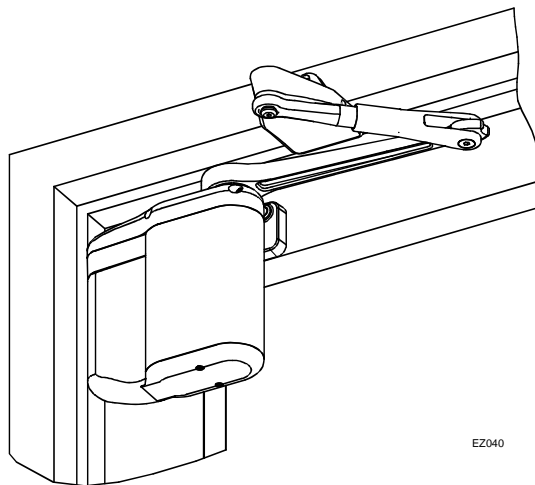**Installation and
Operating Instructions**

ADA EZ

Installation and Operating Instructions

700001

Rev. F, 6/17/09

**ADA EZ
Wire Free Door Opener**

EZ040

Note

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device. This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Refer to www.ADAEZ.com to obtain the latest manual and template revisions.

Installation and Operating Instructions

TABLE OF CONTENTS

1. PURPOSE

   1.1 **Discussion**

   This manual provides system description, installation instructions, operating instructions, troubleshooting recommendations, and a replacement parts listing for the ADA EZ swing door operator.

   The ADA EZ is an automatic door opening and closing device that permits automatic operation of single or double right hand or left hand doors measuring 36″ to 48″ wide and weighing up to 250 lbs. The door operator device mounts on a parallel-arm push-side configuration.

   The ADA EZ operator allows the door to open manually or by a remote transmitter device. As the door closes the ADA EZ operator generates an electrical charge that restores power to the operator battery. If the door is operated via remote transmitter more often than it is opened manually, the door-closing cycle may not supply enough power to charge the battery and permit remote operation. In this case an optional AC 110-volt transformer is available.

   1.2 **Applicability**

   This manual is applicable to the ADA EZ-series wireless door opener.

2. PREREQUISITES

   2.1 If the door is an aluminum storefront door, make sure that you do not drill into the tie rod or the top rail web. Also, do not drill into the junction of the style and rail.
   2.2 When using the optional plug-in transformer, a 110-VAC grounded power outlet is available in the vicinity of the door. GFI or ground fault protected outlets are *not* acceptable.
   2.3 Protective barrier (caution/warning tape) has been set up to prevent unauthorized access to work area.
   2.4 If applicable, the existing door closer has been removed.
   2.5 The operator must only be installed on doors and frames in good working order, without sticking or binding during normal operation.
   2.6 The door has been secured to prevent unexpected opening or closing during installation.
   2.7 Attachment 1 has been reviewed for the following:
   - Definitions of the terms used in this procedure
   - A listing of the tools, equipment, materials, and consumables used in this procedure.

3. PRECAUTIONS

   3.1 This product is intended for interior use only.
   3.2 The transformer must *not* be plugged into the outlet until the operator and door arm installation are complete.
   3.3 The battery should not be installed in the transmitter until the operator and door arm installation are complete.
   3.4 An operating door creates pinch hazards. Be careful making operating adjustments while the door is moving.
   3.5 The transformer wiring must *not* be concealed behind walls or routed through doorways, window openings, walls, ceilings, or floors. Also, this wiring must be secured to prevent it from becoming entrapped in the moving parts of the operator or door.

4. SYSTEM DESCRIPTION

4.1 **General**

The ADA EZ operator is shipped in the following pieces (see Figure 1):
- Operator assembled with black cover installed
- Optional silver and bronze covers (when specified)
- Fixed door arm assembly
- Shock-absorbing door arm assembly
- Operator mounting bracket
- Operator mounting bracket cover
- Operator mounting posts
- Door arm pivot assembly
- Battery assembly installed but disconnected from the operator
- Two wireless pushbuttons
- Operator mounting templates (right hand and left hand)
- Hardware pack including fasteners for aluminum and hollow metal, wood, and all installations
- Door decals including the following:
    - Two yellow "CAUTION AUTOMATIC DOOR" decals
    - Two blue "ACTIVATE SWITCH TO OPERATE" decals
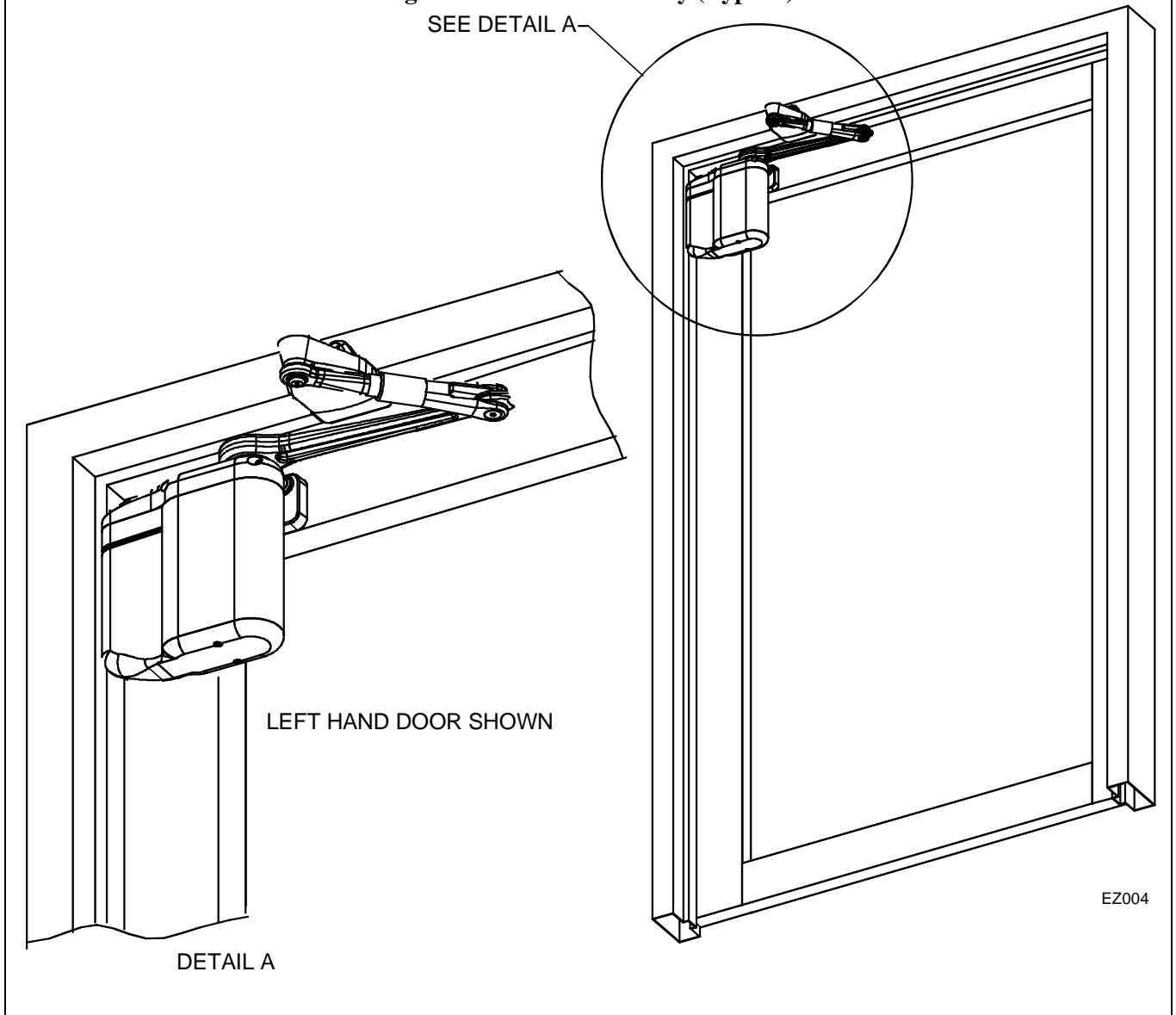   - One yellow "DAILY SAFETY CHECK" decal

Figure 2 illustrates an assembled ADA EZ operator installed on a left hand door. The paragraphs that follow describe its components:

Figure 1. ADA EZ Shipped Components

EZ046
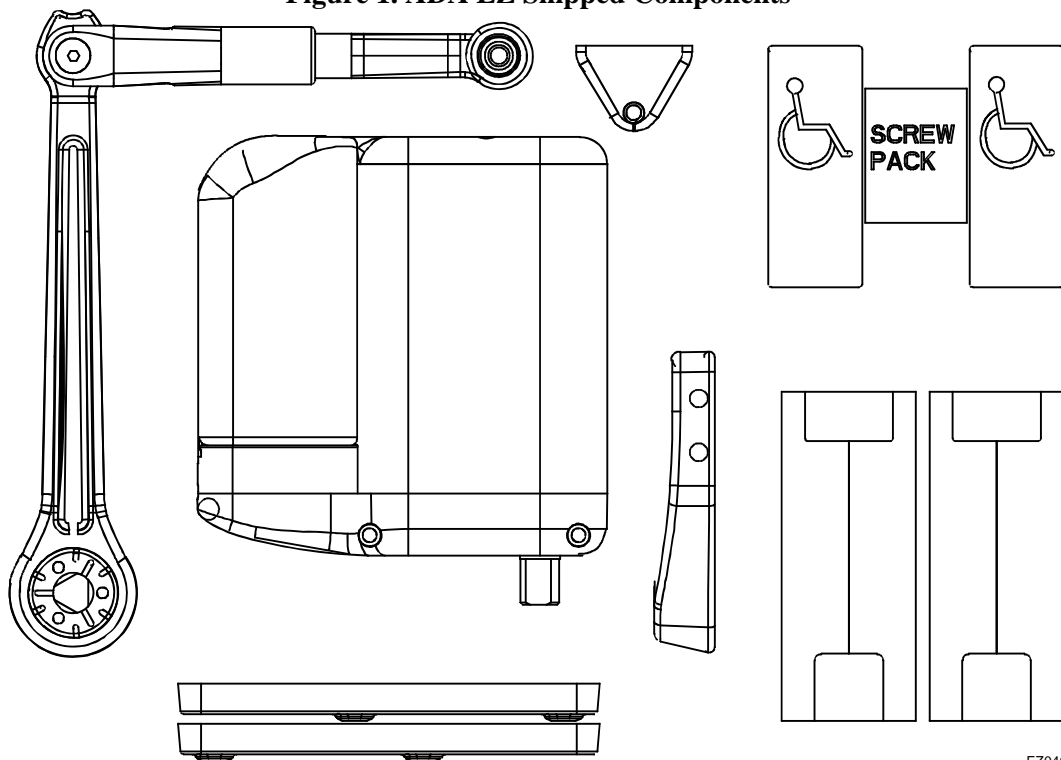
Figure 2. ADA EZ Assembly (Typical)

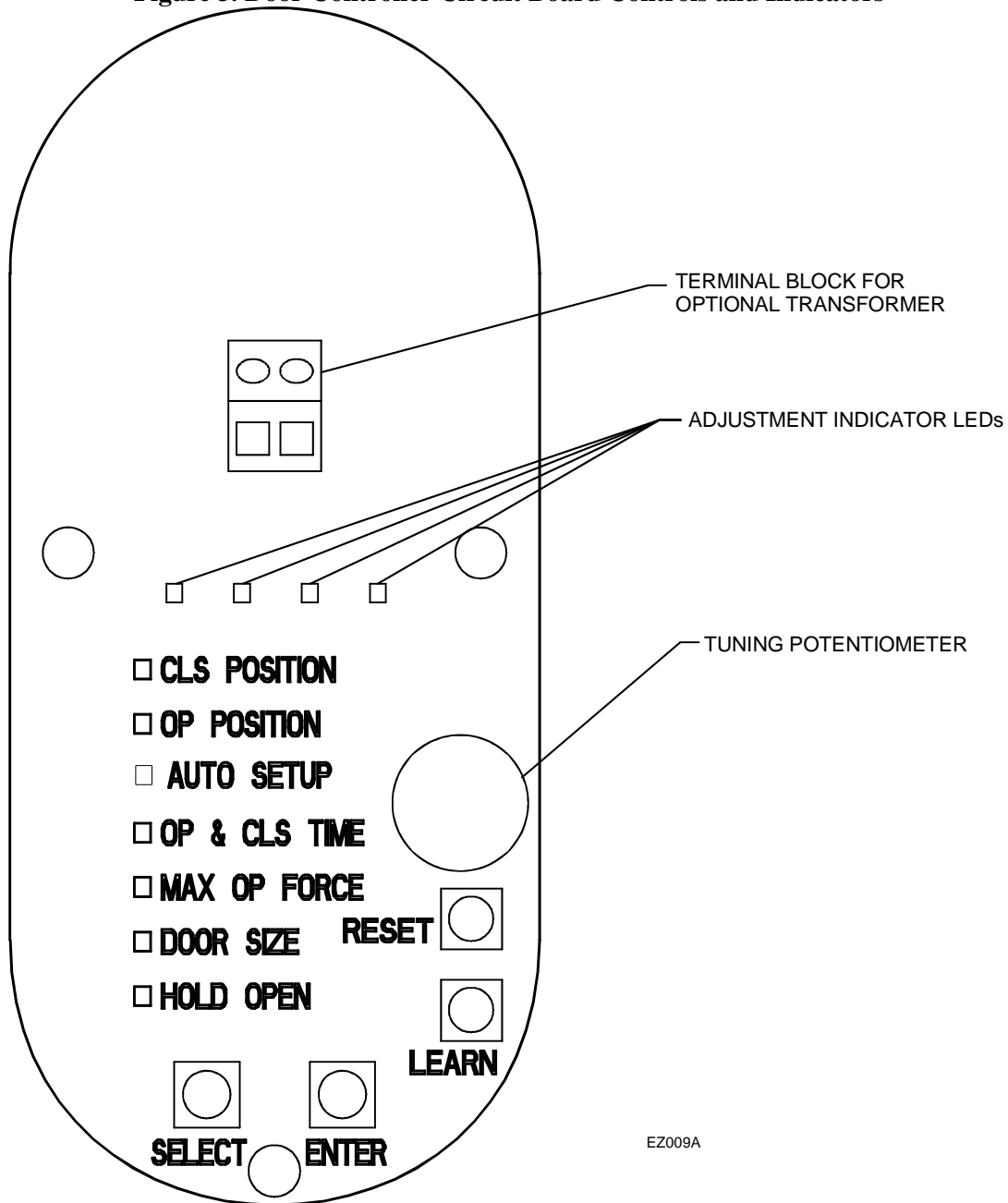SEE DETAIL A

LEFT HAND DOOR SHOWN

EZ004

DETAIL A

4.1.1 <u>Door Operator Assembly:</u> Includes the following major assemblies:

- <u>Door Operator:</u> Contains the mechanical components required to move the door. The operator assembly mounts on the leading edge of the door top rail and includes the motor/gearbox, door arm, mounting brackets, regenerative power source, battery pack, and cover.

