

# StrongArmPark DC™

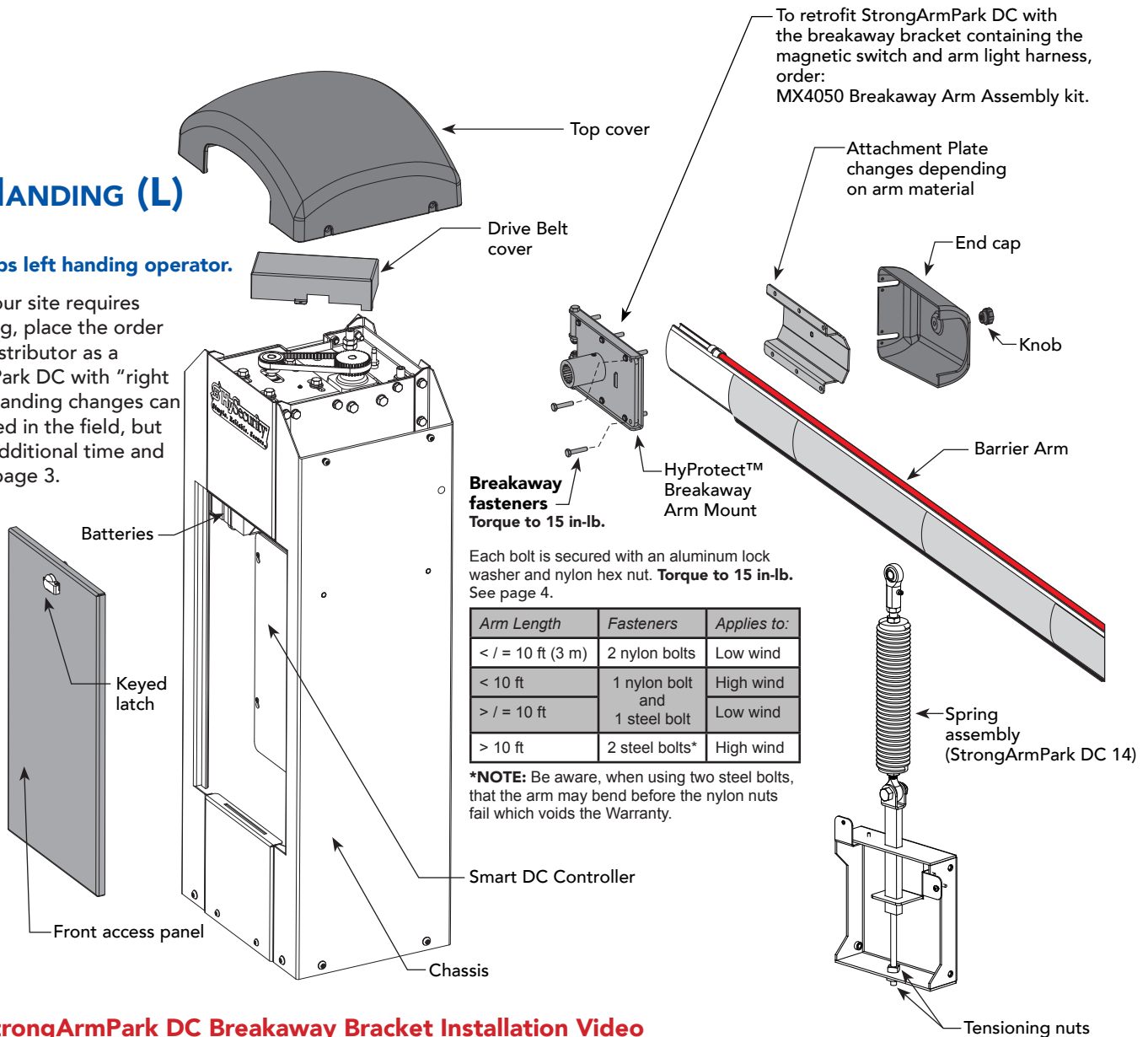
## QUICK START STEPS

### LEFT HANDING (L)

Standard.

Factory ships left handing operator.

**NOTE:** If your site requires right handing, place the order with your distributor as a StrongArmPark DC with "right handing." Handing changes can be completed in the field, but it requires additional time and effort. See page 3.

