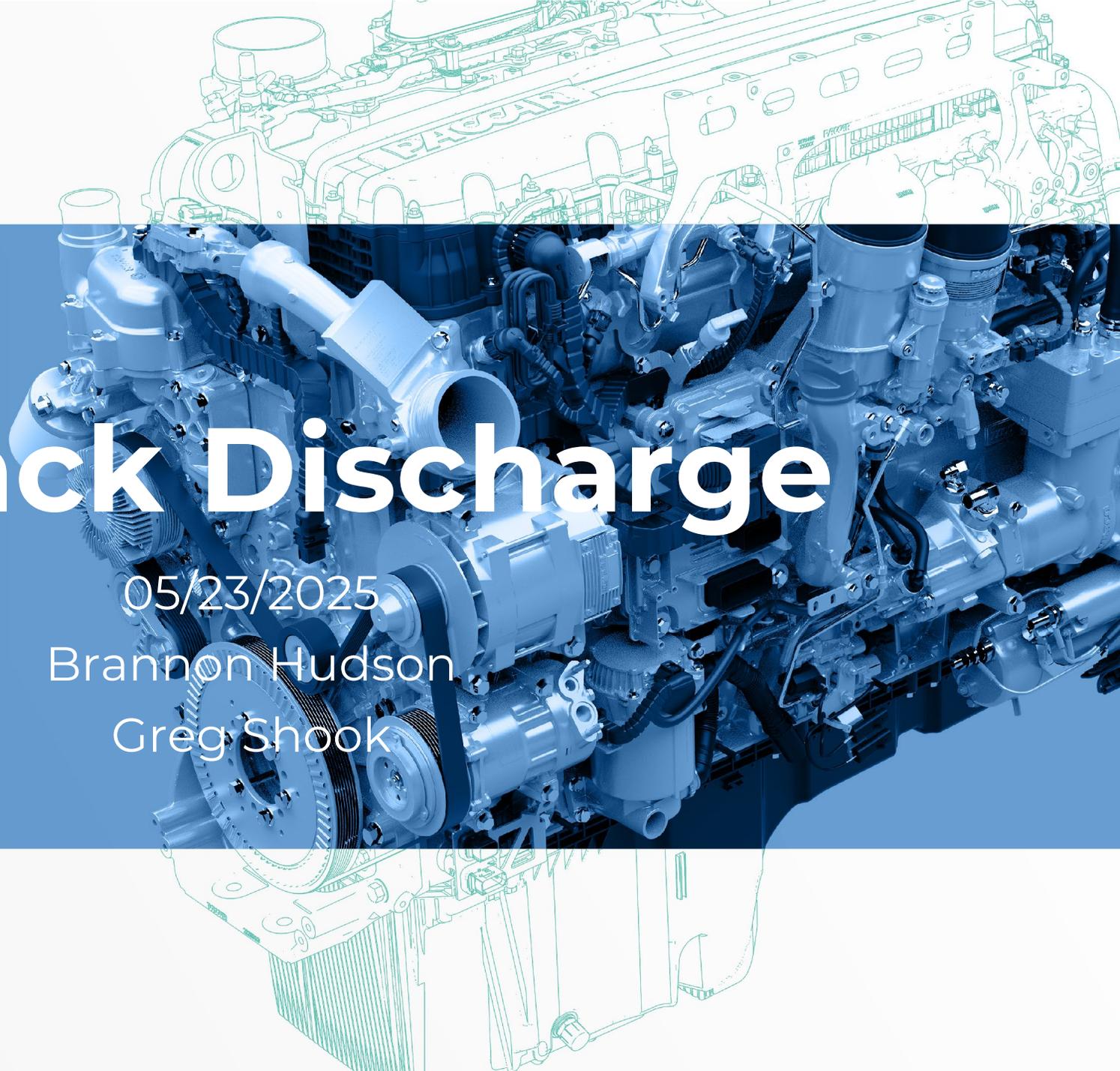


FSAE Pack Discharge

05/23/2025

Brannon Hudson

Greg Shook



Scope

- PACCAR will be providing pack discharge stations this year at the Formula SAE Electric competition to offer teams the ability to discharge their accumulators.
- **Dates:** June 17th – 21st 2025
- **Location:** Michigan international speedway

