



# SmarTracks Diagnostics PC Software Installation Guide & User Manual

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# 1. Safety Instructions

## ATTENTION!

Before using your SmarTracks Diagnostics, read all instructions on handling the device and Timing Gates, including the safety information.

### 1.1. Electronic measuring equipment

Non-compliance with this safety information may result in a fire, electric shocks or other injuries, or may lead to damage to the system components.

Do not drop the measuring equipment, and do not dismantle, open, break, bend, deform, drill through, crush, burn or paint it. Do not heat in a microwave and do not insert foreign objects into the device.

When attaching the sensor to your computer, we recommend using the provided USB extension cable to protect your computer from humidity and dirt. If you need to attach the sensor directly make sure there is no moisture or dirt on the sensor! Do not try to dry the sensor with an external heat source such as a microwave or a hot air gun.

Never try to repair the measuring equipment yourself.

### 1.2. Timing Gates



Timing Gates contain powerful magnets. The magnetic field can damage e.g. mobile phones, TVs, laptops, computer hard drives, credit cards, data media, mechanical clocks, hearing devices, speakers, and the measuring sensor.

Therefore, these devices should never be kept in close proximity to the Timing Gates. A minimum distance of 50 cm must be maintained. Do not try to open the Timing Gates. Always keep the sensor at a safety distance of at least 10cm from the Timing Gates.



Timing Gates are to be **HANDLED WITH CARE**.

**Do not drop** the Timing Gates.

Do not store in temperatures above **65°C / 149°F**.



## ATTENTION!

**Magnets may affect the function of pacemakers and implanted defibrillators. If you have such devices fitted, keep them at a sufficient distance from the magnets.**

### 1.3. Charging the measuring device

To charge the sensor, always use the supplied USB cable with an adapter (power supply) or a high-power USB port on another device which is compatible with the USB 2.0 standard. If you use the adapter to charge the sensor, ensure that the power supply is fully assembled before connecting it to a plug socket. Then securely plug the

adapter into the plug socket. Do not touch the adapter with wet hands! Always use an approved power supply to charge your sensor.

The adapter may become warm during normal use. Always ensure an adequate flow of air around the adapter and handle it with care.

## **1.4. Information on disposal and recycling**

You must dispose of the measuring equipment properly according to the valid environmental directives and legislation. Since the sensor contains electronic components and a battery, the sensor may not be disposed of with normal domestic waste. If you want to dispose of your used sensor, you can consult your local authority regarding disposal and recycling options. The battery is removed and taken for environmentally friendly recycling.

## 2. Glossary of Technical Terms

<b>Measurement</b>	A measurement starts from the moment the sensor is disconnected from the computer and ends when the sensor is reconnected with the computer.
<b>Assessment</b>	An assessment is an evaluation of specific capacities of the athlete, such as agility, sprinting capacity, etc. Several assessments can be carried out during one measurement.
<b>Test</b>	A test is one specific action of an assessment, such as one jump, one run, etc. Several tests can be carried out during one assessment.
<b>Measurement data</b>	Measurement data is the raw data measured by the sensor. This data can be uploaded to a computer and analyzed by the SmarTracks Diagnostics software.
<b>Test results</b>	Test results are the analyzed data as they are displayed in the SmarTracks Diagnostics software.
<b>Measurement window</b>	The measurement window is the window shown during a measurement. It displays the measure events.
<b>Measure event</b>	A measure event is either the marking of an invalid attempt or changing athlete. The chronology of these events during a measurement is displayed in the measurement window.

## 3. Software Installation

### 3.1. Technical requirements

- Windows 10 (from version 1909)
- 15" display
- Intel i5 equivalent or better
- RAM: ≥ 8GB, 16GB is preferred
- Storage: SSD or similar
- Disk space:  
For application: minimum 1GB  
For recorded data: minimum 10GB
- 1 free USB Type A interface

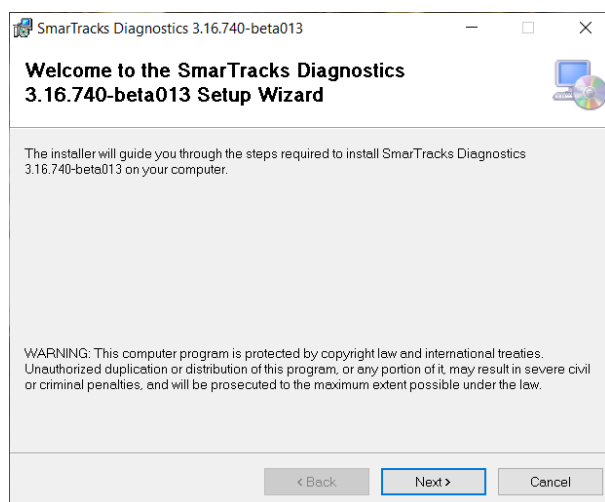
The SmarTracks Diagnostics PC software cannot run on MacOS.

### 3.2. Installing the SmarTracks Diagnostics PC software

The SmarTracks Diagnostics software is either:

- supplied on a USB stick
- OR
- you will be given the software download details

#### Installation when the software is supplied on a USB stick



STEP 1: Connect the supplied USB stick.

STEP 2: Open the "SetupSmarTracks.msi" file.

STEP 3: Select "Next" and follow the rest of the instructions.

## Installation when you are given the download details

STEP 1: Go to <https://download.humotion.net/SmarTracks/Software/>

STEP 2: Enter the username and password given to you (NOTE: these are not your personal license login details)

STEP 3: Download the setup file.

STEP 4: Depending on your operating system, you can get a notification screen about running an unrecognized app. (Example shown with Windows 10, this may differ per operating system.)

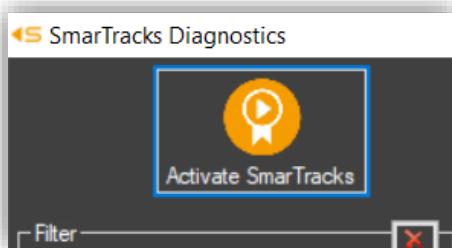


STEP 3: Click "More info".

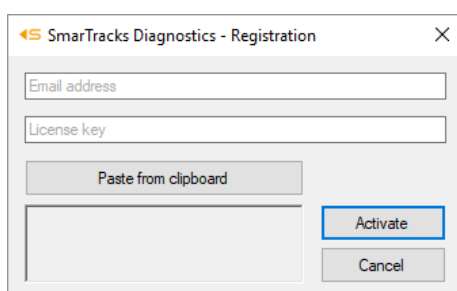
STEP 4: Click "Run anyway" and follow the rest of the instructions.

### 3.3. Activating your SmarTracks Diagnostics license

After installing SmarTracks Diagnostics, you need to register the product by activating your license.



STEP 1: Click the "Activate SmarTracks" button in the upper left corner.

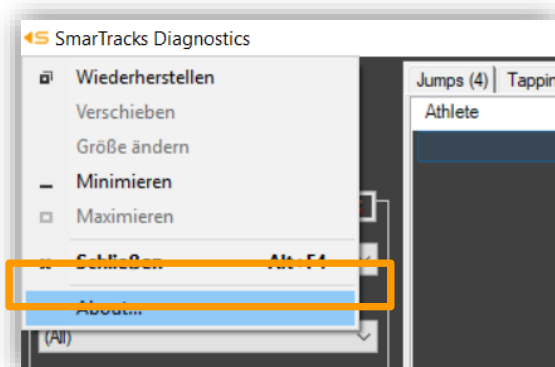


STEP 2: Please enter the email address and the license key provided to you by Humotion.

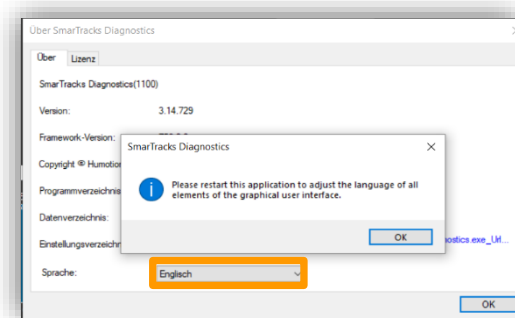
STEP 3: Click "Activate".



### 3.4. Changing the language settings



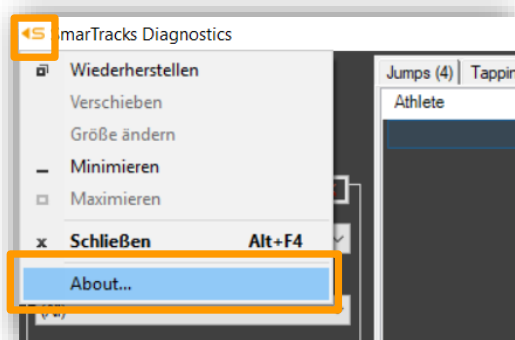
STEP 1: Click on the logo in the upper left corner and choose “About...”.



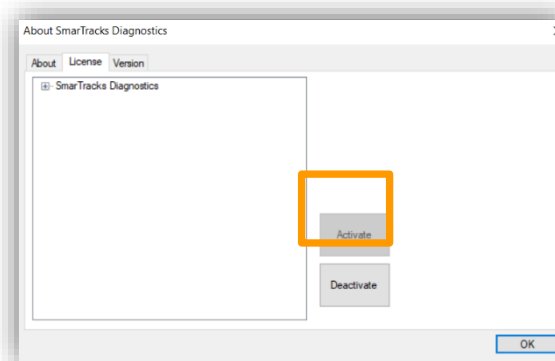
STEP 2: Select the language in the drop-down menu and click “OK”.

The changes will take effect after you restart SmarTracks Diagnostics.

### 3.5. Deactivating your SmarTracks Diagnostics license



STEP 1: Click on the small logo in the upper left corner and choose “About...”.



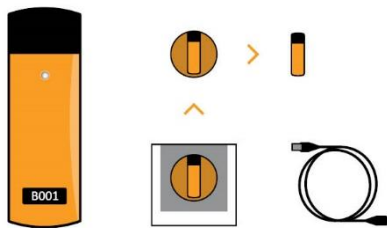
STEP 2: Go to the license tab and click “Deactivate”

## 4. Hardware

The SmarTracks Diagnostics Software needs to be used with a DX3.5 or DX5.0 Diagnostics sensor and an MB60 Belt.

### 4.1. DX Sensor and MB60 Belt

#### DX3.5 or DX5.0 Diagnostics Sensor



The sensor records all movement data.