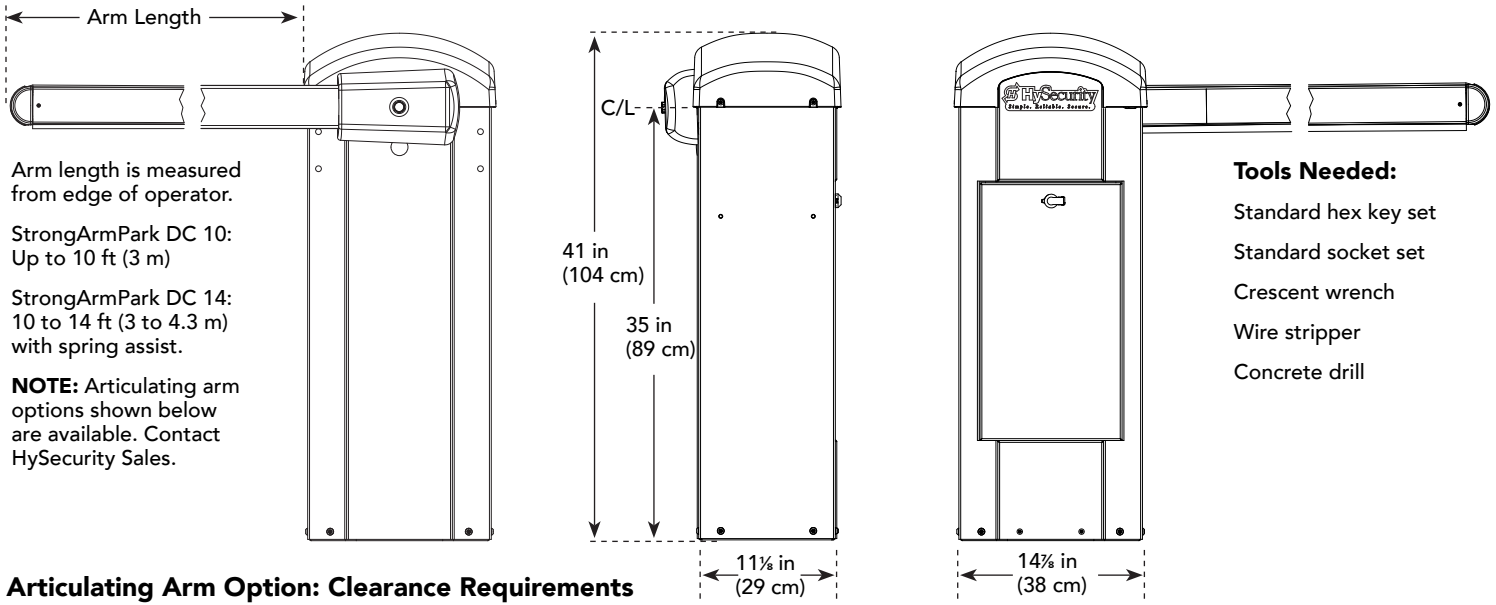


### StrongArmPark DC Breakaway Bracket Installation Video

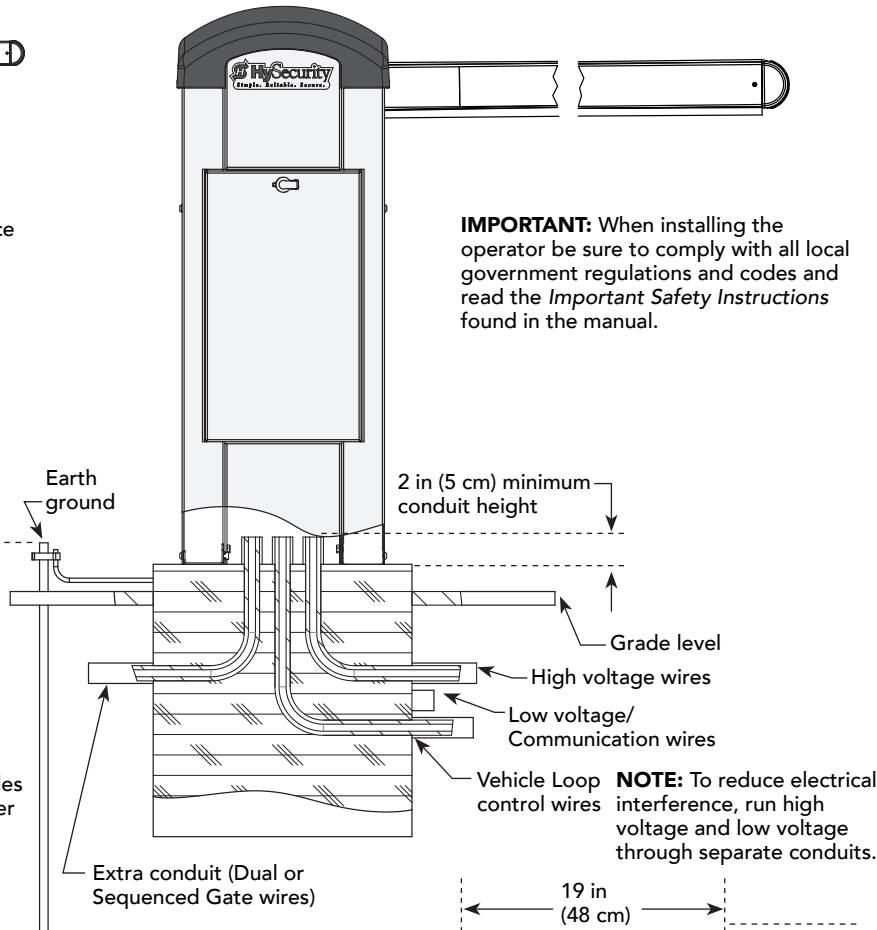
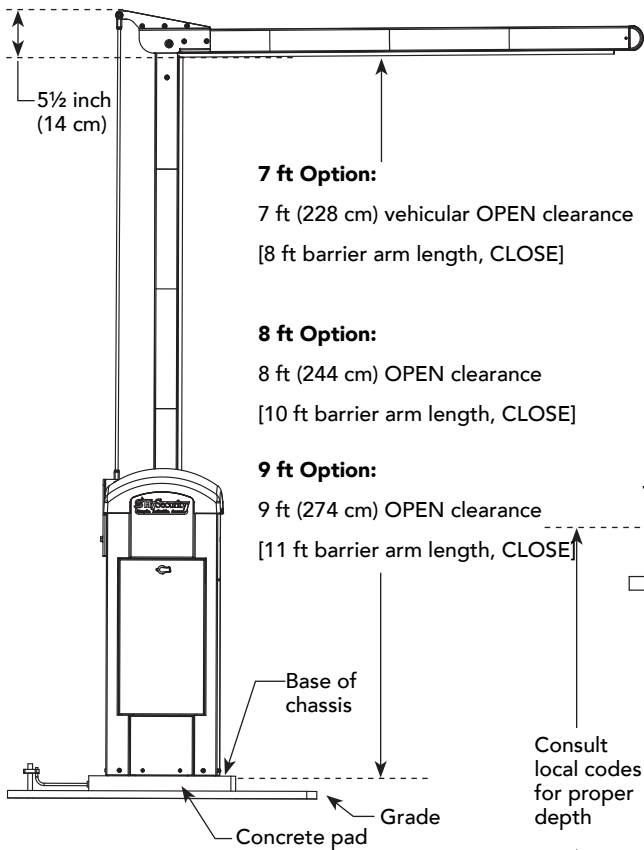
To review the installation video, scan the QR code with your cell phone or click on the following link:  
<http://bit.ly/breakawayinstall>



# 1 SITE PLANNING & OPERATOR INSTALLATION



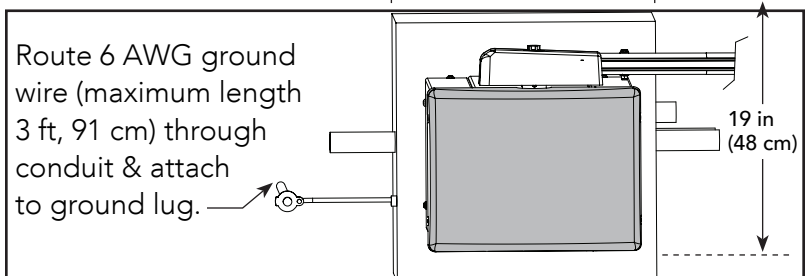
## Articulating Arm Option: Clearance Requirements



**IMPORTANT:** When installing the operator be sure to comply with all local government regulations and codes and read the *Important Safety Instructions* found in the manual.

