Auto ⊡ EntryControl™

Low Energy Swing Door Automatic Operator

INSTALLATION GUIDE

For Surface Mounted Applications

SDC
Security Door Controls

Visit: sdcsecurity.com/autoentry
For Installation video

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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 though the doorway.

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READ IMPORTANT NOTICE (PAGE 2) BEFORE BEGINNING THE INSTALLATION OF THIS PRODUCT

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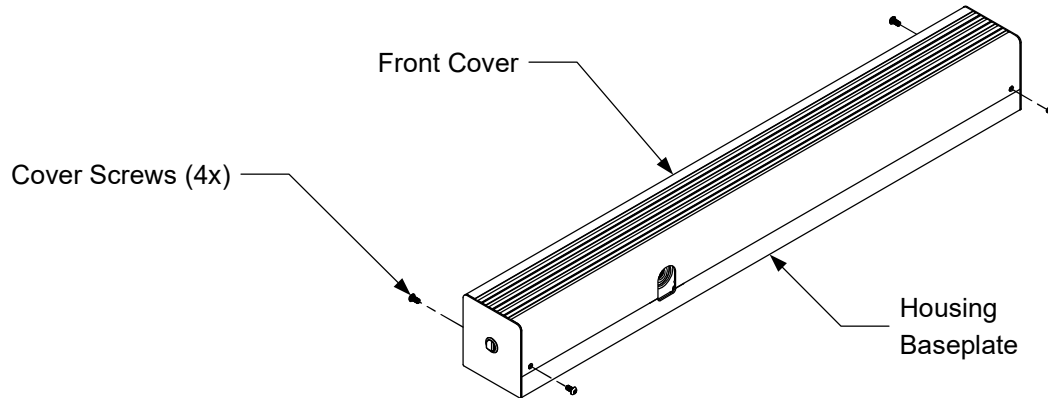
PRODUCT DESCRIPTION & SPECIFICATIONS

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.

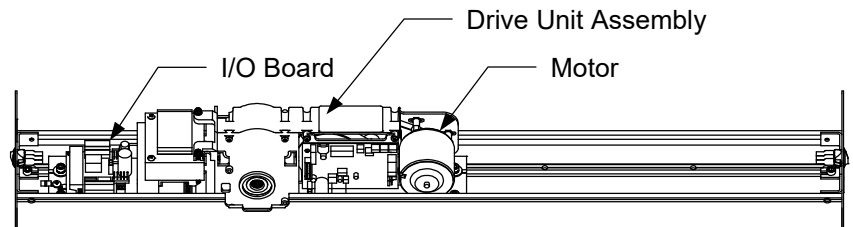|	
Power Supply	115 VAC (+6%, -10%) 60Hz
Power Consumption	100W
Current Consumption	1A
Motor	24 VDC Permanent Magnet With Belt Driven Encoder
Installed Product Dimensions	- Length (from mounting wall): 4-7/8" - Height: 4-1/2" - Width: 39"/45"/51" for 36"/42"/48" opening, respectively
Fused Protection	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	Push Arm Pull Arm - 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	- Automtic - Hold Open - Manual (Off/Night)
Standard Control Outputs	- 24 VDC Power Supply - Lock Relay - Door Status (Fully Open and Fully Closed) - Malfunction Alarm Signal
Standard Control Inputs	- Interior Activation - Exterior Activation - Emergency Shutdown - Fire Alarm Input - Secondary Activation (Push side door mounted presence sensor) - Stop Safety Device Input (Pull side presence sensor)

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STEP 1: HOUSING BASEPLATE INSTALLATION

Remove the Front Cover by removing the 4 hex screws on the top & bottom of the operator.

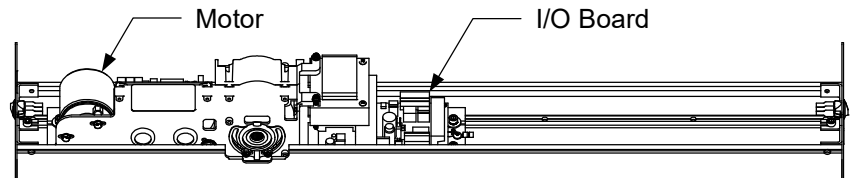Front Cover

Cover Screws (4x)

Housing Baseplate

The Drive Unit Assembly is factory mounted to the slotted Housing Baseplate using **four adjustable** Hex Bolts and **one fixed** Hex Bolt. The bolts attach to nuts that slide in the two slotted tracks of the back plate. The Drive Unit Assembly should be removed before installing the Housing Baseplate.

NOTE: The Drive Unit Assembly will be shipped from the factory in the *Pull* or *Push* orientation depending on purchased model. Take note of the orientation before removing the Drive Unit Assembly (i.e. is the Motor towards the center of the housing, or the edge of the housing). The Drive Unit Assembly will need to be re-installed in the same orientation.

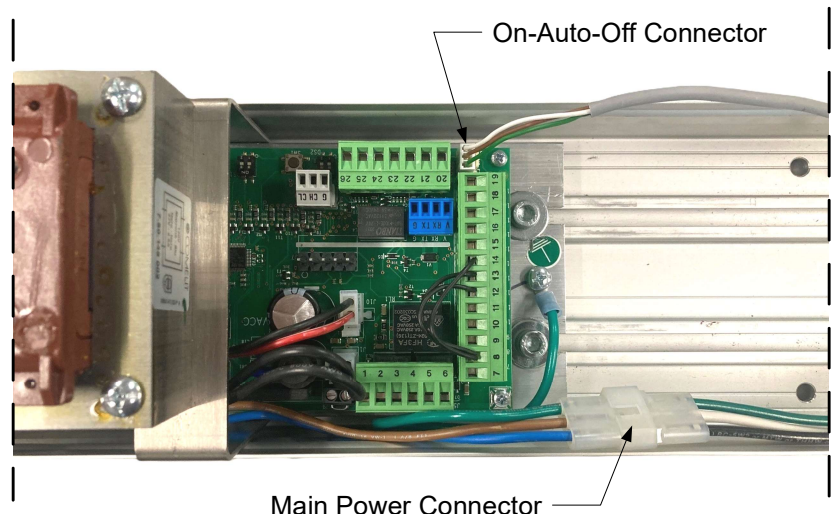Drive Unit Assembly
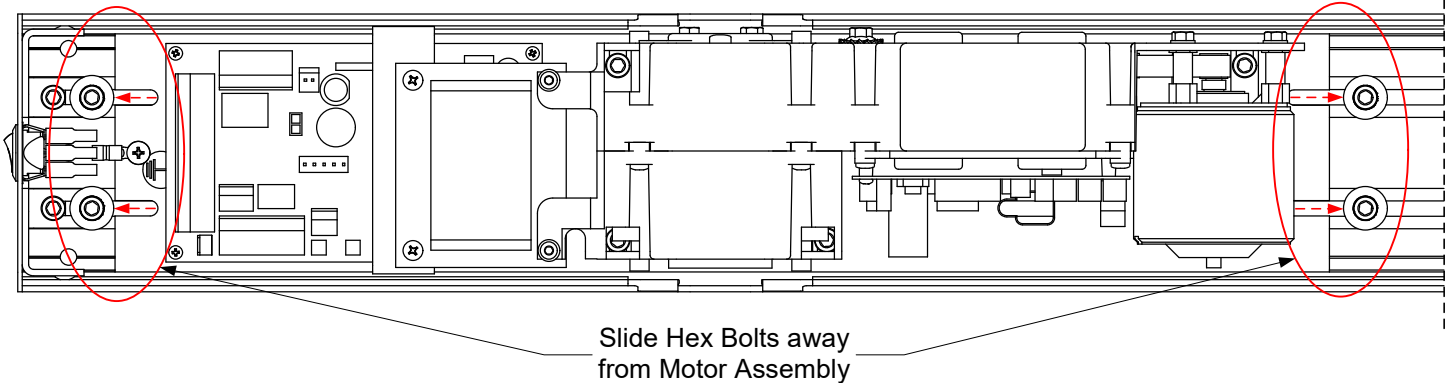
I/O Board

Motor

Push Orientation

Motor

I/O Board

Pull Orientation
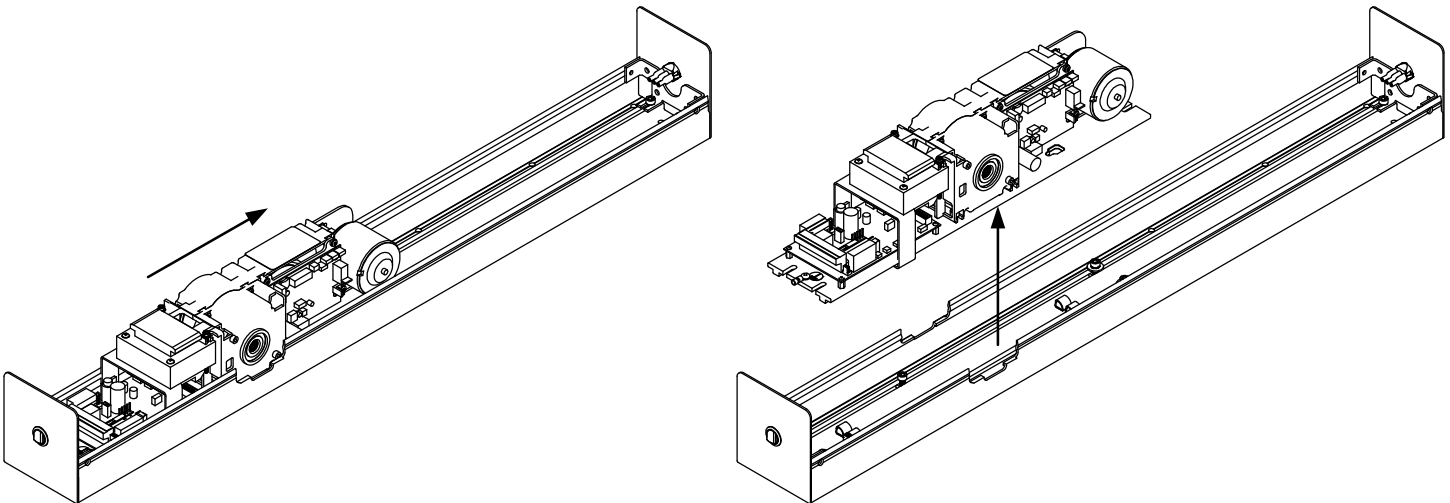
Before removing any Hex Bolts, disconnect the *On-Auto-Off Connector* from the I/O Board & the *Main Power Connector* .
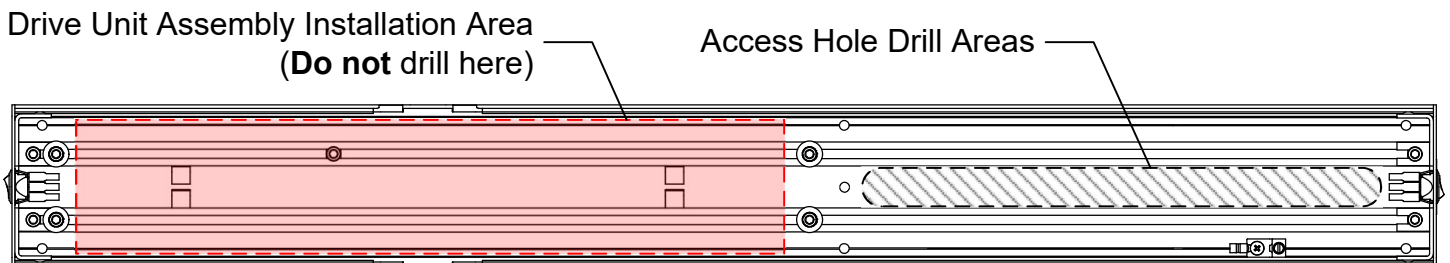
On-Auto-Off Connector

