



GT20 Swing Door Operator Installation Manual

P/N C-00171 Rev 8-29-16

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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 1ft² (0.9 m²) 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	3-3/4" (95mm)
	Width	Varies
	Depth	4-3/4" (120mm)
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	<ul style="list-style-type: none"> ▶ 2 x Activation ▶ 3 x Safety Inputs (1 x Header mounted, 2 x Door mounted) ▶ 1 x Emergency Input

Input	Description	
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

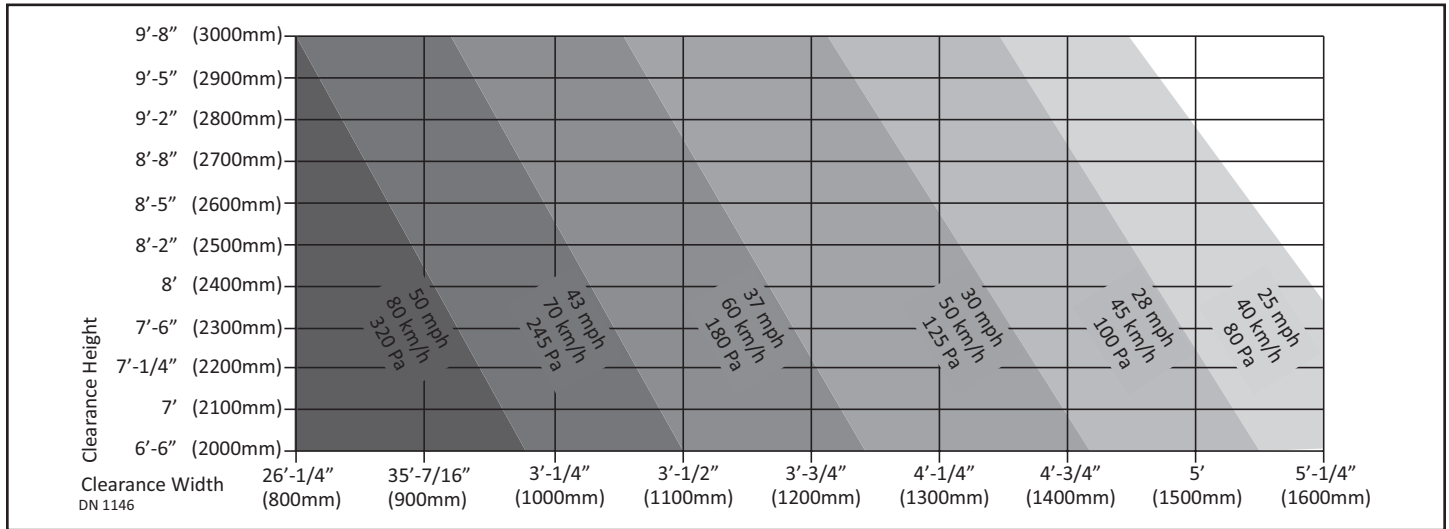
Option	Description	
Sensitivity Adjustment for Obstacle Detection	Yes (on opening)	Adjusts how hard the Door Panel pushes against an Object before recycling.
	No (on opening)	
Time Delay Adjustment for Activation	0 - 60 seconds	Determines the amount of time "Power Open" is applied to the motor.
Electronic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

SECTION 4.2 Required Tools

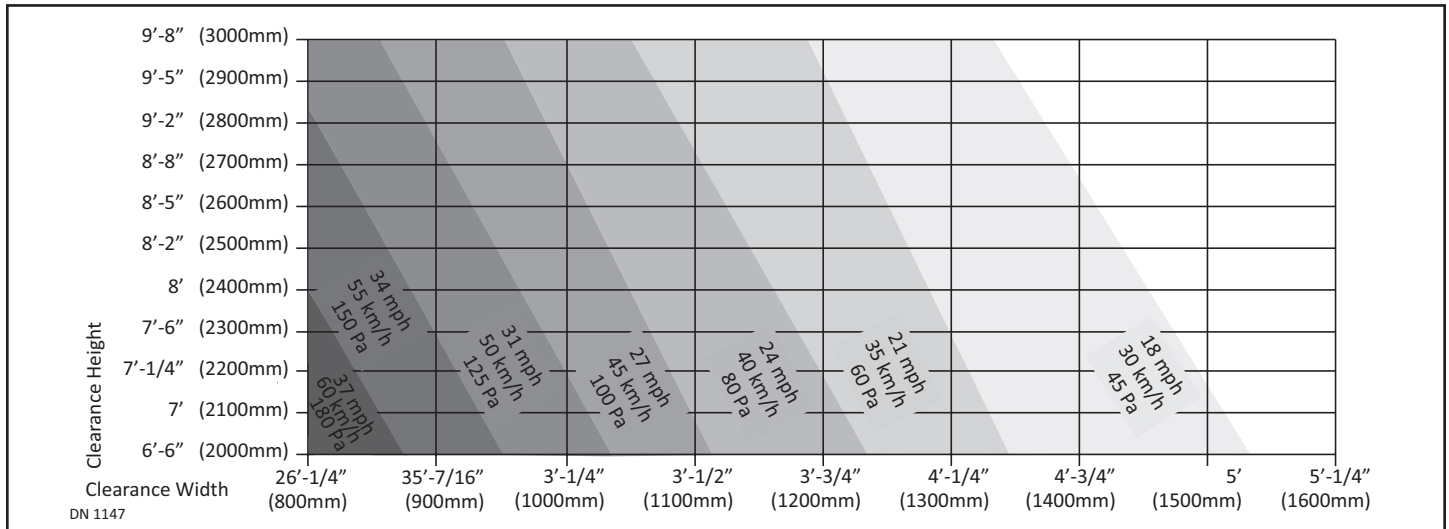
- ▶ 6mm Allen Wrench
- ▶ 13mm Open Box / Combination Wrench

SECTION 4.3 Windload

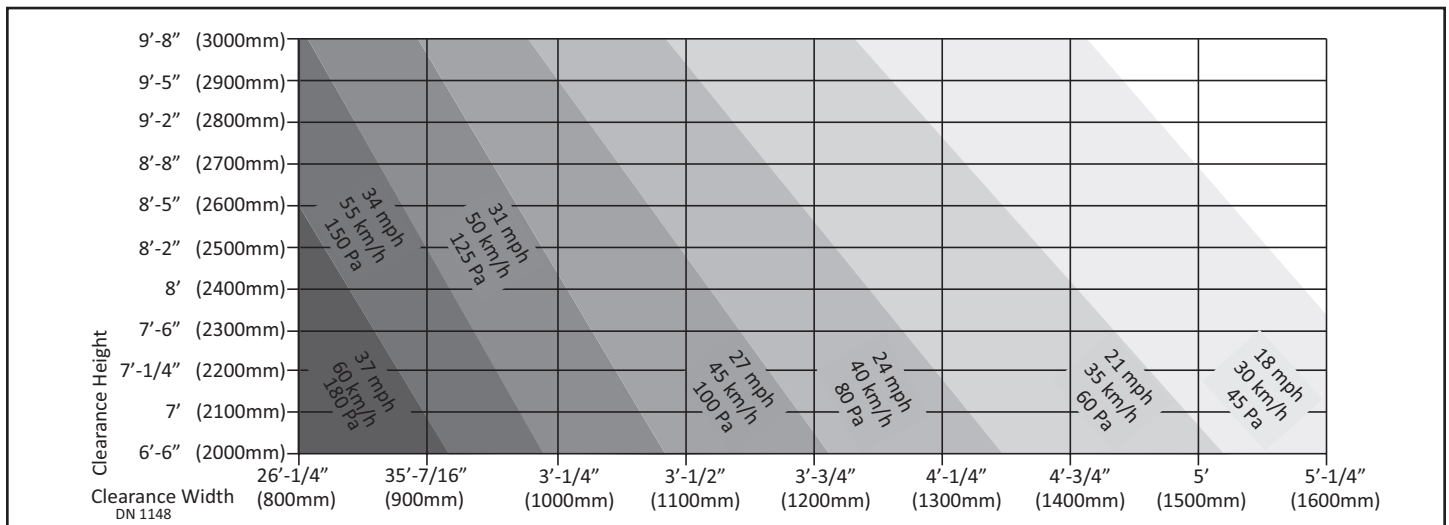
4.3.1 Outswing Arm PUSH Function



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.

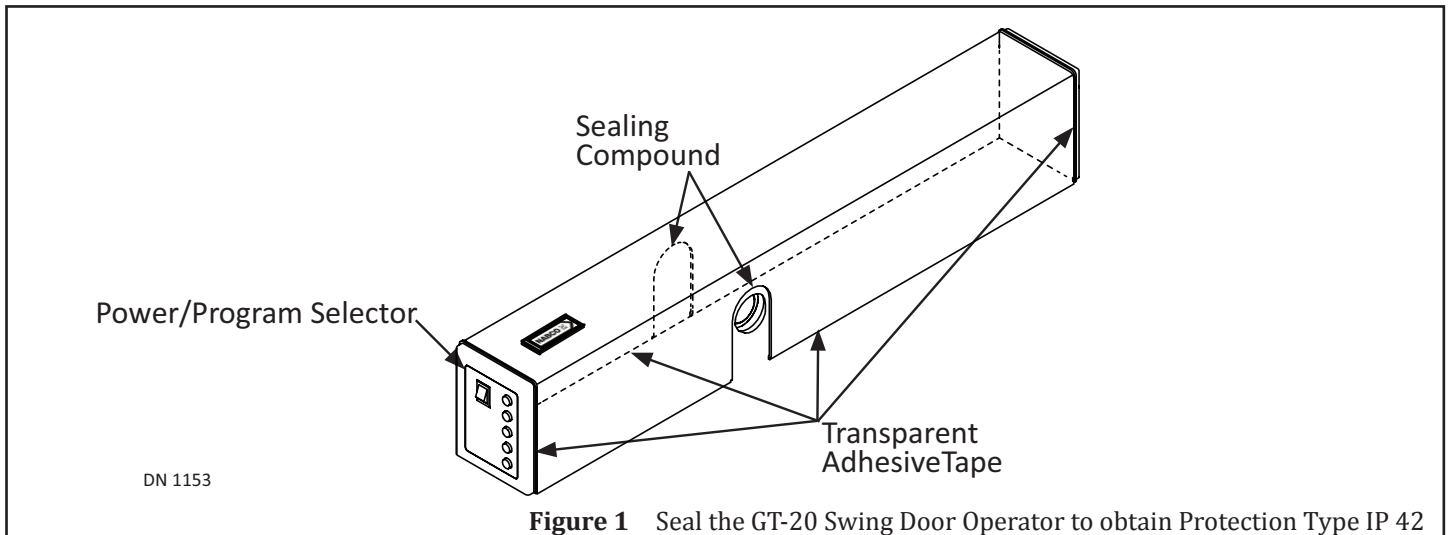
DANGER

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 Important Header Information

4.6.1 Seal Header for Wet Environment

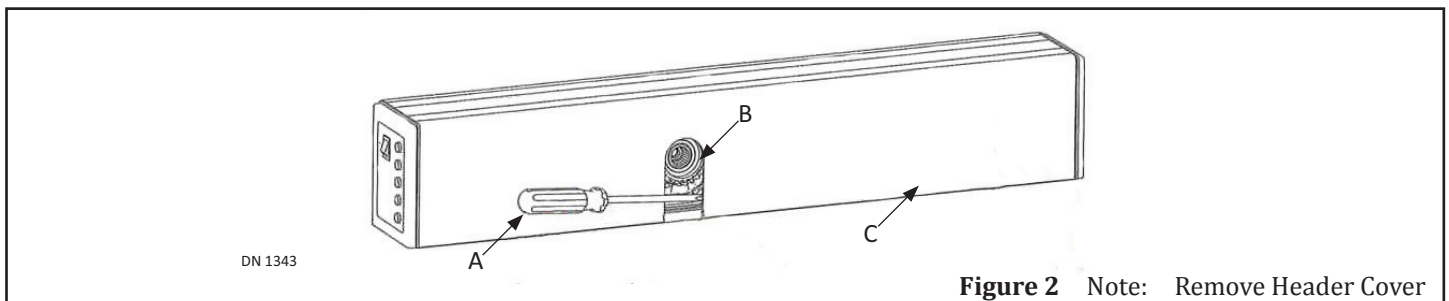
1. Seal all Header Seams with Sealing Compound and Transparent Adhesive Tape according to Figure 14.



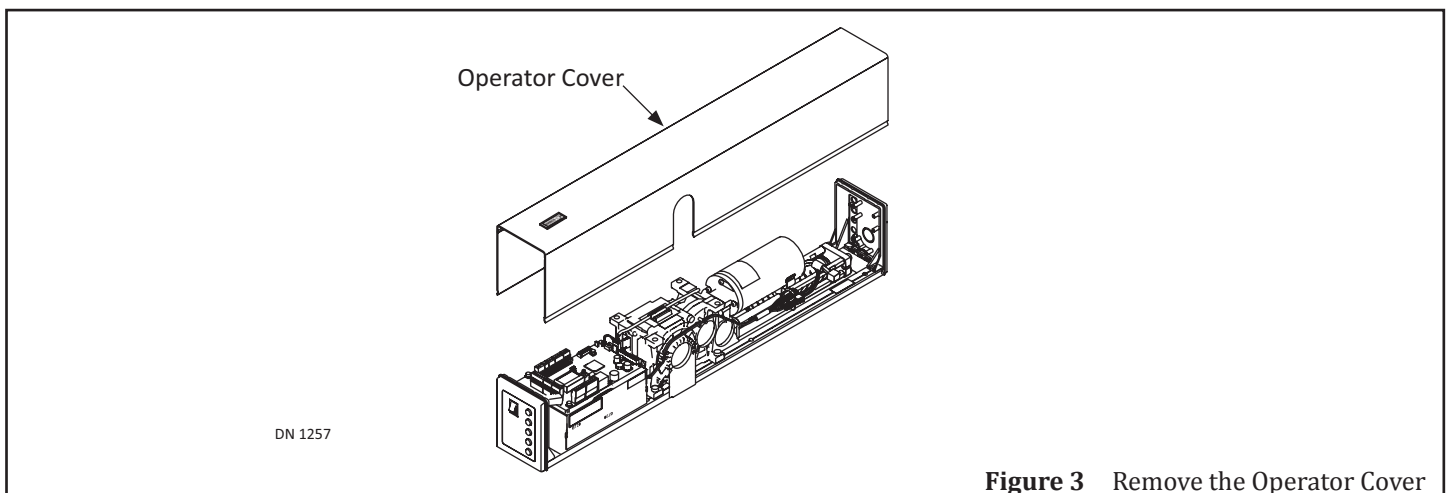
4.6.2 How to Remove the GT20 Header Cover

Note: To avoid unauthorized manipulations on the Drive/Control Unit and also to prevent the Cover from falling off, the Cover is tightly latched.

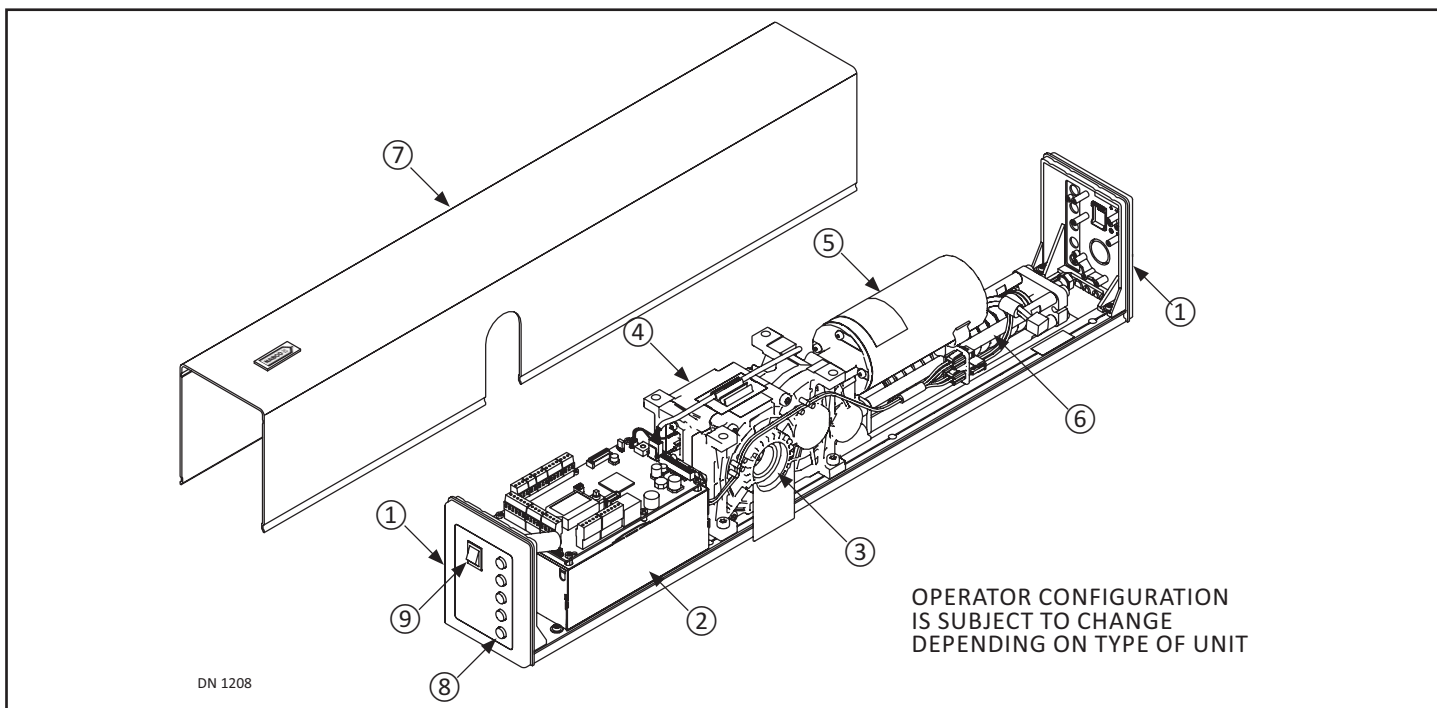
1. Obtain (1) Phillips Head Screwdriver (A).
2. Go to the space that is close to the Transmission Output (B).
3. With (1) Phillips Head Screwdriver, lift the edge of the Cover.



