

Manual Sensbalance MiniBoard 1.0

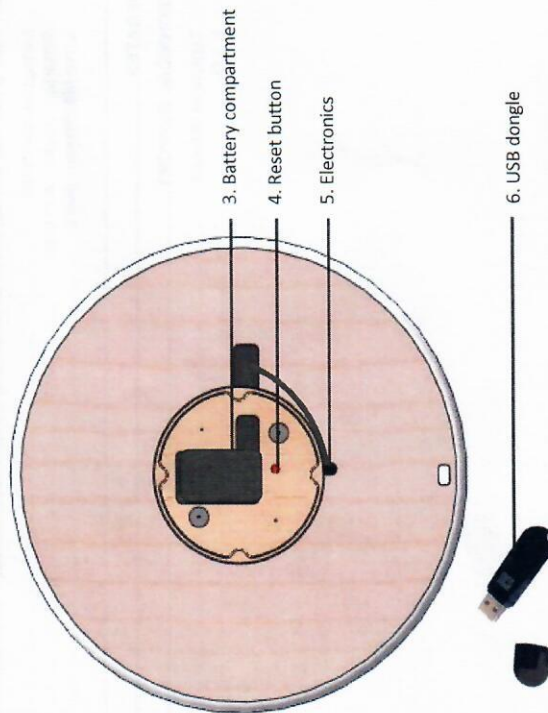
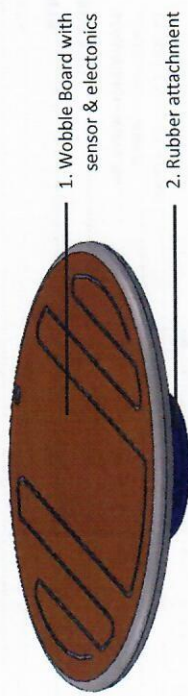


sensamove

1 MiniBoard

1.1 MiniBoard - wireless

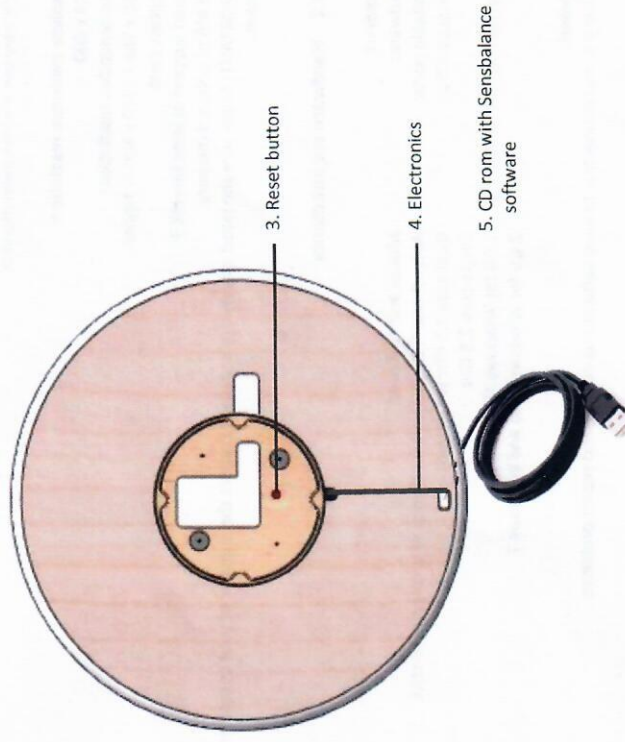
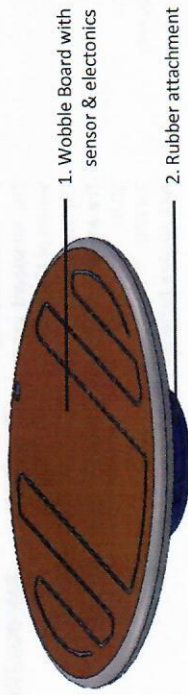
The total package of the wireless MiniBoard contains the following eight parts:



- 7. 2 AAA batteries
- 8. CD rom with Sensbalance software

1.2 MiniBoard – wired

The total package of the wired MiniBoard contains the following five parts:



1.3 Product Specifications

MiniBoard:

The MiniBoard is approximately 40 centimetres wide (round) and 5 - 7 centimetres high.

The MiniBoard can only be used by people with a maximum weight of 120 kilograms.

The MiniBoard is made of blank varnished wood.

The accessories are made of PU Rubber and sheet metal.

Electronics:

Band Frequency:

2,4 GHz

Batteries:

AAA Alkaline Batteries

1.3.1 Monitor requirements

Preferably use a widescreen monitor.

