Removing the high-voltage distribution box



Overview

HV Junction Box As of this writing, the replacement 2nd generation HV junction box for RWD vehicles is no longer available, and the vehicle must be retrofi.

Key Takeaways

Removing a high-voltage distribution box requires strict safety precautions, proper PPE, and careful disconnection of all high-voltage cables before removal.

Safety First

Before attempting to remove a high-voltage distribution box, ensure all power sources are completely disconnected. Use a voltage tester or multimeter to confirm that no voltage is present in the system ( ). Always wear insulating gloves rated for high voltage (minimum class 0, 1000V), safety goggles, and rubber-soled shoes to protect against electric shock and arc flash ( ).

Only qualified personnel should perform this task due to the risk of electrocution.

Preparation

Identify all high-voltage connections: Mark cables leading to batteries, inverters, or other components to avoid confusion during reinstallation ( ). Gather tools: Insulated screwdrivers, wrenches, and any manufacturer-specified tools are required. Ensure all tools are rated for high-voltage work ( ).

Clear the workspace: Remove any obstacles and ensure a safe working area to prevent accidental contact with live components.

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Step-by-

Step Removal

Power down the system: Turn off the main power supply and disconnect all phase and neutral wires. Verify zero voltage with a tester ( ). Remove protective covers: Unscrew and remove the distribution box cover to expose internal wiring ( ).

Disconnect high-voltage cables: Carefully release connectors and unscrew terminal nuts securing HV cables. Label each cable for proper reconnection if needed ( ). Check for residual voltage: Ensure that all capacitors or stored energy in the system are discharged before proceeding ( ).

Remove the box: Unscrew mounting brackets or tabs holding the box in place. Gently pull the box away from the wall or mounting surface ( ). Inspect components: Check for any damage to wires or connectors.

Replace any worn or damaged parts before reinstalling or disposing of the box ( ).

Additional Considerations

Do not attempt removal if unsure: High-voltage systems are extremely dangerous. Contact a licensed electrician or service engineer if you are not trained ( ). Follow manufacturer guidelines: Some high-voltage junction boxes, such as those in electric vehicles, may have specific procedures and torque requirements for connectors ( ).

Proper disposal: If the box is being decommissioned, follow local regulations for disposal of electrical components. By following these steps and prioritizing safety, you can remove a high-voltage distribution box while minimizing the risk of injury or equipment damage.

Article Content

HV Junction Box

As of this writing, the replacement 2nd generation HV junction box for RWD vehicles is no longer available, and the vehicle must be retrofitted with a dual motor HV

How to Strip a High Voltage Box

Removing and replacing a high voltage breaker box requires the disassembly or stripping of parts and wiring installed into the box. As long as you take the necessary safety precautions, stripping a high

Removing and installing/replacing positive battery cable power ...

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For vehicles with additional electrical systems (48V electrical system, high-voltage vehicle electrical system), it is mandatory to deactivate them before disconnecting the vehicle battery.

How to remove circuit breaker from panel box?

This article will introduce the concepts of circuit breakers and distribution boxes to readers, as well as how to remove circuit breakers from distribution boxes.

Replace right power distribution box (after vehicle diagnosis)

Ignition is switched off. On PHEV and BEVE vehicles, the high-voltage system is de-energised. Deactivate additional electrical storage devices by opening bonnet.

Tesla Model S: HV Junction Box

Disconnect the low voltage harness connection on the rear LH side of the HVJB . Release the 4 bolts that secure the HVJB to the body (torque 5 Nm). Remove the HVJB from the vehicle.

Controller

Press the connector locking tab, rotate the lever arm to release, disconnect the electrical harness from the high voltage controller connector, and then remove

Tesla Model S: HV Junction Box

Disconnect the High Voltage Interlock (HVIL) loop connector and position it aside. Disconnect the junction box to master charger connectors (x5). Note: Note installed position of components before

ASSEMBLY! EV High Voltage Junction Box

In this video, Kenny explains the components that make up a HVJB, and highlights the construction process of our Atom Drive high voltage junction boxes, which are made and tested in house,...

Instructions for HV Battery Electrical Disconnection Model S, Model X ...

It includes a procedure to carry out measurements to make sure that the High Voltage battery contactors are open and no High Voltage is present on the vehicle components.

Vehicle HV Disablement Procedure

This procedure can only be performed on vehicles with the large rear drive unit. If the vehicle has the small rear drive unit, perform the "Checking for

ElectricityHazardsSafetyGuide dd

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Industrial voltage Some large industrial customers are supplied with electricity directly from the high voltage (HV) distribution system, and operate their own high and low voltage networks.

Full Guide to Manual Service Disconnect

A Manual Service Disconnect (MSD) is a crucial safety device in electric and hybrid vehicles, designed to isolate high-voltage battery systems during maintenance or emergencies. This

Understanding the Importance and Safety Features of High-Voltage ...

As more folks start adopting high-voltage setups, it''s really important for everyone—stakeholders, engineers, operators alike—to understand how vital these distribution

High-Voltage Electrical Safety

Electrical distribution system Electricity is transmitted from generating stations and substations via high-voltage transmission lines at 60–500 kV (60,000–500,000 V). These lines are

How to Master High-Voltage Switchgear: Operations & Faults

High-voltage switchgear is are essential electrical product used across power generation, transmission, distribution, conversion, and consumption. They manage switching, control, and

Removing and installing/replacing positive battery cable power ...

Removing and installing/replacing positive battery cable power distribution box, rear Preliminary Work 1 – Deactivating the 48V vehicle electrical system Prerequisite

removing/modifying new work boxes

There are both high voltage and low voltage single and double gang boxes that I need to extend wiring to/from. I have plenty of experience in installing both new and old work boxes, but not

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