Main Power Connector

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Loosen the 4 side Hex Bolts so that they can slide away from the Drive Unit Assembly (do not remove them completely).

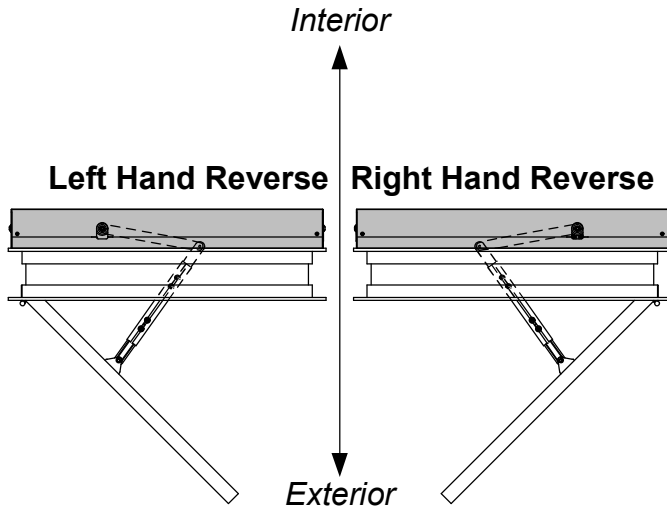Slide Hex Bolts away from Motor Assembly

There is a fifth fixed Hex Bolt in the center of the Drive Unit Assembly that does **not** need to be loosened. To free the Drive Unit Assembly, slide it towards the center of the Housing Baseplate. Carefully lift the Drive Unit Assembly off of the Housing Baseplate. Note the position of the slotted hole on the back of the drive unit plate, as you will need to re-align this hole with the fifth Hex Bolt when re-installing the drive unit in Step 2.

To route low voltage wires out of the device, a 7/8" diameter access hole may be drilled in the Housing Baseplate anywhere inside black hatched areas shown below. The hole may also be drilled in the top or bottom of the Housing Cover if desired (do not drill in the Drive Unit Installation Area). Move any loose wires out of the way before drilling. A 7/8" grommet is supplied to protect cables routing out of the device.
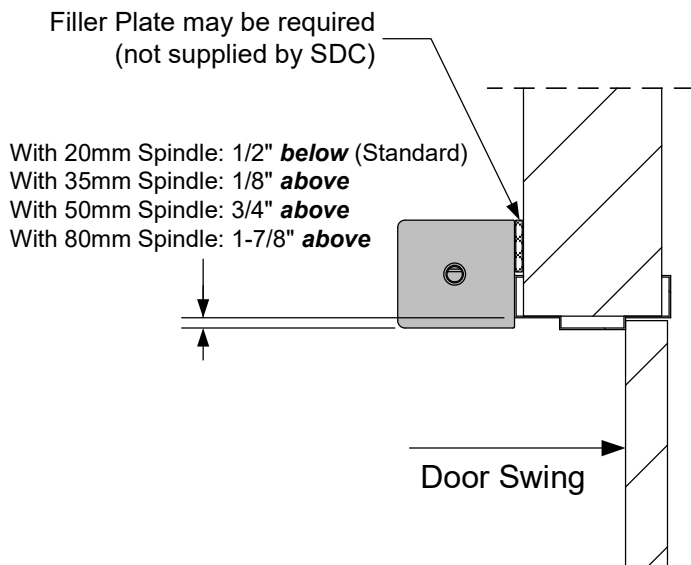
Drive Unit Assembly Installation Area
(**Do not** drill here)

Access Hole Drill Areas

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Push Application

Interior

Left Hand Reverse | **Right Hand Reverse**

Exterior

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

Push Arm Applications

Mount the Housing Baseplate 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).

Filler Plate may be required (not supplied by SDC)

With 20mm Spindle: 1/2" *below* (Standard)
With 35mm Spindle: 1/8" *above*
With 50mm Spindle: 3/4" *above*
With 80mm Spindle: 1-7/8" *above*

Door Swing

Pull Application

Interior
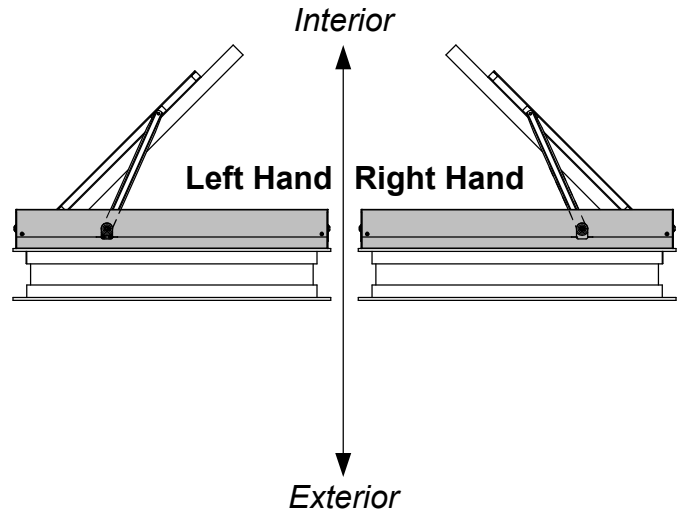
Left Hand | **Right Hand**

Exterior

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

Pull Arm Applications

Mount the Housing Baseplate 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).

Filler Plate may be required (not supplied by SDC)

With 20mm Spindle: 1" *above* (Standard)
With 35mm Spindle: 1-5/8" *above*
With 50mm Spindle: 2-1/4" *above*
With 80mm Spindle: 3-3/8" *above*

Door Swing

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

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The Housing Baseplate should mount with the Spindle Cutouts closer to the hinge side of door.

Hinge side of door ◄──────── ──── Spindle Cutouts

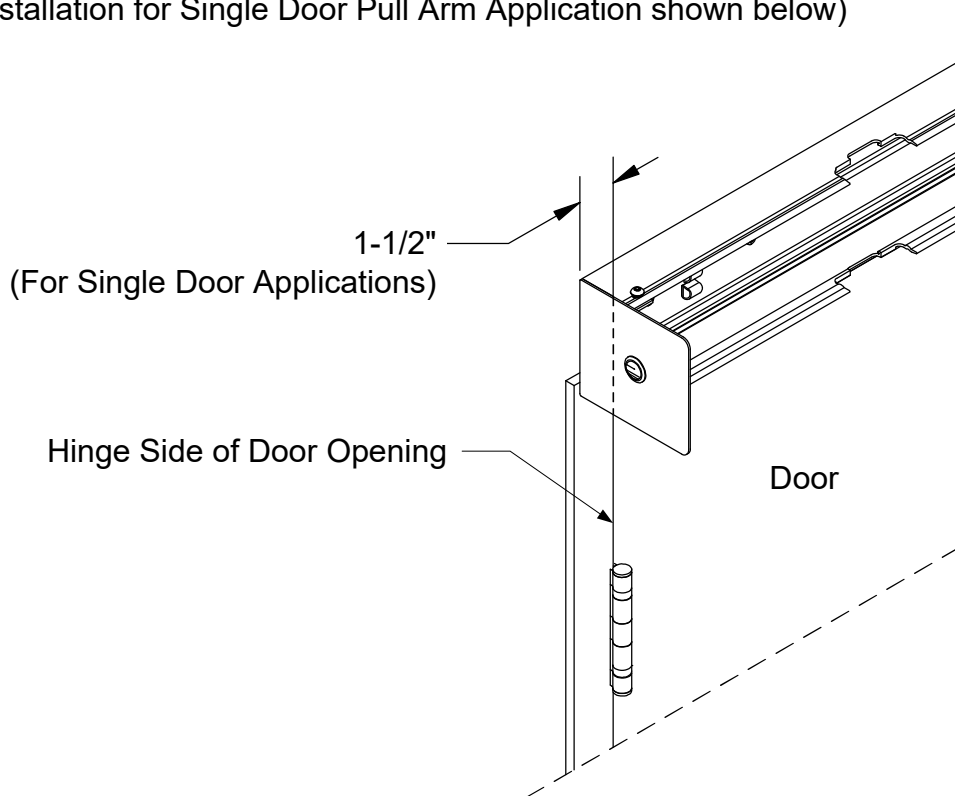For Single Door Applications, the Housing Baseplate should extend past the door opening on the hinge side by 1-1/2". This will position the Arm Spindle in the correct location in relation to the hinge.

For Double Door Applications, the Housing Baseplate should be centered on the door opening.

