



HUR Labs Force Platform Software Suite

User Manual

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1 INTRODUCTION.....	3
1.1 Overview.....	3
1.2 Features.....	3
2 HUR LABS WARRANTY TERMS.....	4
3 FORCE PLATFORM.....	5
3.1 Package.....	5
3.2 Dimensions.....	5
3.3 Extension Plate (optional).....	6
3.4 Miscellaneous.....	6
4 INSTALLATION.....	7
4.1 System-Requirements.....	7
4.2 Installation of the HUR Labs Force Platform Software Suite.....	7
4.2.1 <i>Installing the HUR Labs Force Platform Software Suite</i>	7
4.2.2 <i>Installing the Force Platform</i>	7
4.2.3 <i>Force Platform Software Suite in Windows Vista/7</i>	8
5 PROGRAM SETTINGS.....	9
6 MANAGING DATABASE.....	10
6.1 Structure of the Database.....	10
6.2 Database Options.....	10
6.3 Browsing Group / Person / Test Database.....	10
6.3.1 <i>Adding, Removing and Editing Groups</i>	11
6.3.2 <i>Adding, Removing and Editing Persons</i>	12
6.4 Searching the Database.....	13
6.5 Container.....	13
6.6 Working with Tests.....	14
6.7 Making Backup of the Database.....	14
7 WORKING WITH THE FORCE PLATFORM.....	15
7.1 Automatic Machine Identification.....	15
7.1.1 <i>Proper calibration</i>	15
7.2 Calibration of the Force Platform.....	16
7.2.1 <i>Restoring the previous calibration</i>	17
7.3 Running Tests.....	18
7.4 Test Preparations and safety.....	18
7.4.1 <i>Running Jump Test</i>	18
7.4.2 <i>Elasticity Tests</i>	20
7.4.3 <i>Fatigue Tests</i>	20
8 ANALYSIS AND COMPARISON OF TEST RESULTS.....	21
8.1 The Analysis of a Jump Test.....	21
8.1.1 <i>Additional Features</i>	22
8.2 The Comparison of Jump Tests.....	23
8.2.1 <i>Additional Features</i>	24
9 PERFORMING JUMPS.....	25
10 TROUBLESHOOTING.....	26
11 DATASHEET.....	27

1 Introduction

1.1 Overview

The **HUR Labs Force Platform Software Suite** is an easy-to-use package, designed to work with the **HUR Labs Force Platform**.

This User Manual describes the use of the software.

Note: If you have a CD-ROM version, this document can also be found from the directory “Manual” in the installation CD.

1.2 Features

- 5 test protocols: Counter movement jump, Squat jump, Drop jump, Elasticity jump and Fatigue test
- Database for persons and groups
- Test results can be stored for later analysis and comparisons
- Printable test reports
- Comparisons of different tests
- Container to help comparisons

2 HUR Labs Warranty Terms

These warranty terms apply to the HUR Labs -products manufactured by HUR in Finland.

Warranty of one (1) year applies to:

- Products including electronic components
- Computer software provided with the product

Warranty of five (5) years applies to:

- Materials and workmanship of products frame assembly. Any coating of material is not included in frame warranty.

Warranty is valid only if the installation and routine maintenance is done as follows:

- Installation is done as specified in HUR Labs installation instructions
- Routine maintenance and service is done according to HUR Labs specifications by HUR Labs certified personnel

Warranty will be voided immediately if:

- Electronic devices or parts not supplied or certified by HUR Labs are installed, used to power or used to operate HUR Labs manufactured products
- Parts not supplied or certified by HUR Labs are used for service or repair of HUR Labs manufactured products

Transportation, storage or other handling related damages are not covered in HUR Labs warranty. In case of transportation, storage or other handling related damage, product must be checked by HUR Labs certified person or warranty can be voided. This is to be done before or during the installation of the product.

HUR Labs dealers are responsible of warranty related costs and case handling in their region. Warranty replacement parts are delivered free of charge.

Replaced part should be sent back to HUR Labs only if so noted in the Delivery note of replacement part or otherwise noted. Parts that are not sent back to HUR Labs, should be recycled following local laws and regulations.

Customer of HUR Labs dealer should first contact the dealer for any warranty related repairs or service.

These terms are valid from 1st of July 2006.

3 Force Platform

The FP4 is a square shaped portable force platform ideal for jump testing. An industrial grade force transducer is attached at each corner. The chassis of the FP4 is made of strong aluminum making it robust yet lightweight (14 kg). Each of the four sensors can measure up to 300 kg weight. **WARNING:** Applying more than 300 kg for a sensor can brake the sensor!

The platform is equipped with 16-bit high precision data acquisition module with an inbuilt a/d conversion. There is a separate a/d conversion made for each channel (each sensor) ensuring that no interference or cross talk can happen making the results highly accurate. Temperature compensated signal amplifiers eliminate any temperature induced baseline changes.

The platform connects to your PC via a direct USB connection and the platform also takes its power from this connection. This means that no external power is required. As there are no separate power sources, the signal from the platform to the PC is unbiased. All you need for force testing in the field is a laptop running Windows XP/Vista/7 with Force Platform Software Suite and the Force Platform.

NOTE: The platform is only for indoor use!

NOTE: Use the platform only for its intended purposes!

3.1 Package

The Force Platform comes with a soft nylon bag. The bag is designed for easy transportation of the platform. The Force Platform Software Suite CD is included in the bag's pocket. HUR cardboard package is completely recyclable. Local laws and regulations of package material disposal should be followed.

NOTE: Make sure that the handles are properly attached to the bag before lifting the bag!

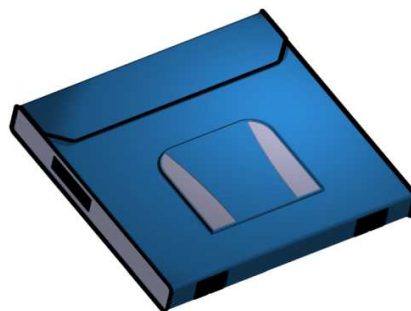


Figure 1: Force Platform Bag

3.2 Dimensions

Force Platform FP4:

- | | | |
|----------------------|---------------|---------|
| ● Platform | 610x610x60 mm | 14.0 kg |
| ● Bag, soft nylon | 650x650x80 mm | 2.4 kg |
| ● Package, cardboard | 660x660x10 mm | 0.8 kg |

3.3 Extension Plate (optional)

A separate extension plate is available as an option. The purpose of the extension plate is to provide a larger area for landing. This decreases the risk of falling when landing. Dimensions: 1145x1145x60 mm.



Figure 2: Extension Plate

3.4 Miscellaneous

Calibration

The calibration information is stored in the platform. The need of a new calibration can be checked by measuring a known weight with the General Data Acquisition. See chapters 7.1.1 and 7.2 for information.

Cleaning

Keep the platform's surface clean. Use any non-corrosive cleaning detergent and cloth.

NOTE: Make sure that the surface is dry and NOT slippery before stepping on the platform!

WARNING: The use of corrosive detergent might damage the surface!

Transportation

Transportation must be done using an appropriate package. Either using the platform's bag or also with the cardboard package. NOTE: Do not transport the platform unprotected!

NOTE: Do not drop the device!

Storage

The platform must be stored inside the bag and in normal humidity and temperature conditions. NOTE: Protect the platform from severe shocks!

Disposal

The platform must be disposed according to local disposal laws and regulations.

Repair

Only qualified technicians should repair the device. In case the surface, USB cable or the sensors get broken, contact HUR Labs office. WARNING: Unauthorized repairs can result in considerable danger to the user! WARNING: Broken sensors can give incorrect results!

4 Installation

4.1 System-Requirements

HUR Labs Force Platform Software Suite needs the following software and hardware.

