

### SECTION 1: LED RETROFIT INTRODUCTION

**OPERATOR:** Applies to all powered M30 and M50 StrongArmCrash products

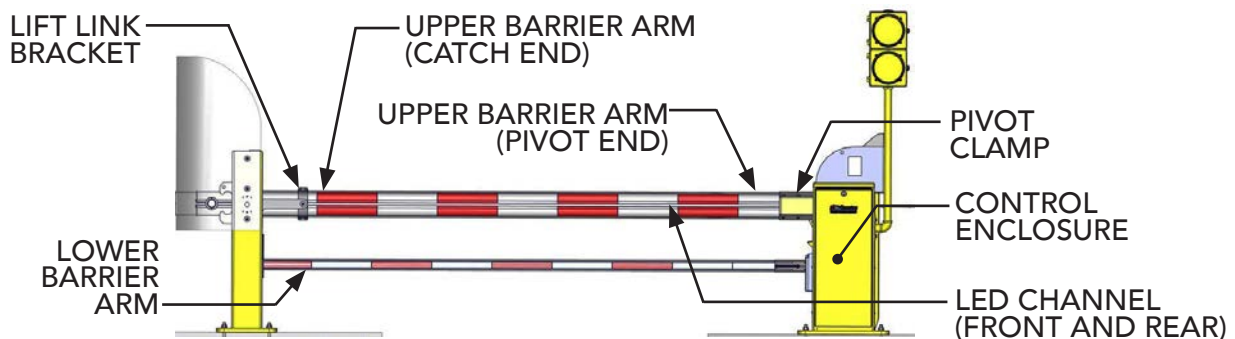
**DATE:** 08/28/2019

**SUBJECT:** New LED strips for M30/50 barrier arms are brighter and light output is more consistent across the length of barrier arm than old LEDs.

**NOTE:** The kit for this retrofit is comprised of power supply, wiring, lenses, and hardware for both sides of the arm. LEDs are not included in the kit and must be purchased separately.

This document provides instructions for replacing the existing LEDs on the StrongArmCrash barrier arm assembly with new brighter LED strips. Refer to callouts in FIGURE 1 for general part identification. These instructions cover the following procedures:

1. Disassemble link lift bracket from upper barrier arm
2. Disassemble hinge clamp from upper barrier arm
3. Disassemble rear panel from pivot end of unit
4. Disassemble hinge cover from hinge
5. Remove old LEDs and adhesive
6. Install new LEDs
7. Install LED lens cover
8. Reassemble barrier arm to unit
9. Prepare new hinge cover with LED cables
10. Open control enclosure
11. Replace existing cord grips
12. Pass LED cable into control enclosure
13. Configure control board components
14. Wire in LEDs and new power supply



M30/M50 GENERAL PART IDENTIFICATION

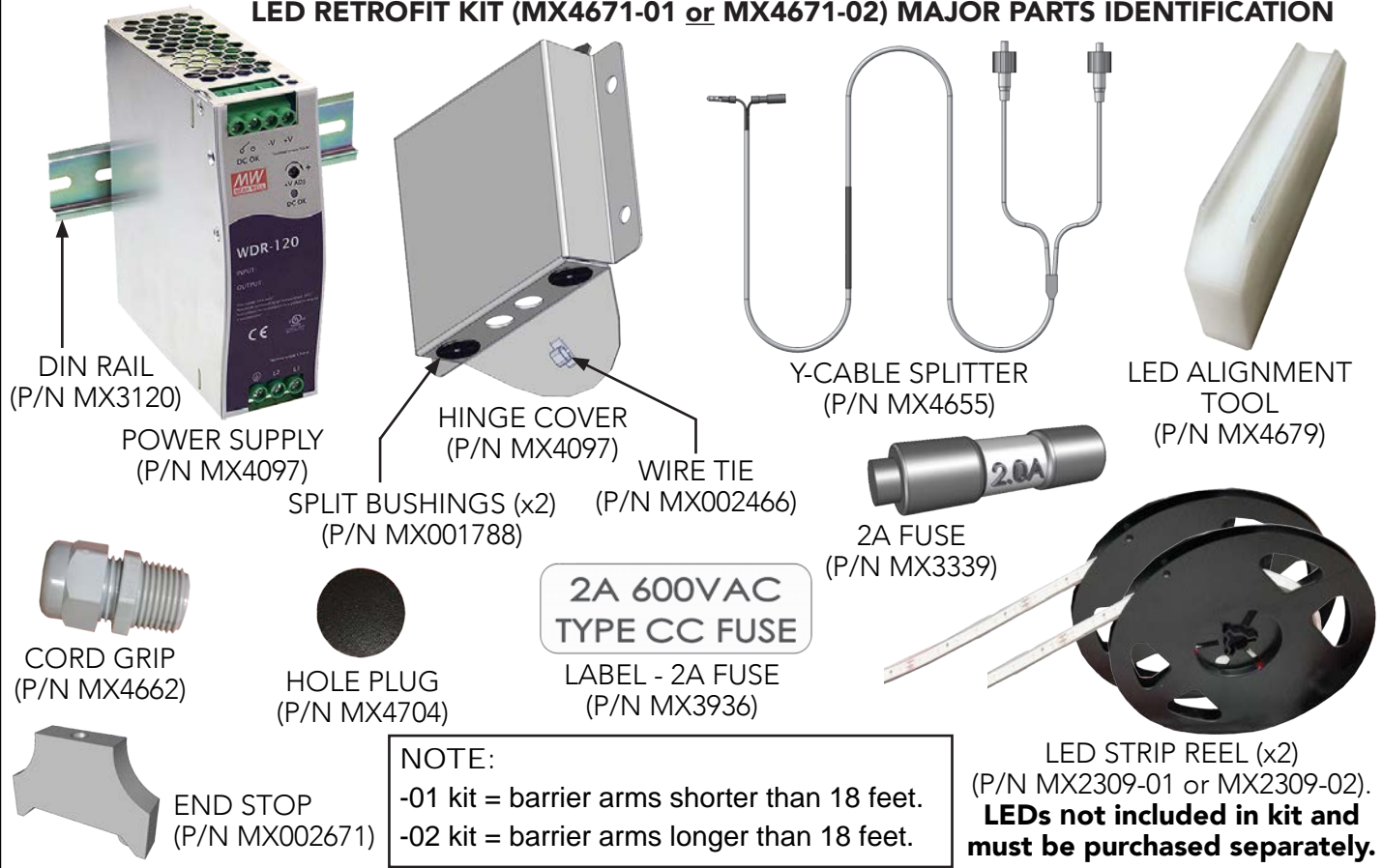
### SECTION 2: TOOLS AND MATERIALS REQUIRED

- Wrenches: 1/4", 3/8", 1/2"
- 3/4" box-end wrench
- 1/2" drive ratchet with 12" extension and 3/4" socket
- 7/16" socket wrench
- Chisel, 1/2" Wide
- Isopropyl alcohol
- LED Strip Installation (alignment )Tool (included in kit)
- Wire cutters

### P/N MX4671-01/-02: LED RETROFIT KIT PARTS LIST

ITEM#	PART#	DESCRIPTION	QTY
1	MX001788	BUSHING, 0.875" X 0.125", SPLIT	2
2	MX001883	WIRE, 12" #14 GRN, 1/4" RNG x 3/8" PS	1
3	MX002466	WIRE TIE, MOUNT, PUSH-IN	1
4	MX002671	STOP, END, DIN, 35MM	2
5	MX3024	HINGE COVER SAM30	1
6	MX3120	DIN RAIL, 35 MM, 8.75"	1
7	MX3339	FUSE 2A TYPE CC UL248	1
8	MX3936	LABEL, TYPE CC FUSE, 2A	1
9	MX4097	POWER SUPPLY, 120W, 24VDC	1
10	MX4654-108	EXTRUSION, LENS, LED, SAM ARM	4/6
11	MX4655	SPLITTER, DC 5.5X2.1, SAM ARM	1
12	MX4659-02	WIRE, 14" #14 3/8PS X 3/8PS	4
13	MX4662	CORD GRIP, 0.5" NON-METALLIC, HEYCO 3232	1
14	MX4678	POWER WIRE, LED RETRO KIT	1
15	MX4679	INSTALLATION TOOL, LED STRIP, SAM ARMS	1
16	MX4704	PLUG, THICK PANEL DOME, .875 D	1
17	N/A	SMALL ZIP TIES	4

### LED RETROFIT KIT (MX4671-01 or MX4671-02) MAJOR PARTS IDENTIFICATION



## SECTION 3: SAFETY AND WARNINGS



### DANGER!

To avoid the risk of injury or death, disconnect the gate operator from the main power source prior to performing this retrofit operation!



