

XOS Technical Service Bulletin

Bulletin No.: TSB-001-24

Date: 1/10/2024

Subject: HV Battery Pack Swap

Applicability: All 2021-2022 Xos SV05 Trucks

Service Category: High Voltage System

Section: High Voltage Battery Packs

Market: USA and Canada

Introduction:

In the event that any of the 2021-2022 Xos SV05 Step Vans require a high voltage battery pack to be replaced, the following steps specify the procedure for the swap.

Vehicle Applicability:

Model Year	Model
2021 - 2022	SV05

Warranty Information:

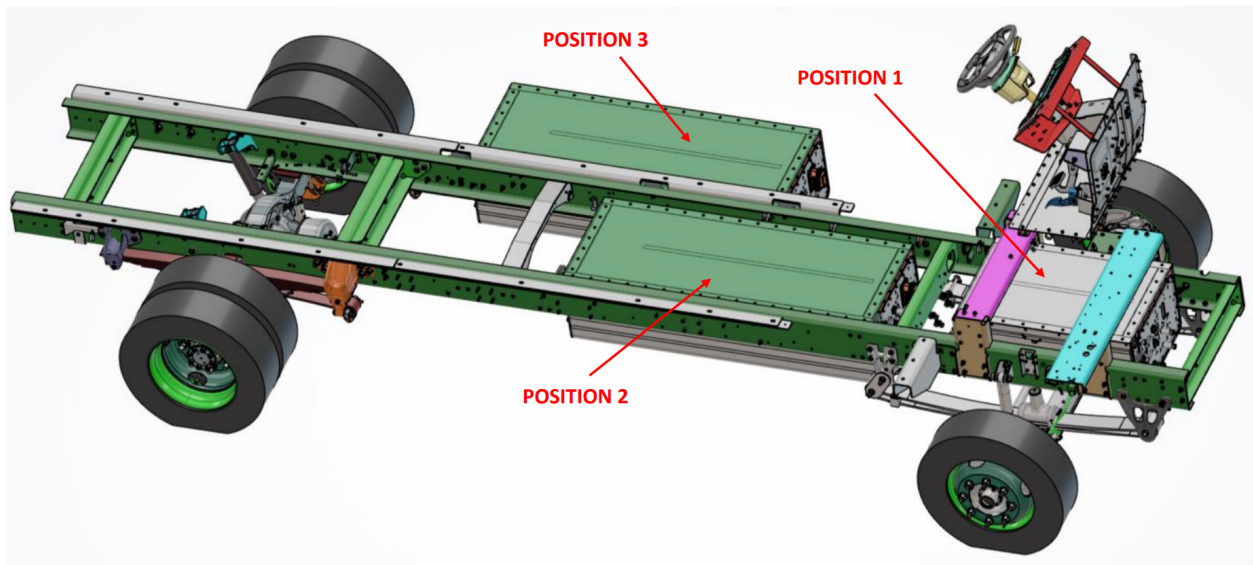
Model	Operation Code	Operation Description	Time (Hours)	Impacted Part Number
SV05	020152	BA04 Pack Swap	3	BA04-PA-A0001
SV05	020151	BA03 Pack Swap	3	BA03-PA-A0001
SV05	02015	TOTAL 3 BATTERY PACK SWAP	9	Variable

Parts Information:

Part Number	Part Name	QTY
BA03-PA-A0001-H/BA04-PA-A0001-G	Battery Pack Assembly	1
HD20-HH-M0168-A	Flange Hex Head, M12 x 1.75mm, 60mm Length, Class 10.9, Zinc-Yellow-Chromate Plated Steel	16 (BA03) / 20 (BA04)
HD20-HH-M0192-A	Flange Bolt M12-1.75 x 25 mm, class 10.9 steel, zinc plated	4
HD40-HH-M0061-A	Washer, Brass, M12 24mm OD, 2.5mm Thick	16 (BA03) / 20 (BA04)

HD20-HH-M0192-A	Flange Bolt M12-1.75 x 25mm, class 10.9 steel, Zinc plated	4
RM02-RG-M0008-A	BA03/4 Mounting Spacer Low Battery Position	2

Battery positions within the chassis are assigned as follows:



The battery packs should be dismantled and mounted pursuant to the procedure below in the following order: Position 1, Position 3, Position 2.

