

Auto *EntryControl*[™]

Low Energy Swing Door Automatic Operator

AUTOM SERIES INSTALLATION GUIDE For Surface Mounted Applications





IMPORTANT NOTE

READ THIS SECTION BEFORE PROCEEDING WITH INSTALLATION

Security Door Controls (hereafter referred to as “SDC”) recommends that its automated pedestrian door products be installed by a trained automatic door technician and that the resulting performance of the product be in full compliance with the most current version of the American National Standards Institute (ANSI) document A156.19 as well as any applicable building codes and/or fire codes. SDC further recommends that a full inspection of the operating system be performed in accordance with the guidelines of the American Association of Automatic Door Manufacturers (AAADM). SDC recommends this documented inspection be performed upon completion of the installation, as well as following the completion of every service call thereafter. If service is not performed within one year of the previous service action, a routine AAADM inspection should be performed and documented. SDC does NOT recommend service on any of their automated pedestrian door products by any individual who is not certified as an AAADM inspector.

Following the installation or service of any SDC automated pedestrian door product, if it is deemed unsafe, or is operating in an unsatisfactory manner according to national performance standards or recommended performance guidelines as defined by SDC, repairs should be made immediately. If an immediate repair cannot be made, the product should be disabled and appropriate measures should be taken to secure the door in a safe position or to enable the door to safely be used manually. During this situation, every effort should be made to notify the owner (or person responsible) of the condition and to advise on corrective actions that must be taken to return the product to safe operation.

LOW ENERGY APPLICATION NOTE

When using the *Auto EntryControl™* Series, SDC recommends the use of a door-mounted presence sensor, like the *SDC Auto-IR™*, on the approach side of the door to be used as a secondary activation device. This type of sensor can be installed at time of installation or can also be retrofitted. This device serves to re-activate the door to the open position should a person enter into the closing path at the approach side of the door as it is closing. Once the door is fully closed, a "knowing act" device must then be used for initial activation. SDC considers this device to be essential in reducing the possibility of doors "timing out" and closing before all pedestrians have passed through the doorway.



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PRODUCT DESCRIPTION & SPECIFICATIONS

The SDC *Auto EntryControl*™ Low Energy Swing Door Operator provides safe and reliable point of entry door control featuring a state-of-the-art microprocessor-based controller with electro-mechanical drives. The unit is self-tuning and self-learning while offering non-handed operation, full mechanical stops, and a variety of interface options for sensors, push-plates, fire alarms, and electrified locks. A versatile, slim-line design makes it suitable for surface mounted (Push/Pull) applications.

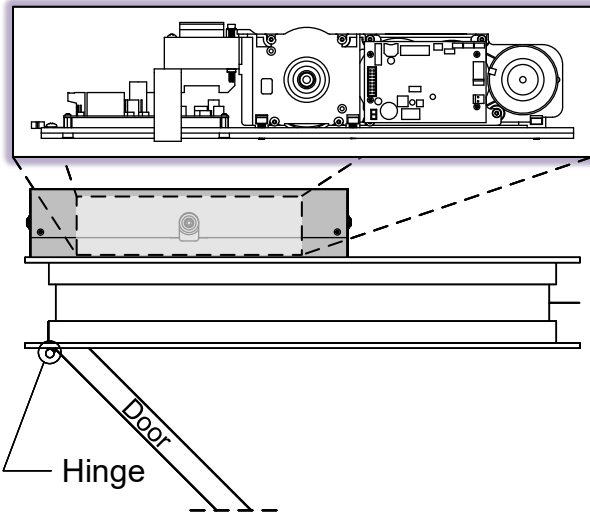
Power Supply	115 VAC (+6%, -10%) 60Hz		
Power Consumption	100W		
Current Consumption	1A		
Motor	24 VDC Permanent Magnet With Belt Driven Encoder		
Installed Product Dimensions	- Length (from mounting wall): 4-7/8" - Height: 4-1/2" - Width: 22-7/8"		
Fused Protection	3.5A Fuse ("F1" located on I/O Board)		
Drive Unit Assembly Weight	22 lbs. Per Operator Drive Assembly		
Ambient Operating Temperature	-4° to 131° F		
Ingress Protection	IP23 (protection from spray water up to 60° from vertical)		
Maximum Door Weight		<u>Push Arm</u>	<u>Pull Arm</u>
	- 36" Door:	438 lbs.	342 lbs.
	- 42" Door:	328 lbs.	256 lbs.
	- 48" Door:	254 lbs.	198 lbs.
24 VDC Accessories/Lock Power Supply	24 VDC / 1A max.		
Adjustable Speeds & Timers Potentiometers	- Auto Opening Speed - Auto Closing Speed - Hold Open Time - Closing Speed w/Power Off		
External Selector Switch Functions	- Automatic - Hold Open - Manual Mode (Off) or Night Mode (Exit Only)		
Standard Control Outputs	- 24 VDC Power Supply - Lock Relay - Door Status (Fully Open and Fully Closed)		
Standard Control Inputs	- Interior & Exterior Activation - Access Control System Interface - Emergency Shutdown - Fire Alarm Input - Secondary Activation (Push side door mounted presence sensor) - Stop Safety Device Input (Pull side presence sensor)		

STEP 1: DETERMINE MOUNTING POSITION

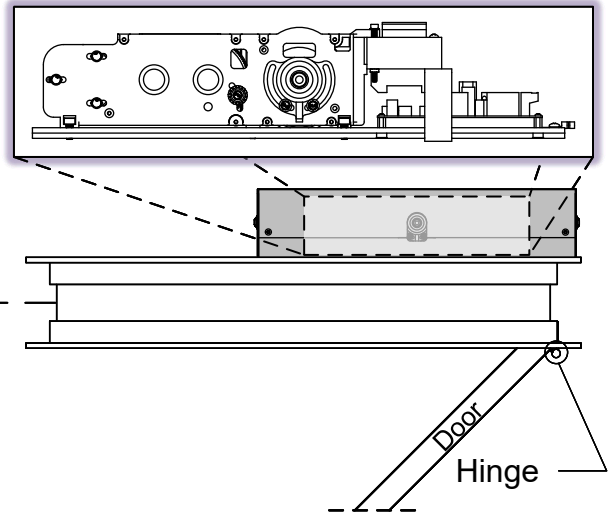
Push Application

I/O Board towards the hinge side of door

Left Hand Reverse (Push)



Right Hand Reverse (Push)

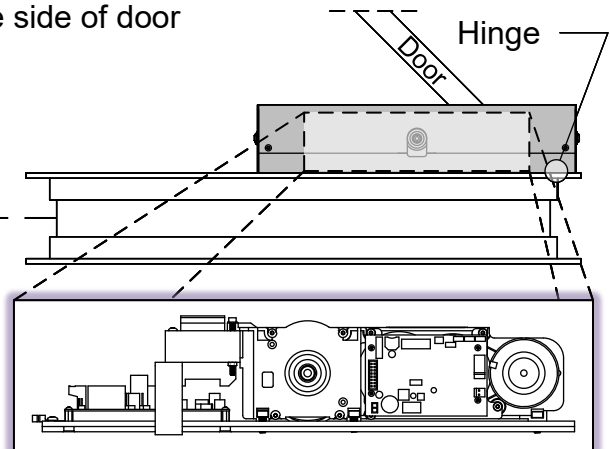
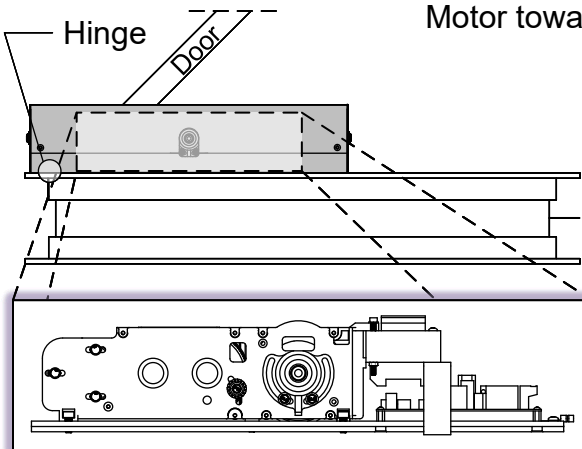


Interior

Exterior

Pull Application

Motor towards the hinge side of door

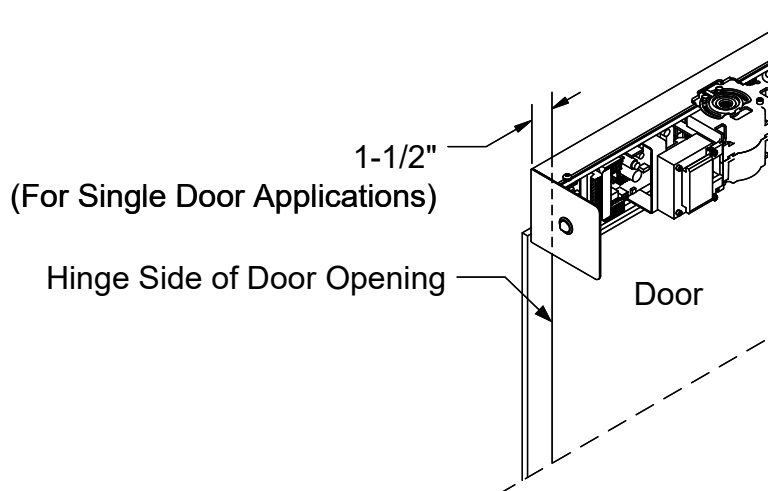


Interior

Exterior

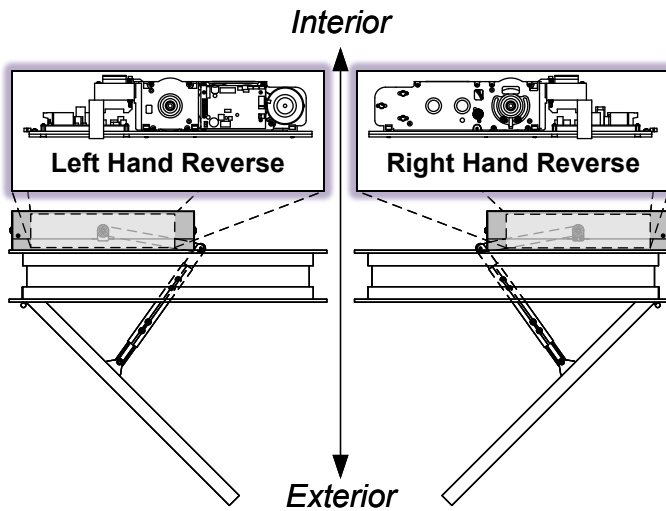
Left Hand (Pull)

Right Hand (Pull)



STEP 1: DETERMINE MOUNTING POSITION

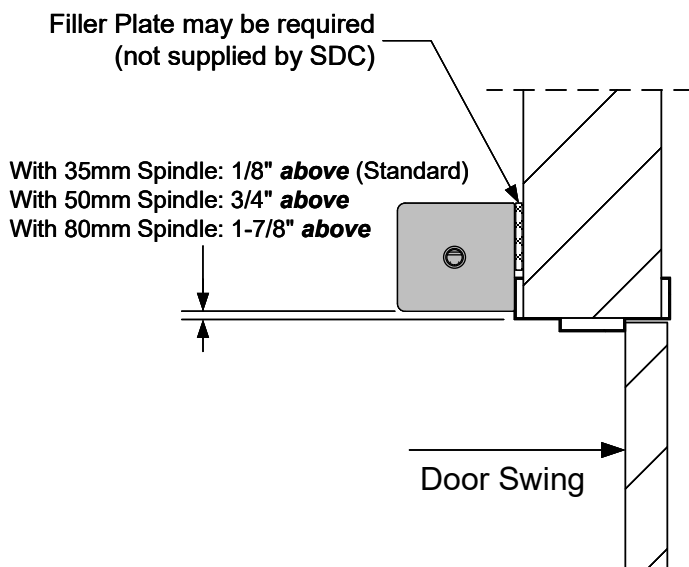
Push Application



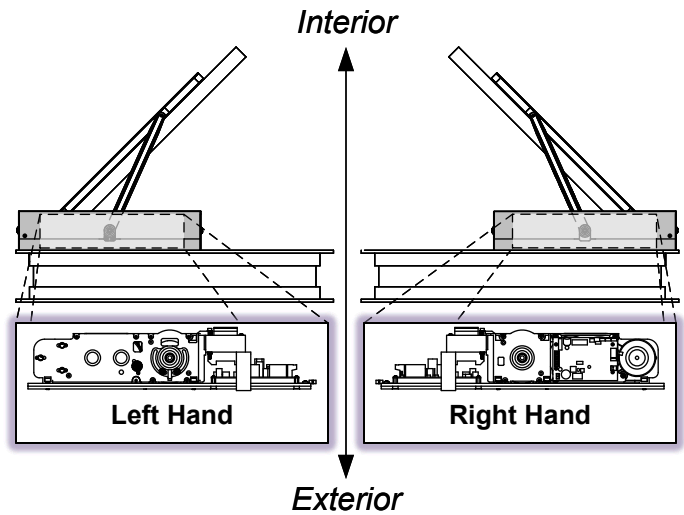
Note: Push Arm shown for clarity. Do not install arm during this step.