### CAUTION!

This equipment presents possible electrical and mechanical hazards. Follow all safety procedures to protect limbs and eyes when performing this retrofit operation!

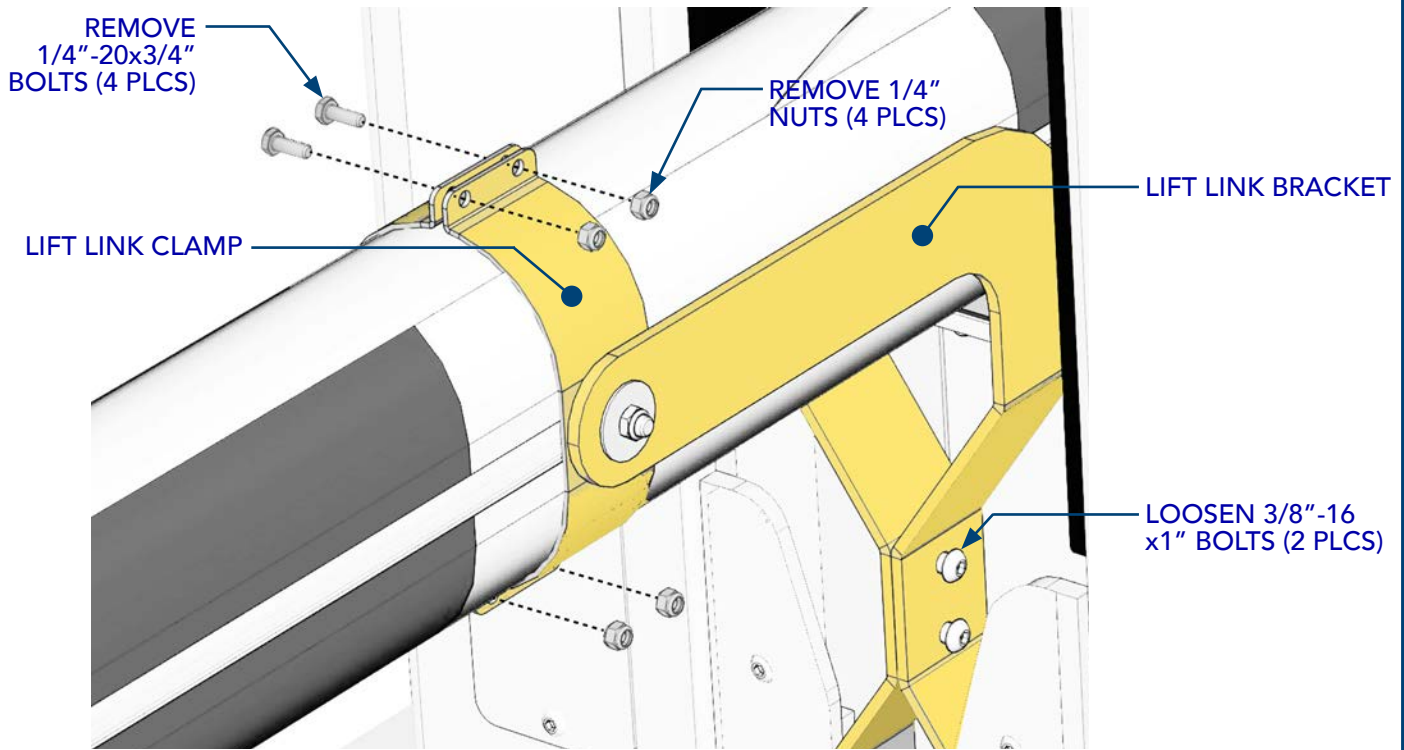
## SECTION 4: MECHANICAL PREPARATION

# 1

### DISASSEMBLE LIFT LINK FROM UPPER ARM

Disassemble the lower lift link from the upper barrier arm as described below:

1. Remove the 1/4" bolts and nuts from the clamp of the link bracket.
2. Loosen the two 3/8"-16 x 1" bolts to allow clamp to be removed from upper arm.



**IMAGE 1-1: REMOVING THE LIFT LINK FROM UPPER BARRIER ARM**

NOTE: Set hardware aside for later reassembly.

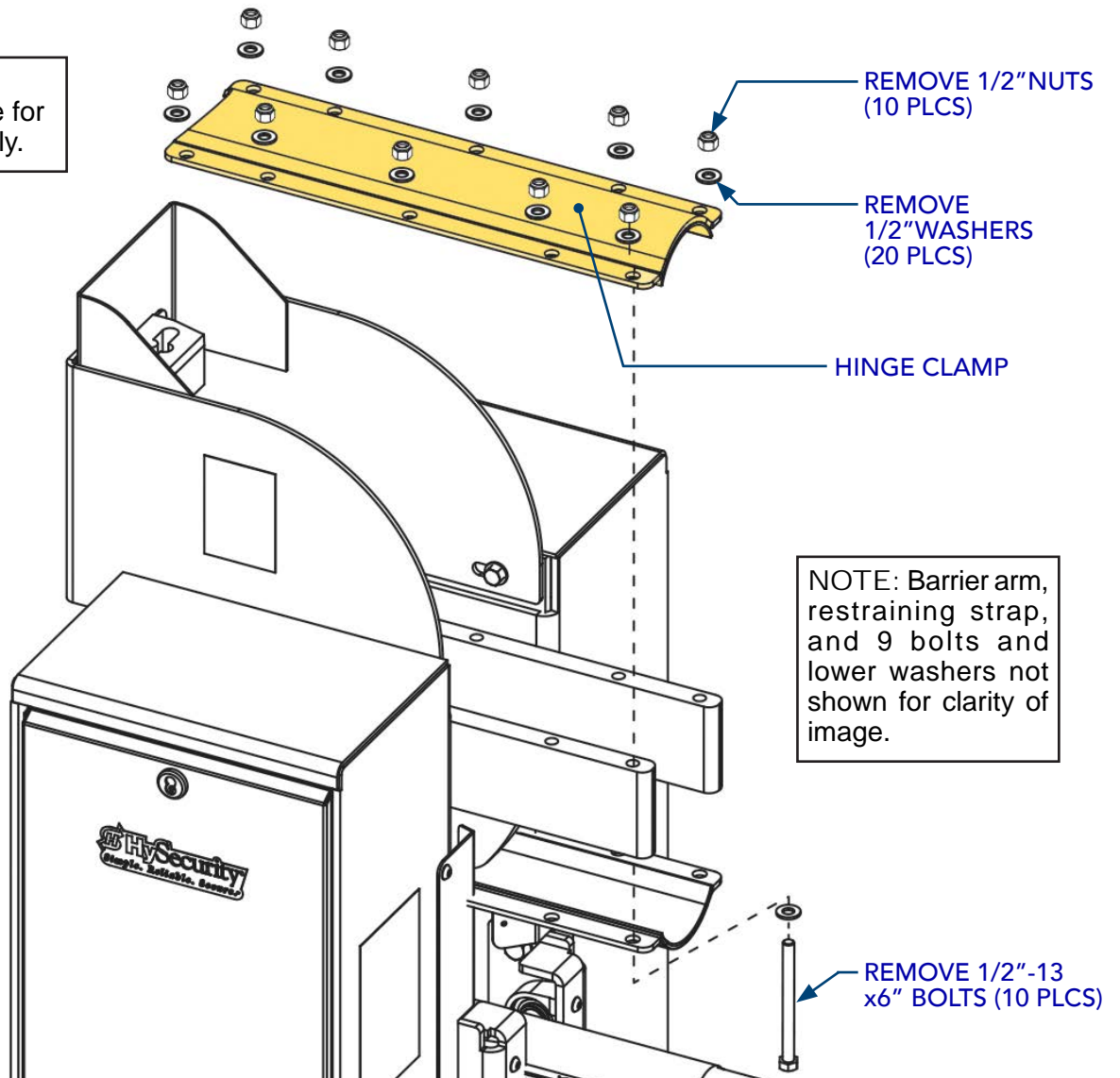
## 2

## DISASSEMBLE HINGE CLAMP FROM ARM HINGE

Disassemble the hinge clamp from the barrier arm hinge as follows:

1. Remove the 1/2"-13x6 bolts (x10) and 1/2" washers (x20) from the arm hinge (IMAGE 2-1).
2. Lift the hinge clamp from the barrier arm.
3. Now the barrier arm may be removed from the unit and is ready for the retrofit procedure.

NOTE: Set hardware aside for later reassembly.