Absolute minimum resolution:

1024 x 600

Recommended resolution:

1280 x 768 / 1280 x 800 or higher

Graphics card:

Should support at least DirectX 9

128 MB of onboard memory

IMPORTANT! Make sure the latest drivers are installed! Contact the supplier of your computer system.

1.3.2 Hardware requirements

Required:

Hardware:

Mouse and keyboard

Available ports:

Processor(CPU):

Dual-core 1.5 Ghz (Preferred) or

Single-core 2.5 Ghz

Internal memory (RAM):

1 GB for Windows XP

2 GB for Windows Vista and Windows 7

Advised:

Active internet connection to keep software up-to-date and report problems

Optional:

Touchscreen for touch based operation. In this case a mouse and keyboard are not required

Hard disk space:

25 - 50 MB free space for software

100 MB to 2 GB or more for database and saving reports

1.3.3 Operating system

Supported:

Windows XP

Windows Vista

Windows 7

NOT supported:

Windows 95

Windows 98

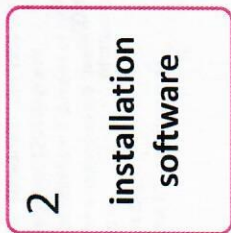
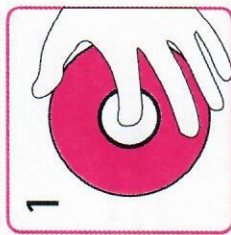
Windows ME

Windows 2000

Linux-based systems

Mac OS X

2 Getting started



2.1 Installing software

1. Insert the installation CD with Sensbalance software in the drive of your notebook or pc.
2. Follow all instructions on the screen.
3. Keep the Sensbalance CD rom in a safe place for future use.

2.2 Setup MiniBoard - wireless

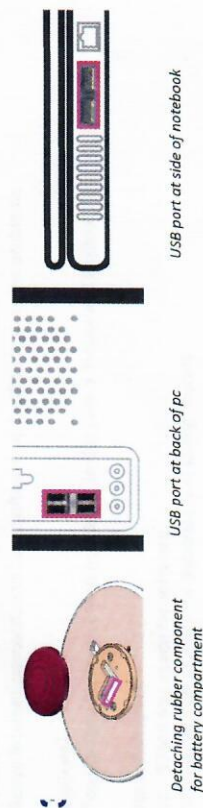
Follow the following steps:

- Step 1: Turn the MiniBoard upside down and detach the rubber component.
Step 2: Take the battery compartment out of the wooden surface.
Step 3: Place the batteries in the battery compartment.
Step 4: Switch the battery on with the on/off button on the side of the battery compartment.
Step 5: Place the USB dongle in the USB port of the notebook or pc.
Step 6: The MiniBoard is now ready to use: read the following chapters of this manual to gather additional information for further use of the MiniBoard and software.

2.3 Setup MiniBoard - wired

Follow the following steps:

- Step 1: Place the USB cable in the USB port of the notebook or pc.
Step 2: The MiniBoard is ready to use: read the following chapters of this manual to gather more information for further use of the MiniBoard and software.



Detaching rubber component for battery compartment

USB port at back of pc

USB port at side of notebook

4 Updates

Updates for the Sensbalance software are displayed on our website: www.sensamove.com. Should an update be required for your software, we will keep you informed by e-mail.

Additional service packs will also be displayed via our website and available through our dealers. Before ordering our products it is necessary to know the serial number of your MiniBoard. You can find it underneath the MiniBoard, around the rubber component.

Sensamove
The Netherlands
www.sensamove.com

5 NMC TESTS – EXERCISES IN CENTER AND WITHIN SHAPES

The NeuroMuscular Control Tests is an optional software module, to be used with the Sensibalance Therapy Cushion, MiniBoard, Chairs, Fitness Board, 2D Sensor Module, and the 3D Cervical Trainer.

It includes two static balance tests (one with visual feedback one without visual feedback), where the cursor needs to be kept as well as possible in the center, and five dynamic tests, where the cursor should be moved inside shapes as well as possible: Left-Right, Front-Back, Diagonal, Donut and Circle. For each test the range settings, test duration, shape dimensions and feedback-type is customizable. Please refer to next sections.

5.1 NMC Tests with Therapy Cushion, MiniBoard, Chair, Fitness Board and 2D Sensor Module

When using the Sensibalance Therapy Cushion, Sensibalance MiniBoard, Sensibalance Therapy Chair, Sensibalance Fitness Board and the stand-alone 2D sensor module only tilting is measured. NMC shows the results of the tilting movements in one view with the circular diagram. Individual NMC Tests in the circular diagram are discussed in section 5.3.

5.2 NMC Tests with the 3D Cervical Trainer

When using the Sensicoordination 3D Cervical Trainer both tilting and rotation is measured. Head movements can be presented in the Tilt View or the Pen View, as explained in Chapter 4.2.

