Stanley Access Technologies

Quick-Reference Guide

Door Assistant System Installation and Operating Instructions Quick-Reference Guide

203XXX

Draft of Rev. A, 1/18/01

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1)This device may not cause harmful interference, and (2)this device must accept any interference received, including interference that may cause undesired operation.

--Caution--

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

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Stanley Access Technologies

Quick-Reference Guide

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1. PURPOSE

1.1 **Discussion**

This manual provides system description, installation instructions, operating instructions, and troubleshooting recommendations for the Stanley Door Assistant system. The Stanley Door Assistant system is an automatic door opening and closing device that permits automatic operation of single right hand or left hand in-swing doors measuring 30″ to 36″ wide and weighing up to 125 lbs.

If power to the operator is lost, the door can be opened manually. In the unlikely event of an operator failure, the system includes an emergency disconnect handle at the base of the operator. Pulling the handle disengages the door arm from the operator output shaft and permits manual door operation.

1.2 **Applicability**

This manual is applicable to the Stanley Door Assistant system.

2. PREREQUISITES

2.1 A 110 VAC grounded power outlet is available in the vicinity of the door.

2.2 Finished walls and doors have been installed.

2.3 Protective barrier (caution/warning tape) has been set up to prevent unauthorized access to work area.

2.4 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 An operating door creates pinch hazards. Be careful making operating adjustments while the door is moving.

4. SYSTEM DESCRIPTION

4.1 **General**

The Door Assistant assembly is shipped in the following pieces:

- Motor/gearbox assembled and attached to the mounting bracket
- Door arm assembly
- Controller circuit board mounted to its housing
- Slider bracket
- Transformer
- Junction Box
- Operator assembly cover
- Transmitter
- Hardware pack **Need to identify what is in the hardware pack.**

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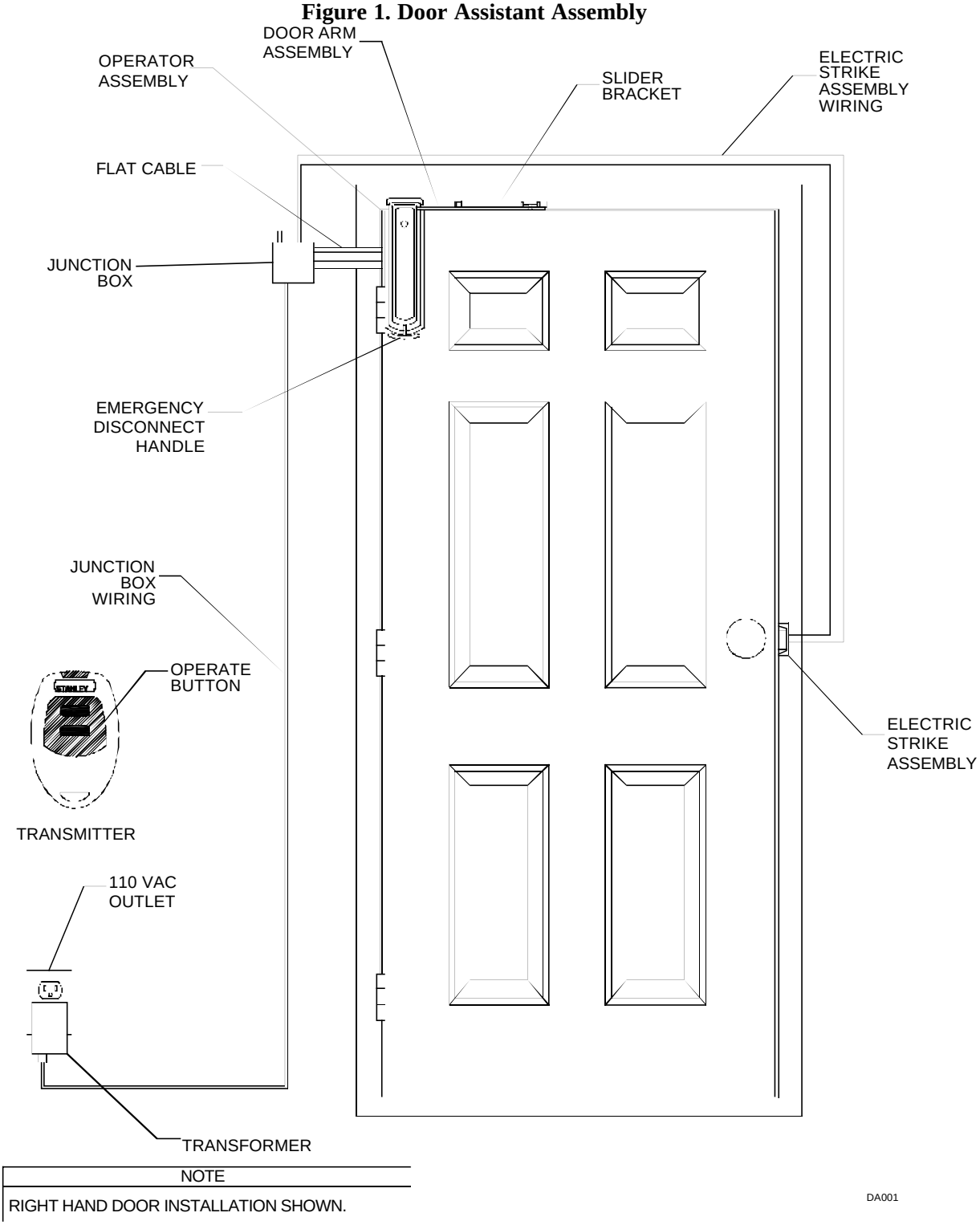
Figure 1 illustrates an installed Door Assistant system installed on a right hand door. The paragraphs that follow describe the major Door Assistant components:

Figure 1. Door Assistant Assembly



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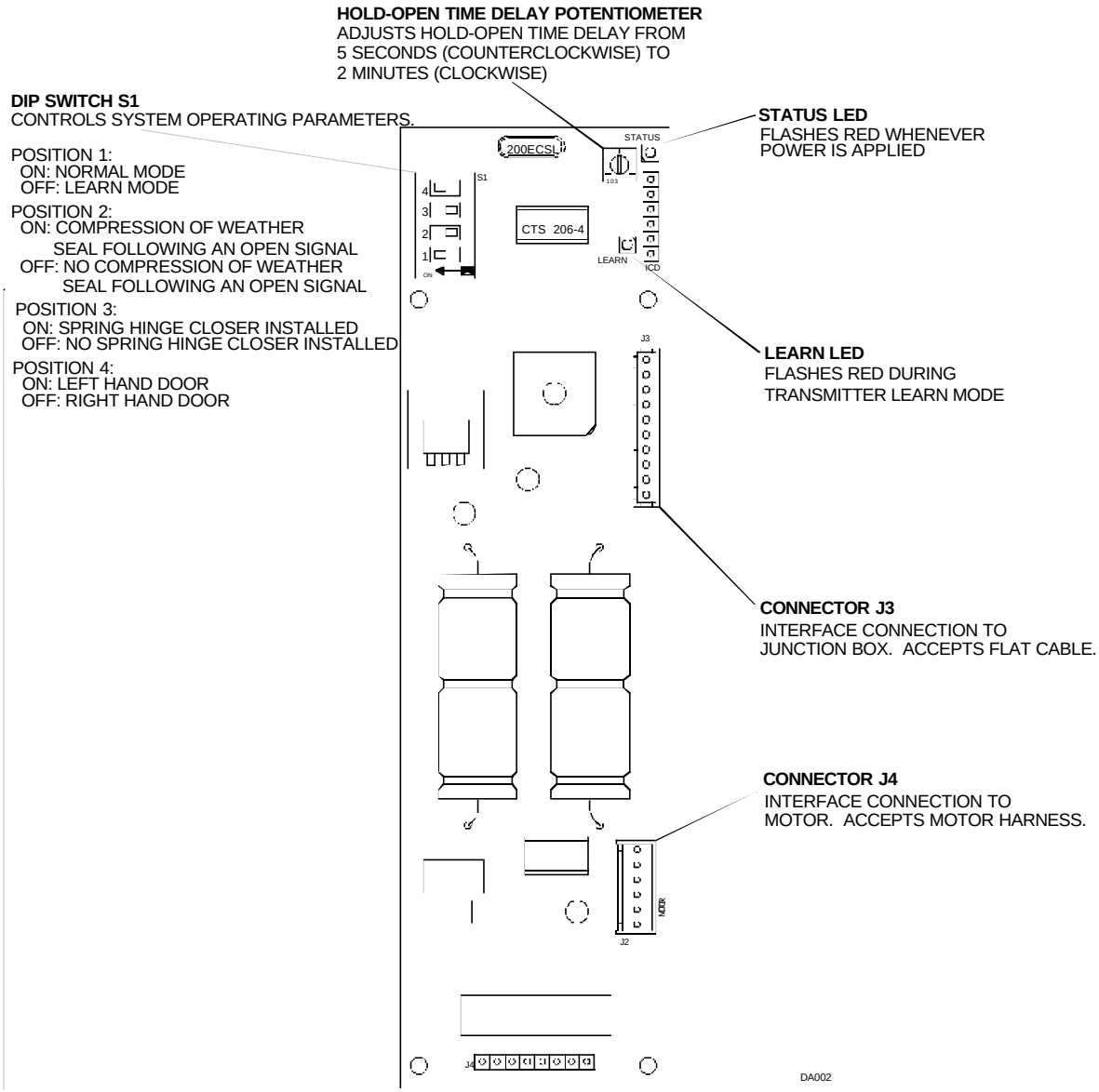
4.1.1 Door Operator Assembly: Includes the door operator, door controller, and drive.

