

6200 Series

Full Feature Low Energy Operator

Model 6231 (Push Side), Low Ceiling Application

Installation Instructions

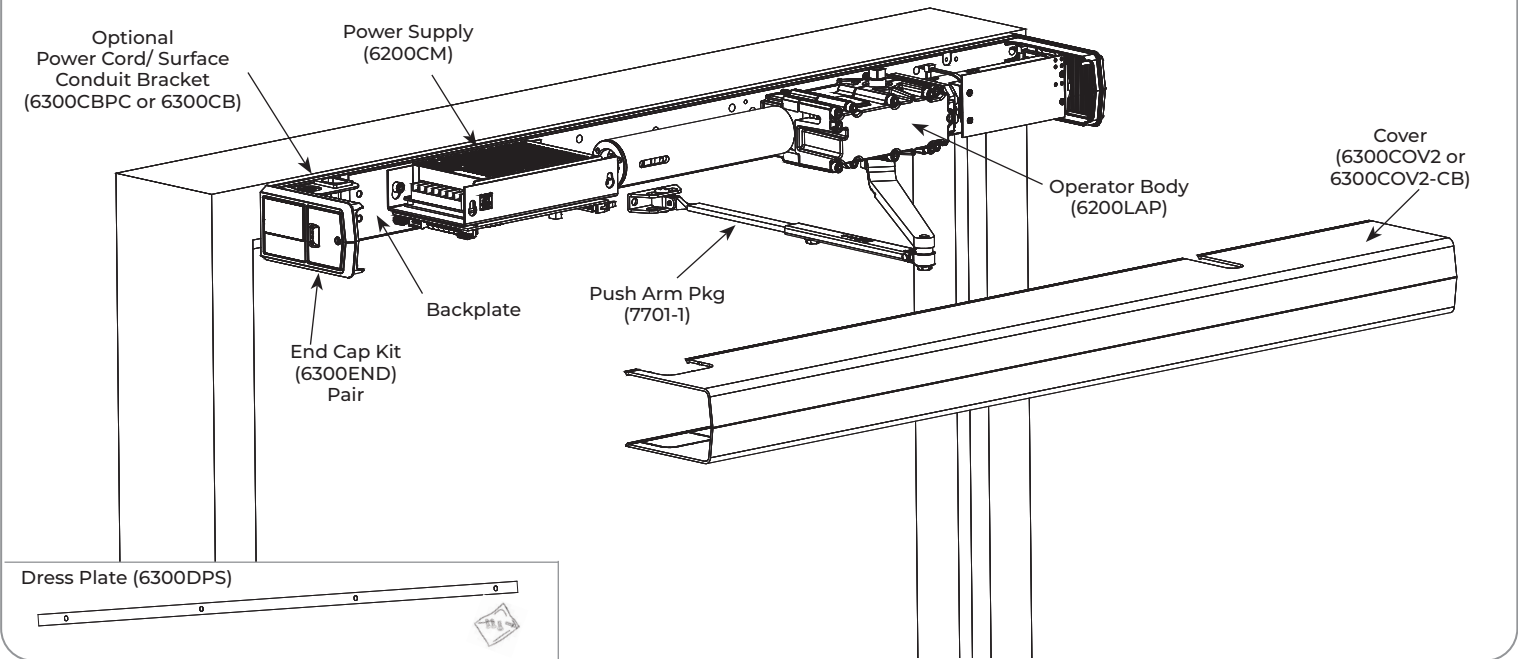


⚠ WARNING

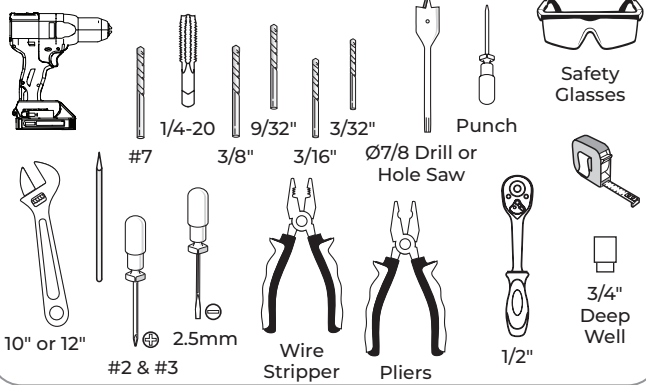
This product can expose you to lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to: www.P65warnings.ca.gov.

