



User Manual

Hydro Charger



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1. Content

- Art. No. 7147 Transom
Generator with Shaft 30 mm, 4 m 3-core cable 2,5 mm²
Propeller with 1 driving pin, 2 washer and lock nut
Charge Controller 12/24 Volt, with LED/Alarmbuzzer and 4m cable
Transom mount bracket
- Manual

2. Tools/ Materials

- 17 mm socket wrench for propeller
- 13 mm wrench for pipe clamps and counter plate
- 6mm Allen key
- Batterie cable min. 6 mm², length depending of installation
(Controller to batteries)
- Cable ties
- Waterproof through connector

3. Mounting on transom

The HYDRO CHARGER propeller should be at least 30 cm under water thus applied a uniform flow. Because of the heel always the position should be as close as possible near the centerline of the boat on the transom, but laterally offset from rudders and boat propeller.

Wherein said transom mount is to be noted that the counter-plate is internally well supported. In a very thin transom wall, it's recommended to reinforce the wall still further.

4. Mounting HYDRO CHARGER

The driving pin from the propeller is inserted into the axis, so that it at both sides equally far faces. The propeller is attached and the pin must exactly fit into the slot. With washer and nut the propeller is fixed. Over the propeller nut the sacrificial anode is screwed.

The appropriate transom bracket should be mounted.

Subsequently, the base support and the generator can be plugged together and fastened. Then the generator is mounted to the base support of the respective bracket and secured with the safety pin.

The HYDRO CHARGER always should be ADDITIONELLY SECURED to the boat. These ropes serve for raising and lowering of the generator.

At the lower segment the inclination of the transom can be compensated so that the HYDRO CHARGER can operate in the water in vertical position. The propeller center should be at least 30 cm under the water.

5. Mounting of the charge controller

The charge controller is placed by means of four screws in a dry compartment in the vicinity of the batteries in a manner that one can see good the digital display. The battery cables should be as short as possible.

Plus on the connector “Batt +” and with a red cable on the plus of the battery and the black cable from the “Batt -“. A 40 Amp fuse in the red wire protects the HYDRO CHARGER in case of a short circuit of the batteries.

From the three screw connectors “Generator“ of the controller a 3-core cable should be installed to the mirror passage, according to the length of the boat. For the mirror passage a waterproof connector should be installed together with the yellow five meter cable coming from the generator. As this cable is carrying alternative current the phase sequence plays no role.

On the boat can be installed solar panels of 400 Watts, in this case they can be connected to the screw connector ”Solar +”and ”Solar -“.

It is important that during the connection of the charge controller, first, the battery is connected to the device, and then the other components. The battery must not be discharged too low, because the electronics have to turn on the unit and also the correct voltage must recognize 12/24 V.

Pay attention, in case of reverse polarity + and -, the controller will eventually be destroyed.

Generator never in use with batteries disconnected. Controller could be destroyed!!!

6. Programming of charge controller

This controller is preprogrammed , you can adjust the parameters before use.

The controller includes the terminals for generator, batteries and for consumers, informative LED display, the red free-wheel switch and the black brake switch.

The connector is the port for the alarm buzzer.

Due to acid batteries release gases during operation, the controller should not be installed in the field of batteries, because of danger of explosion.

The remote control unit has five buttons, scrolling to service, by pressing “Menu“ you can go through the menu one way, by pressing ”OK“ you go the other way. With + and - you can adjust the various parameters. With the”Reset“button, the settings will be reset.

The separate manual Hydro & Solar Hybrid Charge Controller explains the functioning and operation of the charge controller.

You can connect consumers “load“to the control unit. Here, the shutdown can be predefined. In addition you can check the amperes on the consumer display.

With the red free-wheel switch with the battery voltage on the maximum, you can leave the propeller in free. In generator mode from about 8 Volts the display starts to work.

The control unit is connected and programmed, the boat outside of the port and under sails, the HYDRO CHARGER can be lowered now into the water.

From now on, the charge details on the digital display are monitored at all the time. If full charge is reached and no consumer is connected directly, you receive a signal from the alarm buzzer, it is recommended to switch on the free-wheel and /or take the HYDRO CHARGER out of the water, to reduce drag and wear.

7. Troubleshooting

The propeller does not begin to spin:

- To little speed, at least 3 to 4 knots (depending of propeller type) are necessary
- The cables are connected incorrectly causing a short circuit
- The propeller is bent
- No battery connected to the controller
- The controller or generator is defective
- The black brake switch is on, put off

To find the error, the procedure is a process of elimination. On the control unit disconnect the three cables from the generator. Rotates the generator now, the error should be between the controller and the battery. The propeller still is turning slowly; the error should be between controller and generator.

