INSTRUCTION TO SERVICE

ITS: 60637	DATE: February 16, 2023
SECTION:	260-BATTERY COMPARTMENT
WRITTEN BY:	Ilan Kizner
SUBJECT:	Inspection – Precharge Circuit resistors
ISSUE:	Possible damage to pre charge resistors

ITS60637

THIS ITS DOCUMENT SHOULD BE RETAINED AND REFERRED TO FOR FUTURE MAINTENANCE UNTIL THE NEW FLYER PARTS AND/OR SERVICE MANUAL IS UPDATED TO REFLECT WORK DONE AS A RESULT OF THIS DOCUMENT. ENSURE THAT THIS DOCUMENT IS AVAILABLE FOR PARTS AND MAINTENANCE STAFF GOING FORWARD.

Contents

⚠ WARNING: **Only trained personnel shall supervise and perform High Voltage system testing, checkout and troubleshooting. Two personnel (one called the Checker & the other called Monitor/Recorder) shall perform Checkout Procedures, together, to ensure safety of themselves, others nearby & for the protection of vehicle & property. Refresher training shall be provided to these personnel on a regular basis and when new systems are to be checked by them. The training of the personnel shall consist of:**

1. SAFETY PROCEDURE

1.1. Turn the master run switch to the off position and wait 5 minutes before proceeding.
1.2. Turn the 12/24V battery disconnect and HV Interlock switch to the “OFF” position.
1.3. Lock and Tag the electrical system of the bus out and retain the key. See Figure 1.
1.4. Install a Lockout/Tagout Steering wheel cover as require

☞ ***NOTE:*** ***Refer to the Lockout/Tagout Procedure in section 1 of your Preventive Maintenance Manual or section 9 of your Service manual for additional information.***

☞ ***NOTE:*** ***Use commercially available lock out equipment and tags being sure to follow any local laws or workplace procedures.***

☞ ***NOTE:*** ***Refer to New Flyer High Voltage Safety Guidelines and Procedures Document 532295 (Appendix A) when completing installation or service work on high voltage power cables.***

