

TIB 46-001 - Battery Electric Vehicle Service Information

7/13/2023

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46-001

Subject

Battery Electric Vehicle Service Information

Whats New Abstract

Safety Equipment, Personal Protective Equipment, and Tools have been extensively updated. Due to differences in suppliers and part numbers between the U.S. and Canada, separate lists for the U.S. and Canadian markets have been created to more effectively separate tool requirements and avoid confusion.

Revision

07/13/2023: Updated parts, tools, and PPE lists for US and Canada. Updated Training requirements information.

05/23/2022: Updated parts section to include PPD part numbers.

02/15/2022: Revised PPE requirements and updated training levels.

Condition

Several models of Battery Electric Vehicles (BEV) are available for to order for low volume validation builds. These vehicles require specialized PPE, tools, and training to service.

Action

Info Only

Continually refer to this bulletin as a source to assist with BEV service start-up. This bulletin will be updated as new information becomes available.

Dealers should begin planning and budgeting to support current and future models of electric drivetrain

chassis.

Parts



WARNING

Through extensive testing, it has been determined that the potential exists for an electrical arc flash incident to occur while commissioning/decommissioning a Battery Electric Vehicle.

Kenworth requires the use of a 20 Cal/cm2 or greater arc flash-rated ensemble while performing this process.

Charging Station is available from PACCAR Parts.

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

Information on charging station(s), pricing and ordering can be found [here](#)

The following Tools and Equipment are available from PACCAR Parts.

[US: Tools and Shop Safety Equipment](#)

[US: PPE](#)

[Canada: Tools and Shop Safety Equipment](#)

[Canada: PPE](#)

The following tools, materials, and equipment are NOT available from PACCAR Parts and must be

sourced locally.

Tools and Supplies Sourced Locally

Description	Specifications	Possible Source
Table Lift	4,000 lb (1,814 kg) minimum capacity, with wheels or casters	Example: Advance lifts model P-4048 with 6,000 lb casters (26"W x 90"L platform) - Sourced through W.W. Cannon LLC, Dallas, TX
IQAN Run - Dana aftersales	Nexiq CAN device adapter	License can be purchased at the following link: https://www.iqan.se/downloads.html
Meritor EV Blue Horizon	Diagnostic Software	License can be purchased at the following link: https://meritor.snapon.com/Shopping/Catalog.aspx
SP-A2	Refrigerant Oil	NAPA
RL-68H	Refrigerant Oil	Grainger
Thomas and Betts Kopr-Shield	Joint Compound	• 201-31879 (1.5 oz with brush) • 201-31879-1 (4 oz with brush) • CP8-TB (8 oz with brush) • CP-16 (16 oz with brush) • CP128 (1 gallon)
Electrolube	HCG (Highly Conductive Grease)	• HCG50TN (50mL tube) • HCG01K (1kg bulk)

**CAUTION**

A separate refrigerant recovery system (Robinair machine) 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.

Background

Battery Electric Vehicles (BEV) require specialized tools, PPE and training for service. These specialized

requirements include:

- Training
- Safety Requirements
- PPE and Tools
- Service Documentation
- Parts Stocking List (MDI)
- Warranty details
- Charging Station
- Who To Contact

Procedure

Things to consider and budget for:

- Technician Training
- Personal Protection Equipment (PPE) & Tools
- Parts Stocking

Training

Additional training courses will be added to the course catalog as they become available.

In Q1 of 2021, a new section will be added to the PACCAR Powertrain training site called PACCAR Electric Vehicles that provide further online training.

PACCAR Powertrain



Technician Training

Servicing BEVs requires specialized training. Kenworth Electric Vehicles Training can be found on [Kenworth-Training.net](https://kenworth-training.net)

Technician EV Certification path information can be found here: [EV Certification Path](#)

- **PACCAR EV Basics Level 0 - Kenworth Electric Vehicles Overview and Safety.** This module is required for all dealership employees to be authorized as a Kenworth Electric Vehicle Sales and Service location.
- **PACCAR EV Basics Level 1 - Introduction to Servicing Kenworth 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



ELECTRIC VEHICLE TRAINING



PACCAR LEVEL	DESCRIPTION	VEHICLE OPERATION	MECHANICAL WORK	MECHANICAL WORK W/ POTENTIAL HV HAZARD	HV WORK	LIVE HV WORK	EVALUATE SKILLS TRAINER
0	AWARENESS	✓					
1	INFORMED ELECTRICAL PERSON (IEP)	✓	✓				
2 (LINE WORKER)	IEP + WORK INSTRUCTIONS	✓	✓	WITHIN BOUNDS OF WORK INSTRUCTIONS	WITHIN BOUNDS OF WORK INSTRUCTIONS		
3 (SKILLED TECH)	SKILLED ELECTRICAL PERSON (SEP)	✓	✓	✓	✓		
4 (SKILLED TECH + LIVE WORK)	SEP + LIVE WORK	✓	✓	✓	✓	✓	

PACCAR training levels bordered in green are available to Dealers.

Attachments

[US: Tools and Shop Safety Equipment](#)

[US: PPE](#)

[Canada: Tools and Shop Safety Equipment](#)

[Canada: PPE](#)

[Charging Station Information](#)

[PACCAR Parts EV Charger Bulletin](#)

[PACCAR BEV Extended Storage Instructions](#)

[Kenworth T680E EV Sales Bulletin](#)

[Kenworth K270E/K370E Battery Electric Vehicles Sales Bulletin](#)

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