



# ORIGINAL- INSTRUCTIONS

- Keep handy at the place of use -

Wind turbine system  
i-200



**I Contents**

	Page
PREFACE .....	2
WHAT YOU HAVE RECEIVED ?.....	3
WHAT DO YOU NEED FOR ASSEMBLY ?.....	3
LOCATION OF THE WIND CHARGER.....	4
General considerations .....	4
Construction on a boat .....	5
Construction on land .....	6
ASSEMBLY & INSTALLATION .....	7
Assembly of the rotors .....	7
Attaching the generator to the tower .....	8
Final mechanical check .....	8
BATTERY .....	9
CABLE SPECIFICATION .....	10
ELECTRICAL CONNECTION .....	10
WIRING .....	11
GETTING STARTED .....	12
INSPECTION AND MAINTENANCE .....	13

## PREFACE

This user guide contains important information regarding your iStaBreeze Wind turbine and its installation and operation. Please lift these Instructions for use as a reference book.

Please read these operating instructions thoroughly before installing and commissioning your wind generator system.

The iStaBreeze i200 Windcharger is designed to use a battery bank (battery) to generate a DC power supply for devices of 12V, lighting, etc. It is also ideal for a professional or recreational application requiring the ability to charge batteries in locations that are not connected to the public grid. The assembly and operation of the wind generator takes place outdoors.

### WARNING !

- The outer diameter of the mounting tube must not be larger than 48, 5mm. A larger outer diameter reduces the distance of the tube to the rotor blades and can cause damage to the wind generator at high wind speeds when the rotor blades are rupturing the mounting tube.*
- During operation, the wind generator is able to generate voltages that exceed the nominal voltage. Caution is always appropriate to avoid electric shock.*
- Before repair work, make sure that the wind generator can not turn.*
- The wind generator is equipped with ceramic magnets, which can be damaged by improper handling. The main generator should be handled with utmost care during transportation and assembly.*
- Make sure that all electrical connections (polarity of the cables) are carried out correctly. An improperly made connection or loose contacts can considerably impair the function and a wrong installation can damage the wind generator and the guarantee claims are automatically extinguished.*
- The supplied fuse must be installed to protect the generator from overloading.*
- Maintenance or repair of the wind generator should only be carried out by a specialist who is familiar with the associated hazards or the relevant VDE regulations.*

*If you have any further questions, please contact your dealer, a qualified electrician or the manufacturer.*

**WHAT HAVE YOU RECEIVED ?**

- 1 Generator
- 6 Rotor blades
- 1 Cover for generator

In case of missing or damaged parts, please contact your dealer or the manufacturer.

**WHAT DO YOU NEED FOR ASSEMBLY ?****Tools**

- suitable wire stripper
- small electric screwdriver

**Other items you need**

- Tower / mounting tube
- Electric Wire
- Battery (Battery Pack)
- Battery terminals
- Terminal strips (depending on your chosen system)

## LOCATION OF THE WIND CHARGER

### General considerations

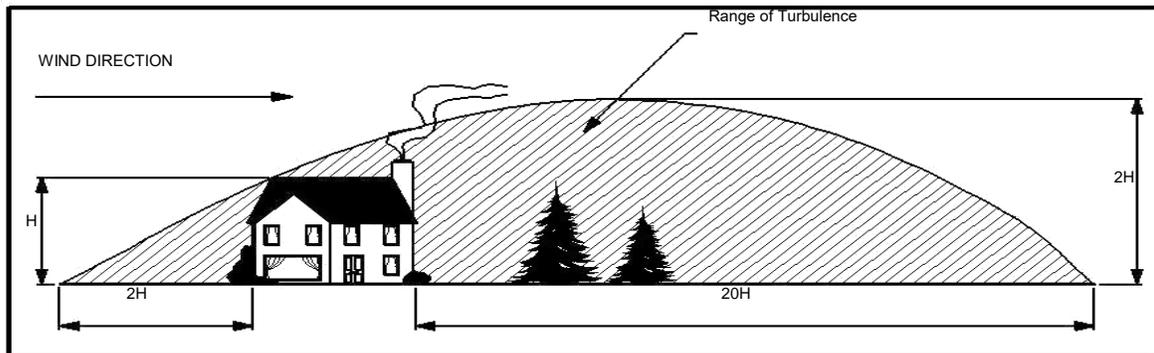
The location and height of the mounting tube or tower for your wind turbine is the major factor in the overall performance of your system.

