

VDC01336

VALID ELECTRIC STEP

INSTALLATION / SERVICE MANUAL





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Safety 1

WARNING

NEVER operate the step when vehicle is in motion.

CAUTION

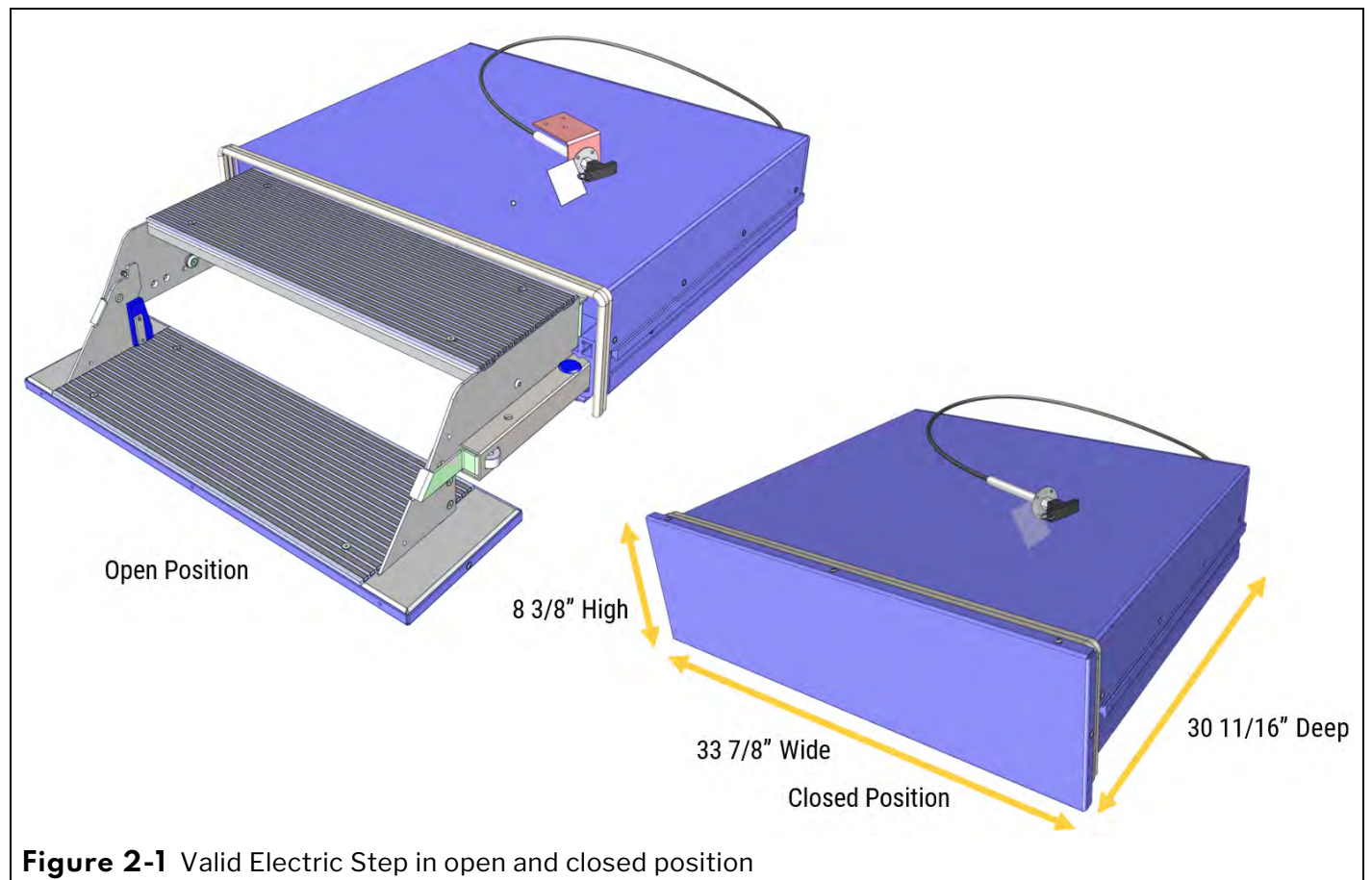
- NEVER operate the step when it is in poor mechanical condition or in need of repair.
 - NEVER alter the step in any manner. Such alterations may cause the step to be unsafe and void the warranty.
 - ALWAYS replace damaged or worn parts immediately.
-
- ALWAYS keep the operator's manual nearby for reference. Re-read the manual periodically.
 - ALWAYS be sure that all replacement parts meet manufacturer's specifications.
 - Periodically check that all nuts, bolts, screws, and fittings to ensure they are tight.

Introduction 2

The Valid Electric Step is a retractable hidden step that can be installed on a coach to improve accessibility when boarding. It is installed and connected beneath an entry door to extend when the door opens, and retract when the door closes.

2.1 Specifications

Property	Value
Width	33 7/8 in
Height	8 3/8 in
Depth	30 11/16 in
Step travel distance	19 1/2 in
Weight	155 lbs
Voltage	12V

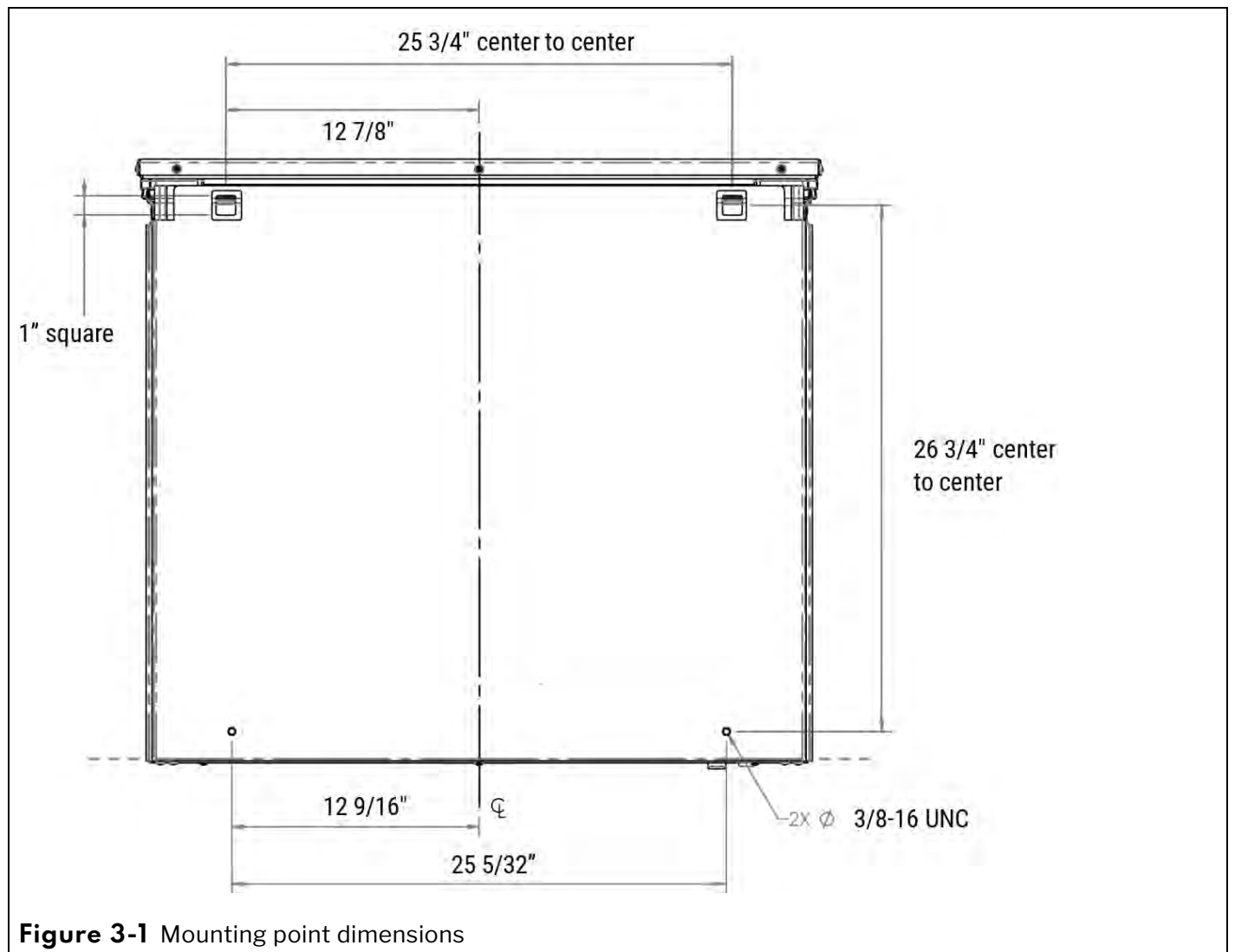


Installation 3

Installation requirements and steps are detailed below.

