

Daggerboard Position Sensor Installation Planning Guide

In order to ensure your Daggerboard Position Sensor will operate properly, several aspects of your boat, board and trunk design and construction that must be considered in order to ensure the system will operate properly.

This guide is intended to help you plan for the installation of the system prior to purchase. If your yacht is in the design and/or construction phase, some of these considerations may influence the design details of its boards and/or trunks. If you're considering the system for installation in a yacht already built, you may need to look carefully at its construction drawings or consult the designer and/or builder.

It's possible that the best location for the antenna on the port trunk is different from that on the starboard trunk. However, if your daggerboards are exchangeable or reversible then you **MUST** find a suitable antenna mounting location that is identical on both trunks.

Preferably, the antenna is mounted on the outboard surface of the trunk and looks inboard towards its associated daggerboard as this arrangement minimizes interference between the two antenna. If this is not possible, the antennas may be mounted on the inboard surface of their trunk provided they are at least 2.0 meters apart. If this separation is not possible, please contact Kinetic Scientific for more information.

Once you have selected either the inboard or outboard surface of the trunk for mounting the antenna, you need to selected a vertical and fore-and-aft location. When identifying the antenna location, it is important to consider certain aspects of the geometry and construction of the trunk and the boards.

Keep these considerations regarding the construction of your daggerboard trunks in mind as you plan your antenna location:

- The antenna is 170W x 60H x 10D mm. It must be oriented horizontally on the trunk surface.
- The antenna is connected to the sensor module by a 1.0 meter cable. Make sure there's a convenient place to mount the sensor within this distance of your antenna location.
- The antenna must be located so that it has a clear view of the tags. Specifically, there should be no bearings, up-haul or down-haul hardware mounted inside the trunk at the location of the antenna as these may interfere with the antenna/tag communication.

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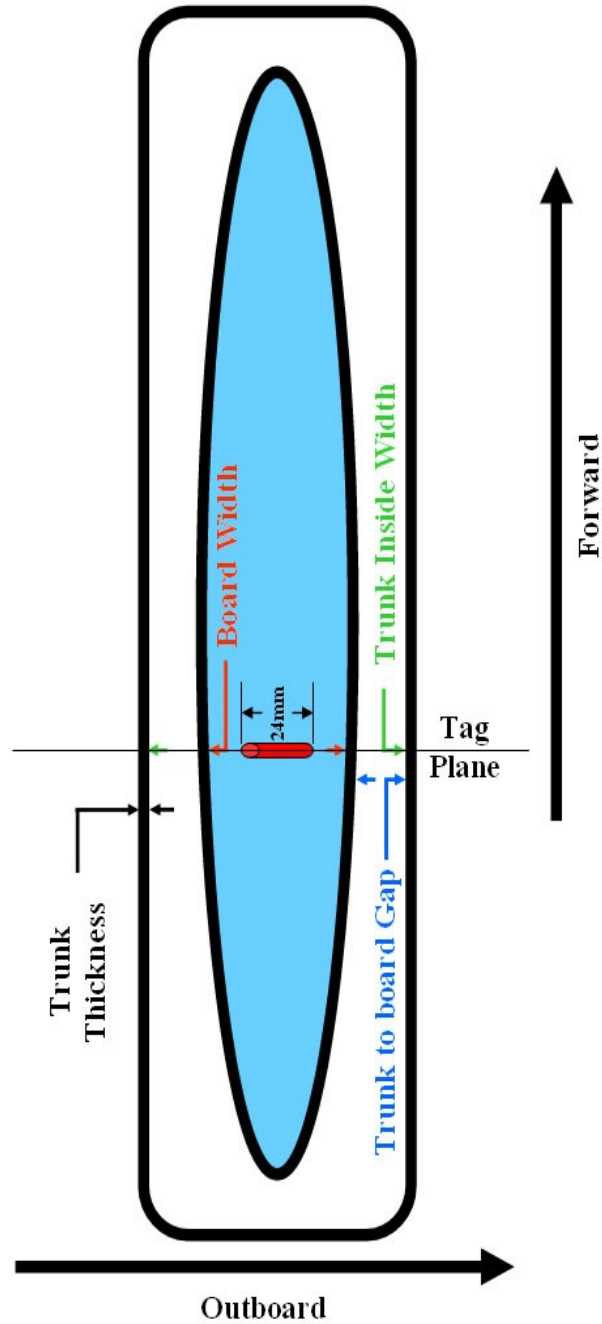
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- It's important to minimize the distance from antenna to tag. Be sure to select a location where the air gap from the inside of the trunk to the skin of the board isn't unnecessarily wide.
- It's important to minimize the amount of carbon fiber through which the antenna must "see" in order to communicate with the tags. When possible, do not select a location where heavier laminate has been used, for example, tabbing located towards the the top or bottom of the trunk.
- Ideally, the antenna and sensor module are mounted away from physical contact by crew and/or equipment during normal sailing conditions.

