

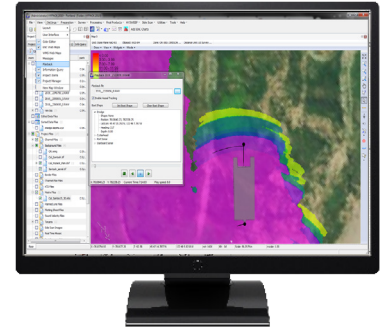
DREDGEPACK

INSTALLATION MANUAL FOR CUTTER SUCTION DREDGES



HYPACK
a xylem brand

The purpose of this manual is guiding you in the installation of the Dredgepack system for cutter suction dredges. Due to the complexity of the installation, please follow the steps described in this guide and if you have questions please contact technical support at help@hypack.com or calling to (860) 635-1500.



Thank you for your purchase of this Cutter Suction system. Every effort has been made to ensure this system is ready for installation directly from the case in which it has been shipped to you. All components have been bench tested for complete functionality of the system. It is our desire to provide you with the best system possible and to fully support all aspects of your new HYPACK® Cutter Suction System.

Best Regards,
HYPACK® Hardware Team
HELP@HYPACK.COM
860-635-1500

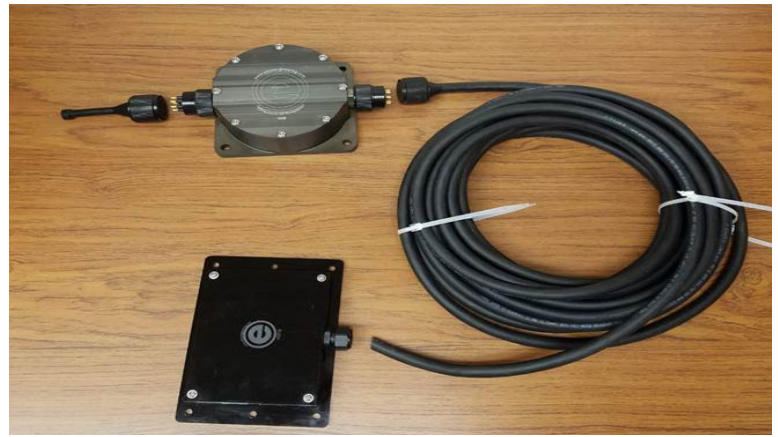
A. List of sensors

Each Dredgepack system for cutter suction dredges is design individually to fit the customer needs. The following sensors are the most common in this kind of dredges:

Two antenna GNSS: This device is used to determine position and heading of the dredge.



- Inclinometer: This device is used to calculate the inclination angle of the ladder.



- Encoder HD25A (Optional): Some dredges can move the ladder horizontally, in that case it will be necessary to have a sensor that can measure the swing.

B. Sensor Installation

1. Ladder Inclinometer

There are several options when installing the inclinometer, however, the key factor is the rotation direction, what it is marked in the case. The inclinometer is fully water and dust proof as long as the cable is properly connected. Some user tent to increase the life span of the inclinometer and cable, that's why the inclinometer is installed above water and not submerged all the time.

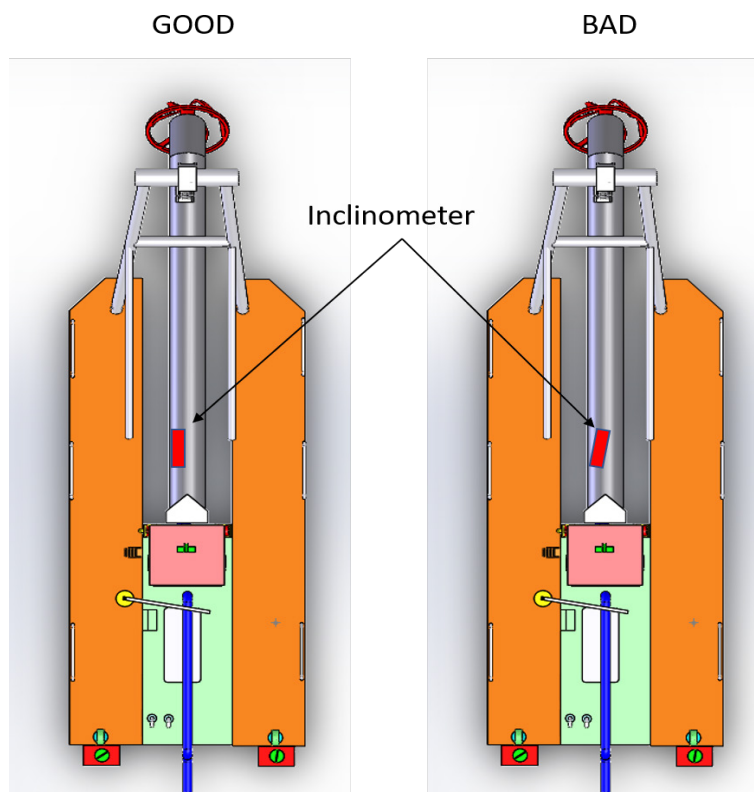


The kit includes a plate with the bolts to tighten the inclinometer. This plate is usually welded to the ladder. The plates dimensions are: 11.25" (28.57 cm) X 7" (17.78 cm).

