

### OVERVIEW

The Toroidal Transformer Kit provides a transformer run system which increases operator performance. The Toroidal Transformer Kit is **ONLY** compatible with 120 Vac or 240 Vac LA500 gate operators with firmware versions 5.1 or higher. Follow the directions according to your application. The bottom accessory outlet cannot be used in conjunction with this kit. Both accessory outlets cannot be used with 240 Vac applications. **NOTE:** The images throughout these instructions are for reference only so your product may look different.

- Model LA500HDTKITXLM is for converting a Large Metal Control Box (XLM)
- Model LA500HDTKITSTD is a replacement toroid for a standard control box

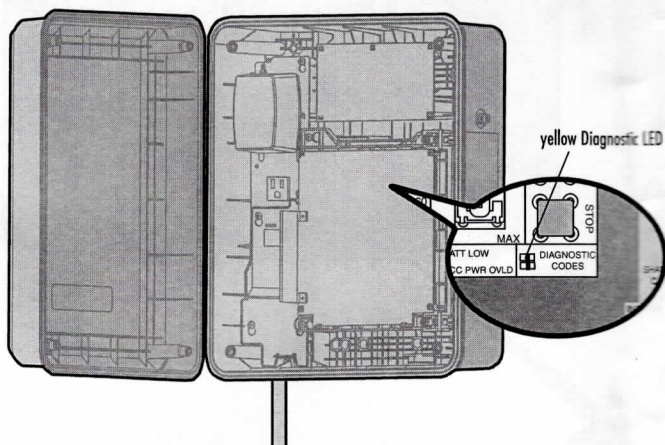
### CHECK FIRMWARE VERSION

The Toroidal Transformer Kit is compatible with operators with firmware versions 5.1 or higher **ONLY**. Refer to Figure 1 if you have a standard control box and refer to Figure 2 if you have a Large Metal Control Box (XLM).

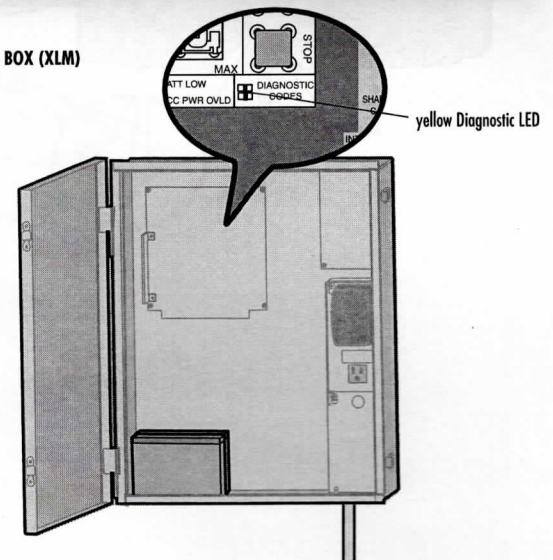
#### To check the firmware version for the main board:

1. Locate the yellow diagnostic LED on the main control board.
2. Disconnect AC/DC power to the main control board for 15 seconds.
3. Connect power. The yellow diagnostic LED will flash rapidly, then stop, then flash the version number, then stop, then flash the revision number (for example: For version 5.1 the LED will flash rapidly, stop, flash 5 times, stop, then flash once).

**FIGURE 1**  
STANDARD CONTROL BOX



**FIGURE 2**  
LARGE METAL CONTROL BOX (XLM)



### ⚠️ WARNING

To reduce the risk of SEVERE INJURY or DEATH:

- ANY maintenance to the operator or in the area near the operator **MUST NOT** be performed until disconnecting the electrical power (AC or solar and battery) and locking-out the power via the operator power switch. Upon completion of maintenance the area **MUST** be cleared and secured, at that time the unit may be returned to service.
- Disconnect power at the fuse box **BEFORE** proceeding. Operator **MUST** be properly grounded and connected in accordance with national and local electrical codes. **NOTE:** The operator should be on a separate fused line of adequate capacity.
- ALL electrical connections **MUST** be made by a qualified individual.
- **DO NOT** install ANY wiring or attempt to run the operator without consulting the wiring diagram. We recommend that you install an edge sensor **BEFORE** proceeding with the control station installation.
- ALL power wiring should be on a dedicated circuit and well protected. The location of the power disconnect should be visible and clearly labeled.
- ALL power and control wiring **MUST** be run in separate conduit.

