**USE YOUR LANYARD AND FLOAT** – To prevent loss of your SpeedCoach GPS, make sure to loop your lanyard through the NK supplied Life Preserver float and wrap the lanyard around any secure part of your boat. There are a lot of electronics packed into the unit and IT DOES NOT FLOAT. NK is not responsible in the event that your unit sinks.

**Training Pack Features**

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**INSTALLATION**

Strap Mounting

Use the provided strap mount to attach your SpeedCoach GPS to a rigger, foot stretcher or any other convenient fixed location in any boat. The mount base rotates to allow you to install the strap vertically or horizontally. (Please see Use Your Lanyard and float warning above)

SpeedCoach Harness Dock Mounting

If your boat is equipped with a SpeedCoach harness, you can mount your unit on the dock. Your SpeedCoach GPS will always use its internal accelerometer to calculate stroke rate as we are assuming a flat switch and magnet are not necessary. If an impeller is present, you have the option to select “Impeller” for speed and distance input. Otherwise, the harness dock will serve as a secure holder and your unit will use its internal GPS receiver to calculate speed and distance. (Please see Use Your Lanyard and float warning above)

SpeedCoach Heart Rate Monitor®

The heart rate SMART LE monitor belt connects to your unit via Bluetooth® technology and adjusts the strap to fit your body snugly. Attach belt across the lower portion of your chest, as shown in the figure to the right. To pair your strap to your unit, please see Setup Menu option.

**BASIC OPERATION**

- **Turn On** - Hold for 2 seconds.
- **Start** - Press once. A checked READY bar will appear on the screen. The READY bar will disappear and the stroke rate, speed/plit, timer and flex windows will all start when the unit detects a stroke.
- **Stop** - Press once.
- **Reset Timers** - Hold for 2 seconds until the RESET bar appears, then release. Press again to Start.
- **Turn Off** - Hold for 3 seconds until TURN OFF bar appears (after STOP and RESET), then release. Your SpeedCoach GPS will turn off automatically after 8 minutes of not sensing accelerometer movement.

To preserve your battery, be sure to turn your unit off before carrying it in your workout bag or car.

**Classic Mode**

**Change Flex Field Measurement** - Press up to change the lower right flex window and press down to change the lower left flex window. Note: You can also change the top windows through our Setup—Display Setup option (firmware 2.2 or higher). Please see the Setup Menu option on how to change these fields.

**Distance** - Accumulated distance since reset in your selected units of measure.
**Average Speed** - Speed since reset calculated as a function of the distance traveled over the elapsed time.
**Count** - Count of strokes detected since reset.
**Dist/Stroke** - Distance per stroke calculated on a stroke-by-stroke basis.
**Heart Rate** - Current heart rate in beats per minute (bpm).
**Elapsed Time** - Amount of time since start of row.

**Skill Mode (requires Empower Oarlock)**

**Change Flex Field Measurement** - Press up or down to change between the different skill measurement fields based on the wireless oarlock.
**Length** - Shows Total Length in the top window. Catch in the lower left window and Finish in the lower right window.
**Work** - Shows Work in the top window. Force in the lower left window and Total Length in the bottom right window.
**Power** - Shows Power in the top window and Average Power in the lower window.
**Catch** - Shows Catch in the top window and Slip in the bottom window.
**Finish** - Shows Finish in the top window and Wash in the bottom window.

**USE YOUR LANYARD END FLOAT** – To prevent loss of your SpeedCoach GPS, make sure to loop your lanyard through the NK supplied Life Preserver float and wrap the lanyard around any secure part of your boat. There are a lot of electronics packed into the unit and IT DOES NOT FLOAT. NK is not responsible in the event that your unit sinks.

**TRAINING PACK FEATURES**

**Heart Rate Indicator (Training pack only)**

- **Strobe Rate**
- **Speed/Pace**
- **Flex Windows** - Show choice of distance, distance per stroke, average speed, stroke count, heart rate or elapsed time
- **Protective Rubber Bumper**
- **Oarlock Indicator**
- **Impeller Indicator**
- **Batter Life Indicator**
- **GPS Indicator**

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**G P S F U N C T I O N AND A C C U R A C Y**

Your SpeedCoach GPS employs a high-precision 5 Hz GPS receiver. This means it receives GPS position and speed data from the GPS satellites 5 times a second. This update rate is necessary to provide the data density for accurate stroke-by-stroke rowing speed. Your GPS receiver’s performance is dependent upon having an unobstructed view of the sky. After passing under a low or wide bridge, you are likely to notice erratic speed data for a stroke or two. Your unit will return to accurate values as soon as it has an unobstructed view of the sky.