- <u>Door Controller:</u> Contains the hardware and software necessary to control the motion of the door. The door controller circuitry converts the 20 VAC to the DC voltage required by the microcontroller, logic circuitry, and electric strike. Figure 3 illustrates the door controller circuit board controls and indicators.

- <u>Drive:</u> Provides the hardware and software necessary to drive the motor based on a door controller command.

Figure 3. Door Controller Circuit Board Controls and Indicators

TERMINAL BLOCK FOR
OPTIONAL TRANSFORMER

ADJUSTMENT INDICATOR LEDs

TUNING POTENTIOMETER

☐ CLS POSITION
☐ OP POSITION
☐ AUTO SETUP
☐ OP & CLS TIME
☐ MAX OP FORCE
☐ DOOR SIZE   RESET
☐ HOLD OPEN

LEARN

SELECT   ENTER

EZ009A

4.1.2 <u>Transmitter:</u> An external device that emits an rf signal or an electrical signal to operate the door. When pushed once, the door opens. The transmitter has a range of 30′ from either side of the door. One 3-volt 280mAH lithium battery (Part No.CR2032) provides transmitter power. The battery provides approximately 500,000 activations.

4.1.3 <u>Transformer:</u> Converts the incoming 110 VAC power to the voltage required by the controller. Plugs into a standard 110-VAC grounded power outlet wall outlet. Transformer rating as follows: Input 120VAC 50/60Hz. Output 30VDC 500mA.

4.2 **Features and Functions**

4.2.1 Opening Speed: Following an activation signal, the door moves from fully closed to open check or 80 degrees, whichever occurs first. The opening speed shall be in accordance with Table 1.

Table 1. Door Sizes and Opening/Closing Speeds

Door Weight (Pounds)	Door Width (Inches)					
	36	38	40	42	44	48
50	3.0	3.0	3.0	3.0	3.0	3.0
75	3.0	3.0	3.0	3.0	3.0	3.1
100	3.0	3.0	3.0	3.2	3.3	3.6
150	3.3	3.5	3.7	3.9	4.1	4.4
200	3.8	4.0	4.3	4.5	4.7	5.1
250	4.3	4.5	4.8	5.0	5.2	5.7
300	4.7	4.9	5.2	5.5	5.7	6.3
350	5.1	5.3	5.6	5.9	6.2	6.8
400	5.4	5.7	6.0	6.3	6.6	7.2
450	5.7	6.1	6.4	6.7	7.0	7.7

4.2.2 Hold-Open Time: Hold open time shall be adjusted to no less than 5 seconds

4.2.3 Closing Speed: Following hold open time, the door moves from fully open to close check or 10°, whichever occurs first, according to Table 1.

4.2.4 Close Check: Close check shall occur in the last 10 degrees of closing and shall not be less than 1.5 seconds

4.2.5 Closing Force: The door shall not close with a force greater than 15 lbs when measured at the latch side of the closing stile. For ADA EZ series, the closing force is adjustable to 8 lbs.

4.2.6 Opening Force: The door shall not open with a force greater than 15 lbs when measured at the latch side of the opening stile.

4.2.7 Transmitter Range: The transmitter has a range of 30′ from either side of the door.

4.2.8 Operation Upon Loss of Power: Standard installations require no external power and operation will not be affected during a power loss. Typically a maximum of 1,000 cycles can be obtained from a fully charged battery pack. Installations with the optional power transformer will continue to function normally.

4.2.9 Operation Upon Obstruction: If the door meets an obstruction while opening, the door will remain under power for two seconds and then close under spring force. If the door meets an obstruction while closing, the door will maintain a closing force of 8 lbs or less.

4.2.10 Transmitter Learn Mode: The transmitter learn mode programs the transmitter to the operator. The system can learn up to 8 separate transmitters. The system also has the ability to remove all transmitters programmed into memory.

4.2.11 Door Learn Mode: The door learn mode allows the door to "learn" its fully open and fully closed positions and adjusts the open time, close time, open force, and hold open times to ensure the settings meet the ANSI 156.19 Low Energy Door Operator Code.

4.2.12 Hold Open: The operator provides an adjustable hold open time. Controls on the circuit board allow adjustment of the door-closing time delay from 1 second to 30 seconds.

5.   INSTALLATION INSTRUCTIONS

5.1   **Determine the Operator and Door Arm Mounting Locations**

CAUTION

The operator must *only* be installed on doors and frames that are in good working order. The door must not stick or bind during normal operation.

If applicable, the existing door closer must be removed before installing the ADA EZ operator.
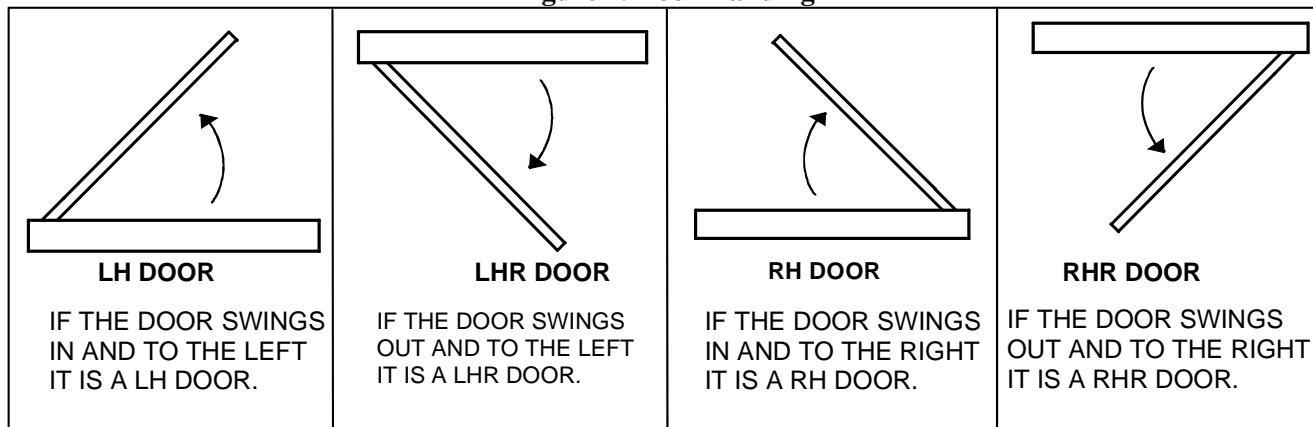

NOTE

The operator always mounts on the *inside* of the door at the leading edge of the top rail.

The following instructions describe installation on an out-swing application.

The operator is a handed unit and ordered from the factory as a right hand or left hand operator. Changing the hand in the field is *not* possible.

5.1.1   Refer to Figure 4, and DETERMINE desired door handing.

Figure 4. Door Handing

LH DOOR	LHR DOOR	RH DOOR	RHR DOOR
IF THE DOOR SWINGS IN AND TO THE LEFT IT IS A LH DOOR.	IF THE DOOR SWINGS OUT AND TO THE LEFT IT IS A LHR DOOR.	IF THE DOOR SWINGS IN AND TO THE RIGHT IT IS A RH DOOR.	IF THE DOOR SWINGS OUT AND TO THE RIGHT IT IS A RHR DOOR.

NOTE: For the purposes of the ADA EZ Operator, a LHR door utilizes a Right Hand Operator and a RHR door utilizes a Left Hand Operator.
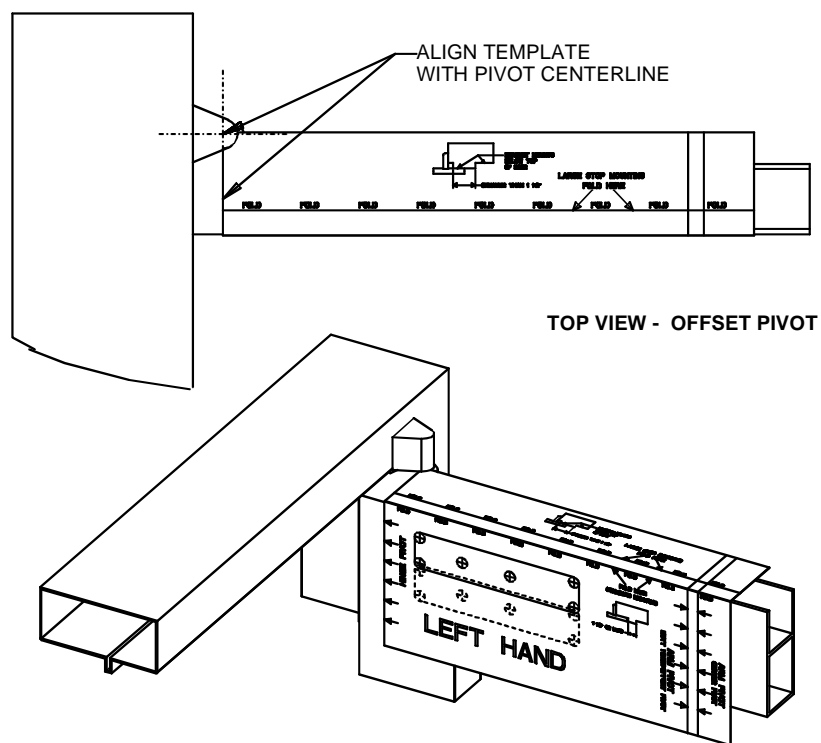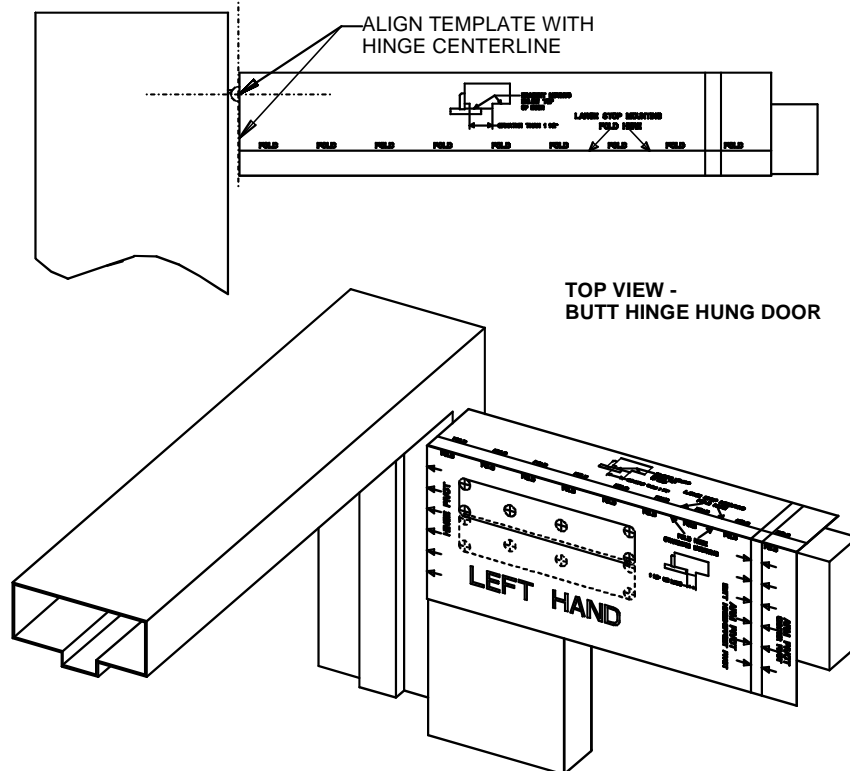
EZ041

5.1.2 SELECT the right hand or left hand operator mounting template as applicable.

5.1.3 EXAMINE the inside door top rail and DETERMINE the top rail width (narrow, medium, or wide).

5.1.4 DETERMINE the type of mounting hinge (butt or continuous, center pivot, or offset.

5.1.5 If the door is an aluminum storefront door, EXAMINE the top rail and, when drilling the mounting holes, ENSURE the following:

- *Do not* drill into the top rail web

- *Do not* drill into the rail-to-stile tie rod(s)

- *Do not* drill into the rail-to-stile junction

5.1.6 Refer to Figure 5, and ALIGN the operator mounting template to the centerline of the butt hinge, center pivot, or offset pivot as applicable.

