# ACTIVESPEED
ActiveSpeed User Guide

Congratulations on purchasing your new **ActiveSpeed**. It has been designed to be as easy as possible to use but the following information will help you get the most from it.

If you do have any questions please watch the instruction videos on our 'ActiveToolsRowing' YouTube channel, email us at **queries@active-tools.com,** or contact your local distributor.

REMOVABLE ANTENNA

ENTER/P BUTTON   POWER BUTTON   UP BUTTON

BACK/S BUTTON   DOWN BUTTON
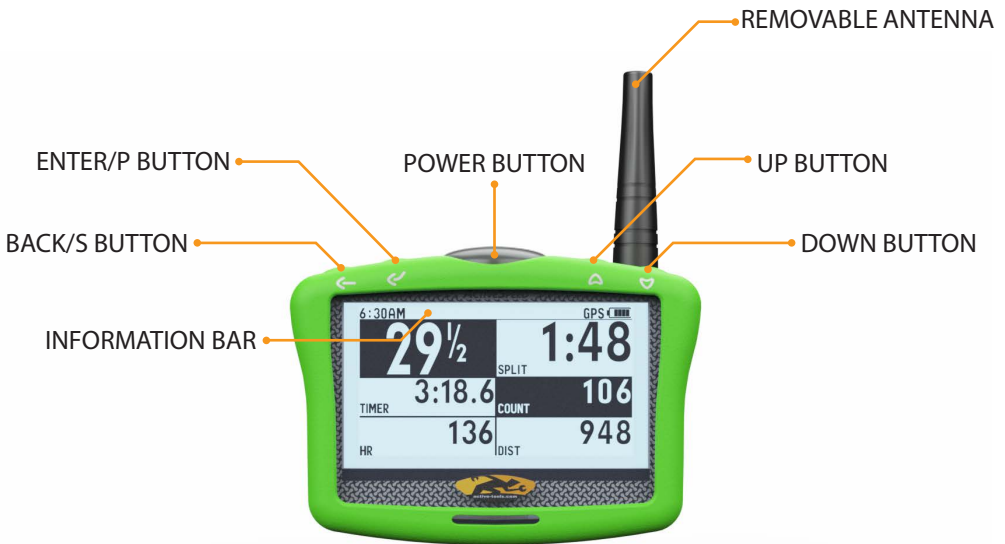
INFORMATION BAR

Information Bar			
00:00	Time in either 12 or 24 hour format.	⏱	Heel Switch connected
T1/R1/P1	Training/Race/Power Screen, 1-6	✈	Impeller connected
WORK 4/6	Progress within a Set in a workout	♥	Heart Rate device connected
SET 2/3	Progress through Sets in a workout	⊃GPS⊂	Searching for Satellites
📶	Crew Unit connected to a Coach Unit	**GPS**	Satellite lock achieved
↔	Power Oarlock connected	🔋	Battery Level

Basic Operation		
Turn On		Press & hold the POWER Button for 2 seconds and the unit will turn on.
Turn Off		Press & hold the POWER Button until *RESET* and then *TURN OFF* appears and then continue holding for a further 3 seconds.
Just Row		Press the POWER button to set the unit to ready. It will then record everything from when you press the button again, or start rowing.
		The timer can then be stopped by pressing the POWER button again and the unit will return to STOP mode until the piece is either resumed or the unit is RESET.
		Alternatively, if you stop rowing or paddle very lightly, STOP will flash. If you then press the POWER button while it is flashing the time you stopped rowing hard will be used as the end of the work piece.
		Within a piece you can insert Splits at any point by pressing the BACK/S button. This inserts a marker into the data file.
Select Screen Layout		Use the UP and DOWN buttons to change the screen layout.

MAIN MENU		
Access the Main Menu		Press the ENTER button to show the main menu and you will find the following options listed.

Workouts		
You have four options when recording a workout:		
Run Last		
Run Last Workout		Press Enter & then select Run Workout.
		This repeats the last workout you used.
Run Favourite		
Run a Favourite Workout		Press Enter & navigate to your chosen workout, press Enter again to run the workout.
		This allows easy access to the workouts that you have picked as your current favourites.
Run Single		
Run a Single Workout		These are simple workouts that can be set up by Distance, Time, or Stroke Count.

