YETI TOOL

EASYCUT V1.0
USER MANUAL

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1 EasyCut's Screens

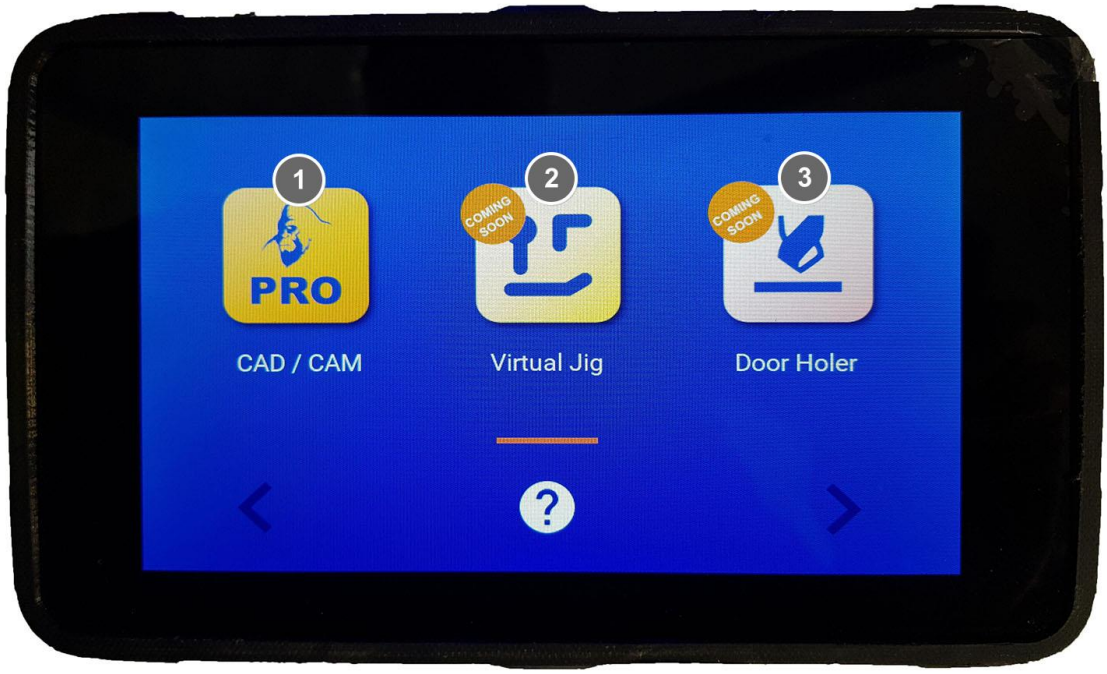
1.1 Disclaimer screen

Please take note of all the warnings, mechanical cutting tools can cause serious injury if used in an improper way.

Do Not use SmartBench unless you have read and familiarised yourself with the user manual which can be found on our downloads page www.yetitool.com/support/downloads

To proceed you need to confirm you have read the manual, are competent to use and are aware of the safety warnings.

1.2 Main lobby screen



1. PRO CAD / CAM

   Use this with files you have processed through your CAM package. You will need to have a GRBL generated GCode file saved in your system.

2. Virtual Jig - Coming soon

   The ability to draw shapes in EasyCut and process them directly with SmartBench

3. Cutting Apps (Door Holer, Kitchen Counter, Etc,) - Coming soon

   Apps designed for specific jobs where dimensions are input directly into EasyCut.

1.3 Core functions

The core function buttons appear on all screens

1. Home button – This is where SmartBench finds it's 0, 0, 0 coordinates and ***MUST*** be carried out prior to any operation.

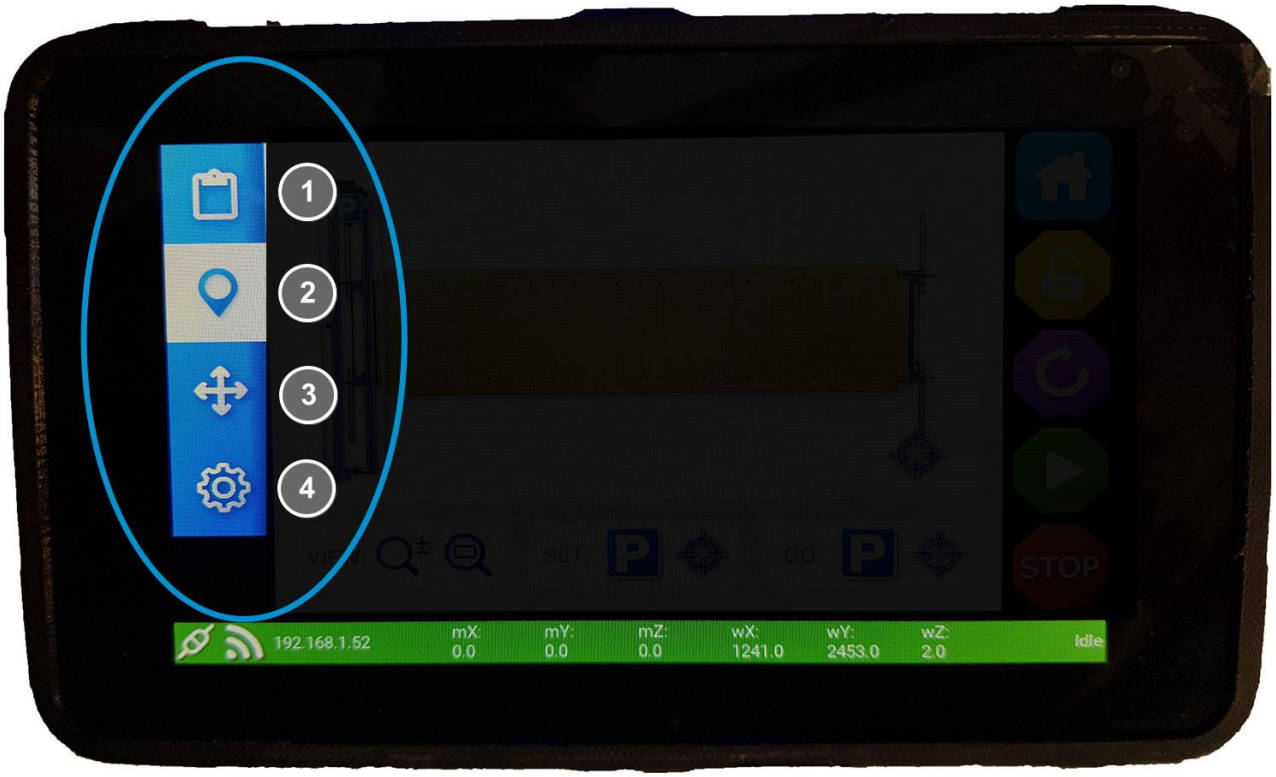
2. Unlock button – Unlocks EasyCut after an alert screen has been displayed

3. Reset button – Resets EasyCut after the unlock button has been pressed and allows continued operation

4. Run button – opens the job run dialogue screen

5. Stop button – stops SmartBench during any operation

1.4 Main screens



1. File Screen – Choose, open, delete, change files

2. Map Screen - Overview of the job, Set or Go to Park and X/Y Datum

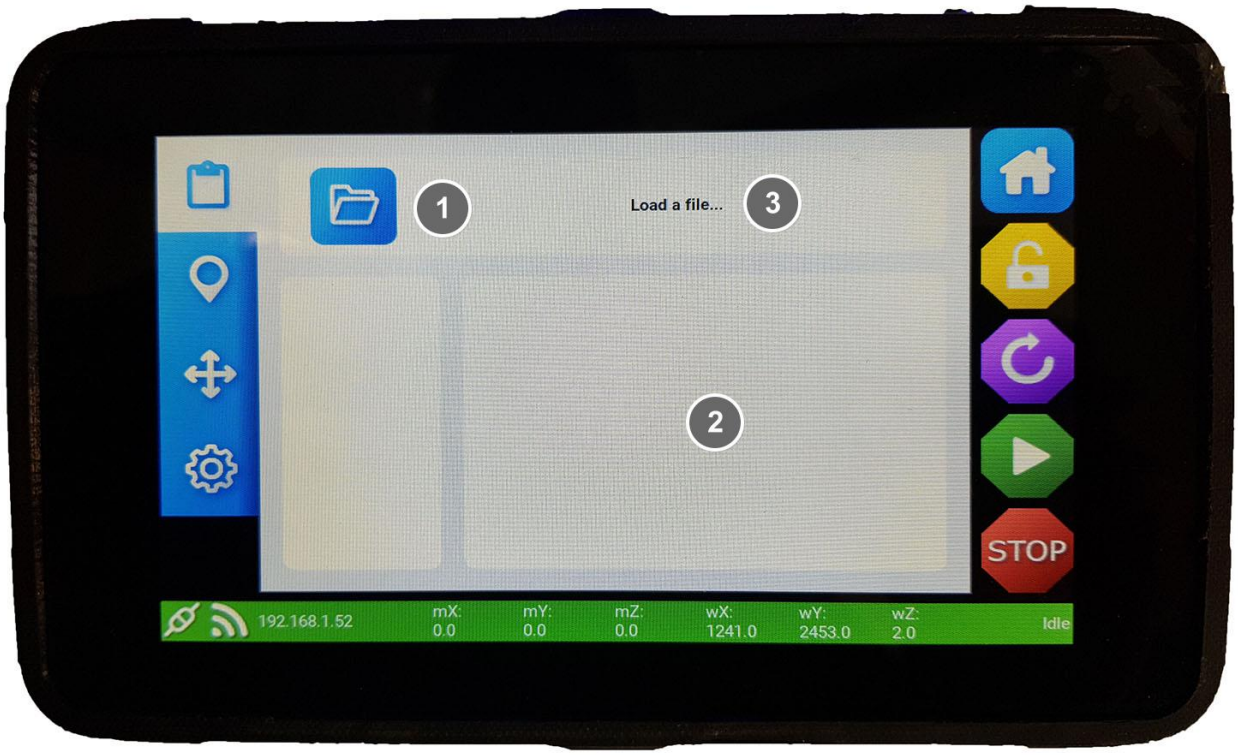
3. Move Screen – Manual move X, Y, Z control move speeds, turn on/off spindle and extraction

4. Settings Screen – Network Settings, Reboot, SW updates and GCode editor

1.5 Footer bar

1. Serial connection established
2. WiFi indicator – the status of EasyCut's connection to your WiFi network
3. IP address - EastCut's IP address on your local network
4. Machine coordinates – Tool head's position relative to the home position
5. Work piece coordinates – Tool head's position relative to the job's datum position
6. SmartBench status

1.6 File load screen



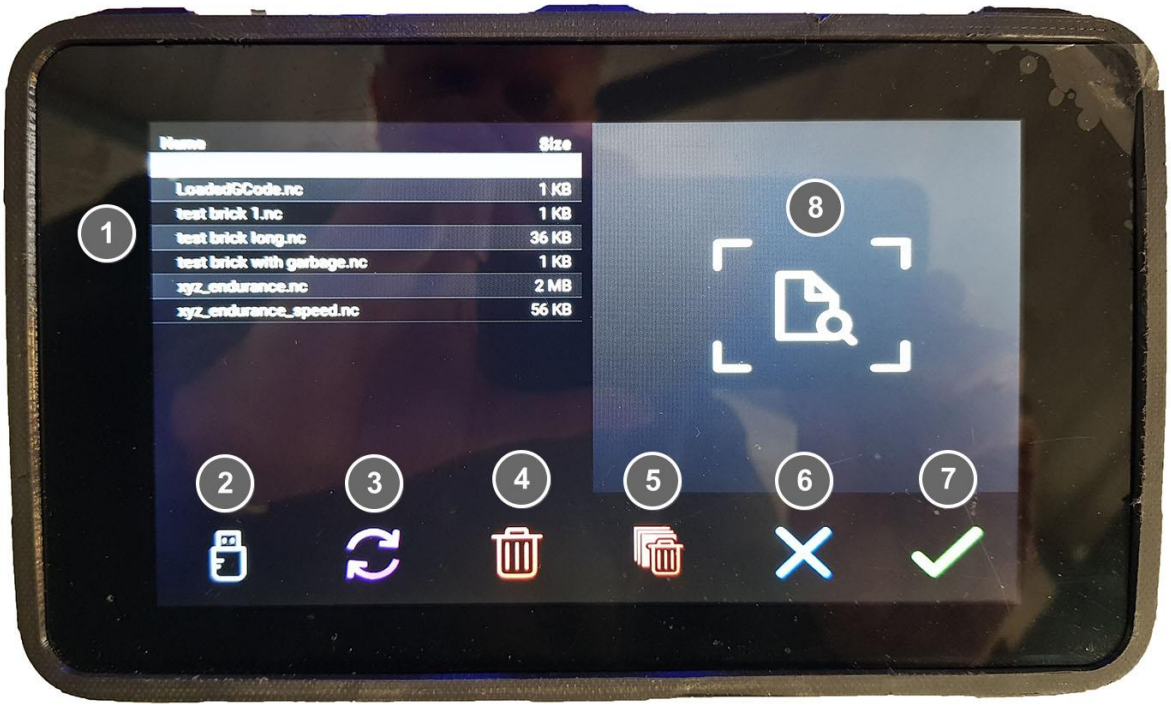
1. Open File explorer – Opens the file explorer screen

