



TrampoLine User Manual



MA/MSc in Music Technology
Electronic Musical Instrument
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use this page for your notes





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Introduction



Congratulations on your purchase of the **LVTEC TrampoLine™**. This unique instrument allows the user to dynamically control various musical parameters, in order to create innovative musical material.

The hardware consists of a ergonomically-designed tabletop interface, which has 8 stretch sensors that can be plucked, and a central control bowl that can be tilted, rotated and angled, in order to control all parameters.

For even more control, the **TrampoLine™** comes with software **TrampoWare™** v1. This software gives the user the freedom to change many different parameters, and to fine-tune the instrument to the player's specific requirements. This software requires Pure Data to be installed on your computer.



You can download PD for your platform from the following locations:

Windows

http://puredata.info/downloads/md5sum/Pd-0.39.3-extended.exe.md5/at_download/file

Mac OS X 10.3

http://puredata.info/downloads/md5sum/Pd-0.39.3-extended-macosx103.dmg.md5/at_download/file

Mac OS X 10.4 PPC

http://puredata.info/downloads/md5sum/Pd-0.39.3-extended-macosx104-powerpc.dmg.md5/at_download/file

Mac OS X Intel

http://puredata.info/downloads/md5sum/Pd-0.39.3-extended-macosx104-i386.dmg.md5/at_download/file

Features



Power

USB

Controls

8 x variable resistance stretch sensors

X & Y axis accelerometer

Features

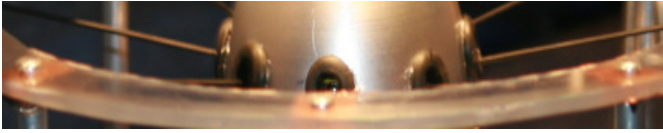
Solo and muting functions

Tuning function

Controllable delay, reverb, filtering and panning effects

Variable waveform synthesis

User-Friendly GUI



Package content

Your TrampoLine package should include the following items:

USB cable

TrampoLine Instrument

TrampoWare™ v1 CD

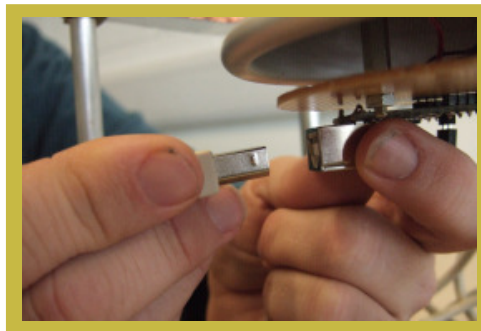
>>>1

Using the instrument



Connecting the Instrument

1. Check that the USB cable is plugged into the port at the bottom of the control bowl.



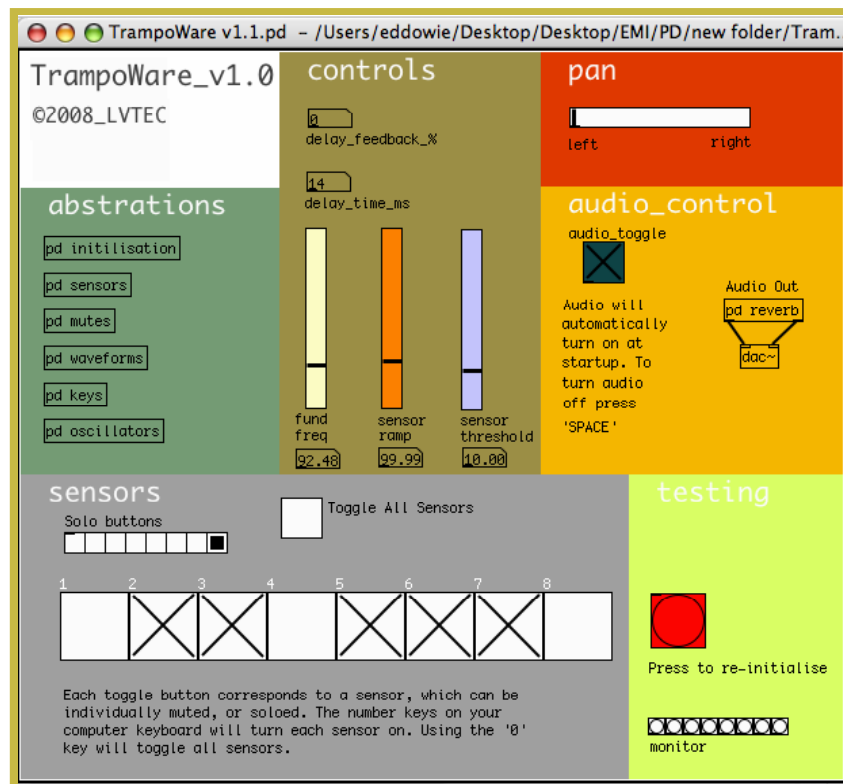
2. Plug the other end of the USB cable into your computer.