- Door Operator: Contains the mechanical components required to move the door. The operator assembly mounts on the hinge edge of the door and includes the motor/gearbox, door arm, mounting brackets, and cover.
- Door Controller: 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 2 illustrates the door controller circuit board controls and indicators.
- Drive: Provides the hardware and software necessary to drive the motor based on a door controller command.

Figure 2. Door Controller Circuit Board Controls and Indicators



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4.1.2 Electric Strike Assembly: Maintains the door in a closed position for security. An electrical signal from the door controller activates a solenoid that releases the strike. When the strike is released, the door opens under the power of the door operator. The electric strike assembly is configured to fail secure.

4.1.3 Transmitter: An external device (such as a proximity sensor or touch pad) that emits a radio frequency (rf) signal or an electrical signal to operate the door. When pushed once, the door opens. When pushed again, the door closes. The transmitter has a range of 50′ from either side of the door. Two 280mAH lithium batteries provide transmitter power.

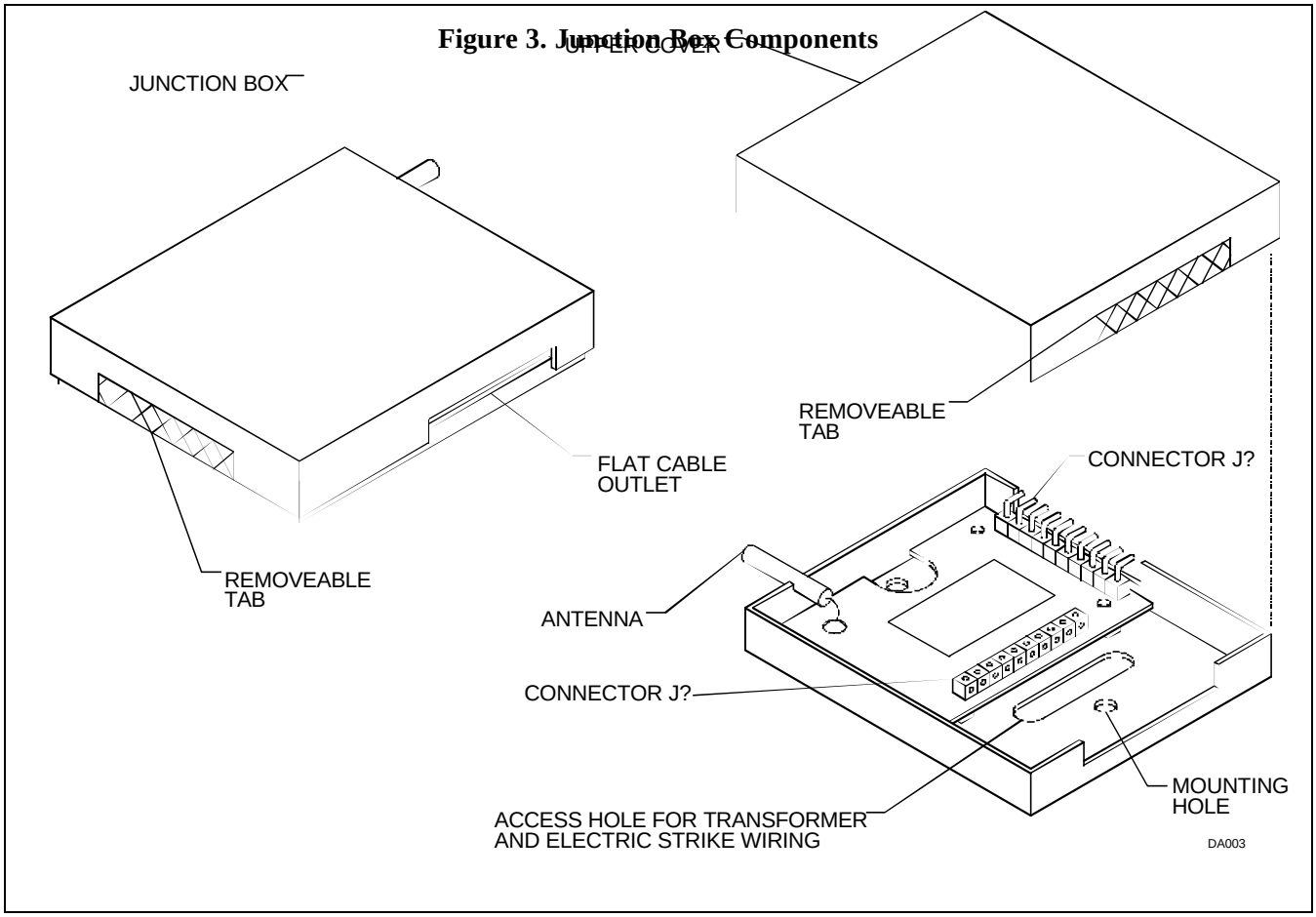
4.1.4 Transformer: Converts the incoming 110 VAC power to 20 VAC required by the controller. Plugs into a standard 110 VAC wall outlet and provides approximately 15′ of wire for connecting to the junction box.

4.1.5 Entrance System: Includes the door and frame.

4.1.6 Junction Box: Contains the antenna and radio frequency (rf) module. The plastic cover removes to permit connection of transformer wiring to connector **XXX** and connection of flat cable from the door controller circuit board to connector **XXX**. The junction box attaches to the wall adjacent to the operator. Figure 3 illustrates the junction box components.

QUESTION: What are the connector designators on the J-box?

Figure 3. Junction Box Components



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4.2 Features and Functions

4.2.1 Opening Limits: The operator allows a 32″ door to open to a maximum of 108° and a 36″ door to open to a maximum of 120° from the fully closed position.