**⚠ DANGER** Turn OFF AC power at the source (circuit breaker panel) before installing the operator. Follow facility Lock Out/Tag Out procedures. Make sure both the DC and AC power switches on the Control Box are in the OFF position.

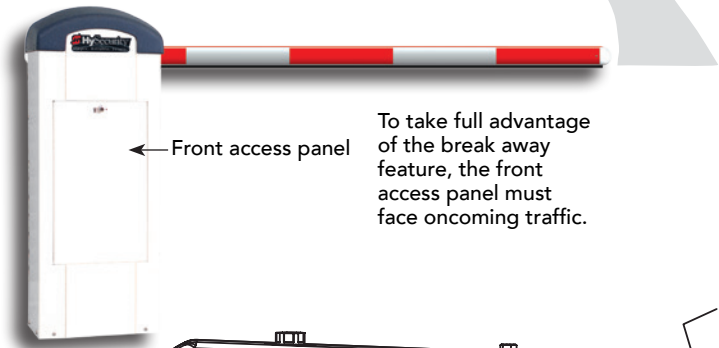
**⚠ DANGER** The potential for lightning discharge exists with all gates, fences and gate operators. National Electric Code (NEC) requires a separate earth ground in addition to the required equipment ground. A local earth ground also serves to protect the electronic controls.



# 2 REVIEW HANDING AND INSTALL THE CHASSIS

**LEFT HANDING (L)** Standard, Factory Default

**RIGHT HANDING (R)**



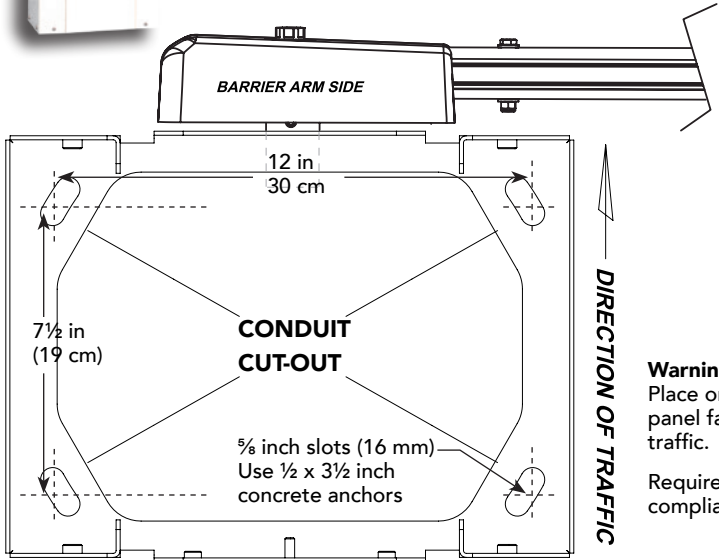
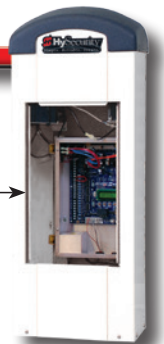
← Front access panel

To take full advantage of the break away feature, the front access panel must face oncoming traffic.

Changes to operator handing in the field, must also be addressed in the Installer Menu.



Smart DC Controller →



**StrongArmPark** Mounting Template

## CUT OUT MOUNTING TEMPLATE

Cut out the base template on the shipping box and use it to mark the mounting locations on the concrete pad.

## INSTALL THE CHASSIS

Remove front access panel.

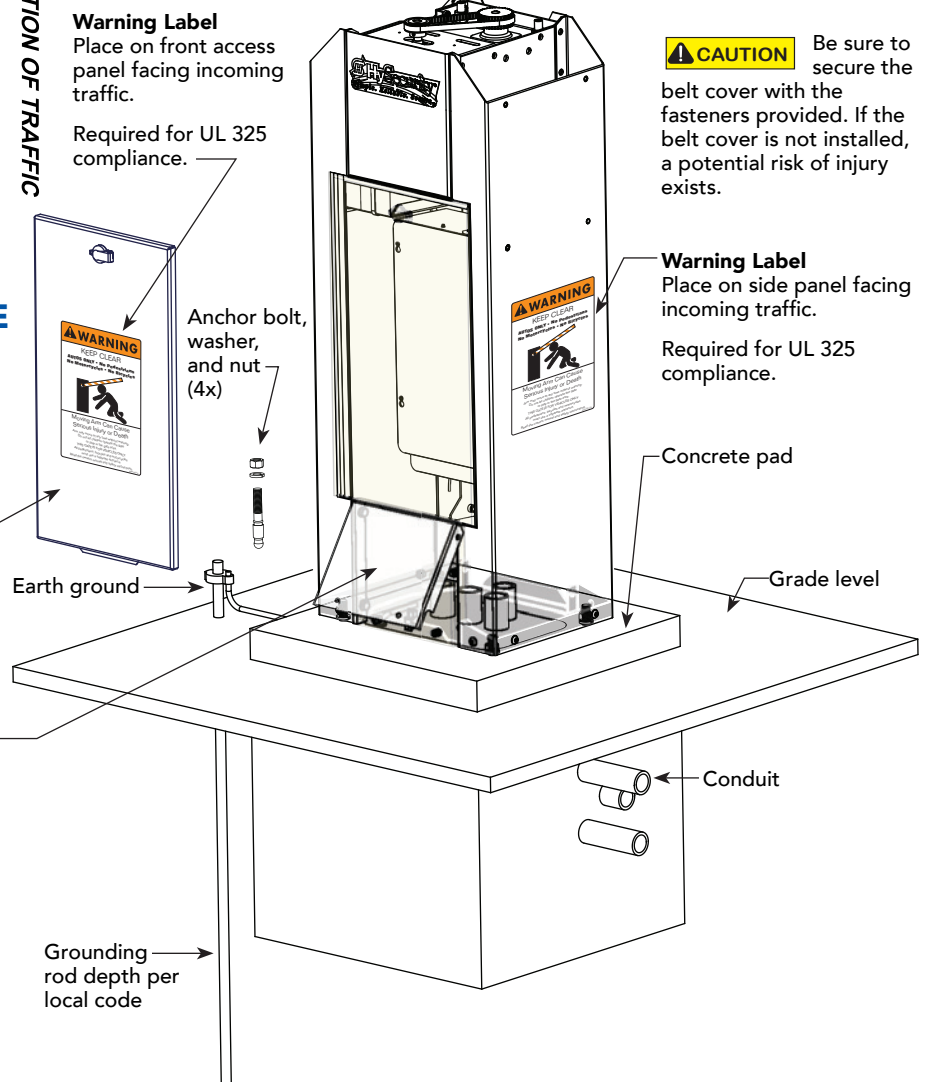
To easily access and wrench-tighten the anchor bolts, swing the base panel open (or remove it).