		Everything is recorded from when you press the POWER button, or start rowing, until the specified Distance, Time, or Stroke Count is complete.

Run/Program Interval

Intervals are based on paired Work and Rest periods and these can then be repeated to make a Set. Each work and rest period can be specified by Time, Distance, or Stroke Count. They can be programmed individually or duplicated. Finally, they can then be repeated as Sets with an additional rest period in between.

You can set target ranges for Rates, Speeds or Heart Rates (or Power if you are using RapidFit Oarlocks) and in Workout Settings you can set the unit to indicate when you are out of range.

Your ActiveSpeed comes with 16 typical workouts pre-programmed and you can set up a total of 29. Any 6 of these can be moved to Favourites to let you find them more easily.

On the 'Select Workout' screen each workout is summarised like this:

Countdown into intervals.
Note that this will not be shown if countdown is not selected.

AUTO or PRESS, depending on whether you want the Interval to start automatically or at the press of the POWER button.

Number of Intervals per set. Equal means they are all the same, Varbl means that they are of variable length.

Auto, 10s, 3 Equal, 4 Sets
2000/R28.0/03:00

Number of Sets programmed.

Work distance, time, or count *

Rest period between intervals *

Target Rate, HR, Speed or Power **

* If Variable intervals have been set these will cycle though and show you each one.
**If a range of target values have been set only the lower figure of that range will be shown.

| Run or Edit a Workout | | First select the workout you want to run in the SELECT WORKOUT list. Run workout can then be selected at the top of the screen.

Alternatively, you can scroll down and edit the workout under the following headings.

Run Workout		**>**
Start	Auto	10s
Intervals	Equal	2
Work	Dist	2000
Target	Rate	28.0-30.0
Rest	Time	03:00
Sets/Rest	2	05:00	

Start		You can set the workout to either start automatically or with a press of the POWER button. You then have the option to set a countdown to delay the timing of the interval until the boat is up to speed.
Intervals		Within a Set you can either have Equal length Intervals or Variable length ones. You can also specify the number per set.
		If you select Variable you will be prompted to select how many you want and then to specify each one individually.
		Please note that the maximum number that can be created is 16.
Work		You can specify the Work for each Interval by Time, Distance, or Stroke Count and then specify a figure.
Target		You have the option to specify a target Rate, Speed, Heart Rate or Power and under Workout Settings you can specify whether you want to be notified when you are out of range (the relevant field will flash and display an arrow pointing up or down if you are under, or over, the target).
		Please note that the '0.5s' on the stroke rate settings are to allow finer control of when these notifications occur, eg: you could set them 1.5 SPM above and below the target rate.
Rest		You can specify the rest period for each Interval by Time, Distance, or Stroke Count.
Sets/Rest		You can specify how many Sets of Intervals you want to complete and also define a rest period between Sets.
Set Favourites		
List Favourites		This is a list of up to six workouts you can set to be favourites.
		The number, eg: 12, in the top line is the number of that workout in the main workout list.
Add Favourites/ Remove Favourites		You can add and remove favourites by selecting workouts from the ones listed.
Workout Settings		
Notifications		You can specify here whether you want the relevant display field to flash if you are out of the target range that you have set. It will also show an arrow that indicates if you are above or below that range.

Display

Display Modes		The ActiveSpeed has three display modes, Training, Race and Power.