4. Pull the Cover off (while still in Position C) by hand.



4.6.3 GT 20 Header Components



Header Components					
1	End Cap	4	Gear Box	7	Header Cover
2	GT20 Control	5	Motor	8	Program Selector
3	Output Shaft	6	Spring Unit (for spring-powered closing)	9	Power Switch

4.6.4 Double Swing Door Units

Operator Assembly can be installed with an Outswing Unit, or an Inswing Unit, or a Combination of both (Inswing and Outswing). This type of installation is called a Double Swing door Unit. Double Swing door Units are installed the same way as an Inswing Unit or an Outswing Unit. Depending on how the GT20 Control is programmed Double Swing door Units can be:

- ▶ Dual Independent: Connected to separate Operator Assemblies and operate independently.
- ▶ Simultaneous Pair: Both swing doors open at same time.
- ▶ Astragal: Master swing door opens first. The Slave swing door is delayed before opening, and then closes before the Master swing door.

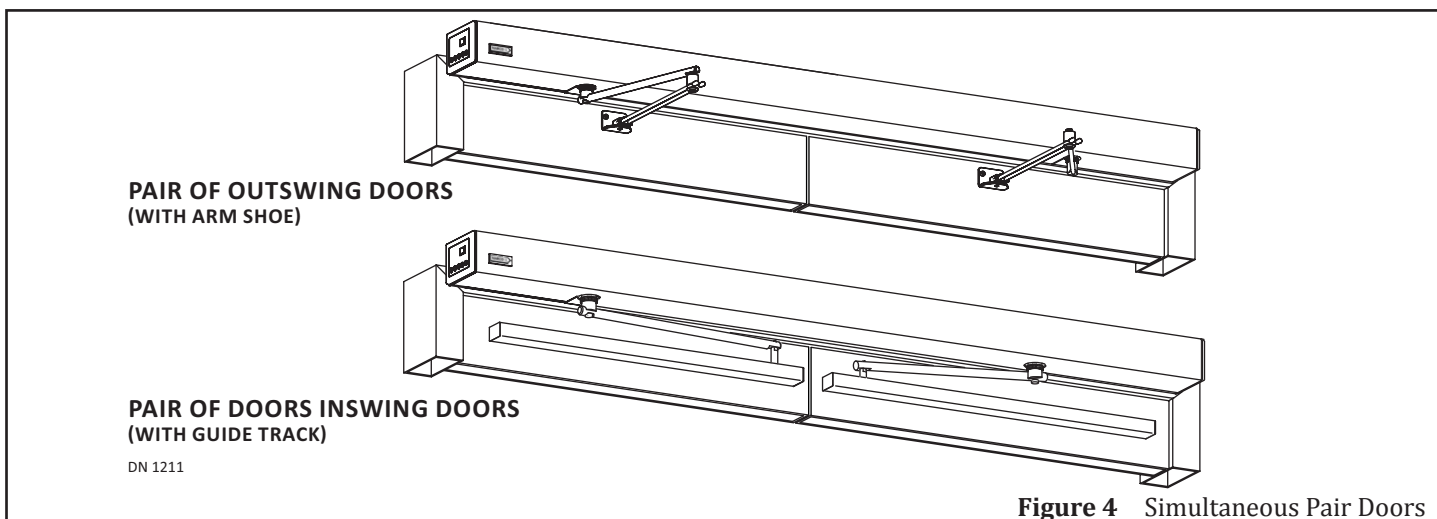
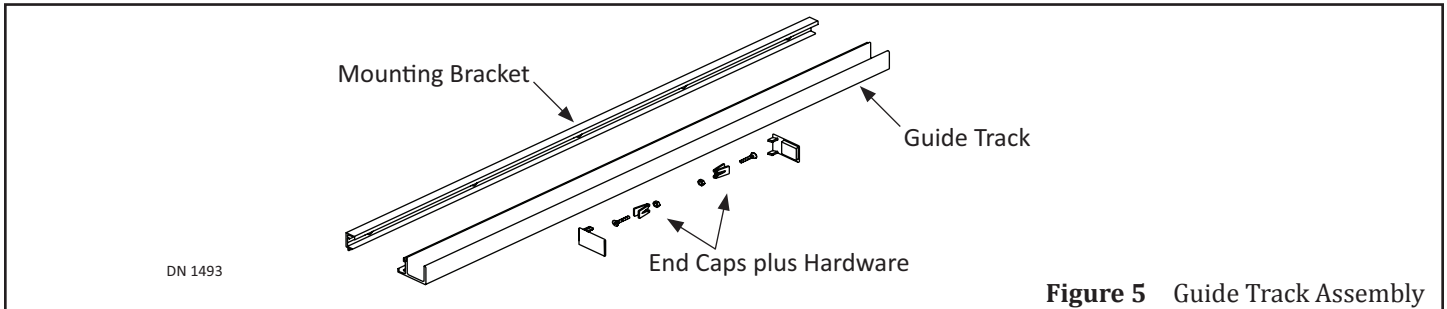


Figure 4 Simultaneous Pair Doors

SECTION 4.7 The Guide Track Assembly

The Guide Track Assembly consists of (3) major parts:

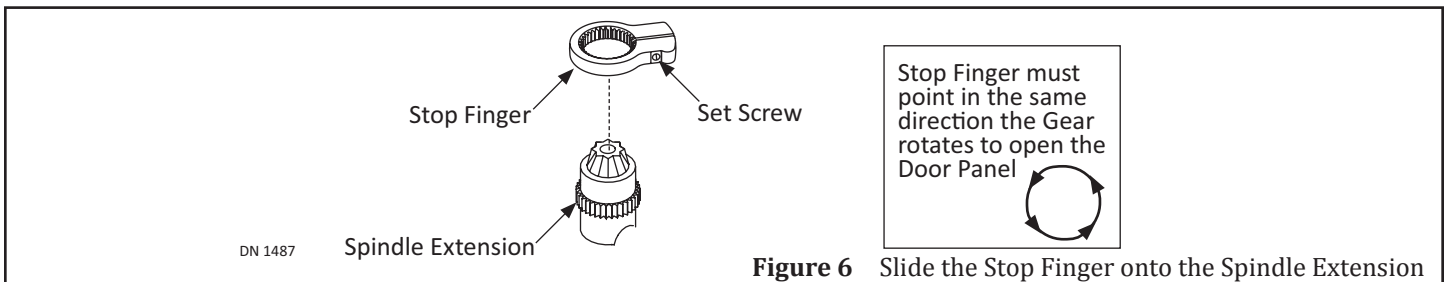
- ▶ (1) Mounting Bracket
 - Secures the Guide Track to the Door Panel.
- ▶ (1) Guide Track
 - Guides the Arm as the Door Panel opens/closes.
- ▶ (2) End Caps plus Hardware
 - Secures the Guide Track to the Mounting Bracket.



SECTION 4.8 The Stop Finger

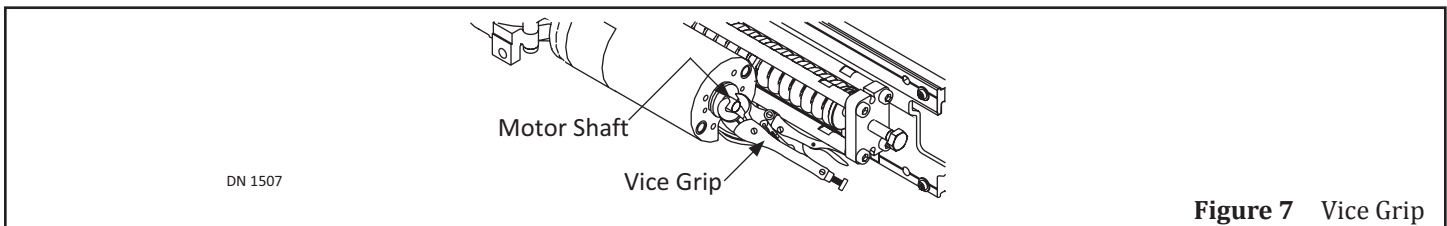
Attention: NABCO supplies Open-Position Door Stops on all Surface Mount GT20 Operator Assemblies. It is recommended to install an auxiliary Door Stop (not provided by NABCO), especially for Swing doors installed in areas where windy conditions exist.

The Stop Finger must point in the same direction the Gear rotates to open the Door Panel.



SECTION 4.9 The Vice Grip

Attention: While installing/uninstalling the Arm, or when making Swing Door adjustments, it is recommended to clamp a Vice Grip onto the end of the Motor Shaft to keep It from rotating. Please go to the Adjustment Chapter within this manual for detailed instructions.



CHAPTER 5: INSTALL THE OUTSWING OPERATOR ASSEMBLY

DANGER

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.

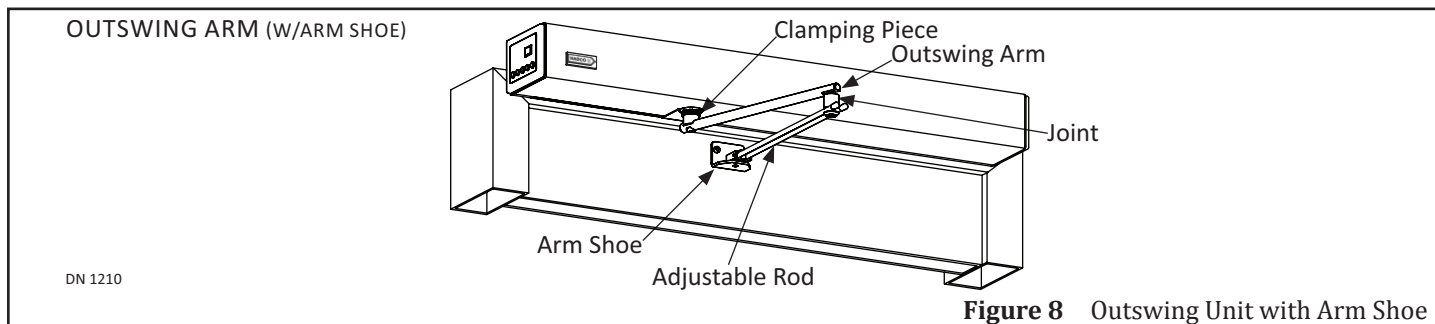


Figure 8 Outswing Unit with Arm Shoe

SECTION 5.1 Install the Header

1. From the top of the Door, measure 7/8 inches up and mark a horizontal line across the Door Frame.
2. From the Center Line of Pivot, measure 8-1/2 inches across the Door Frame. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Operator.

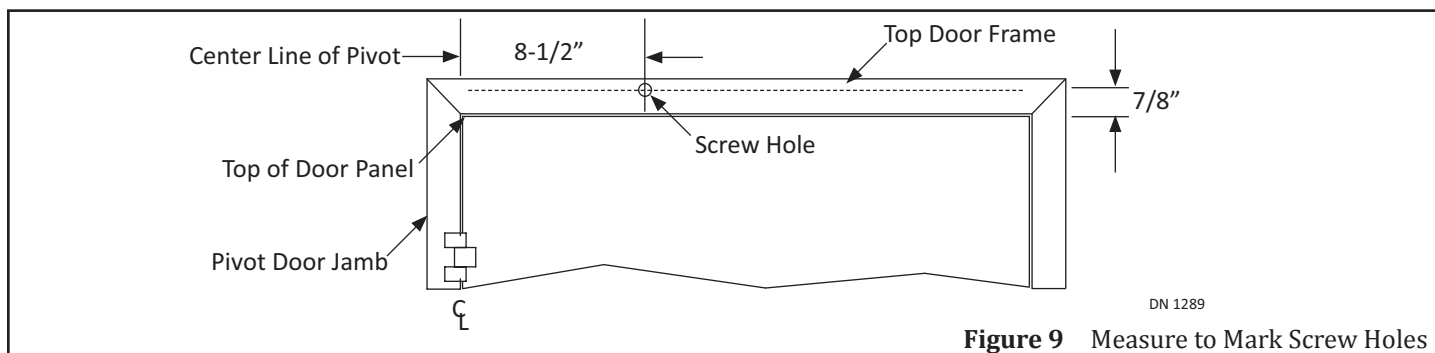


Figure 9 Measure to Mark Screw Holes

3. Locate (8) predrilled holes on the back of the Header.
4. Align the first pre-drilled screw hole to the measured mark and use the Header as a template to mark and drill (8) 1/4 inch screw holes. Ensure the Header is square and level.
5. Secure the Header to the Door Frame with (8) 1/4 inch Screws (Not supplied by NABCO). Do not install Cover at this time.

SECTION 5.2 Install the Outswing Arm

The Outswing Arm consists of (2) major parts:

- ▶ The Lever Arm: Used to secure the Outswing Arm to the GT20 Operator.
- ▶ Arm Shoe Assembly: Used to secure the Outswing Arm to the Door Panel.

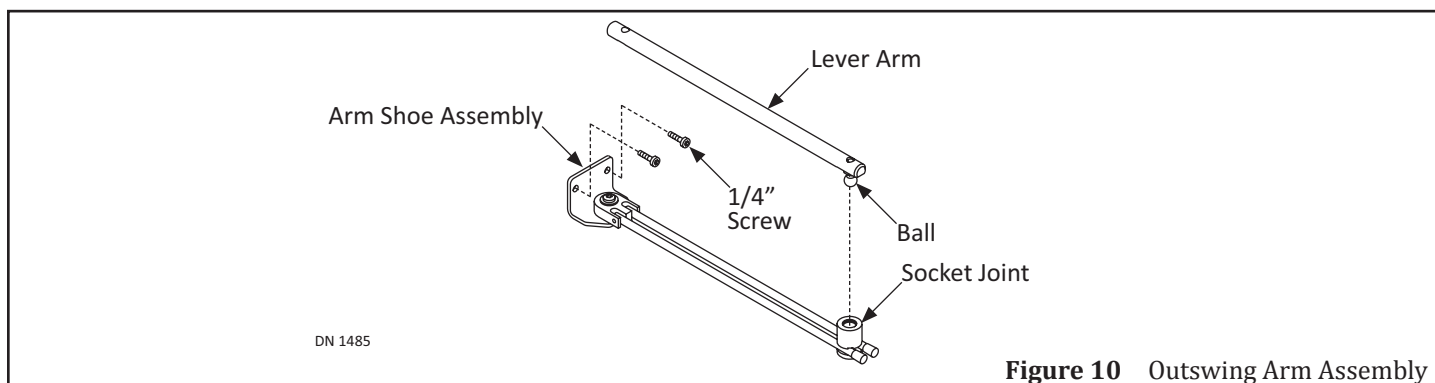


Figure 10 Outswing Arm Assembly

5.2.1 Install the Arm Shoe to Door Panel

1. From the top of the Door, measure 2 inches down and mark a horizontal line across the face of Door Panel.
2. From the Center Line of Pivot, measure 14-1/8 inches across the Door Panel. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Arm Shoe Assembly.