**Figure 5. Installing the Mounting Template**

ALIGN TEMPLATE WITH
HINGE CENTERLINE

**TOP VIEW -
BUTT HINGE HUNG DOOR**

LEFT HAND

ALIGN TEMPLATE
WITH PIVOT CENTERLINE

TOP VIEW - OFFSET PIVOT

LEFT HAND

EZ045

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CAUTION

To ensure proper installation, the operator must be fastened with *at least* four fasteners. For heavier doors more fasteners are recommended.

      5.1.7   Using a center punch, MARK the mounting hole locations.

      5.1.8   Refer to Figure 6, and, using a square, MARK the centerline of the arm pivot onto the underside and face of the frame header and door stop. (This line is shown on the template.)

Figure 6. Marking the Centerline of the Arm Pivot
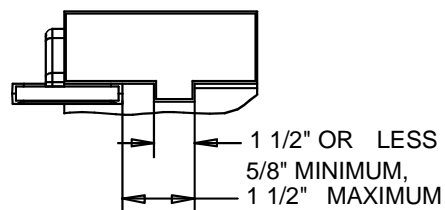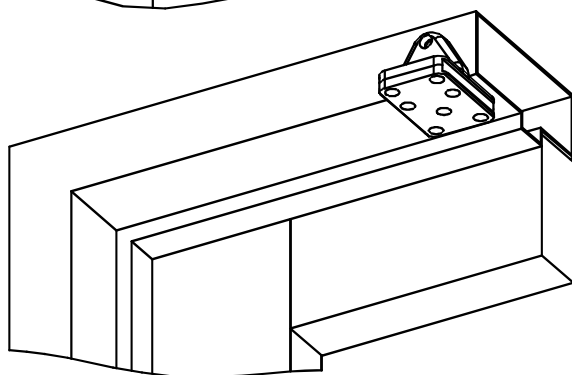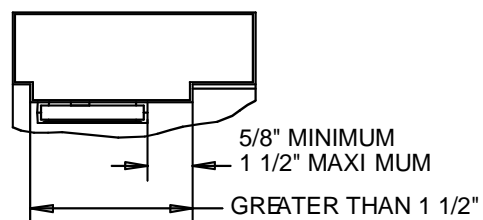

EZ043
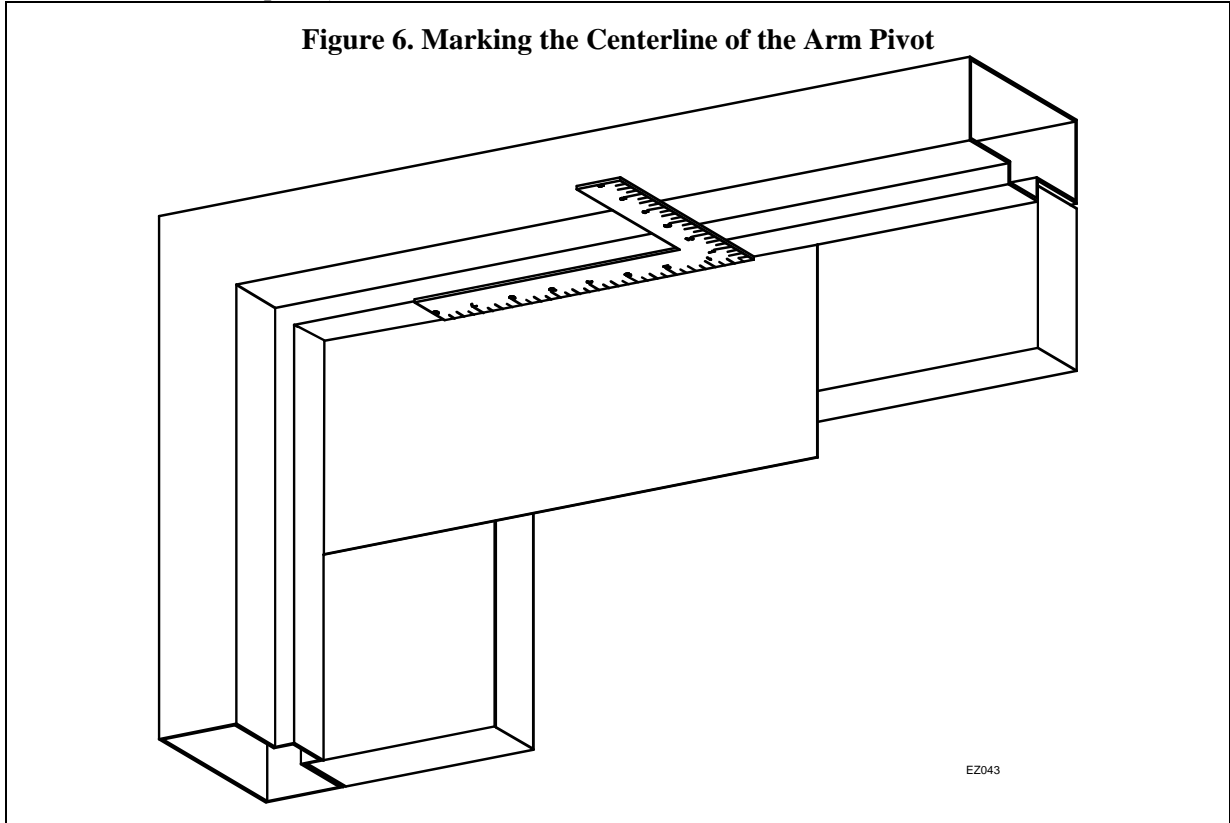
    5.2   **Mounting the Door Arm Pivot Bracket**
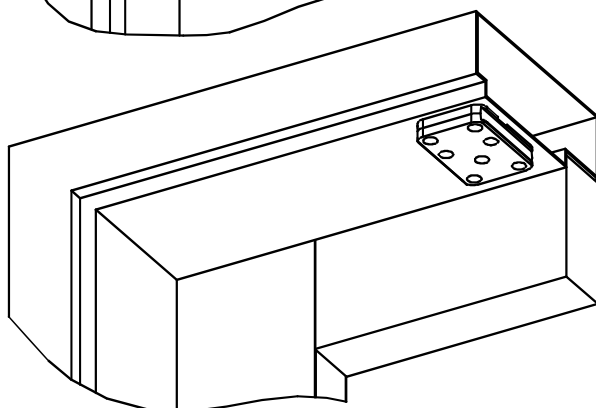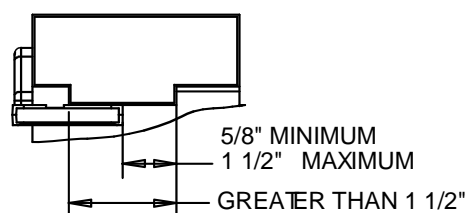
NOTE

The face of the vertical support must be flush against the face of the frame header. On some door installations, the door stop prevents the bracket from setting flush. If this is the case, the arm pivot bracket can be adjusted by removing the bracket vertical support and reversing it.

In a flush mount installation, the ceiling covers the frame face. In this case, the vertical support of the bracket must be removed. The bracket should then be mounted to the underside of the frame header.

      5.2.1   Refer to Figure 7 and DETERMINE the orientation of the door arm pivot bracket as necessary to ensure the following (as applicable):

- If the door is a typical installation, the vertical support will set flush against the face of the frame header.

- If the door is a large reveal installation, the bracket will mount to the underside of the frame header.

Figure 7. Determining the Door Arm Pivot Bracket Orientation

5/8" MINIMUM
1 1/2" MAXIMUM
GREATERTHAN 1 1/2"

5/8" MINIMUM
1 1/2" MAXIMUM
GREATER THAN 1 1/2"

5/8" MINIMUM
1 1/2" MAXI MUM
GREATER THAN 1 1/2"

1 1/2" OR   LESS
5/8" MINIMUM,
1 1/2" MAXIMUM
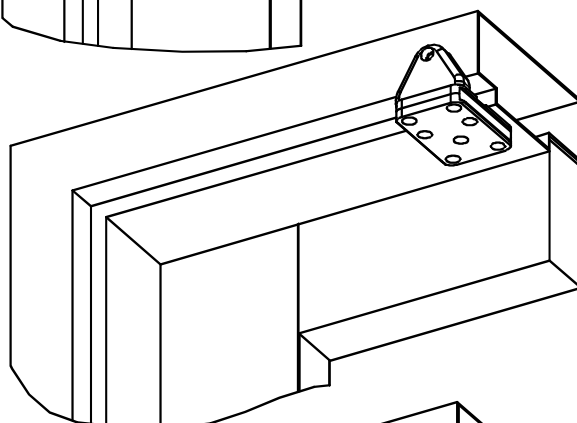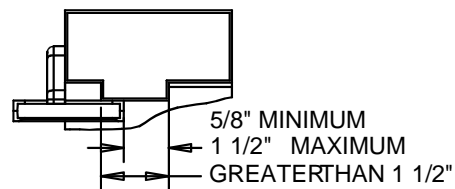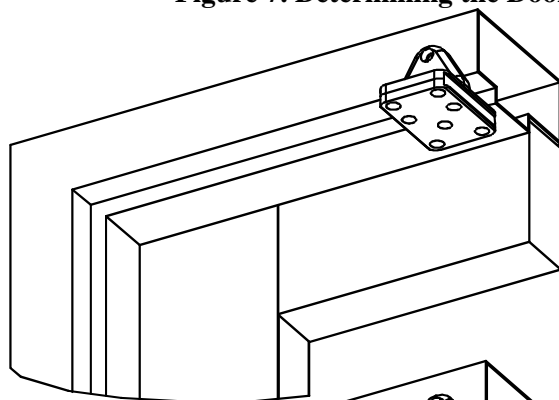
EZ002A

CAUTION

To ensure proper installation, the door arm pivot bracket must be fastened to the underside of the header frame and to the face of the header frame with *at least* three fasteners.

NOTE

When attempting to install the rivnuts to the underside of the door frame it may be necessary to remove the door stop.

5.2.2   Refer to Figure 8 and, using a center punch, MARK the door arm pivot bracket hole locations.

5.2.3   If the door frame is aluminum and rivnuts must be installed, PERFORM the following:

a.   Using a $^{25}/_{64}''$ drill, DRILL the door arm pivot bracket holes.

b.   Using a rivnut tool, INSTALL the ¼-20 steel rivnuts.

c.   INSTALL and TIGHTEN the three (minimum) ¾" socket head capscrews securing the door arm pivot bracket to the underside and face of the frame header.

5.2.4   If the door frame is wood, PERFORM the following:

a.   Using a $^{5}/_{32}''$ drill, DRILL the door arm pivot bracket pilot holes.

b.   INSTALL and TIGHTEN the three #14 x 1 ¼" wood screws (minimum) securing the door arm pivot bracket to the underside and face of the frame header.

