GT20 8300-8350 Overhead Concealed Swing Door Operator Installation Manual

P/N C-00183 Rev 8-31-16

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Associated Manuals Part Numbers: *GT20 Swing Door Wiring and Programming Manual (P/N C-00169)*
GT20 Swing Door Owners Manual (P/N C-00170) 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

DANGER **According UL 325 8.4, Do Not mount Operator onto flammable surfaces!**

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.**

WARNING **Read this "General Safety Recommendations" section before installing, operating or servicing the automatic door. Failure to follow these practices may result in serious consequences. If you do not understand the instruction, ask the installing qualified technician to teach you how to use the door.**

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.**

WARNING **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.**

WARNING **The GT20 Swing Door Operator Assembly must not be mounted within locations presenting explosion hazards. The presence of flammable gases or smoke represents a considerable safety hazard.**

Attention: Any modifications of the installation that are not described in this manual are not approved by the manufacturer.

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

- When configuring the installation, it is essential to make sure local regulations are complied. It is particularly important to ensure Door Panels do not have any sharp edges. The secondary closing edges must be designed by customers in such a fashion as to eliminate any dangerous crushing and shearing points.
- Application limits must be observed.

- Choice of Fasteners depend on the construction base.
- The swing door drive mechanism GT20 may only be installed and operated for indoor use. If this condition cannot be fulfilled, the customer must provide sufficient protection from moisture.
- In order to guarantee the safety of the users at all times, the installation must have an AAADM inspection before it is put into service and during normal operation, at least once a year.
- It is inadmissible to bypass, shunt or disable the safety devices. Any defective safety devices may not be disconnected in order to continue the operation of the installation.
- Disconnect power at the branch circuit protection during all electrical or mechanical service. When uncertain whether power supply is disconnected, always verify using a voltmeter.
- All electrical troubleshooting 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 door technician to install all warning and instructional labels in accordance with ANSI 156.10 (Full Energy) or ANSI 156.19 (Low Energy) and verify compliance.
- It is the responsibility of the purchasing facility or end user to keep warning and instructional labels and literature legible, intact and with the door.
- Replacement labels and literature may be obtained from local NABCO Entrances, Inc. Distributors. If the name of the local distributor is unknown, contact NABCO Entrances, Inc. at 1-877-622-2694 for assistance.
- A safe and reliable function of the installation can only be guaranteed if it is operated with the original NABCO Entrances, Inc. accessories/spare parts. NABCO Entrances, Inc. declines all responsibility for damages resulting from unauthorized modifications of the installation or from the use of foreign accessories/spare parts.

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 (Full Power) and ANSI Standard 156.19 (Low Energy) covers the GT20 Swing Door Operator Assembly. Other local standards or codes may apply. Use them in addition to the ANSI standard. Both Full Power and Low Energy Swing door Units are listed by UL according to UL325 and is identified as such on the label.

Instruct the building owners and operator on the essentials of the operation of this device. The owner should follow these instructions to determine whether 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. Replacement labels and literature may be obtained from local NABCO Entrances, Inc. Distributors. If the name of the local distributor is unknown, contact NABCO Entrances, Inc. at 1-877-622-2694 for assistance.

SECTION 3.2 Objective

The Swing Door Operator assembly is designed to be installed onto the top surface of the Door Frame, or Door Panel, or between the Jamb Tubes under the Door Frame (OHC). This manual was created to offer 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.29.5.1:**

> **"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 1ft^2 (0.9 m^2) and having no dimension greater than 18 in (457 mm)".**

CHAPTER 4: GETTING STARTED

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

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

SECTION 4.1 Technical Data

Table 1 Electrical Specifications

Electricity	Description
Power Input	120 VAC (+10/-15%) 60 Hz 1.5 Amp
Auxiliary Power Output	24 VDC (±10%) 2A

Table 2 Operator Assembly Specifications

Specification	Description	
Weight Operator Assembly	23 pounds (10,5 kg)	
Motor Type	DC Brush Motor (with Encoder installed on Gear Box)	
Motor Voltage	30V	
Motor Power Rating	100 W	
Power consumption	Max. 560 W	
Maximum Door Weight	Full Energy	550 pounds (250 kg)
	Low Energy	220 pounds (100 kg)
Minimum Height of Door Panel	6 Feet (1.83m)	
Width of Door Panel	Full Energy	30” - 63” (762mm - 1,600mm)
	Low Energy	30” - 48” (762mm - 1,219mm)
Power Transmission	Outswing Arm	Adjustable Rods attached to Arm Shoe
	Inswing Arm	Arm slides into Track
Operator Assembly Dimensions	Height	6” (152.4mm)
	Width	Varies
	Depth	5-1/2” (139.7mm)
Operating/Shipping Temperature	5 to 122 ˚F (-15...+50 ˚C)	
Protection Type	IP 40 (IP 42*) Weather Resistant to Water and Dust	
Torque Output Shaft	Max. 59 pounds (80 Nm)	
Distance door hinge - Output Shaft	Mounting against Door Frame	11”
	Door Panel mounting	15”
Door Opening Angle	Max. 105˚	
Opening Speed	Max. 40˚ (opening degree per second)	
Closing Speed	Max. 40˚ (opening degree per second)	
Hold Open Time	0 - 60 seconds	
Hold Open Time Night	0 - 180 seconds	

Table 3 Input / Output Specifications

Input	Description	
Number of Signal Inputs	► 2 x Activation ► 3 x Safety Inputs (1 x Header mounted, 2 x Door mounted) ► 1 x Emergency Input	
Optically Isolated Input	(1) Wall Switch can activate multiple Units without using an Isolation Relay.	
Signal Suppression for Door Mounted Sensor	Signal Suppression determines what angle the door mounted sensor is ignored by the control.	
	► Pull Side	Programmable - 45 degrees to Full Open
	► Push Side	Programmable - 0 - 60 degrees
Output	**Description**	
Number of Outputs	► 1 x Electric Lock Form C Relay ► 1 x Electric Lock Status	

Table 4 Basic Features

Feature	Description	
Simultaneous Pair Synchronization	Pairs are synchronized to ease adjustability and to operate smoothly.	
Astragal Function	Opens and/or Closes (1) Door Panel slightly ahead of an opposite Door Panel.	
Independent Dual	(2) Independent Swing Doors operated by a (2) Operator Assemblies.	
Low Energy	Utilize a Knowing Act to open a Swing door.	
Full Energy	Utilize Sensor(s) to open a Swing door.	
Air Lock w/optional plug-in board	Activation of first Door Panel prevents second Door Panel from opening	
Power Boost	Power Close	
Hold Close	Applies pressure to keep Door closed	
Obstacle Detection	► Opening	Door Panel will reverse if an obstacle is detected.
	► Closing	
Inverse Operation	Programmable	In the event of a Power Failure or alarm, Inverse Operation opens the Door Panel under Spring Power for: ► Smoke Evacuation ► Egress Minimizes the need for battery back-up.
Wind Compensation	Control will gradually increase motor current to counteract wind pressure	

Table 5 Adjustable Options

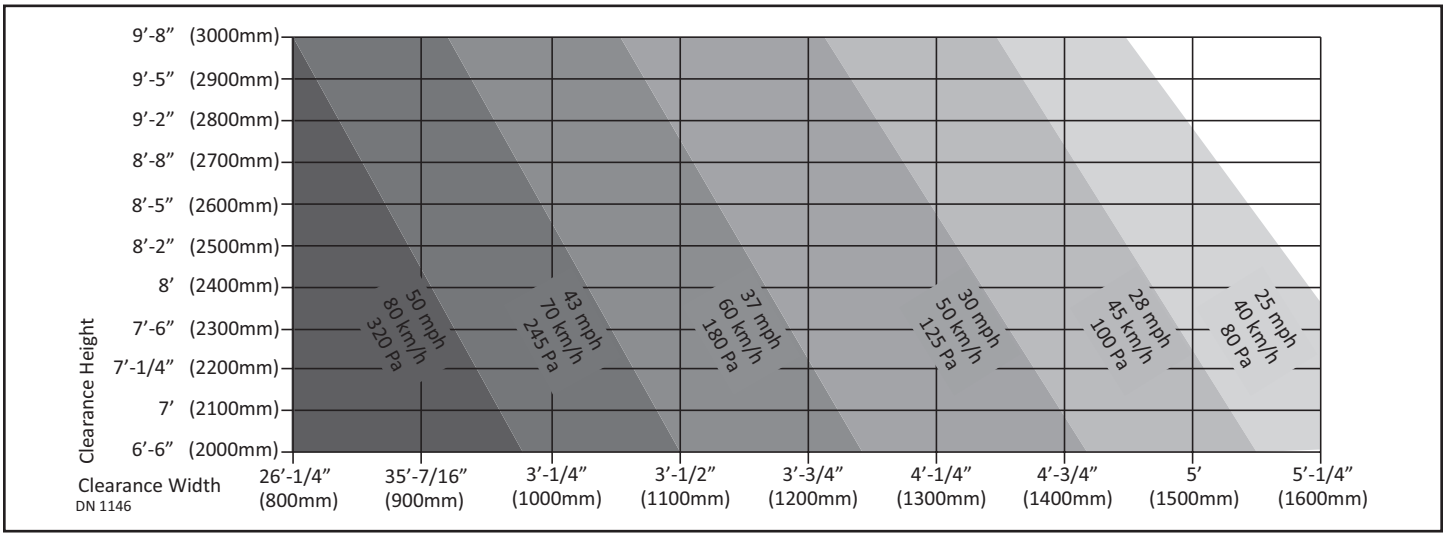
Option		Description
Sensitivity Adjustment for Obstacle Detection	Yes (on opening)	Adjusts how hard the Door Panel pushes against an Object before recycling.
	No (on opening)	
Time Delay Adjustment for Activation	0 - 60 seconds	Determines the amount of time “Power Open” is applied to the motor.
Electronic Delay Timer	0 - 4 seconds	Adjusts the amount of time the Door Panel hesitates before opening when locked.

SECTION 4.2 Required Tools

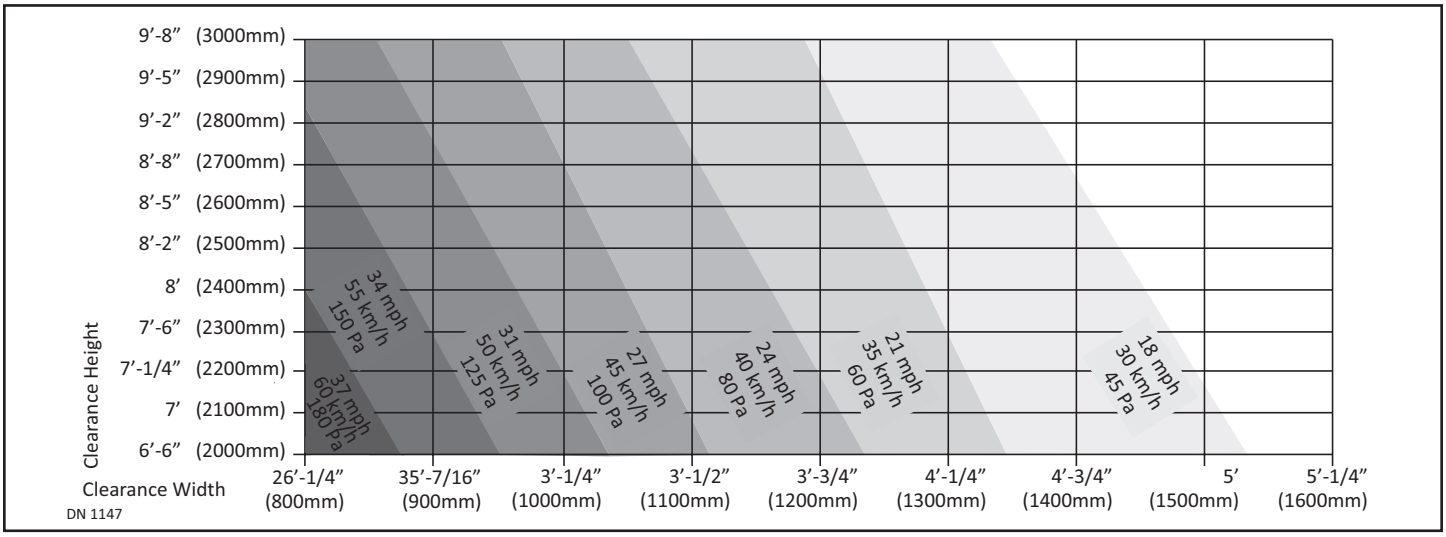
- ► 6mm Allen Wrench
- ► 13mm Open Box / Combination Wrench

SECTION 4.3 Windload

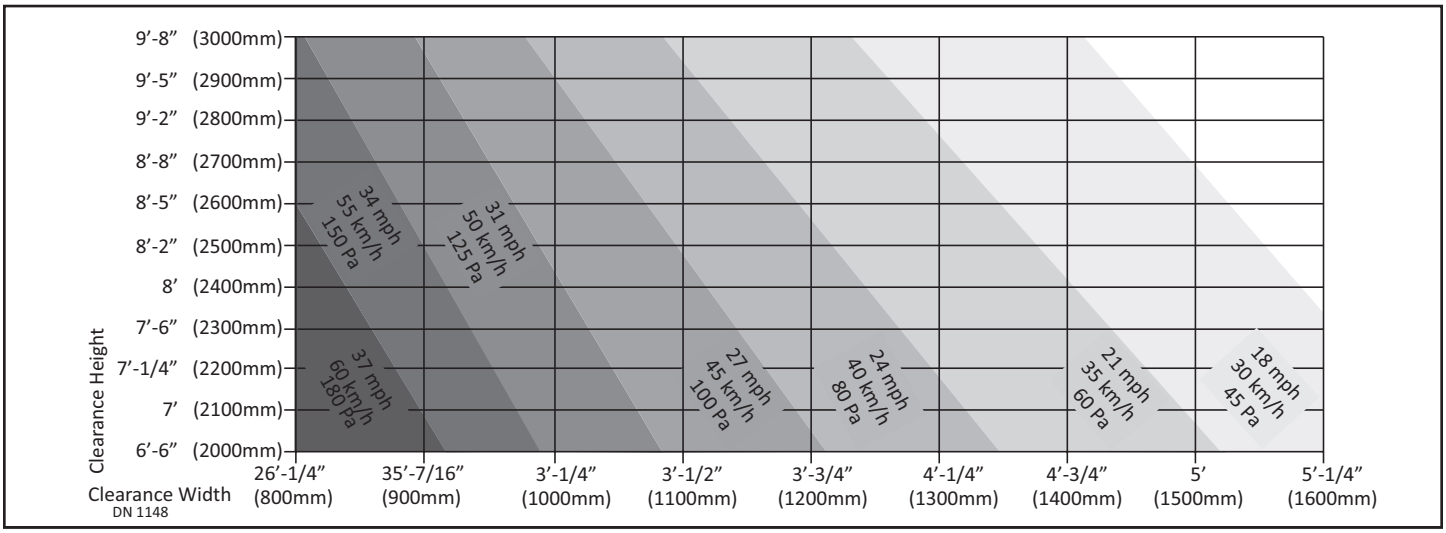
4.3.1 Outswing Arm PUSH Function



4.3.2 Inswing Arm PUSH Function



4.3.3 Inswing Arm PULL Function



SECTION 4.4 Power Output

4.4.1 Full Power Swing Doors

- Utilize Sensor(s) to open a Swing door. Sensors activate the Control by detecting motion of pedestrians (or moving objects) coming into range.
- Must be compliant with ANSI Standard Code 156.10 to reduce chance of injury to pedestrians and wheeled traffic.

