



PROTERRA



TECHNICAL SERVICE BULLETIN

ISSUE DATE:	7/5/2022
SERVICE BULLETIN SUBJECT:	2170 Battery Ancillary Bay External Grounding Strap Retrofit
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	FC-22-84
LABOR OPERATION CODE:	HA41Z

NOTICE! It is expected that this process may require up to one half hour per battery pack. Please schedule appropriately to minimize vehicle downtime.

2170 BATTERY ANCILLARY BAY EXTERNAL GROUNDING RETROFIT

Description

This procedure describes the process of adding an External Grounding Strap to the ancillary bay of a 2170 cell-based battery pack.



Tools/Parts Required

Tools and Supplies Required:

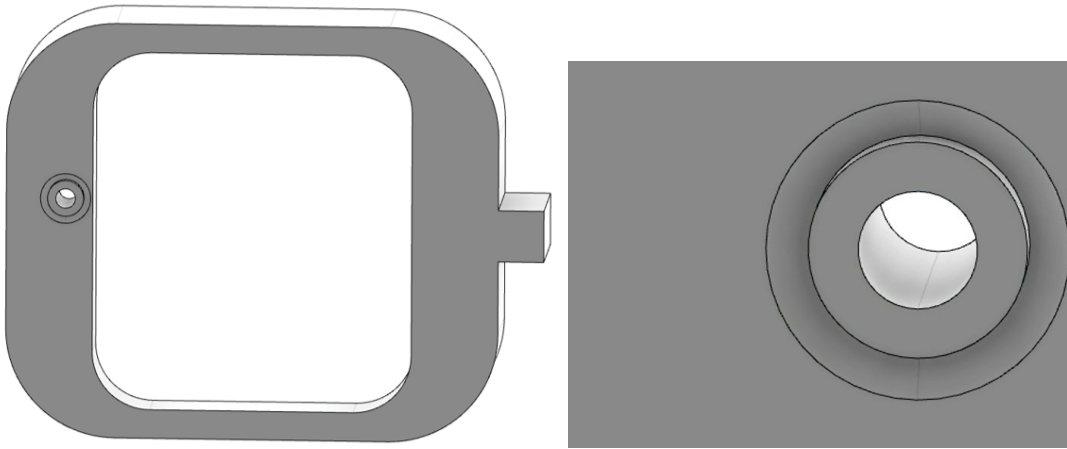
- Wheel Lifts (4 Required)
- Jack Stands (4 Required)
- Drill Fixture 174-3861
- Power Drill
- Adjustable Drill Stop
- 4.2mm Drill Bit
- M5 x 0.8 Tap
- Ratchet
- T-25 Torx Socket
- T-40 Torx Socket
- 13mm Socket
- Calibrated Torque Wrench
- Green Torque Stripe Marker
- Orange Torque Stripe Paint

Kit Parts Required:

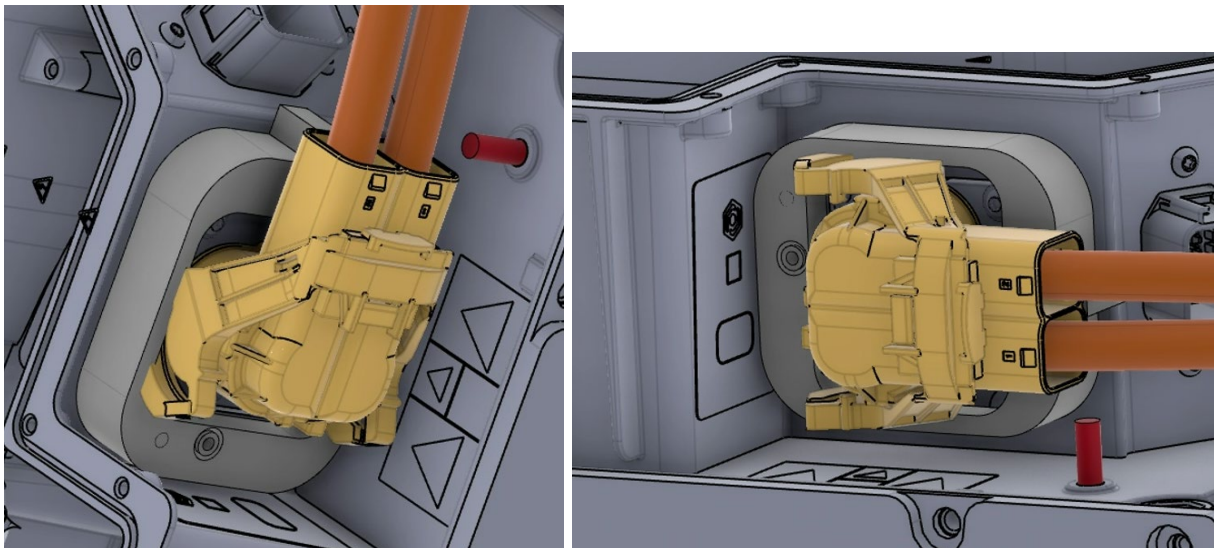
- 061900 Retrofit Kit - External Ground Strap (Consisting of)
 - 171-5847 ASSEMBLY, GND STRAP, M5, M8,8IN, G813L8 1 EA
 - 044229 SCR, M5x10, BTN,STL, ZnNi, P-ST3 1 EA
 - 022468 SCR, M8x16, PAN,STL, ZnNi, P-ST3 1 EA