- Microsoft Windows XP/Vista/7/8
- Screen resolution of 1024x768 or higher
- Pentium III 1 GHz processor or faster is recommended
- 256 Mb of RAM
- USB-port

4.2 Installation of the HUR Labs Force Platform Software Suite

4.2.1 Installing the HUR Labs Force Platform Software Suite

- Insert **HUR Labs Force Platform Software Suite** CD-ROM to appropriate drive
- The program installation starts automatically
- Follow the instructions

NOTE: In Windows Vista/7 the installation needs to be run with administrator rights. If you plan to use the program in regular user account, you need to set file permissions for database and program directories.

4.2.2 Installing the Force Platform

Plug the **Force Platform** in USB port. Windows recognizes the new hardware and asks its drivers. The drivers can be found in the **HUR Labs Force Platform Software Suite CD** (“HurDaq_driver” folder) or in the directory where the software was installed (by default “C:\Program Files\Hur Labs\Force Platform Software Suite”). FTD2XXUN.EXE is used only for uninstalling the drivers.

Later on, when plugging the **Force Platform** in a different USB port, the Windows might want to install the drivers again. This time, let the Windows search for the drivers by itself. If the Windows doesn't find the drivers, then locate the drivers from the **HUR Labs Force Platform Software Suite CD** (“HurDaq_driver” folder) or from the directory where the software was installed (by default “C:\Program Files\Hur Labs\Force Platform Software Suite”).

4.2.3 Force Platform Software Suite in Windows Vista/7

If you are running the Force Platform Software Suite with regular Vista, Windows 7 or Windows 8 user account, you need to have file read-write permissions to the database and to the program directory. The database directory is “C:\Program Files\Common Files\HurDB30”. The program directory is “C:\Program Files\Hur Labs”. Contact your system administrator in order to set the file permissions for your needs.

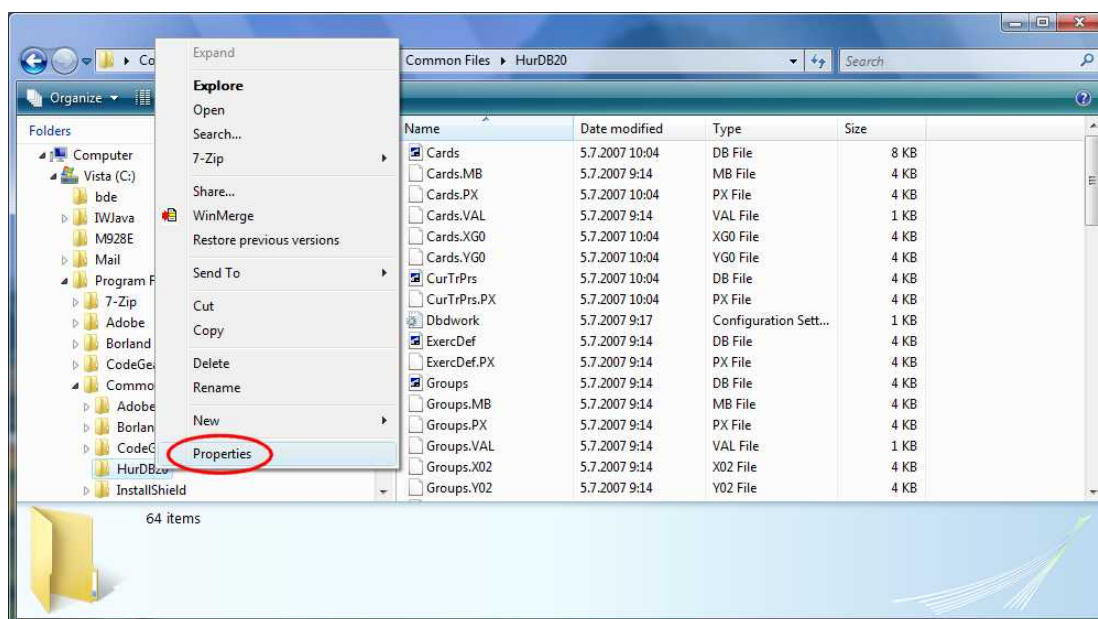


Figure 3: Right click on the folder and select properties

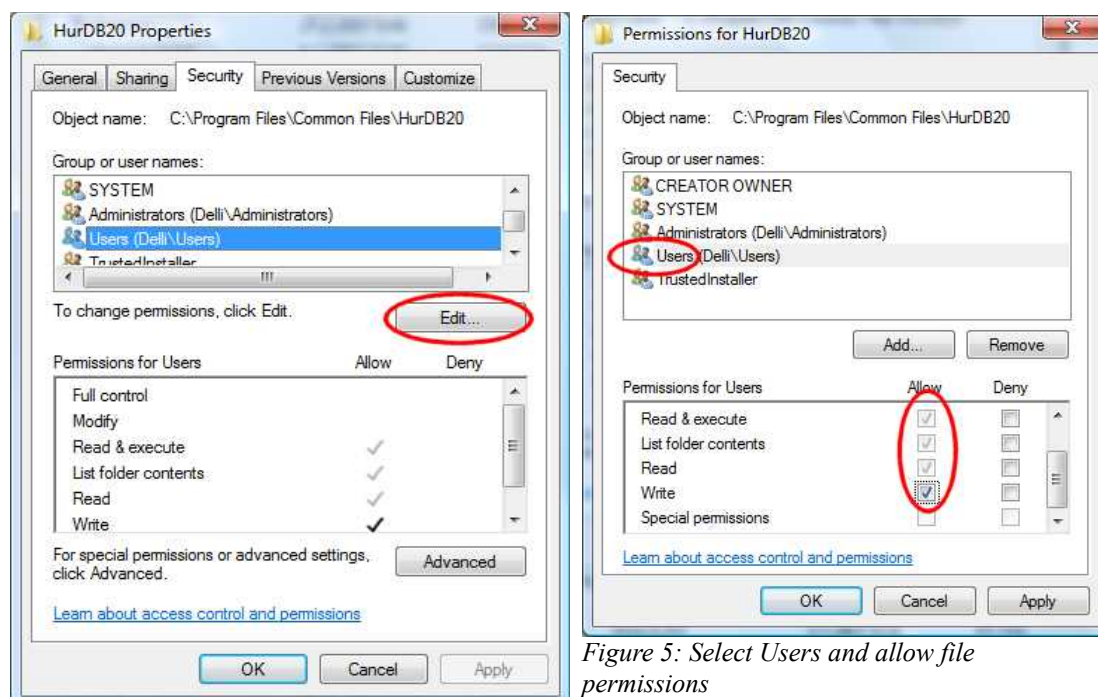


Figure 5: Select Users and allow file permissions

Figure 4: Select Security-tab and click Edit

5 Program Settings

The **HUR Labs Force Platform Software Suite** has some settings, which need to be set correctly in order for the program to work properly. Settings can be entered through the 'Settings' window, which can be viewed by selecting '**File|Settings**' from the program's main menu. 'Settings' window is seen in [Figure 6](#).

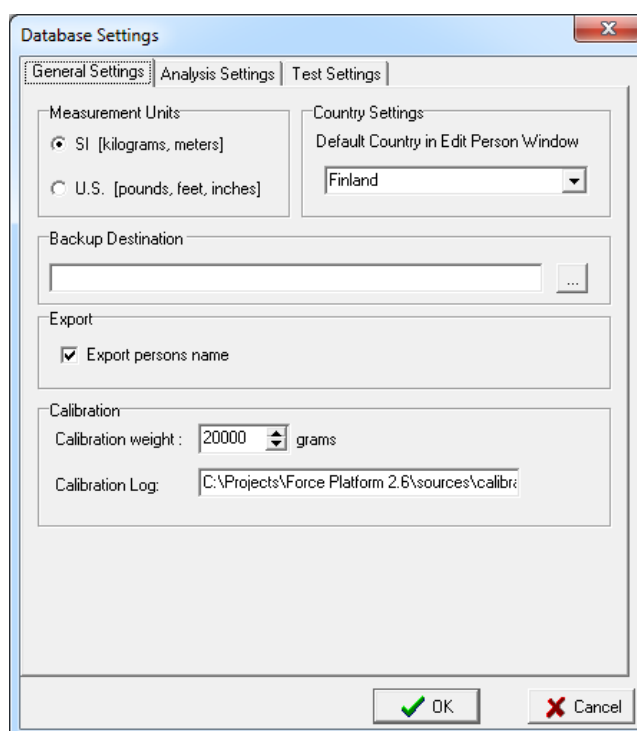


Figure 6: Settings Window

The first page of the settings window displays the settings of the units, country, backup destination, export and calibration information. U.S. Units only effect the person's weight and height.