4.2.2 Opening Speed: Following an activation signal, the door moves from fully closed to fully open in 4 to 6 seconds.

4.2.3 Closing Speed: Following an activation signal, the door moves from fully open to within 10° of fully closed position in 3 to 6 seconds. The door moves from 10° of fully closed position to fully closed position in *not less than* 2 seconds.

4.2.4 Closing Force: The door shall not close with a force greater than 40 lbs when measured at the latch side of the closing stile.

4.2.5 Transmitter Range: The transmitter has a range of 50′ from either side of the door.

4.2.6 Operation Upon Loss of Power: The door can function manually if power to the system is interrupted.

4.2.7 Operation Upon Obstruction: If the door meets an obstruction while opening or closing, the door will immediately stop. The subsequent operation of the door will depend upon the position of the door when it met the obstruction.

- If the door was within 15° of the fully closed position when it was obstructed, it will move to the fully *closed* position.
- If the door was within 15° of the fully open position when it was obstructed, it will move to the fully *open* position.
- If the door was in any other position when it was obstructed, it will move to the fully open or fully closed position depending on the last operate signal that it received. (If the last operate signal was to open, the door will close following an obstruction. If the last operate signal was to close, the door will open following an obstruction.)

4.2.8 Transmitter Learn Mode: The transmitter learn mode programs the transmitter to the operator when the operator is first powered up.

4.2.9 Door Learn Mode: The door learn mode allows the door to “learn” its fully open and fully closed positions. The door learn mode is conducted when the unit is first powered up and whenever power is lost for more than 4 seconds. During door learn mode, the door closes when the transmitter is first pressed. Next the door opens in slow speed until it hits the doorstop, and then closes at normal speed.

4.2.10 Hold-Open Time Delay: A hold-open time delay potentiometer on the operator circuit board allows adjustment of the hold-open time delay from 5 seconds to 2 minutes. Used when the door is equipped with a spring hinge closer.

4.2.11 Door Handing Selection: DIP switch S1 position 4 selects operation on left hand or right hand doors.

4.2.12 Spring Hinge Closer Operation Selection: DIP switch S1 position 3 selects operation on doors with or without a spring hinge closer. If the door is equipped with a spring hinge closer, the operator must be able to overcome spring tension as the door opens and resist spring tension as the door closes. The following paragraphs describe door operation with and without a spring hinge closer:

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- Power Open/Power Close With Spring Hinge Closer –This mode is used for doors equipped with spring hinge closers. In this mode, an operate signal is needed to open the strike and power the door open. The controller will hold the door open against the force of the spring closer for a specified period of time (adjustable from 5 seconds to 2 minutes). When the selected time delay elapses, the controller allows the door to fully close under spring hinge closure force with assistance from the motor. If an operate signal is received during the hold-open time, this signal will override the hold-open command and allow the door to close.
- Power Open/Power Close, No Spring Hinge Closer –This mode is used for doors that are *not* equipped with spring hinge closers. In this mode, an operate signal is needed to power-open the door and maintain the door in the open position. With the door in the open position, a second operate signal will power the door closed. The door will then stay closed until the next operate signal is received. If the door is left in any open position between fully closed and fully open and it receives an operate signal, it will act upon that signal as normal. If it receives a close signal it will close under normal power operation. If it receives an open signal it will open under normal power operation. However, if the door is manually left open less than 15°, the door will always go open at the next operate signal. Likewise, when the door is manually left open within 15° of the fully open position, the door will always go closed at the next operate signal.

4.2.13 Weather Seal Operation Selection: DIP switch S1 position 2 selects operation on doors with or without a magnetic or compression weather seal. If the door is equipped with a magnetic or compression weather seal, the operator must compress the weather seal in order to release the strike and allow the door to open. Upon receipt of the operate signal, the door closes for ¼to ¾seconds in order to compress the weather seal and ensure the strike is free to open. After the strike releases, the operator opens the door.

5. INSTALLATION INSTRUCTIONS

5.1 **Checking the Door and Door Installation Site**

5.1.1 ENSURE door is a solid wood door or a hollow-core wood, metal, or fiberglass door.

QUESTION: Any doors that the unit cannot be installed on? Any restrictions?

5.1.2 ENSURE door is an in-swing door, and the door weighs no more than 125 lbs.

5.1.3 ENSURE door is 32″ to 36″ wide.

QUESTION: Do we want to restrict installation to doors that are 32” to 36” wide?

5.1.4 ENSURE door jamb is square and door opens and closes freely throughout full range of operation.

5.1.5 ENSURE door assembly includes hinge-mounted and/or floor-mounted doorstops to prevent overtravel of door past its intended maximum opening angle.

5.1.6 ENSURE a 110 VAC electrical outlet is within 15′ of the door.

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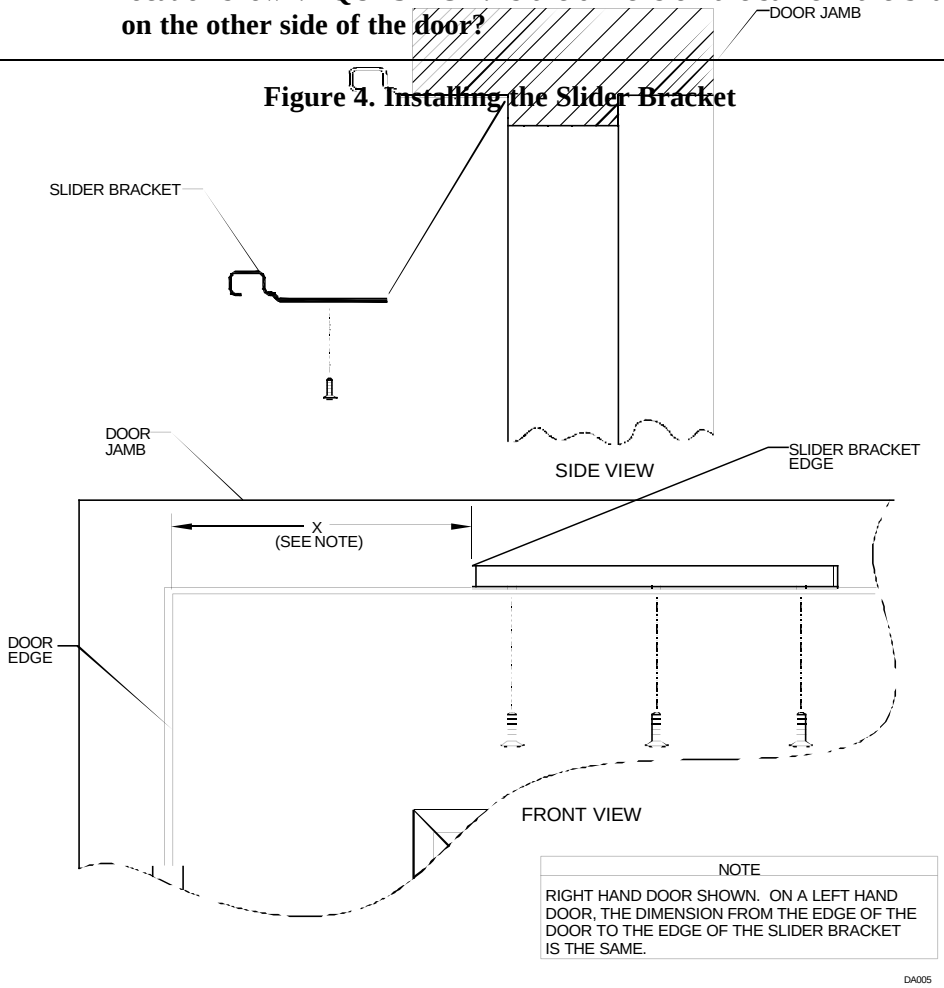
5.2 Installing the Slider Bracket on the Door Jamb

5.2.1 Refer to Figure 4, and POSITION slider bracket against underside of jamb at the location shown. **QUESTION: Is the dimension the same if the bracket is installed on the other side of the door?**

