

Safety Recall

Volvo Trucks North America

Greensboro, NC USA

VOLVO

Release Date	Number	Release
05.2023	RVXX2304	03

**Added Important Note
Battery Diagram Updated**

**Akasol Batteries
VNR**

RECALL INFORMATION

Revision Date 06/02/2023

Volvo Trucks has determined that certain VNR electric model trucks could have been built with Akasol battery packs with internal coolant lines that were not properly assembled and result in the loss of coolant which could cause a short in a battery cell. With a short in the battery cell there is a risk of a battery fire and subsequent vehicle fire.

Volvo Trucks has not received any complaints or reports of vehicle crashes because of this safety issue; therefore, Volvo considers this as a proactive measure to protect the public and Volvo's customers from the potential risk associated with this defect.

To ensure that these vehicles meet Volvo's stringent quality requirements, an inspection of each battery by an Akasol representative is required. Certified Volvo BEV dealers will be responsible for scheduling and preparing trucks for inspection. If any manufacturing discrepancies are identified the batteries will be removed and replaced.

Please follow the procedures below to schedule and prepare the truck for inspection.

VEHICLES AFFECTED

Certain 2020 to 2024 Volvo VNR Electric model vehicles manufactured from April 1, 2019 through April 10, 2023.

VEHICLE QUANTITY

There are 132 vehicles affected by this recall (125 U.S, 7 Canada).

Scheduling Inspection

There will need to be Akasol and Volvo representatives on site to complete the battery inspection. Because of this, you will need to schedule the inspection prior to the truck arriving to the service center. To schedule the inspection an eService case will need to be opened.

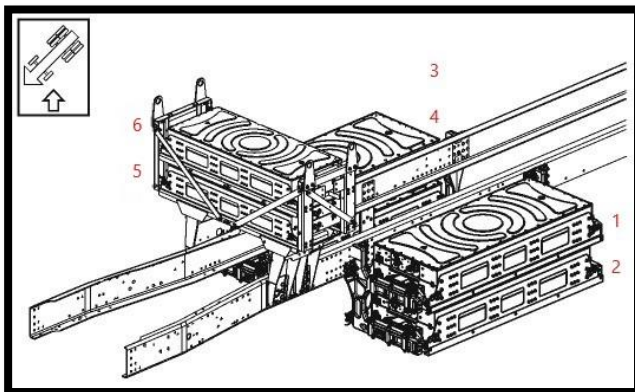
Important Note!
<ul style="list-style-type: none">• In the Area drop down box please select VTNA - eMobility Technical Support group.• In the description field please state the following. In reference to recall number RVXX2304 I need to schedule this truck for inspection.

Once the case has been received and processed the eService team will respond to the case with the scheduled date of inspection.

Inspection Preparation

On the day of inspection, Akasol must perform internal inspections of every battery for quality assurance. The steps below must be performed for them to conduct the inspection.

Important Note!
As you prepare the truck for inspection you will need to take pictures of each battery's data plate to record the battery's serial number. Please add a picture of each data plate in the previously made eService case. Label pictures one through six. Refer to diagram below for battery orientation.



Battery 1 (A)	Left Side Top
Battery 2 (B)	Left Side Bottom
Battery 3 (C)	Right Side Top
Battery 4 (D)	Right Side Bottom
Battery 5 (E)	Rear Cab Bottom
Battery 6 (F)	Rear Cab Top

 **DANGER**

Risk of electrical discharge.

Damaged traction voltage cables can cause electric shocks and arcs resulting in serious burns or death.

- ▶ Check that the traction voltage cables are in good condition before any operation is carried out.
- ▶ Report to the responsible person if any damaged traction voltage cables are found.

 **DANGER**

Risk of electrical discharge.

Incorrect handling of the traction voltage system (>60 V DC) can cause electric shocks and arcs resulting in serious burns or death.

- ▶ Decommissioning and commissioning must only be carried out by personnel with adequate certification according to **Safety regulations, electric vehicles**, in function group 30.
- ▶ The steps described in the instruction are minimum requirements.
- ▶ Always comply with the local legislation or regulations with stricter safety requirements, including but not limited to, measuring tools and personal protective equipment to be used.

 **DANGER**

Risk of electrical discharge.

Defective gloves can result in electric shocks resulting in serious burns or death.

- ▶ Always use the gloves described in the instruction.
- ▶ Check gloves for leakage and damage before use, even if they are new.
- ▶ Ensure that gloves are completely dry before use.

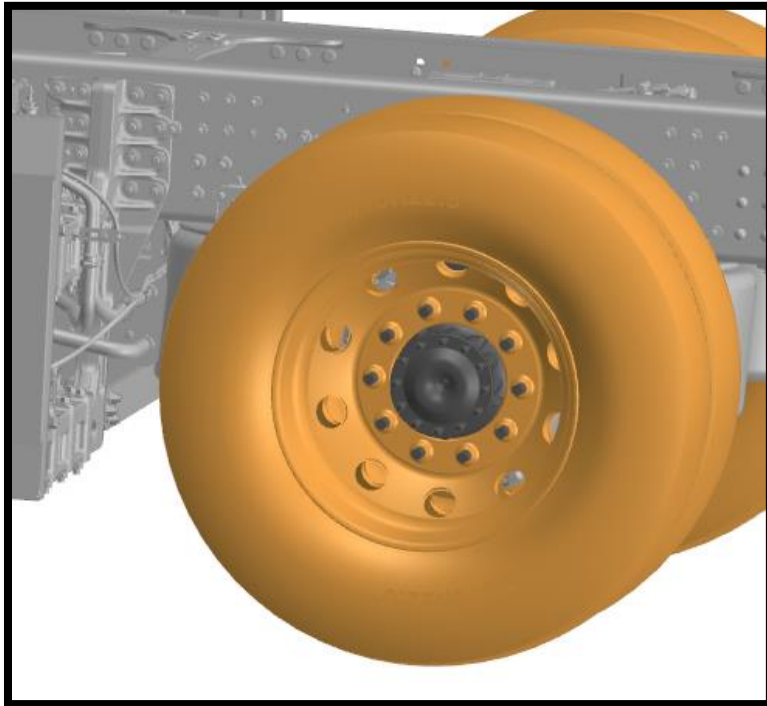
Note: The truck does not have to be decommissioned. All electrical and coolant connections can remain in place and attached.