**IMAGE 2-1: REMOVING THE HINGE CLAMP FROM ARM HINGE**

### TORQUE VALUE FOR REASSEMBLY:

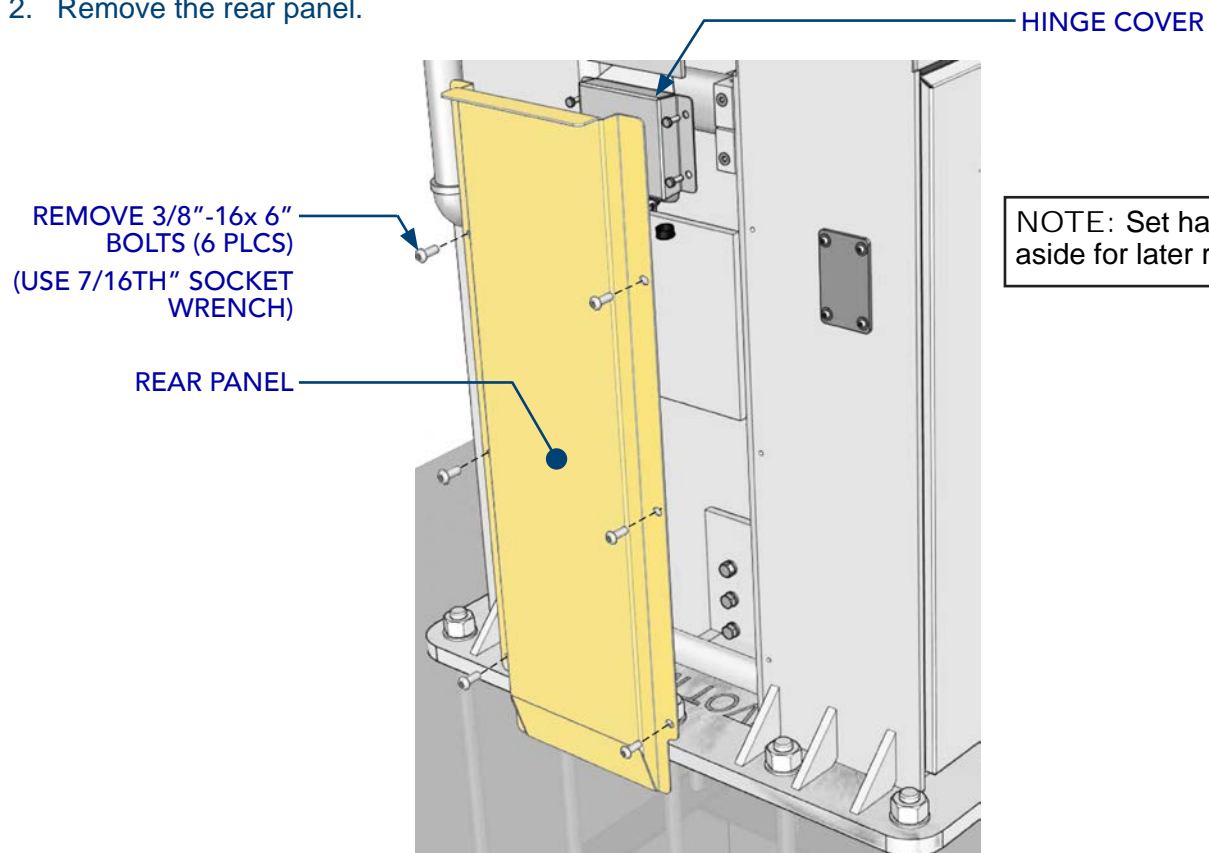
When reassembling, tighten nuts (not bolts) securely to 75 ft-lbs (102 N-m).

### 3

## REMOVE REAR PANEL

Remove the rear panel as follows:

1. Remove the 3/8"-16x1" bolts (x6) affixing the rear panel from the enclosure (IMAGE 3-1).
2. Remove the rear panel.

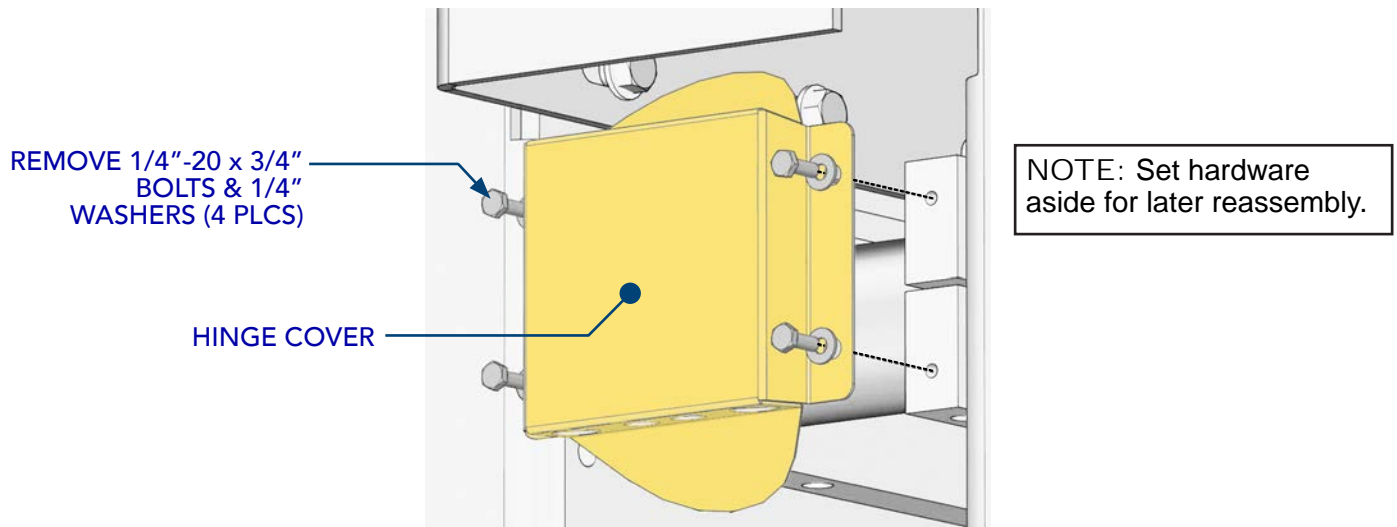


**IMAGE 3-1: REMOVING REAR PANEL**

## 4 REMOVE HINGE COVER

Remove the hinge cover as follows:

1. Remove the 1/4"-20 x 3/4" bolts (x4) and 1/4" washers (x4) affixing the hinge cover to the arm hinge (IMAGE 4-1).
2. Remove the hinge cover and discard, as it will be replaced with a new one (MX3024) in the kit..



**IMAGE 4-1: REMOVING THE HINGE COVER**



## SECTION 5: LED RETROFIT INSTRUCTIONS

### 5 REMOVE OLD LEDS AND ADHESIVE

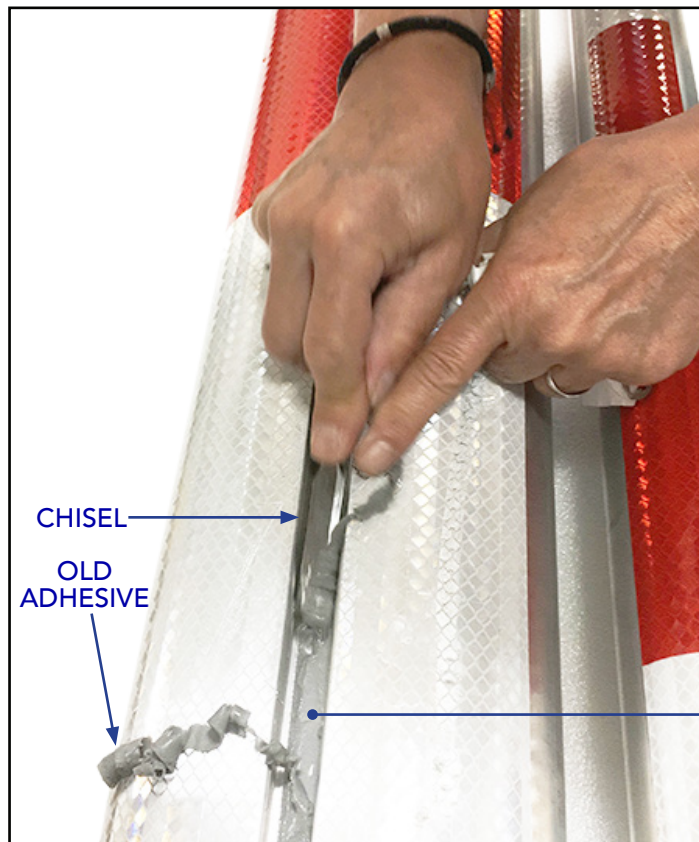
Remove Old LEDS and adhesive as follows:

1. Pull out old LED strip from both sides of barrier arm and discard.
2. Apply isopropyl alcohol to the old adhesive in the LED channel and let sit for a two or three minutes.
3. Apply alcohol to the tip of a 1/2" wide chisel, angle chisel low in the LED trough, apply moderate pressure, and attempt to remove as much adhesive during each pass as possible.
4. Use alcohol to remove any traces of old adhesive in the LED channel.



