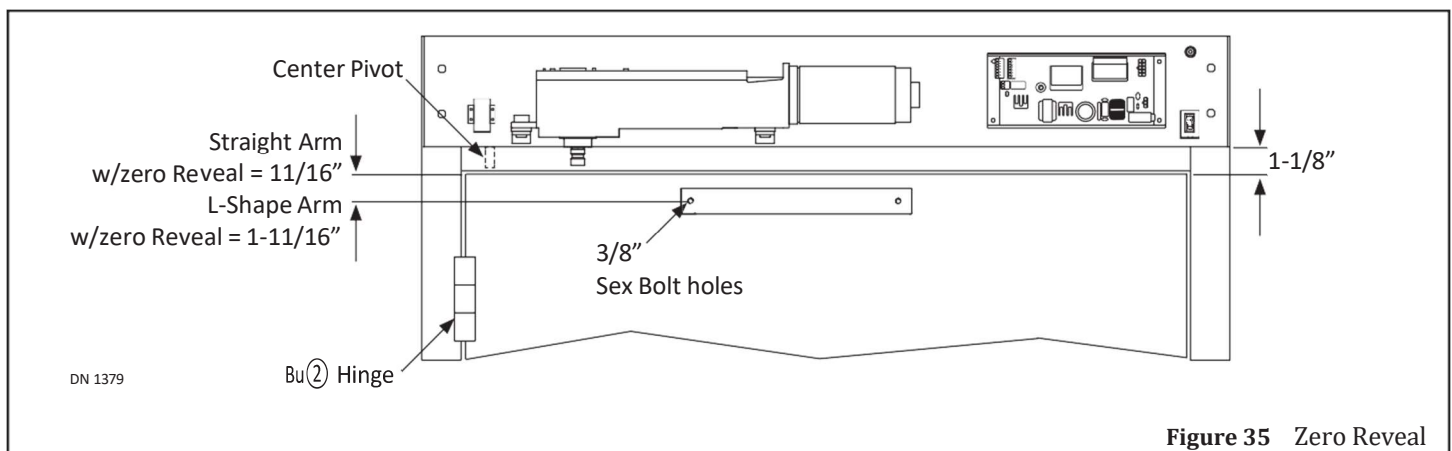
1. Measure:
 - ▶ Straight Arm: 11/16 inch from the Bottom of Door Frame down to the Horizontal Line. Mark a vertical line across the Horizontal Line. This is the center of the first Sex Bolt hole.
 - ▶ L-Shape Arm: 1-9/16 inch from the Bottom of Door Frame down to the Horizontal Line.
 - ▶ For dimensions not shown (L-Shape Arm): Reveal + 8-7/8 inch = New dimension



2. Butt the Guide Track against the Swing door by aligning the first Sex Bolt hole with the measured Mark.
3. Ensure the Guide Track is square and level. Use the Track as a Template to mark the second Sex Bolt hole. Set aside.
4. Drill (2) 3/8 inch bolt holes all the way through the Swing door.
5. Go to the back of the Swing door. Insert each Sex Bolt into the drilled holes.
6. Go to the front of the Swing door. Butt the Track against the Swing door by aligning the Sex Bolt holes.
 - a. Install (1) Spacer behind the Track for Swing doors with "0" Reveal.
7. Secure the Guide Track to the Swing Door with (2) 1/4-20 x 2-1/4" Screw.



11.1.2: Zero Reveal



Note: For zero Reveal applications the Straight Arm can be used to eliminate the Arm protruding into the room.

- ▶ Straight Arm: Measure 11/16 inch from the Bottom of Door Frame down to the Horizontal Line.
- ▶ L-Shape Arm: Measure 1-11/16 inch from the Bottom of Door Frame down to the Horizontal Line.