Important Note!

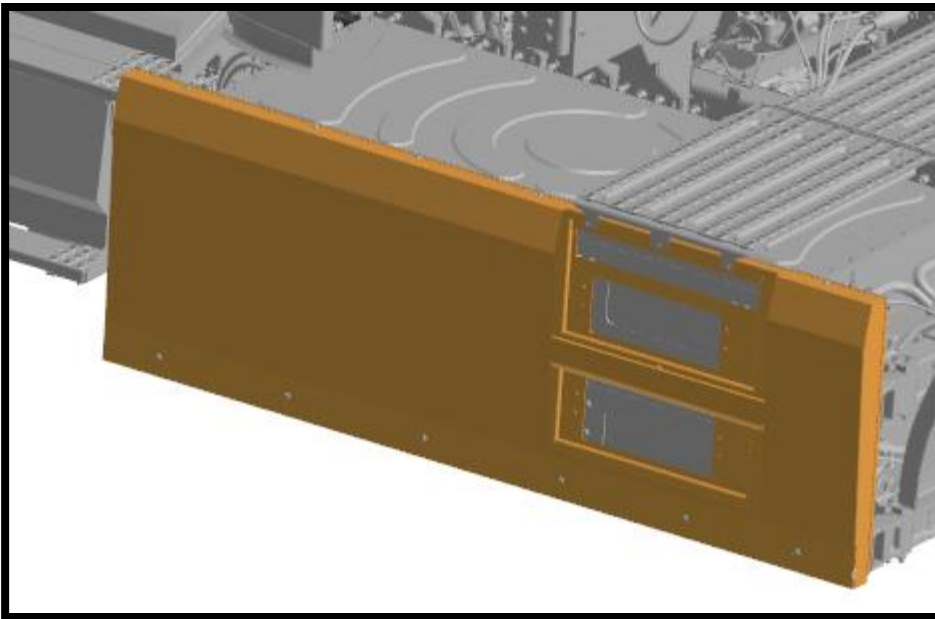
When pulling truck into the shop please insure there is at least six feet of clearance on the driver's side of the truck to allow room for Akasol tech to borescope the gantry batteries.

Perform the Following steps on both sides for frame mounted batteries.

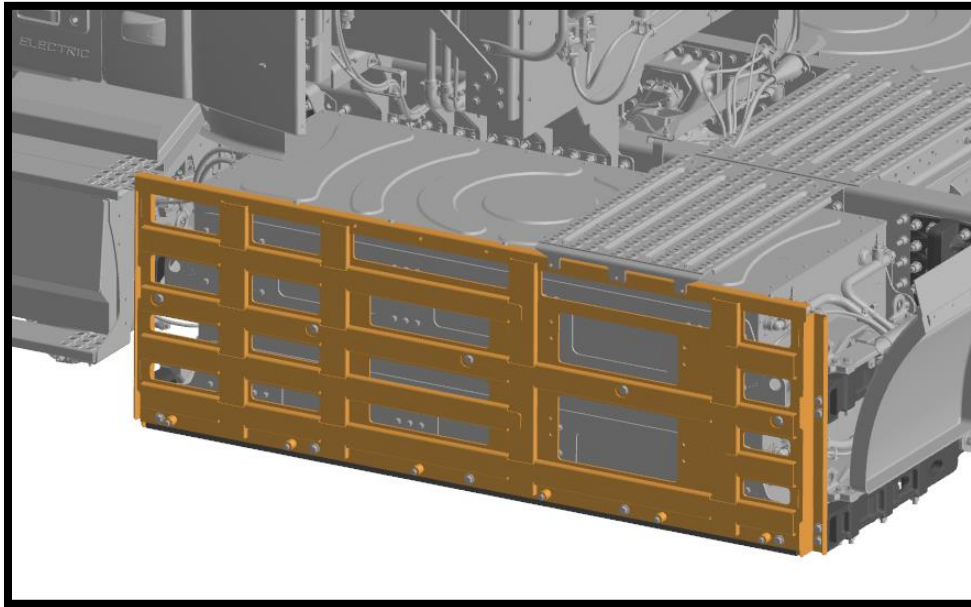
Step 1. Remove the front rear axle wheels and tires.



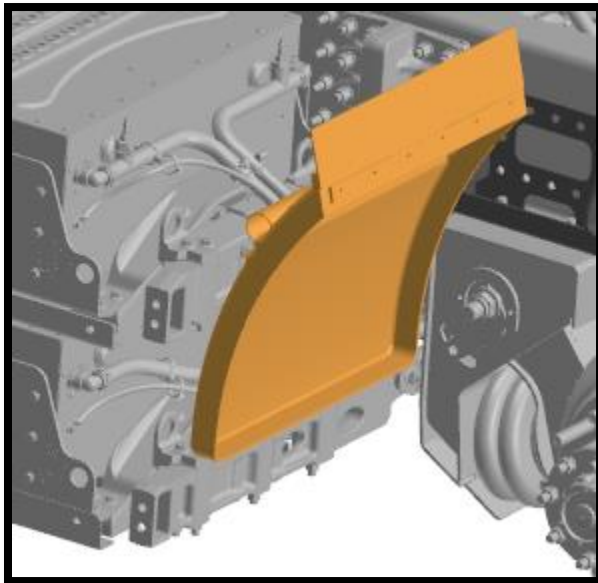
Step 2. Remove the ESS covers.



