

SMARTBENCH

Quick Start Guide



EU Declaration of Conformity

We, **Yeti Tool Limited**

of **Unit 1 Westfield Court, Barnes Ground, Clevedon, Bristol. BS21 6FQ UK**

declare under our sole responsibility that the product(s):

Product Name	SmartBench
Model Number(s)	SmartBench V1.2
Part Number(s)	20836, 20837, 20838, 20839, 20840, 20841, 20842, 20843, 20844, 20845, 20846, 20847, 20848, 20849, 20850, 20851, 20852, 20853

to which this declaration relates is(are) in conformity with the essential requirements and other relevant requirements of EU Directive **2006/42/EC (MD)**, EU Directive **2014/53/EU (RED)** and EU Directive **2011/65/EU (RoHS2)**.

Type	Essential Requirements
Health & Safety (RED article 3.1a)	EN 62368-1:2014 EN 60950-1:2006+A1:2010+A12:2011+A2:2013 EN 62311:2008 EN 62061:2005 EN ISO 19085-1:2017
EMC (RED article 3.1b)	ETSI EN 301 489-1 V2.1.1 (2017-02) in accordance with the specific requirements of: ETSI EN 301 489-17 V3.1.1 (2017-02) EN 55032:2012/AC:2013 Class A EN 55035:2017 EN 61000-3-2:2014 EN 61000-3-3:2013
Spectrum (RED article 3.2)	ETSI EN 300 328 V2.1.1 (2016-11) ETSI EN 301 893 V1.8.1 (2015-03)
RoHS2	EN 50581:2012

United Kingdom 18th February 2019
Authorised signature for and on behalf of
Yeti Tool Limited
Ed Sells - Director

European Representative:

Yeti Tool Limited
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Tel: +44 1275 217060

**IMPORTANT**

This is a class 1 machine: The power supply MUST be earthed. Only use the power cable supplied. If you require a replacement, please contact your place of purchase.

Thank you for purchasing SmartBench!

This quick start guide has been created to get you up and running with SmartBench as quickly as possible. For more guidance, please visit the knowledge base on our website www.yetitool.com/support



What is in the box

Start by getting familiar with key components of SmartBench

Please check the contents. If any of the above items are damaged or missing, please contact your point of purchase immediately.

<p style="text-align: center;">Box 1</p> <p style="text-align: center;">1 x Z Head assembly (including spindle) 1 x SmartBench Console</p>	<p style="text-align: center;">Box 3</p> <p style="text-align: center;">2x Leg Set 1 x IEC Power lead 1 x Extraction power lead 1x USB Stick 1x Tool kit (Collet Spanner and 6mm hex) 1x Wheel setting tool</p>
<p style="text-align: center;">Box 2</p> <p style="text-align: center;">1x X Upper Beam 1x X Lower Beam</p>	
<p style="text-align: center;">1x Y Bench</p>	

Key components

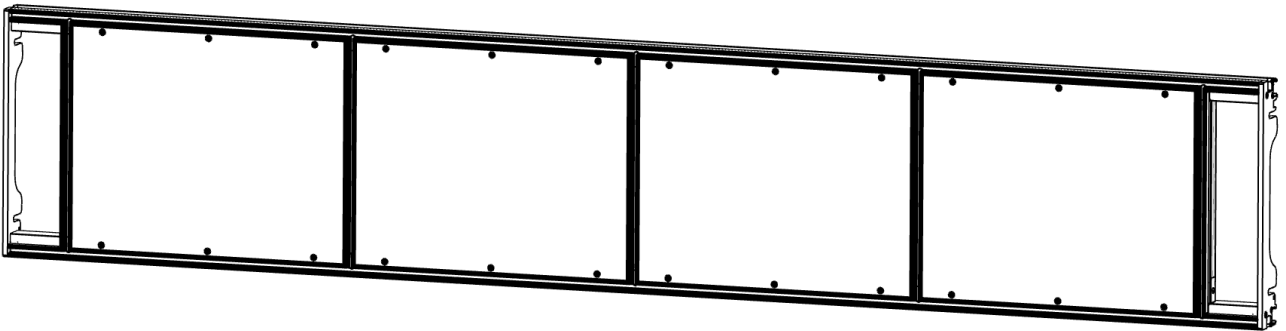


Figure 1: Y Bench

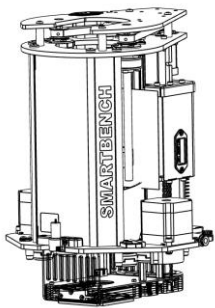


Figure 2: Z Head

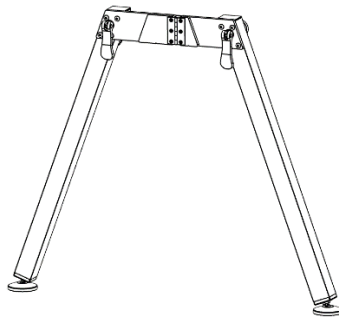


Figure 3: Leg Set (x2)