		You can configure up to six display screens for each mode and the current screen selected is shown in the INFORMATION BAR, eg: T1 is Training 1.
Select Screen to Display	⌃ ⌄	You can scroll through the different screens that you have set up, in the mode that is active, using the UP and DOWN buttons when you are in the main screen.
Choose a Screen Mode	↵	To choose a different screen mode press ENTER when either Select Train, Select Race or Select Power is highlighted.
Edit		
Edit Screen Layouts	↵	To edit the screen layouts select Edit Train, Edit Race or Edit Power. Within this menu you can select which screen to configure (the tick next to a screen indicates whether it is enabled).
	⌃ ⌄ ↵	You can enable or disable the screen layout using the UP and DOWN buttons and then press ENTER. You can then select the number of fields in the same way and configure each field in turn with one of these parameters. *(see RapidFit instructions for an explanation of Power field names)*
RATE		Rate is always displayed in the first field.
TIMER		Elapsed Time
DIST		Distance Covered
DIS/ST		Distance Per Stroke
COUNT		Stroke Count
SPEED		Shown in splits or distance/sec
AV. SPD		Shown in splits or distance/sec
HR		Heart Rate, either as measured or as a percentage of your maximum
CHECK		When Check is selected the ActiveSpeed displays a Check Factor which is measured over two strokes and is calculated from the average boat deceleration during each stroke. This is then adjusted for rate. Check values do vary with crew weight and boat type but as a general guide we see figures of around 35 to 40 for the best crews at race pace increasing to 60 or 70 for less experienced rowers. *Rather than monitoring Check continuously we suggest tracking it over time and using it to assess improvements made due to changes in technique.*
'NOW' and 'NEXT'		These are for use with interval workouts. 'NOW' shows you what you are currently doing and 'NEXT' what is

		coming up next in the workout.

Recall		
Your ActiveSpeed stores each piece of timed work that you do. When its memory is nearly full a warning is given and you can then either delete or transfer out files or let it fill up completely. *NOTE: If you do let it fill up the oldest workouts will automatically be deleted to create space for new ones.*		
Select Workout		Select the piece you want to review by pressing ENTER.
Explore		Press ENTER on Explore then scroll though and review the stored data for each piece using the UP and DOWN buttons. *Holding the buttons down will increase the speed they scroll at.*
Upload		This will upload the workout using the DataFlow app.
Erase		Press ENTER on YES to erase the selected workout or NO to return to the Recall menu.

Settings		
Device Name		
Set Name		This can be any combination of 10 letters, numbers or blank spaces. Press ENTER and use the UP and DOWN buttons to change each character one at a time. Then press ENTER to move to the next character or BACK to move back. A long back press will take you back to the main screen.
Coach Link		
Using an ActiveSpeed a coach can view the data on up to five other units (all will need to have their antennas fitted). The range over water is a minimum of 200 metres but is generally considerably more. The coach can choose the parameters they want to monitor, they don't have to be the same ones the rower is viewing. They can then scroll through the crews with a single press of the POWER button.		
Network Set Up		Navigate to Link Setting. To set the network name and PIN, press ENTER and use the UP and DOWN buttons to change each character one at a time. Press ENTER again to move to the next character or BACK to move back.
To Start Session		The coach can start a Coach Link at Coach > Coach Link Start.

		Crews can join under Crew > Join Coach Link
		NOTE: Network names and PIN numbers must be set prior to joining a network, you will not be prompted to do so when attempting to join.
To End Session		Either: • Turn off the units using the POWER buttons. • Crew can opt to leave the Coach Link via Crew > Leave Coach Link. • Coach can end the session via Coach > Coach Link Stop

Please note that many National Rowing Organisation have rules concerning transmitting data when racing, so please check those carefully as you may need to remove the antenna. If racing internationally you will also need to check exactly what the current FISA regulations are as they do occasionally change.

PENDING	DataFlow	**PENDING**

This allows you to link to the ActiveTools DataFlow app to transfer data out. This is available for both iOS and Android and allows easy data transfer to Ludum, Rowsandall, Training Peaks, Strava, Golden Cheetah, etc. This includes both performance data and tracks of the courses you steered.

You can then review and analyse both your on-water workouts and any land-based ones you have transferred to these sites.

The inbuilt GPS module will record your courses and this data can then be viewed in Google Earth once uploaded. On open water your course is generally accurate to 2-3 metres / 6-9 feet, but on narrow rivers trees, bridges and buildings will affect the results.

The app also lets you update the firmware on your ActiveSpeed and in the future it will let you see, and analyse, data and force curves from our RapidFit Coaching and Data oarlocks.