Step 3. Remove the crash guard.

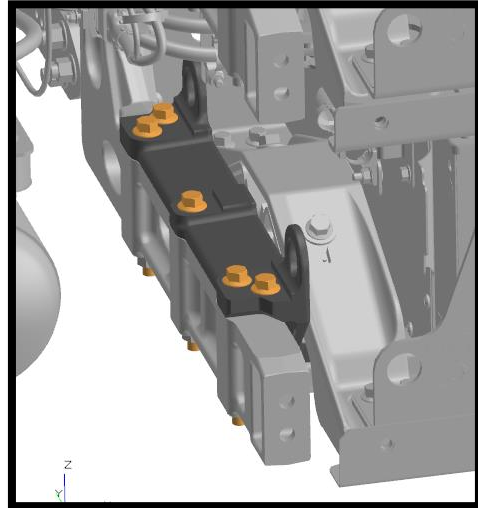
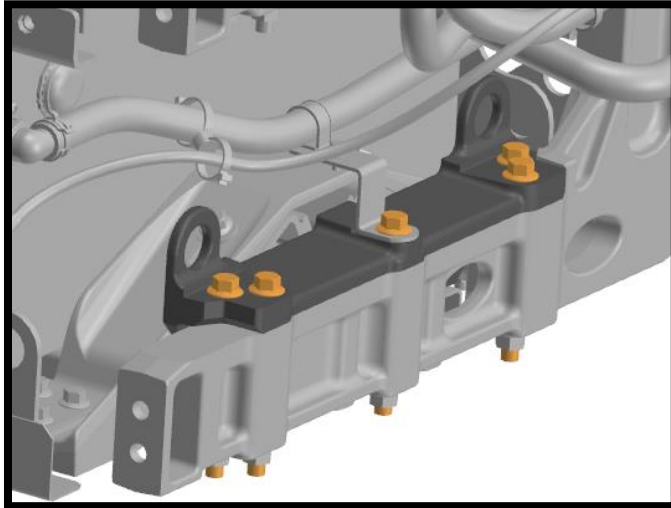


Step 4. Remove the mudflap.

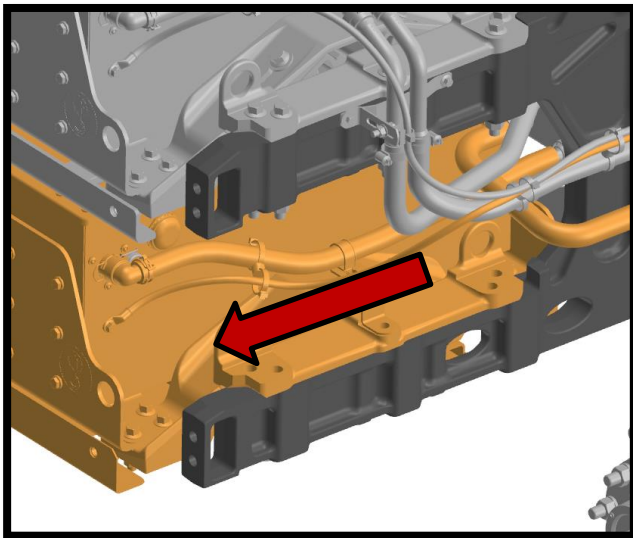


Perform the following steps for both lower side mounted batteries.

Step 5. Remove mounting fasteners for the lower frame mount ESS's.



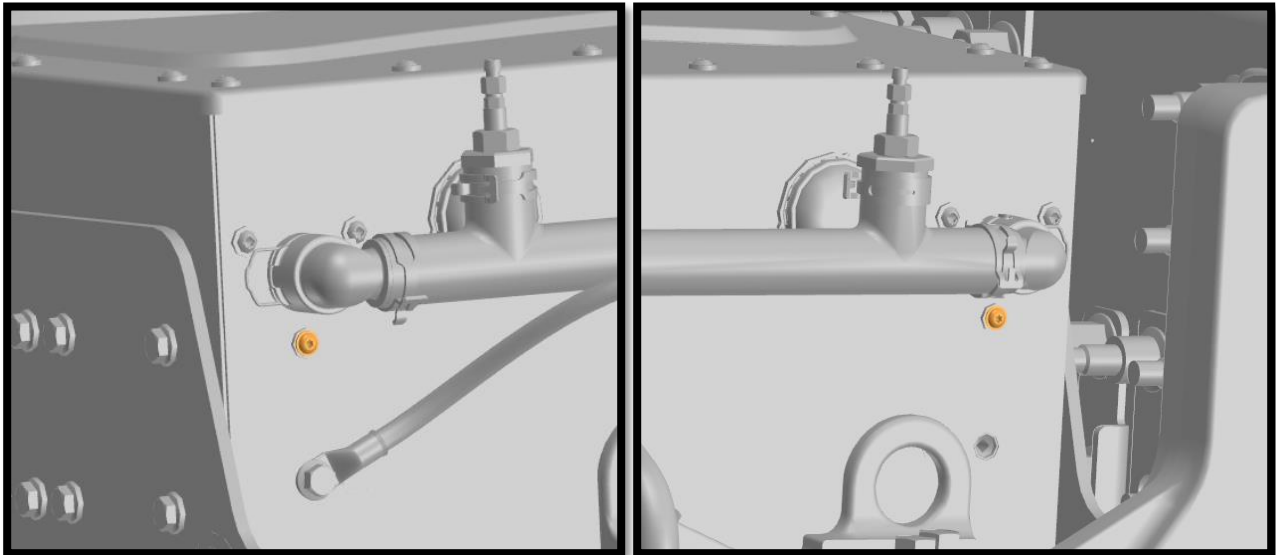
Step 6. Carefully slide both lower ESS outward so the inboard screw can be accessed with the borescope.