A higher setting for speed smoothing filters will dampen both the initial error and the return to valid readings. Note that your total distance, elapsed time and average speed will not be affected by these few strokes of erratic speed readings. You may also notice slightly degraded speed performance (less stable readings) on extremely overcast days.

Note that when using your SpeedCoach GPS in team boats at a seat other than stroke seat, the body of the rower in front of you may interfere with the GPS signal, particularly if you are both long-legged. If possible, move the SpeedCoach to the side of the footstretcher so that it is not directly under the body of the rower in front.

The GPS receiver provides speed accuracy of +/- 0.1 m/s, which translates to +/- 3 seconds at a 2:00 pace.

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**MEMORY**

The total memory that the unit can store is approximately 25 hours. Every stroke is stored in memory and the memory can be reviewed by every 100 meter increment. The speed input (GPS or Impeller) and system of units used will be stored as was rowed.

**Memory Storage**

When the memory is full, the unit will stop recording data. When memory is full, all data will be overwritten, the screen will then display the following message:

"MEMORY FULL, STOP WORKOUTS NOW."

**Data Recall**

Select Data Recall from the Main Menu to review stored data. Rowing memory will be formatted in sessions according to date and time. Just row sessions will have the Just row prefix whereas a Workout session will just show the times recorded.

Please note: a session is not complete until: a) In Just Row, you reset the counter b) In Workout, the workout is completed or cancelled.

**Delete All Sessions Data**

This selection will delete ALL memory if chosen. Sessions cannot be deleted individually.

**Viewing Sessions**

Selecting a session will bring up the Session Overview (Figure 1). The overview provides the overall distance, time, avg split, and avg stroke rate during that session. Selecting the Session Overview will bring up the Session Details (Figure 2). This page will show the session breakdown by specified period (time or distance). Select MORE to view additional measurement values not currently shown on the screen.

**Data Link**

Select this to connect your unit to your PC or Mac for Firmware updates or uploading data to your computer. Please go to www.NKhome.com/support/rowing-and-sports-support/manuals-and-downloads/to download the LiNK application and follow instructions.

Please note: Bluegiga Bluetooth Smart dongle required

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**MOUNTING DOCK FEET**

- **Mounting Dock Feet**
- **Dock Feet**
- **Mounting DOCK FEET**
- **DOCK FEET**
- **MOUNTING**

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**FIRMWARE UPGRADE PORT**

- **Firmware Upgrade Port**

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**LANYARD ATTACHMENT**

- **Impeller Contacts**
- **Battery Contacts**

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**BUTTONS**

- **Directional Up/Down Select as shown from front**

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**DATA LiNK™**

- **Data Link**

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**Menu Navigation and Setting Button Use**

- **Access Menu/Select**
- **Move/Adjust**
- **Go Back/Exit**

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**G P S F U N C T I O N AND A C C U R A C Y**

Your SpeedCoach GPS employs a high-precision 5 Hz GPS receiver. This means it receives GPS position and speed data from the GPS satellites 5 times a second. This update rate is necessary to provide the data density for accurate stroke-by-stroke rowing speed. Your GPS receiver’s performance is dependent upon having an unobstructed view of the sky. After passing under a low or wide bridge, you are likely to notice erratic speed data for a stroke or two. Your unit will return to accurate values as soon as it has an unobstructed view of the sky.

A higher setting for speed smoothing filters will dampen both the initial error and the return to valid readings. Note that your total distance, elapsed time and average speed will not be affected by these few strokes of erratic speed readings. You may also notice slightly degraded speed performance (less stable readings) on extremely overcast days.

Note that when using your SpeedCoach GPS in team boats at a seat other than stroke seat, the body of the rower in front of you may interfere with the GPS signal, particularly if you are both long-legged. If possible, move the SpeedCoach to the side of the footstretcher so that it is not directly under the body of the rower in front.

The GPS receiver provides speed accuracy of +/- 0.1 m/s, which translates to +/- 3 seconds at a 2:00 /500M split pace. Distance accuracy is +/- 2.5M over any distance.
**SETUP MENU**

From the Main Menu select Setup. From there, use the menu navigation steps described above to navigate, select, adjust and exit setup options.