# GETTING STARTED

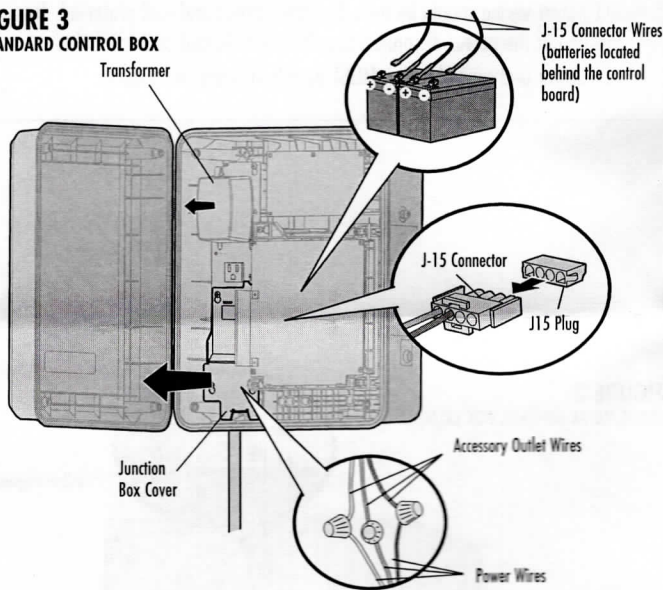
Main power supply and control wiring **MUST** be run in separate conduits. Refer to Figure 3 if you have a standard control box and refer to Figure 4 if you have a Large Metal Control Box (XLM).

- 1** Disconnect **ALL POWER**.
- 2** Open the control box cover and unplug the transformer from the accessory outlet.
- 3** Remove the junction box cover.
- 4** Disconnect the power wires from the accessory outlet wires.
- 5** Remove the J-15 connector from the control board.
- 6** Disconnect the J-15 connector wires from the batteries. Discard the old J-15 connector.

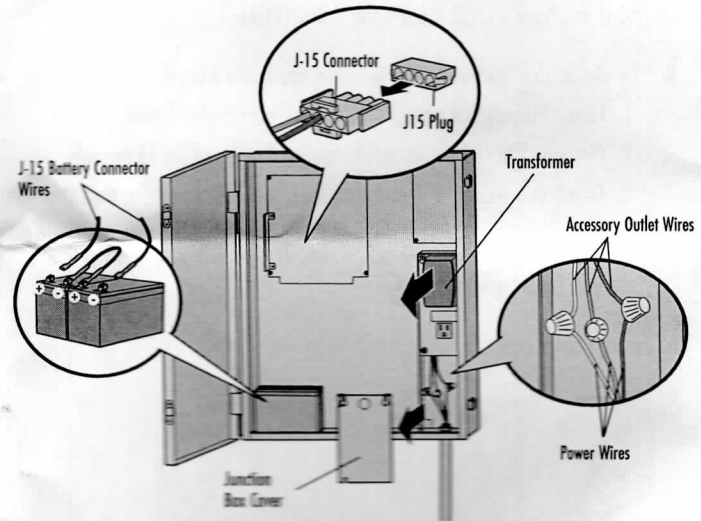
AMERICAN WIRE GAUGE (AWG)	MAXIMUM WIRE LENGTH (120 VAC)	MAXIMUM WIRE LENGTH (240 VAC)
14	130 feet	260 feet
12	205 feet	410 feet
10	325 feet	650 feet
8	520 feet	1040 feet
6	825 feet	1650 feet
4	1312 feet	2624 feet