2. Tool path viewer – Displays the top 1000 GCode lines of the file you load.

3. File Name – Displays the name of the file loaded

Quick Link - Go to File Section

1.7 File explorer screen



1. File list – The list of files available for selection
2. Load from USB – Used if loading from a USB stick
3. Refresh – Refreshes you file list
4. Delete – Deletes your file from the file list
5. Multiple delete
6. Close file explorer – Do not process any changes and return to file load screen
7. Select file – Process all changes and return to file load screen
8. File image (if any)

Quick Link - Go to File Section

1.8 File Run screen

1. Stop Job
2. Pause Job
3. Increase or decrease feed speed on the fly
4. Z height graphic

1.9 SmartBench Map screen

1. SmartBench graphical overview

2. X/Y Datum point – The current position of the X/Y datum point

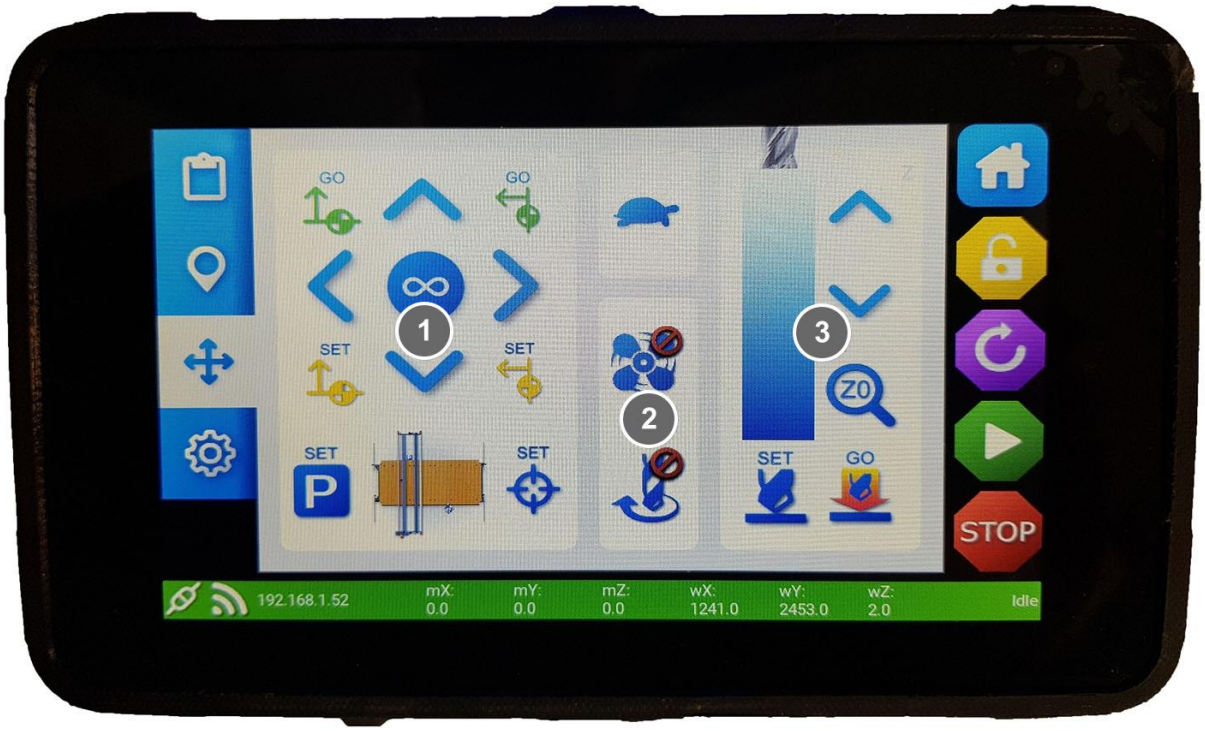
3. Park position – The location the head goes to when you use the Park function

4. Display Zoom – Zoom your display

5. Set Park and X/Y Datum point – Set a new position Park or X/Y Datum point positions

6. Go to Park or X/Y Datum point – Take the Z Head to the set Park or X/Y Datum position

1.10 SmartBench move screen overview



1. 1.10.1 - X/Y Moves and settings
2. 1.10.2 - Additional Controls
3. 1.10.3 - Z Moves and settings

1.10.1 X/Y Axis Movement

1. X Axis movement
2. Y Axis movement
3. Distance of X/Y travel
4. Speed of X/Y/Z travel
5. Go to current X Datum point
6. Go to current Y Datum point
7. Set current X position as X Datum point
8. Set current Y position as Y Datum point
9. Set current X/Y position as Park point
10. Set current X/Y position as X/Y Datum point

Quick Link – Go to 3.2 Control

1.10.2 Additional Controls

1. Extraction On/Off

2. Spindle On/Off

Quick Link – Go to 3.2 Control

1.10.3 Z Axis Movement

1. Z Axis info panel
2. Z Axis movement
3. Z Probe
4. Manually set Z height
5. Go to the current set Z Height

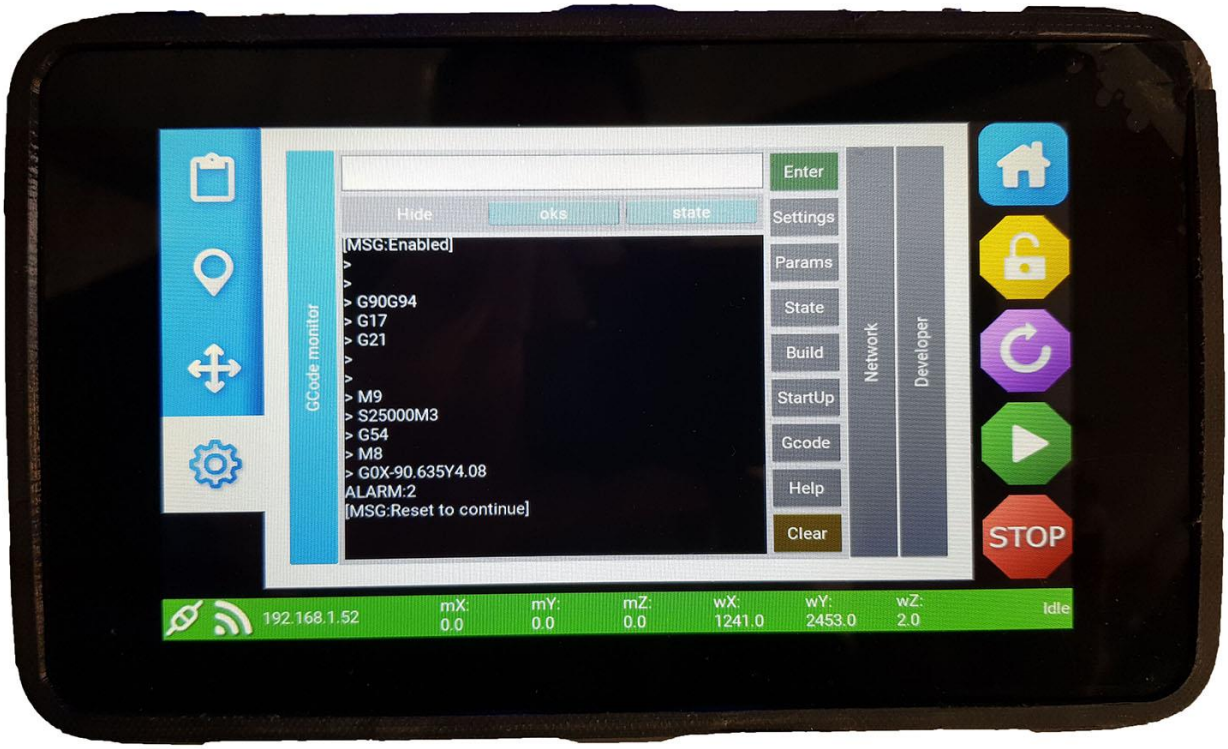
Quick Link – Go to 3.2 Control

1.11 Settings screen overview

1. 1.11.1 - GCode editor
2. 1.11.2 - Network setup
3. 1.11.3 - Developer functions (do not use unless instructed by customer support)

1.11.1 Settings - GCode Editor

For advanced users only



1.11.2 Settings Network setup screen

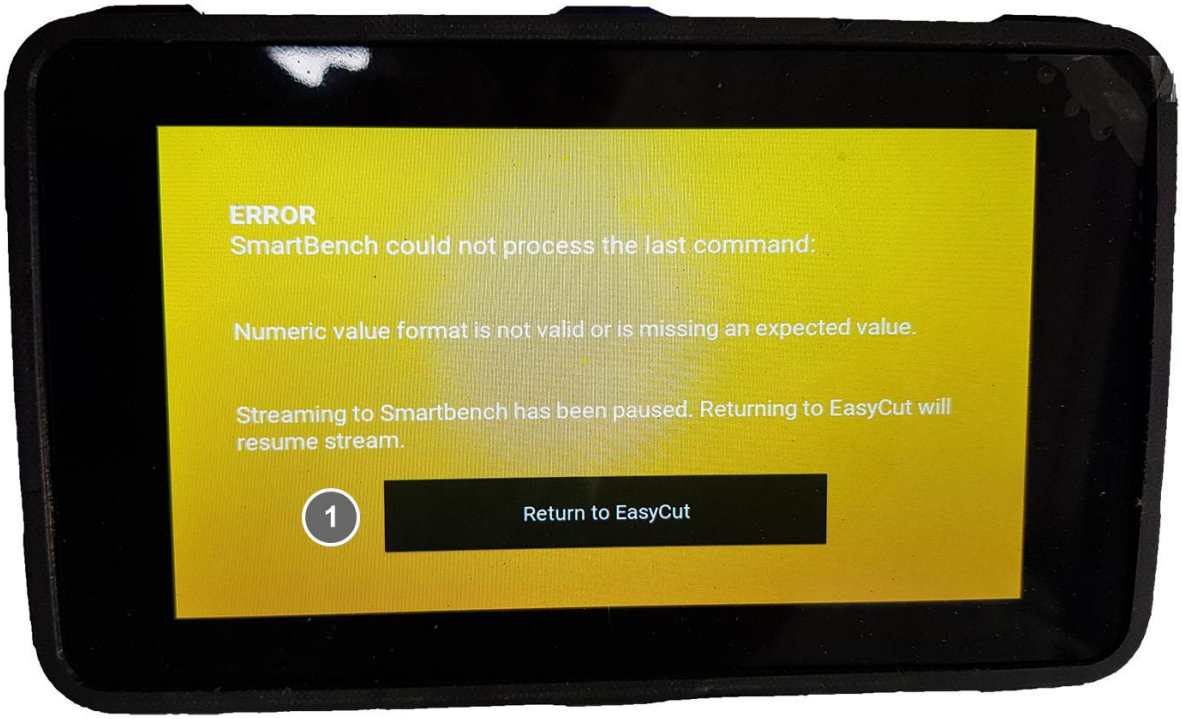
1. Location
2. Network name
3. Network Password

Quick Link – Go to Network Set Up

1.11.3 Settings Developer screen

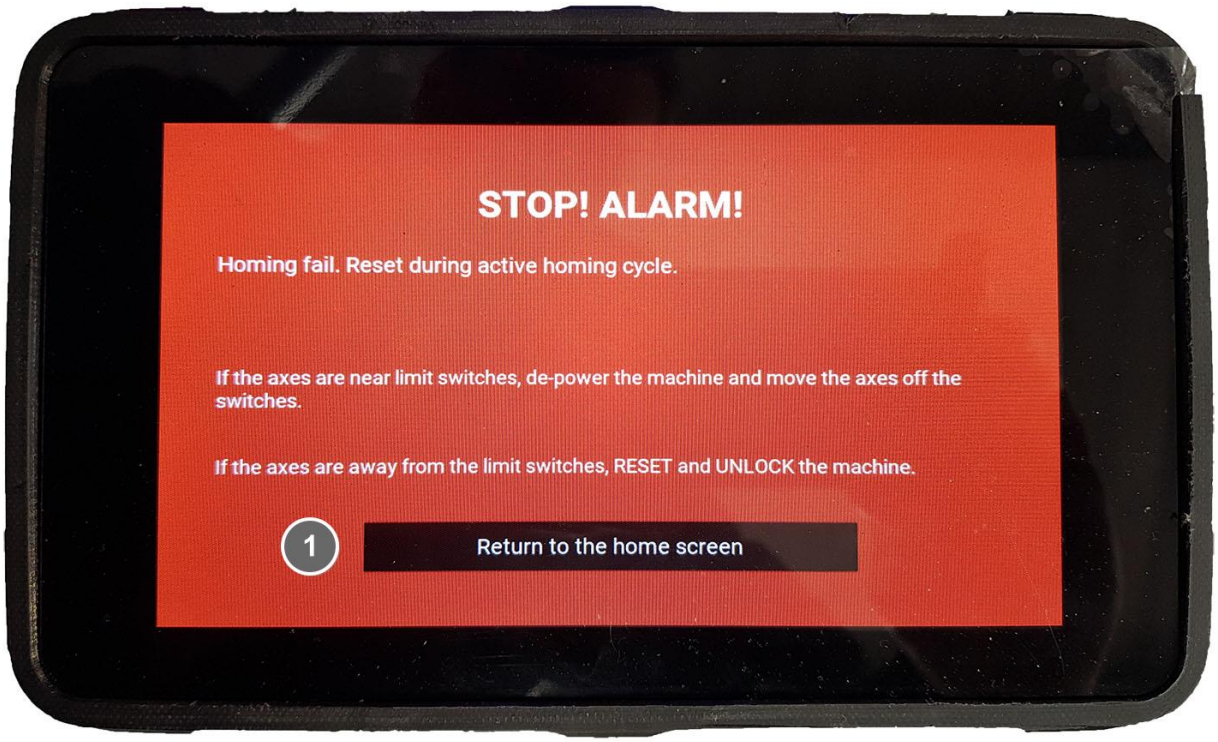
1. Reboot
2. Square Axis
3. GRBL GCode checking
4. Virtual HW
5. Bake GRBL settings
6. Quit to console
7. Return to Lobby
8. Buffer Log
9. Get Software update
10. Current Software version

