

GLV Pre startup

<u>GLV - Pre Startup Checklist</u>		<u>Check</u>
1	GLV Battery is disconnected from GLV Box.	
2	GLV Box is securely mounted on the vehicle.	
3	GLV connector panels are secured to GLV Box.	
4	Left side panel is securely mounted on the vehicle.	
5	Right side panel is securely mounted on the vehicle.	
6	Cockpit panel is securely mounted on the vehicle.	
7	All wires are secured to vehicle frame.	
8	Wire slack has been gathered and safely secured to vehicle frame.	
9	No conducting part of left side panel is touching vehicle body.	
10	No conducting part of right side panel is touching vehicle body.	
11	No conducting part of cockpit panel is touching vehicle body.	
12	GLV Battery is charged.	
13	Low Amp Circuit Breaker is not tripped	
14	High Amp Circuit Breaker is not tripped	
15	Connection to left side panel has been made to GLV Box port J3 with W3 cable.	
16	Connection to right side panel has been made to GLV Box port J4 with W33 cable.	
17	Connection to cockpit panel has been made to GLV Box port J6 with W22 cable.	
18	Safety Loop cable, W6 connected on GLV Box port J9 to Cooling Controller J3.	
19	GLV Power/CAN cable, W31, is connected to GLV Box port J16 to Cooling Controller port J4.	
20	Left side panel BRB is closed.	
21	Right side panel BRB is closed.	
22	Cockpit panel BRB is closed	
23	GLVMS is off and key is out.	
24	TSVMS is off and key is out.	

TSI Pre Startup

<u>TSI -Pre Startup Checklist</u>		<u>Check</u>
1	TSI Box is securely mounted on the vehicle.	
2	TSI connector panels are secured to TSI Box.	
3	All wires are secured to vehicle frame.	
4	DT connection to pedals has been made to TSI Box J1 to W24	
5	DT connection to peripheral lights has been made to TSI Box J2 to W23	
6	DT connection to cockpit panel has been made to TSI Box J3 to W25	
7	Safety Loop cable, W6 connected on TSI Box port J9 to Battery Pack 1	
8	Safety Loop cable, W6 connected on TSI Box port J6 to Cooling J2	
9	GLV Power/CAN cable W31 is connected to TSI Box port J8 to Battery Pack 1	
10	GLV Power/CAN cable, W31, is connected to TSI Box port J7 to Cooling J1	
11	Motor Controller cable W21 is connected to TSI Bot port J11	
12	High Voltage Cable W12 connected to Pack 1	
13	High Voltage Cable W13 connected to Pack 4	
14	High Voltage Cable W11+ connected to motor controler plus	
15	High Voltage Cable W11+ connected to motor controler plus	
16	High Voltage Cable W11 U connector from motor controller to motor U	
17	High Voltage Cable W11 V connector from motor controller to motor V	
18	High Voltage Cable W11 W connector from motor controller to motor W	
19	W26 connected from motor controller to motor	
20	Check all high voltage cables are secure and not shorting	

TSV Pre Startup

<u>TSV - Pre Startup Checklist</u>		<u>Check</u>
1	Pack 1 is secured to vehicle frame	
2	Pack 2 is secured to vehicle frame	
3	Pack 3 is secured to vehicle frame	
4	Pack 4 is secured to vehicle frame	
5	Assure clock is running on all packs with AMS (reset if not)	
6	High Voltage Cable W13 is connected from Pack 4 TS- to TSI	
7	High Voltage cable on Pack 4 TS+ connected to Pack 3 TS-	
8	High Voltage cable on Pack 3 TS+ connected to Pack 3 TS-	
9	High Voltage cable on Pack 2 TS+ connected to Pack 1 TS-	
10	High Voltage Cable W12 is connected from Pack 1 TS+ to TSI	
11	Safety Loop Cable W6 is connected from TSI J9 to Pack 1 J2	
12	Safety Loop Cable W6 is connected from Pack 1 J2 to Pack 2 J4	
13	Safety Loop Cable W6 is connected from Pack 2 J2 to Pack 3 J4	
14	Safety Loop Cable W6 is connected from Pack 3 J2 to Pack 4 J4	
15	Safety Loop Jumper connected in Pack 4 J2	
16	GLV Power/CAN cable W31 is connected from TSI J8 to Pack 1 J3	
17	GLV Power/CAN cable W31 is connected from Pack 1 J1 to Pack 2 J3	
18	GLV Power/CAN cable W31 is connected from Pack 2 J1 to Pack 3 J3	
19	GLV Power/CAN cable W31 is connected from Pack 3 J1 to Pack 4 J3	
20	GLV Power/CAN jumper connected in Pack 4 J1	

Startup

Startup Checklist		Check
1	GLV Battery is connected to the J1 2 pin DT connector	
2	Twist open right side BRB	
3	Twist open left side BRB	
4	Turn on GLVMS on right side panel	
5	Check GLV light is on	
6	Check IMD light is on then goes off	
7	Check Fault light is on then goes off with IMD	
8	Check Current/Voltage and Power Display on GLV Box is on	
9	Press green Mreset button on right side panel	
10	Check Safe light is on	
11	Assure that driver is conscious and ready	
12	Make sure no one is in front of or behind the car	
13	Turn on TSVMS on right side panel	
14	Driver should twist open cockpit BRB.	
15	Driver should press green Mreset on cockpit panel (observe that AIRs LED is lit)	
16	Check AIRs light is on	
17	Check TSEL light is on	
18	Driver should press brake, and not accelerator, and press drive button	
19	Check Drive light on	
20	Drive	

Shutdown

<u>Short Term Shutdown Checklist</u>		<u>Check</u>
1	Stop the car	
2	Driver presses BRB in cockpit	
3	TSEL is off	
4	Driver indicated they have shut down the cockpit	
5	Approach the car from the Right Side	
6	Shutdown TSVMS	
7	Driver can now exit the car	

<u>Long Term Shutdown Checklist</u>		<u>Check</u>
1	Complete Short Term Shutdown Checklist	
2	Shutdown GLVMS	
3	Press Right Side BRB	
4	Press Left Side BRB	
5	Disconnect GLV Battery	

Failures

<u>Fault Light Lit Checklist</u>		<u>Check</u>
1	Check Safety loop wiring	
2	Check Safety loop termination	
3	Check IMD fault	
4	Check Pack screen for faults (FLT#)	
5	Check Pack screen for charging (CHRG/CHRD)	
6	Check Circuit breakers on GLV	

<u>TSV Unexpected Shutdown (Fault light)</u>		<u>Check</u>
1	Ensure out of drive mode	
2	Check AIRs light on	
3	Check Pack screen for dead status (DEAD) Reset if detected	
4	Check status lights on motor controller are on	
5	Check voltage at TSVMP is >80V	
6	If lit complete Fault Light Lit checklist	

<u>No Voltage at TSVMP</u>		<u>Check</u>
1	Check Safe light on	
2	Check AIRs light on	
3	Check status on Pack screens (RDY/SAFE:CLOSED)	
4	Check fault light off	
5	Open AIRs	
6	Disconnect all HV Pack connections	
7	Close AIRs	
8	Check voltage across each pack	
9	Check 200A fuse in packs that do not have voltage	
10	Check AIRs close (use voltmeter) on packs that do not have voltage	
11	Back to the shop for repairs	