



Supplementary K270E/K370E Operator's Manual

September 2024

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This manual illustrates and describes the operation of features or equipment which may be either standard or optional on this vehicle. This manual may also include a description of features and equipment which are no longer available or were not ordered on this vehicle. Please disregard any illustrations or descriptions relating to features or equipment which are not on this vehicle. PACCAR reserves the right to discontinue, change specifications, or change the design of its vehicles at any time without notice and without incurring any obligation. The information contained in this manual is proprietary to PACCAR. Reproduction, in whole or in part, by any means is strictly prohibited without prior written authorization from PACCAR Inc.

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Introduction

This vehicle is equipped with a 100% electric powertrain that was manufactured and installed by Dana. It is important to understand the operational characteristics and functions of this electric vehicle (EV). The supplemental manual provides information that is not part of the base OEM chassis. Please refer to the OEM operator's manual for information unrelated to the EV functions.

Electric Powertrain

The Dana Electric Powertrain is a 100% electric drive and does not use an internal combustion engine. Some of the vehicle's systems operate differently and have different operating characteristics than vehicles equipped with an internal combustion engine. Read this manual thoroughly before you drive the electrified vehicle to ensure the operating and safety requirements are understood.

As the vehicle operates, the high voltage (HV) battery pack gradually discharges. If the HV battery pack is completely discharged, the vehicle will not operate until it is recharged.



Caution: Do not allow the HV battery pack to discharge below specified limits. Failure to comply may cause equipment or property damage.

This vehicle uses a low voltage (LV) battery pack and an HV lithium-ion battery pack. The LV battery pack uses two LV batteries for startup of both LV and HV components.



Caution: If the vehicle will sit unused for 24 hours or longer, turn off the LV disconnect switch to prevent damage to the lead acid battery. Failure to comply with these instructions may cause equipment damage.

Similar to internal combustion engine powertrains, the HV DC-DC converter uses energy from the HV battery to power auxiliary components such as the audio system, supplemental restraint system, headlights, power steering, and windshield wipers.

The HV battery pack provides power to the propulsion motor that moves the vehicle. The HV battery pack also charges the LV battery pack and powers LV components through the DC-DC converter. The vehicle must be plugged in to recharge the HV battery pack. Additionally, the vehicle system can extend the vehicle range through regenerative braking. Regenerative braking converts braking power into electricity that is stored in the HV battery pack while the vehicle is decelerating or driven downhill.



Warning: Your vehicle contains a sealed lithium-ion HV battery. If the lithium-ion battery is disposed of improperly, there is a risk of severe burns and electric shock that may result in serious injury or death. There is also a risk of environmental damage.



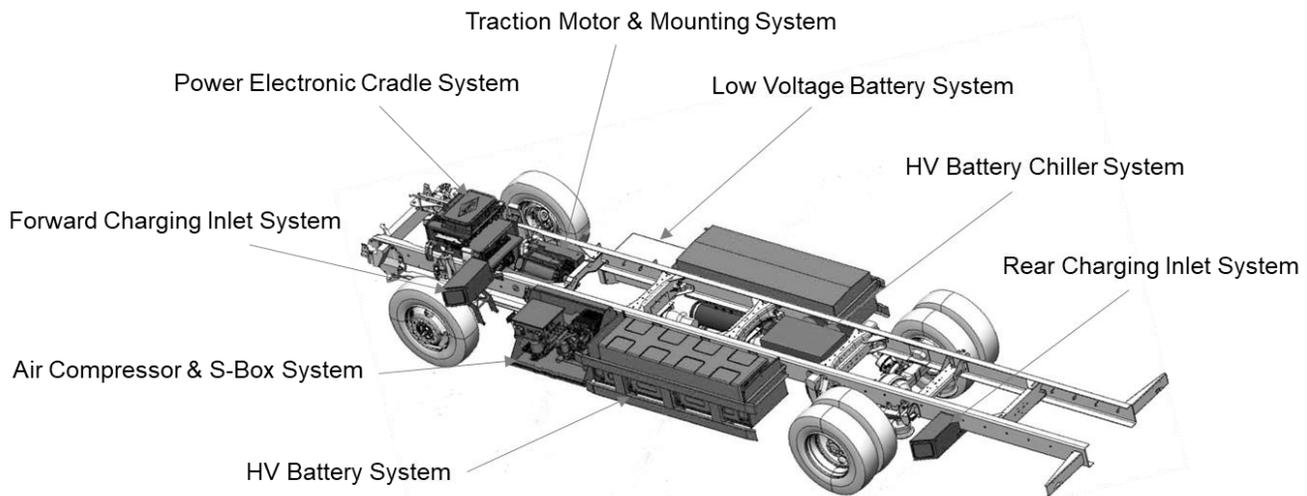
Caution: To prevent damage to the lithium-ion battery:

- Do not use the lithium-ion battery for any other purpose.
- Do not leave the vehicle in a zero or near zero state of charge for more than 14 days. Check the lithium-ion battery available charge gauge display prior to parking the vehicle for extended periods of time.
- Do not expose the vehicle to extreme ambient temperatures for extended periods (see Long-Term Storage).
- When storing the vehicle, follow the Long-Term Storage requirements as defined in this manual (see Long-Term Storage).

Failure to comply with these instructions may cause equipment damage.

The ability of the HV battery pack to hold a charge will decrease with time and usage. As the battery pack degrades and capacity decreases, the driving range will decrease. This is normal, expected, and not indicative of any defect in your HV battery. The battery capacity will keep approximately 80% of its original capacity after sixteen years (or 4000 cycles). This is only an estimate, and this percentage may vary significantly depending on individual vehicle and HV battery pack usage. The HV battery pack has limited-service life.

The image below identifies each major component of the electrification system. Your truck will have either a forward charging inlet or a rear charging inlet.



Telematics

This vehicle is equipped with electronic modules that monitor and record data for several vehicle systems, including the traction motor, battery packs, braking, and other electrical systems. Other electronic modules record information concerning driving conditions, including parking operation, braking, acceleration, trip distance, and other related information about your use of the vehicle. Features such as air conditioner or headlight usage, diagnostic trouble codes, vehicle charging, vehicle speed, direction, and/or location are also recorded to provide feedback depending on the vehicle driving state.

Some data is stored by the vehicle for vehicle servicing. Other data concerning your vehicle's operation and performance is wirelessly transmitted through the vehicle onboard telematics system upon vehicle start-up or at other intervals to Dana. This data may be used by Dana for various purposes, including EV services troubleshooting; vehicle quality, functionality, and performance; analysis and research by Dana designed to, among other things, optimize performance of future electric vehicles including improvements in future battery life; and as otherwise may be required by law. Such data may be shared with Dana's parents, subsidiaries, affiliates, successors or assignees, authorized PACCAR certified DEP dealers, PACCAR's marketing partners, your fleet company (if your vehicle is a fleet vehicle), your rental company (if your vehicle is a rental vehicle), and third-party service providers such as cellular information systems and data management providers.

Telematics features are dependent on cellular data transmission. Some areas may have limited or no cellular connectivity, resulting in a loss or interruption of data transmission. As a result, certain features may be temporarily unavailable. Even in areas with good reception, cellular connectivity can be adversely affected by tall buildings, apartments, tunnels, underground parking, mountains, etc. Even if the signal strength bar of the in-vehicle data communication module indicates good reception, connectivity may be disrupted. This does not indicate a malfunction. Operate the system again after a few minutes to restore connectivity.

Chapter 1 - Safety

Safety Alerts and Warnings

Please read and follow all safety alerts in this manual. They are for your protection and information. The alerts can also help you avoid injury to yourself and your passengers. The alerts can also help prevent costly damage to the vehicle. Safety alerts are highlighted by safety alert symbols and signal words such as "Warning", "Caution", or "Note." Do not ignore any of these alerts.

Warning



The safety message following this symbol and word provides a warning against operating procedures that could cause serious injury or even death. Failure to follow these warnings could also cause equipment or property damage. The alert will identify a hazard, how to avoid it, and the probable consequence of not avoiding the hazard.

Caution



The safety alert following this symbol and word provides a caution against operating procedures that could cause equipment or property damage. The alert will identify a hazard, how to avoid it, and the probable consequence if ignored.