4.4.2 Low Energy Swing Doors

- Utilize a Knowing Act to open a Swing door.
  A conscious effort that is carried out in many different ways, including (but not limited to): manually opening/closing a Swing door; pressing various types of Push Plates; turning a Key switch; flipping a Rocker Switch; utilizing a keypad or card reader, etc.
- Must be compliant with the ANSI Standard Code 156.19 to reduce chance of injury to pedestrians and wheeled traffic.

SECTION 4.5 Mechanical Operation of Door

4.5.1 With Power

- Standard Swing Door
  The Swing door automatically opens upon activation of a Sensor or a Knowing Act, and then fully closes after the programmed "hold-open" time has expired.
- Inverse Swing Door
  The Swing door automatically opens upon activation of a Sensor or a Knowing Act, and then fully closes after the programmed "hold-open" time has expired.

4.5.2 Without Power

- Standard Swing Door
  An internal spring located inside the Operator automatically CLOSES the Swing door. An internal Brake located inside the Motor allows the Swing door to fully close. The Swing door can be manually opened at any time.
- Inverse Swing Door
  An internal spring located inside the Operator automatically OPENS the Swing door (unless the Swing door has been locked with a Fail/Secure electric lock). An internal Brake located inside the Motor allows the Swing door to fully open with a slow, controlled motion.

  Inverse Swing Door is suitable for:
  - Escape Routes and/or Rescue Routes
  - Extracting smoke from buildings
  - Extracting heat from buildings

Notice: For Escape Routes, Rescue Routes, Exhausting Smoke or for Heat Applications; National and/or Local Requirements/Regulations may exist. Please ensure these Requirements/Regulations are fulfilled.

It is recommended to install a FAIL/SAFE electric lock on Swing doors using Inverse Swing Doors. During normal operation, the FAIL/SAFE lock applies continuous pressure to keep the Swing door in a fully closed position. During a Power Failure, the FAIL/SAFE lock automatically unlocks, thus allowing the Swing door to fully open.

DANGER **Do Not install Fail/Secure electric locks on Swing Doors using Inverse Swing Doors. Fail/Secure electric locks will not allow the Swing door to open during a Power Failure.**

SECTION 4.6 Types of Installation

The Overhead Concealed (OHC) Operator Assembly is installed inside the Door Frame (directly underneath the top, between (2) Jamb Tubes). The Operator Assembly can be installed as a:

- Single Swing Door: (OUT to the Exterior or IN to the Interior)
- Standard Dual Independent: Connected to separate Operator Assemblies and operate independently.
- Standard Simultaneous Pair: Both swing doors open at same time.
- Astragal Swing Doors: Connected to separate Operator Assemblies whereby the Master swing door opens first; The Slave swing door is delayed before opening, and then closes before the Master swing door.

SECTION 4.7 Handing

4.7.1 Determine Handing from Standing Underneath the GT20 Operator

Open the Swing door. Butt your back against the Pivot side of Swing door. Swing out the (right or left) arm in the direction the Swing door opened.

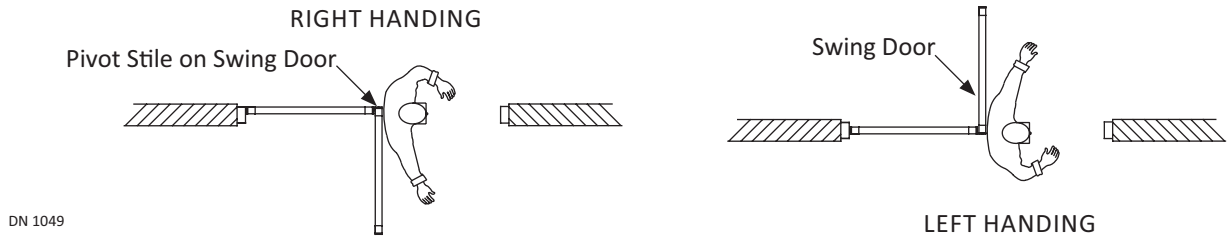


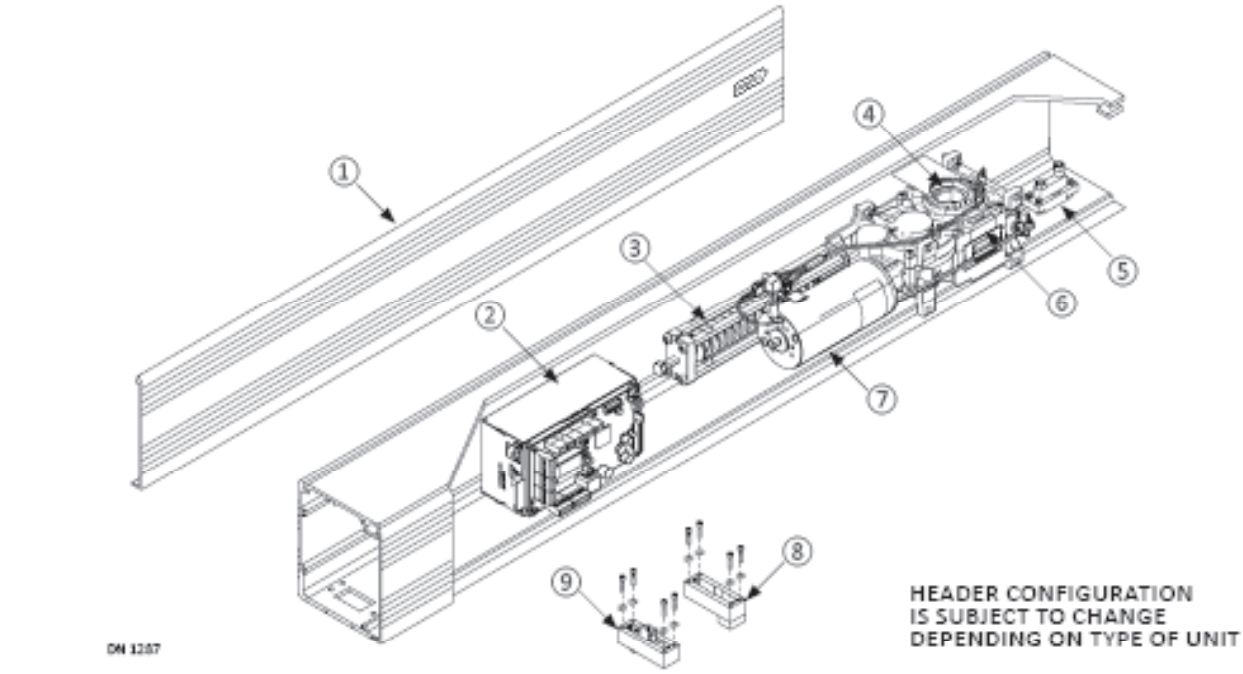
Figure 1 Determine GT 20 Operator Handing

4.7.2 Determine Handing from Direction the OHC Swing Door Opens

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

Figure 2 Determine OHC Handing

SECTION 4.8 Header Components



Header Components					
1	Header Cover	4	Output Shaft	7	Motor
2	GT20 Control	5	Top Pivot Assembly	8	Door Stop Assembly
3	Spring Unit (for spring-powered closing)	6	Gear Box	9	Panic Latch Assembly

CHAPTER 5: INSTALL THE HEADER

The Overhead Concealed (OHC) Operator Assembly is installed inside the Door Frame (directly underneath the top, between (2) Jamb Tubes). The GT20 Operator can swing the Door Panel: Out to the Exterior, or In to the Interior.

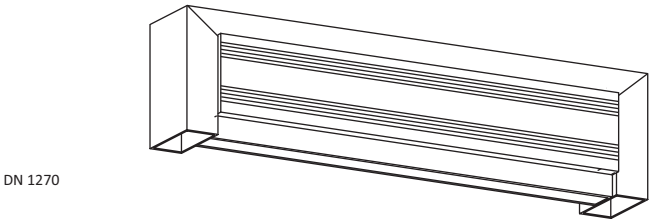


Figure 3 Overhead Concealed Operator Assembly

SECTION 5.1 Prep the Jamb Tubes

1. Measure the full height of existing Swing door.
2. Obtain and then place the Jamb Drilling Template at the top of Jamb Tube so it is flush.
3. Align the center to the previously drawn center mark.
4. Adhere the Jamb Drilling Template to each Jamb Tube.
   a. The Jamb Drilling Template is removable.

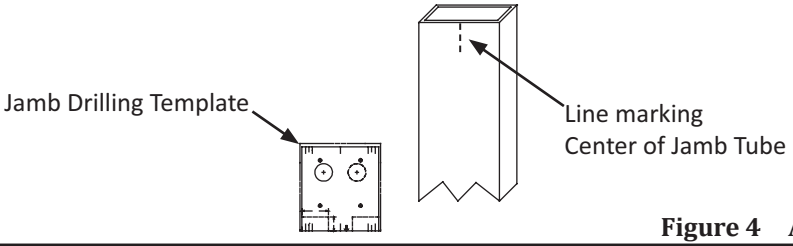


Figure 4 Adhere Jamb Drilling Template

5. Drill (4) .391 diameter holes through (4) clearly marked (A)s on the Template. Countersink each screw hole.
6. Obtain (4) Rivnuts provided by NABCO. Install (1) Rivnut into each drilled .391 hole.
7. Drill (1) 1-1/4 inch diameter hole through (1 of 2) clearly marked (B)s on the Template to allow incoming 120 VAC Power.
   a. The 120 VAC incoming power must be routed through the Strike Jamb, only.
8. Remove the Template from the Strike Jamb, then adhere same Template to the Pivot Jamb. Repeat steps.

SECTION 5.2 Install the Header to Jamb Tubes

1. Determine which Jamb tube is the Pivot Jamb and the Strike Jamb.
   - Swing door pivots on side of Pivot Jamb.
   - Swing door locks on side of Strike Jamb.
2. Position each Jamb tube at both sides of the Header. Be sure to orientate the frame in relation to the outside of building/room.

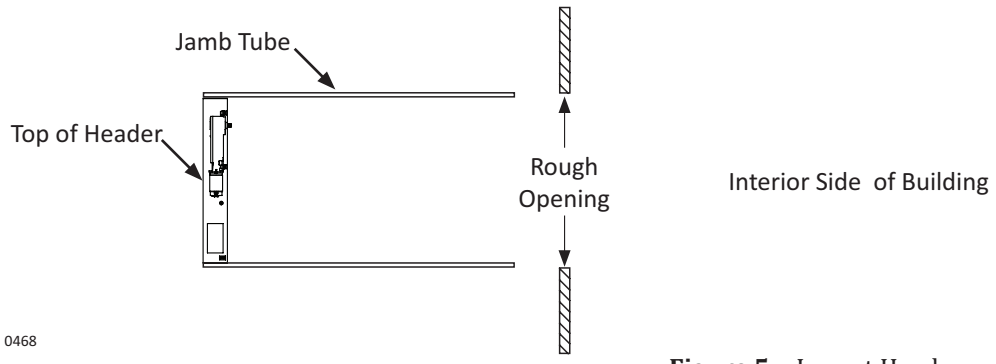


Figure 5 Layout Header and Jamb Tubes

3. Secure Header to both Jamb Tubes with (8) 1/4-20 x 3/4 inch Hex Head Cap Screws and (8) 1/4 inch Star Washers from the Parts bag provided within the Header.

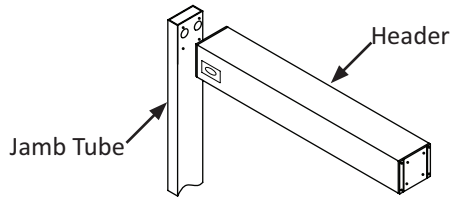


Figure 6 Secure Bottom Load Header to Jamb Tubes

SECTION 5.3 Install the Frame to Building

Note: It is recommended to pull incoming 120 VAC Power wires through the end of Header for a single Swing door or the middle of Header for a simultaneous pair Swing door. It is also recommended to install wires into an Electrical conduit.

Note: It is recommended to countersink holes as required to flush the surface.

Note: It is recommended to drill tap threads for anchors in a steel or aluminum structure.

1. Lift to position the assembled Frame into the rough opening. Insert all incoming wiring through the 1-1/4 inch hole located on side of Header.
2. Plumb Jamb tubes in both planes to ensure the rough opening allows a 1/4 inch clearance. Shim back of Jamb as required.

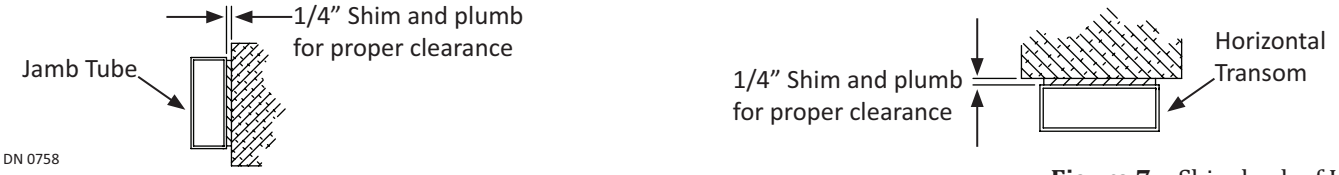


Figure 7 Shim back of Jamb

5.3.1: Anchor Placement for Jamb Tubes

Use 1/4 inch diameter anchors with a minimum of 3 per Jamb Tube, maximum is 48 inches on center. Drill 1/4 inch diameter holes in the face of Jamb and then countersink each hole. Anchors and Fasteners must be appropriate for the type of structure being fastened into. Anchors and Fasteners are not provided by NABCO.

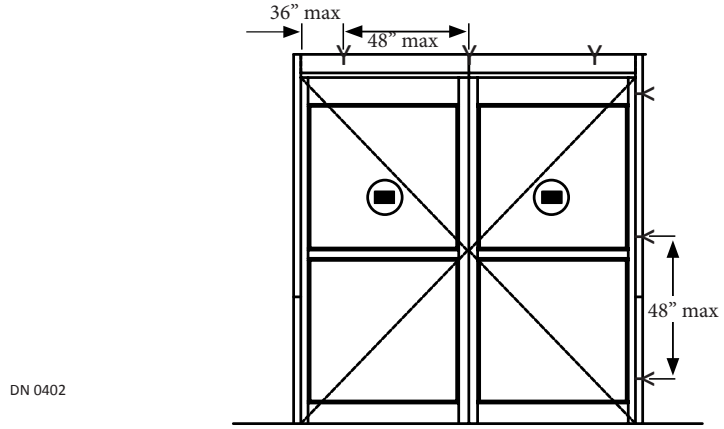


Figure 8 Anchor Placement

3. Secure the Frame with Fasteners not provided by NABCO.

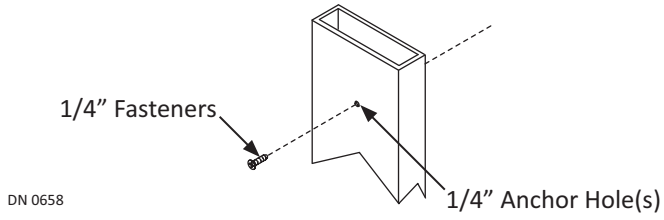


Figure 9 Screw Anchors

SECTION 5.4 Install the Fingerguard

Note: Screws must be appropriate for the type of structure being fastened into. Screws are not provided by NABCO.