3.1 Installation Requirements

- 9/16" wrench, or socket and ratchet
- Torque wrench
- Adequate support structure for mounting the Valid Electric Step (to be supplied by the vehicle manufacturer). Refer to Figure 3-1 below for mounting point dimensions and Figure 3-2 on the next page for an example mounting structure.



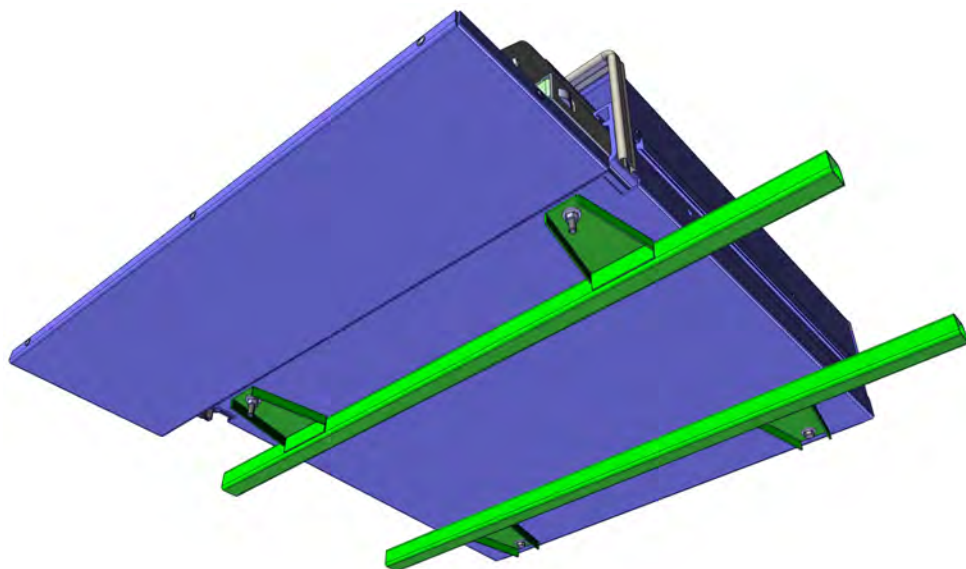


Figure 3-2 Valid Electric Step - structural mounting requirements

NOTE The green elements represent vehicle OEM parts.

3.2 Installation Procedure

1. Place the step onto the support structure and secure the rear with fasteners from the provided kit.

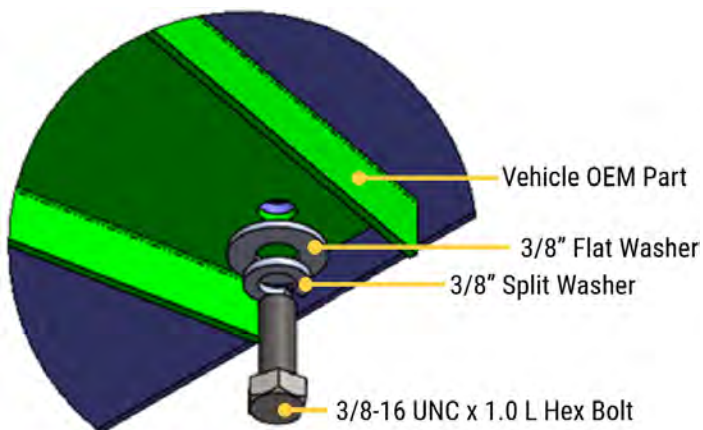
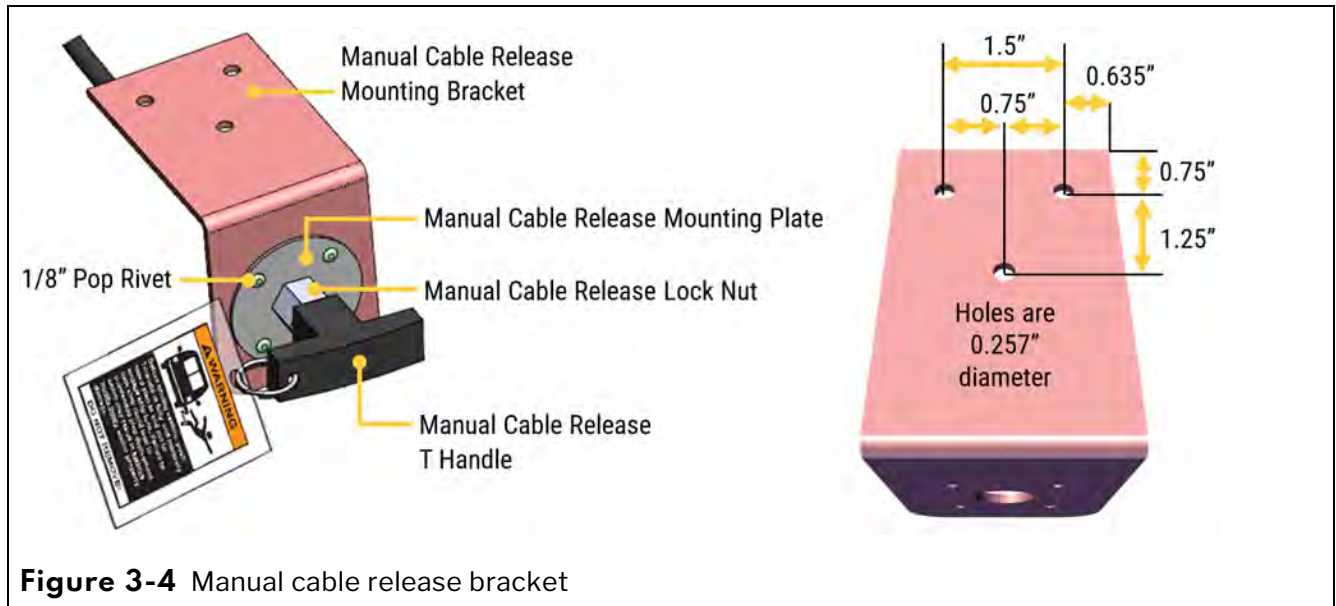
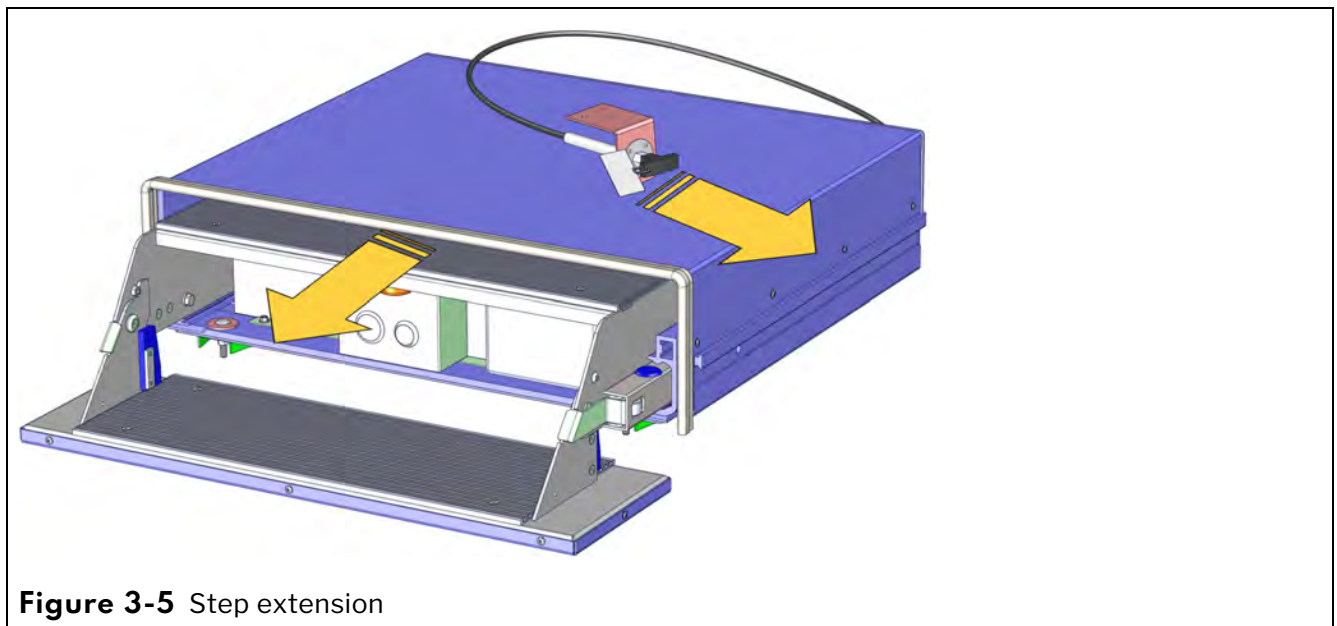