(Note: Installation for Single Door Pull Arm Application shown below)

1-1/2"
(For Single Door Applications)

Hinge Side of Door Opening ──────────

Door

Mount the Housing Baseplate to the top door frame using supplied Mounting Screws or other appropriate hardware. Mounting holes are provided for convenience. Additional or alternate mounting holes may be used given the existing frame conditions.

Mounting Holes

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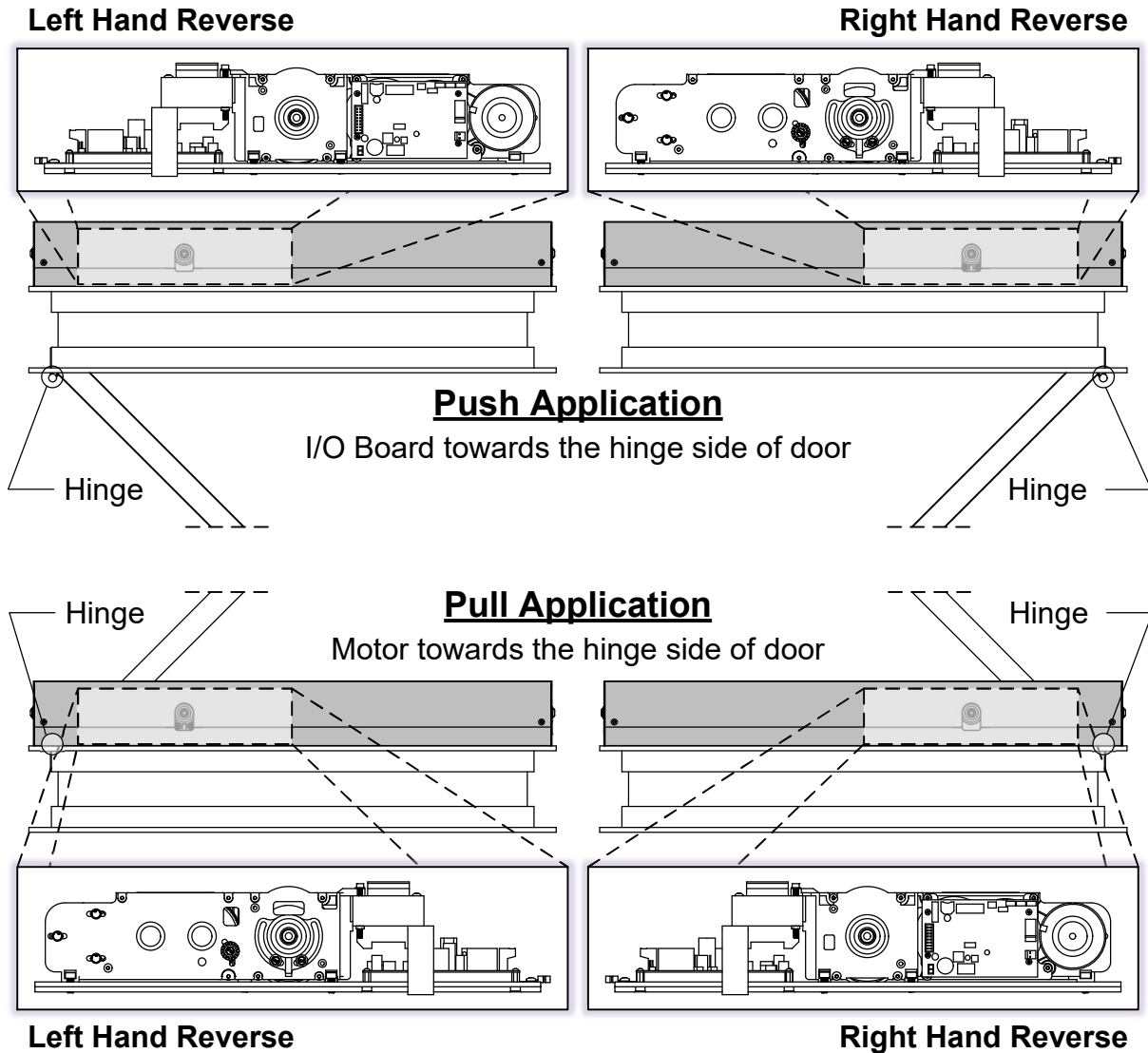[t] 800.413.8783 ■ 805.494.0622 ■ E-mail: service@sdcsecurity.com ■ 801 Avenida Acaso, Camarillo, CA 93012 ■ PO Box 3670, Camarillo, CA 93011

STEP 2: RE-MOUNT THE DRIVE UNIT ASSEMBLY

The orientation of the Drive Unit Assembly will depend on the door handing & application.

Left Hand Reverse   **Right Hand Reverse**

Push Application
I/O Board towards the hinge side of door

Hinge   Hinge

Pull Application
Motor towards the hinge side of door

Hinge   Hinge

Left Hand Reverse   **Right Hand Reverse**

Before reinstalling the Drive Unit Assembly, take notice of the location of the 4 loose mounting Hex Bolts in the Housing Baseplate, making sure they are not in the Drive Unit installation area. Place the Drive Unit Assembly in the slotted tracks, making sure the fifth center Hex Bolt is in the Drive Unit Baseplate. Slide the Drive Unit Assembly until the spindle hole is centered on the Housing cutouts. Tighten the center Hex Bolt.

Slide the 4 other Hex Bolts and their washers over the Drive Unit Assembly and tighten loosely. Make sure the Spindle Hole on the Drive Unit Assembly lines up with the center of the Spindle Cutouts on the Housing Baseplate. Secure the Drive Unit Assembly by tightening the 4 outer Hex Bolts.
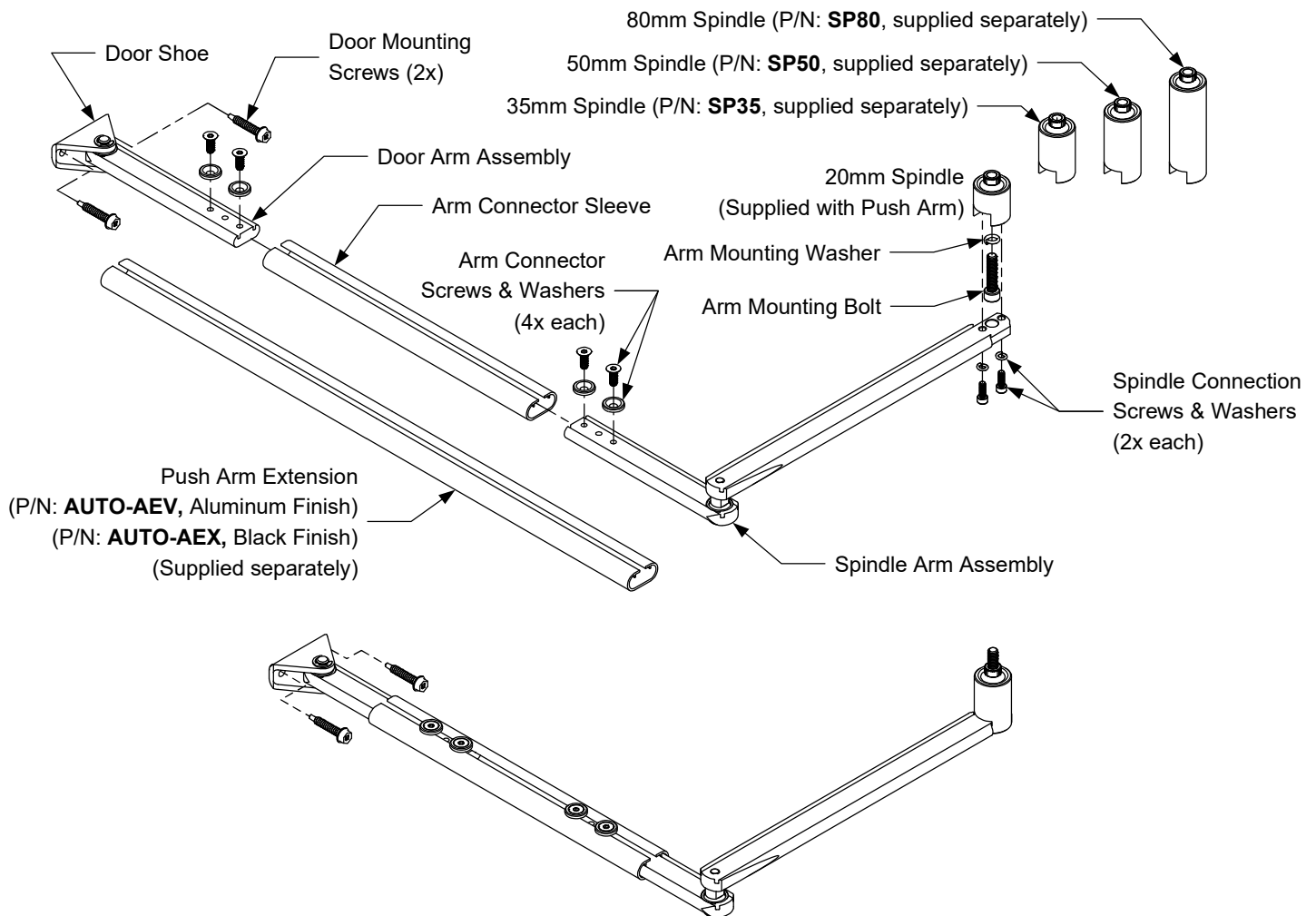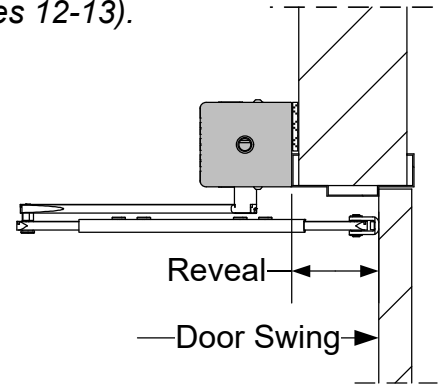
Reconnect the On-Auto-Off Connector & the Main Power Connector to the Drive Unit Assembly.

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STEP 3A: INSTALL THE ARM ASSEMBLY – PUSH APPLICATION

For Pull Applications with less than 1/2" Reveal, refer to Step 3B (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 20mm 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 11).

