



**OARTEC SIMULATOR TRAINING MONITOR
USER MANUAL
Version 1.05**



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Features

The Oartec Training Monitor (OTM) is a professional workout monitor that has a number of display and training features specific for rowing.

Getting Started

To get the monitor started each time you use the machine, press the ON/OFF button.

To reset the monitor at any time, press the ON/OFF button twice to turn the monitor off and then back on again.



Default Screen

The default display is set to show:
Time
Stroke Rate
Speed as Time/500m
Distance



Speed

Speed can be displayed as:
Time/500m
Watts
Km/Hr
Miles/Hr (M/Hr)
Metres/Second (M/S)

Change units of Speed by pressing the SPEED button.



Averages

Average display field shows:
Av. Time/500m
Av. Watts
Av. Km/Hr
Av. Miles/Hr
Av. Metres/Second
Stroke Count
or clear field.

Change units of Average by pressing the AV button.

Technical Functions

Technical display field shows:
Stroke Length
Drive Ratio
Av. Strokes per Minute
Heart Rate
Drag
or clear field.

Change Technical features by pressing the TECH button.



Technical Functions

Press the TECH button to access these features. The Technical information is displayed in the bottom left hand field on the display.

Drive ratio

The drive ratio is a ratio of drive time to recovery time. The drive phase is always measured as 1. For example if the drive time was 1 second and the recovery time was 3 second the drive ratio would be displayed as 1:3.0. If the drive time is 0.7 secs and the recovery time was 2.8 secs the drive ratio would be displayed as 1:4.0.

Stroke Length

Stroke Length is a numerical value given to the length of the drive phase of the rowing stroke. The measurement is based on the amount of flywheel revolutions from the beginning to the finish of the stroke and converted into a number for easy reference. The numerical value is a reference number only. It does not represent a length in centimeters or inches or an arc length but is very useful for setting a target length you wish to reach.

Average Strokes Per Minute

This feature displays the average strokes per minute from the commencement of a Just Row or programmed workout.

Heart Rate

The OTM is compatible with the Polar brand of heart rate chest belts and receivers. The Polar HR receiver plugs into the port at the rear of the monitor.

When the OTM is receiving the signal the Heart icon will flash on and off.

The receiver must be set within 3 feet of the chest belt worn by the rower to be within range of the signal.

Drag

The Drag feature is a numerical value given to the rate of deceleration of the flywheel. With a heavy resistance setting, the flywheel decelerates quicker and therefore the drag value is high. A lighter resistance, a lower drag value.

This Drag value is calculated every stroke and used in the algorithm to produce the rowing speed. This Drag feature compensates for dust accumulation in the flywheel housing and atmospheric conditions (Temperature, Altitude, Wind) which can affect the rate of deceleration of the flywheel. For example a setting of 4 on one machine may need a setting of 5 on another to achieve the same level of resistance on both machines. Using the drag value instead of the resistance lever number is the best way to calibrate each machine to be the same resistance.

This feature is more used for performance testing where it is important that all machines are set to an equal resistance, so that each rower is tested under the same conditions.

To measure the drag value for a given resistance, press the TECH button until the Drag is shown. Row 3 to 4 strokes continuously and the monitor will calculate the drag for that resistance setting. Adjust the resistance lever up or down until the desired drag value is set.

Other Features

The OTM uses the advanced self calibration algorithm to give consistent scores across all resistance settings. This allows scores to be comparable from machine to machine.

To save on battery life the monitor has a time out function set at 90 seconds after the last button action, rowing stroke or completed workout.

Software Updates

From time to time Oartec will release software updates that might rectify unseen bugs in the software or add functionality to the monitor.

To view the current software installed on the monitor press ARROW UP button to activate the Interval field in the bottom centre of the display. Then press READY. The software version will display in the bottom right display field shown below.

To update the software follow the procedure set out in the update pdf that comes with the software update. You will initially have to install the update drivers to your PC running Windows XP, Vista or higher. Once the drivers are installed connect the PC to the monitor using a USB cable and update. This should take about 30 secs and the new software will be uploaded ready for use.

We will send software updates to our existing customers as they are released or they will be available to download from the Oartec website.

Training Modes

The Simulator OTM has a selection of 2 workout modes for different training sessions and methods.

These are:

Just Row mode

Time or Distance mode

Just Row Mode

The simplest function of the OTM is the Just Row mode.

Turn the monitor on and start rowing. Both time and distance will start counting up until you stop rowing.



You can stop rowing for a short rest, stretch or drink and once the flywheel slows down the screen display fields will pause after your last stroke until you start rowing again. The elapsed workout information will be preserved and start where you last stopped.

It is important to note that if you stop for longer than 90 seconds before rowing again, the monitor will timeout and you will lose your current workout information. The monitor will reset back to zero when you turn the monitor back on again after timeout.

If you wish to display additional information on the screen such as average speed or technical data such as heart rate or stroke length, press the AV and TECH buttons to activate these display fields.

Time and Distance Workouts

The OTM can be programmed for Time or Distance workouts, where the display will countdown until the workout is complete. This is the best way to use the OTM if you want an exact final result and to see the average speed, stroke rate and other relevant data at the end of the workout.

Time Workout



Step 1

Turn the monitor ON.
Press TIME
The Time digits will appear in the top left hand corner of the monitor.