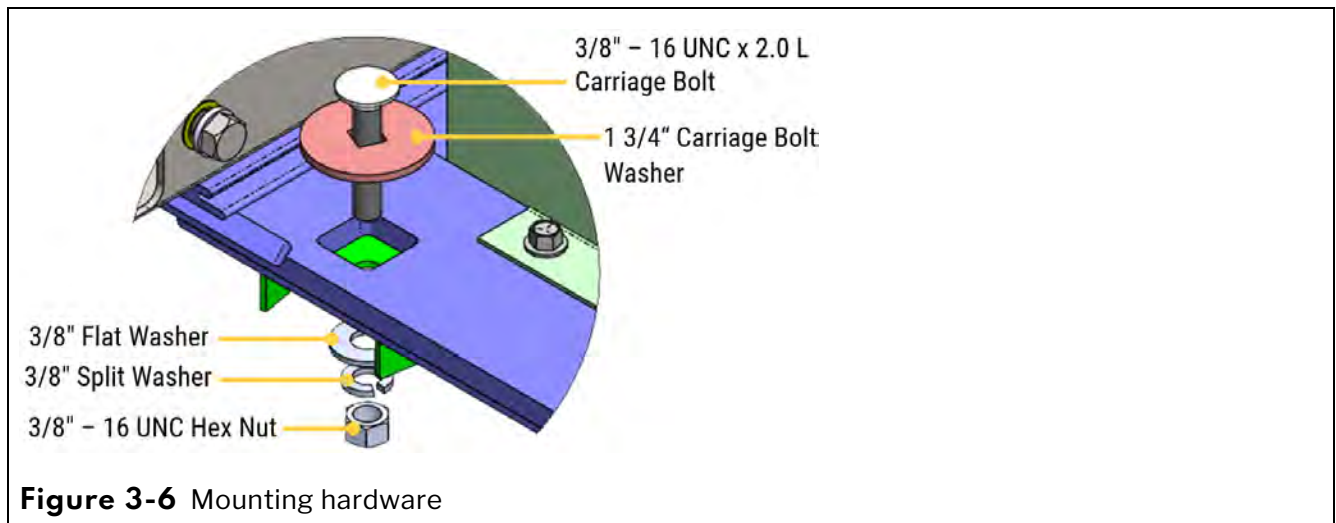
Figure 3-3 Front mounting fasteners

2. Mount manual release cable handle as required. Refer to Figure 3-4 below



3. With the manual cable release mounted and the rear of the step secured to the coach, pull the manual cable release to allow the step to extend and retract manually.
4. Extend the step outward until the front mounting holes are accessible from the both the inside and outside. Refer to Figure 3-5 below and Figure 3-6 on the facing page.



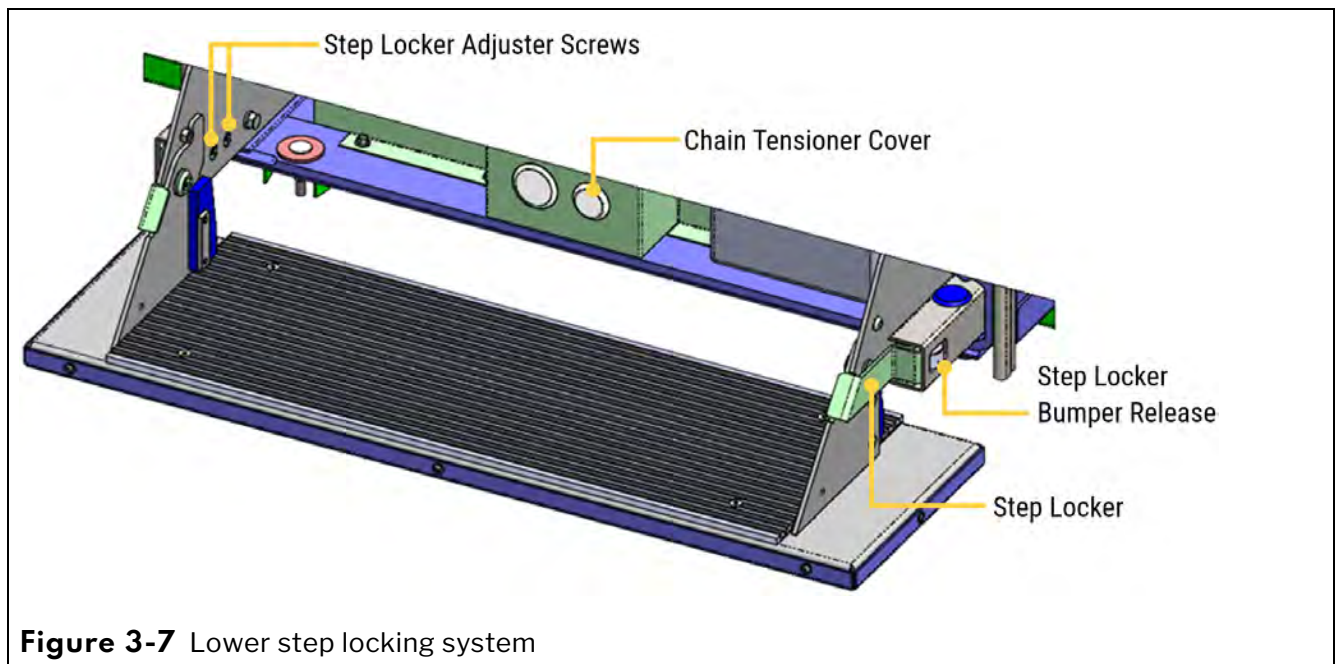


NOTE Mounting bolts should be torqued to 20 ft-lbs.

NOTE Front mounts are large squares to accommodate for tolerances.

5. Ensure that the lower step lockers can close to a secure position that prevents the lower step from rotating up in the open position.

Loosen adjuster screws by a quarter turn to adjust the step lockers forward or backward as necessary.