Reveal

Door Swing

Door Shoe

Door Mounting Screws (2x)

80mm Spindle (P/N: **SP80**, supplied separately)

50mm Spindle (P/N: **SP50**, supplied separately)

35mm Spindle (P/N: **SP35**, supplied separately)

Door Arm Assembly

Arm Connector Sleeve

20mm Spindle
(Supplied with Push Arm)

Arm Connector
Screws & Washers
(4x each)

Arm Mounting Washer

Arm Mounting Bolt

Spindle Connection
Screws & Washers
(2x each)

Push Arm Extension
(P/N: **AUTO-AEV,** Aluminum Finish)
(P/N: **AUTO-AEX,** Black Finish)
(Supplied separately)
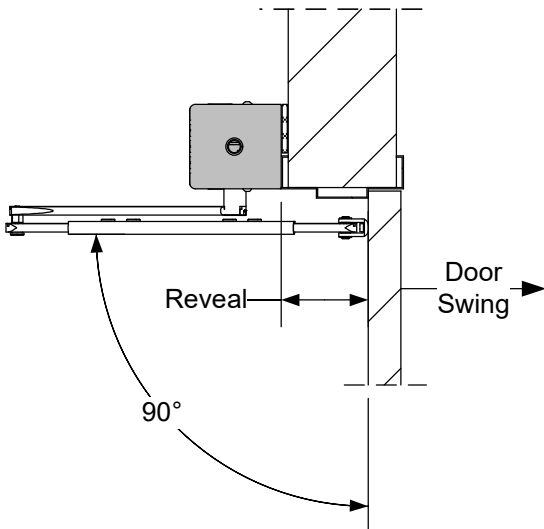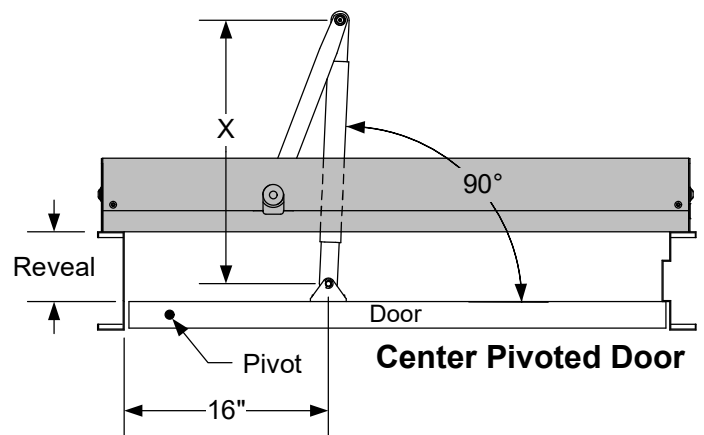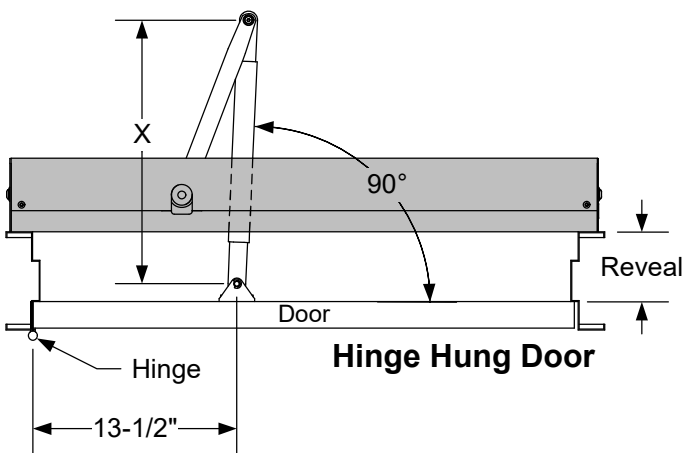
Spindle Arm Assembly

**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.

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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.

Hinge Hung Door

Center Pivoted Door

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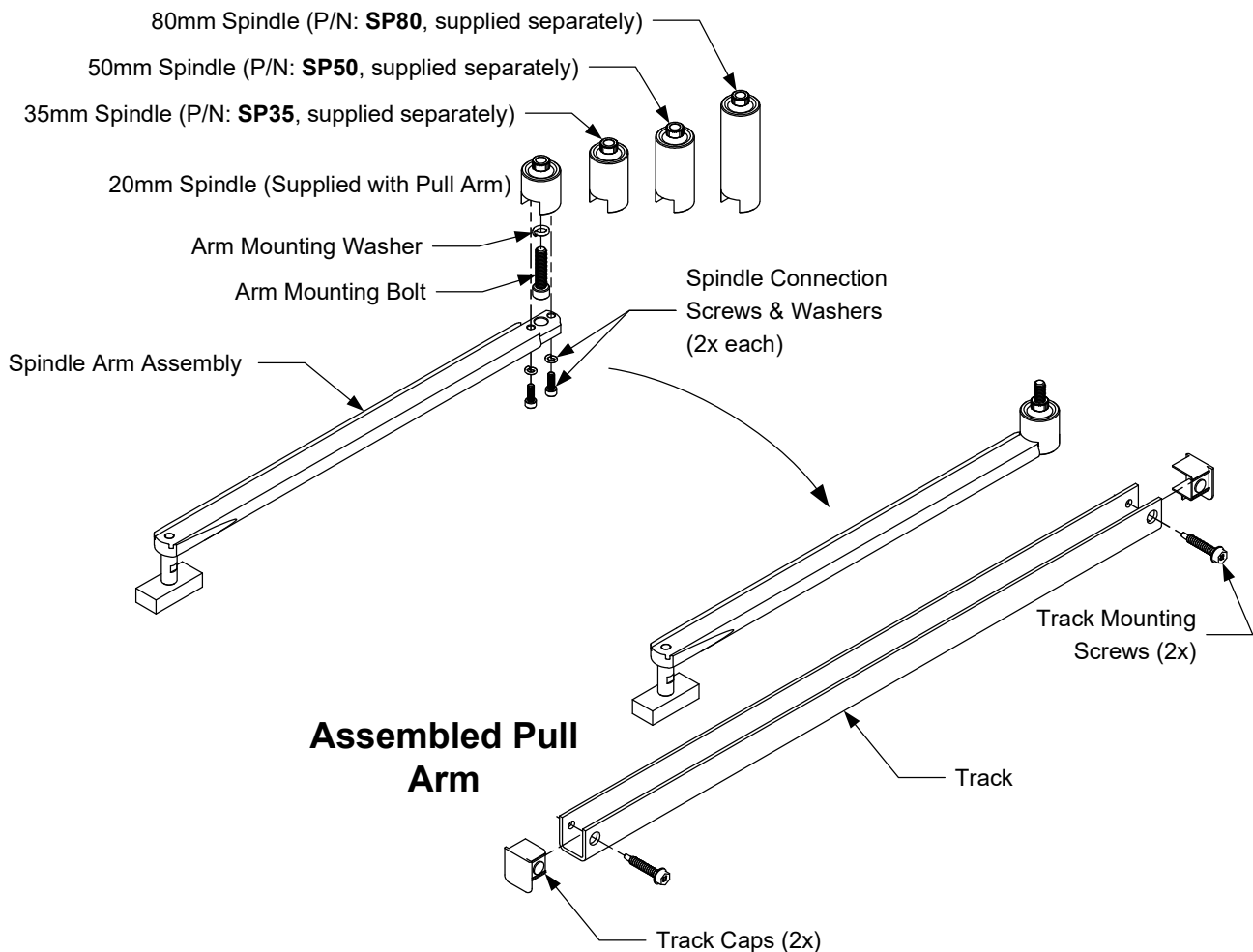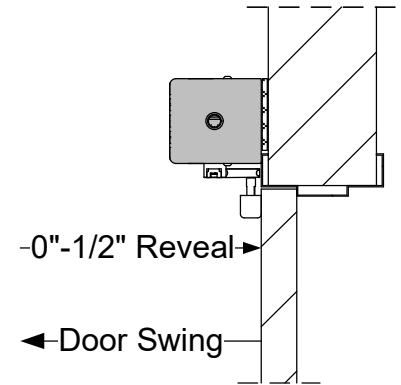
IMPORTANT NOTE: After full installation, manually hold the door open and move the Mechanical Closed Door Stop to the fully closed position (see page 14). This will provide a preload and ensure the device is programmed to rotate until stopping on the frame door stop.

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STEP 3B: INSTALL THE ARM ASSEMBLY – PULL APPLICATION

For Push Applications, refer to Step 3A (pages 10-11).