Note



The alert following this symbol and word provides important information that is not safety related but should be followed. The alert will highlight things that may not be obvious but are useful to your efficient operation of the vehicle.

Warnings and Safety Regulations



Warning: The following warning and safety regulations must be strictly observed for your safety, for bystanders' safety, and to prevent vehicle damage.

Read the instructions and warnings on the labels on all components. Failure to follow these warnings could cause equipment damage, property damage, injury, and death. The instructions and warnings are for your health and safety.

Modification of the Vehicle

Modifying your vehicle could make it unsafe. Some modifications could affect your vehicle's electrical system, stability, or other important functions. The electric powertrain should not be modified for any reason. Modification to any of Dana's components will void your warranty. Modifications to the electric chassis could cause death or personal injury.



Caution: Connecting to an unapproved CAN bus may trigger CAN fault codes or damage systems and components on the vehicle. Failures and damages caused by improper CAN bus connections are not covered by PACCAR warranties and may result in equipment or property damage.

Cooling System Fill Cap



Warning: Do not remove the radiator fill cap while the powertrain is hot. Scalding steam and fluid under pressure may escape. You could be badly burned. Failure to comply may result in death or personal injury.

Oils and Lubricants

Various kinds of oil and other lubricants used on the vehicle may constitute a health hazard if they contact the skin. This also applies to electric powertrain coolant, refrigerant in air conditioning systems, and battery acid. Do not contact vehicle liquids without the appropriate personal protective equipment.



Warning: Use only an authorized refrigerant lubricant for this vehicle. This vehicle uses a non-conductive refrigerant lubricant and not the typical refrigerant lubricant used for PACCAR vehicles. Use of a conductive lubricant could result in electrical damage within the compressor, possibly leading to a fire. Failure to comply may result in death, personal injury, equipment, or property damage.

Maintenance Activities

When carrying out maintenance work under the cab, make sure the cab is fully tilted and locked to prevent it from falling back accidentally.

Following a collision, only tilt the cab in an emergency. The tilting mechanism may be damaged and a HV hazard might exist.



Warning: Always support the vehicle with appropriate safety stands if it is necessary to work underneath the vehicle. A jack is not adequate for this purpose. Failure to comply may result in death, personal injury, equipment, or property damage.

Environment

Pollution is a serious threat to the environment. To keep pollution to a minimum, follow the below rules:

- Do not dump used oil, lubricants, hydraulic fluid, or coolants in drains, sewers, landfills, or on the ground. Return these fluids to the designated authority or appropriate chemical waste collection company for recycling or destruction. All used fluids must be stored separately.
- Service the vehicle regularly according to the instructions and recommendations in this manual.

High Voltage (HV) System

The following messages apply to the high voltage (HV) system.



Warning: Repair of HV components or the HV battery is very dangerous and could cause severe burns and electric shock. Never remove or disassemble any HV components in this vehicle. All inspections and repairs must be conducted by an authorized and trained service dealer. Failure to comply may result in death or personal injury.



Warning: Do not touch or attempt to remove any orange colored HV cables, connectors, or components. Failure to comply may result in death or personal injury.



Warning: The HV system on this vehicle has no parts that an owner or unauthorized service technician can service. Under no circumstances should you open or tamper with the battery or other HV components. Always contact a certified service dealer. Failure to comply may result in death or personal injury.



Caution: The HV battery pack requires no routine owner maintenance outside of battery balancing, visual inspections, and long-term storage. If the battery service icon illuminates, contact a PACCAR dealership and do not attempt to service the battery. Failure to comply may result in equipment or property damage.



Note: In the unlikely event of a fire, immediately contact your local fire emergency responders.



Note: The HV system on this vehicle does not have components that require service by the user. Do not disassemble, remove, or replace HV components, cables, or connectors. All HV cables are colored orange for easy identification.



Note: If a collision occurs, remove the keys from the ignition (if they are safely accessible) and do not touch any HV cables, connectors, or components.

Low Voltage (LV) System

The cab system of this vehicle operates on high voltage (HV) while other areas operate on low voltage (LV). When replacing or fitting electrical or electronic components, always verify that they are suitable for the system voltage.

LV Batteries

The following messages apply to low voltage (LV) batteries.



Warning: Always disconnect the battery negative (ground) lead before carrying out repairs or service on the electrical system. Failure to comply may result in death, personal injury, equipment, or property damage.



Warning: Before attempting any work on the batteries or electrical system, remove all jewelry. If metal jewelry or other metal contacts with electrical circuits, a short circuit may occur, causing personal injury and causing electrical system failure and damage.



Warning: When connecting or disconnecting the low voltage battery, connect the positive cable to the positive terminal and the negative cable to the negative terminal. Connecting a positive to a negative could result in an electric surge that may result in death, personal injury, equipment, or property damage.

Welding



Warning: DO NOT weld any part of an electric vehicle. The excessive heat may result in a fire or explosion. Failure to comply may result in death, personal injury, equipment, or property damage.

How to Charge a Discharged Battery

This vehicle cannot key on when the low voltage (LV) batteries are discharged. Discharged LV batteries cannot supply adequate voltage to power the vehicle control unit (VCU) and other LV components.

Before a complete LV discharge occurs, Faults F0132 (low voltage issue detected at start-up) or F0095 (low voltage issue while driving) may either show on the digital display or be stored in the VCU fault log.



Warning: Do not jump start the vehicle's HV battery system. Jump starting the system could result in a vehicle shutdown during operation. Failure to comply may result in death, personal injury, equipment, or property damage.

Causes

There are three potential reasons why the LV battery would be discharged:

1. The LV disconnect switch was left "ON" for an extended time without vehicle operation.
2. A faulty LV battery.



Note: Replace all faulty LV batteries before returning the vehicle to service.

3. An issue with the LV charging system.

Charging the LV Batteries

If the low voltage (LV) batteries are discharged and the vehicle will not turn on, fully charge the LV batteries using an external power supply (charger) before returning the vehicle to service. DO NOT jumpstart the vehicle. Jump-starting will not sufficiently charge the LV batteries for safe operation.



Warning: Vehicles with faulty, discharged, or frozen LV batteries may experience unintended shutdown, especially while turning. Jumpstarting DOES NOT sufficiently charge the LV batteries for safe operation. Failure to comply may result in death, personal injury, equipment, or property damage.



Warning: In below-freezing temperatures, a discharged LV battery may freeze. Do not attempt to charge a LV battery if it is visibly or suspected to be frozen. Failure to comply may result in death, personal injury, equipment, or property damage.



Warning: Do not remove the LV battery unless the battery is fully discharged. Follow all safety precautions outlined in the battery's manufacturing guide when charging the battery. Failure to comply may result in injury, death, or equipment or property damage.

To charge the LV batteries:

1. Turn the vehicle off.
2. Remove the LV battery from the vehicle.
3. Charge the LV battery with an external charger according to the battery's manufacturing guide.
4. Put the LV battery back on the vehicle.



Note: If the LV batteries continue to discharge, do not jumpstart them. Instead, contact your nearest battery electric vehicle servicing dealership.

Roadside Assistance

Call toll-free to talk to someone at the PACCAR Customer Center.

1-800-KW-Assist
(1-800-592-7747)

The Customer Call Center is open 24 hours per day, 365 days per year, and is staffed with trained personnel (English and other languages if necessary), free of charge, to provide total roadside assistance. Their custom mapping system can locate the nearest Authorized Dealers and Independent Service Providers (ISPs) based on the vehicle's location. In addition, the customer center can dispatch services for tires, trailers, fines and permits, chains, towing, hazardous clean-up, mechanical repairs, and preventive maintenance services. If they cannot answer a specific question, they will direct you to a representative who can.

First Responder's Guide

First Responder instructions are available through the QR code or URL below. Download and print the

documentation for the Kenworth K270E/K370E with your current model year. Routinely check the NFPA site to ensure your first responder materials are up to date.

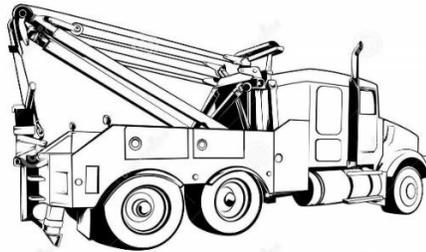


QR Code for First Responder Instructions

(Scan with phone camera or use URL below)

<https://www.nfpa.org/education-and-research/emergency-response/emergency-response-guides/kenworth>

Towing Instructions



Towing Safety



Warning: Only a commercial towing company representative or a battery electric vehicle (BEV) certified technician should attempt to prepare a BEV for towing. Failure to comply may result in death, personal injury, and equipment or property damage.