The second page of the settings window displays the settings of the analysis. You can change the threshold for flight time, force recruitment interval and peak/average power calculations. Peak power can be calculated from work / time, Harman, Johnson Bahamonde or with Sayers formula. Average power can be by calculating the average power during jump, Lewis, Harman or with Johnson Bahamonde formula. The default formulas take advantage of the fact that the force platform provides us the power information. Other formulas are used when determining the power from the jump height by flight time.

The third page of the settings window displays the settings of test. You can choose to have a weight check between every jump, countdown before jump. You can also choose to save the test automatically, remember persons weight or repeat the jump automatically if it fails without user interaction.

6 Managing Database

6.1 Structure of the Database

The database behind the **HUR Labs Force Platform Software Suite** consists of groups of persons, persons and tests. This structure helps to organize persons and tests logically, just like the files are organized to sub-directories on the hard drive. Since Force Platform Software Suite version 2.6, the database engine has been changed.

6.2 Database Options

From the Database Options, it is possible to change the database, refresh the database tree and import old Paradox database. The 'Change Database' function makes possible to create a new empty database.

6.3 Browsing Group / Person / Test Database

The contents of group / person database can be viewed by clicking the 'Database' button ([Figure 7](#)) from the program's toolbar. The database tree will appear as seen in [Figure 8](#).

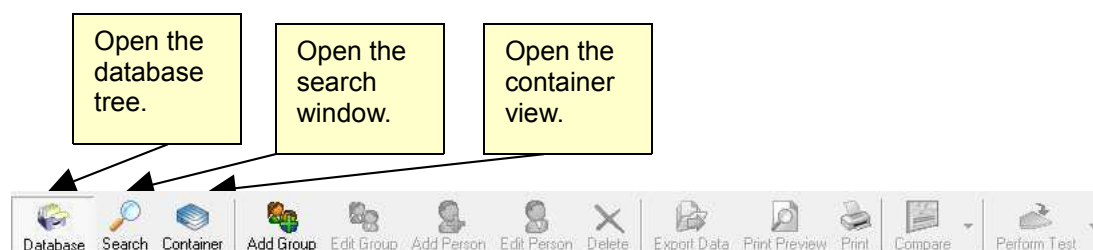


Figure 7: Main Toolbar

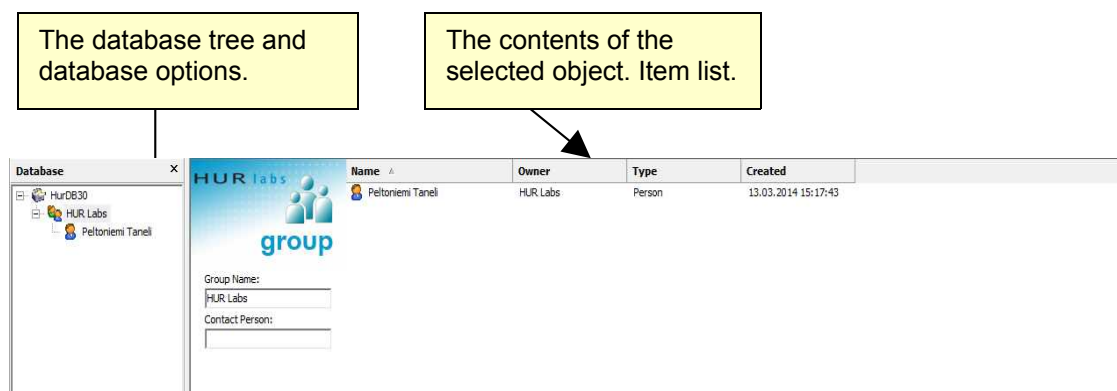


Figure 8: Browsing the Database

6.3.1 Adding, Removing and Editing Groups

A new group can be added to the database by clicking the '**Add Group**' button. A dialog, where information about the new group can be entered, will appear ([Figure 9](#)).

Information about a certain group can be viewed or edited by selecting the group from the tree view and clicking the '**Edit Group**' button. A dialog with group's information will appear. Group information can now be edited.

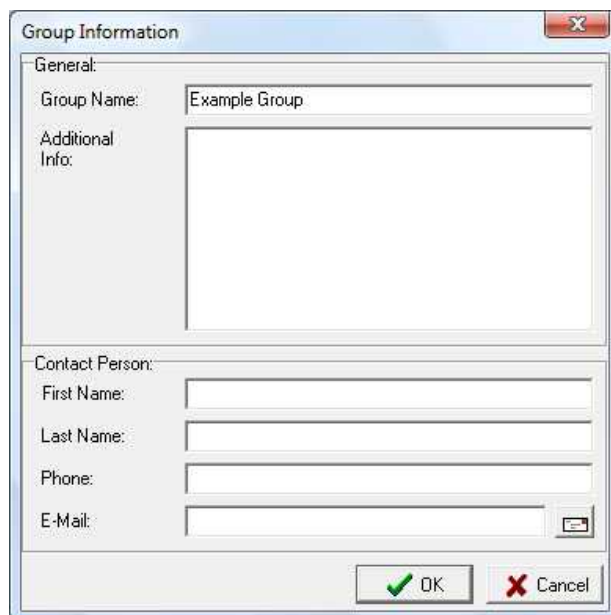
The image shows a Windows-style dialog box titled "Group Information". It has a standard title bar with a close button (X). The dialog is divided into two main sections. The top section is labeled "General:" and contains a "Group Name:" label followed by a text box containing "Example Group". Below this is a label "Additional Info:" followed by a large, empty text area. The bottom section is labeled "Contact Person:" and contains four labels with corresponding text boxes: "First Name:", "Last Name:", "Phone:", and "E-Mail:". The "E-Mail:" text box has a small icon on its right side. At the bottom right of the dialog are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

Figure 9: Group Information Window

Information about a certain group can be viewed or edited by right clicking on the group and selecting '**Edit Group**' from the popup menu. A dialog with group's information will appear. Group information can now be edited. Right click on a group and select '**Remove**' from the popup menu to remove it. An alternative way is to select the test and click on the '**Delete**' button, which is located on the main toolbar. Removing a group also removes all its persons. Basic group operations can also be found from '**File|Base DB Operations**' from the program's main menu.

Please note that a group, which contains persons who have foreign references, from other HURDB compliant programs, cannot be removed.

6.3.2 Adding, Removing and Editing Persons

A new person can be added to a certain group by selecting the group from the tree view and clicking the '**Add Person**' button. A dialog, where information about the new person can be entered, will appear ([Figure 10](#)).

Information about a certain person can be viewed or edited by selecting the person from the tree view and clicking the '**Edit Person**' button. A dialog with person's information will appear. **Person information** can now be edited.