The same procedure should be used to dismantle and mount each of the battery packs, with some variability for supporting the weight of each battery pack. The procedure and battery-pack specific instructions are as follows:

1. Position the vehicle in the service shop with adequate space to operate the recommended forklift around the front of the vehicle.
2. Turn the master switch OFF and apply appropriate lock-out/tag-out devices to ensure a safe working environment while HV system components are being serviced.
3. Remove the battery pack mid-pack connector.
4. Disconnect the HV positive (+), HV negative (-) and low voltage data connectors from the front battery pack.
5. Fasten RM02-RG-M0008-A Mounting Spacers to the new battery pack using HD20-HH-M0192-A Flanged Bolts at the bottom. This performs two vital functions: first, it creates clearance with the heads of bolts that might otherwise interfere with installation, and second, it seals the unused bolt holes. Torque to 108 Nm.



6. Each battery pack position varies in terms of supporting/lifting it. Please refer to the instructions below unique to each pack position.
7. After supporting the battery pack for removal, loosen the bolts of the mounting brackets from both the chassis and battery sides. This will help dismount the battery pack from the brackets easily.



8. Carefully remove the mounting bolts from the battery packs to dismount the battery pack from the vehicle.
9. Once the procedure of lowering the old battery pack is complete and stored safely on the crate. Carefully align the new battery pack with the already installed mounting spacer to the mounting brackets. When raising the pack into the chassis, please follow the battery pack position-specific lifting instructions below.
10. Hand tighten HD20-HH-M0168-A Bolts & HD40-HH-M0061-A washers to fasten the battery pack to the mounting bracket to ensure proper thread alignment.
11. Note that there are HV cables and other items threaded through the cutout of each bracket against the frame rail. Be certain to identify and correctly position these items before tightening any bolts. Look out for pinch points and compression events.
12. Torque the bolts on the bracket to chassis to 95 Nm and the bracket to pack to 108 Nm.



13. Note that different battery pack sizes require a different number of bolts. BA03 (longer length pack) accommodate for 8 bolts on each mounting bracket while BA04 (shorter pack) accommodate for 10.
14. Connect the low voltage connector.
15. Connect the high voltage cables.
16. Be certain to validate every step, ensure all bolts are torqued, and cables are connected and not pinched before finally connecting the mid-pack connectors.

Positioning New Battery Packs for Lifting:

- A. Position the battery pack resting on 4x4 segments arranged along the centerline of the box, with the 4x4 spacers arranged centered on the box centerline and across the shorter axis of the box (see photos). This is the position that will be required to lift the battery pack with the forklift



- B. Once the extension forks are installed, lift the battery pack and line up on the vehicle centerline.



Battery Pack Position 1

Removal/Install Procedure:

1. Position the forklift to support the front bumper.
2. Remove the four bolts holding the front bumper and crossmember in position on the chassis. Remove both the bumper and crossmember.



3. Use the forklift to dismount/mount position 1 battery pack. This requires two persons of which one is the careful forklift operator and the other is the guide. Be mindful of surroundings and do not rush the procedure.

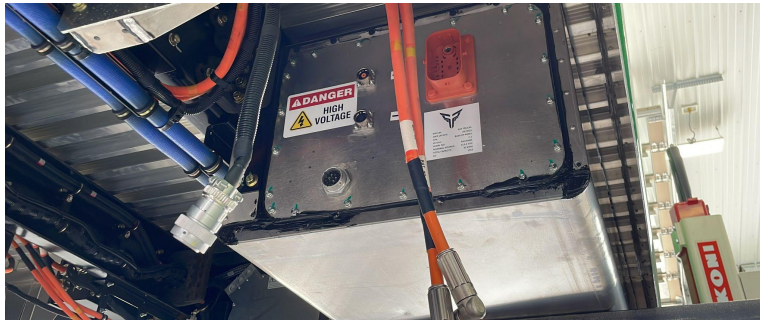


Battery Pack Position 3

Note: Battery pack Position 2 is the last to dismount/mount.

Removal/Install Procedure:

1. Position the forklift to support battery pack position 3.
2. Follow the steps above to dismount/mount the battery packs from the vehicle.



Battery Pack Position 2

Note: Battery pack position 2 is the last to dismount/mount.

Removal/Install Procedure:

1. Position 2 battery pack requires a lifting table to mount/dismount it.
2. Follow the steps above to dismount/mount the battery packs from the vehicle.