**NOTE:** Use copper conductors **ONLY**.

**FIGURE 3**  
STANDARD CONTROL BOX



**FIGURE 4**  
LARGE METAL CONTROL BOX (XLM)



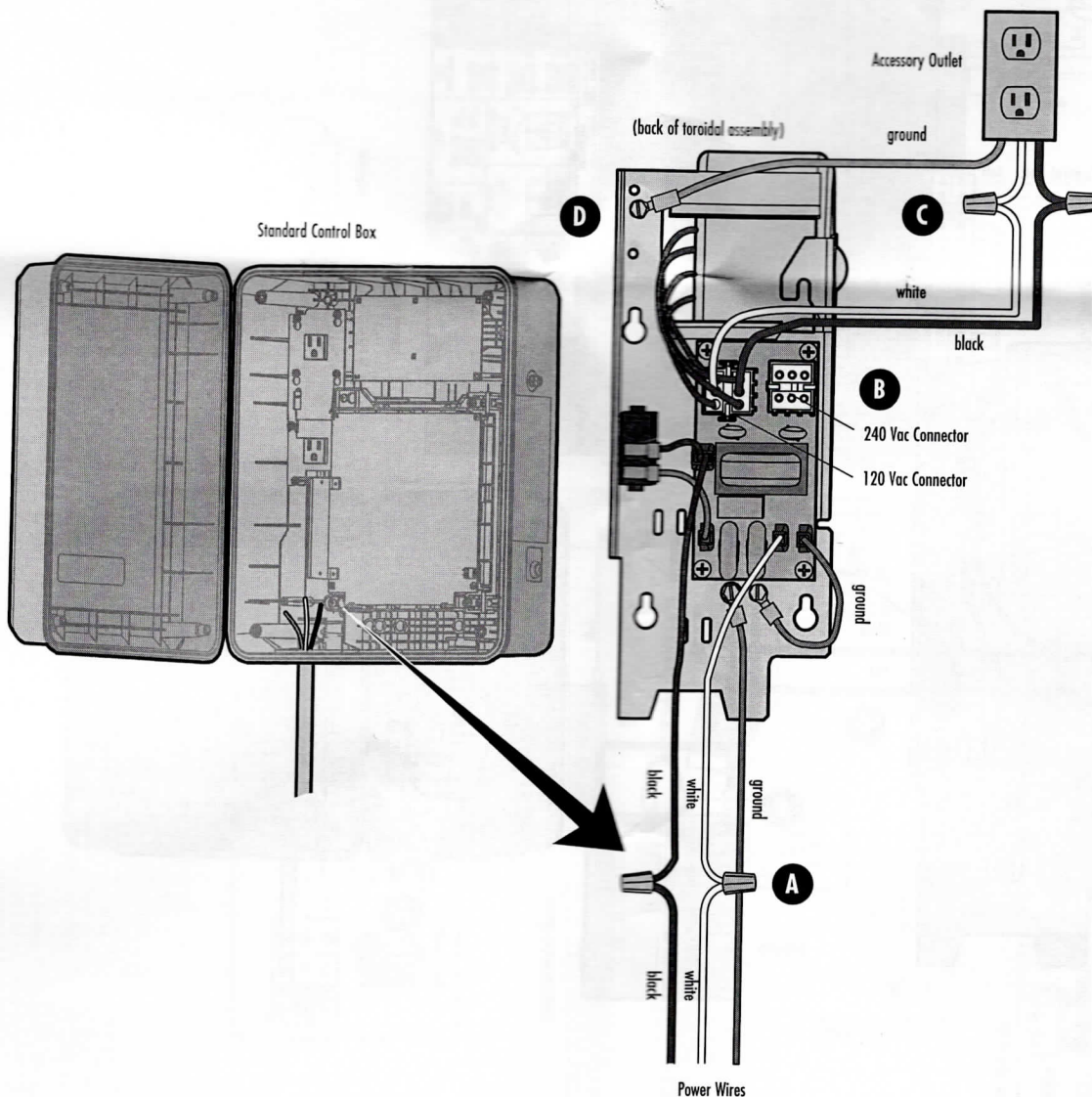


# INSTALLATION

The images below show model LA500HDTKITSTD toroidal transformer for the standard control box. **NOTE:** If you have a Large Metal Control Box (XLM) your toroidal transformer (model LA500HDTKITXLM) will look slightly different.

- 1** Connect the power wires to the toroidal transformer assembly (Figure 5-A).
- 2** Connect the ground wire (Figure 5-A).
- 3** Ensure the plug is connected to either the 120 or 240 Vac connector on the EMI board, depending on your application (Figure 5-B). Factory default is 120 Vac.
- 4** Connect the white and black wires from the 120 connector plug to the accessory outlet wires (Figure 5-C). **DO NOT** connect to accessory outlet wires if using the 240 Vac option.
- 5** Connect the ground wire from the accessory outlet to the ground screw on the toroidal transformer assembly (Figure 5-D).