Push Arm Applications

Mount the Operator as shown below. The height of the bottom face of the Housing Baseplate in relation to the top of the door opening is dependent on the Spindle length (35mm Spindle supplied).



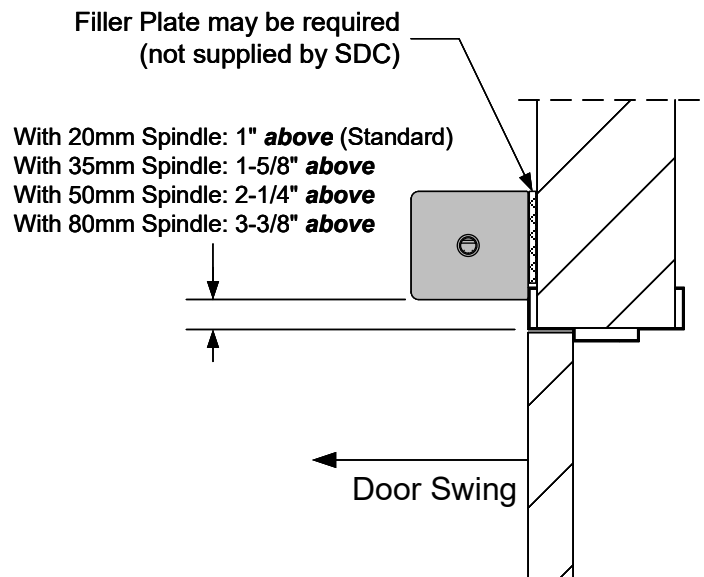
Pull Application



Note: Pull Arm shown for clarity. Do not install arm during this step.

Pull Arm Applications

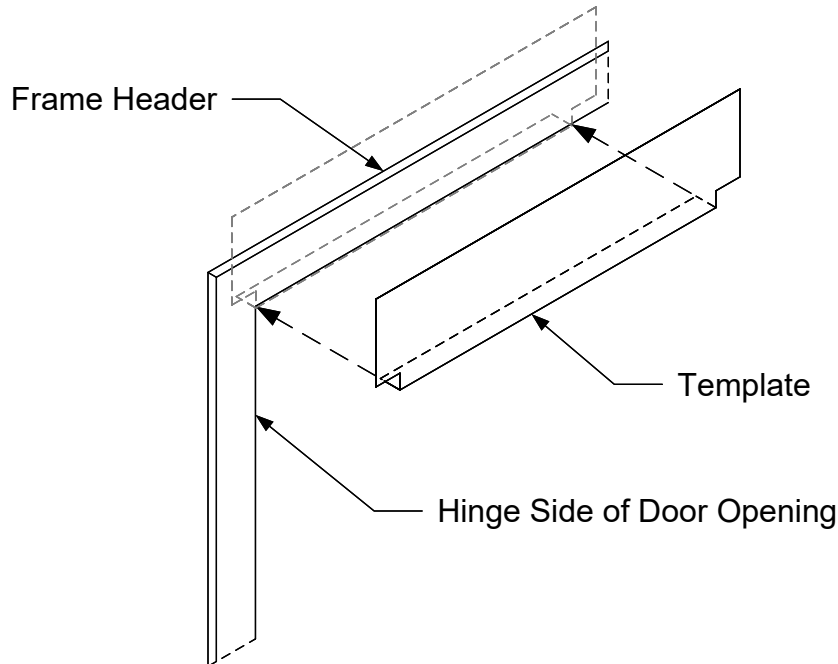
Mount the Operator as shown below. The height of the bottom face of the Housing Baseplate in relation to the top of the door opening is dependent on the Spindle length (20mm Spindle supplied).



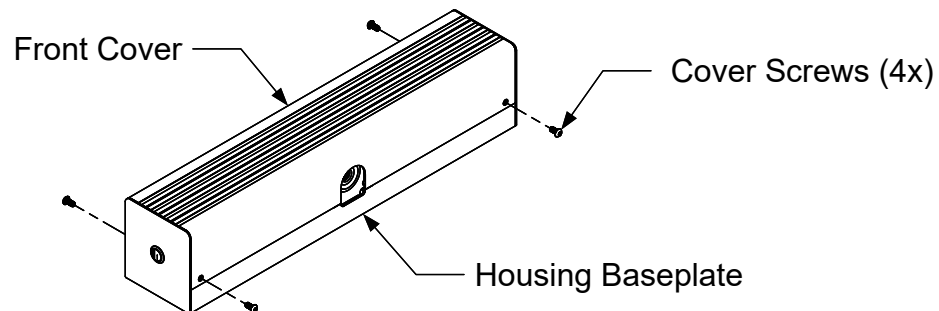
Note: A reinforcement filler plate may be required to mount the Housing Baseplate flush against the wall (not supplied by SDC).

STEP 2: INSTALL OPERATOR

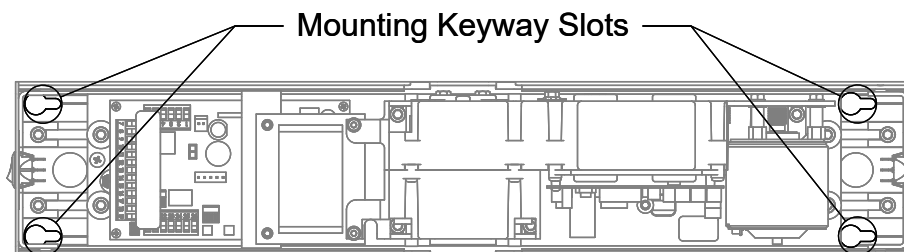
Fold supplied Template along appropriate line for either Push or Pull model. Place Template on Frame with the folded tab under the Frame Header and the edge aligned with the hinge side of door opening. Mark hole locations. Fasten supplied Mounting Screws partway into the wall at marked locations.



Using a 5/32" Allen wrench, Remove the Front Cover by removing the 4 hex screws on the top & bottom of the operator.



Install Operator onto Mounting Bolts using the keyway slots. Tighten Mounting Screws to secure in place.





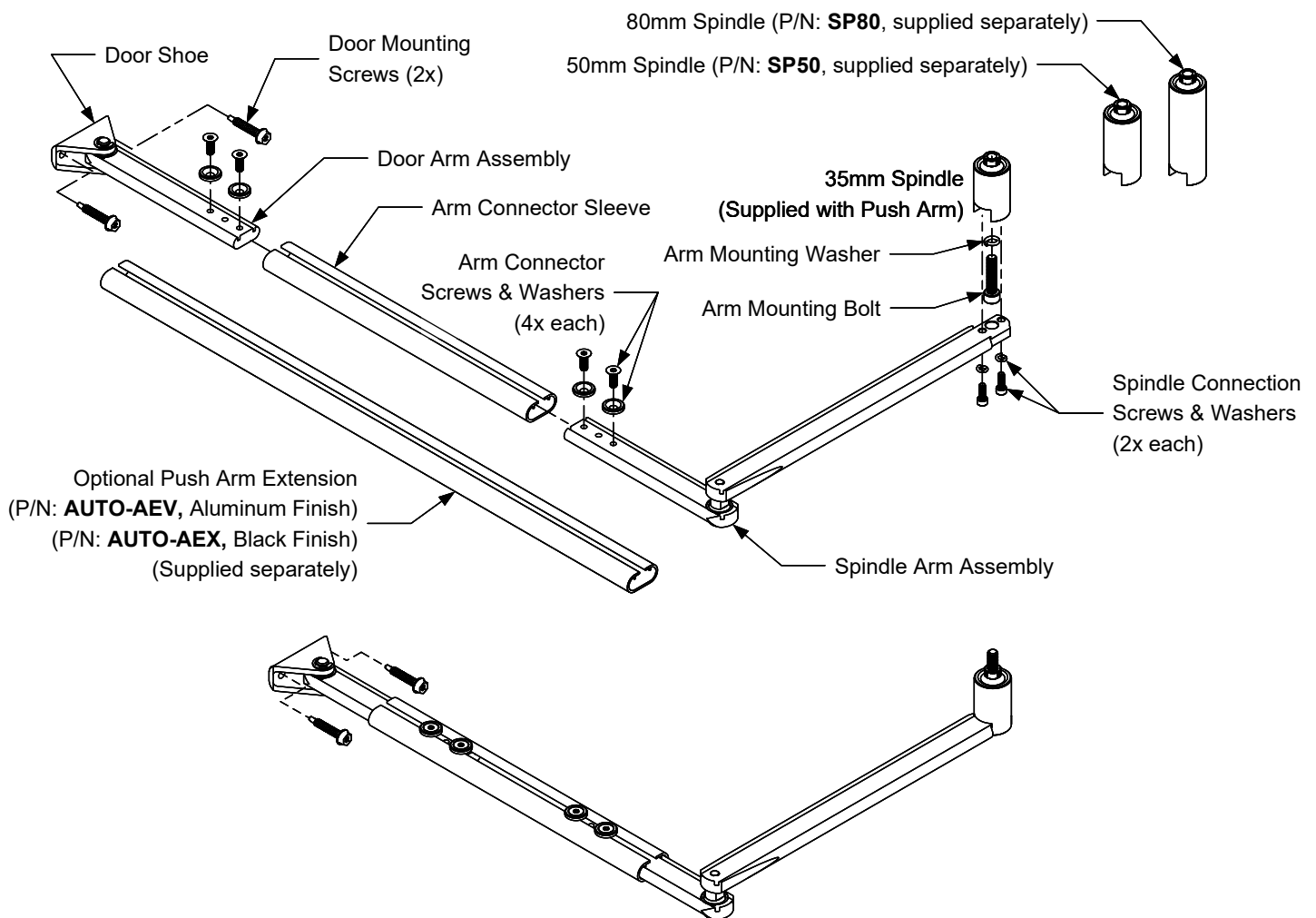
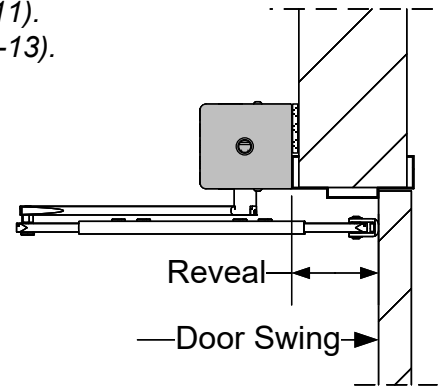
STEP 3A: INSTALL THE ARM ASSEMBLY – PUSH APPLICATION

For Pull Applications with less than 1/2" Reveal, refer to Step 3B (pages 10-11).

For Pull Applications with more than 1/2" Reveal, refer to Step 3C (pages 12-13).

The Push Arm is meant for use on Out-Swing doors.

Assemble the Push Arm as shown below. Push Arm Application models are supplied with a 35mm Spindle & a 12" Arm Connector Sleeve. Different length Spindles are sold separately. For Hinge Hung Doors with Reveals greater than 8" or Center Pivoted Doors with Reveals greater than 5", a separately purchased Push Arm Extension is required (refer to diagrams on page 8).



