

COXMATE

ADVANCED ELECTRONICS FOR ROWING

Coxmate GPS

MANUAL(Firmware V1.30)

1. Introduction

This manual provides an overview of the operation of the Coxmate GPS. The GPS is designed to provide performance monitoring for a variety of water sports. In addition to this App there are a number of others on the device for cycling, hiking and other activities. These are not covered in this manual and are not supported by Coxmate. Technical support material can be found at <https://www.coxmate.com.au/techsupport> . The PC Navigation, and, Coxmate Analysis Software are available at <http://gps.coxmate.com.au/>. To access this software you will need the serial number of the GPS – at rear of unit – see picture. The Coxmate GPS comes with a 12 month software licence. Thereafter a nominal annual fee will be charged.



The following items are included:

- GPS with neoprene case
- USB lead
- Suction Mount with option of connecting to stretcher adjustment rail (rowing)
- Adaptor bracket
- Lanyard
- Manual

When you first receive the unit, connect it to a USB port on a computer or a USB charger, to charge the unit. **The charger should have a current capacity of 1.5A (5V).** The connection point on GPS (see adjacent picture) is under the cover at base of unit. Whenever you close this cover, make sure it is pressed firmly and clicks into place. **THIS COVER PROVIDES A WATERPROOF SEAL WHEN CLOSED. IT IS VERY IMPORTANT IT IS KEPT CLOSED WHENEVER GPS HAS POTENTIAL TO GET WET.**



The GPS can be used in a number of different boats eg rowing boats, Kayaks, Dragon Boats, Cornish Gigs, Scandinavian Church boats and outriggers. It can also be used by coaches in following boats (firmwareV1.25 and later). The GPS uses an accelerometer to detect strokes and the acceleration profile of different boats require different settings for stroke detection sensitivity. To ensure reliable readings the sensitivity needs to be set appropriately. To change the detection sensitivity go to section 4.5 for details. Here are some guidelines for settings:

For boats with relatively large speed variation through stroke(eg rowing boats) set SENSITIVITY to Low or Very Low. For boats with relatively small speed variation through stroke(eg Dragon Boats and Kayaks) set SENSITIVITY to HIGH or very HIGH.

If you wish to operate the GPS without stroke detection, then set SENSITIVITY to TIME.

If you are a coach in a following boat, you can disable automatic stroke detection and manually enter rate by touching touchscreen. To enable this mode go to SET UP/COACHING and select the number of strokes between screen taps eg if you select 3 you tap the top half of the screen every 3 strokes.

If you want to have records time and date stamped, then to make sure the time and date are correct, set the time SET UP/TIME - go to section 4.5 for details

2. Mounting in Boat

Fit the adaptor bracket to GPS.

There are three options for mounting the unit in the boat:

- The rear of the adaptor bracket slides onto the standard 'T' bracket used by Coxmate HC and NK Speedcoach.
- Attach the adaptor bracket to the suction mount via the screw fitting. Slide the GPS unit down onto the bracket. Fit suction bracket to boat. This will require a clean smooth surface. Wet the suction cap, make sure the vacuum lever is up, place suction cap in target position and press vacuum lever down. If the surface is not smooth, then attaching a thin layer of self adhesive material can be applied to surface to create a smooth surface. The position of the GPS can be adjusted by loosening the thumb screw on the bracket – tighten it up once in correct position. Check unit is firmly attached.
- Replace the suction pad part of mount with adaptor shown -in red circle – undo thumb screw. This metal rectangle slides into the stretcher adjustment rail- fitted in rowing boats. Tighten the locking ring. Position/angle adjustment is achieved by loosening thumb screw.



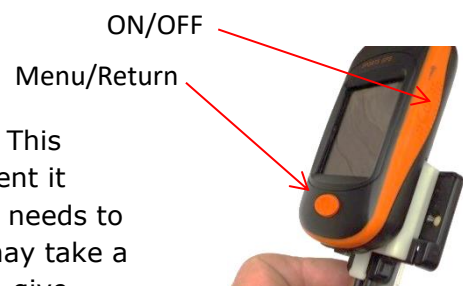
If the unit is to be used for stroke(rate) detection, it is important that the unit is firmly attached to craft and is approximately (+/- 20 degrees) perpendicular to the direction of travel.