**IMAGE 5-1: CHISEL SCRAPING OFF OLD ADHESIVE (SIDE VIEW)**

**NOTE:** Avoid scratching the bottom of the LED channel with the chisel.



**NOTE:** There are two LED channels; one on each side of the barrier arm. Be sure to replace the LEDs on BOTH sides of the barrier arm.

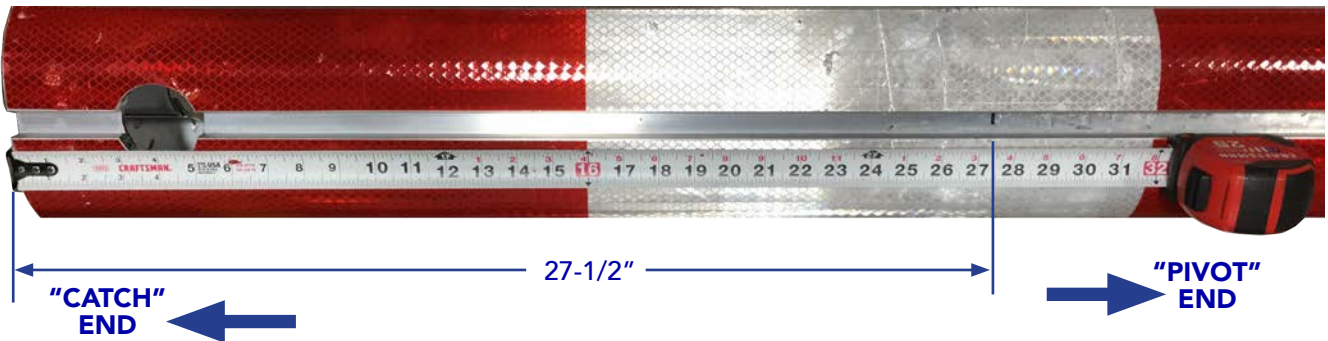
**IMAGE 5-2: CHISEL SCRAPING OFF OLD ADHESIVE**

## 6 INSTALL NEW LEDS

**NOTE:** Two light strips are precut to length and included in the kit.

Install new LEDS as follows:

1. Measure 27-1/2" from the "catch" end of barrier arm as shown in IMAGE 6-1, and mark in LED channel. This is the starting point where the LED strip is installed.



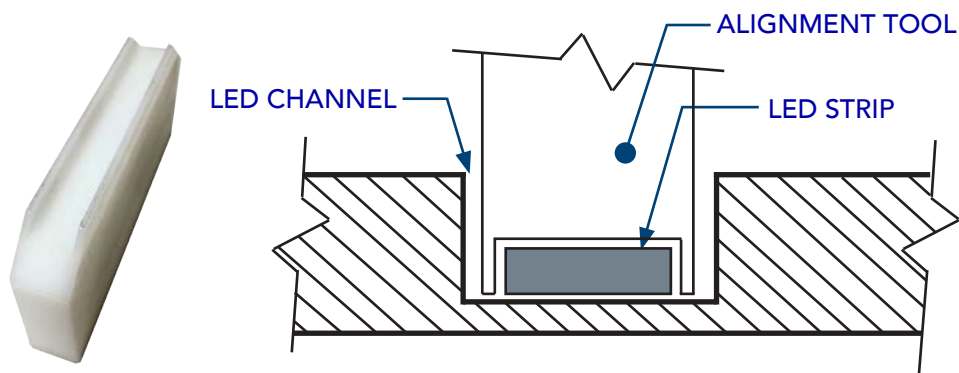
**IMAGE 6-1: DETERMINING START OF LED STRIP**

2. LEDs strip and place end of LED strip at 27-1/2" mark, and roll out into LED channel about 8". Do not pull off adhesive backing on LED strip yet.



**IMAGE 6-2: LAYING OUT LED STRIP IN LED CHANNEL**

3. Procure the alignment tool (IMAGE 6-3) before removing adhesive backing from LED strip.



**IMAGE 6-3: ALIGNMENT TOOL FOR LED STRIP (CROSS SECTION FRONT VIEW)**



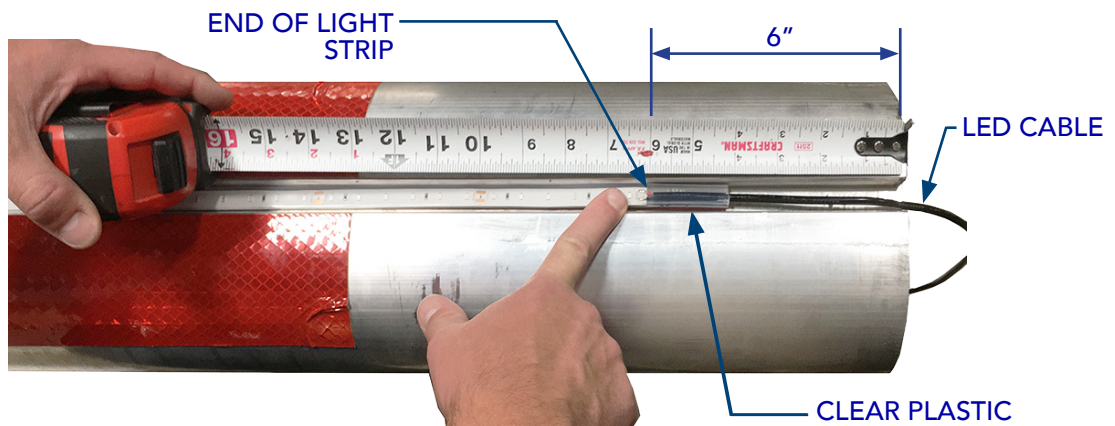
### (6) INSTALL NEW LEDS (CONT.)

4. Peel off the first 4" of the adhesive protector and use the alignment tool to ensure the LED strip adheres to the bottom of the LED channel in the center of the LED channel. Use moderate pressure and slowly slide the alignment tool forward until you must peel off another 4" of adhesive protector. Continue until finished.



**IMAGE 6-4: USING THE LED STRIP ALIGNMENT TOOL**

5. Ensure that end of the light strip (end with cable attached) measures as shown in IMAGE 6-5.



**IMAGE 6-5: CABLE END OF LED LIGHT STRIP**

6. The LED cable should now extend approximately 16" from the end of the arm (IMAGE 6-6).



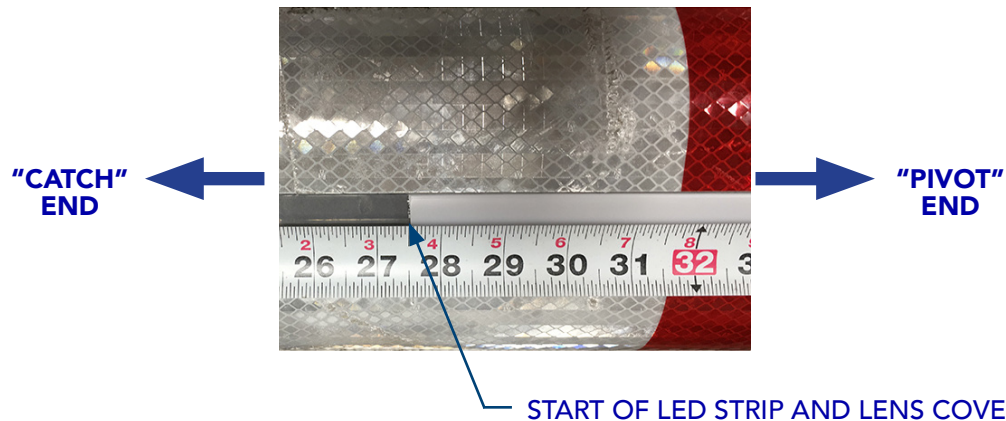
**IMAGE 6-6: CABLE AT 16" LENGTH FROM END OF ARM**

### 7 INSTALL LED LENS COVER

LED lens covers are shipped in longer lengths and are cut for size for installation as follows:

1. Each light strip uses two pieces of LED lens cover in order to leave a 2" gap (IMAGE 7-1) to accommodate the hardware of the Link Clamp that surrounds the "catch" end of the arm (IMAGE 7-2).