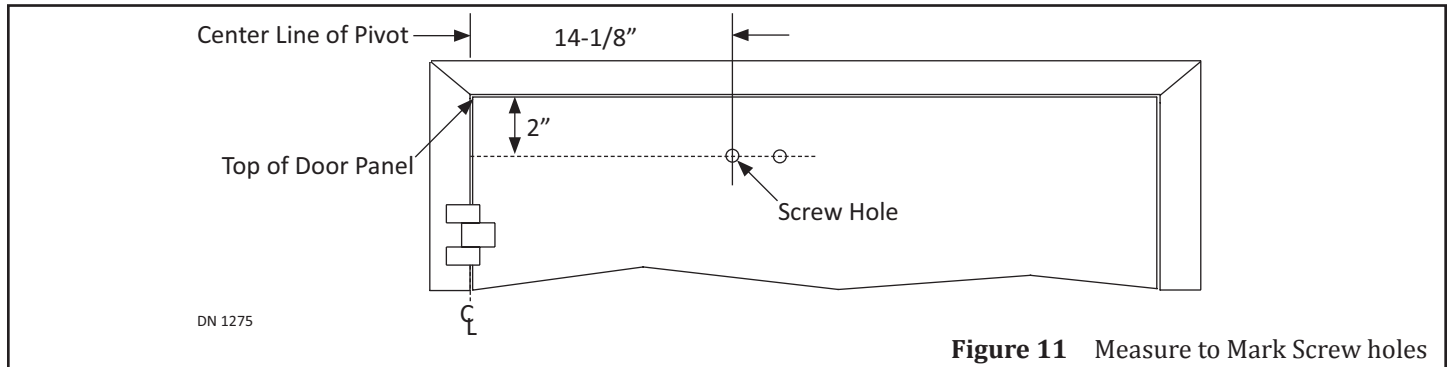


Figure 11 Measure to Mark Screw holes

3. Pull the Ball out from the Socket Joint to separate the Lever Arm from the Arm Shoe Assembly.
4. Secure the Arm Shoe to the Swing Door with (2) 1/4 inch Screws or (2) 1/4 x 3/4 inch Sex Bolt Screws (Sex Bolt kit provided by NABCO).
 - ▶ If 1/4 inch screws are being used to secure the Arm Shoe Assembly:
 - Align the first pre-drilled screw hole to the measured mark and use the Arm Shoe as a template to mark and drill (2) 1/4 inch screw holes. Ensure the Header is square and level.
 - ▶ If Sex Bolts are being used to secure the Arm Shoe Assembly:
 - Align the first pre-drilled screw hole to the measured mark and use the Arm Shoe as a template to mark and drill (2) screw holes all the way through the Door Panel, so they are big enough to allow the sex bolts to be inserted. Ensure the Header is square and level.

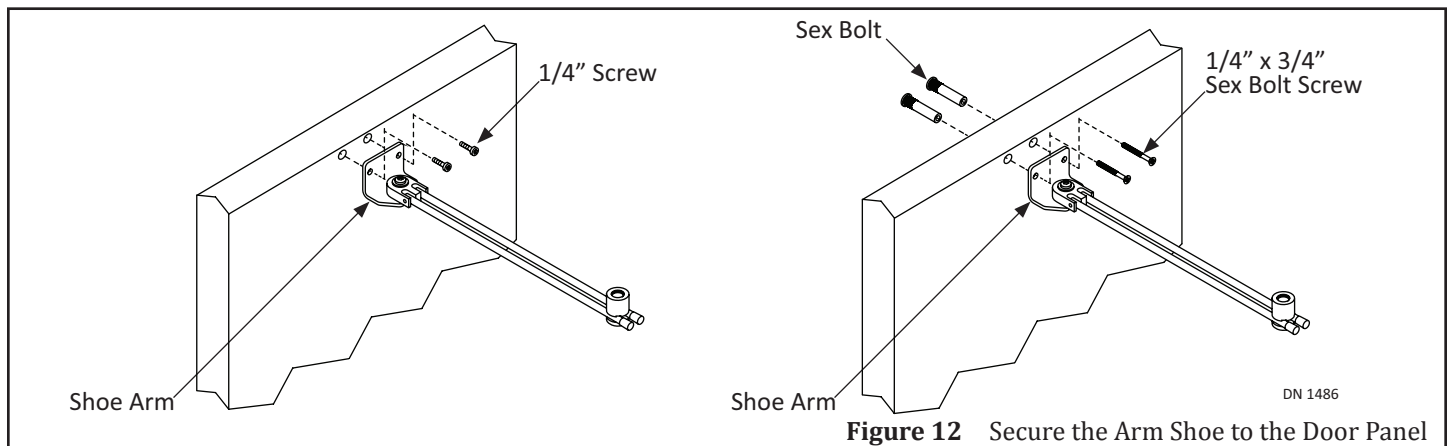


Figure 12 Secure the Arm Shoe to the Door Panel

5.2.2 Install the Lever Arm to the GT20 Operator

1. Loosen the Set Screw located on the side of the Stop Finger. Slide the Stop Finger onto the Spindle Extension.
 - a. The Stop Finger must point in the same direction the Gear rotates to open the Door Panel.
 - b. If deemed necessary, please go to the Adjustment Chapter within this manual to adjust the Stop Finger.
2. Place the Spindle Extension onto the top of the Lever Arm. Align the bolt holes.
3. From the bottom of the Lever Arm, slide (1) Bolt all the way up through both bolt holes.

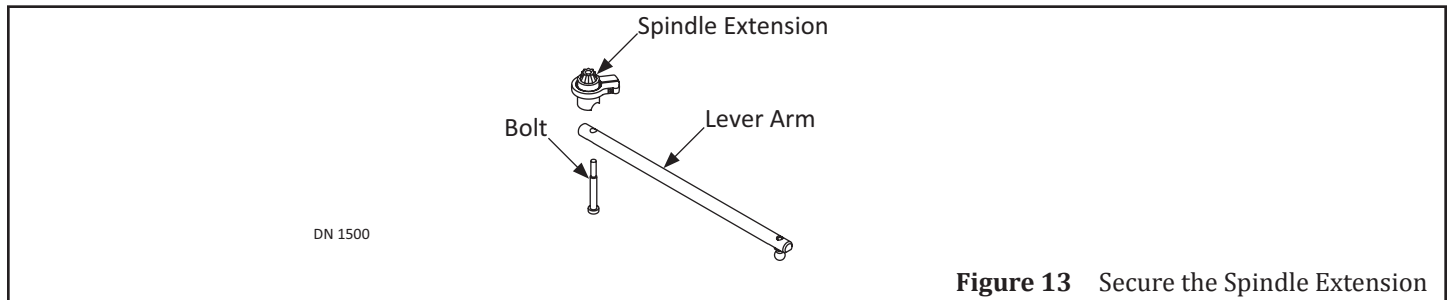


Figure 13 Secure the Spindle Extension

4. Position the Lever Arm as perpendicular as possible (90 degrees) with regard to the Door Panel.
5. Insert the Spindle Extension into the Output Shaft. Tighten the Bolt.

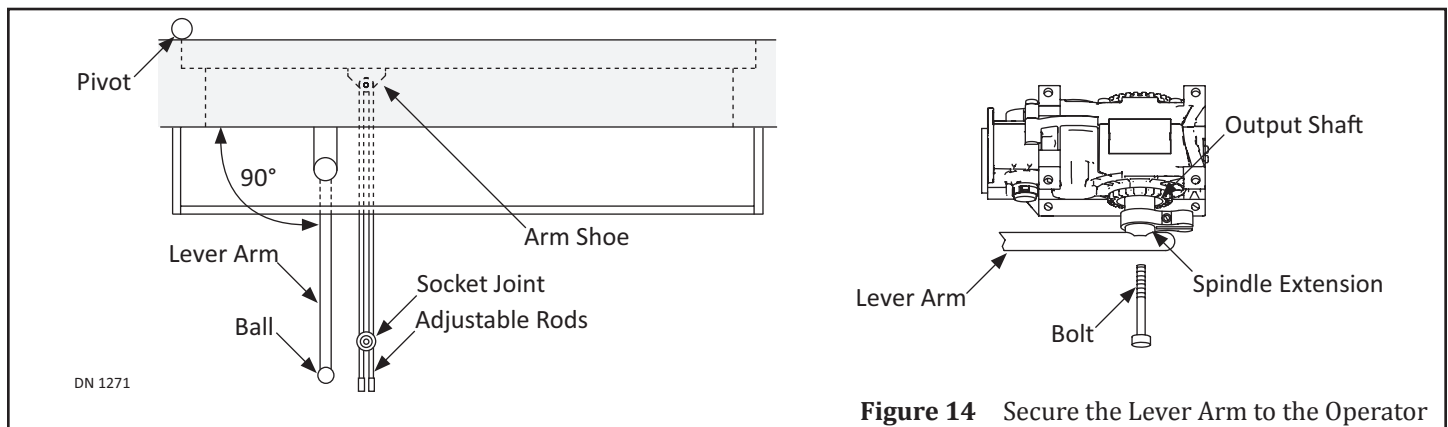


Figure 14 Secure the Lever Arm to the Operator

6. Tighten the Bolt with a Torque Wrench:
 - ▶ The existing Bolt must be torqued appropriately (200 in-lb).
 - ▶ If the existing Bolt is removed; a new Bolt can be used providing Loctite is applied and torqued appropriately (200 in-lb).
 - ▶ Alternatively, the existing Bolt can be used providing it is first cleaned (existing Loctite removed), before fresh Loctite is applied and torqued appropriately (200 in-lb).
- a. Compatible Torque Wrenches: Grainger/Westward Fixed 3/8" Micrometer Torque Wrench, 50 to 250 In-Lb or Sears/Craftsman Micro-Clicker Torque Wrench 3/8" Drive 25 to 250 In-Lb.

5.2.3 Connect the Lever Arm to the Arm Shoe

CAUTION If Rod Arms touch the Door Frame they must be shortened.

1. Manually close the Door Panel.
2. Connect the Ball into the Socket Joint.
3. Slightly loosen the Bolt located at the bottom of the Socket Joint.
4. Position the Adjustable Rods so they are perpendicular as possible (90 degrees) with regard to the Door Panel. Tighten Bolt.

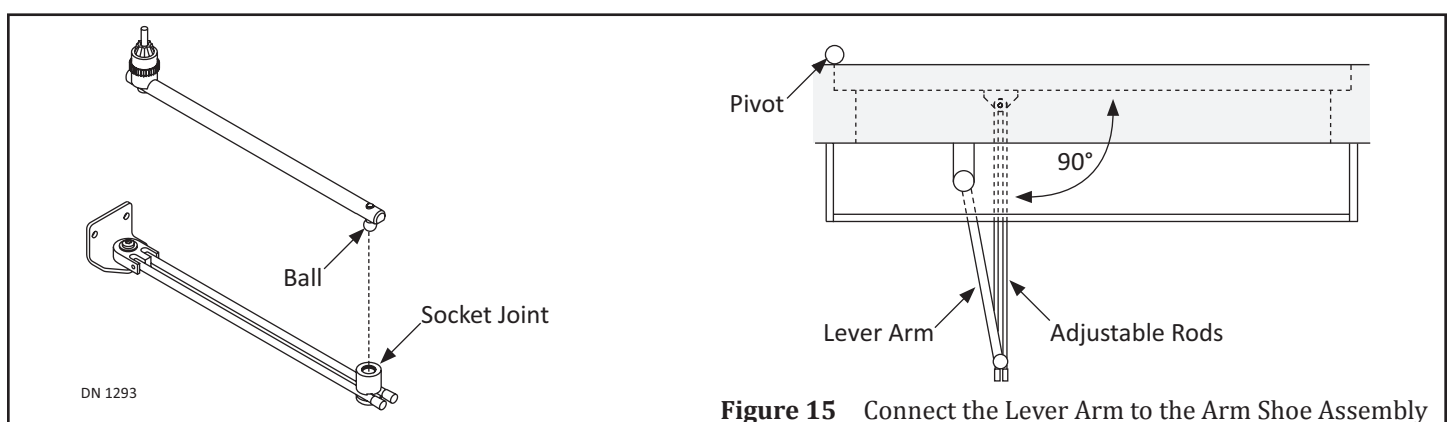


Figure 15 Connect the Lever Arm to the Arm Shoe Assembly

5.2.4 Shorten Adjustable Rods

Note: Adjustable Rods can be cut down to a shorter length whenever deemed necessary.

1. Cut each Adjustable Rod with a Hack Saw. Slide a Rubber End Cap on the newly cut ends.

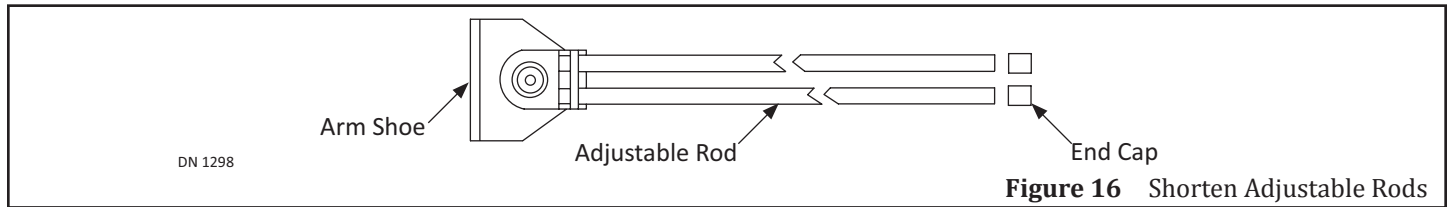


Figure 16 Shorten Adjustable Rods

CHAPTER 6: INSTALL THE OUTSWING OPERATOR ASSEMBLY (W/TRACK)

DANGER

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.

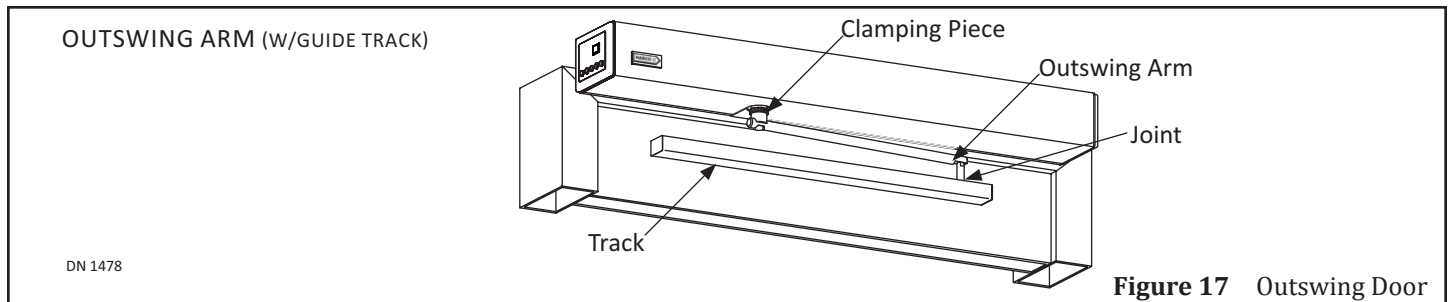


Figure 17 Outswing Door

SECTION 6.1 Install the Header

1. From the top of the Door, measure 7/8 inch up and mark a horizontal line across the Door Frame.
2. From the Center Line of Pivot, measure 8-1/2 inches across the Door Frame. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Operator.

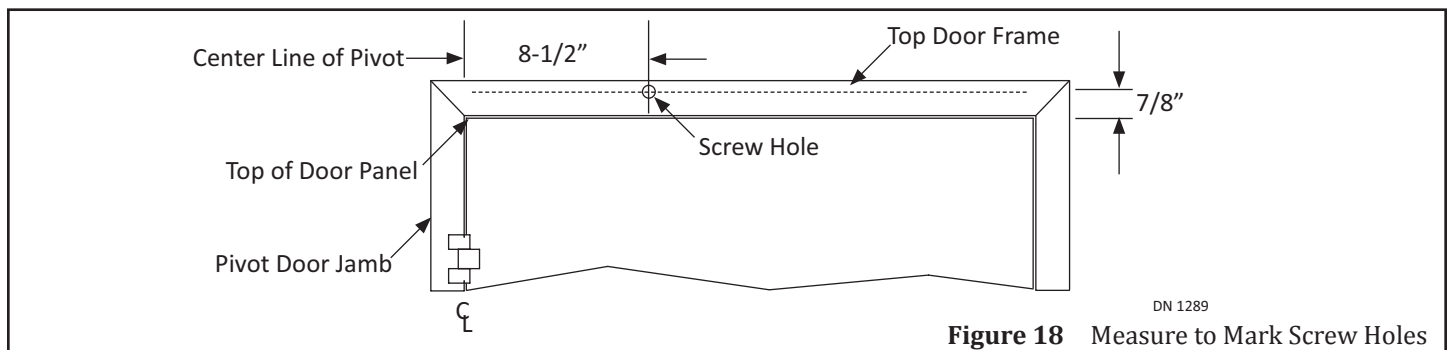


Figure 18 Measure to Mark Screw Holes

3. Locate and align the first pre-drilled screw hole on back of Header, to the measured mark. Use the Header as a template to mark and drill (8) 1/4 inch screw holes. Ensure the Header is square and level.
4. Secure the Header to the Door Frame with (8) 1/4 inch Screws (Not supplied by NABCO).
5. Do not install Header Cover at this time.