Assembled Push Arm

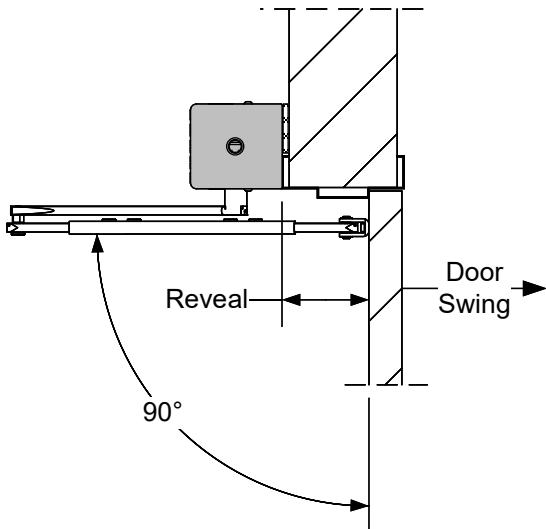
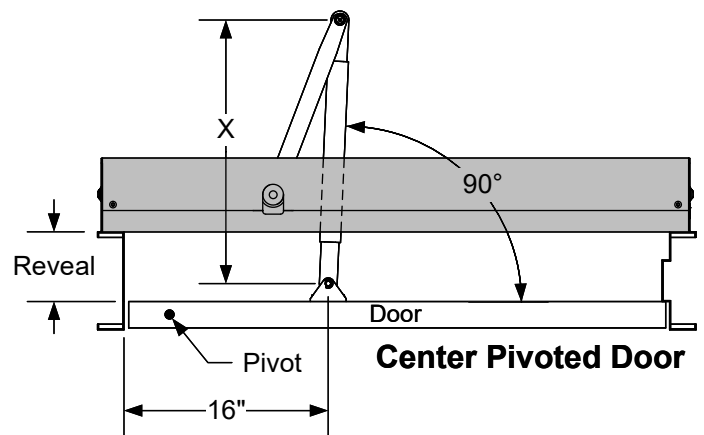
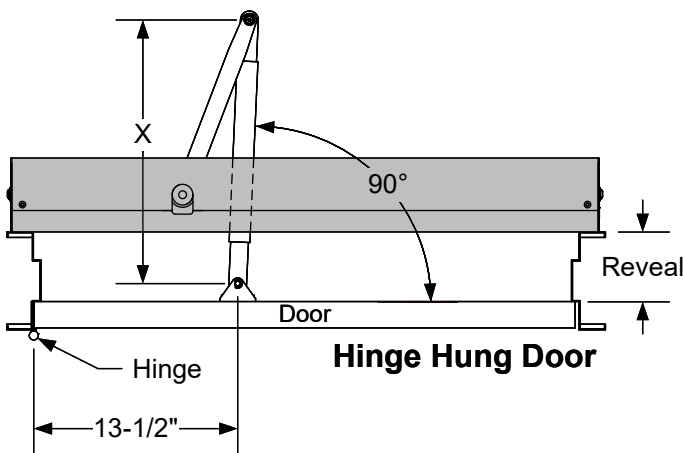
Note: For Fire Rated Doors, use supplied Sex Bolts and Pan Head Screws to mount the Arm to the Door. Refer to Appendix C (page 27) for additional Fire Door installation procedures.

The length of Dimension X will vary depending on the "Reveal" distance, or the distance between the back of the Housing Baseplate and the closest face of the door (refer to diagram and chart below).

Installation dimensions are different for Hinge Hung Doors and Center Pivoted Doors:

- **For Hinge Hung Doors**, the centerline of the Door Shoe should be about 13-1/2" from the hinge-side edge of the door.
- **For Center Pivoted Doors**, the centerline of the Door Shoe should be about 16" from the hinge-side edge of the door.

With the door closed, the Door Arm should be at *approximately* 90° to the face of the door both horizontally and vertically.



Reveal	Hinge Hung X Dimension	Center Pivoted X Dimension
0"	13"	16"
1"	14"	17"
2"	15"	18"
3"	16"	19"
4"	17"	20"
5"	18"	21"
6"	19"	Use Push Arm Extension
7"	20"	
8"	21"	
>8"	Use Push Arm Extension	
Use an Push Arm Extension for Reveal distances greater than 8" on a Hinge Hung Door or 5" on a Center Pivoted Door (supplied separately)		

Note: If the reveal falls between two of the values on the chart, use [Reveal Dimension + 13"] for hinge hung doors, or [Reveal Dimension + 16"] for Center Pivot doors.

IMPORTANT NOTE: After full installation, manually hold the door open and move the Mechanical Closed Door Stop to the fully closed position (see page 14). This will provide a preload and ensure the device is programmed to rotate until stopping on the frame door stop.

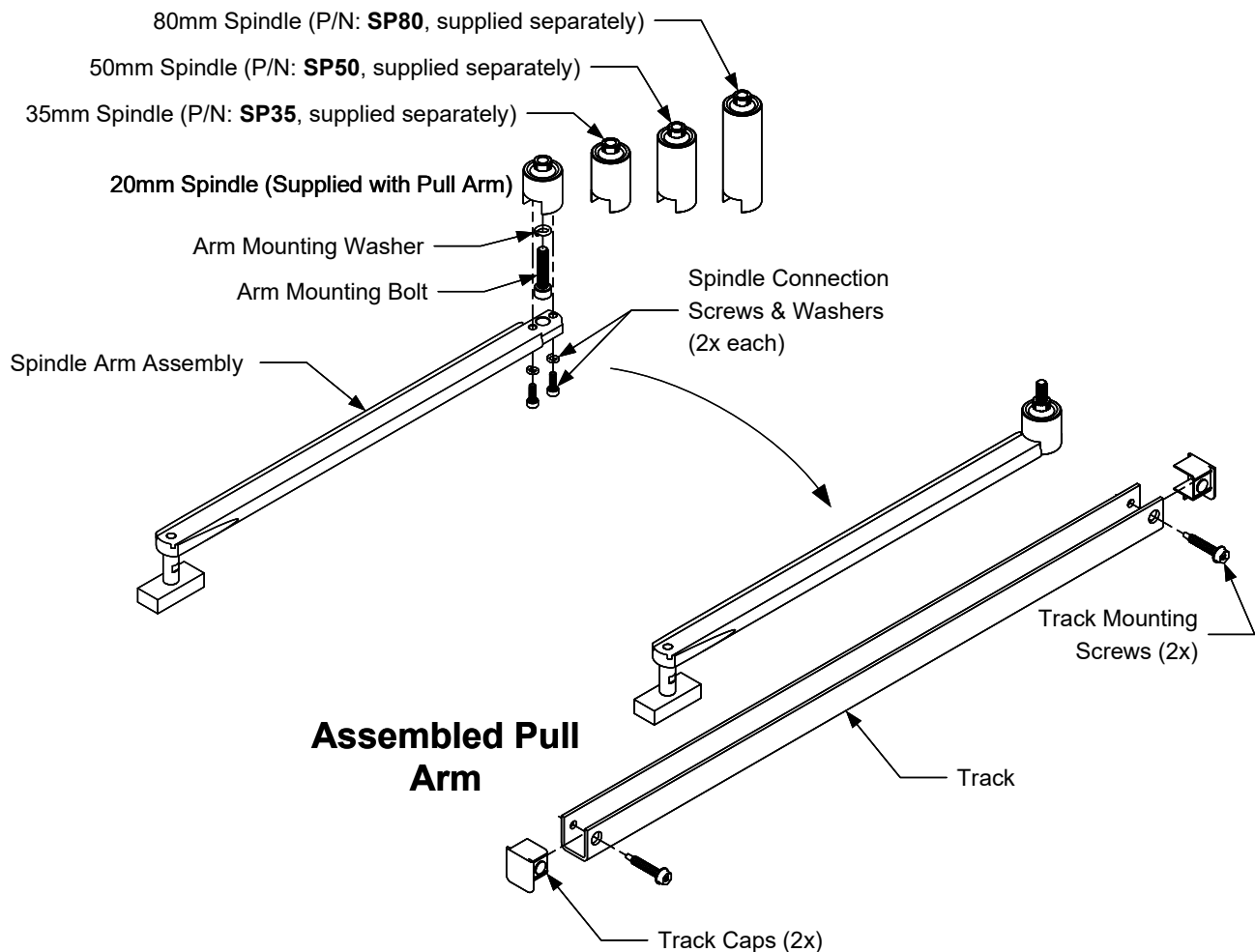
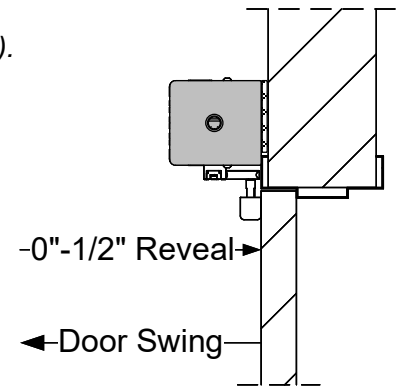
STEP 3B: INSTALL THE ARM ASSEMBLY – PULL APPLICATION

For Push Applications, refer to Step 3A (pages 8-9).

For Pull Applications with more than 1/2" Reveal, refer to Step 3C (pages 12-13).

The Pull Arm is meant for use on In-Swing doors with a 0" Reveal. It is crucial that the door-side face of the Pull Arm Track be flush with the face of the door frame. **NOTE: For Reveals greater than 0" but less than 1/2", the Pull Arm Track needs to be shimmed from the door to be flush with the door frame (spacer by others).**

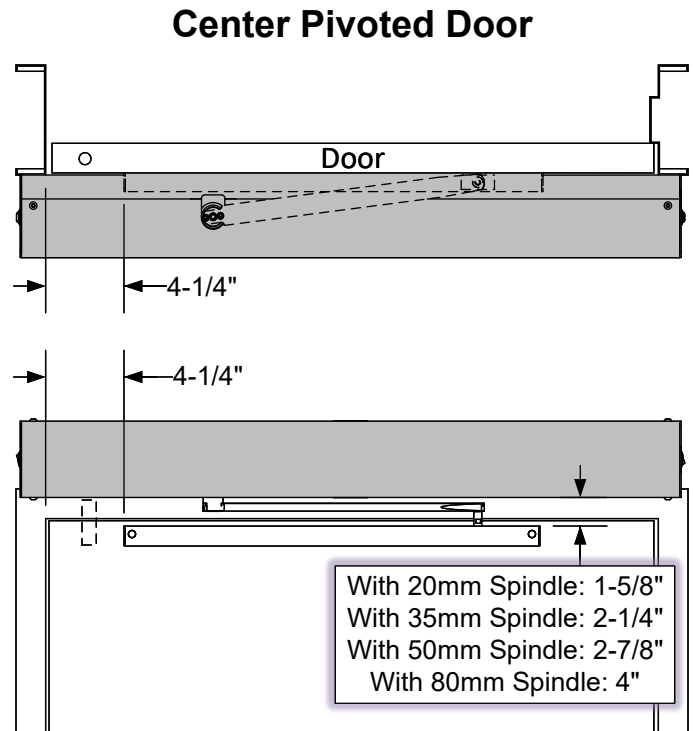
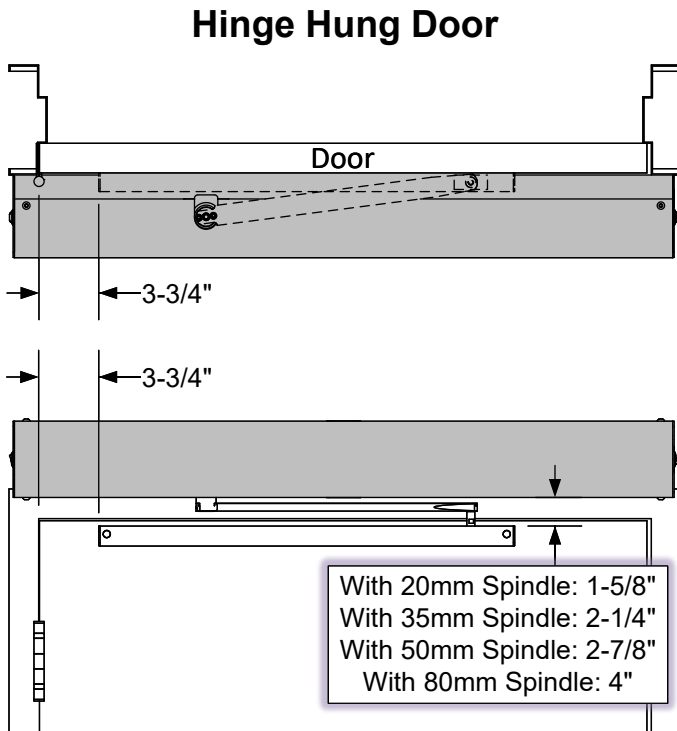
Assemble the Pull Arm as shown below. Pull Arm Application models are supplied with a 20mm Spindle. Different length Spindles are supplied separately (Note: the Spindle **should not** hang below the top of the Door).



Note: For Fire Rated Doors, use supplied Sex Bolts and Pan Head Screws to mount the Track to the Door. Refer to Appendix C (page 27) for additional Fire Door installation procedures.

Installation dimensions are different for Hinge Hung Doors and Center Pivoted Doors:

- **For Hinge Hung Doors**, the edge of the Track should be 3-3/4" from the door opening on the hinge side.
- **For Center Pivoted Doors**, the edge of the Track should be 4-1/4" from the door opening on the hinge side.



