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BATTERY AND CHARGING SYSTEM - GENERAL INFORMATION

QUIESCENT DRAIN (G2473530)

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DESCRIPTION AND OPERATION

VEHICLE QUIESCENT CURRENT TEST

If a customer complains of a startup battery that discharges continuously or when left for a prolonged period of time, it is recommended that a quiescent drain test is done as described below.

When the vehicle is armed, the effect of the security system status indicator flashing is to cause a pulsation in the measured current drain. In this case, either the average current should be taken (using a digital multimeter) with an averaging system) or the current reading taken, ignoring the brief high current peaks.

Equipment

A digital multimeter with current clamp.

METHOD OF MEASUREMENT

PREPARATION – ONLY ON VEHICLES, INSTALLED WITH SECURE TRACKER FEATURE



NOTES:

- The 'Service Mode' feature is not available on North American Specification (NAS) market vehicles.
- Before disconnecting power to the Telematic Control Unit Module (TCU) the vehicle owner must place the TCU into 'Service Mode'. The 'Service Mode' disables all alert triggers, except movement alert.
- This must be done for example when disconnecting the startup battery to do maintenance repairs.
- For security purposes 'Service Mode' is the sole responsibility of the vehicle owner as it requires a Personal Identification Number (PIN) code that has been defined by the owner.

The TCU 'Service Mode' can be activated in the following ways:

- Through the Call Center - The owner calls the Telematics Service Provider (TSP) and requests to set the vehicle into 'Service Mode'.
- Through the 'InControl© Remote' mobile phone application - The owner enables the 'Service Mode'.
- Through the InControl© website - The owner enables the 'Service Mode'.



NOTES:

- If the TCU is not set into 'Service Mode', then communication to and from the TCU may be lost, which may prevent the vehicle starting.
- **Failure to do so may result in any warranty claim being rejected.**

If the disconnection procedure is not done, the system sends a theft alert to the following:

- The owner, through the InControl® Remote mobile phone application.
- The Telematics Service Provider (TSP).

Then the system will enter 'Theft Notification' or 'Stolen Vehicle Tracking' mode during which time the charge in the TCU battery would be used. The emergency services may be falsely alerted that the vehicle has been stolen.

When the primary vehicle battery is disconnected for a period of time, the vehicle owner can define the time it is to be disconnected for. If the time is exceeded, the vehicle owner must re-activate the 'Service Mode'. To re-activate the 'Service Mode' the owner is required to use the 'InControl® Remote' mobile phone application.

ALL VEHICLES, USING A DIGITAL MULTIMETER WITH A CURRENT CLAMP

- 1** Switch off all electrical loads and make sure that the vehicle is in Power Mode 4 (vehicle unlocked and smart key present).
- 2** Remove any other potential electrical drains such as accessories plugged into accessory sockets.
- 3** Connect the current clamp to the digital multimeter.
- 4** Calibrate the current clamp.
- 5** Install the current clamp around the startup battery ground cable.
- 6** Follow the instructions in the "Quiescent Current Test" section in this procedure.

QUIESCENT CURRENT TEST

- 1** Select Power Mode 6 (Ignition ON) and then select Power Mode 4 (vehicle unlocked and smart key present) (do not crank).
- 2** Open and latch all doors, hood, tailgate or luggage compartment lid.
- 3** Lock the vehicle using the remote function on the smart key (Single lock only to avoid volumetric sensor arming).
- 4** Wait until the vehicle systems have completely shut down.
 - The hazard warning lamp switch illumination or the Light Emitting Diode (LED), installed in the switch is a possible indicator of the shutdown period. When the Body Control Module (BCM)/ Gateway Module A (GWM) shutdown has completed, the illumination of the hazard warning lamp switch or the LED extinguishes.
 - If none of the above listed indicators are available, wait until the specified time for shutdown period has elapsed. Refer to the 'Quiescent Drain - Typical Values' section in this procedure for details.
- 5** Record the amperage readings.
- 6** Record the final reading on the battery report form.

The preferred method of testing following an excessive current consumption figure is to use a current clamp around individual junction box leads to the various suspected circuits to identify a potential cause.

This is in preference to the old method of removing fuses for the following reasons:

- The drain may be caused by a module remaining active and preventing the quiescent drain from reducing to normal levels.
- The drain may be caused by a relay winding that is activated. Pulling the fuse can allow this to 'reset' and the drain will be lost and go un-diagnosed.

QUIESCENT DRAIN - TYPICAL VALUES



NOTE:

The quiescent drain after the initial shutdown period should not exceed the value shown in the table.

BRAND	MODEL	SHUTDOWN PERIOD (MINUTES)	TYPICAL BATTERY DRAIN VALUES
Jaguar	All, except I-Pace (X590)	30	<30 mA (average over 10 minutes)
Land Rover	All		

The total current drain will be higher if certain approved accessories are installed. For example: tracker, trailer module.

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