SECTION 11.2: Secure the Inswing Arm to Door

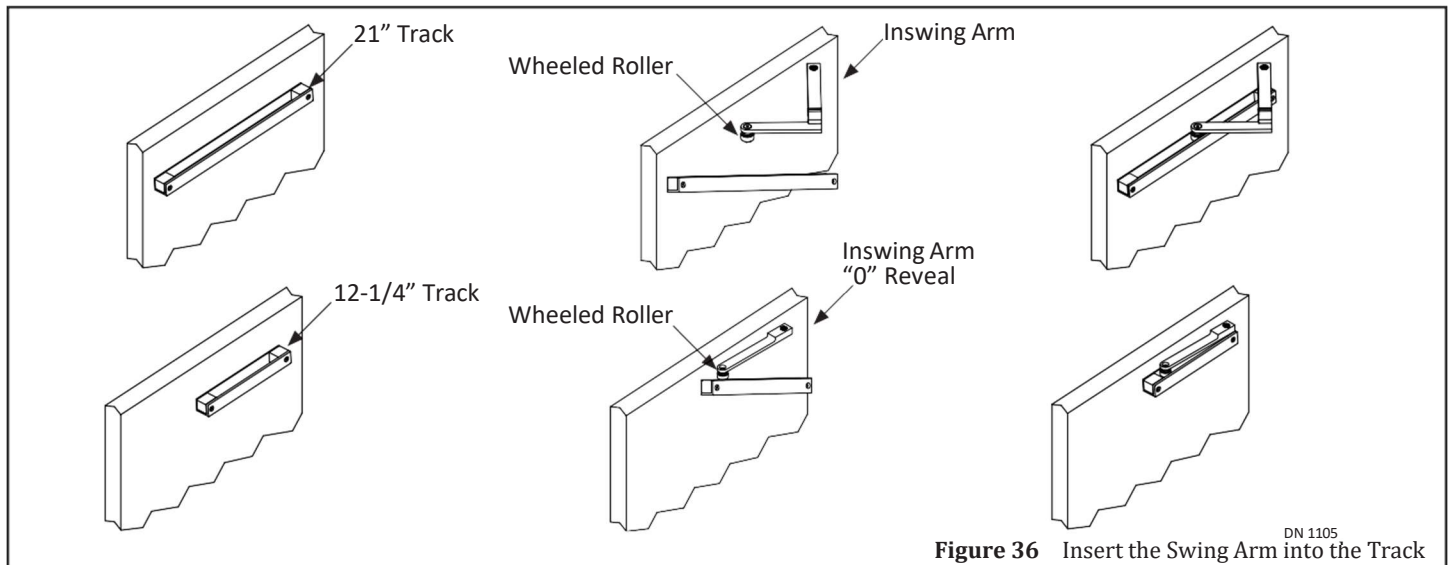


Figure 36 Insert the Swing Arm into the Track

1. Remove the first 1/4-20 x 2-1/4" Screw (closest to the Pivot Door Jamb) that is used to secure the Track to the Swing door, so that side of the Track will hang down.
2. Close the Swing door to allow the Wheeled Roller (located at the end of the Swing Arm) to butt against the Swing door.
3. Raise the Track until the screw hole is aligned with the screw hole on the Swing door.
 - a. The Wheeled Roller will insert itself into the Track.
4. Secure the Track to the Swing door with (1) 1/4-20 x 2-1/4" Screw.
5. Secure the Swing Arm to the Operator Spindle with (1) Set Screw. Tighten but do not overtighten.
 - a. Ensure the Set Screw is seated correctly within the groove on the Operator Spindle.
6. Remove the (Pin or 1/8 inch) Allen Wrench.

CHAPTER 12: INSTALL THE ARM STOP (SIDE LOAD UNITS)