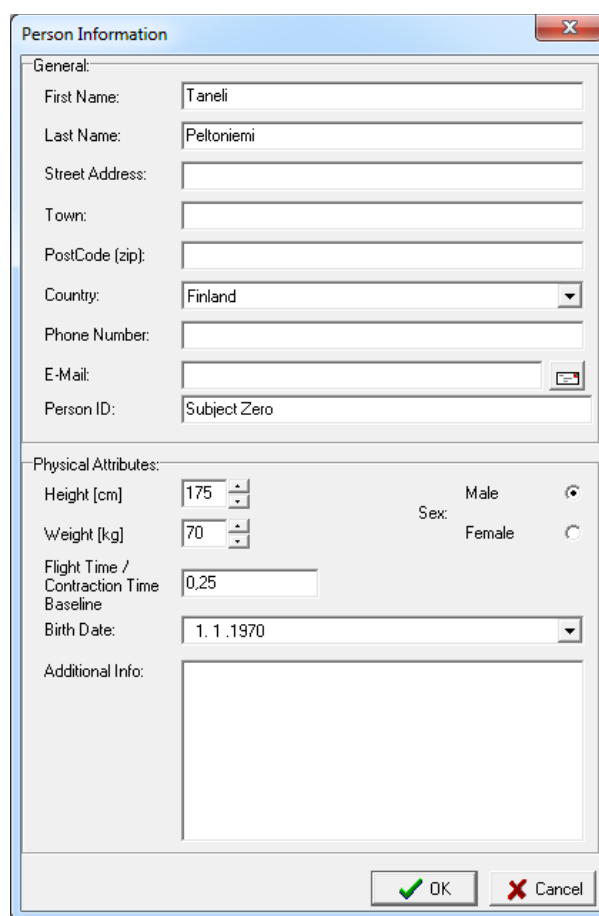
The image shows a 'Person Information' dialog box with two main sections: 'General' and 'Physical Attributes'. The 'General' section includes fields for First Name (Taneli), Last Name (Peltoniemi), Street Address, Town, PostCode (zip), Country (Finland), Phone Number, E-Mail, and Person ID (Subject Zero). The 'Physical Attributes' section includes Height (cm) (175), Weight (kg) (70), Sex (Male selected), Flight Time / Contraction Time Baseline (0.25), Birth Date (1.1.1970), and an Additional Info text area. At the bottom are OK and Cancel buttons.

Figure 10: Person Information Window

Information about a certain person can be viewed or edited by right clicking on a person and selecting '**Edit Person**' from the popup menu. A dialog with person's information will appear. **Person information** can now be edited. Right click on a person and select '**Remove**' from the popup menu to remove a person. An alternative way is to select the test and click on the '**Delete Selected Element**' button, which is located on the main toolbar. Removing a person also removes all its tests. Basic person operations can be also found from '**File|Base DB Operations**' from the program's main menu.

Please note that a person or persons tests who have foreign references, from other HURDB compliant programs, cannot be removed.

6.4 Searching the Database

Groups, persons or tests can be searched from the database by clicking 'Search' button. A search dialog will appear as seen in [Figure 11](#).

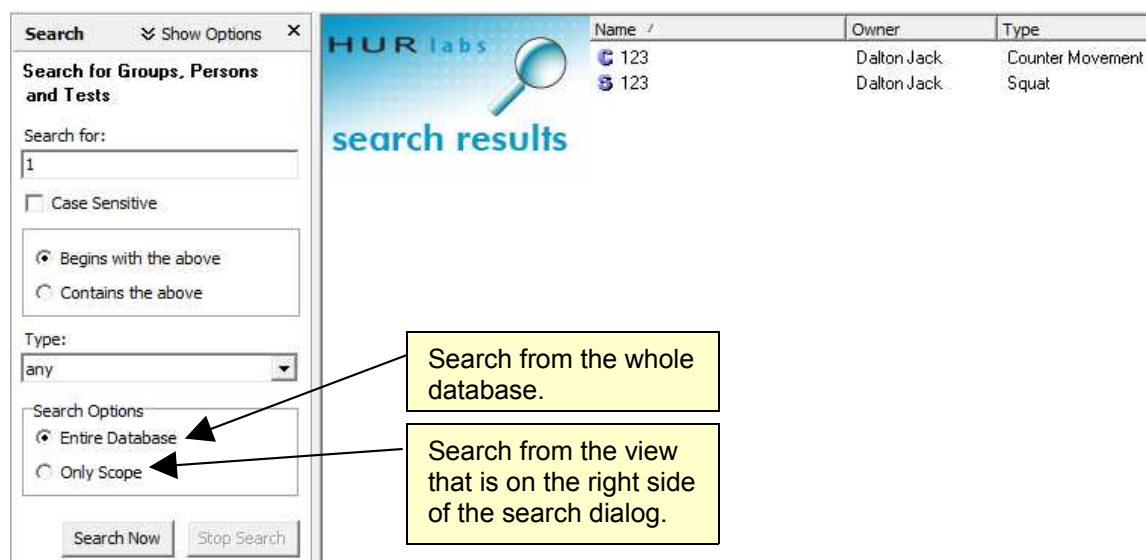


Figure 11: Searching the Database

Enter the known information about the target to be searched in edit box on the top of the window and click '**Search Now**' button to start search. Type can be group, person or test. In the search options, the '**Entire database**' option means that the whole database is searched and the '**Only scope**' option means that the view on the left will be only searched. The search results will be shown in the left side of the '**Search**' window. This is the fastest way to locate a certain group, person or test in the database.

6.5 Container

The container is a useful tool for selecting tests from different persons for comparison. Persons and groups can also be added to container. Items can be added to container by right clicking on items view and selecting '**Add to Container**' or '**Add all to Container**'. Right clicking on person or group gives an option to add all its tests to container.

The container can be viewed by clicking on the '**Container**' button. In the container there are options for filtering items, removing duplicate items or clearing the list. To compare the contents of the container, click on the '**Analyse Scope Data**' button.

6.6 Working with Tests

Tests, which belong to a certain person, can be viewed by selecting the person from the database tree.

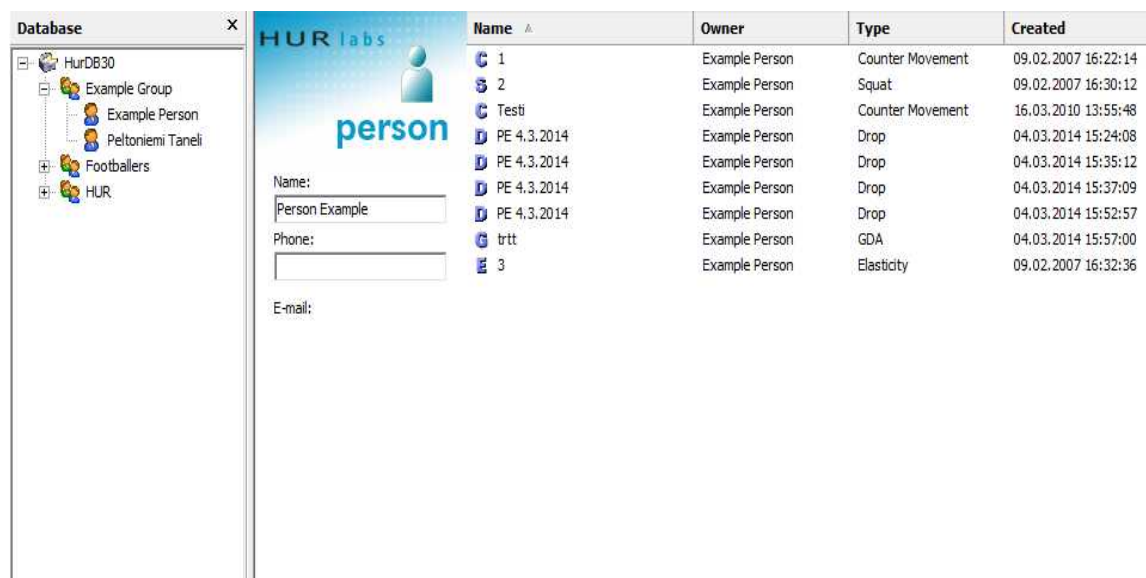


Figure 12: Tests

Owner means the person that made the test. Type tells you that what protocol was used when performing the test. Created is the time when the test was performed.

Tests can be analysed by double clicking on it or by right clicking on it and selecting **'Analyse'** from the popup menu.

Right click on a test and select **'Remove'** from the popup menu to remove it. Alternative way is to select the test and click on the **'Delete'** button, which is located on the main toolbar.

6.7 Making Backup of the Database

A backup of the current database can be made by selecting **'File|Backup'** from the program's main menu. Select the directory where to save the backup. The copy of the database will appear in a zip-file.

NOTE: Remember to make backups!

WARNING: A computer malfunction might result in data loss!

