PUBLISHED: 06-FEB-2018
2017.0 XE (X760), 414-00

BATTERY AND CHARGING SYSTEM - GENERAL INFORMATION

DESCRIPTION AND OPERATION

VEHICLE QUIESCENT CURRENT TESTING

On vehicles fitted with a Battery Monitoring System (BMS), the diagnostic routine for quiescent drain testing in the approved Jaguar or Land Rover diagnostic system should be utilized.

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

The battery drain should be measured using the approved Jaguar or Land Rover diagnostic system or a Digital Multi-Meter (DVOM). A procedure for quiescent drain measurement using the diagnostic system is available in the Diagnosis and Testing section of the Workshop Manual. The vehicle should be in the locked/armed state (for example vehicle alarm fully armed), all doors, engine and luggage compartment lids are open and latched (so as to appear closed from an electrical point of view). The test should take place after the vehicle has entered shutdown mode. The time taken for this to occur after the ignition is switched off varies according to model (Refer to the Topix On line resource for details).

When the vehicle is armed, the effect of the security system Light Emitting Diode (LED) flashing is to cause a pulsation in the measured current drain. In this case, either the average current should be taken (using a Digital Multi- Meter (DVOM) with an averaging system) or the current reading taken, ignoring the brief high current peaks.

EQUIPMENT

Approved Jaguar or Land Rover diagnostic system with current probe**OR** Digital Multi-Meter (DVOM) with current probe.

METHOD OF MEASUREMENT

Using an Approved Jaguar or Land Rover Diagnostic System.

1. Switch off all electrical loads and ensure that the ignition is off
2. Connect the current probe to the approved Jaguar or Land Rover diagnostic system
3. Calibrate the probe
4. Install a clamp around the battery lead/junction box lead
5. Go to the Quiescent Current Testing section in this procedure

Using a digital multimeter

Do not use an in-line DVOM to measure the quiescent drain on vehicles fitted with an electronic throttle (for example XK 2006 onwards). The current exceeds the maximum amount the fuse in the DVOM is capable of handling.

1. Switch off all electrical loads and ensure that the ignition is off
2. Connect the current probe to the digital multmeter
3. Calibrate the probe
4. Install a clamp around the battery lead/junction box lead
5. Go to the Quiescent Current Testing section in this procedure

QUIESCENT CURRENT TESTING

1. Switch ignition to ‘on’ or select ignition mode in keyless vehicles and switch to ‘off’ (do not crank)
2. Remove key from ignition switch (if equipped)
3. Open and latch all doors, hood and luggage compartment lid
4. Lock the vehicle using the remote function on the remote handset. (Single lock only to avoid volumetric alarm arming)
5. Remove any other potential electrical drains such as accessories plugged into accessory sockets
6. Record the amperage readings after the shutdown period referenced in the Topix on line resource for details. Note all cars from 10MY onwards and XK from 07MY and XF from 08MY should be less than 30mA after 30 minutes
7. 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 probe 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.

Jaguar Quiescent Drain Values

MODEL	SHUT DOWN PERIOD (MINUTES)	TYPICAL VALUES BATTERY DRAIN (MA)
XJS 3.2	60	<30
Sovereign 3.2	60	<37.3
XJ6 4.0	60	<38.6
XJS	60	<43.9
XJ6 (X300) (1995MY)	60	<43
XJ8 (X300)	60	<30
XK8 (X100)	60	<30
S-Type (X200)	60	<30
X-Type (X400)	30	<30
XJ6 (X350)	40	<30
XJ8 (X350)	40	<30
XK (X150) - From 2006 MY	<20 (after lock/arm condition) ²	<30

MODEL	SHUT DOWN PERIOD (MINUTES)	TYPICAL VALUES BATTERY DRAIN (MA)
	33 (unlocked)	<30
XF (X250) - From 2008 MY	<20 (after lock/arm condition) [2]	<30
	33 (unlocked)	<30
XF (X250) - From 2013 MY	<10 (after lock/arm condition) [2]	<25
XF SportBrake (X250) - From 201 3MY	<10 (after lock/arm condition) [2]	<25
	<20 (unlocked)	<25
XJ (X351) - From 2010MY - 2012 MY	10 (afterlock/arm condition) [2]	<20
	30 (unlocked)	<20
XJ (X351) - From 2013 MY	10 (afterlock/arm condition) [2]	<20
	<20 (unlocked)	<20
F - Type (X152) - From 2013 MY	10 (afterlock/arm condition) [2]	<20
	<20 (unlocked)	<20
XE (X760) - From 2016 MY	10 (afterlock/arm condition) [2]	<20
	<20 (unlocked)	<20
E-Pace (X540) - From 2018 MY	10 (afterlock/arm condition) [2]	<20
	20 (unlocked)	<20
F-Pace (X761) - From 2017 MY	10 (afterlock/arm condition) [2]	<20
	<20 (unlocked)	<20

NOTE:

1. The total current drain will be higher if certain approved accessories are fitted (for example: tracker, trailer module, etc.)
2. Applies to vehicles without Tire Pressure Monitoring System (TPMS). Vehicle shut-down period with TPMS is approximately 15 minutes.