FIGURE 5



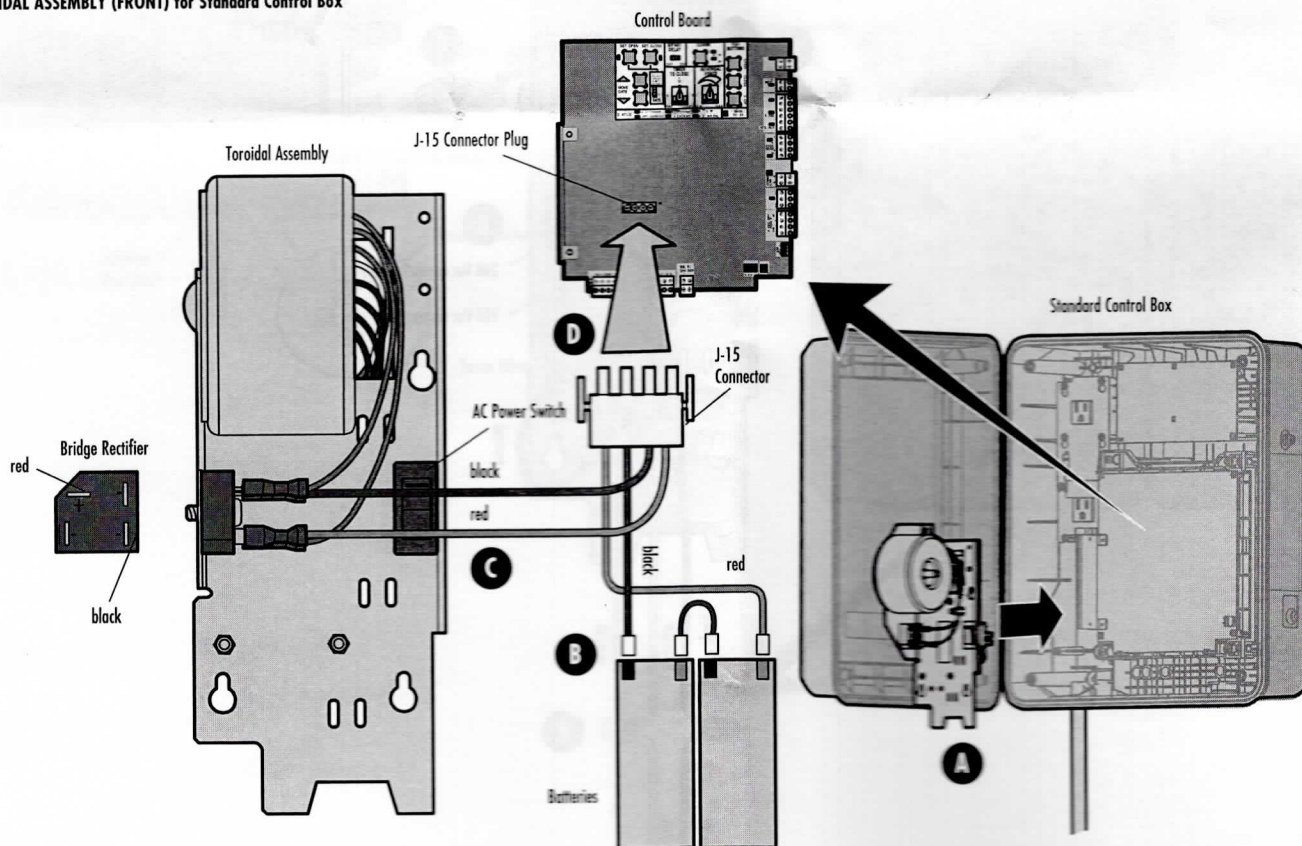
## INSTALLATION CONTINUED...

- 6** Install the toroidal transformer assembly in the control box in place of the old junction box cover (Figure 6-A). Discard the old junction box cover.
- 7** Connect the black and red wires from the new J-15 connector (provided) to the batteries (Figure 6-B).
- 8** Connect the black and red wires from the new J-15 connector to the bridge rectifier on the toroidal transformer assembly (Figure 6-C).
- 9** Plug in the J-15 connector to the J-15 connector plug on the control board (Figure 6-D).
- 10** Connect ALL POWER.

### AC POWER SWITCH

The AC Power switch on the toroidal transformer assembly will turn the incoming 120/240 Vac power ON or OFF. This AC Power switch ONLY turns off AC power to the control board and DOES NOT turn off battery power or power to the accessory outlets.

