



Sacramento Clean Cities

EV Technician Training Overview



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ICE vs EV

What do they share?



ICE vs EV

What do they share?

- Fluids
 - Brake
 - Coolant
 - Hydraulic
 - Windshield
- Fuse Box
- 12V Battery
- Bulbs, lighting, radio, accessories

ICE vs EV

How are they different?



ELIMINATE
GASOLINE



ELIMINATE
TRANSMISSION SERVICING



ELIMINATE
OIL CHANGES



REDUCE
BRAKE WEAR



ELIMINATE
EXHAUST COMPONENTS



ELIMINATE
EMISSIONS TESTING



ELIMINATE
AIR FILTERS



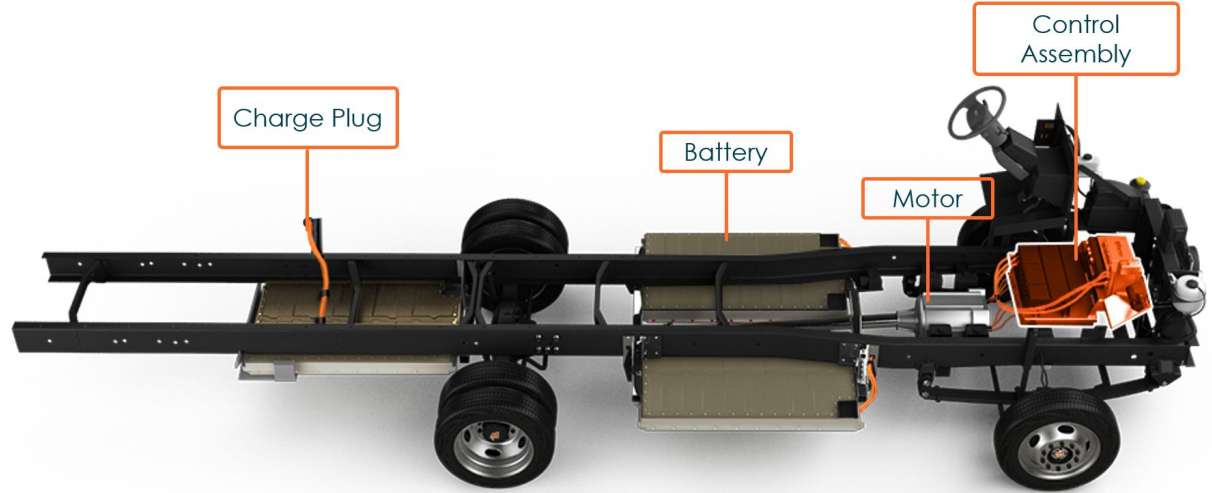
REDUCE
BELTS



ELIMINATE
VACUUM LINES

ICE vs EV

How are they different?



ICE vs EV

How are they different?

	ICE	EV
Power consumption when OFF	No	System is always energized, consumes small amount of power to perform diagnostics and charge 12V battery
Engine Braking	Engine compression braking	Electric motor regenerative braking (recharges batteries)
Diagnostic Access	OBD2 port	Diagnostic computer onboard - remote diagnostic analysis. OBD2 port also available for ABS, instrument cluster, etc..
Safety shutoff	None	Emergency shutoff (automatic and/or manual) deactivates HV system in even of crash or for safer repair environment

ICE vs EV

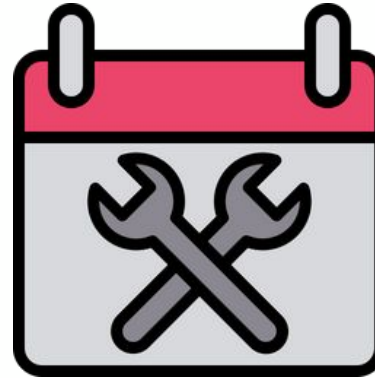
70% of an electric vehicle's component parts may be different from a gasoline-powered vehicle

-CALSTART

Less moving parts = Less periodic maintenance

PM Schedules & Recommended Service

What does your schedule look like today?



PM Schedules & Recommended Service

Not much different than an ICE vehicle

In general, EVs will follow the same standard maintenance schedule that an ICE vehicle would

This includes, but is not limited to:

- Tires & brakes
- 12V battery
- Fluid Levels
- Air Filters
- Fuses

PM Schedules & Recommended Service

Not much different than an ICE vehicle

In certain cases, some EVs may include HV Battery cooling system checks in their periodic schedules

The HV system itself is designed to be completely maintenance free and has no user serviceable parts

- HV cables are typically colored for easy identification

BEST PRACTICE to always turn OFF HV system when servicing a vehicle

General Maintenance & Service



General Maintenance & Service

Washing your EV

Electricity
and water
don't mix



General Maintenance & Service

Washing your EV

YES, YOU CAN WASH YOUR EV LIKE ANY OTHER CAR

- Electronic components, cabling and cable connectors are environmentally sealed to allow safe use of drive-thru vehicle washing systems

General Maintenance & Service

Towing your EV

- Towing procedures follow that of an ICE equivalent vehicle
- It is generally preferred to tow on a flatbed truck to prevent possibility of damage during transit
 - Front wheels suspended is acceptable
- Always refer to the owner/operator manual for any additional requirements and procedures

BEST PRACTICE to always turn OFF HV system when servicing a vehicle

General Maintenance & Service

Jump Starting your EV

- Identical procedure to that of an ICE equivalent vehicle
- Do not disconnect 12V battery from vehicle electrical system
- Jump Starting is STRICTLY for the 12V battery
- Always refer to the owner/operator manual for additional requirements and procedures

***BEST PRACTICE** to always turn OFF HV system when servicing a vehicle

Common 'False' Service Issues

What does this mean?



Common 'False' Service Issues

There is a learning curve with EV

- Operationally there are a few 'extra steps' that an owner/operator needs to make part of their daily routine
- Forgetting one of these new daily routines can lead to 'False' service issues

Common 'False' Service Issues

- Forgetting to plug in your vehicle to the charger
 - Battery is dead or will have little to no charge the next morning
- Forgetting to unplug your vehicle from the charger
 - Safety systems won't allow you to engage 'Drive' if charger is plugged in
- Charging Infrastructure malfunctions
 - Breaker faults
- HV system cutoff switch was left ON after PM work was performed

Thank You

THE BACKBONE OF MODERN COMMERCE