1.12 Error screen



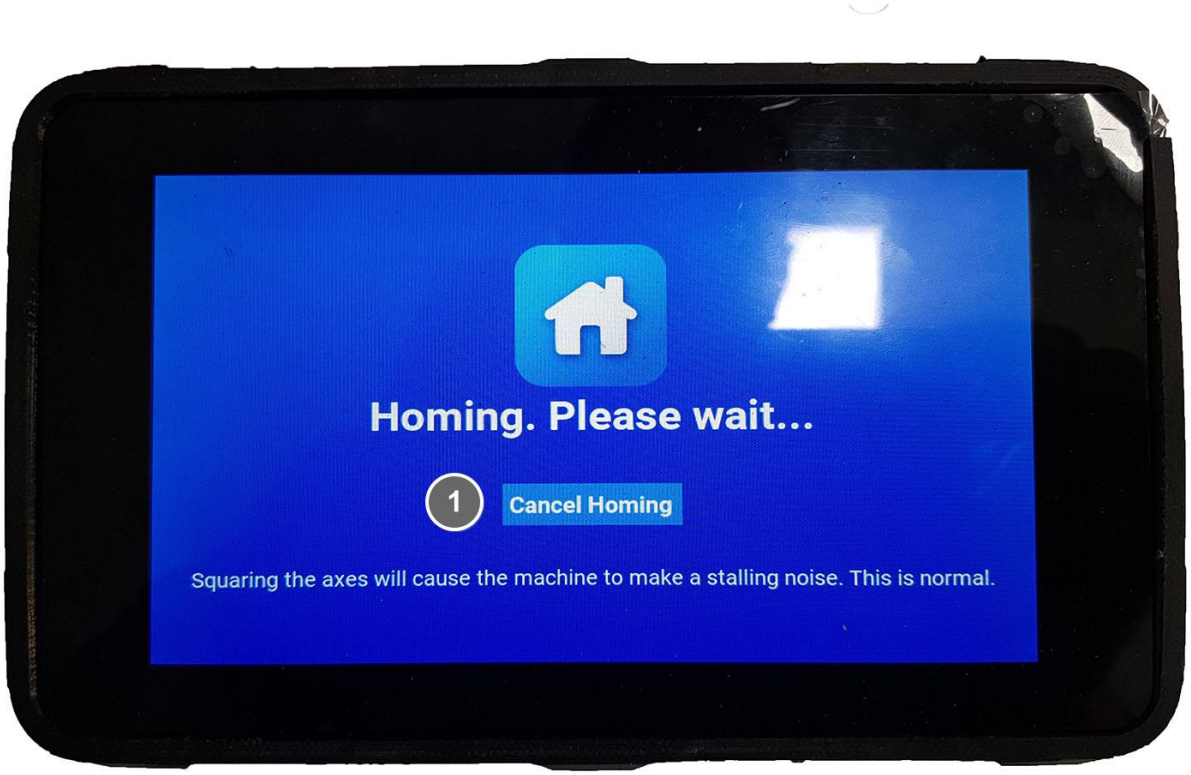
1. Return to home screen button to progress further

1.13 Alarm screen



1. Return to home screen button to progress further.

1.14 Homing screen



1. Cancel Homing – Stops the homing process and waits for further input. You cannot use SmartBench until the homing process has been fully completed.

2 EasyCut set up

2.1 Connect EasyCut to your local WiFi Network

Step one of setting up EasyCut is to connect to your local network, this gives the following functionality.

a. Software updates
b. File transfer via your WiFi network

1. Location – ***Important!*** Leave location set as GB
2. Insert your Network name –
    - Touch on the network name box
    - Clear the text "**Network name…**" using the  on the pop-up keyboard
    - Once the Network name box is empty add your WiFi network name (SSID)
3. Network Password -
    - Touch on the Network password box
    - Clear the text "**Network password…**" using the  button on the pop-up keyboard
    - Once the Network password box is empty add your WiFi network password

(Continue to page 26)

4. Connect to WiFi –
    - Close the keyboard using the  button in the lower right corner
    - Press the connect button

Please note the system will automatically reboot

2.2 Update EasyCut software

Step two which completes the EasyCut set up is to update the software. In doing this you'll get the benefit of the following updates;

- Additional functionality to improve our customers user experience
- Virtual jig (Q3 2019)
- Cutting apps. (Q4 2019)

You'll find the software update button in the Settings>Developer screen

- Press the Get SW update button 

The system will automatically connect to our server, download and update the latest version of software and then reboot.

It is important to note none of your job files will be touched, and the last set datum or park points will be retained.

CAD/CAM Operation

2.3 Files

2.3.1 Load a file over WiFi

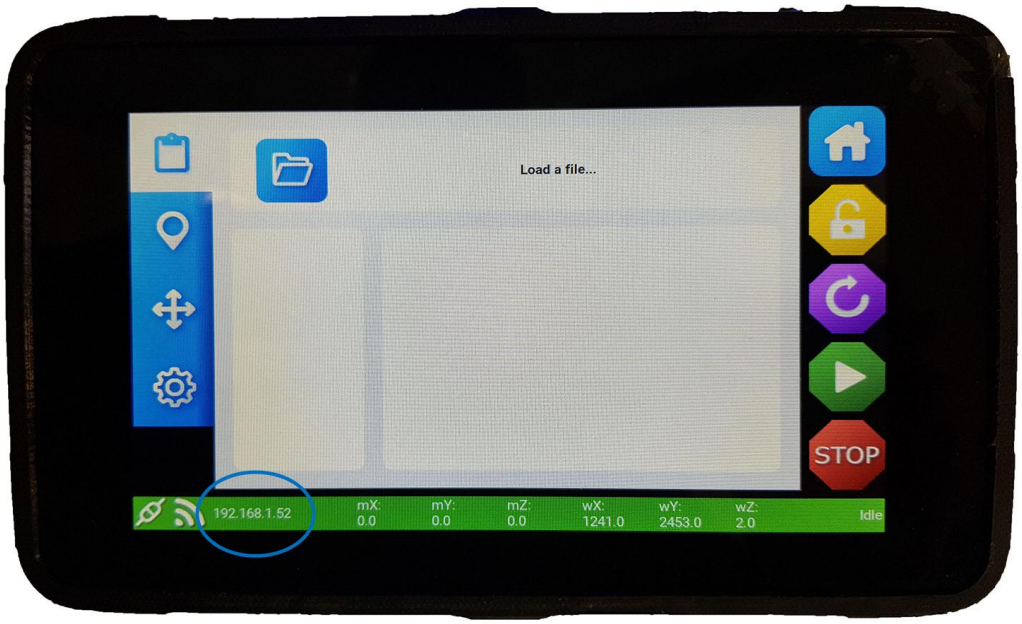
Currently, loading files on EasyCut via WiFi requires the use of an FTP client, in this case Filezilla. This will be built into EasyCut by Q2 2019 and be part of a SW update.

To load your cut files simply follow these steps:

2.3.1.1 Install Filezilla

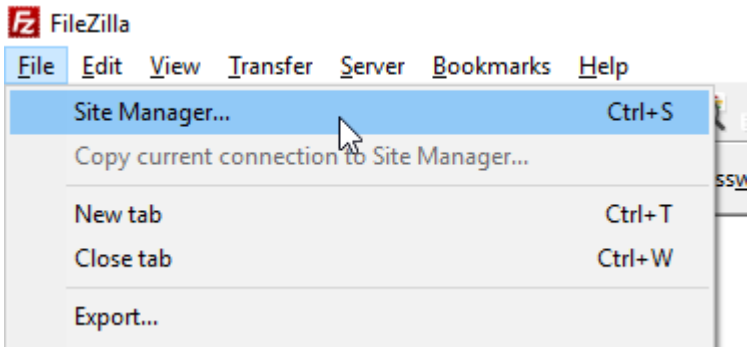
2.3.1.2 Note IP address on EasyCut

- Turn EasyCut on
- Note IP address in bottom left corner of console

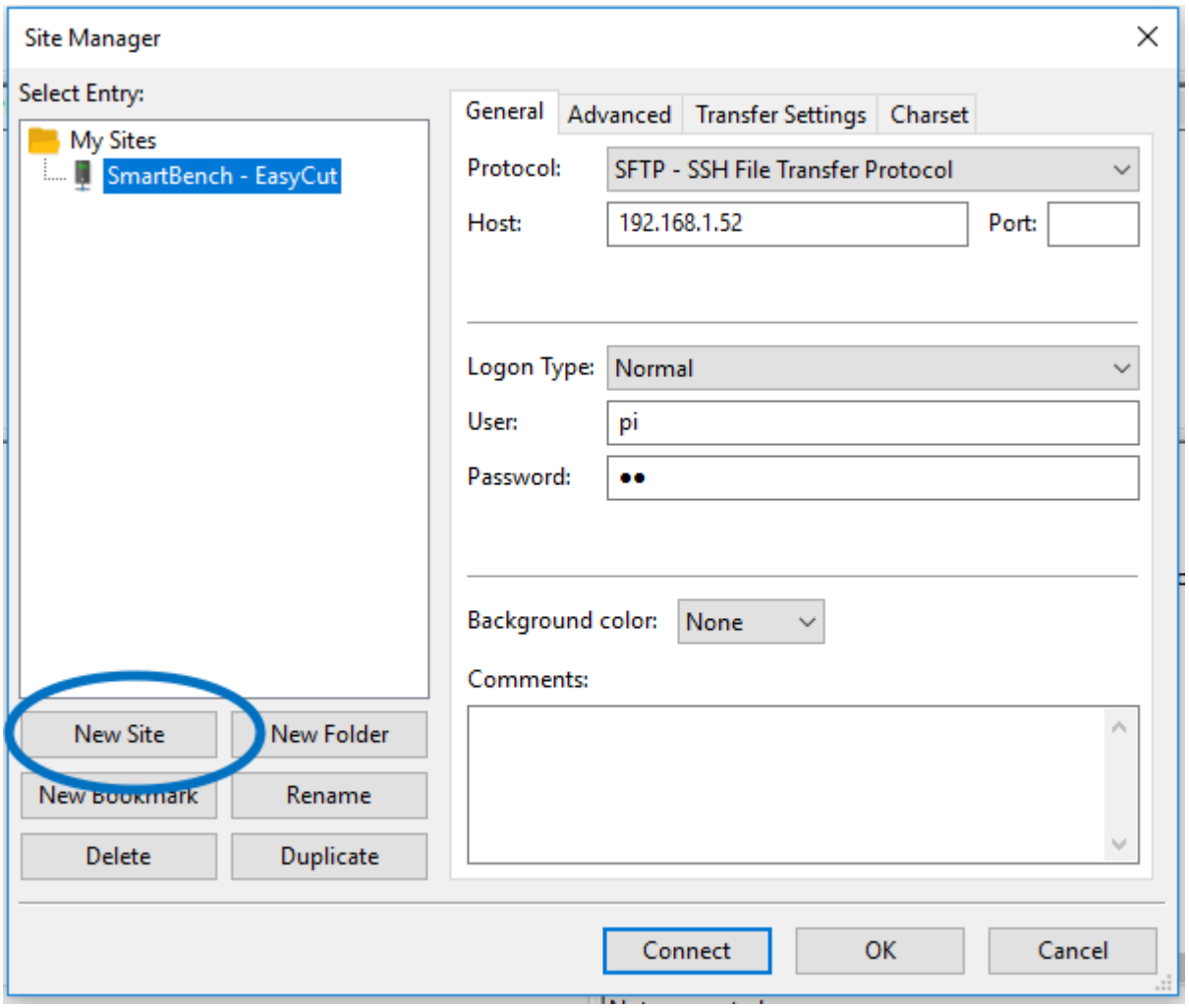


2.3.1.3 Setup Connection in Filezilla

- Open Filezilla
- Open Site Manager

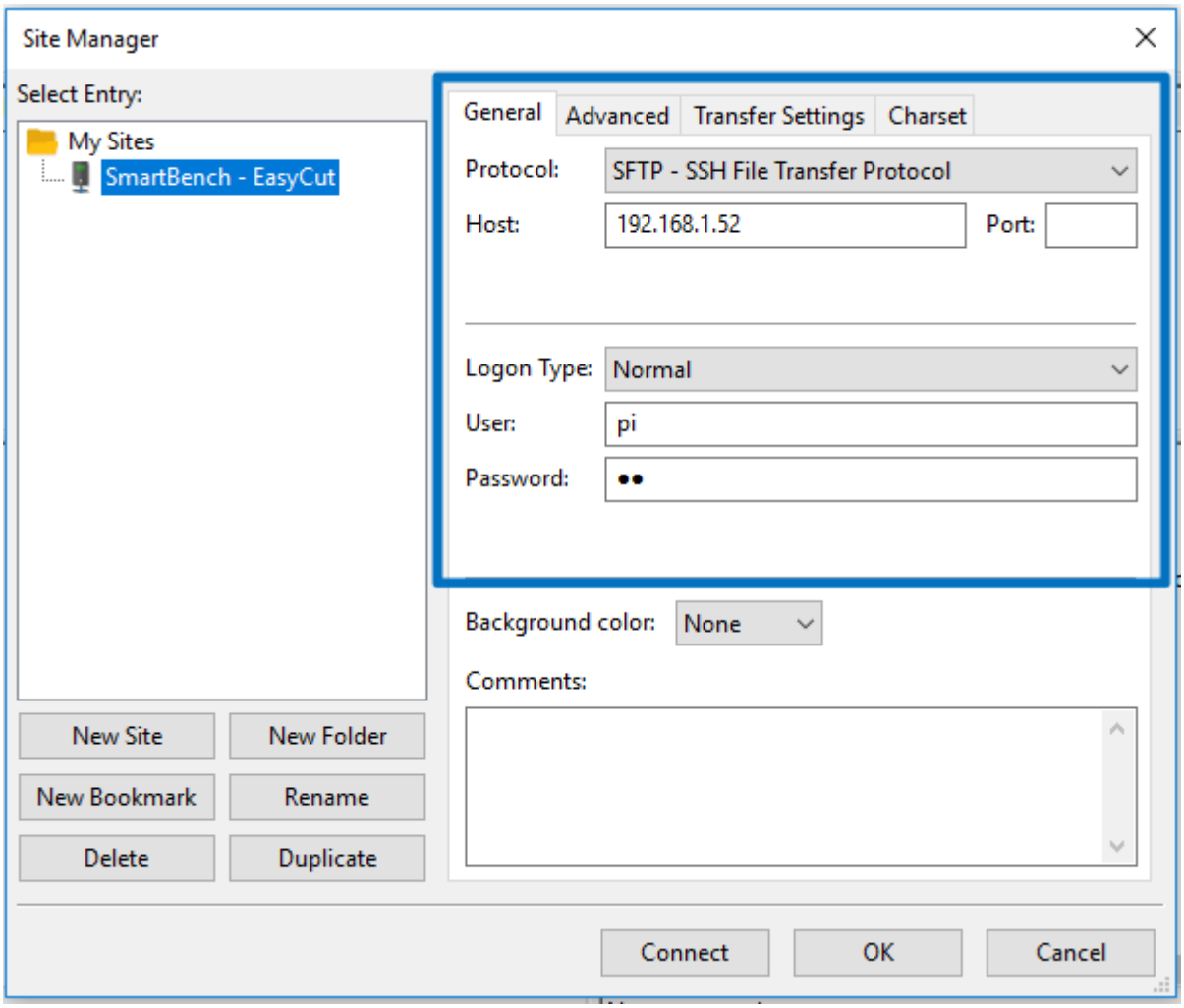


- Create ‘New Site’ & name it something appropriate

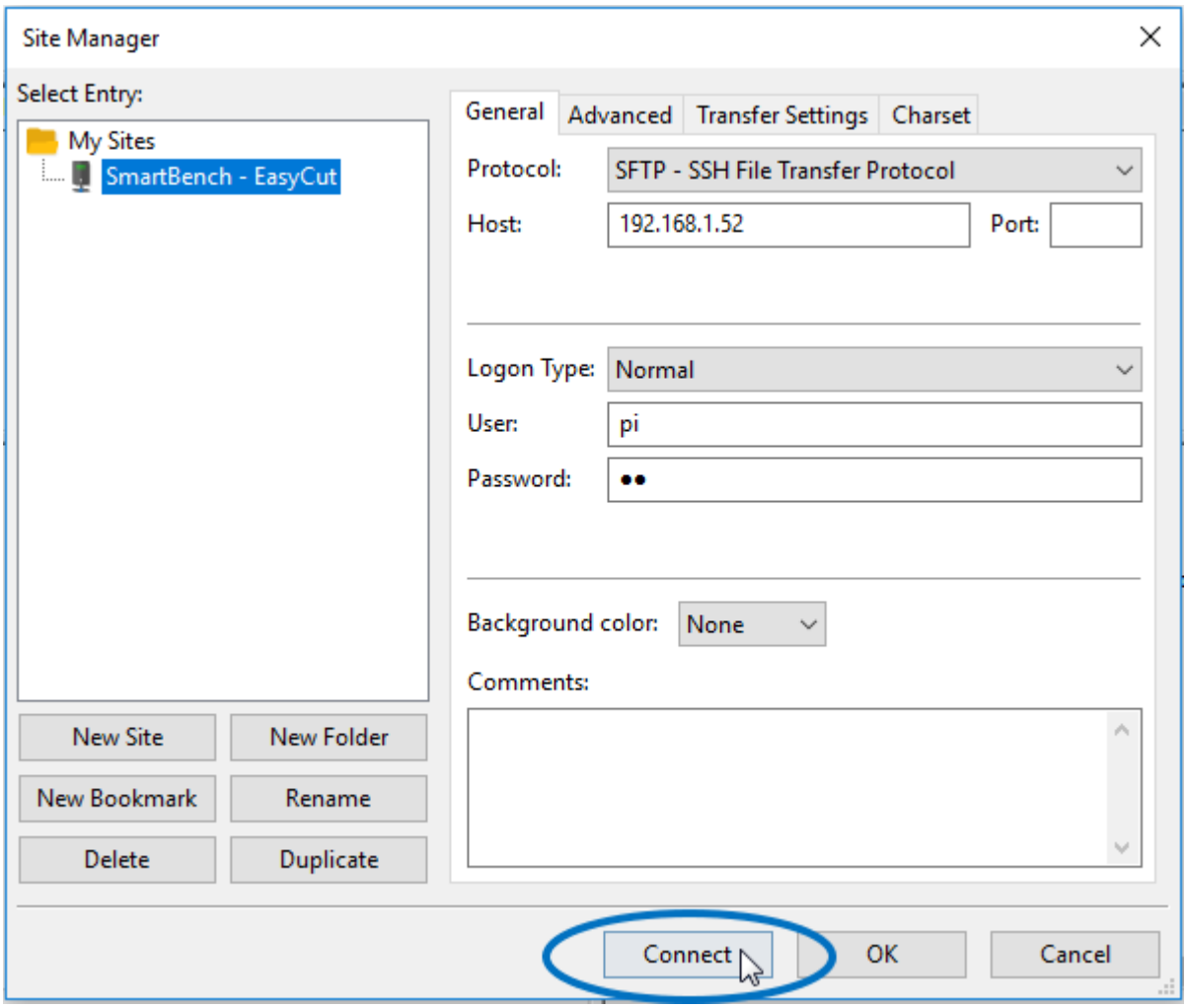


- Under tab '**General**', match settings:

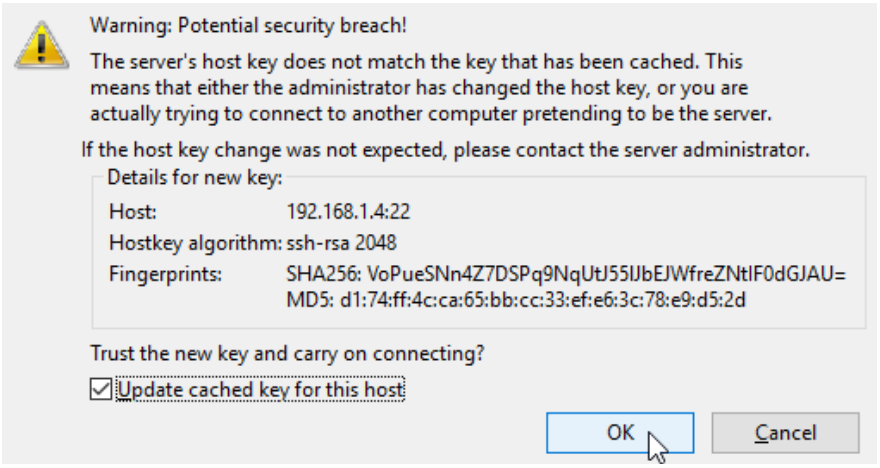
  - Protocol: SFTP
  - Host: <enter the IP address on EasyCut>
  - Port: leave blank
  - Logon Type: normal
  - User: pi
  - Pass: pi



- Connect



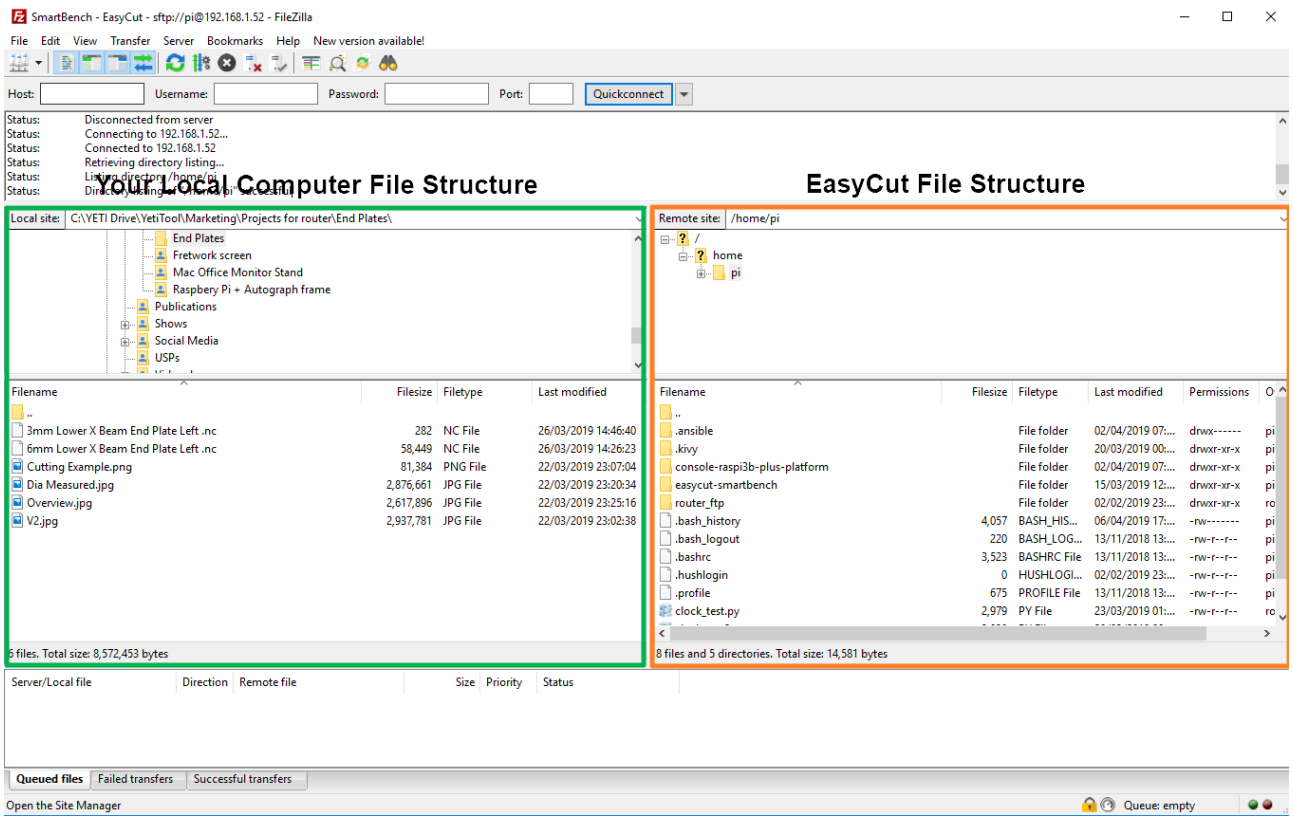
- Accept key, update cached key (optional)



- A successful connection will display something like:

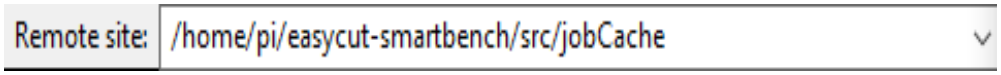
```
Status:     Disconnected from server
Status:     Connecting to 192.168.1.4...
Status:     Connected to 192.168.1.4
Status:     Retrieving directory listing...
Status:     Listing directory /home/pi
Status:     Directory listing of "/home/pi" successful
```