Step 2

The flashing digit will be editable using the ARROW UP button. To move to the next digit across use the ARROW ACROSS button.



Step 3

Set the desired Time using the ARROW buttons, then press the READY button.

Start rowing and the Time will count down until the set workout time has been completed. It will then show the final F screen with the total distance rowed, the average speed and the average stroke rate for the workout.

Distance Workout



Step 1

Turn the monitor ON.
Press DIST
The Distance digits will appear in the bottom right hand corner of the monitor.



Step 2

The flashing digit will be editable using the ARROW UP button. To move to the next digit across use the ARROW ACROSS button.



Step 3

Set the desired Distance using the ARROW buttons, then press the READY button.

Start rowing and the Distance will count down until the set workout distance has been completed. It will then show the final F screen with the total time taken, the average speed and the average stroke rate for the workout.

Workout Memory

The OTM has a memory feature that stores the workout information of the most recent programmed time, distance or interval workout.

On completion of the programmed workout the monitor will display an F screen showing the final results of the workout.

The OTM also records split results for a set time or distance split ie 2000m workout can record the split results for every 500m, giving a total of 4 splits to compare. Each split is numbered for reference.

To scroll through splits, use the ARROW button. To scroll through Averages and other information in the AV display field in the top right of the screen, press the AV button.

The OTM will store the results of the most recent workout until another workout is programmed. Once the monitor has been reset the previous workout information is erased.

If the monitor powers down, the memory can be recalled by turning the monitor ON and pressing the MEMORY button.

Example 1 - 2000m

On completion of the 2000m workout, the OTM will display the final results as an F screen. The information shown will be total time taken, average speed in time/500m and the average strokes per minute.



Press the ARROW buttons to move from the F screen to the Splits that show the results for each split segment. In this case every 500m. (See Setting the Splits)



Split Interval 1



Split Interval 2



Split Interval 3



Split Interval 4

Setting the Splits

The split units can be set from the split presets of 30 secs, 45secs, 1 min, 2min, 100m, 250m, 500m, 10 strokes, 20 strokes. The split must be set prior to the commencement of the workout. The OTM will default to the set split unit until it is changed.



Step 1

Turn the monitor ON. Press Time or Distance. Edit the workout Time or Distance or press INTERVAL to change the Split Preset.



Step 2

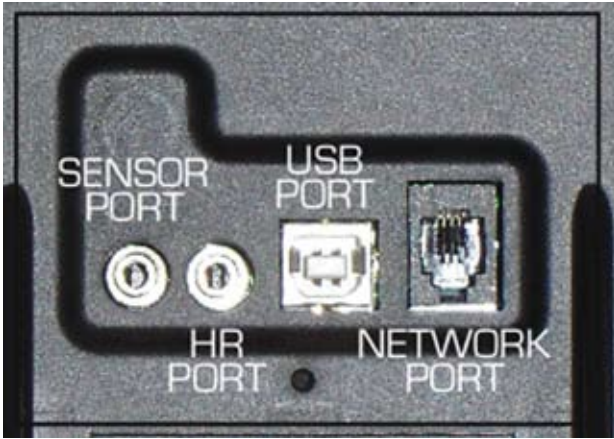
Use the ARROW buttons to scroll through the Preset Split options.



Step 3

Select the Split Preset by pressing READY. Edit the workout or if already set, press READY to prepare to start the workout.

Ports



On the rear of the monitor there are four ports for specific cable connection.
The first small port is for the flywheel sensor cable (labelled Sensor Port)
The second small port is for the Polar Heart Rate receiver.(labelled HR Port)
The USB port is for connecting the monitor to a computer.
The Network port is for connecting to other Oartec monitors (not currently configured).

Batteries

The Oartec Workout Monitor uses 4 AA standard batteries and access to the battery compartment is by sliding open the battery cover located at the rear of the monitor beneath the Ports.

Troubleshooting

Issue: Monitor not giving any scores. Reading zeros when rowing.

1. Check the sensor is plugged in and in the correct port.
2. Check pulses procedure. If no pulses continue with steps 3 & 4.
3. Check for damage to the cable.
4. Contact your local Oartec agent for further advice or replacement cable.

Issue: Monitor not turning on.

1. Replace batteries.
2. If the batteries have been replaced with new and in date batteries and still does not turn on contact your local Oartec agent for further advice or replacement monitor.

Issue: Monitor gives irregular speed and ratings.

1. Check pulses procedure. If there is a regular pulse at low speed check again at a progressively higher flywheel speed. Listen for consistency of beeps as the speed of the flywheel increases.
2. If there are inconsistent beeps it means that the sensor is not detecting the 3 magnets per revolution and therefore producing some irregular scores and ratings.
3. If this is the problem you identify please contact your local Oartec agent for further advice.

Check Pulses Procedure

1. Turn monitor ON.
2. Press the ARROW UP button. The small interval digits should appear in the centre bottom field of the display.
3. Press the ARROW UP until the digit reads 01, then press READY. The top right corner field should then show a number digit only.
4. Lightly pull the handle to get the flywheel moving. The flywheel contains 3 evenly spaced magnets and as each magnet passes over the monitor sensor, there should be a beep. ie. 3 beeps per revolution.
5. Try moving the flywheel faster and listen for an even and consistent beep pattern.
6. If hearing an irregular pattern of beeps or missing beeps please contact your local Oartec agent for further advice.