The Pull Arm is meant for use on In-Swing doors with a 0"–1/2" 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", the Pull Arm Track needs to be shimmed from the door to be flush with the door frame.
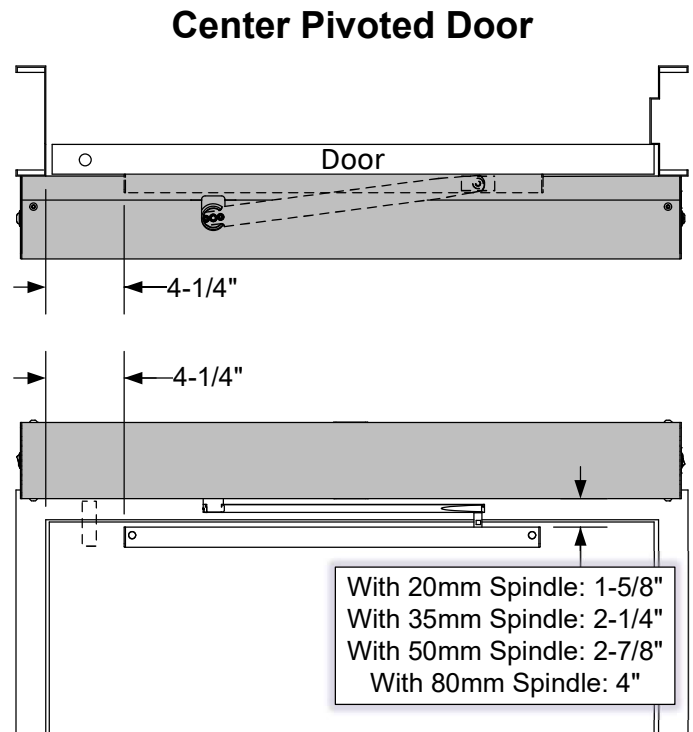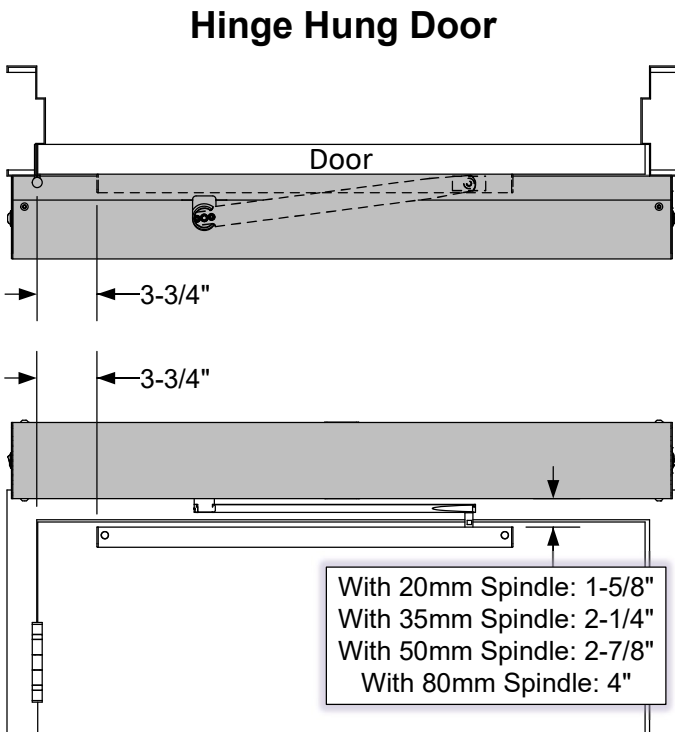
Assemble the Pull Arm as shown below. Pull Arm Application models are supplied with a 20mm Spindle. Different length Spindles are supplied separately (Note: the Spindle **should not** hang below the top of the Door).

-0"-1/2" Reveal→

←Door Swing

80mm Spindle (P/N: **SP80**, supplied separately)

50mm Spindle (P/N: **SP50**, supplied separately)

35mm Spindle (P/N: **SP35**, supplied separately)

20mm Spindle (Supplied with Pull Arm)

Arm Mounting Washer

Arm Mounting Bolt

Spindle Arm Assembly

Spindle Connection
Screws & Washers
(2x each)

Assembled Pull Arm

Track Mounting
Screws (2x)

Track

Track Caps (2x)

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.

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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.
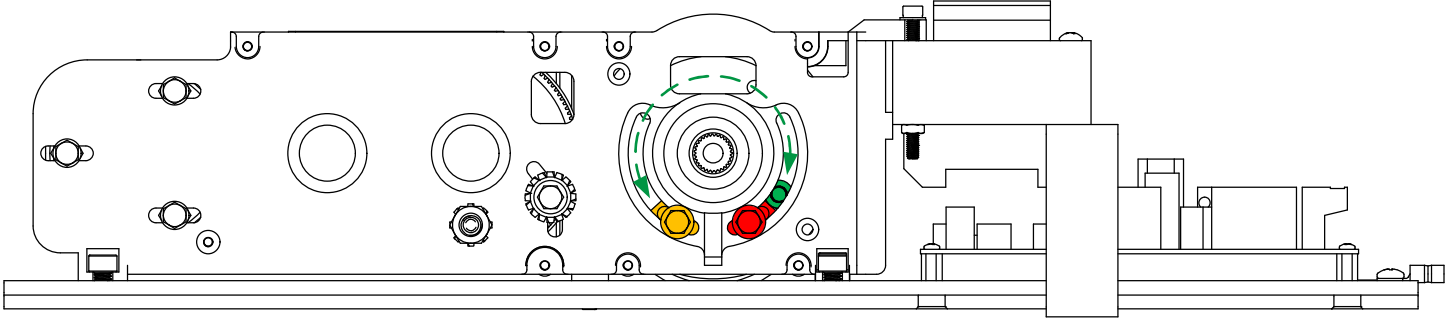
Hinge Hung Door   **Center Pivoted Door**

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

Install the 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.

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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 Step 7 on page 18 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.
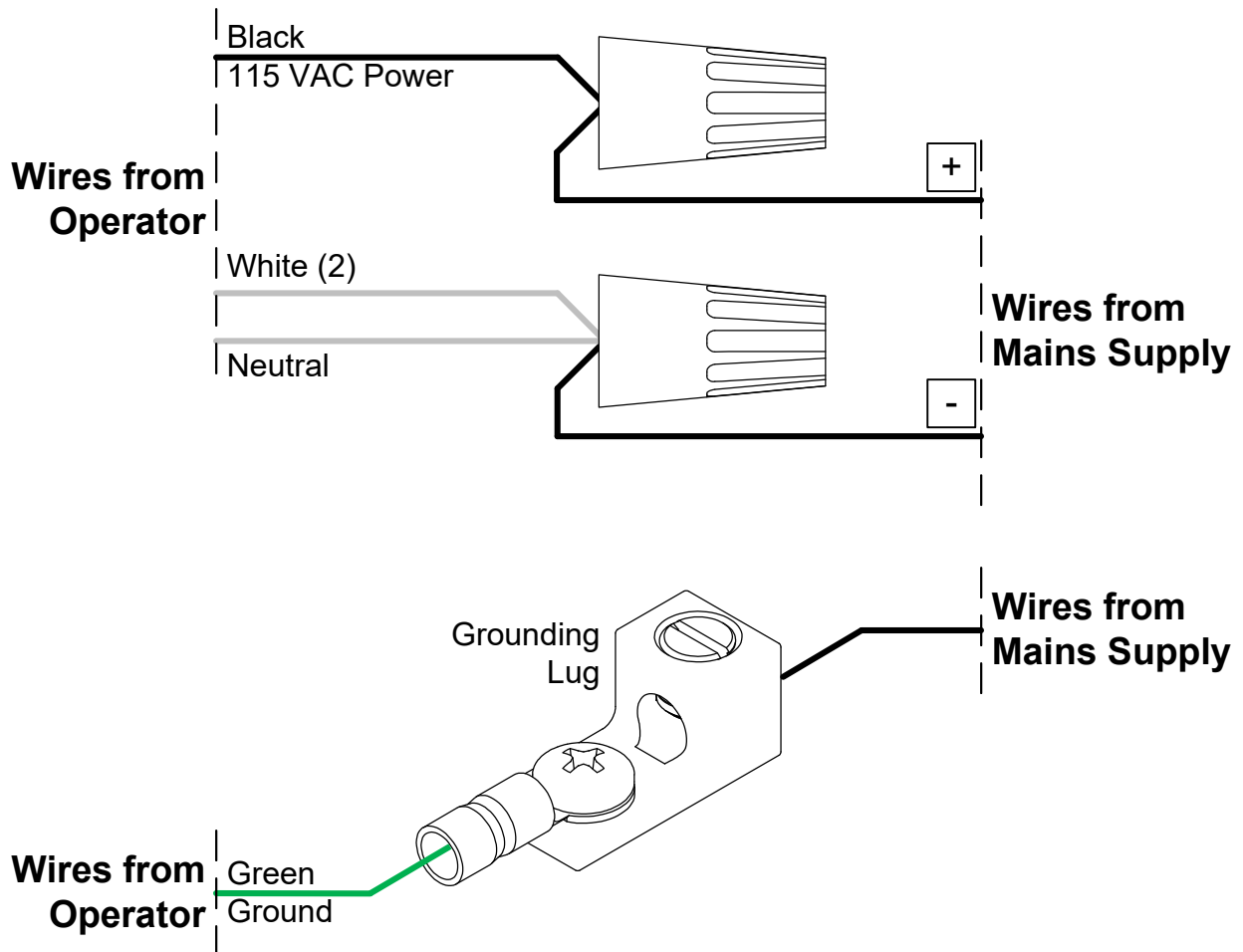
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STEP 5: 120 VOLT AC ELECTRICAL CONNECTION

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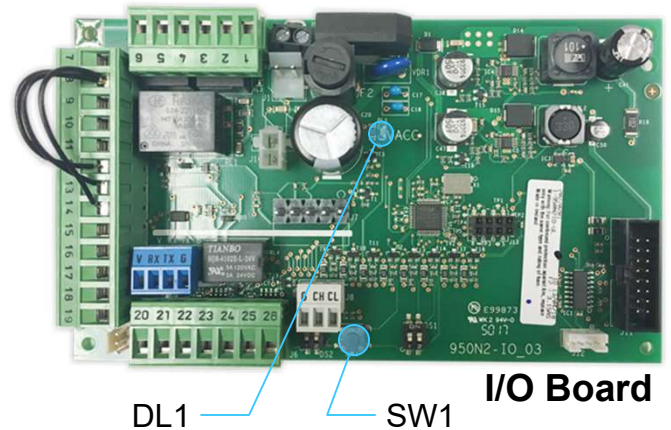
Connect the main power to the Black, White, and Green wires using the two supplied wire nuts as shown below.

- Connect positive to the Black wire.
  - Main power supply requirements: 120 VAC, 15A, Single Phase, 60Hz circuit.
- Connect both White wires to incoming neutral.
- Use Grounding Lug to connect to ground.

Black
115 VAC Power

Wires from Operator

+

White (2)

Neutral

Wires from Mains Supply

-

Grounding Lug

Wires from Mains Supply

Wires from Operator | Green Ground

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STEP 6: POWER ON & TUNE-IN

- Ensure the 120 VAC is connected and secure.
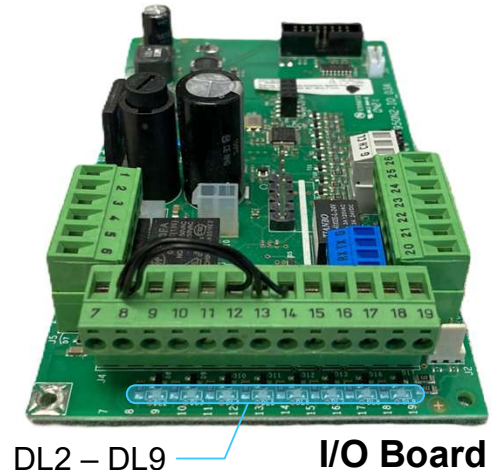- Ensure Off-On-Hold Switch is in the middle (0) position.
- Apply power using the Power Switch and observe the LEDs on both boards:
  - On the I/O Board, LEDs DL1, DL4, DL5, & DL6 must be ON solid green upon power up.
  - On the Logic Board, LED DL3 should be flashing blue.
- The I/O Board will not accept an activation until approx. 8 seconds after powering on AND until an initial setup is completed.
- Initial setup should be done with all dip switches in the OFF position for Push Applications, and with DIP #2 on the Logic Board ON for Pull Applications (see page 18 for Dip Switch functions).