7 Working with the Force Platform

7.1 Automatic Machine Identification

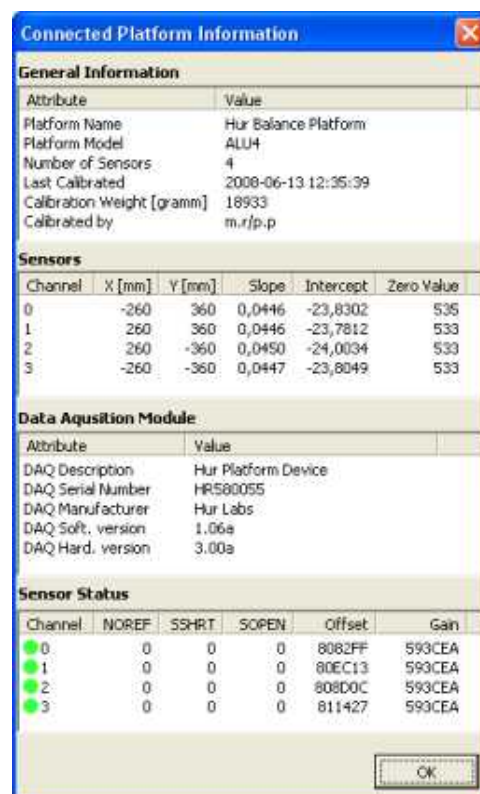
The program automatically 'knows' which machine is connected to the computer and adjusts the functions on the basis of the connected machine. Calibration information is stored in the platform. Every time the program is started, it tries to identify the connected machine.

When the machine connected to computer is changed to another, **HUR Labs Force Platform Software Suite** need not be restarted. All that is needed is to select '**Machine|Identify**' from the program's main menu.

7.1.1 Proper calibration

In order to get proper results from the **Force Platform**, the sensor values need to be okay. Select '**Machine|Identify**' from the program's main menu to see the current calibration values. [Figure 13](#) shows an example of sensor values. The calibration is definitely wrong if the slope values are over 0,05 or below 0,03.

General Data Acquisition is a helpful tool to see if the calibration was done properly. Measure the weight of your calibration weight after the calibration.



The screenshot shows a window titled 'Connected Platform Information' with a close button (X) in the top right corner. The window is divided into several sections:

- General Information:** A table with two columns: Attribute and Value.

Attribute	Value
Platform Name	Hur Balance Platform
Platform Model	ALU4
Number of Sensors	4
Last Calibrated	2008-06-13 12:35:39
Calibration Weight [gramm]	18933
Calibrated by	m.r/p.p
- Sensors:** A table with six columns: Channel, X [mm], Y [mm], Slope, Intercept, and Zero Value.

Channel	X [mm]	Y [mm]	Slope	Intercept	Zero Value
0	-260	360	0,0446	-23,8302	535
1	260	360	0,0446	-23,7812	533
2	260	-360	0,0450	-24,0034	533
3	-260	-360	0,0447	-23,8049	533
- Data Acquisition Module:** A table with two columns: Attribute and Value.

Attribute	Value
DAQ Description	Hur Platform Device
DAQ Serial Number	HR580055
DAQ Manufacturer	Hur Labs
DAQ Soft. version	1.06a
DAQ Hard. version	3.00a
- Sensor Status:** A table with six columns: Channel, NOREF, SSHRT, SOPEN, Offset, and Gain.

Channel	NOREF	SSHRT	SOPEN	Offset	Gain
0	0	0	0	8082FF	593CEA
1	0	0	0	80EC13	593CEA
2	0	0	0	808D0C	593CEA
3	0	0	0	811427	593CEA

An 'OK' button is located at the bottom right of the window.

Figure 13: Force Platform Identify Window

7.2 Calibration of the Force Platform

The force transducers of the **Force Platform** need not to be calibrated before any tests can be run with the unit, but it is advised to calibrate the platform when the platform is used for the first time. Calibration can be started by selecting '**Machine|Calibrate!**' from the program's main menu. The calibration window will appear as seen in [Figure 14](#).



Figure 14: Force Platform Calibration Window

The **Force Platform** calibration process consists of different phases: First the program registers the sensor values from the platform in upside-down position. The second phase is to put the calibration weight on every sensor. The third phase is to measure the Zero Values in upside down position. All phases need to be successfully completed to get valid calibration data. Instructions on the screen will guide the user through the process. As you proceed you can see the values given by the calibration, see chapter 7.1.1 Proper Calibration for help for these values.

Avoid using too light calibration weights. Calibration weight should be at least 10 kg heavy. The heavier the calibration weight, the better the calibration should be. Note that the max weight is 300 kg for a single sensor(older models have 200 kg sensors).

WARNING: A poor calibration can give incorrect results when performing the tests!

7.2.1 Restoring the previous calibration

Backup calibration can be restored by selecting '**Machine|Restore Calibration**' from the program's main menu. Clicking the '**Restore**' button restores the previous calibration.

A backup calibration can be taken when calibrating the platform. When user calibrates the platform the old calibration is stored in an ini-file. The current calibration is stored in the platform's memory.

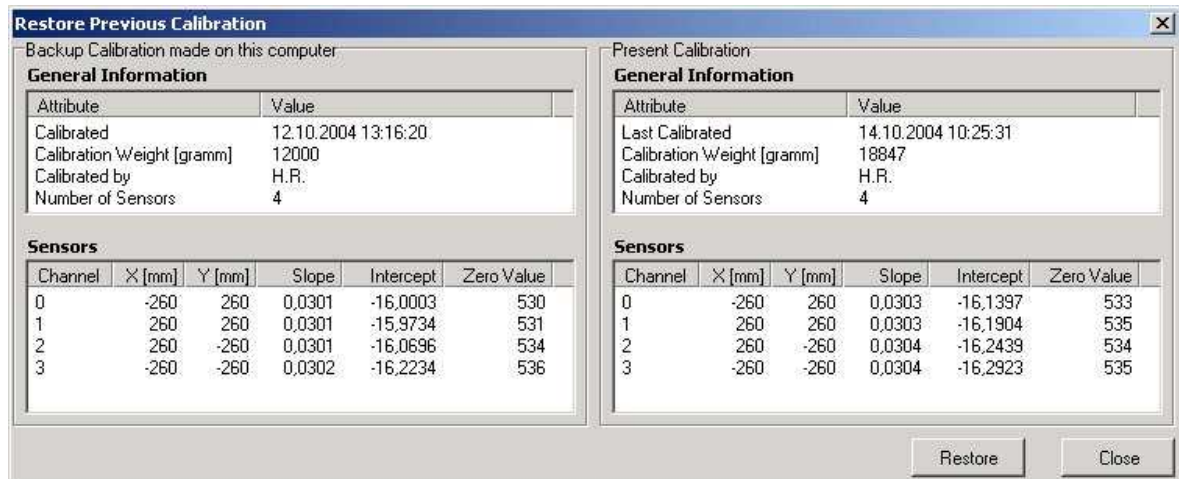


Figure 15: Restore Previous Calibration

7.3 Running Tests

HUR Labs Force Platform Software Suite includes the necessary tools to analyze a person's "jumping ability": Maximum force developed during the exertion phase, jump height, etc...

7.4 Test Preparations and safety

Check the following things before starting the tests:

- The surface of the platform is clean and not slippery
- The platform is placed steadily on the floor
- Sensors are on the same height with each others
- Calibration is done properly
- Clean testing area. USB cable or other objects shouldn't create risk of falling or tripping
- The platform is functioning properly
- The patient is fit for the test

WARNING: Neglecting test safety instructions can result in considerable danger to the user!

WARNING: Improper test preparations can cause incorrect test results!

7.4.1 Running Jump Test

Select first the test person from the database. Clicking the "Perform Test" button will start the default test. "**Perform Test**" button is only enabled when a test person is selected and the platform is connected. By clicking the "**Perform Test**" button's drop down button, you will see a menu where you can select the test protocol, see [Figure 17](#).

