



TESLA OWNERS
CLUB OF NEW YORK
STATE

TESLA FOR FIRST RESPONDERS

*First Responder Training
for Tesla vehicles.*



AMERIK



INTRODUCTION

Tesla Owners Club of New York State

- Tesla Owners Club of New York State is exclusively sanctioned by Tesla for the state of NY.
- Mission:
 - Encourage adoption of all things Tesla in New York State. We believe in an electric, low carbon future—with a healthy dose of performance to make it fun! Our club will strive to provide a statewide community for sharing information for everyone interested in Tesla, to help promote EV adoption, and educate the public about Tesla and its imbedded technologies.
 - Provide fun events for our members throughout the year and keep members informed about Tesla developments. Provide opportunities to gather and share our Tesla experiences, discuss tricks and pointers for better range, and share EV insights with fellow owners and enthusiasts, as well as the general public.



OBJECTIVES

- Identify different Tesla Models currently on the road
- Identify structure of Tesla Models
- Review Tesla First Responder initial actions
- Review Tesla access means by model
- Review high voltage battery disconnect points
- Review firefighting actions.
- Review rescue actions including stabilization and no-cut zones.



TESLA MODELS

Model S

- Full size sedan, first production Tesla, starting in 2012



TESLA MODELS

Model S

- Full size sedan, design refresh starting in 2016 after Model X launch



TESLA MODELS

Model X

- Full size crossover/SUV, starting in 2016



TESLA MODELS

Model 3

- Mid-size sedan, starting in 2018



TESLA MODELS

Model Y

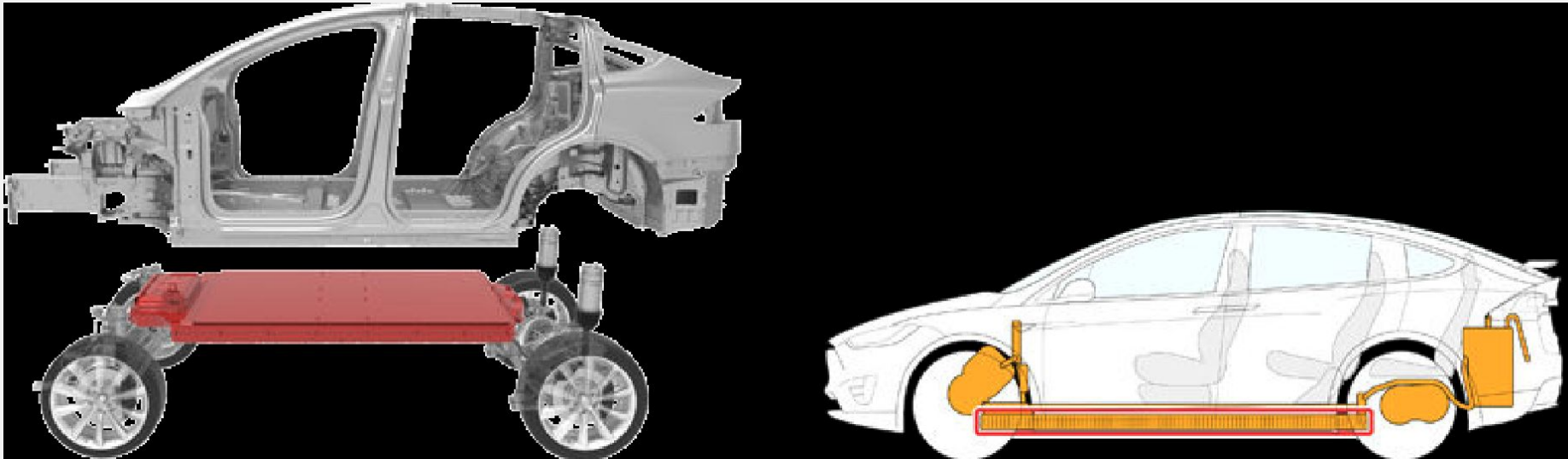
- Mid-size crossover/SUV, started shipping early 2020



STRUCTURE OF TESLA MODELS

Common Questions

- Where are the batteries?



- Does it have a gasoline engine?

NO! This is a BEV, a battery electric vehicle, not a hybrid or Plug-in Hybrid Electric Vehicle (PHEV).



INITIAL ACTIONS

First Responder Initial Actions

- Always follow safety protocols. Your safety FIRST. You can't help anyone if you go down.
- As with all vehicles with keyless fobs, secure the fob or other device that controls the vehicle.
- Crashes: Always respond an engine, at least two FFs packed and masked with a dry attack line, and a water source as you would for any crash.
- Rescue
 - Stabilize vehicle
 - Protect occupants
 - Open doors, windows, trunk/liftgate, then secure electrical service
- Firefighting
 - Prepare for firefighting if not already actively working
- Medical Emergencies
 - Control C-spine and protect patient from further injury
 - Treat patients per protocols



ACCESS

Different models have different access

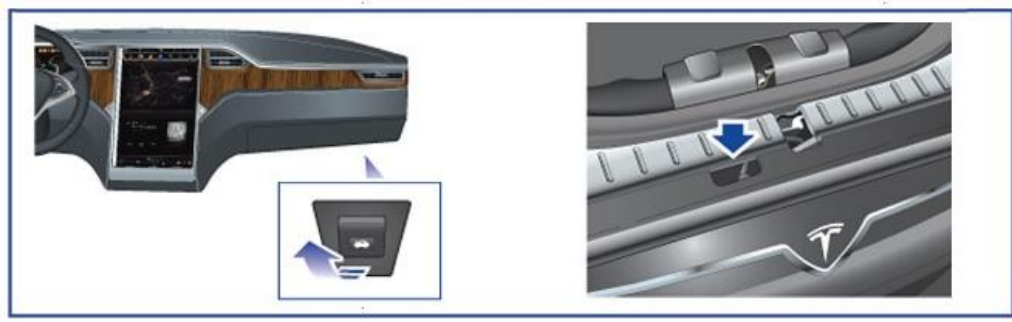
- All models can operate Rear Trunk (Trunk) and Front Trunk (Frunk) from fob or touch screen
- Trunks have release buttons on trunk or liftgate.
- Model X has power front and rear doors controlled from fob or touch screen
- Model S door handles self-present (pop out) if programmed or simply press in and they present
- Model X door handles press in and open under power
- Model 3 and Model Y press in to present handle