SECTION 6.2 Install the Guide Track Assembly

6.2.1 Install the Mounting Bracket to Door Panel

1. From the top of Door, measure 2-1/2 inches down and mark a horizontal line across the face of the Door Panel.
2. From the Center Line of Pivot, measure 5-1/2 inches across the Door Panel. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Mounting Bracket.

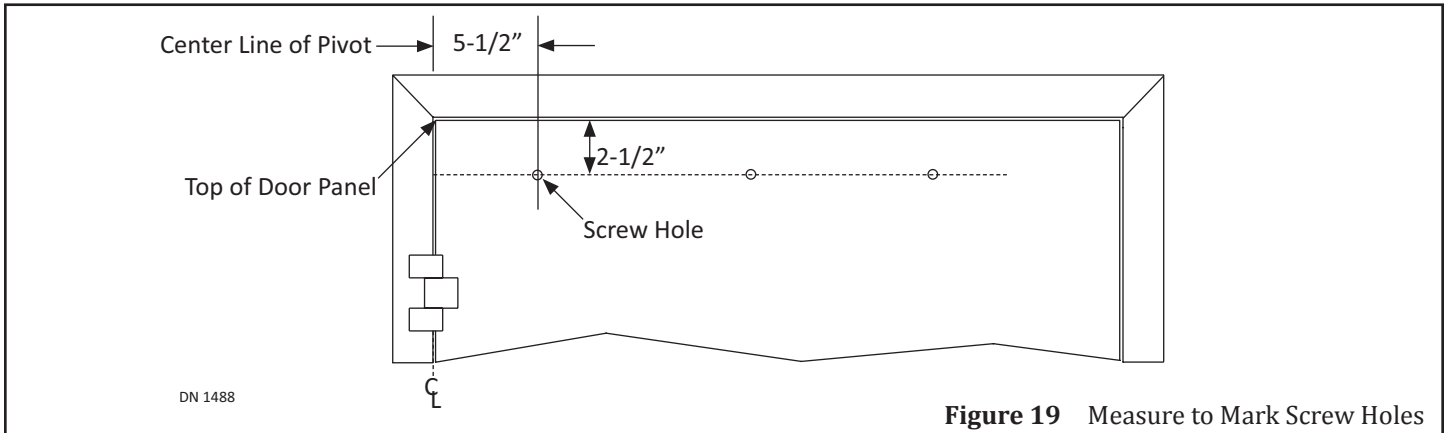


Figure 19 Measure to Mark Screw Holes

3. Align the first pre-drilled Screw hole to the measured mark. Use the Mounting Bracket as a template to mark and drill (3) screw holes for #10 Screws. Ensure the Mounting Bracket is square and level.
4. Secure the Mounting Bracket to the Door Panel with (3) #10 Screws.

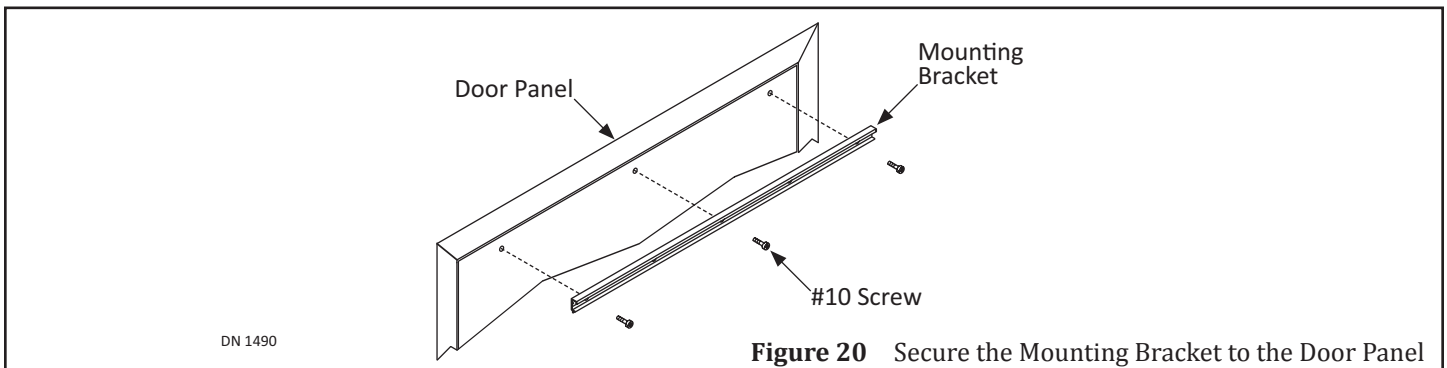


Figure 20 Secure the Mounting Bracket to the Door Panel

6.2.2 Install the Guide Track to the Mounting Bracket

1. Secure the Guide Track to the Mounting Bracket with (1) nut, (1) Wedge Clamp, and (1) screw into each open end.
2. Insert (1) end cap into each side.

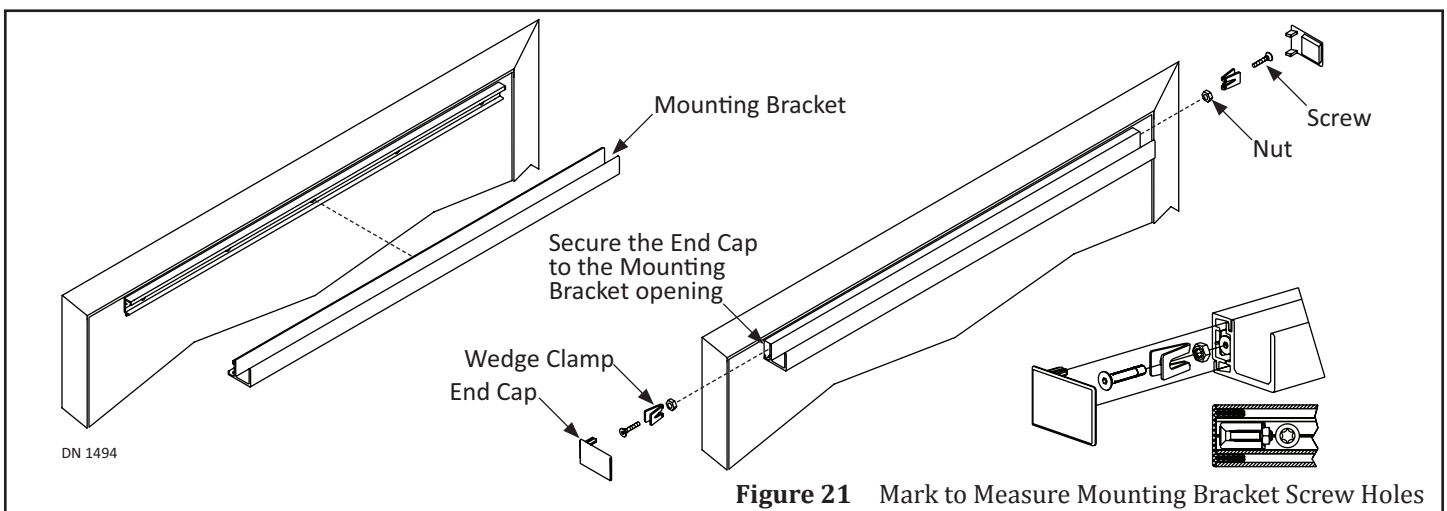
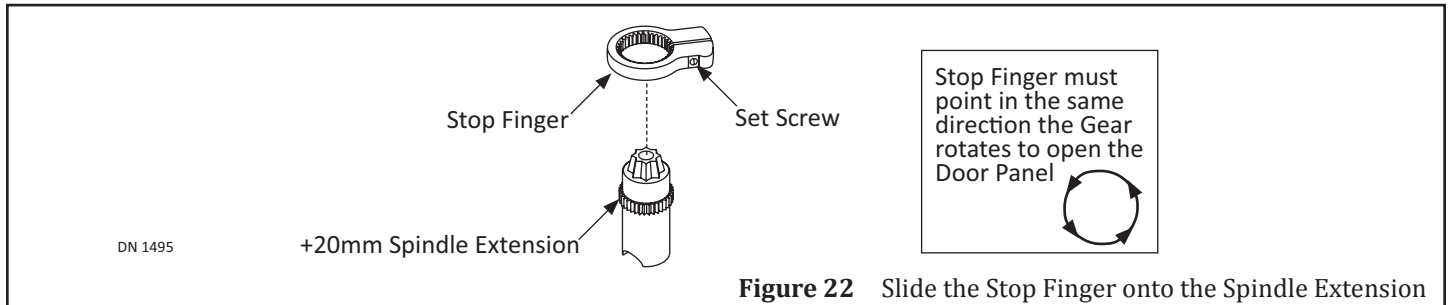


Figure 21 Mark to Measure Mounting Bracket Screw Holes

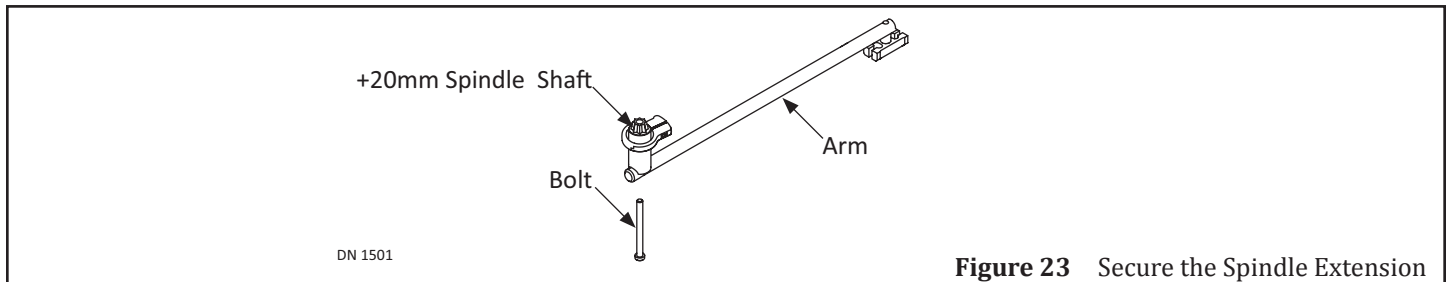
SECTION 6.3 Install the Outswing Arm

1. Loosen the Set Screw located on the side of the Stop Finger.
2. Slide the Stop Finger onto the Spindle Extension.
 - a. The Stop Finger must point in the same direction the Gear rotates to open the Door Panel.
 - b. If deemed necessary, please go to the Adjustment Chapter within this manual to adjust the Stop Finger.

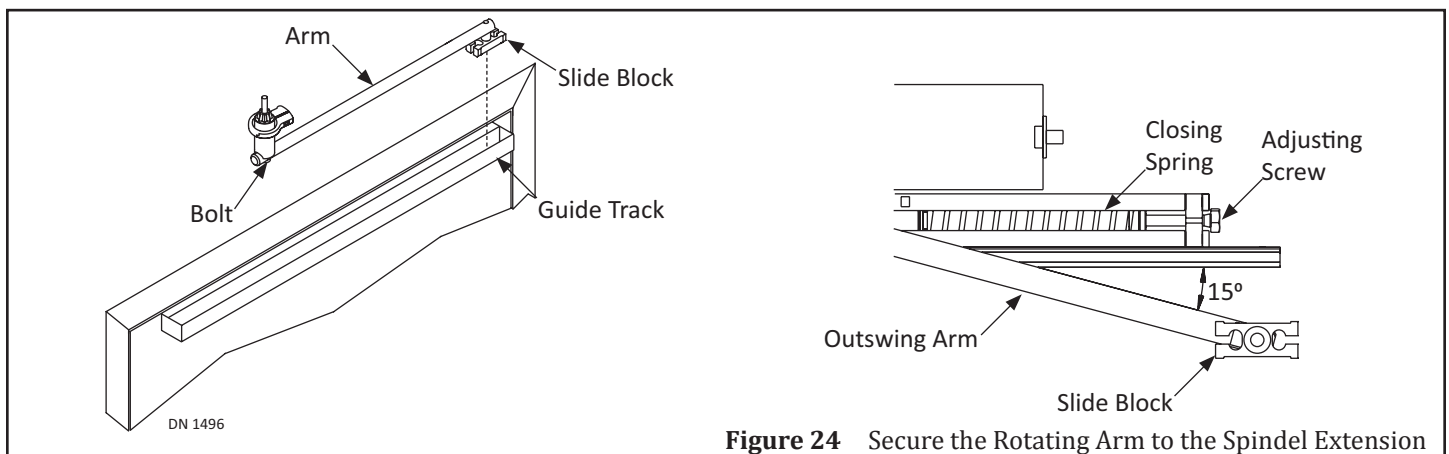


6.3.1 Secure the Arm to the Operator

Note: It is recommended to clamp a Vice Grip onto the end of the Motor Shaft to keep It from rotating.



1. Open the Door Panel. Place the Spindle Extension onto the top of the Lever Arm. Align both holes.
2. From the Bottom of the Lever Arm, slide (1) Bolt all the way up through both bolt holes.
3. Insert the Slide Block into the Guide Track.
4. Position the Inswing Arm with a 15° offset.
 - a. To facilitate the installation: the Closing Spring can be completely released by means of the Adjusting Screw.
 - b. The more the Closing Spring is tightened by the Adjusting Screw, the more the Gear centers the Spindle Extension, thus the Inswing Arm. If deemed necessary, please go to the Adjustment Chapter within this manual to Adjust Preload.
5. Insert the Spindle Extension into the Output Shaft.



6. Tighten the Bolt with a Torque Wrench:
 - ▶ The existing Bolt must be torqued appropriately (200 in-lb).
 - ▶ If the existing Bolt is removed; a new Bolt can be used providing Loctite is applied and torqued appropriately (200 in-lb).
 - ▶ Alternatively, the existing Bolt can be used providing it is first cleaned (existing Loctite removed), before fresh Loctite is applied and torqued appropriately (200 in-lb).
- a. Compatible Torque Wrenches: Grainger/Westward Fixed 3/8" Micrometer Torque Wrench, 50 to 250 In-Lb or Sears/Craftsman Micro-Clicker Torque Wrench 3/8" Drive 25 to 250 In-Lb.

CHAPTER 7: INSTALL THE INSWING OPERATOR ASSEMBLY

DANGER

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. Operator Assembly is installed with a Lever Arm connected to a Slide Block that slides into a Guide Track, to PULL a Swing door open.

