



Installation Manual

Hydro Charger Light

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1. Content

Art. No. 7100/7101 Transom Hydro Charger Light 12/24 V completely ready for installation

- Generator with shaft, 4 m 3-core cable tin plated, 2,5 mm²
- Propeller complete with propeller blades preset in according to order, 1 pin, a large and a small U-disc and M10 stop nut
- Charge Controller 12/24 volts, with LED/alarm buzzer
- Waterproof, complete connector kit
- Pivotal transom bracket Art. 7149
- User manual for the bracket (attached)
- User manual for the Charge Controller (attached)

2. Tools/ Materials

- 17 mm socket wrench for propeller
- 13 mm wrench for the installation of pivotal transom bracket with a counterplate
- 6 mm Allen key for installation of the transom bracket with a counterplate
- Pliers
- Small screwdriver for the installation of the plug
- Battery cable min. 6 mm², length depending on the installation (Controller to batteries)
- Cable ties
- 36 mm socket wrench (included)

3. Mounting on transom

The Hydro Charger Light propeller should be at least 30 cm underwater to ensure a uniform flow. The position of the heel should always be as close as possible near to the centerline of the boat on the transom, but laterally offset (10-20cm) from rudders and boat propeller.

Please make sure that the pivotal transom mount is internally well supported to the counterplate. In a very thin transom wall, it's recommended to further reinforce the wall. Please have a look on the separate manual at the end.

Propeller assembly: The large, 30 mm special disc is pushed onto the propeller shaft, then the small pin of the propeller is inserted into the corresponding whole, so that it protrudes equally far on both sides. When you put the propeller on the shaft, the pin must fit in the slot of the propeller.

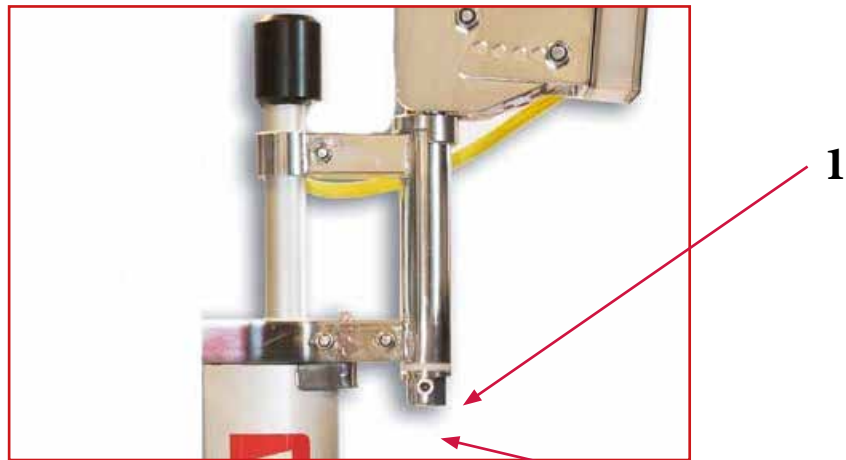
Important: The pin must fit in the slot of the propeller exactly, otherwise, the propeller can be lost during the trip !!! (we recommend marking with a marker outside of the propeller so that the position can be determined better).

With a washer and self-locking nut, the propeller will be screwed with a 17-socket key (tightly!) Then attach the end cap with the 3 screws. (see sketch at the end of the manual).

Due to possible transport damage, we always deliver the propeller well-packed separately.