Warning: Do not perform maintenance on high voltage cables. A trained technician is required for service. Contact an EV service certified dealer for service. Be mindful of the location of high voltage cables and components when working around the vehicle. Failure to comply may result in death, personal injury, and equipment or property damage.



Warning: Shut down the HV system before towing electric commercial vehicles for ANY distance. HV Shutdown should never be performed by anyone that has not been trained and certified. Failure to comply may result in death, personal injury, and equipment or property damage.



Warning: Do not tow this vehicle after an accident if high-voltage components were damaged. Refer to the first responders field guide for more instructions. Failure to comply may result in death, personal injury, and equipment or property damage.



Warning: Even with high voltage decommissioning, both axle shafts must be removed from the drive axle housing to ensure the propulsion motor will not rotate during the towing process. A rotating motor may generate unsafe voltage that can damage or destroy the HV circuit or cause a thermal event. Failure to comply may result in death, personal injury, and equipment or property damage.



Note: Follow the high voltage decommissioning procedure found in Dana's manual for this electric chassis:

[https://media.spicerparts.com/cfs/files/media/2Y6F9tS6Y3KxBu5zx/ESSM-0240%20Kenworth%20Service%20Manual%201-9-23%20\(1\).pdf?token=eyJhdXRoVG9rZW4iOiIifQ%3D%3D&store=original](https://media.spicerparts.com/cfs/files/media/2Y6F9tS6Y3KxBu5zx/ESSM-0240%20Kenworth%20Service%20Manual%201-9-23%20(1).pdf?token=eyJhdXRoVG9rZW4iOiIifQ%3D%3D&store=original)

Towing Procedures

A commercial towing company may use one of the following towing methods to tow a battery electric vehicle.

Towing Option 1

This method involves lifting the vehicle from the drive axle and then towing the vehicle with the steer axle on the ground. It requires less preparation than option two and does not require new bearing straps or reassembly. However, the vehicle's specific wheelbase length and upfit may affect the towing company's ability to effectively tow the vehicle.

Towing Option 2

This method involves removing both axle shafts from the drive axle. Removing the axle shafts before towing the vehicle prevents unwanted current generation from the propulsion motor.

1. Remove the key from the ignition.
2. Turn the HV battery disconnect to the **OFF** position, then wait for 2 minutes.
3. Block the front and back of at least one of the vehicle's tires so the truck cannot move during this procedure.
4. Turn the Low Voltage Disconnect switch **OFF**.

5. Cage the vehicle brakes according to the manufacturer's recommendation.
6. Starting on the driver's side, place a drip pan under the end of the drive axle wheel hub to catch the lubrication.
7. With an impact gun, remove any axle shaft nuts, washers, and tapered dowels (if used).
8. Remove the axle shaft from the drive axle housing.



Note: Do not use a chisel or any other wedge device to loosen the shaft. Chisels and wedges will damage the flange of the wheel hub.

9. Wipe the end of the wheel hub to remove any oil.
10. Install a wheel end cover over the axle shaft studs.
11. Reinstall the wheel end fasteners and tighten in a crisscross pattern. **Do not over tighten.**
12. Repeat steps 6-11 on the passenger's side of the drive axle.
13. Add oil to the wheel ends using the procedure outlined in the Dana *Service Manual AXSM-0030*.

Wheel End Lubrication



Caution: All wheel hub cavities and bearings must be lubricated before operation to avoid axle failure. Failure to comply may result in equipment or property damage.

Follow Dana's wheel end lubrication procedure before axle operation.

Dana axles may be equipped with the following wheel end designs:

- Wheel ends with an oil fill hole
- Wheel ends without an oil fill hole

For wheel ends with a fill hole:

1. Rotate the wheel end hub until the oil fill hole opens upwards.
2. Remove the oil fill plug.
3. Pour 0.5 pints (236 ml) of axle sump lubricant into each hub through the wheel end fill hole.
4. Replace the oil fill plug and tighten to the specified torque.

For wheel ends without a fill hole:

1. With the axle level and wheel ends assembled, add the lubricant through the filler hole in the carrier until the fluid is level with the bottom of the filler hole.

2. Raise the right side of the axle 12 inches (0.3 meters) or more. Hold the axle in this position for one minute.
3. Lower the right side.
4. Raise the left side of the axle 12 inches (0.3 meters) or more. Hold the axle in this position for one minute.
5. Lower the left side.
6. With the axle on a level surface, add the lubricant through the housing cover oil filler hole until the fluid is level with the bottom of the filler hole.



Note: Axles without wheel end fill holes require approximately 2.5 additional pints (1.4L) of lubricant to bring the lubricant levels even with the bottom of the fill hole.

Chapter 2 - Emergency

Emergency Operation



Warning: High voltage shutdown should only be performed by someone who is both trained and certified. Failure to comply may result in personal injury, death, equipment, or property damage.



Warning: Because EV's can move with little or no sound, conventional methods of determining if a vehicle can be moved under its own power cannot be relied upon. Making assumptions that the vehicle is not powered up can be dangerous. Failure to comply may result in personal injury, death, equipment, or property damage.



Warning: Always be prepared to deal with hazardous conditions when working with EV's by wearing the proper safety equipment. Failure to comply could result in personal injury or death.



Note: Shut down procedures will vary between OEM's and even vehicle models.



Note: Proper techniques and standard protocols are essential for safety during an emergency operation involving an electric vehicle (EV).

Safety Procedures for HV Battery Pack Damage or Nearby Fire

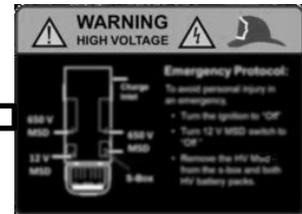
1. Contact firefighters.
2. Provide firefighters a copy of the first responders field guide and direct them to the first responders label under the hood (see image below). Create a safety perimeter of at least 6 feet around the vehicle.
3. Move to an area upwind and far enough away from the accident site to avoid breathing any hazardous smoke or gases.



Warning: Do not enter the vehicle or touch the chassis until receiving approval from first responders. Failure to comply could result in personal injury or death.



Note: Always assume that the HV battery packs could be damaged after an accident and have it inspected by a service technician.



The above image shows location of the First Responders Label.

Fire Instructions



Warning: Do not touch any fluid on the vehicle during a fire. Certain plastic seals may produce gases that can form a corrosive acid if combined with water. Failure to comply may result in personal injury, death, and equipment or property damage.



Warning: Do not attempt to put out a battery pack fire with a fire extinguisher. Failure to comply may result in personal injury or death.

1. Exit the vehicle.
2. Create a safety perimeter of at least 6 feet around the vehicle.
3. Contact First Responders.

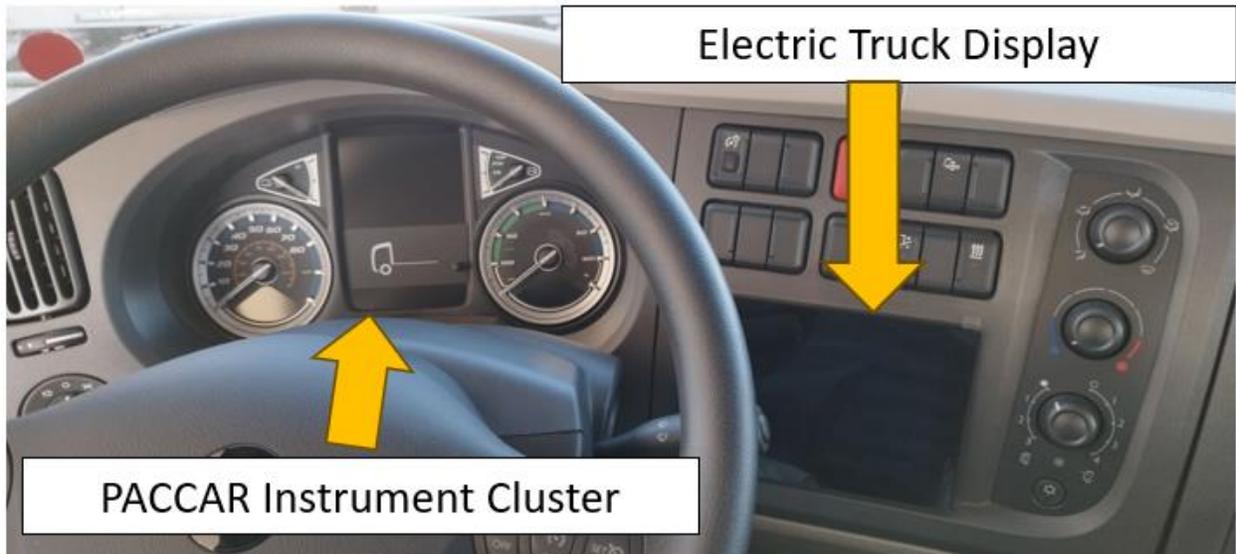
Turn-On Procedure without HV Battery Pack Damage (including the enclosure)

