

Science & Motion **Golf**

SAM PuttLab

HEAD and WRIST measurement



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1 Head and Wrist Measurement

The additional sensor delivered with the SAM PuttLab Pro enables an additional data channel for measurements. By default there are 3 channels available on the Triplet to record the movement of the club.

Since version 2.0 of the SAM PuttLab the additional sensor can be used for **wrist/hand** or **head** movement measurements.

The next sections describes how to attach the sensor, how to execute measurement or training and how to open the special result reports for wrist and head measurement.



Attention:

The sensor and the cable are build with extreme light weight materials, so be very careful in handling these parts. Never pull the sensor cable !

1.1 Wrist measurement

To execute a measurement or training with additional **wrist** measurement you need:

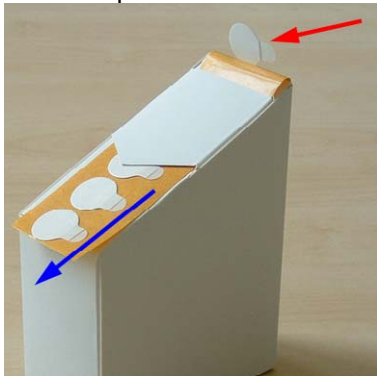
- a) additional sensor
- b) double sided stickers for sensor fixation on hand



a) Prepare the sensor:

The sensor itself can be attached to the target position on the hand by using the double side adhesive stickers which are delivered with your SAM PuttLab Pro.

See the pictures:



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Pull the band with the stickers out of the box so that the next sticker will show up (left picture).
Take the sticker and stick it to the backside of the sensor (right picture)

b) Attach the sensor to the hand:

Remove the paper from the backside of the sticker and stick the sensor to the hand like shown in the picture below:

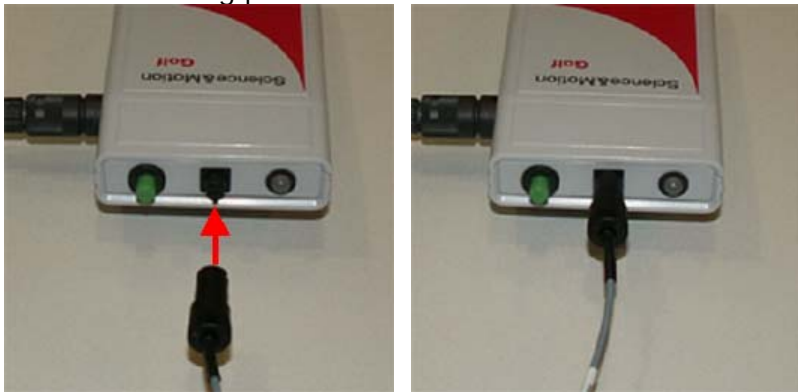


The sensor has to point in direction of the basic unit (front).
The cable should hang down in a loop to be sure to not disturb the movement.

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c) Connect sensor to battery clip:

The plug at the other end of the sensor cable has to be plugged into the jack on the topside of the battery clip. See the following pictures:



Attention:

When you remove the plug from the battery clip do not pull the cable itself. Only pull the plastic plug!

If the cable is too long, you can loop it around the battery clip one or two times like shown in the next picture:



1.2 Head measurement

To execute a measurement or training with additional **head** measurement you need:

- additional sensor
- SAM head band
- double sided stickers for sensor fixation on head band

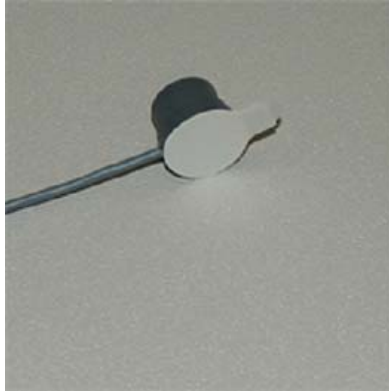
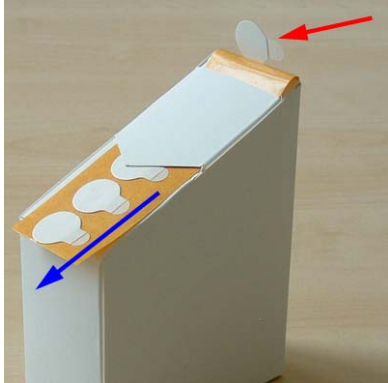


a) Prepare the sensor:

The sensor itself should be attached to the target position on the head band by using the double side adhesive stickers which are delivered with your SAM PuttLab Pro.

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See the pictures:



Pull the band with the stickers in direction of the blue arrow until the next sticker shows up (left picture).