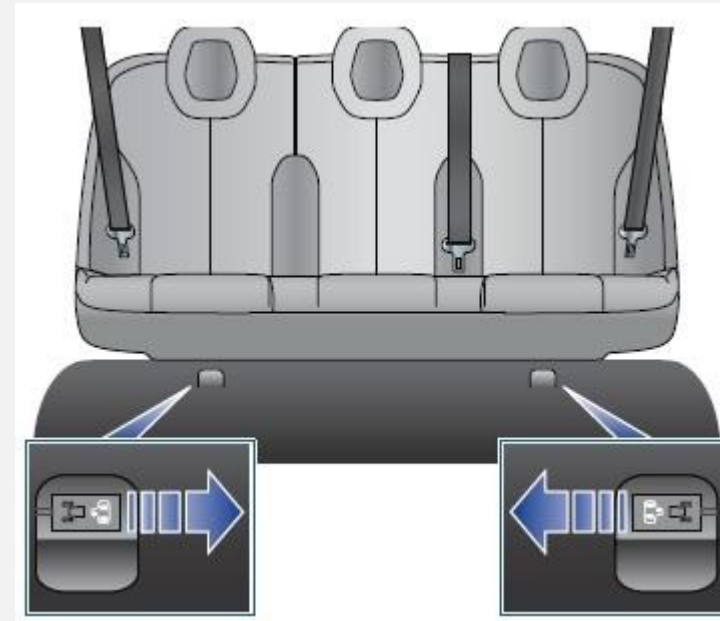
ACCESS

Model S Emergency Access

- Front doors: Reach in and release from inside
- Rear doors: Pull back carpet in front of rear seats and pull release handle under seats towards the center
- No separate emergency release for trunk
- Front Trunk (Frunk) in emergency 2012-2014 models: Release handle under glove box, then push secondary release handle under frunk lid



Frunk



Rear Doors



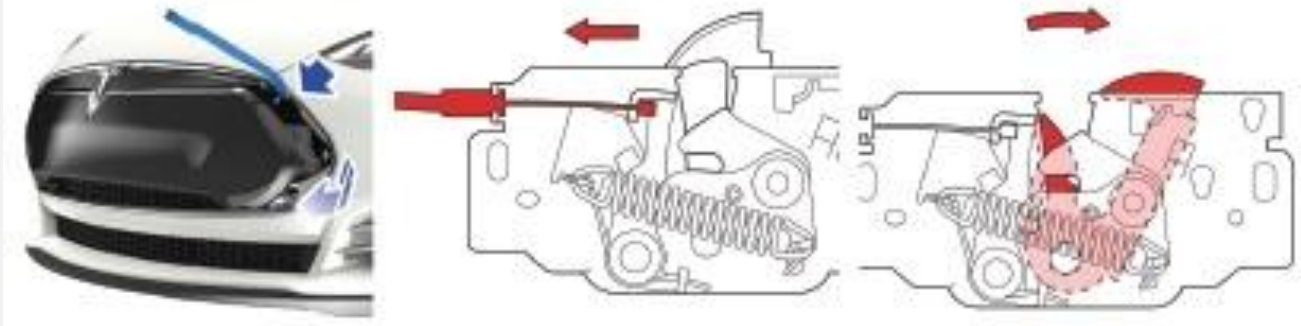
ACCESS

Model S Emergency Access

- Front Truck (Frunk) in emergency 2014-2015 Dual Motor:

To open the hood manually, perform the following steps:

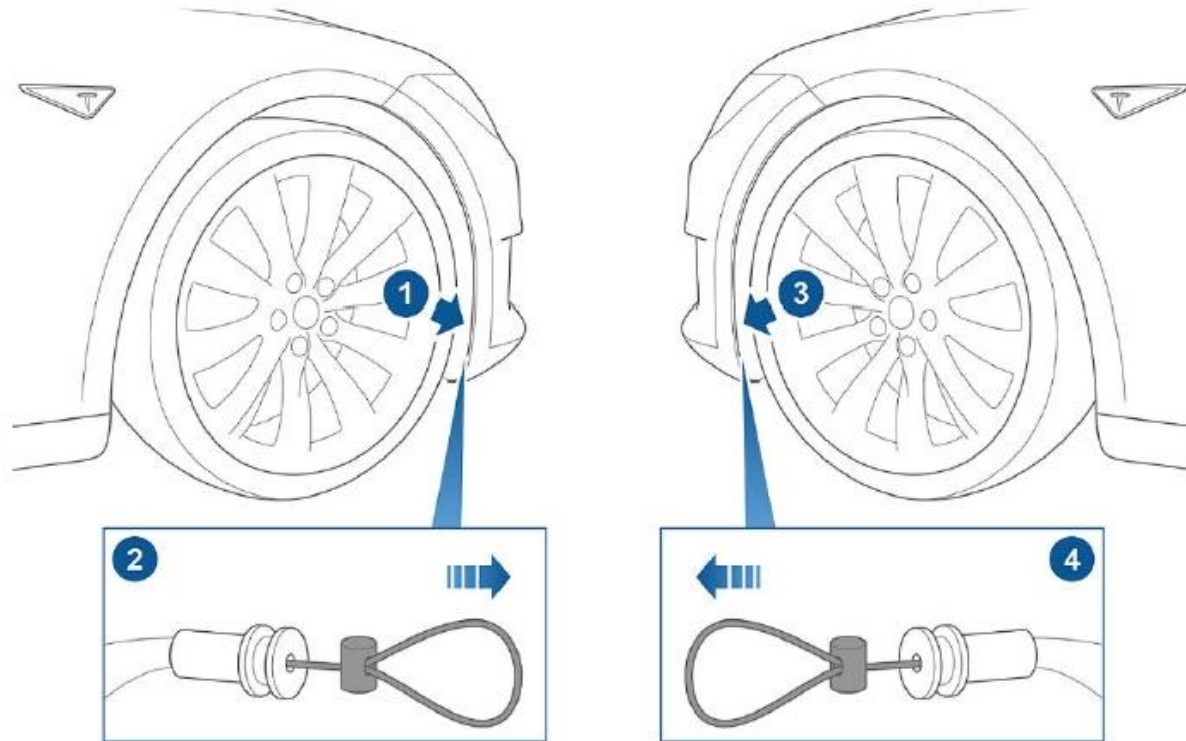
1. Pry the nose cone toward you using a plastic pry tool in the top right corner.
NOTE: A cable is connected to the rear of the nose cone.
2. Pull the primary release lever under the front middle of the hood to the left.
3. Push the secondary release lever under the front middle of the hood to the right and push up on the hood to open it.



