INTERNATIONAL

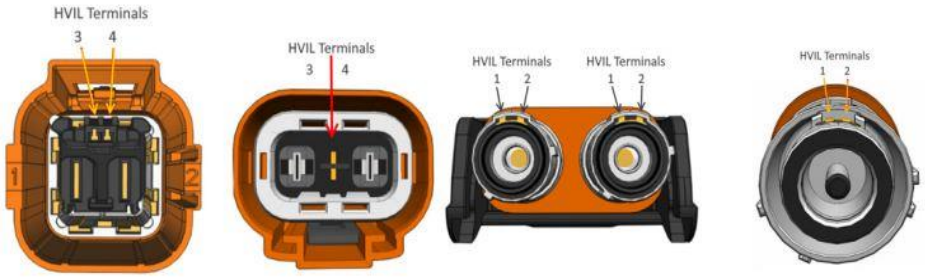
INTERNATIONAL EV PRODUCT 1ST AND 2ND RESPONDERS

Quick Reference

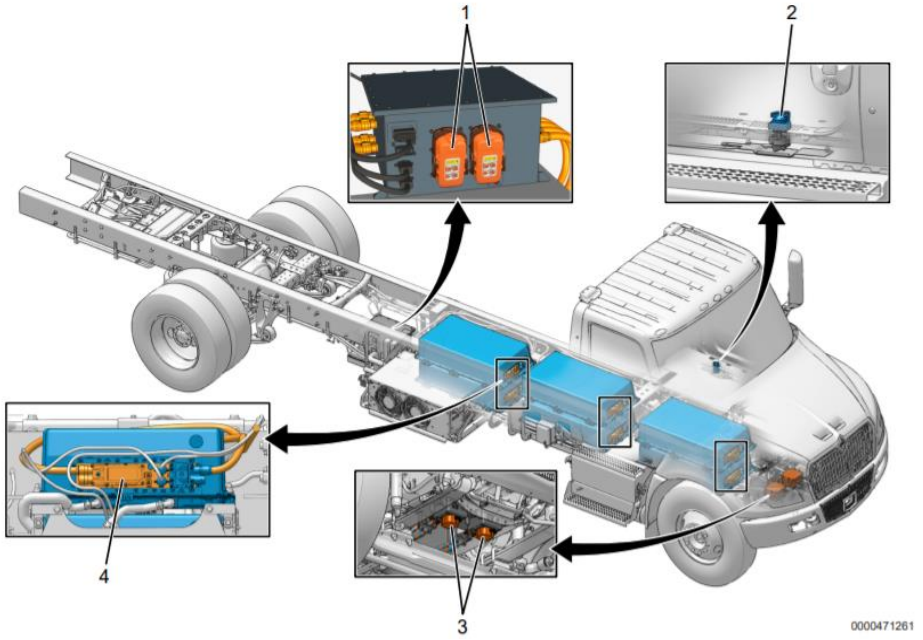
HV PROTECTIVE DESIGN

International electric vehicles are designed with safety in mind and adhere to industry standards.

- **Isolation monitoring**- Detects HV presence where it shouldn't be.
- **High Voltage Interlock**- Detects when a HV cable is not fully seated.
- Manual safety disconnects allow for isolation of HV away form components.
- HV system isolated from the chassis/body
- All HV components have their own fuses.
- IC bus may have additional MSDs on right frame rail
- IC Bus may have additional HV batteries