**Display Setup:** Allows you to toggle between using the Classic SpeedCoach display layout and the Skill display layout when using the Empower Oarlock.

**Display Mode:** Choose between Classic and Skill (see above). Please note that you can also view oarlock measurements in the Classic display layout in the window of your choice.

**Classic Setup:** Allows you to set the top two windows to display any of the available measurements desired.

Input

The (speed and distance) Input setup can be set to GPS or Impeller. Please note that you will need a wiring harness and impeller to use the Impeller mode.

**Accessory Setup:** Used to pair either the Heart Rate belt or Empower Oarlock.

**HRM Setup**

Selecting this option will automatically attempt to pair the Heart Rate Monitor (HRM) Belt with the unit. If more than one belt is found, you may need to change locations to isolate the belt. The HRM will automatically turn on when attached to your belt. The belt works best with moisture, so if you are not getting a reading, place some moisture on the contact of the belt before attaching it to your body. Once the belt has been paired with the unit, you will not need to pair in the future (unless you select Forget HRM or change belts).

**Oarlock Setup**

Used to switch between using the wireless oarlock.

Connection – Press this option to pair your wireless oarlock to the SpeedCoach unit. Oar Length – Enter the total length of your oarlock.

Inboard – Enter the measurement from the collar to the sleeve of your oarlock.

Boat ID – Enter the name of the boat being used (up to 5 characters).

Seat Number – Enter the seat number in which the oarlock is used.

Side – Enter the side that the oarlock is on: starboard or port.

Set Zero Force: Used to run a routine to calibrate the zero force of the oarlock.

Set Zero Angle: Used to run a routine to calibrate the zero angle of the oarlock.

**Diagnostics**

Options are Timer Start Acceleration, Noise Filtering and Axis.

**Stroke Rate Setup**

Options are Timer Start Acceleration, Noise Filtering and Axis.

**GPS Spd Smoothing, Strokes**

The Smoothing feature will average the last number of strokes selected. If ‘2’ is selected, for example, the Speed/Split displayed will be an average of the last two strokes, updated every stroke.

**Start Timer Acceleration**

Governs the degree of acceleration that must be detected to start the stroke meter. The default value is 4. If you increase this value, a more forceful stroke is needed to start the timer. If you decrease this value, a less forceful stroke is needed to start the timer.

**Noise Filtering**

Governs the degree to which the accelerometer will register changes in acceleration as a stroke. The default value is 1. If you decrease this value, less acceleration is needed to register a stroke. If you increase this value, acceleration is needed to register a stroke.

**Axis**

Allows you to select Front-Back (2 or X) and Y. Front-Back (2) is generally recommended for rowing assuming that the uppermost part of the oarlock is to the long axis of the boat. At a non-perpendicular axis, the recommendation is to toggle to (A or Y). Selecting this option will automatically generate a routine to pair your wireless oarlock.

**Time and Date**

Used to change the format and date displayed. Please note: only time shown on the display, date will be shown on data recall screen. Please note in most U.S. locations daylight savings time is ON in the summer and OFF in the winter.

**Diagnositics**

The diagrams screen provides information about the performance of your unit’s GPS receiver, accelerometers, HRM, clock, and charging system. This information assists NK tech support in case your unit is not functioning correctly.

**ADVANCED SETUP MENU**

**Impeller Calibration**

To change your Calibration Value run on the calibration routine (see below).

**GPS Spd Smoothing, Strokes**

The Smoothing feature will average the last number of strokes selected. If ‘2’ is selected, for example, the Speed/Split displayed will be an average of the last two strokes, updated every stroke.

**Start Timer Acceleration**

Governs the degree of acceleration that must be detected to start the stroke meter. The default value is 4. If you increase this value, a more forceful stroke is needed to start the timer. If you decrease this value, a less forceful stroke is needed to start the timer.

**Governs the degree to which the accelerometer will register changes in acceleration as a stroke. The default value is 1. If you decrease this value, less acceleration is needed to register a stroke. If you increase this value, acceleration is needed to register a stroke.

**Axis**

Allows you to select Front-Back (2 or X) and Y. Front-Back (2) is generally recommended for rowing assuming that the uppermost part of the oarlock is to the long axis of the boat. At a non-perpendicular axis, the recommendation is to toggle to (A or Y). Selecting this option will automatically generate a routine to pair your wireless oarlock.