Figure 4. Installing the Slider Bracket



5.2.2 Using a scribe or center punch, MARK location of three slider bracket mounting holes.

5.2.3 DRILL three xxx slider bracket mounting holes at the marked locations. **What size holes?**

5.2.4 Using the screws supplied, FASTEN slider bracket to underside of jamb. **What size screws?**

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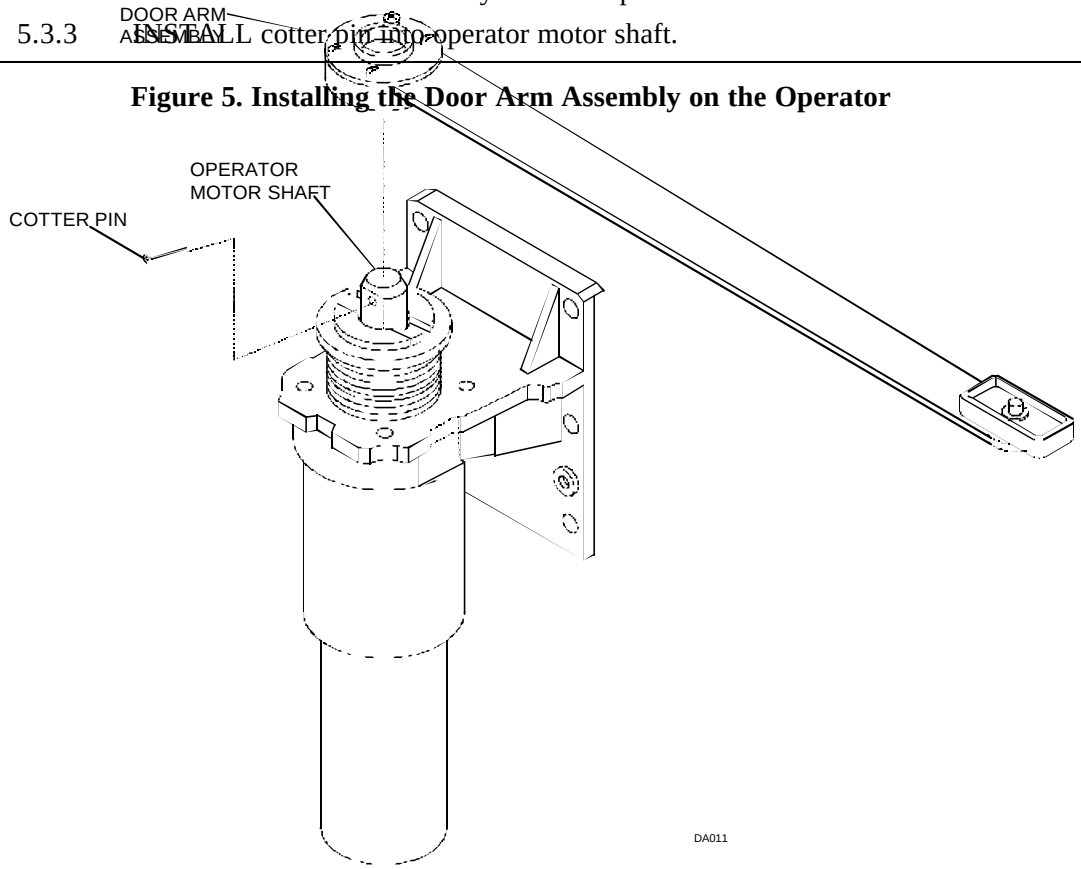
5.3 **Installing the Door Arm Assembly on the Operator**

5.3.1 Refer to Figure 5, and REMOVE cotter pin from motor shaft.

5.3.2 POSITION door arm assembly onto the operator motor shaft.

5.3.3 INSTALL cotter pin into operator motor shaft.

Figure 5. Installing the Door Arm Assembly on the Operator



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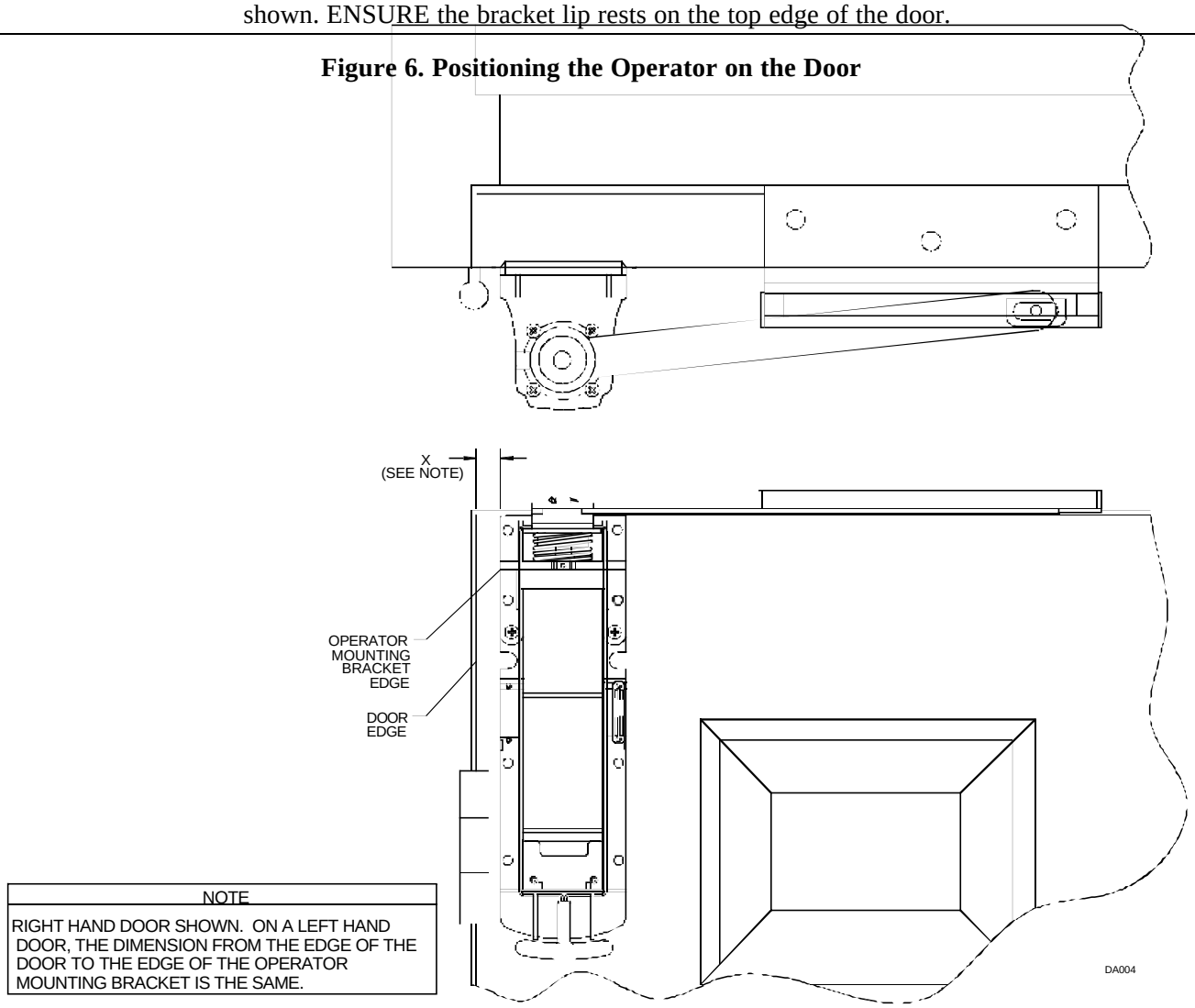
5.4 **Installing the Operator Assembly on the Door**

5.4.1 Refer to Figure 6, and POSITION operator onto inside face of door at the location shown. ENSURE the bracket lip rests on the top edge of the door.