Pour la version française voir NortonRixson.com.
READ AND FOLLOW ALL INSTRUCTIONS.
SAVE THESE INSTRUCTIONS.

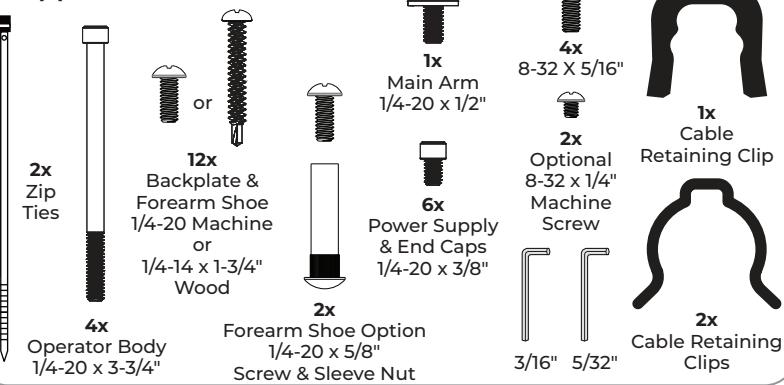
6231 Push Side up to 130° opening



Tools Needed



Supplied Fasteners & Tools



The table below provides a list of documents associated with this product. These documents are available for download from www.nortonrixson.com. If additional information or assistance is needed, contact Technical Product Support.

Document Title	Document Number
6200 Series Quick Start Guide	80-9363-0021-020
6200 Series Operator On Board or WiFi Programming Guide	80-9363-0022-020
6231 Push Side, Low Ceiling Application Template, 36-48" Door Width, 90-200 lb. Door Weight 130° Max Open Angle w/ Reveal of 1/8" to 3-1/4"	80-7362-0001-020

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Certifications and Standards

- UL Certified: Operator conforms to ANSI/UL standard 325 for automatic closing doors and UL10C Positive Pressure Fire Test for Door Assemblies.
- ANSI A156.19: These products are designed to conform to this specification “for power assist and low energy power operated doors.” These products are designed to exceed all the requirements for “Low Energy Power Operated Door”.
- Americans with Disabilities Act (A.D.A.): These door operators can be installed and adjusted to conform with A.D.A. regulations.
- ANSI A117.1: These door controls permit door assemblies to conform to the requirements of this specification “for buildings and facilities - providing accessibility and usability for physically handicap people”.

Technical Data

Input power:	120VAC, 60Hz 3.0A
Power supply:	24 V DC, max. 4.5 Amp. ; .4A Available for Acc.
Door width:	36 - 48" (91-122 cm)
Door weight:	90-200 lb. (41-91 kg)
Push max angle:	130° with reveal of 1/8" to 3-1/4" (3 to 82.5 mm)
Pull max angle:	120°
Hold open time:	5-30 seconds (A.D.A. 5 seconds min.) Indefinite for Hold Open Input or End Cap 3 Position Switch

NOTES:

- Permanent wiring is to be employed as required by local codes.
- Activation devices: push plates, touchless wall switches, etc
- Maximum wire size is:
 - 12AWG at terminals LINE and NEUTRAL, (120VAC; 60Hz) on Power Input Terminal
 - 14AWG at all other terminals

Product Safety Warnings

WARNING: To reduce risk of injury to person, use this operator only with Pedestrian Swing doors. **FOR INDOOR USE ONLY**

