

46-001 - Battery Electric Vehicle (BEV) Service Info - U.S.

8/2/2024

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46-001

Subject

Battery Electric Vehicle (BEV) Service Information

Whats New Abstract

BEV Phase 2 tools have been added to the BEV required tools lists.

Introduction

The purpose of this bulletin is to communicate initial service information regarding Battery Electric Vehicles (BEV) to the field.

Revision

08/02/2024– Added tools to the BEV Phase 2 required tools list.

01/25/2024 – Added “Field Support Procedure” section within “Procedure” section. This new section provides a flow chart to illustrate TCS case creation procedures for both Heavy and Medium duty BEV.

06/14/2023 – Both recommended tool tables (Available from PACCAR Parts and Source Locally) have been updated. Verbiage throughout bulletin has been updated to eliminate the use of Peterbilt and replace with PACCAR. Due to differences in the recommended tools which are a result of differences between suppliers, two separate versions of the bulletin have been created - 1 for the U.S. market and 1 for the Canadian market.

05/19/2022 - PPD Part Numbers added to the Tools and Safety Equipment in the Parts Section.

12/03/2021 - Added 20 cal/cm² arc flash rated suit to the PPE table.

10/22/2021 - Added Warning statement about potential electrical arc flash concern to the Parts section.

03/03/2021 - Updated with specific info about the levels of training, a link to the training site, and updated the training graphic.

02/24/2021 - Update parts section with estimated costs and removed reference to Eagle Raptor software.

02/17/2021 - Updated the parts section to show parts that will and will not be available from PPD. Added HVAC refrigerant warning to the Procedure section.

12/21/2020 - Charging Stations are now available through PPD. The link to the PPD bulletin was added to the Parts Section.

Resolution

Information Only

Dealers should continually refer to this bulletin as a source to assist with BEV service start-up. This bulletin will be

updated periodically as new information becomes available.

Parts



WARNING!

Electrical arc flash may occur while energizing or de-energizing a vehicle. Service technicians must use 20 Cal/cm² or greater arc flash rated personal protective equipment during this process. Failure to comply may result in death, injury, or property damage.

Charging Station available from PACCAR Parts:

Part Number	Description
AC20-1-001	PACCHARGE20AC 19.2KW, 2YR PART WARRANTY

Refer to the PPD [Electric Vehicle Charger](#) bulletin for part numbers and descriptions.

Additional information about the charging stations can be found [here](#).

The following PPE, safety equipment and tools ARE REQUIRED and are available from PACCAR Parts.		
EV Tools and Safety Equipment		
Part Number	Description	Standard Lead Time
PAR13691	Wiha Insulated Allen Key Set	2-3 weeks
PAR20093	Wiha Insulated Metric Wrench Set	2-3 weeks
PAR31391	Wiha Insulated 1/4" Metric Ratchet Set	2-3 weeks
PAR1965328	Wiha 112pc Kit-Insulated Hand Tool 32801	8-14 weeks
PAR1587FC	Fluke 1587FC Insulation	2-3 weeks

The following PPE, safety equipment and tools **ARE REQUIRED** and are available from PACCAR Parts.

EV Tools and Safety Equipment

Part Number	Description	Standard Lead Time
	Multimeter	
TA467	Picoscope TA467 Insulation Tester (Alternative to Fluke 1587)	2-4 weeks
PAR19360	Insulating Blanket-Mat Class 4, 36K VAC	2-3 weeks
PARNS8716	Tape-Caution, Bilingual, 1000ft Roll	3-5 days
PARNS7271	Post-42", 12lbs. Rubber Base	3-5 days
PARX30388DP	Sign-Safety, 10"x14", Danger High Voltage	3-5 days
PAR899520901	Hook-Rescue, Insulated, 2 Meter	3-5 days
PAR00297	Kit-Lockout/Tagout, Box, Padlock, Tags	2-3 weeks
CPT10291919	H pack plastic fuse covers (4 pc required)	N/A
CPT36034000309	G and C pack plastic fuse covers (6 pc required)	N/A
CPT111550	CATL Balancing Harness	N/A

The following PPE, safety equipment and tools **ARE REQUIRED** and are available from PACCAR Parts.

