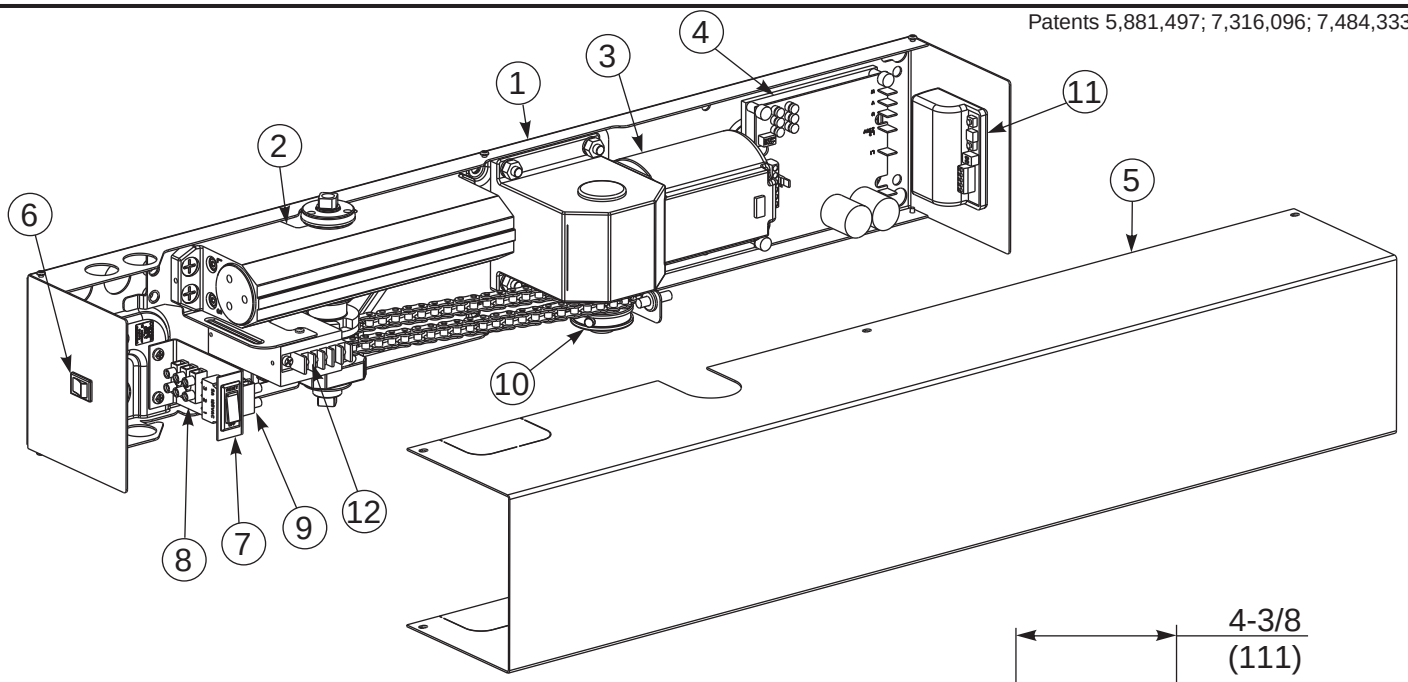
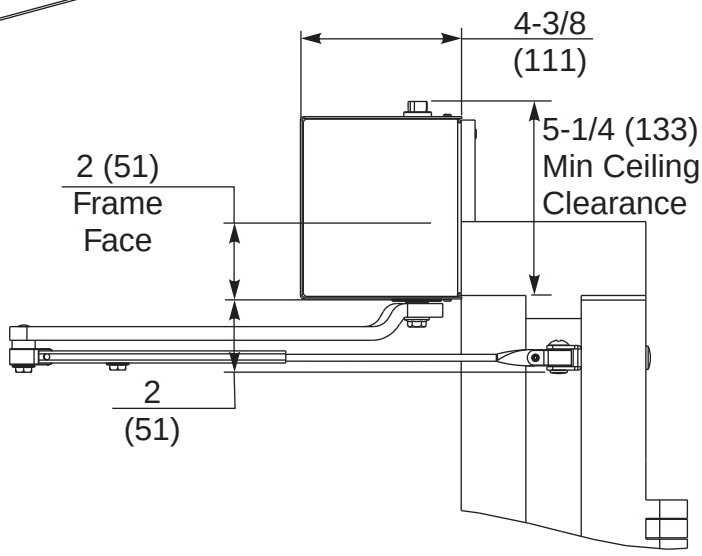
5700 Series Power Operator
Stop (Push) Side Mount
Installation and Instruction Manual

80-9357-0005-020 (06-15)

Patents 5,881,497; 7,316,096; 7,484,333



Item No.	Description
1	Back plate
2	Door Closer (1601LAP or 1601BFLAP)
3	Motor Assembly (5700M)
4	Inverter (5700IN)
5	Cover (5700COV)
6	On/Off switch
7	Circuit Breaker
8	120VAC Electrical Connections
9	Activation Inputs
10	Door Open/Closed Position Magnets
11	Optional RF Receiver
12	Power Supply - 1.1A 24V



Tools required:

- 1/8” allen wrench (included)
- Flat blade screwdriver (potentiometer & terminal size)
- Screwdriver (Phillips size 2)
- Tape ruler
- Power drill and set of drill bits
- Center punch
- Wire stripper
- #7 drill 1/4-20 tap (metal frame install)

⚠ WARNINGS

- Always disconnect the main power to the operator prior to servicing or cleaning.
- To reduce the risk of injury or person, use the operator only with Pedestrian Swing doors.
- This operator is for indoor use only.
- 120VAC power supplied to the operator must be a dedicated circuit from the main circuit breaker panel and must NOT be connected into any building lighting system that operates flourescent lights.
- Maximum door size: 48 in (1219mm) wide x 250 lb (113.4kg).

ASSA ABLOY, the global leader in door opening solutions

80-9357-0005-020 (06-15)

Contents

General Information

- UL labeled fire or smoke barrier door assemblies require that the 120VAC (60Hz) power input to the *LEO* door operator be supplied through normally closed alarm contacts of the alarm system / alarm panel.
- Power input to *LEO* door operator must be 120VAC (60Hz) to terminals HOT and COM at terminal strip T1. Earth ground (GND) to green screw on backplate.
- All wiring must conform to standard wiring practice in accordance with national and local wiring codes.
- Note: Unless otherwise noted, all dimensions are given in inches (millimeters).
- Minimum suggested and required material thickness for hollow metal frames (skin plus reinforcement) is charted on below.
- Unit is Non-Handed.
- Door must be hung on butt hinges [5" (127mm) max. width] or 3/4" (19mm) offset pivots. A separate door and frame preparation template will be supplied for other conditions.
- Door must swing freely through the entire opening and closing cycle before beginning the installation.
- Use of an auxiliary door stop (by others) is always recommended.
- An incorrectly installed or improperly adjusted door operator can cause property damage or personal injury. These instructions should be followed to avoid the possibility of misapplication or misadjustment.

WARNING: Make sure 120VAC (60Hz) input power is turned off at facility's main circuit breaker before proceeding with installation.

General Templating Information:

- Before beginning the installation, verify that the door frame is properly reinforced and is well anchored in the wall.
- Unreinforced hollow metal frames and aluminum frames should be prepared and fitted with 1/4-20 blind rivet nuts, furnished by others.
- 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.
- No. 14 x 2-3/4" (70mm) long sheet metal screws for wood.

Fasteners for Door:

- 1/4-20 machine screws.
- 3/8" diameter x 1-5/8" (41mm) long sex nut.

Electrical Information:

- Maximum current draw of unit is 0.6 amps.
- Breaker Switch protects the motor assembly and inverter; and has a 3 amp rating.
- Maximum wire size is:
  12AWG at terminals HOT and COM (120VAC; 60Hz) on "T1" Power Input Terminal.
  14AWG at terminals 1 thru 4 on Accessory Terminal .
  18AWG at terminals 22 thru 25 on "T1" Power Input Terminal.