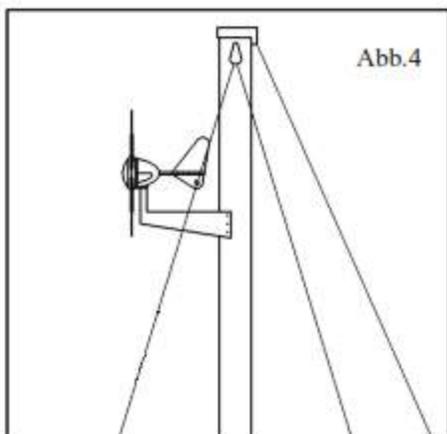
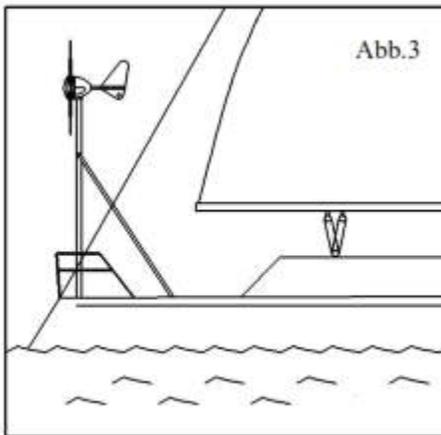
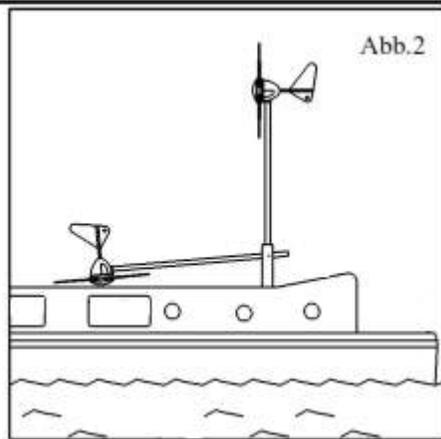
The unobstructed flow of wind over land and water is often disturbed by a multitude of obstacles causing shear winds and turbulence.

**Windshear** stands for the interference between the fast moving upper air layer and the slower moving lower air layer, which moves close to the land surface. Therefore, the closer you are to the surface, the average wind speed decreases.

**Turbulence** caused by wind blowing over obstacles such as boats, trees and buildings. Both the shear wind and the turbulence decrease with increasing altitude and can easily be reduced by installing the equipment over them.

It is therefore important that the wind generator is installed at a location that is as free as possible of disturbed airflow. But keep in mind that obstacles that are downwind can be as detrimental to performance as obstacles that are against the wind direction (Fig.1):





istaBreeze i200 is designed to fit an aluminum or stainless steel tube with an inside diameter of 41mm. The outer diameter must not be greater than 485 mm.

Suitable pipes: stainless steel 1<sup>3</sup>/<sub>4</sub>“ 16 SWG  
Aluminium 1<sup>7</sup>/<sub>8</sub>“ 10 SWG

We suggest the following fixings, which you can choose according to preference or site conditions:

**Deck** (Abb.3)

A suitable pipe attached to the deck with appropriate attachment and guy ropes is the most widely used method of securing the wind charger to yachts, mounting kits.

**Mast** (Abb.4)

An attachment to the mast is suitable for larger yachts, as the wind power, the higher the wind generator is attached, increases.

## Construction on a boat

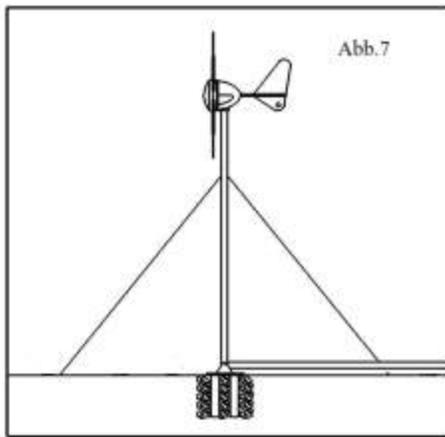
The wind generator must be placed in a safe position, at least 2.3 meters above the deck, so that the rotor blades are not touched by obstacles that could interfere with the rotor blades (Fig.2).

## Construction on land

The iStaBreeze i200 is designed to fit over an aluminum, steel or stainless steel tube with an inside diameter of 41mm. The outer diameter must not be greater than 48.5 mm. The standpipe must be anchored in a concrete foundation. And the depth of the anchorage should be 1/3 of the total pipe length.

A suitable mounting tube is a 6.5 meter high, central, galvanized tube. The pipe must be held in place by at least four tethers.

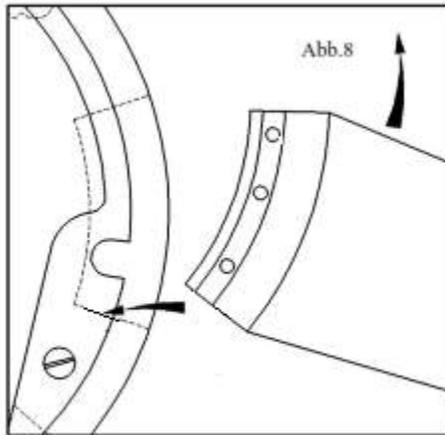
The attachment points for the tethers on the tower must be securely attached to the tower and should be welded for safety.