Note: Do not overtighten screws to prevent deforming Weatherstrip Extrusion. Ensure each screw is flush to the Jamb tube.

1. Go to the top of the Pivot Jamb tube, at the center, drop a Plumb Line to the floor.
2. Mark the Center line on the inside face of the Pivot Jamb Tube. It is recommended to use a level.
3. Insert the Weather Strip into both channels located on the Finger Guard Mounting Plate.
   a. Spraying silicone (not included) inside the Channels may ease the insertion of the Weather Strip.

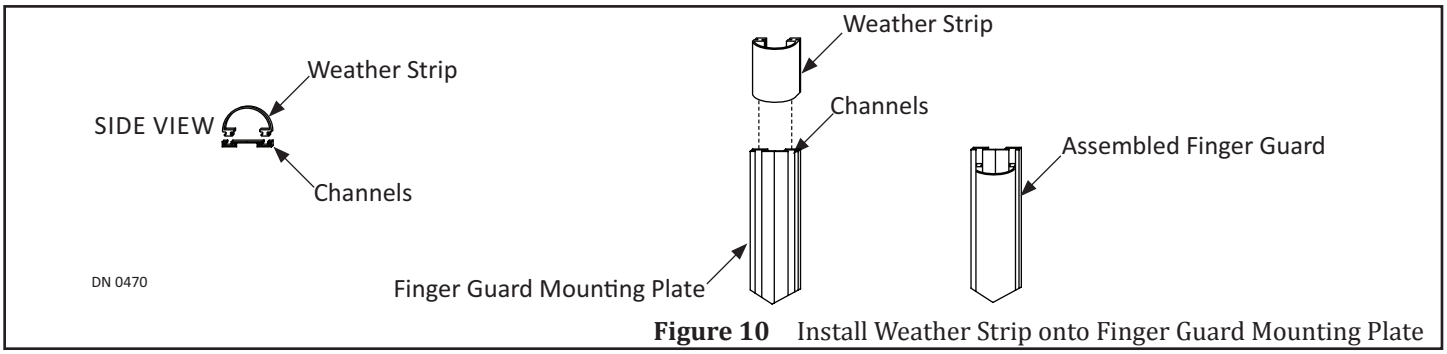


Figure 10 Install Weather Strip onto Finger Guard Mounting Plate

4. Line up the Center Notch located down the full length of the Finger Guard Mounting Plate, with the Center Mark located on the Pivot Jamb Tube. It is recommended to use a level.

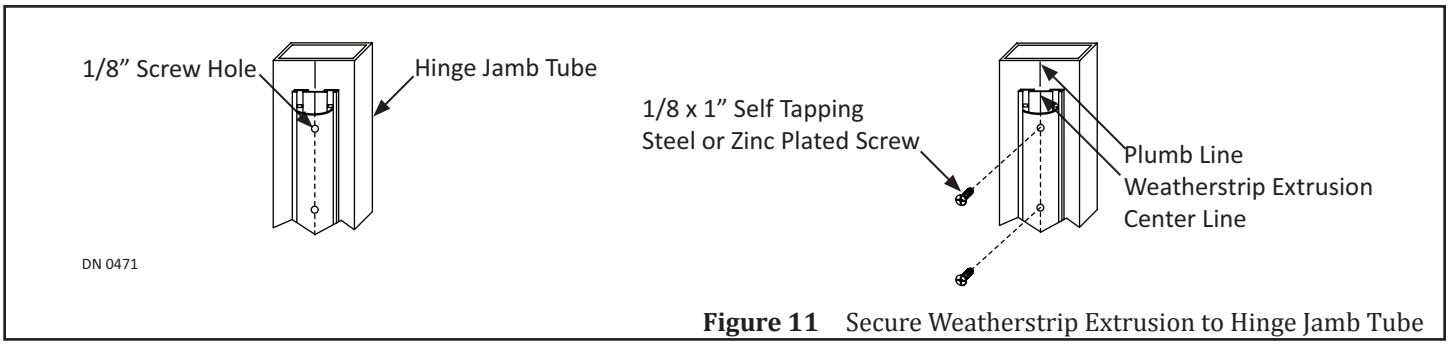


Figure 11 Secure Weatherstrip Extrusion to Hinge Jamb Tube

5. Drill (3-4) 1/4 inch evenly spaced screw holes down the Finger Guard Assembly.
   a. Each screw hole must go through the Weather Strip, Mounting Plate and the Pivot Jamb Tube.
6. Secure the Finger Guard Mounting Plate onto the Pivot Jamb with 1/4 x 1 inch self tapping Screws (zinc or steel plated).

SECTION 5.5 Install the Floor Pivot

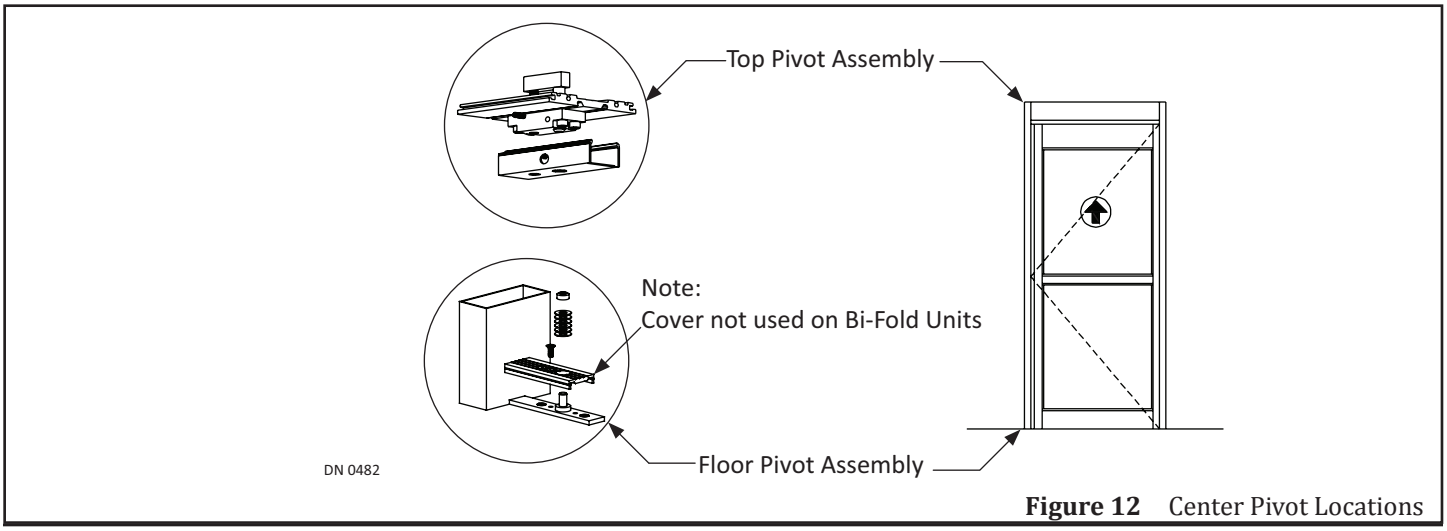


Figure 12 Center Pivot Locations

1. Obtain the Floor Pivot Assembly. The Pivot Shaft is not centered on the Floor Pivot. One end is used:
   - With the Finger Guard; so the Pivot Shaft measures 3.75 inches away from the Pivot Jamb.
   - Without the Finger Guard; so the Pivot Shaft measures 2.75 inches away from the Pivot Jamb.

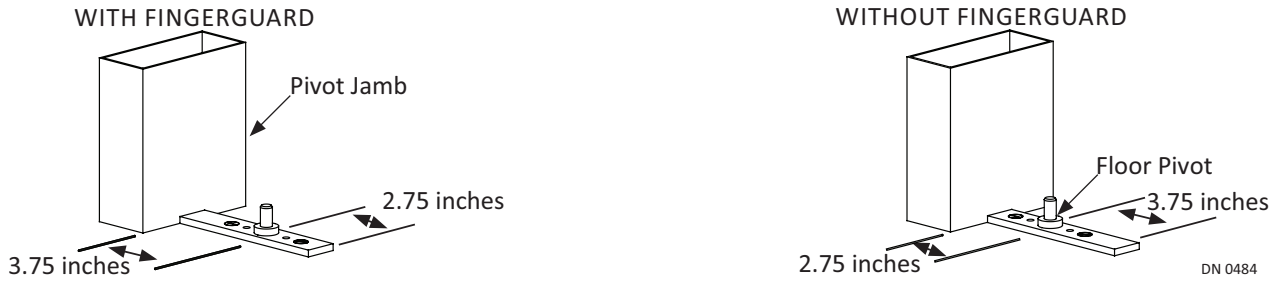


Figure 13 Position Floor Pivot according to Finger Guard Installation

2. Measure and mark the center of the Pivot Jamb and the Floor Pivot.
3. Butt the center mark of the Floor Pivot up against the center mark of the Pivot Jamb.
4. Align both Pivot Shafts. Drop a Plumb Line (down the center) from the Top Pivot Shaft to the Floor Pivot Shaft.
5. Use the Floor Pivot as a template to mark and drill (2) holes for #14 x 1 inch Blue anchors provided by NABCO.
6. Insert (2) #14 x 1” Blue anchors into each hole. Secure the Floor Pivot with (2) #14 x 1-1/2 inch Slotted Flat Head Screws.

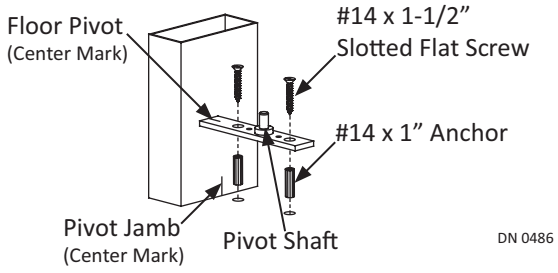


Figure 14 Install Floor Pivot

7. Secure the Pivot Cover with (1) 1/2-20 x 7/16 inch Flat Head Machine Screw.

Note:
Cover Plate not used
on Bi-Fold Doors

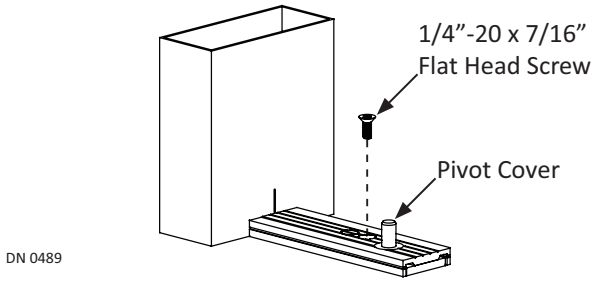


Figure 15 Install Pivot Cover onto Floor Pivot

SECTION 5.6 Lay down the Saddle Threshold over the Floor Pivot

1. Obtain the Saddle Threshold. The Pivot Side of the Saddle Threshold has a cut out for the Pivot Plate.

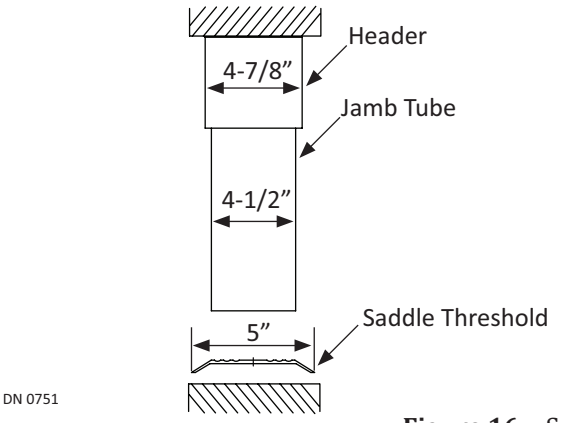


Figure 16 Saddle Track installed on Surface only

2. Obtain the Saddle Threshold. The Pivot Side of the Saddle Threshold has a cut out for the Pivot Plate. Place the Pivot Side of the Saddle Threshold over the Floor Pivot Assembly.Ensure the Saddle Track is centered to the Strike Jamb and square.

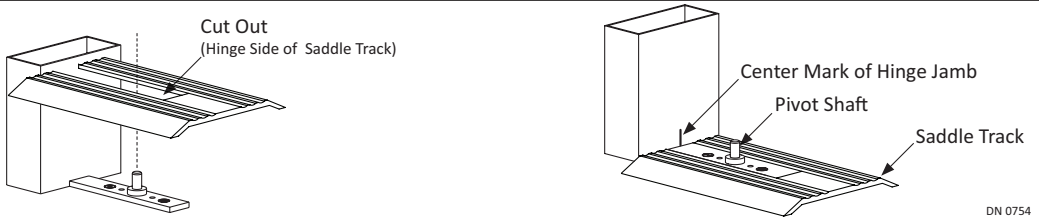


Figure 17 Place Saddle Track over Floor Pivot

3. Square and center the Saddle Threshold to the Strike Jamb.
4. Obtain #10 x 1-1/2 inch sheet metal screws and anchors (per length of the Saddle Threshold).
5. In the center of the Saddle Threshold, approximately 4 inches from the cutout for the Pivot Plate, mark (1) screw hole.
6. In the center of the Saddle Threshold, approximately 4 inches from the Strike Jamb, mark (1) screw hole.

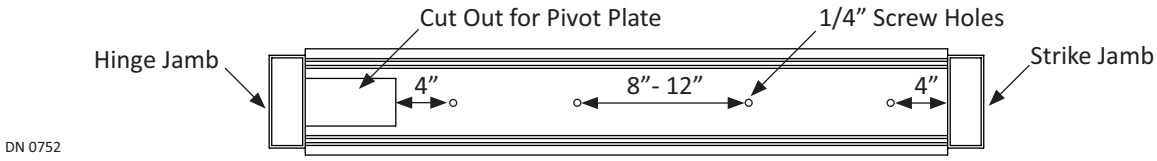


Figure 18 Mark and Drill Holes on Saddle Track

7. Mark remaining screw holes 8 - 12 inches apart and evenly spaced.
8. Drill screw holes into the floor no less than 1-1/2 inch deep for #14 x 1” anchors.
9. Remove the Saddle Threshold. Set aside.
10. Insert #14 x 1” plastic anchors into the drilled screw holes.
11. Secure the Floor Track with #10 x 1-1/2 inch sheet metal screws (Not provided by NABCO).
    a. Do not overtighten screws to prevent deforming the Saddle Threshold.