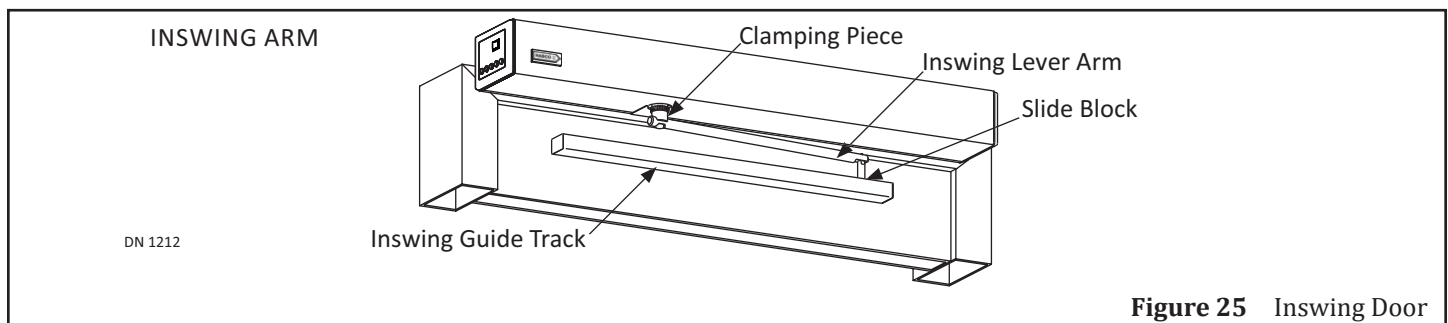


Figure 25 Inswing Door

SECTION 7.1 Install the Header to the Top Door Frame

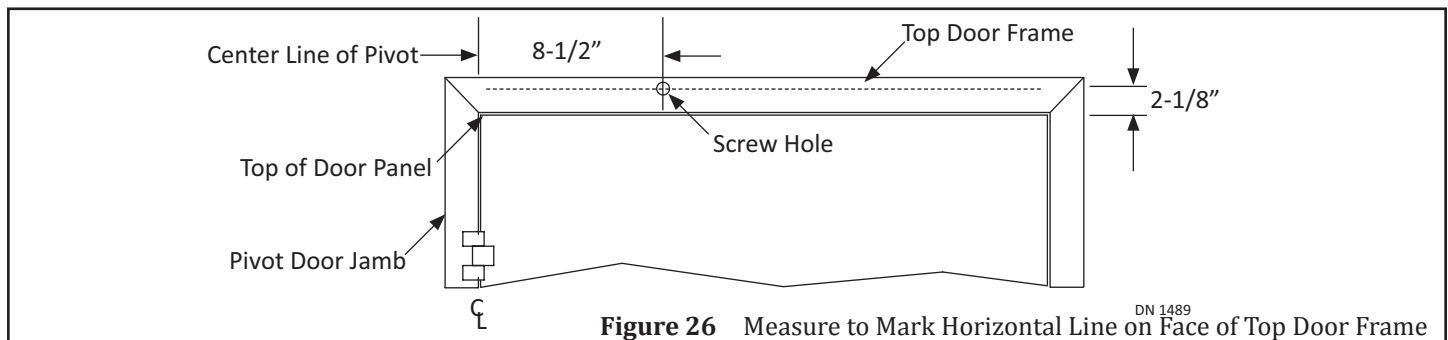


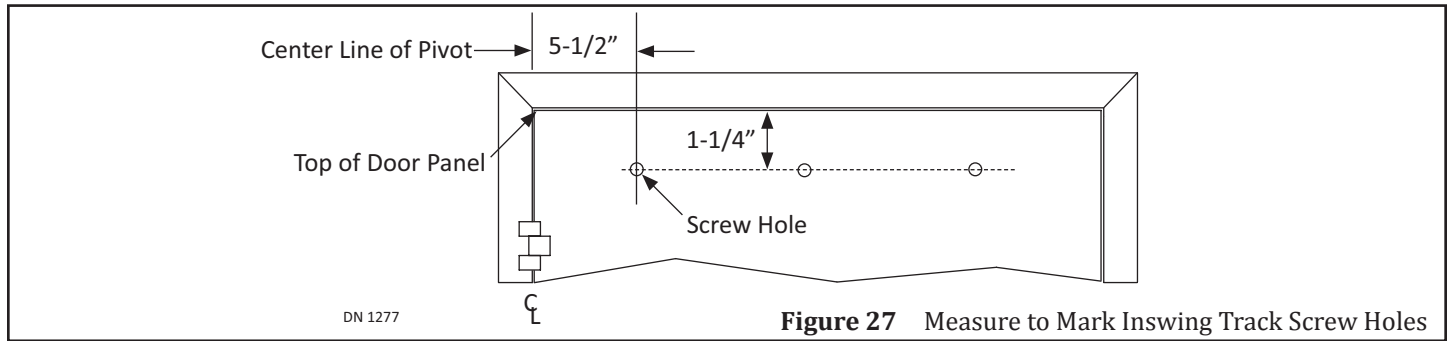
Figure 26 Measure to Mark Horizontal Line on Face of Top Door Frame

1. From the top of the Door, measure 2-1/8 inches up and mark a horizontal line across the Door Frame.
2. From the Center Line of Pivot, measure 8-1/2 inches across the Door Frame. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Operator.
3. Locate (8) predrilled holes on the back of the Header.
4. Align the first pre-drilled screw hole to the measured mark and use the Header as a template to mark and drill (8) 1/4 inch screw holes. Ensure the Header is square and level.
5. Secure Header to Door Frame with (8) 1/4 inch Screws (Not supplied by NABCO). Do not install Header Cover at this time.

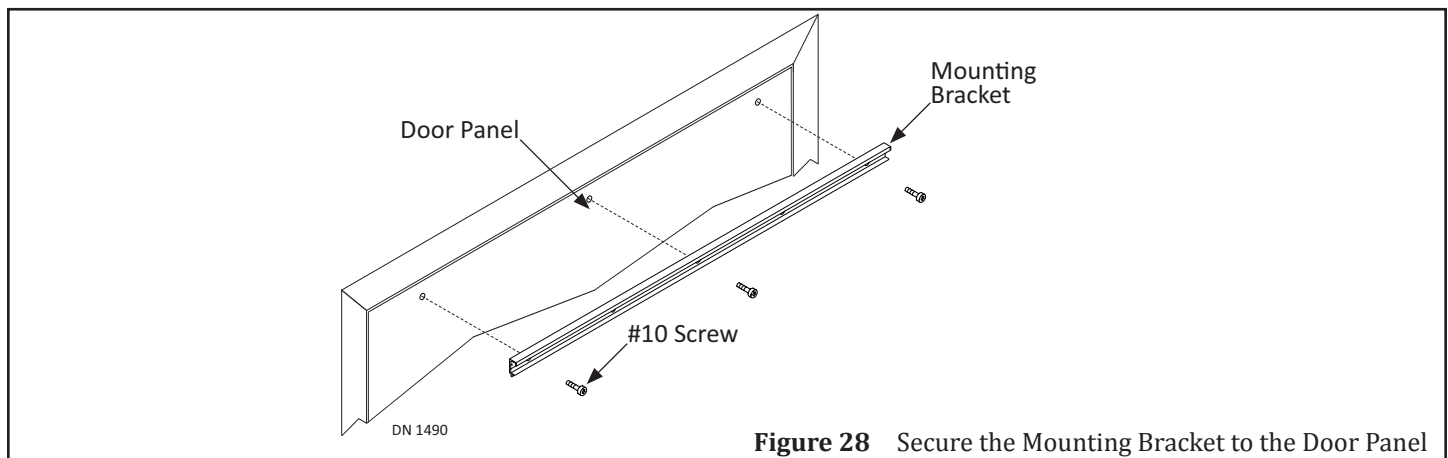
SECTION 7.2 Install the Guide Track Assembly

7.2.1 Install the Mounting Bracket to Door Panel

1. From the top of the Door, measure 1/2 inch down and mark a horizontal line across the face of Door Panel.
2. From the Center Line of Pivot, measure 5-1/2 inches across the Door Panel. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Arm Shoe Assembly.

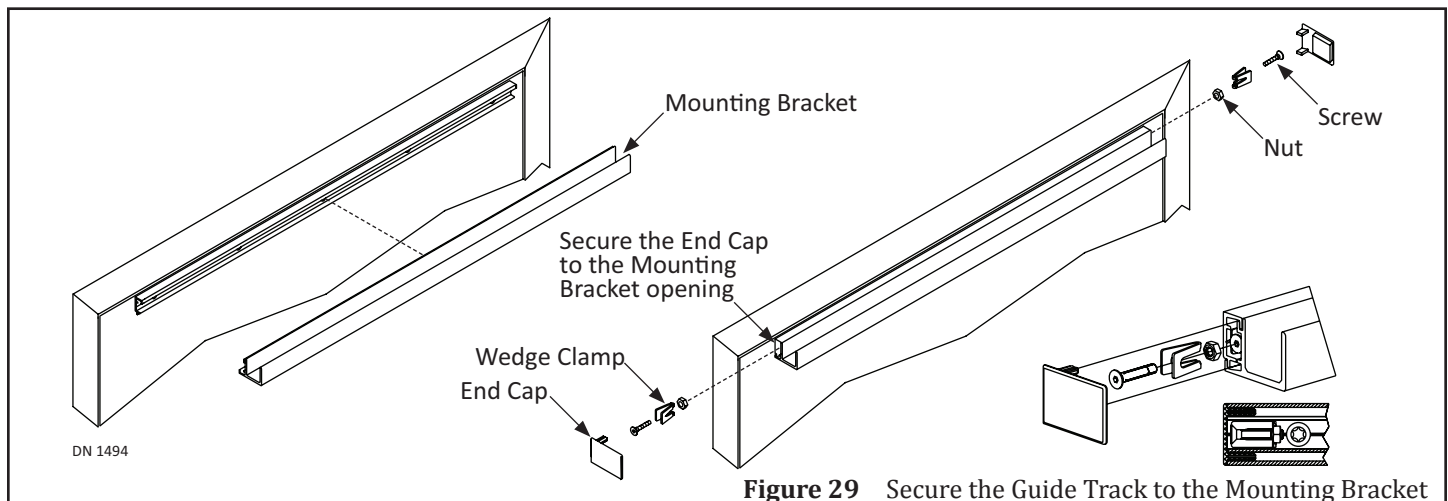


3. Align the first pre-drilled Screw hole to the measured mark and use the Mounting Bracket as a template to mark and drill (3) screw holes for #10 Screws. Ensure the Mounting Bracket is square and level.
4. Secure the Mounting Bracket to the Door Panel with (3) #10 Screws (not provided by NABCO).



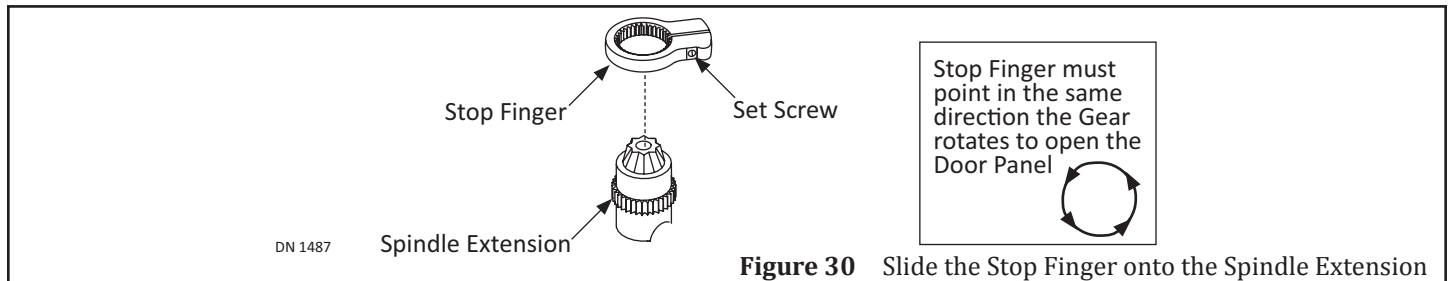
7.2.2 Install the Guide Track to the Mounting Bracket

1. Assemble the Guide Track to the Mounting Bracket.
2. Secure the Guide Track to the Mounting Bracket with (1) nut, (1) Wedge Clamp, and (1) screw into each open end.
3. Insert (1) end cap into each side.



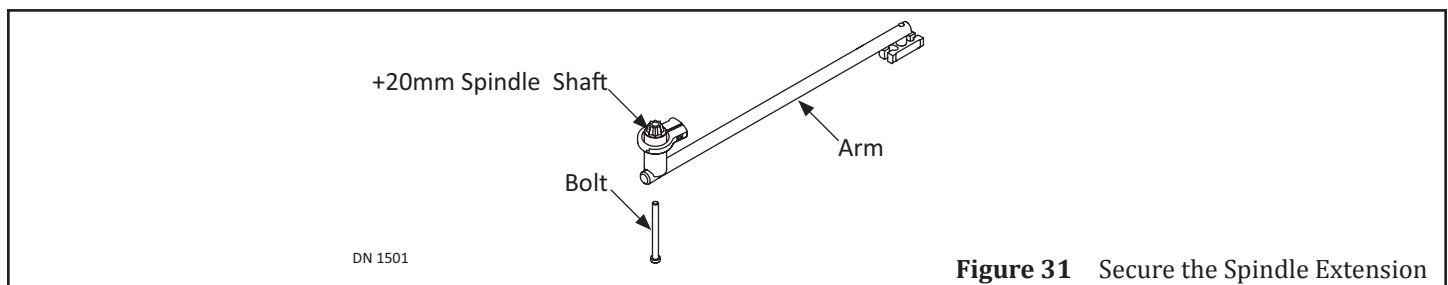
SECTION 7.3 Install the Inswing Arm

1. Loosen the Set Screw located on the side of the Stop Finger.
2. Slide the Stop Finger onto the Spindle Extension.
 - a. The Stop Finger must point in the same direction the Gear rotates to open the Door Panel.
 - b. If deemed necessary, please go to the Adjustment Chapter within this manual to adjust the Stop Finger.

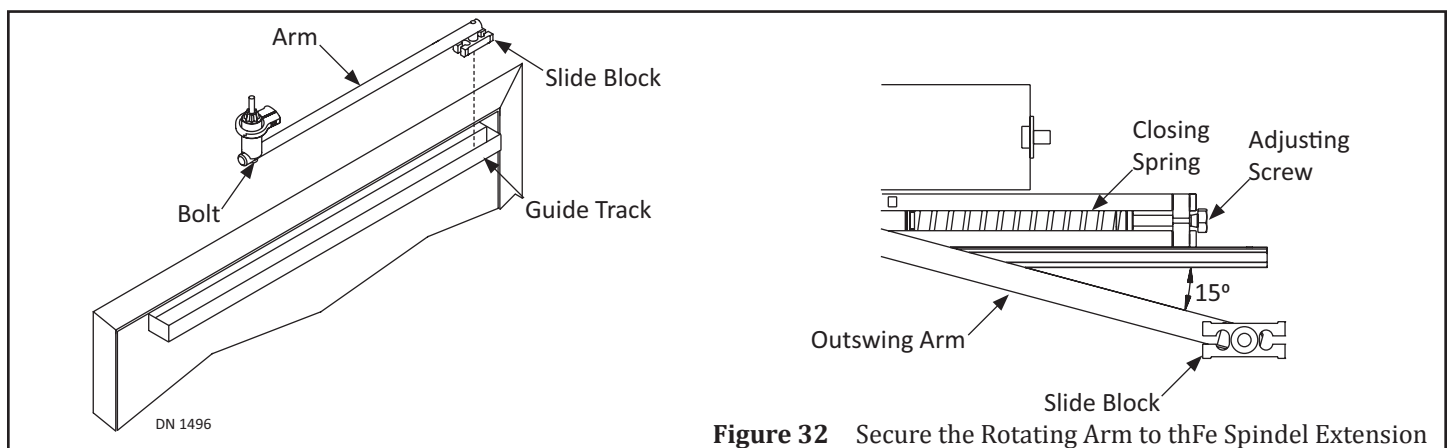


7.3.1: Secure the Arm to the Operator

Note: It is recommended to clamp a Vice Grip onto the end of the Motor Shaft to keep It from rotating.



3. Position the Inswing Arm with a 15° offset.
 - a. To facilitate the installation: the Closing Spring can be completely released by means of the Adjusting Screw.
 - b. The more the Closing Spring is tightened by the Adjusting Screw, the more the Gear centers the Spindle Extension, thus the Inswing Arm. If deemed necessary, please go to the Adjustment Chapter within this manual to Adjust Preload.
4. Insert the Spindle Extension into the Output Shaft.



5. Tighten the Bolt with a Torque Wrench:
 - ▶ The existing Bolt must be torqued appropriately (200 in-lb).
 - ▶ If the existing Bolt is removed; a new Bolt can be used providing Loctite is applied and torqued appropriately (200 in-lb).
 - ▶ Alternatively, the existing Bolt can be used providing it is first cleaned (existing Loctite removed), before fresh Loctite is applied and torqued appropriately (200 in-lb).
 - a. Compatible Torque Wrenches: Grainger/Westward Fixed 3/8" Micrometer Torque Wrench, 50 to 250 In-Lb or Sears/Craftsman Micro-Clicker Torque Wrench 3/8" Drive 25 to 250 In-Lb.

CHAPTER 8: INSTALL THE INSWING OPERATOR ASSEMBLY (W/REVEAL)

DANGER

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.

SECTION 8.1 Install the Operator to the Top Door Frame

1. From the top of the Door, measure 2-1/8 inches up and mark a horizontal line across the Door Frame.
2. From the Center Line of Pivot, measure 8-1/2 inches across the Door Frame. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Operator.