4. Mounting Hydro Charger Light

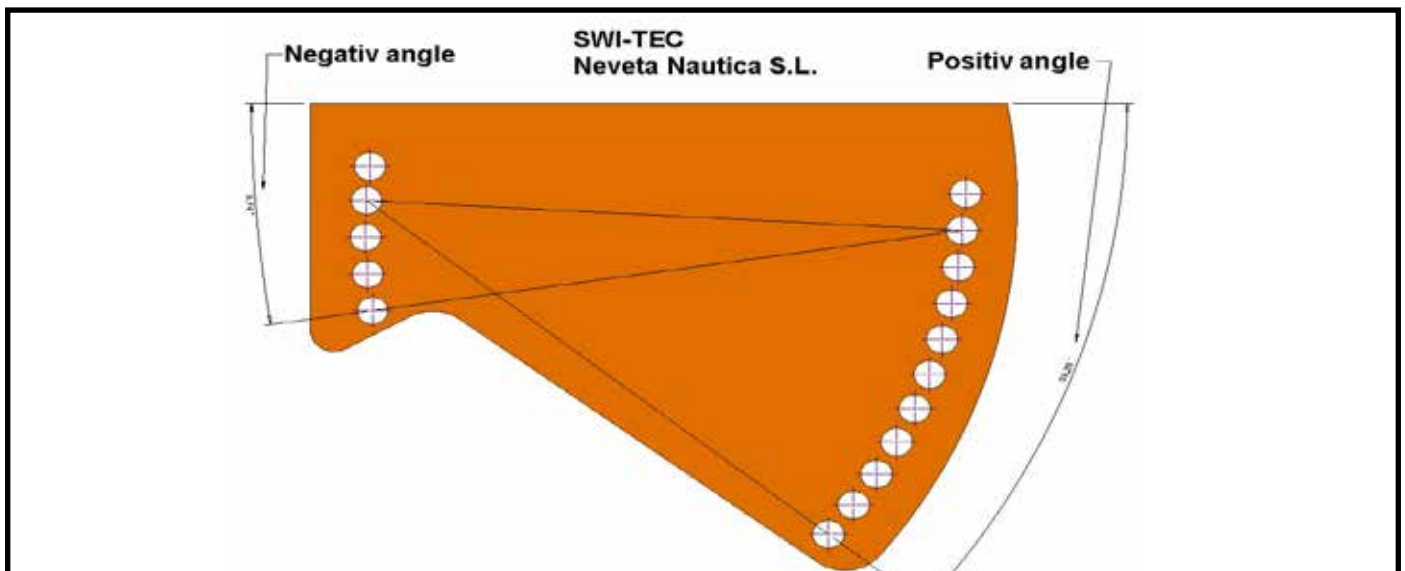
The appropriate transom bracket should be mounted. Subsequently, the base support and the generator can be plugged together with the thick washer below (1), screw and tighten security nut fastened (2). Then, the generator will be mounted to the base support of the respective bracket and secured with the safety pin.



The line used for raising and lowering must be secured on deck.

