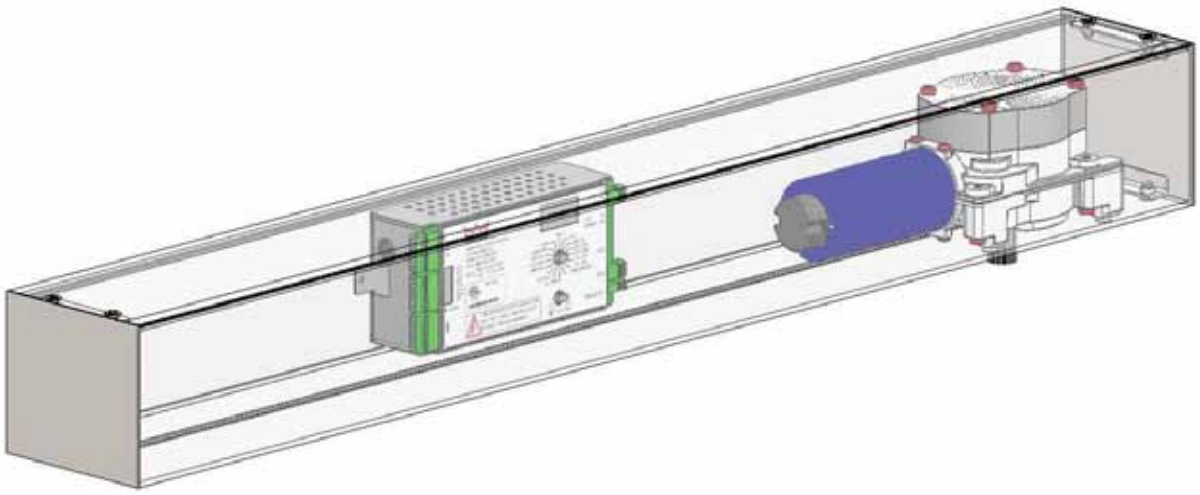
LOW ENERGY
AUTOMATIC SWING DOOR

INSTALLATION AND TUNE IN MANUAL

Distributed by:



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DL3038-010 Rev. B 6/08

Contents

ED700 LOW ENERGY AUTOMATIC DOOR OPERATOR

Page Number

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Important Installation Instructions

1. Carefully Read And Follow All Installation Instructions
2. Always disconnect the power supply before servicing.
3. After installation and adjustment, the installers final responsibility is to properly Instruct the owner in the safe use of the door. He must also present the owner With the ED700 Owner's Manual and carefully explain how to perform the Daily Safety Check.
4. Save These Instructions for Future Reference

Compliance with Safety Standards

Your door system was designed to the latest operating and safety standards. In Order to ensure the continued safe operation of your door, it is important that:

- Your door system be maintained in compliance with the standards of the industry, BHMA/ANSI 156.19.
- Proper decals and labels to be applied, per BHMA/ANSI standards, and maintained On your doors.

Suggested Tools:

Screwdrivers
- Small straight flat blade-for small terminals
- #2 Phillips (cross point)
- #3 Phillips (cross point)

Wrench / Sockets
- 9/16" Socket for arm attachment
- 1/2" Wrench / Socket
- 7/16" Wrench / Socket
- 3/8" Wrench / Socket

Electric Drill / Screwgun
- Various bits 1/8", 7/32", 1/4", 3/8", 1/2"
- 1' Holesaw
- Countersink

Level
Step Ladder
Tape Measure
Electrical Wire Strippers / Cutters
Various Wire Nuts

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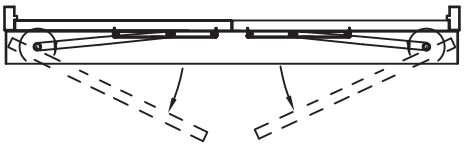
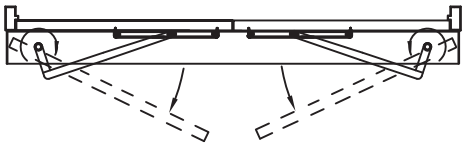
ED700 SALES PACKAGES:
SURFACE APPLIED

See page 25 for minimum and maximum header lengths and door weights.

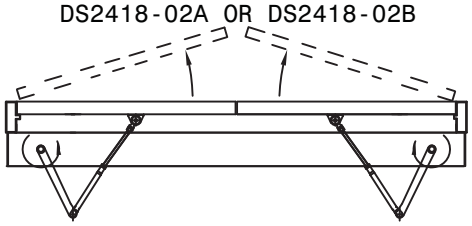
PAIR LH-RH, PULL (IN) 0" Reveal Only
DS2419-02A OR DS2419-02B



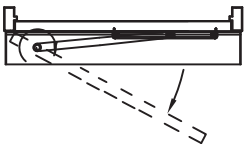
PAIR LH-RH, PULL (IN) 0" to 6" Reveal
DS2519-02A OR DS2519-02B



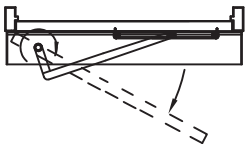
PAIR LH/RH, PUSH (OUTI)
DS2418-02A OR DS2418-02B



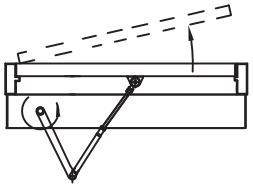
SINGLE RH, PULL (IN) 0" Reveal Only
DS2416-02A OR DS2416-02B



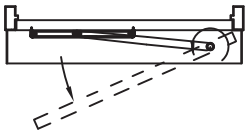
SINGLE RH, PULL (IN) 0" to 6" Reveal
DS2521-02A OR DS2521-02B



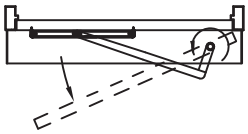
LH, PUSH (OUT)
DS2417-02A OR DS2417-02B



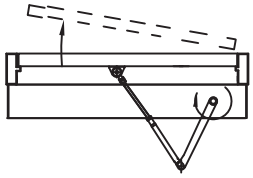
SINGLE LH, PULL (IN) 0" Reveal Only
DS1350-02A OR DS1350-02B



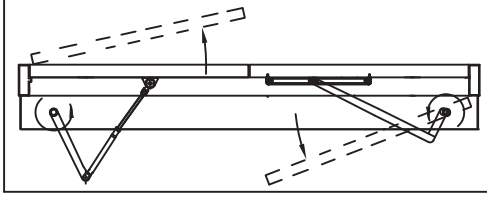
SINGLE LH, PULL (IN) 0" to 6" Reveal
DS2520-02A OR DS2520-02B



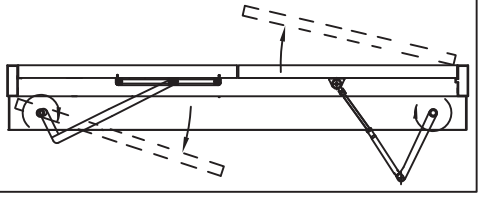
RH, PUSH (OUT)
DS2415-02A OR DS2415-02B



Left Hand Double Egress
DS1400-02A OR DS1400-02B



Right Hand Double Egress
DS2420-02A OR DS2020-02B



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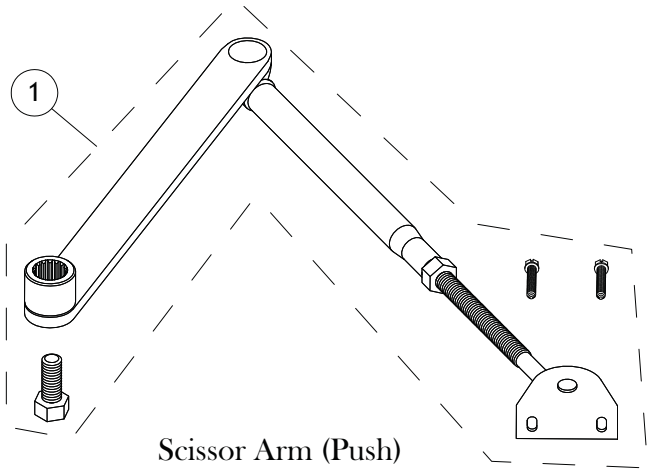
ARM STYLES



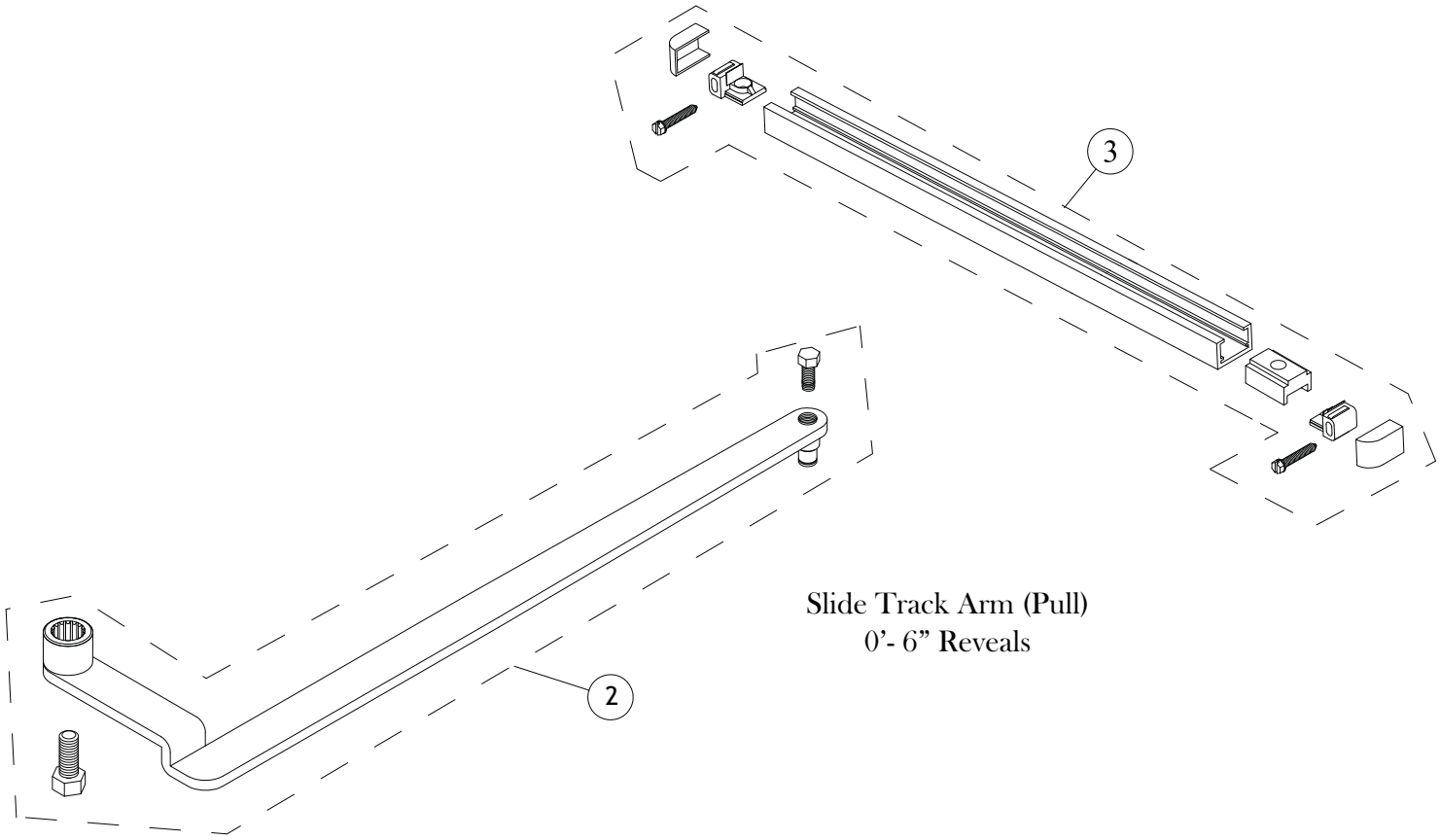
Scissor Arm (Push)