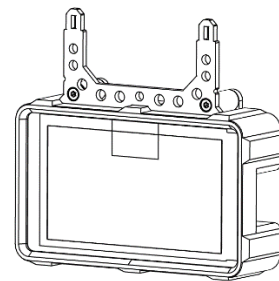


Figure 4: Console

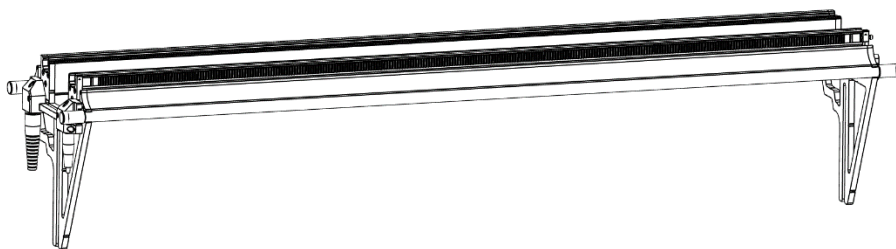


Figure 5: X Beam Upper

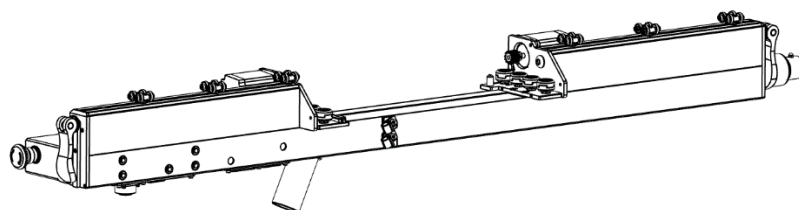
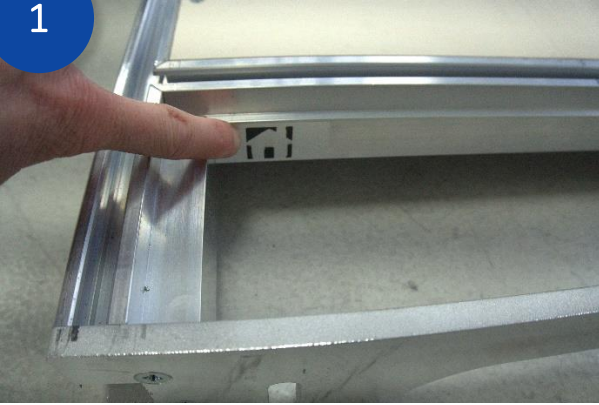


Figure 6: X Beam Lower

Assembly

Fit Leg Set 1 – Opposite from Home End

1



Identify the home end of the *Y Bench* by looking for the Home Icon.

2



At the opposite end of the bench, fit *Leg Set 1* by first unfolding the legs.

3



Lift the *Y Bench* to accept the location pins of the *Leg Set*. Slide the leg clamp pins into the slots in the *Y Bench* end plate.

4

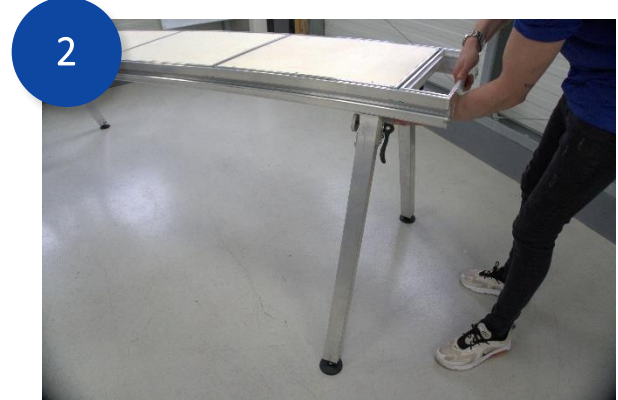


Push the clamp handles down flat to the *Y Bench* end plate to tighten.

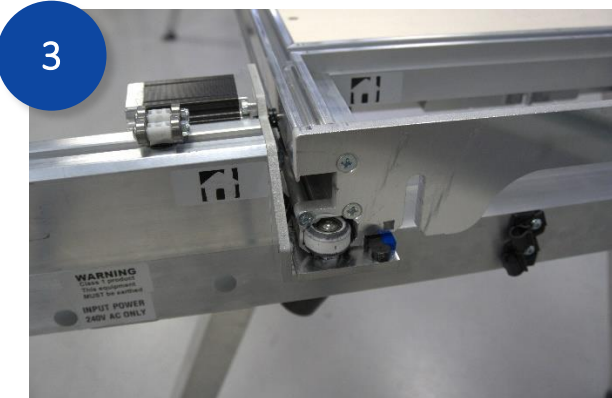
Fit the X Beam Lower



Unfold a *Leg Set*. Lift the *Y Bench* at the home end.