Important Note!

Slack exists in the coolant and electrical connections to allow this movement, but it is limited. Take care to not stretch any of the connecting hoses or wires.

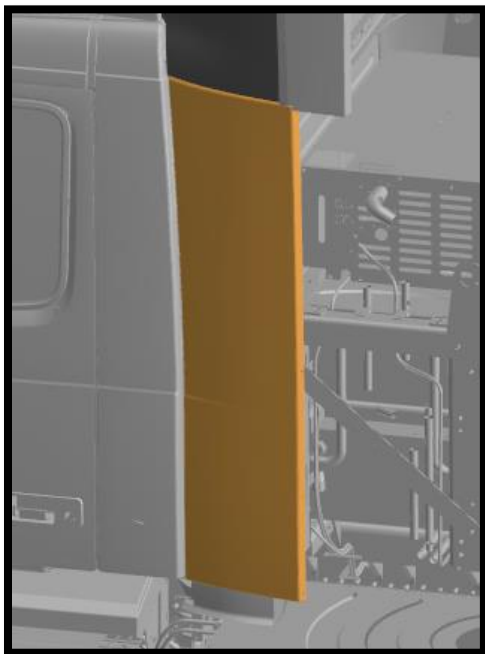
Step 7. Remove the bottom screw on both the inlet and outlet coolant ports on both frame mounted ESS'S to allow borescope access.



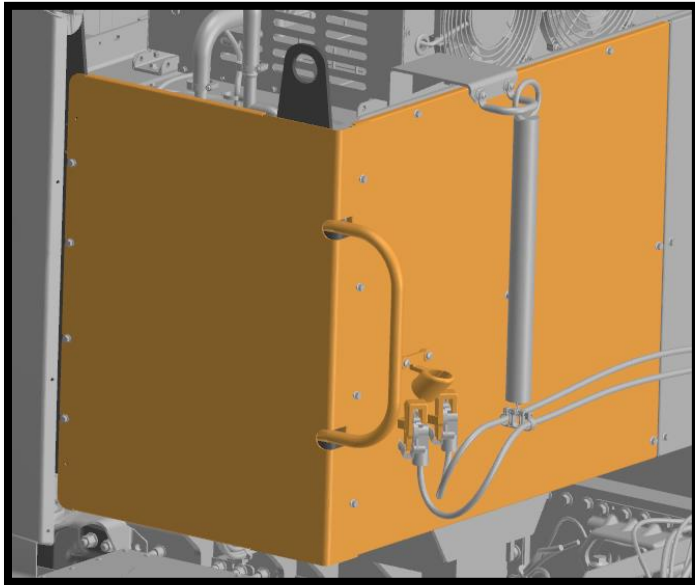
Frame mounted ESS's are now ready for inspection by Akasol.

Perform the Following Steps for the gantry mounted ESS

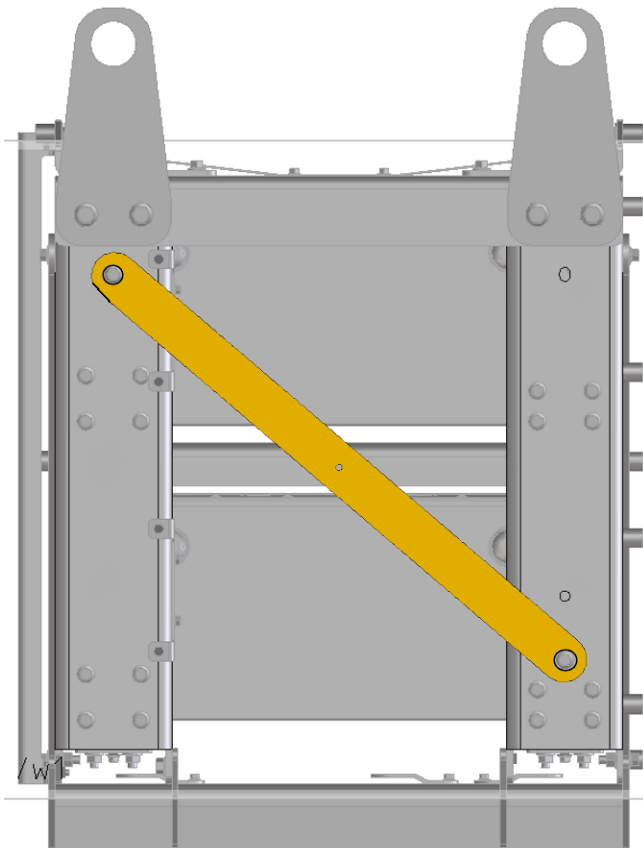
Step 8. Remove left cab extender.