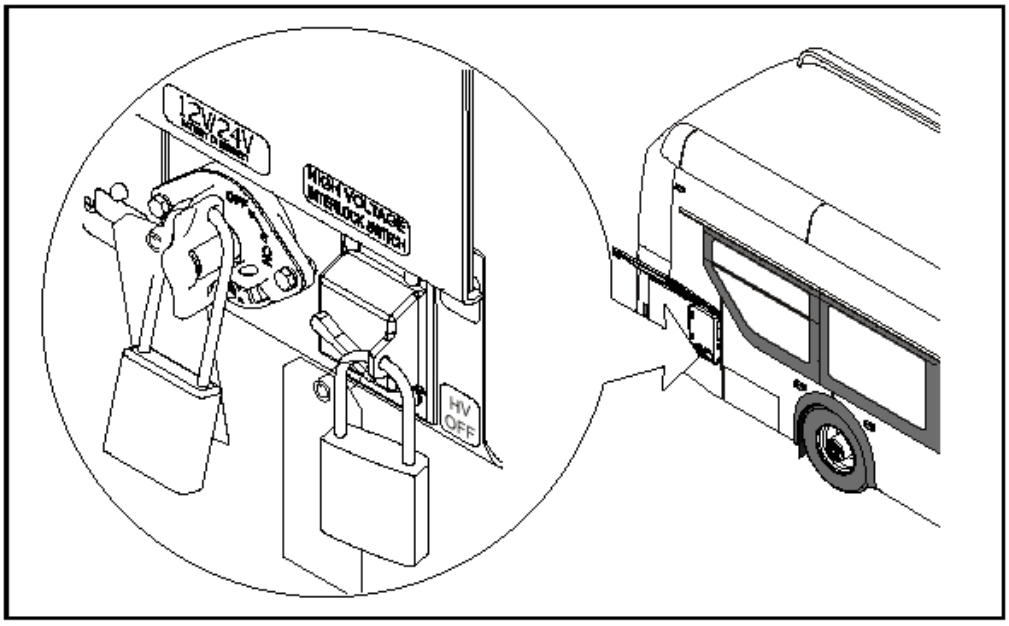


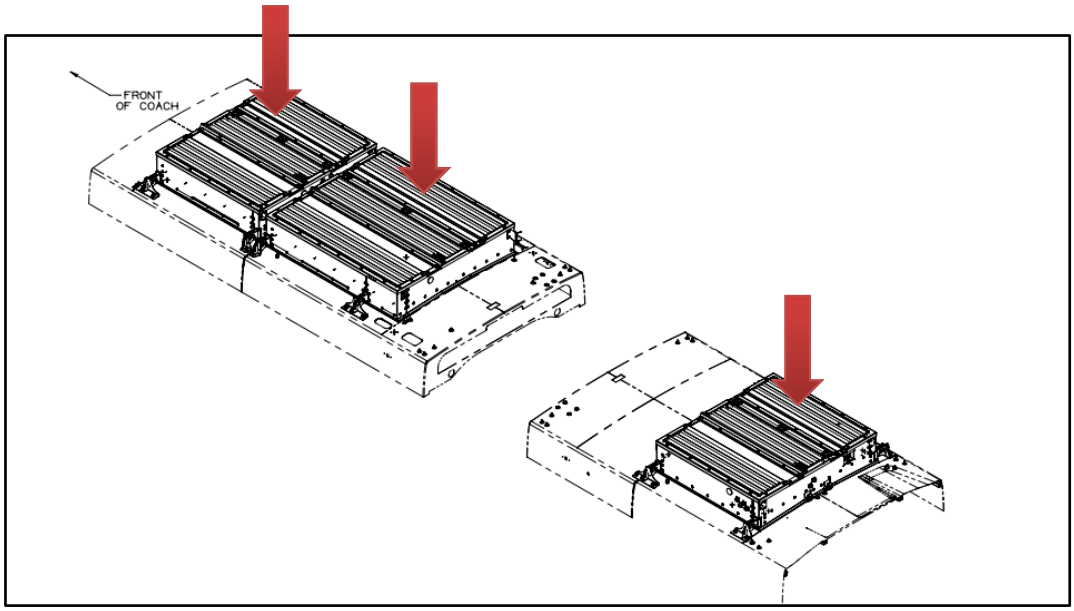
Figure 1: Lockout tagout location reference

2. Problem description:

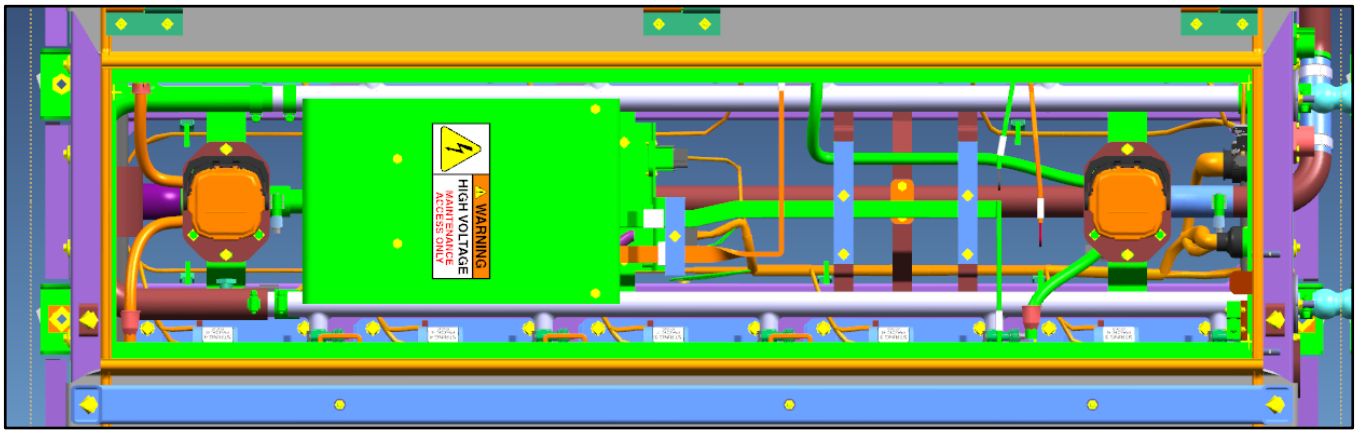
- The following ITS provides inspection instruction following field reports of damaged precharge circuit on the BDU's.
- The following ITS will only apply to SR numbers: 2212, 2213 and 2315
- Inspection will be done only on the roof ESS

3. Procedure

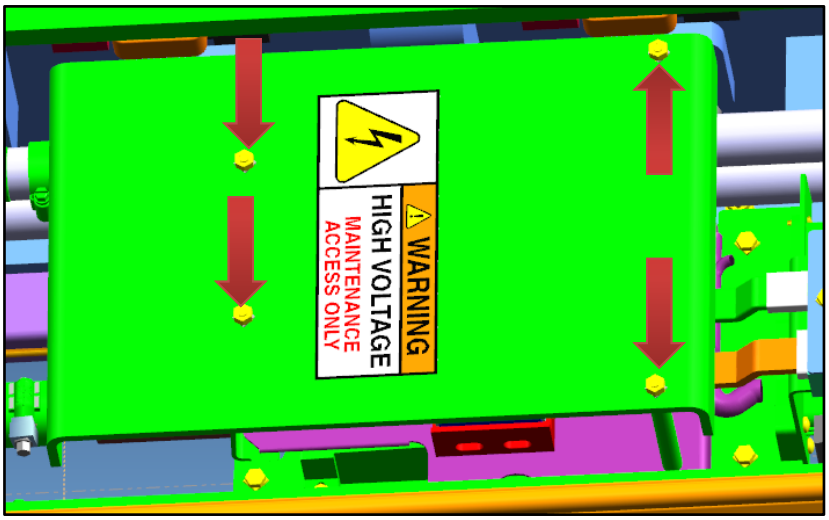
3.1. Gain access to the roof of the bus and locate the front, mid and rear ESS enclosures. Ensure that appropriate fall protection PPE is used, and appropriate safety procedures are followed per the New Flyer Service Manual.