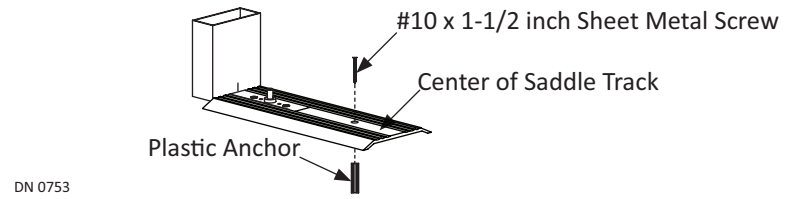


Figure 19 Secure Floor Track to Floor Surface

CHAPTER 6: INSTALL THE SWING DOOR (PROVIDED BY NABCO)

FOR UNITS NOT PROVIDED BY NABCO SKIP TO CHAPTER 7

1. Go to the Pivot side of Header. Loosen the Set Screw located directly above the Pivot Shaft.
2. Go to the Self Riser screw located underneath the top Pivot. Turn the Self Riser Screw counter-clockwise to retract the Center Pivot Shaft.

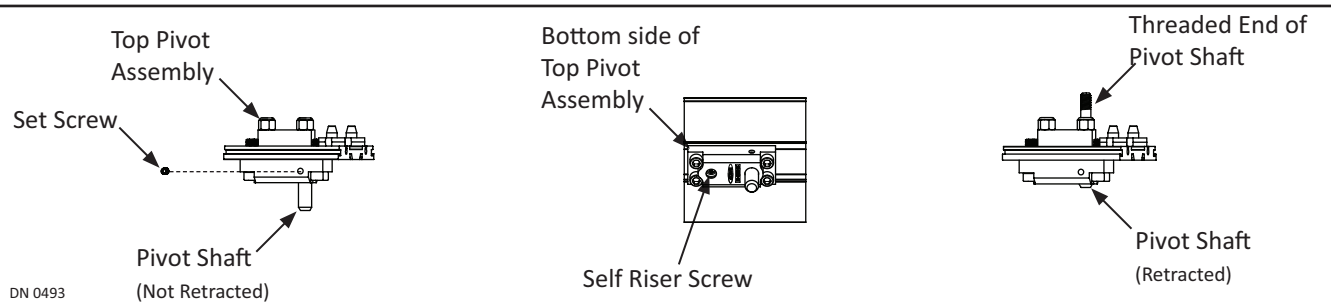


Figure 20 The Center Pivot Shaft

3. Go to the bottom Pivot Assembly. Insert the Ball Bearing onto the Floor Pivot Shaft.

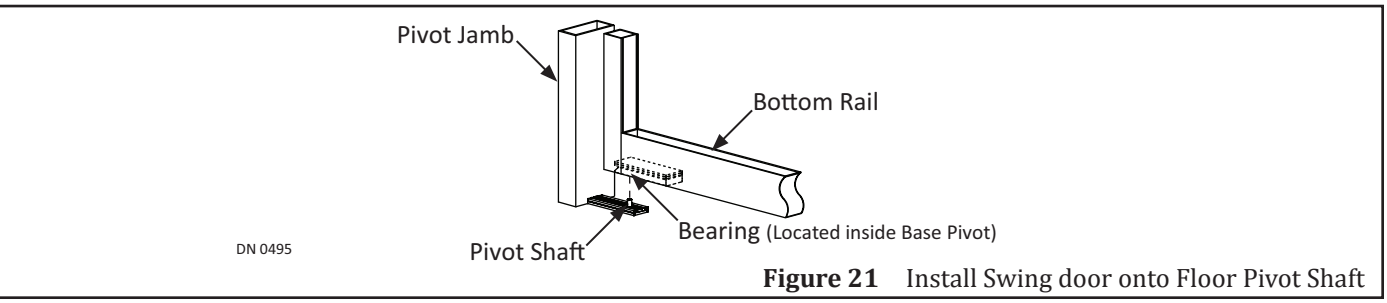


Figure 21 Install Swing door onto Floor Pivot Shaft

4. Go to the Top Rail. Locate the Track Assembly.
5. With a flat head screwdriver, turn the Self Riser Screw clockwise until the Riser Bar is all the way down into the Bearing.
   a. Tighten the Riser Bar tight to the base Pivot Plate to ensure the Pivot Shaft is fully engaged inside the Bushing.

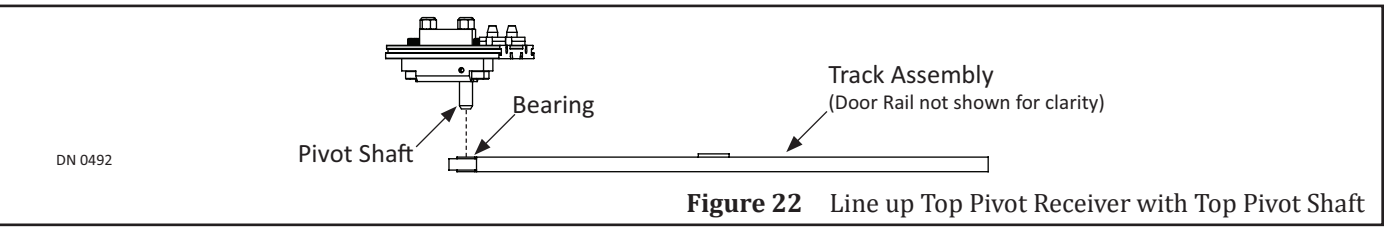
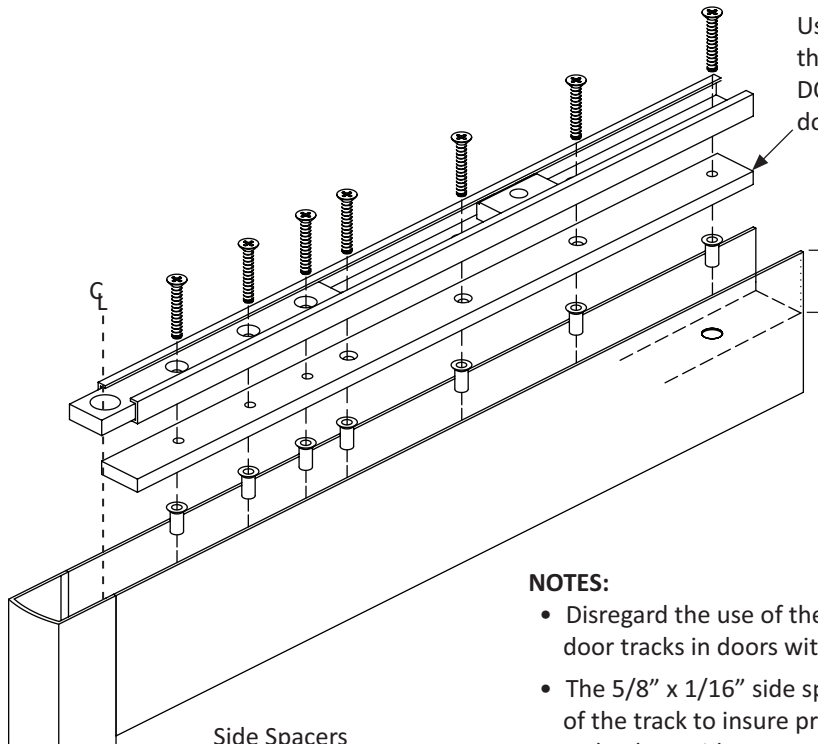
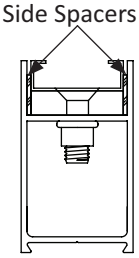
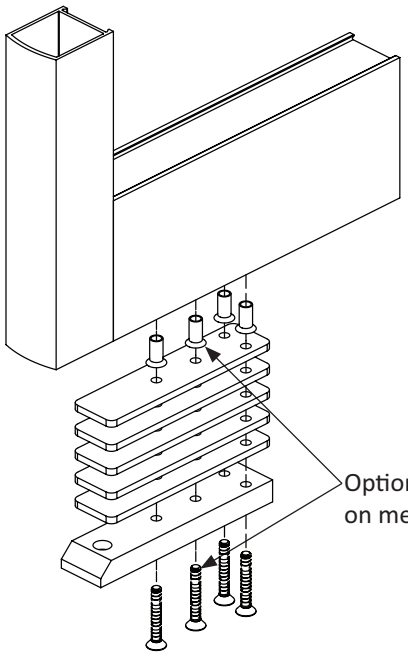


Figure 22 Line up Top Pivot Receiver with Top Pivot Shaft

CHAPTER 7: INSTALL THE SWING DOOR (NOT PROVIDED BY NABCO)







NOTES:

- Disregard the use of the 3/8” inch spacer block when installing door tracks in doors with a web depth of 5/8”.
- The 5/8” x 1/16” side spacers should be installed on either side of the track to insure proper centering of the track in the door web. These side spacers may be left in the door or be removed after the track is securely in place.
- Use the 1/4-20 rivnuts for attaching the pivots and track to door if the door web is not thick enough for sufficient thread engagement.

Installation Instructions:

- Prepare Swing door as shown.
- Install (7) 1/4-20 rivnuts in the web located inside the Top Rail.
- Place the Track, which has been lubricated at the NABCO Factory with lightweight grease, on top of the Spacer Block. Use the Side Spacers where needed.
- Line up Screw holes with rivnuts.
- Secure the Track and Spacer Block (if used) with (7) 1/4-20 x 1-1/2” phillips flat head screws.

DN 0756
DN 0133

Figure 23 Install the Track and Pivot Base

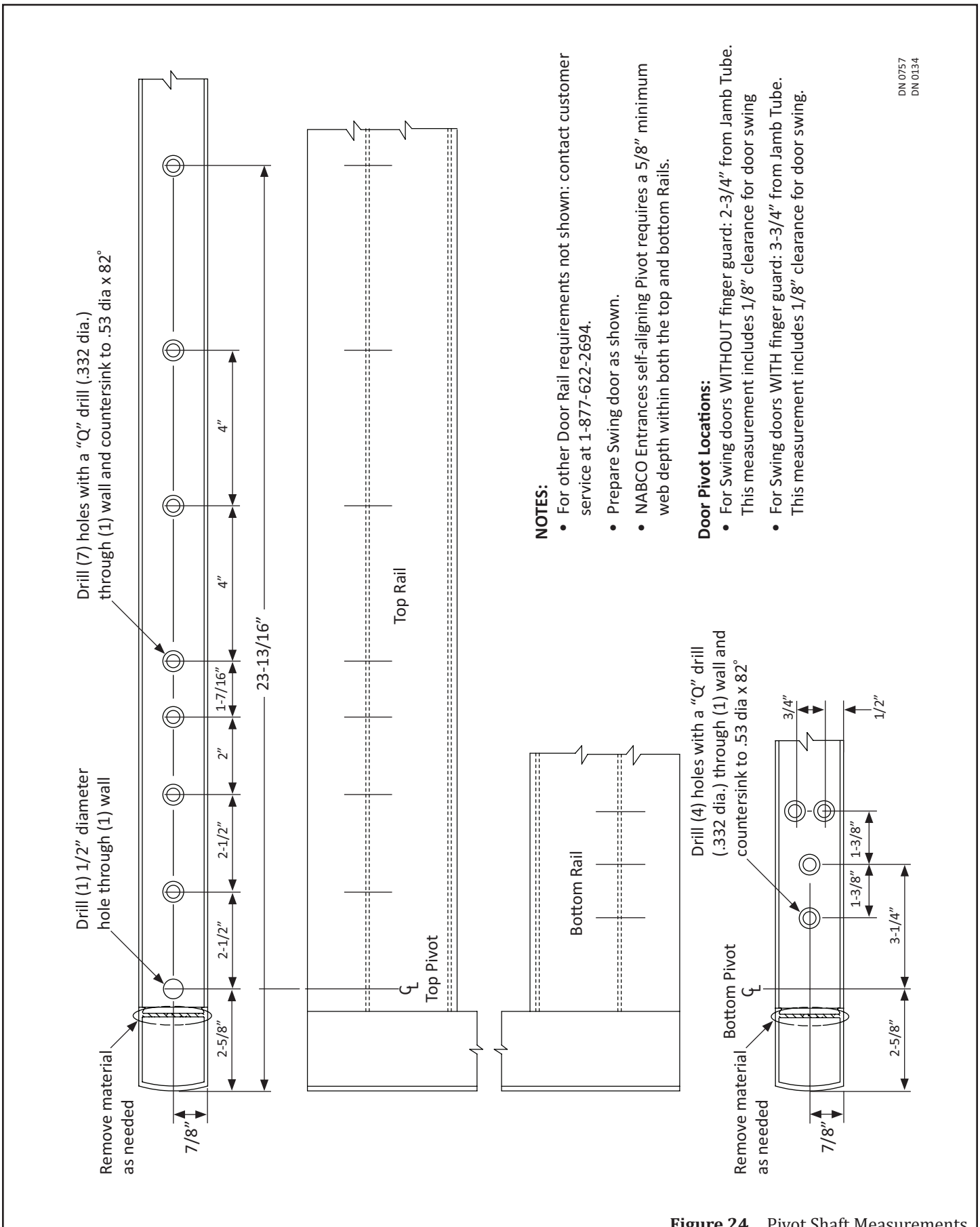


Figure 24 Pivot Shaft Measurements

SECTION 7.1 Prep the Door Rail

The inside wall of the Pivot Stile may butt up against the Door Rail (at the very top). If the Track needs to extend past the Door Rail, the inside wall will need to be milled out to match the width and depth of the Web. This may need to be done to the top Door Rail and/or the bottom Door Rail.

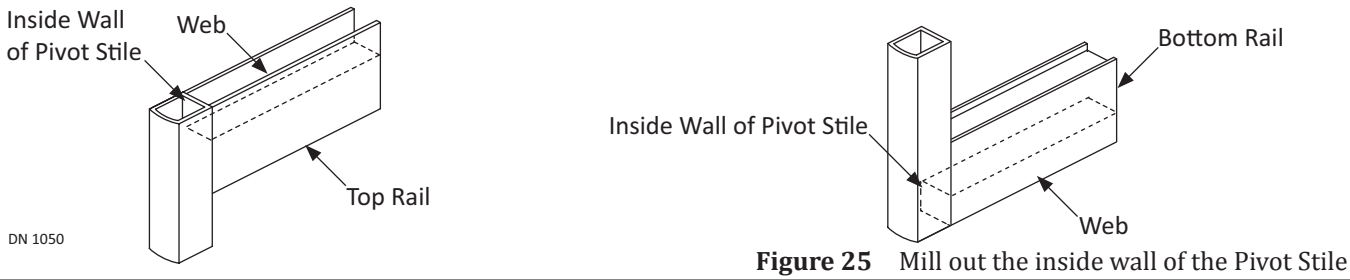


Figure 25 Mill out the inside wall of the Pivot Stile

SECTION 7.2 Install the Base Pivot into the Bottom Door Rail

Note: Please refer to Figure 24 for detailed Base Pivot installation measurements.