Figure 8. Mounting the Door Arm Pivot Bracket

EZ025
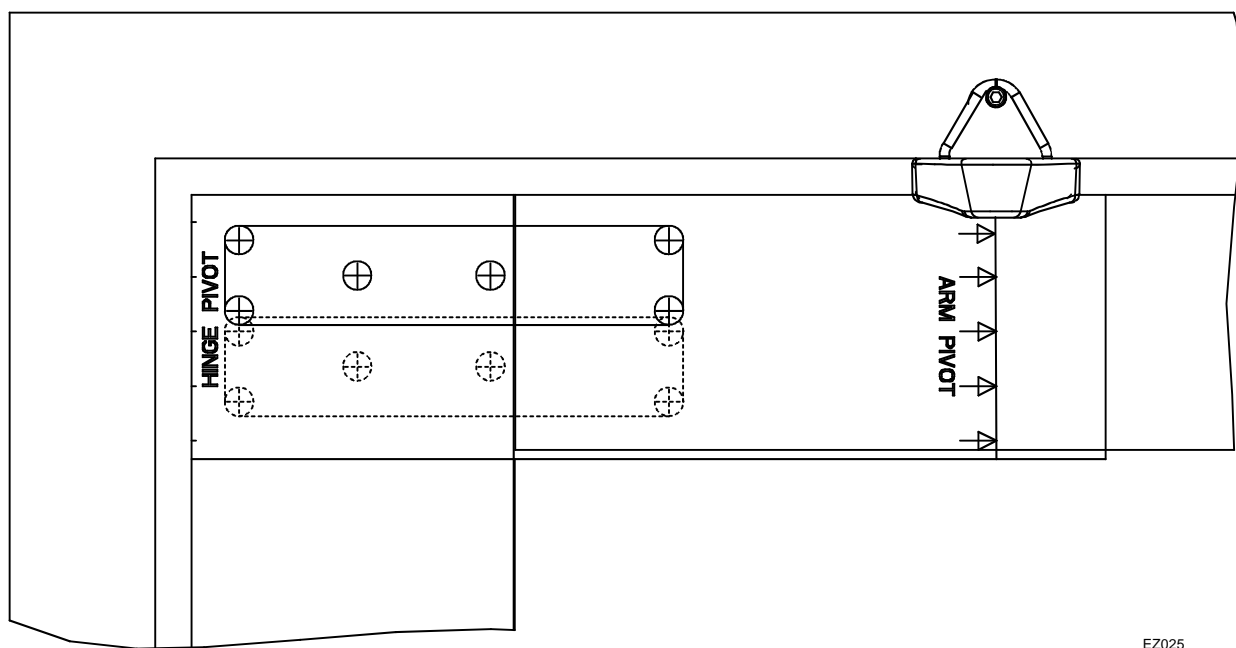
5.3   **Installing the Operator Mounting Bracket**

5.3.1   Refer to Figure 9 and DETERMINE the proper operator mounting bracket location.

Figure 9. Determining the Operator Mounting Bracket Location

DOOR OPERATOR
MOUNTING POST POSITIONS

USE THESE MOUNTING LOCATIONS
(CHECK TO ENSURE THERE ARE
NO INTERNAL DOOR FEATURES
INTERFERING WITH MOUNTING POSITIONS)

LARGE STOP

DOOR OPERATOR
MOUNTING POST POSITIONS

USE THESE MOUNTING LOCATIONS
(CHECK TO ENSURE THERE ARE
NO INTERNAL DOOR FEATURES
INTERERING WITH MOUNTING POSITIONS)

WIDE STILE/TOP RAIL

DOOR OPERATOR MOUNTING
POST POSITION

USE THESE MOUNTING LOCATIONS
(CHECK TO ENSURE THERE ARE
NO INTERNAL DOOR FEATURES
INTERFERING WITH MOUNTING POSITIONS)

MEDIUM STILE/TOP RAIL

DOOR OPERATOR MOUNTING
POST POSITION

USE THESE MOUNTING HOLE LOCATIONS
(CHECK TO ENSURE THERE ARE
NO INTERNAL DOOR FEATURES
INTERFERING WITH MOUNTING POSITIONS)

NARROW STILE/NARROW TOP RAIL

EZ048

5.3.2   If the door frame is aluminum and rivnuts must be installed, PERFORM the following:

- Using a $^{25}/_{64}''$ drill, DRILL the operator mounting bracket holes.

5.3.3   Using a rivnut tool, INSTALL the ¼-220 steel rivnuts.

NOTE

Some door installations may require sex nut and bolt fasteners.

5.3.4   If the door frame is wood, PERFORM the following:

- Using a $^{5}/_{32}''$ drill, DRILL the operator mounting bracket holes.

5.3.5   INSTALL a washer onto each of the four (minimum) ¾″ socket head operator mounting bracket capscrews.

5.3.6   INSTALL, but do not TIGHTEN the socket head capscrews securing the operator mounting bracket to the door.

5.3.7   ADJUST the operator mounting bracket as follows:

- If the operator mounting bracket is in the lower position, ADJUST the bracket so that there is 1¾″ space between the top of the bracket and the top of the door.

- If the operator mounting bracket is in the upper position, ADJUST the bracket so that there is $^{1}/_{2}''$ space between the top of the bracket and the top of the door.

5.3.8   TIGHTEN the socket head capscrews securing the operator mounting bracket to the door.
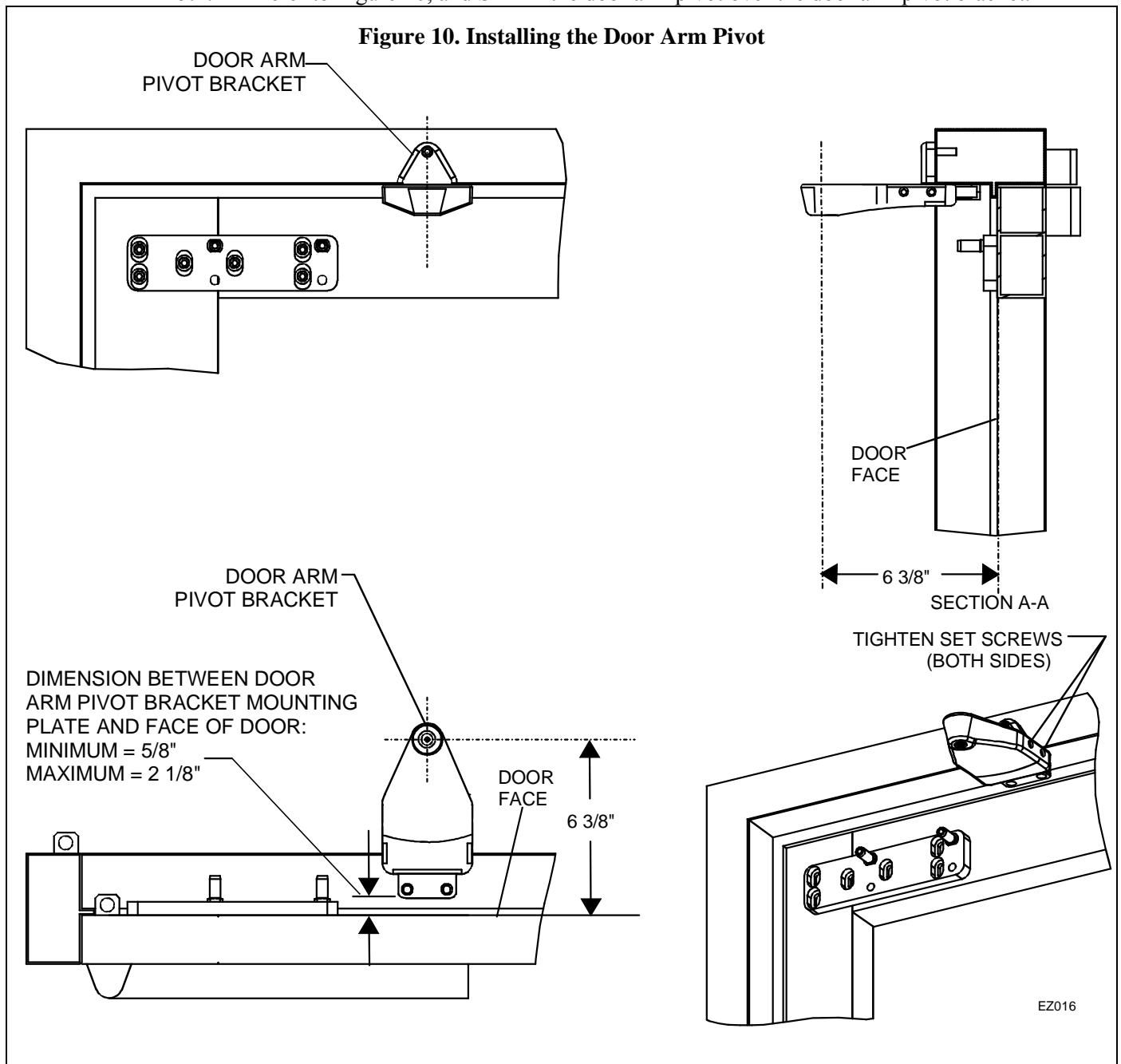
NOTE

The operator mounting bracket includes four threaded holes that accept the operator mounting pins. The lower set of two threaded holes is used when the operator is installed on a narrow-rail door. The upper set of two threaded holes is used when the operator is installed on a medium- or wide-rail door.

5.3.9   Refer to Figure 9 and PERFORM one of the following as applicable:

- If the operator is being mounted to a narrow rail door, TIGHTEN the operator mounting pins into the *lower* threaded holes in the mounting bracket using a $^{7}/_{16}''$ box wrench or large adjustable wrench.

- If the operator is being mounted to a wide or medium rail door, TIGHTEN the operator mounting pins into the *upper* threaded holes in the mounting bracket using a $^{7}/_{16}''$ box wrench or large adjustable wrench.

5.4   Installing the Door Arm Pivot

5.4.1   Refer to Figure 10, and SLIDE the door arm pivot over the door arm pivot bracket.

Figure 10. Installing the Door Arm Pivot

DOOR ARM
PIVOT BRACKET

DOOR
FACE

6 3/8"

SECTION A-A

DOOR ARM
PIVOT BRACKET

DIMENSION BETWEEN DOOR
ARM PIVOT BRACKET MOUNTING
PLATE AND FACE OF DOOR:
MINIMUM = 5/8"
MAXIMUM = 2 1/8"

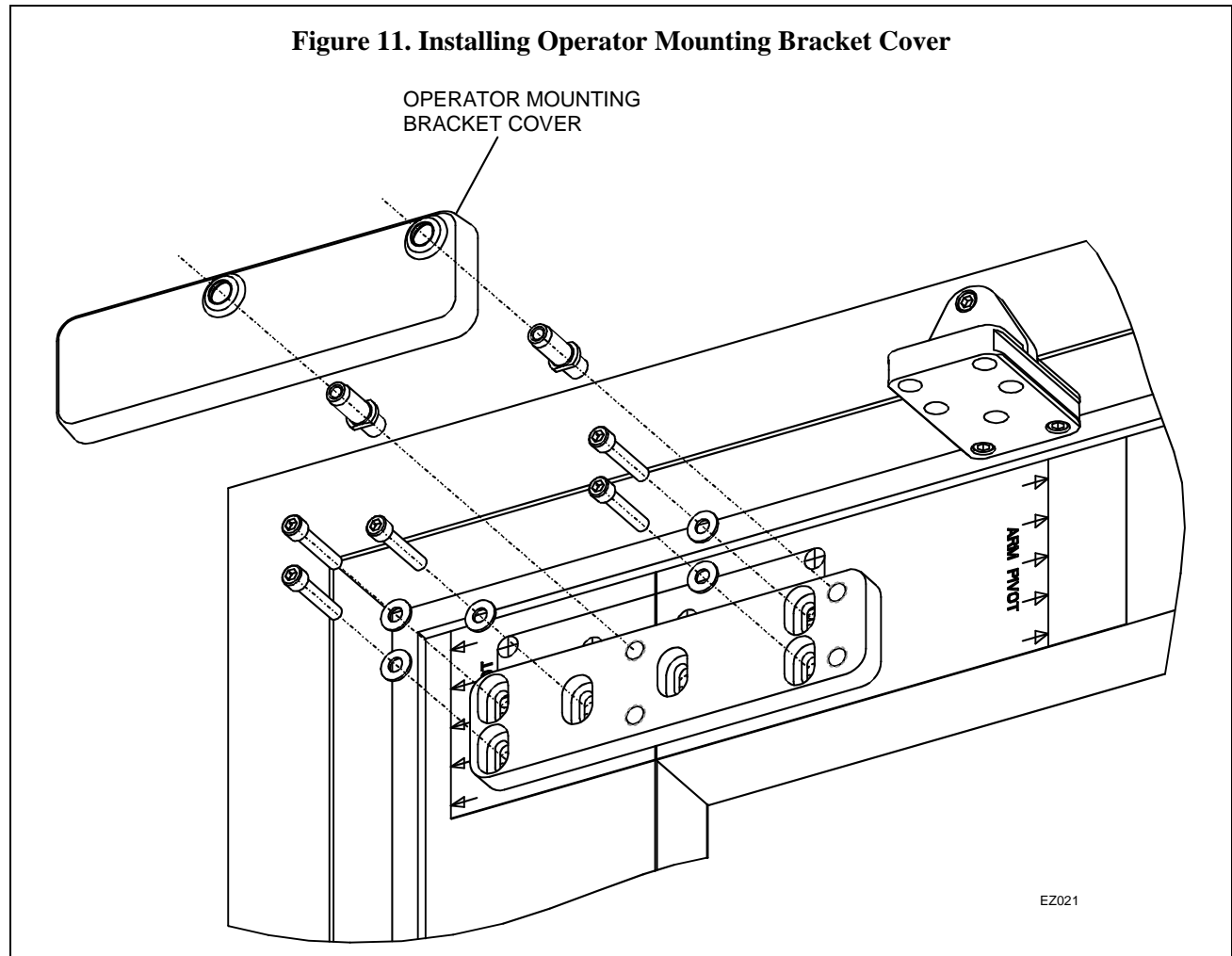DOOR
FACE

6 3/8"

TIGHTEN SET SCREWS
(BOTH SIDES)

EZ016

5.4.2   ENSURE that the dimension from the face of the door to the centerline of the door arm mounting hole is $6\,^3/_8''$.

