

Instructions for Current PSC-12800A-C Charger Battery Belt & Chargers

Bescor PRB-7XLR 12 Volt 7.2 Ampere-Hour Battery Belt

This is a leakproof maintenance-free sealed lead-acid gel-type battery which can be used in any position. Its capacity of 7.2 amp-hrs means that when new it can power a .72 amp load (such as a typical 16mm camera equipped with an efficient Tobin drive motor and no torque motor) for about 10 hours on a charge, theoretically 21,600 feet of film at 24 FPS. (.72 amp x 10 hrs = 7.2 amp-hrs.) With a higher current drain the capacity is reduced. It has no “memory” and holds its charge in storage far better than a nickel-cadmium type battery.

A built-in automatic resetting PTC (positive temperature coefficient) “circuit breaker” device is present, which will reduce the current to a low value if more than about 15 amps is drawn from it, from a short circuit in the cable or camera which could melt or burn the wiring and shorten battery life. This device will reset automatically if everything is unplugged from the battery belt and it is left to cool for a few minutes or more.

The battery belt may have 75% to 100% of full charge when purchased. Charge it before use for about 25% of the full charge time. Charge it also whenever it has been stored without use for 3 months or more. For best results and longest life we recommend the automatic-cutoff charger to prevent overcharging or undercharging.

The life of the batteries will be greatest if they are recharged within 24 hours of use, after each use instead of waiting for them to be totally drained. If recharged after using only 30% of capacity the expected life is 1000 to 2000 charge-discharge cycles. If recharged when 50% drained the expected life is 400 to 800 cycles. If recharged only when totally exhausted the expected life is reduced to 150 to 300 cycles.

Preferably use the permanently attached XLR cable for powering your camera or other load. The cigarette lighter receptacle is less reliable. The 4-pin XLR female connector has industry standard wiring, that is pin 1 negative (—) and pin 4 positive (+). The batteries will last a long time but not forever. You should plan on having them re-celled after a few years or so.

Power Sonic PSC-12800A-C Automatic Charger

This is the charger that is recommended by TCS for the battery belt. It will not undercharge or overcharge, and two lights indicate the status of the charging without guesswork on the part of the user. The unit we supply has been modified by TCS to include a 4-pin XLR male connector for a positive and reliable connection to the battery.

To use, simply plug into a two-wire or grounding AC wall receptacle or extension cord. The unit is self-adjusting for any line voltage and can be used world-wide with plug adapters. Plug the XLR charger output into the XLR connector of the battery. The light will show the status of charging:

● A **red** light shows that the battery is on fast charge.

● A **green** light shows that the battery is on float charge.

If the battery is only slightly used, the charger may go to float charge immediately, which is normal. If the charger is not plugged in and receiving power, the lights will be dark. The charger can be left connected indefinitely on float charge without overcharging, as the 13.80 float output voltage is equal to the voltage of a fully charged battery, so then no current will flow.

Bescor BC-500 and BC-1000 Manual Charger

These chargers are supplied where a low initial price is paramount, and the batteries will not be used much, or else the user is prepared to measure the charge voltage and manually stop charging. None of these models indicate whether they are actually working properly, or even if they are plugged in and getting power. They can only be used on 120 volt 60 Hz current.

The BC-500 will give a full charge in 16 hours, and the BC-1000 will give a full charge in 8 hours. If the battery is only partly discharged, you must charge for only the proportion of time that you have used. Overcharging and undercharging are both possible, especially if the line voltage is off, and either condition will shorten the life of the battery.

For best results, you should use a DC voltmeter to measure the voltage of the battery while it is still being charged, from the battery's other, spare power socket. Stop charging when the actual charging voltage reaches 14.75 volts.

Tobin Cinema Systems, Inc.
Website: <http://www.tobincinemasystems.com>

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Instructions for Previous PSC-12800A Charger Battery Belt & Chargers

Bescor PRB-7XLR 12 Volt 7.2 Ampere-Hour Battery Belt

This is a leakproof maintenance-free sealed lead-acid gel-type battery which can be used in any position. Its capacity of 7.2 amp-hrs means that when new it can power a .72 amp load (such as a typical 16mm camera equipped with an efficient Tobin drive motor and no torque motor) for about 10 hours on a charge, theoretically 21,600 feet of film at 24 FPS. (.72 amp x 10 hrs = 7.2 amp-hrs.) With a higher current drain the capacity is reduced. It has no “memory” and holds its charge in storage far better than a nickel-cadmium type battery.