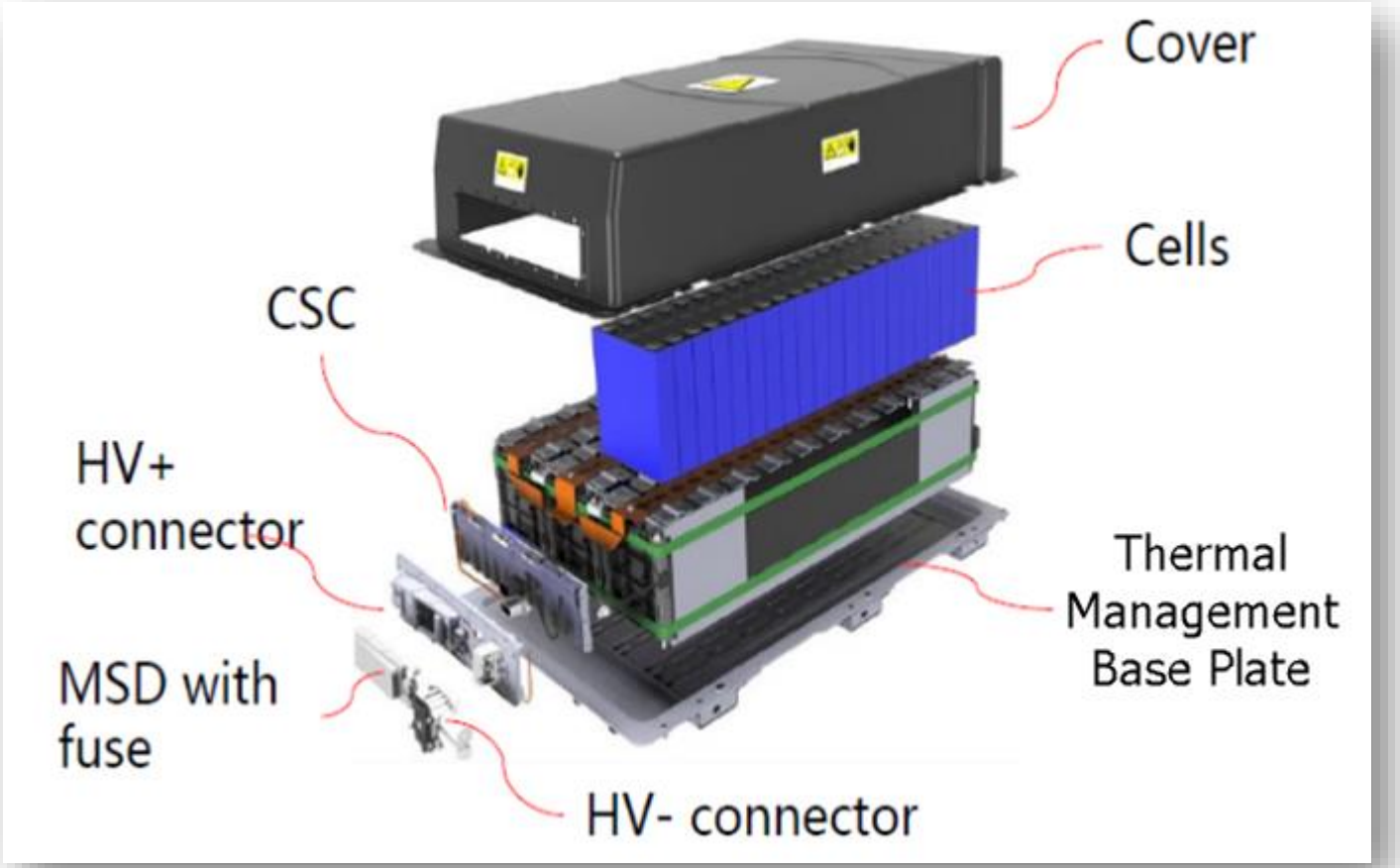
1. **Manual Service Disconnects (MSD) (2) Installed in S-Box**
   Level 1/Zone 1 isolation
2. **High-Voltage disconnect switch**
3. **Manual Service Disconnects (2) located under truck**
   Level 2/Zone 2 isolation
4. **High-voltage battery fuses (6)**
   Level 3/Zone 3 isolation



ALWAYS REFER TO INFORMATION POSTED ON NFPA WEBSITE TO IDENTIFY SPECIFIC VEHICLE INSTRUCTIONS

HIGH VOLTAGE BATTERY
CATL LFP 35KWH BATTERY- 6 OR 9 BATTERY CONFIG.