Use the leg set to support the *Y bench*. This should be just past the first crossbeam.



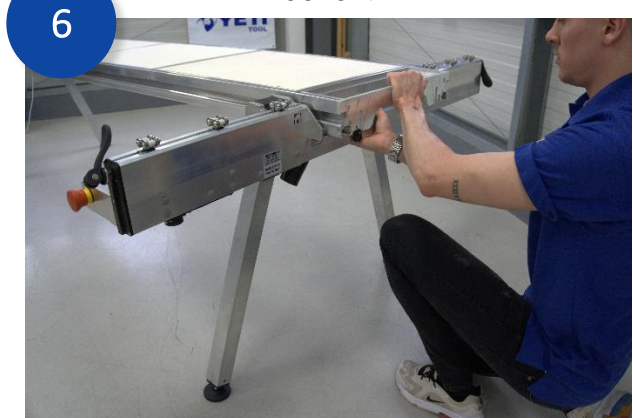
To fit the *X Beam Lower*, offer up the beam ensuring the home labels are aligned.



Ensuring the wheels are aligned with the channels, push the *X Beam Lower* onto the *Y bench*.



You should feel some preload on the wheels as they pop into place.



Push the *X Beam Lower* onto the *Y Bench*. The assembly should look like this.

Fit Leg Set 2

1



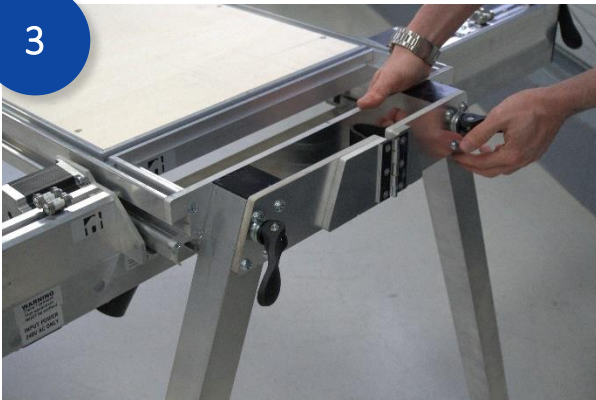
Lift the *Y Bench* by the end plate, and take *Leg set 2* with the other hand.

2



Lift the *Y Bench* to accept the location pins of the *Leg Set*. Slide the leg clamp pins into the slots in the *Y Bench* end plate.

3



Push the clamp handles down flat to the legs

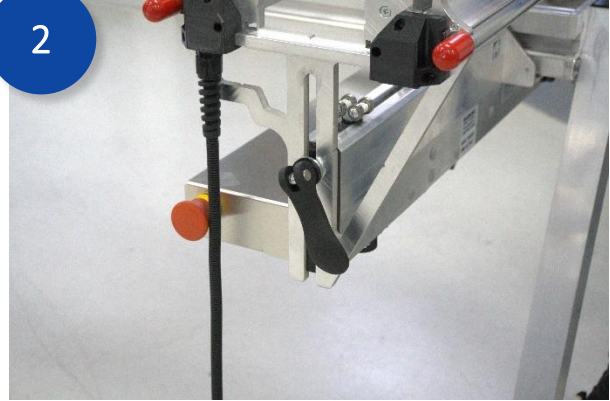
Attach the X Beam Upper

1



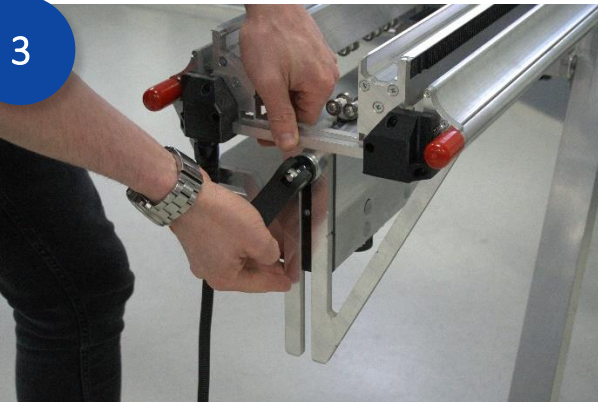
Slide the *X Beam Upper* onto the *X Beam Lower* as shown above.

2



The forks on the end of the *X Beam Upper* should slide on the skids of the *X Beam Lower*.

3



Secure in place by tightening the clamps on each end of the beam.