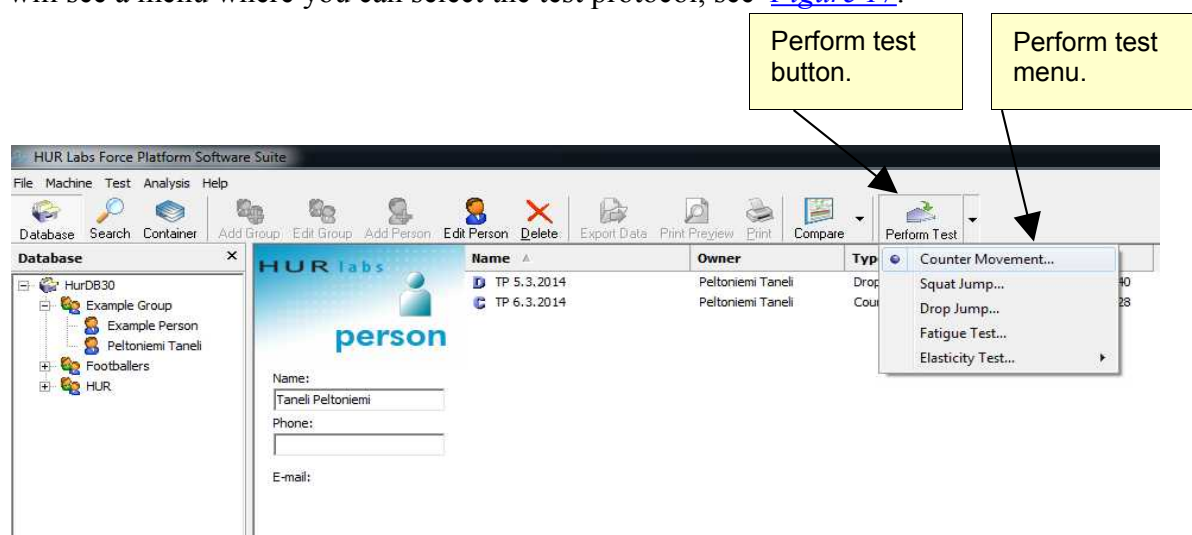


Figure 16: Select test to perform

Before going to the actual test, the platform's weight need to be measured. This is called as the zero values measurement. Make sure that no weight is applied on the platform during this measurement. Zero values measurement is done before every test.

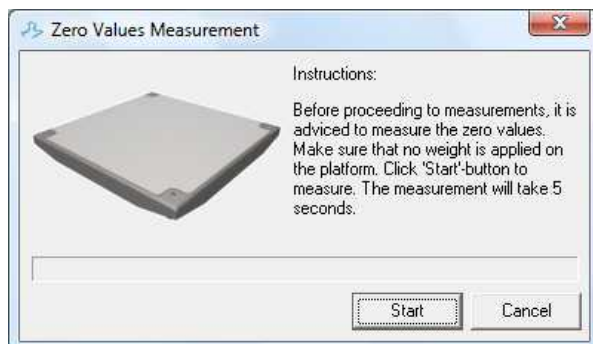


Figure 17: Zero values measurement

After the zero values measurement, a jump test window will appear as seen in [Figure 18](#):

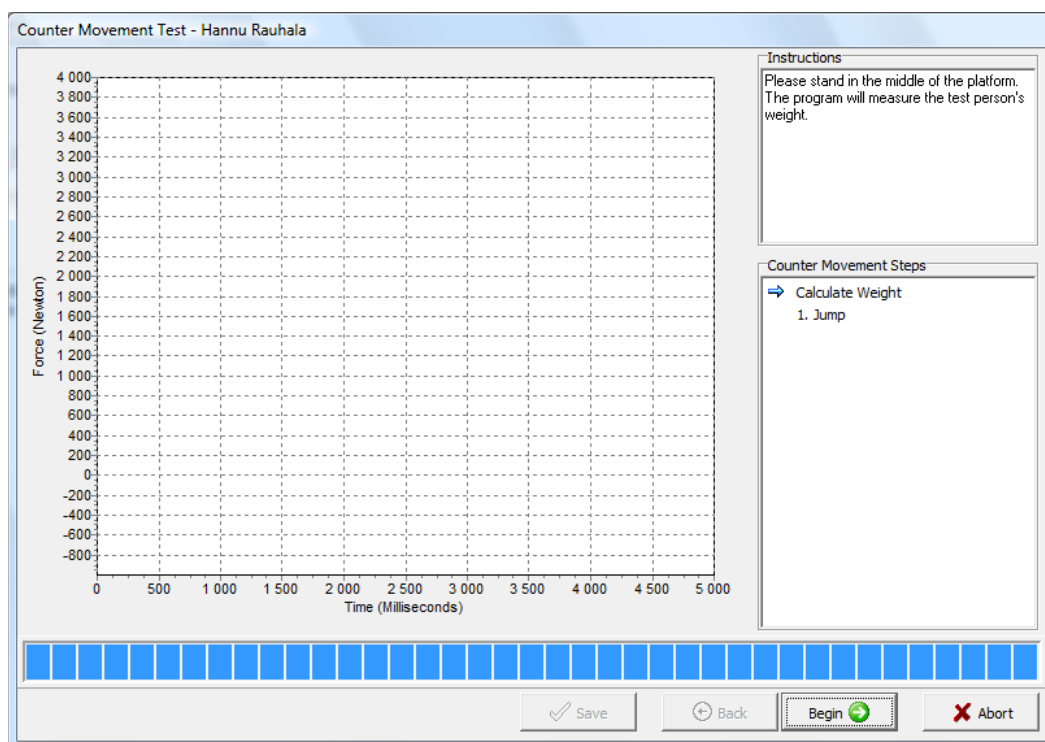


Figure 18: Performing test

At the beginning of the test the weight of the test person is measured. If weight checking is enabled, after every jump the weight is checked. If the checked weight differences too much from the original then the zero point can be measured again. Follow the instructions on the screen to complete the jump test. Push the 'Save' button after you have finished jumps.

NOTE: If connection to the platform closes during the test, replug the USB cable to the PC and repeat the performance.

7.4.2 Elasticity Tests

Elasticity tests can be run by selecting '**Elasticity Jump**' from the menu **Test** in the program's main menu. The routine is the same as in other tests, but there are off course more jumps to do. The user can create elasticity tests by selecting '**Create Elasticity Test from existing tests**' from the menu **Test** in the program's main menu. After that, a window will appear as seen in [Figure 19](#).

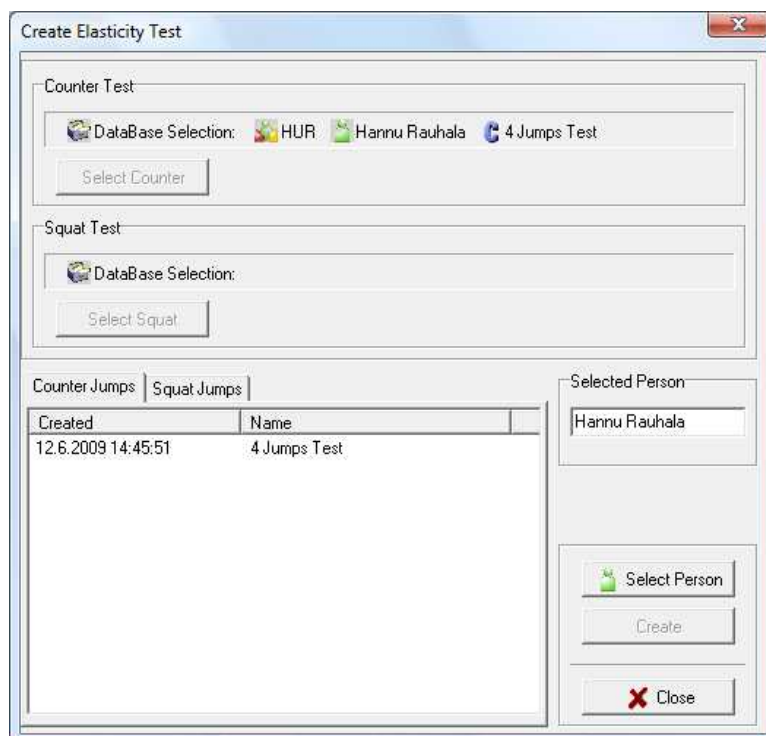


Figure 19: Create Elasticity Test Window

The user can add a test by double-clicking on it or clicking on the '**Select Counter**' button or the '**Select Squat**' button. The user can also change the person whose tests are shown by clicking on the '**Select Person**' button. It is possible to create a new elasticity test which counter movement part is done by a different person than the squat part is done. Finally when the counter movement test and the squat test are selected, the elasticity test can be created by clicking the '**Create**' button.