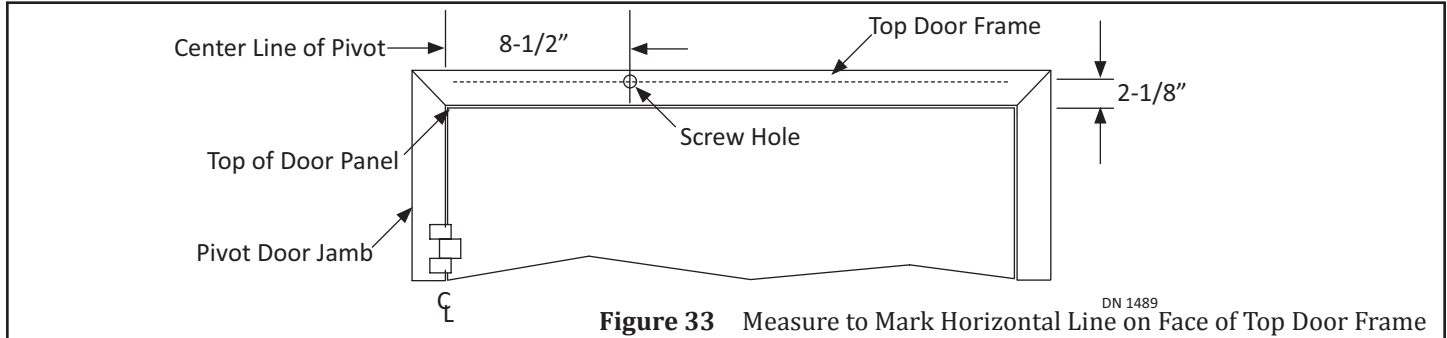


Figure 33 Measure to Mark Horizontal Line on Face of Top Door Frame

3. Locate (8) predrilled holes on the back of the Header.
4. Align the first pre-drilled screw hole to the measured mark and use the Header as a template to mark and drill (8) 1/4 inch screw holes. Ensure the Header is square and level.
5. Secure the Header to the Door Frame with (8) 1/4 inch Screws (Not supplied by NABCO).
 - a. Do not install Header Cover at this time.

SECTION 8.2 Install the Guide Track Assembly

8.2.1 Install the Mounting Bracket to Door Panel

1. From the top of the Door, measure 1-5/8 inches down and mark a horizontal line across the face of Door Panel.
2. From the Center Line of Pivot, measure 5-1/2 inches across the Door Panel. Mark a vertical line across the existing horizontal line. This is the center of the first Screw hole used to secure the Arm Shoe Assembly.

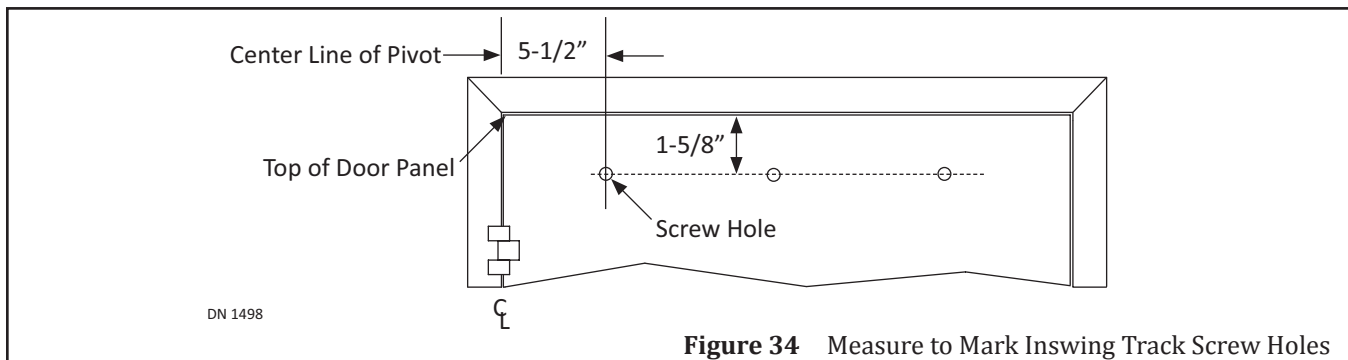


Figure 34 Measure to Mark Inswing Track Screw Holes

3. Align the first pre-drilled Screw hole to the measured mark and use the Mounting Bracket as a template to mark and drill (3) screw holes for #10 Screws. Ensure the Mounting Bracket is square and level.
4. Secure the Mounting Bracket to the Swing Door with (3) #10 Screws (not provided by NABCO). Please see Figure 15.

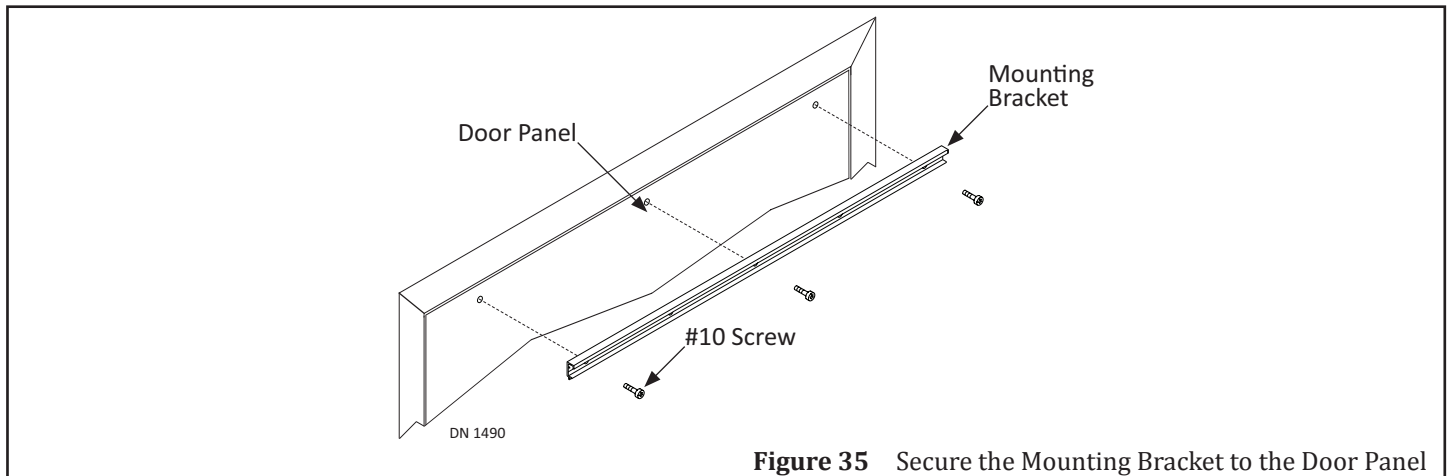


Figure 35 Secure the Mounting Bracket to the Door Panel

SECTION 8.3 Install the Guide Track to the Mounting Bracket

1. Assemble and then secure the Guide Track to the Mounting Bracket on each side, with: (1) nut, (1) Wedge Clamp, and (1) screw. Please see Figure 10.
2. Insert (1) end cap into each side.

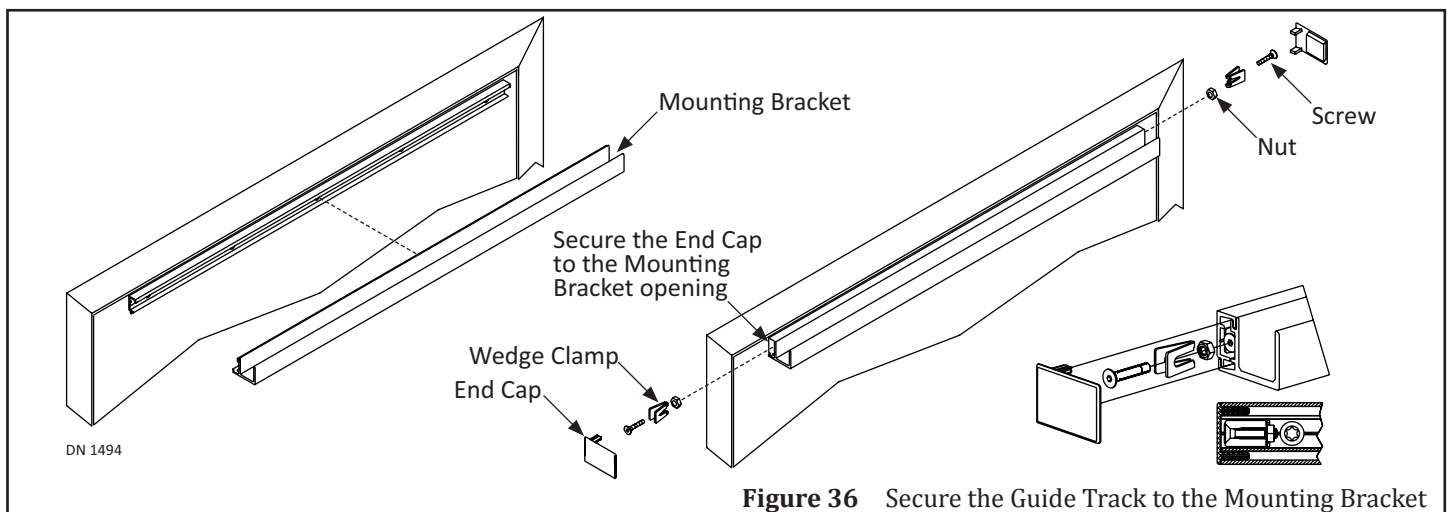


Figure 36 Secure the Guide Track to the Mounting Bracket

SECTION 8.4 Install the Inswing Reveal Arm

8.4.1 Replace the Standard Arm

1. Take out all contents shipped within the Standard Arm box.
 - a. NABCO ships the Reveal Arm inside the Standard Arm box.

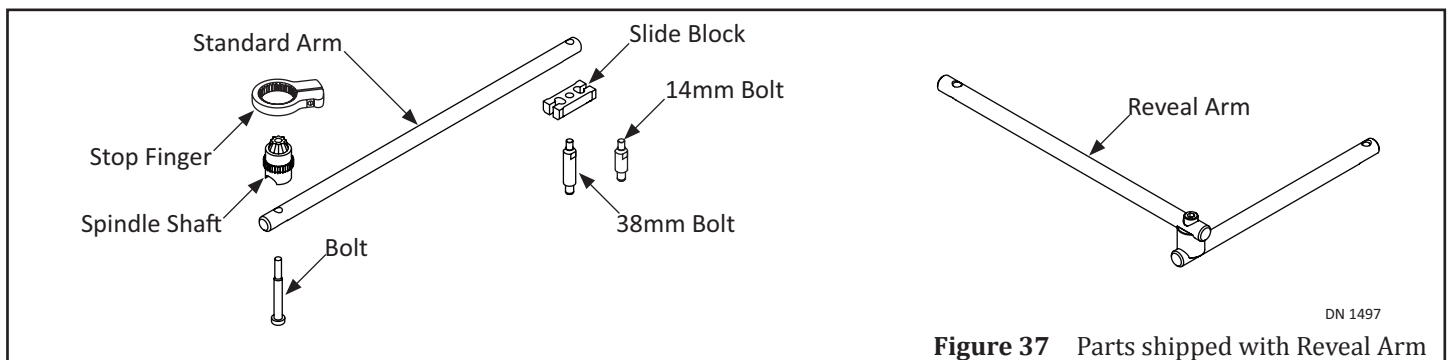


Figure 37 Parts shipped with Reveal Arm

2. If necessary, remove the Slide Block from the Standard Arm. Set aside.
3. Discard the Standard Arm.
4. Some Units are shipped with a 38mm Bolt. Due to a redesign of the Reveal Arm, only (1) 14mm Bolt is used to secure the Slide Block. Discard the 38mm Bolt (if shipped).
5. Obtain the Reveal Arm.
6. Place the Slide Block under the end of the Short Arm. Align the bolt holes.
7. Slide (1) 14mm Bolt through the Slide Block and the Reveal Arm.
8. Go under the Slide Block. Secure the 14mm Bolt to the Reveal Arm with (1) Ring Clamp.

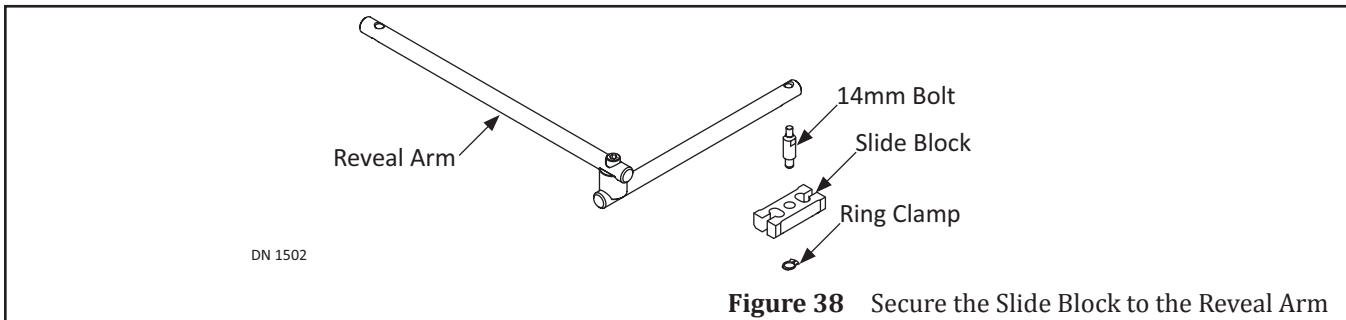


Figure 38 Secure the Slide Block to the Reveal Arm

9. Loosen the Set Screw located on the side of the Stop Finger.
10. Slide the Stop Finger onto the Spindle Extension.
 - a. The Stop Finger must point in the same direction the Gear rotates to open the Door Panel.
 - b. If deemed necessary, please go to the Adjustment Chapter within this manual to adjust the Stop Finger.

SECTION 8.5 Secure the Arm to the Operator

Note: It is recommended to clamp a Vice Grip onto the end of the Motor Shaft to keep It from rotating.

1. Position the Inswing Arm with a 15° offset.
 - a. To facilitate the installation: the Closing Spring can be completely released by means of the Adjusting Screw.
 - b. The more the Closing Spring is tightened by the Adjusting Screw, the more the Gear centers the Spindle Extension, thus the Inswing Arm. If deemed necessary, please go to the Adjustment Chapter within this manual to Adjust Preload.
2. Insert the Spindle Extension into the Output Shaft.

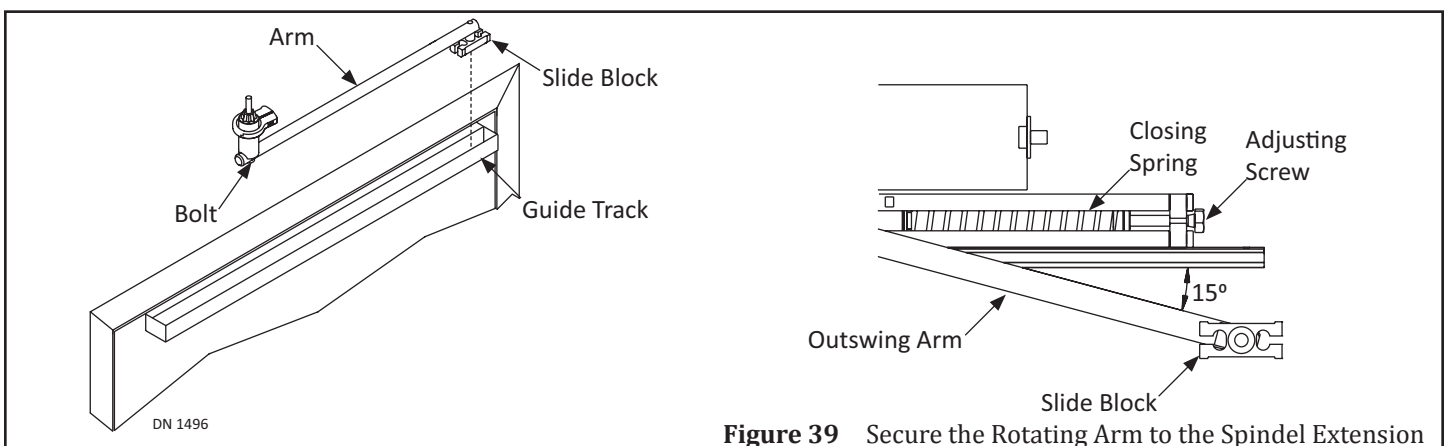


Figure 39 Secure the Rotating Arm to the Spindel Extension

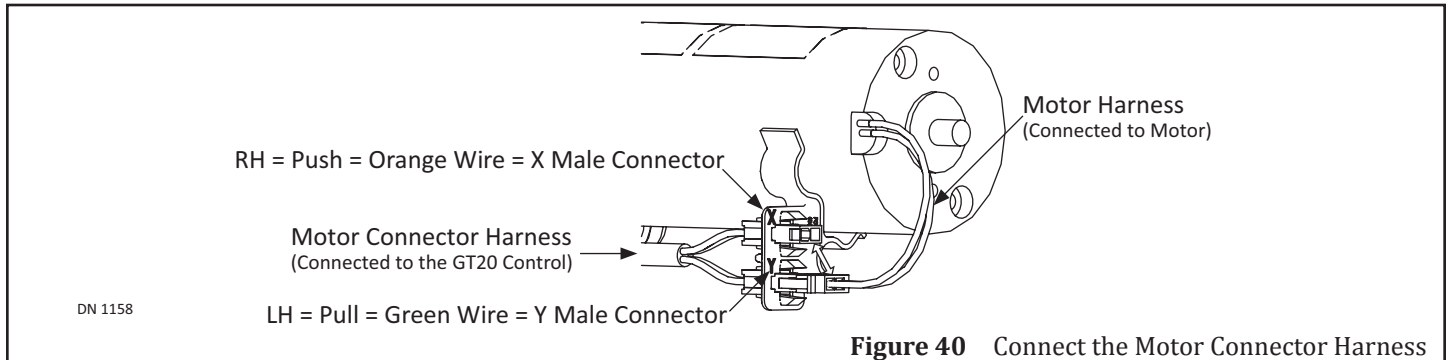
3. Tighten the Bolt with a Torque Wrench:
 - ▶ The existing Bolt must be torqued appropriately (200 in-lb).
 - ▶ If the existing Bolt is removed; a new Bolt can be used providing Loctite is applied and torqued appropriately (200 in-lb).
 - ▶ Alternatively, the existing Bolt can be used providing it is first cleaned (existing Loctite removed), before fresh Loctite is applied and torqued appropriately (200 in-lb).
 - a. Compatible Torque Wrenches: Grainger/Westward Fixed 3/8" Micrometer Torque Wrench, 50 to 250 In-Lb or Sears/Craftsman Micro-Clicker Torque Wrench 3/8" Drive 25 to 250 In-Lb.