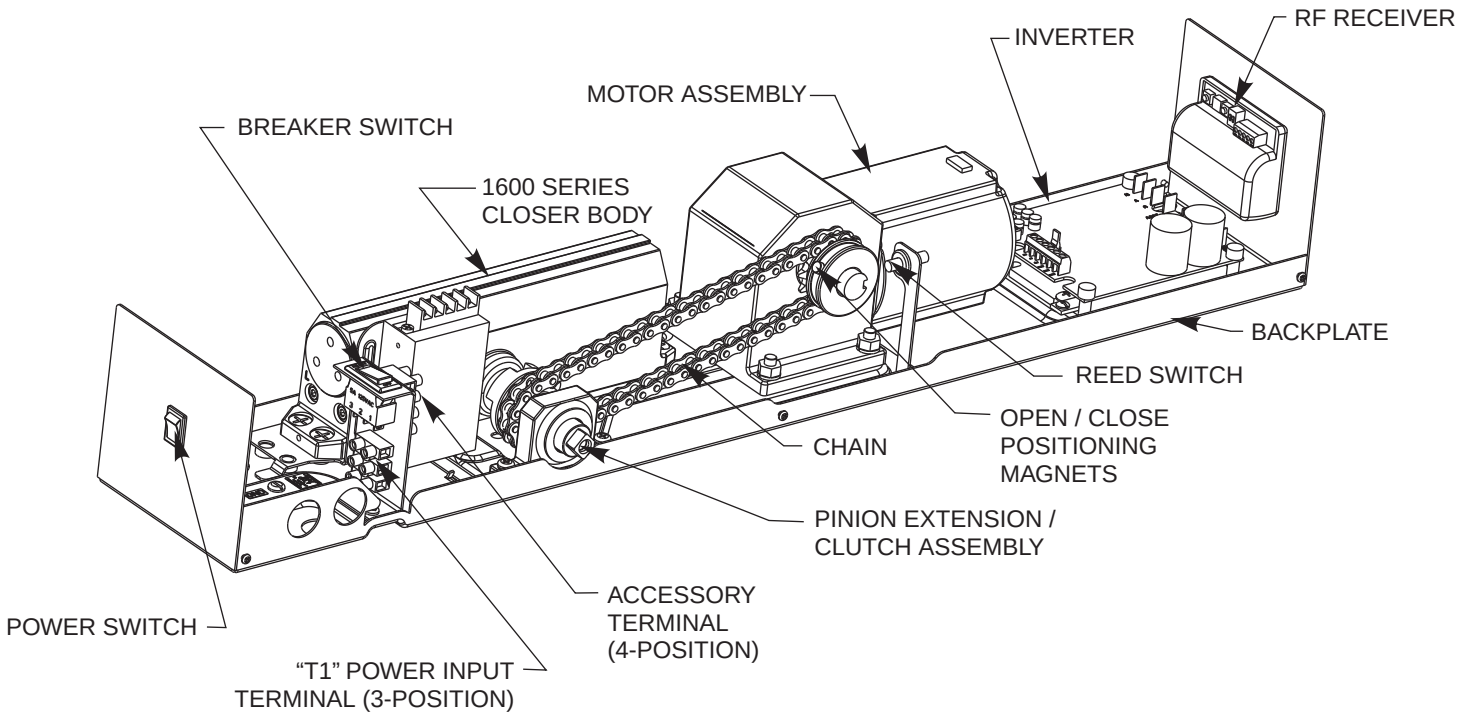
Frame Reinforcement Table

Hollow Metal Door Frame Reinforcing		
Frame Material	Reinforcing	
	Recommended	Min. Required
12 Ga. .1046 (2.66)	**12 Ga. .1046** (2.66)	**18 Ga. .0478** (1.21)
14 Ga. .0747 (1.90)	**10 Ga. .1343** (3.41)	**12 Ga. .1046** (2.66)
16 Ga. .0598 (1.52)	**10 Ga. .1343** (3.41)	**12 Ga. .1046** (2.66)
18 Ga. .0478 (1.21)	**8 Ga. .1644** (4.18)	**10 Ga. .1343** (3.41)

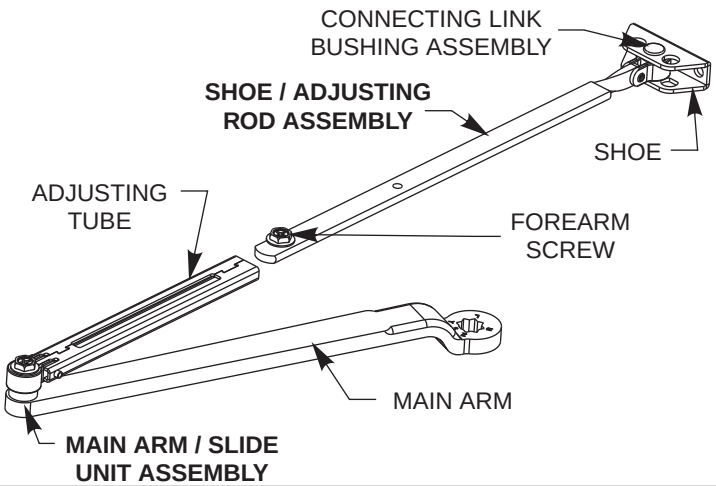
Technical Data

Input power:	**120VAC, 60Hz**
Power consumption:	**.6 amps**
Circuit breaker:	**3 amps**
Power supply:	**24 V DC, max. 1.1 Amp.**
Door width:	**28 - 48" (71-122 cm)**
Door weight:	**100-250 lb. (45-113 kg)**
Door opening angle:	**up to 110° Pull side; up to 170° Push side; Manually to 180° Push/Pull side**
Hold open time:	**5 - 30 seconds (A.D.A. 5 seconds min.)**

Component Layout

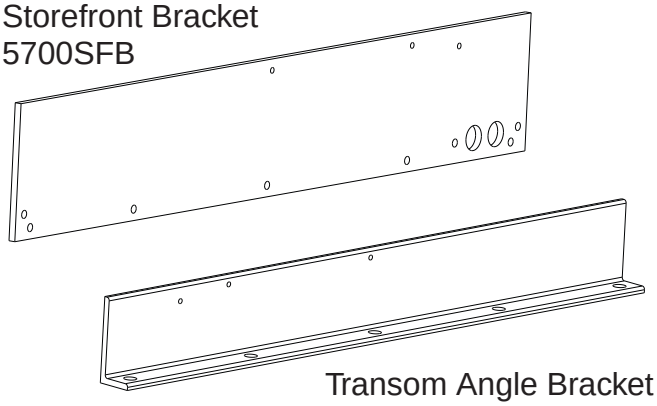


Included with 5730 and 5740



Optional Mounting Support

Storefront Bracket
5700SFB



Transom Angle Bracket
5730TAB

ADA / ANSI / UL Information

Americans With Disabilities Act (A.D.A.)
These door operators can be installed and adjusted to conform with A.D.A. regulations.

ANSI Standards

ANSI A117.1 – These door operators permit door assemblies to conform to the requirements of this specification "for buildings and facilities – **providing accessibility and usability for physically handicapped people"**.

- **ANSI A156.19 –** These products are designed to conform to this specification **"for power assist and low energy power operated doors"**.

U.L. Listing

Underwriters Laboratories, Inc. listed for use on fire and smoke barrier door assemblies when the 120VAC (60Hz) power input is supplied through the normally closed alarm contacts of a compatible UL Listed alarm system or alarm panel.

1. Stop (Push) Side - Initial Frame Holes

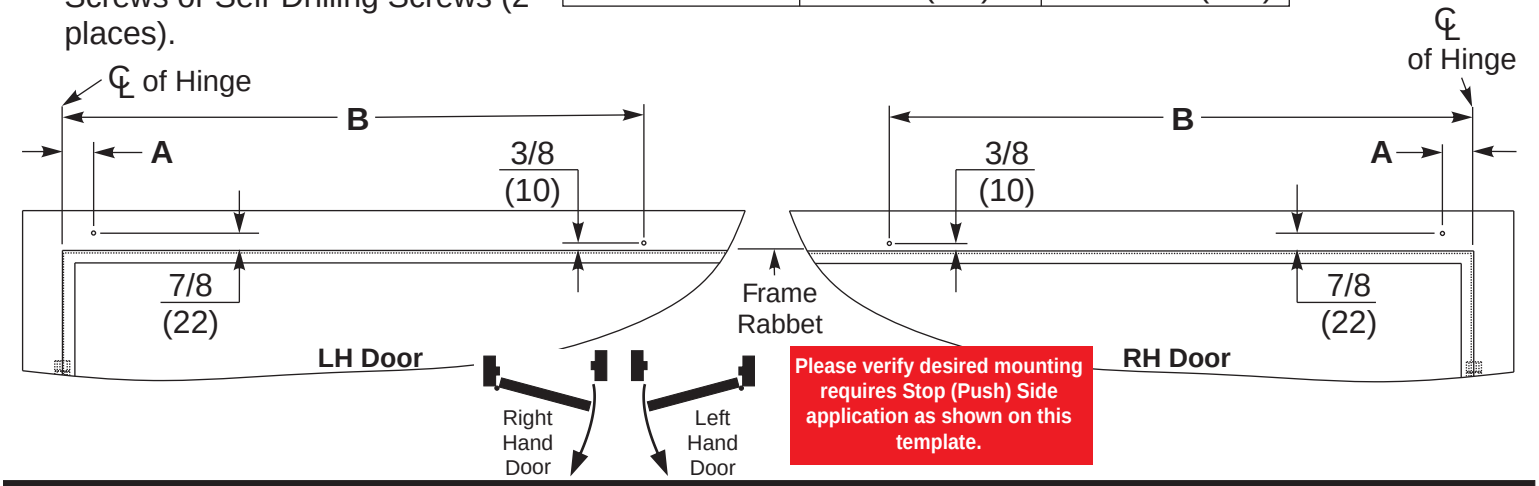
Left hand door illustrated.