Procedure:

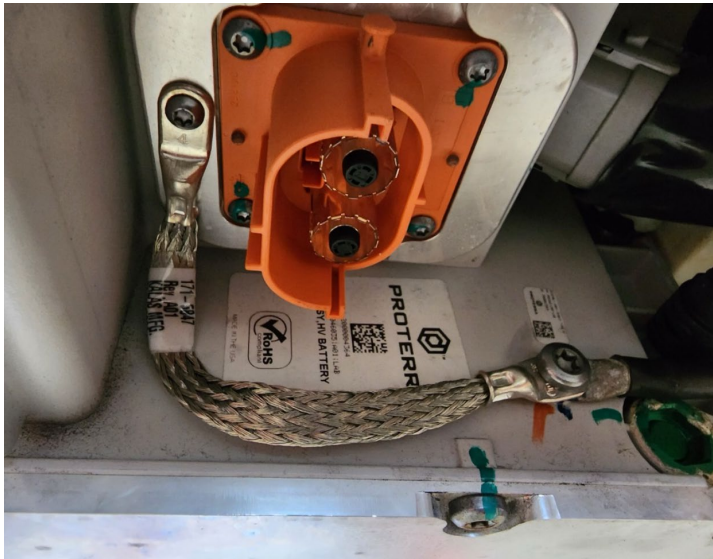
1. Perform the Proterra approved Lockout/Tagout procedures to make the bus safe for work.
2. Using the Wheel Lifts, raise the bus to access the battery packs underneath the bus.
3. Working underneath the bus, locate the first battery pack to get the Grounding Strap Retrofit.
4. Remove the MSD from the battery pack.
5. Disconnect the high-voltage connector from the battery pack. Ensure that the connector is positioned so that no debris from the drilling operation can enter the connector.
6. Using a 13mm Ratchet/Socket, remove the ground lug from the battery pack.
7. Place the Bushing (**174-3862**) inside the Fixture (**166-7622**) as shown in the following illustrations. The Bushing should be positioned so that the countersunk hole is flush with the bottom surface of the Fixture.



8. Place the Fixture (**166-7622**) over the high-voltage connector as shown in the following illustrations. The high-voltage connector shown is not connected at this time.



9. Using a Power Drill with a 4.2mm Drill Bit and a Drill Stop set to 24mm, drill a hole using the Fixture **(174-3861)** as a guide.
10. Remove the Fixture **(174-3861)** from the battery pack.
11. Using an M5 Tap, tap the drilled hole to accept a fastener.
12. Using a Ratchet with T-25 and T-40 Sockets, install the Ground Strap **(171-584)** using an M5 Screw **(044229)** and an M8 Screw **(022468)** as shown in the following photograph.



13. Using a Calibrated Torque Wrench with a T-25 Socket, **torque the M5 Screw to 26.5 inch-pounds.**
14. Using a Calibrated Torque Wrench with a T-40 Socket, **torque the M8 Screw to 124 inch-pounds.**
15. Using a Green Torque Stripe Marker, mark the properly torqued fasteners.
16. Using a 13mm Ratchet/Socket, reinstall the ground lug that was removed earlier.
17. Using a Calibrated Torque Wrench with a 13mm Socket, **torque the ground lug screw to 160 inch-pounds.**
18. Using Orange Torque Stripe Paint, mark the properly torqued fastener.
19. Reconnect the high-voltage connector to the battery pack.
20. Reinstall the MSD onto the battery pack.
21. Repeat the process to install a Ground Strap **(171-584)** onto the remaining battery packs on the bus. Some buses may have rooftop packs that require a Ground Strap.
22. Remove the Jack Stands.

23. Using the Wheel lifts, safely lower the bus.
24. Add Ground Straps **(171-584)** to the rooftop packs as necessary.
25. Remove the Lockout/Tagout devices and return the bus to service.