1. DC0847-01A ARM, UNIVERSAL SCISSOR CL
   DC0847-01B ARM, UNIVERSAL SCISSOR DB

   DK2494-01A KIT, DOUBLE EGRESS SISSOR ARM
   EXTENDED SPINDLE REQUIRED FOR DOUBLE EGEESS APPLICATIONS

2. DS2516-01A ASSY, TRACK ARM RH CL
   DS2516-01B ASSY, TRACK ARM RH DB
   DS2219-01A ASSY, TRACK ARM LH CL
   DS2219-01B ASSY, TRACK ARM LH DB

3. DS2409-01A ASSY, SLIDE TRACK
   DS2409-01B ASSY, SLIDE TRACK



Slide Track Arm (Pull)
0'- 6" Reveals

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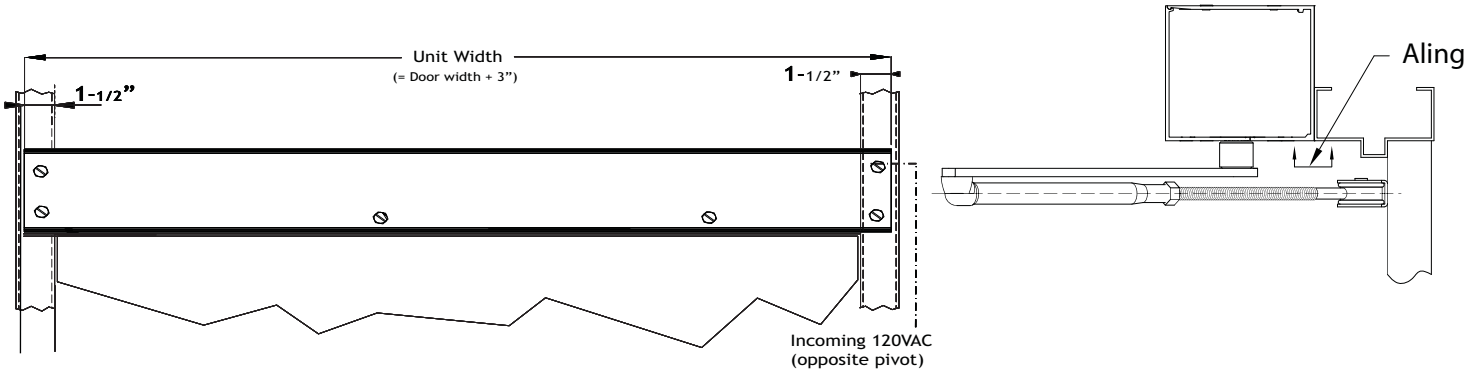
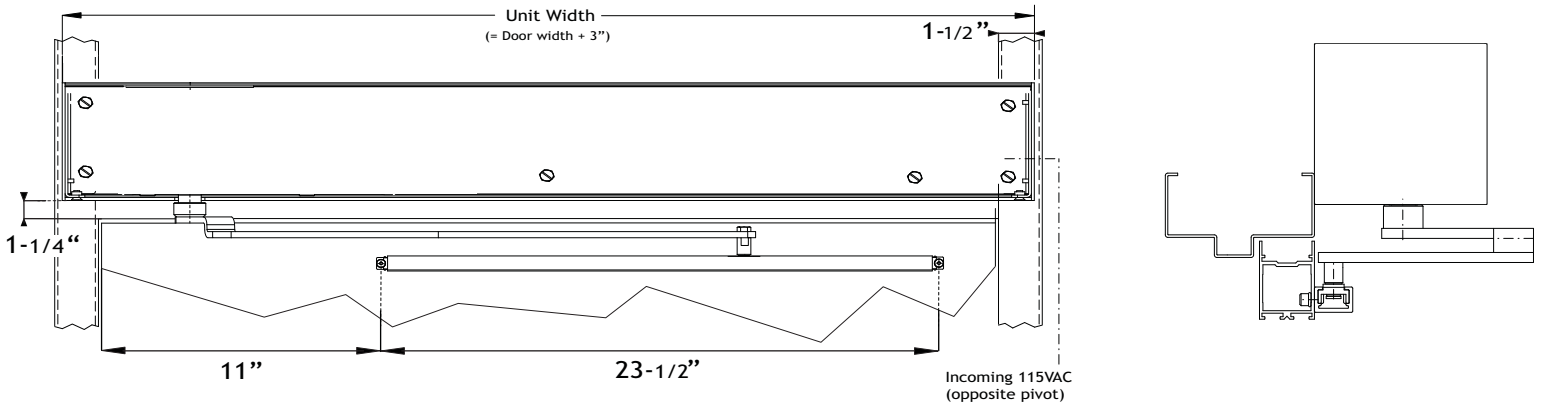
MOUNTING THE HEADER

PUSH ARM



The header should overlap the door opening 1-1/2" on each side of the frame.
If the header is shorter then the door opening the pivot side should overlap the frame by 1-1/2" the centerline of the drive shaft should be 4" from the pivot side of the opening in most applications.
If the header is not predrilled with mounting holes, locate and predrill at least six mounting locations.
For outswing applications using a Push arm the header should be flush with the bottom of the frame opening, for frames with a standard stop.
For inswinging doors using Pull Arms or Double Egress applications the header should be located 1-1/4' from top of the door.
The header must be plumb and level and fastened securely to the mounting surface. Fasteners will vary with the mounting surface but the unit is supplied with fasteners that provide adequate support for most applications. Drywall mounting surfaces or stucco surfaces will require additional backing to support the header.

PULL ARM TRACK OR DOUBLE EGRESS PAIR



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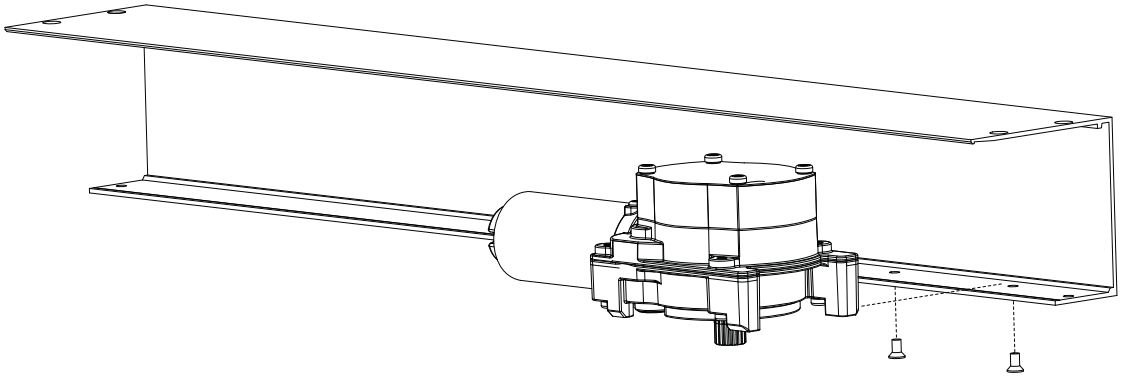
INSTALLING THE OPERATOR

TO INSTALL THE OPERATOR:

Align the bottom two holes with the two holes on the header
and fasten the operator to the header with (2) #1/4-20 X 1/2" FH screws.



WARNING: DO NOT ROTATE THE SHAFT, INSTALL THE ARM OR CONNECT TO THE DOOR WITHOUT FIRST CONNECTING THE CONTROLER TO THE OPERATOR.

THE CLOSING SPEED CONTROL IS IN THE CONTROLER, ALLOWING THE OPERATOR TO SLAM CLOSED WITHOUT THE CONTROLER CONNECTED MAY RESULT IN DAMAGE TO THE OPERATOR.

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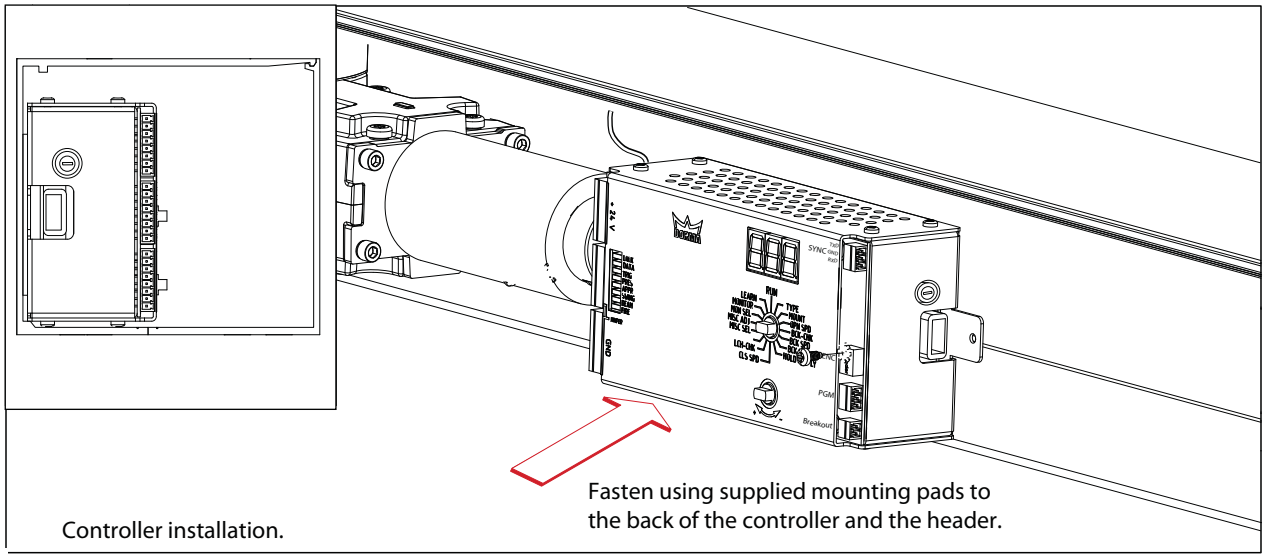
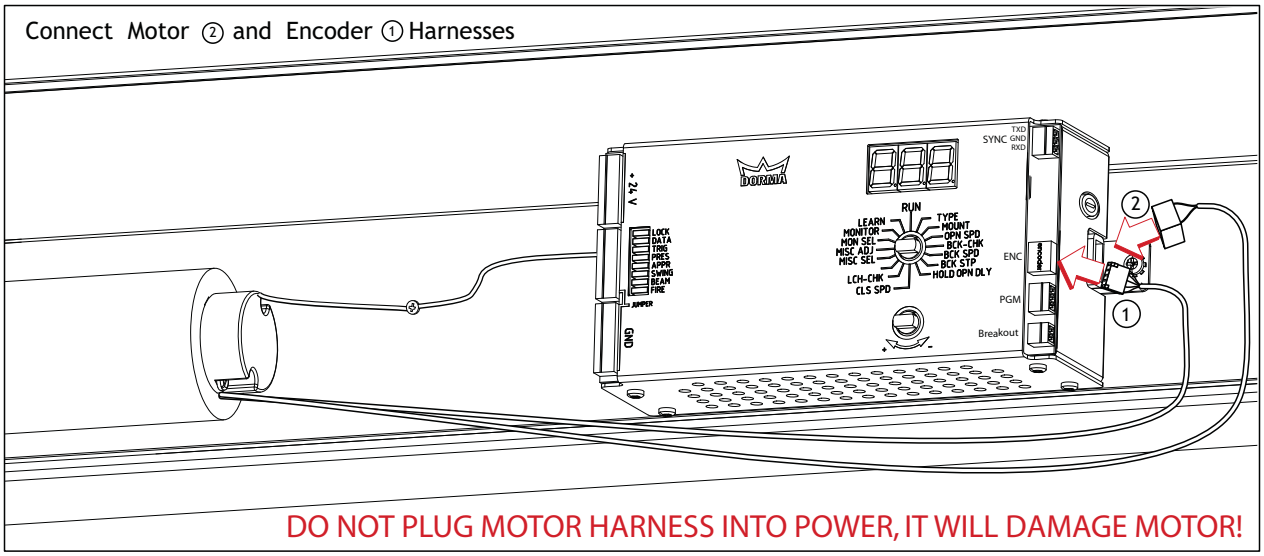
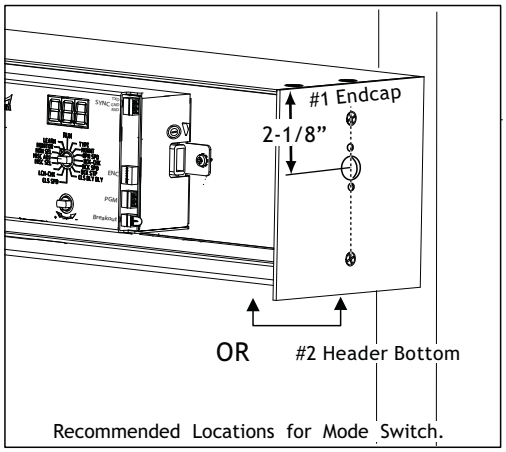
INSTALL THE CONTROLLER and ON OFF HOLD SWITCH (PROGRAM)