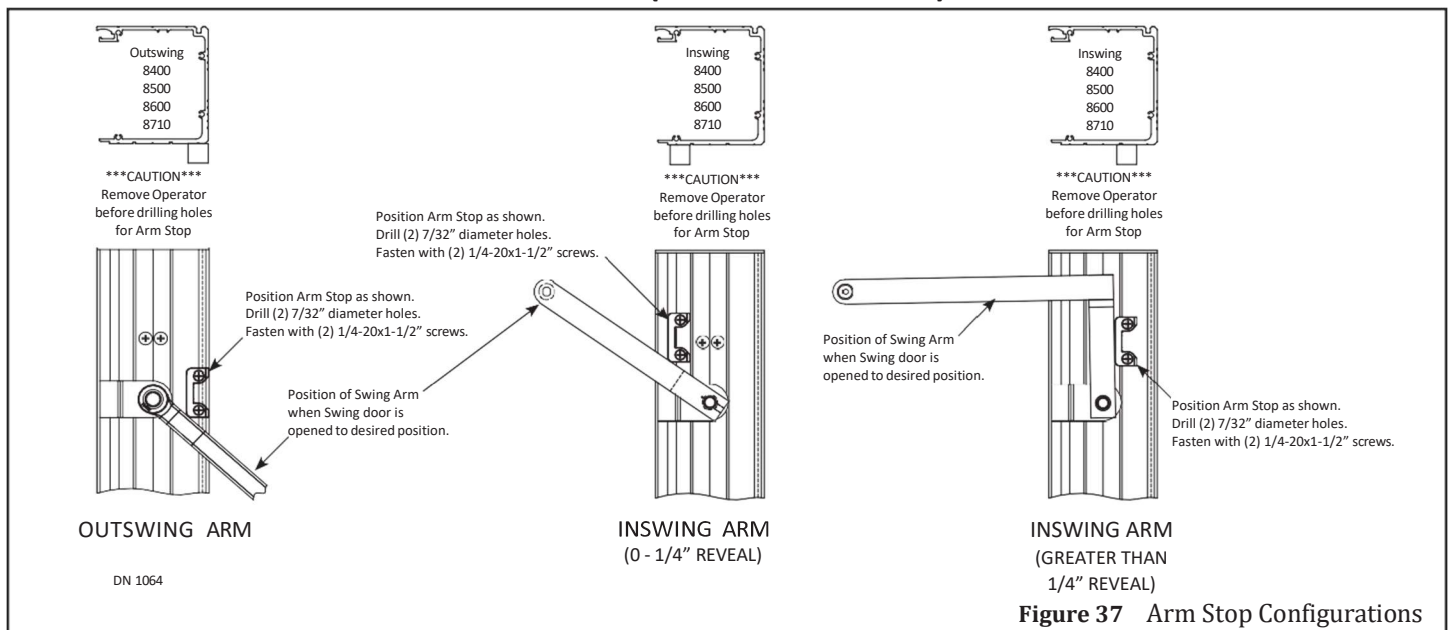
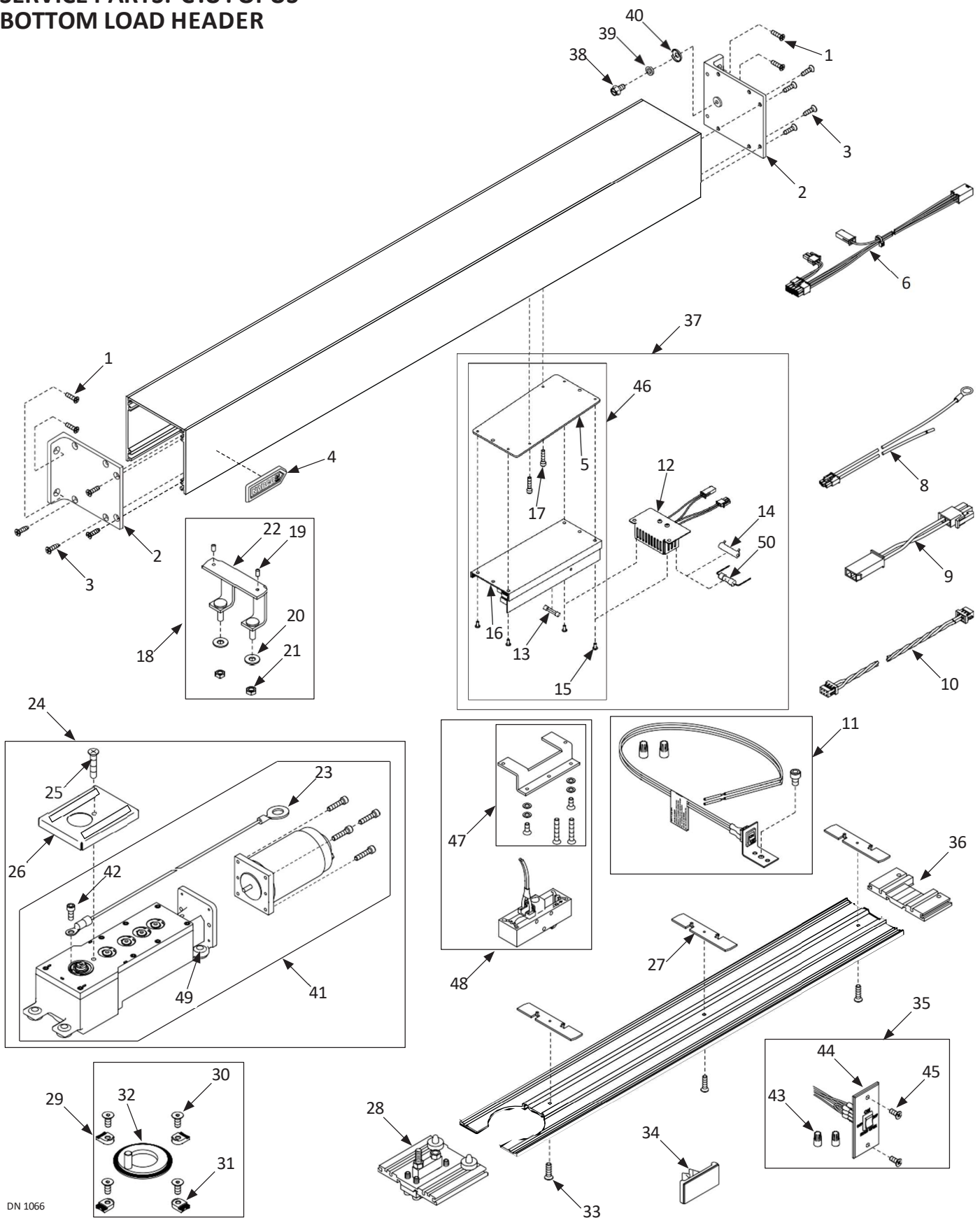