HOLD OPEN *ABIERTO*   **ON** *AUTOMÁTICO*   **OFF** *MANUAL*

Logic Board

DL1
DL2
DL3
DL4

DL1   SW1   **I/O Board**

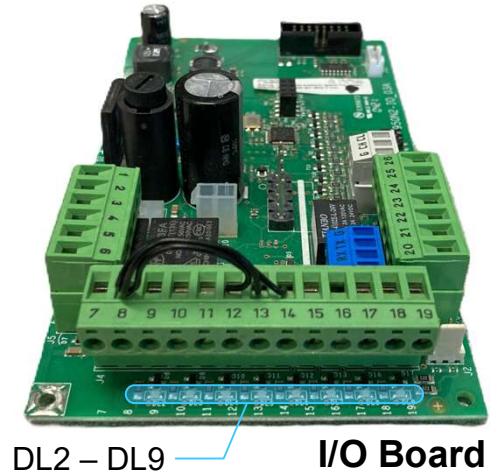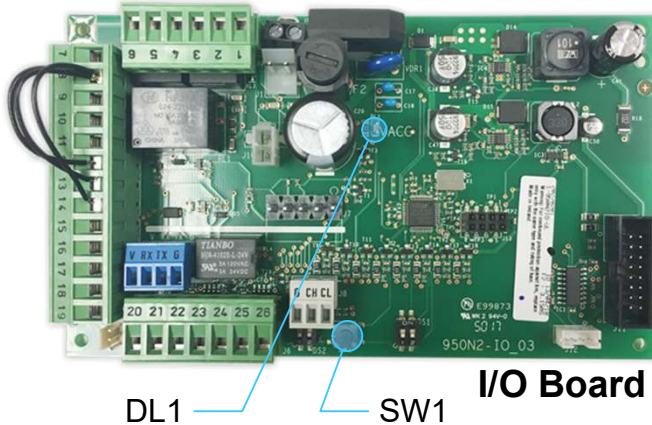**Perform an initial setup at the I/O board as follows**:

- Ensure main power is on.
- At the I/O Board, depress the SW1 button for approximately 5 seconds. When the red LED (DL2) at 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.

DL2 – DL9   **I/O Board**

IMPORTANT NOTE: If the operator 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 must 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.

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I/O Board LED Indicators

DL1 ———— SW1 **I/O Board**

DL2 – DL9 **I/O Board**

LED	ON	OFF	Notes
DL1	Accessories power is present	No Accessories power	
DL2	Internal Opening Command **active**	Internal Opening Command **inactive**	Indicates status of input 10
DL3	External Opening Command **active**	External Opening Command **inactive**	Indicates status of input 11
DL4	Emergency Command **inactive**	Emergency command **active**	Indicates status of input 12
DL5	Secondary Activation **inactive**	Secondary Activation command **active**	Indicates status of input 13
DL6	Stop Command **inactive**	Stop Command **active**	Indicates status of input 14
DL7	Inactive	Inactive	Inactive
DL8	Alarm command is **active**	Fire Alarm Command **inactive**	Indicates status of input 16
DL9	Reserved	Reserved	Indicates status of input 17

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.

Logic Board LED Indicators

DL1 – Green LED, illuminates when:
- A USB connection is present.

DL2 – Red LED, flashes when:
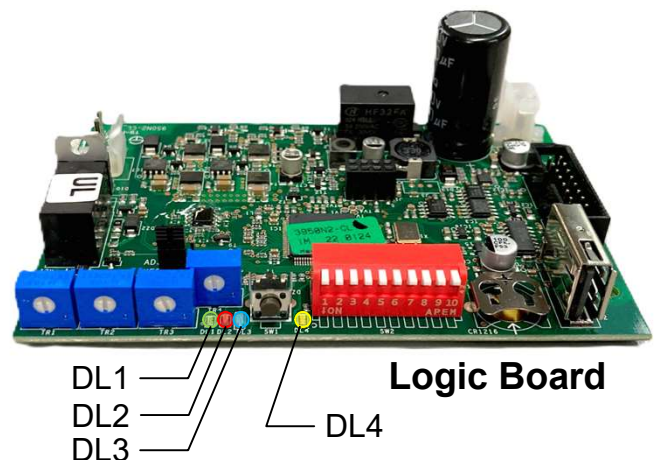- An error condition exists (solid or slow flash)
- Initialization required (slow flash)
- Setup in progress (fast flash)

DL3 – Blue LED, illuminates then flashes when:
- The device is operating normally.
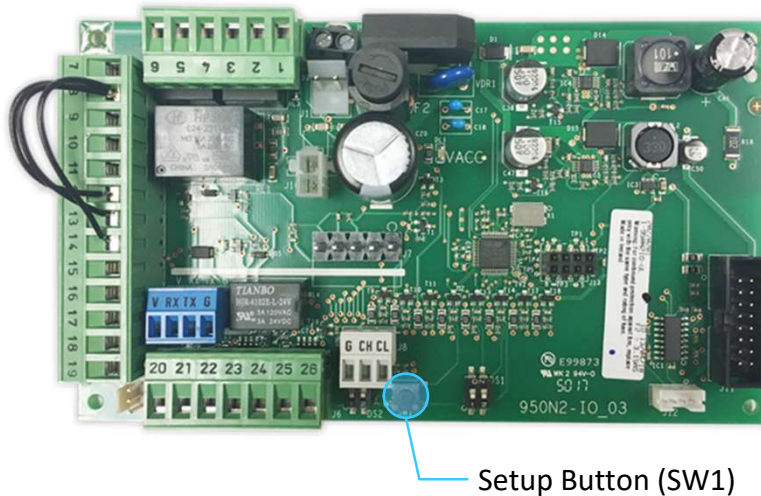
DL4 – Yellow LED, illuminates when:
- A change has been made to the control, such as speed or time adjustment or dip switch

DL1 ————
DL2 ———— **Logic Board**
DL3 ————
DL4 ————

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STEP 7: 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 below), to allow the start of the setup process detailed in Step 6.
- 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.**
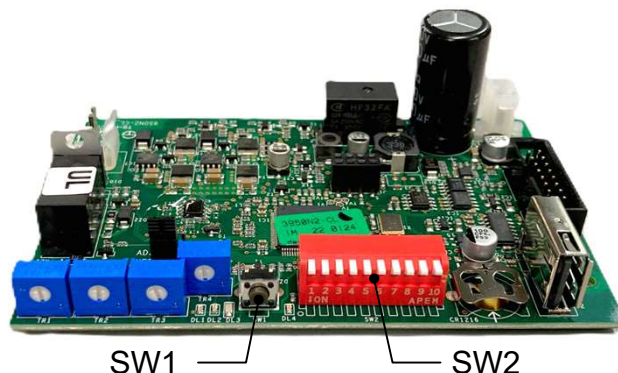

Setup Button (SW1)

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STEP 8: SET 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.

Initial setup should be done with all dip switches in the OFF position for Push Applications, and with #2 ON for Pull Applications. All other dip switches may be set after the initial setup.

SW1 ⎯⎯   ⎯⎯ SW2

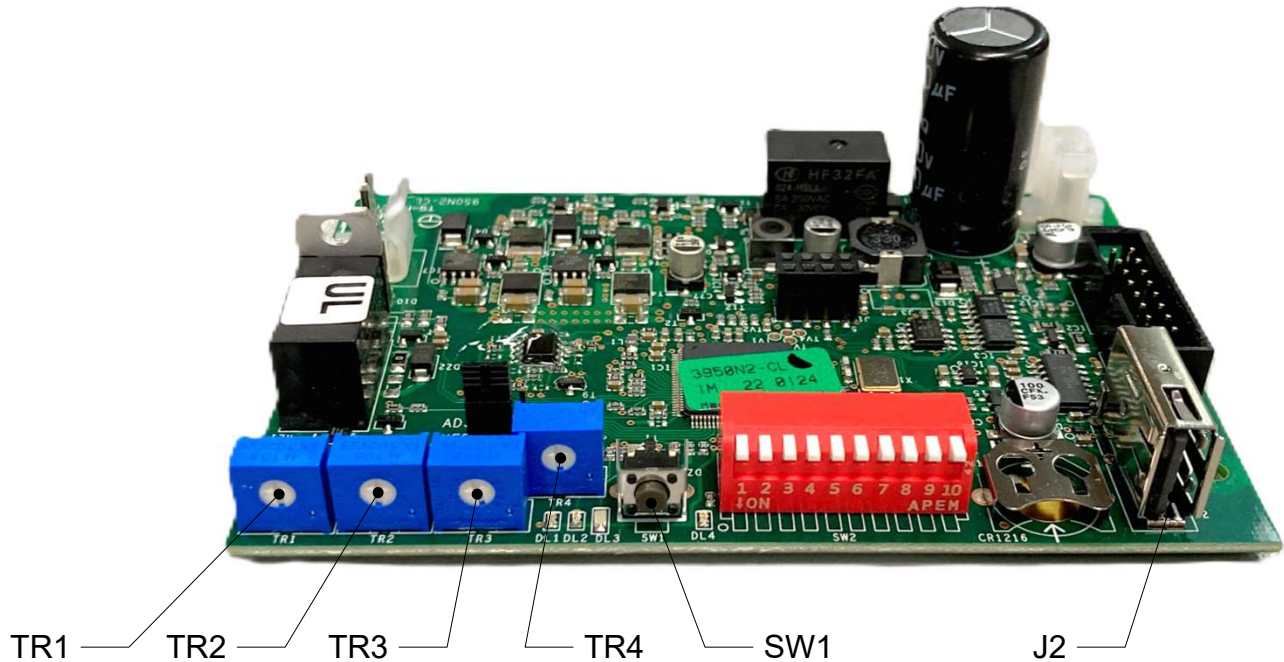|	Description	ON	OFF
1	Closed Door Force	Additional force applied while door is in closed position. Be sure to maintain ANSI compliance if using on low energy application. Cannot exceed 30 lbf to get door moving from jamb.	Disabled (Default)
2	Push / Pull Arm	Use for Slide Arm Applications. Operator 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 10 when On-Off Switch is in OFF (night function) position.	Disabled. The On/Off Switch, when OFF, required manual operation of the door. (Default)
4	Push and Go	Enabled.	Disabled (Default)
5	Full Power / Low Energy	Low Energy performance enabled. 5 seconds to open, 7 seconds hold open, 5 seconds to close. Speed & time potentiometers are disabled. Settings are fixed.	Disabled. Control can be adjusted for full power or low energy operation via potentiometers. (Default)
6	Not used for Low Energy Applications		Set to OFF for Low Energy Applications. Required when using Stall Safety input (14).
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: SDC recommends the use of a door-mounted secondary activation device when dip switch 9 is ON-Enabled.