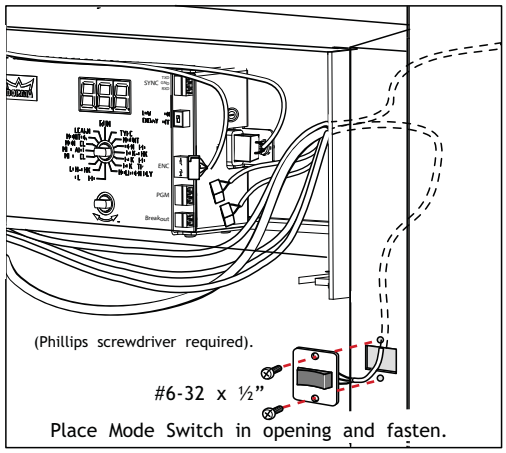
Controller installation.

Fasten using supplied mounting pads to the back of the controller and the header.

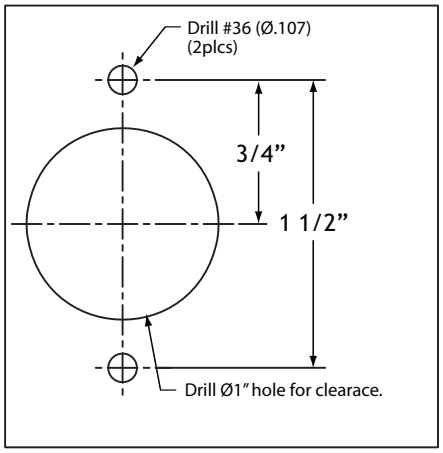




Recommended Locations for Mode Switch.



Place Mode Switch in opening and fasten.



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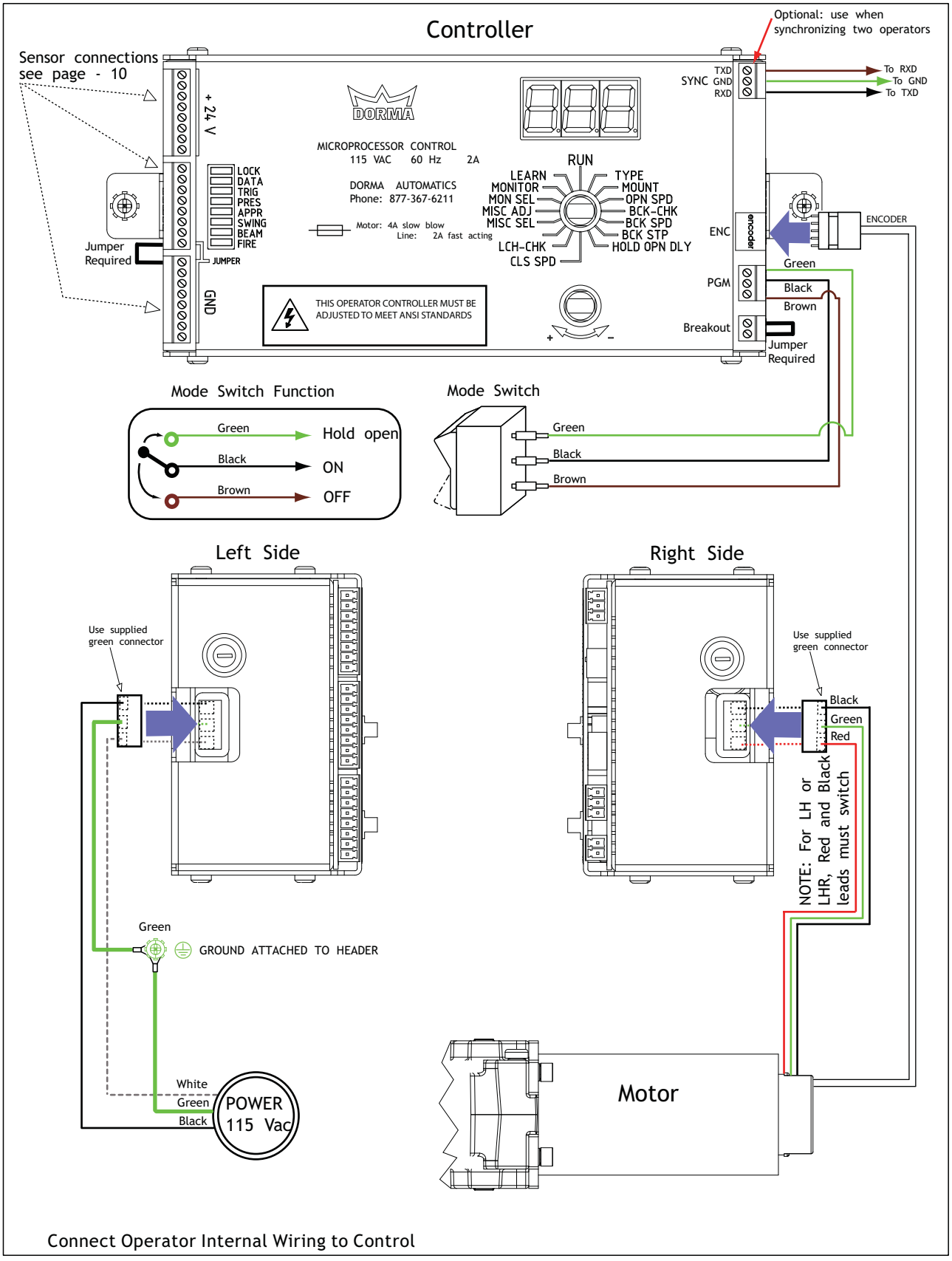
Connecting the Controller



Connect Operator Internal Wiring to Control

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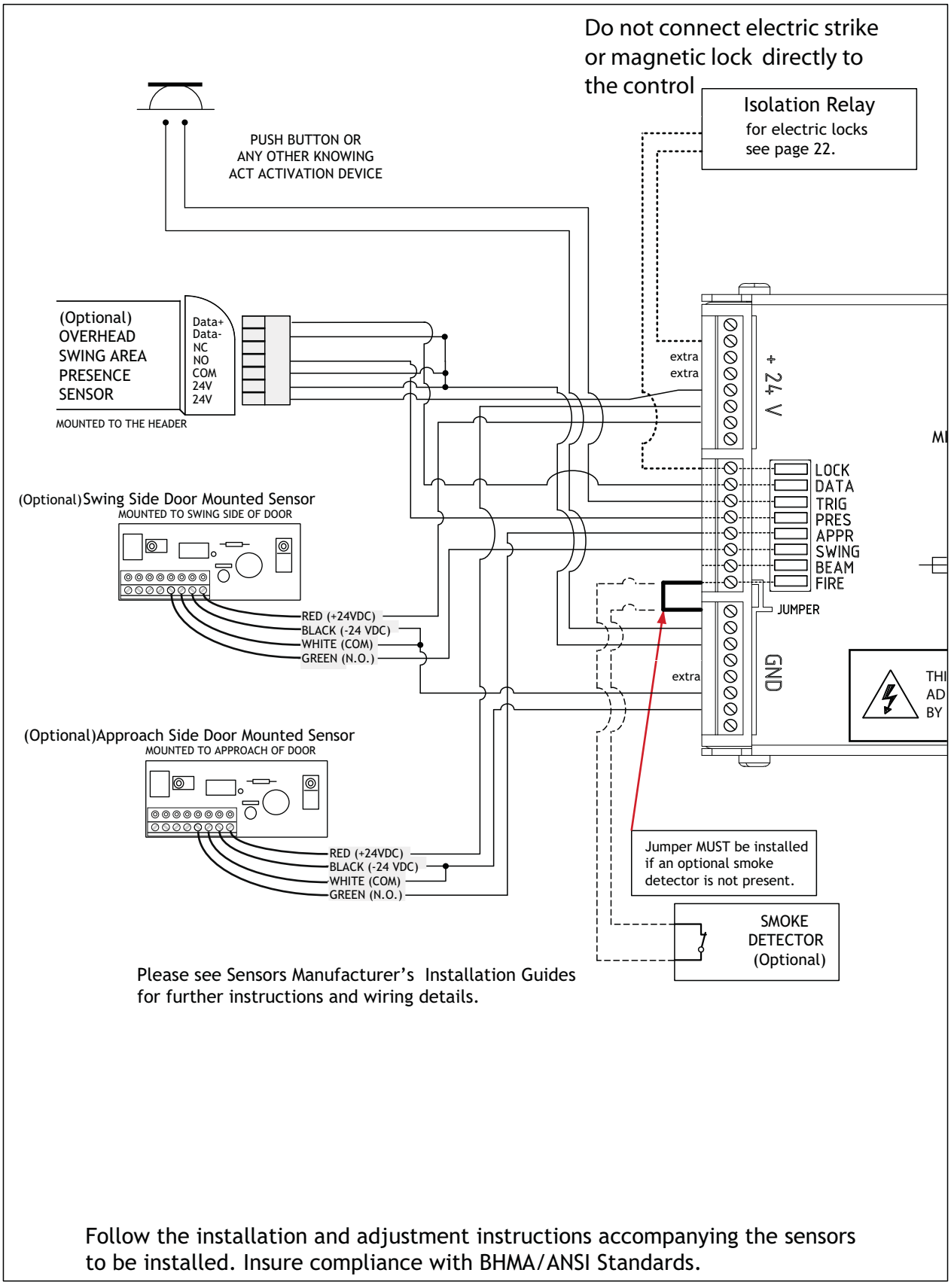
WIRING DIAGRAM FOR PUSH PLATES AND OPTIONAL ACCESSORIES



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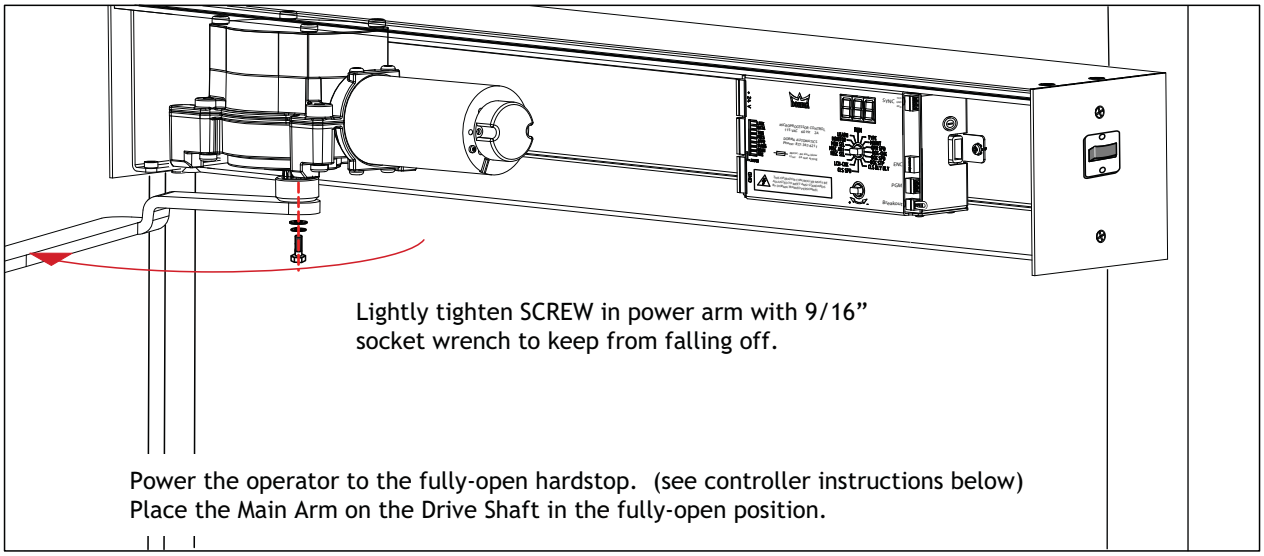
Power the Operator to Hardstop



Lightly tighten SCREW in power arm with 9/16" socket wrench to keep from falling off.