5.3 Select and configure a NMC Test

The NeuroMuscular Control Tests is an optional software module. It includes two static balance tests (one with visual feedback one without visual feedback) and five dynamic tests: Left-Right, Front-Back, Diagonal, Donut and Circle.

In the following sections the different tests are discussed.

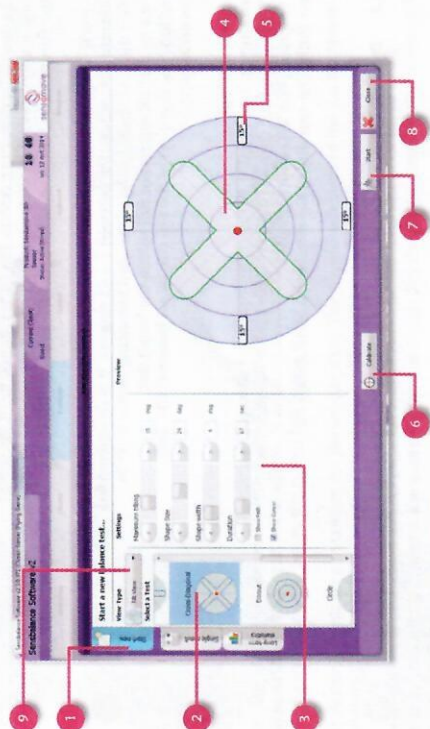


Figure 5 Overview of the 'Start new' screen

Tabs to switch between:

- Starting a new test
- Viewing a single result
- Long-term statistics

2 A list with available tests.

3 Settings that go with the test. (See next section)

4 A Preview of the test with current settings.

5 Label with maximum tilting angle.

6 Calibration button to centre the red dot.

7 Start the test with the current settings.

8 Close the window.

3D-Sensor / Cervical Trainer Only:

9 Switch between Pen & Tilt view. See chapter 4.2

5.3.1 Static balance tests

- 1) Static balance test with feedback of the cursor (Balance Test)
- 2) Static balance test without feedback of the cursor (Balance Test, Proprioception)

Starting posture and calibration:

Whether the patient has the right starting posture for the tests on the specific sensbalance device. The cursor should be at the centre of the target disc. If necessary use the [Calibrate] button to centre the cursor.

The static balance tests settings:

Maximum tilt: Adjustable between 1 – 45 degrees. It is recommended that the maximum tilting of the used balancing device is set to ensure that all recordings fall within the target disc.
Duration: The duration of the test can be set between 10 – 240 seconds.

Feedback settings:

Show Cursor: The visibility of the cursor cannot be changed. In Balance Test the cursor is always visible and in Balance Test Proprioception it's always invisible.

Show Path: The visibility of the recorded path is always off.

5.3.2 Dynamic balance tests

- 3) Left – Right (Horizontal)
- 4) Front – Back (Vertical)
- 5) Diagonal
- 6) Donut
- 7) Circle

Dynamic Balance Tests settings:

Maximum tilt: Adjustable between 1 – 45 degrees. It is recommended that the maximum tilting of the used balancing device is set to ensure that all recordings fall within the target disc.
Duration: The duration of the test can be set between 10 – 240 seconds.

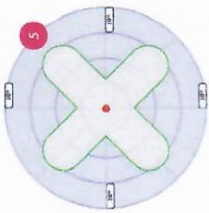
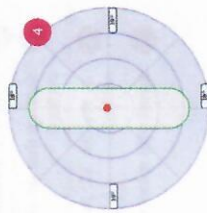
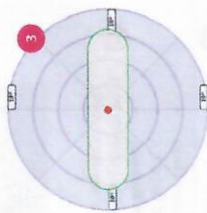
Shape settings:

The shapes have one or more of the following customisation parameters:

Shape size: 1 – 45 degrees. The length or total size of the shape can be set depending on whether you want to do the test over the full maximum tilting or in a smaller area.

Shape width: 1 – 45 degrees. This settings adjusts the width or thickness of the shape.

Radius: 1 – 45 degrees. (Donut shape only) Sets the distance from the centre to the centre of the path.



Distance from Centre: 0 – 45 degrees. (Circle shape only) 0 means the circle resides at the centre and if this setting equals the maximum tilting setting the circle is placed on the outer border.

Radial position: 0 – 359 degrees. (Circle shape only) Like the hand of a timepiece the position of the circle is rotated around the centre of the target disc.