1. Lay the Swing door onto a flat surface that is sturdy enough to keep the door stable, and high enough to see while drilling.
2. Go to the Bottom Rail on the Pivot side of Swing Door. Measure to find the center inside the Web. Mark a horizontal line all the way across the full width of the Web face.
3. From the outer edge of the Pivot Stile measure:
   - With the Finger Guard; 3-5/8 inches.
   - Without the Finger Guard; 2-5/8 inches.
4. Mark a vertical line across the horizontal line onto the Web face. This is the center of the Bearing.
5. From the center of the Bearing mark, measure another 3-1/4 inches. Mark a vertical line across the horizontal line onto the Web face. This is the center of the second .322 diameter anchor hole.
6. Obtain (1) Spacer. Center the Spacer inside the Web. Align the second screw hole to the second anchor hole marked onto the Web face.
7. Use the Spacer as a template to mark the remaining (3) anchor holes. Ensure the Spacer is aligned and centered. Drill (4) .322 anchor holes.
8. Countersink the (4) anchor holes to .53 diameter x 82 degrees.
9. Insert (4) 1/4-20 tapped Rivnuts into the (4) .322 anchor holes.
10. Obtain the Base Pivot assembly. Place (1-4) Spacers on the bottom side of the Pivot Base.
    a. The Gel filled Bearing is located on the top side of the Pivot Base.
11. Insert the Pivot Base assembly up into the Web. Add/subtract spacers until the Base Pivot is flush to the outside edge of the Door Rail. Secure the Pivot Base to the Web with (4) 1/4 - 20 x 2 inch Phillips Head Machine Screws.

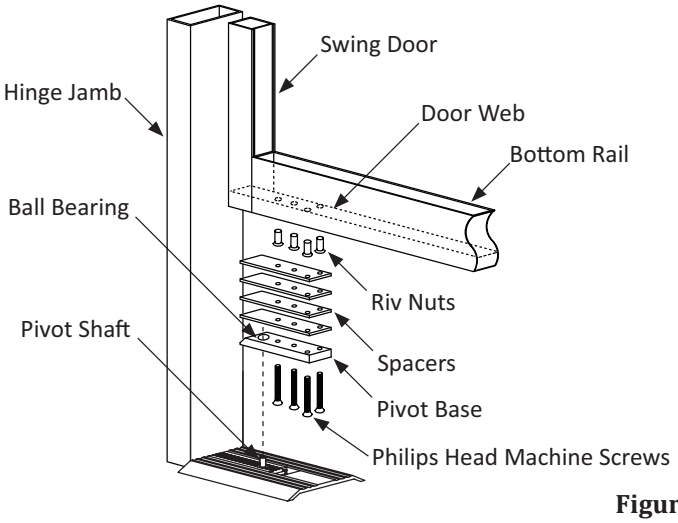


Figure 26 Base Pivot Assembly

SECTION 7.3 Partially Install the Track into the Top Door Rail

1. Lay the Swing door on a flat surface that is sturdy enough to keep the door stable, and high enough to see while drilling.
2. Go to the Top Rail on the Pivot side of Swing Door. Measure to find the center inside the Web. Mark a horizontal line all the way across the full width of the Web face.
3. From the outer edge of the Pivot Stile measure 23-13/16 inches. Mark a vertical line across the horizontal line onto the Web Face. This is the center of (1) .322 anchor hole.
4. Drill (1) .322 anchor hole.
5. Countersink the anchor hole to .53 diameter x 82 degrees.It is recommended to drill tap threads for anchors in a steel or aluminum structure.
6. Insert (1) 1/4-20 tapped Rivnut into the .322 anchor hole.
7. Obtain the Track Assembly. Place (1) Spacer Block inside the Web according to the Web Depth:
   - 5/8 inch deep: No Spacer Block is required
   - 7/8 inch deep: Insert 1/4 inch Spacer Block
   - 1 inch deep: Insert 3/8 inch Spacer Block
   - 1-9/16 inch deep: Insert (2) 3/8 inch Spacer Blocks
8. Place (1) Track on top of the Spacer Block (or the Web if a Spacer Block is not used).
   a. Ensure the Pivot Pin Receiver is on the Pivot Side of the Web.
9. Place (2) 5/8 " x 1/16" Side Spacers on either side of the Track.Side Spacers are used to ensure proper centering of Track.

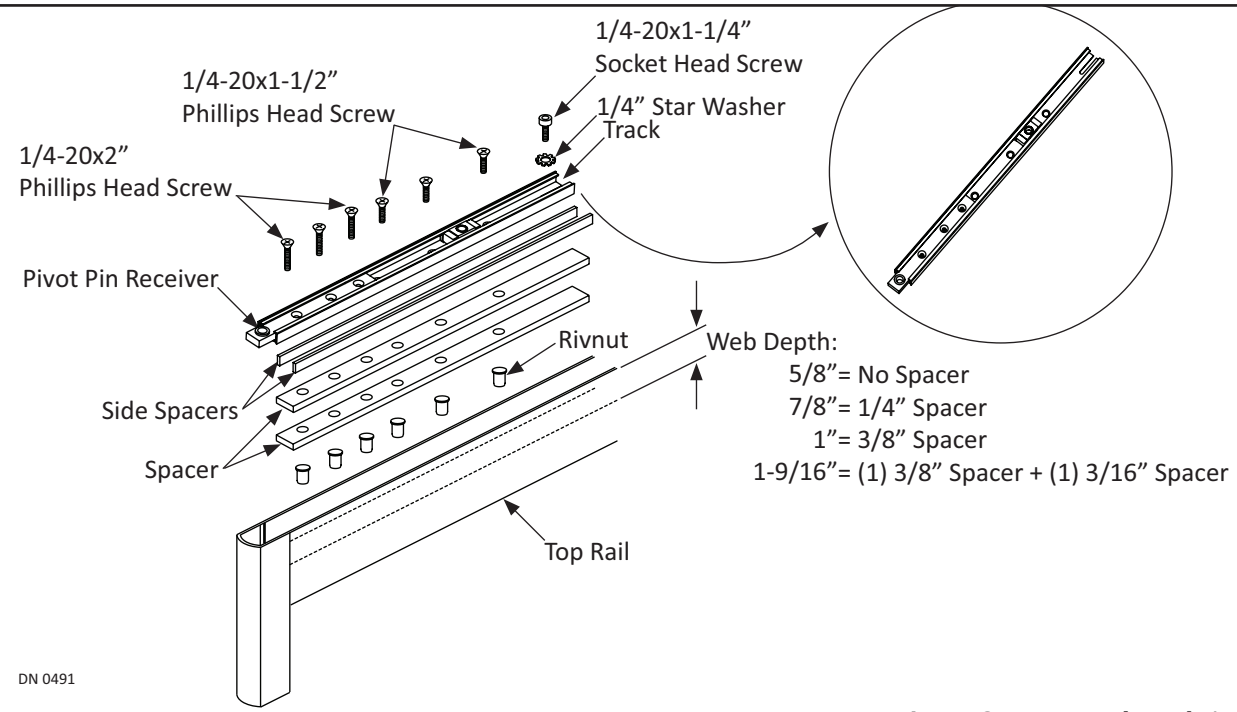


Figure 27 Top Rail Track Assembly

10. From the outer edge of the Pivot Stile measure: (3-5/8 inches) with Finger Guard; (2-5/8 inches) without Finger Guard.
11. Slide the Track towards the Pivot Stile or away from the Pivot Stile until the Bearing is centered to that measurement.
12. Locate the Slot at the end of the Track. Locate the Pre-drilled screw hole.
13. Secure the Track to the Web with (1) 1/4 inch Star Washer and (1) 1/4-20x1-1/4 inch Socket Head screw. Tighten but do not overtighten. The Socket Head screw may need to be loosened one more time.

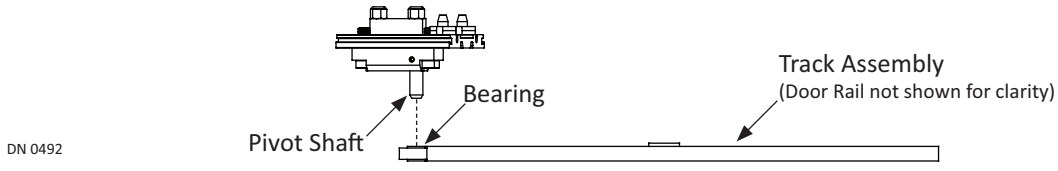


Figure 28 Insert the Top Pivot Shaft into the Bearing

SECTION 7.4 Temporily Install the Swing Door

1. Locate the Pivot Assembly on the Pivot side of Header.
2. Loosen the Set Screw located directly above the Pivot Shaft.
3. Turn the Self Riser Screw (located underneath the Pivot Assembly) counter-clockwise to retract the Pivot Shaft.

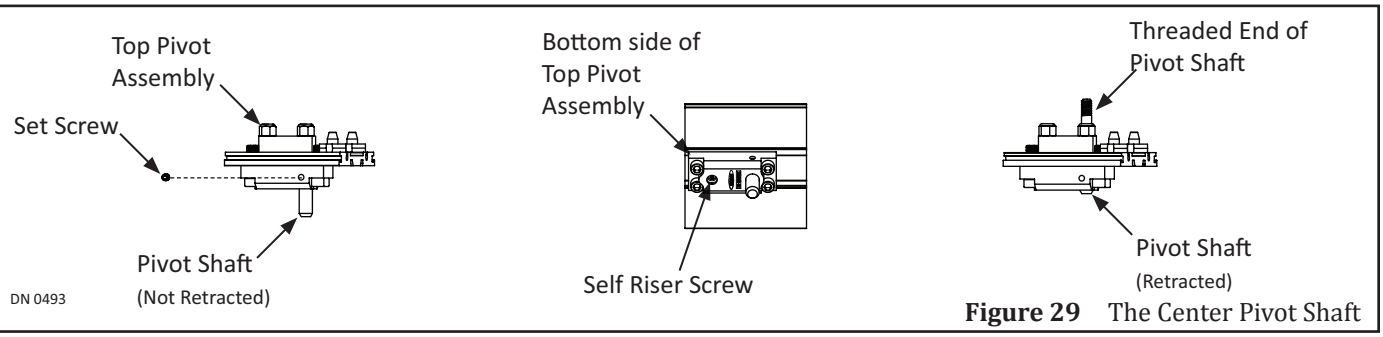


Figure 29 The Center Pivot Shaft

4. Go to the bottom Door Rail. Slide the Bearing onto the Pivot Shaft.

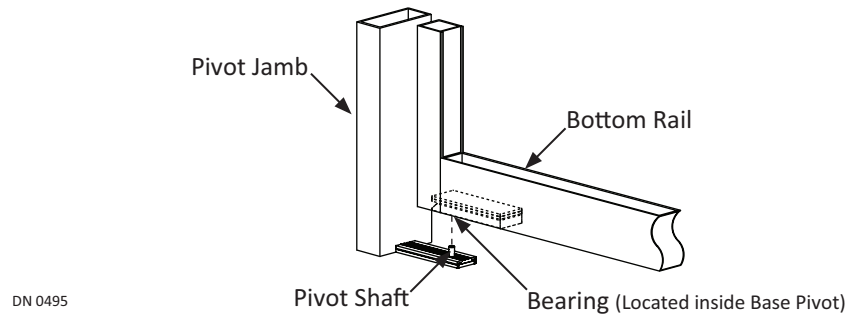


Figure 30 Install Swing door onto Floor Pivot Shaft

5. Go to the top Door Rail. Turn the Self Riser Screw clockwise to insert the Pivot Shaft into the Bearing.
6. With a flat head screwdriver, turn the Self Riser Screw clockwise until the Pivot Shaft is inserted all the way down into the Bearing.
7. Slide the Track Assembly back and forth until the Swing door is properly aligned.
   a. It is recommended to use a Level.
8. Tighten the Set Screw, do not overtighten. The Set Screw may have to be loosened one more time.

7.4.1 Align the Swing Door

1. Fully open the Swing door.
2. Go to the Track Assembly located inside the Top Rail.
3. Loosen (1) 1/4-20x1-1/4 inch Socket Head Screw.
4. Slide the Track Assembly back and forth until the Swing door is properly aligned.
   a. It is recommended to use a Level.
5. Tighten the Socket Head Screw but do not tighten all the way down.
   a. The Socket Head Cap Screw may need to be loosened one more time.

7.4.2 Adjust the Swing Door\Height

1. Measure for proper clearance:
   - Top of Swing door must be: 1/8 inch to 1/16 inch from Header.
   - Bottom of Swing door must be: 3/16 inch to 1/16 inch from Floor (or threshold if it is installed).
2. Remove the Swing door.
3. Slide (1-6) Spacer Shims onto the Pivot Shaft to adjust the Swing door for proper clearance.
4. Slide (1) Self Aligner Cap on top of the (1-6) Spacer Shims.
5. Reinstall the Swing door and then check the alignment.

Figure 31 Install Shims and Self Aligner Cap onto Floor Pivot Shaft

CHAPTER 8: PERMANENTLY INSTALL THE SADDLE THRESHOLD

1. Fully open the Swing door.
2. Obtain (5) or more 1/4 x 1-1/4 inch Flathead Phillips Tapcon screws.
   a. The number of screws and anchors depends upon the length of the Saddle Threshold.
3. In the center of the Saddle Threshold, approximately 4 inches from the cutout for the Pivot Plate, mark (1) screw hole.
4. In the center of the Saddle Threshold, approximately 4 inches from the Strike Jamb, mark (1) screw hole.

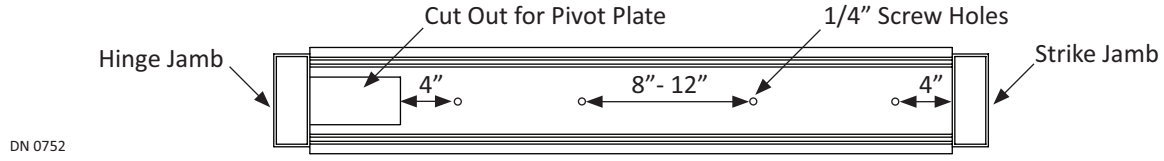


Figure 32 Mark and Drill Holes on Saddle Track

5. Mark remaining screw holes 8 - 12 inches apart and evenly spaced.
6. Secure the Threshold with fasteners not provided by NABCO.
   a. Do not overtighten screws to prevent deforming the Saddle Threshold.

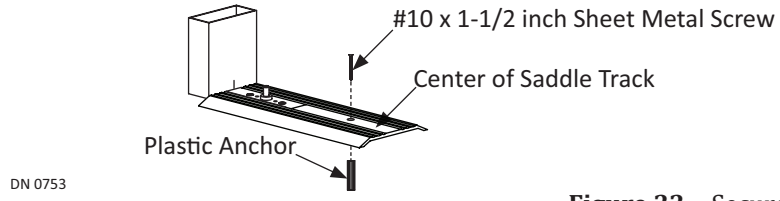


Figure 33 Secure Floor Track to Floor Surface

CHAPTER 9: INSTALL THE SWING ARM

1. Obtain the Swing Arm.
2. With an 5/16 inch Allen Wrench, remove the Pivot Screw and (3) Washers. Obtain the Bolt (shipped separately). Set aside.