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STEP 9: I/O BOARD WIRING CONNECTIONS

	Position	Function	Description
Terminal Strip J5	1	Electric Lock 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 though the relay. Relay is triggered by activation inputs 10, 11, or 15. Relay remains energized until door is fully closed again.
	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 though the relay. Relay is triggered by activation inputs 10, 11, or 15. Relay remains energized until door is fully closed again.
	4	Door Status – Closed	N.C. Dry Contact - Contact opens upon activation. Contact remains open until door is fully closed again.
	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.
Terminal Strip J4	7	GND	Common Ground
	8	GND	Common Ground
	9	+24VDC	1A Max. Current
	10	Internal Activation	Requires N.O. Contact between input 10 & COM. Remains capable to activate when dip switch 3 is ON AND On-Off switch is OFF.
	11	External Activation	Requires N.O. Contact between input 11 & COM.
	12	Emergency Closing	Requires N.C. contact between 12 & COM. Upon open contact, door closes and overrides all other inputs. Remains jumpered if input is not used.
	13	Secondary Activation	Requires N.C. contact between 13 & COM. Disabled in full closed position. Used for AUTO-IR door-mounted presence sensor.
	14	Stall Safety	Requires N.C. contact between 14 & COM. Upon open contact, during opening, door stops, then resumes at reduced speed when input is released.
	15	Key Input	N.O. connection
	16	Alarm Input	N.O. contact, when closed causes door closing. All inputs inhibited during closed contact
	17	Not Used	Requires N.O. contact
	18	GND	Common Ground
	19	GND	Common Ground
Terminal Strip J6	20	Aux Relay	Not used
	21	Aux Relay	Not used
	22	Aux Relay	Not used
	23	Solid State Output #1	Configurable using AUTO-PROG handheld programmer
	24	Solid State Output #2	Configurable using AUTO-PROG handheld programmer
	25	+24VDC	1A max. (Total for terminals 9 & 25)
	26	GND	Common Ground

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STEP 10: ADJUSTING TIMERS ON THE LOGIC BOARD

LEGEND:

TR1 – Opening speed adjustment. Increase speed by turning clockwise = decrease open cycle time

TR2 – Closing speed adjustment. Increase speed by turning clockwise = decrease open cycle time

TR3 – Hold-open time adjustment

TR4 – Closing speed adjustment when mains power is OFF **TR4** will only be enabled when jumper J6 is moved to ADJ. (It is enabled by default).

SW1 – 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 the blue potentiometers or dip switches. 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 activation from input 10, 11, and 13.
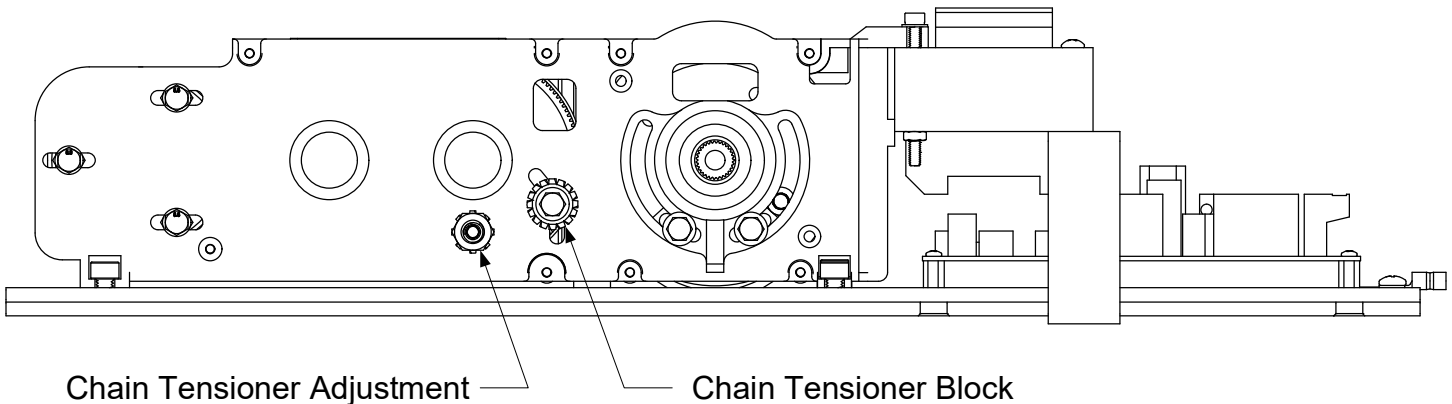- When Dip Switch 5 is ON, the blue speed and time potentiometers are disabled and will have no effect.

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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 • 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).
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.

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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.
- 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.
- Wear marks may be evident on the body of the operator where the tensioner bolt has slipped.

Chain Tensioner Adjustment ─── ─── Chain Tensioner Block

Adjusting the Chain Tensioner

1. Loosen the Chain Tensioner Adjustment Lock Nut (do not remove it).
2. Loosen the Chain Tensioner Block Hex Screw (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.
4. Re-tighten the Chain Tensioner Block Hex Screw while maintaining chain tension - These bolts are generally torqued to around 3.7ft lbs.
6. Re-tighten the Chain Tensioner Adjustment Lock Nut.
7. When complete, double check the positions of the Mechanical Stops - adjust if necessary.
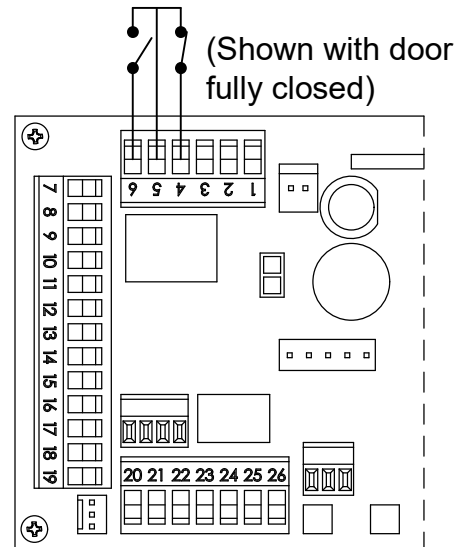8. Launch a new setup with the Control Boards to check for proper operation.

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APPENDIX B – WIRING DIAGRAMS

Door Status Switch Output

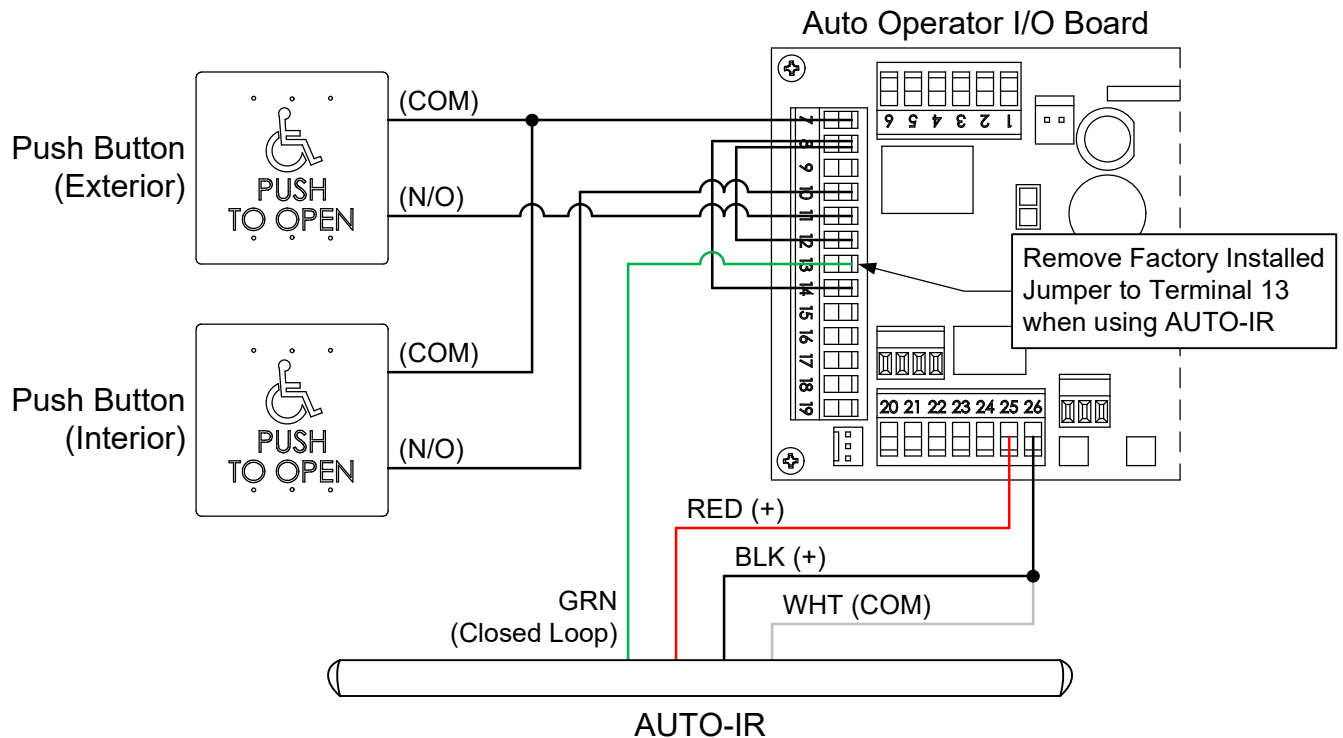**Terminal 4**: Door "Closed" status switch: Contact closes upon full door closed position.