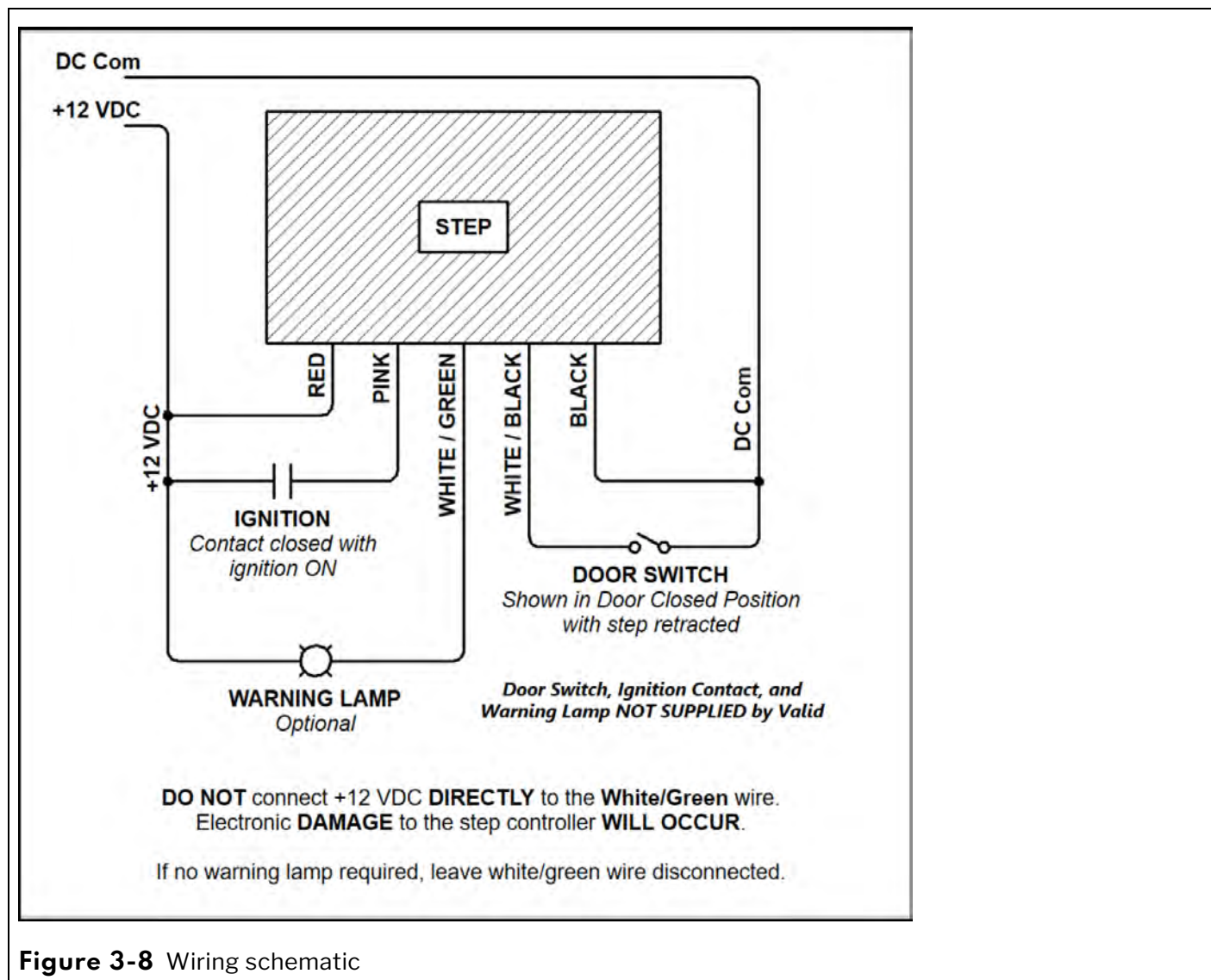


IMPORTANT Do not completely remove screws.

6. Connect the wiring harness from the Valid Electric Step to the electrical system in the coach as shown in Figure 3-8 below.

CAUTION

DO NOT connect +12VDC to the white / green wire. Electronic damage WILL occur.



NOTE The white / green wire is optional for a warning light on the dash.

Operation 4

With the Valid Electric Step installed and connected as described in the previous chapter, a switch connected to the door will actuate the on-board electric motor to extend and retract the step.

If the door is closed, and the switch is in the open position, the step remains in the retracted position by default.

When the door opens, the switch is closed and the circuit is completed, moving the step into the fully extended position.

As the step extends into the open position, the front cover / lower step pivots downward, and a locking mechanism on each side engages to secure the step in the lower position.

As the step retracts, the bumper release bearings are pushed inwards. This motion causes the locking mechanism to open, and allows the lower step to rotate back up as the step retracts back into default closed position.

Service information is provided in this chapter, including maintenance, troubleshooting, and common procedures.

5.1 Annual Maintenance

- Remove cover and apply general chain wax once per year.
- Lubricate step locker pins with general spray grease once per year.
- Apply white lithium grease to the sides of carriage and carriage rails once per year.

5.2 Troubleshooting

The table below describes some common troubles and their solutions.

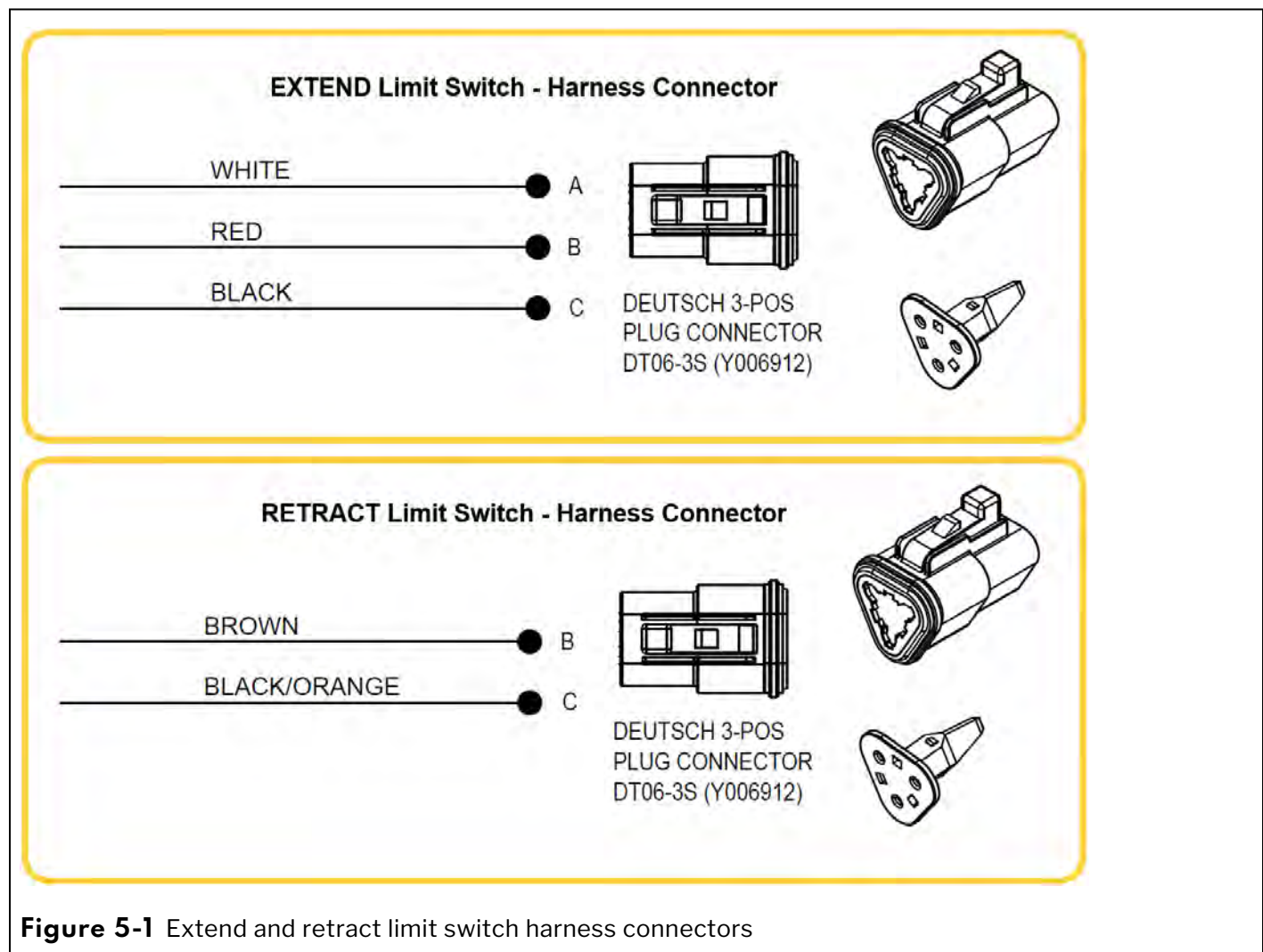
Symptom	Possible Solutions
Step does not operate nor make any sounds.	Check all internal and external electrical connections for damage. Repair as required. Check all fuses. Replace any blown fuses.
Step does not operate but sounds like the motor is working.	Ensure the manual cable release is NOT pulled. Ensure the chain tension is not too tight. Refer to "Adjust Chain Tension" on page 14. Ensure there are no parts binding in the chain or carriage areas.
Step operates slowly or with restriction.	Ensure the chain tension is not too tight. Refer to "Adjust Chain Tension" on page 14. Ensure the chain and carriage / carriage rails are lubricated appropriately.
The bottom step is allowed to swing.	Ensure the step lockers are not obstructed. Ensure lockers are adjusted correctly. Ensure the step lockers are sufficiently lubricated at the pivot point. Check to ensure step stoppers are in place. Replace as required.