**FIGURE 6**  
TOROIDAL ASSEMBLY (FRONT) for Standard Control Box



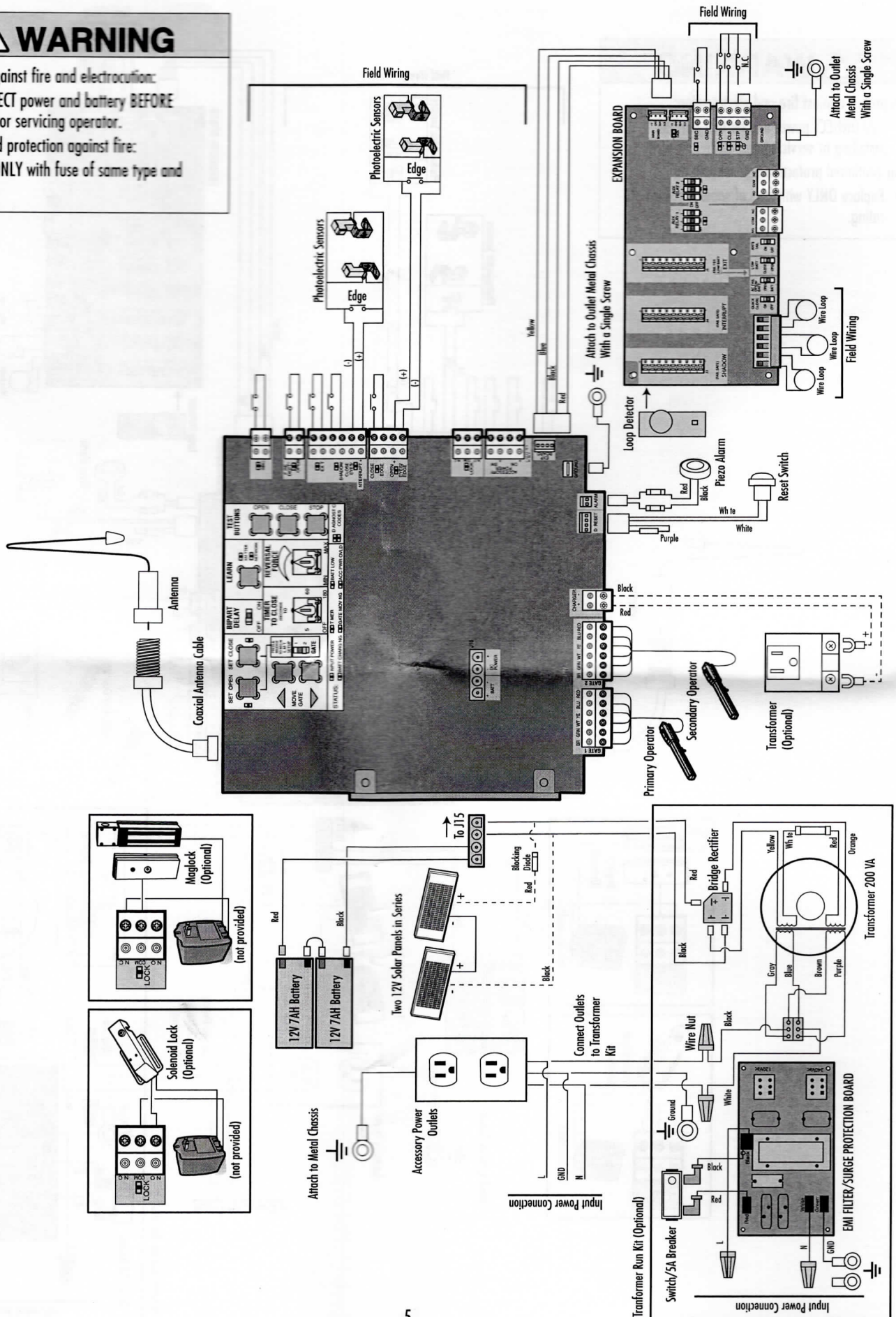


# WIRING DIAGRAMS

## STANDARD CONTROL BOX

### ⚠ WARNING

- To protect against fire and electrocution:
- DISCONNECT power and battery BEFORE installing or servicing operator.
- For continued protection against fire:
- Replace ONLY with fuse of same type and rating.



# WIRING DIAGRAMS

## LARGE METAL CONTROL BOX (XLM)

### ⚡ WARNING

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- DISCONNECT power and battery BEFORE installing or servicing operator.
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