CHAPTER 9: 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.

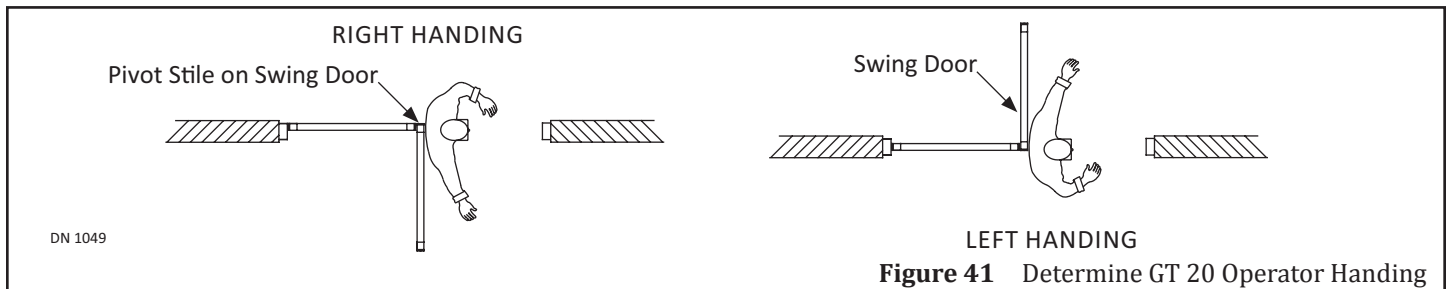


Before connecting the Male Connector, the installer must first determine the Handing of the door (that determines the Spindle Rotation) and then refer to Chapter 16 under the Parameter Menu (ROD).

SECTION 9.1 Handing

9.1.1 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.



9.1.2 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.



SECTION 9.2 Determine the Spindle Rotation

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

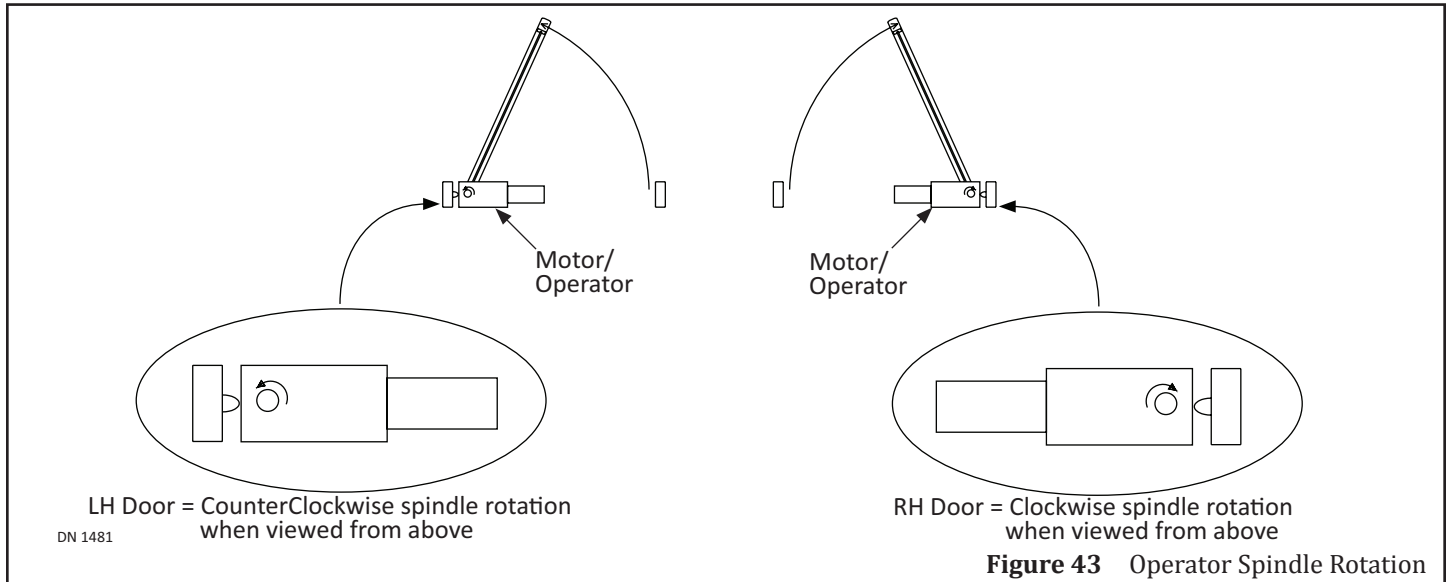


Figure 43 Operator Spindle Rotation

SECTION 9.3 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	GT20	GT20 Inverse
X = Orange	RH = Clockwise = Push	RH = Counterclockwise = Pull
Y = Green	LH = Counterclockwise = Pull	LH = Clockwise = Push

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.

9.3.1 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.
 - a. 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.

9.3.2 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.

9.3.3 Test the Inverse Door

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

CHAPTER 10: 120 VAC GENERAL WIRING

DANGER

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: Depending upon the installation, the Power Switch/Program Selector may have to be installed on the opposite side of the Header. If 120 VAC Power wires must be installed from Hinge Side of Header, ensure all wires are securely clipped to prevent pinching of the wires during the Motor/Operator installation process.

Note: Please see "The Motor Connector Harness" chapter within this manual for wiring details.

1. Connect the Main Power Supply.
2. Mount the Side Cover.

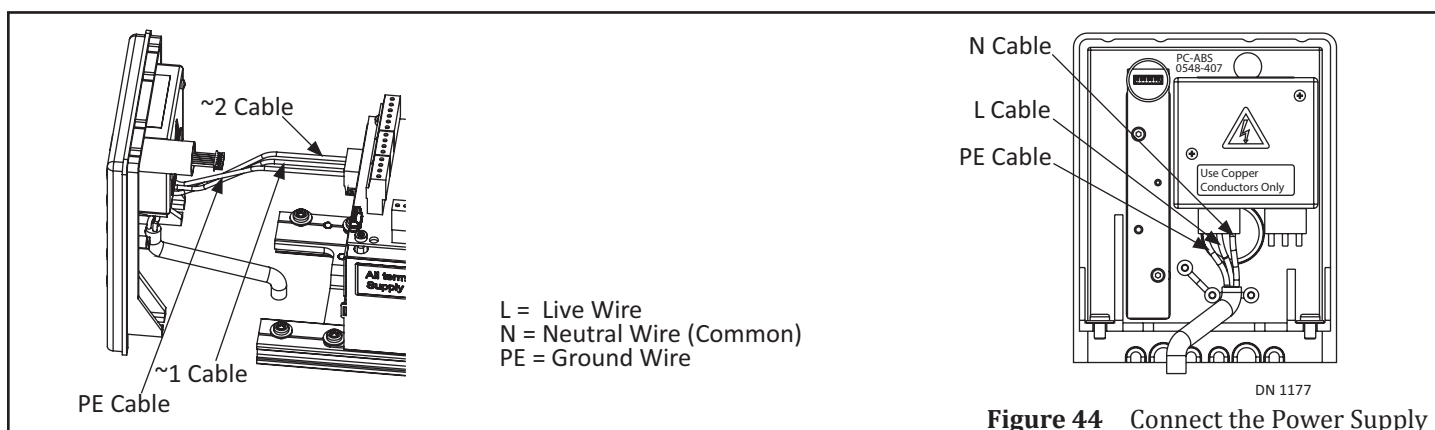


Figure 44 Connect the Power Supply

CHAPTER 11: ADJUSTMENTS

CAUTION

- Ensure 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).
- Ensure 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 11.1 Adjust the Stop Finger

If the Door Panel opens too far, or not far enough, and/or the Stop Finger is not positioned so it is just short of touching the Door Stop Eccentric in the fully open position; the Stop Finger and/or the Eccentric must be adjusted. There are two types of adjustments:

- ▶ Coarse: The Stop Finger is repositioned.
 - ▶ Fine: The Eccentric is repositioned.
1. Manually open the Door Panel. The maximum door opening angle is 105 degrees.
 2. Clamp the end of the Motor Shaft with a Vice Grip to keep It from rotating.
 - ▶ Coarse Adjustment:
 1. Loosen the Set Screw located on the side of Stop Finger.
 2. Slide the Stop Finger off the Gear Teeth.
 3. Rotate the Stop Finger clockwise/counterclockwise as needed.
 4. Slide the Stop Finger back onto the Gear Teeth.
 5. Tighten the Set Screw.
 - ▶ Fine Adjustment:
 1. Loosen the Eccentric with an Allen Wrench.
 2. Rotate the Eccentric clockwise/counterclockwise as needed.
 3. Tighten the Eccentric with an Allen Wrench.
 3. Remove the Vice Grip.

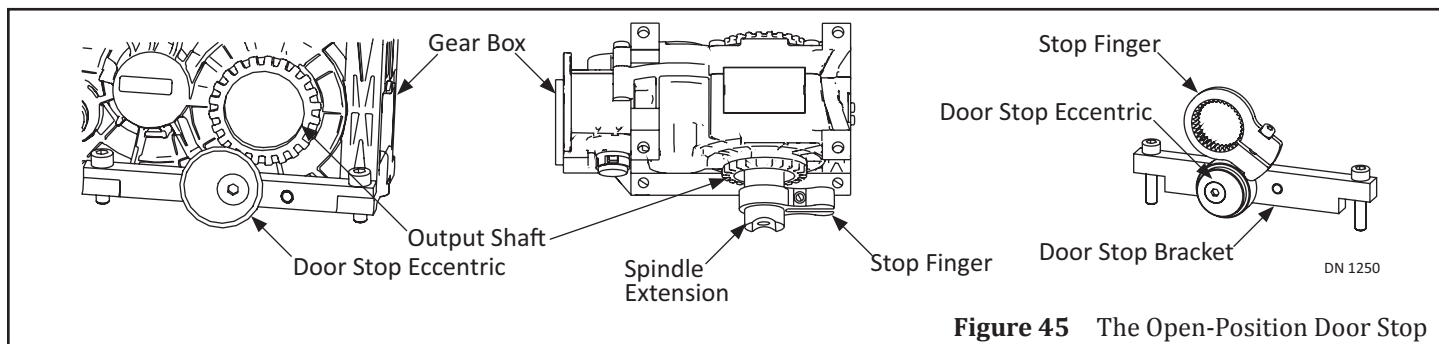


Figure 45 The Open-Position Door Stop

SECTION 11.2 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 Table 8.
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.

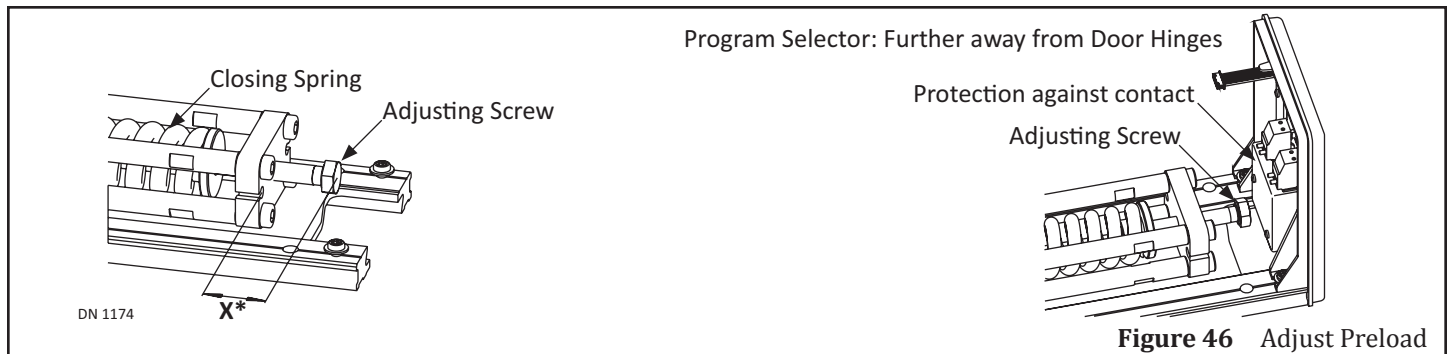


Table 7 Standard GT20 Swing Door Operator Assembly

Door Panel Width	37-3/8"	43-3/8"	49-1/4"	55-1/8"	63"
Closing torque 0...4	13.2 lb/ft; 18 Nm	19 lb/ft; 26 Nm	27.2 lb/ft; 37 Nm	39.7 lb/ft; 54 Nm	64 lb/ft 87 Nm
Outswing Arm attached to Arm Shoe (pushing function)					
Measure X*	1-1/2"	1-3/8"	1-1/8"	7/8"	3/4"
Inswing Arm slides into Guide Track (pulling function)					
Measure X*	1-3/8"	1-3/16"	7/8"	5/8"	1/2"
Outswing using Inswing Arm slides into Long Guide Track (pushing function)					
Measure X*	1-1/4"	1-1/8"	7/8"	9/16"	1/2"
<ul style="list-style-type: none"> ▶ X* = Approximate value for a Reveal of 0 mm. ▶ ANSI 156.10 reference = Amount of Force required to prevent a <i>stopped</i> 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." 					

Table 8 Value according to National Regulations

Door Panel Width	37-3/8"	43-3/8"	49-1/4"	55-1/8"	63"
Swing Rod attached to Arm Shoe (pushing function)					
Measure X*	1-9/16"	1-7/16"	1-1/4"	1-1/16"	7/8"
Swing Arm slides into Guide Track (pulling function)					
Measure X*	1-1/2"	1-3/8"	1-1/8"	7/8"	3/4"
Outswing using Inswing Arm slides into Long Guide Track (pushing function)					
Measure X*	1-7/16"	1-5/16"	1-1/16"	3/4"	11/16"
<ul style="list-style-type: none"> ▶ * Measure X is an approximated value for a Reveal of 0mm. ▶ Increase the Spring Tension only as little as necessary. ▶ The Operator Assembly must be able to open the Door Panel safely from any position. 					

SECTION 11.3 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.
2. Go to either side of the GT20 Control to locate a Blue square. Exact location depending upon type of installation.
3. With a flat head screwdriver turn the Potentiometer:
 - ▶ Clockwise for maximum accelerated force.
 - ▶ Counterclockwise for minimum accelerated force.

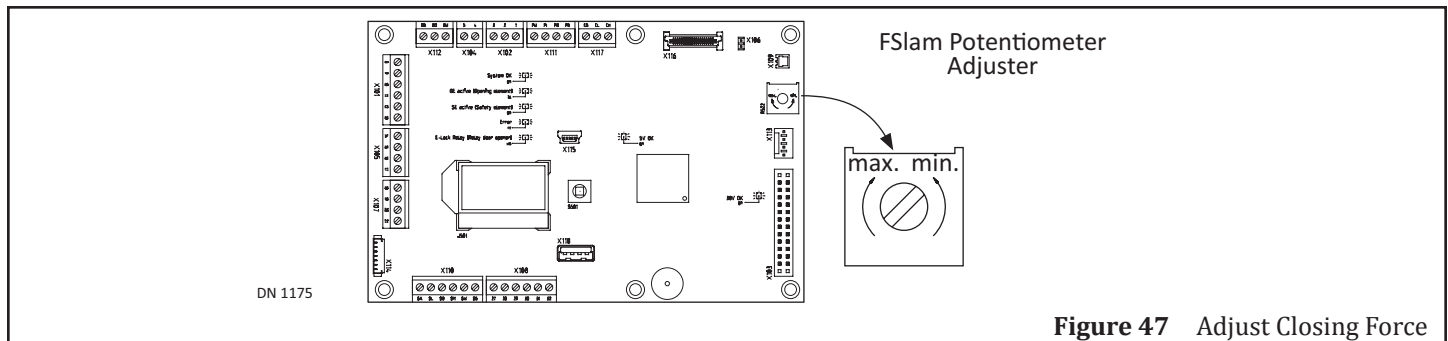


Figure 47 Adjust Closing Force

SECTION 11.4 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 9, 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.