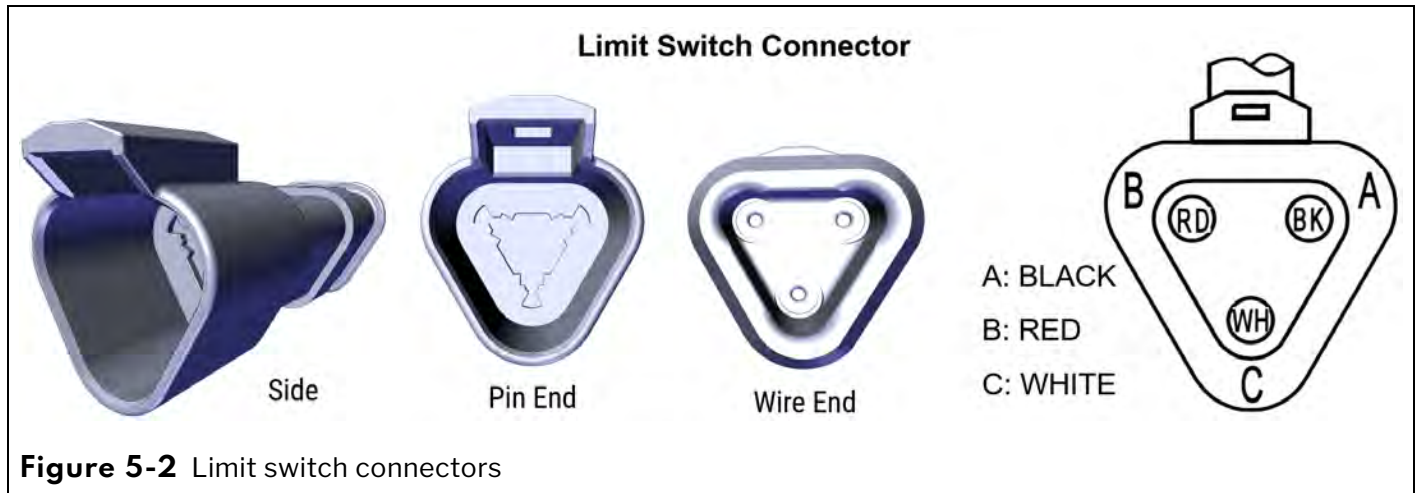
Symptom	Possible Solutions
Step does not move, or is restrictive with the manual cable release pulled.	Ensure there are no visible obstacles blocking the path of motion. Ensure the chain and carriage / carriage rails are lubricated appropriately. Check for damaged internal parts. Replace as required.

5.3 Limit Switches

Limit switch harness connections are shown in Figure 5-1 below.

- A = Normally Open
- B = Normally Closed
- C = Common





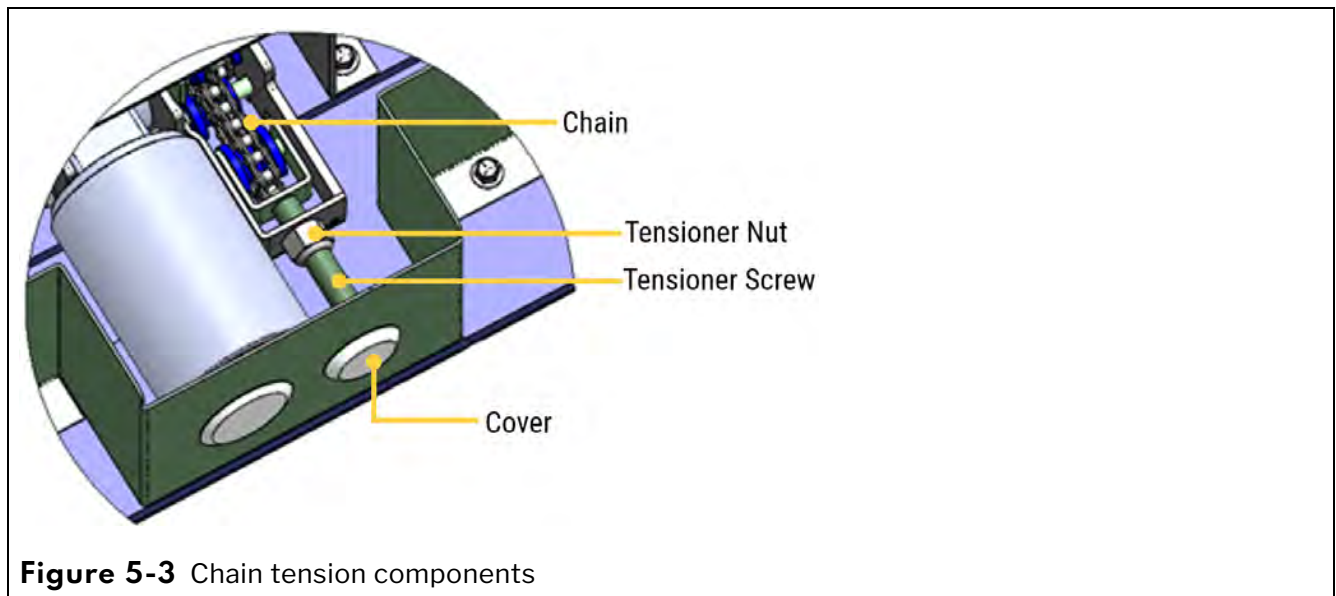
NOTE The wires in the limit switch connector are the same colors as those of the extend switch harness, but they are connected to different pins.

5.4 Service Procedures

The following sections describe procedures that may be useful for servicing the Valid Electric Step.

5.4.1 Adjust Chain Tension

1. Remove the main cover by removing the screws on the sides and rear of the step.
2. Use a 3/4" wrench on the tensioner nut to tighten or loosen the tensioner screw as required. Refer to Figure 5-3 below.