A. Using template, locate and prepare holes in the frame.

B. Drill #7 and tap 1/4-20 Machine Screws or Self-Drilling Screws (2 places).

Door Opening Angle	A	B
Up to 110°	1-9/16 (40)	29-3/16 (741)
110° to 180°	-15/16 (-24) *	26-11/16 (678)

* This dimension will be on opposite side of hinge centerline shown below.

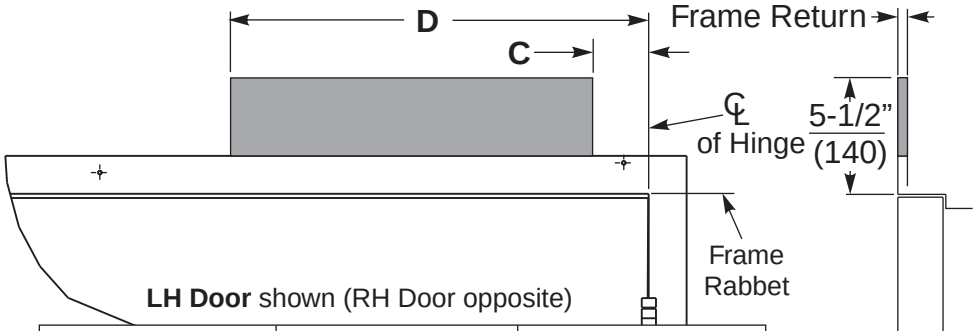


2. Stop (Push) Side - Initial Wall Prep

For wood or masonry framing, blocking (supplied by others) is ***required*** for proper support of operator. Thickness is dependent upon Frame Return. Material must comply with local codes. *Failure to properly support top portion of operator will void warranty.*

A. For wood framing, screw blocking into wall studs.

B. Lab anchoring required for masonry walls.

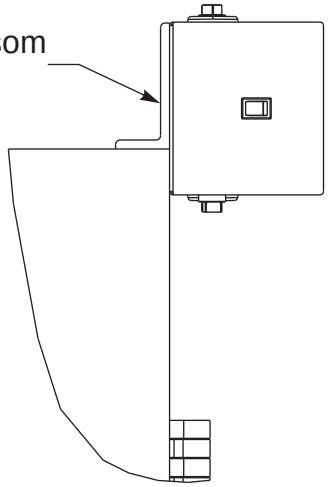


Blocking Material	C max	D min
Up to 110°	4-3/4 (121)	16-1/8 (410)
110° to 180°	2-1/4 (57)	13-5/8 (346)

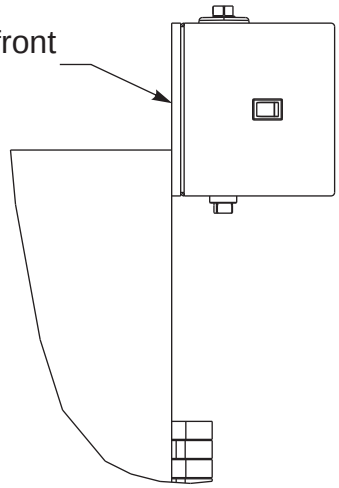
If above Step 2 for Initial Wall Prep is not available, shown to the right are two options:

- Transom Angle Bracket
- Storefront Bracket

Optional Transom Angle Bracket



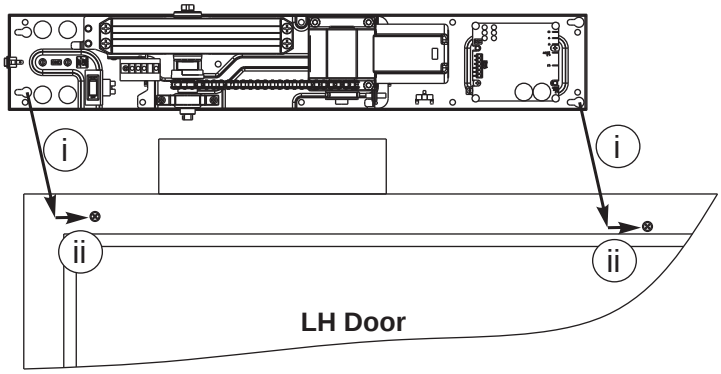
Optional Storefront Bracket

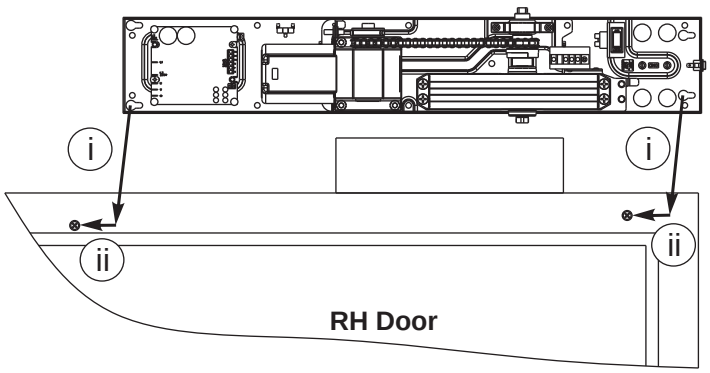


3. Stop (Push) Side - Unit Mounting

A. Install (2) 1/4-20 x 1” machine screws or 1/4” self-drilling screws into holes drilled in Step 1. Leave 1/8” gap between bottom of screw head and frame.
B. i)Install Unit Assembly over screws in previous step and ii) slide Unit Assembly toward Latch edge of door.
C. Secure (2) screws.

Note: Level is incorporated into back plate to aid in installation.



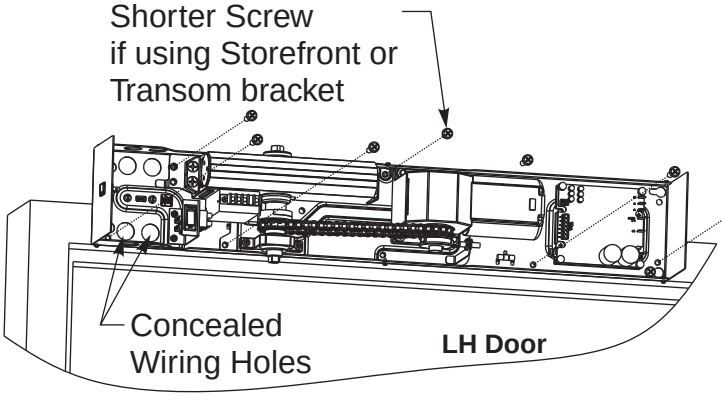


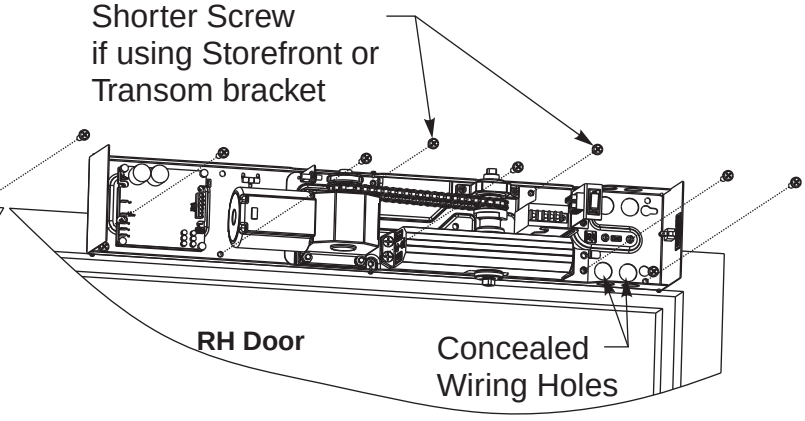
4. Stop (Push) Side - For Concealed Wiring Only

A. Mark conduit holes using back plate as template.
B. Remove back plate.
C. Drill (2) Ø7/8” holes.
D. Install conduit in frame, if desired.
E. Reinstall back plate and secure (2) screws.

5. Stop (Push) Side - Remaining Mounting Screws

A. Using Back Plate as template, locate and prepare holes in the frame.
B. Drill #7 holes and tap 1/4-20 for Machine Screws or Self Drilling Screws (7 places).
C. Install 1/4-20 x 1” machine screws or 1/4” self-drilling screws into holes unless noted otherwise.
D. Flat head screw must be used to go through the mounting hold of the door closer body.
E. Support behind back plate is **required** (see Step 2). If using Storefront or Transom Bracket, LH door will use 1/4-20 x 3/8 flat head screw between closer body and motor; RH door will use (2) 1/4-20 x 3/8 screws for top support holes.





