

# ***SpeedCoach***<sup>®</sup>

## **Impeller Wiring Installation**

The logo consists of the letters 'N' and 'K' in a bold, serif font. The 'N' is black and the 'K' is blue.

**NIELSEN-KELLERMAN**

21 Creek Circle, Boothwyn, PA 19061 USA

web: [www.nkhome.com](http://www.nkhome.com)

email: [info@nkhome.com](mailto:info@nkhome.com)

Phone: 610.447.1555

fax: 610.447.1577

**Thank you for purchasing this SpeedCoach wiring system.** PLEASE take a moment to review these instructions before installing the wiring harness and impeller. Your SpeedCoach system should provide you with years of trouble-free service but we are always here to help if a problem arises. To order parts or accessories or obtain technical support, please call 610-447-1555. You may also e-mail orders to [orders@nkhome.com](mailto:orders@nkhome.com) and send questions to our support representatives at [support@nkhome.com](mailto:support@nkhome.com). Visit NK online at: [www.nkhome.com](http://www.nkhome.com).

***If you've never done this before, please read through all of these installation instructions before permanently installing any part of your SpeedCoach System.***

***The VHB ("Very High Bond") mounting tape used in this installation requires 24 hours to cure to its full bond. PLEASE avoid getting it wet (in other words, don't take your boat for a row) until fully cured. Failure to do this risks loss of your brand new impeller, or having to re-install parts of your system.***

***Wherever you will be installing VHB mounting tape, make sure to use the provided alcohol swabs to clean all oil and dust from the mounting surfaces. Avoid touching the VHB with your fingers as the oil on your skin decreases the bond strength.***

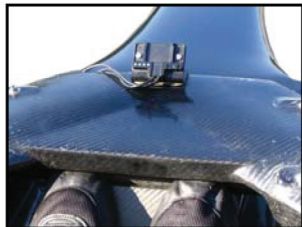
***IF you ever need to remove installed VHB, use a hair dryer to warm the VHB thoroughly, then peel very slowly from one edge to avoid damaging the surface.***

## INSTALLING THE MOUNTING BRACKET (IF USED)

The SpeedCoach wiring is shipped with no mounting bracket attached to allow you the flexibility to choose your mounting option. Make sure you have purchased the correct mounting bracket for the installation option you have chosen. To install the bracket, clean the mounting location thoroughly with an alcohol prep pad, peel the liner from the Dual-Lock or VHB tape, align the bracket on the mounting location, and press firmly.

### ***Install the Angle Bracket:***

The Angle Bracket is designed to be mounted to the top of a wing rigger or the deck. The Dual-Lock tape allows you to remove the docking station from the wing rigger when you derig your boat. It's easiest to leave both pieces of Dual-Lock attached to the bracket when making the installation.



## INSTALLING THE SPEEDCOACH DOCK

Next you will mount the plastic dock on the end of the SpeedCoach wiring to the front of the installed mounting bracket or directly to the mounting location chosen. If installing the docking station on a T-Bracket, you may use a cable tie to secure the harness wires so they will stay out of the way when you are strapping your feet into your shoes.

1. Clean the mounting location thoroughly with an alcohol prep pad.
2. Peel the liner from the VHB tape on the wiring dock;
3. Align the dock on the mounting bracket or location and press firmly. Be sure to support the mounting bracket from behind while pressing the dock into place.



## MOUNTING THE SPEEDCOACH

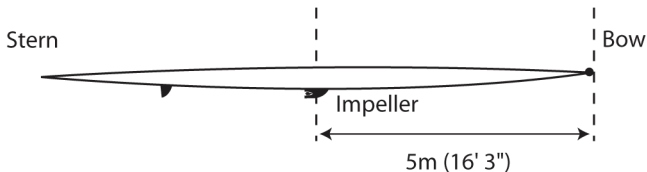
Slide the SpeedCoach display unit onto the docking station until it clicks. Be sure that the lanyard is out of the way.

**NOTE:** To prevent the loss of your SpeedCoach in the event that it is bumped while you are rowing or paddling, loop the lanyard around the top of the bracket and slip the SPC through the loop. Or, if applicable, make sure you have the NK float looped through the lanyard as well.