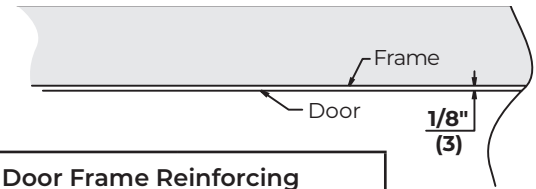
1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Install only on a properly operating and balanced door. A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs to any hardware before installing the operator.
3. Remove, or make inoperative, all locks (unless mechanically and/or electrically interlocked to the power unit) that are connected to the door before installing the operator.
4. Do not connect the door operator to the source power until instructed to do so.
5. Never let children operate or play with door controls. Keep remote control (when provided) away from children.
6. Personnel should keep away from a moving door in motion.
7. Test door's safety features at least once a month. After adjusting either force or limit of travel, retest door operator's safety features. Failure to adjust operator properly may cause severe injury or death.
8. KEEP DOOR PROPERLY OPERATING. See Door Manufacturer's Owner's Manual. An improperly operating door could cause severe injury or death. Have a trained door systems technician make repairs.
9. SAVE THESE INSTRUCTIONS.

Before You Begin

- Thickness recommended for reinforcements in hollow metal doors and frames is charted.
- This template information based upon use of 5" (127mm) maximum width butt hinges.
- Maximum frame reveal is 1/8" up to 3-1/4" (3 to 82.5mm) maximum for 6231 units.
- Before beginning the installation, verify that the door frame is properly reinforced and is well anchored in the wall.
- Concealed electrical conduit and concealed switch or sensor wires should be pulled to the frame before proceeding.

Fasteners for Frame:

- 1/4-20 Machine screws for hollow metal and aluminum.
- 1/4-14 x 1-3/4" (44mm) self-drilling sheet metal screws for wood.



Hollow Metal Door Frame Reinforcing		
Frame Material	Reinforcing	
	Recommended	Min. Required
12 Ga. .105 (2.66)	12 Ga. .105 (2.66)	18 Ga. .048 (1.21)
14 Ga. .075 (1.90)	10 Ga. .134 (3.41)	12 Ga. .105 (2.66)
16 Ga. .060 (1.52)	10 Ga. .134 (3.41)	12 Ga. .105 (2.66)
18 Ga. .048 (1.21)	8 Ga. .165 (4.18)	10 Ga. .134 (3.41)

Installation

A. Mount backplate.

1. Determine right hand or left hand installation. (Fig. 1)
2. Measure, mark, and drill the first mounting hole according to the template (available for download from www.nortonrixson.com). (Fig. 2)

For Metal Frames:

Use #7 drill and 1/4-20 tap for 1/4-20 machine screws.

For Wood Frames:

Use 3/16" drill and 1/4-14 x 1-3/4" for self drilling sheet metal screws.

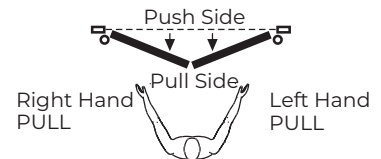


Fig. 1

3. Place backplate against the frame so that the first hole in the backplate is aligned with the first mounting hole in the frame. Attach backplate to the frame with the provided screw. **Do not fully tighten the screw at this time.** (Fig. 3)
4. Ensure backplate is level and aligned with door frame. Using backplate as guide, mark and drill second hole. (Fig. 3)
5. Insert second screw and tighten both screws.
6. Using backplate as a guide, drill and tap remaining eight (8) holes in the frame. (Fig. 3)
7. Secure the backplate with the eight (8) screws and tighten.
8. **For concealed wiring:** Using the backplate as a guide, mark and pre-drill two (2) conduit holes with the 3/16" drill. Then use the Ø7/8" hole saw or equivalent to drill two (2) conduit holes.