6. Stop (Push) Side - For Surface Wiring Only

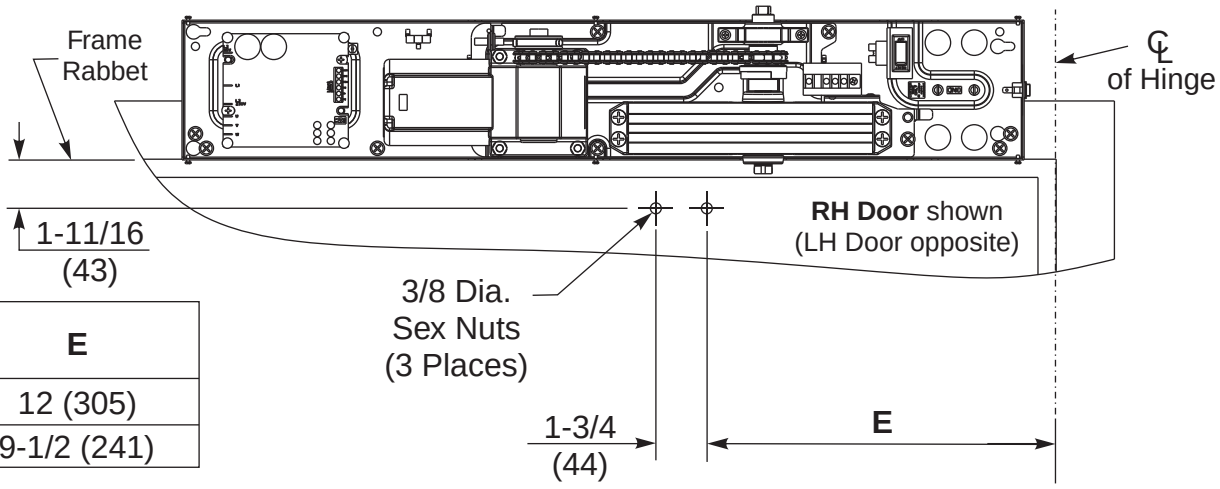
A. Connect wiring conduit to holes in side of back plate.

B. When installing cover, appropriate knockout will need to be removed.

7. Stop (Push) Side - Prep Door for Arm Shoe

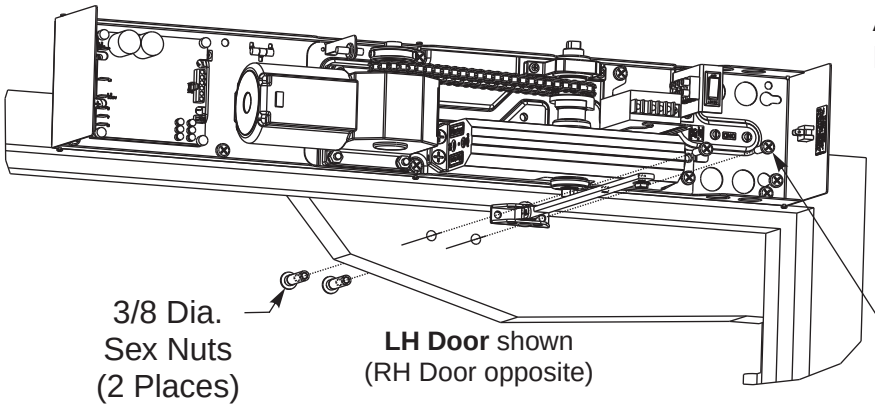
A. Using template, locate and prepare holes in door.

B. Drill 3/8” thru (2 places) for sex bolts.



Door Opening Angle	E
Up to 110°	12 (305)
110° to 180°	9-1/2 (241)

8. Stop (Push) Side - Mount Arm Shoe to Door



A. Place sex nuts through back side of door.

B. Attach arm to door using 1/4-20 x 1” screws.

9. Stop (Push) Side - Attach Arm to Closer

A. Install main arm onto pinion shaft of unit at a 90° angle to the door frame. Align arm mark “S” with the flat corner of the pinion shaft square (see figure 1 at right).

B. Secure main arm to pinion with 1/4-20 Flange Head Screw provided (see figure 2 at right). Tighten screw with 7/16” wrench or socket.

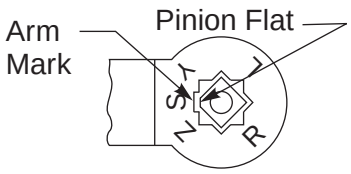


Figure 1

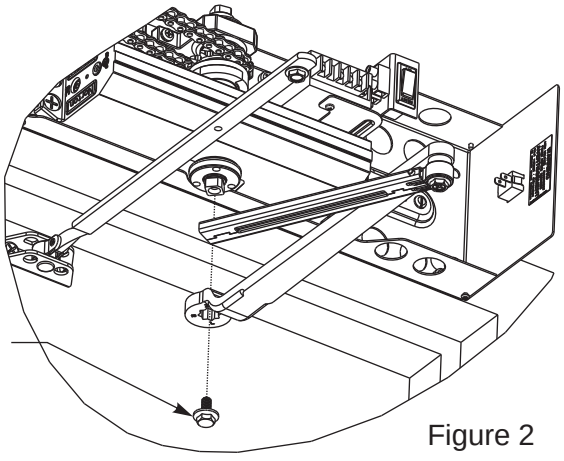


Figure 2

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9. Stop (Push) Side - Attach Arm to Closer Cont.

C. PRELOAD ARM (see figure 3 at right): Remove 1/4-20 hex head screw on adjusting rod and insert adjusting rod into arm slide. Reinstall 1/4-20 screw and leave loose. Rotate main arm away from hinge edge until adjusting rod and arm are perpendicular (at a 90 ° angle) to the doo rframe. Tighten the 1/4-20 hex head screw on the adjusting rod to secure arm in this new position.

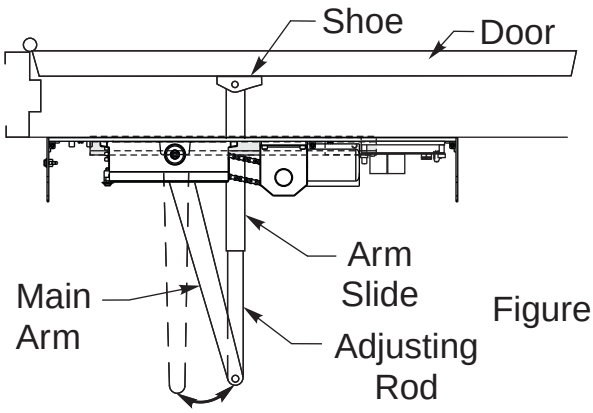
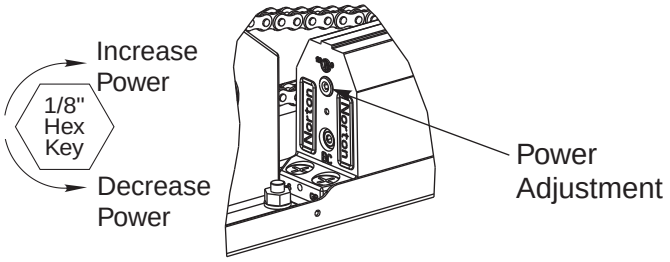


Figure 3

10. Stop (Push) Side - Adjust Closing Power

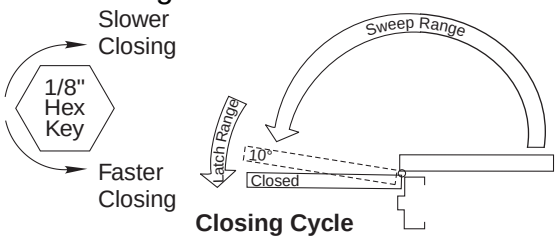
A. Adjust closing power of unit (See illustration at right) - Using a 1/8” allen wrench, turn the power adjustment shaft clockwise to increase door closing power. Door control is shipped set at midpoint of power setting. Maximum closing power can be achieved with 8 (360°) clockwise turns of the power adjustment screw.



11. Stop (Push) Side - Adjust Closing Power

A. Adjust Hydraulic valves using a 1/8” hex wrench to obtain proper door closing speeds. See following illustrations.

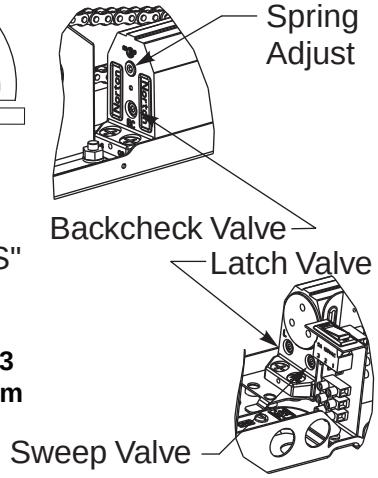
B. Refer to Table 1 below for recommended minimum opening / closing times per ANSI/BHMA A156.19.