## INSTALLING THE SPEED SENSOR & IMPELLER

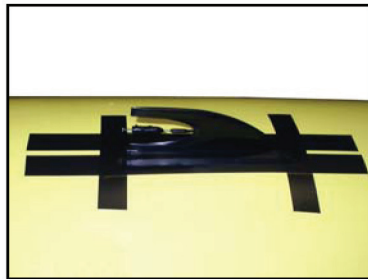
All boats produce a boundary layer of turbulent water from the bow to the stern. The closer you get to the stern, the more turbulent the water. The SpeedCoach unit is factory calibrated for correct readings with the impeller installed at 16'3" (5 meters) from the bow of the boat. This location will typically fall under the footstretchers of a single, or around two seats of a larger boat. Installing the impeller in this location should yield accurate performance even if you don't calibrate your unit. You should avoid placing the impeller farther than 6 meters from the bow because the water will be too turbulent for the impeller to spin consistently, so accuracy will be compromised - even if calibrated. (See "CALIBRATION" section for instructions on how to calibrate.)



## ***Install the Impeller (Temporary):***

For borrowed boats, or if you plan to remove your impeller for racing, you may install your impeller temporarily with electrical tape. When installed properly with electrical tape, the impeller should not easily fall off your boat. However, check the tape regularly to make sure that it is still secured to the boat and is not beginning to peel off.

1. Set the impeller on top of the hull in your selected location. Sight down the length of the hull to ensure the impeller is straight. Mark your mounting location with a permanent pen.
2. Clean the mounting location thoroughly with an alcohol prep pad (being careful not to remove your marks).
3. CUT (do not tear - this stretches the adhesive and makes it less effective) two pieces of electrical tape approximately 7 inches long.
4. Place the impeller in its mounting location. **DOUBLE CHECK** (it's easy to make a mistake here) that you have the curve of the impeller pointing toward the bow ball, and the impeller pointing toward the fin.
5. Lay one long piece of electrical tape on either side of the impeller, with approximately half of the width of the tape on the impeller mount flange and half on the hull. You should have approximately an inch of extra tape on each end that will affix solely to the boat.
6. Cut two 2 1/2" pieces of tape for the two ends of the impeller. Lay them on top of the ends of the mount flange, and across the two long pieces of tape.
7. Smooth all the tape thoroughly, ensuring there are no bubbles and full contact with the hull.
8. **WAIT 24 HOURS BEFORE ROWING OR PADDLING**



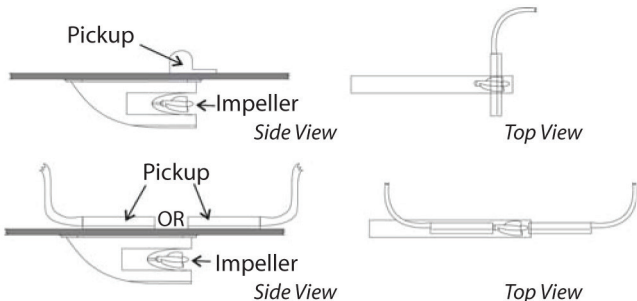
## ***IMPORTANT!***

While transporting your boat, it is important to secure or remove the impeller. The constant spinning will wear the magnet. You can either keep a cover on your boat while transporting, tape the impeller so it cannot spin, or unscrew the impeller from the hull mount.

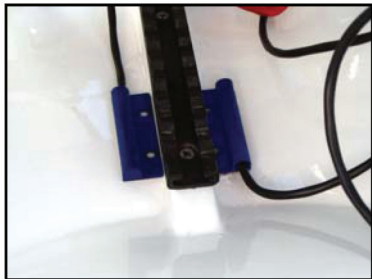


## ***Install the Speed Sensor (Blue Sensor)***

The sensor can be mounted parallel or perpendicular to the impeller. Either way is suitable; the impeller just must be within 2 inches of the impeller.



1. Clean the mounting location thoroughly with an alcohol prep pad.
2. Peel the liner from the VHB tape on the blue sensor.
3. Align the sensor directly above the impeller and press firmly.
4. If desired, secure the wires using cable ties and mounts. If you have extra wire, coil the wire and secure with a cable tie.



**NOTE:** Multiple sensors can be mounted around one impeller, simply mount them next to each other, or stack them on top of each other. (i.e. if you have a mounting harness in both seats of a double.)



## CALIBRATION

Calibration is an optional step that allows the display unit to compensate for different impeller locations and variations in hull shapes. If you need very accurate distance and speed measurements (to compare your performance with published results, for instance), calibration is a good idea. However, even if your unit is not properly calibrated, your SpeedCoach will provide you with valuable feedback on changes in boat speed, and you will be able to compare upstream and downstream pieces.