Connect to DataFlow	*DETAILS TO FOLLOW*
Transfer to DataFlow	*DETAILS TO FOLLOW*

PENDING	Sensors	**PENDING**

Here you can pair and configure the optional wireless Accessories.

Heart Rate Monitor		The ActiveSpeed works with most standard Bluetooth heart rate monitors. *NOTE: You might want to purchase a combined BLE/ANT strap though as some devices, including some Concept 2 machines, only use ANT (the Heart Rate Strap that we sell as an accessory is a combined BLE/ANT one).*
Impeller		The Impeller design was optimised using Computational Fluid Dynamics but all Impellers create significant drag, so we recommend that they are only used for training and are removed for racing. On straight courses you will get reasonably good speed readings with the Impeller in most positions on a hull providing you calibrate it. However, to get

		sensible readings without calibration, and on turns, a position of 5 metres from the Bow is recommended.
		Calibrating the Impeller is done automatically using the GPS distance sensor. You will need to do it on a clear, and reasonably straight, 500 metre stretch of water. You will to get a more accurate calibration if you do it on still water but if the water is moving you should use 'Stream Compensation' before starting the calibration.
		The unit will enter Calibration Mode and '500' will be displayed. You then need to row at a reasonable pace, in a straight line, for 500 metres. The distance will count down as you do this and when it reaches zero 'READY' will be displayed and your Impeller is calibrated.
		Manually Adjusting the Calibration
		This is for use when you are fitting your ActiveSpeed to a boat that has an Impeller with a known Calibration Factor, or if you are setting the Calibration Factor of an Impeller using markers on a rowing course rather than using the automatic GPS calibration method. To do this you monitor what distance the ActiveSpeed displays when the boat travels between 500 metre markers and then adjust the Calibration factor up or down by the percentage the displayed distance was out (you adjust the factor down if the distance displayed is less than 500 metres and up if greater). Enter Impeller Calibration Factor mode so that you can then adjust the Calibration Factor number using the UP and DOWN buttons.
Heel Switch		This is an optional accessory that connects between the heel restraint tie points on your shoes and allows rolling start pieces to be timed by simply moving your heels apart. (Patent Nos. US7452252B2 and GB2427591B)
RapidFit Coaching and Data Oarlocks		When these become available it will be possible to pair one Sweep or two Sculling Oarlocks to the ActiveSpeed. They can be moved between boats in under a minute and heights can be quickly adjusted using standard clips. Pitches can also be set in the usual way. (Patent Pending)
Advanced Settings		
Time and Date		Use the ENTER and UP and DOWN buttons to edit the settings.
		You can toggle between 12 and 24 hour displays.
		A short press of the BACK button will take you back one step. A long press will take you back to the main screen.

Display Units		Here you can set: Units - Metres, Kilometres, or Miles Speed Display - Splits or Speed Heart Rate - Beats Per Minute or % of maximum Heart Rate Set Max HR - You need to specify this if you are using "% of maximum Heart Rate" setting
Speed Averaging		Here you can set the number of strokes speed is averaged over when using GPS. *The Default setting is 5.*
Accelerometer		These set the Sensitivity and Noise Filter settings for the accelerometer. The factory settings for Rowing are Sensitivity: 4, Noise Filter: 5, and 2 or 3 Axis: 2. *These do not normally need adjusting and are mainly intended to be used with other types of boats.*
Distance Calculation		'Speed x Time' calculates distances by continuously multiplying Speed and Time and gives the best results on rivers with bends in them, providing the GPS reception is good. 'Position' measures between points and is optimal for straighter courses and where GPS reception is poor.