5.4.3   TIGHTEN the four set screws securing the door arm pivot to the door arm pivot bracket.

5.5   Installing the Door Operator

5.5.1   Refer to Figure 11, and INSTALL the operator mounting bracket cover over the operator mounting bracket.

5.5.2   REMOVE the two capscrews securing the operator bottom cover to the operator.

5.5.3   REMOVE the bottom cover from the operator.

5.5.4   SLIDE the battery pack from the operator and REMOVE the battery pack.

5.5.5   REMOVE the dress cover from the operator.

Figure 11. Installing Operator Mounting Bracket Cover

OPERATOR MOUNTING
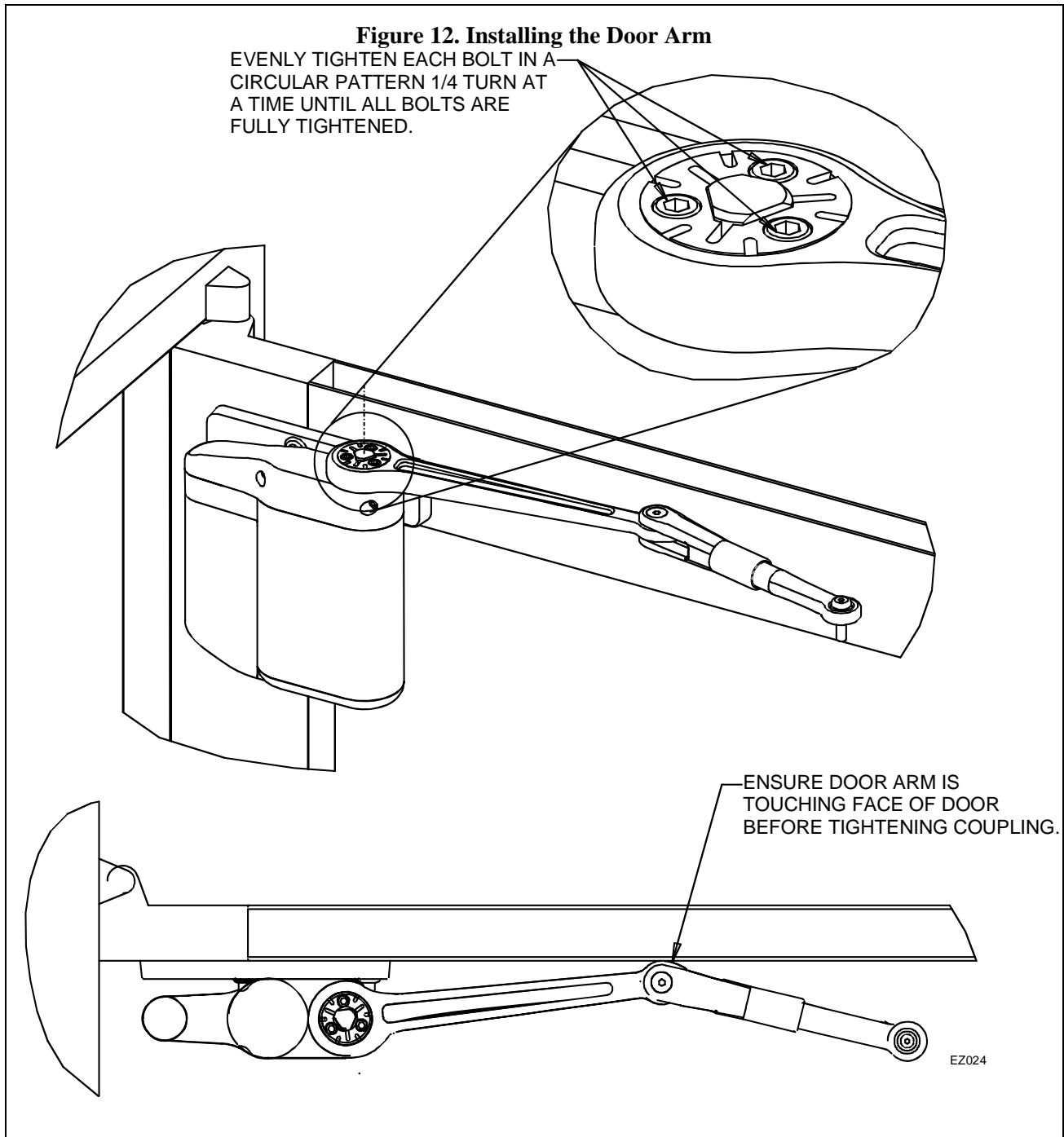BRACKET COVER

ARM PIVOT

EZ021

WARNING

To avoid inadvertent activation of the operator during connection of the door arm, the battery pack should not be installed until *after* the door arm is connected.

5.5.6   With the battery back facing the jamb, POSITION the operator onto the operator mounting pins. ENSURE the operator does not slide off the mounting pins.

5.5.7   INSTALL and TIGHTEN the two ¼-20 X 1½″ socket head capscrews securing the operator to the operator mounting pins.

5.6   Installing the Door Arm

5.6.1   Refer to Figure 12, and, with the door arm coupling screws facing up and the door arm against the door rail, POSITION the larger end of the door arm onto the operator output shaft.

Figure 12. Installing the Door Arm

EVENLY TIGHTEN EACH BOLT IN A
CIRCULAR PATTERN 1/4 TURN AT
A TIME UNTIL ALL BOLTS ARE
FULLY TIGHTENED.

ENSURE DOOR ARM IS
TOUCHING FACE OF DOOR
BEFORE TIGHTENING COUPLING.

EZ024

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Rev. F, 6/17/09

CAUTION

The door arm coupling is a two-piece tapered coupling. In order to draw the coupling halves together evenly the three door arm coupling screws must be tightened evenly (one quarter turn at a time) until fully tight.

5.6.2   With the door arm touching the face of the door, TIGHTEN the door arm coupling screws evenly (one quarter turn at a time) until fully tight.

5.6.3   THREAD the adjustable door arm end link into the door arm as necessary to align the end link mounting hole with the door arm pivot mounting hole.

5.6.4   If the door arm end link does not align with the door arm pivot mounting hole and there is no available travel on the threaded end link, PERFORM the following:

- LOOSEN the socket head capscrews securing the door arm pivot to the door arm pivot bracket.

- SLIDE the door arm pivot as necessary to align the door arm end link with the door arm pivot mounting hole.

- TIGHTEN the socket head capscrews securing the door arm pivot to the door arm pivot bracket.

NOTE

In order to apply a preload to the door, the door arm must be threaded into the door arm three revolutions.

5.6.5   THREAD the adjustable door arm end link into the door arm three revolutions.

5.6.6   INSTALL the washer provided onto the top of the door arm end link, and TIGHTEN the $^5/_{16}$ -18 X $^7/_8$″ button-head capscrew securing the door arm end link to the door arm pivot bracket.

5.6.7   SLIDE the dress cover onto the operator.

5.6.8   CONNECT the battery pack connector plug to the operator.

5.6.9   SLIDE the battery pack onto the operator, and ENSURE that the battery pack wires will not interfere with the operator cover.

NOTE

Ensure that the supplied washer is properly inserted onto the top of the door arm end link to prevent rubbing between the two parts.

5.6.10 Refer to Figure 12A and INSTALL the supplied washer onto the top of the door arm end link.

Figure 12A. Installing the Door Arm End Link Washer

EZ047
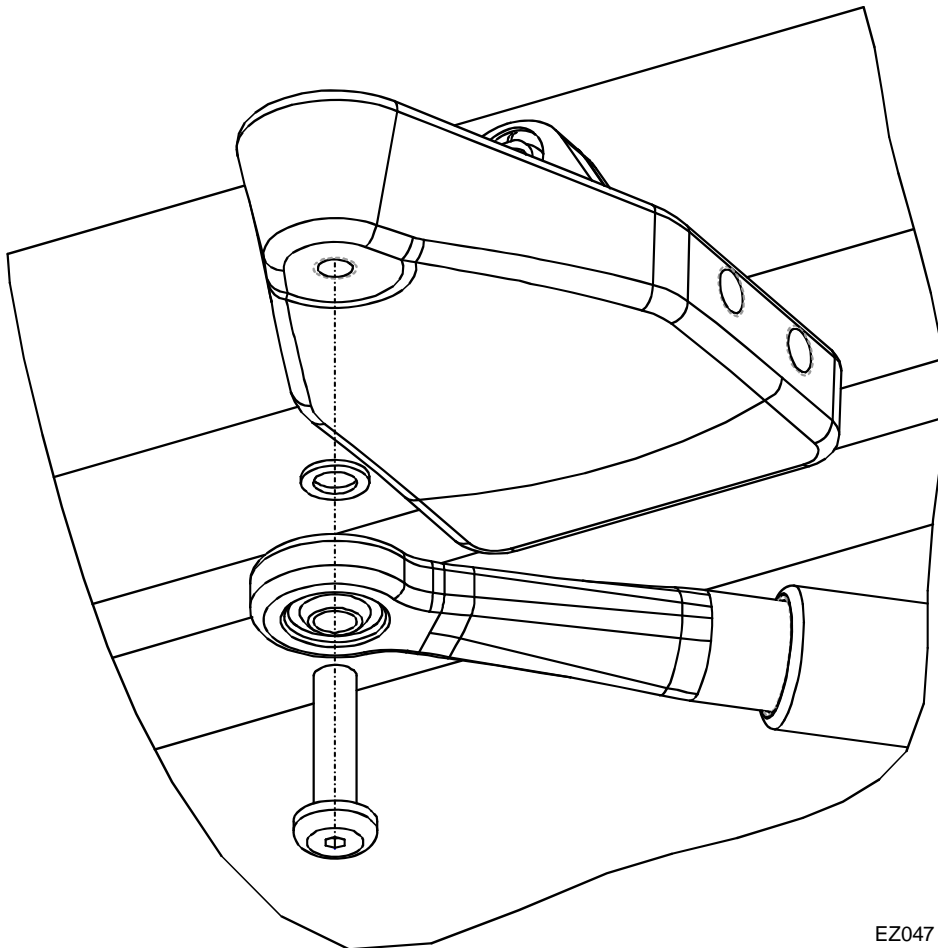
5.7   **Installing the Pushbutton Switches**

5.7.1   Refer to Figure 13, and INSTALL the pushbutton switches. ENSURE the following:

- Switches are located 1′ to 5′ from the door, but not more than 12′.
- Switches remain accessible from the swing side when the door is opened.
- Switches are not located in a position where the user would be in the path of the moving door.
- Switches are mounted so that the user is in full sight of the door when activating the switch.
- Switches are mounted at a minimum height of 34″ (864mm) and a maximum height of 48″ (1219mm).

5.7.2   CONSULT ANSI A117.1, "Standard on Accessible and Usable Buildings and Facilities," and other applicable building codes for additional information regarding accessibility requirements for the door and the area around the door.

**Figure 13. Installing the Pushbutton Switches**

48 " Maximum
34" Minimum

Front View

Back View
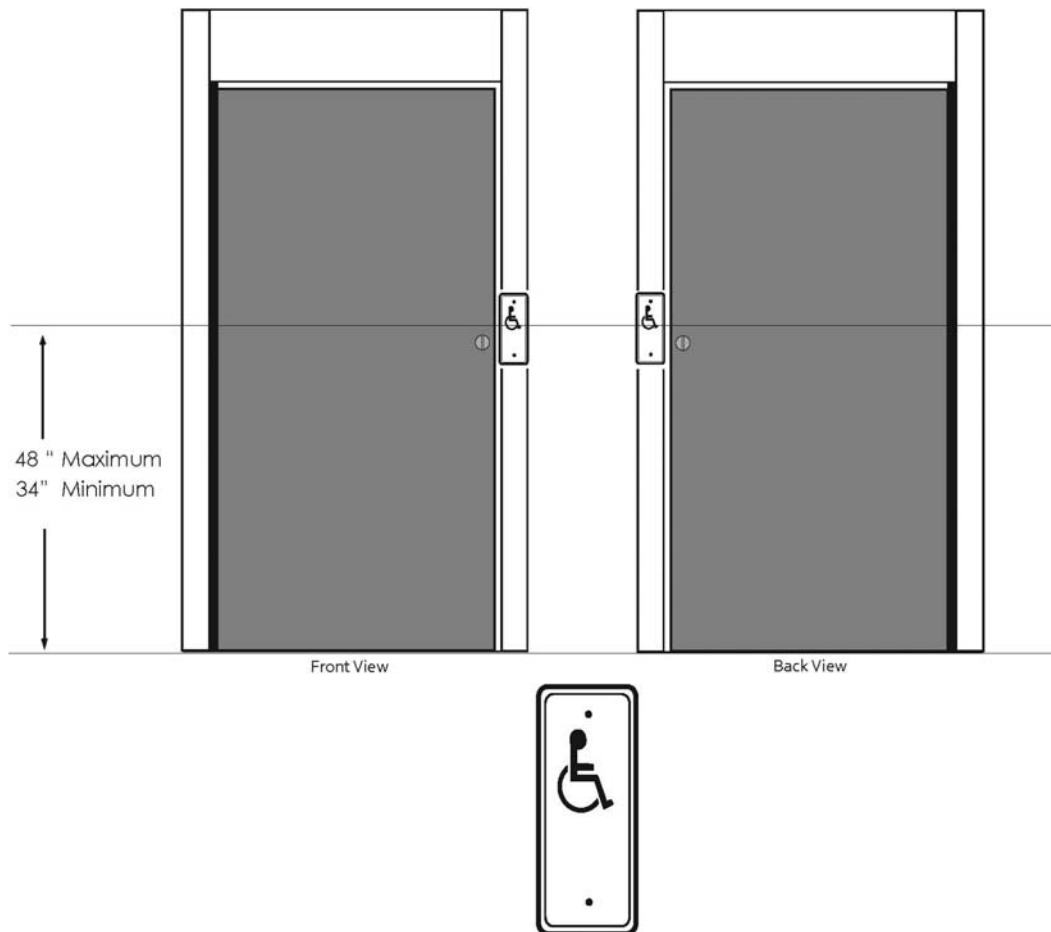
5.8 Installing the Optional Plug-In Transformer

NOTE

An optional plug-in transformer is recommended in installations where the automatic door-opening feature will be used frequently.