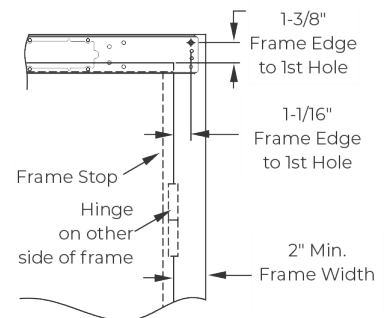


Fig. 2 Right Hand Shown

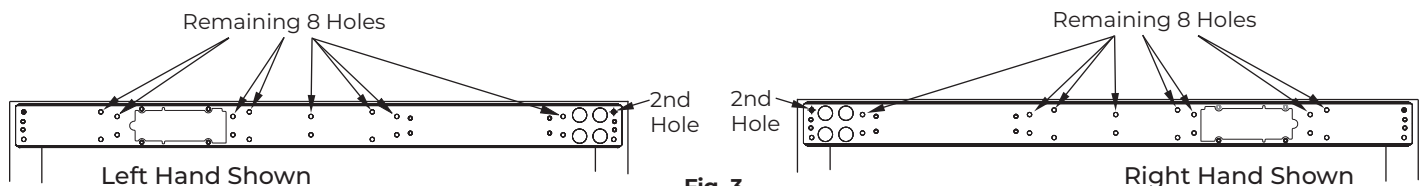
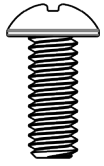


Fig. 3

Installation (cont.)

B. Mount forearm with shoe.

1. Using the template (available for download from www.nortonrixson.com), measure and mark the door for the first forearm shoe mounting hole. (Fig. 4)
2. Drill the first mounting hole.
 - **For metal reinforced doors:** Drill and tap holes with #7 drill and 1/4-20 tap to use with 1/4-20 machine screws.
 - OR
 - **For wood doors:** Reference Fig. 5 and use 1/4-20 x 5/8" screws with sleeve nuts.
3. Secure the forearm shoe to the first mounting hole using a 1/4-20 x 1/2" screw. **Do not fully tighten.**
4. Level the forearm shoe on the door.
5. Using the forearm shoe as template, mark and drill the second mounting hole. (Fig. 4)
6. Repeat step 3 and secure the forearm shoe to door. Tighten both screws. (Fig. 6)



OR

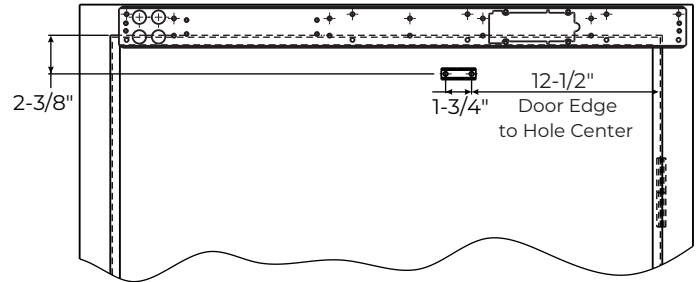
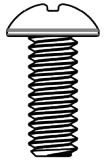