(Spindle Length Note: The bottom of the Spindle **should not** hang below the top face of door)

Install the Pull Arm Assembly to the Operator before installing the Track to the Door. When installing the Pull Arm Assembly on the Operator, make sure the arm position is as close to the frame as possible. It may be necessary to slightly rotate the Pull Arm Assembly away from the door to fit the Sliding Block in the Track.

IMPORTANT NOTE: After full installation, manually hold the door open and move the Mechanical Closed Door Stop to the fully closed position (see page 14). This will provide a preload and ensure the device is programmed to rotate until stopping on the frame door stop.

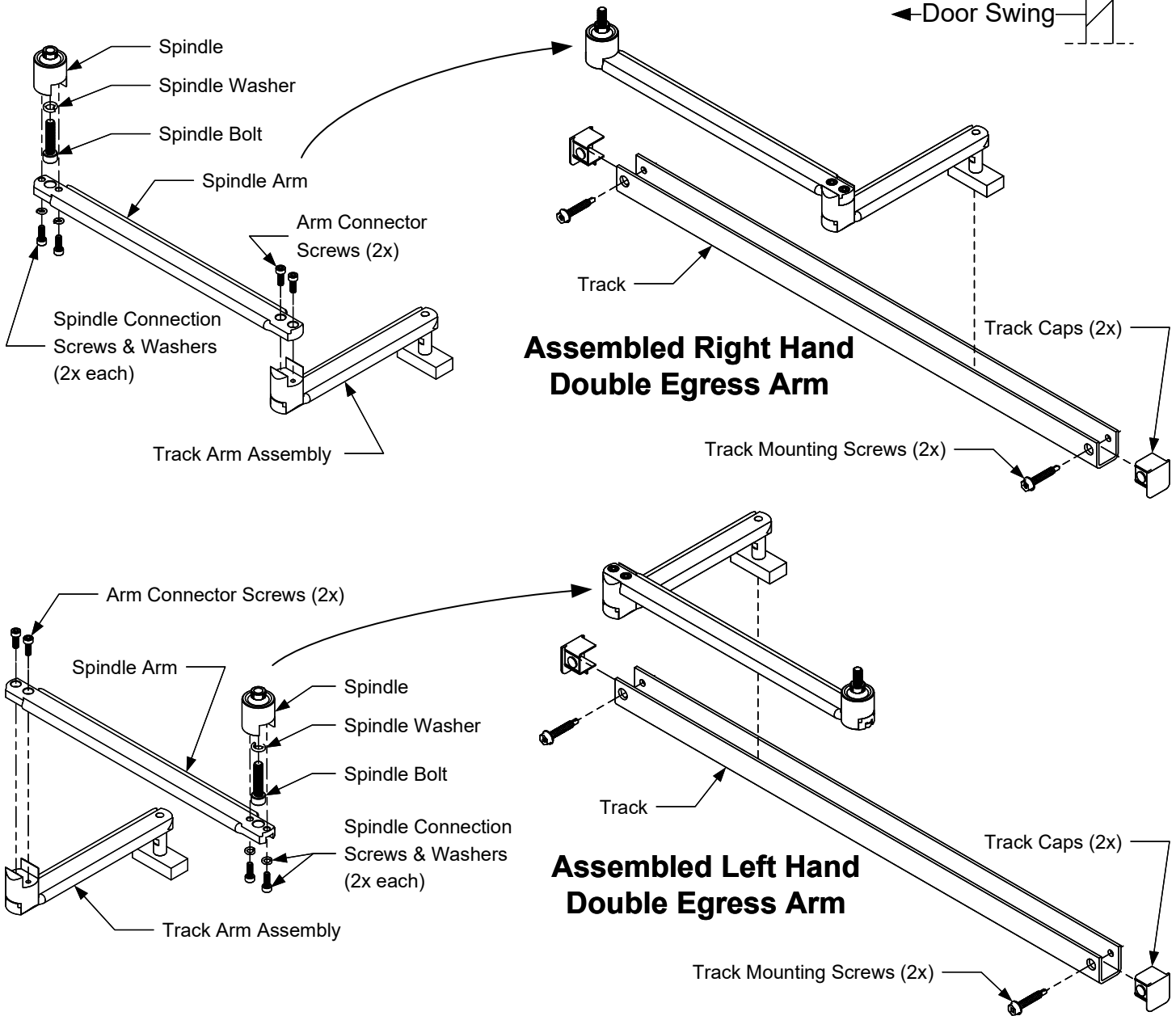
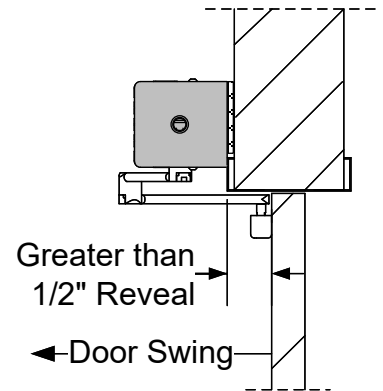
STEP 3C: INSTALL THE ARM ASSEMBLY – DOUBLE EGRESS ARM APPLICATION

For Push Applications, refer to Step 3A (pages 8-9).

For Pull Applications with less than 1/2" Reveal, refer to Step 3B (pages 10-11).

The Double Egress Arm is meant for use on Double Egress Doors or PULL Application Doors that have a Reveal greater than 1/2".

Assembly of the Double Egress Arm is different depending on the handing of the Door, as shown below. Double Egress Application models are supplied with a 20mm Spindle. Different length Spindles are supplied separately.

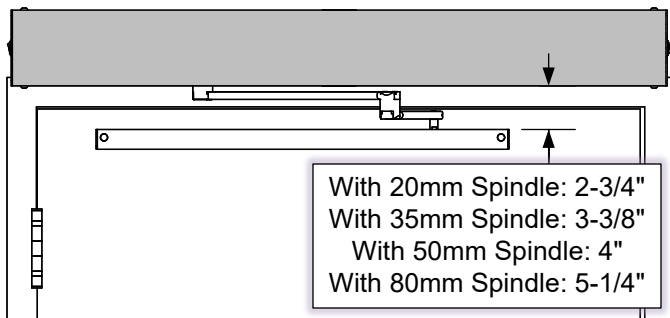
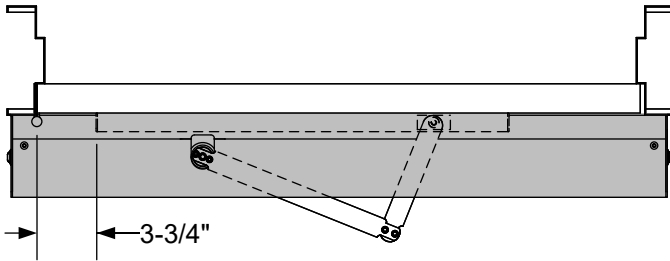


Note: For Fire Rated Doors, use supplied Sex Bolts and Pan Head Screws to mount the Track to the Door. Refer to Appendix C (page 27) for additional Fire Door installation procedures.

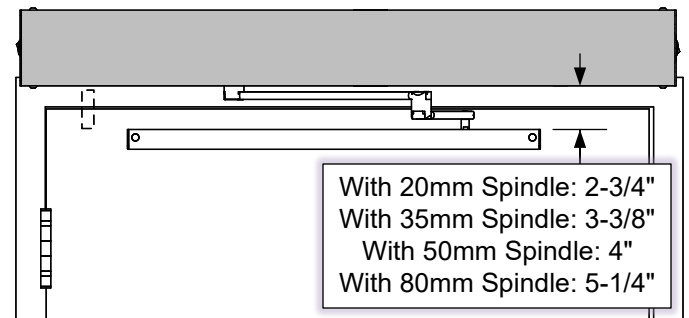
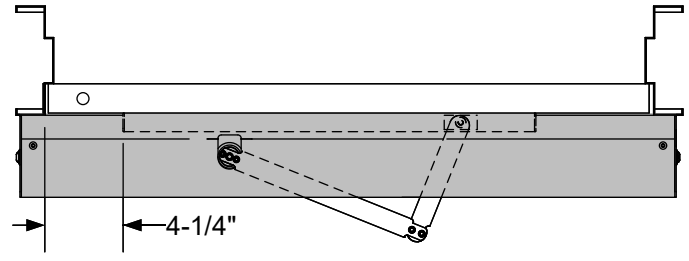
Installation dimensions are different for Hinge Hung Doors and Center Pivoted Doors:

- **For Hinge Hung Doors**, the edge of the Track should be 3-3/4" from the door opening on the hinge side.
- **For Center Pivoted Doors**, the edge of the Track should be 4-1/4" from the door opening on the hinge side.

Hinge Hung Door



Center Pivoted Door

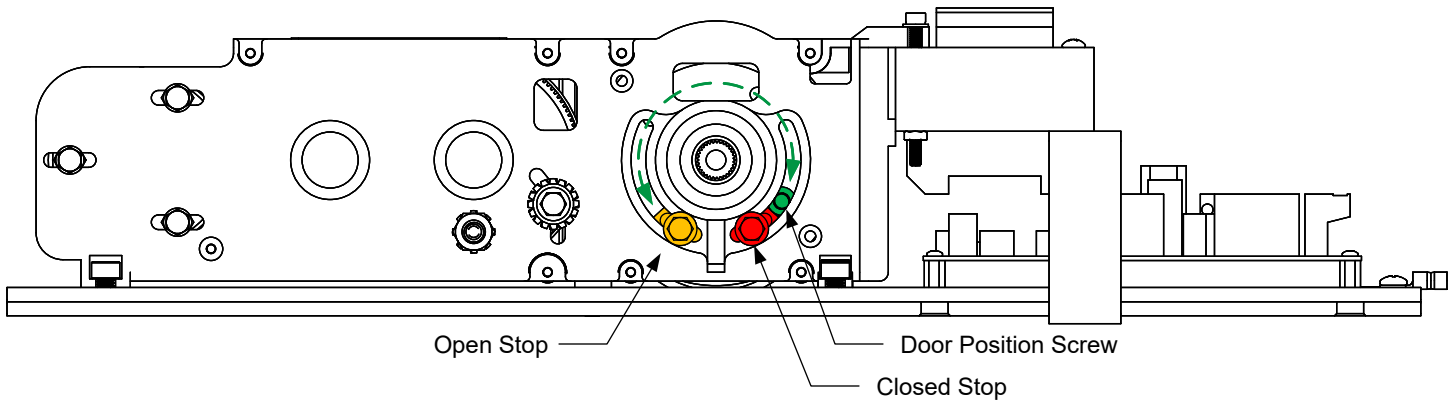


(Spindle Length Note: The bottom of the Spindle **should not** hang below the top face of door)

Install the Double Egress Arm Assembly to the Operator before installing the Track to the Door. When installing the Arm Assembly on the Operator, make sure the arm position is as close to the frame as possible. It may be necessary to slightly rotate the Arm Assembly away from the door to fit the Sliding Block in the Track.

IMPORTANT NOTE: After full installation, manually hold the door open and move the Mechanical Closed Door Stop to the fully closed position (see page 14). This will provide a preload and ensure the device is programmed to rotate until stopping on the frame door stop.

STEP 4: ADJUSTING THE MECHANICAL STOPS



Open Door Stop

Closed Door Stop

Door Position Screw

The Mechanical Stops will be located on the top or bottom of the mounted Operator depending on the handing of the door.

The **Open Door Stop** determines the furthest the door can open with both automatic and manual operation. When the door opens, the Door Position Screw will rotate until it hits the Open Door Stop. The main purpose of the Open Door Stop is to prevent the door from opening too far during manual use and damaging objects behind it.

The **Closed Door Stop** determines the furthest the door can close. When the door closes, the Door Position Screw will rotate until it hits the Closed Door Stop (or when the door hits a frame-mounted fixed door stop).

It is recommended that the Door Stops be adjusted prior to powering on the Operator for the first time. Both Door Stops can be adjusted by loosening the Hex Screw just enough that the Stop can slide along its slot. **Do not remove the Hex Screw from the Stop.**

- When adjusting the Open Door Stop, manually prop the door open at the furthest desired open position. Slide the Open Door Stop until it touches the Door Position Screw, then tighten the Hex Screw.
- When adjusting the Closed Door Stop, manually prop the door at the desired closed position. Slide the Closed Door Stop until it touches the Door Position Screw, then tighten the Hex Screw

An optional programmable "Soft Stop" can be added after initial Automatic Operation Setup (refer to page 17 for Soft Stop setup instructions).

IMPORTANT NOTE: After full installation, move the Mechanical Closed Door Stop to the fully closed position (towards the Housing Baseplate). This will add a preload and ensure the device is programmed to rotate until stopping on the frame door stop.

