

DIRECT+ Battery Charger

The Direct+ charger is shown in *Figure 1*. A grounded power supply of 95-240 VAC, 50/60 Hz should be provided to the charger. Make sure that the battery charger is positioned so it has adequate clearance to allow air circulation by the cooling fan. Detailed operating instructions are supplied with the battery charger.

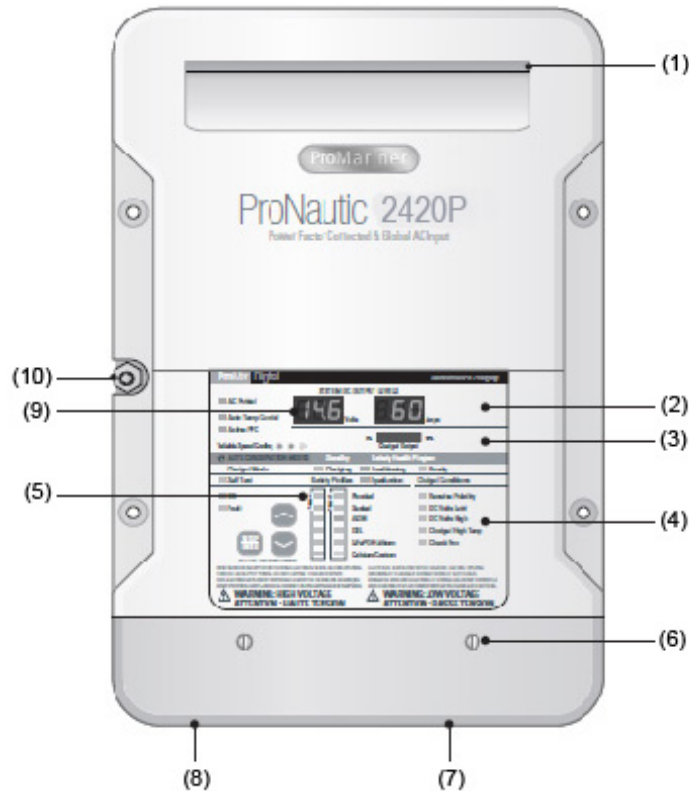


Figure 1

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|--------------------------------|--------------------------------|------------------------------------|
| (1) COOLING VENT | (5) CHARGING PROFILE SELECTED | (9) VOLTAGE OUT DISPLAY |
| (2) AMPERAGE OUT DISPLAY | (6) AC AND DC CONNECTION COVER | (10) ABYC RECOMMENDED BONDING STUD |
| (3) PERCENTAGE OF OUTPUTS USED | (7) DC SIDE TERMINATIONS | |
| (4) FAULTS | (8) AC SIDE TERMINATIONS | |

The ProNautic 2420P charger is supplied with the proper 115/230 VAC input power cord and 24 VDC output power cord already attached. The charger should also be preset for the type of battery included with your Direct+ lane machine.

- AGM and 30 Ahr Lithium batteries should be preset to the Custom Profile set to 28.6 VDC and 50% current (amps) output.
- The 48 Ahr Lithium battery should be preset to the Custom Profile set to 28.6 VDC and 100% current (amps) output.

Contact Brunswick Technical Support or your installing distributor if your charger is not set to the proper settings for the type of battery in your machine.

It is best to install the charger onto a wall within 8 feet of a power outlet that is not being used to power other equipment. The AC power cord has an in-line On/Off switch to allow you to turn the power off BEFORE disconnecting the DC output cable from the left hand charge port on the lane machine. The DC output cable should then be reconnected to the left hand charge port BEFORE turning on the AC power back on the charger.

Battery Charger: Connecting to Envoy

Start with the AC input power to the battery charger switched OFF. Connect the red 24 VDC output connector of the battery charger to the matching red charger connection port on the left hand side cover of the Envoy. Make sure the green 'POWER' LED on the left-hand side cover of the Envoy indicates that the lane machine power is ON. The switch ON the power to the battery charger. This sequence assures that the charger always starts with the proper mode necessary to the stat of the battery discharge.

The red 'CHARGE' LED located on the left-hand side cover of the Envoy, should turn ON only after it sense voltage from a properly connected battery charger. This indicates the START of the battery charging process. Switch OFF the power to the battery charger before removing the red charger connector from the left-hand side cover of the Envoy. The red 'CHARGE' LED does not turn off if the charger is disconnected. This red 'CHARGE' LED remains ON until the lane machine prepares to run a lane or the power is turned off. The red 'CHARGE' LED should then turn ON again after it senses voltage from a properly connected battery charger. Refer to *Figure 2*.

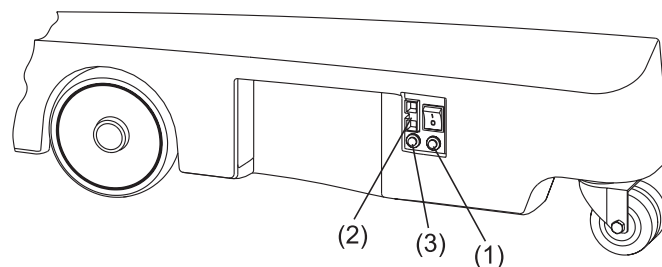


Figure 2

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| (1) GREEN POWER LED MUST BE ON TO CHARGE AND MONITOR BATTERIES | (2) CONNECT RED CHARGER CONNECTOR TO PORT ON LEFT HAND SIDE COVER | (3) RED CHARGER LED TURNS ON TO INDICATE START OF CHARGING BATTERY |
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Battery Charger: Connecting to the MAX

Start with the AC input power to the battery charger switched OFF. Connect the red 24 VDC output connector of the battery charger to the matching red charger connection port on the left hand side cover of the MAX. Make sure the green 'POWER' LED on the left-hand side cover of the MAX indicates that the lane machine power is ON. The switch ON the power to the battery charger. This sequence assures that the charger always starts with the proper mode necessary to the stat of the battery discharge. The MAX will begin monitoring the charging cycle when the DC output voltage reaches 26.8 VDC. The MAX can be charged with the machine power off, however the system will not be able to monitor the charge.

Remember, always connect the battery charger to the lane machine when not running lanes:

- The battery charger is designed to remain connected to the lane machine whenever not running the lane machine. It will keep the batteries in optimal condition and will not overcharge them.
- Leaving the lane machine on for any extended time without connecting the battery charger will slowly discharge the batteries and reduce their capacities.