When connecting the sensor to a computer, make sure to use the supplied USB cable.

Charging time 100%: ca. 3 hours

Active measurement: 8-10hrs

Standby: > 3 weeks

#### MB60 Belt



The belt keeps the sensor in the right place to ensure correct data. Make sure the belt is placed on your lower back with the sensor in a vertical position. The belt should be placed so that the top edges of the belt are at the same height as the top of your hip bones.



### 4.2. Timing Gates

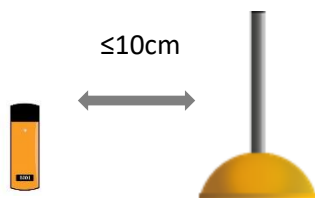
For assessments that require timing, SmarTracks Timing Gates are used. There are two types of Timing Gates:

- Timing Gates Mobile
- Timing Gates In-Ground (SmarTracks Locations)

#### 4.2.1. Timing Gates Mobile

The Timing Gates Mobile can be placed everywhere to conduct timing assessments. The gates do not require electronic wiring and are tolerant against humidity and dirt.

To maintain the integrity of the integrated magnets, the magnetic rods (MCD's) should be well protected from falling or other severe shocks at any time.



IMPORTANT: Do not hold the DX sensor closer than 10cm to the Timing Gates, since this could damage the sensor irreparably.

#### 4.2.2. Installing Timing Gates Mobile

A Timing Gate consists of two magnetic elements. A magnetic element consists of one cone and one magnetic rod (MCD), which is to be stuck into the hole of the cone (see figure 2).

IMPORTANT: The yellow end of the MCD should always face upwards.



Figure 1: Magnetic rod (MCD)

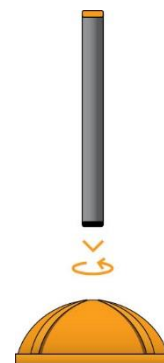
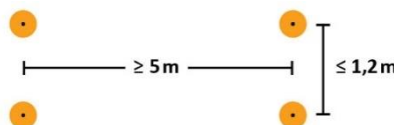
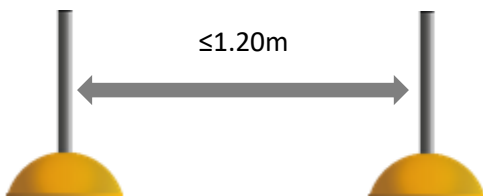


Figure 2: Inserting the MCD into the Cone

Place two magnetic elements next to each other to form a Timing Gate.

The distance between **two elements of a Timing Gate** should **not be more than 1.20 m**.

The distance between **two Timing Gates** should **not be below 5 m** to avoid the merging of the magnetic fields that are generated by the gates.

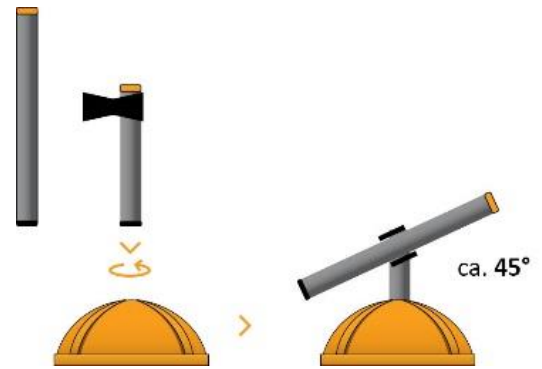


## Angled Timing Gates

The MCD can be set up straight (most common) or angled.

Angled setups are used for amplification or alignment of the magnetic field that is generated by the Timing Gates. In practice, the application is useful for smaller athletes (e.g. children) or for certain tests of agility.

The angled setup is done with the help of an angled mount, which is stuck in the hole of the cone. Rotate the black MCD holder to a **45 degree angle** and insert the MCD with the Humotion logo on the high end.



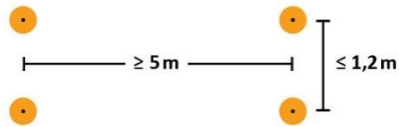
You can either place both magnetic elements angled, both magnetic elements straight, or one angled and one straight.

Example of an angled Timing Gate:

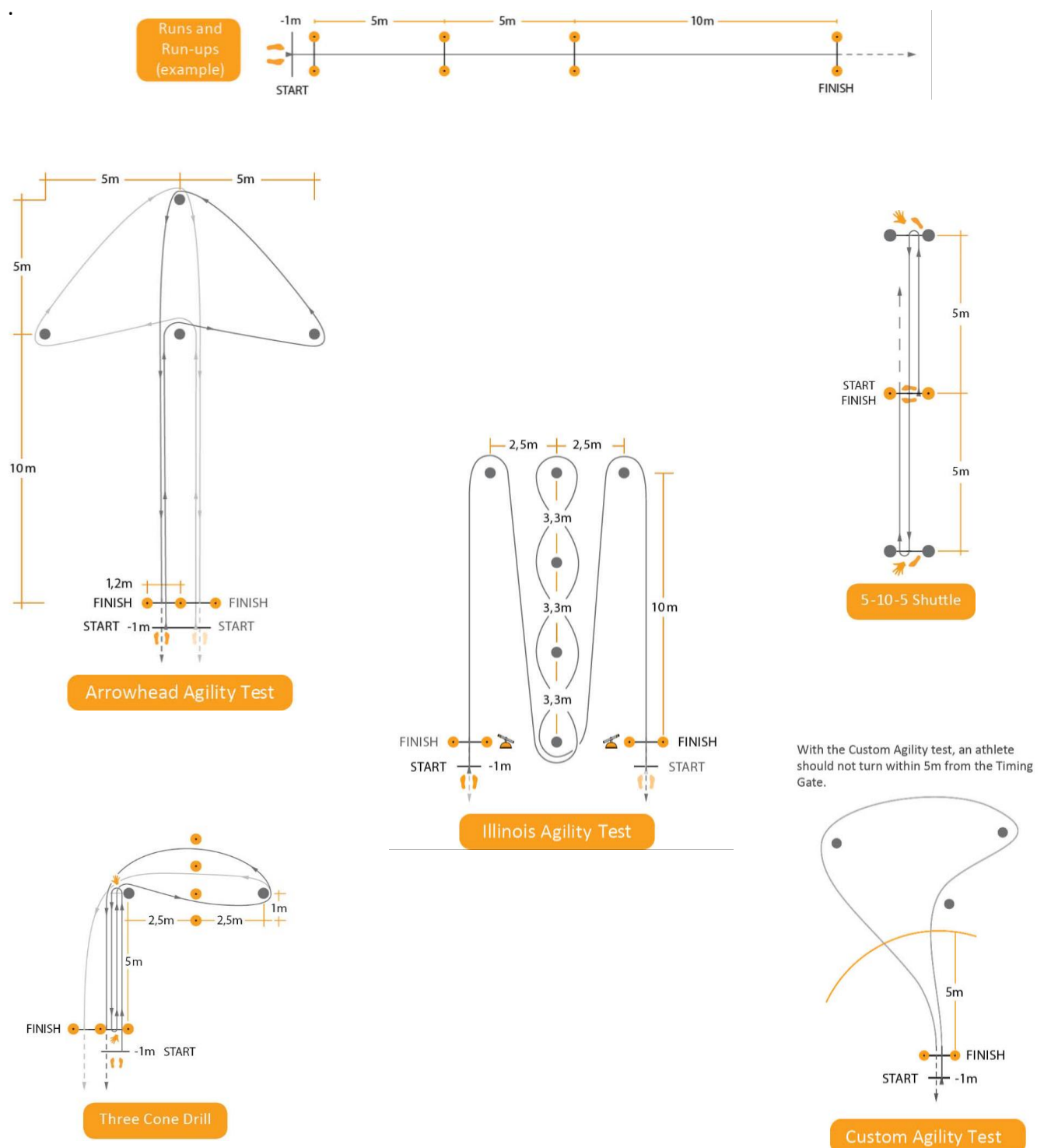


#### 4.2.3. Timing Gate ground plans

### Distances to be held when setting up Timing Gates:



Timing Gate setup examples:



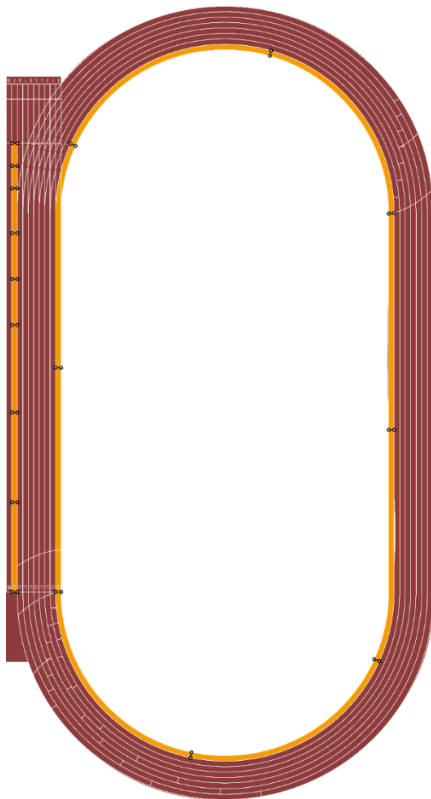
#### 4.2.4. Timing Gates In-Ground

Timing Gates In-Ground are invisibly and permanently integrated into a track or turf field. These are so-called SmarTracks Locations.

With a SmarTracks Location, you do not need to set up any Timing Gates yourself.

You have the option to combine Timing Gates Mobile with Timing Gates In-Ground. For example if you want more intervals in a specific section.

Go to [www.locations.smartracks.run](http://www.locations.smartracks.run) for an overview of all existing SmarTracks Locations and their ground plans.



In this example track, the Timing Gates In-Ground are placed in the following intervals:

Lane 9:

0m - 5m - 10m - 20m - 30m - 40m - 60m - 80m - 100m

Lane 1:

0m - 50m - 100m - 150m - 200m - 250m - 300m - 350m - 400m

## 5. Performing a Measurement

### 5.1. Make sure the sensor is charged

You can only start a measurement when the sensor has been loaded to at least 3,80V.

To check the battery status of the sensor:

STEP 1: Start the SmarTracks Diagnostics software.

STEP 2: Connect a sensor to your PC using the USB cable.

The device, as well as the charge status of the battery, is displayed bottom left.