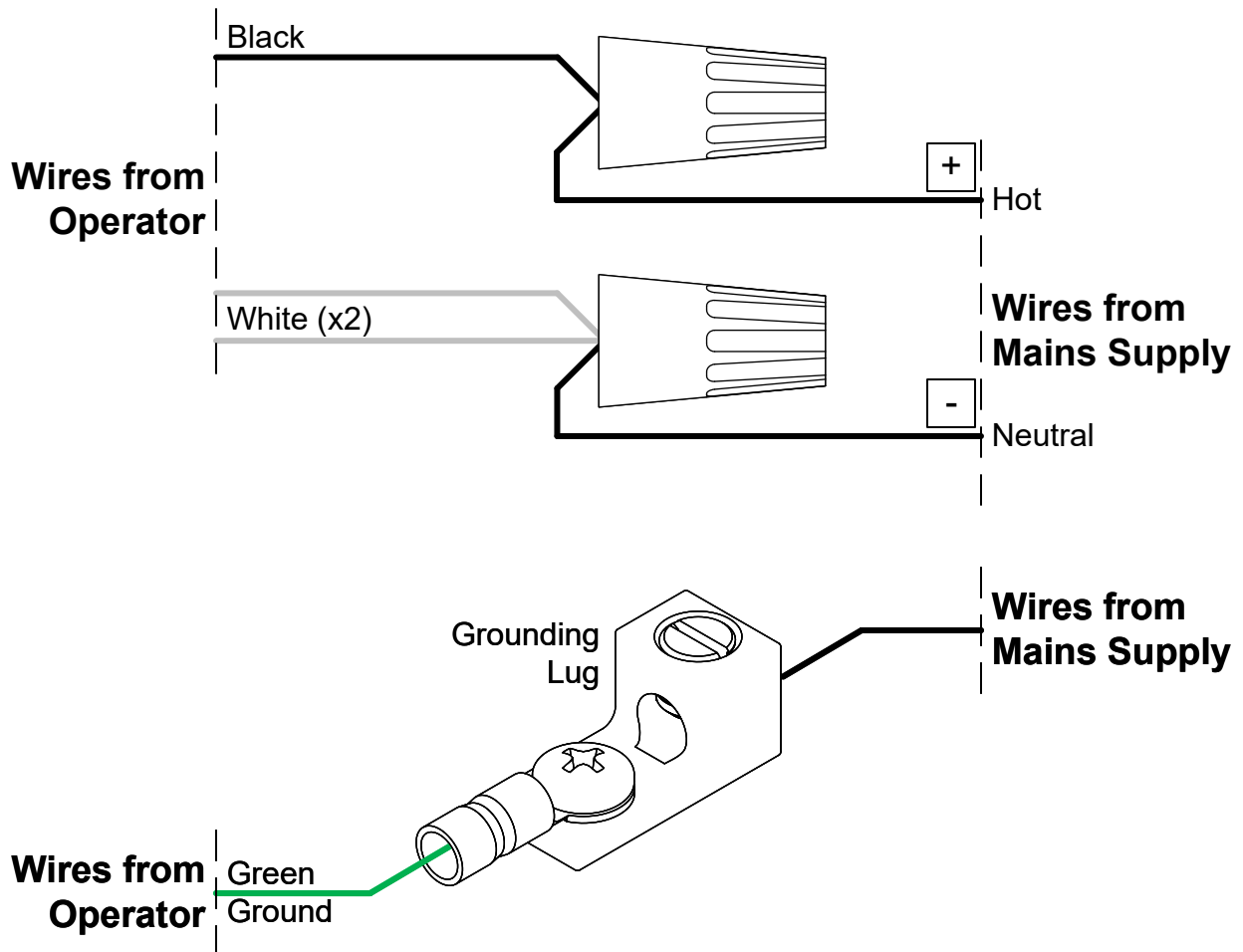
STEP 5: PRIMARY VAC ELECTRICAL CONNECTION

WARNING:

Ensure all incoming electrical power is shut off before proceeding with any high voltage wiring. Failure to do so may result in damage to equipment or personal harm.

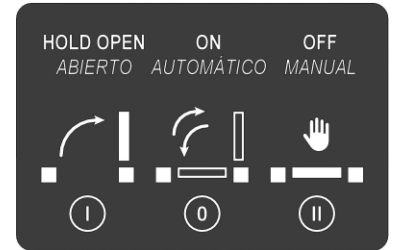
Connect the main power to the Black, White, and Green wires using the two supplied wire nuts as shown below.

- Connect incoming hot to the Black wire.
 - Main power supply requirements: 110-122 VAC, 15A, Single Phase, 60Hz circuit.
- Connect both White wires to incoming neutral.
- Use Grounding Lug to connect to ground.

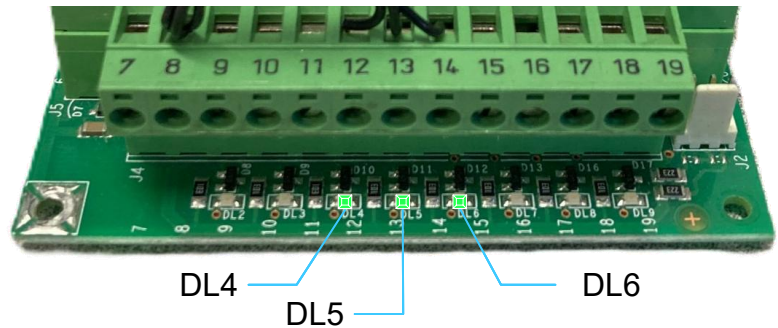
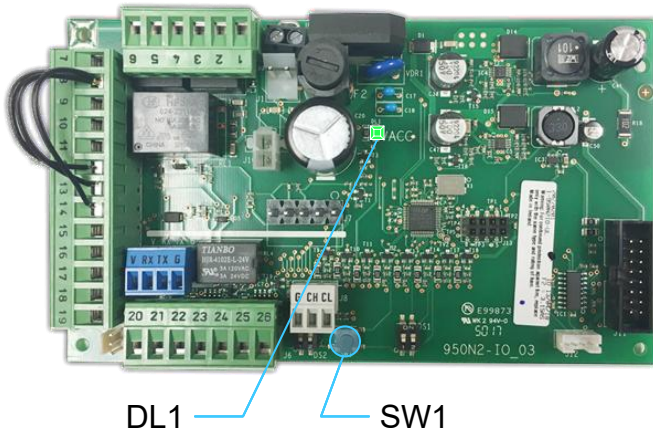


STEP 6: POWER ON & TUNE-IN

- Ensure the Mains VAC is connected and secure.
- Ensure Off-On-Hold Switch is in the middle (0) position.
- Apply power using the Power Switch and observe the LEDs on both boards:
 - On the I/O Board, LEDs DL1, DL4, DL5, & DL6 must be ON solid green upon power up.
 - On the Logic Board, LED DL3 should be flashing blue.
- The **I/O Board** will not accept an activation until approx. 8 seconds after powering on AND until an initial setup is completed.
- During Initial setup the **Logic Board** should have all dip switches in the **OFF** position for **Push** Applications. For **Pull** Applications DIP Switch #2 should be in the **ON** position (see page 20 for Dip Switch functions).



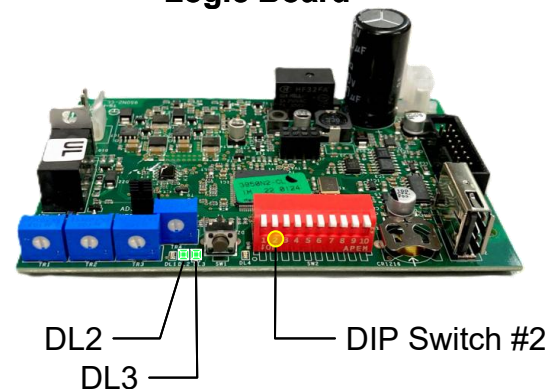
I/O Board



Logic Board

Perform an initial setup at the I/O board as follows:

- Ensure main power is on.
- On the **I/O Board**, depress the **SW1** button for approximately 5 seconds. When the red LED (DL2) on the Logic Board begins flashing rapidly, release the button.
- Door will slowly open, recycle partially, close and then re-open a second time.
- Do not interrupt the process and do not move the door manually during this time.
- If the door does not open and the red LED (DL2) is flashing slowly, check to make sure all connections to both Control Boards are secure. Correct as necessary or contact support.
- Once the setup process is complete, the door will close and the red LED will go out.
- Setup is complete. DL3 will flash blue under normal operation.



IMPORTANT NOTE: If the operator open stroke is interrupted, the “Soft Stop” function will be activated (see page 17 for proper Soft Stop setup). The door will then only automatically open to that position. A new setup will need to be performed to re-learn the full operator stroke.

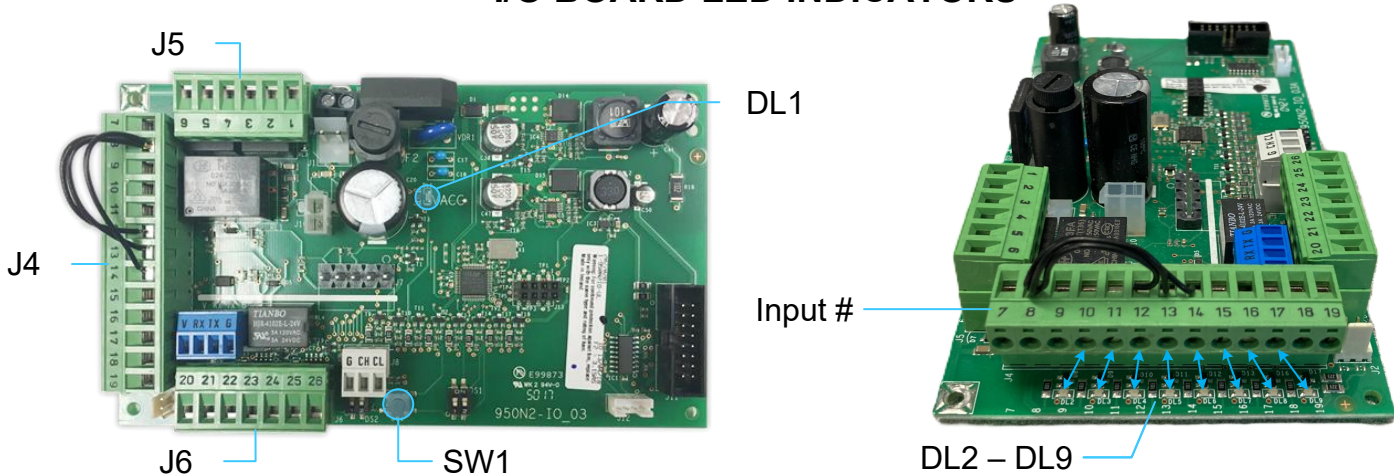
- Upon completion of the Setup, momentarily jumper terminals 7 & 11 on the **I/O Board** to activate opening the door. Ensure all performance is acceptable.
- A re-learn is not required following a main power recovery.

SETTING UP THE SOFT STOP

A "Soft Stop" is sometimes preferred depending upon the application, particularly if heavy manual use is anticipated. The Soft Stop is simply a method of programming the door for the open position by means of a temporary stop method, such as holding your foot at the desired location during programming. To use the Soft Stop method, perform the following:

- Press the automatic calibration button (SW1 on the I/O Board shown above), to allow the start of the setup process detailed on page 16.
- During the first door opening cycle of Setup, position your foot on the ground at the desired full open door position. Allow the door to hit your foot. Remove your foot from that position after the door moves away from your foot.
- Allow the setup to complete.
- The door will open automatically thereafter to that position. When the door is pushed further than the soft stop location it will return to the programmed point automatically.
- If there is anything behind the open door that the door could collide into from manual openings, such as a glass wall, make sure to adjust the Open Door Mechanical Stop to avoid collisions. **Do not rely solely on the Soft Stop to avoid collisions.**

I/O BOARD LED INDICATORS



As a general rule for I/O board LED observation:

- For normally open inputs, the respective LED will illuminate upon triggering the input.
- For normally closed inputs, the respective LED will extinguish upon triggering the input.