Stream Compensation		
The GPS stream compensation feature (Patent No. US9804268B2) helps give more accurate GPS speed readings on moving water. Please note though that this has inherent limitations, due to GPS accuracy and varying stream conditions, so using an impeller is often the best option for training outings.		
Setting Stream Compensation		First put the ActiveSpeed in 'STOP' mode and have the blades square in the water so that the boat is moving with the stream. Then hold the BACK (S) BUTTON ('S' stands for Stream Compensation) for 3 seconds. The DISPLAY will show STREAM COMPENSATION and it will then measure the speed of the boat over 20 seconds, which will count down on display. When this is complete the distance the boat moved during the 20 second period will be displayed, in metres, so you can see that the compensation process produced a sensible result (if not it will be because of the limitations of GPS in that location, so you will need to repeat the process). *Please note that you will need to repeat the procedure each time you turn the boat around.*

About	
Firmware version	This shows the current firmware version.

Odometer	
Totals	Your Daily, Weekly, Monthly, Yearly and Total distances are listed here.

Mounting the Unit

Whichever mounting option you choose we strongly recommend that you attach the ActiveSpeed to your boat using its lanyard so that it cannot be lost. **The unit does not float unless it has the optional float attached and even with it fitted it won't float with the Silicone Strap Mount attatched.**

Note that not mounting the unit parallel to the centreline of the boat may affect Rate and Check readings.

There are three mounting options:

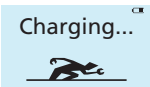**Standard Mounting Bracket**   **Silicone Strap Mount**   **GoPro Mounting Bracket**

Standard Mounting Bracket	This is best fitted under a footplate nut.
Silicone Strap Mount	This can be used on wing riggers, and some foot stretchers, and having fitted it the ActiveSpeed can be adjusted to achieve the optimum viewing angle. If you only use the strap on narrower riggers it can be shortened with scissors by cutting along one of the grooves.
GoPro Mounting Bracket	This is primarily intended for coaching launches and it can be fitted to any standard GoPro surface mount. It can also be used when rowing if the boat has a suitable flat surface. A few coaches also use them on bikes but this must be done with great care, and only when other people aren't around. You will find that on rough surfaces the vibration may cause the hinge to change position. You therefore need to rotate the unit on the handlebars so that the hinge is fully closed when the ActiveSpeed is set at the angle you want.

Battery & Charging

Battery Indicator		Each bar represents approximately 20% of battery life. A full battery gives around 20 hours of normal use or 10 hours if the Coach Link is being used.
Charging		Connect the charging plug to its lead and slide it into place on the rear of the unit. The battery takes approximately 3 hours to fully charge from empty. *During the last 5-10 minutes of charging your unit will occasionally complete a memory cleanup and during this process it can't be used.*
Full Charge		When the unit is fully charged the backlight will turn off and 'Fully Charged' will appear.

Antenna Storage

The Antenna can be stored in the case when it is not being used but the Antenna Cap MUST be fitted to the ActiveSpeed to prevent water damage to the connector.

Antenna

Antenna Cap storage boss

Reset Button

This is for use in the unlikely event that the unit needs re-booting. It is accessed from the front of the unit by lifting the edge of the rubber bumper.

Disposal

Marked in accordance with the WEEE (Waste Electrical and Electronic Equipment) Directive. Please do not dispose of the ActiveSpeed in your household rubbish. Return to Active Tools, an Active Tools agent, or a designated recycling centre for proper recycling and disposal.

FAQs

I was charging my ActiveSpeed and the CHARGING screen said MEMORY CLEANUP.
During the last few minutes of charging your unit will sometimes complete a memory clean up and during this process the unit is not usable.

How long will a battery pack last, before it needs to be replaced?
You can expect at least 2-3 years life out of your battery pack, and it is then user replaceable.

Does the unit float?
The unit does not float unless it has the optional float attached.

Can I remove the antenna?
The antenna can be removed when the Coach Link is not being used. The Stainless Steel Antenna Cap must be fitted though as water damage to the connector won't be covered under the warranty.

I can't seem to connect to my coach's network?
Network names and PIN numbers must be set prior to joining a network, you will not be prompted to do so when attempting to join.

Why do Check values sometimes seem inconsistent?
In less stable boats Check values can be affected by the sideways rotation of the boat if the ActiveSpeed is not mounted on the boat's centreline.

Does the unit come with a warranty?
Yes, there is a 2-year warranty.

Is any maintenance required?
None is required.