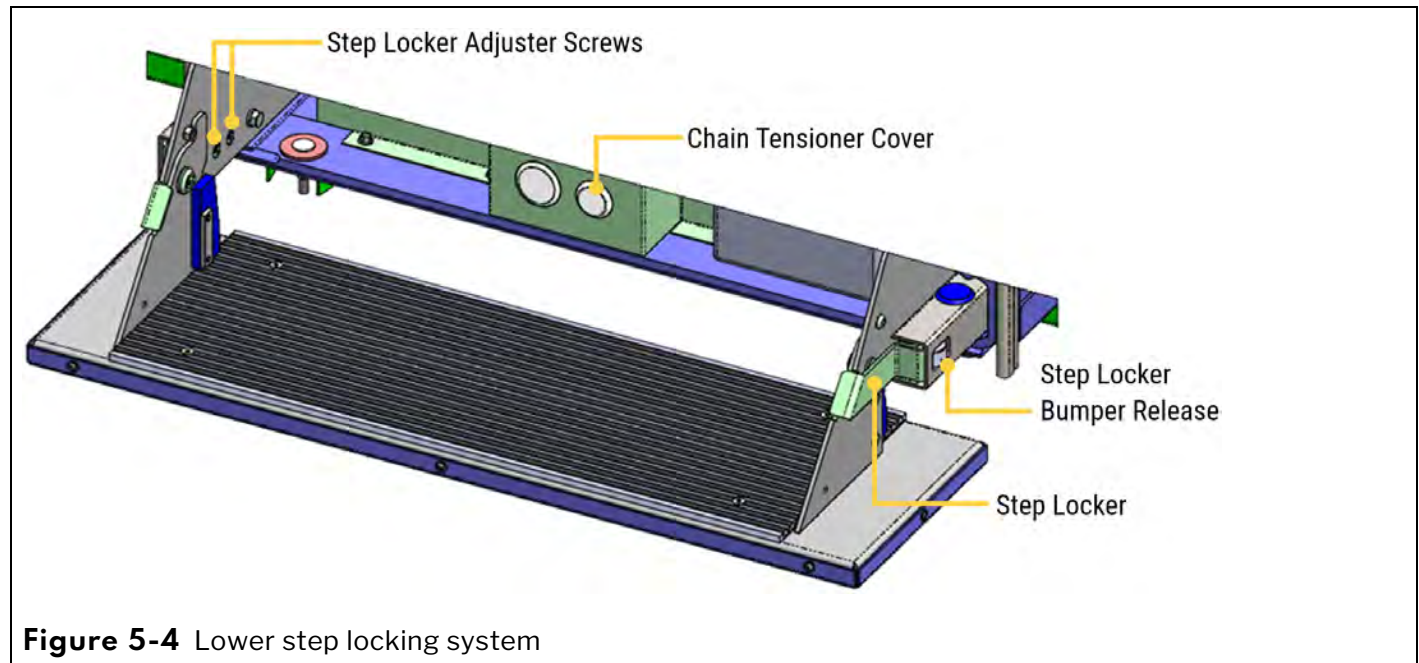
5.4.2 Adjust Lockers

Refer to Figure 5-4 below.

1. Loosen the step locker adjuster screws.

IMPORTANT Do not completely remove the screws.

2. Adjust the step lockers as necessary.
3. Tighten the screws.



5.4.3 Access Fuses on Controller

Fuses for the Valid Electric Step are located on the controller circuit board, located beneath a cover that can be accessed by extending the step fully.

1. Extend the step until the lower step flips open.

NOTE If the step is not operational, use the manual release cable.

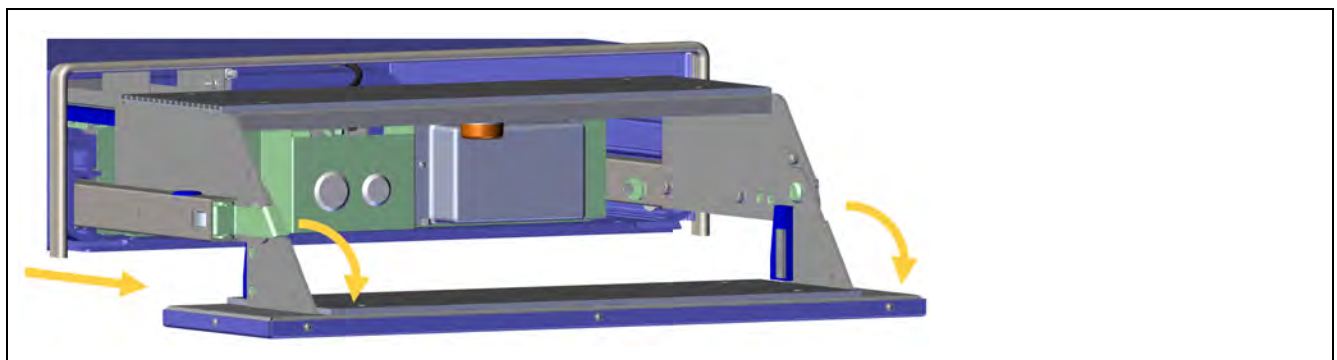
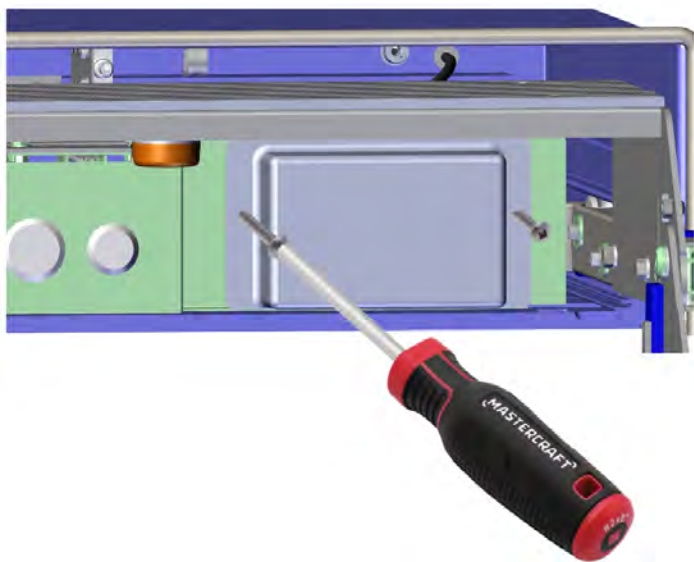
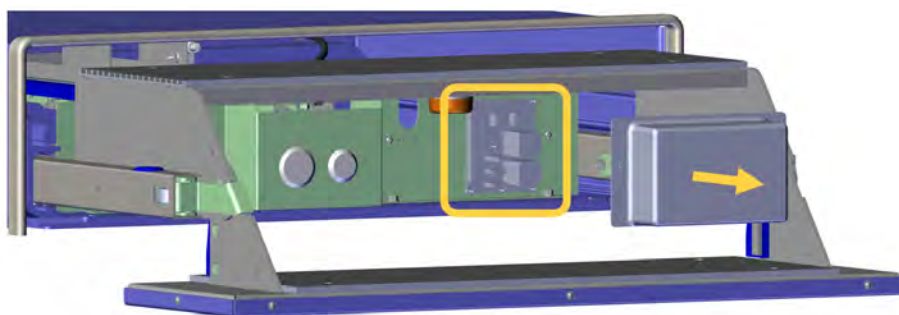


Figure 5-5 Extend step fully

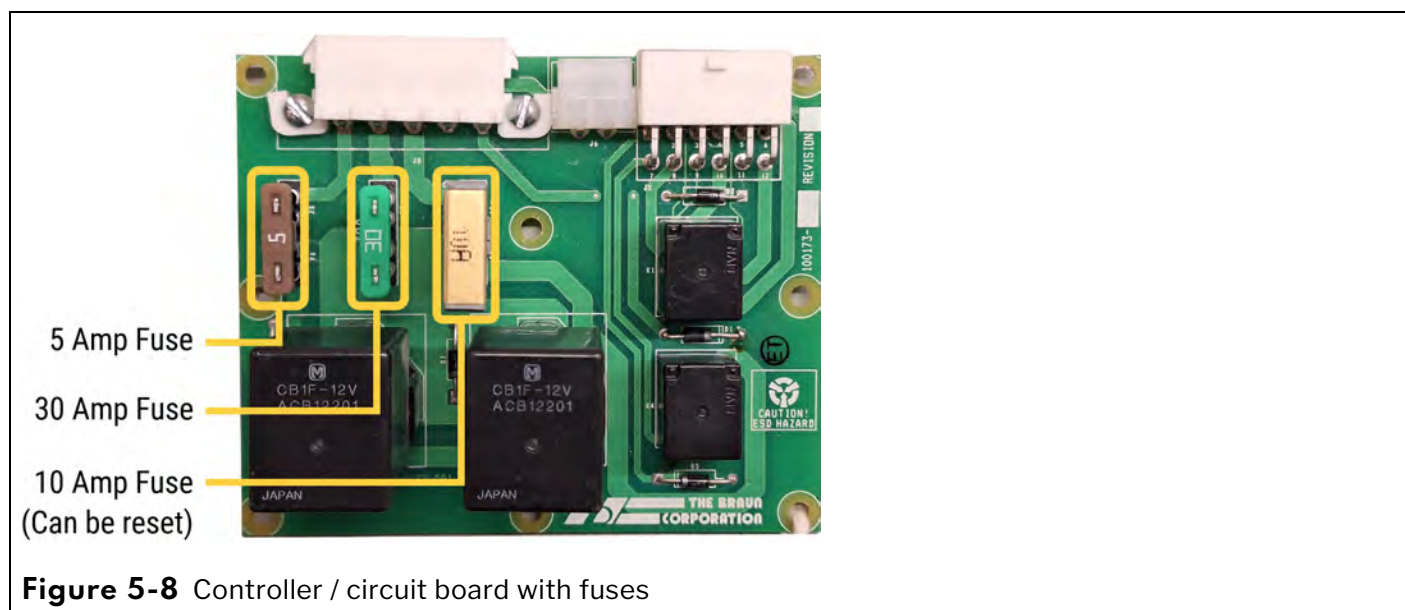
2. Using a #1 Robertson screwdriver, remove the screws holding on the controller cover.

