

Quintic Software

Tutorial 10

Quintic CSV Synchronisation

(Quintic Biomechanics v26 only)

Synchronising External Hardware with Quintic Videos

In the Quintic Biomechanics v26 software you can synchronise data from an external piece of hardware using the new CSV sync function.

This function is flexible to allow synchronisation from any hardware that can export to a .CSV file.

Examples include:

- Pressure plates
- Force plates
- EMG systems
- Cycling power cranks
- Pressure insoles
- And much more...

This tutorial will guide you through the process of synchronising your exported .CSV file with your Quintic videos.

If your hardware can export data to an Excel file, you can then choose 'save as' and select '**CSV (Comma delimited) (*.CSV)**' when saving. This will create an Excel file in the correct format to use for synchronisation.

If you require information on how to export to CSV from your external hardware, please contact the hardware supplier directly.

1. File Name and Location

First you need to ensure that the .CSV file you have exported from your external hardware is located in the same folder as your video file.

You then need to name the file to match EXACTLY the same name as the related video file. For example...

Video File Name: jump1.avi
CSV File Name: jump1.csv

2. CSV File Contents

The Quintic software will read the information from the .CSV file when opening it up for synchronisation with the videos. In order for the data to be meaningful, it should be arranged in columns, with the first row of each column containing the name for the variable/series.

- The first column should contain the variable 'Time' with units in seconds. This is used to synchronise the data with the frames of the video.
- The rest of the columns should then contain your data variables.

Below is an example CSV file that has been exported from a force plate and then opened in Excel.

	A	B	C	D
1	Time (s)	Fx (N)	Fy (N)	Fz (N)
2	0	-0.07678	3.343002	634.0088
3	0.000992	0.157671	3.342997	634.1862
4	0.001984	-0.25262	3.401682	634.8368

The data can be edited in Excel if required and saved as a .CSV file by choosing 'save as' and selecting 'CSV (Comma delimited) (*.CSV)' when saving. This will create an Excel file in the correct format to use for synchronisation.

More variables (maximum 16) can be included by adding additional columns in the same format. For example, if you wish to show data captured from a pressure plate, as well as the above data captured from a force plate, you can do so by adding more columns containing the data.

NB: Only one CSV file can be opened alongside a video. Therefore in order to display data from more than one external piece of hardware, all the data needs to be stored in one CSV file.

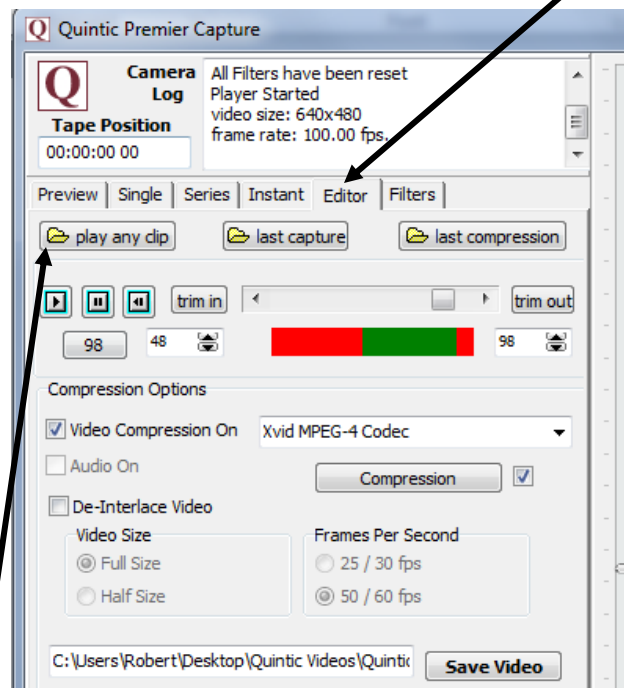
3. Synchronisation

Video Trimming

Open up the video in the main Quintic window and determine your key frame for synchronisation. This can either be the first key frame (i.e. heel contact) or a form of trigger (i.e. a trigger light) depending on the data from your external software.

You will need to trim the video to start at that key point. This first frame will be the frame that your exported CSV data will be synchronised with.

To trim the video you will need to open the video in the Quintic Editor. This can be found under the 'Camera' tab, within the 'Single Camera Capture' function. When the single camera system opens you will need to go to the 'Editor' tab.



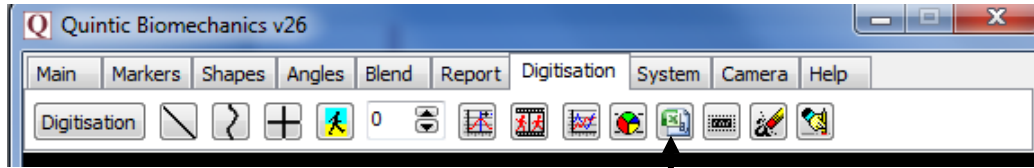
Click on the '**Play any Clip**' button and navigate to the file you wish to trim, double click on the file and it will load and begin to play in the preview window.

You can then use the 'Trim in' and 'Trim out' buttons to reduce the length of the video to include only the key frames that you require. Move the video to the first key frame, identified as above, and click 'Trim in'. You will see that the first section of the bar is now red, indicating the section of the video that will be removed. If required you can also trim the end of the video using the 'Trim out' function.

When you have selected the settings you wish to change click on the '**Save Video**' button and select a file name and folder to save this video file.