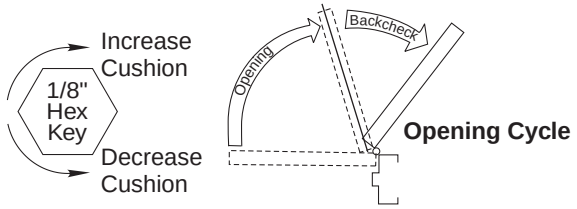


Closing Cycle

Closing Cycle – Make adjustments, as necessary, to the Sweep Speed "S" valve and Latch Speed "L" valve.

Note: A.D.A. requires that from an open position of 70°, the door will take at least 3 seconds to move to a point 3” (75mm) from the latched position, measured at the leading edge of the door.





Opening Cycle

Opening Cycle – Adjust Backcheck, "B" valve, as necessary, for hydraulic resistance to door opening in the backcheck range.

Note: Too much Backcheck, "B" valve, can affect the operation of the units pump, preventing units from fully opening the door. This valve may require fine tuning after all other adjustments have been made.

Table 1 - Minimum Opening / Closing Times for ANSI/BHMA A156.19

Door Leaf Width - Inches (mm)	Door Weight in Pounds (kg)				
	100 (45.4)	125 (56.7)	150 (68.0)	175 (79.4)	200 (90.7)
30 (762)	3.0	3.0	3.0	3.0	3.5
36 (914)	3.0	3.5	3.5	4.0	4.0
42 (1067)	3.5	4.0	4.0	4.5	4.5
48 (1219)	4.0	4.5	4.5	5.0	5.5

Backcheck - adjust the backcheck valve to have a minimum opening time to backcheck or 80 degrees (whichever comes first) based on Table 1.

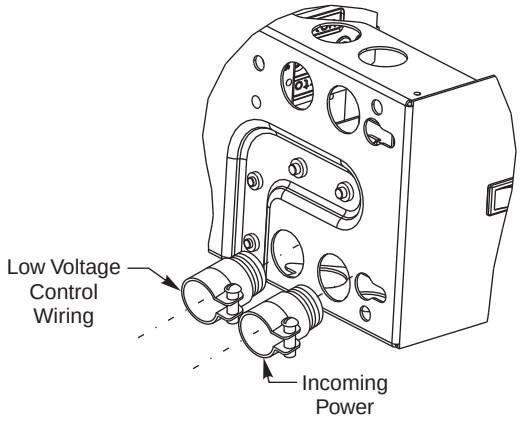
Closing Time - adjust Latch and Sweep valves to have a minimum closing time from 90 degrees to Latch Check or 10 degrees (whichever comes first) based on Table 1.

Matrix values are in seconds.

12. Input Power Configurations

CONCEALED WIRING

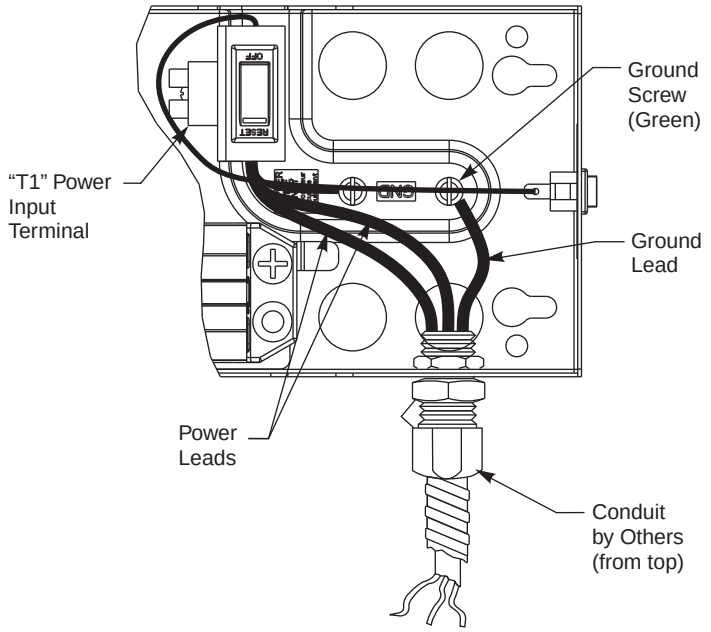
Thread conduit fitting(s) into backplate as shown. A second conduit fitting is required for low voltage control wiring. CHECK LOCAL CODES. Pull conduit out of header and attach to conduit fittings before mounting. Secure operator to door frame. Attach incoming ground wire to backplate with ground screw as illustrated in "Surface Wiring" illustration to the Right.



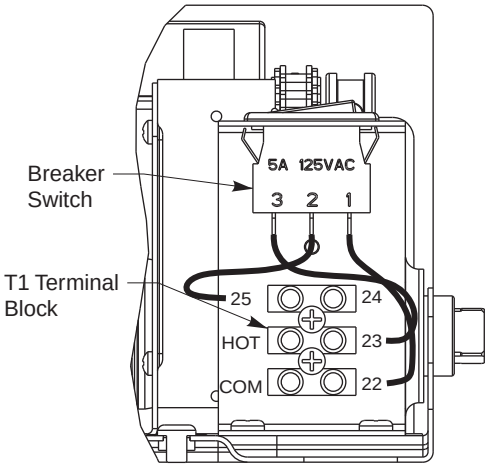
Ground Wire Connection – Ground wire must be secured to backplate under head of (green) ground screw nearest to "T1" Power Input Terminal. Screw labeled "GND".

SURFACE WIRING

Thread conduit fitting(s) into backplate as shown. A second conduit fitting is required for low voltage control wiring. CHECK LOCAL CODES. Pull conduit out of header and attach to conduit fittings before mounting Secure operator to door frame. Attach incoming ground wire to backplate with ground screw as illustrated below.



Terminal	Description
COM	Common power lead
HOT	Hot power lead
25	Circuit Breaker
24	Switch
23	Circuit Breaker
22	Common connection to Circuit Breaker / Inverter



13. Final Electrical and Mechanical Setup

A. Confirm all mechanical adjustments have been made and wiring connected per Page 7 and 8.

B. Turn on facility's main circuit breaker.

C. Turn power to unit on at the Unit Power Switch and turn the Breaker Switch to "RESET".

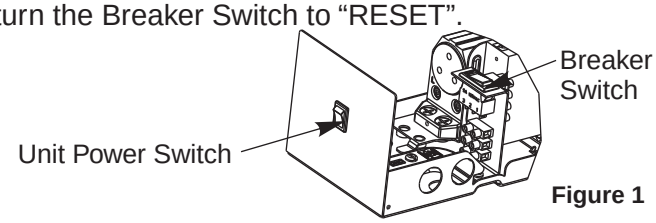


Figure 1

D. Using a short jumper cable, jump terminals 1 and 2, see Fig. 2 below, to activate unit. When door reaches 20°, switch Breaker Switch to "**OFF**" position cutting power to the unit. Allow door to fully close (door may be manually pulled closed).

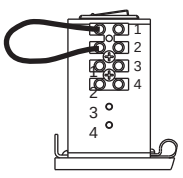


Figure 2

13. Final Electrical and Mechanical Setup Continued

E. Adjust Closing Position Magnet (See Fig. 3) - With door in the closed position, use finger to slide Closed Position Magnet so it aligns directly with the Reed Switch.

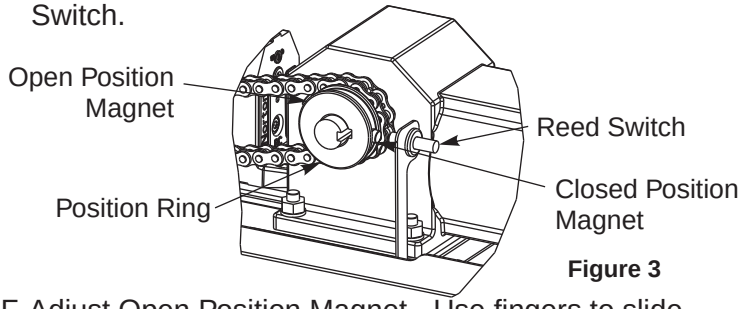


Figure 3

F. Adjust Open Position Magnet - Use fingers to slide

F cont. Open Position Magnet 180° from Open Position Magnet.

G. Flip Breaker Switch to "RESET" to turn power on. Jump terminals 1 and 2 (as shown in Fig. 2) to activate door. Note open position of the door. Allow door to close.