- Transfer file to EasyCut



Green side represents local filesystem (e.g. your PC)
Orange side represents site's filesystem (i.e. the console)
We are trying to move a file from the local to the site (i.e. green to orange)

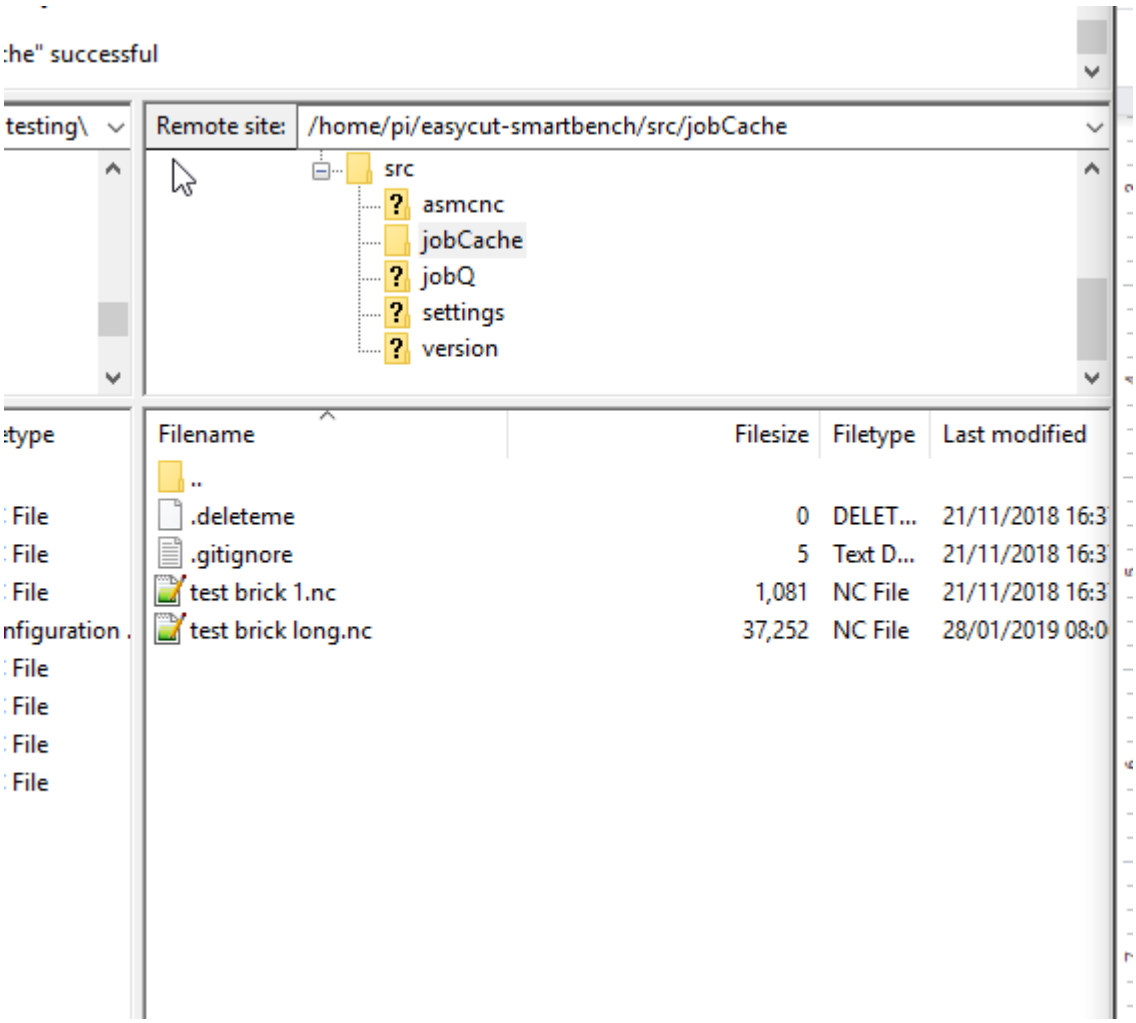
- Navigate to the destination folder
  On console side (orange area)
  Navigate to destination folder: EasyCut's "jobCache" folder



Either navigate through the file tree, or copy and paste the line below into the 'Remote site' field:

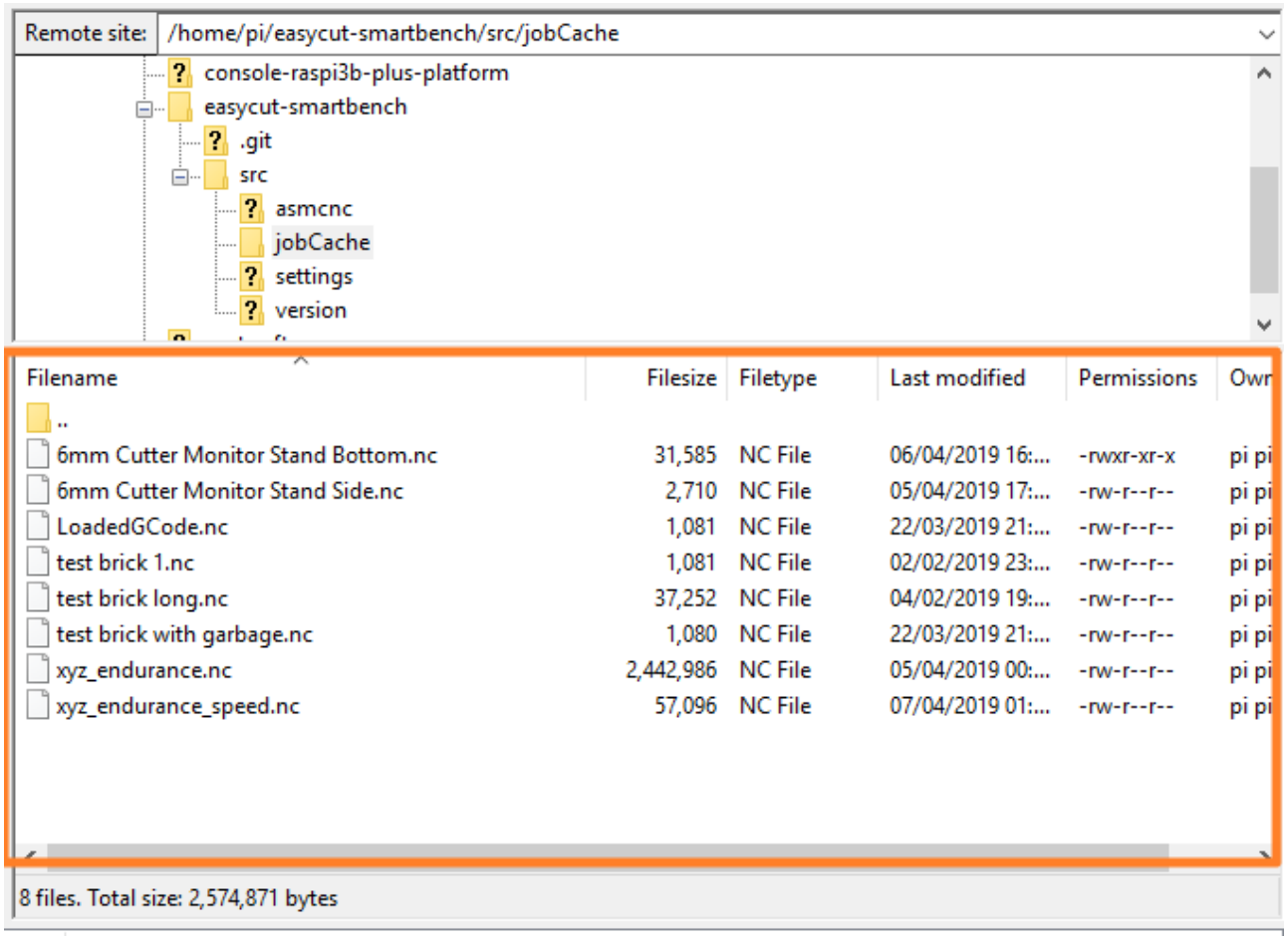
/home/pi/easycut-smartbench/src/jobCache

A successful navigation will look something like this:

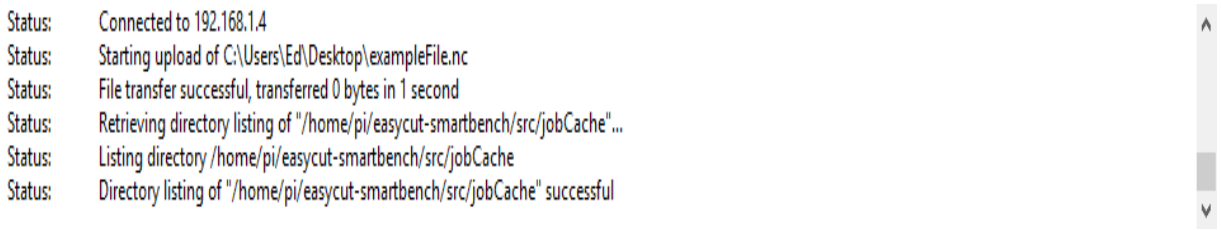


- Drag file over
  You can either find the file from the green area and drag it over into the orange are,

  OR drag it in from a windows folder or desktop into the orange area.



A successful copy will look something like this
:

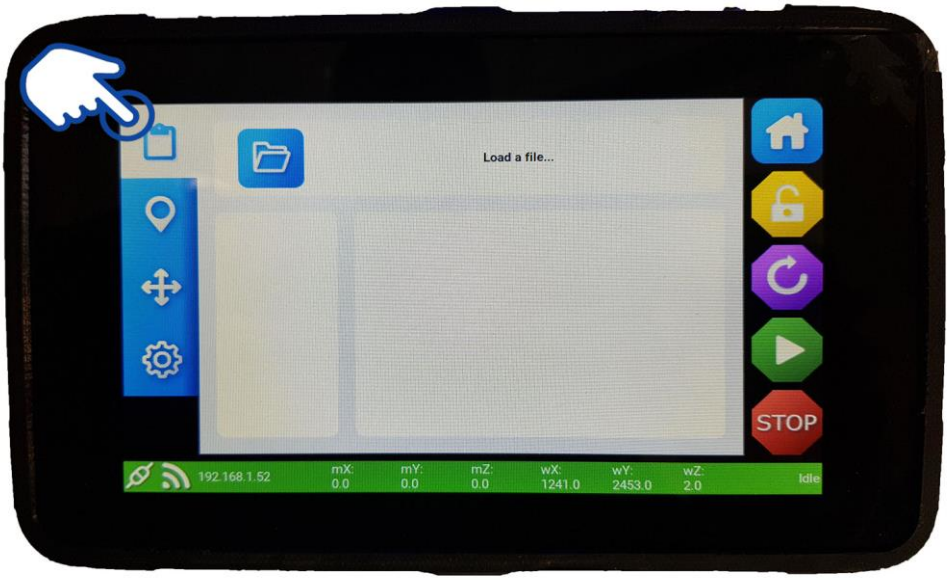


And you will see your file displayed in the orange area.

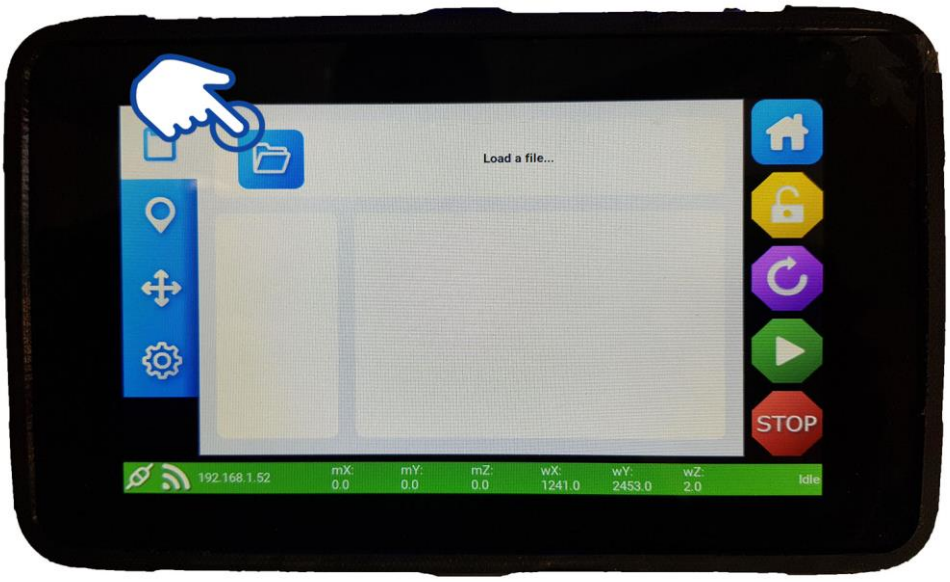
2.3.2 Load a file via USB

On the right side of the EasyCut console you'll find a USB port for loading files.