It is recommended that the lanyard is used as a safety strap. **If the GPS falls into water it will sink.**

3. Getting Started

To operate unit:

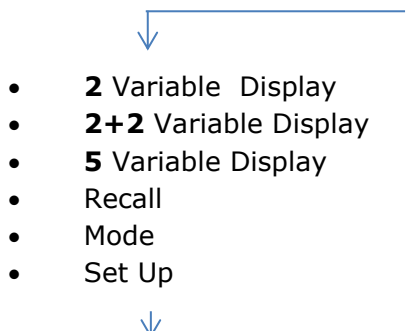
- ON/OFF: The power ON/OFF button is on the side. This button requires firm pressure to operate – to prevent it accidentally operating when it is in your kit bag. It needs to be held down for approximately one second. It may take a couple of minutes to detect satellites, before it can give accurate readings. To turn unit OFF, hold finger on ON/OFF button for approximately 2 seconds'. To exit the Coxmate application, hold Menu/Return button down for ~2 seconds. To restart the application, tap the Coxmate tile. 🏊
- Reset: Press ON/OFF and Menu/Return buttons simultaneously.
- Touchscreen: Used for operation and configuration.



4. On Water

To unit will go straight to displaying rate and speed. The top line provides status of satellites, battery, time and whether a 🏊 heart rate chest strap is attached.

Repeated presses of the Menu/Return button will go through following:



4.1 **2 Variable Display:**

Rate and Speed will be displayed. This display has 'COXMATE' at bottom of the screen.

4.2 **2 +2 Variable Display:**

Rate and Speed will also be displayed. However if you start the *timer*, time and distance will also be displayed – the display will alternate between rate/speed and time/distance each stroke.

The status of the *timer* is shown at bottom of screen. Each time screen is touched, it will step through the following:

- **READY**
- **SET**(flashing) The *timer* will start if screen is touched, or, if motion is detected.
- **RUN** – *timer* running. Will stop if screen touched. Can also be programmed to stop after a defined period
- **PAUSED** If screen is touched whilst in **RUN** the *timer* will pause. If the screen is touched again, timer will resume. The unit will not record whilst it is PAUSED and the time before and after PAUSE will be stored as one continuous record. If you hold your finger down for 2 seconds when in PAUSED, the *timer* will STOP.
- **STOP** – *timer* stopped. Will reset time and distance to zero and go to READY if screen touched.

The READY/SET/RUN/PAUSED or STOP are displayed at bottom of screen.

4.3 **Five Variable Display:**

If this is selected, then 5 variables can be displayed. These can be selected in **Set Up**.

READY/SET/RUN/STOP operate the same as with the **2+2 variable** display.

Any 5 of the following variables can be selected:

Rate; Speed (Split); Time; Distance; Distance/stroke; Average Speed; Stroke Count; Heart Rate (Requires chest strap); Pace Speed – you can race against a virtual boat; Pace Distance – tells you how far ahead or behind virtual boat you are. Navigation - if this is selected, unit will display how many metres you are from, and what direction you need to travel to get to, a pre-programmed route. Workout -if unit is in Workout mode, the bottom right and middle right segment will be dedicated to Workout – see Workout section for details.

Time, Distance, Average Speed, Stroke Count, Pace Distance and Workout are all reset when timer is reset and only update when timer is running. READY,SET,RUN etc – as per **2+2** display.

4.4 RECALL

Recall shows records which are stored in unit – Each time the *timer* is started and stopped, a record is created- provided RECORD is ON. (Got to Set UP/RECORD to turn RECORD ON/OFF). Each record is indexed with the time and date of the start. Selecting and viewing a record will show how long the record is (End Time) and the average rating and speed for this period. Pressing NEXT and PREV will show the detail of the record in 15 second increments. Records can be deleted.

4.5 SET UP

SET UP enables:

- UNITS to be selected for DISTANCE and SPEED:
 - Distance: metres, kilometres or miles
 - Speed: m/s, time/500m (Split), kph or mph
- DISPLAY: Each sector of the 5 Variable display can be selected from the options listed in **4.3**.
- AUTO STOP: This enables the *timer* to stop after a period of time without a stroke. It can be set to 5,10,15,20,25 seconds or disabled. If set to disabled, the *timer* is stopped manually by touching screen.
- SENSITIVITY: The stroke detection to Start *timer* (Start Stroke) and detect stroke (Normal Stroke) for determining rating can be adjusted. The higher the setting, the less acceleration is required to trigger signal. For rowing boats a setting of 'low' or 'very low' is generally the best. For **kayaks** and **dragon boats** 'high'. Special conditions eg rough water may require further adjustment. If TIME is selected, the speed will be updated independently of any stroke
- AVERAGING: You can smooth rate, speed and ratio readings by averaging the reading over a number of strokes – between 1 and 5. There is also an AUTO setting – the number of strokes the reading is averaged over will depend on the rating. It is generally recommended that the speed be set to AUTO.
- DISPLAY COLOUR: Black on White or White on Black.
- Record: On or Off
- SEAT ORIENTATION: This sets the navigation assist direction arrows to display correctly, depending on which way the unit is facing
- TIME: This enables the time to be set (24Hr). This will enable unit to identify time zone and set time precisely.
- COACHING: If 1,2,or3 is selected, then unit will operate in COACHING mode. This mode is designed to be used by a coach following boat in a tinny (or similar). The coach can determine coached vessels speed by travelling at same speed. The stroke rate is determined by the coach touching the touchscreen. '1,2or3' determines the number of strokes between touches eg if coach selects '3', then he will touch the screen every third stroke.