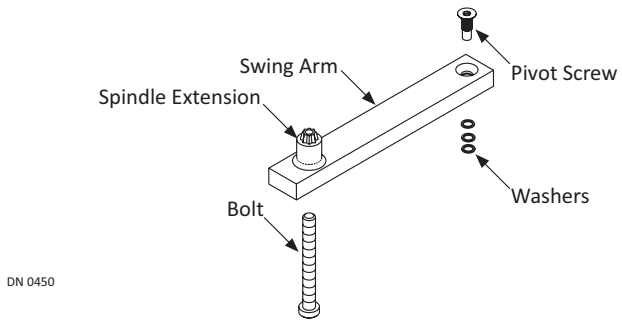


Figure 34 Prepare the Swing Arm

SECTION 9.1 Secure the Arm to the Operator

CAUTION **Power must be turned OFF during the Swing Arm installation.**

Attention: While installing/uninstalling the Arm, it is recommended to clamp a Vice Grip onto the end of the Motor Shaft to keep It from rotating.

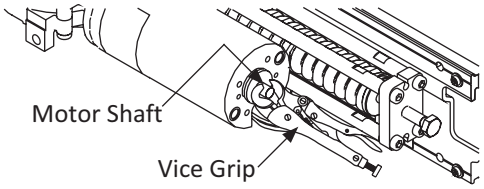


Figure 35 Clamp Vice Grip to Motor Shaft

1. Open the Door Panel. Insert the Spindle Extension into the Output Shaft.
2. Position the Swing Arm with a 15° offset.
   a. To facilitate the installation: the Closing Spring can be completely released by means of the Adjusting Screw.
3. Secure the Swing Arm to the Operator with (1) Bolt.

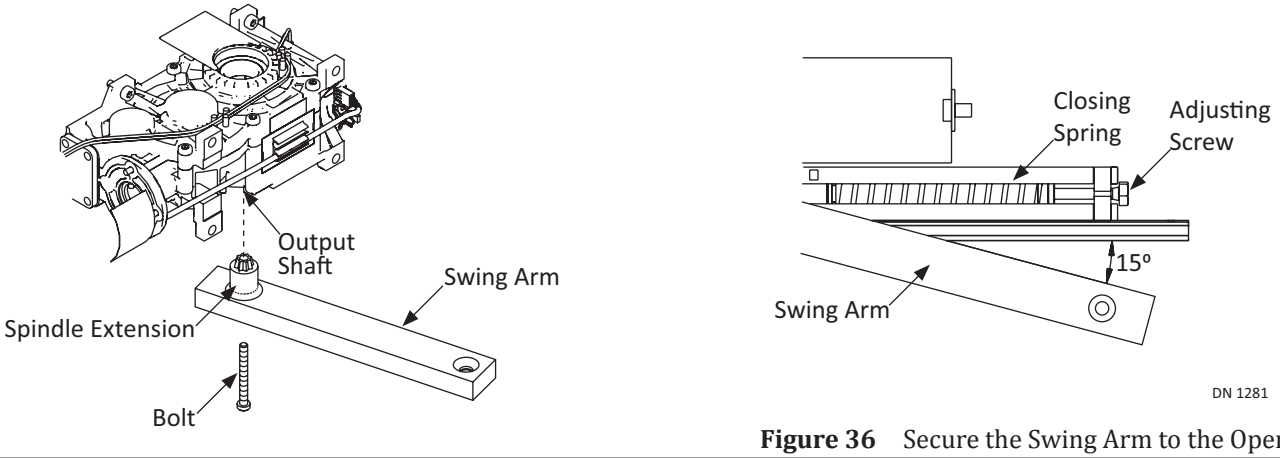


Figure 36 Secure the Swing Arm to the Operator

SECTION 9.2 Secure the Swing Arm to the Swing Door

1. Go to the end of the Swing Arm. Align the Pivot Screw hole to the Slide Block.
2. Check to see how many Washers will be necessary to install between the Swing Arm and the Swing door.
   - 3 for 3/16 inch Clearance Door
   - 2 for 1/8 inch Clearance Door
   - 1 for 1/16 inch Clearance Door
3. Hold the washers in place while inserting the Pivot Screw through the hole and into the Slide Block. Tighten the Pivot Screw.

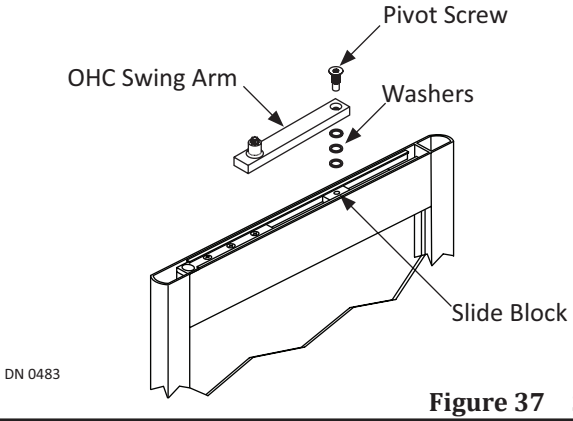


Figure 37 Secure the Swing Arm to the Swing Door

CHAPTER 10: 120 VAC GENERAL WIRING

WARNING **Shut the installation site, branch 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.**

WARNING **All high voltage electrical connections must be made by licensed electricians according to National and Local electrical codes/regulations.**

CAUTION **Permanent wiring shall be employed as required by local codes.**

CAUTION **Keep all Incoming 120 VAC wiring separate from low voltage wiring within Header. 120 VAC Power wires must be routed (separate from other wiring) located near the top of inside Header.**

CAUTION **Ensure that the Grounding of the Electric Power Supply is installed/connected in a proper way (especially the PE Cable from the Building Side).**

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.

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

Note: For detailed wiring, please refer to the GT20 Swing Door Wiring and Programming Manual P/N 15-14984.

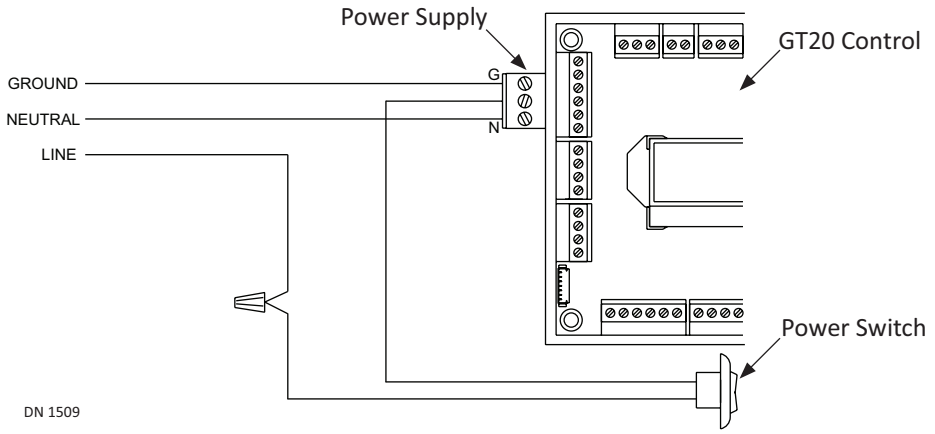


Figure 38 Connect the Power Supply

CHAPTER 11: THE MOTOR CONNECTOR HARNESS

WARNING **!!! If a panic breakout latch is installed and the motor is plugged in backwards or the wrong arms are chosen during programming, there is a possibility that the door can burst open unexpectedly towards the installer once TEACH mode is initiated !!!**

The Motor Connector Harness is used to ensure proper Swing Door operation during Manual Mode or during a Power Outage/No Power. The Motor Connector Harness is connected to the Motor Harness with (1) of two Male Connectors. Each Male Connector is identified by color: (Y) Green and (X) Orange.

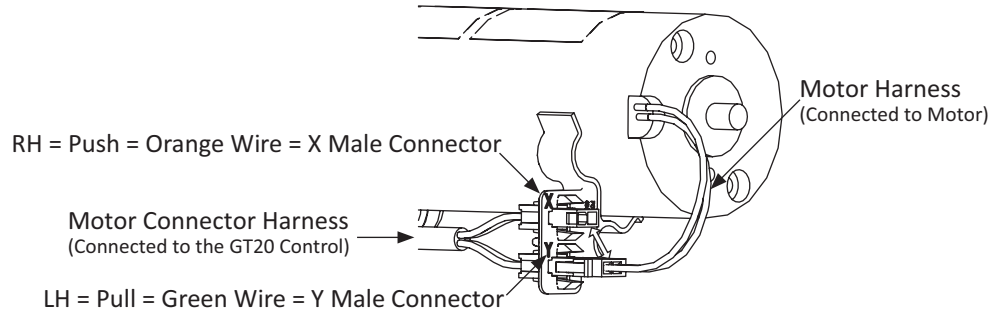


Figure 39 Connect the Motor Connector Harness

Before connecting the Male Connector, the installer must first determine the Handing of the door (that determines the Spindle Rotation) and then refer to Chapter 16 under the Parameter Menu (ROD).

SECTION 11.1 Determine the Spindle Rotation

The spindle rotation determines whether the door is pushed open or pulled open.

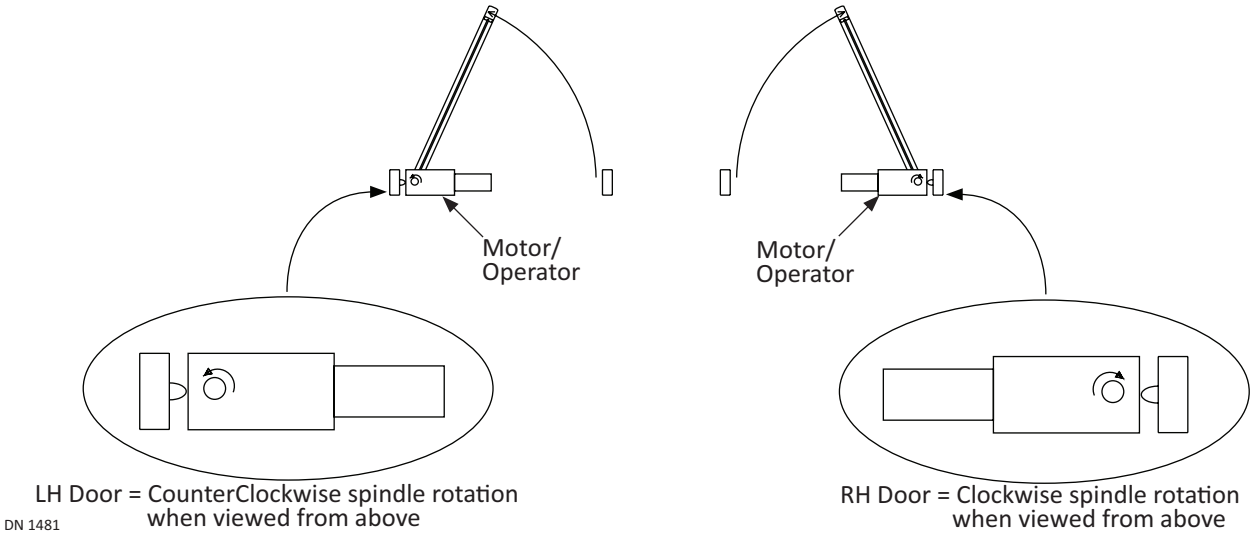


Figure 40 Operator Spindle Rotation

CHAPTER 12: DETERMINE THE PARAMETER

The Parameter Menu is displayed on the LCD screen located on the GT20 Control. The Element "ROD" must be selected in order to program the appropriate Unit Type, and Value. If the Male Connector is not correctly programmed, the door can burst open unexpectedly during TEACH. Please refer to Table 6 as a guide to select the appropriate Unit for each Male Connector.

Table 6 Handing and Spindle Rotation

Male Connector	OHC
X = Orange	RH = Clockwise = Push
Y = Green	LH = Counterclockwise = Pull

WARNING **Turn Power OFF before installing the Motor Connector Harness.**

WARNING **Clear the area of any persons or objects in the path of moving Door Panel, in order to avoid injuries or damages.**

SECTION 12.1 Connect the Male Connector to the Motor Harness

1. Ensure all Power is turned OFF.
2. Connect the Motor Connector Harness to the Motor Harness according to the Handing.
3. Go to the GT20 Control. Locate the FSlam Potentiometer.
   b. The FSlam Potentiometer is a blue square labeled "R522".
4. Ensure the FSlam Potentiometer is turned fully counter clockwise.

Attention: FSlam potentiometer must always be turned fully counterclockwise. The FSlam potentiometer is used to govern Latch Check speed when power is turned OFF.

5. Go to the Parameter menu located within the GT20 Swing Door Wiring and Programming Manual; P/N 15-14984.

SECTION 12.2 Test the Swing Door

1. Manually *OPEN* the Door Panel to the Full Open position, then let it go.
   a. The Swing door should slow down before reaching the Fully Closed Position.
   b. If the Door Panel slams shut, the Motor Connector Harness is connected wrong.
      1. Swap the connections to the Motor.
      2. Test the Door Operation again.

CHAPTER 13: ADJUSTMENTS

CAUTION

- **Check that the Door may be opened without power applied to the Unit.**
- **Ensure the force required to open the Door with power disconnected, shall not be greater than 50 pounds (222.4N).**
- **Check that the door does not close with a force greater than 30 pounds (133.4N) at the Latch Side of the closing stile, and does not close the final 10 degrees in less than 1.5 seconds.**

SECTION 13.1 Adjust Preload

- By default, Pre-load for the Closing Spring is: X* = 1-1/32 inch (26 mm).
- The Set Screw needs to be shortened by 3/8 inch (10mm) if it butts up against the side cover where the Power/ Mode Switch is installed.
- Pre-load adjustments must be done before carrying out the automatic set-up procedure.
- Adjust the spring pressure so Door Panels correctly engage existing locks.
- Close Spring force can be ***reduced*** on Standard Installations.

1. Close the Door Panel. Go to the Closing Spring.
2. Locate the Adjusting Screw.
3. Adjust distance X* according to Table 7 or SECTION 13.2.
4. Open the Door Panel at least 60 degrees, then let it go.
   a. If the Door Panel fails to fully close, repeat Steps 1 - 4.