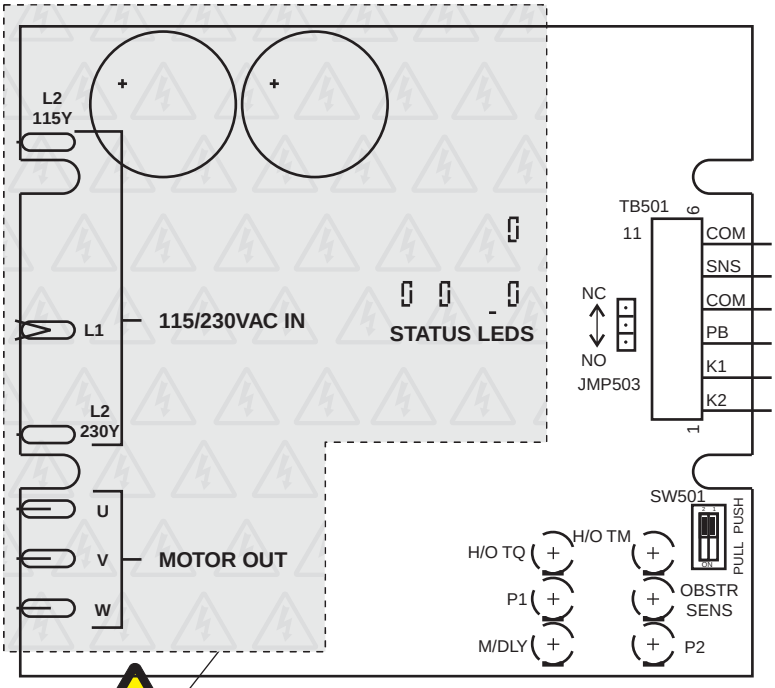
H. Use finger to readjust the Open Position Magnet to desired door open position.

I. Repeat Step G to verify door open position.

J. Make all connections necessary for any accessories to the 4-position Accessory Terminal (see Pages 10-11).

K. Make necessary adjustments to inverter (see Page 9). Replace cover and cover screws.

Inverter Details

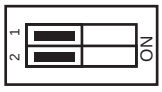


POT	DESCRIPTION	FUNCTION
M/DLY	Motor Delay on Opening	CW - Increase CCW - Decrease
OBSTR SENS	Obstruction Detection on Open	CW - Increase CCW - Decrease
P1	Closing Speed	CW - Increase CCW - Decrease
H/O TM	Hold Open Time (5 - 30 Seconds)	CW - Increase CCW - Decrease
H/O TQ	Motor Torque at Hold Open Position	CW - Increase CCW - Decrease
P2	Opening Speed	CW - Increase CCW - Decrease

Inverter Adjustments:

- Based on function adjustment desired, use table above to determine which POT is to be adjusted.

Dip Switch Settings



1. Door Mounting - ON - pull
   OFF - push
2. Push Recognition - ON - active
   OFF - inactive

(Adjustments made in the shaded area should be performed by Authorized Factory Personnel.)

WARNING
Electric
Shock Risk

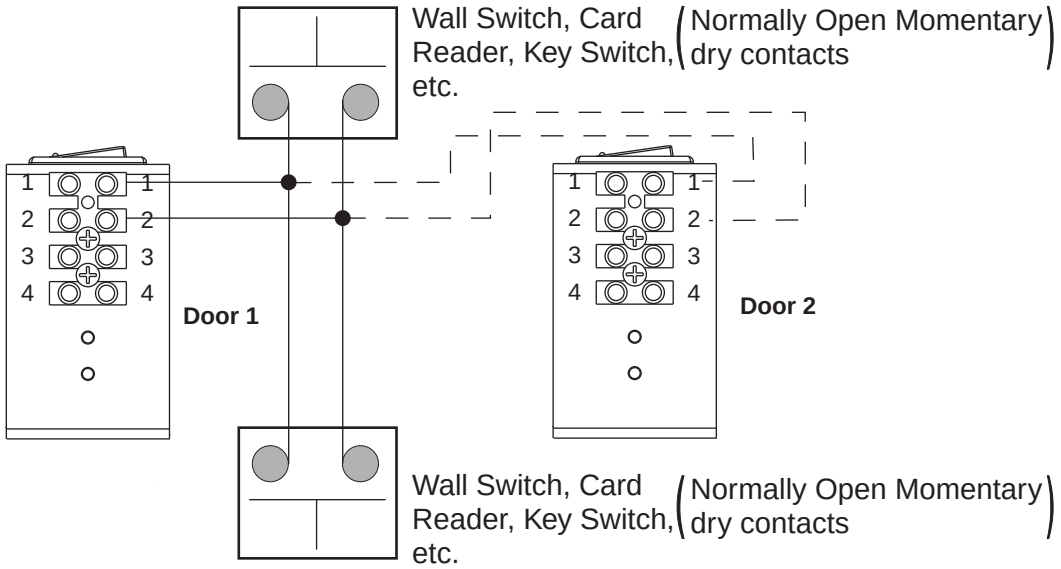
WARNING

120 HIGH VOLT POTENTIAL PRESENT. MAKE SURE POWER IS TURNED OFF DURING INSTALLATION PROCEDURE.

Standard Function with Switches

Notes:
1. Power input to Door Operator Unit is at "T1" Power Input Terminal (not shown) 120VAC 60Hz.

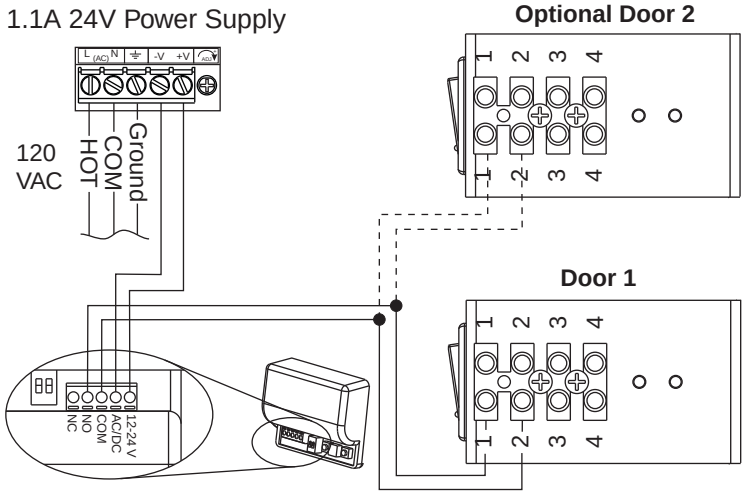
Operation:
- Doors are normally closed.
- Activating either switch will open both doors. Door will close after hold open time delay has elapsed.



Radio Frequency Function Option

Notes:
1. Power input to Door Operator Unit is at "T1" Power Input Terminal (not shown) 120VAC 60Hz.

2. Radio Frequency Feature can be purchased as a separate kit.



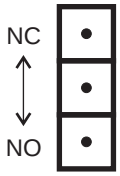
Operation:
- Door is normally closed.
- Activating wireless switch or hand held wireless transmitter will open the door.
- Door will close after hold open delay elapses.

Troubleshooting

Fault	Possible reasons why	Remedies/Explanations
The door does not open - The motor does not start	Control switch is set to OFF position	Change the setting of the ON/OFF switch
	Circuit breaker is set to OFF position	Reset circuit breaker to the ON position
	Electrical power is missing	Check the electrical power switch
	Activation unit does not function	Jump activation input
- The motor starts	Motor is driving in wrong direction	Flip Door Mounting Dip Switch to other direction
	Something jammed beneath the door	Remove object
	Arm has come loose	Re-time and re-install arm.
The door does not close	Spring tension too low	Increase spring tension per preceding instructions
	Arm has come loose	Re-time and re-install arm.
	Something jammed beneath the door	Remove object