The USB cable provides the instrument with power, and also sends data to your computer system.



Loading TrampoWare™

1. Install Pure Data on your computer (the web addresses are printed in the introduction – <http://puredata.info>)
2. Insert the CD and load the file **TrampoWare v1.0.pd**. The instrument should immediately work on start up. If there is no sound, try pressing the 're-initialisation' button on the lower right of the screen (pictured below).



Using the instrument



3. The instrument should immediately work on start up. As long as the sensors are working you should see the buttons on the bottom right flashing as indicated below.).



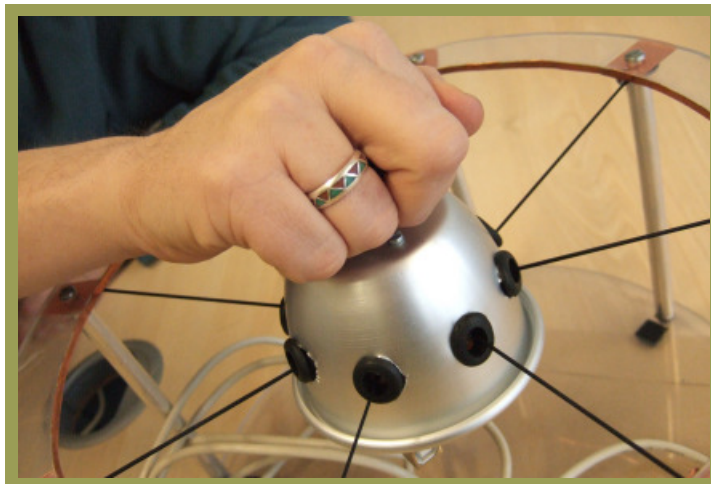
If these buttons do not flash, try pressing the 're-initialisation' button on the lower right of the screen (pictured below).



You should be ready to start playing the **TrampoLine™** now!



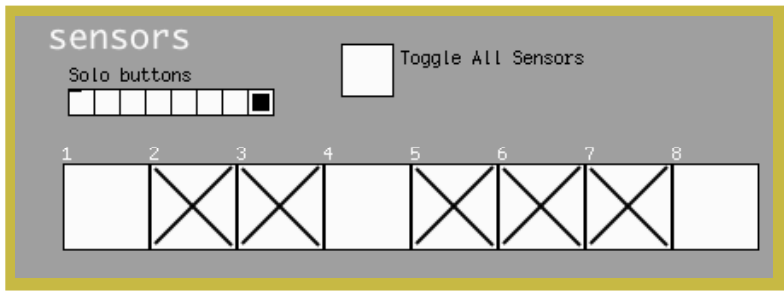
To play the TrampoLine™ place your hand on the control bowl as indicated below.



Each sensor corresponds to one tone, the pitch of which can be controlled by stretching the sensor. At start-up, each sensor will be turned on. The on/off state of each sensor is indicated in the 'sensors' part of the GUI (shown overleaf).

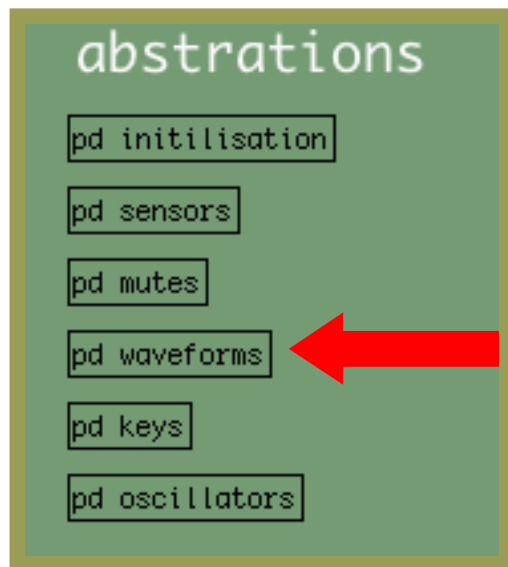


Using the instrument



Each sensor can be toggled on and off with the number keys (1-8) on the computer keyboard (the '0' key on the keyboard toggles all sensors on and off). In addition, each sensor can be soloed by pressing the relevant solo_button.