EV Tools and Safety Equipment

Part Number	Description	Standard Lead Time
	CPT110208	
CPT110208	Gland Nut Torque Tool (579EV and 520EV ONLY)	N/A
CPTMDEBC3H01	CATL Battery Lifting Hooks - H and G packs (4 pc required) PURCHASE AS NEEDED	N/A

EV PPE

Step 1: Choose Technicians' Preferred Flash Kit

Option #1 OR Option #2 - Do not NEED both

Part Number	Description	Standard Lead Time
Option #1: Coverall, Pant, Arc-Hood, Hard Hat, Safety Glasses		
PAR528213X	PPE 3 Arc Flash Kit - 25 Cal/cm ² 3XL	2-3 weeks
PAR528212X	PPE 3 Arc Flash Kit - 25 Cal/cm ² 2XL	
PAR52821XL	PPE 3 Arc Flash Kit - 25 Cal/cm ² XL	
PAR52821L	PPE 3 Arc Flash Kit - 25 Cal/cm ² L	

The following PPE, safety equipment and tools **ARE REQUIRED** and are available from PACCAR Parts.

EV Tools and Safety Equipment

Part Number	Description	Standard Lead Time
PAR52821M	PPE 3 Arc Flash Kit - 25 Cal/cm ² M	
Option #2: Jacket, Overall, Pant, Arc-Hood, Hard Hat, Safety Glasses		
PAR530033X	PPE 3 Arc Flash Kit - 25 Cal/cm ² 3XL	2-3 weeks
PAR530032X	PPE 3 Arc Flash Kit - 25 Cal/cm ² 2XL	
PAR53003XL	PPE 3 Arc Flash Kit - 25 Cal/cm ² XL	
PAR53003L	PPE 3 Arc Flash Kit - 25 Cal/cm ² L	
PAR53003M	PPE 3 Arc Flash Kit - 25 Cal/cm ² M	
Step 2: Choose Boot Size		
PAR7021004	Boots- Insulated, Bullfrog Pro 11, Size 4	10 days
PAR7021005	Boots- Insulated, Bullfrog Pro 11, Size 5	
PAR7021006	Boots- Insulated, Bullfrog Pro 11, Size 6	

The following PPE, safety equipment and tools **ARE REQUIRED** and are available from PACCAR Parts.

EV Tools and Safety Equipment

Part Number	Description	Standard Lead Time
PAR7021007	Boots- Insulated, Bullfrog Pro 11, Size 7	
PAR7021008	Boots- Insulated, Bullfrog Pro 11, Size 8	
PAR7021009	Boots- Insulated, Bullfrog Pro 11, Size 9	
PAR7021010	Boots- Insulated, Bullfrog Pro 11, Size 10	
PAR7021011	Boots- Insulated, Bullfrog Pro 11, Size 11	
PAR7021012	Boots- Insulated, Bullfrog Pro 11, Size 12	
PAR7021013	Boots- Insulated, Bullfrog Pro 11, Size 13	
PAR7021014	Boots- Insulated, Bullfrog Pro 11, Size 14	
PAR7021015	Boots- Insulated, Bullfrog Pro 11, Size 15	

Step 3: Choose Technicians' Inner Glove

The following PPE, safety equipment and tools **ARE REQUIRED** and are available from PACCAR Parts.

EV Tools and Safety Equipment

Part Number	Description	Standard Lead Time
Size		
Class 0, 1000 Volt, High Voltage Gloves		
PAR1008	Insulated HV Glove CL0 11in BLK Size 8	1-3 days
PAR1009	Insulated HV Glove CL0 11in BLK Size 9	
PAR1010	Insulated HV Glove CL0 11in BLK Size 10	
PAR1011	Insulated HV Glove CL0 11in BLK Size 11	
PAR1012	Insulated HV Glove CL0 11in BLK Size 12	
Step 4: Choose Technicians' Outer Glove Size		
HV, Outer, Leather, Protective Gloves		
PAR5008	HV Leather Protect Glove CLS 00-0 10" Size 8	1-3 days
PAR5009	HV Leather Protect Glove CLS 00-0 10" Size 9	
PAR5010	HV Leather Protect Glove CLS 00-0 10" Size 10	
	HV Leather	

The following PPE, safety equipment and tools **ARE REQUIRED** and are available from PACCAR Parts.

EV Tools and Safety Equipment

Part Number	Description	Standard Lead Time
PAR5011	Protect Glove CLS 00-0 10" Size 11	
PAR5012	HV Leather Protect Glove CLS 00-0 10" Size 12	

Please plan to source locally.
The tools, materials, and safety equipment in the following table **ARE REQUIRED** and are not available from PACCAR Parts.