**IMPORTANT NOTE!** This instruction refers ONLY to barrier arms of odd lengths. For even lengths, consult HySecurity technical support for appropriate lens cover installation information.



**IMAGE 7-1: LED LENS COVER PLACEMENT GAP (ODD LENGTHS ONLY)**



**IMAGE 7-2: LINK BRACKET AND HARDWARE**

2. After cutting LED lens cover to lengths needed, press into LED channel as shown in IMAGE 7-3.



**IMAGE 7-3: INSERTING LED LENS COVER INTO LED CHANNEL**

### 8

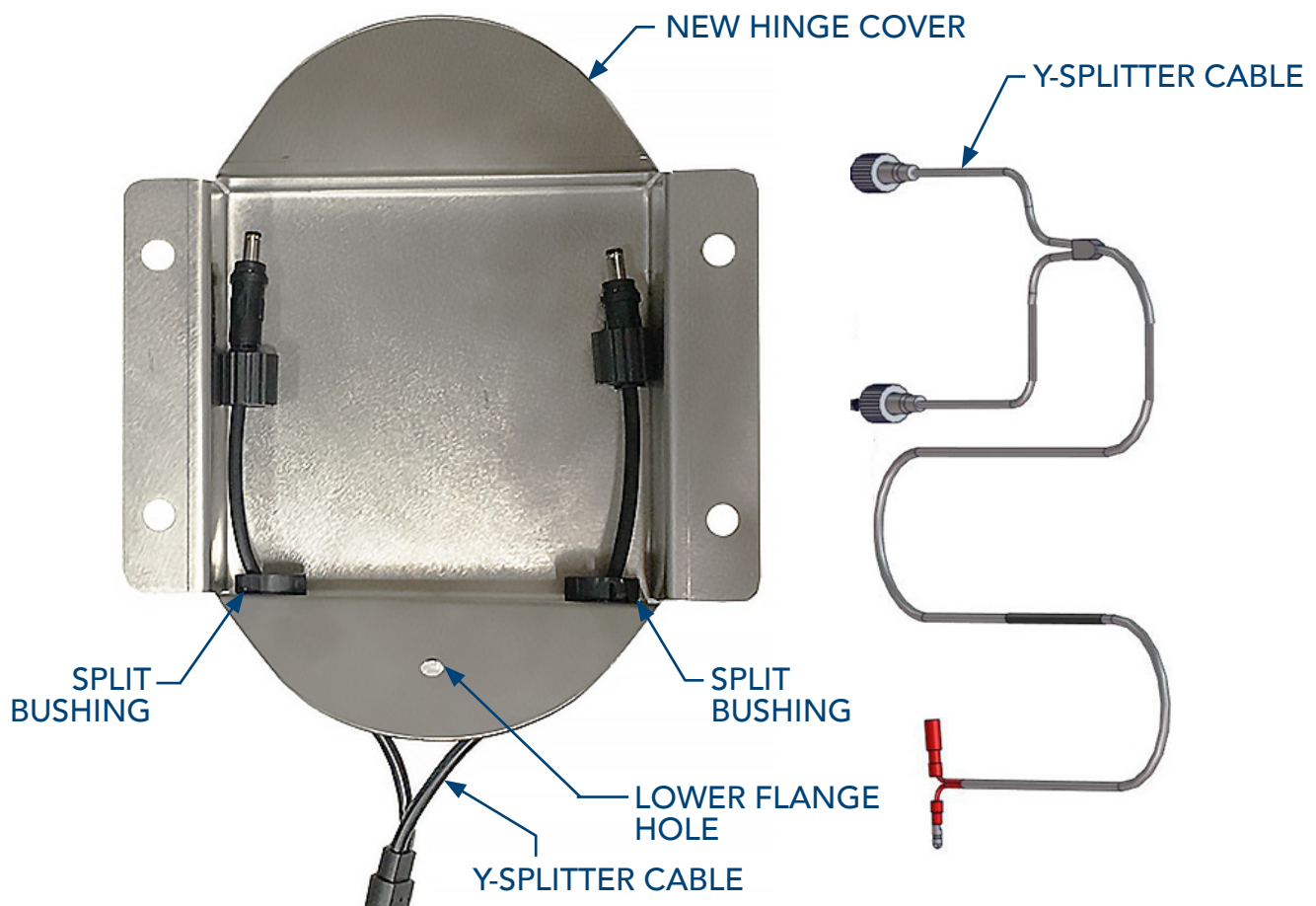
## REASSEMBLE BARRIER ARM TO UNIT

1. Refer to INSTRUCTION 1 and 2 and reverse the steps to reassemble the upper barrier arm to the pivot clamp and the lift link bracket.
2. Pass the LED cables and splitter cables under the pivot clamp in a way they will not be damaged by the raising and lowering of the barrier arm.

### 9

## PREPARE NEW HINGE COVER WITH LED CABLES

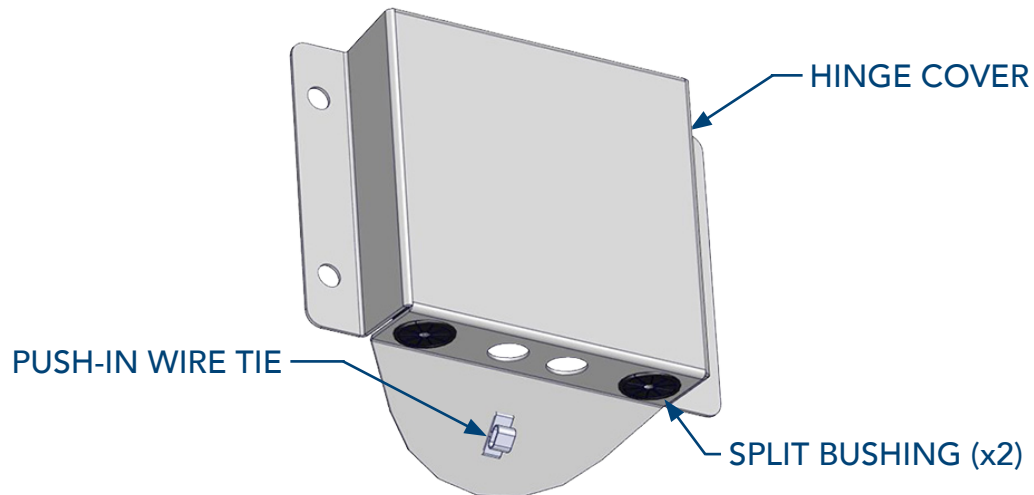
Obtain new hinge cover (P/N MX3024), two black split bushings (P/N MX001788), and Y-splitter cable (P/N MX4655) from the kit and assemble as shown in IMAGE 9-1).



**IMAGE 9-1: HINGE COVER, BUSHINGS, AND Y-SPLITTER CABLE**

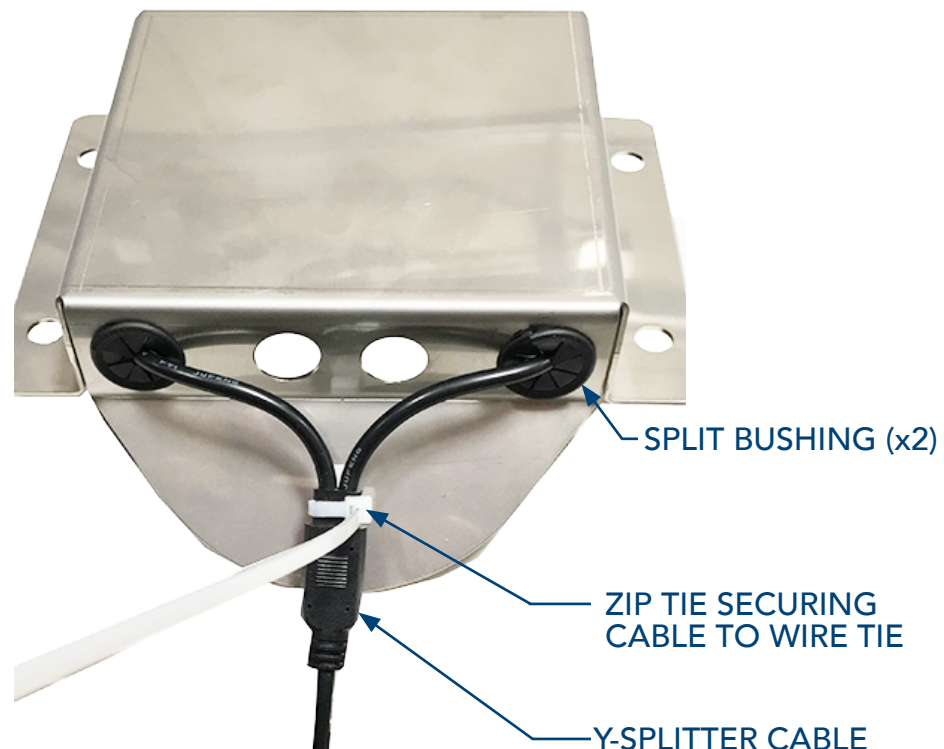
## (9) PREPARE HINGE COVER WITH LED CABLES (CONT.)