**NOTE:** The spring tension on StrongArmPark DC14, should be adjusted BEFORE fastening the operator to the concrete pad. The proximity of the conduit to the adjustment nut at the base of the spring makes it difficult to wrench-tighten.

**REMOVE TOP COVER**

**ATTACH DRIVE BELT COVER**

**CAUTION** Be sure to secure the belt cover with the fasteners provided. If the belt cover is not installed, a potential risk of injury exists.



# 3 INSTALL THE BARRIER ARM

## INSTALL THE HYPROTECT™ BREAKAWAY ARM MOUNT

**LEFT HAND OPERATOR (SHOWN)** Standard shipment is L (left handing)

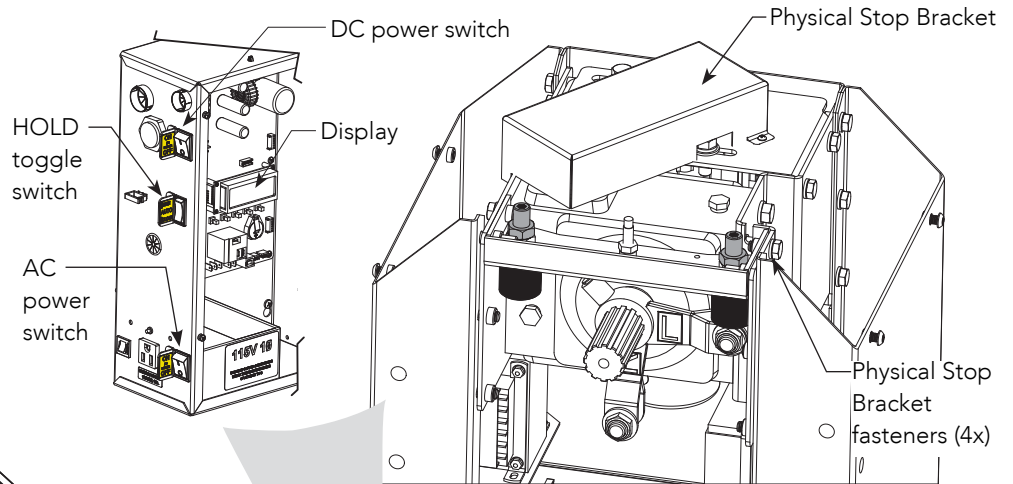
**NOTE:** For articulating arm assembly, see the instructions shipped with the articulating arm or [view online](#) with a registered account.

To review the installation video, click on the youtube video location: <https://youtu.be/AdTWNyC-C-NU>

**1** Make sure AC and DC power switches are in the OFF position.

**2** Connect the red battery wire. (Refer to step 4 in [the Installation Instructions.](#))

**3** Press the DC switch ON and toggle HOLD switch to Hold Open.



### Tools Required

- ♦ Utility knife
- ♦ Standard socket set
- ♦ Standard hex key set

**Warning Labels**  
UL 325 compliance requires placement on both sides of barrier arm.



**4** After GATE OPEN appears on the display, turn the DC power switch OFF.

**5** Remove Physical Stop Bracket (4 fasteners)

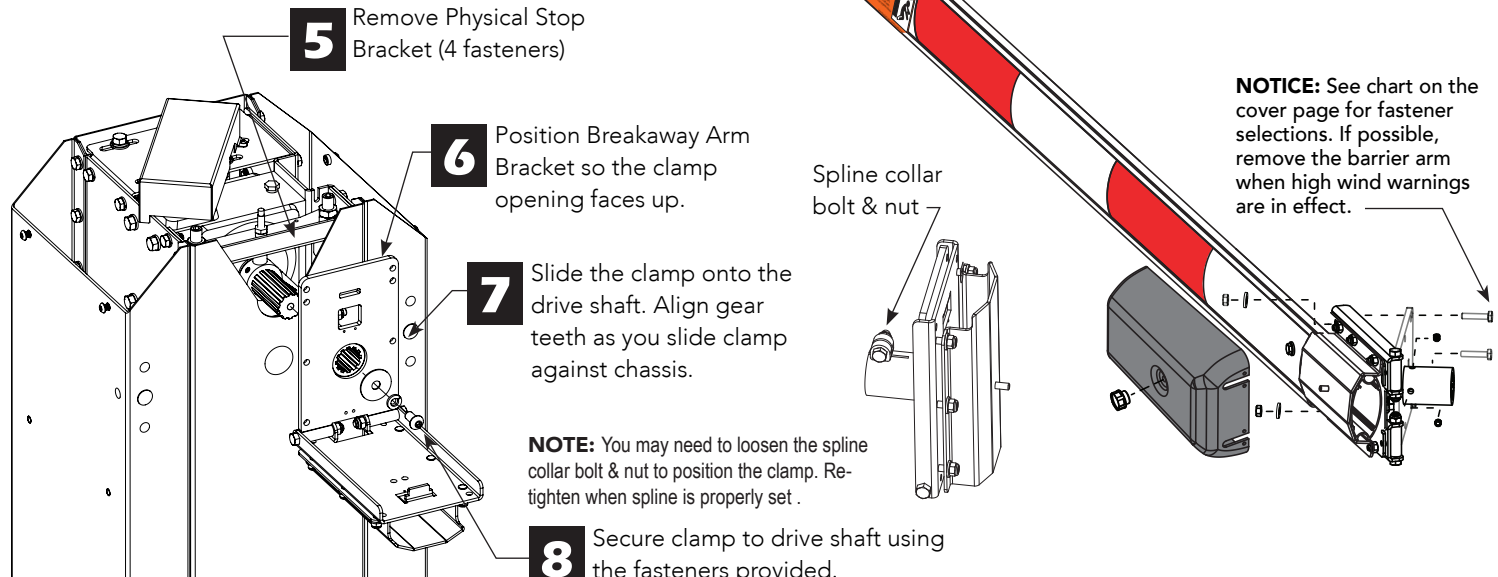
**6** Position Breakaway Arm Bracket so the clamp opening faces up.