Charging time - 100%: ca. 3 hours

Charging time - 80%: ca. 2 hours

When the charge status reaches 4,20V, it is fully charged.

Fully charged, a sensor can measure ca. 8 hours, dependent on activities.

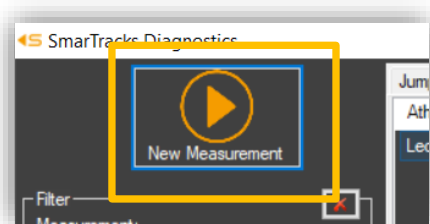
### 5.2. Entering athlete / team names

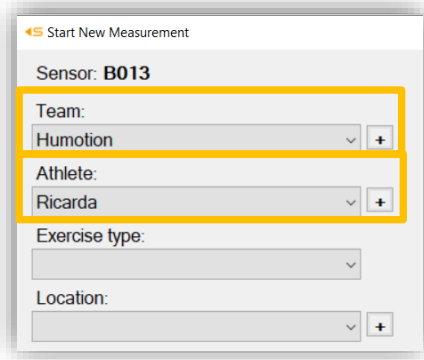
STEP 1: Start the SmarTracks Diagnostics software.

STEP 2: Connect a sensor to your PC using the USB cable.

NOTE: It does not matter which sensor you connect to the PC, the names are saved centrally on the software, not on the sensor.

STEP 3: Click on “New Measurement”.





STEP 4: The window “Start New Measurement” opens. Here you can:

- Enter a team name (*obligatory*)
- Enter an athlete’s name (*obligatory*)

It is possible to enter one or several teams under “Team”. The entries will be saved for future measurements.

You can add one or several athletes to a team by clicking on the small square box on the right under “Athlete”. The entries will be saved for future measurements.

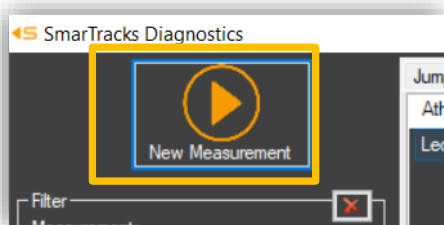
STEP 5:

- If you do not wish to perform a measurement immediately, press “Cancel”. The entered team and athlete names are saved for future measurements.
- If you wish to perform a measurement immediately, proceed with step 5.3.

### 5.3. Starting a measurement

STEP 1: Start the SmarTracks Diagnostics software.

STEP 2: Connect the sensor-belt to your PC using the USB cable.



STEP 3: Click on the “New Measurement” button to start a measurement.



STEP 4: The window “Start New Measurement” opens. Here you can:

- Enter/select a **team name** (*obligatory*)
- Enter/select the **first athlete’s name** (*obligatory*)
- Select the exercise type (*optional*)  
(highly recommended if you only wish to perform runs of one type). For more information on the running type list, see 8.1. Sprint.
- Select the **location** (*obligatory*)
- Select gate option (*optional*)

**Location** describes your position in the global earth magnetic field.

**Make sure to enter the correct location, it is necessary for correct magnetic gate detection.**

To select your location:

- Click the small square box on the right under “Location”.
- Click your location on the map. This does not need to be highly accurate, an approximation will do.

- Enter the desired Location name and click “Add”.
- Click “OK”.

**Gate option** describes the options of Timing Gates: “Mobile”, “In-Ground – Vertical” or “In-Ground – Horizontal”.

- If you are using SmarTracks Diagnostics with mobile Timing Gates, select “Mobile”.
- If you are on a SmarTracks Location with Timing Gates In-Ground, select “In-Ground – Vertical”.

NOTE: If you are on one of the following locations, select “In-Ground – Horizontal”:

- Kleve (Germany), Allround Sports Kleve
- Dortmund (Germany), Helmut-Körnig-Halle, only for the round lanes
- Münster (Germany), Leichtathletikhalle, only for the round lanes
- Auf Schalke (Germany)

STEP 5: When everything is set, click “Next”.

STEP 6: Remove the sensor from the PC.

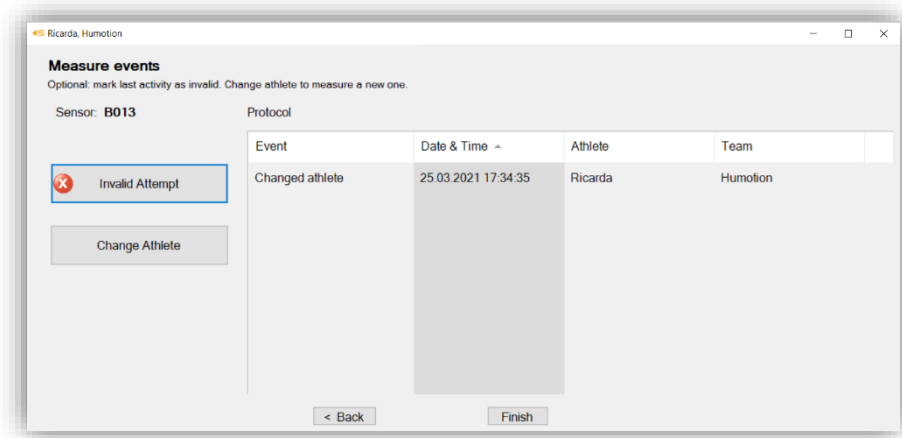
The sensor is now activated.

STEP 7: The athlete can now put on the sensor-belt and start the assessments.

## 5.4. During a measurement

A measurement window opens automatically after disconnecting the sensor from the PC.

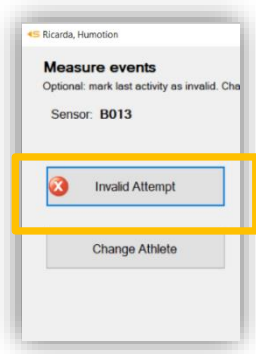
The window carries the name of the athlete and team that is currently in action.



Here you can record measure events, such as a change of athlete or a deletion of an incorrectly performed test.

The first measure event is always “Changed Athlete”, which shows the time when the first athlete put on the sensor-belt.

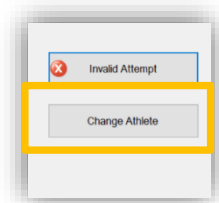
#### 5.4.1. Removing an incorrectly performed test during a measurement



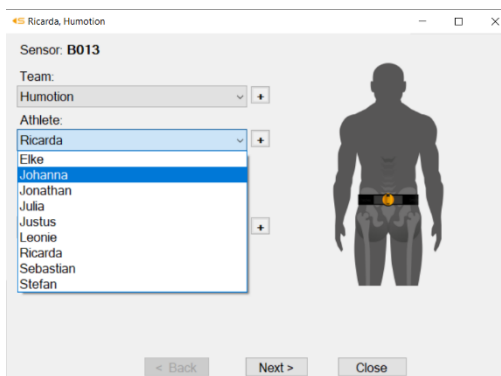
We recommend to always evaluate the correct execution of the test that has been performed.

If a test was performed incorrectly, click on “Invalid Attempt” after the test and it will not show up in the test results. The athlete can then perform a new test.

#### 5.4.2. Changing athlete during a measurement



STEP 1: Click the “Change Athlete” button.



STEP 2: Select the next athlete.

- If you registered the athlete before/ during starting the measurement, select the athlete from the drop-down menu.
- If you did not register the athlete before/ during starting the measurement, enter the athlete’s name in the box manually. The athlete’s name will not be saved for later measurements.

STEP 3: Hand over the sensor to the next athlete.

#### 5.5. Stopping a measurement

Reconnect the sensor to the PC using the USB-cable. The sensor now stops measuring and all measurement data is analyzed.

For more information on how to view the analyzed data, see 7. *Viewing Results*.

## 6. Measurement FAQs

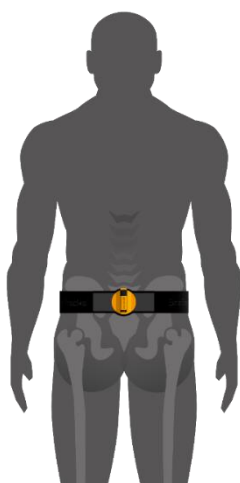
### 6.1. How do I know if the sensor is measuring?

During a measurement, the sensor shows a **red or a red-blue blinking light**.

The measurement is started from the moment the sensor is disconnected from the computer.

To stop the measurement, connect the sensor to the computer using the USB cable.

### 6.2. How do I put on the sensor?



When putting on the sensor with the MB60, make sure the black USB cap points upwards, and the sensor is aligned with the spine.

The belt should cross the L4/L5 vertebrae. To do this, the belt should be placed so that the top edges of the belt are at the same height as the top of the athlete's hip bones.



**IMPORTANT:** Do not hold the sensor closer than 10cm to the MCDs, since this might damage the sensor irreparably.

### 6.3. How do I start multiple measurements simultaneously?

To perform two or more measurements simultaneously, carry out the instructions under 5.3. Starting a measurement successively with each sensor.

**NOTE:** Each sensor has its own measurement window. The window carries the name of the athlete and team last entered.

### 6.4. Can I do multiple assessments while measuring?

The athlete can do several assessments (e.g. first agility, then tappings, then sprints), while wearing the sensor. You do not need to start a new measurement or reconnect the sensor in between. The athlete can just perform all assessments consecutively.

After the measurement data is uploaded, the software automatically recognizes the different assessments.

## 7. Viewing Results

### 7.1. Uploading measurement data

STEP 1: After completing the tests, reconnect the sensor to your PC via the USB cable.

STEP 2: The data is analyzed automatically. The test results are displayed in the software.

After the measurement data has been analyzed, the test results are automatically sorted over three tabs:

Jumps	Tappings	Runs
Squat Jump (SJ) Drop Jump (DJ) Countermovement Jump (CMJ)	Tappings	Speed Endurance Agility

## 7.2. Jumps

Under the “Jumps” tab, you can find the test results for:

- Squat Jump
- Drop Jump
- Countermovement Jump

The screenshot shows the SmarTracks Diagnostics software interface. On the left, there is a sidebar with a 'Filter' menu (1) and 'Statistical data' (2). The 'Filter' menu includes options for 'Measurement', 'Team', 'Player', 'Jump type', and 'Speed category'. The 'Statistical data' section shows summary statistics for the selected athlete(s). On the right, there is a large 'Results table' (3) displaying test results for various athletes, including columns for Player, Type, Height, Contact Time, Quotient, Date & Time, Team, Speed, and Comment.