Figure 37 Arm Stop Configurations

CAUTION**Do Not drill screw holes for the Arm Stop into the Motor/Operator!!!**

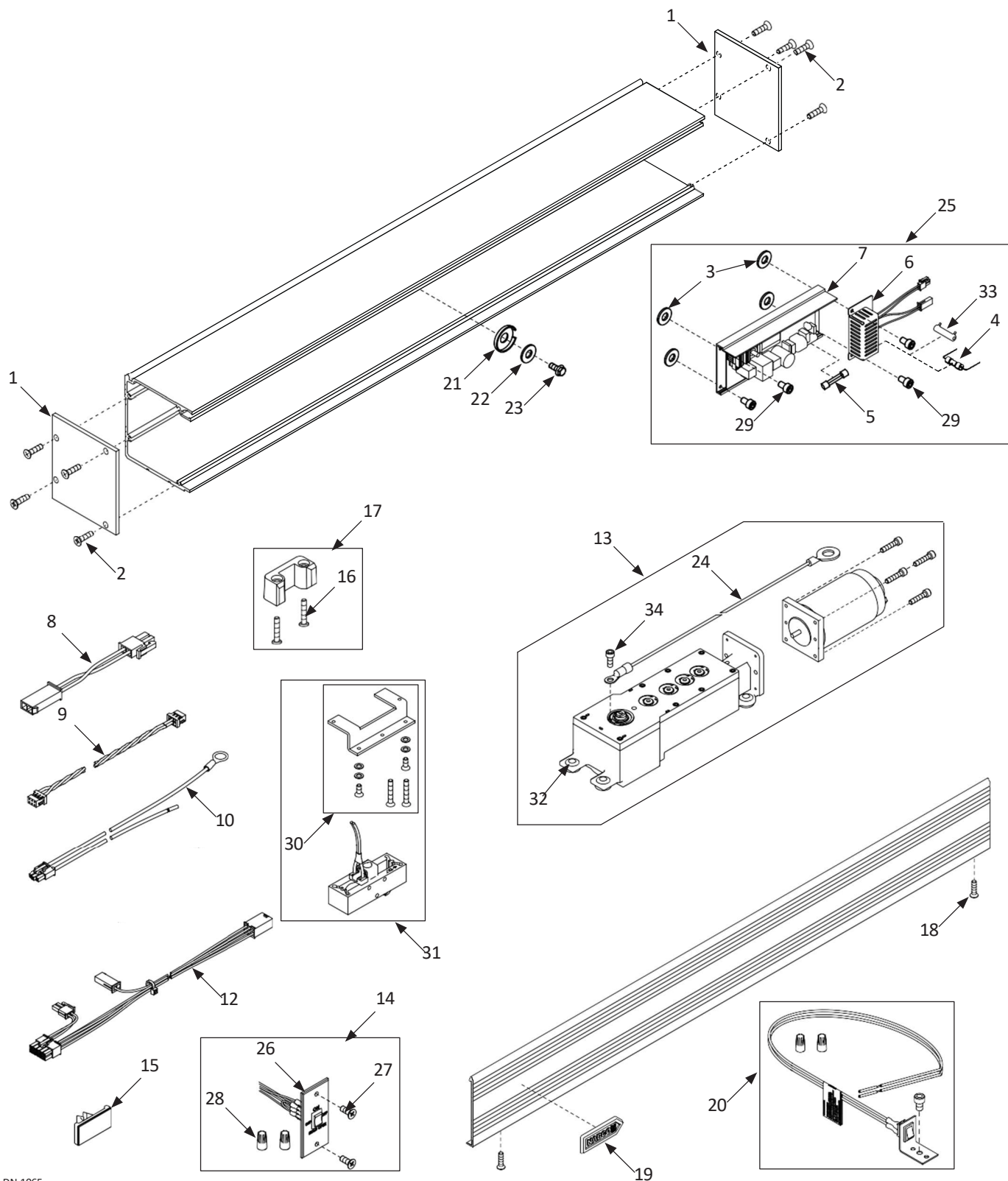
1. Open the Swing Door 90 degrees.
2. Obtain the Parts Bag that includes (1) Arm Stop and (2) 1/4-20 inch Self Tapping screws.
3. Position the Arm Stop at the bottom of Header according to type of Swing Arm and Reveal shown in Figure 37.
4. Use the Arm Stop as a template to mark and drill (2) 7/32 inch diameter screw holes.
5. Secure the Arm Stop with (2) 1/4-20 inch Self Tapping screws.