ACCESS

Model S Emergency Access

- Front Truck (Frunk) in emergency 2016+
 - Pull the release cables located in the front wheel arch liners. First, release the cover in the RH front wheel well and pull the strap to release the primary latch. Then, release the cover in the LH front wheel well and pull the strap to release the secondary latch.



ACCESS

Model X Emergency Access

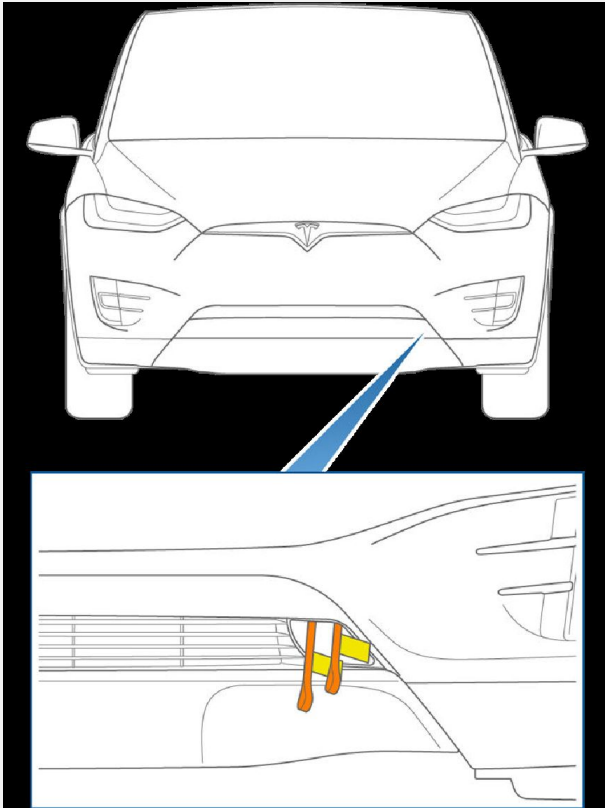
- Front doors: Reach in and release from inside
- Rear doors: Without 12-volt power, the falcon wing doors can only be opened from the inside of the vehicle. Remove the speaker grill from the door and pull the mechanical release cable down and towards the front seat, as shown. After the latch has released, manually lift the doors.



ACCESS

Model X Emergency Access

- No separate emergency release for trunk
- Front Truck (Frunk): Pull the release cables located in the tow attachment on the front bumper. You need to release the tow hook cover first to expose the straps, and then pull the straps, labeled A and B, in alphabetical order to open the primary and secondary latches.



ACCESS

Model 3 & Y Emergency Access

- Front doors: Reach in and lift mechanical release from inside



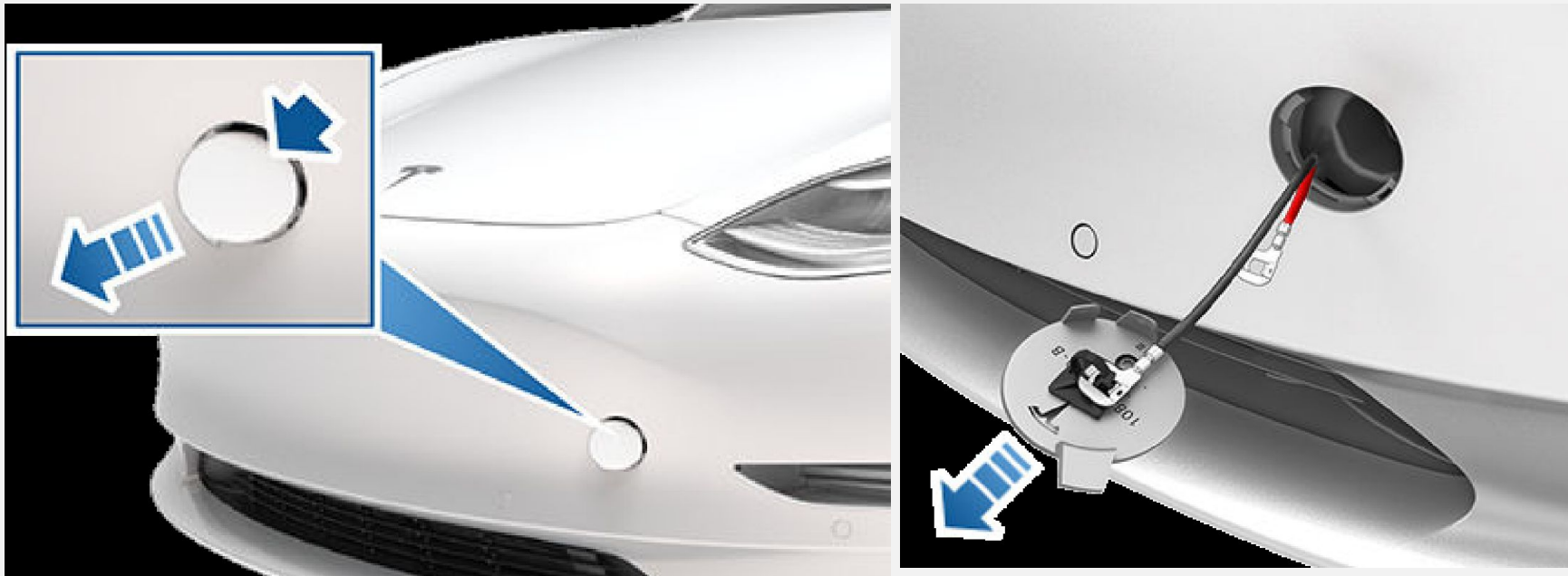
- Rear doors can only be opened with power on.
 - No separate emergency release for trunk