1. Turn the HV battery disconnect switch back to ON (if optioned).
2. Turn the key to the START position.

Chapter 3 - Truck Operation

Vehicle Display and Instruments

This vehicle is equipped with a PACCAR instrument cluster behind the steering wheel and a battery electric truck display to the right of the steering wheel.



Instrument Cluster

This section explains the new telltale and gauge locations (relative to the previous diesel cluster). The following image shows the location of these telltales and gauges.



Overheat Warning Light



Warning: If a coolant temperature warning shows an overheat condition, or you have any other reason to suspect the EV powertrain may be overheating, take immediate action as explained in "When the Coolant Overheats." Continued operation, even for a short time, may result in a fire, risk of personal injury, or severe vehicle damage.

When the Coolant Overheats

1. Turn on the hazard-warning flasher, immediately pull over to a safe place that does not impede traffic and place the truck in park.
2. Key off the vehicle and contact the PACCAR Customer Center for direction: **1-800-KW-Assist** (1-800-592-7747).

Stop Telltale



Instrument Check: Yes

Location: Cluster

Color: Red

Pull over as soon as possible when the "STOP Sign" telltale on the cluster is activated. Permanent damage to the truck or personal injury could occur with continued driving. After pulling over, call the PACCAR Customer Center: **1-800-KW-Assist** (1-800-592-7747).

Service Vehicle Soon Telltale



Instrument Check: Yes

Location: Cluster

Color: Yellow

The Service telltale will activate when the vehicle needs to be serviced soon.

High Voltage Hazard Telltale



Instrument Check: Yes

Location: Electrification Display

Color: Red

This telltale appears with a popup message when high voltage (HV) components are not functioning as required. Pull over as soon as possible when this telltale on the digital display is activated. Permanent damage to the truck or personal injury could occur with continued driving. After pulling over, call Dana's Real Time Warranty Group.¹



Warning: If "Insulation Fault," "HVIL Fault," or other High Voltage System Faults appear on the Dana display, follow the below instructions. Personal injury, death, or permanent truck damage could occur if the below instructions are not followed.

High Voltage Hazard Procedure:

1. Pull over as soon as possible.
2. Remove the keys from the ignition.
3. Exit the truck.
4. Call the PACCAR Customer Center for guidance: 1-800-KW-Assist (1-800-592-7747).

Regenerative Braking Retarder Telltale



Instrument Check: Yes

Location: Cluster

Color: Green

¹ Dial 1-877-777-5360 and then choose option 4 for Dana's RTW warranty. Agents are available 8:00AM to 5:00 PM EST. Prior to calling, please be prepared to provide the agent with detailed information pertaining to the failure and vehicle.

The regenerative braking retarder telltale will activate when regenerative braking is enabled. After every key cycle, the regenerative braking system will default to enabled.



Warning: Drivers should disable regenerative braking under low traction road conditions (e.g., ice, rain, snow). Failure to comply may result in personal injury, death, equipment, or property damage.

Charging Telltale



Instrument Check: Yes

Location: Cluster

Color: Green

This telltale illuminates if the key is placed in the ignition when the truck is charging. Vehicle safety functions prevent the truck from being driven when the charger cable is connected.



Note: Engage the parking brake to stop the truck from rolling on uneven surfaces. Interlocks do not lock the truck in place. They only prevent operation.

Limited Performance Mode Telltale



Instrument Check: Yes

Location: Cluster

Color: Yellow

The limited performance mode telltale will illuminate when severe derating is occurring on the powertrain. Refer to electric truck display for more information when events such as this occur. If the STOP telltale is not activated, it is possible to continue driving the truck, but the truck's acceleration and deceleration capabilities will be very limited.

Regenerative Braking System Telltale



Instrument Check: Yes

Location: Cluster

Color: Yellow

RBS stands for “Regenerative Braking System.” This telltale illuminates when the regenerative braking system is active and is severely derated or disabled. This can occur when the battery State of Charge (SOC) achieves or exceeds 95%, or due to abnormal operating conditions -- such as extreme ambient temperatures or long downhill grades.

When the RBS telltale is lit, the operator **must** rely on the service brakes. If neither the Service Telltale nor the Stop Telltale are activated, the truck may be driven while the RBS telltale is activated.



Warning: If the Regenerative Braking System (RBS) telltale appears, regenerative braking **cannot** be used to slow the vehicle. The vehicle can only be slowed using the service brakes. The RBS telltale appears when

- The battery State of Charge (SOC) is or exceeds 95%
- Operating in extreme temperatures
- Operating on long downhill grades

Failure to comply may result in personal injury, death, equipment, or property damage.

DC-DC Converter Telltale



Instrument Check: No

Location: Cluster

Color: Yellow

The DC-DC converter is similar to an alternator since it supplies low voltage (LV) power to the truck. This telltale illuminates when the DC-DC converter malfunctions, and LV components could be impacted.

PTO Enabled Telltale



Instrument Check: Yes

Location: Cluster

Color: Yellow

The Power Take Off (PTO) telltale will illuminate if you have an electric PTO (option) on your truck and it is enabled.

Low Charge Level Telltale



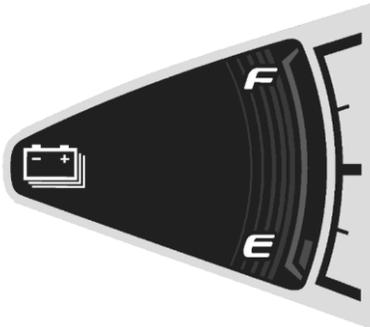
Instrument Check: Yes

Location: Cluster

Color: Yellow

The Low Charge Level telltale is located in the charge level gauge. This telltale will have a yellow illumination when the vehicle's high voltage battery is close to entering Limited Performance Mode and needs to be recharged. When the charge level is within normal operating bounds, this telltale will have white backlighting.

Charge Level Gauge



Location: Cluster

The Charge Level gauge shows the high voltage battery pack's state of charge from 0% (Empty) to 100% (Full) useable energy. When the state of charge is low, the battery telltale on this gauge will have orange illumination.

Power Output Gauge



Location: Cluster

The Power Output gauge shows the power output from the HV battery pack. This includes auxiliary components (for example, cab climate control, powertrain fan, HV battery heater, HV battery chiller, lights, etc.).

Gauge Values

OFF: When the truck is not ready to drive, the gauge's needle will stay at OFF.

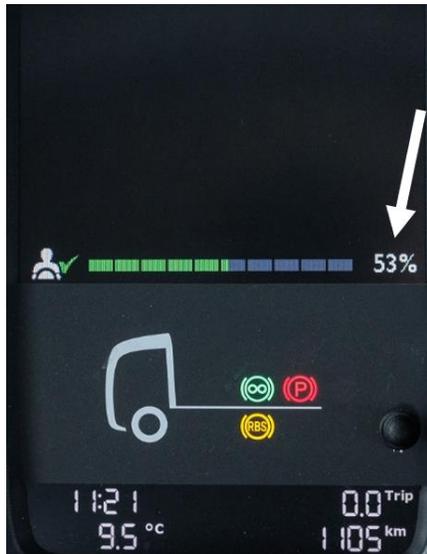
READY: When the truck has started up and ready to move, the needle will initially move to READY.