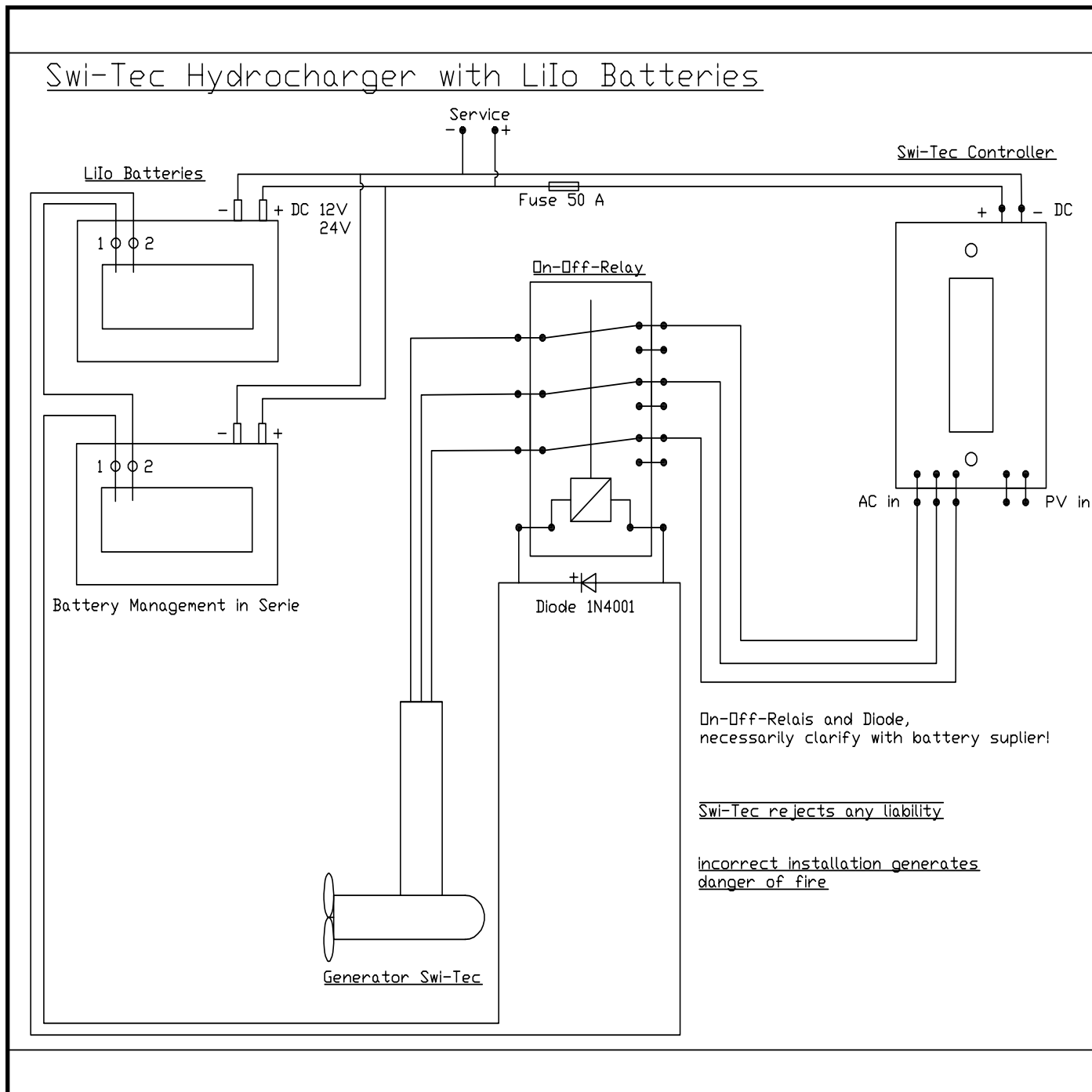


At the lower segment, the inclination of the transom can be compensated so that the Hydro Charger Light can operate in the water in vertical position. The propeller center should be at least 30 cm underwater.



5. Installation of the charge controller

If you would like to connect the HydroCharger with Lithium batteries, you should obtain the authorization of the battery manufacturer. In any case you, have to connect a relay between the Hydro Charger Light and the controller , which is controlled through the electronic management of the lithium battery. In case of problems with the Lithium batteries, we don't accept any form of warranty!



The charge controller will be placed and fixed with four screws in a dry compartment near the batteries so that the digital display is easily visible. Keep the battery cables as short as possible.

Connect the red cable from the ,Batt +' connector to the positive terminal of the battery and the black cable from the ,Batt -' connector to the negative terminal. A 40 Amp fuse in the red wire protects the Hydro Charger Light in case of a battery short circuit.

From the three screw connectors labeled ,Generator' on the controller, install a 3-core cable according to the length of the boat. For the transom connection, use a waterproof connector along with the yellow cable from

the generator. Since this cable carries alternating current, the phase sequence doesn't matter.

Solar panels of 400 watts, max. 60vdc, can be installed on the boat. Connect them to the ,Solar +' and ,Solar -' screw connectors.

The connection „remote brake“ is the port for the alarm buzzer.

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

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

Never use the generator with disconnected batteries, as it could damage the controller!!!“

6. Programming of charge controller

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

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

Acid batteries release gases during operation, the controller should not be installed in the field of batteries, due to risk of explosion.