1 In the **Filter menu**, you can filter the test results you wish to view.

2 **Statistical data** of the selected athlete(s):

- For the Squat Jump (SJ) and Countermovement Jump (CMJ) you see the
  - average, minimum and maximum jump height.
- For the Drop Jump (DJ) you see the
  - average, minimum and maximum jump height
  - ground contact time (“Drop Jump Contact Time”)
  - reactive strength index (“RSI”).

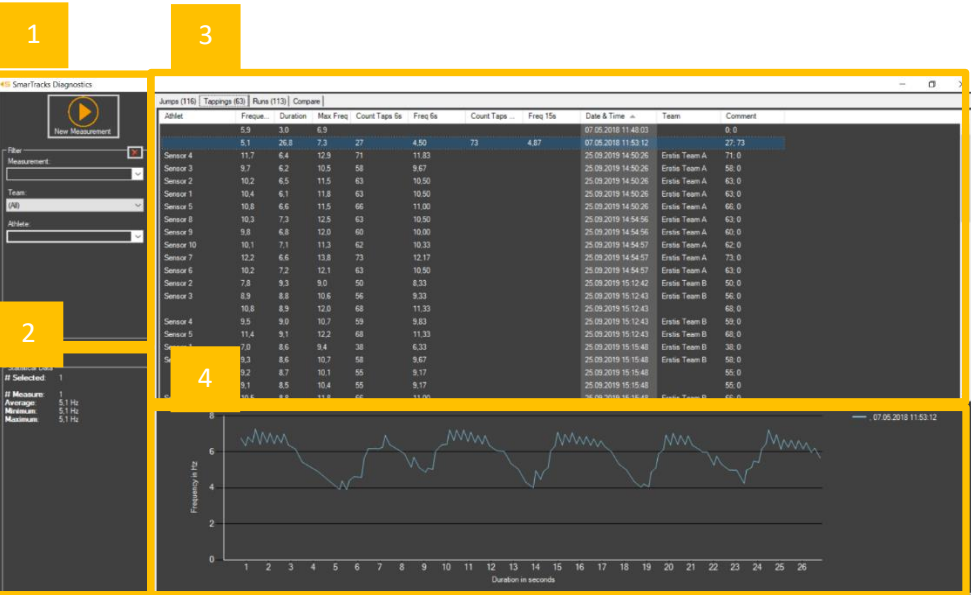
3 In the **Results table**, the following results are shown:

Type	Squat Jump (SJ), Drop Jump (DJ), or Countermovement Jump (CMJ).
Height	Jump height [cm]

Contact time (only for DJ)	Ground contact time [ms] If the contact time exceeds 250ms, the contact time will be displayed in orange.
RSI (only for DJ)	Reactive strength index (Jump height [cm]/ Ground contact time [s])

### 7.3. Tappings

In the “Tappings” tab, you can find the test results for tappings.



- 1 In the **Filter menu**, you can filter the test results you wish to view.
- 2 The **Statistical data** shows you the average, minimum and maximum tap frequency of the selected athlete(s).
- 3 In the **Results table**, the following results are shown:

Frequency	Average number of contacts with the ground per second [Hz]
-----------	--

Duration	Duration of tapping test
Max frequency	Maximum number of contacts with the ground per second [Hz]
Count taps 6s	Number of taps in the first 6 seconds (only shown if duration was 6 seconds or more)
Frequency 6s	Average number of contacts with the ground per second in the first 6 seconds [Hz]
Count taps 15s	Number of taps in the first 15 seconds (only shown if duration was 15 seconds or more)
Frequency 15s	Average number of contacts with the ground per second in the first 15 seconds [Hz]

4

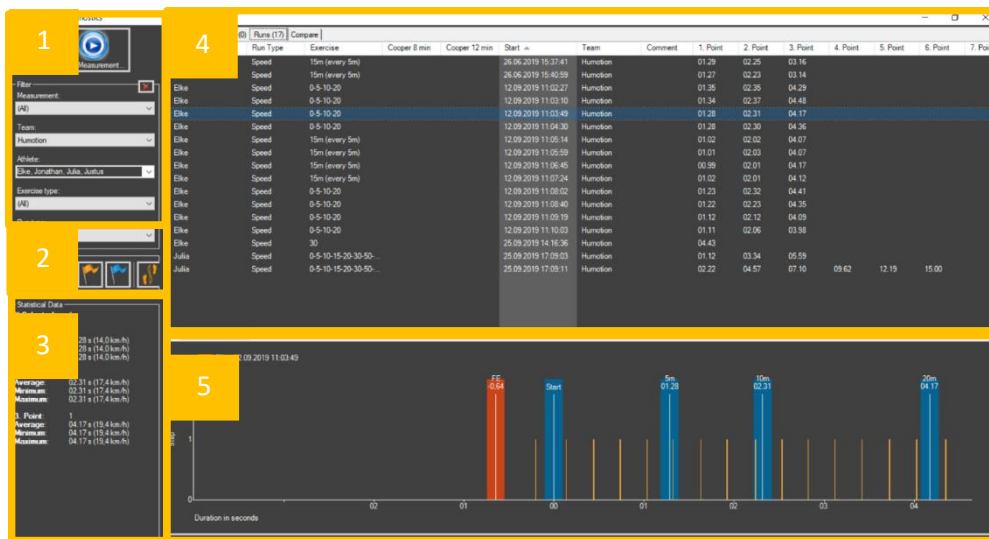
The **Chart** shows the selected athlete's tap frequency (Hz) for the duration of the test.

When you click on the chart, the chart shows each individual ground contact for the duration of the test.



## 7.4. Runs

In the “Runs” tab, you can find the test results for speed, endurance and agility tests.



1 In the **Filter** menu, you can filter the test results you wish to view.

2 The **Export** menu allows you to export test results. For more information on exporting test results, see 7.6 How do I export tests results?

3 The **Statistical data** shows you the following data of selected athlete(s):

- the average, minimum and maximum running time at each point [s]
- the speed at each point [km/h].

4 In the **Results table**, the following results are shown:

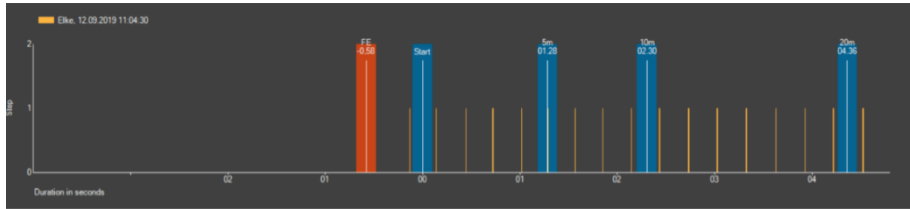
Cooper 8 min	If the running time was 8 minutes or more, a Cooper value is shown here.
Cooper 12 min	If the running time was 12 minutes or more, a Cooper value is shown here.
1./2./3./... Point	<p>Time when each respective point was reached [s] Each point represents:</p> <ul style="list-style-type: none"> <li>When no running type exercise has been selected: a Timing Gate</li> <li>When a running type exercise has been selected: a measurement point of the running type exercise</li> </ul>

5

The **Chart** shows the selected athlete's steps for the duration of the test. It shows

- at what point in time the Force Explosion took place (orange column)
- at what point in time foot contact was made (orange stripe)
- at what point in time a Timing Gate was passed (blue column).

NOTE: If multiple athletes are selected, it only shows the chart of the athlete that was selected first.

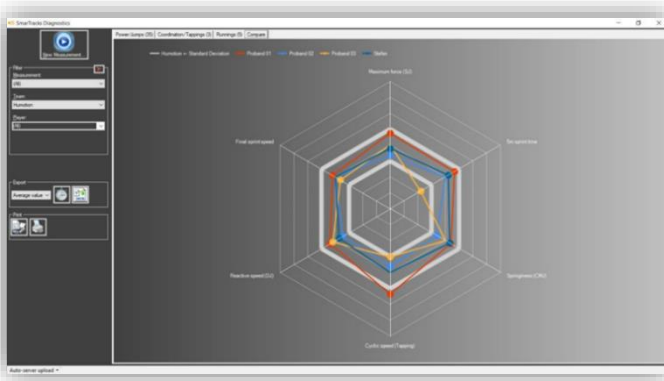


Steps: The first foot signal is the first contact with the ground after the start. A step is defined as the distance from one contact to the following contact.

Depending on the start mode of the runner it can happen that after Force Explosion up to two invalid foot signals are recognized.

## 7.5. Comparing via the spider diagram

Under the “Compare” tab, you can see a spider diagram. This diagram allows you to compare the following results of different athletes:



- Maximum force (SJ)
- 5m sprint time
- Springiness (CMJ)
- Cyclic speed (Tapping)
- Reactive Strength Index (DJ)
- Final sprint speed

STEP 1: Select the athletes you wish to compare via the Filter menu.

STEP 2: The results for the selected athletes are shown in the spider diagram.

## 7.6. Comparing via Excel or JSON files

With the export function, you can create Excel or JSON files.

For more information, see 7.7. Exporting test results

TimedRunnings [Read-Only] - Excel									
2016-dec-22 15:26:35 Cor 5-100(5+5+10+...+10)									
Distance [m]	Time [ss,ff]	Interval [m]	Time [ss,ff]	Speed [m/s]	Speed [km/h]	Steps [#]	Steps [Hz]	Steps [m]	
5	2.35	5	2.35	2.13	7.67	5.96	2.54	0.84	
10	4.63	5	2.28	2.20	7.90	5.39	2.37	0.93	
20	6.83	10	2.20	4.55	16.36	5.45	2.48	1.83	
		20,00	6.83	2.93	10.55	16,80	2,46	1,19	
2017-feb-03 10:03:38 Cor 5-10-20-30-60									
Distance [m]	Time [ss,ff]	Interval [m]	Time [ss,ff]	Speed [m/s]	Speed [km/h]	Steps [#]	Steps [Hz]	Steps [m]	
5	1.82	5	1.82	2.75	9.92	4.93	2.72	1.01	
10	7.10	5	5.29	0.95	3.40	14.34	2.71	0.35	
		10,00	7.10	1.41	5.07	19,27	2,71	0,52	

## 7.7. Exporting test results

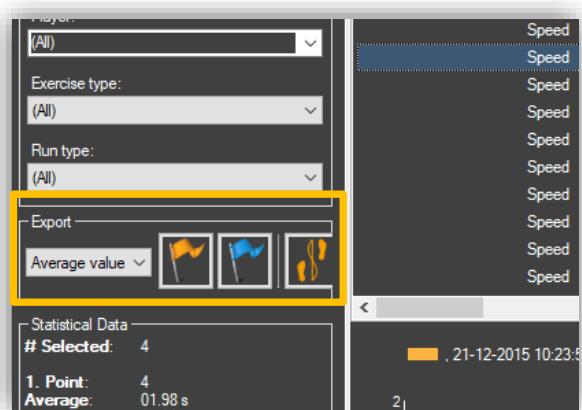
You can export test results from the SmarTracks Diagnostics software for personal storage, presentation or distribution.