7.4.3 Fatigue Tests

Fatigue tests can be run by selecting '**Fatigue Test**' from the menu **Test** in the program's main menu. The user can then select the test duration; 15, 30, 45 or 60 seconds. The test can be only started after the test person is standing steadily on the platform. The center of pressure (COP) will be shown during the test on the screen. Test person's starting position is the same as in the Counter Movement jump. After the first jump, jumps will be continuously repeated until the test is finished. It is important that the test person lands on the platform after each jump. The use of the extension plate is suggested.

NOTE: Landing off the platform can result into damage to the test person.

8 Analysis and comparison of test results

The way the tests can be selected to be analyzed or compared are explained in chapter 6.6 Working with Tests.

8.1 The Analysis of a Jump Test

When a jump test is selected to be analyzed, the analysis window appears as seen in [Figure 20](#)

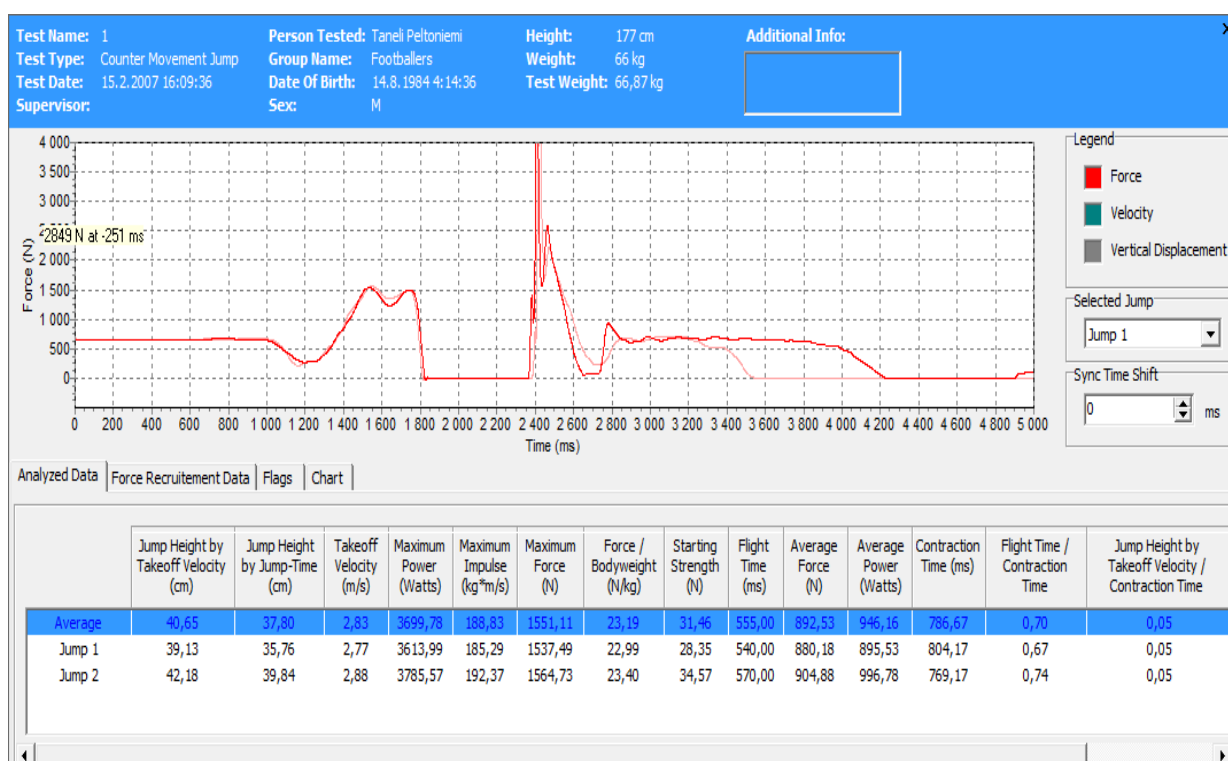


Figure 20: Jump Test Analysis Window

In the header of the window there are general information concerning performed test. Lower part of the analysis window includes test results, force recruitment information, possibility to change calculation range and chart related options.

Analyzed Data:

- Jump Height by Take Off Velocity (cm)
- Jump Height by jump-time (cm)
- Takeoff Velocity (m/s)
- Maximum Power (Watts)
- Maximum Impulse (kg*m/s)
- Maximum Force (N)
- Force / BodyWeight (N/kg)
- Starting Strength (N)
- Flight Time (ms)
- Average Force (N)
- Average Power (Watts)

- Contraction Time (Counter and Squat)
- Flight Time to Contraction Time ratio (Counter and Squat)
- Jump Height by Takeoff Velocity / Contraction Time (Counter and Squat)
- Flight Time / Contraction Time % of Baseline (Counter and Squat)
- Flight to Contact Ratio (only in drop jump analyze)
- Reactive Strength Index RSI (only in drop jump analyze)

Force Recruitment Data:

- Interactive calculation of the time and rate of change when giving an interval in Newtons (N) of percent (%)
- Fixed precalculated numbers regarding Force Recruitment
- Maximum Force Recruitment

Fatigue analysis allows the comparison of different parts of the test. Test can be divided into different parts by jump count or by seconds. Average results will be shown from each part. Jump Results page will also show the balance, the center of pressure (COP), during the test. Force recruitment is not available in fatigue analysis.

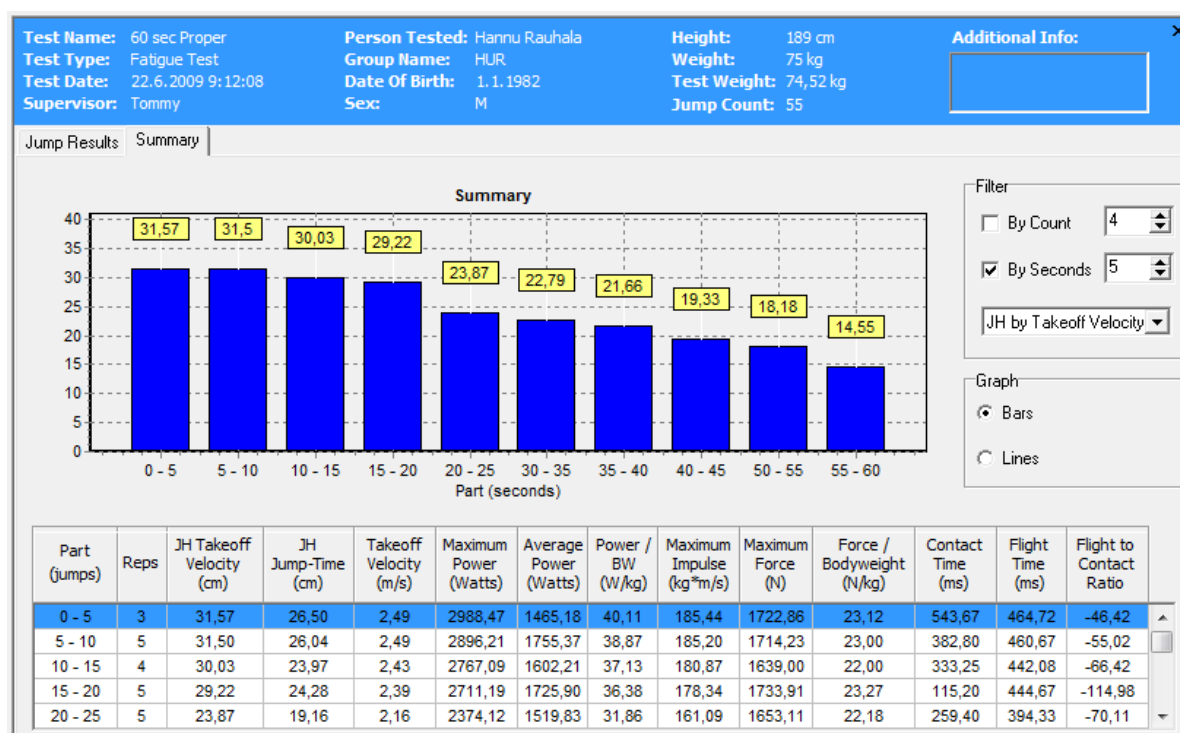


Figure 21: Fatigue test analysis

8.1.1 Additional Features

The graph can be zoomed and moved, this enable you to see the points much better.