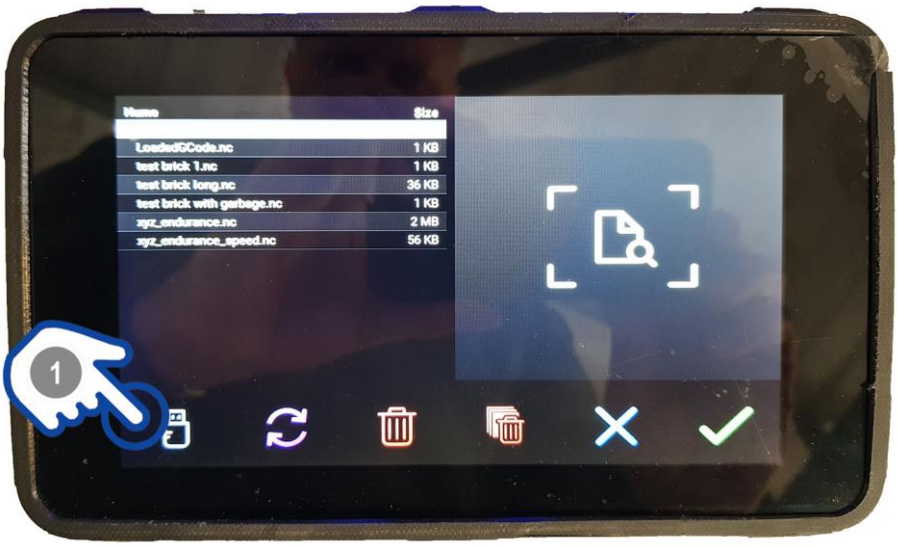
- Insert your USB into the port
- Go to File Load Screen



- Go to File Explorer

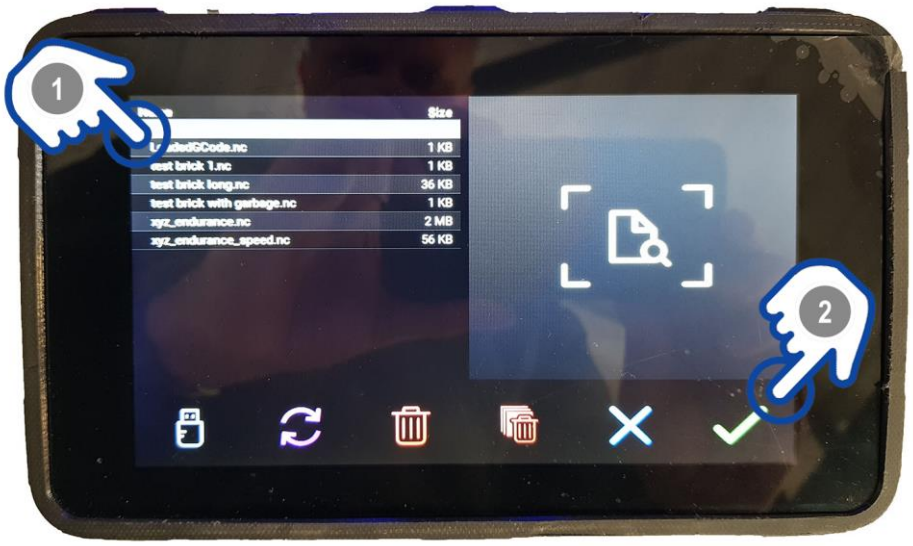


- Press the USB icon found bottom left to load your files from your USB



2.3.3 Select your file

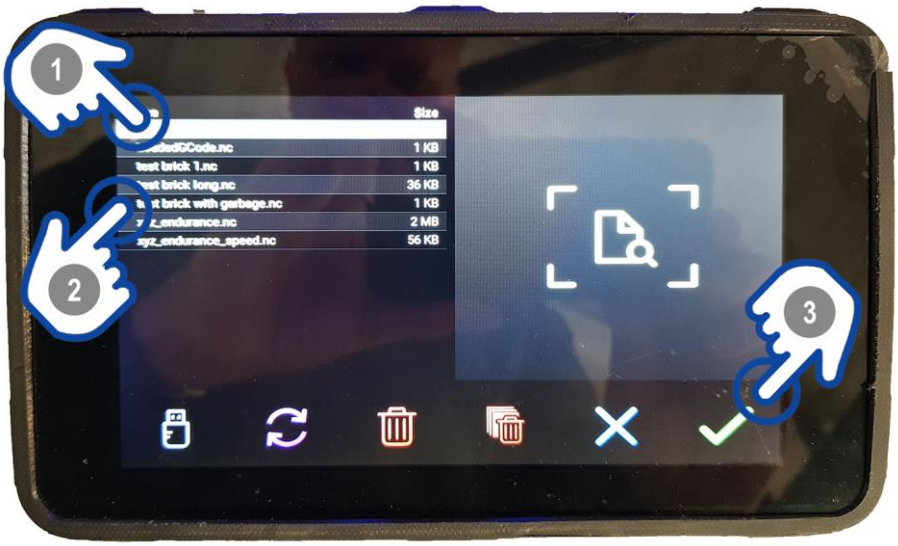
- Select your file from the list
- Press the Tick Icon to accept your file selection



EasyCut will automatically return to the File Load screen

2.3.4 Change your file

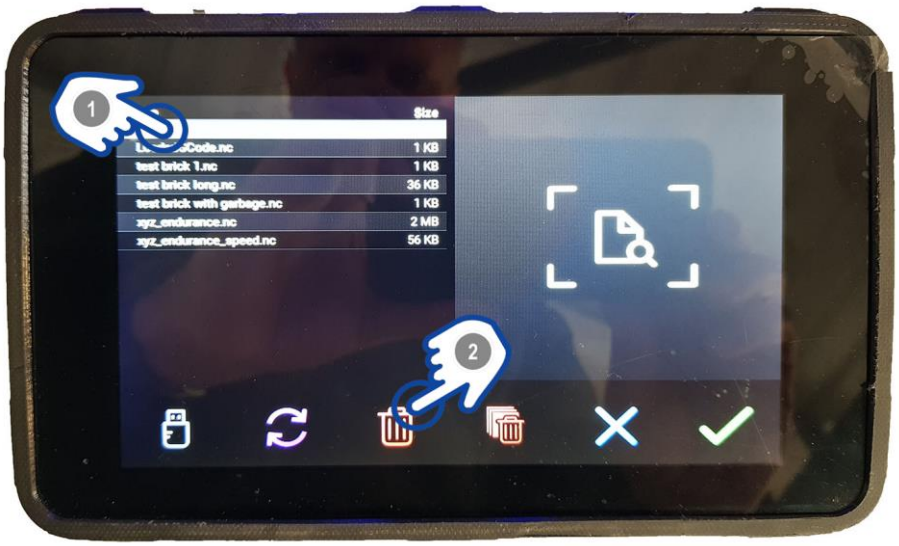
- Your current file is shown with a light background colour
- Press another file name to select your new file
- Press the Tick icon to confirm



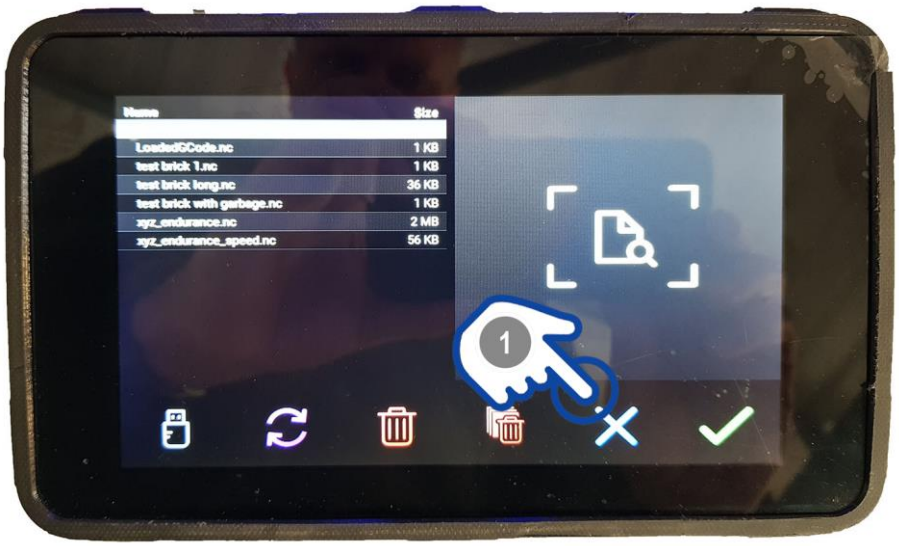
EasyCut will automatically return to the File Load screen

2.3.5 Delete your file

- Select your file to be deleted – make sure it's highlighted with a white background
- Press the delete button

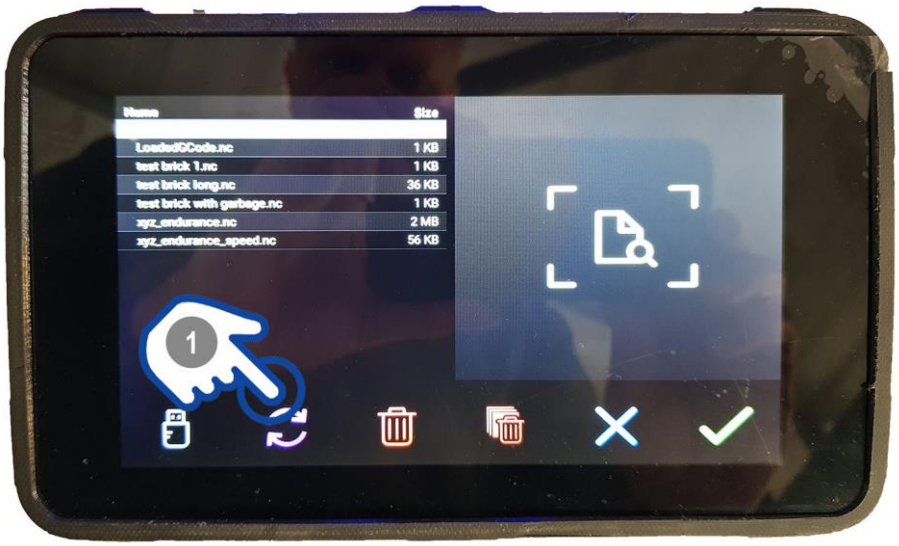


- To choose another file see **section 3.1.3** Select your file
- To close the File Explorer, press the X Icon



2.3.6 Refresh your file list

- Press the refresh file icon to refresh the file list



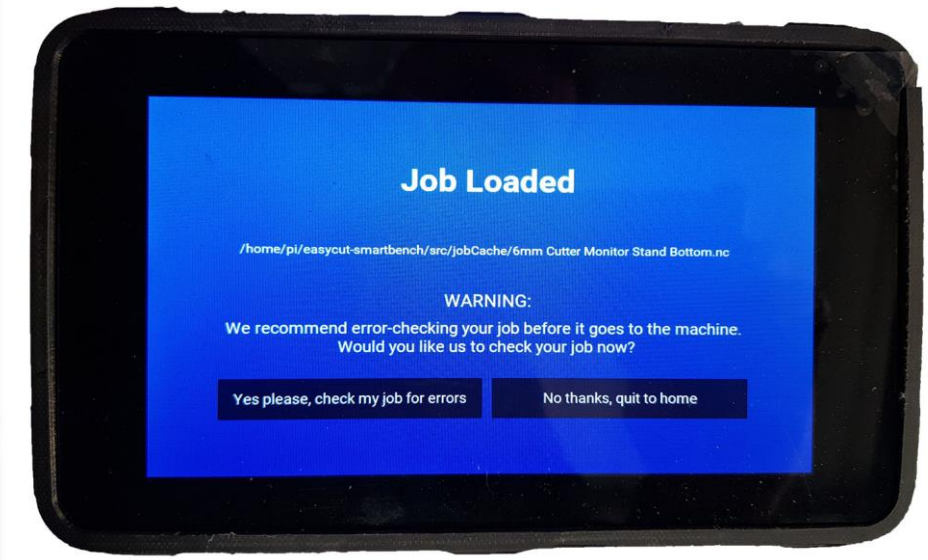
2.3.7 File checking

File checking occurs when you press the tick icon to confirm your file choice and the Job loads.