CSV Sync

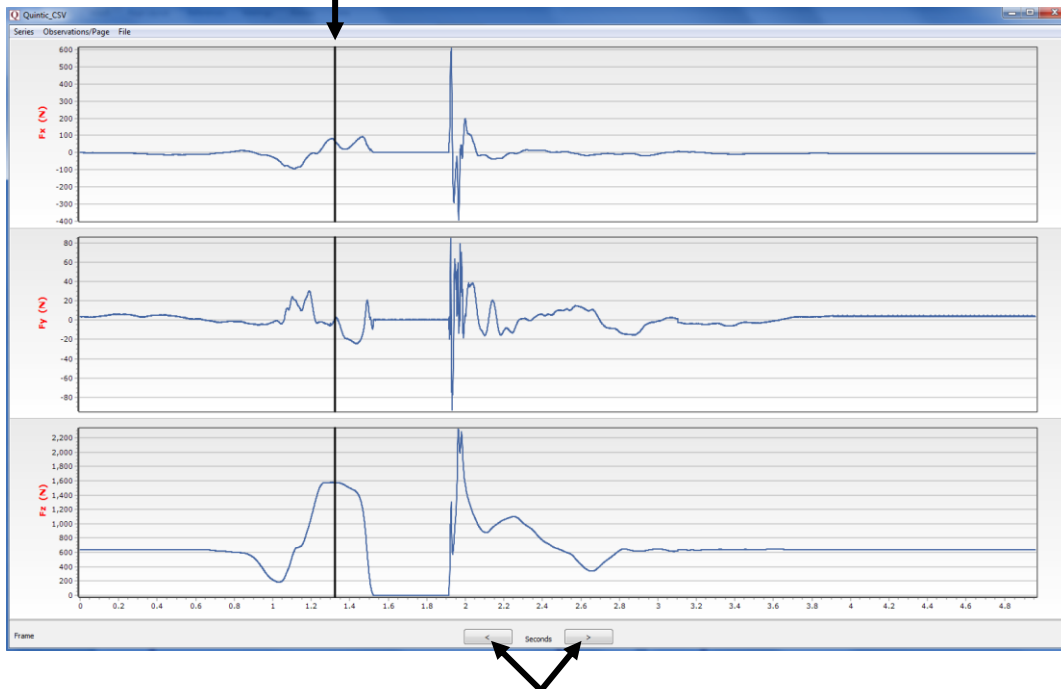
Next go to the 'Digitisation' tab of the software and click on the CSV function button shown below.



CSV Function

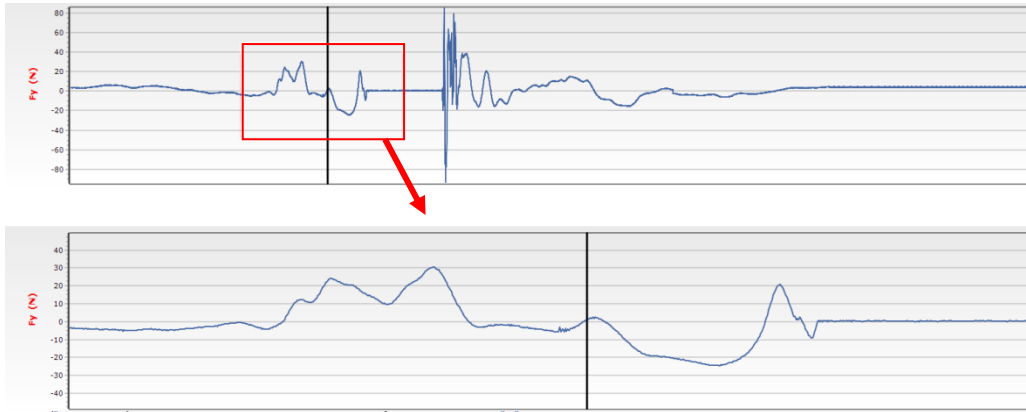
The CSV window will open. As default 'All Observations' will be shown (i.e. all data points). Below is an example of pressure data collected from a counter movement jump on an RSscan pressure plate.

The interactive black line indicates the current frame of the video.



You can progress the graph through the CSV data points using these arrows.

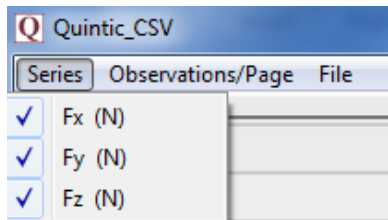
You can zoom in on a specific portion of a graph by dragging the mouse over the area, as shown below.



4. Number of Variables and Observations

Number of Variables

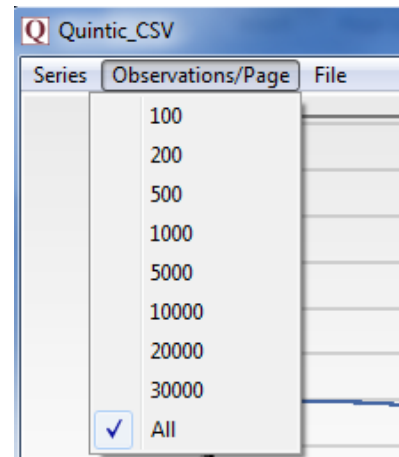
To select which variables are displayed click on 'Series' and then tick the variables you wish to display.



You can choose a maximum of 8 variables from a list of up to 16. These are the columns in your CSV file.

Number of Observations

To change the number of observation/data points shown, click on 'Observations/Page' and select the relevant number.



5. Save and Print

Within the 'File' dropdown menu you will find options to...

- Copy the graphs to clipboard
- Save graphs as a JPEG image
- Print graphs directly from the software