In Flags – tab page you can include flags. Flags are used to manually select the area that is used to calculate data. You can reset the flags to their original positions by clicking the **'Reset Flags'** button.

In Chart – tab page you can adjust the line placements in the graph with the **'Arrange**

Lines' and the **'Reset Lines'** buttons. Velocity and vertical displacement lines can be added from here. Also the axis values can be changed from here depending on the shown lines.

By clicking the right mouse button, a popup-menu appears. Here you can choose several things:

- Copy the results to the clipboard
- Copy all the values of the graph to the clipboard
- Align Lines
- Chart
 1. Force
 2. Velocity
 3. Vertical displacement
- Left Axis
 1. Force
 2. Velocity
 3. Vertical displacement
- Right Axis
 1. Force
 2. Velocity
 3. Vertical displacement
 4. None

8.2 The Comparison of Jump Tests

Tests can be compared by selecting a group, person or test from the list and selecting **'Analysis|Test Compare'** or just by clicking the button **'Compare'**.



Figure 22: Selecting to compare

It is possible to compare all the tests of one person, or the tests of all the persons of a group. When a group is selected, as seen in [Figure 22](#) then there exists the possibility to choose between comparing all the tests of the group or only the last test of each person of the group.⁹

When multiple jump tests are selected to be compared, the jump test comparison window appears as seen in [Figure 23](#).

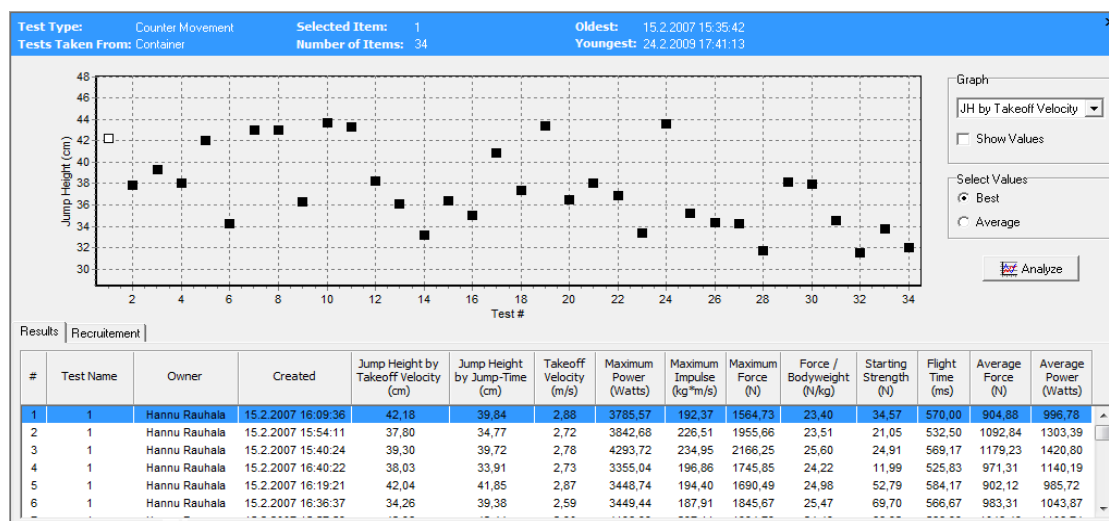


Figure 23: Jump Test Comparison Window

The following information is shown in the jump test comparison grid:

- jump height by takeoff velocity
- jump height by jump time
- takeoff velocity
- maximum power
- maximum impulse
- maximum force
- maximum force per kg bodyweight
- starting strength
- flight time
- average force
- average power
- contraction time (counter and squat)
- flight time / contraction time (counter and squat)
- jump height by takeoff velocity / contraction time (counter and squat)
- flight time / contraction time & of baseline (counter and squat)
- flight to contact ratio (only in drop jump comparisons)
- reactive strength index RSI (only in drop jump comparisons)
- rate of change starting from 0 until 30% of the force
- rate of change starting from 30 until 60% of the force
- rate of change starting from 60 until 90% of the force
- maximum force recruitment

8.2.1 Additional Features

When the cursor of the mouse is moved over the graph and the left mouse button is clicked, the corresponding line in the grid will be selected. Clicking the '**Analyze**' button the selected test is analyzed.

When a test is selected in the grid, the corresponding point on the graph will be highlighted and the test information is displayed in the header field.

9 Performing Jumps

The jumps should be made roughly as in the [Figure 24](#), [Figure 25](#) and [Figure 26](#).

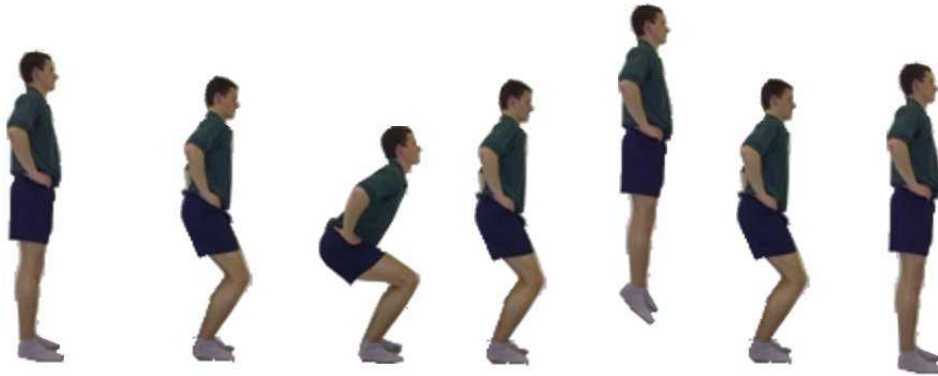


Figure 24: Counter Movement Jump



Figure 25: Squat Jump



Figure 26: Drop Jump

10 Troubleshooting

If there are problems with the connection to the platform, please try the following:

- Check that the platform is correctly connected to the computer.
- Check that Windows recognizes the platform. Drivers can be found from the program directory.
- If the **HUR Labs Force Platform Software Suite** gives an error saying that ‘Set_Ident Failed!’ or the program doesn’t identify the platform, then try to unplug the USB-cable and replug it. Restart the software.

11 Datasheet

Force Platform (FP4)

Measuring unit	kg
Measuring range	0-300kg/sensor
Sensor type	Force Transducer
Manufacturer type	TY2002
Non linearity	+/- 0,02% FS
Combined error	0,03%
Sensitivity	2mV/V +/- 0,25%
Overload capacity	150% / sensor
Operating voltage	Taken from USB
USB connection	B-type plug
Resolution	16 bits*
DAQ software	Updated via USB
Maximum sampling rate	1200 Hz
Application software	Force Platform Software Suite
Operating System	Windows XP/Vista/7
EMC	SGS EMC test report 240268-2
Storage conditions	Dry, room temperature.
Operating conditions	Indoors
Dimensions (h x l x w)	610x610x60mm
Weight (without package)	14,0kg
Weight (with package and accessories)	16,4kg
Bag weight	2,4kg
Bag dimensions (h x l x w)	650x650x75mm
Warranty	1 year

* depends on the sampling rate

Note:

When device lifecycle ends, pay respect to local waste disposal rules.