- Lithium Iron Phosphate – Prismatic cells (63 per pack)
  - High temperature tolerance (runaway can happen at 270C or 518F)
  - Long life
  - No “battery memory” or degradation from 100% charge.
- Liquid cooled with standard 50/50 Glycol / Distilled Water. Target 65F internal.
- Each pack has its own fuse and can isolate itself from the rest of the system when failure occurs.
- Isolate vehicles with compromised battery pack at least 50 ft from structures or flammable materials until the battery can be removed.

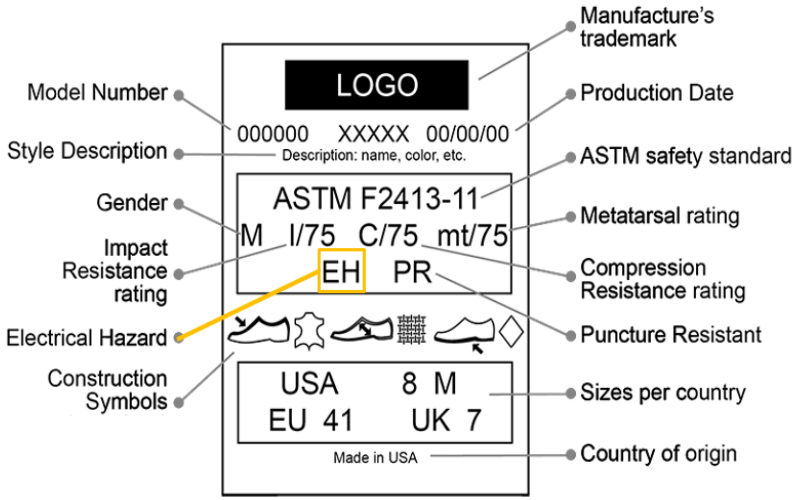


HIGH VOLTAGE PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Class 0 electrical insulating gloves (red label)
  - Re-certify every 6 months
  - If new pair, never used, the printed date is good for 1 year *
  - Leather over gloves
- Electrical Hazard (EH) rated safety shoes or boots
- Safety glasses or goggles (non-Conductive)
- Lockout/Tagout equipment

To safety service high voltage vehicles each service facility / organization must:

- Understand and follow applicable Authority Having Jurisdiction (AHJ) control of hazardous energy standards and safety regulations
- Ensure employees are trained on types of energy, hazards, and methods to control hazardous energy
- Understand, create, and enforce control of hazardous energy / high-voltage vehicle service safety protocols
- Make appropriate safety equipment available to employees: high-voltage Person Protective Equipment
- (PPE), locks, lock boxes, sign-out sheets, etc.



HIGH VOLTAGE CABLE STRIPING

INTERNATIONAL ELECTRIC VEHICLES HAVE ADOPTED A CABLE STRIPING SYSTEM TO IDENTIFY WHAT STEPS MUST BE TAKEN TO DISCONNECT INDIVIDUAL CABLES / COMPONENTS.

- PPE MUST BE WORN TO PERFORM THESE STEPS
- THE DISCONNECT SWITCHES CAN BE LOCKED OUT
- FOLLOW RECOMMENDATIONS POSTED ON NFPA.ORG

CABLE STRIPING AND ISOLATION OF HV

SOLID ORANGE CABLE: LEVEL 1 ISOLATION-
12V AND HV DISCONNECT OFF , REAR MSDS OUT.