Notes on PACE function: This can be selected in display configuration. It enables you to race against a 'virtual' boat. To use it, you must have both Pace speed and Pace distance selected for display. You can then set a 'target' speed by touching the pace speed section of display. A drop down adjustment icon will appear. Select the speed you want. Once this is set, and the *timer* is started, the pace distance will show how far ahead or behind the pace boat you are.

Heart Rate: If you have an Ant+ chest strap, it must be paired with the GPS. If this does not occur automatically, then to manually pair: hold finger on Menu button for approx. 3 seconds –

this will exit the Coxmate application. Select the 'HRM' App and 'pairing'. Once paired, press Menu button and select the Coxmate App. A small red heart icon will appear at top of screen.

4.6 MODE

There are 3 modes:

- **RUN** (Normal mode)
- **WORKOUT**
- **NAVIGATION**

If **WORKOUT** is selected it will enable you to choose a WORKOUT and either LOAD or EDIT it. 24 workout programmes are available (A-Z excluding 'I' and 'O'). The workouts can be programmed in Time, Distance, Strokes, or, Strokes(work phase) and Time(rest phase). Each increment in a workout has a **Work** and a **Rest** phase. If you chose EDIT, you can programme the **Work** and a **Rest** phase for the selected INTERVAL. If you want to repeat a programmed interval, then there is a repeat function (REPT). This will copy the current INTERVAL values to the next INTERVAL. If you are training to a Workout programme then the bottom right display segment will show eg **B:7:W**, signifying programme **B**, interval **7** and in **Work** phase. The middle right display segment will show the remaining time/distance/strokes. Workout is started by starting *timer*.

Selecting **NAVIGATION** will allow you to choose a pre-programmed route which has been downloaded from PC to GPS, or, NONE (no route).

NOTE: The NAVIGATION function should only be used to assist in navigation and must never be relied on for safety or collision avoidance.

5.0 Maintenance

If unit is used in salt water, rinse unit, including mount, in fresh water to remove any salt. There are some metallic components on mount which may corrode if salt is not removed. Occasional light greasing of the metallic parts on mount and the USB connection will minimise any corrosion. To clean case and display use a mild detergent and rinse with clean water – **make sure access door is properly closed**. Store unit in clean dry environment. Do not subject it to excessive temperatures.

If the GPS becomes slow to respond to touches, then deleting stored records will speed it up. **Resetting:** If unit 'locks up', then it can be reset by pressing both buttons simultaneously. **Charging:** If unit does not charge properly, then try a different charger – some do not supply enough current or have incorrect voltage, or try a different lead. If using a PC, remember that they will sometimes turn the power off to USB port when they go into power save mode.

The unit uses a Lithium polymer battery. DO NOT REMOVE OR TRY AND REPLACE BATTERY. IF UNIT IS TO BE DISPOSED OF, MAKE SURE IT IS DISPOSED OF ACCORDING TO LOCAL REGULATIONS.

The battery should be charged at least once every 4 months

Files: If the unit is connected (via USB lead) to a PC, it will show up as a normal 'memory stick' – in fact it can be used as same. All the files relevant to the Coxmate App are stored in the 'Coxmate' folder. There are 3 file types which are stored: '.CMT' are the stored data files, '.CMC' are the programmed routes, and, 'Workout.DAT' contains all programmed workouts. If the PC Analysis software is used, all the '.CMT' files will appear when the PC application is running, and the 'Connect' tab is selected.

The only time the GPS requires files to be placed in this folder is for programmed routes ('.CMC'). Once a route has been programmed using Google© Maps, it can be saved to this folder. Some browsers will allow the file to be placed directly into this folder. Others will require route to be downloaded to PC and then transferred to this folder.