A built-in automatic resetting PTC (positive temperature coefficient) “circuit breaker” device is present, which will reduce the current to a low value if more than about 15 amps is drawn from it, from a short circuit in the cable or camera which could melt or burn the wiring and shorten battery life. This device will reset automatically if everything is unplugged from the battery belt and it is left to cool for a few minutes or more.

The battery belt may have 75% to 100% of full charge when purchased. Charge it before use for about 25% of the full charge time. Charge it also whenever it has been stored without use for 3 months or more. For best results and longest life we recommend the automatic-cutoff charger to prevent overcharging or undercharging.

The battery belt may have 75% to 90% of full charge when purchased. Charge it before use for about 25% of the full charge time. Charge it also whenever it has been stored without use for 3 months or more. For best results and longest life we recommend the automatic-cutoff charger to prevent overcharging or undercharging.

The life of the batteries will be greatest if they are recharged within 24 hours of use, after each use instead of waiting for them to be totally drained. If recharged after using only 30% of capacity the expected life is 1000 to 2000 charge-discharge cycles. If recharged when 50% drained the expected life is 400 to 800 cycles. If recharged only when totally exhausted the expected life is reduced to 150 to 300 cycles.

Preferably use the permanently attached XLR cable for powering your camera or other load. The cigarette lighter receptacle is less reliable. The 4-pin XLR female connector has industry standard wiring, that is pin 1 negative (—) and pin 4 positive (+). The batteries will last a long time but not forever. You should plan on having them re-celled after a few years or so.

Power Sonic PSC-12800A Automatic Charger

This is the charger that is recommended by TCS for the battery belt. It will not undercharge or overcharge, and a multicolor light indicates the status of the connection and charging without guesswork on the part of the user. The unit we supply has been modified by TCS to include a 4-pin XLR male connector for a positive and reliable connection to the battery.

To use, simply plug into a grounding 120 volt 60 Hz wall receptacle or extension cord. Plug the XLR charger output into the XLR connector of the battery. The light will show the status of charging:

- A **yellow** (actually amber-yellow) light shows that the battery is on fast charge.
- A **green** (actually yellow-green) light shows that the battery is on float charge.
- A **red** light shows that the battery is wired incorrectly and is hooked up backwards.

If the battery is only slightly used, the charger may go to float charge immediately, which is normal. Note that the colors screened on the case are over-optimistic; the actual LED (light emitting diode) colors are yellow-green rather than pure green, and amber rather than pure yellow. If the charger is not plugged in and receiving power, the light will be dark. The charger can be left connected indefinitely on float charge without overcharging, as the 13.80 float output voltage is equal to the voltage of a fully charged battery, so then no current will flow.

Bescor BC-500, BC-500E and BC-1000 Manual Charger

These chargers are supplied where a low initial price is paramount, and the batteries will not be used much, or else the user is prepared to measure the charge voltage and manually stop charging. The BC-500E is supplied for use on European 220 volt 50 Hz power, where a Power Sonic charger is not available for this mains voltage. None of these three models indicate whether they are actually working properly, or even if they are plugged in and getting power.

The BC-500 and BC-500E will give a full charge in 16 hours, and the BC-1000 will give a full charge in 8 hours. If the battery is only partly discharged, you must charge for only the proportion of time that you have used. Overcharging and undercharging are both possible, especially if the line voltage is off, and either condition will shorten the life of the battery.

For best results, you should use a DC voltmeter to measure the voltage of the battery while it is still being charged, from the battery's other, spare power socket. Stop charging when the actual charging voltage reaches 14.75 volts.

Battery Belt Supplementary Instructions

Precautions for “cigarette lighter” power socket

WARNING: This socket is “live” (i.e., has 12 volts DC present) at all times.

DO NOT store the XLR plug in this power socket. **DO NOT** insert any metal objects other than a proper “lighter plug” connector.

Doing so will short circuit the battery. Although a circuit breaker is present, it is an automatic-reset type which will cycle through its on and off cycles and eventually burn out, and it could fail in either the on or off state. This will also discharge the battery at an excessive rate, shortening its life, and cause a fire or battery explosion hazard. This damage and risk is not covered by your warranty.

This socket is provided for two purposes: (1) For recharging the battery using the manual charger, and (2) For powering accessories such as movie/video lights that use this type of connector. We recommend inserting a plastic, rubber or wood stopper or cap when it is not in use.

Tobin Cinema Systems, Inc.
<http://www.tobincinemasystems.com>