5.8.1 Refer to Figure 14, and REMOVE the two capscrews securing the operator bottom cover to the operator.

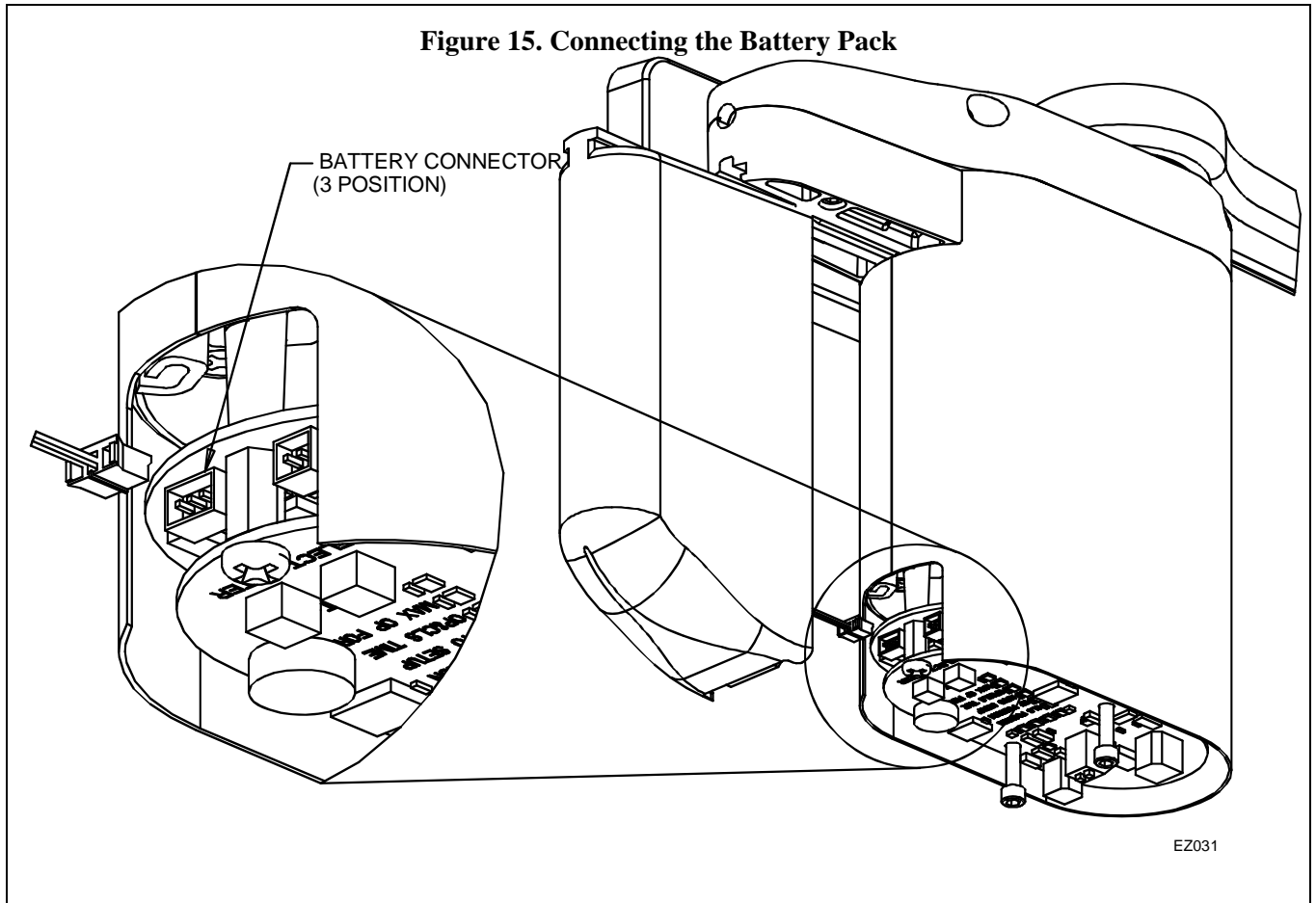**Figure 14. Installing the Optional Plug-In Transformer**

DOOR CORD
(NOT SUPPLIED)

ROUTE WIRE
UNDER TAB

ROUTE WIRE
INSIDE WIRE
GUIDE

EZ023
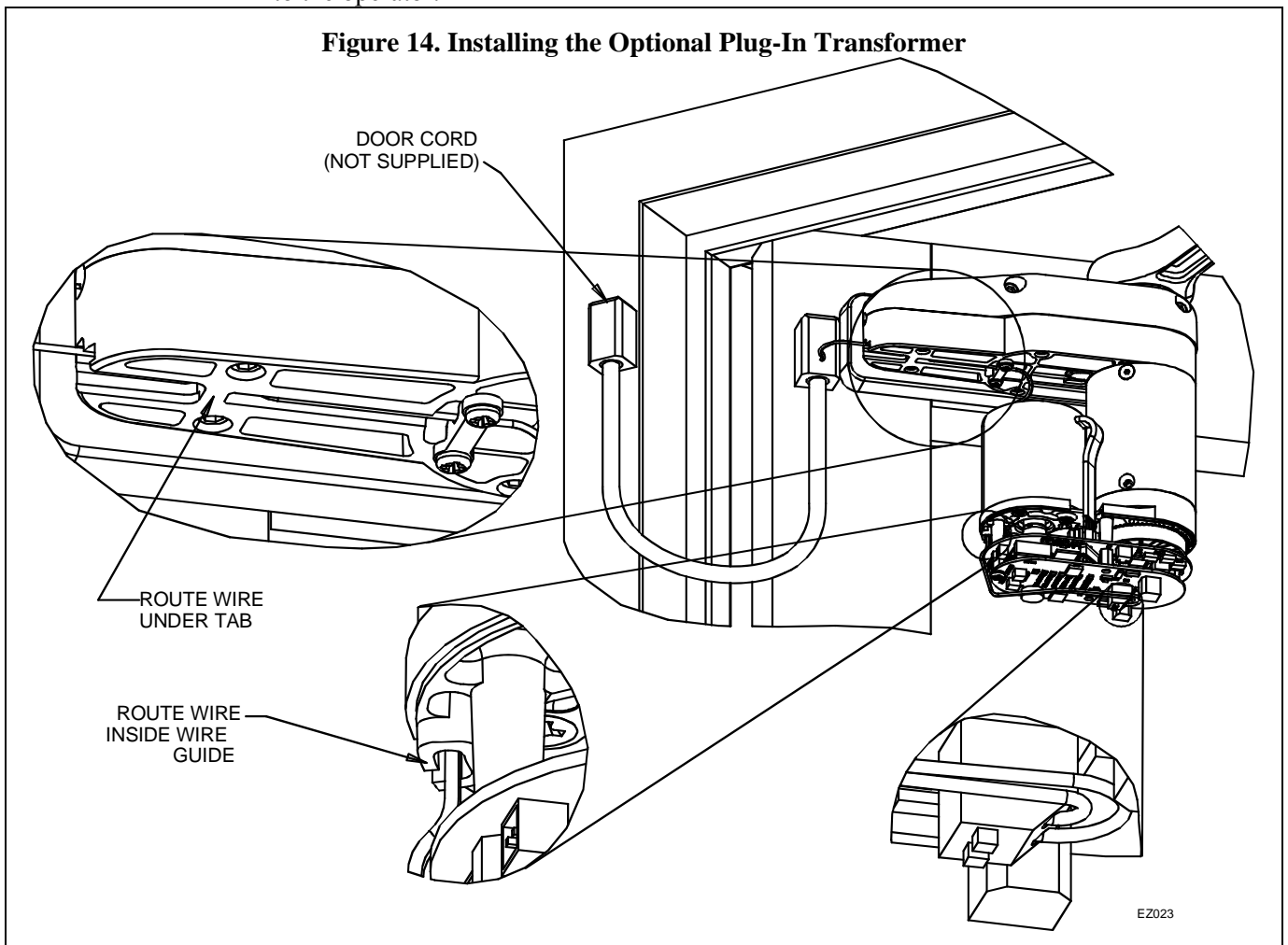
5.8.2 REMOVE the bottom cover from the operator.

5.8.3 THREAD the transformer wire through the operator cover and motor cable slot.

5.8.4 CONNECT the two transformer wires to the terminal block on the bottom of the control circuit board.
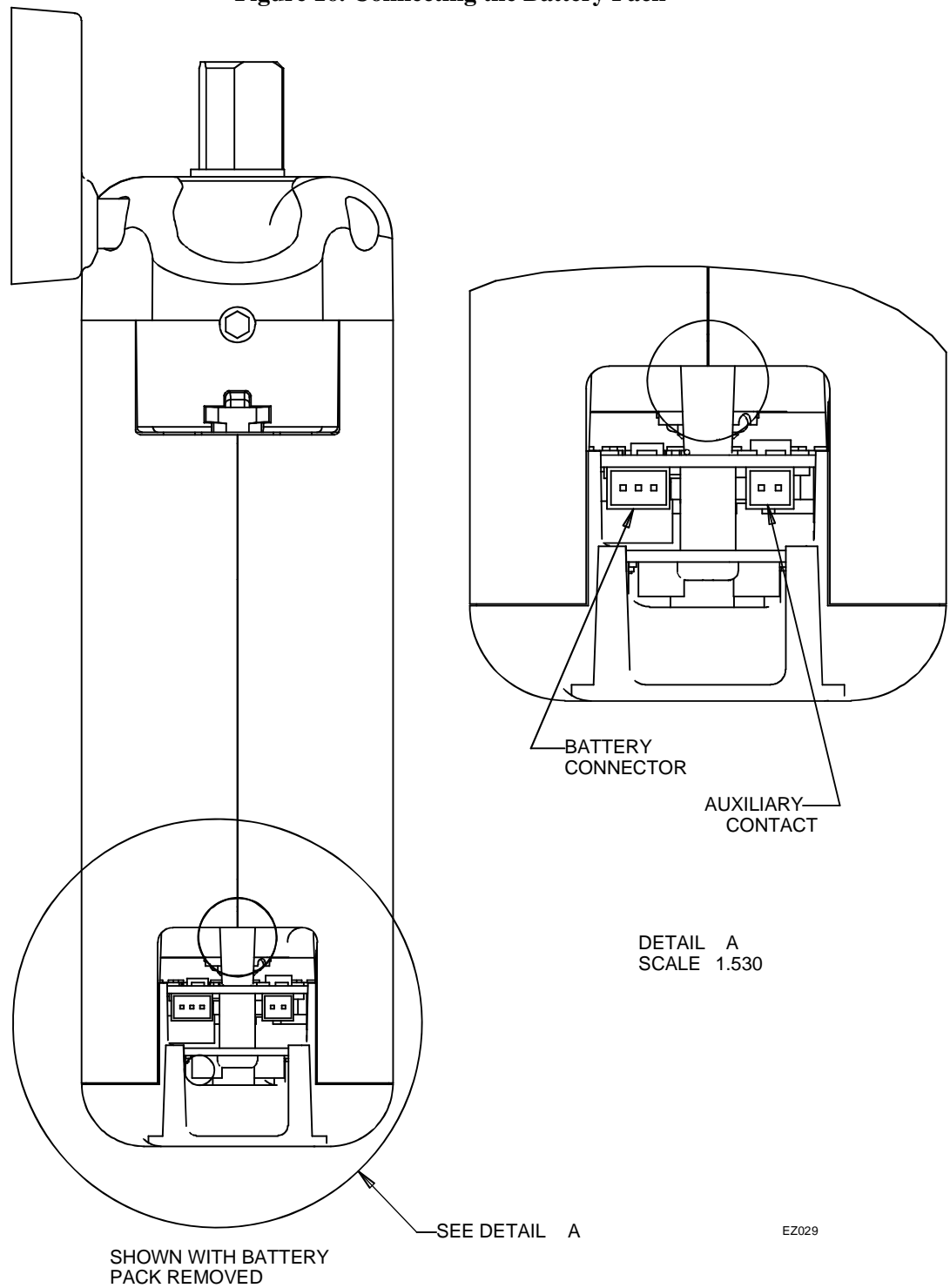
NOTE

There are two keyed connectors on the operator. One three-position connector accepts the battery pack connector plug.