Figure 6. Positioning the Operator on the Door



QUESTION: Should there be a template attached? Need the dimension from the edge of the door to the edge of the mounting bracket. Also, is the dimension the same if the operator is on the other side of the door?

5.4.2 Using a scribe or center punch, MARK location of six operator mounting holes.

5.4.3 REMOVE operator, and DRILL six **xxx** operator mounting holes at the marked locations.

QUESTION: What size holes? Look at EXP-2000. Is the door arm shown too long? With the door closed, shouldn't the door arm be somewhere in the middle of the slider bracket?

5.4.4 REMOVE slider bracket end cap closest to operator.

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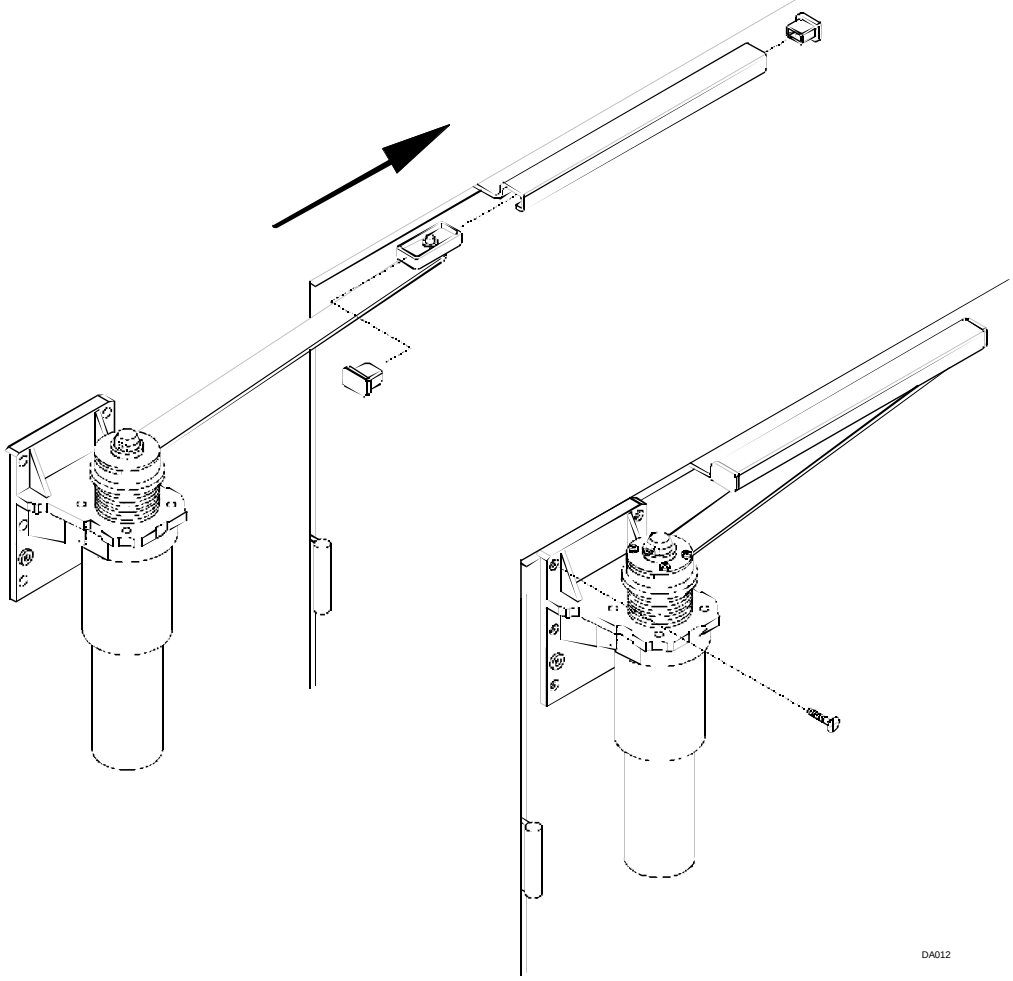
5.4.5 Refer to Figure 7, and INSERT door arm slide block into opening in slider bracket.

Figure 7. Installing the Operator Assembly on the Door



5.4.6 SLIDE operator and door arm assembly toward slider bracket, and POSITION operator onto door at the marked location.

5.4.7 Using the screws supplied, FASTEN the door operator to the door.

5.4.8 INSTALL slider bracket end cap.

5.4.9 POSITION circuit board mounting bracket onto operator mounting bracket.

5.4.10 Using a scribe or center punch, MARK location of two circuit board mounting holes.

5.4.11 REMOVE circuit board mounting bracket, and DRILL two **xxx** circuit board mounting holes at the marked locations.

5.4.12 POSITION circuit board mounting bracket over operator mounting bracket.

5.4.13 Using the screws supplied, FASTEN the circuit board mounting bracket to the door.

5.4.14 Refer to Figure 6, and INSTALL emergency release handle onto operator assembly. **When does the handle get installed?**

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5.5 **Installing the Junction Box**

5.5.1 REMOVE junction box cover.

NOTE
When installing the junction box on the wall, make sure the antenna points upward.

5.5.2 Refer to Figure 8, and, POSITION the junction box onto the wall at the location shown.

5.5.3 Using the junction box base as a template, MARK the two junction box mounting holes onto the wall.

QUESTION: What is the proper dimension of the junction box from the jamb or operator. Do the tabs need to be broken off of the junction box? Also, what size mounting holes?

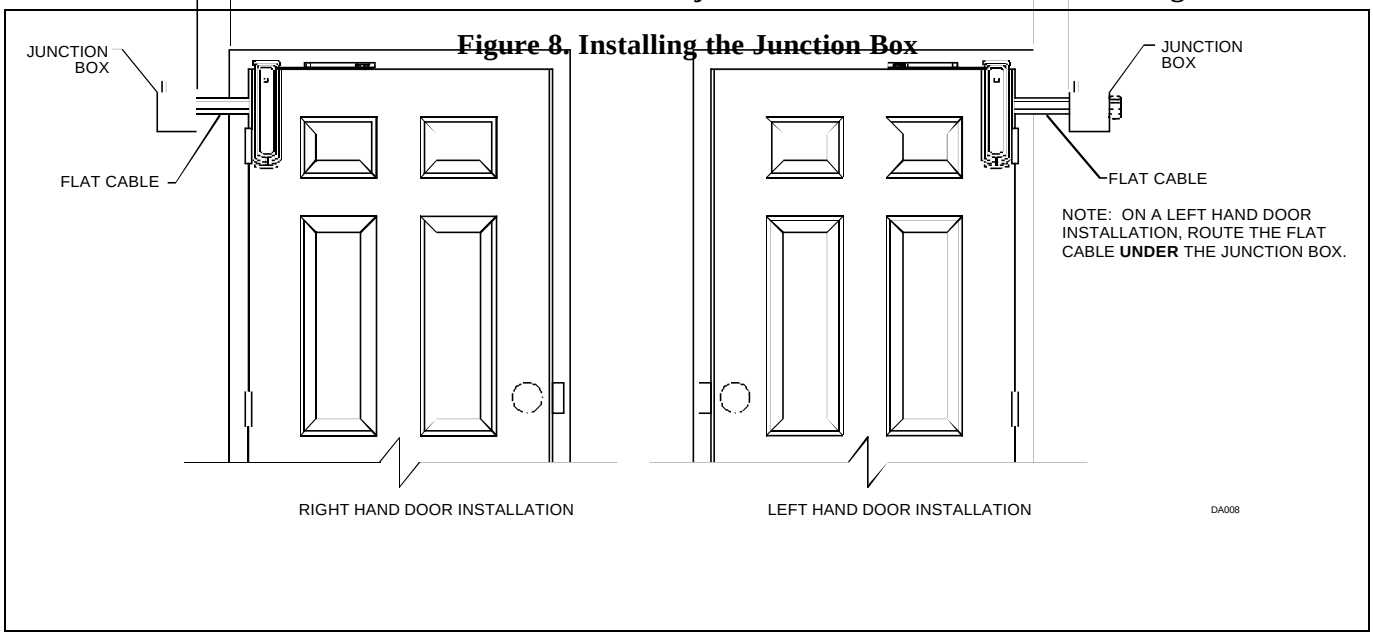

Figure 8. Installing the Junction Box

5.5.4 Using the screws and wall anchors supplied, FASTEN junction box to wall.

5.5.5 INSTALL junction box cover.

5.6 **Installing the Electric Strike Assembly**

5.6.1 IF installed, REMOVE the existing strike assembly from the door jamb.

NOTE
The strike installation details are different for wood and metal jambs.