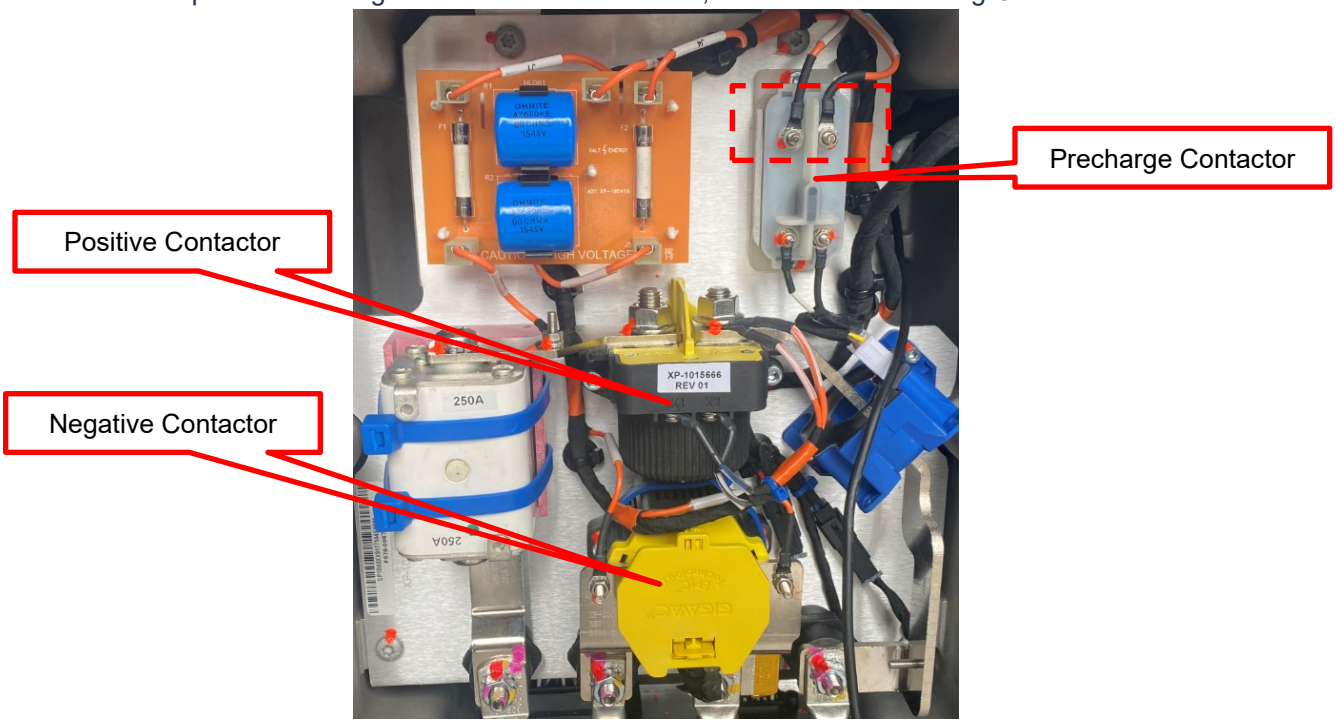
3.2. Access the front ESS roof rack door panel and remove the center rooftop cover of the front ESS by carefully sliding off the hinge pins. Retain all hardware.



3.3. Remove the BDU cover by opening four 1/4UNC hex bolts, nuts and washers. Retain all hardware.



3.4. Measure the positive and negative contactors resistance, should be above 1Meg Ohm.



3.5. Measure the precharge contactor resistance between the marked terminals shown above. Resistance should be above 1 Meg Ohm.

3.6. Inspect the precharge circuit resistors for any sign of discoloration or heat damage. Refer to Appendix A for examples of damaged precharge resistors.
3.7. Repeat the same for Mid and Rear ESS enclosures.
3.8. If any of the precharge circuits show similarity to the pictures in Appendix A please email TSS:

Ilan Kizner
New Flyer Industries
E-Mail: ilan_kizner@newflyer.com

And Provide the following information:
1. Bus number
2. Record/picture of the suspected BDU
3. String number
4. PLC program part number and revision
5. XALT version for each battery

3.9. Reinstall the BDU Cover and secure with 4 screws and washer. Torque to 6 FT-LBS.
3.10. Close ESS roof rack door panel.

Appendix A – Examples of damaged precharge resistors