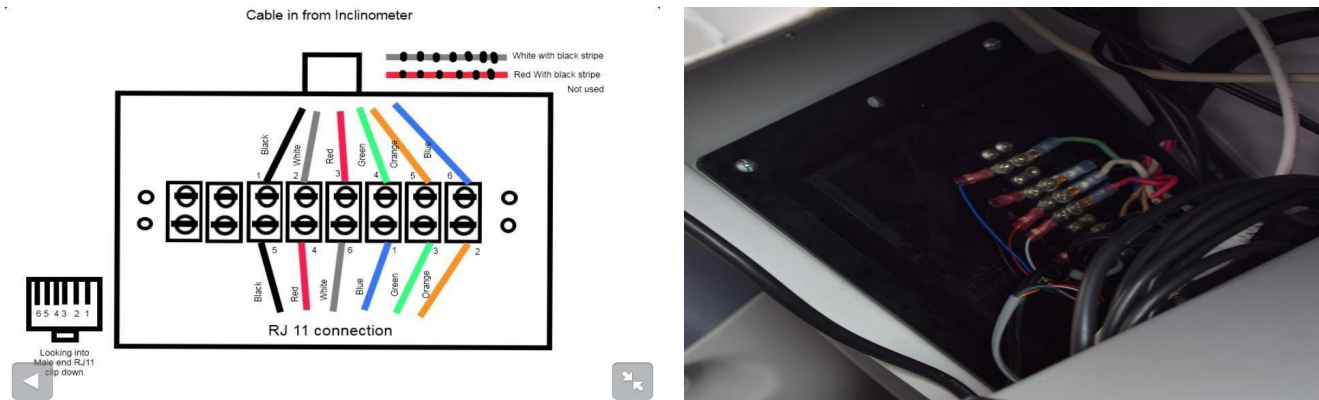
DONOTWELDTHEPLATEWHENTHEINCLINOMETER IS ATTACHED. THIS CAN BURN THE SENSOR OR DAMAGE THE CASE.



As long as the inclinometer is located in the proper orientation, it is going to measure the angle of the ladder no matter if it is located close to the trunnion or the cutter head.



Once the inclinometer is properly installed, it is necessary to run the cable to the cabin and connect it to the interface box. The cables must be connected as described in the box.



Inside the box you will get in the other end a RJ11 connector that must be connected to the SEI box. The SEI box will transform the signals received from the inclinometer to USB signals. The ports of the SEI box are RJ11, Power (12V) and USB type B.



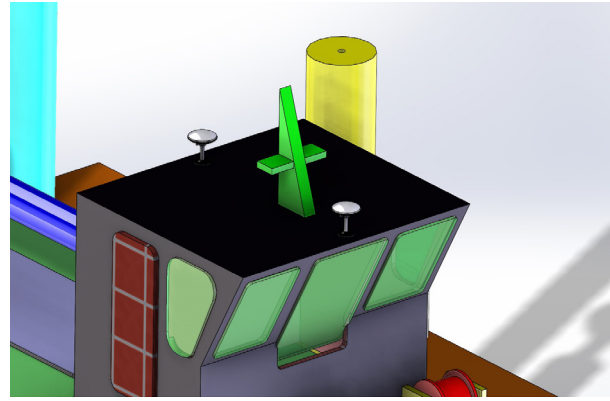
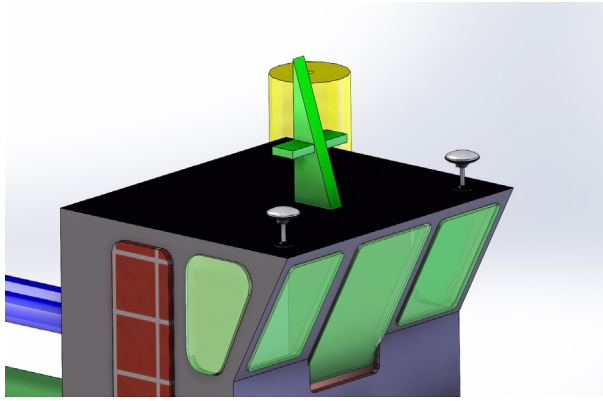
The USB cable from the SEI box should be connected to the PC, that's why it must be located close to it.