**SERVICE PARTS: C.U. OPUS
BOTTOM LOAD HEADER**

Opus Bottom Load Header			
Item	Part	Finish/Sizes/Notes	Description
1	T-00294		FHMS,1/4-20x1.000L.,PHIL,ZN
2	A-60733	Clear	BRACKET,END CAP,C.U.,204
	A-70733	Dark Bronze	BRACKET,END CAP,C.U.,313
3	T-00061		FHMS,1/4-20x1.000L.,PHIL,TRI-LOBE,ZINC
4	C-00067		NAMEPLATE,NABCO LOGO
5	M-01735		PLATE,BOTTOM LOAD,OPUS
6	A-01000	Not used on GT710/8710	HARNESS,MOTOR,OPUS
8	M-01072		HARNESS,POWER,OPUS
9	A-01001	For Right Hand Operator only	HARNESS,RH OPERATOR,OPUS
10	M-01680	Simultaneous Pair	HARNESS,SIM PAIR,OPUS
11	A-00409		PARTS BAG,ON/OFF,SWINGER,SWITCH
12	A-01003		MODULE,BRAKE,OPUS
13	V-00552	Used on Opus Control	FUSE;5A;GMA;5X20mm
14	V-00411	Used on Brake Module	RESISTOR,200 OHM,20 WATT
15	T-00420		PHMS,8-32x0.375L,PHIL,SWAGEFORM,ZINC
16	M-01546		CONTROLLER,OPUS
17	T-00232		SHCS,10-24x0.875L.,ZINC
18	A-00501		BRKT.;MOTOR;REAR;BTM.LOAD
19	T-00073		SHSS,1/4-20x0.500L.,KNURL PT.
20	T-00092		WASHER,.438 ID,1.00 OD,.083 THK,ZINC
21	T-00067		NUT,HEX,JAM,3/8-16,ZINC
22	M-01181		TOP FRAME MOUNT, SUB - ASSY - SWINGER
23	A-00620		GROUND WIRE:SWING OPERATOR:OPUS
24	A-01093	RH	OPER.SWGR,W/ENCOD,ROF;RH;NO CLUTCH;B-LO
	A-01092	LH	OPER.SWGR,W/ENCOD.ROF;LH;NO CLUTCH;B-LO
25	T-00238		FHMS,10-24x1.000L.,PHIL,ZINC
26	A-00348		COVER,SWITCH,SWINGER
27	M-01177		LOCK COVER PLATE - BOTTOM
28	A-60731	Clear/Out	BASE PIVOT,C.U.,OUTSWING,204
	A-70731	Dark Bronze/Out	BASE PIVOT,C.U.,OUTSWING,313
	A-60738	Clear/In	BASE PIVOT,C.U.,IN/OUTSWING,2-1/2in:204
	A-70738	Dark Bronze/In	BASE PIVOT,C.U.,IN/OUTSWING,2-1/2in:313
29	A-00489		STOP,RING ASSY
30	T-00334		FHMS:5/16-18x0.750L.:SOKT:ZN
31	M-01159		RING, STOP - HOLD DOWN
32	M-01475		LIMIT STOP:C.U.
33	T-00391		FHMS,10-24x0.750L.,PHIL,ZINC
34	V-00098		SADDLE, WIRE
35	A-00805		SWITCH,ROCKER,SWINGER,ON/OFF/HOLD OPEN
36	A-61176	Clear	CU - SGL STRIKE BASE 3-1/4,204
	A-71176	Dark Bronze	CU - SGL STRIKE BASE 3-1/4,313