CHARGE (green region): During regenerative braking events, the needle will hover in the green CHARGE region. As regenerative braking power increases, the needle will move further counterclockwise into the green CHARGE region.

POWER (blue region): While the truck is ready to move but staying at 0 mph, the auxiliary component operation will keep the needle in the blue POWER region. While driving, especially during acceleration events, the needle will move further clockwise into the blue region.

Driver Feedback System

Displayed on the Driver Performance Assistant status bar.



This is a driver reward system for efficient driving. This vehicle does not use the DFS system, but the bar may still appear in the instrument cluster display.

Electrification Display

Three System State Modes (Vehicle state is always display in the top right of the display).

OFF – Low voltage power is present, but high voltage (HV) battery is off.



READY – The HV bus is ON, and the truck is fully operational.



Warning: Do not assume the vehicle is off if the vehicle is silent. Failure to comply may result in death, personal injury, and equipment or property damage.



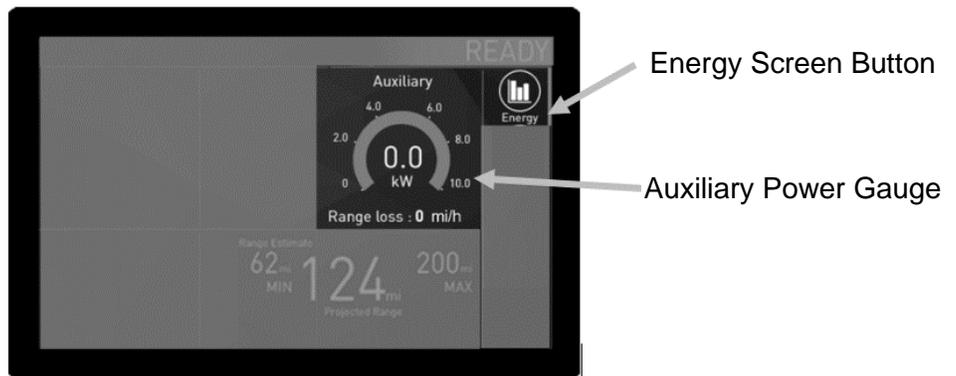
Warning: Remain watchful for pedestrians. This vehicle is much quieter than diesel powered models and a pedestrian may not be aware the vehicle is approaching. Failure to comply may result in personal or pedestrian injury or death.



CHARGE – The HV bus is ON, and charge connector is plugged into the vehicle’s inlet.



Auxiliary Power – The auxiliary power gauge monitors usage of other chassis components. The truck range loss due to auxiliary power usage is shown in miles per hour of truck operation.



Chapter 4 - Quick Start Guide

Charging the High Voltage Battery Pack



Warning: Never spray liquid at high pressure towards the charging port while charging. Failure to follow these instructions can result in serious personal injury or damage to the vehicle, charging equipment, or property.



Caution: Do not store the battery pack above 104 °F (40 °C) for extended time periods. Permanent HV battery damage will occur (see Long-term Storage Requirements on page 33).



Caution: Use a compatible charger when charging the HV battery. Using different types of chargers that are not listed by Dana as compatible may have serious effect on the vehicle's durability. Failure to comply may result in equipment damage.



Caution: After receiving the truck, customers must ensure that its first charge reaches 100% for cell balancing and state of charge reset. Nothing less than 100% (such as 99%) will allow the HV battery pack to perform these steps. Failure to fully charge the HV battery pack to 100% may result in equipment or property damage and poor range.



Caution: During extreme hot or cold ambient conditions, keep the truck plugged in after charging is complete. This will enable the HV battery pack temperature management systems to help keep the battery packs in their optimal operating temperatures for quick startup and to prevent damage from extreme cold for long time periods. Failure to comply may result in equipment or property damage.

Maximum charge rate by battery

Battery Capacity (kWh)	Charge Rate (kW)
141	70.5
209	104.5
282	141



Note: The vehicle cannot be started if it is currently being charged.



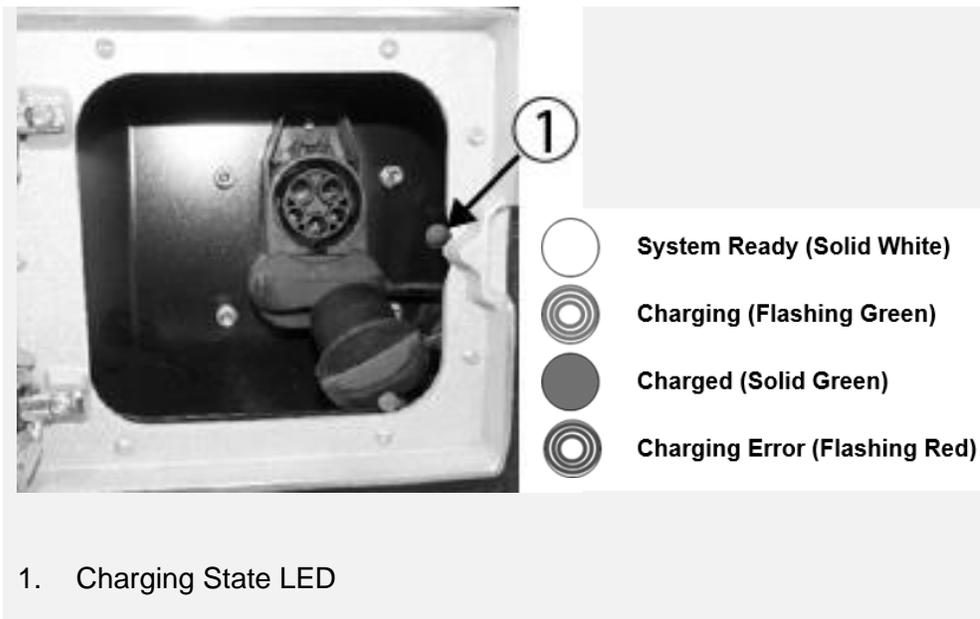
Note: For optimal performance and range, allow the battery to fully charge to 100% state of charge frequently.

Charging Procedure



Warning: If the key is in the accessory/run position after the charge session ends, the vehicle cannot shut down. This will lead to the low voltage batteries discharging, which may result in lower charge than expected when operating the vehicle. Always remove the key from the ignition switch after the charge session ends. Failure to comply may result in injury, death, and equipment or property damage.

1. Key off the vehicle and wait one minute after the high voltage system has shut down.
2. If the key is in the accessory/run position, wait one minute. remove the ignition key.
3. Open the charging port cover, and the charge port LEDs will illuminate WHITE.
4. Connect charging connector to the charge port.
5. The system will run a self-check and activate.
6. The electrification display will show CHARGE, and the charge-port LEDs will turn GREEN.
7. When the charge port LEDs begin flashing GREEN, the vehicle is charging.



Type	Sequence		Potential cause(s)	Action
1	5 White	1 Red	Charge plug not fully seated (OR) Proximity pilot error	1
2	1 White	3 Red	No Control Pilot detected	2
3	2 White	3 Red	Control Pilot Error	2
4	Continuous Red		SLAC Failure	
5	1 White	4 Red	Charge inlet lock error	1
6	1 White	5 Red	Charger indicates cable check has failed	1
7	2 White	5 Red	Charger is unable to precharge to required voltage range	2
8	5 Green	2 White	Vehicle is waiting for energy from Charger	<p>Step 1: Wait for one hour with charger plugged in.</p> <p>Step 2: If same LED pattern continues, terminate charging session and proceed to Action Sequence 2.</p>

Action 1

Step 1: Disconnect the charging plug from the truck, ensure vehicle Key is in 'OFF' position, wait for at least one minute.

Step 2: Look at charger, ensure it is ready for a new charge session.

Step 3: Connect charge plug to vehicle charging port. Ensure charge plug is fully seated and 'locks' into place. When charge plug is seated correctly, the button on the upper surface of the charge plug returns to a neutral position where the button is no longer depressed.

Step 4: If the same LED pattern is observed again, repeat Step-1 to Step-3 while using a different charge plug.

Step 5: If the same LED pattern is observed again after Step-4, follow Action Sequence 2 (below).

Action 2

Step 1: Disconnect the charging plug from the truck, ensure vehicle Key is in 'OFF' position, wait for at least one minute.

Step 2: Look at charger, ensure it is ready for a new charge session.