Feedback settings:

Show Path: On/Off

Show Cursor: On/Off

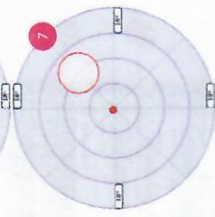
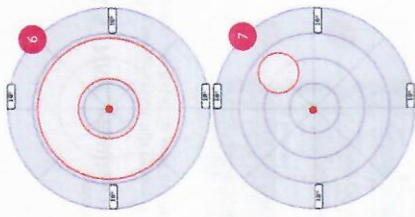
5.4 Start a NMC test

After the desired test shape is selected and the appropriate settings are made press the [Start] button at the bottom right of the screen. A small countdown clock will be displayed together with a live preview to prepare before the actual test begins measuring.

The system records all movements for the set duration. The countdown clock at the top left shows the remaining time.

When the test is completed a short message is displayed that the data has been saved to the database. Press [OK]. After a few moments the Tab Single Results appears and results, scores and settings are shown.

Stop the test prematurely: You can stop the test before it is finished but note that nothing will be saved to the database. Press the [Stop recording] button on the right side of the screen. Then press the [Open select window] button to start a new test.



5.5 NMC results

The single result tab presents the exercise results in a graphical way as a graph and a table. The scores are listed as well as the used settings.

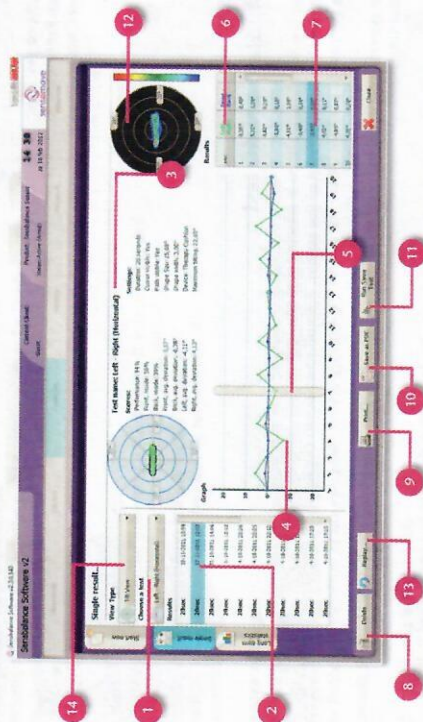


Figure 6 Overview of the results screen

- 1 Test combo box.
- 2 Overview of saved results. Click to select a result.
- 3 Overview of settings and scores..
- 4 Graph with average per second.
- 5 Selection band. Click on a graph point to select it.
- 6 Numerical results as shown in the graph.
- 7 This selection band corresponds with the vertical selection band in the graph (5)
- 8 Remove the selected (2) test.
- 9 Print the selected test.
- 10 Save the test as PDF file.
- 11 Restart the test with the same settings.
- 12 Heat Map.
- 13 Replay the exercise.
- 14 3D-Sensor / Cervical Trainer Only:
 - 14 Switch between Pen & Tilt view. See chapter 4.2

The next paragraphs explain the various scores.

5.5.1 Static Balance test, and Static Balance test Proprioception

Performance % A measure of how stable the cursor is kept at the centre.
 100% = the entire time the cursor was kept exactly at the centre.
 0% = cursor was at the border the entire time.
Front ° / Back ° / Left ° / Right ° Average deviation in degrees.

Example:

Front: 1.5°

With a maximum tilting angle of 20 degrees → this would mean an average of 1.5 degrees in the front direction.

5.5.2 Left – Right (Horizontal)

Performance % A measure of how accurate the cursor is kept inside the shape.
 100% = the entire time the cursor was kept inside the shape.
 0% = the cursor was not recorded inside the shape.

Front, inside % Percentage in the front direction inside the shape.
Back, inside % Percentage in the back direction inside the shape.
Front ° Average deviation in degrees in the front direction.
Back ° Average deviation in degrees in the back direction.
Left ° Average deviation in degrees in the left direction.
Right ° Average deviation in degrees in the right direction.

5.5.3 Front – Back (Vertical)

Performance % A measure of how accurate the cursor is kept inside the shape.
 100% = the entire time the cursor was kept inside the shape.
 0% = the cursor was not recorded inside the shape.

Left, inside % Percentage in the left direction inside the shape.
Right, inside % Percentage in the right direction inside the shape.
Front ° Average deviation in degrees in the front direction.
Back ° Average deviation in degrees in the back direction.
Left ° Average deviation in degrees in the left direction.
Right ° Average deviation in degrees in the right direction.

Example:

Performance: 98%

Left, inside: 57%

Right, inside: 41%

Front: 1.1°

Back: 1.5°

Left: 5.1°

Right: 4.7°

The performance show that the exercise was performed quite good: 98% out of a 100% of the time inside the shape. There is a slight tendency to make excessive movements to the Left (5.1°) en a smaller tendency to the Right (4.7°). The same goes for the results inside the shape. Note that 57 added 41 equals to the performance of 98%.