You can only export test results via the “Runs” tab or the “Compare” tab.

### 7.7.1. Exporting runs (Excel)

STEP 1: Go to the “Runs” tab.

STEP 2: Filter the test results you wish to export using the Filter menu.



STEP 3: Go to the Export menu in the left column.

The drop-down menu shows three options:

- All values: Export all values per athlete.
- Average values: Export only the average time per athlete.
- Best values: Export only the best time per athlete.

Select which data you wish to export.

STEP 4: Click one of the export buttons. There are three export buttons:



Export absolute time values of selected runs.



Export relative time values of selected runs.



Export absolute time values of selected runs.

The test results are exported to an Excel file.

## 7.7.2. Exporting all types of results (Excel or JSON)



STEP 1: Go to the “Compare” tab.

STEP 2: Filter the test results you wish to export using the Filter menu.

STEP 3A (JSON):



Click the “Json” button.

The JSON export is now saved to your computer.

The JSON export contains all assessments performed by the selected team/player(s). This includes jumps, tappings, agility tests and runs.

STEP 3B (EXCEL):

Select which data you wish to export in the Export menu.

The drop-down menu shows three options:

- All values: Export all values per athlete.
- Average values: Export only the average time per athlete.
- Best values: Export only the best time per athlete.

Then click one of the two export buttons below.



Export key attributes of a measurement.



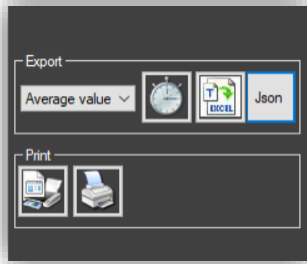
Export all attributes of a measurement.

The test results are exported to an Excel file.

The Excel exports are designed to compile the data reflected in the spider diagram. We recommend to only use it with the assessments of the diagram’s predefined test battery. This includes:

- Linear sprinting of at least 5m
- Tapping test of at least 6 seconds
- At least one jumps type

### 7.7.3. Printing the spider diagram



STEP 1: Go to the “Compare” tab

STEP 2: Filter the test results you wish to export using the Filter menu.

STEP 3: Go to the Print menu in the left column.



You can preview the document by clicking on the “Print preview” button.



You can directly print the document by clicking on the “Print chart” button.

## 8. Managing Test Results

### 8.1. Filtering/selecting

#### 8.1.1. Filtering test results

In the upper right corner, there is a **Filter menu**, which allows you to filter results according to:

- **Measurement:** You can select “All” to view the results of all measurements made, or you can select one specific measurement.
- **Team:** You can select one or all teams.
- **Athlete:** You can select all, one or more athletes.

In the “Jumps” tab, you have additional filters in the Filter menu for:

- **Jump type**
- **Speed category**

In the “Runs” tab, you have additional filters in the Filter menu for:

- **Exercise type**
- **Run type**

To clear all filters, click the red cross button in the top right corner of the filter menu.

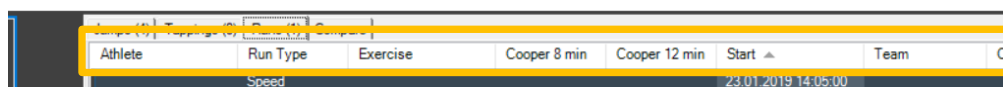
#### 8.1.2. Selecting test results

- To select a **specific test result**, click on the test result.
- To select **multiple test results** simultaneously, hold the CTRL key and click the test results you wish to select.
- To view **all test results**, right-click on any test results line, and click “Select all”.

The Statistical Data menu in the lower left corner shows you how many test results you have selected.

#### 8.1.3. Sorting test results

To sort the test results, click on the table tab according to which you wish to sort the test results.



Athlete	Run Type	Exercise	Cooper 8 min	Cooper 12 min	Start	Team	C
	Speed				23.01.2019 14:05:00		

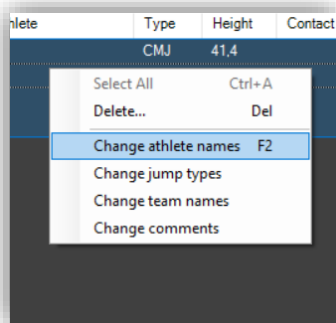
#### 8.1.4. Deleting test results

To delete test results in the SmarTracks Diagnostics software:

STEP 1: Right-click on the test result line you wish to delete.

STEP 2: Click “Delete...”.

## 8.2. Editing



STEP 1: Right-click on the test result line you wish to edit.

STEP 2: Choose the item you wish to change from the drop-down menu.

#### 8.2.1. Entering/changing the jump type

Type	Height
SJ	28,5
CMJ	46,7
SJ	34,4
DJ	38,6
-	46,8
CMJ	48,0
DJ	54,1
SJ	47,6
CMJ	45,7
CMJ	45,1
SJ	47,0

STEP 1: Go to the “Jumps” tab.

STEP 2: Double-click on the field you wish to change under Type.

STEP 3: Choose the jump type from the drop-down menu.

#### 8.2.2. Entering/changing the run type

type	Exercise	Cooper 8 min
	100m (5+5+10+...+...)	
	100m (5+5+10+...+...)	
ance	50-10000m (every 1	
ance	5-20	
	5-30	
	5-15m (every 5m)	
	5-10-20	
	5-10-30	
	5-10-20-30	
	5-30m (every 5m)	
	5-10-15-20-30-40-50-60	
	5-10-20-60-100	
	5-10-15-20-30-50-75-10	
	5-10-20-30-60-90-100-1	
	10-110m (every 10m)	
	50-10000m (every 50m)	

STEP 1: Go to the “Runs” tab.

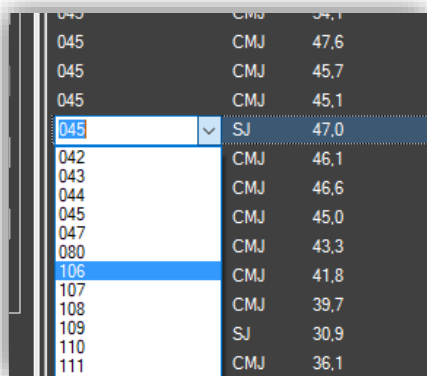
STEP 2: Double-click on the field you wish to change under Exercise.

STEP 3: Choose the exercise type from the drop-down menu.

NOTE: If you cannot find the run interval you need, see 8.1.1. Selecting the sprint interval.

NOTE: You cannot manually enter the Cooper Test. The software automatically recognizes each run that lasts for at least 8 or 12 minutes as a Cooper test and displays the Cooper value accordingly.

### 8.2.3. Changing an athlete's name or a team name



045	SJ	47,0
042	CMJ	46,1
043	CMJ	46,6
044	CMJ	45,0
045	CMJ	45,1
047	CMJ	43,3
080	CMJ	41,8
106	CMJ	39,7
107	CMJ	30,9
108	CMJ	36,1
109	CMJ	
110	CMJ	
111	CMJ	

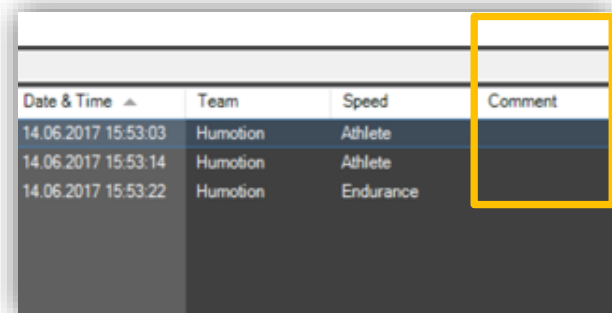
STEP 1: Double-click on the name you wish to change.

STEP 2:

- Option 1: Select a name from the drop-down menu. (recommended)
- Option 2: Type a name in the empty field and press ENTER.

NOTE: With option 2, the name will not be saved for future measurements.

### 8.2.4. Annotating test results



Date & Time	Team	Speed	Comment
14.06.2017 15:53:03	Humotion	Athlete	
14.06.2017 15:53:14	Humotion	Athlete	
14.06.2017 15:53:22	Humotion	Endurance	

The comment section in each test result line allows you to make notes for specific test results.

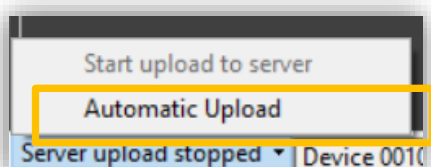
STEP 1: Go to the test result for which you want to make notes.

STEP 2: Double-click on the field under Comment.

STEP 3: Enter any notes or comments you may have.

NOTE: You can sort test results according to comments.

### 8.3. How do I enable the automatic upload of measurement data to Humotion servers?



To enable the automatic upload of measurement data to Humotion servers, click on the "Automatic upload" button.



## 9. SmarTracks Diagnostics Assessments

### 9.1. Sprint

You can measure any running distance.

If you are running on a SmarTracks Location with integrated Timing Gates, you can start at any gate. You can check out the Timing Gate pattern of each SmarTracks Location on [www.locations.smartracks.run](http://www.locations.smartracks.run).

If you are using Timing Gates Mobile, we recommend starting at the 100m finish line or any other fixed point on your track/turf location. From there, place the mobile gates at the desired intervals.

#### Software settings

##### Selecting the gate pattern

If you do not select a gate pattern for the measurement, the software will assign the appropriate pattern automatically when analyzing the data.

If desired, the pattern can be changed manually after the measured.

- If you are using Timing Gates In-Ground, the gate pattern depends on your SmarTracks location. If you are unsure about the gate pattern of your location, you can check it on the free Smart Run app or on [www.locations.smartracks.run](http://www.locations.smartracks.run).
- If you are using Timing Gates Mobile, please strictly adhere to the given pattern.  
For example, if you set the pattern to 0-5-10-20m, then you have to place Timing Gates at 0m, 5m, 10m, and 20m.