LED Location	Input #	Input Closed	Input Open
DL1		Accessories power is present	No Accessories power
DL2	10	Internal Opening Command active	Internal Opening Command inactive
DL3	11	External Opening Command active	External Opening Command inactive
DL4	12	Fire/Emergency Close inactive	Fire/Emergency Close active
DL5	13	Secondary Activation inactive	Secondary Activation command active
DL6	14	Stop Command inactive	Stop Command active
DL7	15	Night Mode Opening Command active	Night Mode Opening Command inactive
DL8	16	Manual Mode is active	Manual Mode is inactive
DL9	17	Access Control interface active	Access Control interface inactive

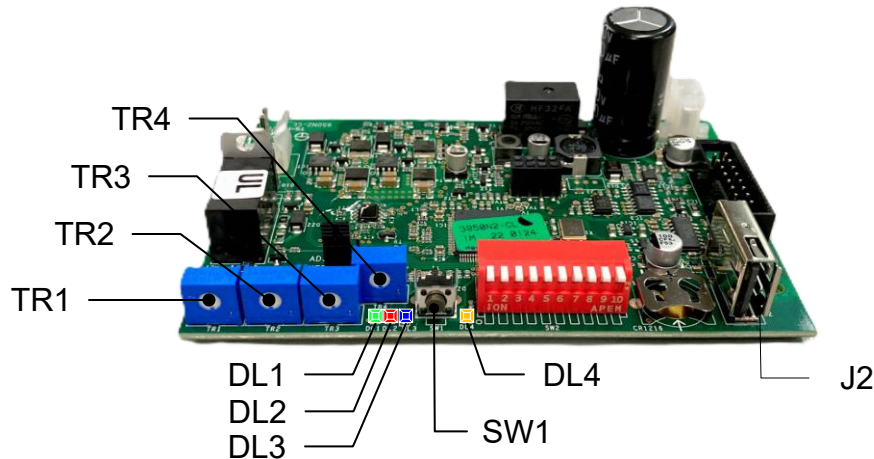
**I/O BOARD WIRING CONNECTIONS**

	Input #	Function	Description
Terminal Strip J5	1	Electric Lock Relay	SPDT Relay Common.
	2	Electric Lock Relay	N.O. Dry contact – Contact closes upon activation. May be used for fail-secure locks by routing 1 leg of power through the relay common. Relay is triggered by activation inputs 10, 11, or 15. Relay remains energized until door fully opens.
	3	Electric Lock Relay	N.C. Dry Contact - Contact opens upon activation. May be used for fail-safe locks by routing 1 leg of power through the relay common. Relay is triggered by activation inputs 10, 11, or 15. Relay remains energized until door fully opens.
	4	Door Status – Closed	N.C. Dry Contact - Contact opens upon activation. Contact remains open until door is fully closed and no activation inputs are active.
	5	Door Status – Common	Common contact for Door Status inputs 4 & 6.
	6	Door Status – Open	N.O. Dry Contact – Contact closes when door is fully open. The contact opens as soon as the door starts to close.

	Input #	Function	Description
Terminal Strip J4	7 & 8	GND	Common Ground
	9	+24VDC	1A Max. Current
	10	Internal Activation	Requires N.O. Dry Contact between input 10 & GND.
	11	External Activation	Requires N.O. Dry Contact between input 11 & GND.
	12	Fire/Emergency Closing	Requires N.C. contact between 12 & GND. When activated, door closes and overrides all activation inputs. Must remain jumpered if input is not used.
	13	Secondary Activation	Requires N.C. contact between 13 & GND. Disabled in full closed position. An active signal reopens the door. Used for AUTO-IR door-mounted presence sensor.
	14	Stall Safety	Requires N.C. contact between 14 & GND. During an open cycle, an active signal stops the door, then resumes at reduced speed when input is deactivated.
	15	Night Mode Activation	N.O. connection. Remains capable to activate the door when dip switch 3 is ON AND Open-Auto-Off switch is OFF.
	16	Manual Mode Activation	N.O. contact, when closed causes door to close and all activation inputs are inhibited. Cannot be used if using input 17.
	17	Access Control Interface	N.O. Dry contact. When activated, lock relay (1,2,3) and auxiliary relay (20,21,22) both activate. Use lock relay to release lock. Use auxiliary relay to complete the exterior activation switch circuit. See Appendix B – Low Energy Application 5 or 6.
	18 & 19	GND	Common Ground

	Input #	Function	Description
Terminal Strip J6	20	Aux Relay	SPDT Relay Common
	21	Aux Relay	SPDT Relay N/O
	22	Aux Relay	SPDT Relay N/C
	23	Solid State Output #1	Configurable using AUTO-PROG handheld programmer. 100mA @ 28VDC max
	24	Solid State Output #2	Configurable using AUTO-PROG handheld programmer. 100mA @ 28VDC max
	25	+24VDC	1A max. (Total for terminals 9 & 25)
	26	GND	Common Ground

LOGIC BOARD LED INDICATORS



LED Location	LED Color	Description
DL1	Green	A USB connection is present
DL2	Red	Solid Red indicates an error on initialization Slow flashing Red indicates initialization required or error Fast flashing Red indicates setup in progress
DL3	Blue	Continuously Slow Flashes when the device is operating normally
DL4	Amber	A change has been made to the control such as speed, time adjustment, and/or dip switch. NOTE: Once a change is made, the SW1 button next to DL4 must be pressed momentarily to clear the yellow light and accept the changes.

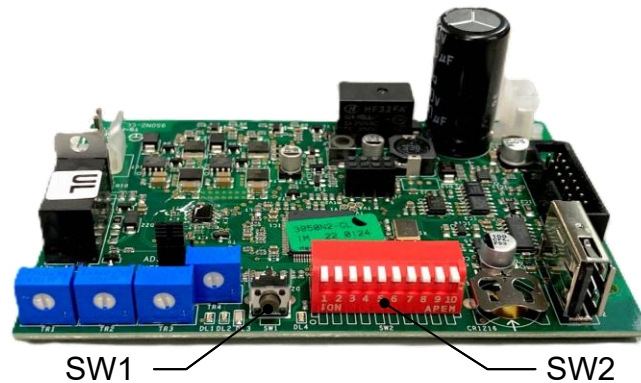
ADJUSTING TIMERS ON THE LOGIC BOARD

Potentiometer	Adjustment	Description
TR1	Opening Speed	Increase speed by turning Clockwise = decreases open cycle time
TR2	Closing Speed	Increase speed by turning Clockwise = decreases closing cycle time
TR3	Hold Open Time	Increase hold open time by turning Clockwise (min = 0.5 sec, max = 30 sec)
TR4	Closing Speed (No AC Power)	Only enabled when main power is off and when jumper J6 is moved to ADJ.
SW1	Program Change Confirmation	Extinguishes amber light (DL4) when lit
J2	USB Port	Used for configuration uploads

HELPFUL NOTES:

- The Amber light (DL4) will illuminate when changes are made to blue potentiometers, dip switches, or using the AUTO-PROG programmer. To confirm & accept changes, momentarily press SW1 next to the amber light, until the amber light goes out.
- Speed and time adjustment changes will not take effect until the door closes fully after the adjustment has been made
- Hold Open time affects the delay following an activation from input 10, 11, 13, or 15 in automatic ON mode.

DIP SWITCHES ON THE LOGIC BOARD



The Logic Board has a block of 10 dip switches (SW2). When the switch is flipped down towards the printed number, it is in the ON position. Default is all OFF.

SW2	Description	ON	OFF
1	Closed Door Force	Additional force applied while door is in closed position. Be sure to maintain ANSI compliance if using on low energy application. Cannot exceed 30 lbf to get door moving manually from jamb.	Disabled (Default)
2	Pull / Push Arm	Use for Slide Arm Applications. Operator stroke at 90 degrees or less. Visible change in performance may not always be noticeable.	Push Arm Application. Operator stroke 90 or greater. (Default)
3	Night Function (Exit Only)	Allows activation at input 15 when Open-Auto-Off Switch is in OFF (night function) position.	Disabled. The Open-Auto-Off Switch, when OFF, required manual operation of the door. (Default)
4	Push and Go	Enabled.	Disabled (Default)
5	Push and Go Hold Time	Push and Go time is fixed to 3 seconds.	Push and Go Hold time follows potentiometer TR3 setting. (Default)
6	Lock Relay Delay	Sets the Delay on Opening to 1.0 second after activation.	Sets the Delay on Opening to 0.3 seconds. Typical for electric strikes or maglocks.
7	Inhibit at 30 degrees before door fully open. Only used if input 14 is used.	Input 14 is disabled at 30 degrees prior to full open door position.	Stall function remains un-inhibited for full door stroke. (Default)
8	Power Close	Additional closing force applied for final 10 degrees of closing.	Disabled (Default)
9	Assisted Manual Closing***	Enabled assisted closing following a manual opening.	Disabled assisted closing following a manual opening.
10	FACTORY USE ONLY, LEAVE IN OFF POSITION		

***Note(s):

1. Dip Switches 9 and 4 CANNOT be used at the same time.
2. SDC recommends the use of a door-mounted secondary activation device when dip switch 9 is ON-Enabled.



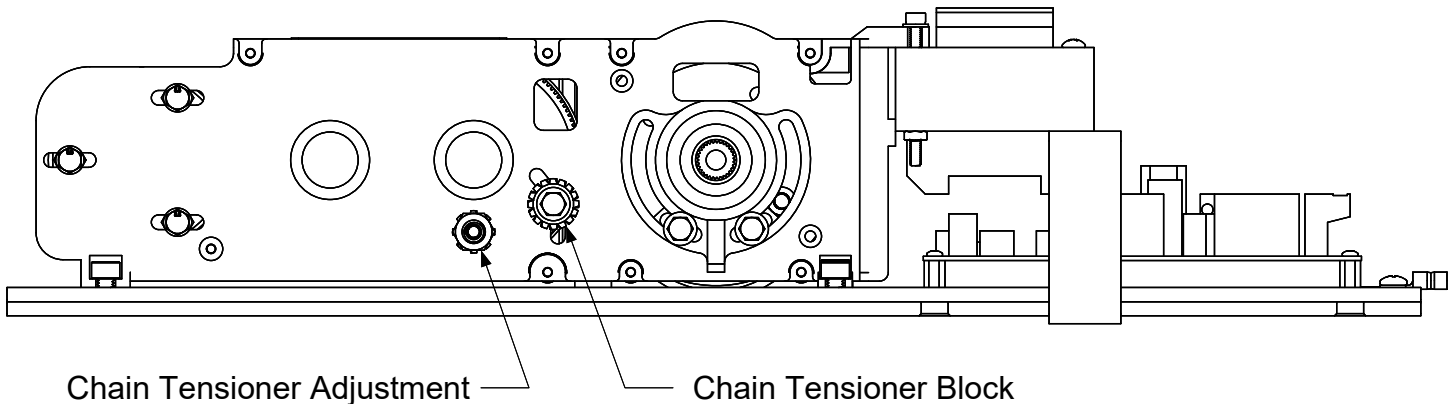
TROUBLESHOOTING

Problem	Solution
Door will not open when activation button is pressed.	• Check Power On-Off switch for proper position • Check 3-position Open-AUTO-Off switch for proper position ('0' position for AUTO mode) • Check LED status for DL4, 5 & 6 on the I/O Board. If any of these LEDs are OFF, the door will not open. They require a normally closed circuit. • Launch a new setup. • Door has traveled closed past the 0 degree position.
Operator will not start the initialization (setup) cycle.	• Ensure that SW1 on the I/O board is being pressed (next to terminal 26) • Check LED status for DL4, 5 & 6 on the I/O Board. If any of these LEDs are OFF, the door will not initialize. They require a normally closed circuit. • Check 3-position Open-AUTO-Off switch for proper position ('0' position for AUTO mode) • Check the ribbon cable interconnecting the I/O board and Logic Board is fully seated on both ends. • If DL2 turns solid red or slowly flashes after initialization attempt, call factory support.
Operator will not accept speed or dip switch changes.	• Ensure the Amber light on the Logic board has been cleared by momentarily pressing the SW1 button next to the Amber light.
Door will not close.	• Check status of LEDs DL2, 3, and 7 on the I/O Board. • If any of these LEDs are ON, input is shorted. Check the associated input. • Check 3-position Open-AUTO-Off switch for proper position ('0' position for AUTO mode)
Door will not reach its full open or closed position.	• Check the mechanical stops on the operator for proper adjustment (see page 14). • Possible loose chain tensioner – refer to Appendix A for chain tensioner adjustment procedures.
Slow flashing red LED (DL2) on the Logic Board	• Indicates a possible fault in the control. - Check LED status for the other inputs. This will identify if any inputs are currently active. • Indicates a potential faulty setup. - Loose or incorrect motor connection - Possible loose chain tensioner – refer to Appendix A for chain tensioner adjustment procedures. - Launch a new setup. If problem repeats and there are no other discrepancies noted, replace the operator/control sub-assembly.
Door closes too fast at last 5 to 10 degrees of closing.	• Ensure dip switch 8 on the Logic Board is OFF. • Ensure there is no binding of the door as it is closing through the last few degrees of closing. If binding exists (from a tight bottom sweep, for example), correct the condition and then re-launch a new setup.