Each sensor can be plucked to sound a note. When the sensor is slowly stretched, no sound will play, meaning that notes are only triggered when sudden movements are detected.

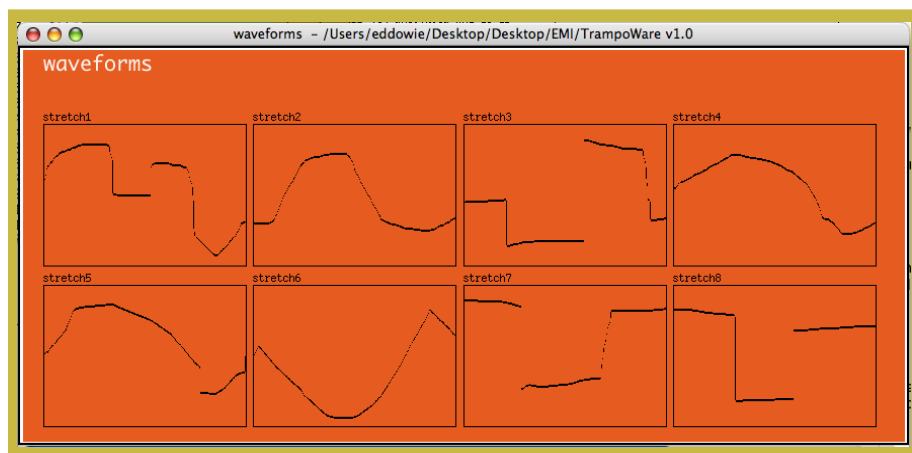


The waveform for each tone can be viewed, and adapted by pressing on the 'pd sensors' patch (as indicated by the arrow below).



Using the instrument



A new window will open with a graph of each sensor's corresponding waveform (as pictured).



To change any of the waveforms, simply click on any of the lines drawn, and re-draw the required waveform shape. This will have an immediate effect on the timbre of each tone.



In addition to the control of each tone, a series of spatial, timbral and temporal effects can be used. Tilting the bowl (or even the whole instrument) in various directions, controls the parameters of different effects. The x and y angles control the delay time and feedback respectively, and also the panning from left to right. When the bowl is angled forward, there is boosting of higher frequencies (the angle controls the cut off of this hi-pass filter. These parameters allow the user to have a great amount of control over the sound, and allow the user to create complex and innovative sonic material.

We hope you enjoy playing and creating with your

TrampoLine™

Troubleshooting

We hope that you are able to use the TrampoLine without a problem, but here are some answers of possible questions.

Q I can't load **TrampoWare™**

Solution one Make sure you have installed the correct version of Pure Data (see Introduction)

Solution two Make sure that the file **TrampoWare v1.0.pd** is in the same folder as the following files:

adsr~.pd
tposc~.pd
tprange.pd
tsp.pd



Q I can't hear any sound?

Solution one Make sure that the audio is turned on. You can toggle this on and off with the SPACEBAR on your computer keyboard.

Solution two Press the re-initialisation button to reset the serial port. Sometimes this can get stuck.

Solution three Check that at least one of the sensors is turned on. Remember that the keys on your computer keyboard toggle the



Troubleshooting



Q The sensors don't work.

Solution one

The stretch sensors are quite sensitive and should be handled with care. Consequently, the range of values that the software is looking for changes. If the tones are constantly playing (even when the sensors are in their position of rest), the lower value of the corresponding sensor needs to be raised slightly. Equally, if notes are not playing, then it is possible this lower value needs to be lowered. In order to change these parameters, click on the 'pd sensors' patch, as indicated on the following image.

abstractions

pd initalisation

pd sensors ←

pd mutes

pd waveforms

pd keys

pd oscillators

When this patch is opened a new window will open that contains 8 subpatches that convert the data coming from the sensors to a suitable range for use. To solve the above problem, observe each sensor one by one, checking that the range of values coming out the left inputs (S) of each subpatch are within the ranges of arguments displayed on the tpsp object (L & U – pictured below). Click 'Command' and 'E' on the computer keyboard, then click on the tpsp object and change the L & U values so that they correspond with the incoming data.

Lower range (L) Upper range (U)