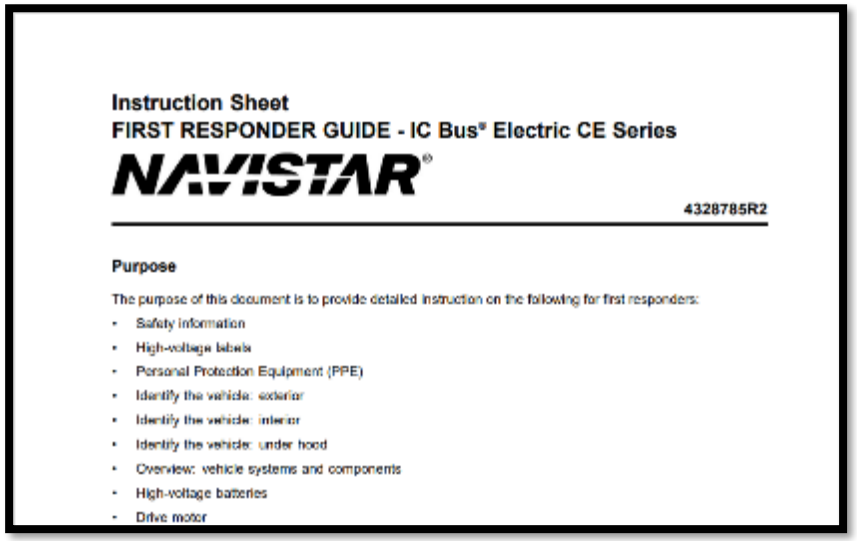
BLUE STRIPED CABLE: LEVEL 2 ISOLATION-
ALL THE ABOVE, PLUS REMOVAL OF FRONT MSDS.

WHITE STRIPED CABLE: LEVEL 3 ISOLATION-
ALL THE ABOVE, PLUS REMOVAL OF BATTERY FUSES.

FIRST/SECOND RESPONDER INFORMATION – NFPA WEBSITE

- First responder guides for IC Bus and eMV can be found on the NFPA site.
  - English, Spanish, and French versions available.

[International NFPA Emergency Response Guides]