Terminal 5: Common for both Door Open & Closed status.

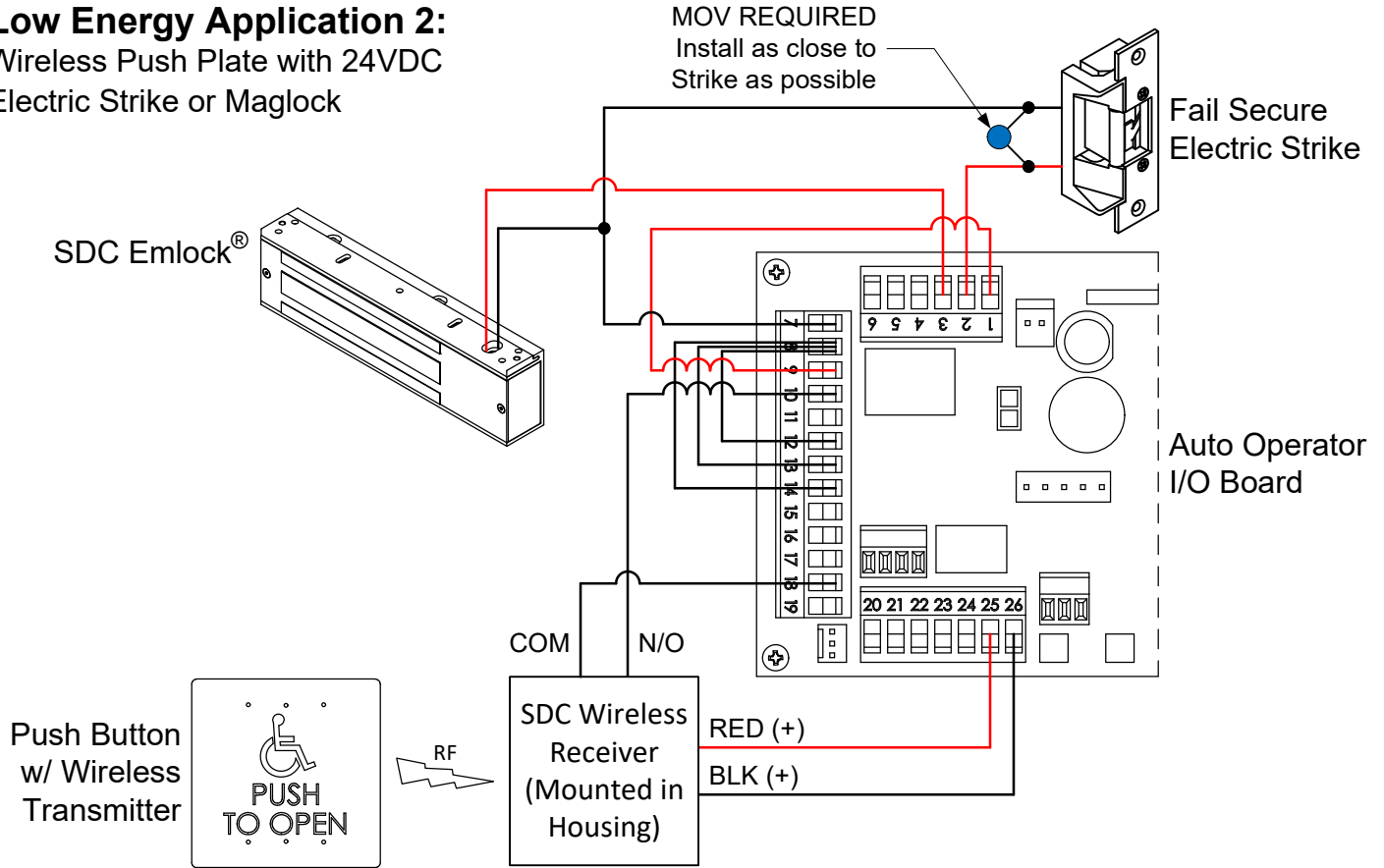**Terminal 6:** Door "Open" status switch: Contact is closed when door is full open.

(Shown with door fully closed)

Low Energy Application 1:

Push Plates with Approach Side Door-Mounted Sensor

Auto Operator I/O Board

Push Button (Exterior)

♿ PUSH TO OPEN

(COM)

(N/O)

Push Button (Interior)

♿ PUSH TO OPEN

(COM)

(N/O)

Remove Factory Installed Jumper to Terminal 13 when using AUTO-IR

RED (+)

BLK (+)

WHT (COM)

GRN (Closed Loop)

AUTO-IR

- 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.
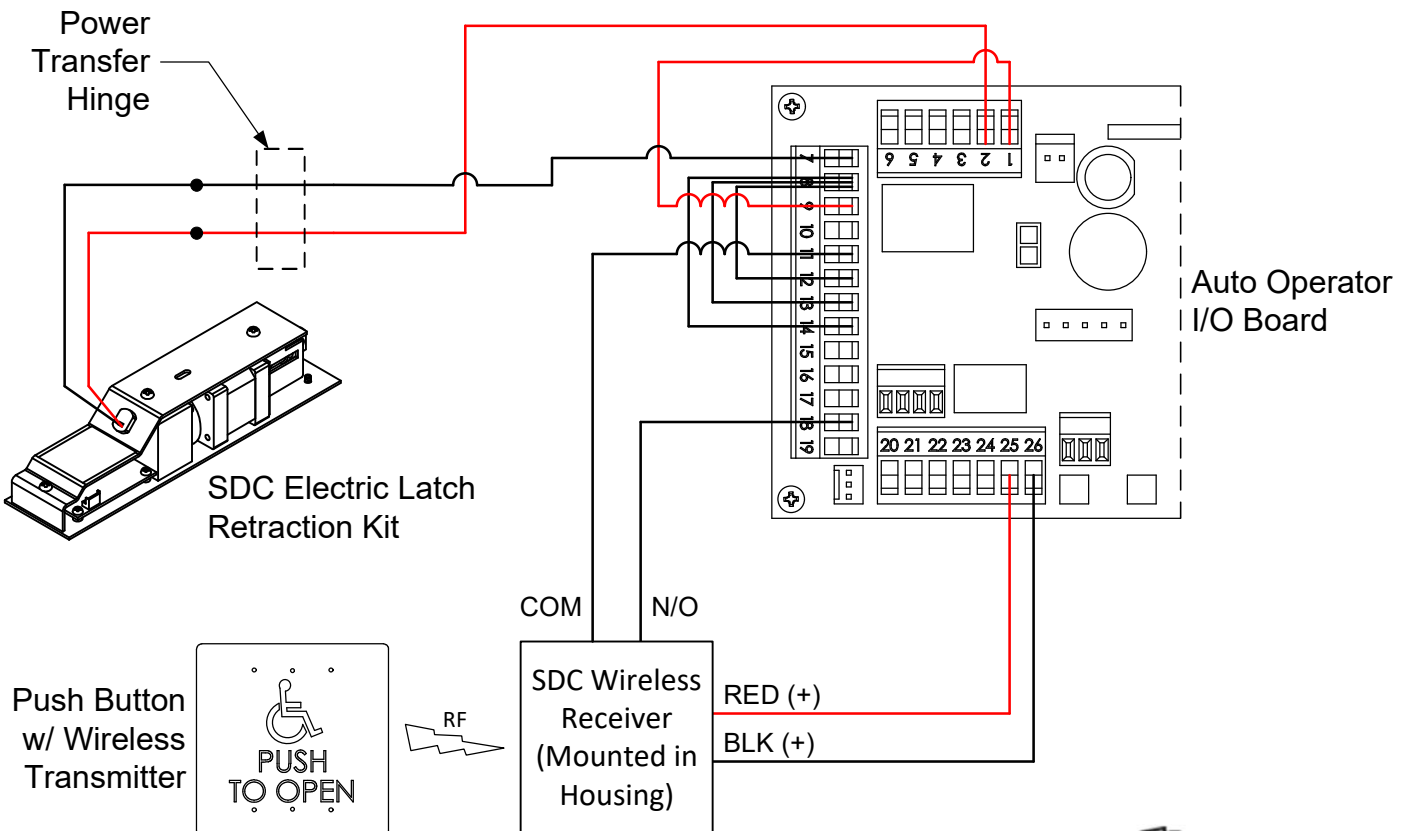
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Low Energy Application 2:
Wireless Push Plate with 24VDC
Electric Strike or Maglock

MOV REQUIRED
Install as close to
Strike as possible

Fail Secure
Electric Strike

SDC Emlock®

Auto Operator
I/O Board

Push Button
w/ Wireless
Transmitter

PUSH TO OPEN

RF

COM   N/O

SDC Wireless
Receiver
(Mounted in
Housing)

RED (+)
BLK (+)

Low Energy Application 3:
Wireless Push Plate with SDC Electric Latch Retraction Kit

Power
Transfer
Hinge

SDC Electric Latch
Retraction Kit

Auto Operator
I/O Board

Push Button
w/ Wireless
Transmitter

PUSH TO OPEN

RF

COM   N/O

SDC Wireless
Receiver
(Mounted in
Housing)

RED (+)
BLK (+)

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Low Energy Application 4:

Simultaneous Pair

Door #1 I/O Board Terminals

Door #2 I/O Board Terminals

HOLD — Green
AUTO — White
OFF — Brown

DOOR #1   **DOOR #2**

Plug in at Control

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 8, 10 and 11 at door #1 and are connected via sync line to Door #2.

When using pairs of controls, N.C. inputs 12, 13 and 14 may be sync'd to each other, OR each control may 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, a N.C. switching circuit will connected to Door #1, and a sync line will be connected to Door #2.

For simultaneous pairs, each plug-in connector for the control is 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.

All dip switches at each control must be set independently and must match between controls.

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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.

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