Take the sticker and stick it to the backside of the sensor (right picture)

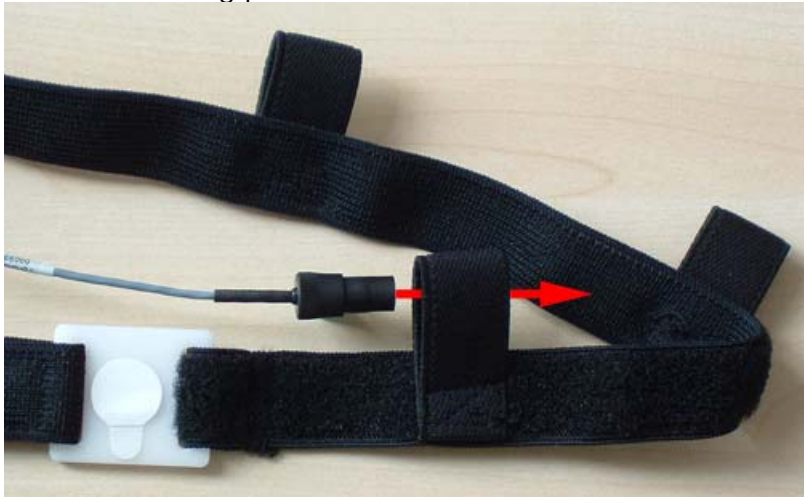
Do not touch the adhesive area of the sticker to avoid poor sticking.

b) Prepare the head band:

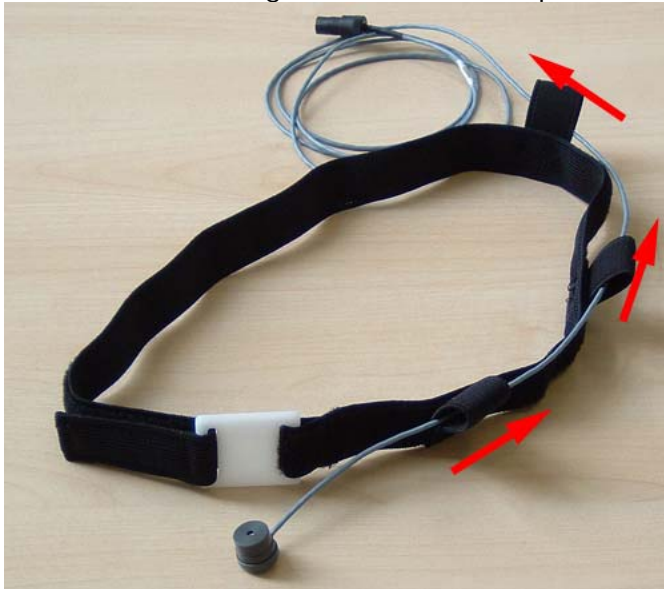
The head band has a plastic plate which holds the sensor. On the side the band has three loops that hold the cable and lead it to the back of the head. The first step is to pull the cable through the loops so that the sensor is on the side of the plastic plate at the end.

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See the following picture:



Pull the cable through the two other loops as well:



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Remove the paper from the backside of the sticker that is already attached to the sensor head and stick the sensor head onto the plastic plate like shown in the next picture:



c) Attach the head band:

The head band is made of elastic material and will fit for most people without adjusting.

The best way to attach the band to the head is as follows: place the plastic plate to the center of the forehead, sensor showing to the front.

Then pull the band over the head to the back so that it fits properly. The cable should be on the left side and going down from the head to the battery clip over the back of the person.

If it is too loose or too tight the band can be adjusted by opening the Velcro fastener at the right side of the plastic plate. Then adjust the band to the right tightness (while holding the plastic plate at the same position) and reattach the Velcro.

i Be sure there is no hair in front of the sensor during the recording of the putts. This will affect the recording and may cause putts not to be recorded!

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d) Connect the sensor to the battery clip:

The plug at the other end of the sensor cable has to be plugged into the jack on the topside of the battery clip. See the following pictures:



Attention:

When you remove the plug from the battery clip do not pull the cable itself. Only pull the plastic plug!

1.3 Measurement and Training with HEAD or WRIST sensor

The following steps will show you how to do execute a measurement or training with hand or head sensor:

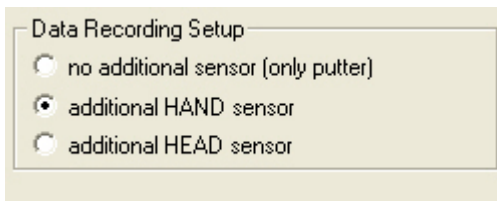
1) Prepare and connect the sensor

See chapter Wrist measurement or Head measurement on how to prepare the hardware.

2) Switch on the external sensor in the software

Before you start a measurement or training with WRIST or HEAD measurement you have to enable the external sensor in the software.

Since version 2.0 you can switch on or off the external sensor directly in the main screen, below the "Data Selection" box:



To enable the sensor the box 'additional **Hand** sensor' or 'additional **Head** sensor' has to be activated.