APPENDIX A – CHAIN TENSIONER ADJUSTMENT

Signs of a loose Chain Tensioner

- Opening or Closing door movements may be erratic.
- The door may reverse open on its own during the closing cycle.
- Wear marks (i.e., scratches) may be evident on the body of the operator where the tensioner block bolt has slipped.
- When a setup is launched, the door may appear to open a few degrees at a time, especially as it is just beginning to open.
- Door may not open to its full open position - it may stop short and then close, as it thinks there was an obstruction.
- Operator may make a loud clicking noise - this is created by the chain jumping on the sprockets.
- There may be a "lag" between operator movement and door movement - this is due to the chain "slack" being taken up before door movement.
- Door may go through a setup correctly but then will show a flashing red error LED upon completion of setup, or upon the first attempt to open.
- If chain is excessively loose, it is possible for the chain to become bound up on itself, thus preventing automatic door movement - this will usually happen on the closing stroke.
- Abnormal noises may come from the operator as you use the door manually.



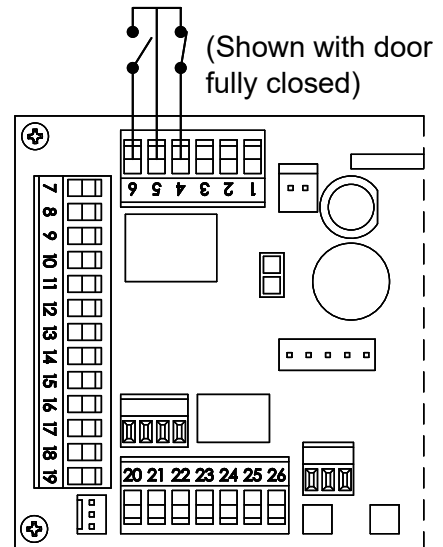
Adjusting the Chain Tensioner

1. Loosen the Chain Tensioner Block Bolt (do not remove it).
2. Loosen the Chain Tensioner Adjustment Nut (do not remove it).
3. Insert 4mm Allen wrench into the Chain Tensioner Adjustment and apply tension counter-clockwise to increase tension on the chain. Apply sufficient tension so that the bolt is centered in the channel, as shown in the figure above.
4. While maintaining chain tension, Re-tighten the Chain Tensioner Block Bolt - This bolt should be tight and is generally torqued to around 3.7ft lbs.
5. Re-tighten the Chain Tensioner Adjustment Lock Nut. This nut needs minimal tightening.
6. Launch a new setup with the I/O board to check for proper operation.

APPENDIX B – WIRING DIAGRAMS

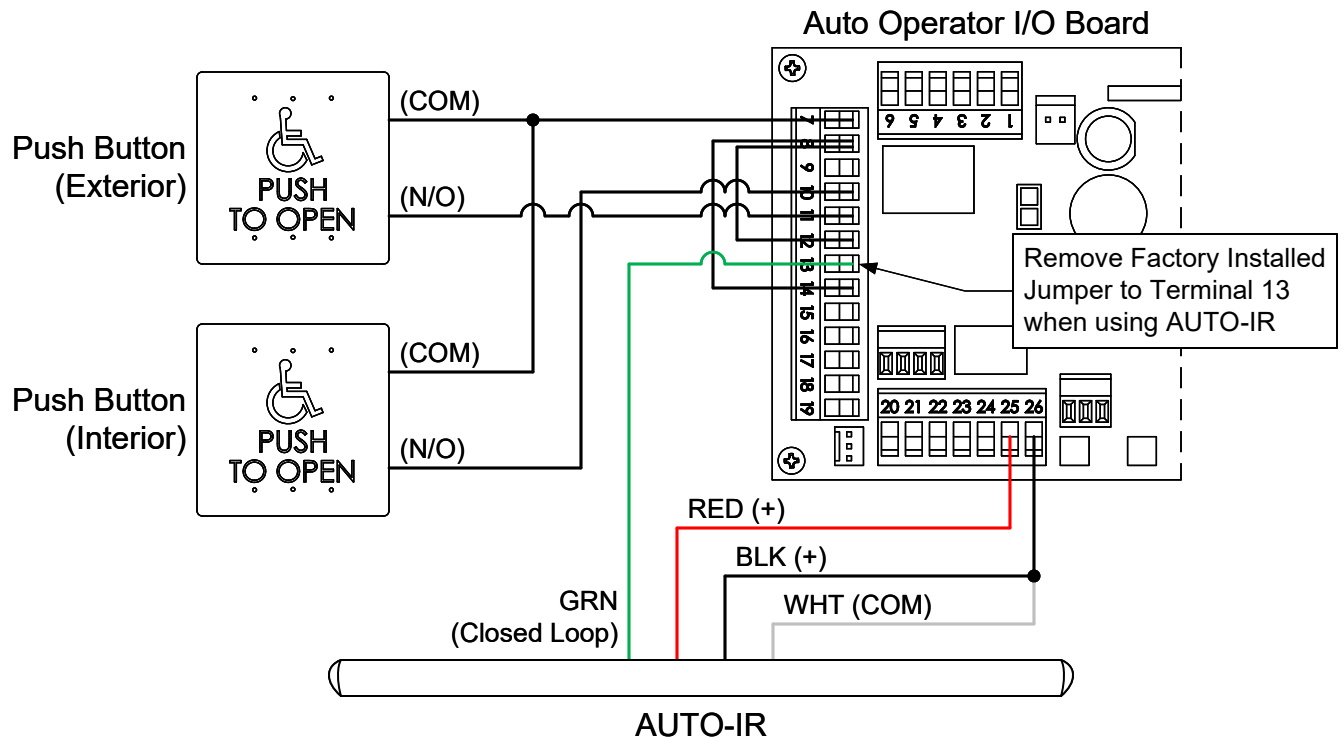
Door Status Switch Output

- Terminal 4:** Door “Closed” status switch: Contact closes upon full door closed position.
- Terminal 5:** Common for both Door Open & Closed status.
- Terminal 6:** Door “Open” status switch: Contact is closed when door is full open.



Low Energy Application 1:

Push Plates with Approach Side Door-Mounted Sensor

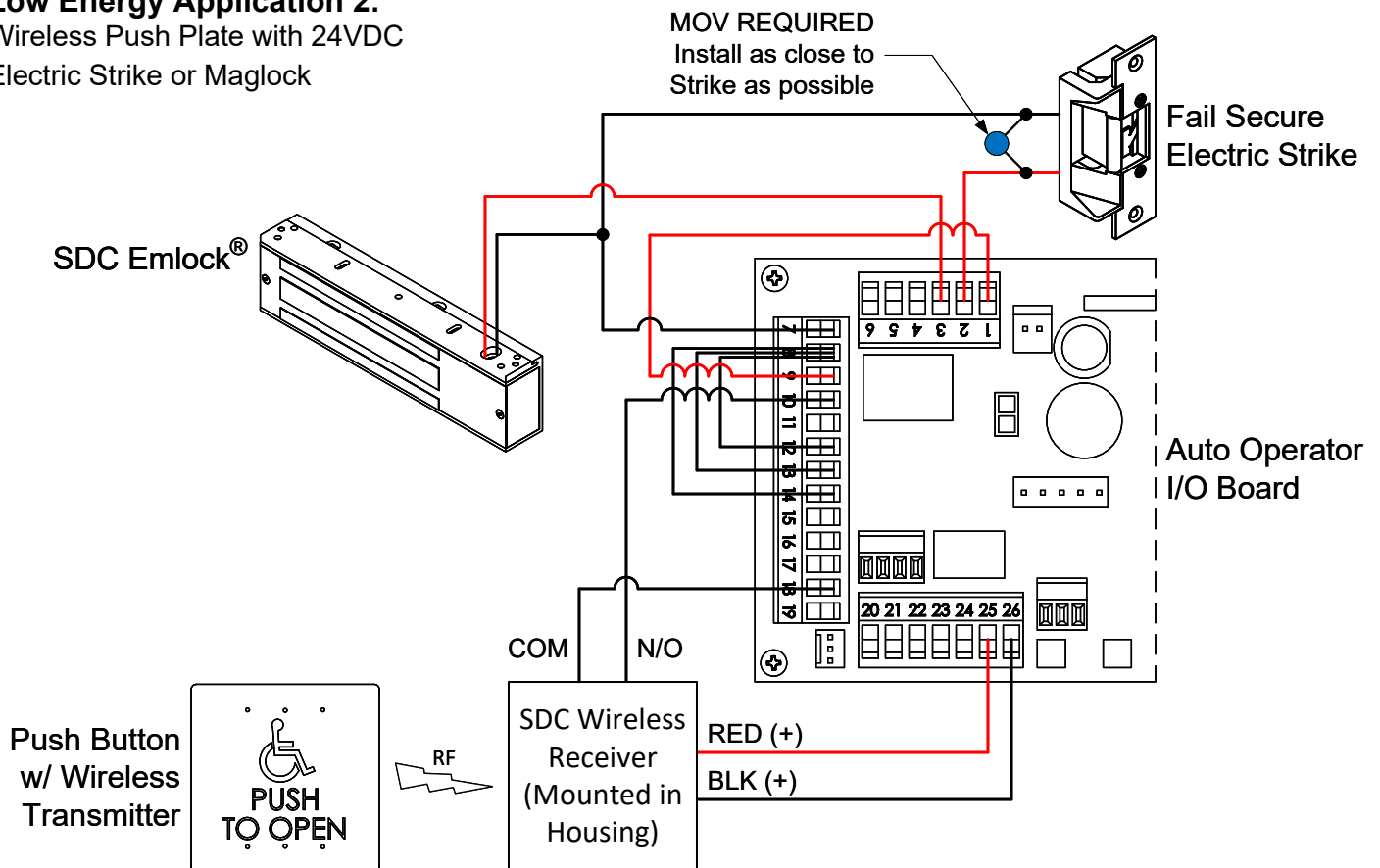


- Non-Swing Side (approach) door-mounted sensor is wired into the secondary activation input (13) at the I/O board. It is a normally closed circuit. Remove factory jumper on terminal 13.
- Door-mounted sensor will cause re-activation when in detection during the closing cycle.
- Presence sensor activation input 13 is disabled at the full closed door position.
- Jumpers must be installed between terminal 8 and 12 & 14 if those inputs are not required for the application. If they are used for the application, they must be connected to a N.C. circuit.

Low Energy Application 2:

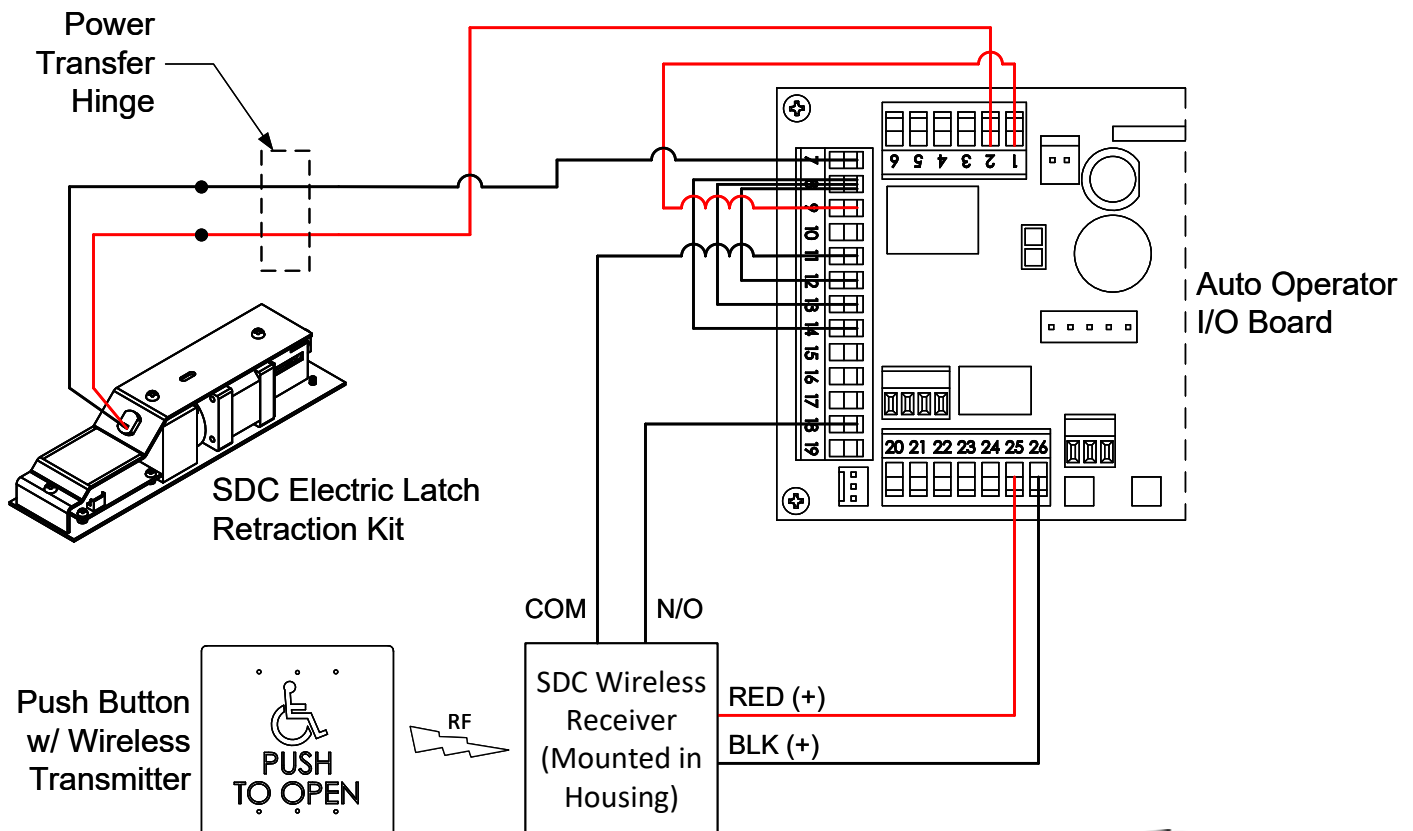
Wireless Push Plate with 24VDC

Electric Strike or Maglock



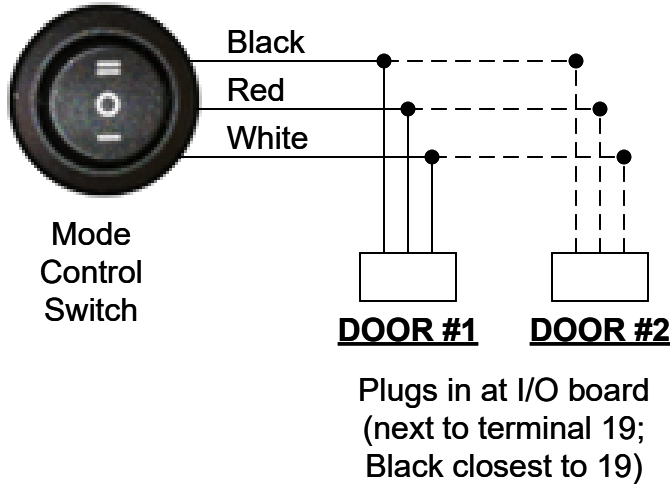
Low Energy Application 3:

Wireless Push Plate with SDC Electric Latch Retraction Kit



Low Energy Application 4:

Simultaneous Pair



⊥ = N/O Activation Switch

Door #1 I/O Board Terminals

7
8
9
10
11
12
13
14
15
16
17
18
19

Door #2 I/O Board Terminals

7
8
9
10
11
12
13
14
15
16
17
18
19

When wiring controls for use as a simultaneous pair, all required inputs need to be synchronized (connected) between Door #1 and Door #2 (shown as dotted lines in above diagram).

Example shown above: Push plates are connected to inputs 7, 10 and 11 at door #1 and are connected via sync line to Door #2.

When using pairs of controls each control board will have its own jumpers installed. If any of these inputs are required for the application, the jumper will be removed for the respective input – in place of the jumper.

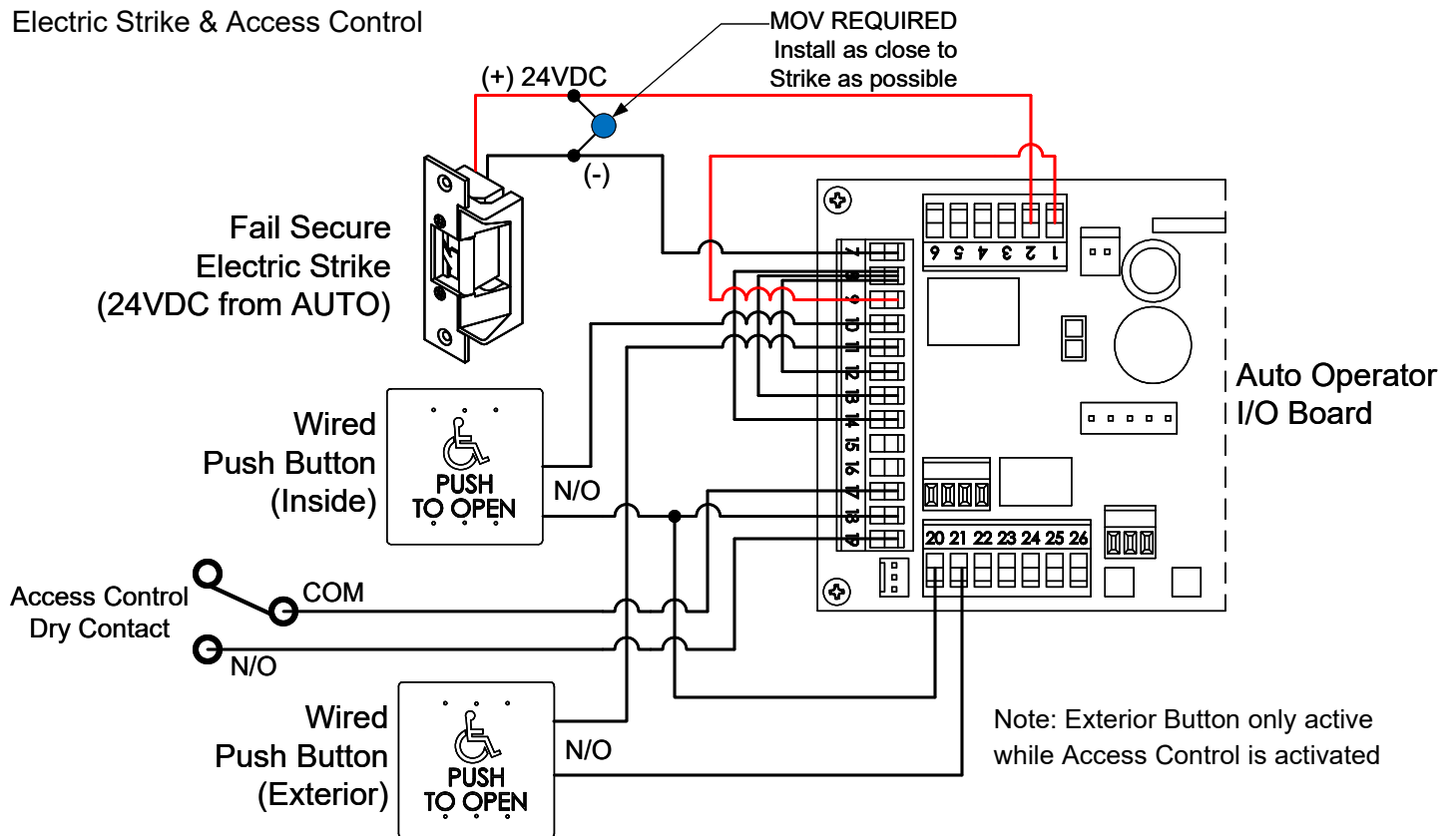
For simultaneous pairs, each plug-in connector for the mode control is pre-wired in parallel to the On-Off-Hold switch located in the header end-cap. One switch will control both doors.

All control adjustments (speed & time delay) must be made independently at each control.

In most applications, all dip switches at each control must be set independently and must match between controls.

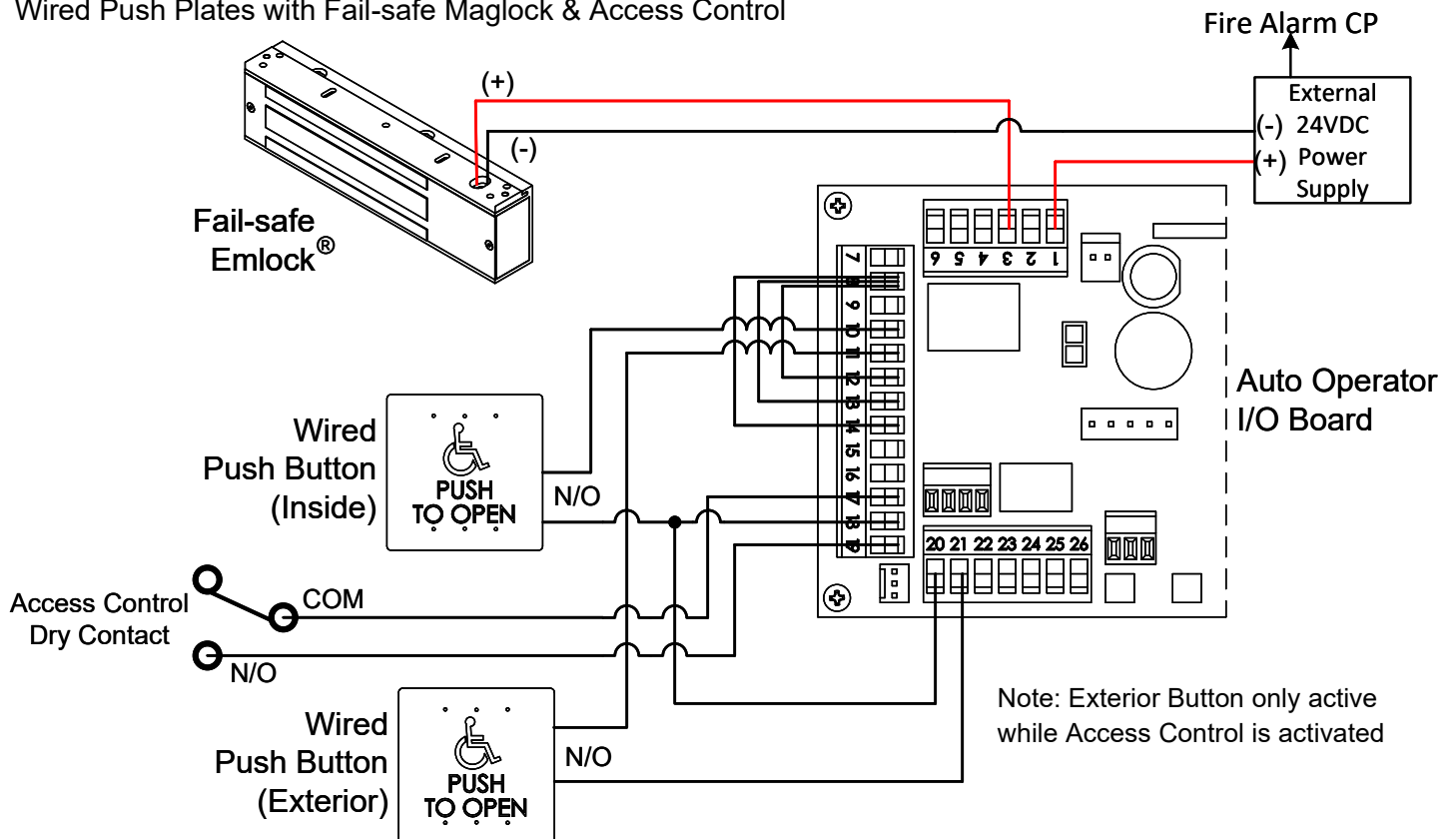
Low Energy Application 5:

Wired Push Plates with Fail-Secure
Electric Strike & Access Control



Low Energy Application 6:

Wired Push Plates with Fail-safe Maglock & Access Control





APPENDIX C – FIRE RATED DOOR APPLICATION

Perform the installation according to the instructions outlined in this manual. Additionally, ensure the following conditions have been met:

- When attaching the door arm to the door, use steel binding posts (Sex Bolts) to attach. Do NOT use sheet metal screws into the face of the door. The door arm bracket must be through-bolted.
- When attaching the header to the hollow metal door frame, ensure there are 5 attaching screws spaced equally apart. They should be #12 sheet metal type screws.
- Fire rated power operated doors must close and latch during a fire alarm condition. Ensure proper procedures have been followed to allow a main power disconnect during a fire alarm condition. Always check to ensure compliance to local building codes.
- Upon job completion, always perform a functional test to ensure that the door(s) close and latch following a power loss.
- Other hardware may be required to complete the installation. For example, for pairs of doors, if an Astragal is installed, a mechanical door coordinator may be required to ensure a proper coordinated closing during a power loss.
- Only fire rated hardware shall be used on a fire rated door & frame assembly.
- Ensure the Auto EntryControl™ operator that is being installed has the proper fire rated label applied to the header.