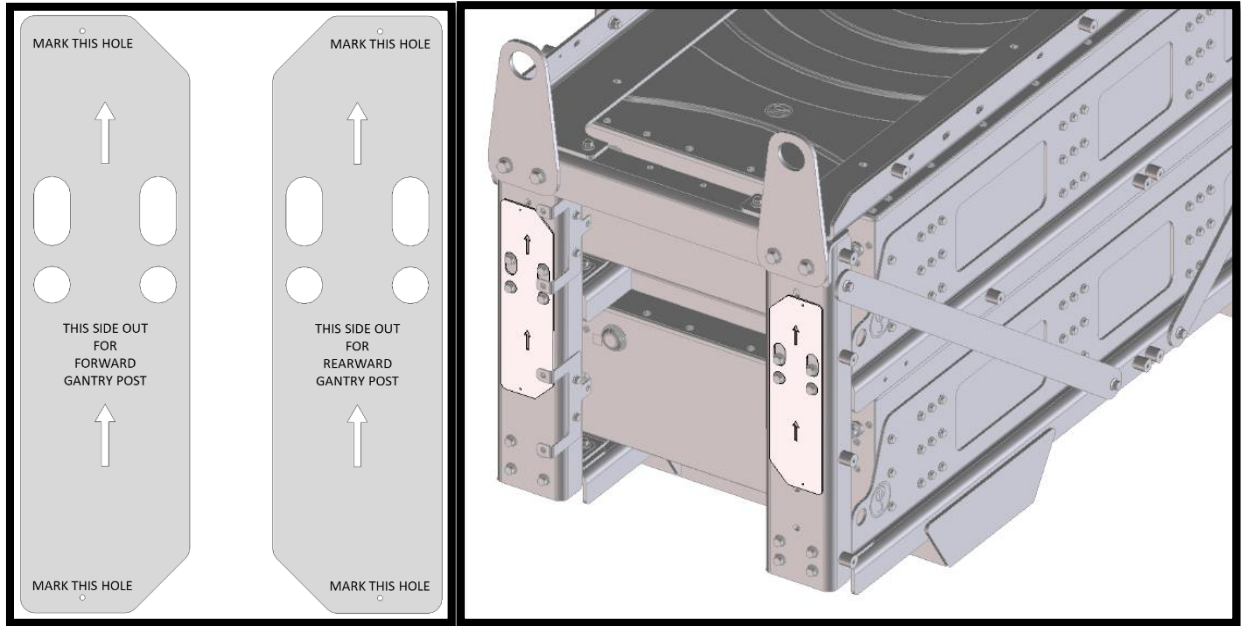
Step 9. Remove the covers and grab handle.



Step 10. Remove gantry cross brace.



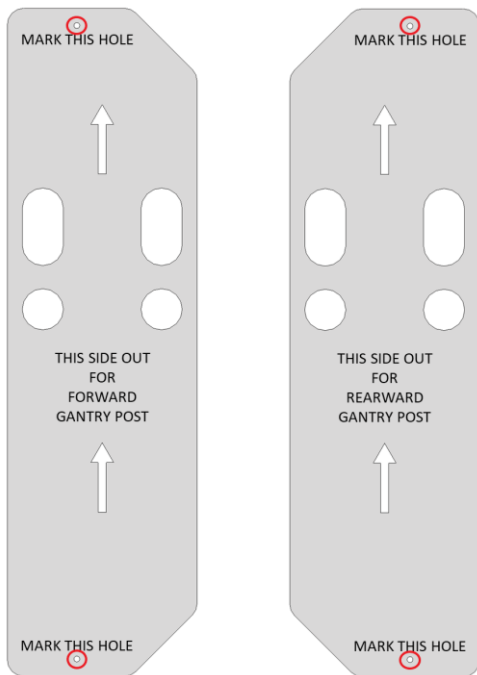
Step 11. Place drilling template on gantry posts according to instructions on the template.



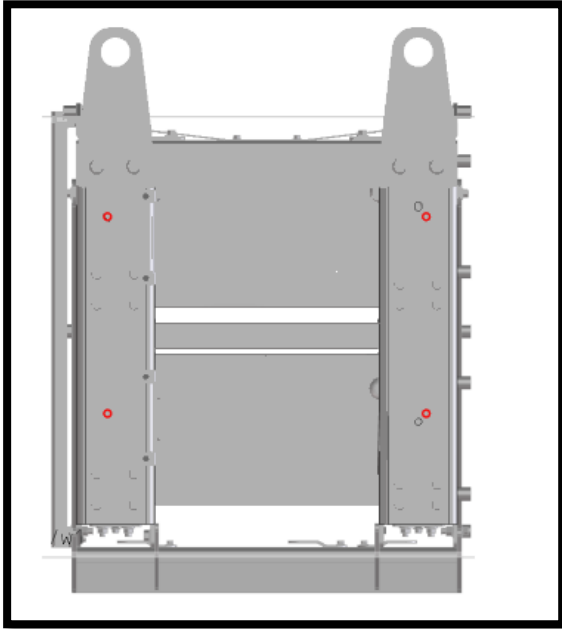
Important Note!

There is only one tool, it is reversible so it can be used on the front and rear gantry posts.

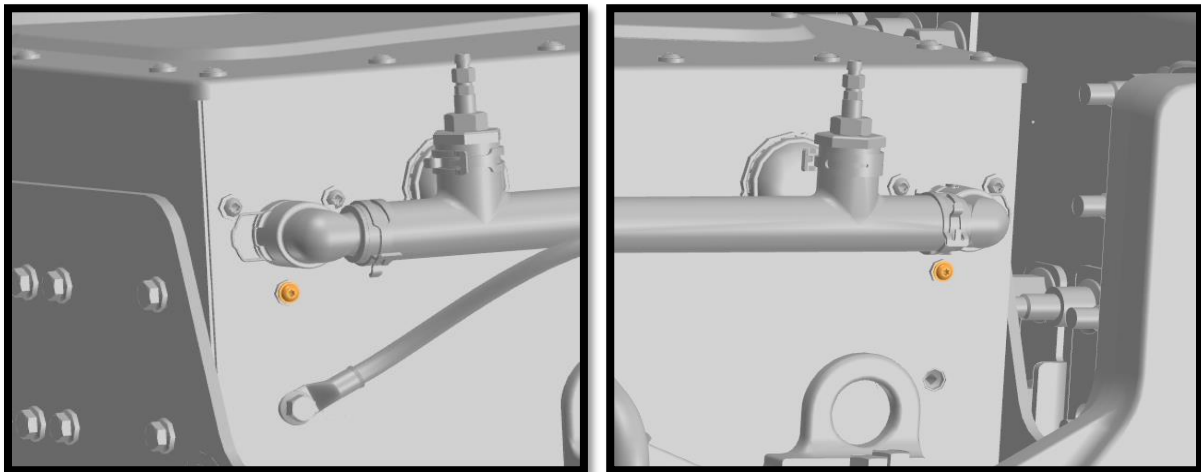
Step 12. Mark top and bottom holes on both the front and rear gantry post.