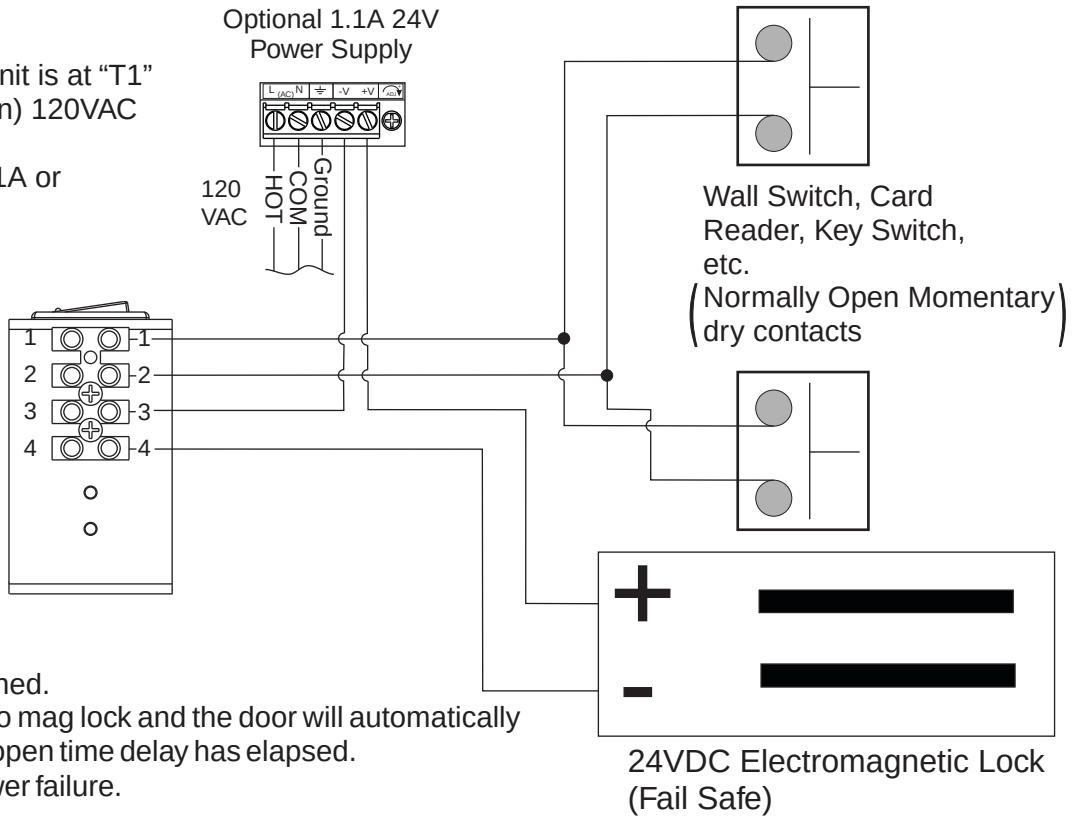
Fail Safe Electromagnetic Lock 24VDC Wiring

Notes:
1. Power input to Door Operator Unit is at "T1" Power Input Terminal (not shown) 120VAC 60Hz.
2. Unit's Relay Rating: 30VDC @ 1A or 125VAC @ .5A



JMP503

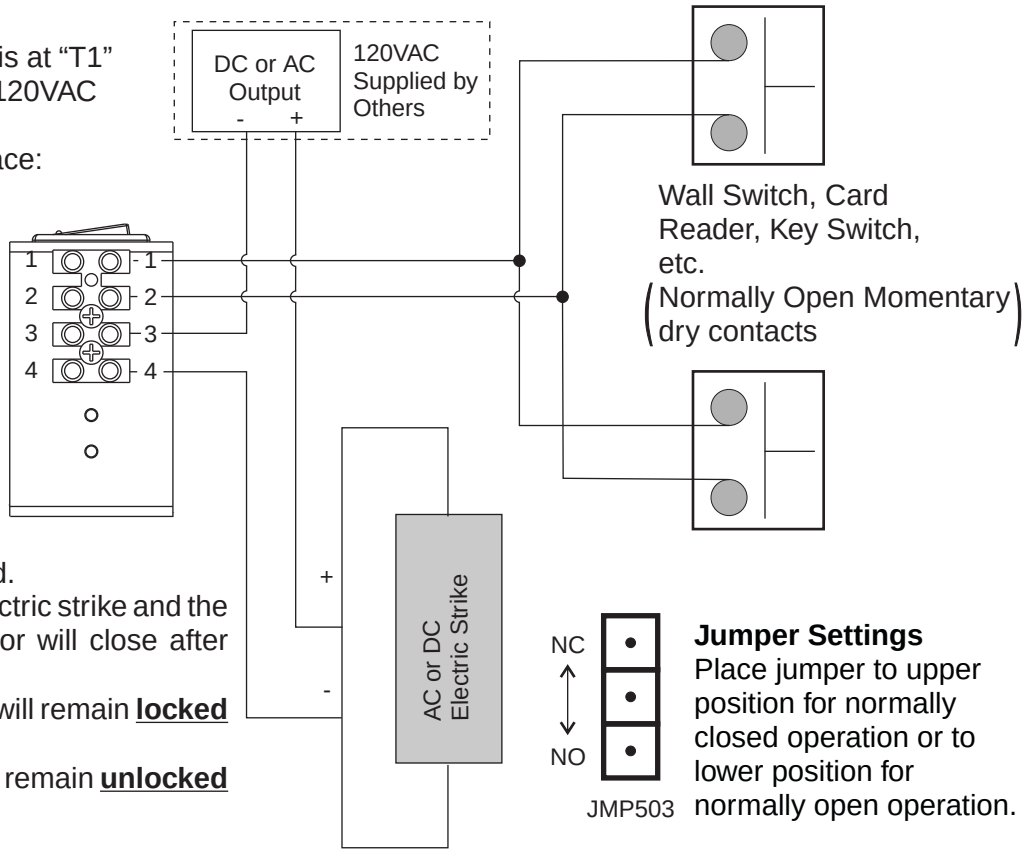
Jumper Settings
Place jumper to upper position for normally closed operation or to lower position for normally open operation.



Operation:
- Door is normally closed and latched.
- Activating switch will cut power to mag lock and the door will automatically open. Door will close after hold open time delay has elapsed.
- The door will **unlock** during power failure.

Fail Secure / Fail Safe Electric Strike Wiring

Notes:
1. Power input to Door Operator Unit is at "T1" Power Input Terminal (not shown) 120VAC 60Hz.
2. Unit's Relay Rating for strike interface: 30VDC @ 1A or 125VAC @ .5A

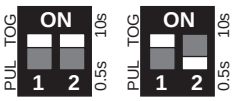


Operation:
- Door is normally closed and latched.
- Activating switch will unlock the electric strike and the door will automatically open. Door will close after hold open time delay has elapsed.
- **For Fail Secure Strike** - The door will remain **locked** during power failure.
- **For Fail Safe Strike** - The door will remain **unlocked** during power failure.

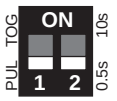
JMP503

Jumper Settings
Place jumper to upper position for normally closed operation or to lower position for normally open operation.

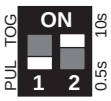
433MHz Receiver User's Guide



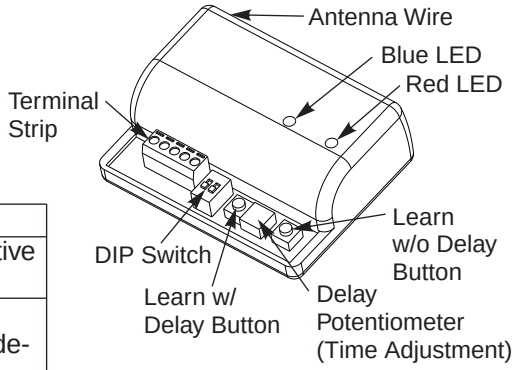
In Toggle Setting (1-ON), the Hold Time is inactive. Either setting for #2 dip switch will have the same result.



0.5 second Pulse Setting



10 second Pulse Setting



#1	Description	Function
OFF	Pulse Relay	Press the transmitter once and the relay will be active momentarily.
ON	Toggle Relay	Press the transmitter once and the relay output is active indefinitely, press it again and the relay will de-energize indefinitely.

#2	Description	Function
OFF	0.5s Hold Time	Relay will remain active 0.5 sec after loss of activation.
ON	10s Hold Time	Relay will remain active 10 sec after loss of activation.

- Always stop pedestrian traffic through the doorway when performing tests that may result in unexpected reactions by the door.
- Ensure compliance with all applicable safety standards upon completion of installation.

Hand-Held Configuration

1. Set dip switches to the receiver to the desired activation cycle (dip switch 1 - Toggle or Pulse and dip switch 2 - 0.5s or 10s hold.
2. Press either Learn w/ Delay Button or Learn w/o Delay Button on the receiver depending on the activation requirements (if delay learn is selected, adjust potentiometer to counterclockwise limit, 0 second delay). Red LED on receiver will flash. After learn cycle is complete, adjust potentiometer to desired delay time (0 - 30 sec).
3. Depress transmitter button repeatedly until Blue LED on the receiver illuminates (indicating reception of signal from transmitter).
   NOTE: Repeat Steps 2 - 3 to program additional transmitters.
4. To test the system, depress transmitter button (Red LED on Transmitter will illuminate) and observe that the Blue LED illuminates on the receiver. This indicates that the relay has been activated.

Push Plate Configuration

1. Before beginning, it is easiest to have already prepared the installation of the push plate.
2. Connect the wires from the transmitter to the NO and COM contacts of the push plate's switch.
3. Follow Steps 1 - 4 (Hand-Held Configuration); depress the push plate to activate the transmitter.
4. Attach the transmitter to the inside of the electrical box and complete the installation.

Removing Transmitter Code(s)

Single Transmitter Code:

- Press both Delay and No Delay Buttons simultaneously until Red LED flashes once (approximately 1 second).
- Press transmitter button twice within 10 seconds and the transmitter code will be deleted.

All Transmitter Codes:

- Press and hold both Delay and No Delay Buttons simultaneously until Blue LED illuminates then release (approximately 10 seconds).

Troubleshooting

Problem: The LED on my receiver is just flickering and I'm unable to program and/or it won't work.