The remote control unit has five buttons for scrolling through services. By pressing „Menu“ and with „OK“ you can navigate the other way around. Use the + and - buttons to adjust various parameters. The „Reset“ button resets the settings.

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

You can connect consumers to the ,load' connection on the control unit, where shutdown can be predefined. In addition you can check the amperes on the display.

With the red free-wheel switch set to the maximum battery voltage, you can leave the propeller in free.

Once the control unit is connected and programmed, and the boat is outside the port and under sails, the Hydro Charger Light can be lowered 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 directly connected, you will receive a signal from the alarm buzzer. It is recommended to switch on the free-wheel and /or take the Hydro Charger Light out of the water to reduce drag and wear.

Important: If you start with full charged batteries, the Hydro Charger Light will only produce less or no electricity!

Also, if the „Free on“ switch is connected, there will be no charging.

7. Troubleshooting

The propeller does not begin to spin:

- To little speed, at least 3 to 4 knots are necessary (depending on the adjusted propeller pitch)
- 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; turn it off.

If the generator shows to small power:

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

The generator is vibrating:

- Propeller is dirty
- Propeller is bent
- The switch „brake“ is on; switch it off.

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. Is the propeller in a vertical position when it is underwater?
4. Disconnect the three cables on the generator and spin the propeller by hand quickly. Measure the AC voltage between the 2 pins. You must measure 3 volts or more.
5. Measure the battery voltage
6. What consumers are running on the battery?
7. In case of connected solar panels and /or wind generator, check the voltage (volt) and power (watt).

8. Safety

Warnings:

- **The generator should be placed in the water with no possibilities of touching it while working.**
- **Never stop the propeller by hand.**
- **The Hydro Charger Light is no bath ladder.**
- **Replace fuses only with fuses of the original capacity. Before replacing the fuse, the causing problem should be identified.**
- **Always lift the Hydro Charger Light out of the water when work is performed on it.**
- **The charger controller can become hot, so ensure good ventilation.**
- **Never operate the generator disconnected from the batteries (2 cables + and -)! The controller will be destroyed!**
- **It is possible to operate the Hydro Charger Light with lithium batteries, but always in consultation and with the permission of the battery manufacturer! In this case, a switching relay must always be installed between the Hydro Charger Light and the charge controller, otherwise our controller may be damaged!**

9. Maintenance / Storage

To ensure long enjoyment of the Hydro Charger Light, you should check it periodically. The first inspection should be on the first day, then at longer intervals.

Consider the following points:

- Check for vibrations.
- Ensure the foot is always in a vertical position while working.
- Confirm that the propeller spins easily.
- Inspect for damage on the propeller blades.
- All screws are firmly tightened on the Hydro Charger Light.
- Verify that all cables and connections are in order and not corroded.
- Check for wear on the cables.
- Ensure the safety line is still in perfect condition.

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

If you store the Hydro Charger Light for a longer time, we recommend to store it in vertical position, because with special oil for cooling and this can leak a little on a long time storage in horizontal position.

10. Technical Specification

Art. No. 7100/7101

Generator with Converter Charger, Basic and Pivotal Transom Bracket

Generator part:	Gear drive with shaft, propeller and programmable converter charger with a remote digital display and a 4 m 3- core cable
Performance:	Generates power from around 4 knots depending on the propeller pitch, regulated in the factory
Output:	50-500Watts depending on speed and battery load
Weight:	Complete generator, propeller und basis bracket in stainless steel (316), approx. 12 kg
Dimensions:	See last page of this manual Propeller Diameter: 380 mm
Converter Charger:	Performance: 1000W (max. Hydro Charger Light 600W, Solar panel 400W, max. 60vdc!)
Batteries:	12 Volt / 24 Volt, 200Ah or more / 100Ah or more (Voltage detected automatically)
Max. batt. Voltage charge stop:	16V/32V (adjustable)
Min. batt. Voltage for charge stop:	11V/22V (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 controller:	278 x 133 x 75 mm
Weight:	1,6 kg

Working environment:

-10 to +50 Degree Celsius, rel. humidity 0-90%

Art. No. 7210

Angle mount bracket for transom

This bracket is designed for platforms and catamarans (additional accessories on request).