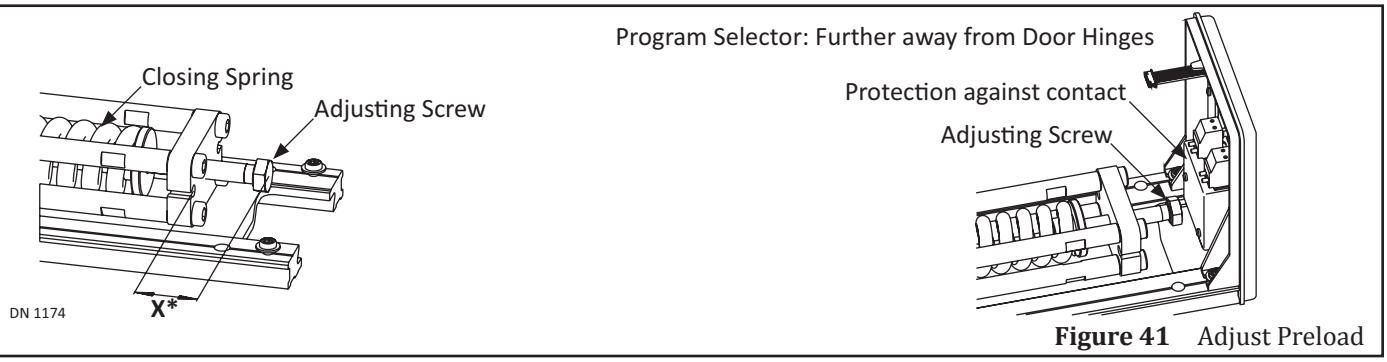


Figure 41 Adjust Preload

Table 7 Standard GT20 Swing Door Operator Assembly

Door Panel Width	37-3/8”	43-3/8”	49-1/4”	55-1/8”	63”
OHC (Pushing and Pulling function)					
Measure X*	1-1/4” (overall door width)				

- X* = Approximate value for a Reveal of 0 mm.
- ANSI 156.10 reference = Amount of Force required to prevent a *stopped* power operated Swing Door from moving in the direction of closing shall not exceed 30 lb. if measured 1 inch from the lock edge of the Door Panel at any point during the closing cycle.”

SECTION 13.2 FSLAM POTENTIOMETER (POWER OFF)

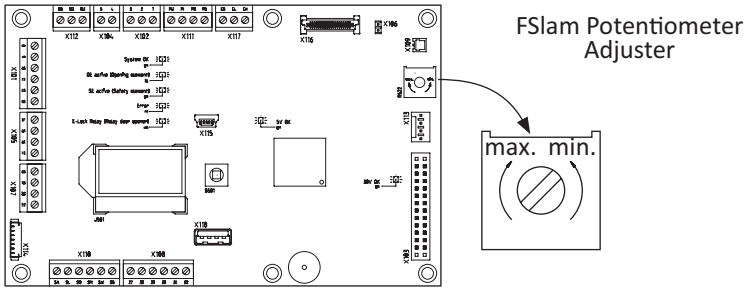
CAUTION

- **Only adjust the Cam when absolutely necessary.**
- **During a Power Failure or when Power is turned OFF, ONLY adjust the Cam if the FSlam Potentiometer will not close the Door after repeated adjustment attempts have been made. The Cam can be adjusted to vary the angle where the slam function will start.**

Note: The FSlam Potentiometer is utilized for Standard Application only (not Inverse Application).

When Power is OFF or during Manual Mode, the Motor slows the Door Panel down to a constant closing speed until the Full Closed position is reached and the Door Panel is locked. This is done by utilizing the FSlam potentiometer (accelerated force). To ensure the FSlam parameter setting is correct:

1. Open the door Panel 90 degrees, then let it go.
   a. If the Door Panel fails to fully close and then lock, adjustments are deemed necessary.
      1. Go to the GT20 Control.
      2. Go to either side of the GT20 Control to locate a Blue square.
         a. Exact location Depends upon the type of installation.
      3. With a flat head screwdriver turn the Potentiometer:
         - Clockwise for maximum accelerated force.
         - Counterclockwise for minimum accelerated force.



DN 1175

Figure 42 Adjust Closing Force

SECTION 13.3 Adjust the Activation Angle

Note: By default, the FSlam Angle (from the Fully Closed Position) is approximately 5 degrees.

1. Carefully pry the Service Cover from the gearbox housing with a flathead screwdriver.
2. Locate the Cam Disk.
   a. The Locking Screw may be positioned under Cam Setting 1 or Cam Setting 2.
3. Slightly loosen the Locking Screw with a 1.5mm socket wrench.
4. According to Table 8, turn the Cam Disk clockwise or counterclockwise to adjust the Angle.
   a. Angle range is between 5 degrees - 15 degrees.
5. Tighten the Locking Screw.
6. Open the Door Panel 45 degrees, then let it go.
   - If the Door Panel locks:
     - Snap the Service Cover back onto the Gearbox Housing.
   - If the Door Panel fails to lock:
     - Repeat steps 1 - 5 accordingly.

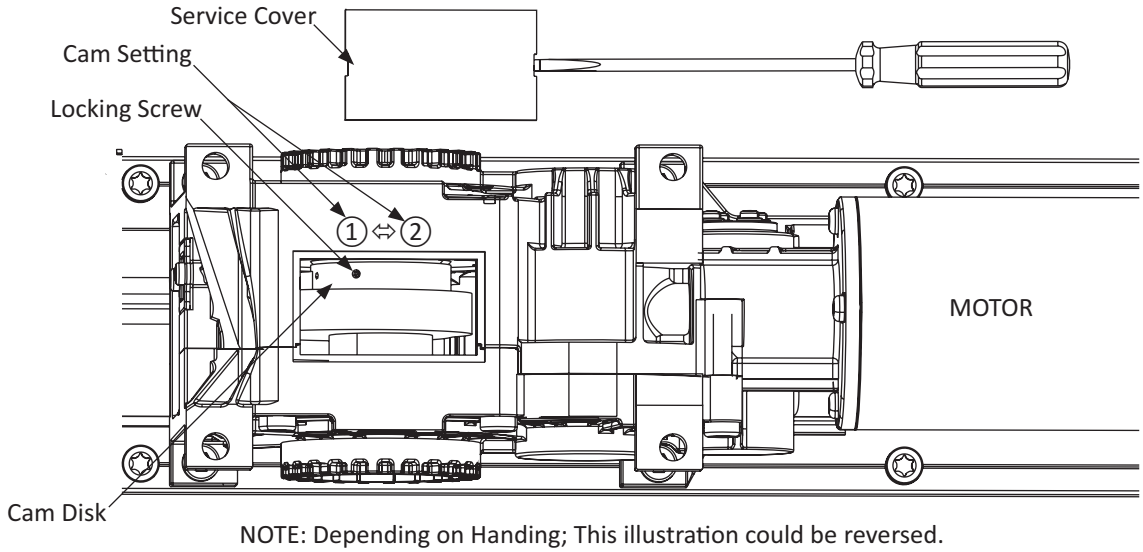


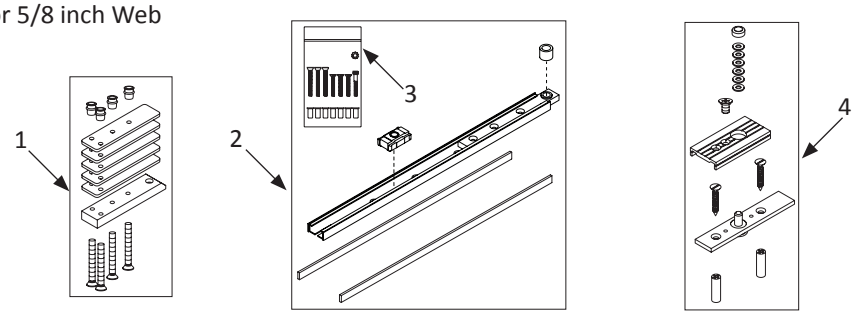
Figure 43 Adjust Activation Angle

Table 8 Angle Range

Angle Range according to Cam Setting			
Setting	**Swing Arm**	**Mount**	**Angle Range**
1	Inswing Arm (pull)	Frame	Smaller
	Outswing Arm (push)	Frame	Bigger
	Inswing Arm (push)	Frame	Bigger
	Inswing Arm (push)	Door Panel	Bigger
2	Inswing Arm (pull)	Frame	Bigger
	Outswing Arm (push)	Frame	Smaller
	Inswing Arm (push)	Frame	Smaller
	Inswing Arm (push)	Door Panel	Smaller

SERVICE PARTS: BAG P/N A-00565

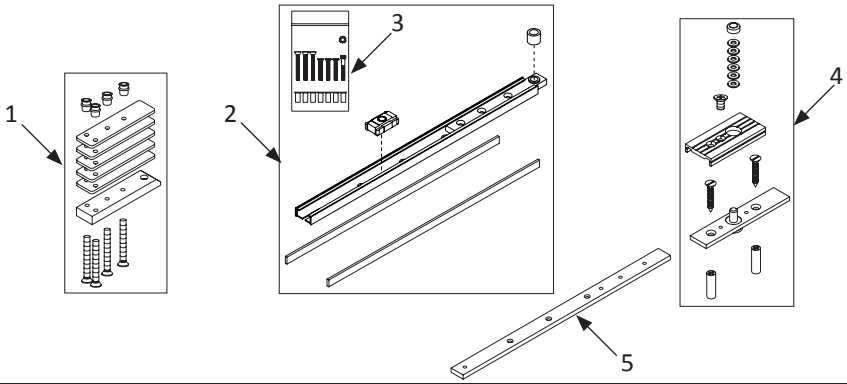
OHC Track Assembly for 5/8 inch Web



OHC Track for 5/8 inch Web: A-00565				
Item	**Part**	**QTY**	**Description**	**Used To**
1	A-00500	1	BTTM PIVOT ASSY, DOOR PORTION, SWING DR	Open/Close the Swing Door
2	A-00459	1	PIVOT BLOCK,O.H.C.,TRACK W/STOP	Swing Arm seats inside Track to Open/Close Door
3	A-00450	1	PARTS BAG,O.H.C. TRACK,SCREW	Secure Track Assembly inside the Top Web
4	A-00417	1	FLOOR PIVOT ASSY, PIN & COVER	Open/Close the Swing Door

SERVICE PARTS: BAG P/N 21-3561

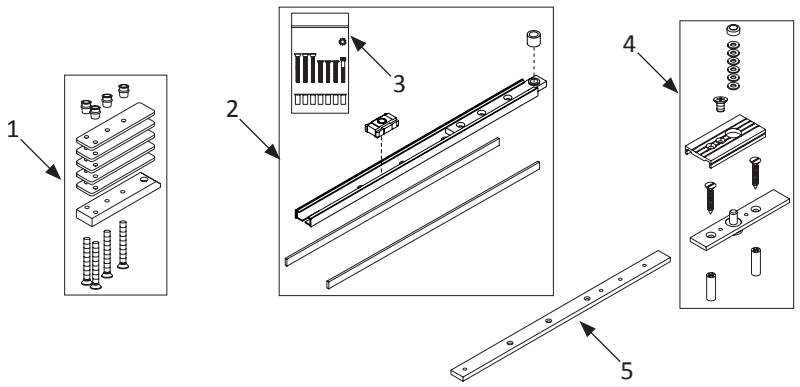
OHC Track Assembly with Spacer for 7/8 inch Web



OHC Track for 7/8 inch Web: 21-3561				
Item	**Part**	**QTY**	**Description**	**Used To**
1	A-00500	1	BTTM PIVOT ASSY, DOOR PORTION, SWING DR	Open/Close the Swing Door
2	A-00459	1	PIVOT BLOCK,O.H.C.,TRACK W/STOP	Swing Arm seats inside Track to Open/Close Door
3	A-00450	1	PARTS BAG,O.H.C. TRACK,SCREW	Secure Track Assembly inside the Top Web
4	A-00417	1	FLOOR PIVOT ASSY, PIN & COVER	Open/Close the Swing Door
5	A-00948	1	SPACER BLOCK	Adjust height of Track within Top Rail

SERVICE PARTS: BAG P/N 21-0928

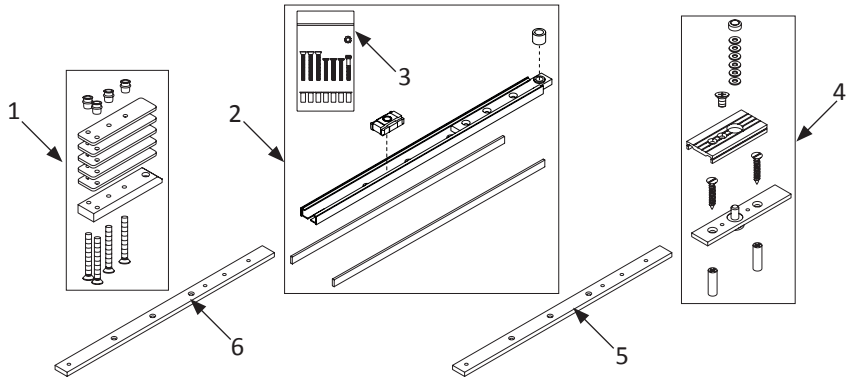
OHC Track Assembly with Spacer for 1 inch Web



OHC Track for 1 inch Web: 21-0928				
Item	**Part**	**QTY**	**Description**	**Used To**
1	A-00500	1	BTTM PIVOT ASSY, DOOR PORTION, SWING DR	Open/Close the Swing Door
2	A-00459	1	PIVOT BLOCK,O.H.C.,TRACK W/STOP	Swing Arm seats inside Track to Open/Close Door
3	A-00450	1	PARTS BAG,O.H.C. TRACK,SCREW	Secure Track Assembly inside the Top Web
4	A-00417	1	FLOOR PIVOT ASSY, PIN & COVER	Open/Close the Swing Door
5	M-01342	1	BLOCK - SPACER 3/8	Adjust height of Track within Top Rail