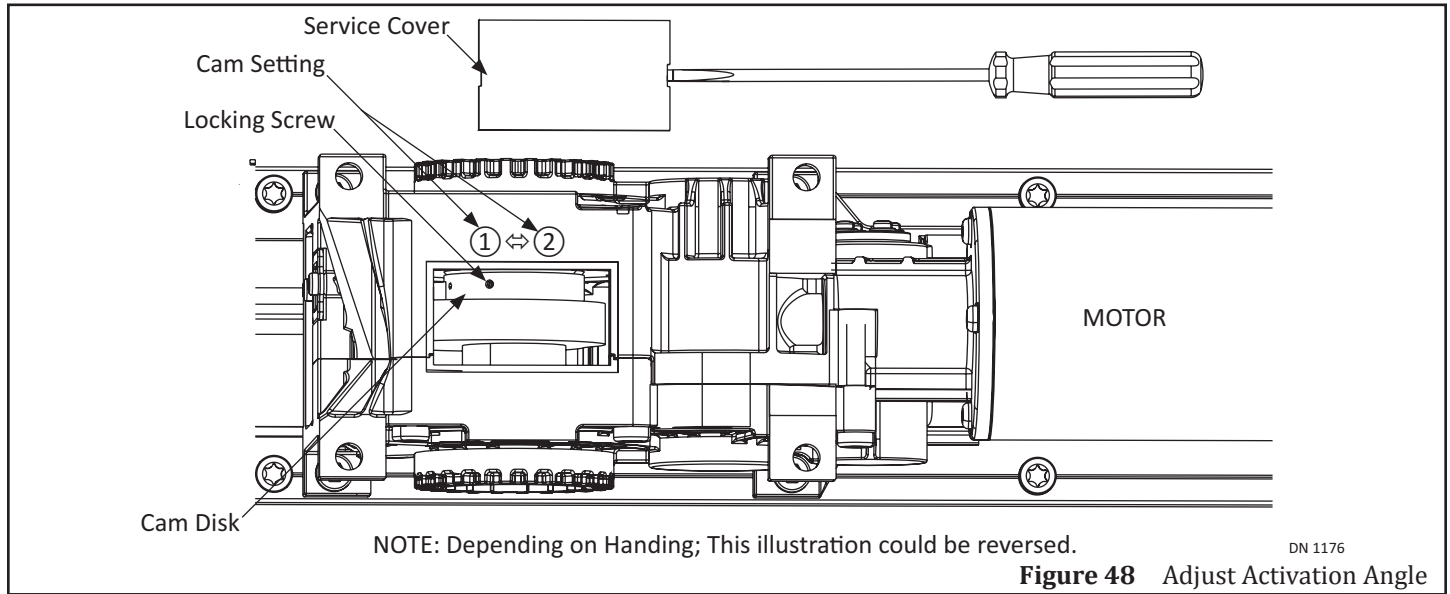
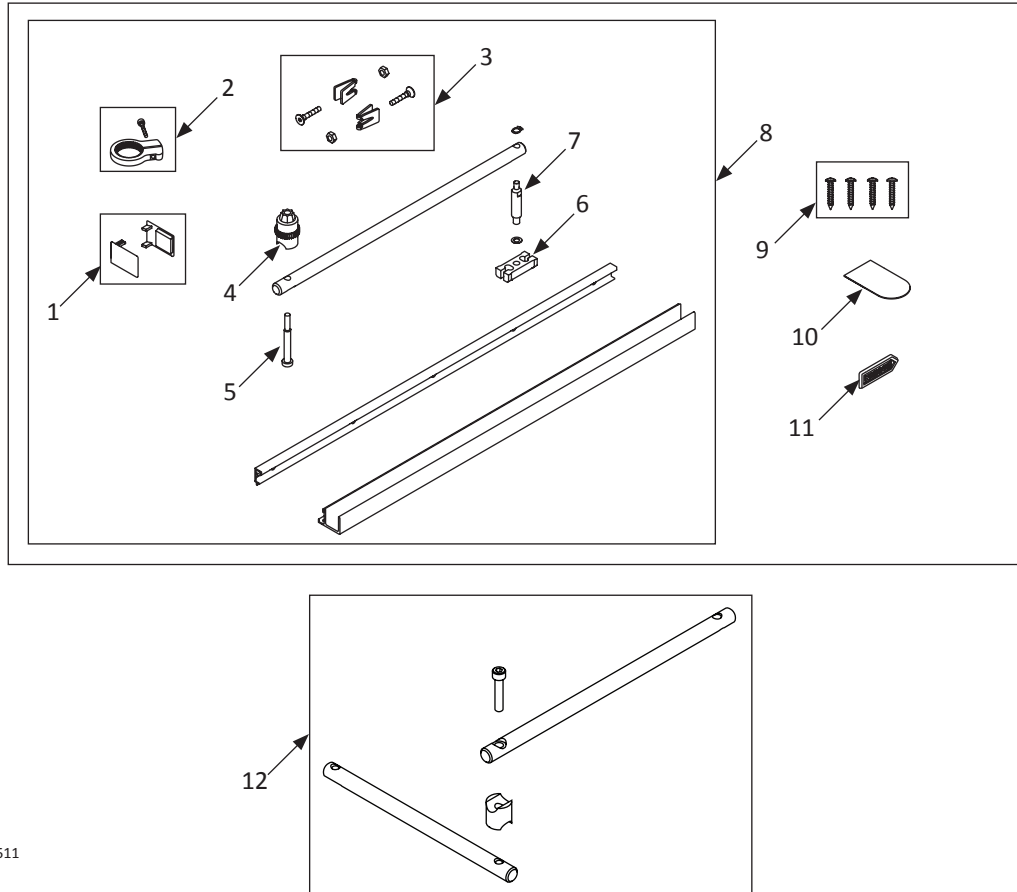


Table 9 Angle Range

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: INSWING ARM PARTS BOX



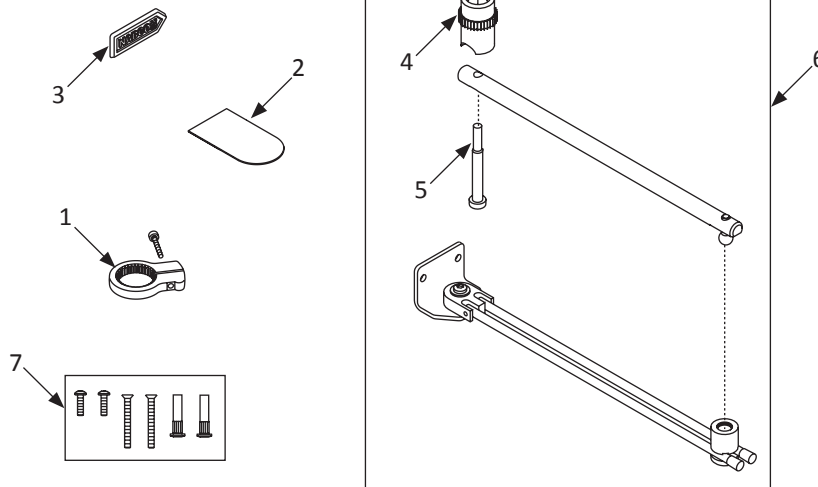
DN 1511

Inswing Arm Parts Box

Item	Part	Notes	Description	Qty	Used to
1	V-00630		"ENDCAPS,TRACK,INSWING,GT20"	1	Keep inside of Track free of dust and debris
2	V-00664		"RING,STOP,GT20"	1	Keep door from swinging past Full Close Position
3	V-00517		"CLIP,V,GT20 INSWING TRACK"	1	Assemble Inswing Track
4	V-00513		"ADAPTER,CLAMPING,STANDARD,GT20"	1	Secure swing arm to Operator and clear door frame
	V-00407	Optional	"ADAPTER,CLAMPING,+20mm,GT20"	1	Secure swing arm to Operator and clear door frame
	V-00408	Optional	"ADAPTER,CLAMPING,+50mm,GT20"	1	Secure swing arm to Operator and clear door frame
5	V-00631		"SHCS,M8 X 70,LOW PROFILE,GT20"	1	Secure swing arm to Operator
	V-00632	Optional	"SHCS,M8 X 90,LOW PROFILE,GT20"	1	Secure swing arm to Operator
	V-00633	Optional	"SHCS,M8 X 120,LOW PROFILE,GT20"	1	Secure swing arm to Operator
6	V-00628		"BLOCK,SLIDE,GT20"	1	Slide arm within Inswing Track to open/close door
7	V-00629	38mm	BOLT,TRACK,38 mm,GT20	1	Secure Slide Block to Swing Arm
	Call Factory	14mm	BOLT, TRACK 14mm,GT20	1	Secure Slide Block to Swing Arm
8	V-00324	Clear	ARM,SLIDING,GT 20	1	Open/close swing door
	A-01134	DrkBronze	ARM,SLIDING,GT 20	1	Open/close swing door
9	A-00796		PARTS BAG,INSWING TRACK,GT20	4	Secure Inswing Track to Swing Door
10	V-00322		COVER,PLASTIC,GT20 COVER	1	Protect inside of Header from dust and debris
11	C-00067		"NAMEPLATE, ADHESIVE BACKED"	1	NABCO Logo
12	M-01791		"ARM,INSWING,RIGHT ANGLE,GT20"	1	Open/close Reveal Doors (only)

SERVICE PARTS: OUTSWING ARM PARTS BOX

P/N A-61095 (Clear); P/N A-71095 (Dark Bronze)



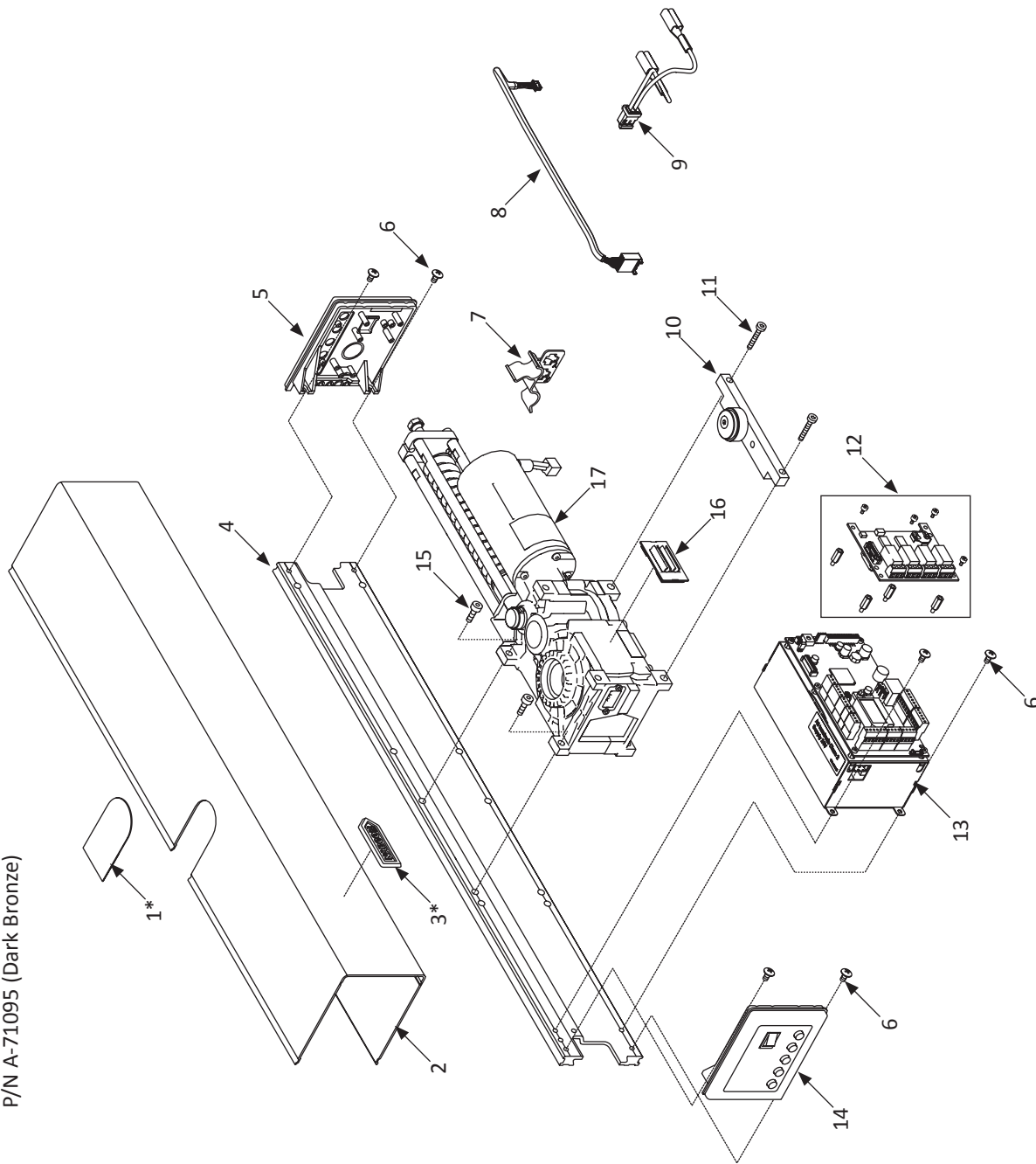
DN 1513

Outswing Arm Parts Box						
Item	Part	Notes	Description	QTY	Used To	
1	V-00664		"RING,STOP,GT20"	1	Keep door from swinging past Full Close Position	
2	V-00322		PARTS BAG,CABLE SET & COVERS,GT 20	1	Protect inside of Header from dust and debris	
3	C-00067		"NAMEPLATE, ADHESIVE BACKED"	1	NABCO Logo	
4	V-00407		"ADAPTER,CLAMPING,+20mm,GT20"	1	Secure swing arm to Operator	
	V-00513	Optional	"ADAPTER,CLAMPING,STANDARD,GT20"	1	Secure swing arm to Operator	
	V-00408	Optional	"ADAPTER,CLAMPING,+50mm,GT20"	1	Secure swing arm to Operator	
5	V-00632		"SHCS,M8 X 90,LOW PROFILE,GT20"	1	Secure swing arm to Clamping Adapter	
	V-00631	Optional	"SHCS,M8 X 70,LOW PROFILE,GT20"	1	Secure swing arm to Clamping Adapter	
	V-00633	Optional	"SHCS,M8 X 120,LOW PROFILE,GT20"	1	Secure swing arm to Clamping Adapter	
6	V-00323		ARM,OUTSWING,GT 20	1	Open/close swing door	
7	A-00389	Clear	PARTS BAG,TRACK AND ARM CU GUIDE,204	1	Secure Arm Shoe to swing door	
	A-00388	DkBronze	PARTS BAG,TRACK AND ARM CU GUIDE,313	1	Secure Arm Shoe to swing door	

SERVICE PARTS: MOTOR/OPERATOR ASSEMBLY HEADER

Viewed from **Non-Break** Out Side

- * Included in Parts Box P/N A-61094 (Clear)
- P/N A-71094 (Dark Bronze)
- P/N A-61095 (Clear)
- P/N A-71095 (Dark Bronze)



DN 1510

Motor/Operator Assembly Header			
Item	Part	Finish/Sizes/Notes	Description
1	V-00322		PARTS BAG,CABLE SET & COVERS,GT 20
2	A-61009	Clear	"COVER,SINGLE,GT20,204"
	A-71009	Dark Bronze	"COVER,SINGLE,GT20,313"
3	C-00067		"NAMEPLATE, ADHESIVE BACKED"
4	A-01010		"BASEPLATE,SINGLE,GT20"
5	V-00319		END CAP,COVER,GT 20
6	T-00452		THMS,M4-.7 X 8 mm LG,PHIL,ZINC
7	V-00476		"CLIP,MOTOR LEADS,GT20"
8	V-00636		"CABLE,ENCODER,GT20"
9	V-00637		"CABLE,SWITCH,GT20"
10	V-00325		OPEN & STOP ,GT 20
11	T-00451		SHCS,M6-1.0 X 30 mm LG,ZINC
12	V-00326	Optional	RELAY,PCB,GT 20
13	V-00317		CONTROL UNIT, GT 20
14	V-00318		END CAP,COVER,PUSH BUTTONS,GT 20
15	T-00450		SHCS,M6-1.0 X 20 mm LG,ZINC
16	V-00638		"COVER,SERVICE/CABLE GUIDE,GT20"
17	V-00316		DRIVE MODULE, GT 20