**7** Slide the clamp onto the drive shaft. Align gear teeth as you slide clamp against chassis.

**NOTE:** You may need to loosen the spline collar bolt & nut to position the clamp. Retighten when spline is properly set.

**8** Secure clamp to drive shaft using the fasteners provided.

**NOTE:** Follow the video to feed wire harness through chassis, assemble barrier arm, connect lighting, magnetic switch and program the gate operator.



# 4 VERIFY POWER IS OFF, AND THEN CONNECT AC WIRES

## TURN POWER OFF

**⚠ DANGER** Turn OFF AC power at the source (circuit breaker panel) before accessing the wires in the junction box. Follow facility Lock Out/Tag out procedures. Make sure both the DC and AC power switches are in the OFF position.

DC power switch disconnects motor and battery.

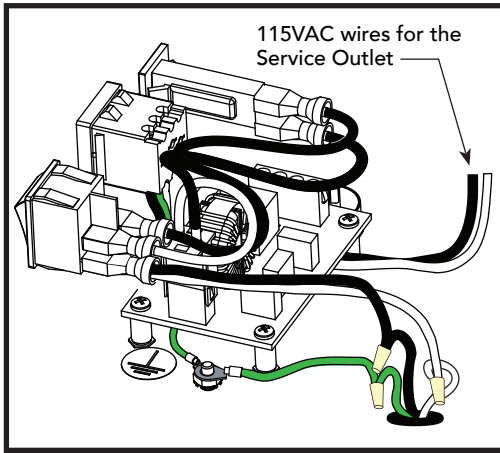
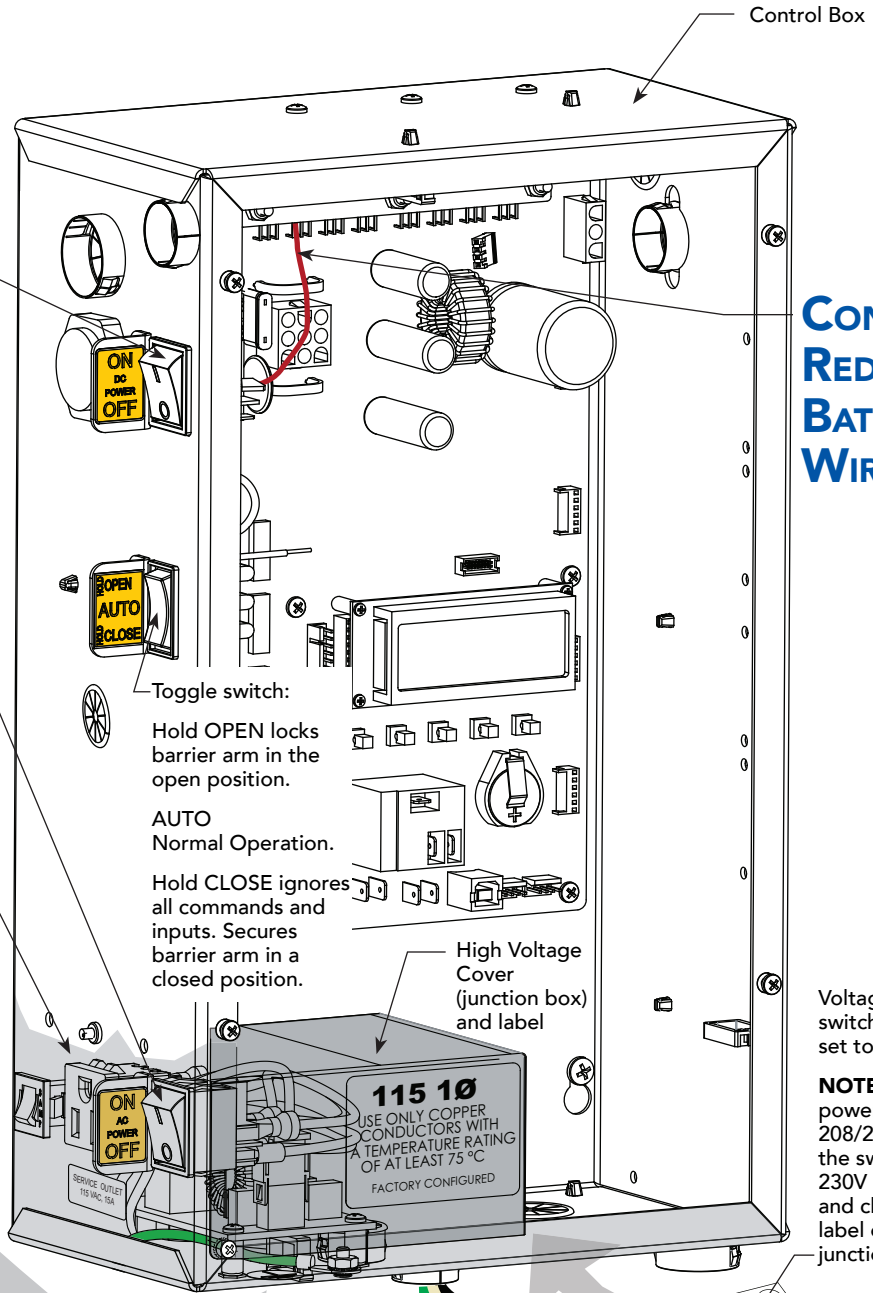
Place the power switches in the OFF position.

AC power switch disconnects incoming AC power to the operator.

**⚠ WARNING** DO NOT connect the 115VAC service outlet to 208 or 230VAC power supply wires! To use the 115VAC service outlet on a 208 or 230VAC installation, the electrician needs to run an extra neutral wire to the operator from the power source and wire the service outlet per code.

Service Outlet  
115VAC only

115VAC wires for the Service Outlet



## CONNECT AC POWER WIRING

1. Unscrew the two Phillips-head screws and remove the high voltage cover.
2. Connect the AC power and ground wires with wire nuts. If running 115VAC, also connect the Service Outlet wires.
3. Replace high voltage cover and secure with screws removed in step 1.