2. GNSS DEVICE

Dredgepack needs the information of position and heading, the best method to get this is using a two antenna GNSS.

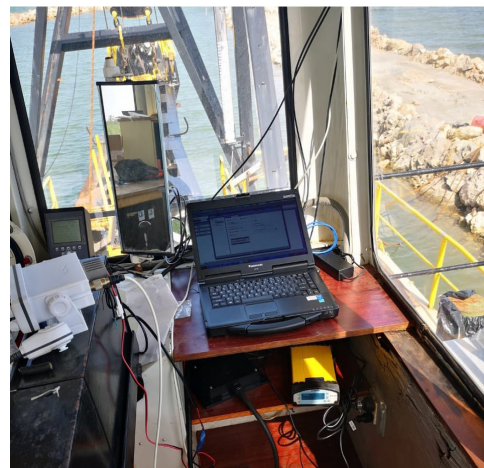
- Dredge position: Most of the dredges operate using a differential or RTK GNSS.
- Dredge heading: There are some solutions available, we offer a GNSS that can calculate the heading using the second antenna.

In order to have the better satellite coverage, it is recommended to install the GNSS antennas on top of the cabin free of obstacles. To avoid measuring complicated offsets, install the antennas parallel to a reference axis. The antennas can be installed from aft to forward or port to starboard. In other words, parallel or perpendicular to the middle line of the dredge.



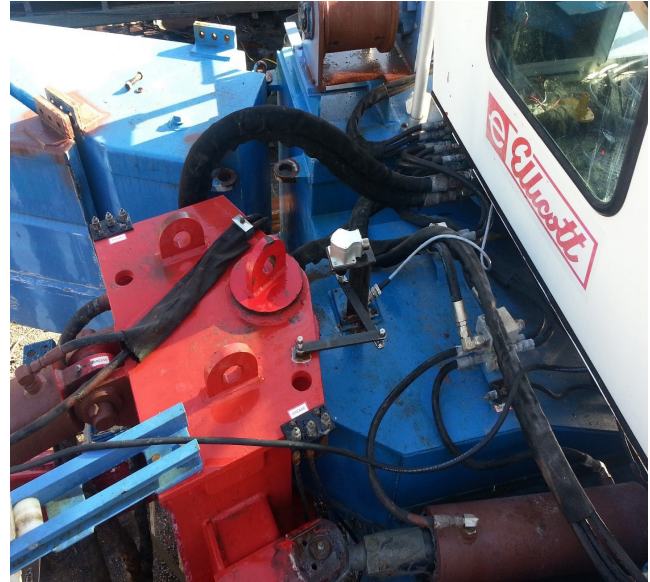
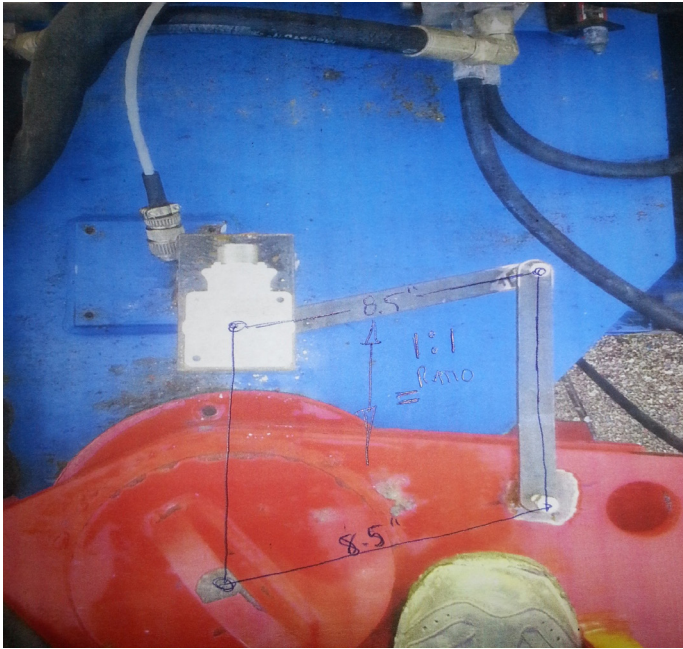
It is possible to assign any of the two antennas as the main one. It is very important to identify the cable of the main antenna because it must be connected in the port 1 in the GNSS. When measuring the offsets we need to know the distance from the trunion to the main antenna.