Step 13. Drill a 14mm hole at all four marked locations. Paint the drilled holes for corrosion protection.



Step 14. Remove the bottom screw on both the inlet and outlet coolant ports on both gantry mounted ESS's to allow borescope access.



Gantry ESS's are now ready for inspection by Akasol.

Important Note!

Akasol will be responsible for installing new sealing washers and screws in the ESS at the borescope access points.

Battery Status

The Akasol technician performing the inspection will inform you of the status of all six batteries.

- Green- No Defects
- Yellow- Defect (Replacement Needed)
- Red- Severely Damaged (Replacement Needed)

You will need to document the status of all six batteries. There is a provide Recall Worksheet at the end of the of the document that will need to be printed and filled out. Once the Recall Worksheet is completed, please upload it to the previously made eService case. If all six batteries have a green status you can proceed to the Truck Reassembly steps.

Battery Replacement

If battery replacement is required, follow operation 3100-09-01-04 for Traction voltage system decommissioning in Impact. Once traction voltage system is decommissioned follow battery replacement instructions in Impact. Use the table below to find the correct instructions according to battery location.

Battery Location	Impact Operation ID
Traction Battery 1 (A)	3121-03-03-04
Traction Battery 2 (B)	3121-03-03-05
Traction Battery 3 (C)	3121-03-03-06
Traction Battery 4 (D)	3121-03-03-07
Traction Battery 5 (E)	3121-03-03-08
Traction Battery 6 (F)	3121-03-03-09

NEW COMMISSIONING PROCESS!

You will need to follow an updated process to commission new replacement batteries. The Volvo representative on site will provide you with new the commissioning instructions, which will include steps to pressure check and isolation fault testing for all new batteries.

Once all needed battery replacements and new battery checks are completed, please follow operation 3100-09-01-03 for Traction voltage system commissioning in Impact.

Important Note!

Please refer to Design and Function document ID number 161186507- [Storage, Handling and Transport of Traction Batteries](#) in Impact under function group 312 for information on how to handle and ship the batteries.

Ordering instructions

Replacement batteries will need be ordered VOR using part number 24203806.

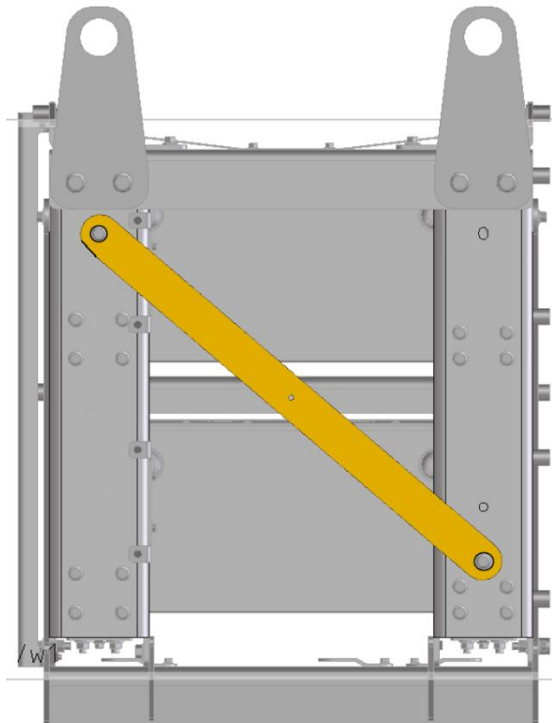
Truck Reassembly

Once inspection and any needed repairs are complete, please follow instructions below to return truck to service.

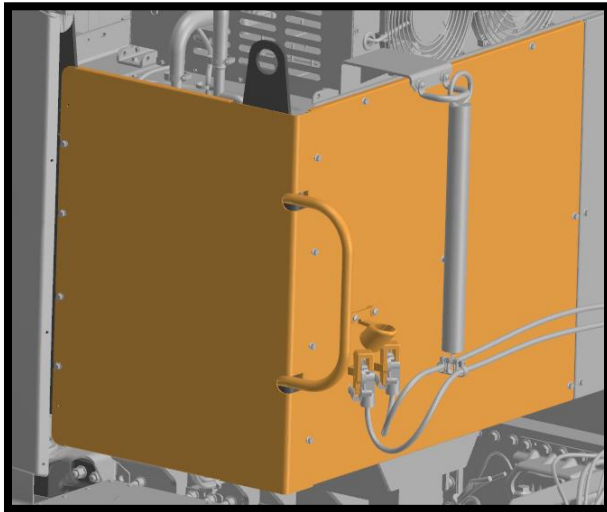
Standard Assembly Torque by bolt size.