**⚠ CAUTION** Wiring of gate operators must conform to NEC standards and comply with all local codes.

**⚠ CAUTION** When connecting to 208/230VAC power, the voltage selector switch on the AC power board must be moved to the 230V position or damage to the operator will occur and void the Warranty. The label on the high voltage cover must be changed to state 230V.

# 5 CONNECT ACCESSORIES

All accessories require a minimum of two connections on the Smart DC Controller:

- ◆ A device input
- ◆ A Common Bus Terminal (COM)

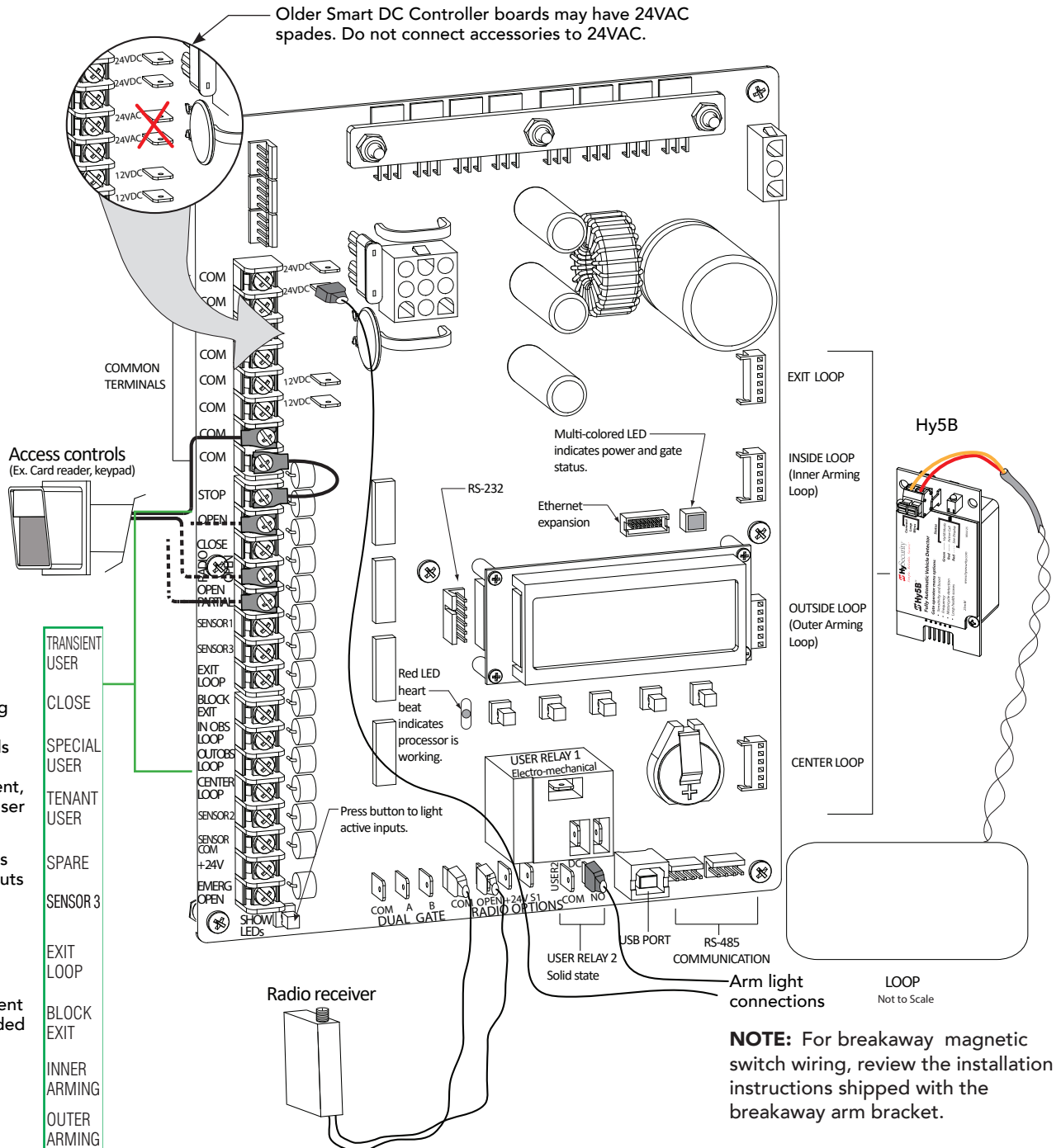
**NOTE:** Other devices may require more connections or configurations. For example, the Fire Department (EMERG OPEN) input requires a +24 volt input. The connection must be activated by changing the setting through the Installer Menu. UL 325 - 2016 updates describing installation of external entrapment protection sensors can be found the [Programming & Operations Manual](#).

Two power supplies (2 terminals each) are available for peripheral connections:

24VDC & 12VDC

**NOTE:** Each power supply (and its corresponding terminals) can be used in any combination to draw the available 1A maximum.

Older Smart DC Controller boards may have 24VAC spades. Do not connect accessories to 24VAC.



## Parking Site Use

The label for the Smart DC Controller accommodates arming loops and establishes which open commands need to be wired for vehicle counts (transient, special, and tenant "user types").

The software identifies the access control inputs and uses the arming loops to control relay and network outputs.

**NOTE:** The most current software must be loaded on your Smart DC Controller.

- TRANSIENT USER
- CLOSE
- SPECIAL USER
- TENANT USER
- SPARE
- SENSOR 3
- EXIT LOOP
- BLOCK EXIT
- INNER ARMING
- OUTER ARMING

**NOTE:** For breakaway magnetic switch wiring, review the installation instructions shipped with the breakaway arm bracket.