5.6.2 IF jamb is wood, INSTALL the strike assembly as follows:

a. Refer to Figure 9, and PREPARE jamb to the dimensions shown. **Do we know the dash number of the strike assembly? (This determines dimension "A".)**

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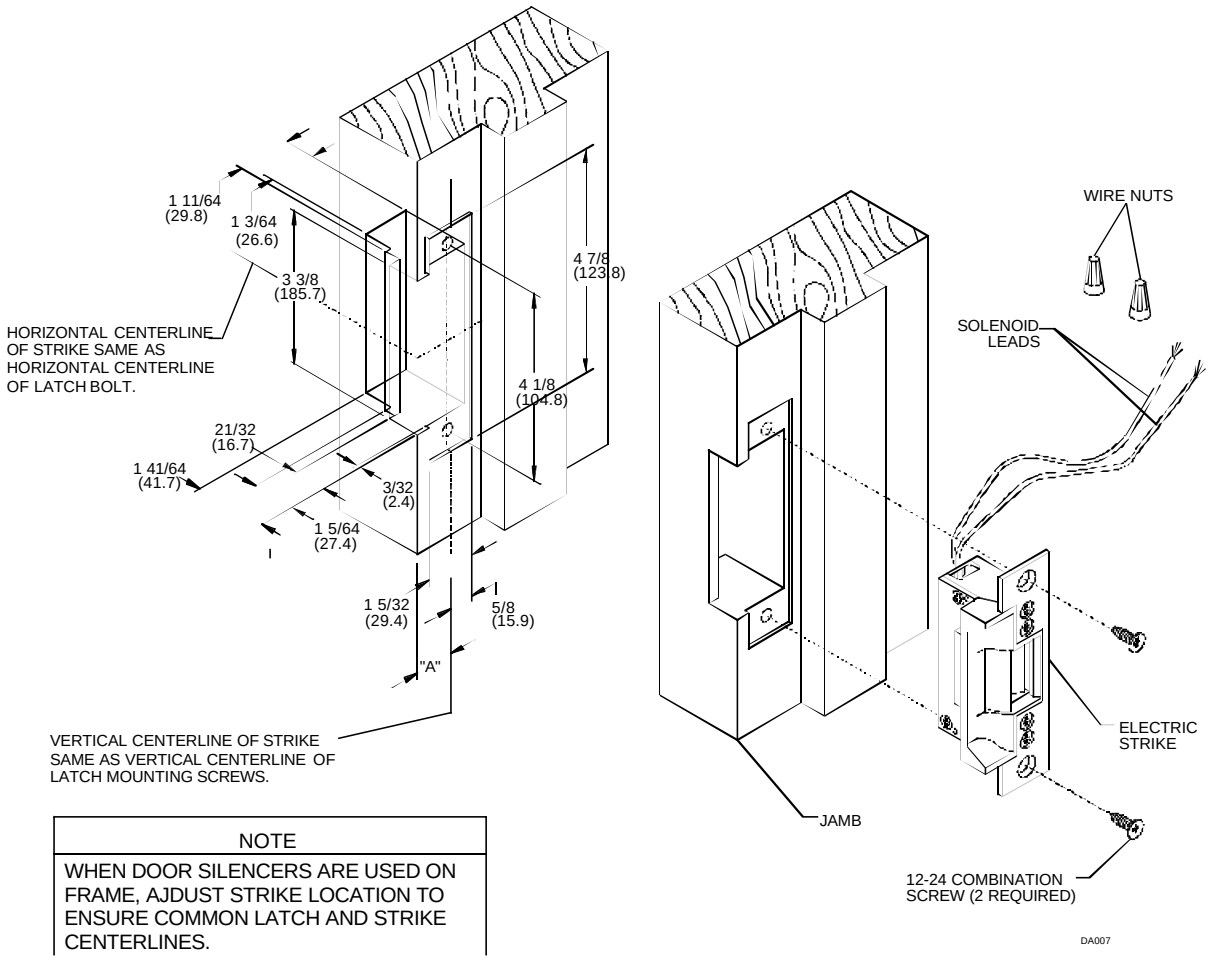
Figure 9. Installing the Strike in a Wood Jamb



NOTE
WHEN DOOR SILENCERS ARE USED ON FRAME, AJDUST STRIKE LOCATION TO ENSURE COMMON LATCH AND STRIKE CENTERLINES.

b. Using four 8-32 X $^{1}/_{4}$″ screws, ATTACH subcover and faceplate to the strike case assembly.

c. DRILL strike wiring access hole through back of jamb, and ENSURE wire can be accessed from side of jamb or molding.

d. ROUTE strike assembly wiring into back of jamb through hole drilled in previous step.

e. Using the wire nuts provided, CONNECT strike solenoid leads to strike assembly wiring.

f. INSERT wiring connections and strike into jamb.

g. Using two 12-24 combination screws, FASTEN strike to jamb.

5.6.3 IF jamb is metal, INSTALL the strike assembly as follows:

a. Refer to Figure 10, and PREPARE jamb to the dimensions shown.

