

<b>Reference</b>	SSM74274
<b>Models</b>	I-PACE / X590
<b>Title</b>	I-Pace High Voltage System - TA Escalation Process
<b>Category</b>	Driveability
<b>Last modified</b>	12-Feb-2019 00:00:00
<b>Symptom</b>	614000 Lack/Loss of Power
<b>Content</b>	<p><b>Issue:</b></p> <p>Recent visits to retailers to resolve concerns with the High Voltage (HV) Traction Battery have shown a number of concerns have been identified with the 12V system. Some functions within the HV Traction Battery can be inhibited if concerns are detected with the 12V circuit. The 12V circuit concerns must be addressed before any diagnosis is done with the HV Traction Battery.</p> <p><b>Action:</b></p> <p>As a result of the retailer visits, the PathFinder Guided Flow procedures for the HV Traction Battery are being revised. As an interim process to assist with accurate diagnosis, use the procedure below before raising a Technical Assistance (TA) for HV Traction Battery concerns.</p> <p><b>Process:</b></p> <p>This SSM is relevant to the Instrument Cluster warning messages listed below:</p> <ul style="list-style-type: none"> <li>• Battery fault detected</li> <li>• High Voltage system fault detected</li> <li>• High Voltage shut down not possible. System live.</li> </ul> <p><u>Step 1. Connect PathFinder and check DTCs:</u></p> <p>a) If DTC U3000-04 is present in the Battery Energy Control Module (BECM), the 12V system must be checked first - do Procedure A.</p> <p>b) If the code U3000-04 is not present in the BECM continue with Step 2</p> <p><u>Step 2. Refer to the DTC list in Appendix A:</u></p> <p>If any of the DTCS in Appendix A are present in the BECM, do Procedure C, otherwise do Procedure B</p> <p><u>Procedure A - Check 12V System</u></p> <p>Test 12V system:</p> <ol style="list-style-type: none"> <li>1. Put vehicle into 'Sleep mode': <ul style="list-style-type: none"> <li>• Open bonnet and latch the RH bonnet latch</li> <li>• Close all doors</li> <li>• Lock the vehicle</li> <li>• Wait for vehicle networks to shut down (sleep mode). This is typically 20 minutes and the Hazard Light Switch illumination will be OFF</li> </ul> </li> <li>2. Test the 12V batteries. Use the procedure 'Determining Battery Condition' in TOPIx Section 414-00A / Battery Care Requirements / Diagnosis and Testing / Section 4.6.</li> </ol> <p>NOTE: It is recommended to use the Midtronics GRX-3080 battery tester (GR8 - USA and Japan only). Where the GRX-3080 &amp; GR8 are unavailable, use the EXP-1080.</p>

3. When both the 12V batteries have passed, and the 12V system is operating correctly, continue with Step 2.

#### Procedure B - Check BECM data and raise TA

Connect PathFinder:

- Navigate to ECU Diagnostics > Battery Energy Control Module (BECM) > ECU Functions
- Select 'Display HV Battery Pack Voltage Information' and run the routine
- Exit PathFinder session
- Log out of PathFinder
- From the desktop, use the 'PathFinder Sessions Extractor' tool and save the session
- Create a TA
- State SSM 74274 in the Customer Comments field
- Select 'EV Electric Vehicle - Warning message displayed' from the symptom list
- Attach the saved session .zip file
- Describe Primary and Secondary diagnostics completed
- Submit the TA

#### Procedure C - Check BECM and BEM data and raise TA

Connect PathFinder:

- Navigate to ECU Diagnostics > Battery Energy Control Module (BECM) > ECU Functions
- Select 'Display HV Battery Pack Voltage Information'
- When the routine is complete, select 'Exit'
- Select 'Live Data'
- Using the search function, select each of the 9 DIDs listed below :