The gate patterns in the list are read as follows:

#### Gate pattern type 1: 0-5-20; 0-5-10-20; 0-5-10-20-60-100

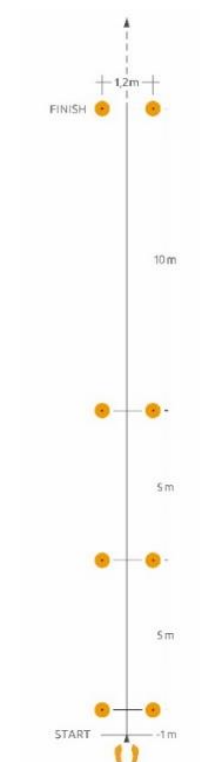
This is a **simple list of the respective gates**, which are always separated by a minus.

For example:

- 0-5-20: There is a Timing Gate at 0m, 5m and 20m.
- 0-5-10-20: There is a Timing Gate at 0m, 5m, 10m and 20m.
- 0-5-10-20-60-100: There is a Timing Gate at 0m, 5m, 10m, 20m, 60m and 100m.

#### Gate pattern type 2: 0-5-30m (every 5m); 0-10-110m (every 10m); 0-10000m (every 50m); 0-10000m (every 100m)

To avoid long lists of intervals, we summarize the patterns **if the distance between stays equal**, e.g. every 10m. In this case, only the first and last measurement point are mentioned with the consistent distance between each point following in brackets.



For example:

- 0-5-30m (every 5m): There is a Timing Gate 0m, 5m, 10m, 15m, 20m, 25m and 30m.
- 0-10000m (every 50m); There is a Timing Gate 0m, 50m, 100m, 150m, 200m, etc.
- 0-10000m (every 100m): There is a Timing Gate at 0m, 100m, 200m, 300m, etc.

### **Gate pattern type 3: 0-5-100m (5+5+10+...+10); 0-10-110m (10+5+5+10+...+10)**

This kind of list is used if you have **irregular gate patterns**. You can see in the example that a few gates are just 5m apart instead of 10m. The irregular gates will be listed with individual distance of the interval and will be divided by '+'. The regular gates will be summarized by '...'.

For example:

- 0-5-100m (5+5+10+...+10): There is a Timing Gate at 0m, 5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, and 100m.

If your desired gate pattern is not listed in the Diagnostics software, you can manually add the pattern to the list:

STEP 1: Close the SmarTracks Diagnostics software

STEP 2: Go to "...\\Documents\\SmarTracks Diagnostics\\Data\\"

STEP 3: Open the text-file "SprintIntervals.txt"

STEP 4: Manually add your desired sprint interval

- For example: 0-5-10-20

FE-5-10-20-100

0-800(20)

STEP 5: Re-open the SmarTracks Diagnostics software

STEP 6: The added gate pattern should be visible in the drop-down list

### ***Selecting the start point of the measurement***

You can choose to have your start point (0 meters and 0 seconds) for the measurement:

- at moment the athlete takes off (so-called Force Explosion (FE)); or ..
- at the first Timing Gate

"Force Explosion" (FE) allows you to start the measurement from the moment the athlete takes off. Instead of the first detected Timing Gate, the sharply increasing kinetic energy is used as trigger for a measurement.

Different standard values and scientific publications often use the 1m distance to the start, while some measurements are made directly at the start of the run. With our system, you can choose which start parameter you want, depending on the desired data.

## 1. When **you want the start point at the first Timing Gate**:

The zero point of time and distance measurement is the first Timing Gate.

- Select a pattern **without** an “FE”-prefix, where all entries represent a Timing Gate with their respective distances.
  - Example: 0-5-10-20
- The athlete starts at least 1m before a Timing Gate. (Starting closer than 1m to the Timing Gate would possibly prevent the sensor from detecting the Timing Gate.)

## 2. When **you want the start point to be at the moment the athlete takes off**:

The zero point of time and distance measurement is the point where the athlete starts the run.

- **Athlete starts at a point without a Timing Gate:**
  - Select a gate pattern with **FE** as the start point (instead of 0), followed by the Timing Gates at their respective distances.
    - Example: FE-5-10-20  
FE-5-100(5+5+10+...+10)
  - The first Timing Gate needs to be passed maximum 15 seconds after Force Explosion.
- **Athlete starts at a point with a Timing Gate:**
  - Enter **FE(0)** as the start point:
    - Example: FE(0)-5-10-20  
FE(0)-5-100(5+5+10+...+10)
  - The first detected gate within the first 800 milliseconds after Force Explosion is suppressed.
  - When working with FE(0), at least two gates are required and must be passed.

### ***When to use Force Explosion FE(0)?***

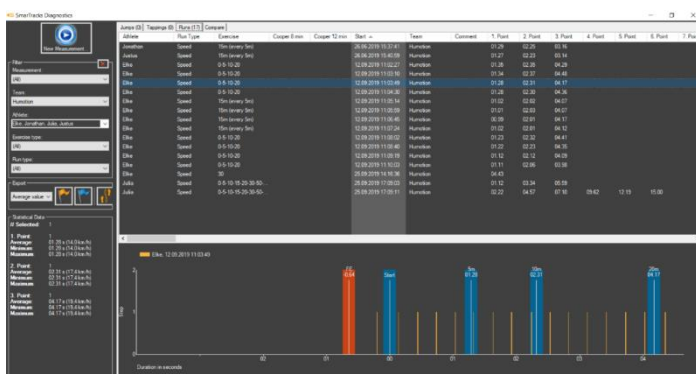
- We recommend to use the gate pattern FE(0) for 3-point starts and block starts at a gate.
- We recommend to use the gate pattern FE(0) for every upright start with foot at the line of a gate.

### **Performing the test**

- The athlete starts from the desired start position. See also *Selecting the start point of the measurement*.
- Before and after each test there should be standing time of at least 1 second.

## Test results

The test results are shown under the “Runs” tab, where you can also export the results into JSON and Excel.



In the software **results table**, you see:

- Athlete name and team
- Exercise
- Start time of test
- 1./2./3./... Point: Time when each respective point was reached [s]. Each point represents:
  - When no running type exercise has been selected: a detected Timing Gate
  - When a running type exercise has been selected: a measurement point of the running type exercise

The **chart** shows the selected athlete’s steps for the duration of the test. It shows

- at what point in time the Force Explosion took place (orange column)
- at what point in time foot contact was made (orange stripe)
- at what point in time a Timing Gate was passed (blue column).

Distance [m]	Time [ss,ff]	Interval [m]	Time [ss,ff]	Speed [m/s]	[km/h]	[#]	[Hz]	[m]
5	2.35	5	2.35	2,13	7,67	5,96	2,54	0,84
10	4.63	5	2.28	2,20	7,90	5,39	2,37	0,93
20	6.83	10	2.20	4,55	16,36	5,45	2,48	1,83
20,00	6.83	2,93	10,55	16,80	2,46	1,19		

Distance [m]	Time [ss,ff]	Interval [m]	Time [ss,ff]	Speed [m/s]	[km/h]	[#]	[Hz]	[m]
5	1.82	5	1.82	2,75	9,92	4,93	2,72	1,01

In the **exports**, you see additional step information:

- Number of steps
- Step frequency (Hz)
- Step length

Note on step information:

The first foot signal is the first contact with the ground after the start. A step is defined as the distance from one contact to the following contact.

Depending on the start mode of the runner it can happen that after Force Explosion up to two invalid foot signals are recognized.

## 9.2. Endurance

### Cooper test

The Cooper Test is a test to determine aerobic endurance capacity. The aim of the test is to cover the maximum distance possible in 12 minutes. Conducting this test on a standardized running track, i.e. 400 m lap outdoors or 200 m lap indoors, ensures the most comparable results.

### Software settings

You cannot enter the Cooper test as an exercise type in the software. The software automatically recognizes each run that lasts for at least 8 or 12 minutes as a Cooper test.

### Setting up the course field

- If you are running on a SmarTracks location with integrated Timing Gates, you can start at any gate.
- If you are using Timing Gates Mobile, we recommend starting at the 100m finish line or any other fixed point on your track. From there, place the Timing Gates Mobile at stated intervals, e.g. every 100 m.

### Performing the test

- The test starts from the start position, 1 m before a gate.
- Before and after each run there should be standing time of at least 1 second.

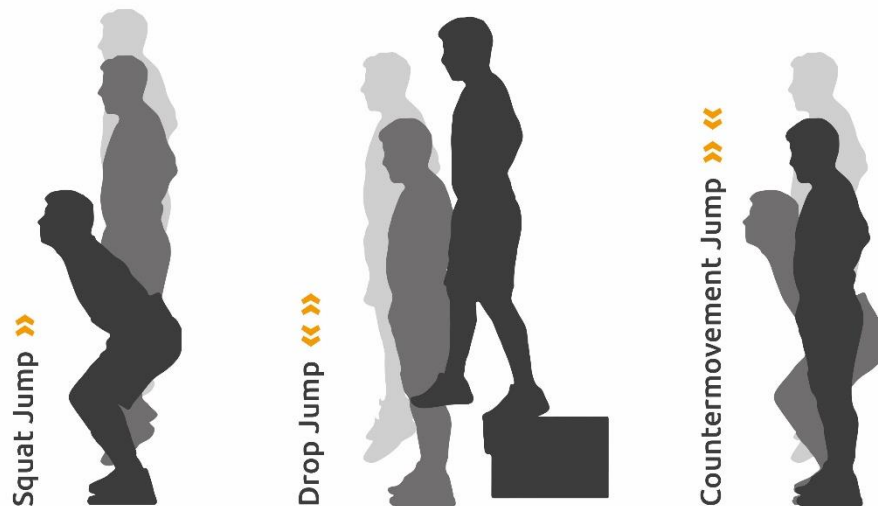
### Test results

The times for 8 minutes and 12 minutes are shown under the “Runs” tab.

### 9.3. Jumps

Explosively fast reactions and speed strength are among the most important physical requirements for athletes. An athlete's jumping ability can tell us a lot about the speed strength of his leg muscles. Alongside other conditioning properties such as endurance and strength, speed strength is directly performance-related.