Power the operator to the fully-open hardstop. (see controller instructions below)
Place the Main Arm on the Drive Shaft in the fully-open position.

Using the Controller to Power the Operator to Hardstop

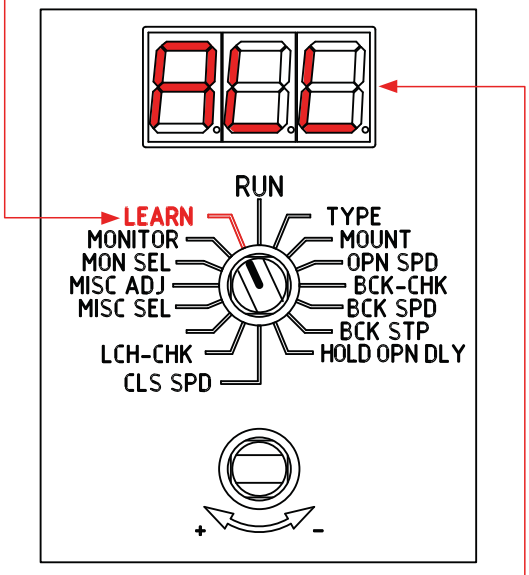
The purpose of this feature is to drive the operator to the fully-open hardstop. It is also used to load the operator spring during the installation.

Basic Requirements

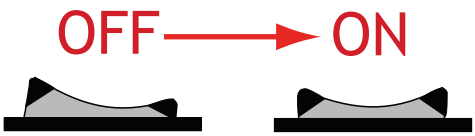
- All cables are connected.
- Swing area is clear of obstacles
- Mode switch in position "OFF".
- Power connected.

Start-Up

- Turn selector knob to "LEARN".



- The display will read "ALL".
- Turn mode switch from "OFF" to the "ON" position.



- The operator pinion will now begin turning slowly in the open direction, and stop indefinitely at the hardstop.
- Connect the arm to the operator pinion with the door opened to 5 degrees beyon the desired fully open position.
- When installation procedure is complete, turn the mode switch to the "OFF" position to power down the operator and close the door.

If the control will not rotate to the hardstop the control may need to be reset to default settings.

Reseting the control to defaults.

REFER TO BOTTOM OF PAGE 19 FOR DETAILS

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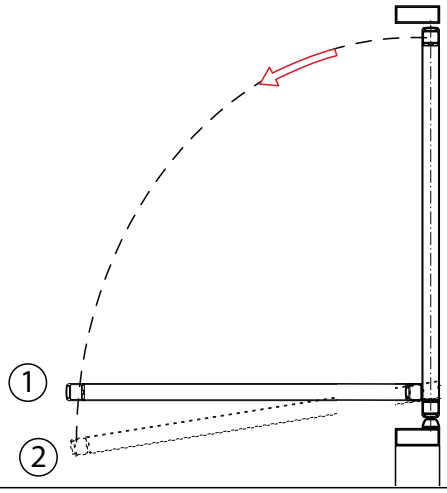
ELECTRONIC STOP SETUP DETAILS

Hardstop Note



1. Electronic Stop - this is set by the controller and acts as the backstop during door operation. It is always set at less than the angle for the Physical Hardstop. Set around 3° to 5° less than the Physical Hardstop.

The ED 700 has two stops one being mechanical and the other being a software controlled stop when programing the door keep in mind that the softstop has to 3 to 5 degrees before the hardstop. Once programed the door will stop at the software stop if it is pushed past this point it will return to the softstop. If you can not swing the door past 90 degrees there are alternative options to preload the arm please contact technical services for assistance.

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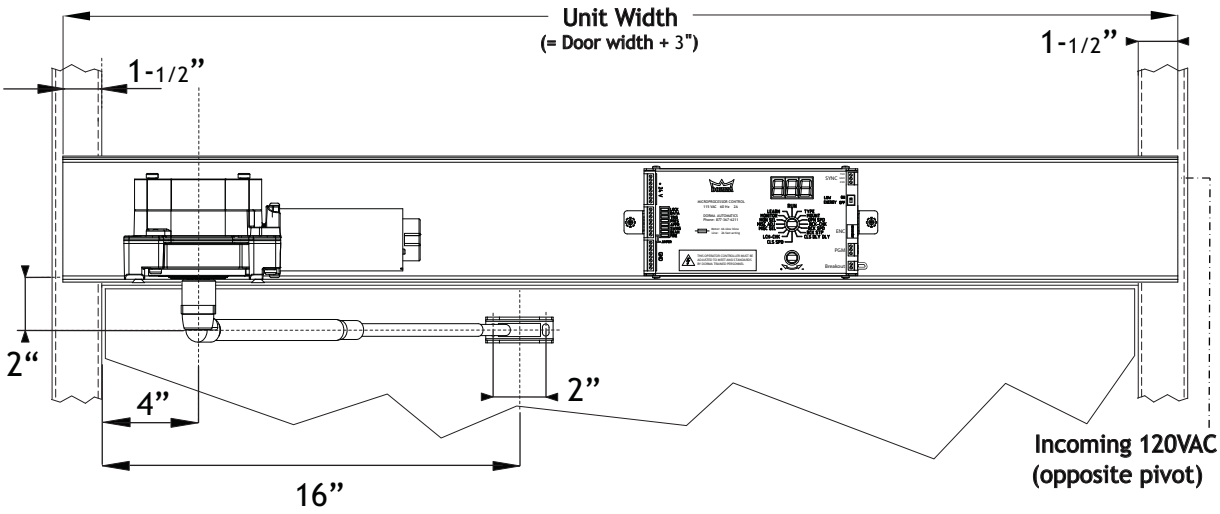
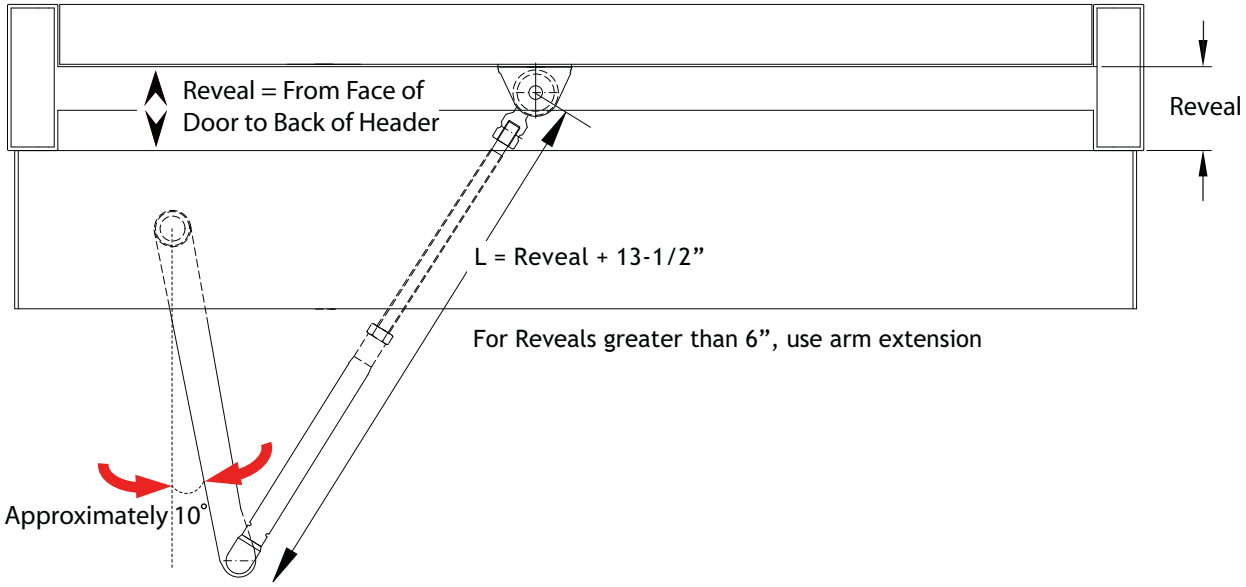
Mount the Push Arm (Install arms with doors at 95 degrees)





The shoe is mounted to the door 2" below the frame. 16" from the pivot side of the door to the centerline of the shoe. Mark the mounting holes for the shoe and secure it to the door using the fasteners provided. Next adjust the connecting arm to the proper length by adding 13-3/8 to the reveal.

To install the arm rotate the operator to the full open position, see page 11. With the operator against the hard stop swing the door open past 90 degrees. With the connecting arm attached to the shoe on the on the door attach the arm to the operator with the door at 95 to 105 degrees and secure the arm to the door. Turn the door off and let it close, once the arm is attached complete the basic set up on page 17.

Make sure the dive arm is not at 90 degrees in relation to the header when the door is closed adjust the connecting arm if necessary.

Installation of Surface Applied - Push Application.