Opus Bottom Load Header			
Item	Part	Finish/Sizes/Notes	Description
37	A-01098		CONTROLLER,W/ BRAKE,BOTTOM LOAD,OPUS
38	T-00346		HHCS:1/4-20x0.375L:GREEN:WASH HD:SLOT
39	M-00450		SPACER,MTG.END CAP
40	V-00104		WASHER, CUP.312 ID X .88 OD X .040 THICK
41	A-01091	RH	OPER.SWGR,W/ENCOD,ROF;RH;NO CLUTCH;S-LO
	A-01090	LH	OPER.SWGR,W/ENCOD.ROF;LH;NO CLUTCH;S-LO
42	T-00185		SHCS,10-24x0.500L.,BK.OX.
43	T-00197		NUT,WIRE,RANGE 22-14AWG,GREY
44	M-01576		SWITCHPLATE,ON/OFF/HOLD OPEN
45	T-00031		FHMS,10-32x0.500L.,PHIL,UCUT,T-LOBE,BKZN
46	A-01143		CONTROLLER,W/O BRAKE,BOTTOM LOAD,OPUS
47	A-00491	Center Pivot only/Clear	BRACKET,MOUNTING ,PANIC,LATCH 204
	A-70491	Center Pivot only/Dark Bronze	BRACKET,MOUNTING ,PANIC,LATCH 313
48	A-00419	Center Pivot only/Clear	KIT,PANIC LATCH,CU,204
	A-70419	Center Pivot only/Dark Bronze	KIT,PANIC LATCH,CU,313
49	M-00991		BUSHING, RUBBER MOUNT, .406ID .80OD
50	A-00453		FUSE,3AMP,W/HEAT SHRINK

SERVICE PARTS: C.U. OPUS SIDE LOAD HEADER

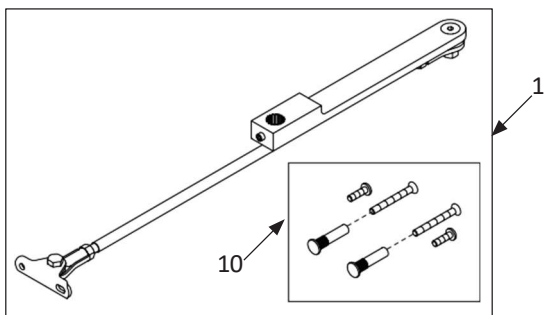


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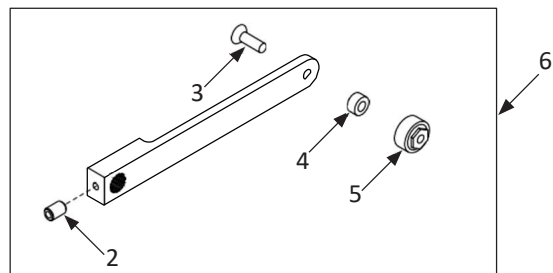
Opus Side Load Header			
Item	Part	Finish/Sizes/Notes	Description
1	M-01051	Clear	END CAP,SIDELOAD HDR,84-8500 4HOLE,204
	M-71051	Dark Bronze	END CAP,SIDELOAD,NO ACCESS HOLE,313
2	T-00016	Clear	FHMS,1/4-20x0.438L.,PHIL,UNDERCUT,ZINC
	T-00108	Dark Bronze	FHMS,1/4-20x0.438L.,PHIL,UNDERCUT,BLK ZN
3	T-00365		WASHER,.170 ID,.625 OD,.032 THK,NYLON
4	A-00453	Included on Brake Module (#6)	FUSE,3AMP,W/HEAT SHRINK
5	V-00552	Used on Opus Control	FUSE;5A;GMA;5X20mm
6	A-01003		MODULE,BRAKE,OPUS
7	M-01546		CONTROLLER,OPUS
8	A-01001	For Right Hand Operator only	HARNESS,RH OPERATOR,OPUS
9	M-01680	Simultaneous Pair	HARNESS,SIM PAIR,OPUS
10	M-01072		HARNESS,POWER,OPUS
12	A-01000	Not used on GT710/8710	HARNESS,MOTOR,OPUS
13	A-01091	RH	OPER.SWGR,W/ENCOD,ROF;RH;NO CLUTCH;S-LO
	A-01090	LH	OPER.SWGR,W/ENCOD.ROF;LH;NO CLUTCH;S-LO
14	A-00805		SWITCH,ROCKER,SWINGER,ON/OFF/HOLD OPEN
15	V-00098		SADDLE, WIRE
16	T-00325		PHMS, 1/4-20X1.500L, PHIL, TYPE F
17	A-00454		ARM STOP,ASSEM FOR 400, 8400, 500, 8500
18	T-00337		PHSMS:#8x0.625L.:PHIL
19	C-00067		NAMEPLATE,NABCO LOGO
20	A-00409		PARTS BAG,ON/OFF,SWINGER,SWITCH
21	V-00104		WASHER, CUP.312 ID X .88 OD X .040 THICK
22	T-00029		WASHER,.250 ID,.563 OD,.049 THK,ZINC
23	T-00347		HHCS:10-32x0.375L:GREEN:WASH HD:SLOT
24	A-00620		GROUND WIRE:SWING OPERATOR:OPUS
25	A-00888		CONTROLLER,W/ BRAKE,SIDELOAD,OPUS
26	M-01576		SWITCHPLATE,ON/OFF/HOLD OPEN
27	T-00031		FHMS,10-32x0.500L.,PHIL,UCUT,T-LOBE,BKZN
28	T-00197		NUT,WIRE,RANGE 22-14AWG,GREY
29	T-00335		SHCS,10-24x0.313L.,ZINC
30	A-00491	Center Pivot only/Clear	BRACKET,MOUNTING ,PANIC,LATCH 204
	A-70491	Center Pivot only/Dark Bronze	BRACKET,MOUNTING ,PANIC,LATCH 313
31	A-00419	Center Pivot only/Clear	KIT,PANIC LATCH,CU,204
	A-70419	Center Pivot only/Dark Bronze	KIT,PANIC LATCH,CU,313
32	M-00991		BUSHING, RUBBER MOUNT, .406ID .800D
33	V-00411	Included on Brake Module (#6)	RESISTOR,200 OHM,20 WATT
34	T-00185		SHCS,10-24x0.500L.,BK.OX.