11. Warranty

SWI-TEC, Neveta Nautica S.L. guarantees that this unit during 24 months or 10'000 miles, (whichever is achieved first) from the date of purchasing, has no material and production defects, which do not allow the perfect function of the Hydro Charger Light. In case of defects during this period, immediate communication with **SWI-TEC, Neveta Nautica S.L.** is recommended.

Shipping cost back to the factory and back to customer is not included in warranty!

IMPORTANT: We do not offer any warranty or guarantee or assume any liability for damage to the propeller and generator caused by overloading or impact, for example, by objects floating in the water such as ropes, fishing nets, plastic parts, containers, seaweed etc.!

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

Assumption of guarantee is that the Hydro Charger Light 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 Light.

SWI-TEC, Neveta Nautica S.L.

Poligono 9, Apt. 51

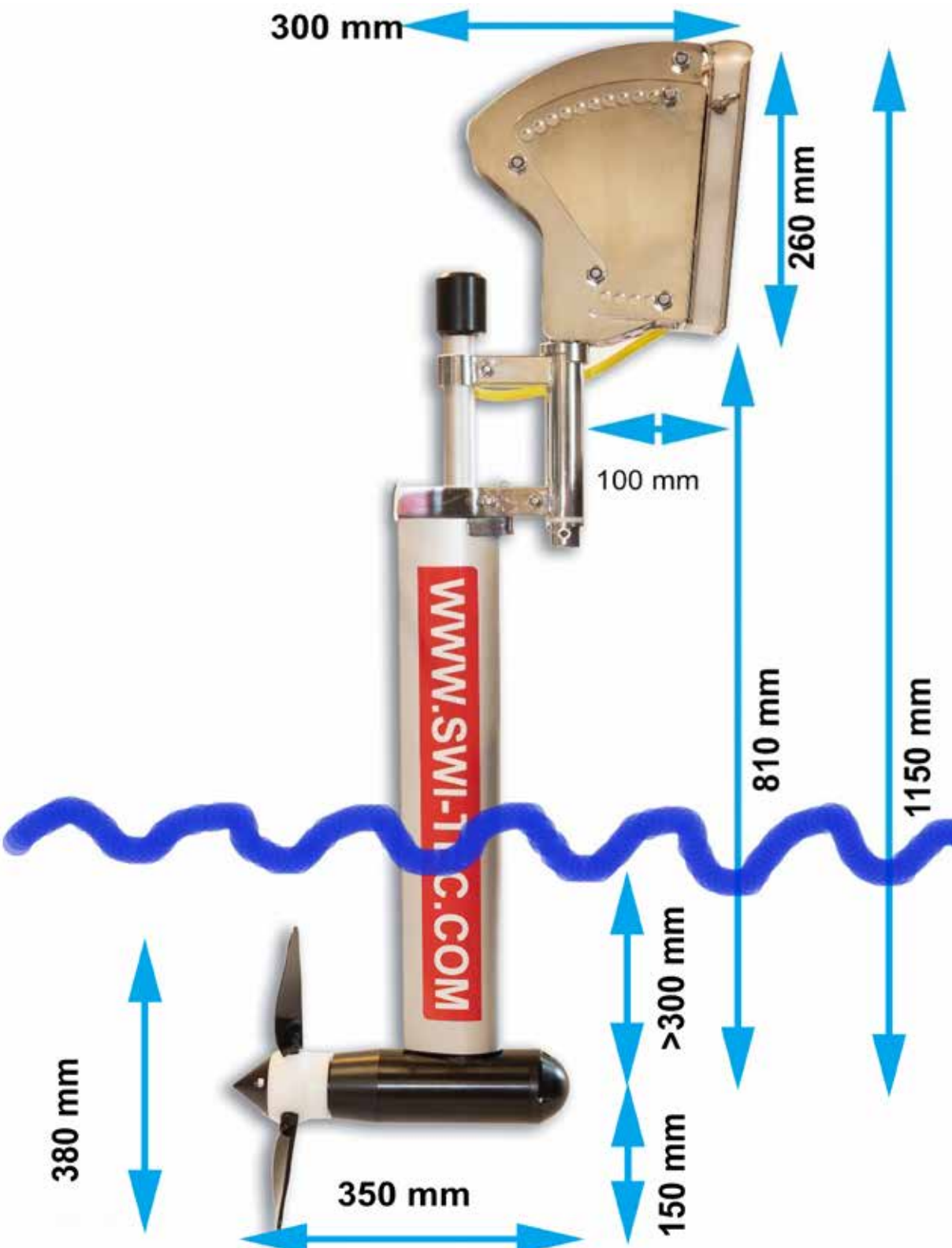
E-07680 Porto Cristo (Mallorca)