Instruction Sheet
FIRST RESPONDER GUIDE - IC Bus® Electric CE Series

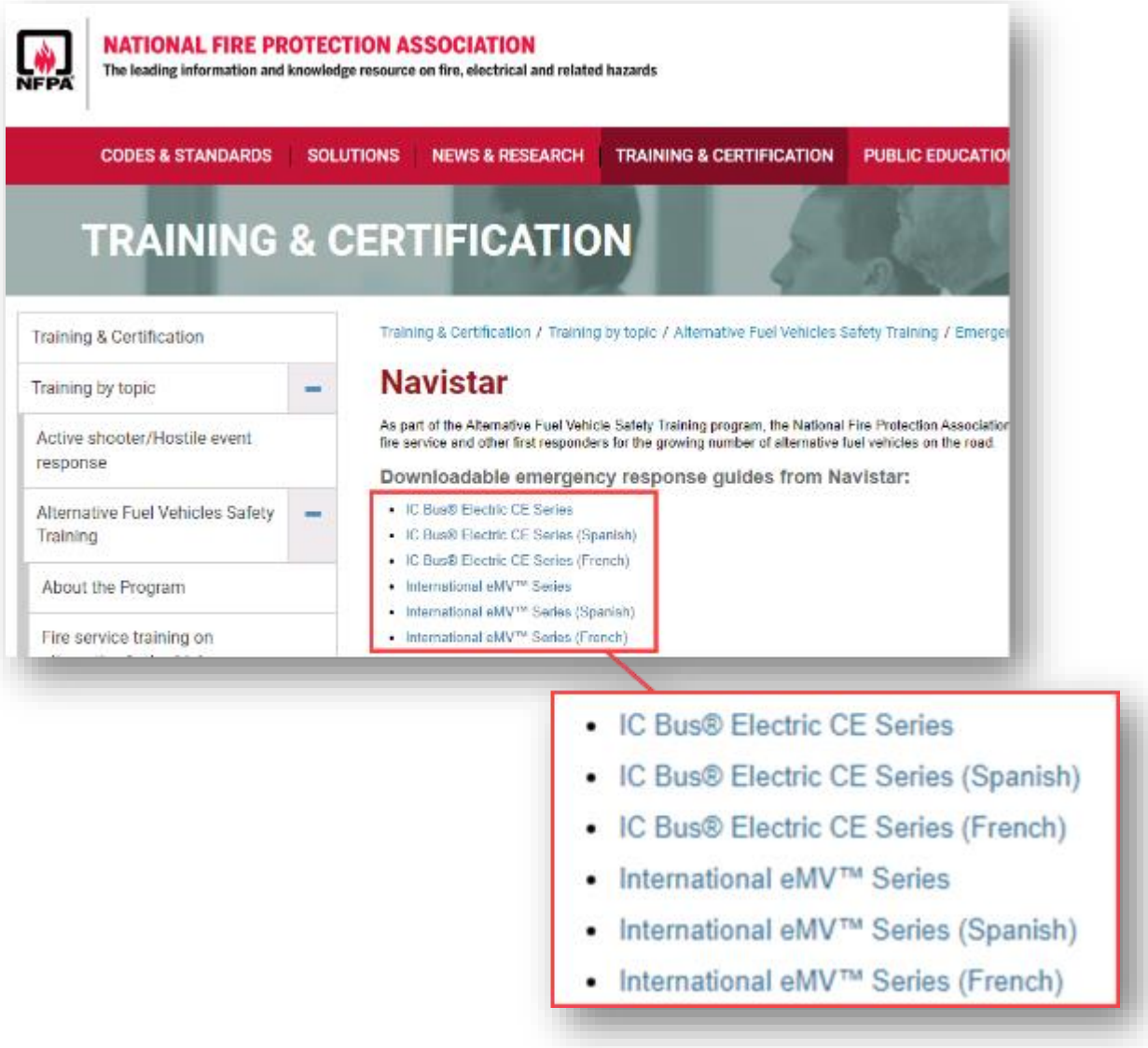
NAVISTAR®

4328785R2

Purpose

The purpose of this document is to provide detailed instruction on the following for first responders:

- Safety information
- High-voltage labels
- Personal Protection Equipment (PPE)
- Identify the vehicle: exterior
- Identify the vehicle: interior
- Identify the vehicle: under hood
- Overview: vehicle systems and components
- High-voltage batteries
- Drive motor



NATIONAL FIRE PROTECTION ASSOCIATION
The leading information and knowledge resource on fire, electrical and related hazards

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Training by topic
Active shooter/Hostile event response
Alternative Fuel Vehicles Safety Training
About the Program
Fire service training on

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Navistar

As part of the Alternative Fuel Vehicle Safety Training program, the National Fire Protection Association fire service and other first responders for the growing number of alternative fuel vehicles on the road.

Downloadable emergency response guides from Navistar:

- IC Bus® Electric CE Series
- IC Bus® Electric CE Series (Spanish)
- IC Bus® Electric CE Series (French)
- International eMV™ Series
- International eMV™ Series (Spanish)
- International eMV™ Series (French)

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EXTRACTION- HV SAFETY

INTERNATIONAL ELECTRIC VEHICLES DO NOT HAVE HV COMPONENTS WITHIN THE PASSENGER CABIN AREAS. ALL COMPONENTS ARE EITHER UNDER-HOOD OR BELOW TOP OF CHASSIS RAIL.

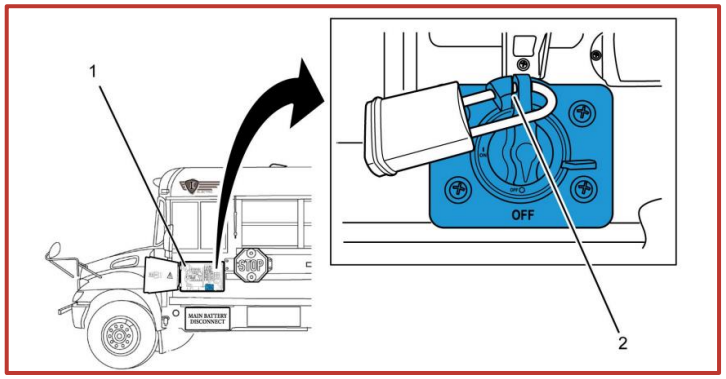
BODY CUTTING IS SAFE ABOVE CABIN FLOOR LEVEL

AVOID CUTTING IN THE ORANGE AREAS BELOW.

school bus shown, but also applies to EMV

VOLTAGE DISCONNECTS - EMV

- In the event of an accident the vehicle can be disabled by turning off the 12V disconnect switch.
- 12V should be turned off during extended periods of disuse.
- When performing HV isolation steps, wait 3 minutes after switching off disconnects.
- Drivers do not need to interact with the HV disconnect switch.