Step 3: Connect the charge plug to the vehicle charging port.

Step 4: If the same LED pattern is observed again, identify charger make and model. Check if the charger is listed on the interoperability list (for approved chargers) provided in this document.

Step 5: Reattempt Charge Sessions at a minimum of two different approved charging stations from different locations. Use of two different locations will help the operator rule out some failure modes.



Note: Contact your nearest authorized servicing dealership if any of the above error lights are displayed.

8. A flashing red light indicates a charging error.
9. A steady green light means the charge is complete.

When the battery achieves 90% state of charge (SOC), the charge rate is reduced (between 14KW – 7KW) to allow for battery balancing and SOC calibration.

Driving the Vehicle

Operating Procedure – Starting the Vehicle



Warning: Vehicle noise may be reduced in some operation modes. The vehicle operator must remain aware of nearby vehicles or pedestrians at all times. Failure to comply may result in death, injury, or property damage.



Warning: Exercise caution when starting the vehicle when parked or stopped on a steep slope. Do not release the brake until after the accelerator pedal has been engaged to reduce vehicle roll back distance. Failure to comply may result in death, personal injury, equipment, or property damage.



Note: The vehicle cannot be turned 'ON' if it is currently being charged.

1. With foot on brake pedal, turn the key to start position.
2. After a single 'chirp' is heard, release the key.
3. The system will run a self-check and activate.
4. After a double 'chirp' is heard, the display will show READY.



5. With foot on brake, select a gear.
 - a. D-N-R on the PACCAR gear selector.
6. The gear will be show in the PACCAR cluster.
7. Disengage parking brake and drive.



Warning: Do not exceed the maximum vehicle speed (65 mph) while driving downhill. Failure to comply may result in death, personal injury, equipment, or property damage.

Turning the Vehicle Off

1. With vehicle at a standstill, enable the park brake via parking brake knob.
2. Turn the key to the OFF position, system will initiate shutdown.
3. System will run a self-check and disable itself.
4. The vehicle state will momentarily change to OFF before the display turns off.



Turning on Cabin Heating

1. To turn on Cabin Heating, first press the Cabin Heating button indicated in the image (1).
2. A green LED in the center of the Cabin Heating button will illuminate, indicating that the Cabin Heating has been switched on.
3. Change the remaining HVAC controls (temperature knob, fan speed, fan direction) as usual for heating.



Driver Controlled Differential Lock (DCDL) Switch

This switch activates the Driver Controlled Differential Lock (DCDL) located on the drive axle. The lock maximizes vehicle traction and control during unfavorable operating conditions.



Warning: Do not turn on the Driver Controlled Differential Lock (DCDL) when traveling on a road with an elevated grade. Failure to comply may result in a loss of vehicle stability, which could lead to death, injury, or equipment and property damage.

The DCDL can be turned on or off only if the vehicle is standing still or moving at a constant, slow speed with level traction.



Caution: Do not turn on the Driver Controlled Differential Lock (DCDL) when the vehicle's wheels are slipping or losing traction. Failure to comply may result in damage to the axle or other equipment damage.

If the vehicle is losing traction, release the accelerator and return the vehicle to stable traction levels before turning on the DCDL.



Warning: Do not exceed 25 mph when using the Driver Controlled Differential Lock (DCDL). DCDL increases the truck's turning radius, which causes understeer. This may cause an operator to lose control of the vehicle. Failure to comply may result in death, injury, or equipment and property damage.



Chapter 5 - Maintenance



Warning: Repair of high voltage (HV) components or the HV battery is very dangerous and could cause severe burns and electric shock. Never remove or disassemble any HV components, connectors, or cables in this vehicle – HV cables are colored orange for easy identification. All inspections and repairs must be conducted by an authorized and trained service dealer. Failure to comply may result in death or personal injury.



Warning: Do not touch or attempt to remove any orange colored HV cables, connectors, or components. Failure to comply may result in death or personal injury.



Warning: The HV system on this vehicle has no parts that an owner or unauthorized service technician can service. Under no circumstances should you open or tamper with the battery or other HV components. Always contact a certified service dealer. Do not touch or attempt to remove any orange colored HV cables, connectors, or components. Failure to comply may result in death or personal injury.



Warning: Do not tilt cab for maintenance following a collision. The tilting mechanism may be damaged, and a high voltage hazard might exist. Do not touch or attempt to remove any orange colored HV cables, connectors, or components. Failure to comply may result in death or personal injury.



Warning: In the unlikely event of a fire, do not attempt to put out a battery fire using a fire extinguisher. Immediately contact your local fire emergency responders. Failure to comply may result in death or personal injury.



Caution: The HV battery pack requires no routine owner maintenance outside of battery balancing, visual inspections, and long-term storage. If the battery service icon illuminates, contact a PACCAR dealership and do not attempt to service the battery. Failure to comply may result in equipment or property damage.

Normal EV Powertrain Maintenance



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.



Warning: Only use approved air conditioning (A/C) oil as listed in the maintenance chart or on the vehicle's A/C service information label. Use of the wrong oil may lead to malfunction of the high voltage isolation in electric A/C compressor that could cause personal injury, death, and equipment or property damage.



Caution: Only use the recommended fluid for each component, and do not mix a recommended fluid with a different fluid. Failure to comply may result equipment or property damage.

The electric powertrain requires fluid inspections, as well as fluid replacements, at regular intervals. See chart below. Do not attempt to perform any type of maintenance or disassembly of the EV power control unit or EV motor assembly. Doing so may damage the component and/or electrical system.

System	Type of Fluid	Capacities	Service Interval
Cab Heater	TRP Extended Life Coolant (ELC) Prediluted 50/50	3 gal (11.4L)	100,000 mi
Radiator		10.15 gal (38.8L)	
High Voltage Battery Pack (ESS) Chiller		141kWh: 6 gal (22.7L) 209kWh: 8 gal (30.3L) 282kWh: 9 gal (34.1L)	100,000 mi (change fluid)
Power Steering	Automatic Transmission Fluid (ATF) BASF PS386	2.5 qt (2.4L)	First 15,000 mi Then every 1,200,000 mi or yearly
Air Compressor System	Castrol Alphasyn T46 or Chevron Cetus PAO 46	0.4 gal (1.4L)	Once a year or every 1500 operating hours
Cab Air Conditioning	R134a	2.6 lbs	As Needed
	Polyalkylene glycol (PAG) oil (SP-A2 preferred)	150 ml	
Drive Axle Differential	BASF 2986 FE 75W90 (Synthetic)	3.1 gal (11.8L)	Check 25,000 mi
			Replace 100,000 mi

Component Inspection Intervals

Component	Description	Inspection Type	Interval
High Voltage Cables	Verify integrity of cables - look for signs of wear and tear.	Visual	Once a year or during regular scheduled truck maintenance
HV Cable Connectors	 Warning: This inspection must be performed by a Kenworth technician with a Battery Electric Vehicle (BEV) Level Three certification. Failure to comply may result in death, injury, or property damage.	Mechanical	Once every two years
Phase Cables	 Warning: This inspection must be performed by a Kenworth technician with a Battery Electric Vehicle (BEV) Level Three certification. Failure to comply may result in death, injury, or property damage.	Visual	Once a year or during regular scheduled truck maintenance
Phase Cable Connectors	 Warning: This inspection must be performed by a Kenworth technician with a Battery Electric Vehicle (BEV) Level Three certification. Failure to comply may result in death, injury, or property damage.	Mechanical	Once every two years
Coolant In/Out (MCU)	Verify tubes for coolant leaks at entry and exit points.	Visual	Once a year or during regular scheduled truck maintenance
Coolant In/Out (Motor)	Verify tubes for coolant leaks at entry and exit points.	Visual	Once a year or during regular scheduled truck maintenance
Air Vent	Verify the level of dust accumulation and remove any obstruction.	Visual	Once a year or during regular scheduled truck maintenance
Coolant	Check coolant level. Add more if required.	Visual	During regular scheduled truck maintenance

Cleaning the Vehicle



Warning: Do not pressure wash any part of this vehicle. Failure to comply may result in injury, death, or equipment damage.



Warning: Perform the vehicle shutdown procedure before washing the truck. Failure to comply may result in personal injury, death, or equipment damage.