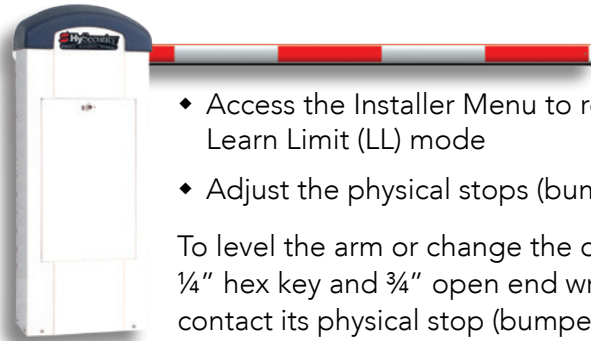
# 6 TURN ON POWER, LEVEL ARM & CONNECT LIGHTS

When both DC & AC power switches are in the OFF position and you turn them ON, the operator initiates a target search and the barrier arm travels open. No physical limit switches exist. The open and close limits are established by sensing the arm position. Even if AC power is lost and the batteries are fully drained, the limits remain intact. The only exception occurs when factory defaults are reinstated or the Smart DC Controller is replaced.

For more information, refer to the [StrongArmPark DC Programming and Operations Manual](#).

## LEVEL THE ARM & ADJUST PHYSICAL STOPS

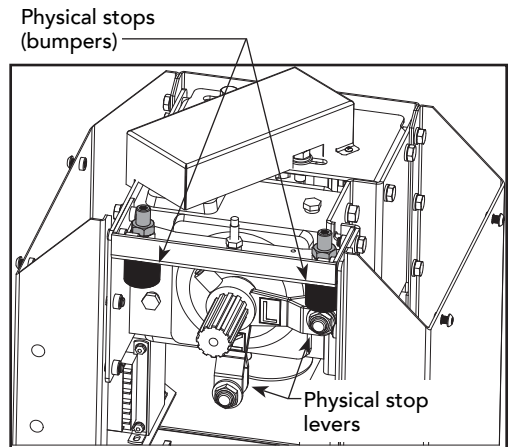
The limits are factory set at 90° and, if adjustments are needed, level the arm using the following procedures:



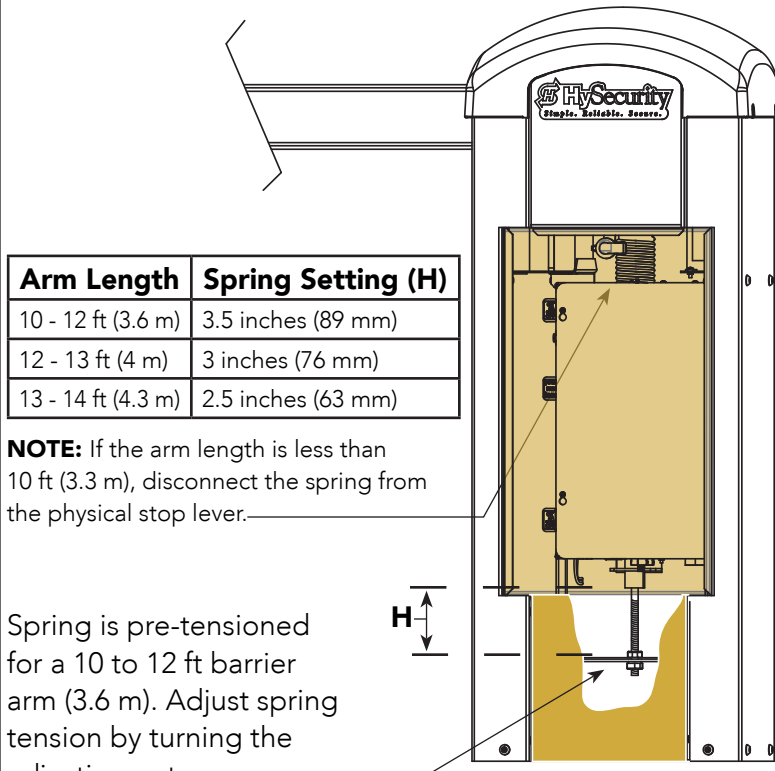
- ◆ Access the Installer Menu to re-establish Learn Limit (LL) mode
- ◆ Adjust the physical stops (bumpers)

To level the arm or change the degree of angle, bumpers can be adjusted up or down using a 1/4" hex key and 3/4" open end wrench. At full Open or Close, the physical stop lever should lightly contact its physical stop (bumper).

To make adjustments to the arm position, the operator needs to be in Learn Limits mode.



### Setting the Spring on the StrongArmPark DC 14



Arm Length	Spring Setting (H)
10 - 12 ft (3.6 m)	3.5 inches (89 mm)
12 - 13 ft (4 m)	3 inches (76 mm)
13 - 14 ft (4.3 m)	2.5 inches (63 mm)

**NOTE:** If the arm length is less than 10 ft (3.3 m), disconnect the spring from the physical stop lever.

Spring is pre-tensioned for a 10 to 12 ft barrier arm (3.6 m). Adjust spring tension by turning the adjusting nut.

**NOTE:** If you need to change a StrongArmPark DC 14 handing in the field, it requires moving the spring's eyebolt to the opposite physical stop lever. Refer to [StrongArmPark DC Programming and Operations Manual](#).

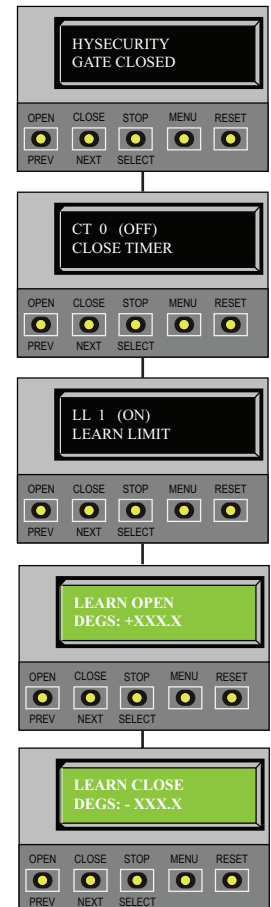
## LEARN LIMITS MODE

Establish limit settings.

1. Start at a gate status display.
2. Press MENU, twice.
3. At the CLOSE TIMER display, simultaneously press and release the OPEN and RESET buttons.
4. At the LL 0 display, press SELECT and change the display to 1 using the NEXT button. Press SELECT again and the LEARN OPEN display appears.
5. Hold the OPEN button until the arm reaches the desired open limit. Release the OPEN button.

**NOTE:** Too far open or close? Press the opposing function button to reverse direction.

6. To preserve the limit setting, press STOP twice. LEARN CLOSE appears on the display.
7. Hold the CLOSE button until the arm travels to full close. Release the CLOSE button.
8. To preserve, press STOP twice.
9. Cycle the operator (Open/Close) several times.
10. If needed, adjust the bumpers so they contact the levers.