ACCESS

Model 3 & Y Emergency Access

- Front Truck (Frunk):
 - This works ONLY when there is no 12-volt power. Otherwise, use normal opening methods.
 - Locate an external 12-volt power supply.
 - Release the tow eye cover by pressing firmly on the top right perimeter of the cover until it pivots inward, then pulling the raised section toward you.
 - Pull the two wires out of the tow eye opening to expose the vehicle-side terminals.



ACCESS

Model 3 & Y Emergency Access

- Front Trunk (Frunk) (continued):
 - Connect the external 12-volt power supply's red positive (+) cable to the red positive (+) vehicle-side terminal.
 - Connect the external 12-volt power supply's black negative (-) cable to the black negative (-) vehicle-side terminal.
 - Turn on the external power supply (refer to the external power supply manufacturer's instructions). The hood latches are immediately released, and you can now open the hood to access the front trunk area.
 - Disconnect both external power supply cables, beginning with the black negative (-) cable.



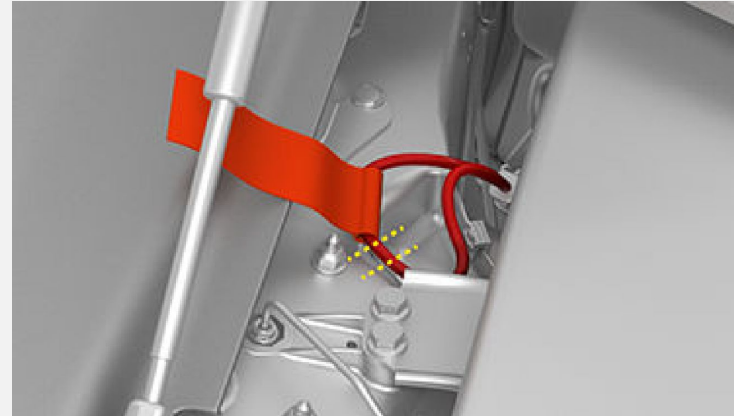
HIGH VOLTAGE DISCONNECT

Disconnect the high voltage battery for safety

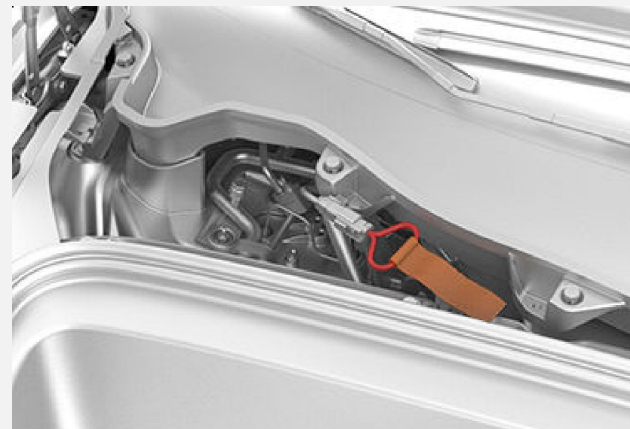
- HV Battery Disconnects are similar for all four models.