Warning: Do not wash the truck while it is charging. Do not wash the charge port. Failure to comply may result in injury, death, or equipment damage.



Caution: Ask the body builder for guidance on washing any equipment added by the body builder. Failure to comply may result in equipment or property damage.



Caution: Do not get any harnesses, cables, or coolant routes wet. Failure to comply may result in equipment or property damage.

This vehicle's tractor and trailer (if attached) may be washed with normal, faucet-pressure water. This vehicle should not be pressure washed.



Avoid getting any part of the undercarriage wet, especially the areas where the battery systems and cables are housed.

Normal Vehicle Chassis Maintenance



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.

Follow the maintenance intervals as outlined in the truck OEM owner's manual for all necessary chassis inspections and maintenance.

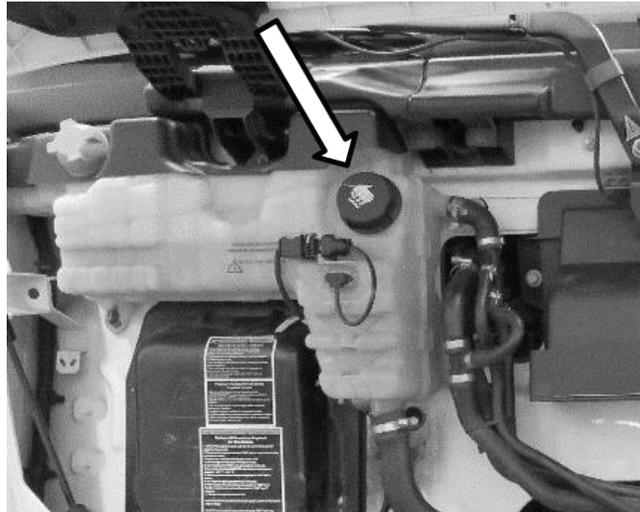


Note: In an extended life coolant (ELC) filled cooling system, the freezing point should be maintained between -30 °F (-34 °C) and -43 °F (-42 °C).

Fluid Level Inspection

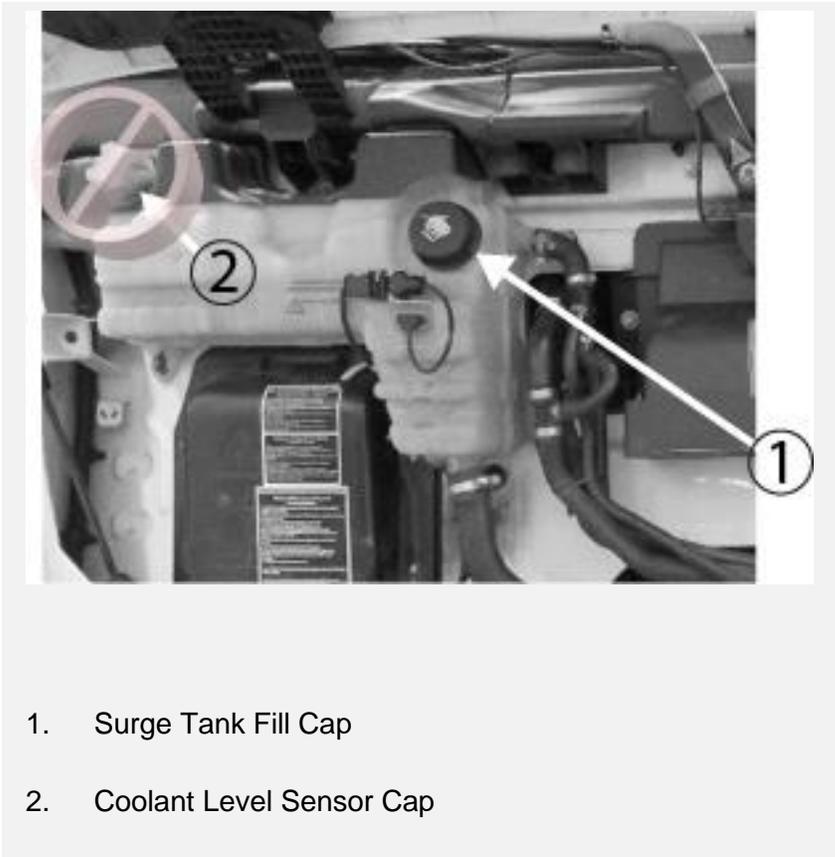
Top off the cooling system when coolant is not full in the surge tanks for all three coolant systems. The powertrain surge tank and HV battery pack chiller surge tank are translucent, which allows the coolant level to be seen. The front-of-cab surge tank uses a fill level indicator to aid in monitoring fluid levels.

Electric Powertrain Coolant Level Inspection



1. The surge tank sight glass should be completely full of coolant (see above graphic for fill port).
2. Coolant levels should be topped off using the procedure HV Battery Chiller Coolant Top Off.

Electric Powertrain Coolant Top Off



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.



Warning: Removing the fill cap from a hot radiator can cause scalding coolant to spray out and burn you badly. Protect face, hands, and arms against escaping fluid and steam by covering the cap with a large, thick rag. Do not try to remove the cap until the surge tank cools down or if you see any steam or coolant escaping. In all situations, remove the cap slowly and carefully. Failure to comply may result in death or serious injury.

1. Wait at least 10 minutes following vehicle operation to allow coolant to cool.
2. Remove the surge tank cap (1).
 - a. **Do not remove** the surge tank coolant level sensor cap (2).
3. Fill system with premixed coolant to "MAX" level on the surge tank.



Caution: When adding fluid, be sure to use fluid of the same type. While many fluids have the same description and intended purpose, they should not be mixed due to incompatible additives. Mixing incompatible fluids may lead to equipment damage.



Caution: Failure to follow this procedure and maintain proper coolant level can cause system failure, resulting in equipment damage.



Caution: Do not overfill the cooling system. Excess coolant may overflow or result in loss of antifreeze and reduced corrosion protection. Failure to comply may result in equipment damage or property damage.



Note: Do not use the pressure cap opening to fill the surge tank with fluid.



Note: Maximum recommended ELC concentration is 60% ELC and 40% water by volume.

Electric Powertrain Coolant Change Instructions



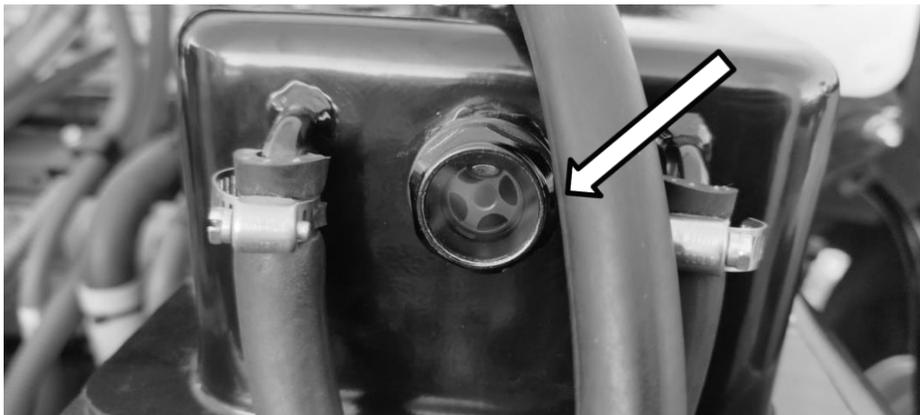
Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.

Dana recommends that a vacuum purge and refill tool be used to drain and refill the cooling system to ensure the removal of air that may cause damage to the circulation pump.



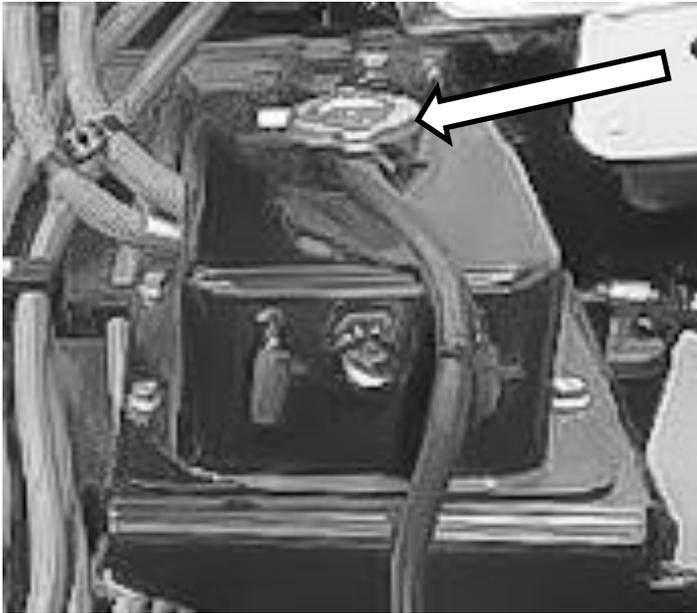
Note: Carefully read the safety instructions that comes with your vacuum tool.