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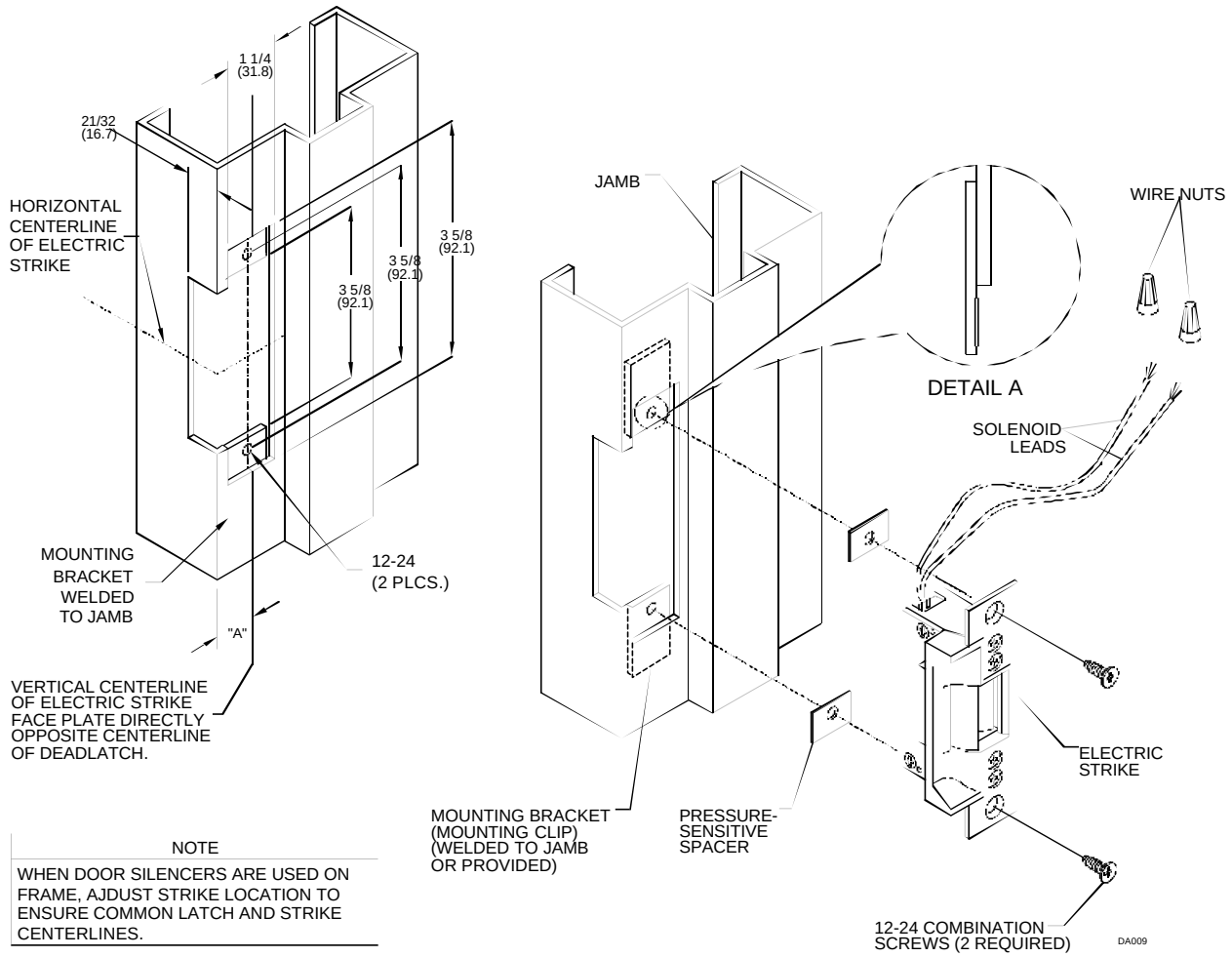
Figure 10. Installing the Strike in a Metal Jamb



NOTE

When the strike faceplate sets inside the jamb, spacers must be installed between the faceplate and the mounting clips. The spacers ensure that the jamb and strike faceplate remain flush.

b. IF necessary, INSTALL mounting clips into jamb. **How do these get installed? Looks like new holes may need to be drilled. Do we know the dash number of the strike assembly? (This determines dimension "A".)**

c. IF the strike faceplate will set inside the jamb, INSTALL pressure-sensitive spacers onto mounting clips, and ENSURE spacer and mounting clip holes align.

d. Using four 8-32 X $^1/_4$″ screws, ATTACH subcover and faceplate to the strike case assembly.

e. DRILL strike wiring access hole through back of jamb, and ENSURE wire can be accessed from side of jamb or molding.

f. ROUTE strike assembly wiring to back of jamb through hole drilled in previous step.

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g. Using the wire nuts provided, CONNECT strike solenoid leads to strike assembly wiring.

h. INSERT wiring connections and strike into jamb.

i. Using two #12 combination screws, FASTEN strike to jamb clips.

NOTE

If possible, conceal the strike wiring against or behind the door trim molding.

5.6.4 ROUTE strike assembly wiring to junction box.

5.7 Wiring the Door Assistant Assembly

5.7.1 REMOVE screw securing controller cover, and REMOVE cover.

5.7.2 REMOVE junction box cover. **Does cover snap off, or do you pry it off?**

5.7.3 Refer to Figure 11, and CONNECT wiring as follows:

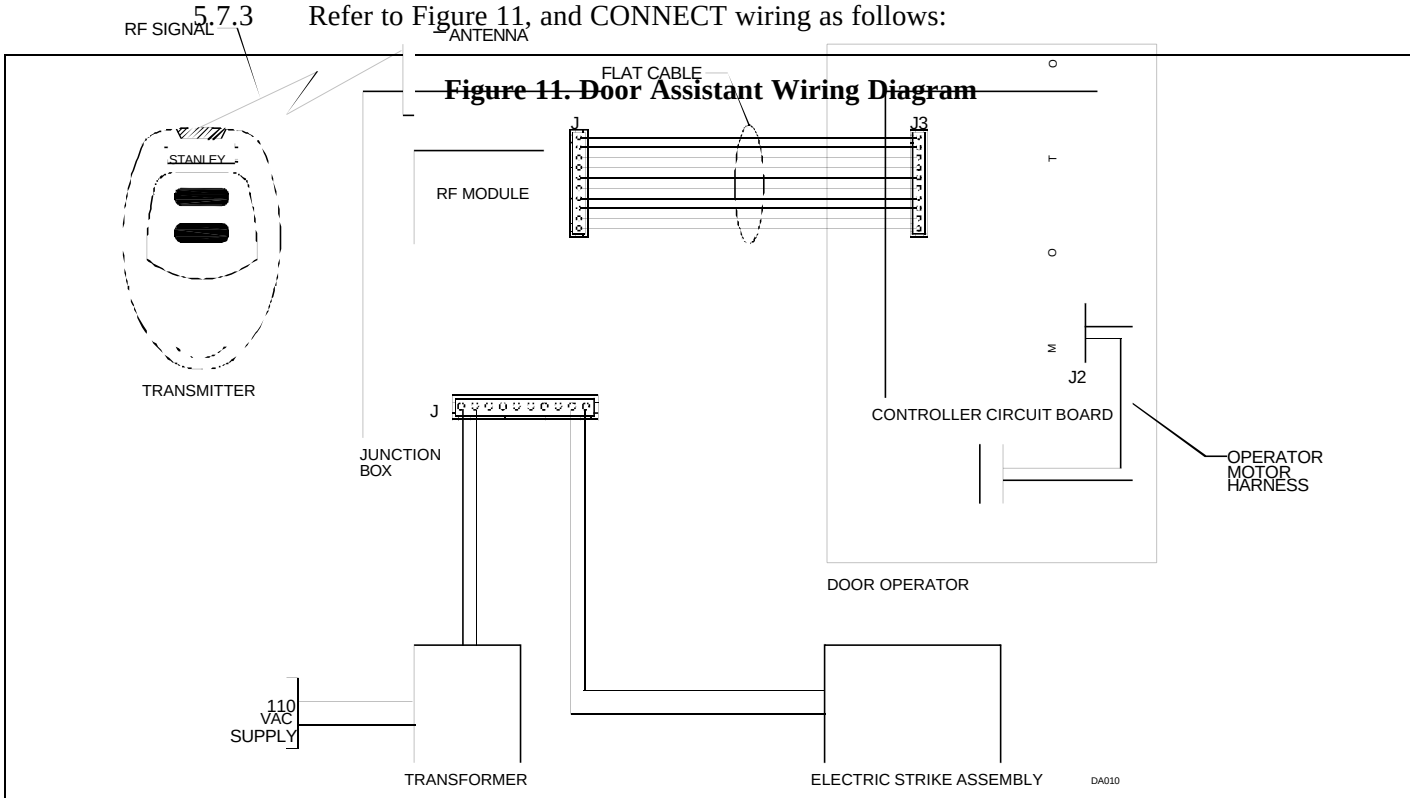

Figure 11. Door Assistant Wiring Diagram

a. CONNECT strike wiring harness to junction box connector **XXX**. **Need all the connector numbers and signal names.**

b. CONNECT flat cable from junction box connector **XXX** to controller circuit board connector J3.

c. CONNECT operator motor harness to controller circuit board connector J2.

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d. CONNECT transformer harness from transformer to junction box connector **XXX** terminals **XXX**.