In the standard jump ability test, three different jumps – the Drop Jump (DJ), Countermovement Jump (CMJ) and Squat Jump (SJ) – are performed several times in succession. The general aim of all three jump types is to achieve the maximum jump height during a basic vertical jump.



#### Performing the test

No special setup is required, the athlete can start the test anytime when wearing an active sensor. Please keep in mind the following points:

- We recommend to execute the jump tests in the following order:
  1. Squat Jump (SJ)
  2. Drop Jump (DJ)
  3. Countermovement Jump (CMJ)

In this order the data of the jumps is more distinct and can be better evaluated afterwards.

- Before and after each jump there should be standing time of at least 1 second.
- These tests are performed without Timing Gates.

### 9.3.1. Squat Jump (SJ)



The Squat Jump is a vertical jump used to test the concentric strength in muscles used for jumping.

#### Performing the test

This jump is performed from the squat position without any countermovement. The upper body is bent slightly forward, with the knees bent to around 90°. The individual's hands are kept on their hips throughout the jump. This is to lessen the effect of the arms, which could be used to boost height while jumping.

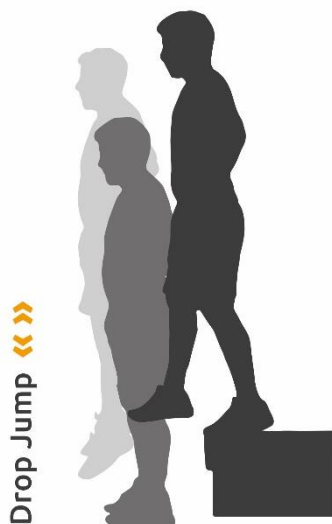
The exercise consists of jumping up as high as possible from the rest position, without any countermovement when starting the jump. The jump height is normally lower than the jump height for the Countermovement Jump.

#### Test results

The following test results are shown under the "Jumps" tab:

- Jump height [cm]

### 9.3.2. Drop Jump (DJ)



The Drop Jump is a vertical jump for testing concentric strength in muscles used for jumping, including reactive strength.

Alongside the jump height, a brief contact time with the ground is also measured. A reactive strength index (jump height divided by contact time) can then be calculated. The impact velocity and energy input into the muscles used for jumping are altered by varying the fall height. The output (jump height or the ratio of jump height and contact time on the ground) is maximized with optimal input (fall height).

#### Performing the test

This jump is performed from a defined fall height. The individual's hands are kept on their hips throughout the jump. This is to lessen the effect of the arms, which could be used to boost height while jumping.

When executing the Drop Jump the athlete steps down and falls from a box or platform. Upon landing, he immediately jumps up as high as possible, keeping the ground time and horizontal movement to a minimum.

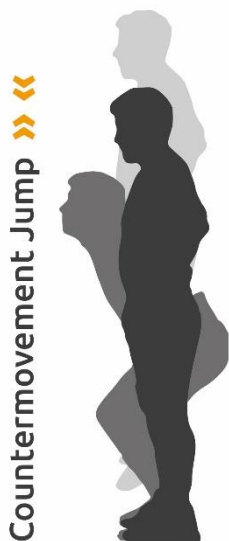
The fall height is usually raised in 15 or 20 cm (6" or 8") steps and optimal height depends on the athlete's ability to absorb and transform the occurring forces. If the measured contact time exceeds 250 ms, the height should be decreased.

## Test results

The following test results are shown under the “Jumps” tab:

- Jump height [cm]
- Ground contact time [ms]
- Reactive strength index (Jump height [cm]/ Ground contact time [s])

### 9.3.3. Countermovement Jump (CMJ)



The Countermovement Jump is a vertical jump for testing concentric strength in muscles used for jumping. This jump is performed from a standing position with a downward countermovement. The countermovement is a rapid downward movement to the start position of the Squat Jump. The individual's hands are kept on their hips throughout the jump. This is to lessen the effect of the arms, which could be used to boost height while jumping.

#### Performing the test

The exercise consists of jumping up as high as possible from an upright position, after making a countermovement when starting the jump. The jump height is normally greater than the jump height of the Squat Jump.

#### Test results

The following test results are shown under the “Jumps” tab:

- Jump height [cm]

## 9.4. Tappings

The tappings test is a test to determine cyclical speed. It is especially suitable for spotting “speed talent”. Tapping performance depends on the ability to coordinate, as well as the individual's level of strength.

SmarTracks records the tapping frequency, i.e. the number of contacts with the ground per second, measured in Hertz. The number of ground contacts as well as the average tapping frequency is determined over 6 and 15 seconds.

#### Performing the test

No special setup is required, the athlete can start the test anytime when wearing an active sensor. Please keep in mind the following points:



- This test is performed without Timing Gates.
- Before and after each test the athlete should stand still for at least 1 second.
- The athlete starts in a standing, athletic position. Knees are slightly bent and the torso is slightly leaned forward.
- Feet have to leave the ground on every sequence.
- The athlete should not move in the horizontal plane during the duration of the test.
- The athlete should move with maximum intent and speed for at least 6 seconds.

### Test results

The following test results are shown under the “Tappings” tab:

Frequency	Average number of contacts with the ground per second [Hz]
Duration	Duration of tapping test
Max frequency	Maximum number of contacts with the ground per second [Hz]
Count taps 6s	Number of taps in the first 6 seconds (only shown if duration was 6 seconds or more)
Frequency 6s	Average number of contacts with the ground per second in the first 6 seconds [Hz]
Count taps 15s	Number of taps in the first 15 seconds (only shown if duration was 15 seconds or more)
Frequency 15s	Average number of contacts with the ground per second in the first 15 seconds [Hz]

We recommend to use the test results of maximum frequency or 6 sec tap count for comparison of groups or individual athletes. Both test results are independent from the duration of the test and therefore results are not influenced by it.

## 9.5. Agility (COD)

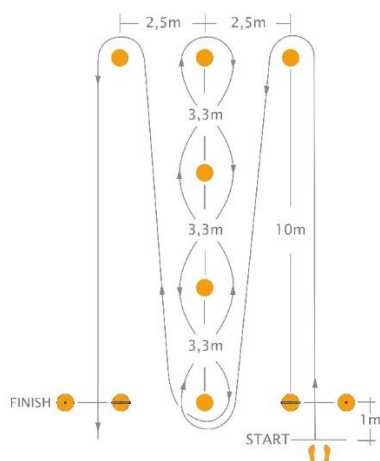
You can find videos on how to perform the agility tests with SmarTracks on <https://smartracks.run/diagnostics-assessments/agility/>.

### 9.5.1. Illinois Agility Test (IAT)

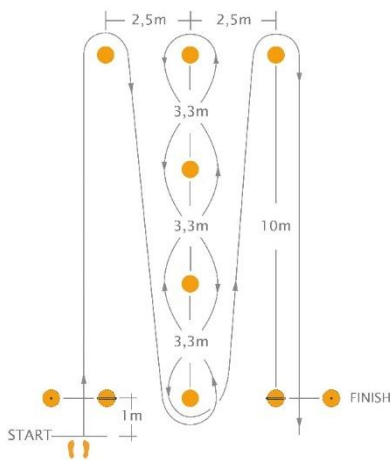
The Illinois Agility Test (IAT) is used to test an athlete's change of direction speed, i.e., his ability to change directions rapidly. The athlete should start in an upright position and maneuver through the represented course with maximum speed. The test should be conducted starting from both the left and the right side, to fully evaluate the athlete's ability.

#### Setting up the course field

- 6 cones and 2 Timing Gates are to be set up according to the figures below.
- Place one Timing Gate at the start, and one Timing Gate at the finish.
- For better measurement results, we advise that the two magnetic elements on the inside position be angled. For the use of angled mounts, see 4.2.1. Timing Gates Mobile.



*Course field for Illinois Agility Test starting from the right.*



*Course field for Illinois Agility Test starting from the left.*

#### Position and set-up of angled Timing Gates for the Illinois Agility Test



*Timing Gate on the left.*



*Timing Gate on the right.*



### Performing the test

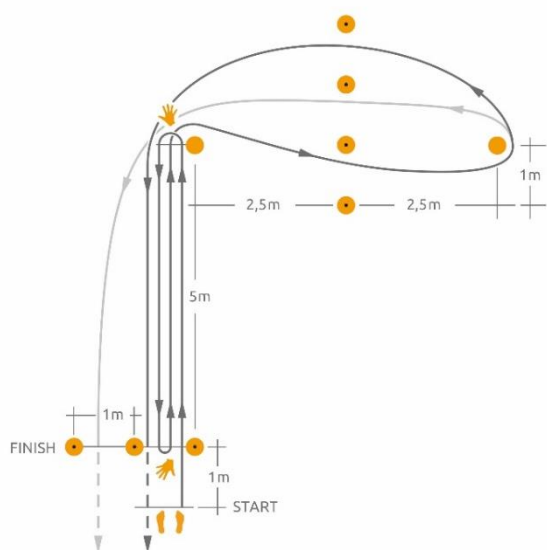
- The athlete starts from the start position, 1 m before a Timing Gate.
- Before and after each test there should be standing time of at least 1 second.

### Test results

The test results are shown under the “Runs” tab.

## 9.5.2. Three Cone Drill (3CD)

The Three Cone Drill (3CD) is one of the most common tests of agility (COD) in American football. It is used as part of athlete assessment in the NFL combine. Nevertheless, the 3CD is a suitable test for all sports with high demands in Change of Direction, relatively short action periods and the necessity to maneuver in crowded spaces.



### Setting up the course field

Three magnetic elements are set up at the start, each 1.2m apart. One cone is placed 5m from the starting line. Another cone is placed 5m from cone A at a 90 degree angle. In between both cones four magnetic elements are placed, each 1.2m apart.

### Performing the test

The athlete starts in a three-point position or upright with his hand and/or feet behind or on the starting line, 1 m before the Timing Gate. To ensure comparability, we recommend to define and use a standard position of your choice and make use of the "comment" field in the results if you differ from your standard.

The athlete can then either start on a given command or on his own accord (after at least 1 second of calm state).

The athlete runs to the first cone, bends down and touches the ground with the **right** hand and turns over his **left shoulder**. Then he turns and runs back to the starting line, bends down and touches that line with his **right** hand and again turns over his **left shoulder**. Then he runs back to the first cone and runs around the outside of it (right shoulder inside), weaves inside the other cone and then around it (left shoulder inside). He runs back and around the first cone (left shoulder inside) before finishing by maximally accelerating and running through the gate past the starting line.