Tel. +34 971 822426

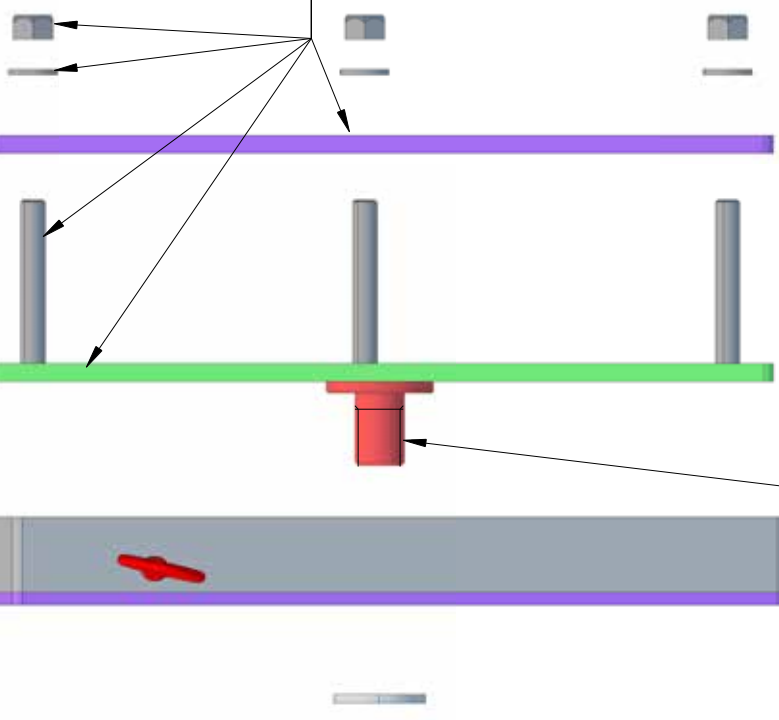
WhatsApp: +34 744 649 362 (ONLY CHAT!)

