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Coding Information

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Title: ProStar Parasitic Battery Load and Predelivery Storage Recommendations

Applies To: All ProStar ONLY

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

10/12/2015 - Initial Article Release
2/21/2017 - Added allowable amp draw for 500K vehicle

DESCRIPTION

If you want to deliver your customer a truck with fully charged batteries: Option A - recharge the batteries after being depleted -OR- Option B - follow this procedure to ensure they never become depleted.

The purpose of this procedure is to provide information regarding normal parasitic battery draw on a ProStar®, the impacts of this draw on battery state of charge, and to provide a simple procedure for preserving the batteries at a full state of charge when extended periods of vehicle downtime or storage are expected.

Parasitic Load

Parasitic load or current draw refers to the amount of current demanded by a vehicle while at rest, with Key OFF, and after all modules have powered down (gone to sleep). The normal parasitic load on a ProStar® Sleeper prior to entering into low voltage disconnect is 150-180mA (0.150-0.180A). The normal parasitic load on a ProStar® Sleeper after completing its low voltage disconnect at 12.1V -OR- on a ProStar® Daycab is less than 50mA (**500mA on 500K vehicles**) (< 0.050A). Note: This parasitic load is considered normal and can be measured on most modern trucks and automobiles which require engine, brake, instrument cluster, and body control modules. Although not recommended, a ProStar® with fully charged batteries can remain parked for several months without requiring a jumpstart.

Battery State of Charge

Battery state of charge (SOC) is the batteries available capacity measured in percentage. There are multiple factors that impact battery SOC, however, the batteries open circuit voltage can be used as a rough estimate for determining the SOC. For an AGM (absorbed glass mat) battery 12.7V or greater is generally considered 100% SOC and 12.6V or greater for a flooded wet cell battery. The load shed point of 12.1V is roughly 50% SOC depending upon how fast they are depleted. Anything below 11.7V is generally considered 0% state of charge.

Parasitic Load and Storage Recommendations

The most reliable method for preserving a battery during storage is with the battery at a full SOC and open circuit (no loads attached). Unfortunately, after the batteries are installed, this requires breaking down the pack. However, the below service procedure provides a method for removing the parasitic load on a ProStar without having to break down the pack. Prior to performing this procedure, consider the amount of time the truck will be stored and the impact of the parasitic load on battery SOC.

Example: ProStar equipped with 4 AGM batteries. Each battery is rated at 100Ah (amp hours) providing a combined capacity of 400Ah. At 150mA parasitic load the pack will be depleted at 0.15A per hour or 0.15A X 24hours per day = 3.6 Ah per day. After 30 days, 30 days X 3.6A per day = 108 Ah or 400 Ah - 108Ah = 292Ah remaining capacity. This is not a precise calculation for battery state of charge because the 100Ah rating is based upon a 20hr discharge, however you can approximate the battery state of charge by dividing 292Ah / 400Ah = 0.73 or approx 73% SOC.

SERVICE PROCEDURE

1. Remove the surface charge from the battery pack. With key OFF, turn on the low beam headlamps and marker lamps for 3-4 minutes.
2. Shut off the low beam head lamps and marker lamps.
3. Using a voltmeter, measure voltage between the positive and negative posts on the batteries. If the voltage is greater than 12.7V for AGM or 12.6V for flooded proceed to step 4. If the voltage is below 12.7V for AGM or 12.6V for flooded batteries consider charging the trucks battery pack to a full state of charge prior to storage.
4. Inside the ProStar battery box, locate the 200A cube fuse for the primary cab power cable as shown in Figure 1. With extreme caution not to short the ratchet against exposed metal, use a 9/16" socket to remove the nut from the positive battery post. Remove the cab power cable and move it to the front of the battery box so it will not come into contact with the battery connections.

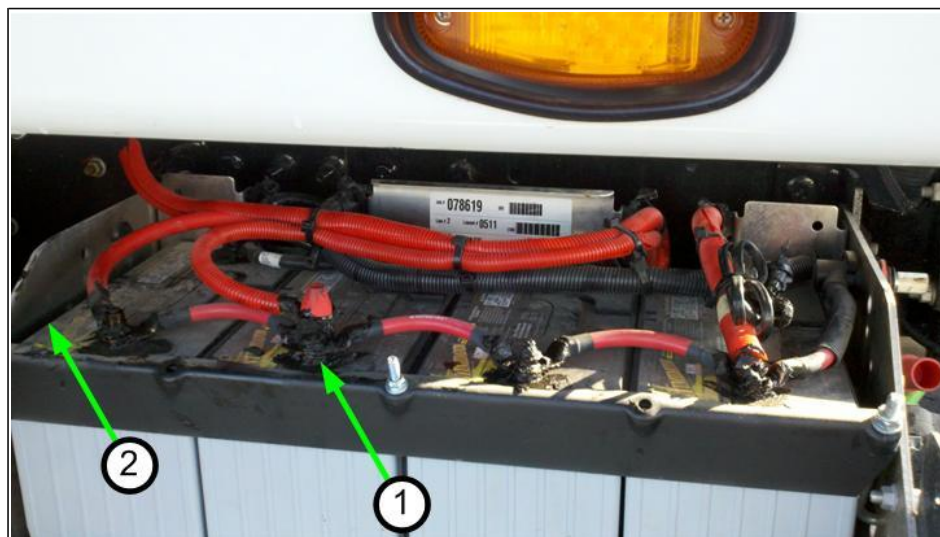


FIGURE 1

1. Main cab power cable with 200A cube fuse
2. Move cab power cable to the front of the box to prevent contact with battery connections

5. When reconnecting the main cab power cable to the battery positive post make sure it is reinstalled on the same post as it was removed from, the second battery from the front, and torque to 12-15 LB-FT (16-20 N-M).

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