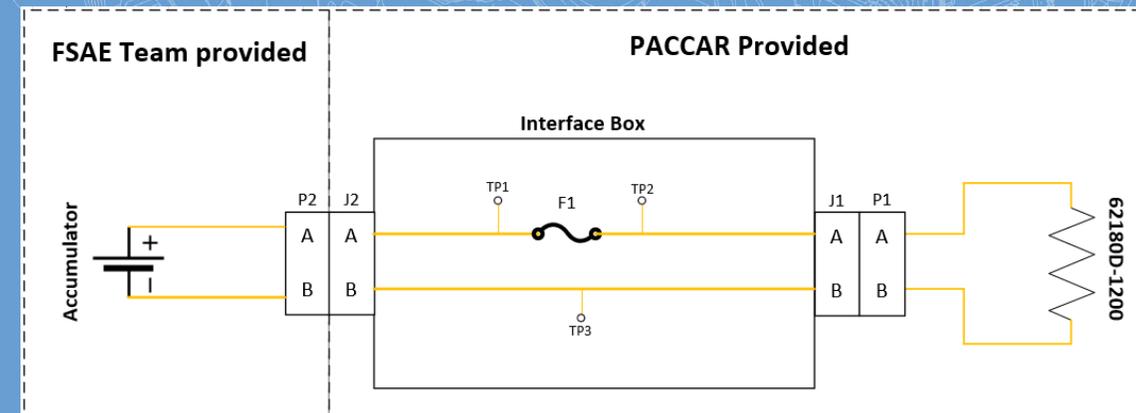


Setup

Discharge Specifications:

- Bidirectional DC power supply + Regenerative load: Chroma **62180D-1200**
- Maximum Voltage: **1200 V**
- Maximum Current: **50 A**
- Maximum Power: **13 kW**
- Number of Discharge Stations: **3**

Setup: Teams will need to supply the connection from their battery to the interface box. Additional information is on next slide.



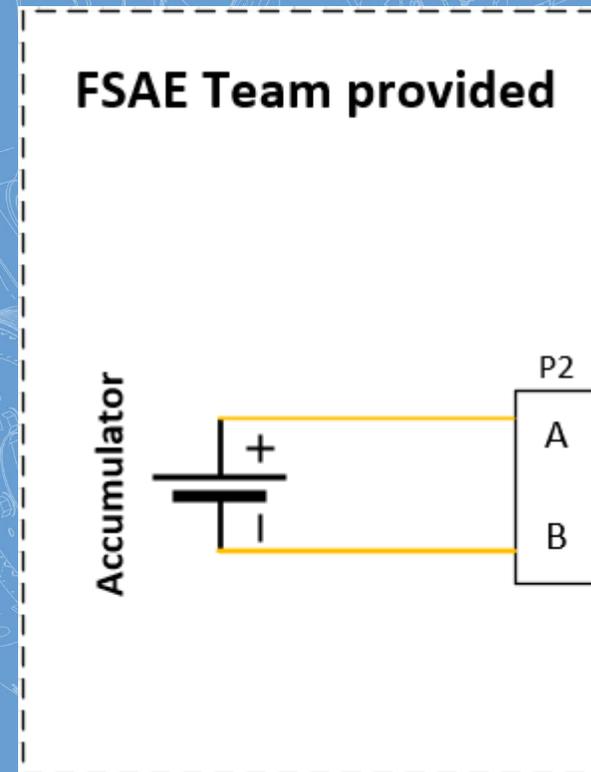
Hardware Requirements

The FSAE team is expected to provide the following:

- P2 Connector (any of the following are acceptable)
 - PL182X-301-35
 - PL182X-300-35
 - PL182X-301-50
 - PL182X-300-50
 - PL182X-301-75
 - PL182X-300-75

Please ensure correct polarity: HV+ → Pin A, HV- → Pin B

- HV Cable – Must match the size of connector P2, selected by FSAE team (35, 50, or 70 mm²)
- Connection to the accumulator shall be determined by the FSAE team



Additional Team Requirements

- Teams should have the ability to bypass HVIL, if needed to discharge accumulator
- To make the most efficient use of this time, please have the following information readily available:
 - Maximum discharge current
 - Nominal pack voltage
 - Minimum pack voltage (to determine when accumulator is sufficiently discharged)

Like the charging requirements defined by SAE, teams are expected to be able to:

- Monitor BMS communication to see the cell voltages and temperatures while discharging. The FSAE rules require the temperature to stay below the lower of the two:
 - The maximum cell temperature limit stated in the cell data sheet
 - 60°C
- Monitor isolation between HV system and GLV system using their IMD

Contact Information

If you have any questions about the discharge requirements prior to the competition, please reach out to Brannon Hudson or Greg Shook

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Greg Shook – Greg.Shook@PACCAR.com