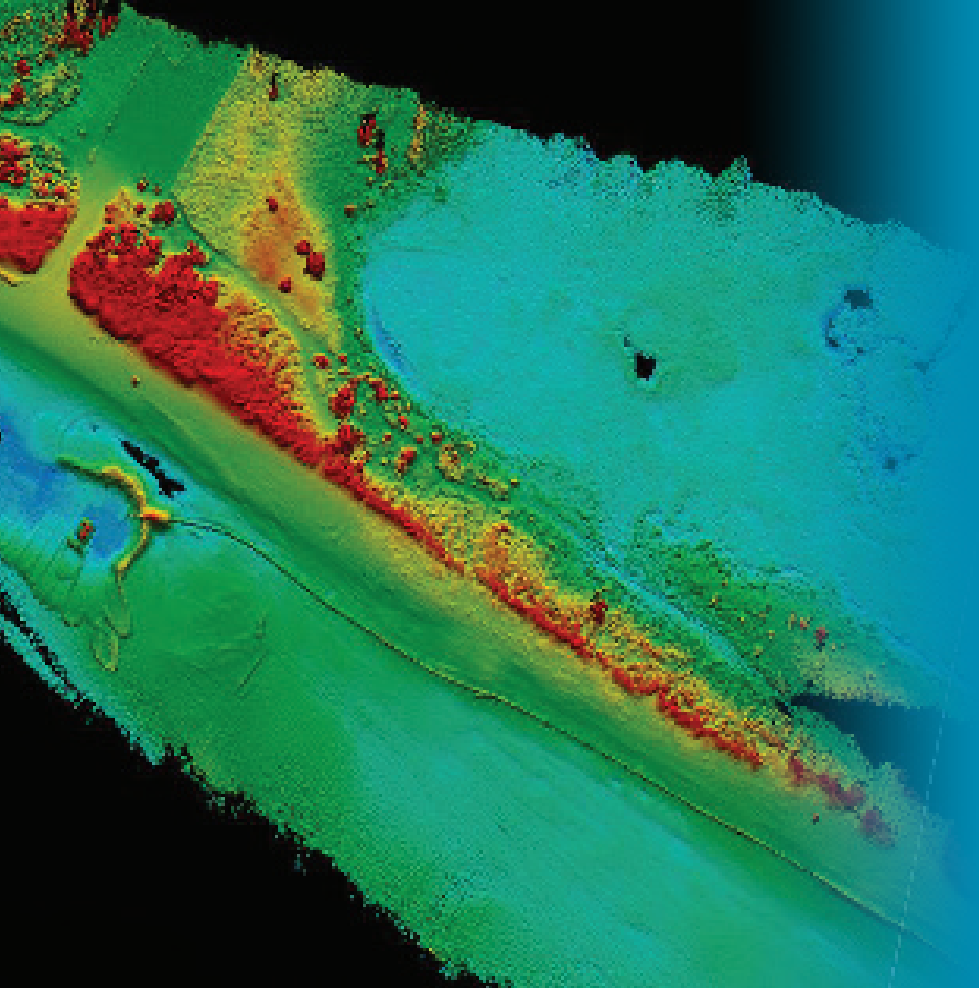
You will need to run the cables inside the cabin. The GNSS can be placed anywhere in the cabin because the connection to the computer uses a network cable (UTP cat5e or 6), however, it would be recommended to put the GNSS as close as possible to the PC.



3. Sensor horizontal movement (Optional)

The sensor to measure the horizontal movement could require some pieces to transfer the movement to the sensor. It should be installed close to the ladder rotation pin. The pieces used to transfer the movement will need certain dimensions in order to have a rotation ratio 1:1. The next image shows an example where it was installed a parallel metal plate with a length that matches the distance between the pin and the sensor.





Why Choose HYPACK

- Simple and intuitive to use
- Industry leading software solutions
- Interfaces with a variety of sensors
- Unparalleled technical support

HYPACK – A Xylem brand has been a world leader in software development for the hydrographic and dredging industry since 1984. Our software is one of the most widely used hydrographic software packages in the world, with more than 10,000 users in over 140 countries.

Our commitment to the industry, and partnership with manufacturers, allows us to provide a solution for all your surveying needs; from a simple area to the most complex project, our software solution can help.

Our suite of software packages will provide you the tools needed to design your survey, collect your data, apply corrections to soundings, remove outliers and invalid points, plot field sheets, and export data to CAD. It also allows you to compute volume quantities, generate contours, create side-scan mosaics and create/update electronic charts. Our hundreds of sensor inputs provide the connection for positioning GNSS and inertial systems, single beam and multibeam echosounders, side scan and sub-bottom sonars, magnetometers, velocity sensors, and more. Whether you are collecting hydrographic survey data, environmental data, or just positioning your vessel in an engineering project, the software will provide the tools needed.

HYPACK continues to reach into new and expanding markets, adding our aerial drone for topographic mapping. This product expands our survey capabilities beyond the hydrographic survey to support your topographic land survey needs. Our mission is not just to provide the tools needed for surveying applications, but to educate and train folks that need to do survey work.



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