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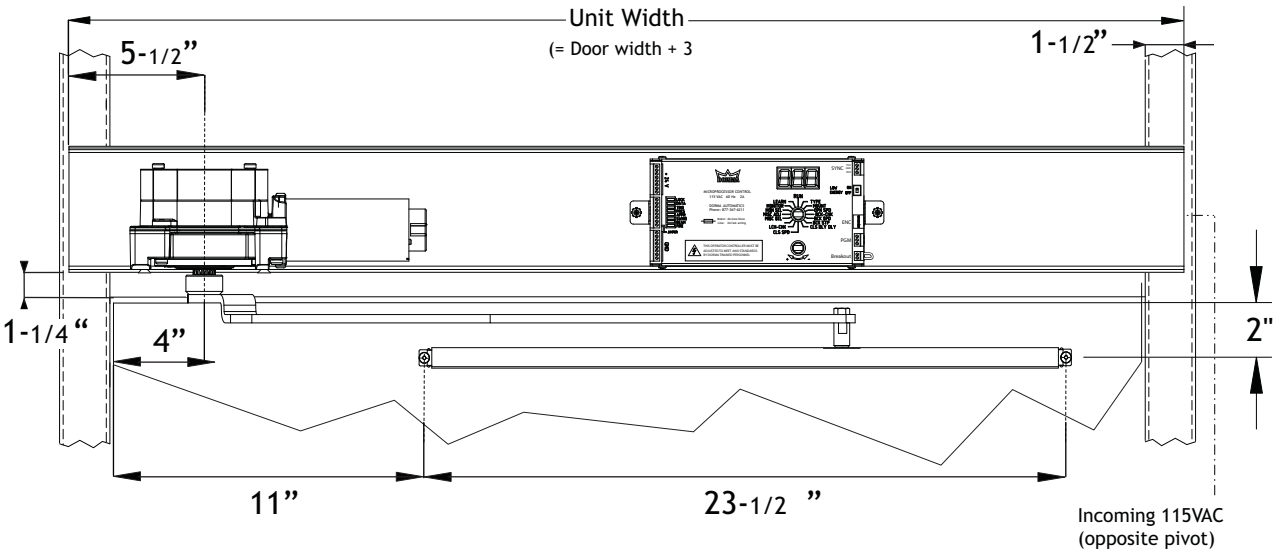
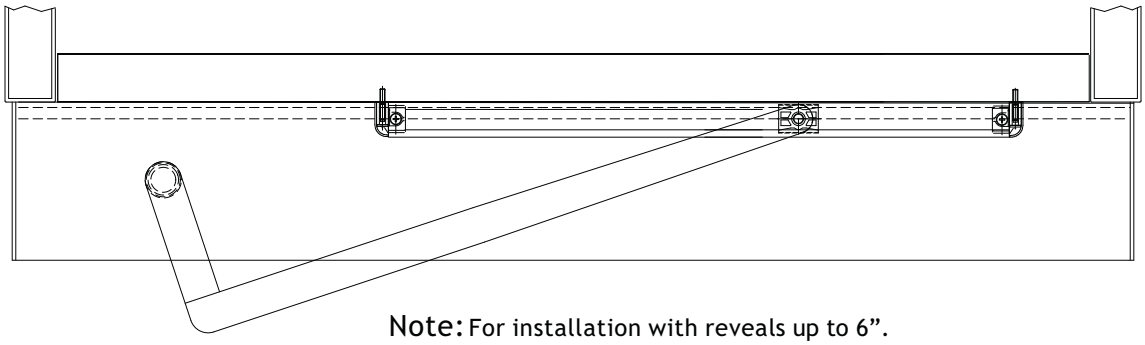
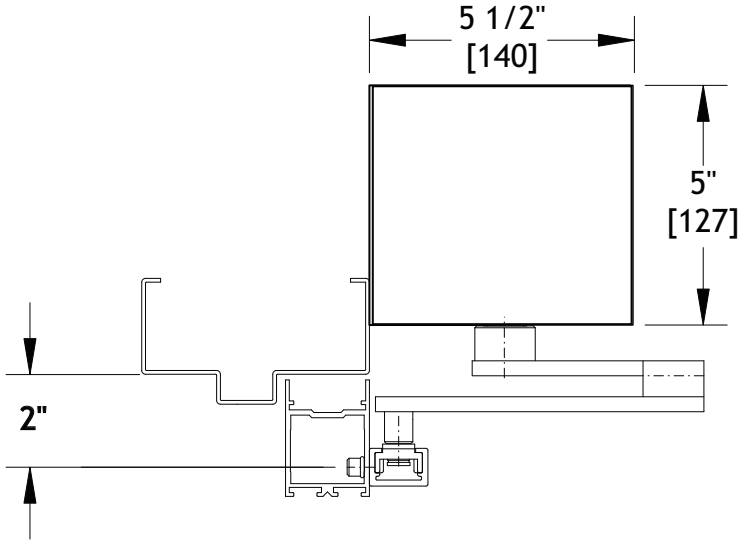
Mount the Pull Arm (For Reveals up to 6”)





Note: For installation with reveals up to 6”.



Installation of Surface Applied - Pull Application.

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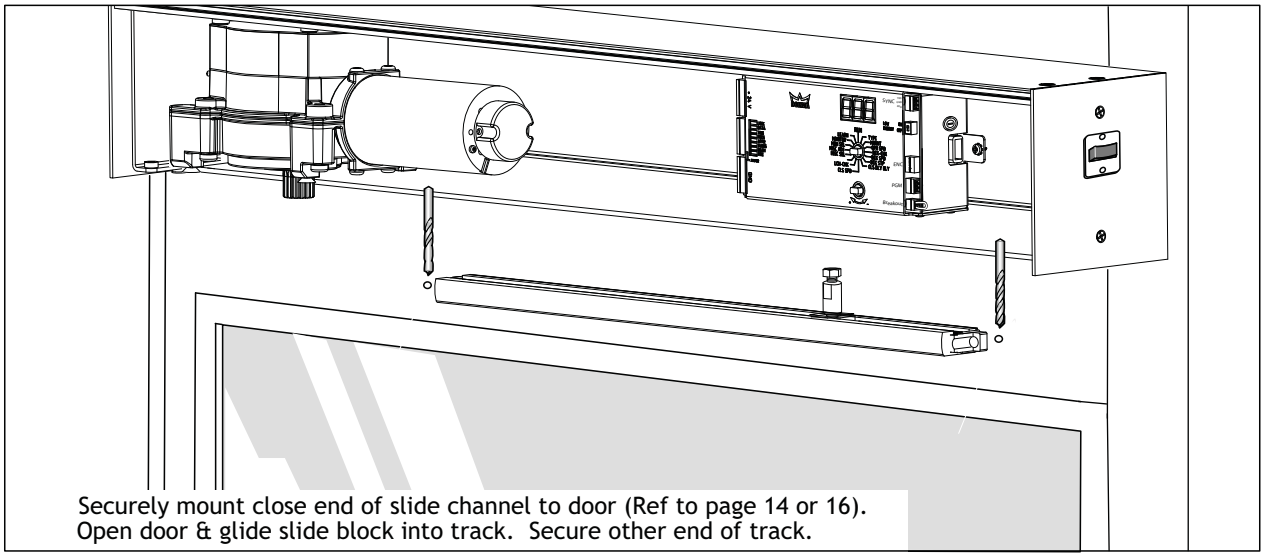
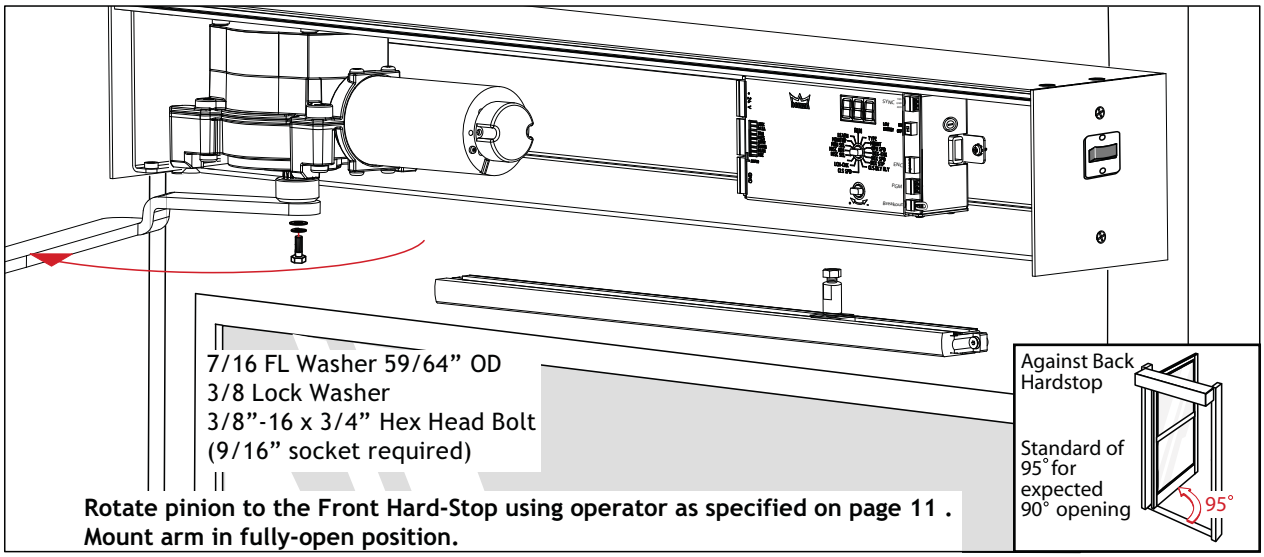
Mount the Pull Arm (See page 16 for 0” reveal arm or 14 for 0”- 6” reveal arm dimensions)

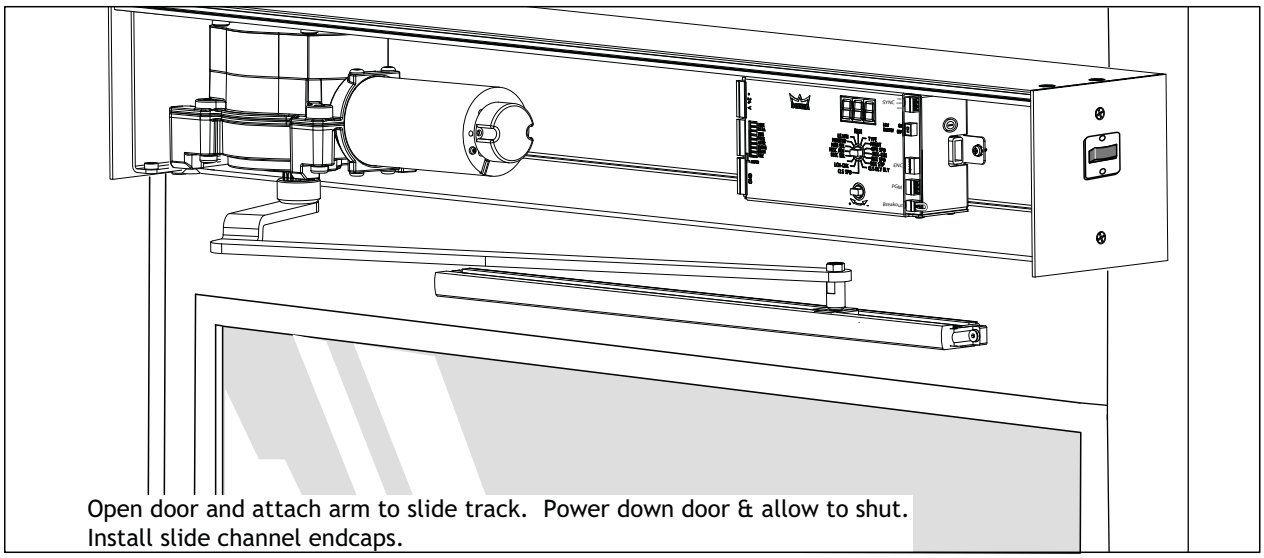


Securely mount close end of slide channel to door (Ref to page 14 or 16).
Open door & glide slide block into track. Secure other end of track.



7/16 FL Washer 59/64” OD
3/8 Lock Washer
3/8”-16 x 3/4” Hex Head Bolt
(9/16” socket required)

Rotate pinion to the Front Hard-Stop using operator as specified on page 11 .
Mount arm in fully-open position.



Open door and attach arm to slide track. Power down door & allow to shut.
Install slide channel endcaps.

