

B & C Specialty Products Inc

123 East 4th St, P.O. Box "B" ---- Newton KS 67114-0894

Telephone (316) 283-8000 ---- Fax (316) 283-7400

Manufacturer of Lightweight Electrical Systems

BATTERY DATA AND INSTRUCTION SHEET

INSTALLATION:

It is best to mount the battery upright, but it can be laid on its side if necessary. In aerobatic aircraft, it is very important that the bracket holding the battery down spreads the clamping loads evenly over the top of the battery. When you're upside down, this bracket becomes the base. Therefore, the clamping loads should be spread over the top of the battery just as evenly as they are spread under the battery. A battery case failure due to localized clamping loads is bad news.

Any extra resistance between the battery and the starter can have a detrimental effect on how the battery-starter system operates. Listed below are some common problems:

1. Starter cable smaller than #2 copper.
2. Bad starter solenoid. If the studs rotate as the nuts are tightened, you lose 95% of the contact area. We recommend using a solenoid available from B & C Specialty Products' P/N S811-1.
3. The bonding strap from your engine to the airframe can be too small. The bonding strap should be the same size as the cable that supplies the (+) power to the starter.
4. The resistance of your steel airframe which is used as ground back to your battery negative terminal is the source of more resistance than most people would think.
5. A long starter cable. The shorter this cable is, the less resistance.

CHARGING VOLTAGE:

Any battery we sell should be charged at $14.6 \pm .2$ volts. Charging any of these batteries at a voltage in excess of the recommended voltage will shorten the life of the battery. Charging at less than the recommended voltage increases time required to reach full charge. Because of this, it is very important that you have an adjustable voltage regulator. To set the regulator to charge at the correct charging voltage, connect a hand-held digital voltmeter (digital is more accurate than analog) directly to the battery posts. Run the engine with the alternator turned ON, most equipment in the aircraft turned OFF, and adjust the regulator until the voltage at the battery reads the appropriate voltage. This is a good time to check the accuracy of your panel mounted voltmeter.

If you use a regular automotive or motorcycle battery charger (including trickle chargers), you will shorten the life of the battery. Most chargers will start out at around 13 volts, but as the battery gets charged up, the voltage goes higher and higher until it reaches 15 to 16 volts. If you want to use a charger without shortening the life of your battery, you have two options:

1. Use a regular automotive charger, monitor the voltage it is charging at, and remove the battery from the charger when it reaches 14.6 volts.
2. Use an automatic charger which has additional electronics built-in to automatically limit the charging voltage. You would need to adjust the charger to shut OFF at 14.6 volts. Chargers which switch to a "Float" or "Maintenance" mode as the battery reaches full charge are usually acceptable. Check that the float voltage is 13.8 volts. This voltage may be left on the battery for extended periods of time. If you would like to purchase an automatic charger, we have .8 amp and 1.2 amp battery chargers available with voltage limiters.

CHARGING TEMPERATURE:

These batteries should be charged at an ambient temperature within the range of 40°F to 95°F. Charging at temperatures below 32°F or over 104°F is not recommended; the battery might be deformed by heat, or not charged enough.

MAINTENANCE-FREE OPERATION:

There is no need to check the specific gravity of the electrolyte or to add water during the service life. The battery is totally sealed, and needs only charging maintenance. There is no corrosive gas generation during normal use.

DEEP DISCHARGE:

These batteries have good deep discharge recovery capability. However, if the battery is repeatedly discharged below 10.5 volts, the battery life will be shortened. Therefore, we do not recommend using the BC103-1, 12AH battery on aircraft not equipped with alternators. Furthermore, we do not recommend using either the BC103-1, 12AH battery or the BC116-1, 16AH battery on aircraft equipped with PM (permanent magnet) type starters.

STORAGE:

When not in use these batteries should be stored in a cool dry place. Periodic charging is required every 60 to 90 days to prevent the battery from discharging due to normal internal leakage current. During extended storage at a constant charge state the battery plates will sulfate, increasing the battery's internal resistance until the battery is unserviceable. A maximum shelf life of 1 ½ years should be expected.

DOT and IATA APPROVAL:

These batteries have been approved for shipment by air by both DOT and IATA.