Description	Estimated Unit Cost
Bendix ACOM Pro diagnostic SW License can be purchased at the following link: Bendix ACom Pro (noregon.com)	N/A
ACOM Debug Harness, IAPU harness (220EV ONLY) Bendix ACom Pro (noregon.com)	N/A
Cummins MSD LOTO Kit - PD8500EV. 2 Sbox MSD covers included (Cummins PN 5573142) 5573142 Cummins® Protective Cover Kit Source One Parts Center (s1partscenter.com)	N/A

Please plan to source locally.
The tools, materials, and safety equipment in the following table **ARE REQUIRED and are not available from PACCAR Parts.**

Description	Estimated Unit Cost
Cementex MRT-18 Insulated Magnetic Pick Up Tool, 18" or equivalent PN Cementex MRT-18 18-Inch Magnetic Retrieving Tool - Magnetic Sweepers - Amazon.com	N/A
Insulated Phillips SlimLine Blade bit #1 (SKU# 28317 or equivalent PN) Wiha 28317 Insulated SlimLine Phillips Blade #1 Made in Germany. (wihatools.com).	N/A
Insulated Phillips SlimLine Blade bit #2 (SKU# 28319 or equivalent PN) Wiha 28319 Insulated SlimLine Phillips Blade #2 Made in Germany. (wihatools.com).	N/A
Insulated SoftFinish Stubby SlimLine Blade Handle (SKU# 28302 or equivalent PN) Wiha 28302 Insulated Stubby SlimLine Blade Holder Made in Germany. (wihatools.com).	N/A
Insulated SlimLine Blade Hex 4.0mm (SKU# 28336 or equivalent PN) Wiha 28332 Insulated SlimLine Hex 1.5mm Made in Germany. (wihatools.com).	N/A
Eaxle Carrier Resolver Torque Tool	N/A

Please plan to source locally.
The tools, materials, and safety equipment in the following table **ARE REQUIRED and are not available from PACCAR Parts.**

Description	Estimated Unit Cost
(ARES 33008 or equivalent) (579EV and 520EV ONLY) 2-Piece Spring Loaded Auto Adjusting Crowfoot Wrench Set – ARES Tool, MJD Industries, LLC	
12/24 volt battery charger (10 AMP Minimum) Locally Sourced	N/A
IQAN Run - Dana Aftersales – Nexiq CAN device adapter (220EV ONLY) License can be purchased at the following link: https://www.iqan.se/iqanrun.html	\$650
Meritor EV Blue Horizon Diagnostic Software (579EV and 520EV ONLY) License can be purchased at the following link: https://meritor.snapon.com/Login.aspx?ReturnUrl=%2fShopping%2fCatalog.aspx	\$950
SP-A2 – Refrigerant Oil	\$130 / 250mL
RL-68H – Refrigerant Oil	\$215 / 1 gal
Thomas and Betts - Kopr-Shield – Joint Compound <ul style="list-style-type: none"> •201-31879 (1.5 oz container with brush) •201-31879-1 (4 oz container with brush) •CP8-TB (8 oz container with brush) •CP16 (16 oz container with brush) • CP128 (1 Gallon can) 	\$40 - \$100
Electrolube – HCG (Highly Conductive	

Please plan to source locally.
The tools, materials, and safety equipment in the following table **ARE REQUIRED and are not available from PACCAR Parts.**

Description	Estimated Unit Cost
Grease) •HCG50TN (50mL tube) •HCG01K (1kg bulk)	

Please plan to source locally.
The tools, materials, and safety equipment in the following table **are required and are not available from PACCAR Parts.**
These are LEVEL 3 Tools (1 required for every 10 locations per dealer group, or 1 required per dealer group if number of locations is less than 10)

Description	Estimated Unit Cost
Table lift - for underside battery removal. 4,000lb (1,814 kg) minimum capacity, with wheels or casters (mobile) Example: Advance Lifts Model P-4048 with 6,000 lbs.	\$18,000

casters (26"W x
90"L platform)

**These can be
sourced
through W.W.
Cannon LLC,
Dallas, TX

Procedure

HVAC REFRIGERANT SYSTEM

BEV vehicles require a nonconductive refrigerant oil which differs from what is used in conventional diesel vehicles.



WARNING!