Fig. 4

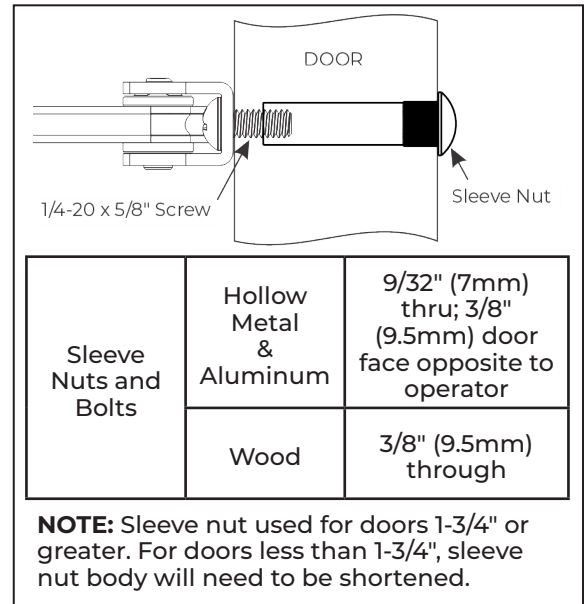


Fig. 5

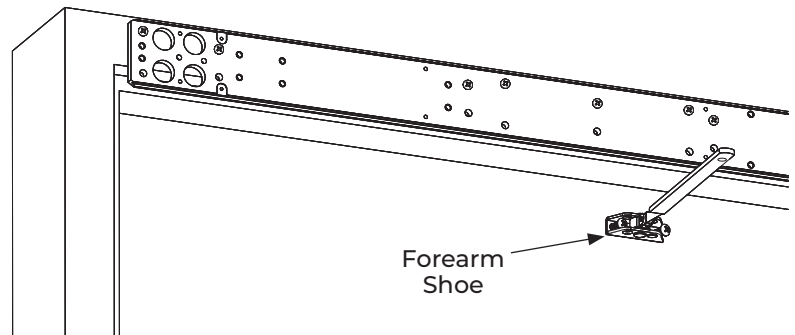
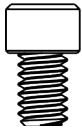


Fig. 6

Installation (cont.)

C. Install end caps.



1. Hold the endcap against the backplate so the flat edge is flush against the backplate's outer edge and the holes in the L-bracket align with the threaded mounting holes. (Fig. 7)
2. Fasten the endcap to the backplate by placing two (2) endcap mounting screws through the L-bracket slots into the threaded holes and tighten. (Fig. 8)

NOTE: End cap with 3-position switch is always located on conduit side of backplate.

NOTE: To retrofit the assembly to an existing operator, screws and fan inside of the end cap must be removed. Refer to the LAPW Replacement document 80-9363-0028-020, available for download from www.nortonrixson.com.

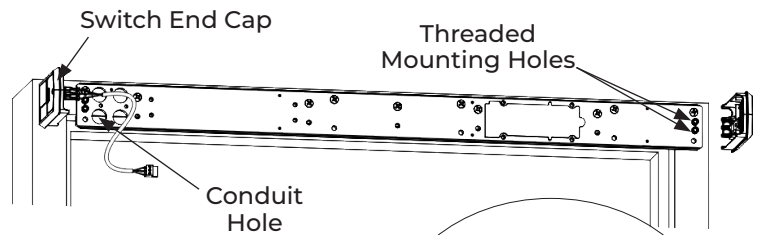


Fig. 7

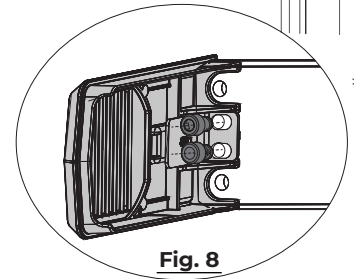
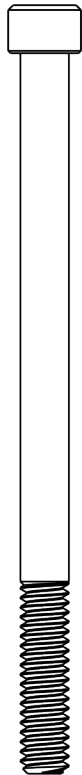


Fig. 8

D. Install operator body assembly.



1. Using the four (4) screws provided, install the operator body to the backplate. (Fig. 9)

NOTE:

- Screws must be tightened in a cross pattern until all four (4) screws are tight. (Fig. 9)
- The operator body is properly orientated for PUSH SIDE application when:
 - The motor is toward the hinge side of the door.
 - The autobrake board is facing away from the backplate.
 - “This side out PUSH SIDE” label is facing away from the backplate.

(Fig. 9)