**Kippbares Befestigungsrohr mit Hilfsrohr**

- The wire tension should be at least 4mm in diameter.
- The anchors in the ground should be at least 5mm in diameter.
- The fixing screws should be at least 5mm in diameter.
- All items should be galvanized or stainless steel to protect against possible corrosion.
- When tensioning ropes are tied together, the sling must include a rope thimble and must be secured with a minimum of three slings.
- All fortifications on the ground must be adapted to the soil conditions.

We recommend that you use tilting towers as these allow for easier installation and easier lowering for access to the wind generator. One type of tilting towers is shown in Fig.



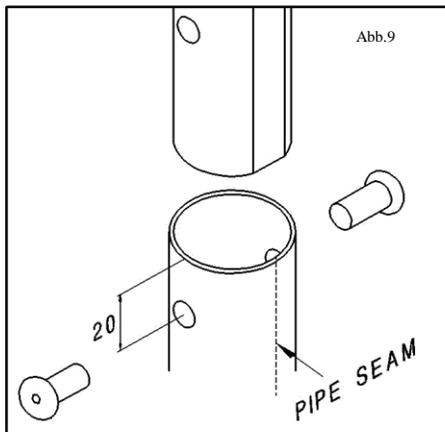
## ASSEMBLY AND INSTALLATION

### THE WIND CHARGER

#### Fixing the Rotor blades (Abb.8)

1. Place the generator with the hub side (hub) on a flat surface
2. Lay the rotor blades as shown in the figure (Fig.8).  
The rotor blades can only be fixed in this position. Place the rotor blades in the socket until they stop. The rotor blade can then be easily inserted by means of a lever movement. If need be, you can also help with a rubber mallet.
3. **You need three screws for each rotor blade.** self-tapping
4. Attach the remaining rotor blade bolts from the front of the rotor hub.
5. Check that all screws are tight (do not overtighten the screws).
6. Attach the generator cover using the 3 screws.

*The attachment of the rotor blades and the cover can also be performed after the generator has been attached to the tower.*



## Attaching the generator to the Tower

### (Abb.9)

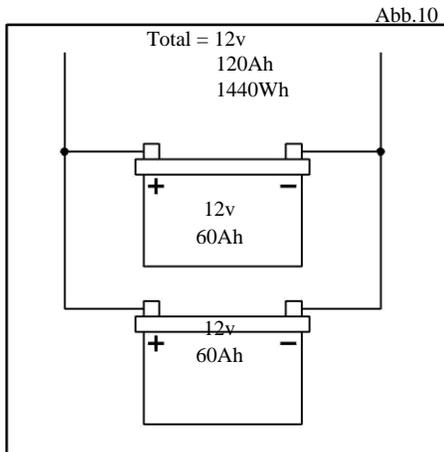
1. The tower adapter can be ordered and fits into the istaBreeze tower with an inside diameter of 47mm. Or note (construction on land)
2. Drill four 10.5mm diameter holes into the mounting tube (about 20mm from the pipe end).
3. Attach the wind generator to the mounting tube using the 2 Allen screws and circlips.

## Final mechanical

### Check

1. Check that all screws are tight.
2. Check that the generator can rotate freely.

*Do not set up the wind generator in this development phase yet. The turbine must be connected to the battery before the rotors can turn in the wind.*



## BATTERY

Leisure and professional batteries are specially designed for good performance in charge / discharge phases. Batteries are the most important part of your battery charging system and should be selected according to your charging needs. They should be provided with at least 3 days power reserve. This will reduce the workload, extend battery life and ensure system reliability during low wind periods.

Ständige Anschlüsse sollten immer an den Permanent connections should always be made to the battery terminals. Never use crocodile clips or similar. The battery terminals should be greased with Vaseline or similar.

The batteries can be connected as follows:

- parallel to increase the ampere hours (Fig.10)

**Red is + Positive**  
**Black is - Negative**

**CABLE SPECIFICATION**

The cable used to connect the wind generator to the batteries should be selected according to Table 1. Using a smaller cable than recommended in the table will reduce the performance of the charging system.

Cordsets are available from your dealer or manufacturer.

10m x 2.5mm<sup>2</sup> including the battery lugs (CA-10/11) 20m x 2.5mm<sup>2</sup> including the battery lugs (CA-10/12)

**ELECTRICAL CONNECTION**

1. Feed the selected cable (see Table 1) along the inside of the pipe.
2. Connect the bare wind generator cables to the cable using the supplied terminal block. Pay attention to the polarity.

