



# I-CAR BEST PRACTICE – HV SAFETY PROTOCOL

## Basic Data

Type of Vehicle	Technician ID	License Plate Number	VIN Number
Date of Test	Technician Name	Client Name	Rated Voltage of HV Battery

High-Voltage Components:	Active System DTC	Part Number	Serial Number	Software Number
Electric Motor				
Inverter				
Battery				
HV Control Unit				
HV Charger				
HV Heater				
HV A/C Compressor				
DC/DC Converter				
Junction Box				
Other Component				

Initial Visual Inspection				
	Safe	Danger	Not Accessible	Comments
High-Voltage Warning signs in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Obvious system damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Orange HV cable damages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosion on bonding point of HV components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HV connectors damages or contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DTCs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All potential equalization (bonding) cables are present and functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Battery Temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



## Other Comments


Danger Move to Quarantine Area

## Measuring and Function Test

### Test and Measurement Equipment Used

	Model	Serial Number
Milliohm Meter		
Insulation Multimeter		
Multimeter		
Two-Pole Voltmeter		
Other Equipment		

## Zero Voltage Check (Two-Pole Volt Meter)

		Actual Values for High-Voltage Battery or Y Harness	Test Voltage:	
		Voltage	Safe	Danger
Vehicle Shut Down 13a	HV + to HV -		<input type="checkbox"/>	<input type="checkbox"/>
	HV + to GND		<input type="checkbox"/>	<input type="checkbox"/>
	HV - to GND		<input type="checkbox"/>	<input type="checkbox"/>
		Actual Values for High-Voltage Connector to Inverter (No Y Harness Used)	Test Voltage:	
		Voltage	Safe	Danger
Vehicle Shut Down 13b	HV + to HV -		<input type="checkbox"/>	<input type="checkbox"/>
	HV + to GND		<input type="checkbox"/>	<input type="checkbox"/>
	HV - to GND		<input type="checkbox"/>	<input type="checkbox"/>



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Physical Inspection				
	Safe	Danger	Not Accessible	Comments
Orange HV cable damages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosion on bonding point of HV components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HV connectors damages or contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All potential equalization (bonding) cables are present and functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Other Comments

## Potential Equalization Check (Bonding)

			Test Current of Measuring Equipment:					
(Vehicle Initialization 1a - 1f) Reference Value 1m Ω / meter (3 feet)	From	To	1 Actual Value mΩ	2 Actual Value mΩ	3 Actual Value mΩ	Safe	Danger	
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>

Insulation Resistance					
		Actual Values for Battery Side		Test Voltage:	
		Resistance	Voltage	Safe	Danger
(Vehicle Initialization 3a - 3b)	HV + to GND			<input type="checkbox"/>	<input type="checkbox"/>
	HV - to GND			<input type="checkbox"/>	<input type="checkbox"/>
		Actual Values for Inverter		Test Voltage:	
		Resistance	Voltage	Safe	Danger
(Vehicle Initialization 4a - 4c)	HV + to GND			<input type="checkbox"/>	<input type="checkbox"/>
	GND to HV +			<input type="checkbox"/>	<input type="checkbox"/>
	HV - to GND			<input type="checkbox"/>	<input type="checkbox"/>
	GND to HV -			<input type="checkbox"/>	<input type="checkbox"/>



## Test Interlock with Diagnostic Tool when Available

Interlock	Test Point / PID	Safe	Danger
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

## Evaluation and Test Comments


Danger Move to Quarantine Area

## Recommendation for Release from HV Expert

Suitable for Release	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Signature of High-Voltage Expert		
Date of Test		

## Release from Customer Workshop

Suitable for Release	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Signature of Workshop Representative		
Date of Test		