If the generator shows to small power:

- Speed too low
- Propeller dirty
- Location not good or generator too short in the water
- The cable section does not fit to the installed length
- The installed battery capacity is too small, so the final voltage is reached too early (battery should have at least 200Ah)
- The red free-wheel switch is on, put on off

The generator is vibrating:

- Propeller dirty
- Propeller bent

Before the manufacturer is contacted, measure the following parameters and share with the manufacturer:

1. Speed of vessel?
2. How deep is the propeller shaft in the water?
3. The propeller is in vertical position when in water?
4. Disconnect the three cables on the generator and measure there the AC voltage between the phases. The three should be equally on the same speed of the vessel.
5. Measure the battery voltage
6. What are the consumers running on the battery?
7. In case of connected solar panels and /or wind generator, check voltage (Volt) and power (Watt).

8. Safety

Warnings:

The generator should be placed in water with no possibilities to touch them while working.

Never stop the propeller by hand.

The HYDRO CHARGER is no bath ladder.

Replace fuses only with fuses of the original capacity. Before the fuse is replaced, the causing problem should be known.

Lift the HYDRO CHARGER always out of the water, when work is performed on it.

The charger controller can come hot. Ensure good ventilation.

Never operate the generator disconnected to the batteries (2 cables + and -)! The controller will be destroyed!

9. Maintenance

So that you long enjoy the HYDRO CHARGER, you should check periodically.

The first inspection on the first day, then at longer intervals.

The following points should be considerate:

- Attention to vibrations
- Foot should be always in vertical position while working
- The propeller spins easely
- Damage on the propeller blades
- All screws are firmly tight on the HYDRO CHARGER
- Are all cables and connections in order and not corroded
- Is no wear on the cables
- If the safety line is still in perfect conditions

The unit requires no special maintenance, except for regular cleaning with fresh water. Then let it dry and spray with preservative oil.

10. Technical Specification

Art. No. 7147

Generator with Converter Charger, basic and mounting bracket

Generator part:	Gear drive with shaft, propeller and programmable converter charger with remote digital display and 5 m 3- core cable
Performance:	generates power from circa 4 knots depending of propeller pitch, regulated in factory
Output:	50-500Watts depending on speed and battery load
Weight:	complete generator, propeller und basis bracket in stainless steel (V4A), circa 13 kg
Dimensions:	Gear drive with shaft without bracket: 100 x 11 cm Propeller diameters: 380 mm
Converter Charger:	Performance: 1000W (max. HYDRO CHARGER 600W, Solar panel 400W)
Batteries:	12 Volt / 24 Volt, 200Ah or more / 100Ah or more (Voltage detected automatically)

Max. batt. Voltage charge stop:	16V/32V (default adjustable)
Min. batt. Voltage for charge stop:	11V/22V (default adjustable)
Max. Charge current:	40A (20A by 24V)
Max. Load current:	15A (7,5A by 24V)
Recovery time after autom. free-wheel:	60 Seconds
No load loss:	smaller 45mA
Dimensions:	278 x 133 x 75 mm
Weight:	1,6 kg
Working environment:	-10 to +50 Degree Celsius, rel. humidity 0-90%

Art.No. 7147

Basis bracket for transom mounting

Stainless steel bracket with two adjustable segments, generator height adjustable with ropes, adjustable angle. Easy entering in the water under speed due to 1 : 4 gear.

Blocking device when sailing. Fast setting device for transom mounting.

Weight: complete with generator support, controller, generator, propeller and mounting device approx. 13 kg

Art. No. 7220

Extra bracket for transom

If you want to use the Hydro Charger on both sides

11. Warranty

SWI-TEC, Neveta Nautica S.L. guarantee, that this unit during 24 months, from the date of purchasing from SWI-TEC, has no material and production defects, which do not allow the perfect function of the HYDRO CHARGER. In case of defects during this period, immediate communication to **SWI-TEC, Neveta Nautica S.L.** is recommended.

SWI-TEC will check the warranty claim and will repair the unit, depending of the damage, only parts or the whole Hydro CHARGER. The place of guarantee is the production place in E-07680 Porto Cristo (Mallorca).

Assumption of guarantee is that the HYDRO CHARGER has suffered no unprofessional actions and the recommendations of the owner's manual are fully maintained during the use of the unit.

Damages through force majeure, as storms, as wars, etc. are not included in this warranty.

For all other cases the terms of business from **SWI-TEC, Neveta Nautica S.L.** are valid.

We wish you a lot of pleasure with the HYDRO CHARGER.

SWI-TEC, Neveta Nautica S.L.

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