Your SpeedCoach has a factory calibration value of 1.000. To calibrate your system, you will be determining a new calibration value by comparing your SpeedCoach's distance reading with a known distance reading. On still water, row or paddle over your measured distance and record the distance displayed on your SpeedCoach. On flowing water, row or paddle over your measured distance both up and down stream and average the results shown on your display. Then, use the following formula to obtain your new calibration value.

$$\frac{(\text{CURRENT CAL VALUE})(\text{TRUE DISTANCE})}{\text{DISPLAYED DISTANCE}} = \text{NEW CAL VALUE}$$

**For example**, if you know you covered 1 mile, but your display shows 0.92, your calibration value will be:

$$\frac{(1.000)(1.00)}{0.92} = 1.086$$

PLEASE NOTE: Calibration is boat and impeller location-specific: if you move your unit to a new boat, or modify the location of your impeller, it is recommended that you recalibrate the unit.

## TROUBLESHOOTING

### ***General Troubleshooting:***

Always try to borrow a fellow rower's SpeedCoach or SpeedCoach Gold so that you can narrow down the variables. By testing your boat's wiring harness with a functional unit, and having your unit tested in a functional wiring harness, you can help determine where the problem lies. Make sure that both SpeedCoach units you are using have a calibration of 1.000.

### ***My unit works in my friend's boat, but neither mine nor hers work in my boat:***

The problem most likely lies with your wiring harness or impeller:

1. Check to make sure there are no cuts, nicks or pinched areas along the wire (a flashlight will be helpful here).
2. Be sure that both sensors are aligned correctly.
3. Be sure that there is no debris or corrosion on the impeller and that it spins freely.
4. Check that the metal contacts on the mounting dock are flush with the surface of the dock.
5. Clean the metal contacts on the mounting dock with a non-abrasive cleanser, like rubbing alcohol. DO NOT use solvents on the docking station as it may cause damage and voids the warranty.

### ***My unit doesn't work in my boat or my friend's boat, but hers works in my boat:***

The problem most likely lies with your SpeedCoach:

1. Inspect the metal contacts on the back of you SpeedCoach. Are all four above the level of the case? Do they spring back out when you press them in gently? Is their metal surface smooth and shiny?
2. Clean the metal contacts on your unit with a non-abrasive cleanser,like rubbing alcohol. DO NOT use solvents on the unit as it may cause damage and voids the warranty.Is the battery door secure and well-sealed?
3. Is the unit window secure and undamaged?

4. Your unit may have been affected by an ESD (electro-static discharge). Perform a hard reset on your unit to clear the charge. To do so, open the battery door, remove the battery or batteries, and hold down both buttons for 10 seconds. Replace the batteries, make sure the o-ring is in place, and close the battery door. This is like rebooting your computer, and often fixes strange or erratic behavior of the display unit.

## ***Specific Problems:***

### **Speed or Pace Readings are Inaccurate**

#### *Is the Calibration Value Set Correctly?*

The calibration value should be set at 1.000 unless you have completed the necessary steps to recalibrate your unit.

#### *Is the Impeller Properly Installed?*

The impeller should be 5 meters from the bow of the boat. If the impeller is installed in a different location, the unit will provide incorrect information unless calibrated. The impeller should not be more than 6 meters from the bow, or turbulence may cause inconsistent performance.

#### *Does the Impeller Spin Freely?*

If the impeller begins to accumulate any debris or corrosion, it may not spin freely which will lead to inaccuracy. If you are unable to clear the debris, a new impeller can be purchased. The impeller may be unscrewed and replaced without removing the hull mount. Note: Any slight humming noise created by the impeller should fade within a week or so.

## ***NK Sports Performance Warranty and Service***

NK does not believe in “disposable electronics.” We know our products don’t lead a pampered life, and we design them for years of performance in tough conditions. We guarantee every NK product to be free of defects in materials and workmanship for a period of TWO YEARS from your date of purchase. We will repair or replace any defective product or part when notified within the warranty period, and will return the product via domestic ground shipping at no charge. The following issues do not result from a manufacturing defect and are not covered under this warranty: damage due to improper use or neglect, including corrosion; impact damage; modifications or attempted repairs by someone other than an authorized NK repair agent; normal wear and tear; failed batteries.

NK wants you to be an NK customer for life, so we take care of you even beyond the terms of the normal product warranty with our Customer Care Program. Trade-in any NK display unit, no matter the age or condition, and receive a generous discount on the replacement product.

Visit **www.nkhome.com** at any time for detailed product specifications, troubleshooting and online ordering.

### **NEED HELP?**

Our NK Knowledge Center has answers to many common questions, along with tips and tricks for using NK products. It's available 24-7 at **www.nkhome.com/support**

For email assistance with the installation or operation of your NK product, write **techsupport@nkhome.com**.

For help with an apparent malfunction, or to arrange or inquire about a repair, write **repairs@nkhome.com**.

Or call **800.784.4221 (610.447.1555 outside of the USA)**, Monday to Friday, 9 to 5.