A separate refrigerant recovery system will be required for BEV vehicles. Refrigerant oil from conventional diesel vehicles can contaminate the refrigerant system in the BEV, resulting in isolation faults in the high voltage system. Isolation faults can result in loss of propulsion.

TRAINING

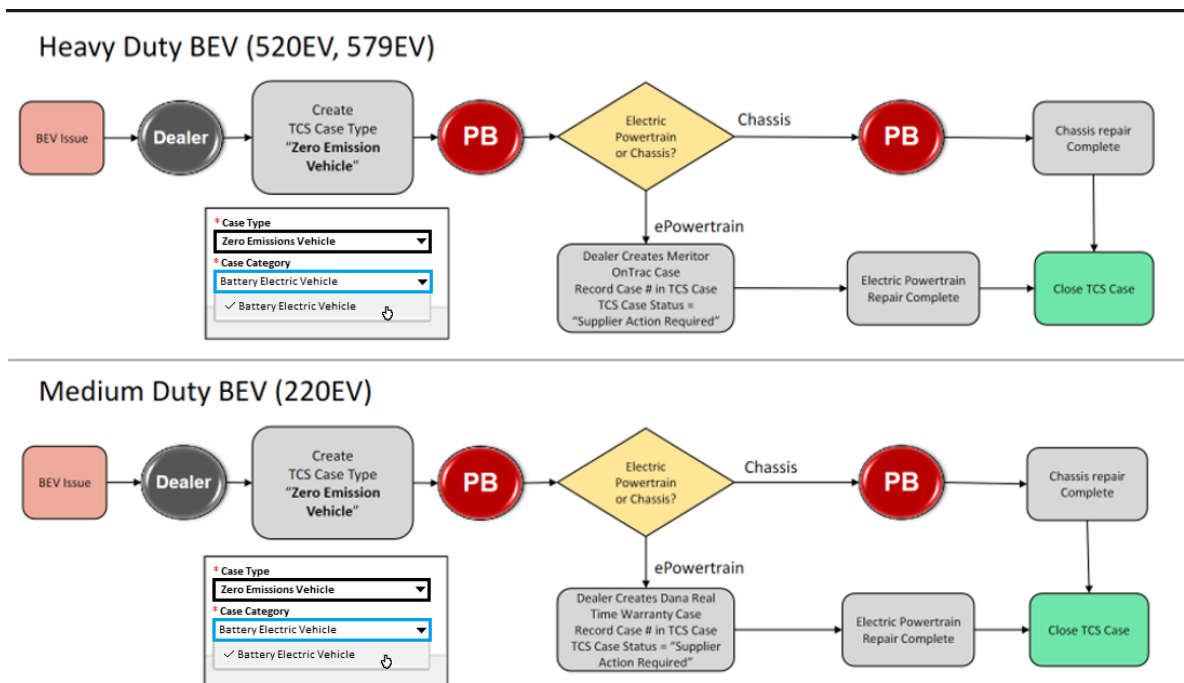
- **PACCAR Level 0 training - Peterbilt Electric Vehicles Overview and Safety** has been released on [Peterbilt-Training.com](https://www.peterbilt-training.com). This module is required for all dealership employees to be authorized as a Peterbilt Electric Vehicle Sales and Service location.
- **PACCAR Level 1 training - Introduction to Servicing Peterbilt Electric Vehicles** consists of two modules with an assessment of knowledge. These modules will be released to the dealership upon execution of the Peterbilt Sales and Service Dealer Agreement for Electric Vehicles. This training will

be required for all dealership service personnel including service support staff and service management.

- **PACCAR Level 2 training** - Only PACCAR manufacturing plant personnel are level 2 trained. Does not apply to dealership personnel at this time.
- **PACCAR Level 3 training** - Will be provided to a dealership prior to the delivery of the first Electric Vehicle to the customer. The training will be model specific. At least 2 technicians per location will be required to be Level 3 EV certified.
- **PACCAR Level 4 training** - Will be available at a later date when dealerships are approved to perform internal repairs to the electrical components. Currently, this work can only be done by the BEV system manufacturers.

FIELD SUPPORT PROCEDURE

- The flow chart shown below illustrates the process for BEV TCS case creation broken down by model.



Attachments

[579 BEV TSB](#)

[520 BEV TSB](#)

[220 BEV TSB](#)

[Charging Station Info](#)

[PACCAR Parts Electric Vehicle Charger Bulletin](#)

Authored by: PR