Model S 2012-2015



Model S 2016+



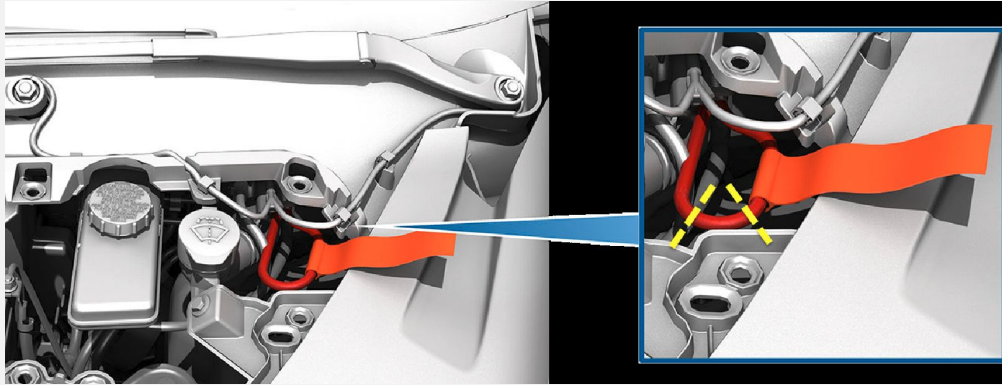
Model X



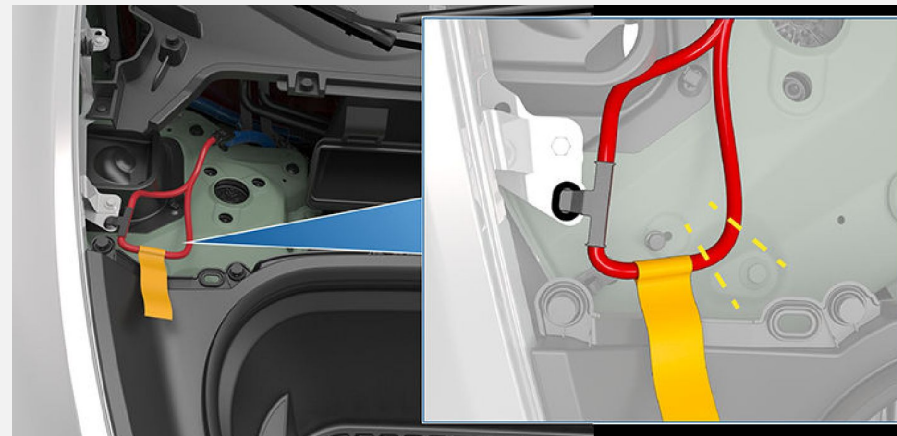
HIGH VOLTAGE DISCONNECT

Disconnect the high voltage battery for safety

- HV Battery Disconnects are similar for all four models.



Model 3



Model Y



WARNINGS

High Voltage Battery and Air Bag Warnings

- After deactivation, the high voltage circuit requires *2 minutes* to de-energize.
- The SRS control unit has a backup power supply with a discharge time of ~10 seconds. Do not touch within 10 seconds of airbag or pre-tensioner deployment.
- When cutting the first responder loop, cut the loop in two locations to remove an entire section to ensure the ends don't accidentally reconnect.



FIREFIGHTING

Actions

- **USE WATER TO FIGHT A HIGH VOLTAGE BATTERY FIRE.** If the battery catches fire, is exposed to high heat, or is generating heat or gases, use large amounts of water to cool the battery. It can take approximately 3,000 gallons (11,356 liters) of water, applied directly to the battery, to fully extinguish and cool down a battery fire; always establish or request an additional water supply. If water is not immediately available, use dry chemicals, CO₂, foam, or another typical fire-extinguishing agent to fight the fire until water is available.
- Apply water directly to the battery. If safety permits, lift or tilt the vehicle for more direct access to the battery. Apply water inside the battery **ONLY** if a natural opening (such as a vent or opening from a collision) already exists. Do not open the battery for the purpose of cooling it.
- Extinguish small fires that do not involve the high voltage battery using typical vehicle firefighting procedures.
- During overhaul, do not make contact with any high voltage components. Always use insulated tools for overhaul.
- Heat and flames can compromise airbag inflators, stored gas inflation cylinders, gas struts, and other components which can result in an unexpected explosion. Perform an adequate knock down before entering a hot zone.



FIREFIGHTING

Actions

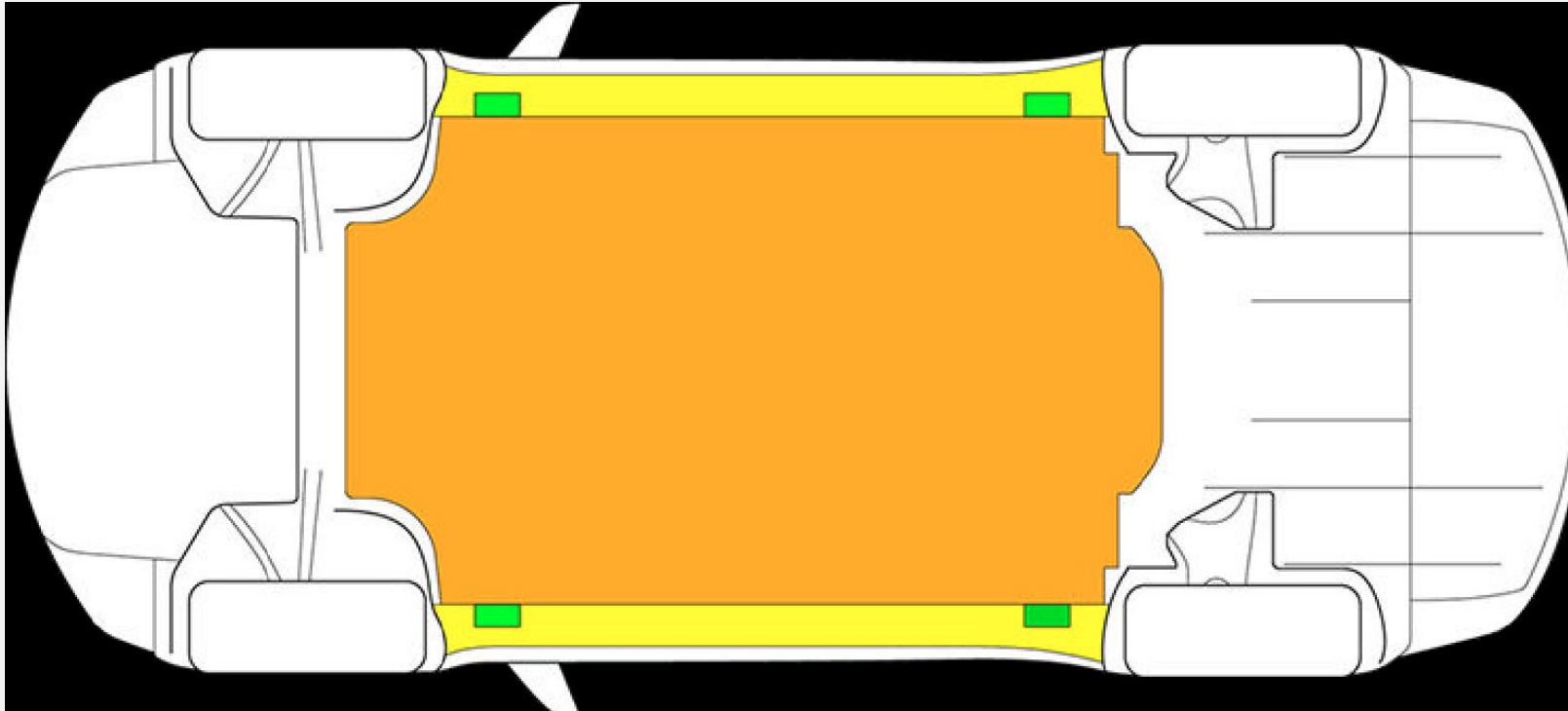
- Battery fires can take up to **24 hours to extinguish**. Consider allowing the battery to burn while protecting exposures.
- After all fire and smoke has visibly subsided, a thermal imaging camera (TIC) can be used to actively measure the temperature of the high voltage battery and monitor the trend of heating or cooling. There must not be fire, smoke, or heating present in the high voltage battery for **at least one hour** before the vehicle can be released to second responders (such as law enforcement, vehicle transporters, etc.). The battery must be completely cooled before releasing the vehicle to second responders or otherwise leaving the incident.
- Always advise second responders that there is a risk of battery re-ignition.
- Second responders may choose to drain excess water out of the vehicle by tilting or repositioning it. This operation can assist in mitigating possible re-ignition.
- Due to potential re-ignition, a Tesla that has been involved in a submersion, fire, or a collision that has compromised the high voltage battery should be **stored in an open area at least 50 ft (15 m)** from any exposure.