QUESTION: How does the transformer connect to the junction box?

What are the connector numbers on J-box?

5.8 **Initial Tune-In Settings**

CAUTION

To prevent damage to operator, the doorstop(s) must prevent the door from opening more than 120° from the fully closed position.

5.8.1 ADJUST doorstop(s) as necessary to ensure that door will open *no more than* 120° from the fully closed position.

5.8.2 ENSURE door is fully closed.

5.8.3 SET weather seal compression selection DIP switch S1 position 2 as follows:

- IF the door is equipped with a compression or magnetic weather seal, SET switch to "ON."
- IF the door is *not* equipped with a compression or magnetic weather seal, SET switch to "OFF."

5.8.4 SET spring hinge selection DIP switch S1 position 3 as follows:

- IF door is equipped with a spring hinge closer, SET switch to "ON."
- IF door is *not* equipped with a spring hinge closer, SET switch to "OFF."

5.8.5 SET door handing DIP switch S1 position 4 as follows:

- IF door is a left hand door, SET switch to "ON."
- IF door is a right hand door, SET switch to "OFF."

5.8.6 SET hold-open time delay potentiometer to midrange.

NOTE

The transmitter learn mode programs the transmitter to the operator. Transmitter learn mode must be conducted the *first* time the operator is powered up.

5.8.7 INITIATE transmitter learn mode as follows:

a. PLUG IN transformer into a 110 VAC outlet, and OBSERVE the operator is powered up (STATUS LED flashes red) and the strike is latched.

b. SET DIP switch S1 position 1 to "OFF," and within 4 seconds of setting the switch to "OFF," PERFORM the following:

- PRESS and HOLD the transmitter operate button until the red LEARN LED on the controller circuit board stops flashing. (This should take approximately 10 seconds.)
- When the red LEARN LED on the controller circuit board stops flashing, RELEASE the transmitter operate button.

QUESTION: Do you need to point the transmitter at the junction box?

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What are the states of the STATUS and LEARN LEDs? When are they steady? When do they flash? When are they off?

c. SET DIP switch S1 position 1 to "ON."

NOTE

In door learn mode, the door learns its opening and closing positions. Door learn mode must be conducted after initiating transmitter learn mode and any time power to the system has been lost for more than 4 seconds.

5.8.8 INITIATE door learn mode as follows:

a. PRESS transmitter operate button, and OBSERVE the following sequence:

- The door closes fully.
- The door opens at a slow speed until it reaches the doorstop.
- When the door reaches the doorstop, the door stops and closes at a normal speed.

5.9 **Final Adjustments**

5.9.1 CHECK manual release function as follows:

a. PULL downward on emergency disconnect handle at the base of the operator, and PUSH handle gently toward door to lock handle in position.

b. ENSURE door opens manually.

c. PULL downward on emergency disconnect handle, PULL handle away from door slightly, and RELEASE handle.

5.9.2 PERFORM obstruction check as follows:

a. PUSH transmitter button once to initiate the door open cycle.

b. When the door is approximately halfway open, PLACE your foot in the path of the opening door, and OBSERVE the door stops and closes.

c. PUSH transmitter button once, and ALLOW door to open fully.

d. PUSH transmitter button once to initiate door close cycle.

e. When the door is approximately halfway closed, PLACE your foot in the path of the closing door, and OBSERVE the door stops and opens.

5.9.3 CYCLE door from the entry and exit sides of the room, and ENSURE door opens and closes smoothly.

5.9.4 CLOSE door.

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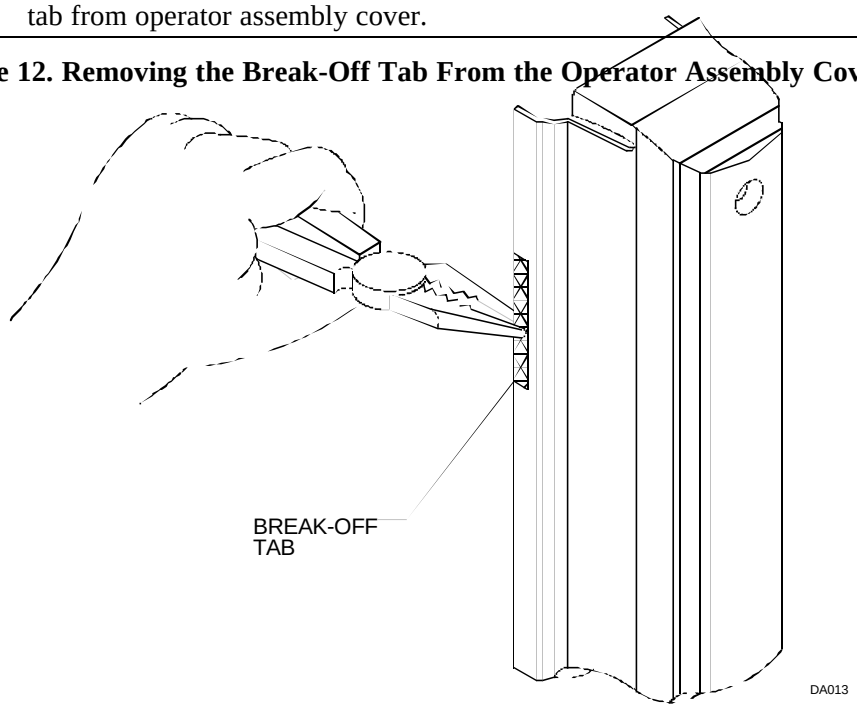
NOTE

The operator assembly cover is manufactured to permit installation on right and left hand doors. The cover includes two break-off tabs —one on each side —that allow the flat cable to pass under the cover. Before installing the cover, the appropriate break-off tab must be pried off using a pair of pliers.

5.9.5 Refer to Figure 12, and, using a pair of pliers, REMOVE appropriate plastic break-off tab from operator assembly cover.

Figure 12. Removing the Break-Off Tab From the Operator Assembly Cover



5.9.6 Using screw supplied, FASTEN operator assembly cover to operator mounting bracket.

5.9.7 INSTALL junction box cover.

5.10 **Closeout Procedure**

5.10.1 ENSURE all connectors are secure.

5.10.2 ENSURE all wires are secured and hidden where possible.

5.10.3 ENSURE controller cover is installed and secure.

5.10.4 ENSURE junction box cover is installed and secure.

5.10.5 ENSURE door and door trim surfaces are clean.

5.10.6 ENSURE door installation area is clean and free of debris.

5.10.7 COMPLETE Work Order and REPORT your actions to Building Superintendent.

6. TROUBLESHOOTING RECOMMENDATIONS

Table 1 provides a listing of Door Assistant related failure symptoms and troubleshooting recommendations.

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Do we want to add the troubleshooting recommendations? Need symptoms and remedies.

Table 1. Door Assistant Troubleshooting Recommendations

Symptom	Recommended Remedy

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

Documents

- None

Definitions

- DIP Switch: (Dual In-Line Package switch): A series of tiny rocker or slider switches contained in the housing of a DIP, or dual in-line package. The switches control system parameters or configurations.
- Door Learn Mode: The process where the operator “learns” the full-open and full-closed door positions.
- Transmitter Learn Mode: The process of programming the transmitter to the operator.
- LED: Light-emitting diode

Tools and Equipment (including, but not limited to)

- Electric drill, metal drill bit set, concrete drill bit set
- Combination square
- Pry bar
- Pliers
- Saws-all with wood- and metal-cutting blades
- Screwdriver kit
- Scribe or center punch
- Tape measure
- Wire strippers
-

Materials (including, but not limited to)

- Assorted fasteners, mollies, finish nails, wood screws
- Wire staples

Consumables (including, but not limited to)

- Caulk
- Clean rags
- Tie wraps
- Vinyl spackle or similar wood filler material

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