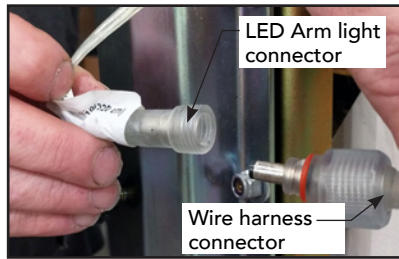
# 7 CONNECT ARM LIGHTS TO SMART DC CONTROLLER

Review the installation video at the following youtube location: <https://youtu.be/AdTWNyC-C-NU>

In a short 8 minutes, the installation video shows you how to:

- Install the breakaway arm bracket
- Connect the magnetic kill switch
- Connect the arm lighting and feed wire through the chassis to the controller (5:50 min)
- Program the controller, Installer Menu settings "R2" User Relay 2 and "BA" Breakaway switch.

1. Attach the end of the wire harness (on outside of chassis) to the LED light connector on the arm. The wire harness connector is keyed. Be sure to properly seat the connectors before threading close.
2. Secure the harness to the chassis with the strain relief bushing.
3. Connect the one wire lead to the **24VDC** power supply terminal.
4. Connect the other wire lead to the NO terminal on User 2 Relay.
5. Turn on both AC and DC power switches. Arm will cycle to search for the target home position.
6. When the arm has stopped moving, access the Installer Menu.
7. Set User Relay 2 logic function to one of the following:



**Connect Arm Light Cables**

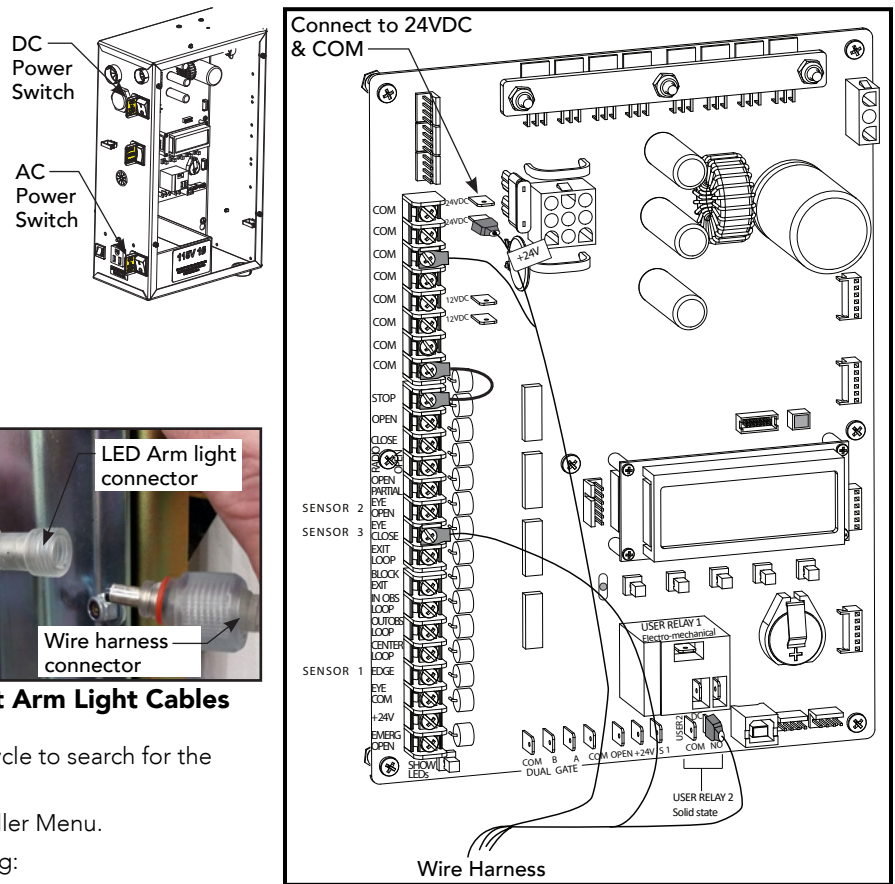
- R2 "27": LED lights remain on throughout arm travel and turn off when open limit is reached.
- R2 "28": LED lights flash throughout arm travel and turn off when open limit is reached.

**NOTE:** Both selections will turn off the lights, which preserves battery life, in the event of AC power loss.

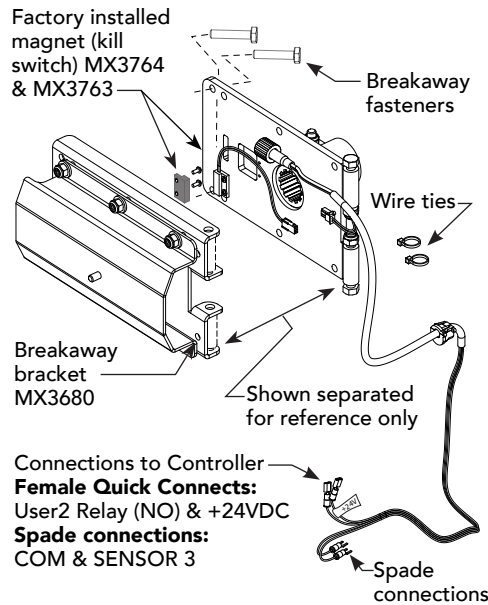
8. To turn on the magnetic proximity switch in the breakaway arm assembly, navigate to BA in the Installer Menu.
9. Select BA and change the menu item to 1.
10. Exit the Installer menu mode by pressing Menu and return to run mode.



If User Relay 2 is being used for accessory devices, you can connect the LED lighting wires directly to 24VDC and COM. Take note that this type of connection does not turn off the arm lights in the event of AC power loss and will drain the batteries quickly.



**Connect Wire Leads for lights and Breakaway bracket "Kill" switch**



**Configure the Installer Menu: Relay 2 Logic**



**Program Breakaway switch, if needed**

## COMPLETE THE INSTALL

- Refer to the installation manual to configure User and Installer Menu options such as gate speed, Close Timer, relay functionality, etc.
- When the operator is functioning properly, replace the operator's covers and secure the key latch.
- Review the *Important Safety Instructions* and the proper use of the barrier arm with the end user.
- Position WARNING labels per UL 325. Take photos of the barrier arm installation site.