**Figure 5-6** Remove cover screws

3. Remove the cover to expose the controller / circuit board.

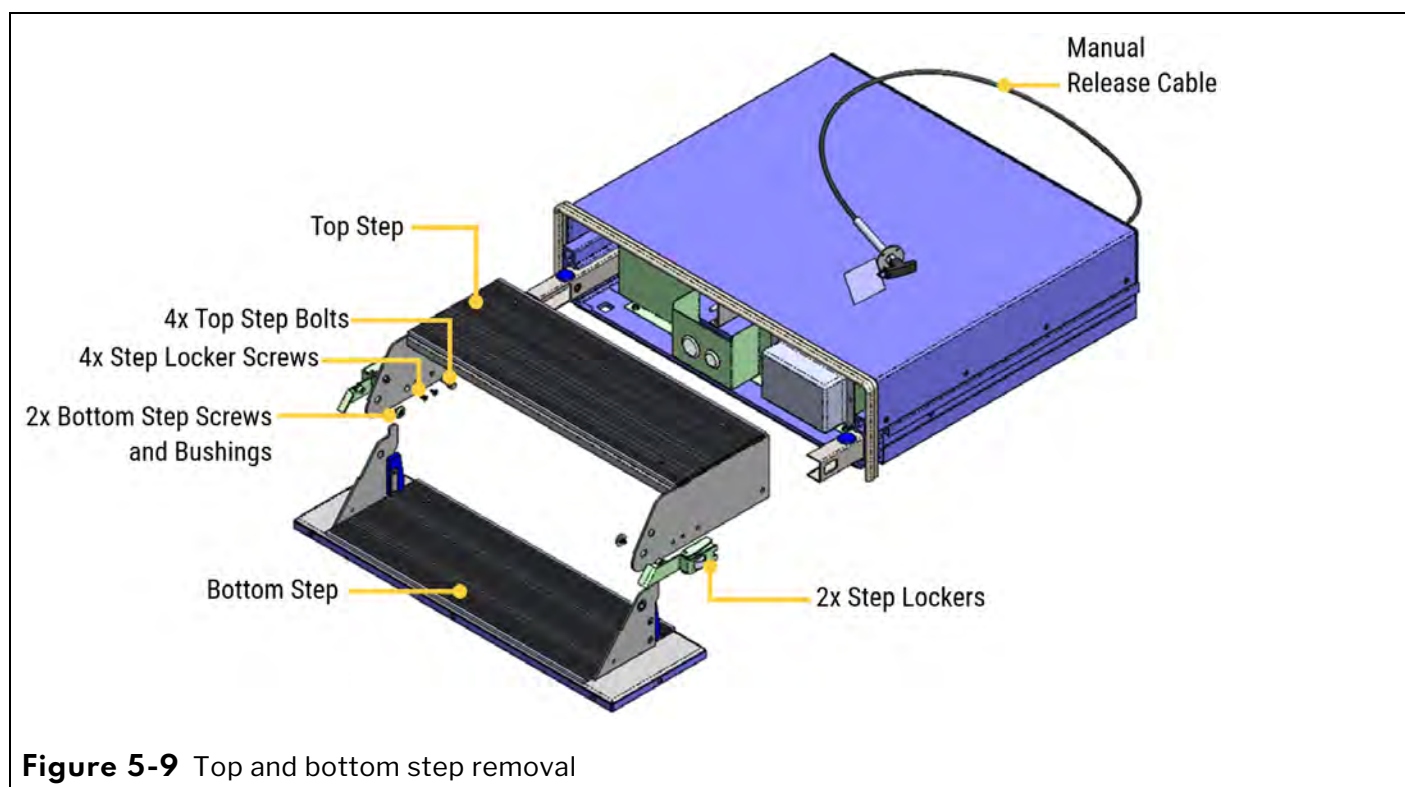
**Figure 5-7** Pull away cover to expose circuit board

There are three fuses on the circuit board - 5A, 30A, and a 10A breaker fuse.