E-Mail: info@swi-tec.com

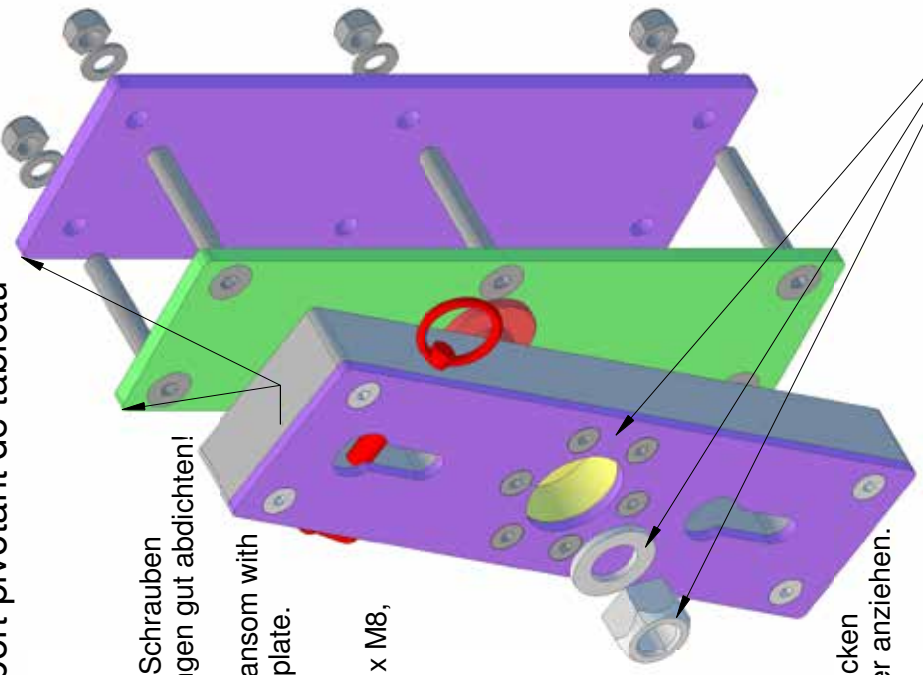
www.swi-tec.com



Montage Anleitung Pendelhalterung - Installation pivotable transom bracke Manuel pour l'installation de support pivotant de tableau



- 1. Grundplatte direkt an Spiegel mit 6 x M8 Schrauben und mit Gegenplatte festschrauben. Bohrungen gut abdichten!
- Installation of ground plate directly on the transom with 6 x M8 screws, Screw tight with the counterplate. Sealing of all drill holes.
- Installation directe sur le tableau avec vis 6 x M8, contre plaque et matériel de garniture



Drehbare Halterung aufstecken und mit Scheibe und Mutter (M16) gut fest ziehen. Hydro Charger einstecken | 90° seitlich nach oben drehen. Beim Loslassen darf er sich nur langsam senken. Allenfalls Mutter fester anziehen. |h jeweils 48 Std Test wiederholen und ggf. Mutter nachziehen.