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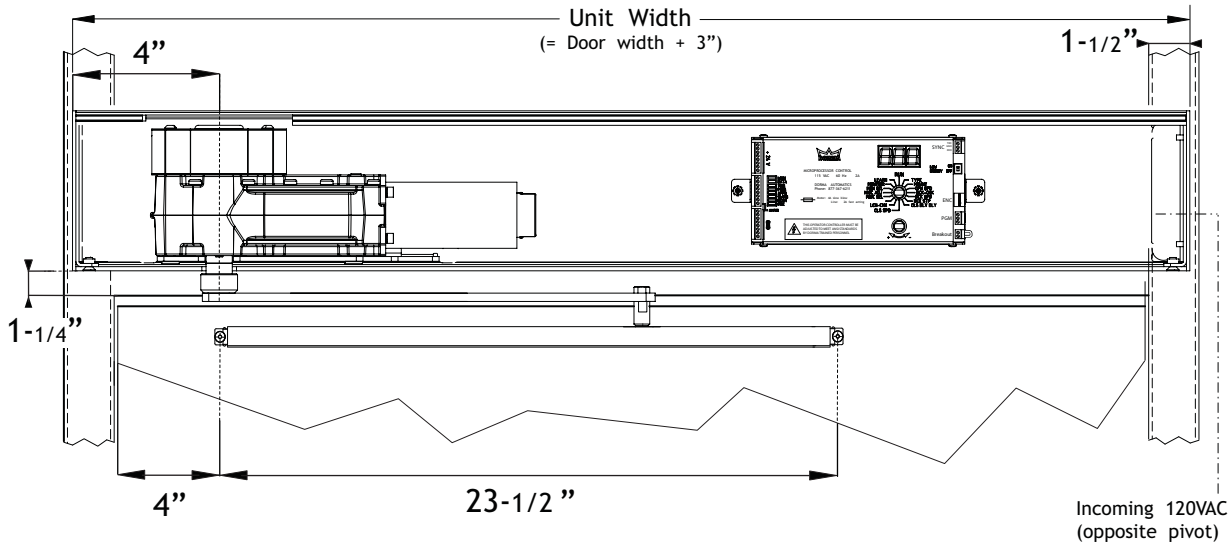
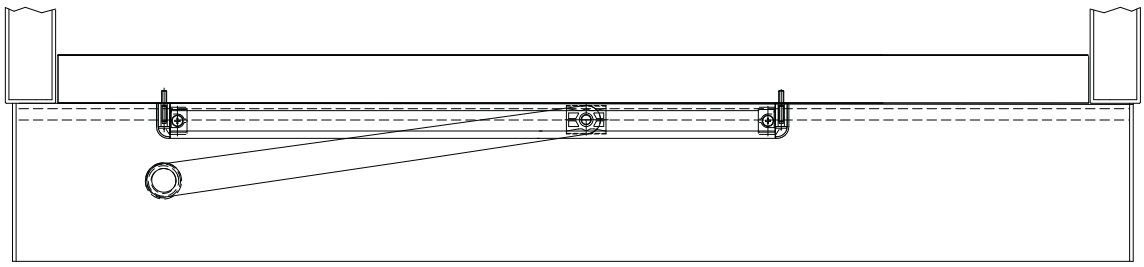
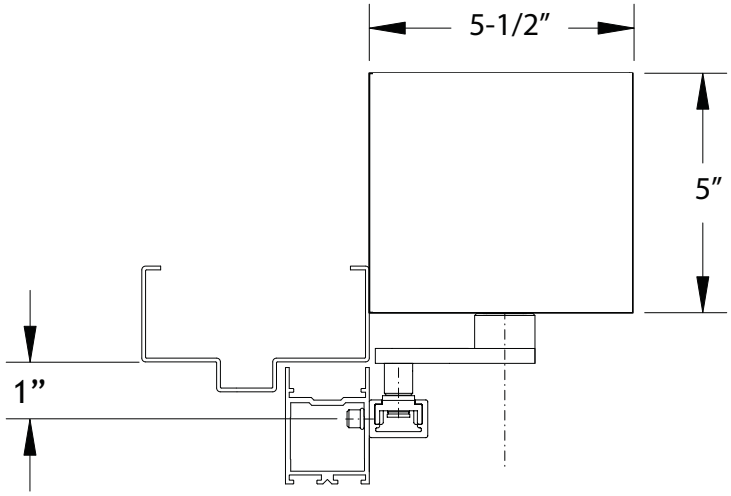
Mount the Pull Arm (For 0” Reveals)





Note: For installation with 0” reveals.



Installation of Surface Applied - Pull Application.

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Basic Set-Up

The purpose of the initial set-up is to bring the ED700 to a point where it can open the door.

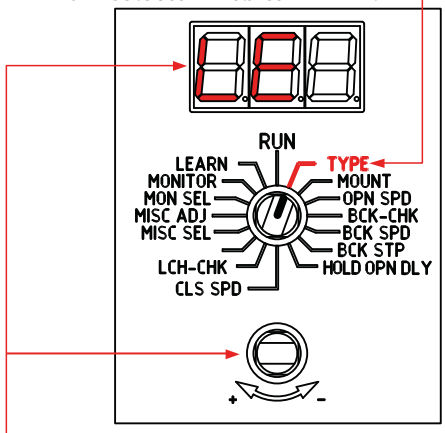
Preparation for Initial set-up

BasicRequirements

- All cables are connected.
- Swing area is clear of obstacles
- Mode switch in position "OFF".
- Power connected.

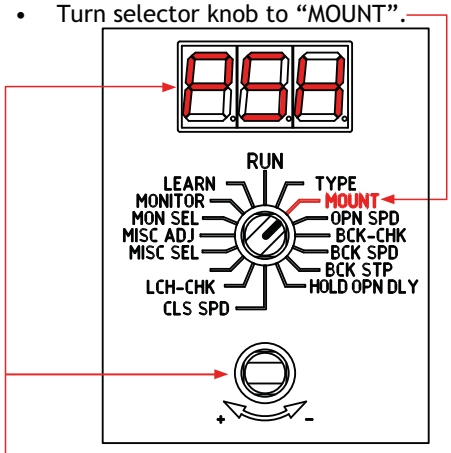
Start-Up

- Turn selector knob to “TYPE”.



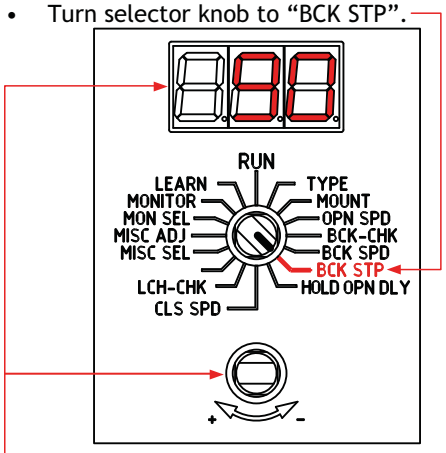
- Turn dial knob to select “Low Energy” or “Power Assist.
  The corresponding letter codes are “LE” or “PA”.

- Turn selector knob to “MOUNT”.



- Turn dial knob to select “Push or Pull mount.

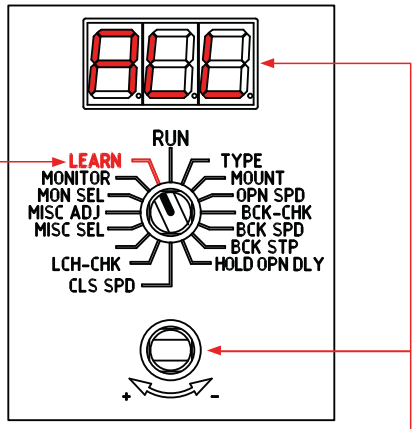
- Turn selector knob to “BCK STP”.



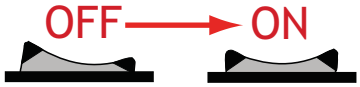
- Turn dial knob so that display shows “90”. This is your back stop in degrees.

  NOTE: If the door is to be set to an angle other than 90°, measure the angle the door will open to and input that value in the step above.

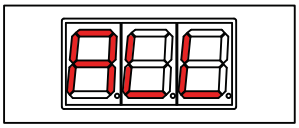
- Turn selector knob to “LEARN”.



- Turn dial knob so that display shows “ALL”. This will cause a full Learn Cycle.
- Turn mode switch from “OFF” to the “ON” position.



- The control box display will show “ALL”, indicating that a Learn Cycle is in progress.



The door will stay closed for 10 seconds to let you get into position to catch it at the desired Back Stop.

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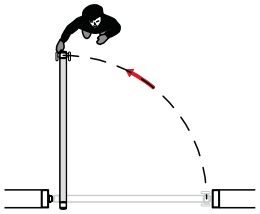
Basic Set-Up

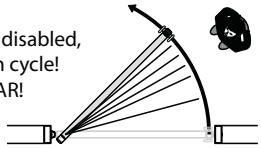
- The door will begin to open slowly. Stop the door at the desired Back Stop position until it begins to close back to latch position.



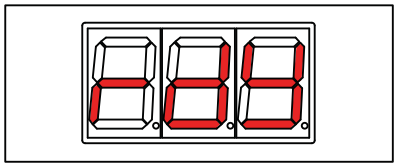
Please let the door close. Stand clear.
Let go of the door and
MOVE OUT OF THE WAY!

- The door will now SLAM open to 45° to measure it's inertia.

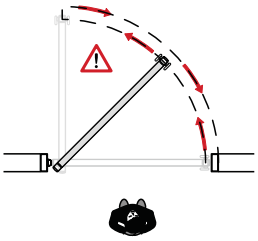
Sensors are disabled, during learn cycle! STAND CLEAR!



- When the controller has learned all of it's self-adjustments, the display will show "rdY".



- The door will now cycle open and close continuously. The door has reduced obstacle detection, DO NOT INTERFERE WITH DOOR!

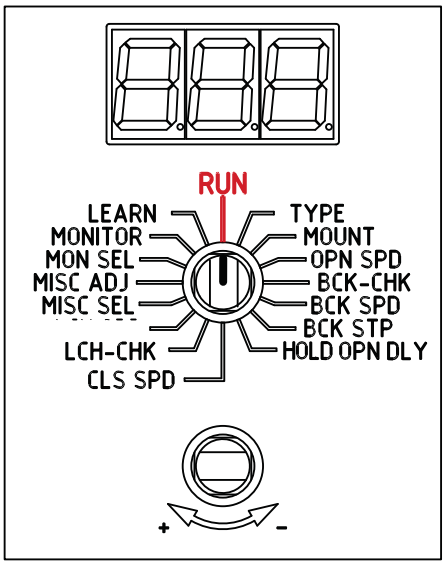


- If you are satisfied with the door's operation, turn the mode switch to the "OFF" position and allow the door to close completely.

NOTE: If door motion is undesirable , or if adjustments need to be made to meet ANSI guidelines, refer to page 19, 26 and 27 for additional control settings.

Note: In some situations you may have to assist the door during learn cycle during the initial opening.

- Turn the selector knob to "RUN".



- The display will show the present state of the opener.

CODE	STATES	DESCRIPTION
C L d	Closed	Door is at Latch-Stop
O P n	Opening	Opener is opening to Back-Stop
P. A.	Power Assist	User may open door with opener's assistance
O P d	Opened	Opener is holding door at Back-Stop
C L r	Closer	Acts as a passive closer, letting user open door manually, closing the door
C. O b	Closing Obstacle	Opener reacted to obstacle during closing cycle
O. O b	Open Obstacle	Opener reacted to obstacle during opening cycle
A L L	Learning	Opener is learning
C y C	Cycle	Opener is going through a learning cycle
r s t	Reset	Opener is being reset

NOTE: If there is an exception to it's operation, it will show a code for it. If an exception code is displayed, see pages 26 and 27 for details.

- Test the opener's operation.
- Test that the door meets ANSI standards.
- **FOR ADDITIONAL SET-UP OPTIONS, SEE CUSTOMIZED SET UP PAGE 20.**

The door is now ready for normal operation.

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Customized Set-Up

The purpose of the customized set-up is to change the default ED700 settings. This can be done during or after a completed learn cycle.

Parameters

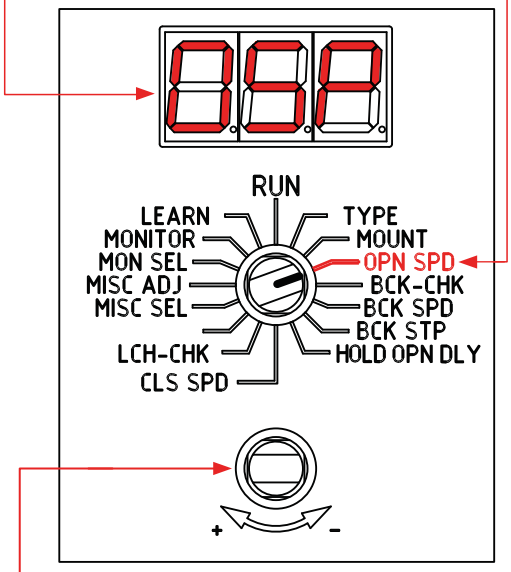
- Open speed to Back-Check
- Back-Check angle
- Deceleration through Back-Check
- Back-Stop angle
- Close Delay
- Closing speed to Latch-Check
- Latch-Check angle

- Using the example to the right and the table below, make parameter changes as desired. When finished, return the selector knob to "RUN", or do another "LEARN" Cycle if the door's motion has been poorly affected.
- For further Set-Up options contained in "MONITOR", "MON SEL", "MISC ADJ", and "MISC SEL", please pages 27 and 28 for parameter details.