5.8.5   Refer to Figures 15 and 16, and CONNECT the battery pack connector plug to the operator.

Figure 15. Connecting the Battery Pack

BATTERY CONNECTOR
(3 POSITION)

EZ031

Figure 16. Connecting the Battery Pack

BATTERY
CONNECTOR

AUXILIARY
CONTACT

DETAIL   A
SCALE   1.530

SEE DETAIL   A

EZ029

SHOWN WITH BATTERY
PACK REMOVED

5.8.6   SLIDE the battery pack onto the operator, and ENSURE that the battery pack wires do *not* interfere with the operator cover.
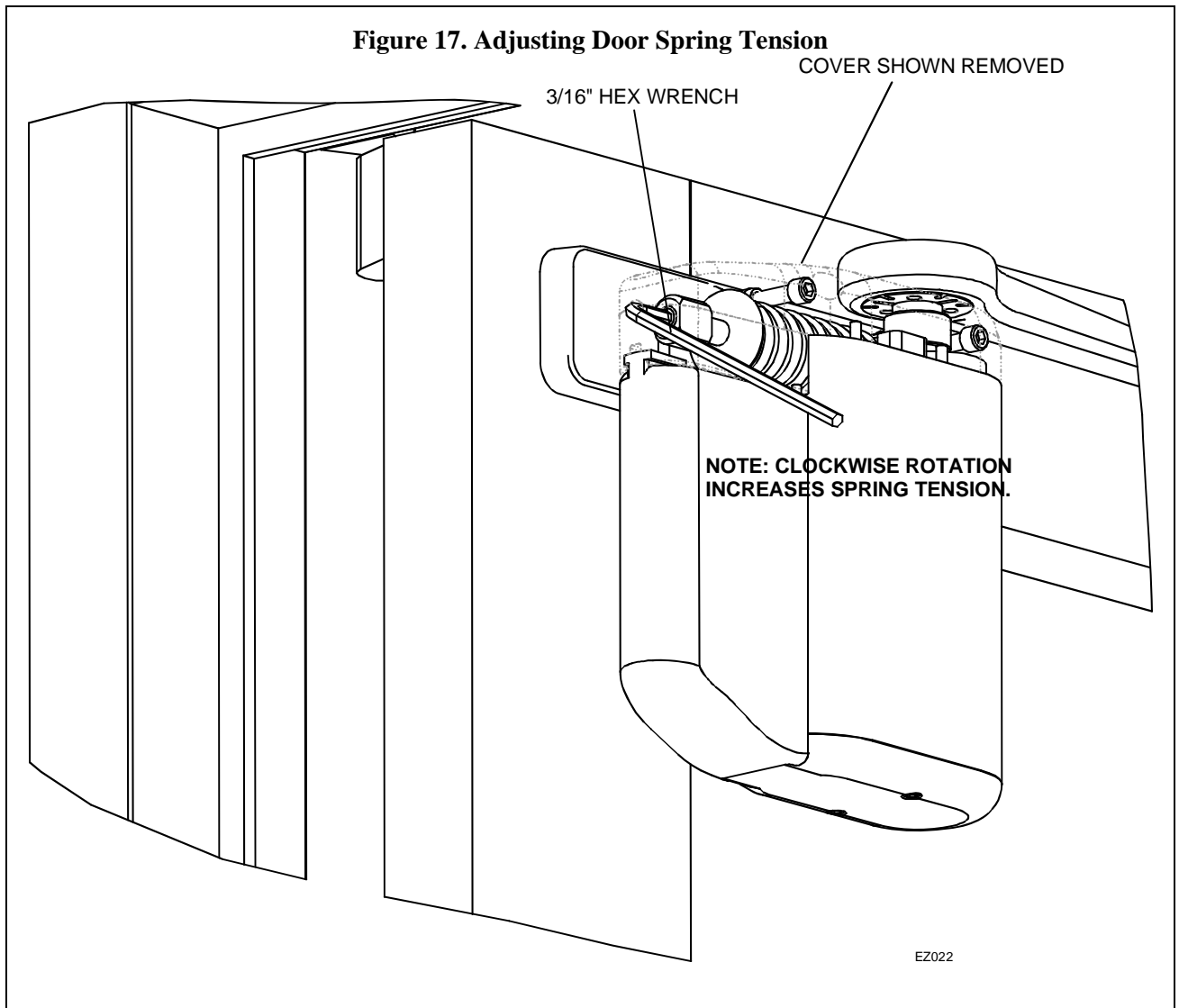

NOTE

If possible, the transformer wiring should be routed against the door trim molding.

5.8.7   ROUTE transformer wiring to a 110 VAC outlet, but do *not* plug transformer into the outlet.

5.9   **Adjusting Door Spring Tension**

5.9.1   PRESS and HOLD the "RESET" pushbutton, then manually OPEN AND CLOSE the door several times. ENSURE that the door opens and closes smoothly.

5.9.2   If the door is difficult to open, refer to Figure 17, and ADJUST door-open spring tension as follows:

a.   INSERT $^3/_{16}''$ hex wrench into spring tension screw.

b.   If necessary, ADJUST door spring tension as follows:

- If the door feels too light, using the $^3/_{16}''$ hex wrench, TURN the setscrew in the end of the operator *clockwise* to *increase* spring tension.

- If the door feels too heavy, using $^3/_{16}''$ hex wrench, TURN the setscrew in the end of the operator *counterclockwise* to *decrease* spring tension.

Figure 17. Adjusting Door Spring Tension

COVER SHOWN REMOVED

3/16" HEX WRENCH

NOTE: CLOCKWISE ROTATION INCREASES SPRING TENSION.

EZ022

5.10   **Programming the Operator**

   5.10.1   Refer to Figure 3 and, at the base of the controller, PRESS and HOLD the "SELECT" and "ENTER" pushbuttons for three seconds. The following shall occur:

- The operator shall enter program mode.

- The four LEDs on the circuit board shall repeatedly flash green.

- The "CLS" position LED shall illuminate red and remain lit.

NOTE

The doors are shipped with a MAXIMUM spring tension.

Always reprogram the operator after adjusting the door spring tension.

   5.10.2   With the door in the closed position, PRESS the "ENTER" pushbutton. The following shall occur:

- The "CLS" position LED shall flash green.
- The "OP" (open) position LED shall illuminate red indicating that the operator is ready for input.
- The LED shall illuminate green once data has been stored for this parameter.

5.10.3   OPEN the door to its fully open position.

5.10.4   With the door in the fully open position, PRESS the "ENTER" pushbutton. The following shall occur:

- The "OP" position LED shall flash green.
- The "AUTO TUNE" position LED shall illuminate red indicating that the operator is ready for input.
- The LED shall illuminate green once data has been stored for this parameter.

5.10.5   With the door in the fully closed position, PRESS the "ENTER" pushbutton. The following shall occur:

- The door shall open quickly and then close.
- The "AUTO SETUP" led shall illuminate green.

5.10.6   PRESS and HOLD the "ENTER" pushbutton for three seconds. The following shall occur:

- The "AUTO SETUP" led shall go out.
- The second LED (not labeled) shall flash green.
- The door shall be tuned.

5.10.7   To reset the controller, PERFORM the following:

   a.   PRESS and HOLD the "ENTER" pushbutton.

   b.   PRESS and RELEASE the "RESET" pushbutton.

5.10.8   If further door adjustments are necessary, refer to Section 5.12, and PERFORM adjustments.

5.11   **Initializing the Remote Control**

NOTE

The rf pushbuttons are preprogrammed at the factory to work with the operator.

5.11.1   To set an RF switch with a door controller, PERFORM the following:

   a.   PUSH the "LEARN" switch on the controller. The controller will enter the learn mode for 10 seconds while green and red LEDs are illuminated.

   b.   PUSH the RF activation switch. LED DS7 shall flash green indicating that the operator learned this rf switch.

5.11.2   To erase all activation codes learned in the door controller, PERFORM the following:

   a.   REMOVE the battery from the operator.

   b.   WAIT 30 seconds.

   c.   PUSH the "LEARN" switch on the operator.

       d.   INSTALL the battery into the operator. LED DS7 shall flash green indicating that the operator memory is clear.

5.11.3   To determine if the signal sent by an rf switch is recognized by a controller, PERFORM the following:

       a.   PUSH the activation switch. The following shall occur:

- LED DS6 shall light red if a signal is received.

- LED DS7 shall flash green if a signal is recognized.

5.12   **Adjusting the Door for Proper Operation (Optional)**

NOTE

The parameters for OPEN and CLOSE TIME, OPEN FORCE, and HOLD-OPEN TIME may be manually adjusted if desired.

5.12.1   To enter PROGRAM MODE, at the base of the controller, PRESS and HOLD the "SELECT" and "ENTER" pushbuttons for three seconds. The following shall occur:

- The operator shall enter program mode.

- The four LEDs on the circuit board shall repeatedly flash green.

- The "CLS" position LED shall illuminate red and remain lit. If necessary, ADJUST door OPEN and CLOSE TIME as follows:

       a.   PRESS the "SELECT" button until the "OP & CLS TIME" LED illuminates.

       b.   ROTATE the potentiometer. The following shall occur:

- The four red LEDs shall illuminate in series. (One lit LED indicates minimum open and close time. Four lit LEDs indicate maximum open and close time.)

- If the LEDs illuminate green, the open and close time are *within* code.

- If the LEDs illuminate red, the open and close time are *outside* code.

       c.   PRESS "ENTER" to select the desired value.

5.12.2   If necessary, ADJUST maximum OPEN FORCE as follows:

       a.   PRESS the "SELECT" button until the "MAX OP FORCE" LED illuminates.

       b.   ROTATE the potentiometer. The following shall occur:

- The four red LEDs shall illuminate in series. One lit LED indicates minimum opening force. Four lit LEDs indicate maximum opening force.

- If the LEDs illuminate green, the opening force is *within* code.

- If the LEDs illuminate red, the opening force is *outside* code.

       c.   PRESS "ENTER" to select the desired value.

5.12.3   If necessary, ADJUST HOLD-OPEN time as follows:

       a.   PRESS the "SELECT" button until the "HOLD OPEN" LED illuminates.

       b.   ROTATE the potentiometer. The following shall occur:

- The four red LEDs shall illuminate in series. One lit LED indicates minimum hold-open time. Four lit LEDs indicate maximum hold-open time.

- If the LEDs illuminate green, the hold-open time is *within* code.
- If the LEDs illuminate red, the hold open time is *outside* code.

    c.   PRESS "ENTER" to select the desired value.

5.12.4 When all adjustments are complete, PRESS and HOLD the "ENTER" pushbutton for three seconds. The operator shall exit programming mode.

5.12.5 INSTALL the bottom cover onto the operator.

5.12.6 INSTALL and TIGHTEN two 8-32 X $^3/_4''$ socket head capscrews securing the operator bottom cover to the operator.

5.13 **Replacing the Battery Pack Fuse**

NOTE

The battery pack includes a 5-amp slow-blow fuse.

5.13.1 REMOVE the two capscrews securing the operator bottom cover to the operator.

5.13.2 REMOVE the bottom cover from the operator.

5.13.3 SLIDE the battery pack from the operator.

5.13.4 REMOVE the screw securing the fuse in the battery pack.

5.13.5 REMOVE the fuse.

5.13.6 INSTALL the replacement fuse.

5.13.7 INSTALL and TIGHTEN the screw securing the fuse in the battery pack.

5.13.8 SLIDE the battery pack onto the operator.

5.13.9 INSTALL the bottom cover onto the operator.

5.13.10 INSTALL and TIGHTEN the two capscrews securing the operator bottom cover to the operator.

5.14 **Closeout Procedure**

5.14.1 Refer to Figure 18, and INSTALL door decals as follows:

    a.   Thoroughly CLEAN glass, metal, or wood surface.

    b.   MARK centerline of decal 50″ (±12″) from finished floor.

    c.   REMOVE the smallest section of decal backing from the yellow "CAUTION AUTOMATIC DOOR" decal.

    d.   HOLD decal up to glass in desired location, and ENSURE decal is straight.

    e.   APPLY sticky surface of decal to door.

    f.   Using a ruler or any rigid flat tool, SMOOTH decal to door.

    g.   Slowly REMOVE the large section of decal backing and at the same time use ruler of straight edge as squeegee. (This will force out all air bubbles.)

    h.   Using the above steps as a guide, MOUNT the blue "ACTIVATE SWITCH TO OPERATE" decal directly below the yellow "CAUTION AUTOMATIC DOOR" decal.

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i. Using the above steps as a guide, MOUNT the yellow "CAUTION AUTOMATIC DOOR" decal and blue "ACTIVATE SWITCH TO OPERATE" decal on the opposite side of the door.

j. Using the above steps as a guide, MOUNT the "DAILY SAFETY CHECK" decal to the door frame.