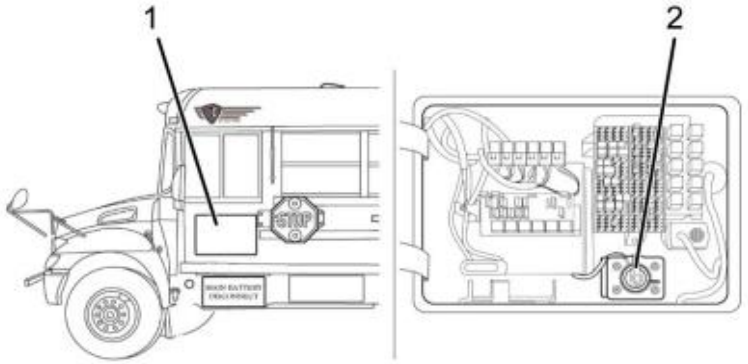


LOCK-OUT / TAG-OUT

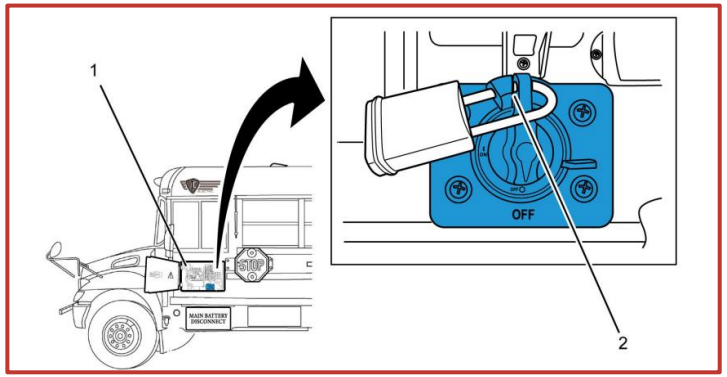
VOLTAGE DISCONNECTS - BUS

— High Voltage Disconnect Switch

— Inside the fuse panel



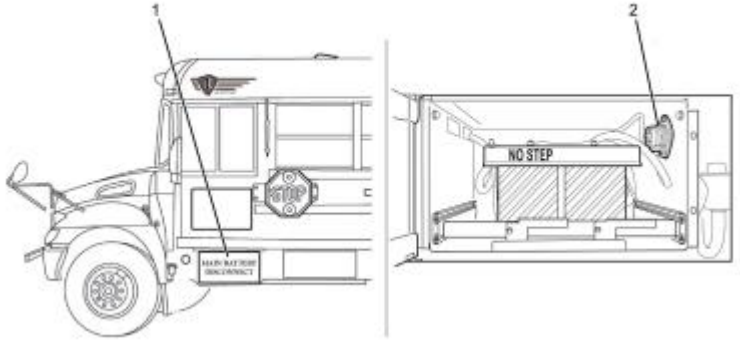
- 1. Access Panel
- 2. High Voltage Disconnect Switch



LOCK-OUT / TAG-OUT

- Low Voltage Disconnect Switch

- Inside the 12V battery box



- 1. Battery Box Cover
- 2. Low Voltage Switch

NOTE: You must wait 3 minutes for HV energy to dissipate before working on HV components

TOWING PROCEDURE

When towed, the vehicle must be lifted from the rear OR the drive shaft or axle shafts must be removed.

Air Tanks can be filled through adapter port found on air tank.

Brakes can be caged using the supplied Cage bolt. This holds them in a released condition.