We would strongly advise you check your files prior to processing

There are two main functions File Checking is looking to achieve

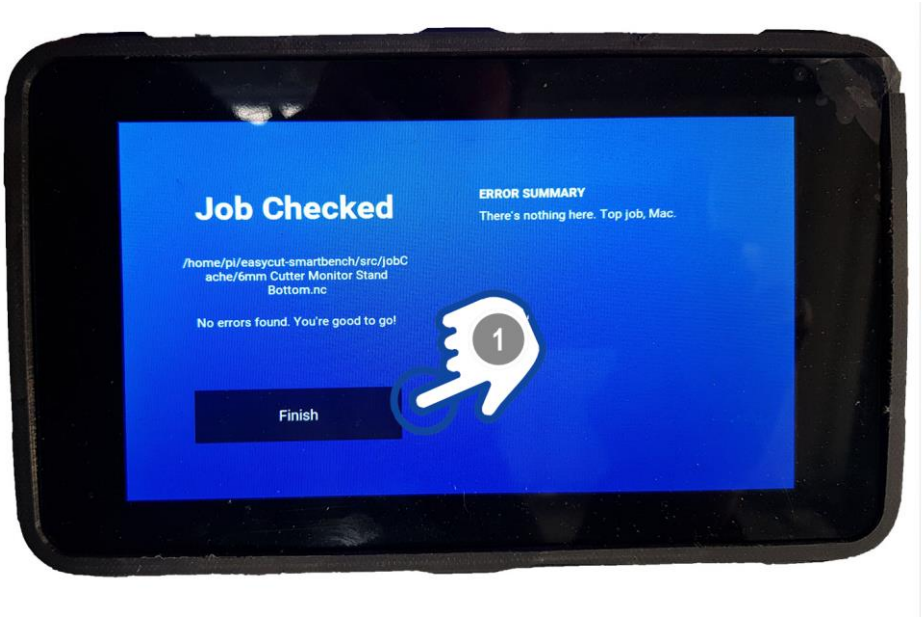
- Is your GCode good for our GRBL platform?
- Is the X/Y Datum point set correctly to allow SmartBench to successfully process your file?



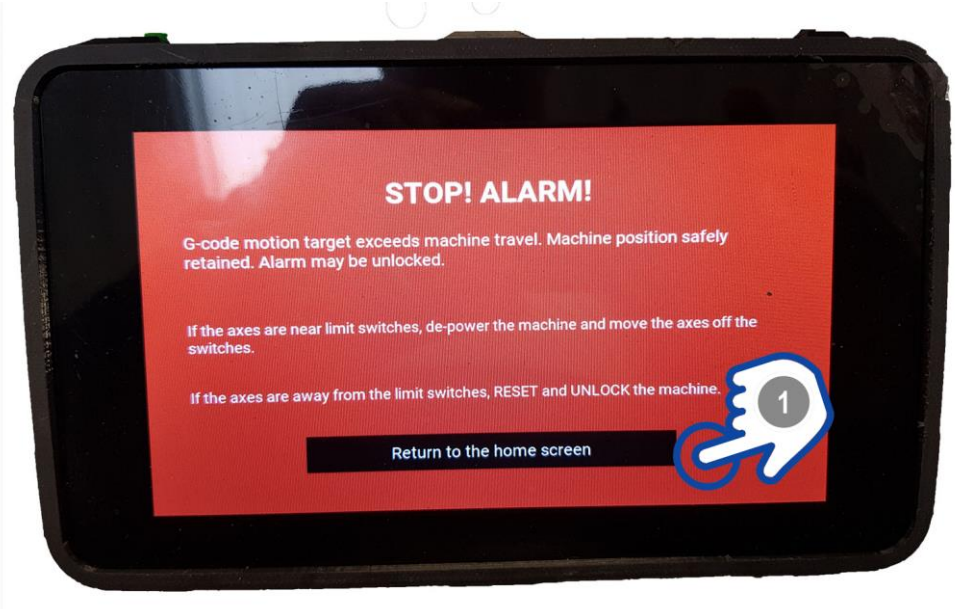
- Choose "***Yes please***" if you'd like your Job file checked – Go to the **next page**
- If you're sure the file is OK, for example you've cut with it before then "***No thanks***" could be the way to go. Jump to next **section 3.2 Control**

If your file passes its check you'll get the following screen.

Tap Finish and you'll return to the file load screen where you can happily progress with your job



If there is a problem with your file, EasyCut will inform you



2.4 Control – EasyCut Move screen

- Go to the Move screen

2.4.1 Manually move X, Y and Z axis

- Press the axis move buttons

X Axis – away = 1, toward =2
Y Axis – left = 3, right = 4
Z Axis – up = 5, down = 6

The touch buttons react in the following way

Press and hold = movement all the time while pressing the button

Press and swipe off = Axis will continue to move after you've released the button

Double tap the button = Axis will continue to move after you've released the button

2.4.2 Choose your manual move head speed

EasyCut has two speed settings when moving the X, Y and Z axis

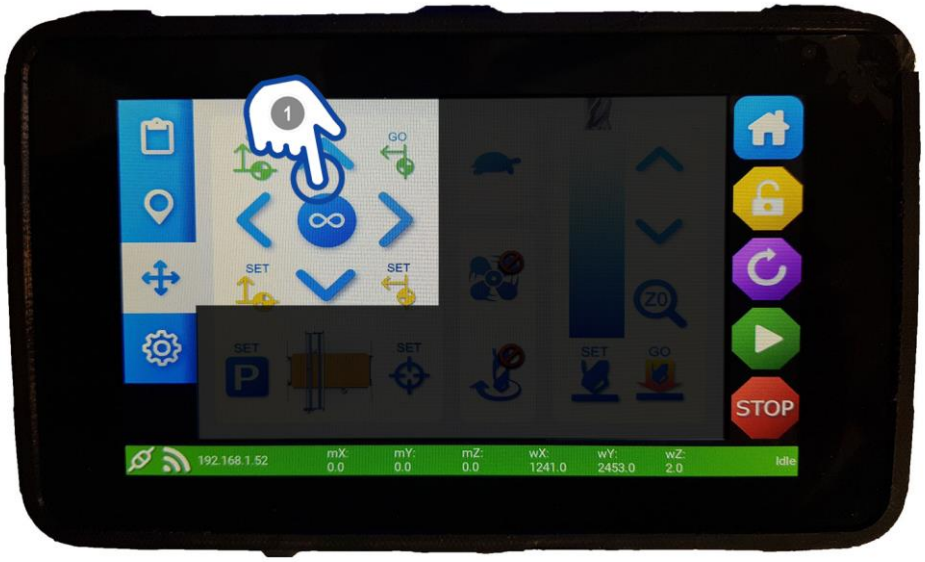
- Press the speed button on the Move screen to choose your speed setting

Slow speed		500mm/min (19.68”/min)
High speed		6000mm/min (236.2”/min

2.4.3 Choose the distance of your manual moves

EasyCut gives the user variations of move distances in X, Y and Z axis.

- Press the button in the middle of the X and Y Axis move buttons to change the distance you wish the head to move

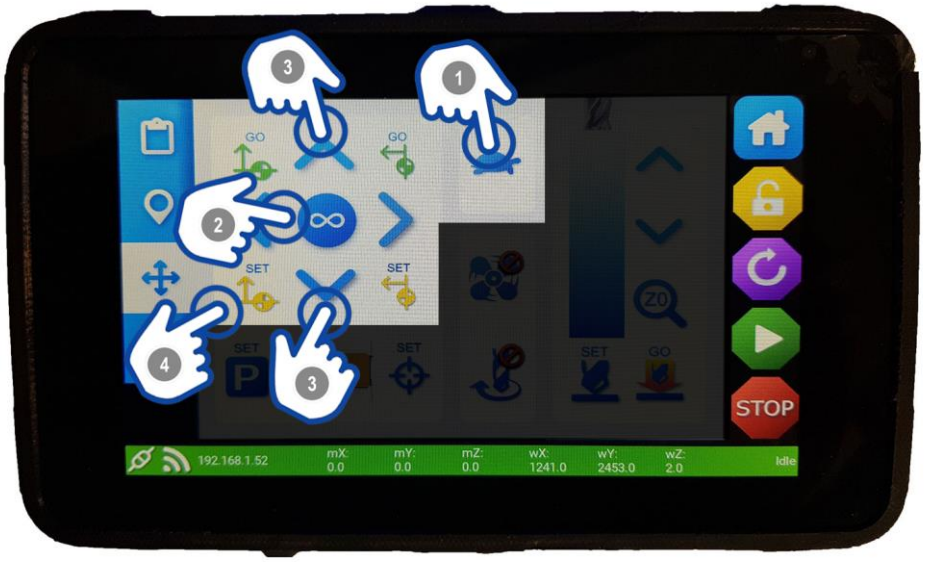


Distance	Icon	Description
Continuous	∞	Moves continuously
Bounding Box		Moves the total distance of your file in either X or Y
10mm	10 mm	Moves 10mm at a time
1mm	1 mm	Moves 1mm at a time
0.1mm	0.1 mm	Moves 0.1mm at a time
0.01mm	0.01 mm	Moves 0.01mm at a time

2.4.4 Set your X datum

To set a Job Start Datum at a particular point in X

1. Select the speed you'd like the tool head to move at
2. Set the move distance
3. Move the tool head using the X manual move to your desired point.
4. Press 



2.4.5 Set your Y datum

To set a Job Start Datum at a particular point in Y

1. Select the speed you'd like the tool head to move at
2. Set the move distance
3. Move the tool head using the Y manual move to your desired point.
4. Press 

2.4.6 Set your X/Y datum together

To set a Job Start Datum at a particular X/Y point

1. Select the speed you'd like the tool head to move at
2. Set the move distance
3. Move the tool head using both the X and Y manual move controls to your desired point.
4. Press 

2.4.7 Go to X datum point

To go to your X position Datum point

1. Select the speed you'd like the tool head to move at
2. Press 

2.4.8 Go to Y datum point

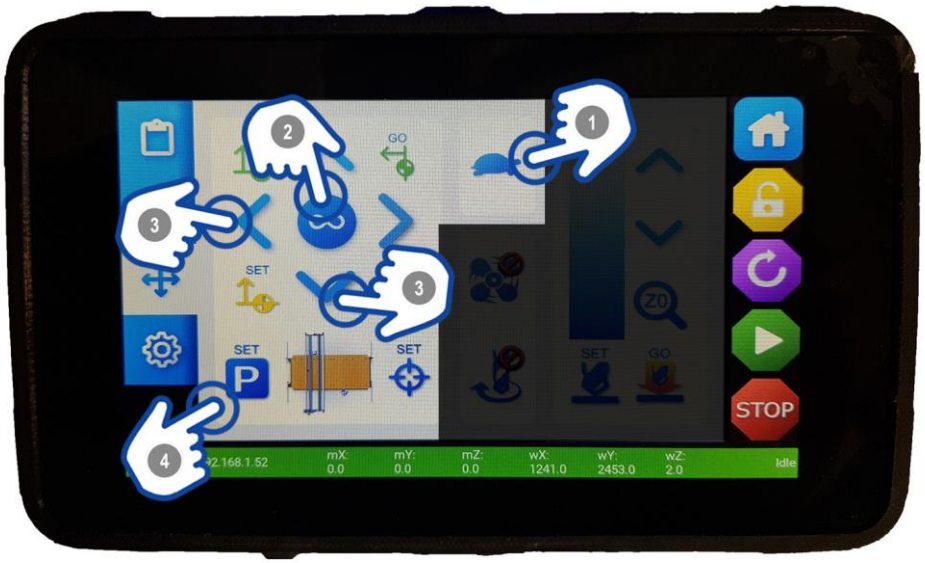
To go to your Y position Datum point

1. Select the speed you'd like the tool head to move at
2. Press 

2.4.9 Set a Park position for the Z head

(Optional) To set a Park point for the tool head at a particular X/Y point

1. Select the speed you'd like the tool head to move at
2. Set the move distance
3. Move the tool head using both the X and Y manual move controls to your desired point.
4. Press 



2.4.10 Turn the extraction on/off manually

To turn the extraction on/off manually

1. Press 

2.4.11 Turn the spindle on/off manually

To turn the spindle on/off manually

1. Press 

2.4.12 Set the Z height manually

To set the Z Height manually

1. Go to Move screen
2. Move the Z Head to the required place
    - Ensure the spindle/cutter is retracted before any X/Y moves are performed
    - Using manual move (see section 3.2.1)

OR

    - Using Go to X (see section 3.2.7) / Go to Y (see section 3.2.8)

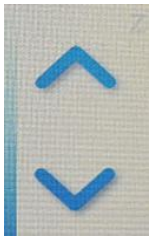
OR

    - Using Go to X/Y Datum (see section 1.9)

3. Remove the dust shoe front cover for maximum visibility (**See SmartBench manual**)
4. Lower the spindle and cutter to the Z point referenced in your CAM strategy (normally either the top or bottom of the stock) using the Z move buttons
    - Choose move speed

    - Choose move distance

- Use Z down button



You may want to move quickly to a point close to your required Z point, and then change the move distance to 10mm, 1mm, 0.1mm or even 0.01mm amounts.

- Press SET

- Replace the dust shoe front cover

After setting don't forget to move the head up before moving in X or Y

2.4.13 Set the Z height with the probe

To set the Z height using the Z probe

1. Go to Move Screen
2. Move the Z Head to the required place
    - Ensure the spindle/cutter is retracted before any X/Y moves are performed.
    - Using manual move (see section 3.2.1)

OR

    - Using Go to X (**see section 3.2.7**) / Go to Y (**see section 3.2.8**)

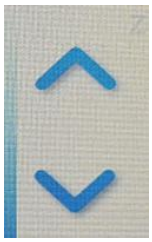
OR

    - Using Go to X/Y Datum (**see section 1.9**)

3. Remove the dust shoe front cover for ease of access and visibility (**See SmartBench manual**)
4. Lower the spindle and cutter close to the Z point referenced in your CAM strategy (normally either the top or bottom of the stock) using the Z move buttons
    - Choose move speed

    - Choose move distance

- Use Z down button



We suggest lowering the spindle and cutter to a distance approximately 5 – 10mm away from the top of the surface you wish to use as your Z point reference

Take out the Z probe plate from its holder

Place the probe plate on the desired surface you wish to reference, ensure it is flat and silver side up.