Figure 18. Installing the Door Decals
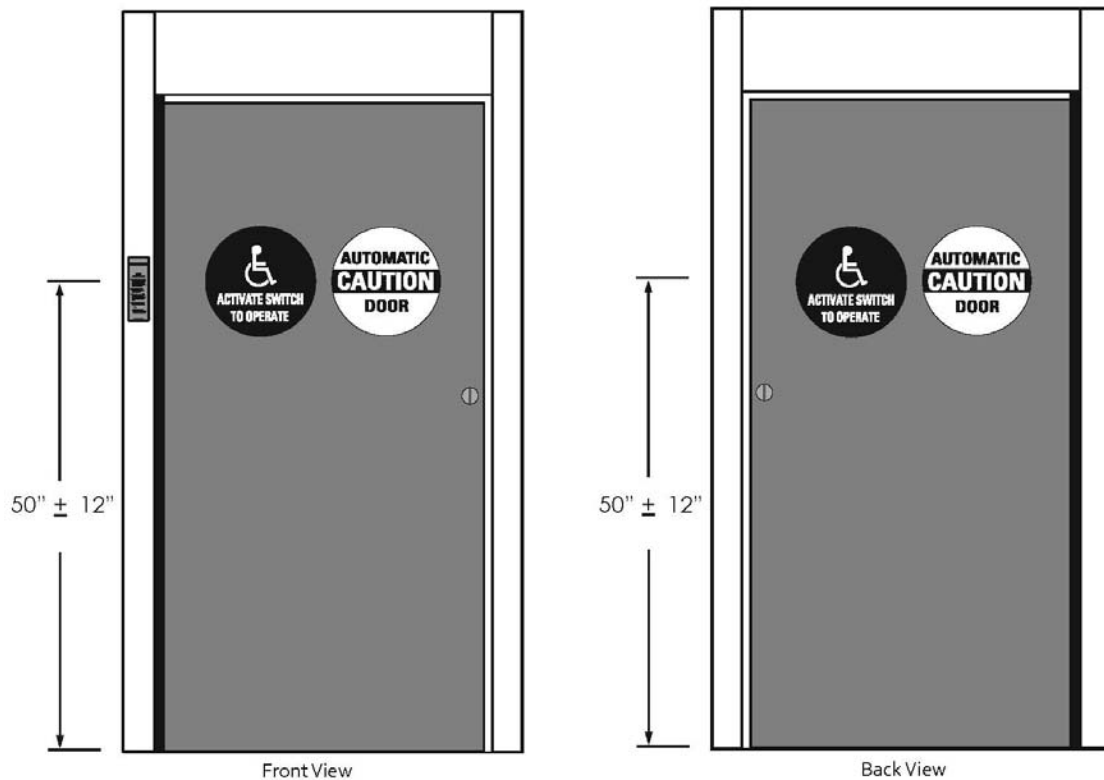
5.14.2 ENSURE all connectors are secure.

5.14.3 ENSURE all wires are secured and hidden where possible.

5.14.4 ENSURE the operator dress cover is installed and secure.

5.14.5 ENSURE the controller cover is installed and secure.

5.14.6 ENSURE the door and door trim surfaces are clean.

5.14.7 ENSURE the door installation area is clean and free of debris.

5.14.8 ENSURE that the client/resident is instructed on how to use this product and operate it correctly, and understands how to perform the daily safety check.

5.14.9 COMPLETE Work Order and REPORT your actions to Building Superintendent

5.15 **Troubleshooting Recommendations**

5.15.1 Refer to Table 2 for a listing of fault symptoms and recommended remedies.

Table 2. Troubleshooting Recommendations

Symptom	Recommended Remedy
Door Too Hard To Open Manually	Refer to section titled "Adjusting Door Spring Tension" and reduce the door-open spring tension.
Door Will Not Fully Close	Refer to section titled "Adjusting Door Spring Tension" and increase the door-open spring tension. The operator must only be installed on doors and frames in good working order, without sticking or binding during normal operation.
Door Arm Rubs On Door Arm Pivot Bracket	Refer to section titled "Installing the Operator Mounting Bracket" and lower the bracket mounting position.
Door Arm Rotates On Triangular Steel Output Shaft	• Ensure that the operator is mounted parallel to the face of the door. If the bottom of the operator is further away from the door than the top, shim the top of the operator mounting bracket to compensate. (Refer to Figures 11 and 12.) • Refer to section titled "Installing the Door Arm" and ensure that the door arm coupling screws are tightened evenly (one quarter turn at a time) until fully tight.

Door Does Not Open Automatically	• Refer to figure titled "Connecting the Battery Pack" and ensure the battery is properly connected to the operator.
	• Refer to section titled "Initializing the Remote Control" and program the rf pushbutton switch.
	• Refer to section titled "Programming the Operator" and auto-tune the operator.
	• Refer to section titled "Replacing the Battery Pack Fuse" and ensure the 5-amp slow-blow fuse is good.
	• To verify a low voltage battery condition perform the following:
	  o Remove the operator bottom cover.
	  o Move the door slightly to "wake up" the controls.
	  o Observe the DS9 LED.
	    ▪ If DS9 is flashing green then the battery is good (above 18VDC).
	    ▪ If DS9 is flashing red then the battery is low (below 18VDC).
	
	  o Battery can be charged by optional plug in transformer or by allowing manual traffic to restore battery power.

Door Stays Open Too Long	• Refer to section titled "Programming the Operator" and Auto-tune the operator. • Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door hold open time.
Door Does Not Stay Open Long Enough	• Refer to section titled "Programming the Operator" and Auto-tune the operator. • Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door hold open time.
Door Opens Too Fast	• Refer to section titled "Programming the Operator" and Auto-tune the operator. • Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door open time.
Door Opens Too Slow	• Refer to section titled "Programming the Operator" and Auto-tune the operator.

Symptom	Recommended Remedy
	• Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door open time.
Door Closes Too Fast	• Refer to section titled "Programming the Operator" and Auto-tune the operator. • Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door close time.
Door Closes Too Slow	• Refer to section titled "Programming the Operator" and Auto-tune the operator. • Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door close time.
Door Opening Force Too High	• Refer to section titled "Programming the Operator" and Auto-tune the operator. • Refer to section titled "Adjusting the Door for Proper Operation" and adjust the door open force.
Can't Remove Door Arm From Operator Output Shaft	• Loosen but do not remove the three door arm coupling screws using a 7/16" hex wrench. Refer to Figure 12. Use either a T-Handle or Screw Driver handle 9/64" hex wrench and insert its tip into the 7/16" screw head. Gently tap with a hammer while working the arm off the output shaft. Repeat for each 7/16" screw head as needed.
Can't Remove Battery From Housing	• Refer to figure titled "Connecting the Battery Pack" and note the T shaped channel at the top of battery housing. • Insert a small flat head screwdriver into the slot above the T-channel and gently pry the battery from the operator housing.
Can't Initialize Remote Control	• Verify that the CR2032 battery installed in the rf transmitter is good. • Refer to section titled "Initializing the Remote Control" and erase all activation codes. THEN: • Set and RF switch with a door controller following the instructions in the section titled "Initializing the Remote Control." • Determine if the signal sent by an RF switch is recognized by a controller as follows: o PUSH the activation switch. ▪ LED DS6 shall light red if a signal is received. ▪ LED DS7 shall flash green if a signal is recognized • Loosen the nuts on the back of the switch plate assembly to ensure that the switch is not stuck in the closed position.

5.16 **Replacement Parts**

5.16.1 Refer to Attachment 2 for a listing of the ADA EZ replacement parts.

Attachment 1
Documents, Definitions, Tools, Equipment, and Consumables
(Sheet 1 of 1)

Documents
- ANSI A156.19-2007, "American National Standard for Power Assist and Low Energy Power Operated Doors"
- ANSI A117.1-2008, "Standard on Accessible and Usable Buildings and Facilities"

Definitions
- LED: Light-emitting diode

Tools and Equipment (including, but not limited to)

- Electric drill, metal drill bit set, concrete drill bit set
- Drill bit sizes: 25/64", 5/32"
- Combination square
- Hammer
- Adjustable Wrench
- Hex wrench set
- Hex wrench sizes: 3/16", 9/64", 1/16"

- Rivnut installer
- Safety glasses
- Screwdriver kit
- 7/16" Box Wrench
- Scribe or center punch

- Staple gun*
- Tape measure
- Wire cutters*
- Tape
- Wire strippers*

*Needed if installing the optional transformer.

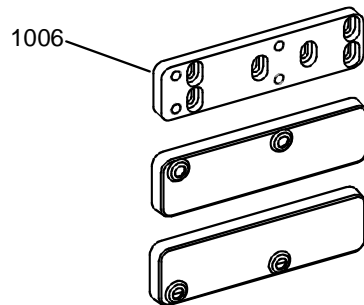**Consumables** (including, but not limited to)

- Clean rags
- Glass cleaner

Notes
- Battery fuse: 5-amp slow-blow fuse
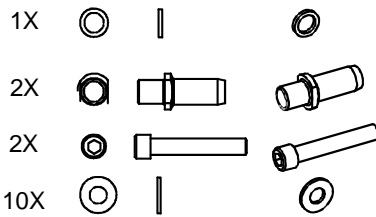- Optional plug-in transformer: Input:120 VAC 20/60 HZ; Output: 30 VDC, 500 mA
- Transmitter battery: 3 volt, 280 mAH, Lithium, part number CR2032
- The ADA EZ utilizes a lithium-polymer main battery.
- Fully discharged lithium-polymer batteries are environmentally friendly and landfill safe.
- Dynatool recycles all ADA EZ lithium polymer batteries.
- Please return all discharged ADA EZ batteries to Dynatool.
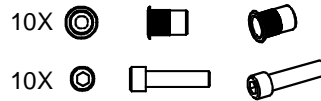
Attachment 2
Replacement Parts

(Sheet 1 of 2)

1001

1007

1002
1003
1004

1008

1010
1011

1005

1006

1012

1013

1009
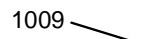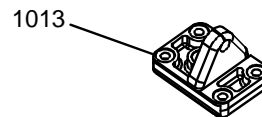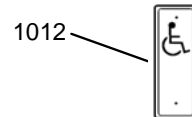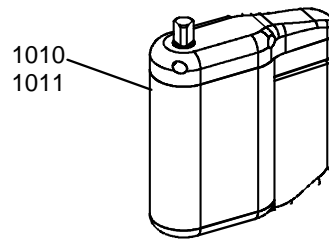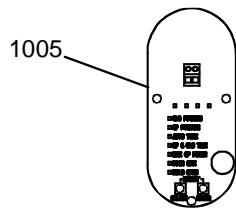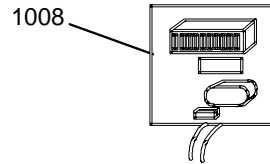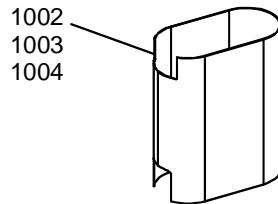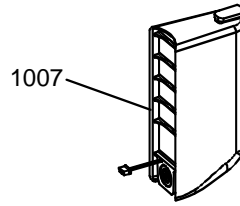
ALL INSTALLATIONS

ALUMINUM/HOLLOW METAL

1X

10X

2X

10X

2X

10X

WOOD

10X

EZ034A

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Attachment 2
Replacement Parts

(Sheet 2 of 2)

Part No.	Description	Part No.	Description
1001	Door Arm Assembly	1008	Wireless Pushbutton Transmitter
1002	Operator Dress Cover Black (BHMA693) Finish	1009	Mounting Hardware Kit
1003	Operator Dress Cover Dark (BHMA710) Finish Bronze	1010	Door Operator Assembly, Right Hand
1004	Operator Dress Cover Aluminum (BHMA628) Finish	1011	Door Operator Assembly, Left Hand
1005	Electronic Control Kit	1012	Wireless Pushbutton Assembly (wireless pushbutton transmitter not included)
1006	Operator Mounting Bracket Operator Mounting Bracket Covers	1013	Door Arm Pivot Assembly
1007	Battery Assembly		

Attachment 3
Quick Programming Guide

(Sheet 1 of 2)

Step	Operator Action	Response
1.	Refer to Figure 3 and, at the base of the controller, PRESS and HOLD the "SELECT" and "ENTER" pushbuttons for three seconds.	• The operator shall enter program mode. • The four LEDs on the circuit board shall repeatedly flash green. • The "CLS" position LED shall illuminate red and remain lit.
	NOTE	
	The doors are shipped with a MAXIMUM spring tension. Always reprogram the operator after adjusting the door spring tension.	
2.	With the door in the closed position, PRESS the "ENTER" pushbutton.	• The "CLS" position LED shall flash green. • The "OP" (open) position LED shall illuminate red indicating that the operator is ready for input. • The LED shall illuminate green once data has been stored for this parameter.
3.	OPEN the door to its fully open position	
4.	With the door in the fully open position, PRESS the "ENTER" pushbutton.	• The "OP" position LED shall flash green. • The "AUTO TUNE" position LED shall illuminate red indicating that the operator is ready for input. • The LED shall illuminate green once data has been stored for this parameter.
5.	With the door in the fully closed position, PRESS the "ENTER" pushbutton.	• The door shall open quickly and then close. • The "AUTO SETUP" led shall illuminate green.
6.	PRESS and HOLD the "ENTER" pushbutton for three seconds.	• The "AUTO SETUP" led shall go out. • The second LED (not labeled) shall flash green. • The door shall be tuned.
7.	To reset the controller, PERFORM the following: a. PRESS and HOLD the "RESET" pushbutton. b. PRESS and HOLD the "ENTER" pushbutton. c. RELEASE the "RESET" pushbutton.	
8.	If further door adjustments are necessary, refer to Section 5.10, and PERFORM adjustment	

Attachment 3
Quick Programming Guide

(Sheet 2 of 2)

	Initializing the Remote Control	
1.	To set an RF switch with a door controller, PERFORM the following:	
a.	PUSH the "LEARN" switch on the controller.	The controller will enter the learn mode for 10 seconds while green and red LEDs are illuminated.
b.	PUSH the RF activation switch.	LED DS7 shall flash green indicating that the operator learned this rf switch.
2.	To erase all activation codes learned in the door controller, PERFORM the following:	
a	REMOVE the batteries from the operator	
b	WAIT 30 seconds	
c	PUSH the "LEARN" switch on the operator	
d	INSTALL the batteries into the operator. LED DS7 shall flash green indicating that the operator memory is clear	