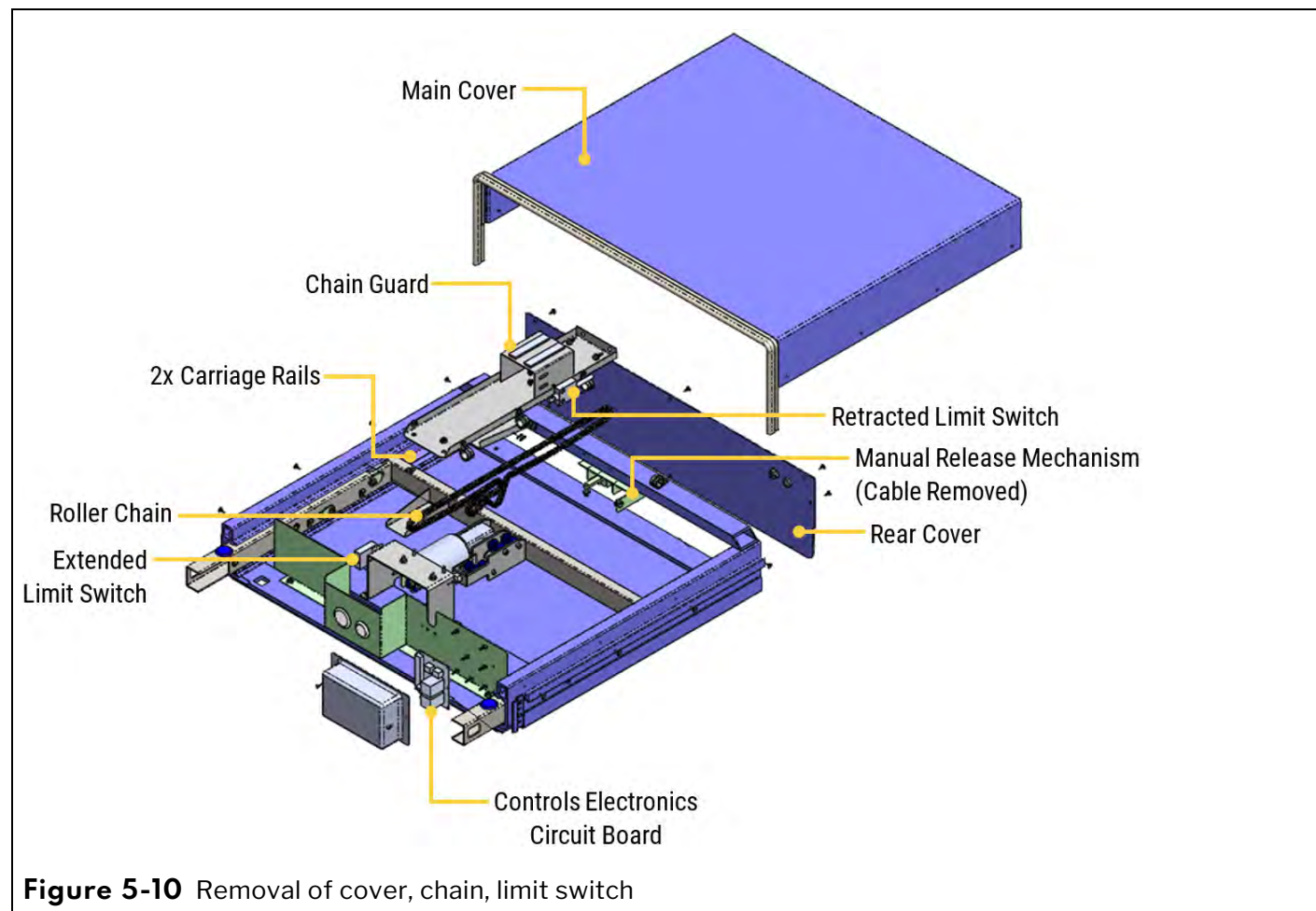


5.5 Service Diagrams

5.5.1 Top and Bottom Step Removal



5.5.2 Removal of Internal Components



5.5.3 Removal of Step Carriage Motor

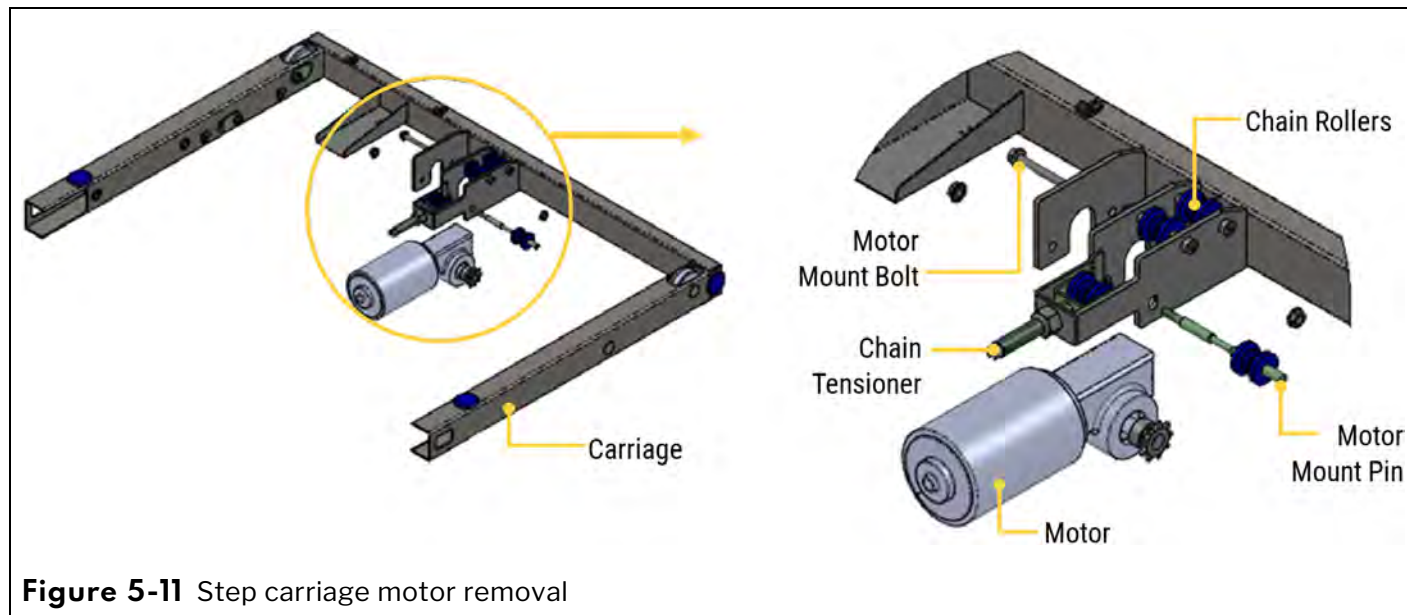
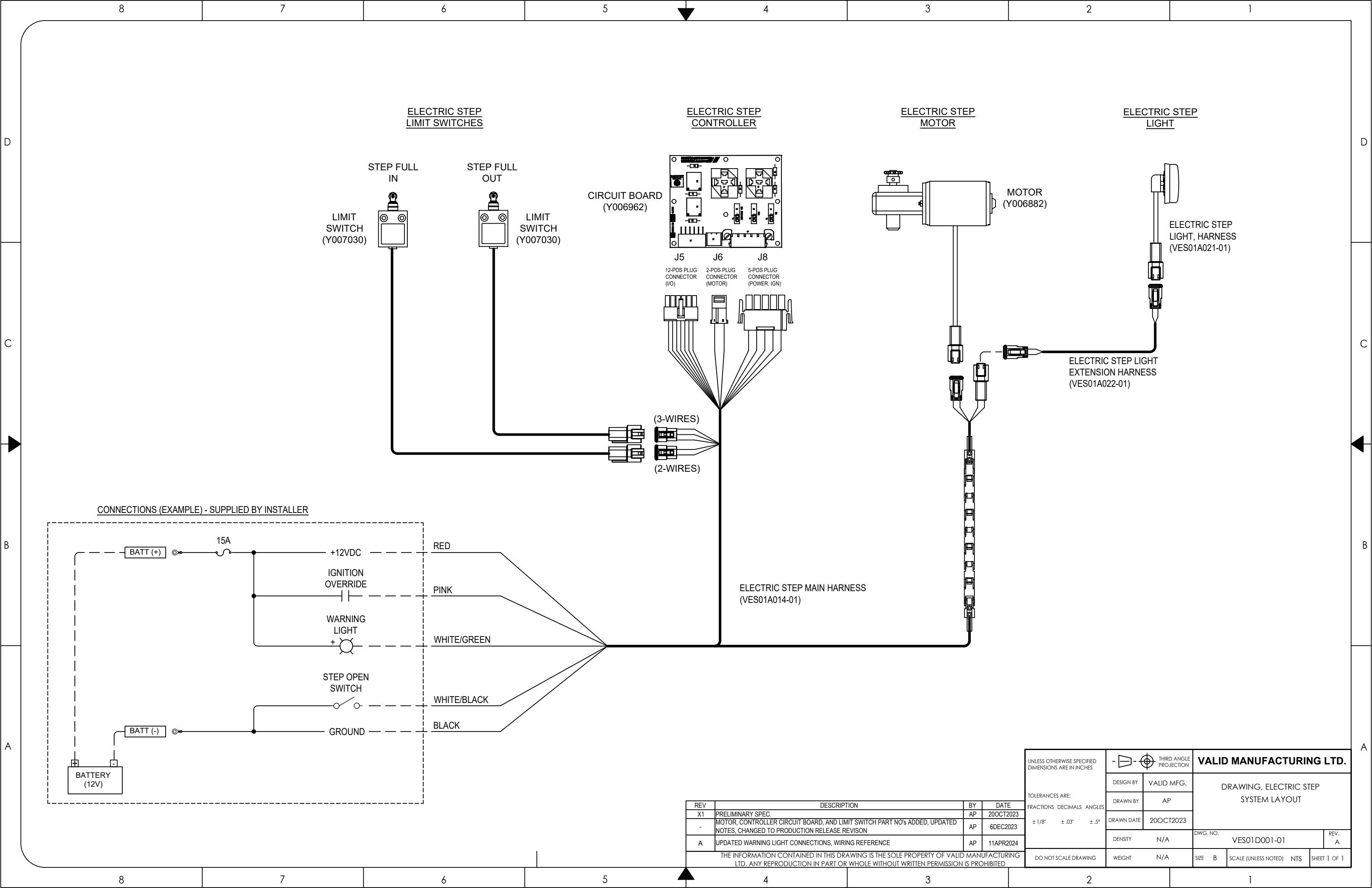


Figure 5-11 Step carriage motor removal



Y006962 - EXECUTIVE STEP CIRCUIT BOARD

VES01A001-01
AUTOMATIC ELECTRIC STEP, VALID