To adjust parameters in Miscellaneous selections turn the selector knob to "MISC SEL" and select the desired parameter, then turn the selector knob to "MISC ADJ" and adjust the parameter using the dial knob.
To select the function to be monitored turn the dial to "MON SEL" then select the function using the dial knob. Then turn the selector knob to monitor.

Open Speed to Back-Check (example)

- Turn selector knob to "OPN SPD".
- The display will show the code and value.



- Turn the dial knob to select the desired speed in DEGREES/SECOND.

Once adjustments are completed verify that a learn cycle is not required by turning dial knob to learn. If learn cycle is not required turn dial to "RUN" and turn program switch off and on.

Selector	Code Meaning	"Dial" Knob Function	DISPLAY	UNITS
OPN SPD	Open Speed	increment/decrement	Opening speed to Back-Check	°/s
BCK-CHK	Back-Check	increment/decrement	Back-Check angle	°
BCK SPD	Back-Speed	increment/decrement	Opening speed to Back-Stop, or Off	°/s
BCK STP	Back-Stop	increment/decrement	Back-Stop angle	°
HOLD OPN DLY	Hold Open Delay	increment/decrement	Time at Back-Stop	s
CLS SPD	Close Speed	increment/decrement	Max closing speed to Latch-Check	°/s
LCH-CHK	Latch-Check	increment/decrement	Latch-Check angle	°

RESETTING THE CONTROLLER

- To RESET the controller, turn the selector knob to "MISC SEL" and turn the dial knob until "rst" is displayed. Now turn the selector knob to "MISC ADJ", and turn the dial knob from "ON", ONE click clockwise to "OFF". The controller has now been reset.

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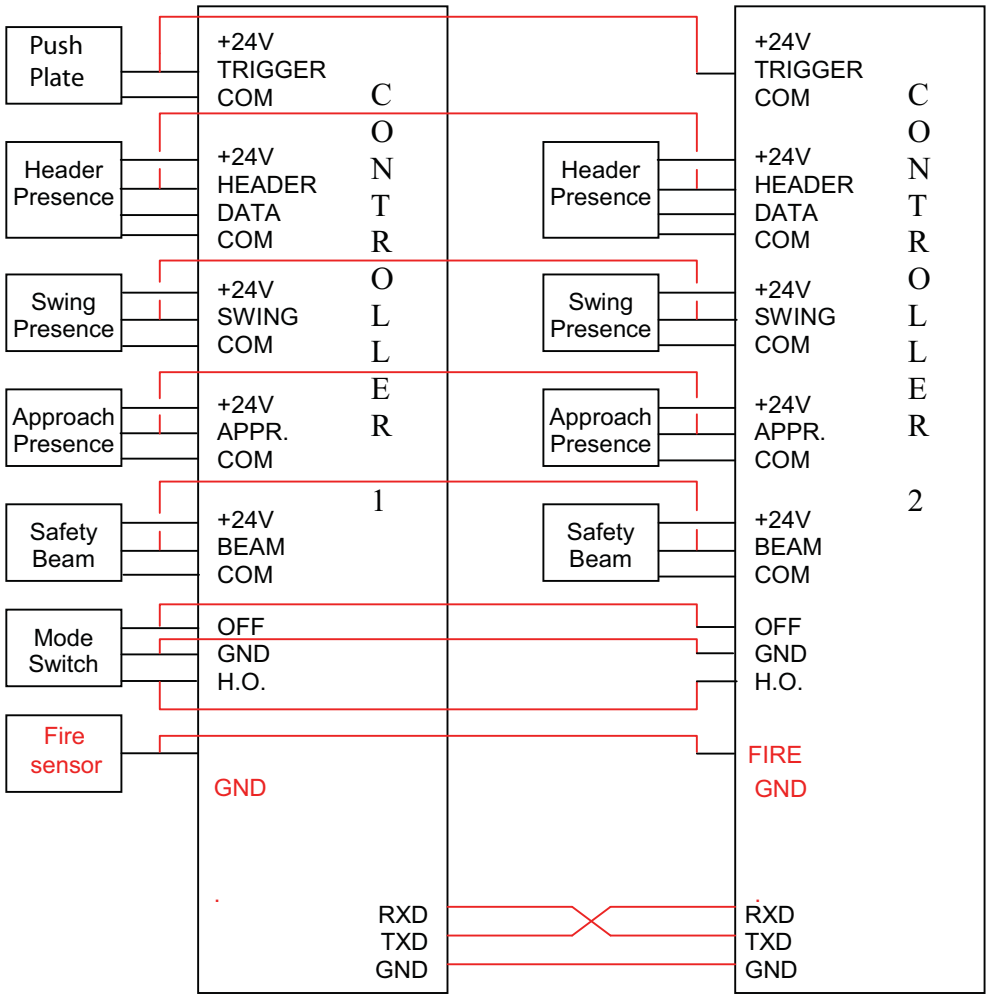
Setting Up Simultaneous Doors

The purpose of the this setup is to synchronize two side-by-side doors for simultaneous operation.

Connecting the Controllers

- Connect the grounds of the two controllers together.
- Connect the knowing act activation device to both controllers in parallel.
- Connect the presence sensor to both controllers in parallel, except for the Data Line.
- Let each controller power it's presence sensors
- Connect a single program switch to both doors in parallel.
- Connect the RXD line of each controller to the TXD line of the other controller.
- If you use the "Fire" input, connect the Fire sensor to both controllers.
- If you use the "Breatout" input, connect the Breakout switch to both controllers.
- Connect both controllers to the same AC power source.
- Program the two controllers identically

(Continued on following page)



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Setting Up Simultaneous Doors

- Run a "Learn" cycle on both controllers. It's easier if they are done separately.

If it's desired that the doors open and/or close differently, continue on this side of the page. If not, skip to the top of the column to the right.

To have the doors open at different times set the OPD Open Delay parameter in miscalenous adjustments on the door you want to delay.

To have the doors close at different times increase the Hold Open time or slow the Closing Speed of the door you want to close last. To assure synchronization of the doors an external time delay may be required to assure that the time delays remain constant.

- When both openers are ready, trigger an automatic opening and, as the doors are opening, block one of doors. The other door will stall. Once it stalls let the door you were holding go and both door will open. Once closed trigger the door again and stop the opposite door.
  After completing both doors opening cycles complete the same process for the closing cycles.

- This will let each opener tell the other of having detected an obstacle, so that each will know of the presence of the a second door. Knowing that, the operators will extend the Hold-Open time to ensure that both doors remain in synchronization.

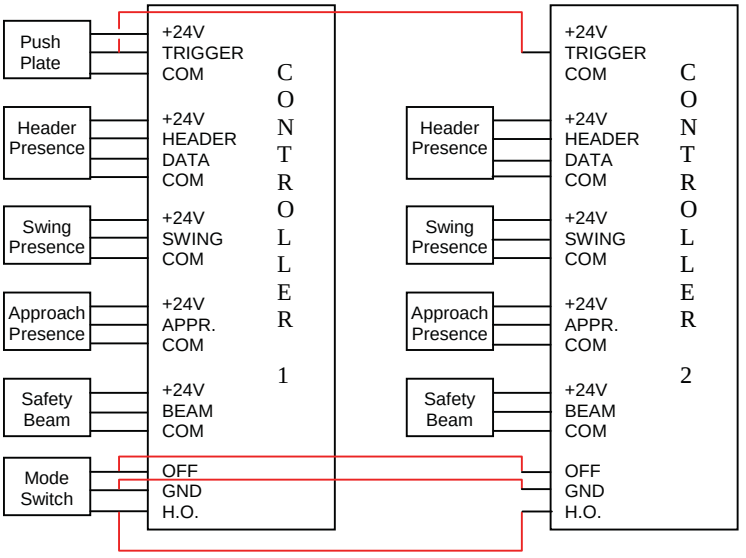
Setting Up Semi-Independent Doors

The purpose of the this set-up is to synchronize two side-by-side doors for semi-independent operation. This means that the doors will open and close at the same time, but will react to obstacles independently.

Connecting the Controllers

- Program the two controllers identically (for coordinated doors - one must close first - increase slightly the Closing Delay of the controller for the door that must close last)
- Connect the grounds of the two controllers together.
- Connect one door's presence sensor to the controller for that door.
- Connect the push plates to both controllers in parallel
- Let each controller power its presence sensors

- Connect a single program switch to both controllers in parallel.
- Power the controllers from the same AC power source.



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Electric Locks

The purpose of the this section is to setup an electric lock. The controller may power an electric strike or magnetic lock through a relay or access control device.

Connecting a Electric Strike

- If the installation has a 24 Vdc electric strike plate (electric lock), the controller is able to power it through a switching relay. (See Figure 1)
- For AC or other voltage DC locks, you will need a seperate transformer and a relay. (See Figure 2)

- The "Open Delay" must be set per manufacturer's specification.
- The controller drives the electric lock from when it recieves a valid trigger (at Latch-Stop), while waiting to open (because of a non-zero Open Delay, or because the swing area is occupied) and until some time after the door has begun to open. It also drives it if the door reaches Latch-Stop as it is retriggered.
- The LOCK LED lights up while the controller drives an electric lock, whether or not a lock is actually present.

NOTE: For wiring locations on controller, see page 10.

Figure 1

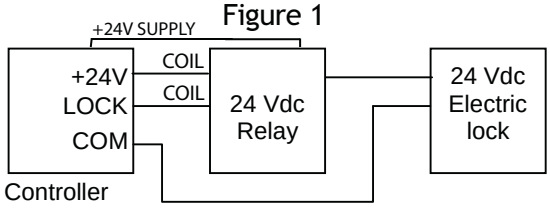
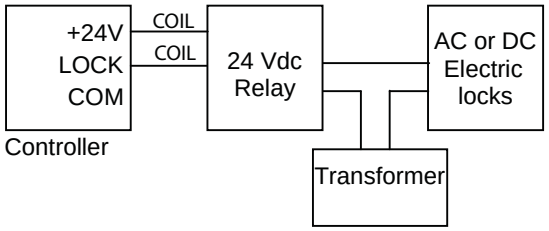
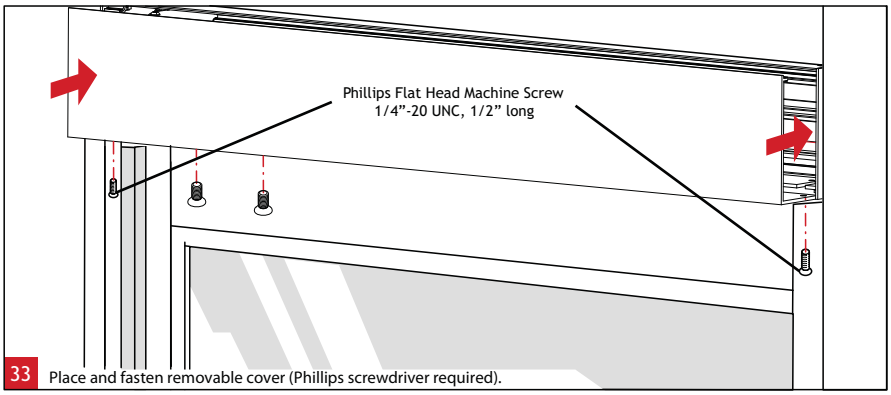


Figure 2



Final check/ Install Cover

- Test all sensors, If applicable, along with door operation to ensure they are working properly.
- Provide safety list similar to that provided by AAADM.
- Make sure that all electrical wiring is connected correctly and away from moving parts.