SERVICE PARTS: SWING ARM AND TRACK ASSEMBLIES

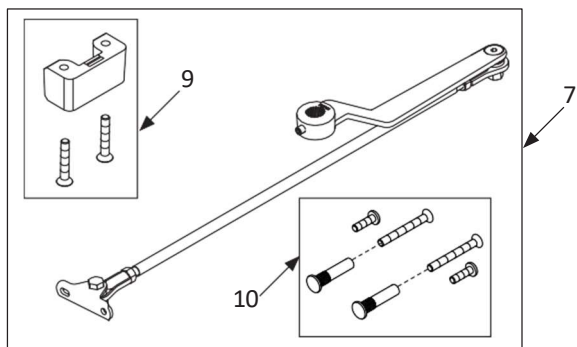
Low Profile Outswing Arm Assembly



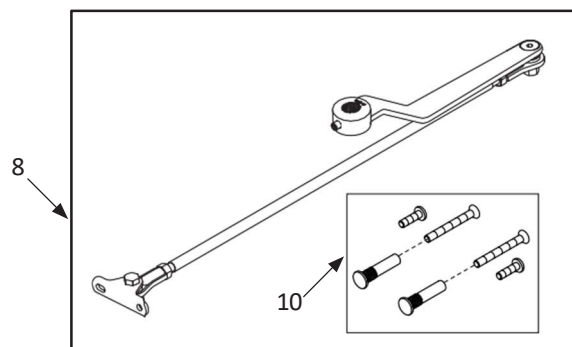
Inswing Arm
Reveal **Equal** to 0 inches