3) Start Measurement or Training session

Start your Measurement or Training the same way you do without using the external sensor.

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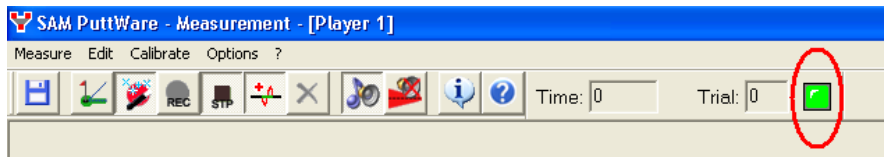
Note: If you start a Training, be sure to select the "Wrist Training" or "PRO Training Head" reports to see the special report pages.

4) Check the functionality of the external sensor

If the 'Hand sensor' or 'Head sensor' option is activated and the external sensor is plugged to the system the movement data for the additional channel will be recorded by the system automatically.

There is nothing different in the execution of Training or Measurement compared to the normal mode.

Just be sure that the status signal for the additional channel lights green when recording data. You find the signal in the toolbar at the top of Measurement and Training window:



Check the status of the symbol in the toolbar:

Not visible: external sensor is not activated; the system will only work correctly if additional marker is not plugged to the system.

Red: external sensor is activated; the system will only work correctly if additional marker is plugged to the system. The red color indicates that currently no signal is received from the sensor.

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Green: external sensor is activated and data signal is currently received from the sensor.

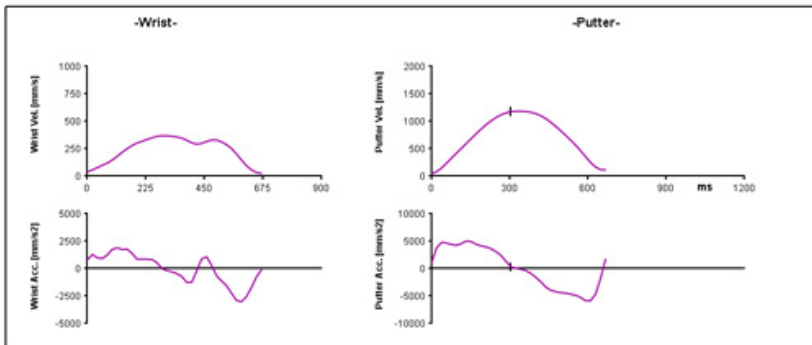


Please note: If the option 'Hand sensor' or 'Head sensor' is selected in the software and the sensor hardware is NOT connected to the system the software will deliver incorrect data signals. This will also happen if the additional sensor switch is off but the sensor hardware is connected to the system. As a result of this the software will show data errors or 'No data signal' error message when you enter the measurement or training mode.

1.4 WRIST measurement reports

Training:

When you start a Training session you can select the "Wrist Training" report in the list of the start up dialog. Then you are able to view one special page in the Training screen:



It shows the speed (velocity) and acceleration of the wrist versus the putter.

Print report:

When you start a Print report you can select "Wrist Print Report" from the list and you get a two pages report showing the wrist measurement results.

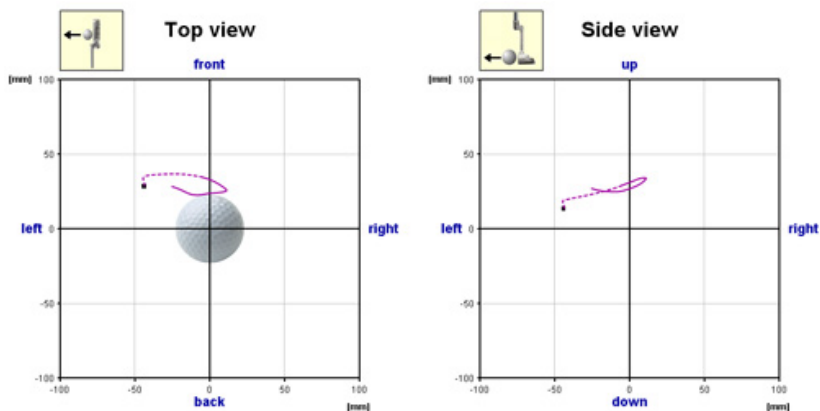
This Report provides information on the following parameters:

- Path curves (top view)
- Rotation
- Change of Rotation
- Wrist speed and acceleration
- Putter speed and acceleration

1.5 HEAD measurement reports

Training:

When you start a Training session you can select the "PRO TrainingHead" report in the list of the start up dialog. Then you are able to view one special page in the Training screen:



This report page provides the following information:

- head address position (relative to moment of calibration)
- head move during back swing (dotted line)
- head move during forward swing (solid line)

Print Report:

When you start a Print report you can select "Head Print Report" from the list and you get the 5 pages Pro Report and an additional page with the head measurement results.

This page will provide the same information as shown above in the Training section.