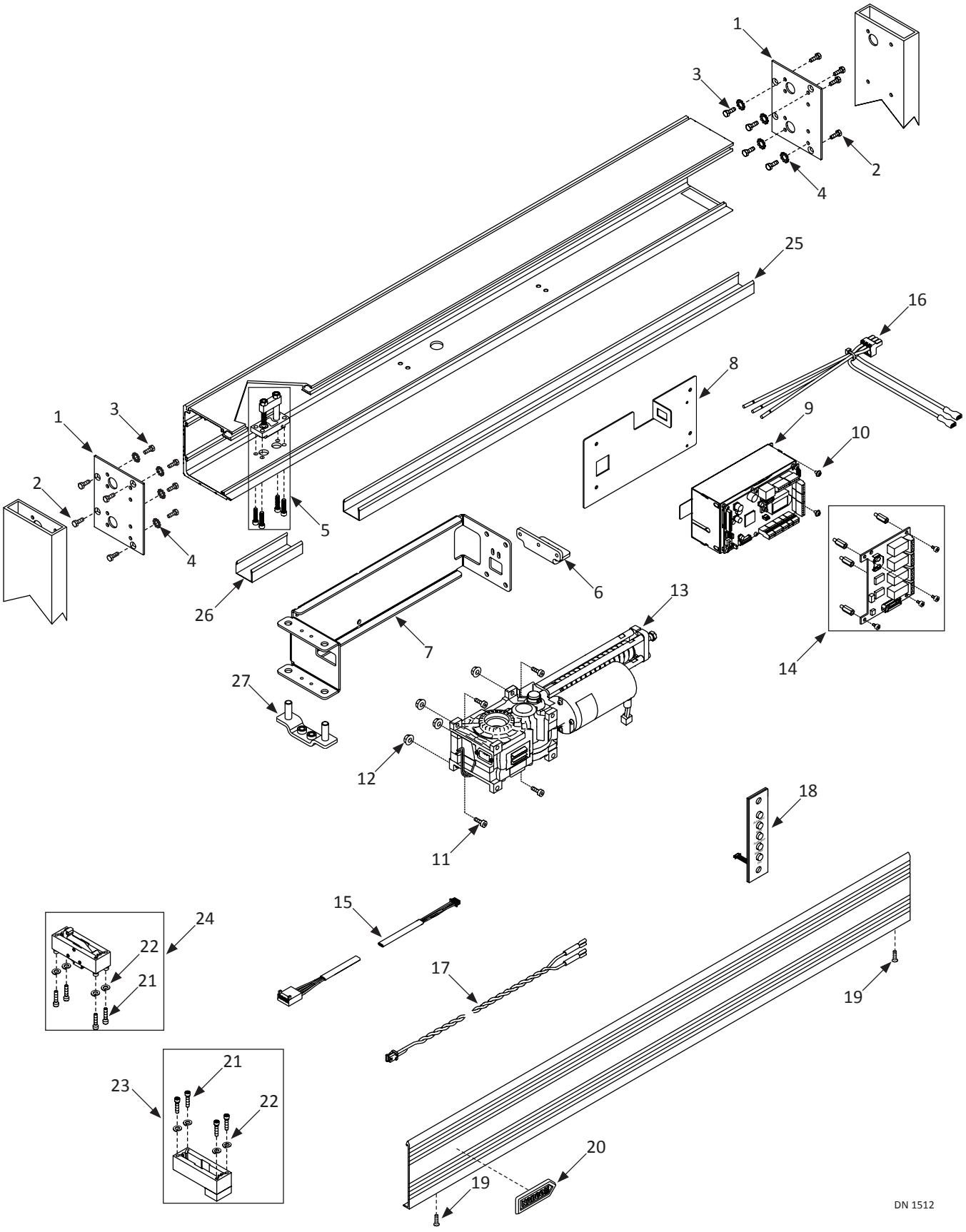
SERVICE PARTS: BAG P/N 21-5106

OHC Track Assembly with Spacer for 1-9/16 inch Web



OHC Track for 1- 9/16 inch Web: 21-5106				
Item	**Part**	**QTY**	**Description**	**Used To**
1	A-00500	1	BTTM PIVOT ASSY, DOOR PORTION, SWING DR	Open/Close the Swing Door
2	A-00459	1	PIVOT BLOCK,O.H.C.,TRACK W/STOP	Swing Arm seats inside Track to Open/Close Door
3	A-00450	1	PARTS BAG,O.H.C. TRACK,SCREW	Secure Track Assembly inside the Top Web
4	A-00417	1	FLOOR PIVOT ASSY, PIN & COVER	Open/Close the Swing Door
5	M-01337	1	BLOCK,SPACER,3/16”	Adjust height of Track within Top Rail
6	M-01342	2	BLOCK - SPACER 3/8	Adjust height of Track within Top Rail

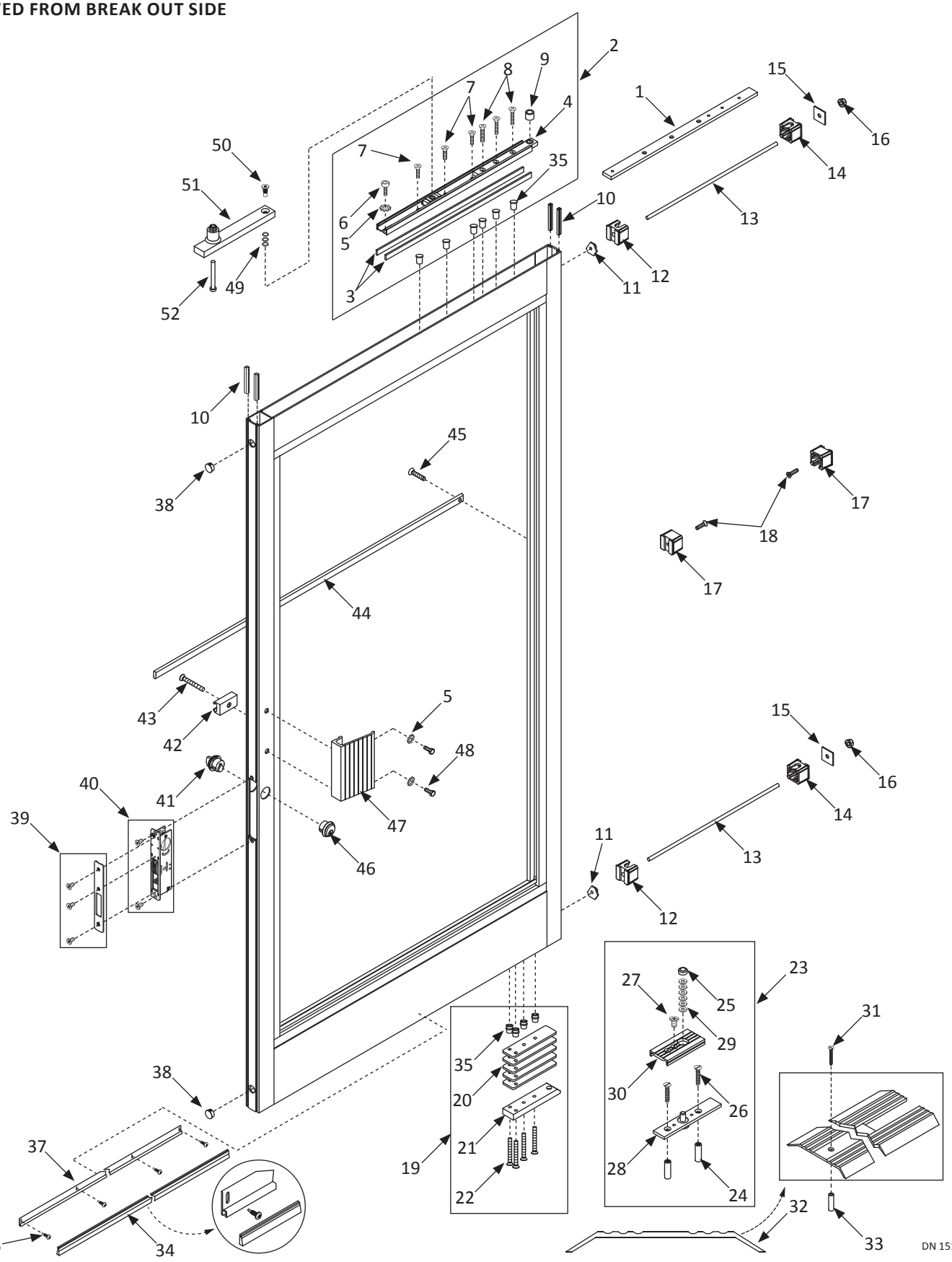
SERVICE PARTS: GT20 OHC HEADER



GT20 Overhead Concealed Header			
Item	**Part**	**Finish/Sizes/Notes**	**Description**
1	A-61172		“END CAP,8300,SIDELOAD,NH,4 HOLE,204”
	A-71172		“END CAP,8300,SIDELOAD,NH,4 HOLE,313”
2	T-00016		FHMS,1/4-20x0.438L.,PHIL,UNDERCUT,ZINC
	T-00108		FHMS,1/4-20x0.438L.,PHIL,UNDERCUT,BLK ZN
3	T-00064		HHCS,1/4-20x0.750L.,ZINC
4	T-00087		WASHER, LOCK, EXT, 1/4 ID, ZINC
5	A-00490		PIVOT,TOP,SWINGER
6	M-01594		“BRACKET,MOUNTING ANGLE,GT8300”
7	M-01593		“PLATE,MOUNTING ,FD20”
8	M-01737		“PLATE,CONTROLS,GT20 OHC”
9	V-00317		“CONTROL UNIT,GT20”
10	T-00452		THMS,M4-.7 X 8 mm LG,PHIL,ZINC
11	T-00077		SHCS,1/4-20x0.750L.,ZINC
12	T-00056		NUT,WHIZLOCK,1/4-20,ZINC
13	V-00316		“DRIVE MODULE,GT20”
14	V-00326	Optional	BOARD,RELAY,GT20
15	M-01740		“CABLE,ENCODER,GT20 OHC”
16	M-01739		“HARNESS,POWER,GT20 OHC”
17	M-01741		“CABLE,SWITCH,GT20 OHC”
18	V-00420		“SWITCH,JAMB,GT20”
19	T-00337		PHSMS:#8x0.625L.:PHIL
20	C-00067		“NAMEPLATE, ADHESIVE BACKED”
21	T-00232		SHCS,10-24x0.875L.,ZINC
22	T-00231		WASHER, LOCK, SPLIT, #10 ID, ZINC
23	A-00643		DOOR STOP:NON PANIC
24	A-00430	Clear	KIT,PANIC LATCH,O.H.C.204
	A-70430	Dark Bronze	KIT,PANIC LATCH,O.H.C.,313
25	M-60889	Clear/Cut to length	SNAP CHANNEL, GT8000,204,,EXTRU
	M-70889	Dark Bronze/Cut to length	SNAP CHANNEL, GT8000,313,EXTRU
26	M-01303	Clear/With Finger Guard	SNAP IN,CHANNEL,204,W-FG
	M-71303	Dark Bronze/With Finger Guard	SNAP IN,CHANNEL,313,W-FG
	M-01302	Clear/No Finger Guard	SNAP IN,CHANNEL,204,NO-FG
	M-71302	Dark Bronze/No Finger Guard	SNAP IN,CHANNEL,313,NO-FG
27	M-01043		BRACKET, OPERATOR, SIDELOAD HEADER

SERVICE PARTS: OHC SWING DOOR

VIEWED FROM BREAK OUT SIDE



Overhead Concealed Swing Door			
Item	**Part**	**Finish/Sizes/Notes**	**Description**
1	A-00948	1/4” Spacer	SPACER BLOCK
	M-01342	3/8” Spacer	BLOCK - SPACER 3/8
	M-01337	3/16” Spacer	BLOCK,SPACER,3/16”
2	A-00459		PIVOT BLOCK,O.H.C.,TRACK W/STOP
3	M-01327	5/8” Web	SPACER,SIDE
4	A-00455		PIVOT BLOCK,O.H.C.,TRACK W/STOP
5	T-00087		WASHER, LOCK, EXT, 1/4 ID, ZINC
6	T-00101		“SHCS,1/4-20x1.500L.,BK.OX.”
7	T-00089		FHMS,1/4-20x1.500L.,PHIL,UNDERCUT,ZINC
8	T-00172		FHMS,1/4-20x2.000L.,PHIL,ZINC
9	V-00114		BALL BEARING, RADIAL-THRUST COMBINATION
10	M-00499		WEATHERING:PILE:.27W X .25H:W/ ADH & FIN
11	M-00416		T-NUT, 3/8”-16, TIE ROD
12	M-00460		CLIP,MUNTIN,.500 HOLE
13	M-00272		3/8-16 THREADED ROD
14	M-00461		CLIP,MUNTIN,.386 HOLE
15	M-00422		PLATE,TIE ROD
16	T-00025		NUT,WHIZLOCK,3/8-16,ZINC
17	M-00462		CLIP,MUNTIN,.261 HOLE
18	T-00061		FHMS,1/4-20x1.000L.,PHIL,TRI-LOBE,ZINC
19	A-00500		BTTM PIVOT ASSY, DOOR PORTION, SWING DR
20	M-01053		SPACER,BASE PIVOT,OHC
21	A-00610		PIVOT:BASE:OHC
22	T-00172		FHMS,1/4-20x2.000L.,PHIL,ZINC
23	A-00417		FLOOR PIVOT ASSY, PIN & COVER
24	T-00314		SCREW ANCHOR, #16 X 1” LG
25	M-01166		SELF ANGLER,PIVOT BASE,UL PART
26	T-00313		FHSMS - SLOTTED, #14 X 1 1/12” LG
27	T-00016		FHMS,1/4-20x0.438L.,PHIL,UNDERCUT,ZINC
28	M-01166		SELF ANGLER,PIVOT BASE,UL PART
29	T-00312		SHIM WSHR, .437 ID X .969 OD X .032 THK
30	M-01231		PREVENTER BLOCK, DUST AND RODENT
31	24-0031-07		SCREW,SLTD FLAT HD,#10X1 1/2” TYPE A
32	24-10901		THRESHOLD SWINGER, MACHINED
33	14-6394		ANCHOR, STRT PLSTC 10-12” X 1”
34	M-00274		BRUSH, NYLON, 1” STEPPED
35	T-00048		RIVNUT,1/4-20, .027-.165 GRIP RANGE
36	T-00222	Zinc	PHSMS,6x0.500L.,PHIL,TEKS,ZINC
	T-00260	Black Zinc	PHSMS,6x0.500L. PHIL,TEKS BLK ZN
37	24-9125-01	Clear	WEATHERING EXT,204
	24-9125-02	Dark Bronze	WEATHERING EXT,313
38	T-00085	Black	DELETE (USE V-00720)

Overhead Concealed Swing Door			
Item	**Part**	**Finish/Sizes/Notes**	**Description**
39	V-00014		COVER,MS LOCK,W/ CUTOUT,204
	V-70014		COVER,MS LOCK,W/ CUTOUT,313
40	V-00005		LOCK, ADAMS-RITE #MS1853
41	V-00116	Silver	CYLINDER,LOCK,THUMBTURN,204
	V-70116	Dark Bronze	CYLINDER,LOCK,THUMBTURN,313
42	M-01316	Silver	(USE A-60012) BLOCK,PILLOW,MACH
	M-01317	Dark Bronze	(USE A-70012) BLOCK,PILLOW,MACH
43	T-00031		FHMS,10-32x0.500L.,PHIL,UCUT,T-LOBE,BKZN
44	24-5475-01	Clear	PUSH BAR - MACHINED
	24-5475-02	Dark Bronze	FHMS,1/4-20x1.000L.,PHIL,TRI-LOBE,ZINC
45	T-00089		FHMS,1/4-20x1.500L.,PHIL,UNDERCUT,ZINC
46	V-00123	Silver	CYLINDER,LOCK,KEYED,204
	V-70123	Dark Bronze	CYLINDER,LOCK,KEYED,313
47	M-01389	Silver	PULL HANDLE,MACHINED,204
	M-71389	Dark Bronze	PULL HANDLE,MACHINED,313
48	T-00064		HHCS,1/4-20x0.750L.,ZINC
49	T-00319		WASHER15/32 IDx5/8 ODx1-1/16THK
50	M-01331		PIVOT SCREW,FHSMS
51	A-60854	Clear	ARM,GT20,OHC,204
	A-70854	Dark Bronze	ARM,GT20,OHC,313
52	V-00631		“SHCS,M8 X 70,LOW PROFILE,GT20”