**Red is + positive**  
**Black is - negative**

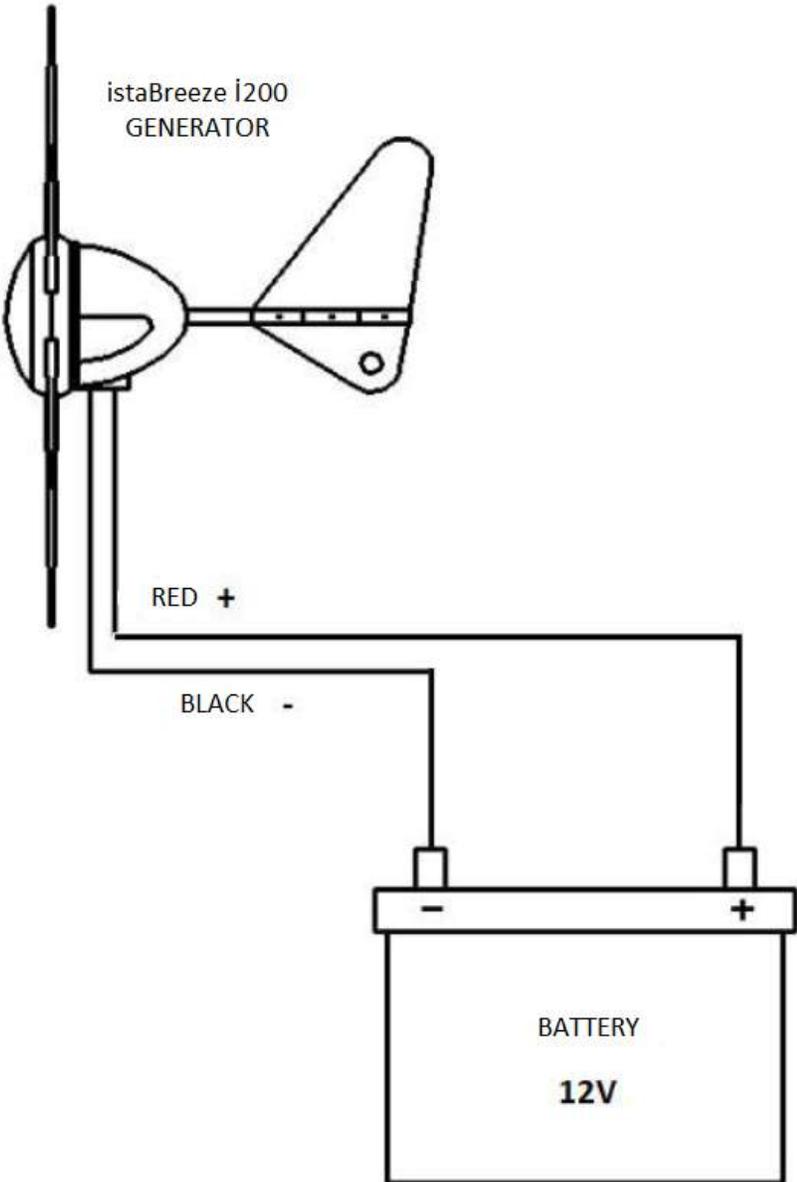
Wrap electrical tape around this connector to protect it from environmental impact.

3. Attach the wind generator to the tower again using the screws provided.
4. Last electrical connection:  
 Connection with the battery.  
**Red is + Positive**  
**Black is - Negative**

Cable Length (m)	Cable Size (mm <sup>2</sup> ) <u>12 Volt</u>
0-20	2,5
21-30	4
31-45	6
46-80	10

Table 1

□ I 200



## GETTING STARTED

Before you hoist and mount the wind generator, check that:

1. All final mechanical controls have been performed.
2. The cable is not pinched.
3. All electrical connections are properly secured and secure.

The wind generator can now be positioned.

*Be sure to avoid any moving parts while setting up and setting down the wind generator.*

After installation, anchor the system in a vertical position. The performance of your wind generator may be affected if the pipe is not upright.

## INSPECTION AND MAINTENANCE

The istaBreeze i200 does not require scheduled maintenance, but an annual inspection should be performed to monitor the overall condition of the plant.

- Before testing, the turbine should either be lowered to the ground or tied down to prevent the generator from turning. To prevent the generator from turning, please follow the procedure below:
  - 1) Use the rudder to turn the wind generator out of the thread (180 °). An inlet at the helm will help. The turbine will eventually come to a standstill.
  - 2) Tie a rotor to the mounting tube to prevent it from rotating.
- While the generator is shut down, the following routine checks should be performed:
  - 3) Check that the screws of the rotors are well tightened.
  - 4) Check that all other moms, bolts and screws are well tightened.
  - 5) Check whether the yaw axis can move freely.
  - 6) Check the condition of the tower construction.
  - 7) Check the tension of the wire ropes if they have been installed.

The tension of the wire ropes should be checked regularly during the first 12 months
  - 8) The system can be cleaned with a mild detergent and washed with water to remove dirt.