2. Using three (3) supplied cable management clips, secure cables along operator body. (Fig. 10)

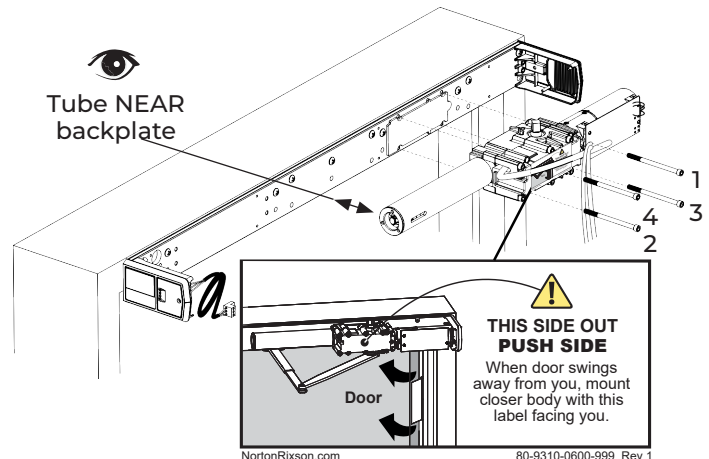


Fig. 9

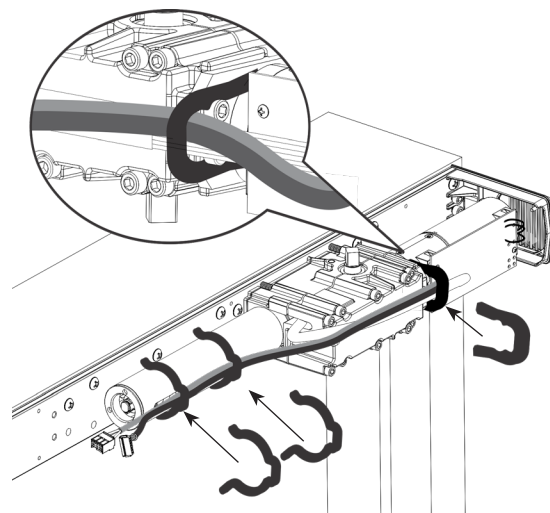
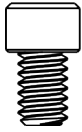


Fig. 10

Installation (cont.)

E. Install power supply assembly.



1. Insert two (2) 1/4-20 x 3/8" screws as shown, leaving an approximate 3/16" gap between the head of the screws and backplate. (Fig. 11)
2. Slide power supply key holes over screws allowing narrow slots of key holes to rest on screws. (Fig. 11)

NOTE: To properly orientate the power supply:

- The narrow slots of key holes are at the top.
- The control board always faces down.
- The power supply harness faces the switch end cap.

3. Tighten screws.
4. **Optional:** PC Conduit Bracket Assembly OR Surface Conduit Assembly installation. (Fig. 12 - PC Conduit Assembly shown)
 - Place the bracket against the backplate between the power supply and end cap. The conduit hole(s) should be facing up toward the frame header and the mounting side of the bracket will face the backplate.
 - Secure the bracket to the backplate using two (2) #8-32 x 1/4" machine screws.
 - Plug the bracket's wiring harness into the pre-wired harness of the power supply. (Fig. 13)
5. Connect the motor cable and ribbon cable from the operator body to the control board. (Fig. 14)
 - To connect the ribbon cable, spread the tabs on the control board connector before inserting.
6. Connect 3-Position switch on end cap to power supply. (Fig. 14)