1. Retrieve the push-in wire tie (P/N MX002466) and insert into the flange hole as shown in IMAGE 9-2.



**IMAGE 9-2: PUSH-IN WIRE-TIE LOCATION AND ORIENTATION**

2. Retrieve a small zip tie from the kit, pass it through the push-in wire tie, and tie the Y-splitter cable to the wire tie as shown in IMAGE 9-3.



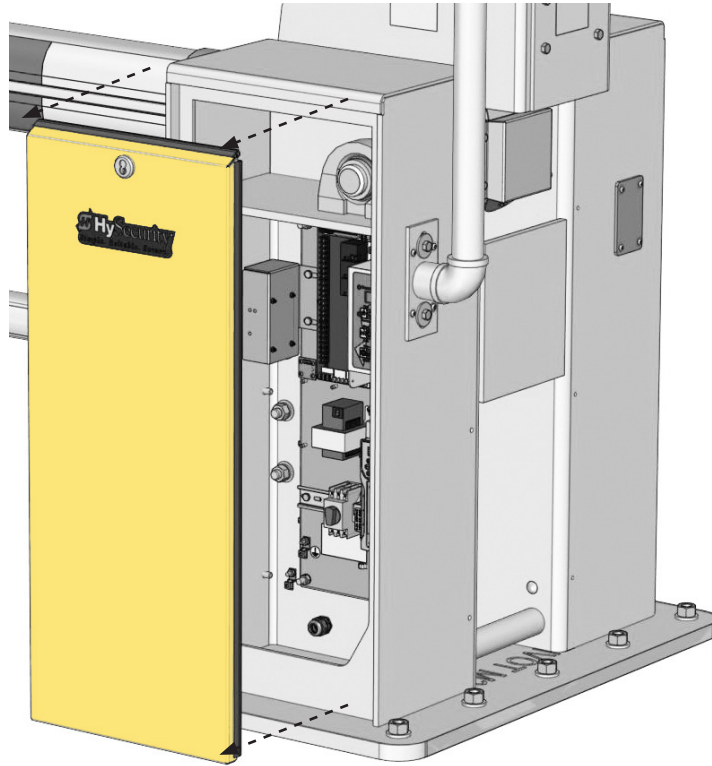
**IMAGE 9-3: USING ZIP TIE TO SECURE Y-SPLITTER CABLE TO HINGE COVER**

3. Refer to INSTRUCTION 4, then reassemble hinge cover back onto the arm hinge. The hinge cover should be oriented with cable exiting out from the bottom.



### 10 OPEN CONTROL ENCLOSURE

Open the control enclosure as shown in IMAGE 10-1:



**IMAGE 10-1: REMOVE CONTROL ENCLOSURE COVER**



## 11

### REPLACE EXISTING CORD GRIPS

Replace the old cord grips from the control enclosure as follows:

1. Remove the two existing cord grips (IMAGE 11-1).



**IMAGE 11-1: REMOVE EXISTING CORD GRIPS**

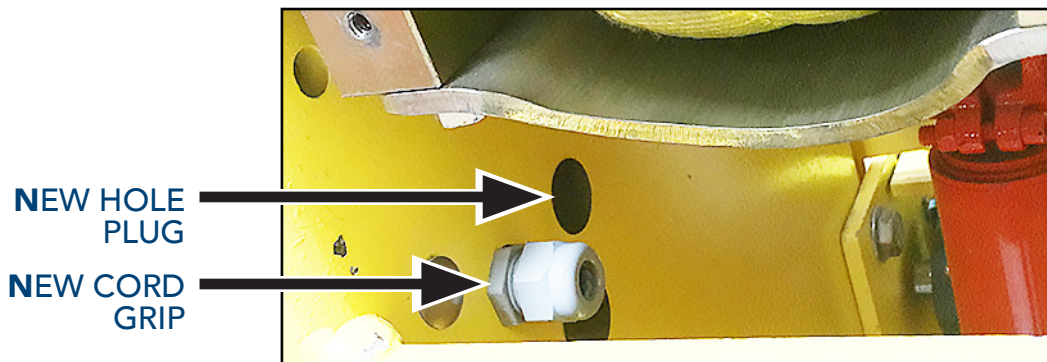
2. Retrieve new cord grip and hole plug (IMAGE 11-2) and install as shown in IMAGE 11-3.



**NOTE:**

Access the interior of the control box to access the lock nuts of the existing cord grips.

**IMAGE 11-2: NEW HOLE PLUG AND CORD GRIP**

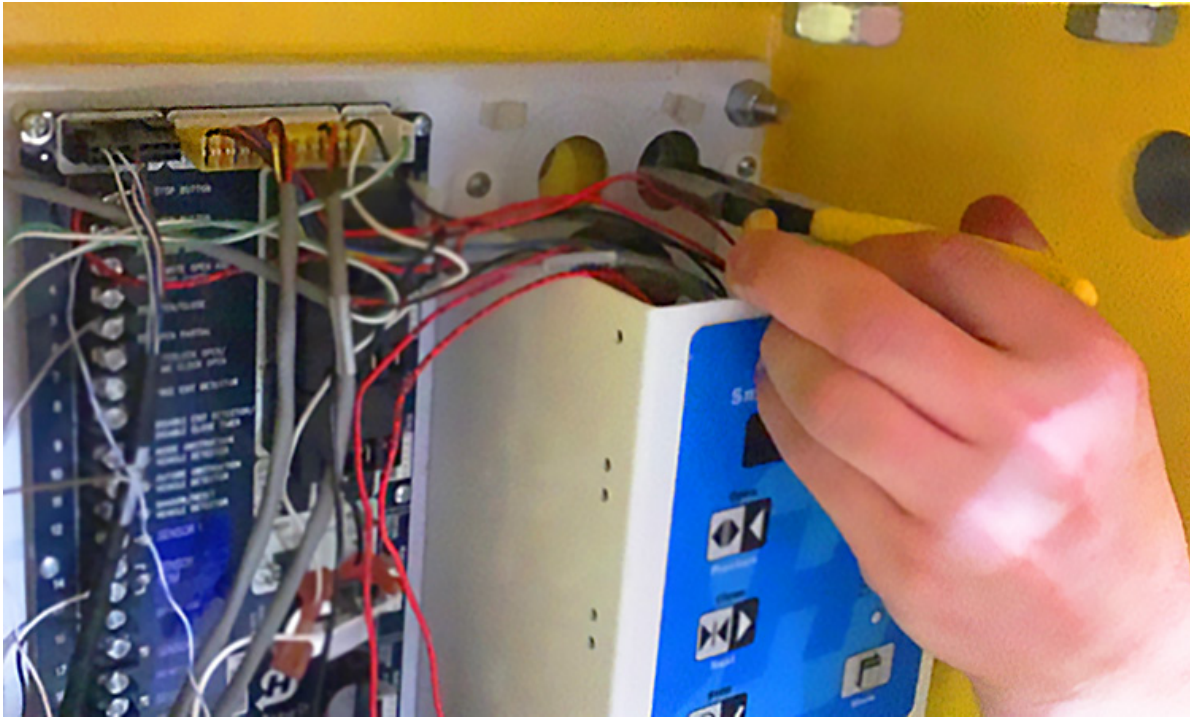


**IMAGE 11-3: NEW HOLE PLUG AND CORD GRIP INSTALLED**

## (11) REPLACE EXISTING CORD GRIPS (CONT.)

(Continued from previous page)

3. It may be necessary to use a pair of needle nose pliers, as shown in IMAGE 11-4, to install the backing nut to the cord grip.