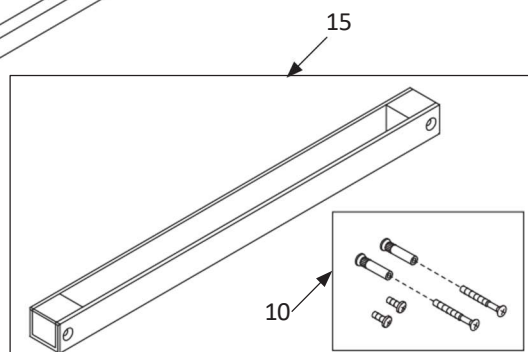
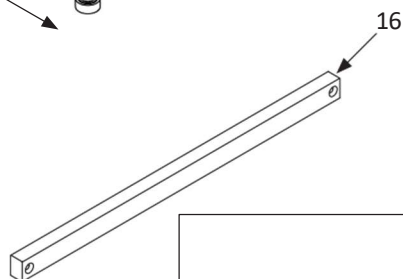
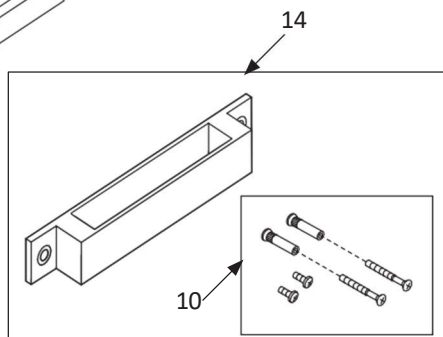
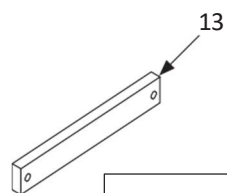
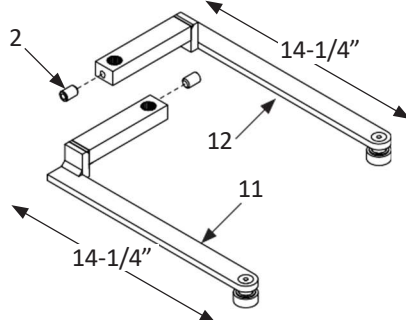
Outswing Arm Assembly



Outswing Arm Assembly



(CU) Inswing Arm Assembly
Reveal Greater than 0 inches



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Swing Arm Assemblies			
Item	Part	Finish/Sizes/Notes	Description
1	A-60770	Clear/Low Profile/No Reveal	ARM,OUTSWING,CU,20in:204
	A-70770	Dark Bronze/Low Profile/No Reveal	ARM,OUTSWING,CU,20in:313
2	T-00261		SHSS,5/16-24x0.500L.,CUP PT.
3	T-00223		FHCS,3/8-24x1.250L.,ZINC
4	M-01045		WASHER,STEEL,.375IDx.750Dx.375INTHK.
5	A-00752		ROLLER,REPLACEMENT
6	A-60545	Clear	ARM,INSWING,CU,NON PANIC,NH,204
	A-70545	Dark Bronze	ARM,INSWING CU,NO PANIC,NH 313
7	A-60786	20"/Clear/w-Stop	ARM,OUTSWING,CU.,20in:204,W-STOP
	A-70786	20"/Dark Bronze/w-Stop	ARM,OUTSWING,CU.,20in:313,W-STOP
	A-60787	30"/Clear/w-Stop	ARM,OUTSWING,C.U.,30in:204,W-STOP
	A-70787	30"/Dark Bronze/w-Stop	ARM,OUTSWING,CU.,30in:313,W-STOP
8	A-60425	20"/Clear	ARM,OUTSWING,STD ASM,20in:204
	A-70425	20"/Dark Bronze	ARM:OUTSWING:STD ASM:20in:313
	A-60426	30"/Clear	ARM,OUTSWING,STD ASM,30in:204
	A-70426	30"/Dark Bronze	ARM:OUTSWING:STD ASM:30in:313
9	A-00454		ARM STOP,ASSEM FOR 400, 8400, 500, 8500
10	A-00389	Clear	PARTS BAG,SEX BOLTS & HARDWARE,204
	A-00388	Dark Bronze	PARTS BAG,SEX BOLTS & HARDWARE,313
11	A-60722	3-1/4" Reveal/RH/Clear	C.U. INSWING ARM,0 TO 3-1/4in:REVEAL,RH,204
	A-70722	3-1/4" Reveal/RH/Dark Bronze	C.U.,INSWING ARM,0-3-1/4in REVEAL,RH,313
12	A-60726	3-1/4" Reveal/LH/Clear	C.U. INSWING ARM,0 TO 3-1/4in: REVEAL,LH,204
	A-70726	3-1/4" Reveal/LH/Dark Bronze	C.U.,INSWING ARM,0-3-1/4in REVEAL,LH,313
13	A-00952	12.25" Long	SPACER,INSWING TRACK, FOR 0" REVEAL
14	A-60639	Clear/12.25" Long	ASM, TRACK, CU, SHORT, 204
	A-70639	Dark Bronze/12.25" Long	ASM, TRACK, CU, SHORT, 313
15	A-00481	Clear/21" Long	ASM, TRACK, CU, LONG, 204
	A-70481	Dark Bronze/21" Long	ASM, TRACK, CU, LONG, 313
16	M-02045	21" Long	SPACER,INSWING TRACK,LONG,710