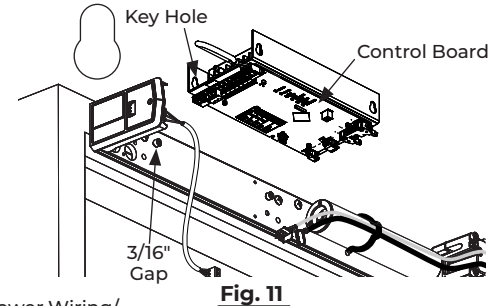


Fig. 11

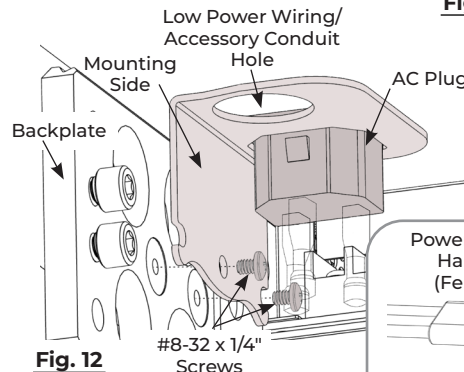


Fig. 12

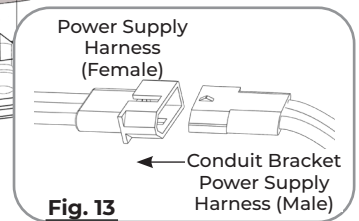


Fig. 13

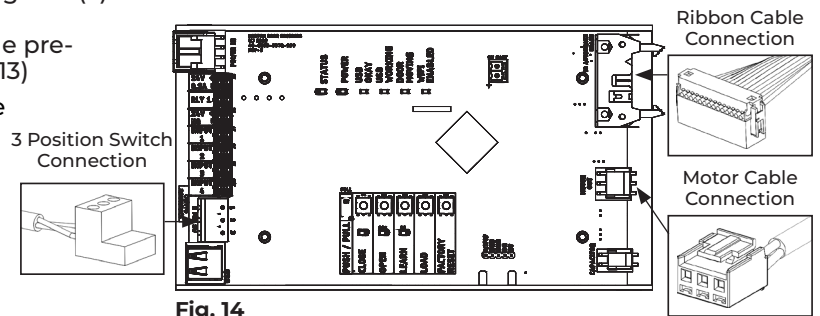
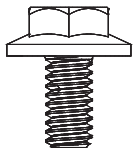


Fig. 14

F. Install main arm.



1. Using hex wrench, secure main arm to bottom pinion with 1/4-20x 1/2" screw. (Fig. 15)
2. Slide main arm tube onto forearm rod. (Fig. 15)

NOTE: If necessary, open door for tube to slide onto forearm.
3. With door fully closed, rotate main arm toward latch edge of door until arm tube is at 90° angle (perpendicular) to door. (Fig. 16)
4. Use arm screw provided with main arm to secure tube to forearm rod. (Fig. 16)

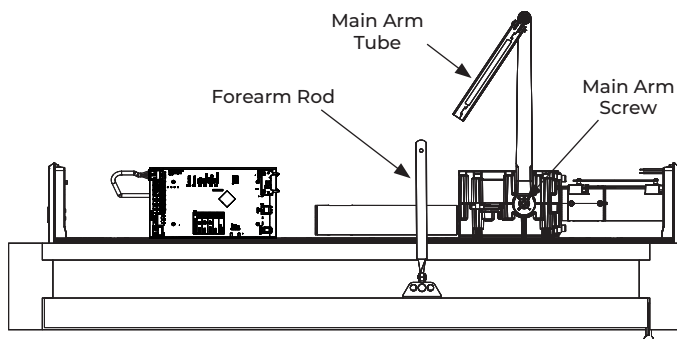


Fig. 15 View: Looking up from floor

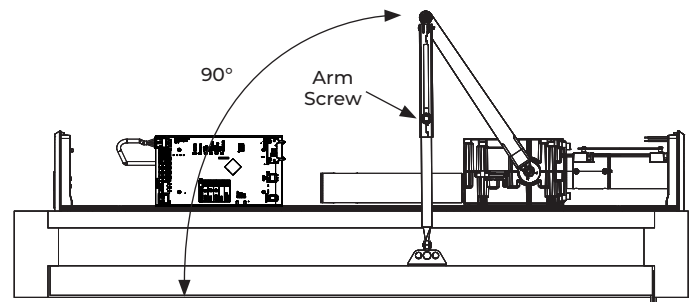


Fig. 16 View: Looking up from floor

G. Adjust closing force.

NOTE: The amount of effort to manually open or close a door is called closing force.

1. Using 1/2" socket wrench with 3/4" deep well socket, turn nut in end of operator body tube to desired force. (Fig. 17)

NOTE: Window in operator tube shows spring. (Fig. 18)

NOTE: If additional closing force is only required in latching region, see Latch Boost and Lock Release features in separate programming manual 80-9363-0022-020.