Thread	Assembling Torque (Nm)
M6	10 ± 1.5
M7	17 ± 3
M8	24 ± 4
M10	48 ± 8
M12	85 ± 15
M14	140 ± 25

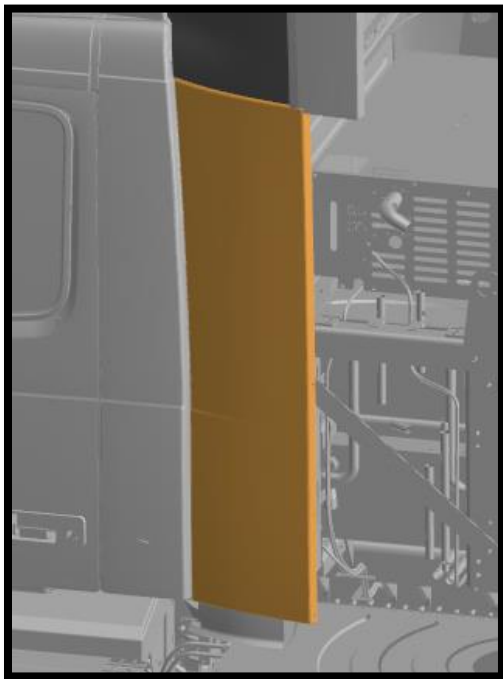
Step 1. Install gantry cross brace.



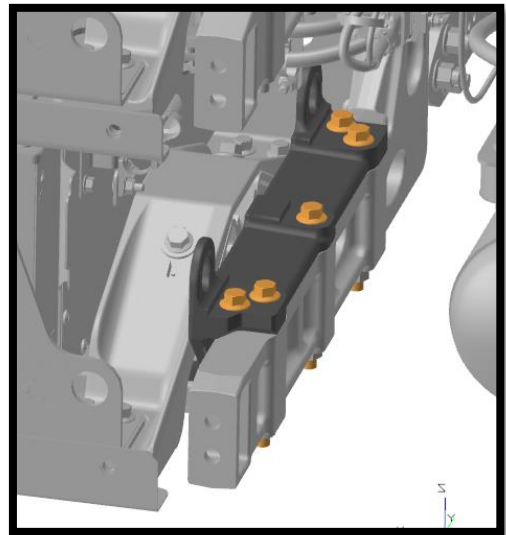
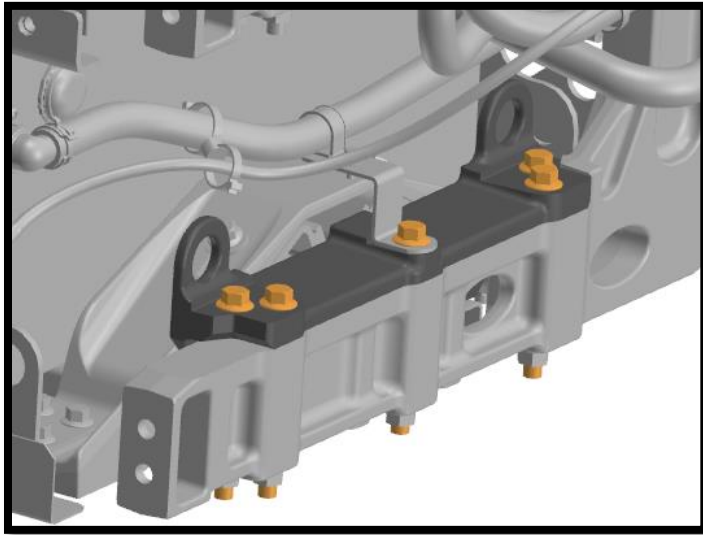
Step 2. Install the covers and grab handle.



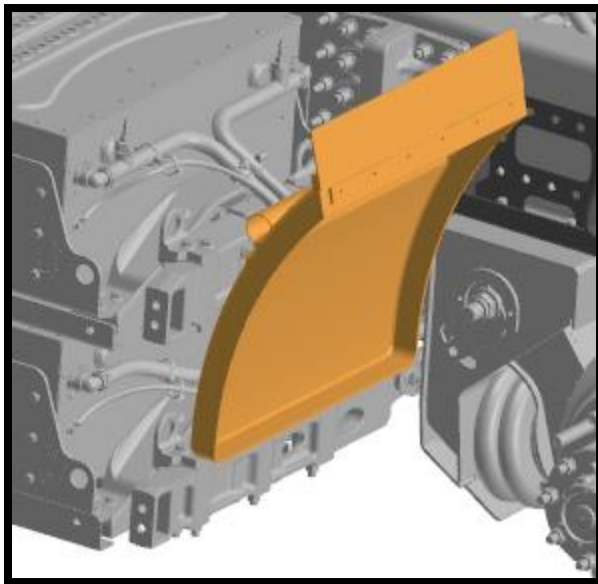
Step 3. Install cab extender.



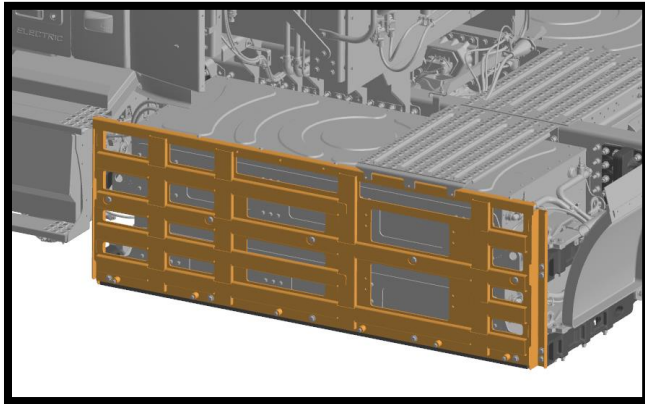
Step 4. Reposition the lower ESS's. Install the ESS mounting fasteners.