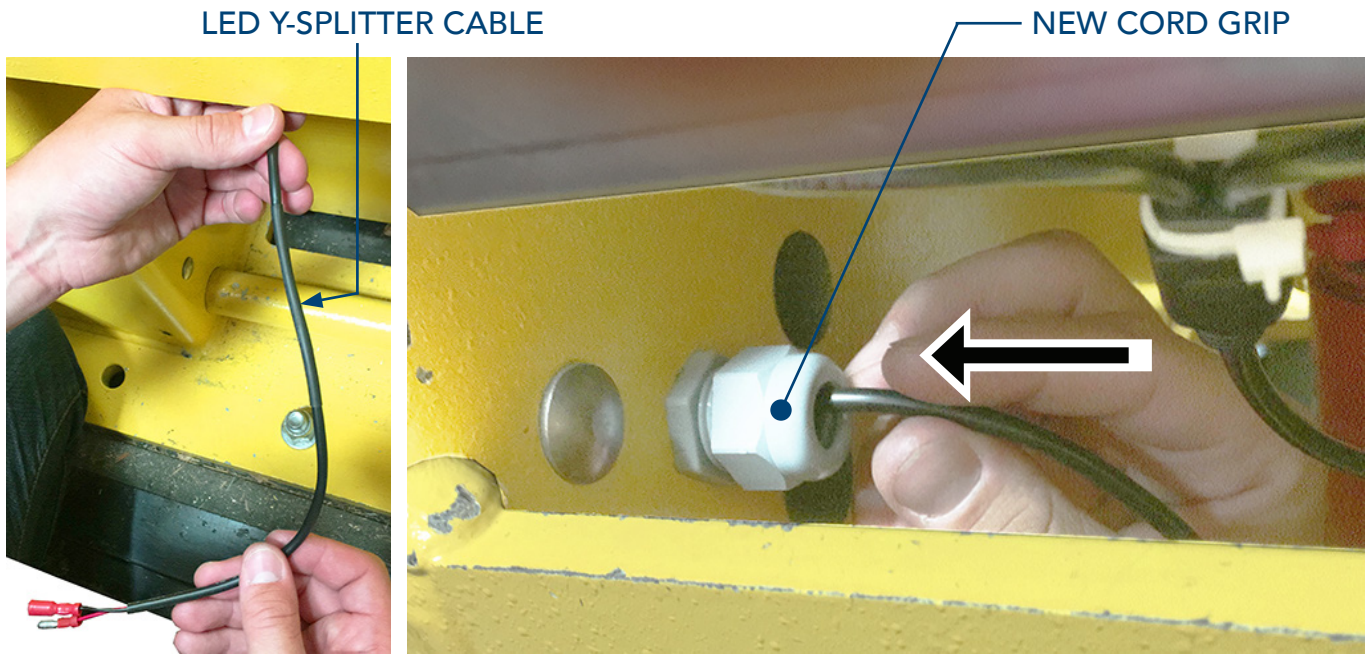


**IMAGE 11-4:** USING PLIERS TO GRIP NUT AND INSTALL NEW CORD GRIP

## 12

### PASS LED CABLE INTO CONTROL ENCLOSURE

Pass LED cable into the cord grip per IMAGE 12-1 and into the control enclosure.



**IMAGE 12-1: PASSING LED CABLE INTO CONTROL ENCLOSURE**

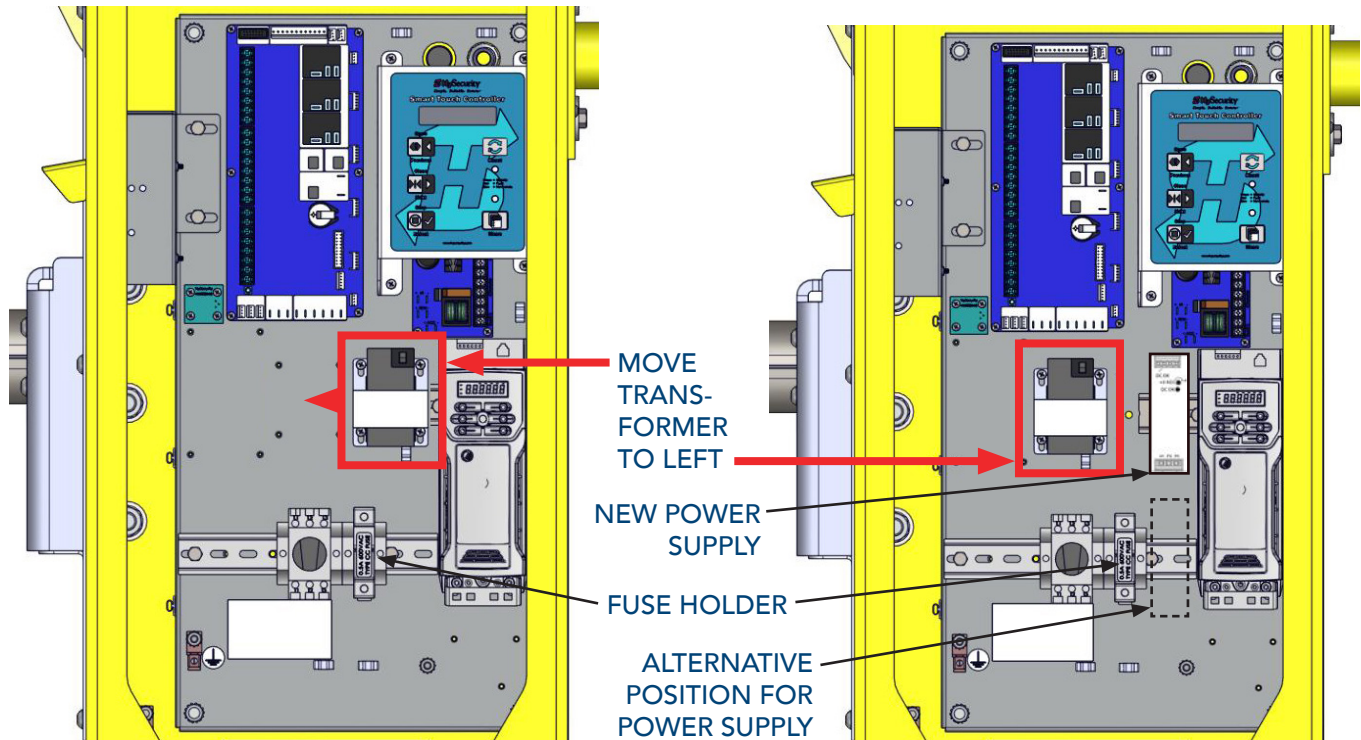


### 12 CONFIGURE CONTROL BOARD COMPONENTS

#### IMPORTANT!

Control board land component layout may differ from unit to unit. Configure and wire according to the layout you have using these instructions as a guide.

1. If the transformer is installed next to the VFD (IMAGE 12-1A, left) move it further to the left to make room for the new power supply.
2. If the DIN rail for the VFD is not long enough to also accommodate the power supply, replace the short rail with the longer one in the kit. If there is room, the power supply may also be mounted on the lower DIN rail between the VFD and the fuse holder.



**IMAGE 12-1: COMPONENT CONFIGURATION: BEFORE (LEFT) and AFTER (RIGHT)**

3. Mount the power supply onto the DIN rail.
4. Retrieve the 2A fuse (P/N MX3339) from the kit and replace the existing fuse in the fuse holder (IMAGE 12-1) with the new 2A fuse.
5. Retrieve the new fuse label (P/N MX3936) from the kit and apply to the fuse holder on the control board.

# 12

## WIRE LEDS AND NEW POWER SUPPLY

Refer to the wiring on the following pages to wire in the new LED cable to power supply and control board. Wires are provided in the kit.

### IMPORTANT!

Do not connect the new LED cable to the existing red wire used for the old LEDs. The new LEDs are powered by the new power supply. Refer to the wiring diagrams on the following pages.