RESCUE

How and what to do and NOT to do

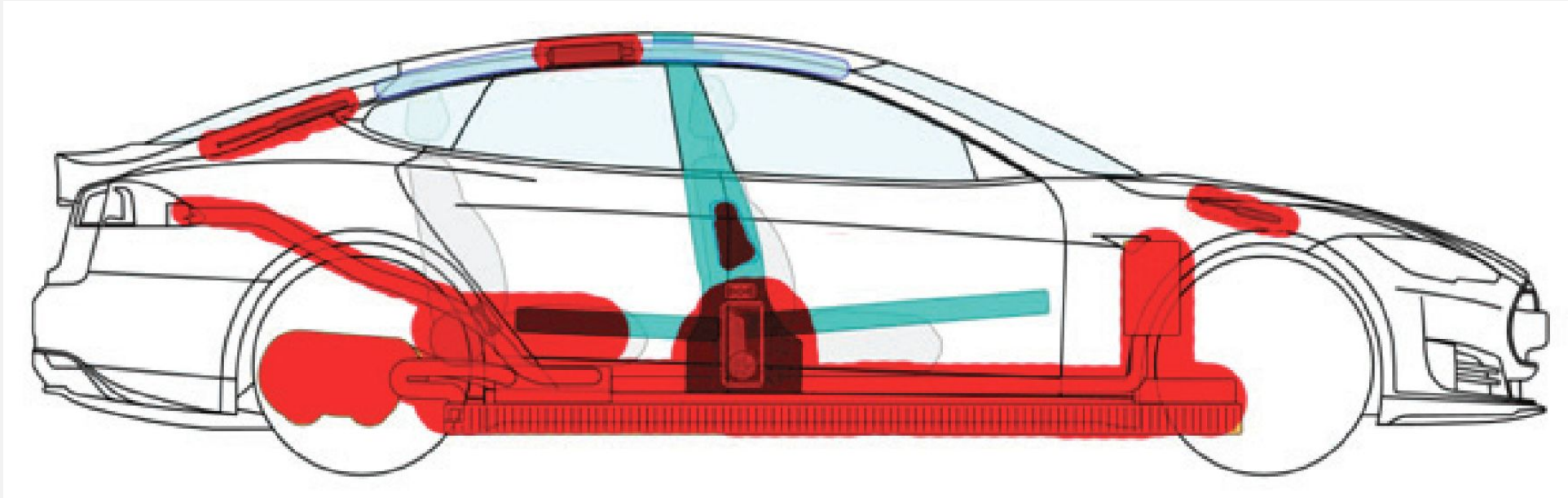
- Stabilization is important in any rescue operation. Chock wheels as you would in any vehicle rescue operation. It is critical to **never breach** the high voltage battery. Lift points are in green. These are hardened points that will not damage the battery. Areas in yellow are safe stabilization points for a Tesla resting on its side.