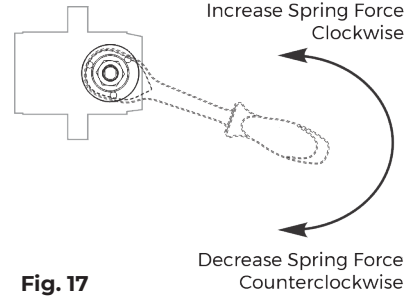


Fig. 17

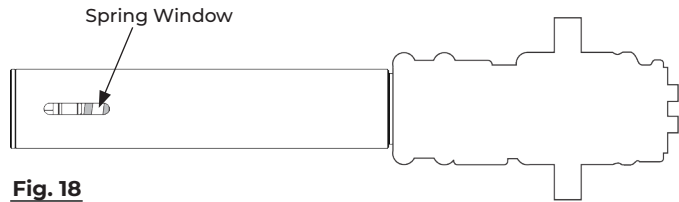


Fig. 18

The **6231 PUSH SIDE Low Energy Operator** has now been installed.

Continue with separate Programming Manual 80-9363-0022-020 to setup and adjust operator. Once programming and adjustments have been completed, attach cover and label plates, as shown below.

H. Attach cover and end cap label plates, and optional dress plate.

NOTE: Attach cover after initial programming has been done. See separate programming manual 80-9363-0022-020.

1. Align cut-outs in cover to pinion shafts. (Fig. 19)
2. **Optional:** If the PC Bracket or Surface Conduit Bracket is installed, use pliers to remove the appropriate knockout located at the top of the cover. (Fig. 20)
3. Slide cover onto unit using end caps as guides.
4. Snap cover securely to back plate.
5. Attach a label plate to each end cap by snapping into place by hand with gentle pressure. (Fig. 19)



WARNING: Make sure no wiring is loose or can be caught by cover when it is snapped into place.

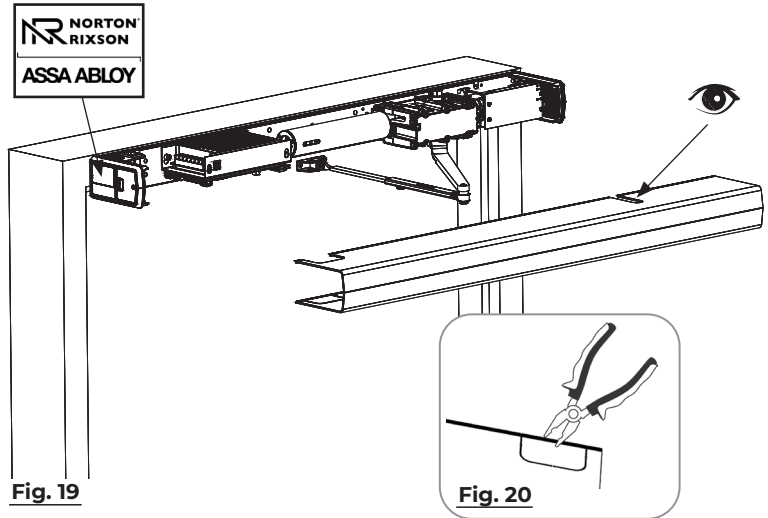


Fig. 19

Fig. 20

(4x) 8-32 X 5/16" Machine Screws

Installing the Dress Plate

1. Align the 6300DPS dress plate so it covers the exposed surface of the operator's backplate.
 - The slots in the dress plate should line up with the screw holes in the backplate.
 - The bottom of the dress plate should be flush with the bottom of the backplate.
2. Use four (4) 8-32 X 5/16" machine screws to secure the dress plate to the backplate where indicated. (Fig. 21)

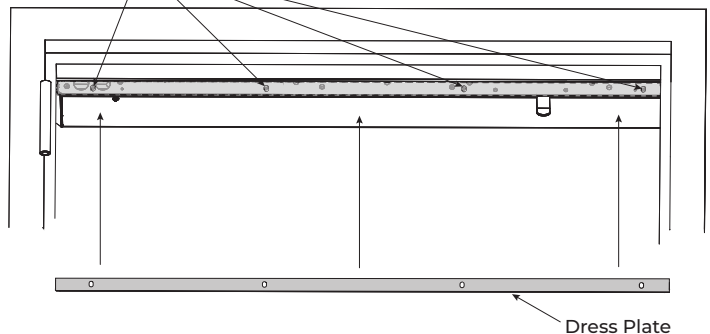


Fig. 21

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