# 13

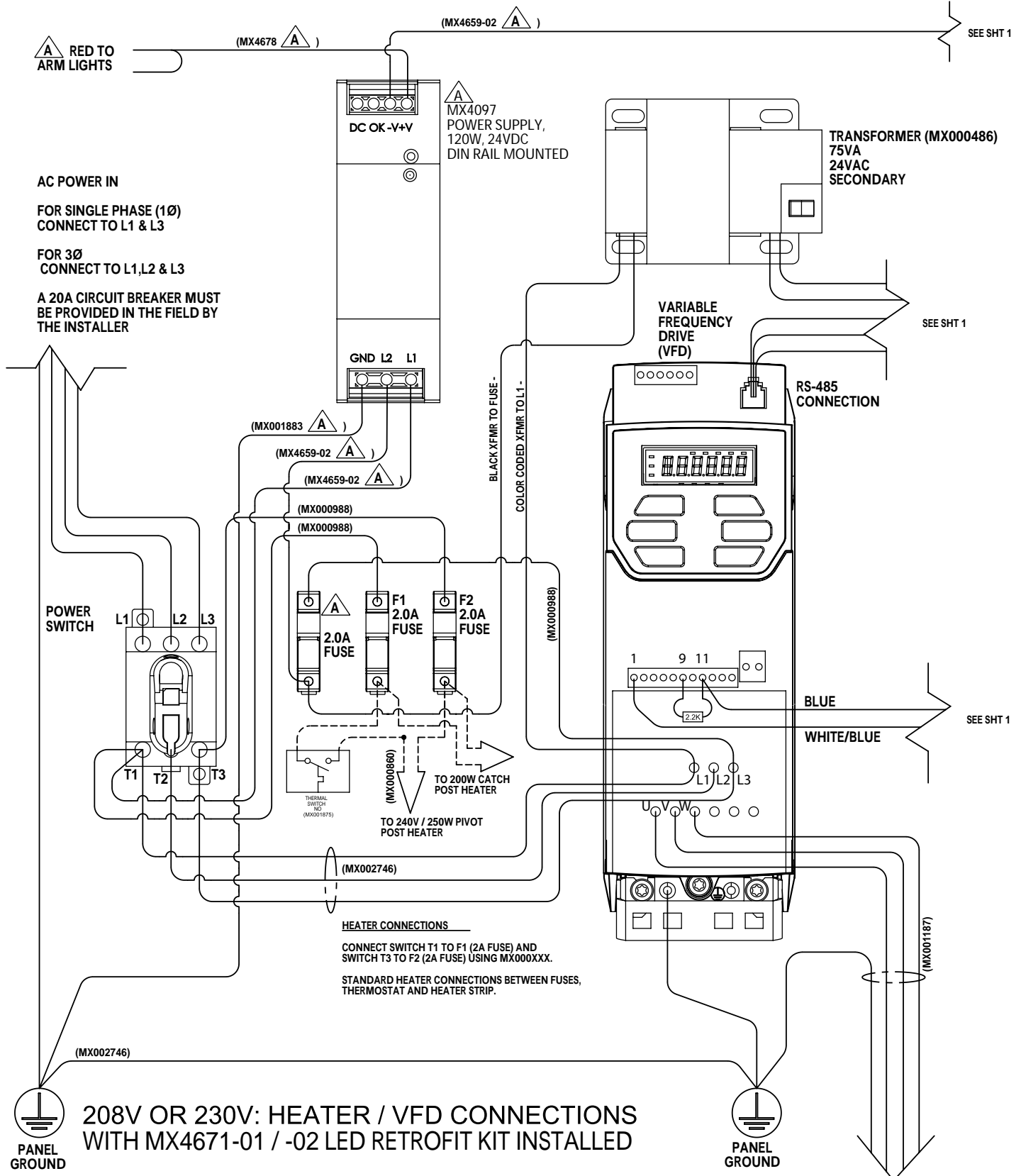
## UNIT REASSEMBLY

After the wiring is complete:

1. Reassemble control panel to control enclosure.
2. Reassemble rear panel to pivot end of unit using old hardware.
3. Place upper barrier arm in pivot saddle and reassemble pivot clamp over arm using old hardware (torque nuts to 75 ft-lbs (102 N-m)).
4. Reattach lift link bracket to upper barrier arm using old hardware.

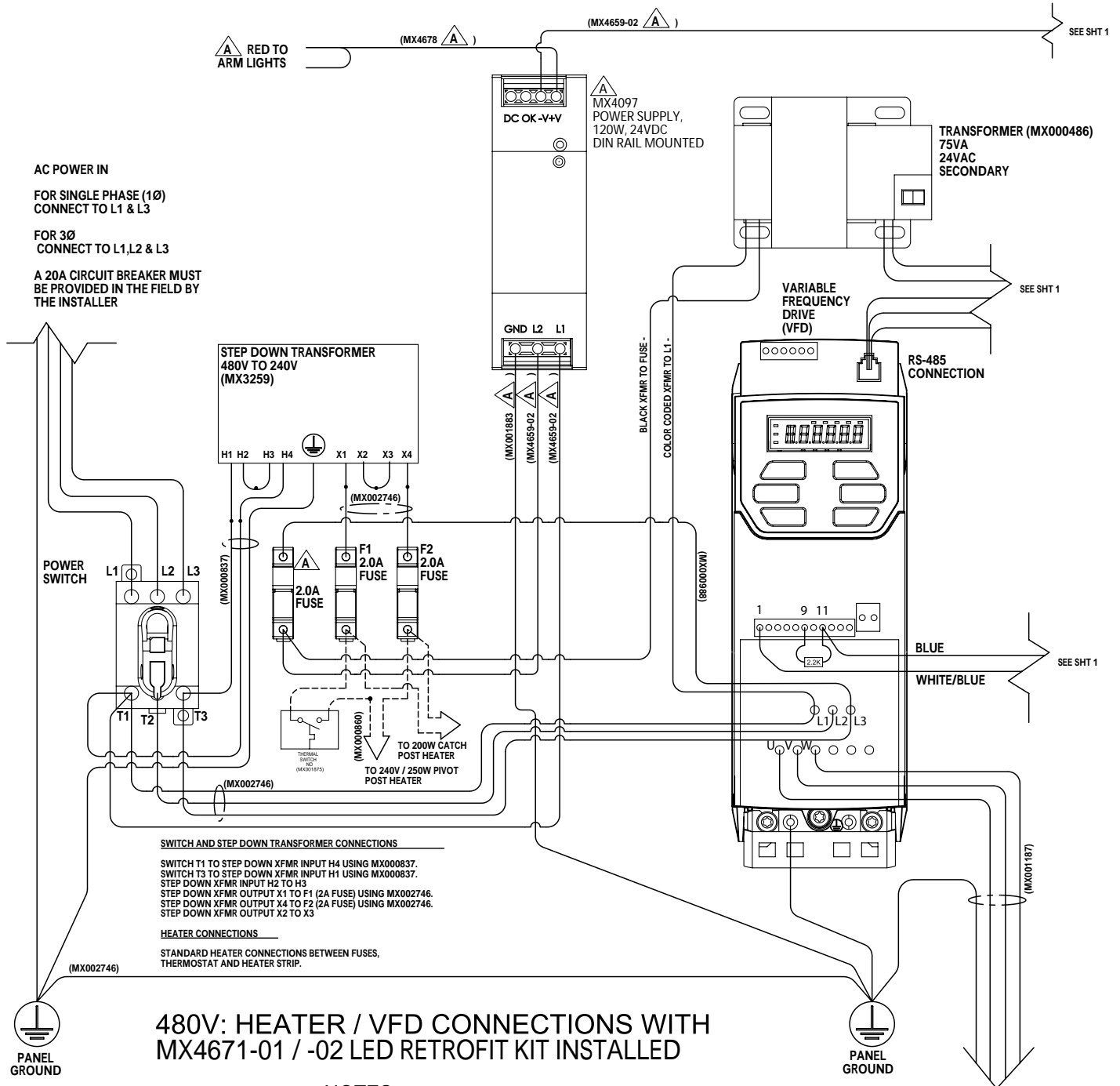






**NOTES:**

- 0.5A FUSE MUST BE REPLACED WITH 2.0A. HARDWARE AND THE WIRING MODIFICATIONS TO ADAPT TO LED LIGHT STRINGS ARE AS INDICATED.



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3Ø TO THE ELECTRIC MOTOR  
 2 HP @ 230V  
 OR  
 2 HP @ 460V

ECN NO.	REV	CHANGE DESCRIPTION
N/A	A	MODIFICATIONS TO ORIGINAL WIRE DIAGRAM INDICATED TO INSTALL RETROFIT KIT.



# INSTALLATION INSTRUCTIONS

StrongArmCrash Led Light Retrofit **MX4671-01/-02**

DOCUMENT REVISIONS		
NAME	DESCRIPTION OF CHANGE	DATE
Curtis Harvey	Rev A: Released for publication.	09/05/2019
Curtis Harvey	Rev B: Added notes stating LEDs not included in kit and are purchased separately., updated branding, minor corrections, and replaced most text with arial font.	01/27/2022

**Contact Information:** Visit <https://support.hysecurity.com/hc/en-us> for installation manuals, replacement part instructions, part diagrams and more. Qualified HySecurity distributors are experienced and trained to assist in resolving installation problems. For the name of a qualified distributor near you, call HySecurity at 800-321-9947. \*Before contacting your distributor or HySecurity Technical Support, obtain the serial number of your operator.