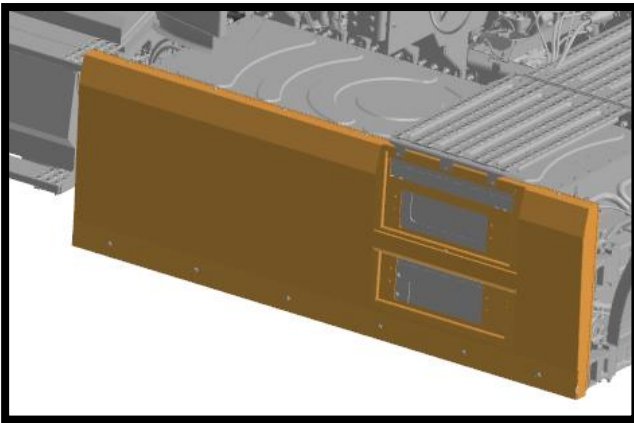
Step 5. Install the mudflaps.



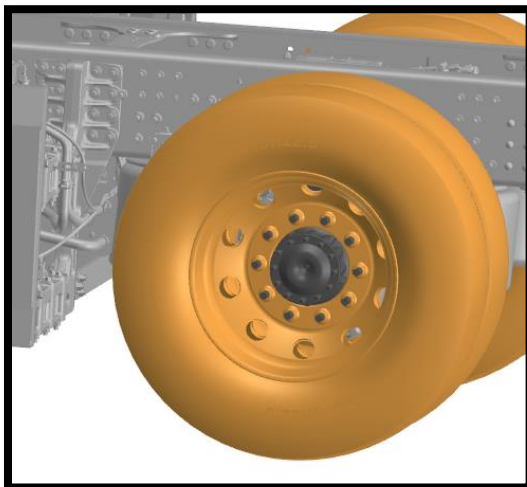
Step 6. Install the crash guards.



Step 7. Install the ESS covers.



Step 8. Install the front rear axle wheels and tires.



Step 9. Return truck to service.

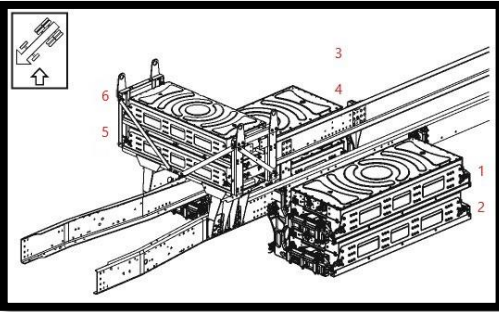
Important Note!

**Truck cannot be release until
you receive an update from
the eService case stating that
the truck is approve for
release.**

Parts

Part Number	Part Description	Quantity
24203806	Battery	As Needed

REIMBURSEMENT

This repair is covered by an authorized safety recall. Reimbursement is obtained through the normal claim handling process.	
	UCHP Reimbursement
Claim Type (used only when uploading from the Dealer Business System)	40
Recall Status	
Vehicle repaired per instructions	1-Modified per instructions
Labor Codes	
3122-03-02-21 Disassemble & reassemble for bore scope inspection	6.0
If battery replacement is required. (Once per vehicle)	
3100-09-01-04 Decommission	0.9
3100-09-01-03 Recommission	1.2
Battery Replacement-	
3121-03-03-04 R&R Battery #1 (A) Left Side Top	3.8
3121-03-03-05 R&R Battery #2 (B) Left Side Bottom	5.0
3121-03-03-06 R&R Battery #3 (C) Right Side Top	4.9
3121-03-03-07 R&R Battery #4 (D) Right Side Bottom	3.7
3121-03-03-08 R&R Battery #5 (E) Rear Cab Top	3.1
3121-03-03-09 R&R Battery #6 (F) Rear Cab Bottom	2.9
	
Causal Part	24203806
Authorization Number	C0296

Note: Dealers are to perform this Safety Recall Campaign on all subject vehicles at no charge to the vehicle owner regardless of mileage, age of vehicle or ownership (original purchaser or subsequent purchasers). Whenever vehicles are subject to a Safety Recall are brought to your dealership for service, or taken into your dealership vehicle inventory, it is strongly recommended that every effort be made to perform the recall correction before the vehicle is sold or released to the owner.

Print, fill out, and upload to eService when completed.

RVXX2304 Recall Worksheet

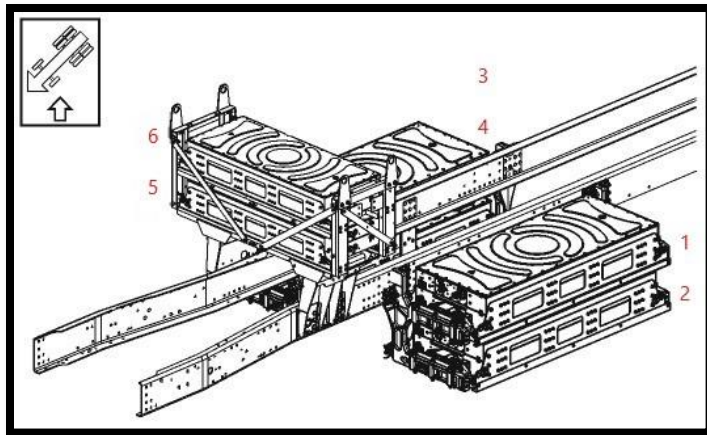
Date _____

Dealer Technician _____

Akasol Technician _____

VIN# _____

Miles _____



Battery 1 (A)	Left Side Top
Battery 2 (B)	Left Side Bottom
Battery 3 (C)	Right Side Top
Battery 4 (D)	Right Side Bottom
Battery 5 (E)	Rear Cab Bottom
Battery 6 (F)	Rear Cab Top

Please check OK, NOT OK according to battery status.

	ESS Serial Number	OK	NOT OK	If Not Ok, Replacement ESS Serial Number
ESS #1				
ESS #2				
ESS #3				
ESS #4				
ESS #5				
ESS #6				