Before and after each test there should be standing time of at least 1 second.

### Test results

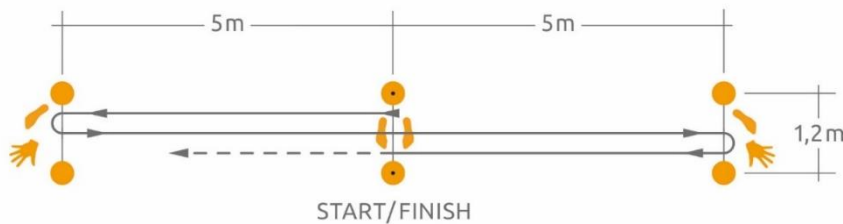
The test results are shown under the “Runs” tab.

### 9.5.3. 5-10-5 Shuttle (Pro Agility Test)

The 5-10-5 Shuttle, or Pro Agility Test consists of rapid directional changes in a linear plane. It is commonly used as an assessment in American football, basketball, soccer, and most other field and court sports. It is used as part of athlete assessment in the NFL combine.

#### Setting up the course field

One magnetic gate consisting of two magnetic elements is set up at the starting line. The magnetic elements are 1.2m apart. Two cones are placed 5m on each side from the starting line to mark the turn-around-lines.



#### Performing the test

The athlete positions himself in a 3-point position on the starting line with feet shoulder width apart and placed equally either side of the starting line.

**The hand in contact with the floor during the 3-point position determines which direction the athlete should travel.** For example, if the athlete is going right, then he must start with his right hand on the starting line, and vice versa. We recommend to standardize the starting direction to ensure comparability.

The test can also be conducted from an upright starting position. To ensure comparability, we recommend to define and use a standard position of your choice and make use of the "comment" field in the results if you differ from your standard.

Example when starting with the **right** hand on the starting line:

The athlete starts the drill by accelerating maximally to the turn-around-line to his **right**. At the turn-around-line the athlete touches it with his **right foot and hand** and then turns over his **left shoulder**. Then he accelerates towards the opposite turn-around-line this time touching it with the **left foot and hand** and turning over his **right shoulder**. The athlete then accelerates towards the starting line to finish the test. On all turns the inside hand must never touch the ground.

- Before and after each test there should be standing time of at least 1 second.

#### Test results

The test results are shown under the "Runs" tab.

#### 9.5.4. Custom Agility Test

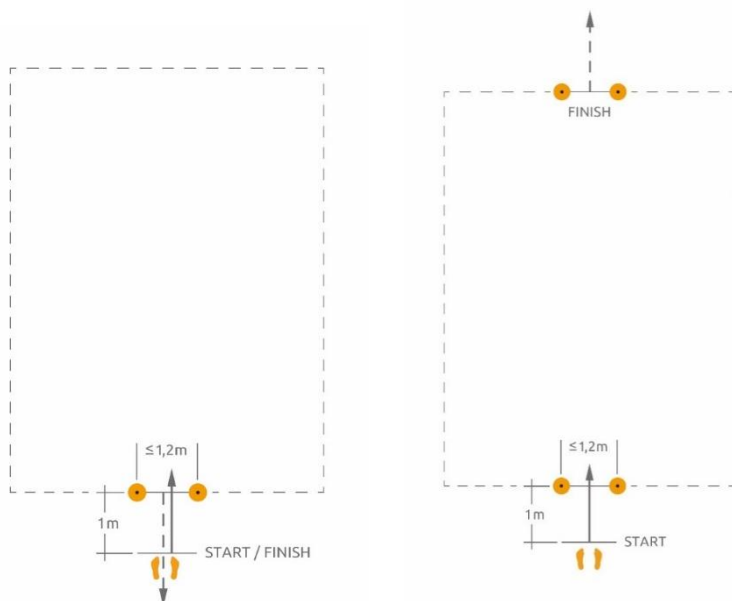
The Custom Agility Test allows trainers and athletes to create their own tests. Either to make them as specific as possible to their sport, or to make standard tests that are not embedded in SmarTracks Diagnostics (e.g. 505 Test). The only general requirement is a start point and a finish point. There is no pre-specified distance or running course.

##### Software settings

This test will not be recognized automatically by the software. It has to be either chosen from the drop-down menu “Exercise type” before the measurement is started or changed under “Exercise” after the data was analyzed (Custom Agility Test).

##### Setting up the course field

- **A maximum of 2 gates** can be set up for the Custom Agility Test: either a gate for the start line and a gate for the finish line, or a single gate, which serves as the start and finish line.
- The starting gate and the finish gate should be at a minimum distance of 5 meters from each other.
- A turn cannot take place within a range of 5 meters from a gate.
- It is recommended to set up cones at points where the athlete should turn/change direction.



##### Performing the test

- The athlete starts the Custom Agility Test 1m before the starting gate, and finishes the test by running through the finish gate.
- The athlete needs to run forwards (not completely backwards or sideways).
- The athlete cannot use any objects (e.g. a ball).
- Before and after each test there should be standing time of at least 1 second.

We cannot guarantee correct data analysis if tests do not adhere to the above-mentioned guidelines.

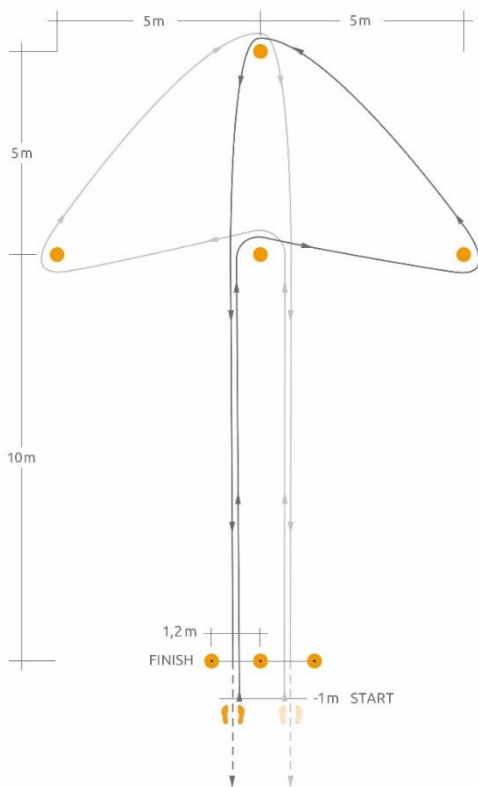
##### Test results

The test results are shown under the “Runs” tab.

### 9.5.5. Arrowhead Agility Test (AAT)

The Arrowhead Agility Test (AAT) is a simple but effective tool to assess an athlete's change of direction speed. Although appropriate for all team sports, it is typically used in soccer.

#### Setting up the course field



One magnetic gate consisting of two magnetic elements is set up at the starting line. The magnetic elements are 1.2m apart. One cone (A) is placed 10m after the starting line, another one (C) 15m after the starting line. Two cones (B and D) are placed 5m on each side from the 10m cone (A), resulting in an arrow-shaped set up.

#### Performing the test – example direction left

The athlete starts in an upright starting position, 1m in front of the starting line.

The athlete then maximally accelerates to cone A. He runs around the cone, turning to the left and accelerates to cone B, this turning to the right and starts accelerating to cone C. Another right turn and the athlete can accelerate back to the finish line.

Since the test can and should be conducted in two directions, it should be decided beforehand which direction the athlete should turn first at cone A. Consequently, this needs to stay constant for all athletes to ensure comparability.

#### Test results

The test results are shown under the “Runs” tab.

# BASIC INSTRUCTIONS

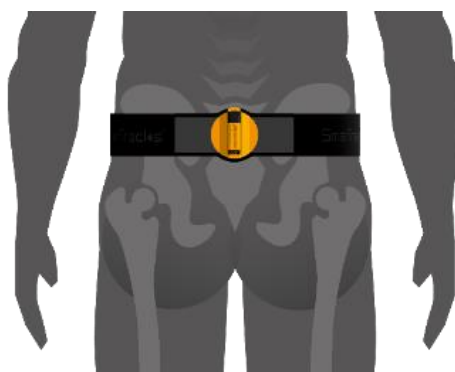
## STEPS FOR PERFORMING A MEASUREMENT

1. Start SmarTracks Diagnostics software
2. Connect sensor to PC
3. Select "New measurement", insert team name, athlete name, location
4. Click "Next" and wait until measurement has started
5. Disconnect sensor from PC and attach sensor to belt
6. Put on sensor-belt
7. Perform assessment(s)
8. Reconnect sensor to PC
9. Data is uploaded and analyzed automatically by software

## CHECKLIST TO ENSURE CORRECT MEASUREMENTS

### *Sensor*

- Is the sensor inserted  
Did it "click"?
- Does the sensor record?  
blue-red?
- Is the sensor placed  
the black cap pointing



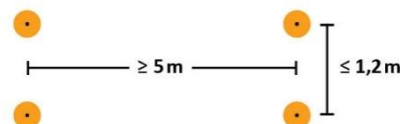
correctly into the holder?

Does the light blink red or

correctly on the body, with  
upwards?

### *Timing Gates Mobile*

- Are the Timing Gates placed correctly? (see  
assessment ground plans)
- Is there a maximum of 1.25m distance between the  
individual elements of a Timing Gate?



- Is there a minimum distance of 5m between each individual Timing Gate?
- In the individual elements of the Timing Gates, does the yellow-colored side point upwards?
- Did you use the angled mounts when advised in the manual?  
(e.g. Illinois Agility Test)

### *Runs & Tests*

- Does the athlete start with a distance of at least 1m in front of the first Timing Gate?
- Does the athlete stay in a calm state for at least 1 second before and after each test?
- For jump tests: does the athlete show minimal knee bend on landings? (knees can be bent a little to catch the impact, but the athlete should not bob up and down)
- For agility tests: When changing direction, does the athlete turn in the right direction? (see manual for instructions)



# Contact Info

You can find further information and instructional videos on  
<https://smartracks.run/support>

If you have any questions or if you are interested in learning more about Humotion's products and services, please contact us using the contact details below:

E-mail: [info@smartracks.run](mailto:info@smartracks.run)  
Telephone: +49 (0) 251 590 805 0

In case of technical problems or software problems please contact Humotion Technical Support:

Telephone: +49 (0) 251 590 805 40  
E-Mail: [support@smartracks.run](mailto:support@smartracks.run)