Solution: You have a push plate stuck or faulty transmitter. Disconnect each push plate until the LED goes out. If LED does not go out, remove each transmitter battery until it does. Replace the appropriate transmitter.

Problem: Receiver intermittently doesn't receive the transmitter(s) signal.

Solution: You may extend the receiver antenna wire only in multiples of 6-3/4" (171), i.e. 6.75 x 4 = 27" (686) of extended antenna wire.

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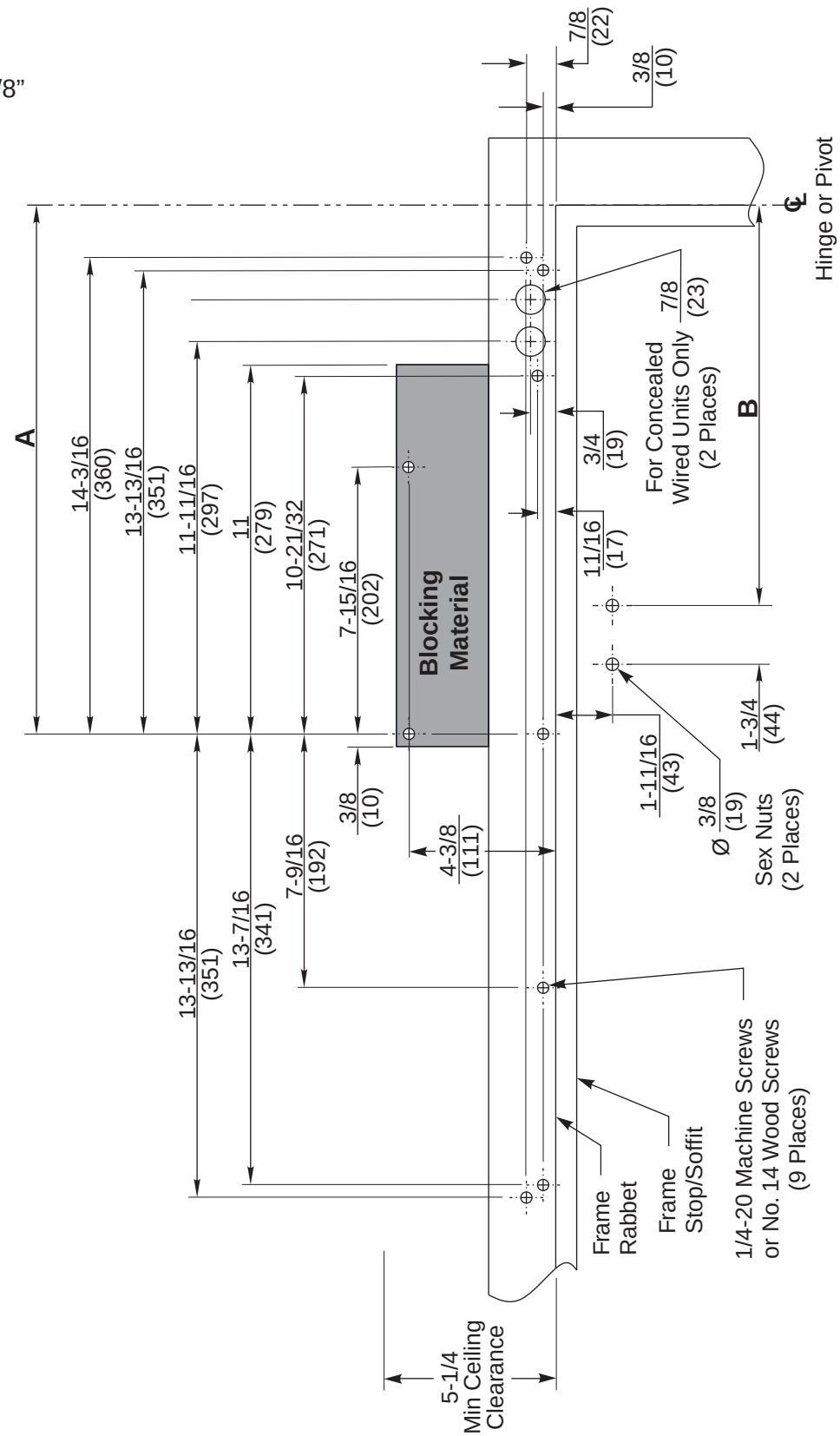
Removable Template - Stop (Push) Side - RH Door

- Do not scale drawing.
- Right hand door shown.
- All dimensions given in inches (mm).
- Maximum frame reveal is 1/8" (3 mm) for this application.

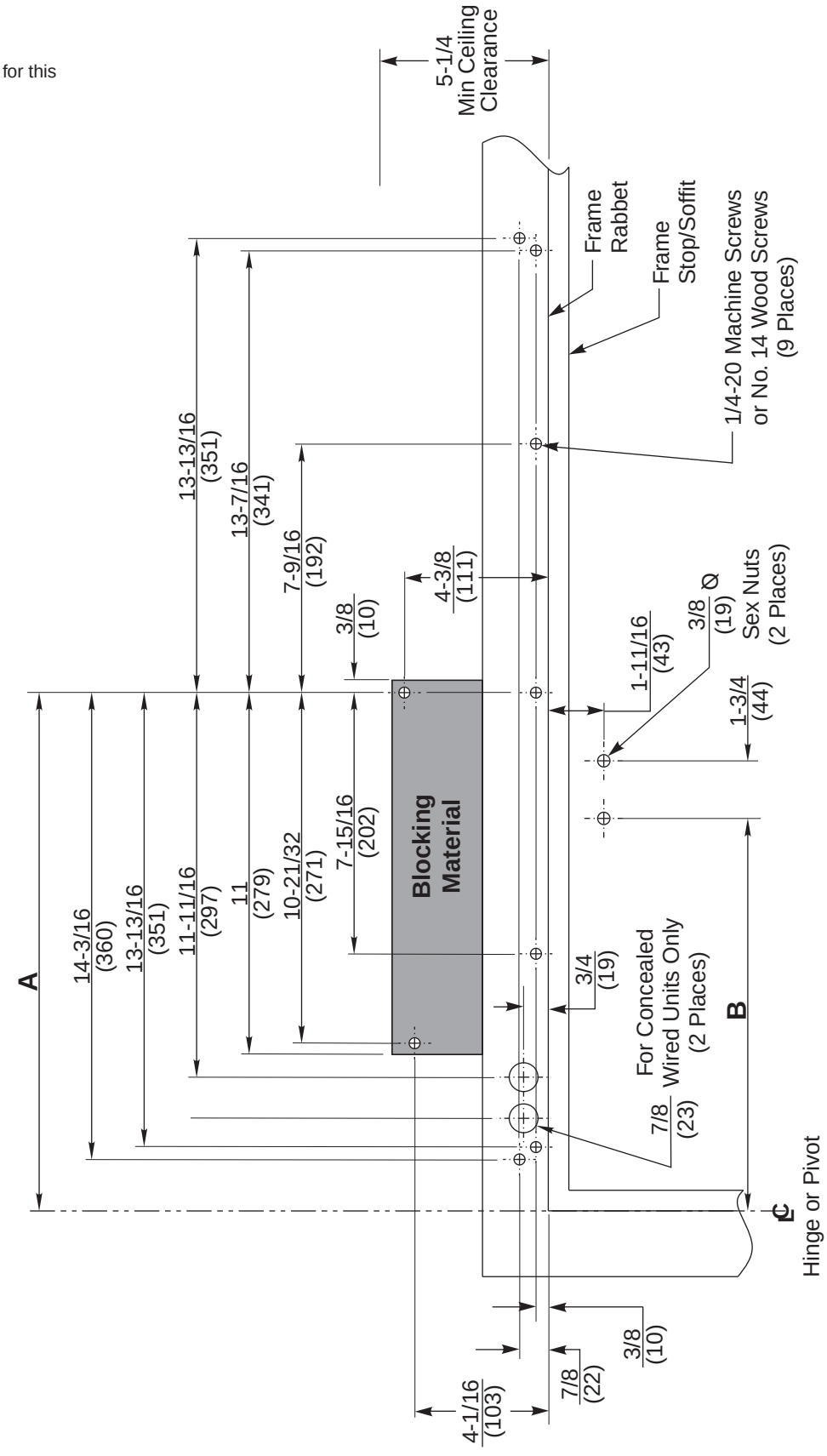
Door Opening Angle	A	B
Up to 110°	15-3/4 (400)	12 (305)
110° to 180°	13-1/4 (337)	9-1/8 (241)



Removable Template - Stop (Push) Side - LH Door

- Do not scale drawing.
- Left hand door shown.
- All dimensions given in inches (mm).
- Maximum frame reveal is 1/8” (3 mm) for this application.

Door Opening Angle	A
Up to 110°	15-1/2 (394)
110° to 180°	13-1/4 (337)



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