



## SVE BULLETIN

### SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

Toll-free: (877) 840-4338

E-Mail: [bbasqa@ford.com](mailto:bbasqa@ford.com) (preferred)

Fax: (313) 594-2633

Website: [www.fleet.ford.com/truckbbas](http://www.fleet.ford.com/truckbbas)

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## Snowplow Headlamp Control with Smart Junction Box

**Addressed To:** Snowplow manufacturers and their suppliers of headlamp control systems.

**Models Affected:** 2008 Model Year F250/350/450/550

### **SPDJB: System Description**

Smart Power Distribution Junction Box (SPDJB or SJB) was incorporated in the 2008 model year F250/350/450/550. Its job is to provide protection against excessive current loads, typical of a short circuit, by shutting down circuit function. The "low-beam" circuit (or "auto-lamps" if so equipped) is protected by SPDJB integrated circuit strategy that shuts down headlamp function when it detects excessive, predetermined, current levels (i.e. larger than a 55-watt bulb load) or short-to-ground.

### **The Affect on Aftermarket Snowplow Headlight Systems**

The SJB strategy may interpret the switching between Ford headlamps and aftermarket snowplow headlamps, and vice-versa, as a short-to-ground, causing the power feeding a headlamp circuit through the SJB to be turned off. The following are examples of normal snowplow headlamp activity where this may occur.

- Disconnecting the snowplow headlamp connector for a functional-test during installation. If wired for "automatic" operation then the snowplow headlamp current is immediately diverted to the Ford headlamps. SPDJB interprets the immediate in-rush current to a cold Ford lamp as a short-to-ground.
- If wired for "manual" operation, identified by a separate aftermarket headlamp switch, then any switching between the Ford and snowplow headlamps after one headlamp system has already been illuminated through the SJB will trigger a shut-down.
- Normal daily snowplow hook-up if Ford headlamp is ON in "low-beam" (or "auto-lamps" active if so equipped).

### **The Effect of an SPDJB Shut-down Event**

- Full Ford headlamp function can be restored by turning the Ford headlamp switch off and back on again. However, a short-to-ground DTC code is flagged and will not clear until approximately 80 key-on ignition starts. The codes are B2A2F (right-front low-beam) and B2A31 (left-front low-beam). Also, the event is stored and after 200 events a Ford dealer will be required to clear codes and return normal headlamp switch function. This repeats at 400 events, and at 600 events the SJB will require replacement.
- Open circuits will not have an affect on SJB diagnostics during normal operation.

### **Solution**

On 04/23/07, customers may have their Ford dealer reprogram the Smart Junction Box (SJB) with a new calibration using Technical Service Bulletin TSB 07-09-01. After reprogramming no other operator intervention is required. New vehicles from KTP with "Snowplow Prep Package Option" (Order Code 473), or "Snowplow/Camper Prep Option", and with a build date of 4/18/07 or later, already have this new calibration included.

NOTE: Relay-driven functions such as the Ford high-beams or park-lamps are not monitored by SJB control strategy. Therefore, if required prior to applying the TSB, the snowplow can still be used because the SJB will not affect snowplow headlamp operations with the Ford headlamp switch in either the "OFF" position, or "ON" in park-lamp position, or "ON" with high-beams activated.