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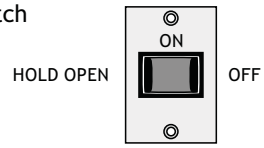
Technical Data

Operation Instructions

1. Program Switch



Switch is in position:

HOLD OPEN

Continuous Open Operation
The door opens to the full opening position and remains in this position.

ON

When an activation signal is detected from the knowing act activation device the door opens to the full opening position. After the hold open delay expires the door closeses.

OFF

The door stops immediately when the switch is placed in this position and closes slowly under spring power. The closing speed is limited. The user may open the door manually.

Restart after power failure
When the power is turned ON, the ED700 goes back to normal operation.

2. Care and Maintenance
   Prior to first use and periodically thereafter, but at least once a year, the system must be checked and maintained by a qualified, knowledgeable technician. During the cleaning operation the Program Switch must be either in the OFF or HOLD OPEN position to avoid automatic movements of the door wings. Always disconnect the appliance before servicing. The entire swing door assembly (Aluminum, Glass, Covers) can be cleaned with a moist towel and common commercial cleaners. The safety sensors are to be cleaned with a dry, soft, non-abrasive towel. The floor area near the swing door panel, including the threshold must be kept clean.
3. Self Help Troubleshooting of Problems
   If the door does not open or close, check the following:
   - Is the line power in order?
   - Is the Program Switch in the proper position?
   - Is the safety sensor path clear and clean?
   - Is the door blocked by obstacles?

If all of the above check out OK call a qualified Service Technician.

ED700 MUST BE SET UP WITHIN THE BHMA/ANSI 156.19 STANDARDS

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SIGNAGE AND SAFETY CHECK

Figure

Decals T e door s o ld a e traffic decals ro erly dis layed as follo s

A in in doors ser in t o ay traffic s all e marked it a decal isi le from ot sides of t e door it t e ords **CAUTION AUTOMATIC DOOR** . See Figure The words **Automatic Door** must e at least 2 in. letters. It should e mounted on the door at a height of in. 4 cm cm from the floor to the centerline of the sign the sign shall e a minimum of in. .2 cm in diameter and made with lac lettering on yellow ac ground.

Figure 2

B. When a separate wall switch is used to initiate the operation of the door operator the doors shall e pro ided with signs on oth sides of the door with the message **ACTIVATE SWITCH TO OPERATE**. The lettering shall e white and the ac ground shall e lue. Figure2

C. An AAADM safety information stic er should e affi ed on the door or frame in a protected isi le location. If you need additional decals for your automatic doors call your automatic door supplier.

Figure .

2. Acti ating Switch. nowing Act

Doors e uipped with a manual operate switch shall when acti ated hold the door open for fi e seconds minimum after release of acti ating switch.

House eeping.
Chec the door area for tripping or slipping ha ards.Chec all door panels for damage. Ma e sure all co ers are properly secured. There should e no ulletin oards literature rac s merchandise display or other attractions in the door area that would interfere with use of the door.

4. Traffic Patterns.
O ser e traffic patterns. Plan routing so people enter and e it in a straight approach directly onto the center of the door opening.

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Technical Data

Operator	
Line Input	100 to 125V AC, 60 Hz, 2 A max.
Power supply for external sensors	24 V DC, 0.8 A
Fuse	2 A fast blow
Ambient Temperature	77 °F(25 °C)

Adjustments	min.	max.
Opening time to Back-Check	2.8 s	8 s
Closing time to Latch-Check	3.0 s	7.5 s
Delay before Opening	0 s	3 s
Delay before Closing	5 s	25 s
Back-Stop Angle	60°	120°
Back-Check-Angle	50°	120°
Latch-Check-Angle	10°	30°
Wall-Mask-Angle	60°	115°
Extra Power Hold Torque	40 ft-lb	240 ft-lb

Door	min.	max.
Door height	84"	102"
Door weight	60 lbs (27 kg)	200 lbs (90 kg)
Door mount - single	Push or Pull	(Surface Applied)
Door width	37"	49“
Door mount - pair	Push or Pull	(Surface Applied)
Door width	62"	98"

Controller Technical Data

Power input	
Connector	2-piece terminal block
Line Input	100 to 125Vac, 60 Hz, 2 A max.
Fuse	2 A, fast (5mm x 20mm)
DC power out	24 Vdc, 800 mA out, always on, short circuit protected, not regulated
Control inputs	
Connector	2-piece terminal blocks
Active low inputs:	
	Open-Trigger (radar or push plate)
	Presence, jamb mounted sensor
	Safety Side, door mounted sensor
	Approach Side, door mounted sensor
	Hold-Open
	Off
	Safety Beam Sensor
Polarity	active low or closed contact to ground
Active threshold	< 0.8 Vdc
Inactive threshold	> 2.0 Vdc
Closed contact current	10 mA surge, 1 mA steady state
Open circuit voltage	5 V
ESD protection	±5 KV, human body model
Overvoltage protection	±5 Vdc or 5 Vac, continuous, with respect to GND
Smoke (Kill) link input:	
Polarity	normally closed contact to GND
Closed contact current	2 mA
ESD protection	±5 KV, human body model
Overvoltage protection	±5 Vdc continuous, with respect to GND
Indicators	1 LED/Sensor, 3-Digit Display

Terminal Designations

1-8	+24V	
9	Electric Strike	-Output
10	Data (Zone)	-Output
11	Trigger (or radar or push plate)	-Input
12	Presence (jamb mounted sensor)	-Input
13	Safety Side (door mounted sensor)	-Input
14	Approach Side (door mounted sensor)	-Input
15	Safety Beam	-Input
16	Kill (Smoke) link	-Input
17-24	GND	
Program switch		
3	Hold Open	- Input
2	GND	
1	OFF	- Input
Breakout		
1	Breakout Switch	-(N.C.)
2	GND	
Motor		
1	M+	
2	M-	
Power Input		
1	Neut.	
2	Earth Ground	
3	Hot 100 to 125 VAC, 60 Hz, 2 A max.	

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ED700 Controller Code Information

DISPLAY	SECTION	FUNCTION	DEFINITION AND NOTES
FUL	Run	Full Power	Full power operation must be adjusted according to ANSI 156.10 and includes safety devices.
LE	Run	Low Energy	Low Energy operation, switch on side of control must also be turned to LE for Low Energy function. Adjusted according to ANSI 156.19.
PA	Run	Power Assist	Power Assist operator will assist in manual operation but will not open the door.
OCN	Mount Type	OCM	Overhead concealed, direct drive application.
PSH	Mount Type	Push Arm	Push or Out arm application, door swings away from the header.
PUL	Mount Type	Pull Arm	Pull Arm or In arm application, door swings under the header.
LOG	Mon	Log	The controller logs the last 16 unusual **events,** turn dial knob counter clockwise to view. This feature is helpful in troubleshooting problems. See **Event** at end of form.
ObS	Mon	Obstacles	Total obstacle count up to 255; to reset, turn dial knob counter clockwise. Remember to reset if you adjust O.Ob, or C.Ob.
CYC	Mon	Number of Cycles	Total number of complete cycles up to 9,999,999 that the **controller** completed. Turn dial knob clockwise to view complete number.
rEL	Mon	Software Version	Displays the software release version the controller contains.
AnG	Mon	Angle	Approximate door angle in degrees. Setting and actual opening point must agree for proper operation.
CUr	Mon	Current	The motor current exceeded maximum for too long.
HLd	Misc. Selections	Hold	Power Hold function, adjustable force setting to hold the door against the latch or closed position OFF is spring tension only.(OFF 0.01 AMPs - 0.70 AMPs)(OFF is default after reset)
PnG	Misc. Selections	Push to Open	Push to open feature opens the door automatically when it is pushed off the latch stop. (Yes - No, default is NO)
OOS	Misc. Selections	Opening Obstruction	This menu is used to adjust Opening obstruction threshold. Value is displayed in AMPS. Higher AMPs means less sensitivity.(1.5 AMPs default, 0.2 - 2.0 AMPs)
COS	Misc. Selections	Closing Obstruction	This menu is used to adjust Closing obstruction threshold. Value is displayed in AMPS. Higher AMPS means less sensitivity.(0.5 AMPs default, 0.2 - 1.1 AMPs)
UAL	Misc. Selections	Wall Mask Angle	Menu adjust the angle at which point a swing side door mounted sensor is inhibited. (Default 65°, 60-115°)
OPd	Misc. Selections	Lock Delay	Lock delay function used for doors with locks or panic hardware that have to release before the door opens. OFF equals no delay.(OFF is default, OFF is 0.1 Sec., 0.1 - 3.0 Seconds.)
OCd	Misc. Selections	Occupied Delay	How long the door stops after an obstacle or presence signal is received. (2 Sec default, 0.1 - 10.0 Sec.)
dEC	Misc. Selections	Deceleration	How quickly the door shows at back check; the higher the number the faster the door slows. (50 Default, 10-27)
PCE	Misc. Selections	Power Close Engaged	("no" or "yes") Turns power close on or off. ("no" is default after reset)
PCA	Misc. Selections	Power Close Angle	(off or 1 - 30 degrees) - Sets the angle the power close turns on at. (20 is default after reset)
PCd	Misc. Selections	Power Close Time Delay	(00.1 - 10 seconds) - Sets the time delay the power close starts after it achieves the proper power close angle. (4 is default after reset)
PCC	Misc. Selections	Power Close Current	(off or 0.01 - 1.00 Amps) - Sets the power closing amps in PCd area.(1.00 is default after reset)
CLC	Misc. Selections	Power Boost	"Closing Current" (Off, or 0.01 - 1.00 Amps) - Sets the closing current while the door is at **"any angle"** of it's closing cycle.(0.50 is default after reset)
rSt	Misc. Selections	Reset	Resets all parameters back to factory defaults. **Reset the control before the learn cycle on new installs,** or use the learn function to force a learn cycle on existing installations.
ALL	Learn	Learn	The opener needs to do a full learn cycle, required on initial install see, rSt.
CYC	Learn	Cycle	The operator needs to do an open and closing cycle. The door will cycle after initial tune in until door is turned OFF and back ON.
rdY	Learn	Ready	The learn cycle is completed and the operator is ready.
- - -	Event		No other event in the log.
bad	Event	BAD	A variable in the control is out of established limits.
Cob	Event	Closing Obstacle	The door encountered an obstacle while opening. See COS parameter in Misc. Selections.
CUr	Event	Over Current	The motor current has exceeded limits for extended period.
Dir	Event	Direction	The motor is wired backwards.
EnC	Event	Encoder	The control is not receiving encoder information.
ENE	Event	Breakout	An emergency link was broken. Breakout switch or Smoke detector activation.
FAI	Event	Controller	The control box has failed to function.
HEA	Event	Overheat	The motor overheated.
LOC	Event	Locked	The door encountered an obstacle at latch stop.
Ntr	Event	Motor	The motor is not connected, or is open.
OOb	Event	Opening Obstruction	The door encountered an obstacle while opening. See OOS parameter in Misc. Selections.
PUP	Event	Power Up	Automatic power up after a bad value was detected.
Set	Event	Set-up	The operator is not set-up; a learn cycle is needed. If ready does not appear after a learn cycle , reset the control and try again.
SnG	Event	Presence Sensor	The swing side door mounted sensor was activated.
SUP	Event	Set-up	The operator is not set-up; a learn cycle is needed. If ready does not appear after a learn cycle , reset the control and try again.
to	Event	Time Out	A state lasted longer then expected.

If this unit is installed as a **LOW ENERGY** Operator, it is the installer's responsibility to adjust the operating parameters of the operator as to **NOT EXCEED** those in the **BHMA/ANSI 156.19** standard.

If these parameters are exceeded, additional safety devices MUST be installed to satisfy the requirements that are stated in the **BHMA/ANSI 156.10** standard for **FULL POWER DOORS.**

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