**Time and Date**

Used to change the format and date displayed. Please note: only time shown on the display, date will be shown on data recall screen. Please note in most U.S. locations daylight savings time is ON in the summer and OFF in the winter.

**Diagnositics**

The diagrams screen provides information about the performance of your unit’s GPS receiver, accelerometers, HRM, clock, and charging system. This information assists NK tech support in case your unit is not functioning correctly.

**FIRMWARE VERSION**

Shows the current firmware version of your oarlock.

**Speed/Distance Setup**

Options are Timer Start Acceleration, Noise Filtering and Axis.

**Start Timer Acceleration**

Governs the degree of acceleration that must be detected to start the stroke meter. The default value is 4. If you increase this value, a more forceful stroke is needed to start the timer. If you decrease this value, a less forceful stroke is needed to start the timer.

**Noise Filtering**

Governs the degree to which the accelerometer will register changes in acceleration as a stroke. The default value is 1. If you decrease this value, less acceleration is needed to register a stroke. If you increase this value, acceleration is needed to register a stroke.

**Axis**

Allows you to select Front-Back (2 or X) and Y. Front-Back (2) is generally recommended for rowing assuming that the uppermost part of the oarlock is to the long axis of the boat. At a non-perpendicular axis, the recommendation is to toggle to (A or Y). Selecting this option will automatically generate a routine to pair your wireless oarlock.

**Time and Date**

Used to change the format and date displayed. Please note: only time shown on the display, date will be shown on data recall screen. Please note in most U.S. locations daylight savings time is ON in the summer and OFF in the winter.

**Diagnositics**

The diagrams screen provides information about the performance of your unit’s GPS receiver, accelerometers, HRM, clock, and charging system. This information assists NK tech support in case your unit is not functioning correctly.

**BATTERY USE AND CHARGING**

A fully charged battery will provide approximately 6-8 hours of operation, depending on backlight use. Each bar on the battery indicator represents 20% of battery life, or approximately 1.2 to 1.5 hours. To change your unit, press it firmly into the charging dock of your SpeedCoach GPS chargers until it clicks and you hear the “beep” – “on” the screen. The battery indicator will flash and the bars will indicate the charge status achieved. The battery indicator will show full and stop flashing after 100% charge is achieved and the display will turn off until the unit is fully charged. The SpeedCoach GPS can only be charged with the supplied charging dock. The SpeedCoach GPS is compatible with any USB charging source, including your computer an automobile USB or cell phone standby power. A SpeedCoach® XL charger will not charge a SpeedCoach GPS.

**IMPELLER CALIBRATION**

Calibration is only relevant if you are using your SpeedCoach GPS with a wiring harness and speed impeller. The Calibration Value is an important factor that compiles any difference in your impeller’s distance measurement and the “standard” upon which the SpeedCoach’s calculations are based. Calibration applies only when in Impeller mode for speed and distance. It can average out any impact of current or tide to improve the accuracy of the calibration results.

**Entering Impeller Calibration**

Select “Impeller Calibrate” from the Advanced Setup Menu.

**Selecting Impeller Calibration Value**

Calibration Value Manually

If you know your boat’s SpeedCoach Calibration Value from previous calibration it is the same for any SpeedCoach. From the Calibration Menu, press [1] to select the Calibration Value, then press [y] to adjust the value, and [y] to accept the value.

Running the Calibration Routine

The SpeedCoach GPS does not need a measured course to be calibrated. Because the SpeedCoach GPS knows both the GPS and Impeller distance measurement, it can self-calibrate. Calibration simply involves rowing the selected distance in two directions. Your option choices are 500 to 1000M. Although a longer distance will somewhat improve the accuracy of your calibration, it is important to choose a calibration distance that you can row in a relatively straight line in both directions. Ideally, it will also have relatively consistent current throughout. The Calibration routine requires that you row your course in both directions. The unit can average any output current of impact and tide to improve the accuracy of the calibration result through more comparison data.

Your SpeedCoach is equipped with a safety feature that will shut down charging if the battery life is too low or too hot. Do not charge below 32°F [0°C] or above 110°F [45°C]. If you receive a battery warning on the screen while the unit is within these temperature limits, immediately remove the unit from the charging dock and contact NK for service. Further attempts to charge may result in fire or permanent damage.