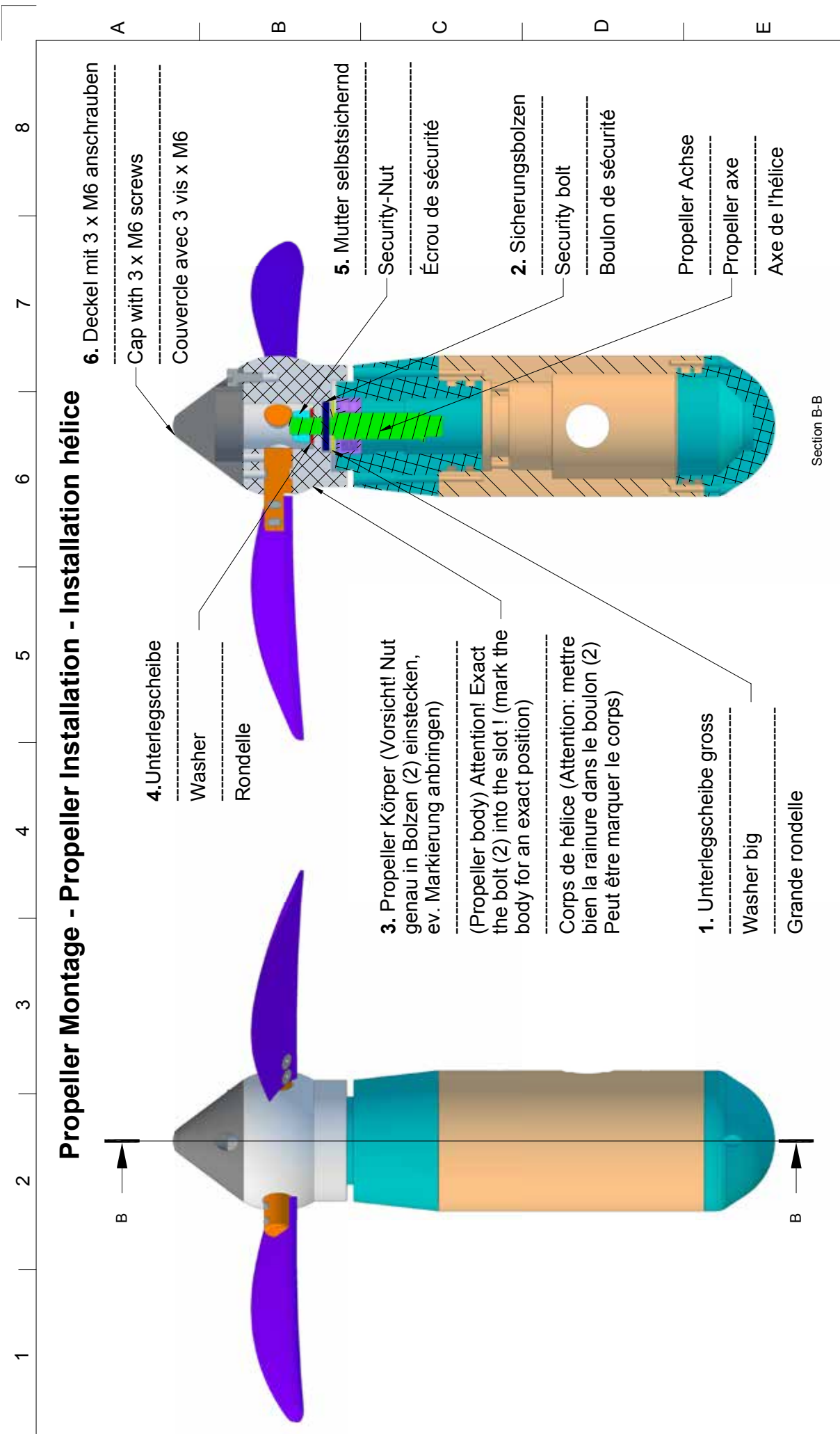
Mount the rotating support on the groundplate and fix it tight with washer and self-locking nut. Attach the Hydro Charger and turn 90° laterally upward. If needed, tighten the nut a little bit more. After each 48 hours, test it again and if it is necessary tighten the nut again.

Mettre la partie pivotante dans la base et avec la rondelle et l'écrou de sécurité serrer bien fort. Après fixer l'Hydro Chargeur et tourner à 90°. Si on lâche, il doit baisser lentement. Eventuellement serrer l'écrou encore plus. Après 24 heures tout répéter.

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PROPRIETARY INFORMATION

Name	Gez.	Anzahl:	Material:	Masstab:
Neveta Nautica S.L. (M.B.)		1	Aisi 316/Deirin	1:2.5
Datum:	Gepr.	Geändert am	Bestellbezeichnung:	Gewicht:
04.09.2018			www.swi-tec.com	2.2 kg

Propeller Montage - Propeller Installation - Installation hélice



6. Deckel mit 3 x M6 anschrauben
 Cap with 3 x M6 screws
 Couvercle avec 3 vis x M6

4. Unterlegscheibe
 Washer
 Rondelle

3. Propeller Körper (Vorsicht! Nut genau in Bolzen (2) einstecken, ev. Markierung anbringen)
 (Propeller body) Attention! Exact the bolt (2) into the slot ! (mark the body for an exact position)
 Corps de hélice (Attention: mettre bien la rainure dans le boulon (2) Peut être marquer le corps)

1. Unterlegscheibe gross
 Washer big
 Grande rondelle

5. Mutter selbstsichernd
 Security-Nut
 Écrou de sécurité

2. Sicherungsbolzen
 Security bolt
 Boulon de sécurité

Propeller Achse
 Propeller axe
 Axe de l'hélice

Section B-B

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Datum: 02.09.2018			Bestellbezeichnung: SWI-TEC Propeller			Gewicht: xx kg	