HV Battery Chiller Coolant Level Inspection



1. The surge tank sight glass should be completely full of coolant (see above graphic for fill port).
2. Coolant levels should be topped off using the procedure high voltage (HV) Battery Chiller Coolant Top Off.

HV Battery Chiller Coolant Top Off



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.



Warning: Removing the fill cap from a hot radiator can cause scalding coolant to spray out and burn you badly. Protect face, hands, and arms against escaping fluid and steam by covering the cap with a large, thick rag. Do not try to remove the cap until the surge tank cools down or if you see any steam or coolant escaping. In all situations, remove the cap slowly and carefully. Failure to comply may result in death or serious injury.

1. Wait at least 10 minutes following vehicle operation to allow coolant to cool.
2. Remove the surge tank cap (see graphic).
3. Fill system with premixed coolant to MAX level on the surge tank.



Caution: When adding fluid, be sure to use fluid of the same type. While many fluids have the same description and intended purpose, they should not be mixed due to incompatible additives. Mixing incompatible fluids may lead to equipment damage.



Caution: Failure to follow this procedure and maintain proper coolant level can cause system failure, resulting in equipment damage.



Caution: Do not overfill the cooling system. Excess coolant may overflow or result in loss of antifreeze and reduced corrosion protection. Failure to comply may result in equipment damage or property damage.



Note: Do not use the pressure cap opening to fill the surge tank with fluid.



Note: Maximum recommended ELC concentration is 60% ELC and 40% water by volume.

HV Battery Chiller Coolant Change Instructions



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.

Dana recommends that a vacuum purge and refill tool be used to drain and refill the cooling system to ensure the removal of air that may cause damage to the circulation pump.



Note: Carefully read the safety instructions that comes with your vacuum tool.

Front-of-Cab Coolant Level Inspection

1. The fluid level should be between the MIN and MAX fill lines marked on the surge tank.
2. Fill levels below the MIN fill line should be topped off using the procedure below.

Front-of-Cab Coolant Top Off



1. Surge Tank Fill Cap



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.



Warning: Removing the fill cap from a hot radiator can cause scalding coolant to spray out and burn you badly. Protect face, hands, and arms against escaping fluid and steam by covering the cap with a large, thick rag. Do not try to remove the cap until the surge tank cools down or if you see any steam or coolant escaping. In all situations, remove the cap slowly and carefully. Failure to comply may result in death or serious injury.

1. Wait at least 10 minutes following vehicle operation to allow coolant to cool.
2. Remove the surge tank cap (1).
 - a. **Do not remove** the surge tank coolant level sensor cap (2).
3. Fill system with premixed coolant to "FULL" level on the surge tank.



Caution: When adding fluid, be sure to use fluid of the same type. While many fluids have the same description and intended purpose, they should not be mixed due to incompatible additives. Mixing incompatible fluids may lead to equipment damage.



Caution: Failure to follow this procedure and maintain proper coolant level can cause system failure, resulting in equipment damage.



Caution: Do not overfill the cooling system. Excess coolant may overflow or result in loss of antifreeze and reduced corrosion protection. Failure to comply may result in equipment damage or property damage.



Note: Do not use the pressure cap opening to fill the surge tank with fluid.



Note: Maximum recommended ELC concentration is 60% ELC and 40% water by volume.

Front-of-Cab Coolant Change Instructions



Warning: Before performing any routine maintenance on the vehicle, place the ignition switch in the OFF position, remove the key, turn the low voltage battery disconnect 'OFF', and lock the disconnect in place. Follow the Dana high voltage decommissioning procedure before performing maintenance (see [Towing Safety](#)), and do not attempt any high voltage maintenance. Failure to comply may result in personal injury, death, and equipment or property damage.

Dana recommends that a vacuum purge and refill tool be used to drain and refill the cooling system to

ensure the removal of air that may cause damage to the circulation pump.



Note: Carefully read the safety instructions that comes with your vacuum tool.

Long-Term Storage

Battery EV Storage Requirements Summary		
Duration	Less than 15 days	15 days or longer *
SOC (State of Charge)	40 - 100%	100%**
Environment	Well ventilated	
Ambient Temperature	Must stay within -31°F to 131°F (-35°C to 55 °C)	
Parking Brake	Engaged	
Low Voltage (LV) Disconnect Switch	OFF position	

* If Parked for 90 Days	Drive truck once every 90 days until display reads 90% SOC or less, then plug vehicle into charger to bring SOC to 100%.
** If SOC falls below 40%	Plug vehicle into charger to bring SOC to 100%. Check SOC every 14 days.



Caution: Failure to follow these guidelines may result in poor performance, and potentially unwarrantable repairs. Refer to your local Kenworth dealership for the latest Storage maintenance and In-Service procedures.



Note: Following prolonged storage, there may be significant variation in the consistency of cells during initial operation causing a reduction in range. However, after running for two weeks, the BMS equalization function can help improve consistency and restore optimal range potential.

Chapter 6 - Information

Warranty Schedule

This Battery Electric Powertrain Warranty Schedule applies only to original factory equipment and is subject to the terms and limitations in the attached Limited Warranty Agreement.

Pursuant to the terms of the attached Limited Warranty Agreement, Kenworth Truck Company will pay warranty claims for Warrantable Failures within the following maximum limits in time or mileage, **whichever shall occur first**. The Warrantable Failure must be brought to the attention of an Authorized Dealer within 30 days of discovery.

	MONTHS	MILES	HOURS*
Battery Electric Powertrain System [All other components not listed below] This coverage applies to the electric powertrain system, except for additional coverage and warranty exclusions.	12	Unlimited	N/A
Charging Port	12	Unlimited	N/A
Driver Dash Display (HMI)	12	N/A	2,000
ePTO	12	Unlimited	N/A
Functional Safety & Charge Control Unit (FS-VCU)**	36	50,000	N/A
Vehicle Control Unit (VCU)**	36	Unlimited	N/A
Electro-Hydraulic Assisted Power Steering Parts & Labor	12	Unlimited	N/A
Parts Only	24	Unlimited	N/A
Air Compressor & Air Dryer Parts & Labor	12	Unlimited	N/A
Parts Only	24	Unlimited	N/A
DC/DC Converter (High Voltage to Low Voltage)	24	Unlimited	N/A
Drive Inverter**	36	Unlimited	N/A
Drive Motor** Thermal Management System & Cooling Module** Regenerative Braking System**	36	Unlimited	N/A
Phase and Resolver Cables	36	Unlimited	N/A
HVAC Compressor and Cabin Heater	36	36,000	N/A
On-Board Charger (BCI20)**	36	50,000	N/A
Battery Chiller System**	36	Unlimited	N/A
High Voltage Battery Junction Box (S-Box)** Battery Management System (BMS)**	72	200,000	N/A
High Voltage Battery / Energy Storage System (ESS)	72	200,000 -OR- 80% Battery Capacity*	N/A

 **Note:** * 'Hours of Service' and 'Battery Capacity' should be confirmed by connecting the designated Service Tool.

 **Note:** ** HVIP Zero-Emissions Powertrain (ZEP) Components.

Your Servicing Dealer Is:



Need Help? Give Us A Call - 24
Hours a Day
1-800-KW-ASSIST
1-800-592-7747

KENWORTH TRUCK COMPANY
P.O. Box 1000
Kirkland, Washington 98083-1000
(425) 828-5000

CANADIAN KENWORTH COMPANY
6711 Mississauga Road N.
Mississauga, Ontario L5N 4J8
(905) 858-7000

Do not remove the manual from vehicle.
Before operating vehicle study the manual carefully.
Read and understand all Warnings, Cautions and Notes.

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