DID 490F – Electric Vehicle Battery Pack Voltage

DID 4900 – Electric Vehicle Traction Contactor Voltage

DID 4901 – Electric Vehicle Auxiliary Contactor Voltage

DID 490D – Electric Vehicle Front Inverter Fuse Voltage

DID 490B – Electric Vehicle Rear Inverter Fuse Voltage

DID 490E – Electric Vehicle Auxiliary Fuse Voltage

DID 491F – Electric Vehicle Traction Contactor Differential Voltage - Measured

DID 491E – Electric Vehicle Auxiliary Contactor Differential Voltage - Measured

DID 4909 – Electric Vehicle Negative Contactor Voltage

- Select 'Start Digital'
- Press and release the Start/Stop button to turn ignition on and wait for the Live Data readings
- Select 'Create PDF'
- Press and release the Start/Stop button to turn ignition off
- Press the footbrake firmly
- Press and release the Start/Stop button to enter 'Ready' mode and wait for the Live Data readings
- Select 'Create PDF'
- Press and release the Start/Stop button to turn off
- Exit PathFinder session
- Log out of PathFinder
- From the desktop, use the 'PathFinder Sessions Extractor' tool and save the session
- Raise a TA
- State SSM 74274 in the Customer Comments field

- Select 'EV Electric Vehicle - Warning message displayed' from the symptom list
- Attach the saved session .zip file
- Describe Primary and Secondary diagnostics completed
- Submit the TA

## APPENDIX A

### HV Traction Battery DTC List:

P0A0A-xx	High Voltage System Interlock Circuit
P0A1F-xx	Battery Energy Control Module
P0A95-xx	High Voltage Fuse "A"
P0AA0-xx	Hybrid/EV Battery Positive Contactor Circuit
P0AA6-xx	Hybrid/EV Battery Voltage System Isolation Fault
P0ABA-xx	Hybrid/EV Battery Pack Voltage Sense "A" Circuit
P0ABF-xx	Hybrid/EV Battery Pack Current Sensor "A" Circuit
P0ADD-xx	Hybrid/EV Battery Negative Contactor Control Circuit/Open
P0AE1-xx	Hybrid/EV Battery Precharge Contactor Circuit
P0AF8-xx	Hybrid/EV Battery System Voltage
P0B0E-xx	Hybrid/EV Battery Pack Current Sensor "B" Circuit
P0B33-xx	High Voltage Service Disconnect Circuit
P0D34-xx	Hybrid/EV Battery System Current
P0D4C-xx	Battery Charger Hybrid/EV Battery Output Voltage Sensor Circuit
P0E2F-xx	High Voltage Fuse "B"
P0E30-xx	High Voltage Fuse "C"
P3035-xx	Hybrid/EV Battery - Traction Positive Contactor Control Circuit
P3049-xx	Hybrid/EV Battery Charger "A" - High Voltage Supply Circuit
P304A-xx	Power Convertor A - High Voltage Supply Circuit
P304B-xx	Electric Booster Heater (PTC Heater) - High Voltage Supply Circuit
P304C-xx	Electric Air compressor - High Voltage Supply Circuit
P304D-xx	Front Electric Motor Inverter - High Voltage Supply Circuit
P304E-xx	Rear Electric Motor Inverter - High Voltage Supply Circuit
P304F-xx	Hybrid\EV Battery Contactor A
P3050-xx	Hybrid\EV Battery Contactor B
P3051-xx	Hybrid\EV Battery Contactor C
U3000-04	Control Module System Internal Failures
U3000-47	Control Module Watchdog / Safety Microcontroller Failure
U3000-48	Control Module Supervision Software Failure
U3000-56	Control Module Invalid / Incomplete Configuration

Technicians - Please rate this SSM and provide comments so that future communications can be improved.

1 = Poor – Basic information provided – The SSM does not help me resolve the customer concern.

3 = Average – Adequate information provided – The SSM partially helps me resolve the customer concern.

5 = Excellent – All required information provided to resolve the customer concern.