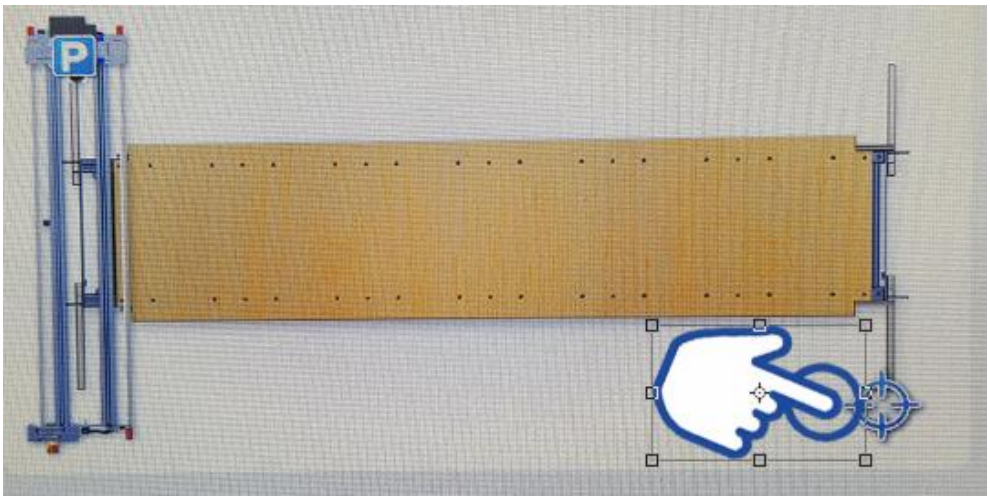
Ensure the Z probe plate is directly beneath the cutter

- Press the Z Zero button

The spindle and cutter will slowly lower until the tip of the cutter finds the Z probe. Once it has done this, it will retract to the top.

2.5 Positioning your job

Go to the Map screen and see where the X/Y Datum set position is located.



If the X/Y Datum position is located in a place where the your cut file will be outside SmartBench's capabilities, move your X/Y datum position (**see section 3.3.1**) to a more suitable position prior to opening your file.

2.5.1 Move the Z Head to your approximate XY job start position

To move your Z Head to your XY job start position

1. Go to Move Screen
2. Move the Z Head to the required place
    - Ensure the spindle/cutter is retracted before any X/Y moves are performed.
    - Using manual move (**see section 3.2.1**)

2.5.2 Set X/Y datum

To set your X/Y Datum point

1. Press 

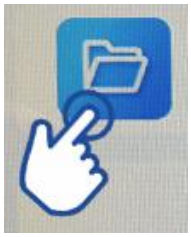
This can be done in either the Move screen or the Map screen

2.5.3 Open your job file

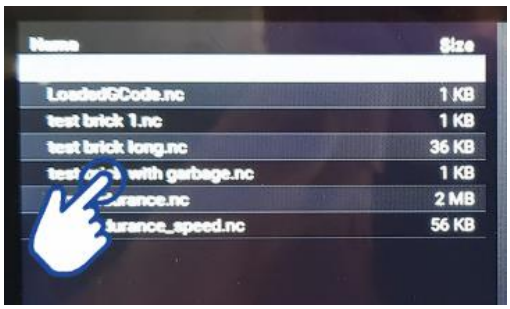
To open your job file (see section 3.1 for full details)

1. Go to File load screen

2. Go to file explorer



3. Choose your file



4. Confirm your file

2.5.4 View your job on the map screen

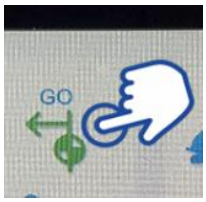
To see where SmartBench will process your job file

1. Go to Map screen and see your Job file bounding box

2.5.5 Check your job using the bounding box function

Check the where the outer limits of your Job file will cut on your stock

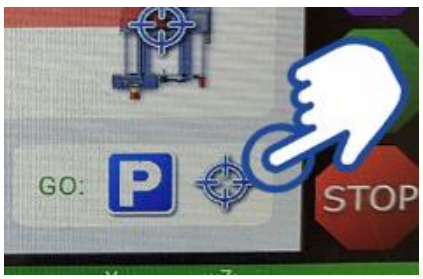
1. Go to the X/Y Datum point by:
    - Go to Move screen
    - Press Go To Y Datum point



    - Press Go To X Datum

OR

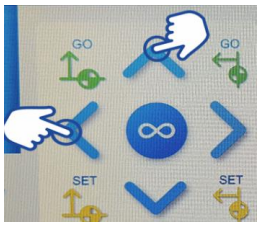
    - Go to Map screen
    - Press Go To X/Y Datum



    - Make sure you're now on Move screen

2. Change Move distance to Bounding Box 

3. Press X Axis Move and Y Axis Move buttons to travel the outer limits of your job file.



2.5.6 Making adjustments

There may be a few reasons that would require you to adjust your start position:

- The file isn't in the right position for the stock your using
- Your CAM strategy start point is referenced at a different corner to your X/Y Datum start point.

To make any adjustments, repeat sections 3.3.1 to 3.3.5

2.6 Setting your job

2.6.1 Set up check list

- You've loaded and selected your file – **See Section 3.1**
- You've set your Job start X/Y Datum point – **See Section 3.3**
- You've set your Z height – **See Section 3.2.12 or 3.2.13**

2.6.2 Turn on your extraction

If you're ***NOT*** using SmartBenches extraction power supply

- Manually turn on your extraction

If you ***ARE*** using SmartBenches extraction power supply

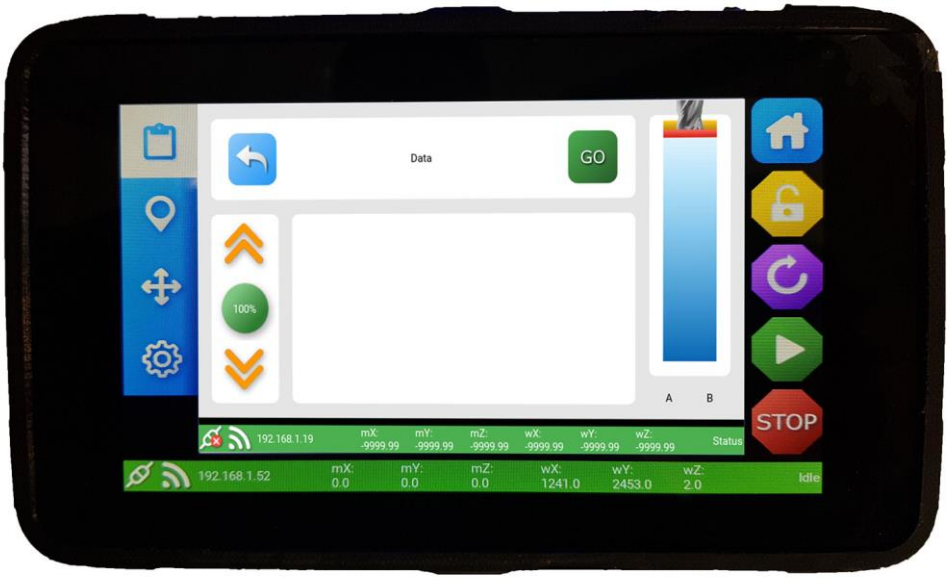
- Turn on your extraction using EasyCut 

2.7 Starting your job

OK, we're ready to start cutting, here are the steps to take:

- Press Run from any of the screens 

You will be taken to the Run Job screen



- Press GO and the job will start

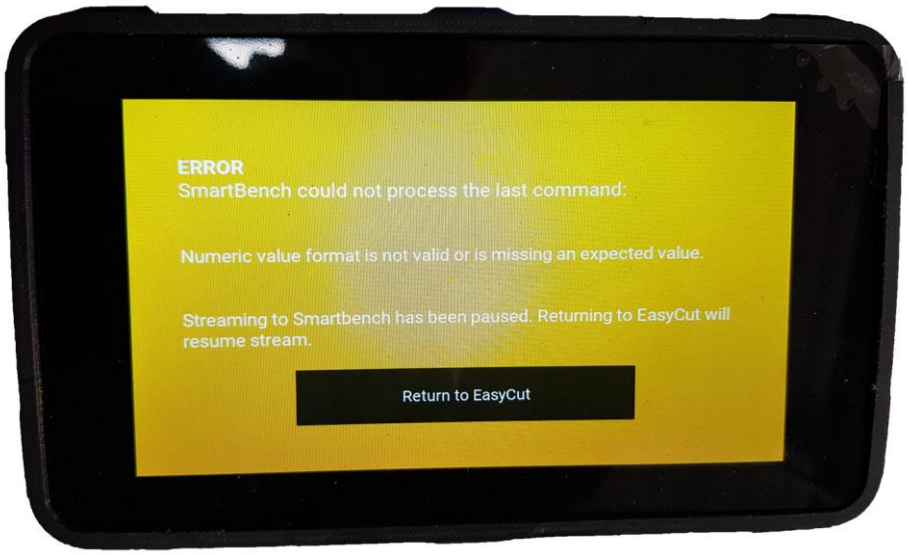
2.8 While cutting

While your job is running you are able to pause, stop and adjust the feed speed of your job.

- 1 – Pause your job
- 2 – Stop your job
- 3 - Increase your feed speed
- 4 – Decrease your feed speed
- 5 – Visual of percentage increase or decrease feed speed.
  Tap to return to the original feed speed

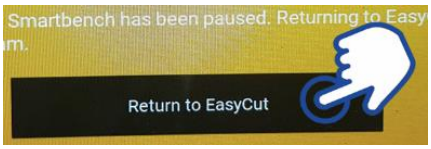
2.9 Reset an Error

If you see the following screen EasyCut has encountered something to trigger an error.



To reset the error

- Return to EasyCut Core screens

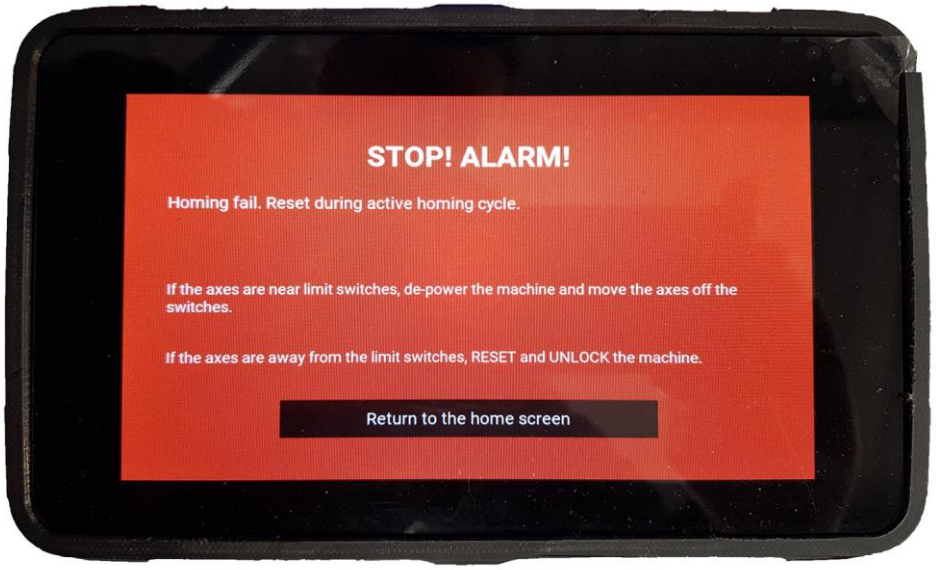


- Unlock EasyCut – the unlock button is one of the 5 core function buttons

- Reset EasyCut – the reset button is one of the 5 core function buttons

2.10 Reset an Alarm

If you see the following screen EasyCut has encountered something to trigger an alarm.



To reset the alarm

- Return to EasyCut Core screens

- Unlock EasyCut – the unlock button is one of the 5 core function buttons

- Reset EasyCut – the reset button is one of the 5 core function buttons

2.11 Developer functions

2.11.1 Reboot – Reboots EasyCut, you will need to re home after EasyCut has rebooted.

2.11.2 Quit to console – For diagnostics only

2.11.3 Square Axis – Squares the X & Y Axis

2.11.4 Return to lobby – Return to the main lobby screen

2.11.5 GRBL check – Redundant

2.11.6 Buffer log – Redundant

2.11.7 Get software update – The most important button in the developer screen. It automatically looks for the latest version of EasyCut, downloads and installs. EasyCut will reboot directly after install.

2.11.8 Bake GRBL – Do not use unless instructed to do so by customer support.

2.12 GCode editor – Advanced users only

We've included a GCode editor to allow advanced users the ability to take advantage of the full suite of GCode commands.

We strongly advise in-experienced users ignore this screen.

2.13 Support

If you require any support, please visit our website and raise a support ticket.

www.yetitool.com/support/submit-a-ticket