RESCUE

How and what to do and NOT to do

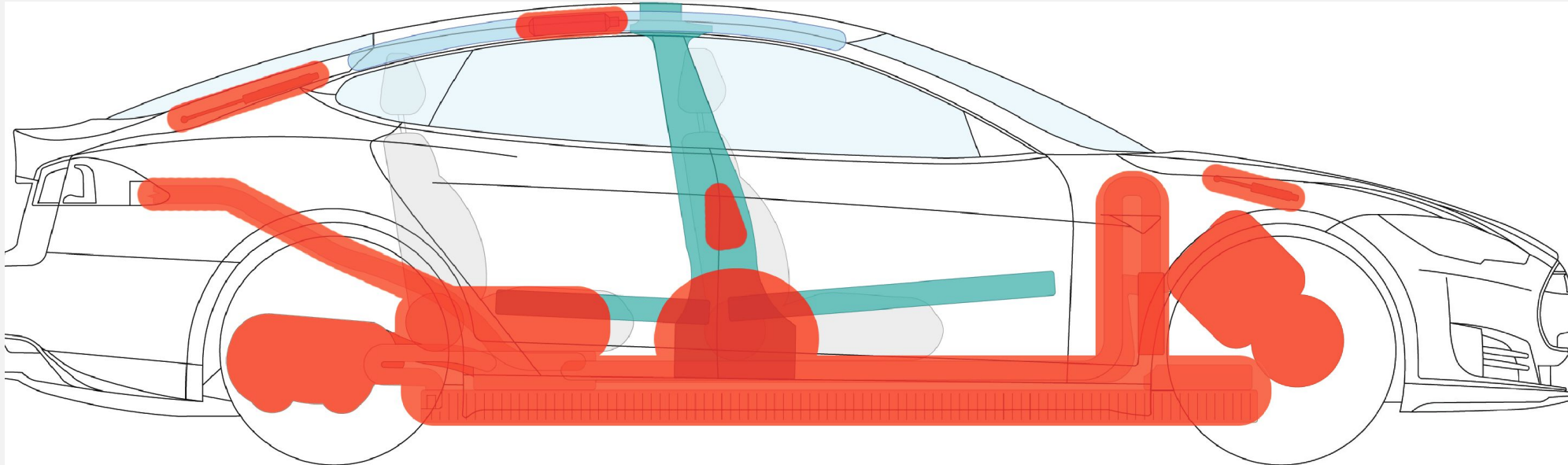
- All Tesla models have areas that are defined as "no-cut zones" due to the presence of high voltage, gas struts, SRS components, or other hazards. Never cut or crush in these areas. Doing so could result in serious injury or death.
- No-Cut Zones for Model S 2012-2014 in **red**



RESCUE

How and what to do and NOT to do

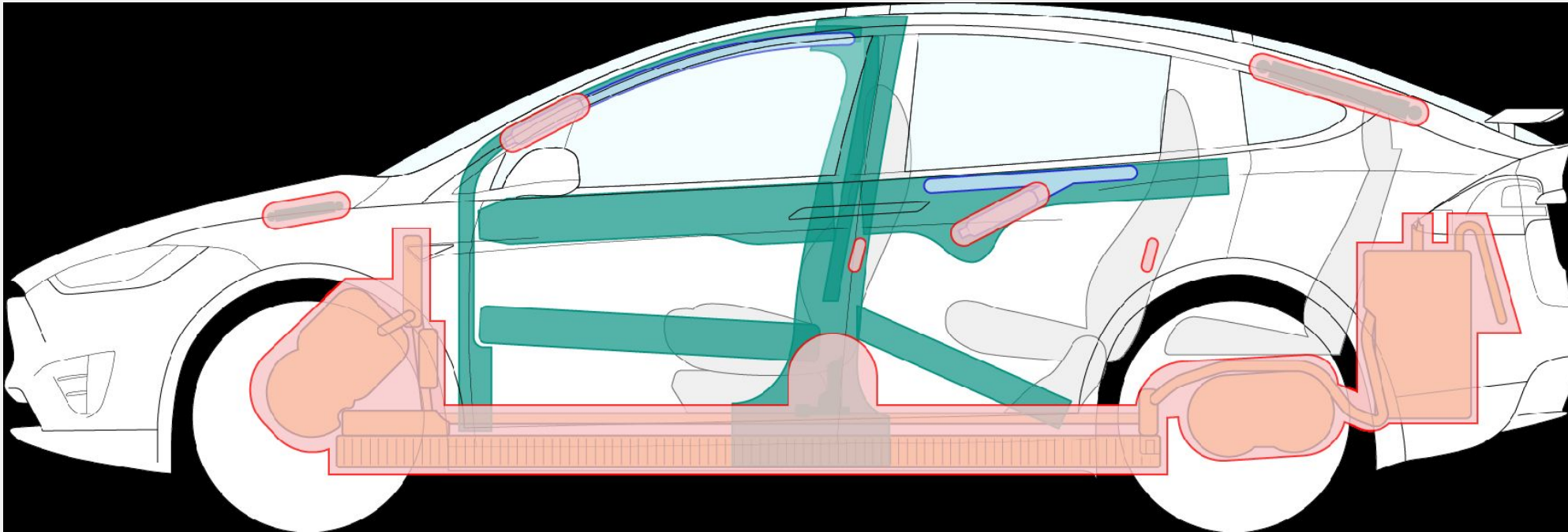
- No-Cut Zones for Model S 2014-2015 Dual Motor in **red**