Keep these considerations regarding the construction of your daggerboards in mind as you plan your antenna location:

- If the antenna are mounted either too far forward or too far aft, it's possible that the daggerboards are thinner than the 25mm necessary to install the tags within them.
- Installing the tags in the daggerboards is difficult if the boards have voids
- If the tags will be installed where the boards are quite thick, it is best to offset the tags so that they are closer to the skin that will be nearest to the antenna.
- The tip of the tag closest to the board skin should be at least 1mm below the thickness of the skin. For example, if your skin thickness is 2mm, you will drill a hole that is 28mm deep for the 25mm tag ($25 + 2 + 1 = 28$).

Starboard Daggerboard and Trunk Top View



Daggerboard Position Sensor Installation Worksheet

*All dimensions in millimeters
Please measure carefully*

Please complete both pages of this **Installation Worksheet** and return it to Kinetic Scientific via e-mail to sales@kineticsscintific.com

Yacht Name	<input type="text"/>
Yacht Location	<input type="text"/>
Contact Name	<input type="text"/>
Contact e-mail address	<input type="text"/>
Contact phone number	<input type="text"/>

Sensors required (including spares)	<input type="text"/>	Sensors
Total number of boards to be instrumented	<input type="text"/>	Boards
Are your daggerboards reversible?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Overall length of dagger board	<input type="text"/>	mm
Max depth of board below hull	<input type="text"/>	mm
Distance between trunks at waterline	<input type="text"/>	mm
Distance between trunks at deck	<input type="text"/>	mm

Using the diagram provided for reference, please complete the following table for each trunk. If your installation is symmetrical, you need not complete both columns. Be *certtain* that all numbers are derived from measurements from a **single plane** as shown in the drawing on page 3.

Port Side Measurements

Board width	<input type="text"/>	mm
Trunk wall thickness	<input type="text"/>	mm
Trunk inside width	<input type="text"/>	mm
Height above waterline	<input type="text"/>	mm
Trunk to board gap	<input type="text"/>	mm

Stbd Side Measurements

Board width	<input type="text"/>	mm
Trunk wall thickness	<input type="text"/>	mm
Trunk inside width	<input type="text"/>	mm
Height above waterline	<input type="text"/>	mm
Trunk to board gap	<input type="text"/>	mm

Daggerboard Position Sensor Interface Worksheet

Will you be interfacing to a Keel Controller? Yes No

Will you be interfacing to other electronics via NMEA 0183? Yes No

Keel Controller Information

Manufacturer
Model
Serial Number
Interface voltage V_{IL} V_{IH}
Interface current I_{IL} I_{IH}

NMEA Interface Information

Please indicate the kind of equipment to which the Daggerboard Position Sensor will be connected:

- Integrated Instrument System (e.g B & G, NKE, etc.)
 Personal Computer
 Other

Manufacturer
Model
Serial Number

Will a converter or multiplexor be used to convert the NMEA 0183 serial data to another protocol such as NMEA 2000 or USB?

Yes No

Manufacturer
Model