RESCUE

How and what to do and NOT to do

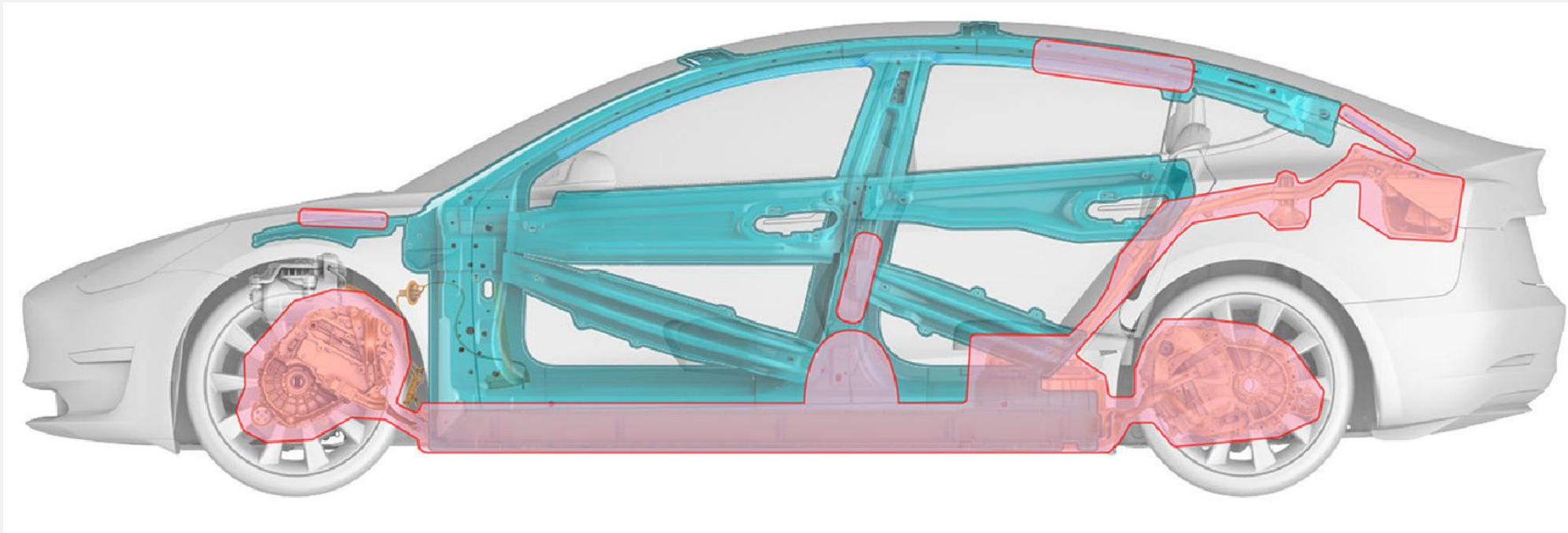
- No-Cut Zones for Model X in pink



RESCUE

How and what to do and NOT to do

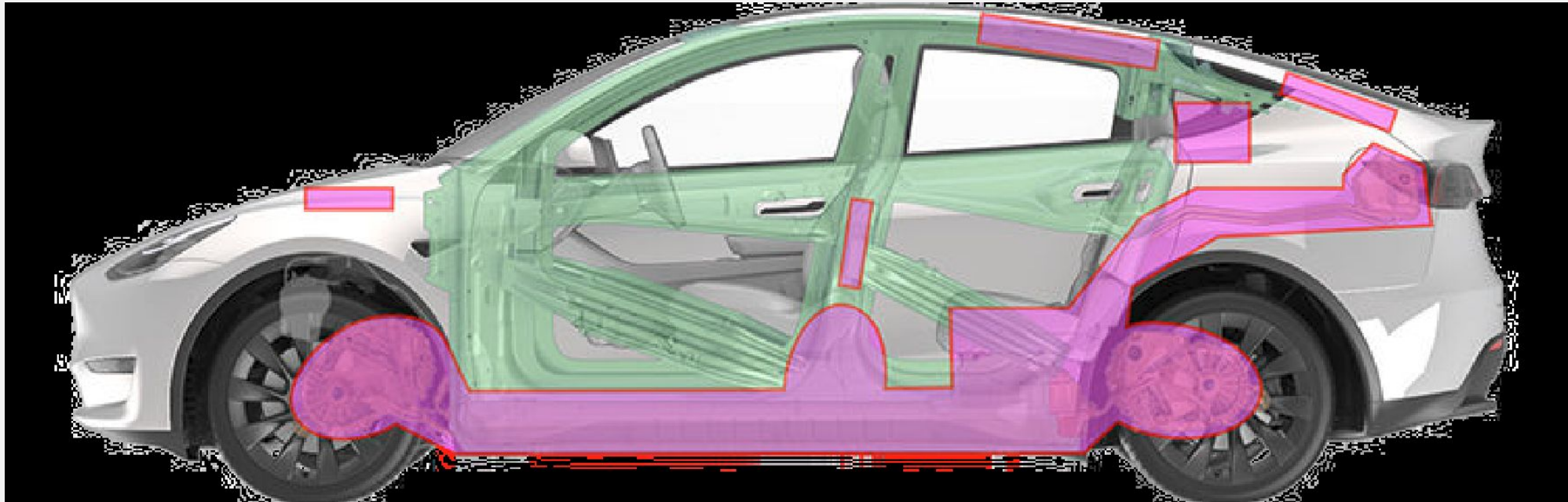
- No-Cut Zones for Model 3 in pink



RESCUE

How and what to do and NOT to do

- No-Cut Zones for Model Y in pink



OTHER MATTERS

Warnings

- Never transport with rear wheels on the ground. Damage and overheating can occur resulting in possible ignition of surrounding components.



CONCLUSION

Some Things are Different, Many Things are the Same

- Tesla Models have some unique characteristics in terms of first responding. These are primarily related to the high voltage battery.
- Other manufacturers are coming out with BEV vehicles and many of the PHEV (plug-in hybrid electric vehicles) on the road now have the same safety concerns.
- Much of the rescue operations are little different than other vehicles on the road. There are still No-Cut Zones due to air bags and seat belt pretensioners.
- First Responder safety is a priority with ALL vehicles. There are simply a few more things to consider with BEVs and PHEVs.



CLOSING

Final Notes

- We at the Tesla Owners Club of New York State (TOCNYS) hope this presentation has been useful.
- For questions and downloadable information, go to <https://www.tesla.com/firstresponders>
- For immediate response on scene, call 877.798.3752
- Other resources
 - <https://www.nfpa.org/training-and-events/by-topic/alternative-fuel-vehicle-safety-training>
 - <https://www.advancedextrication.com/>
 - <https://www.universityofextrication.com/>
- Our website is <https://www.tocnys.org/>