4



Slide the cables by the drag chain latch plate so that they are laid flat and extend from the end of the *X Beam Upper*

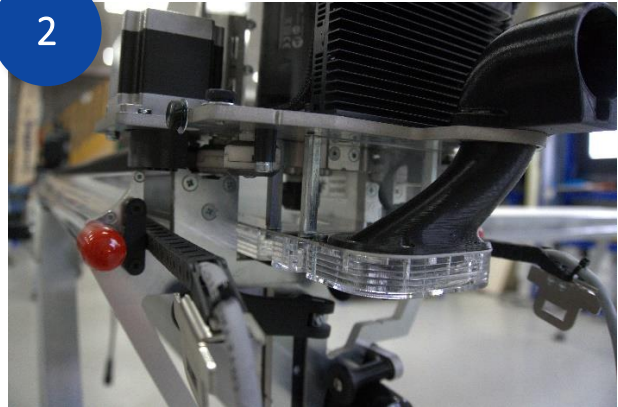
Fit the Z Head

1



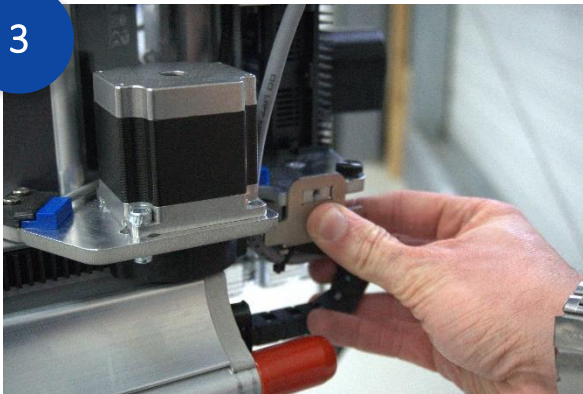
To Fit the *Z Head*, offer up the *Z head* ensuring the extraction elbow is facing towards you.

2



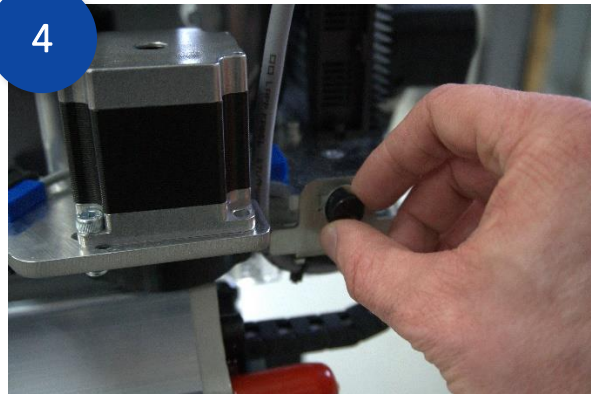
Load the *Z head* by inserting the wheels into the channels until the *Z head* holds onto the beam. This should be just passed the first wheel.

3



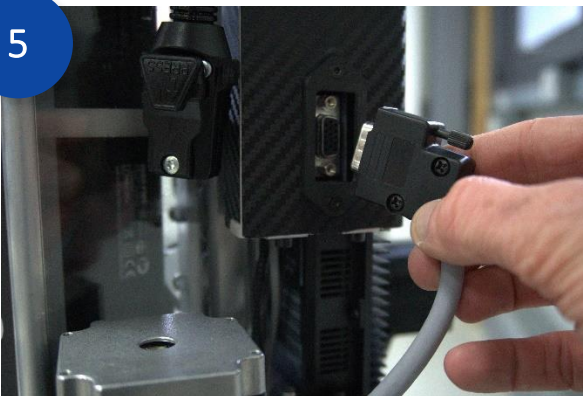
Place the drag chain latch plate over the rectangular face on the side of the *Z Head* bottom plate ensuring the signal cable seats into the recess.

4



Secure this in place with the thumbscrew provided.

5



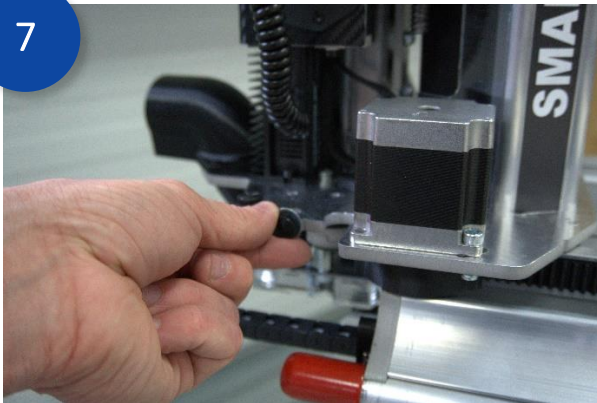
Plug in the signal cable and secure with the thumbscrew.

6



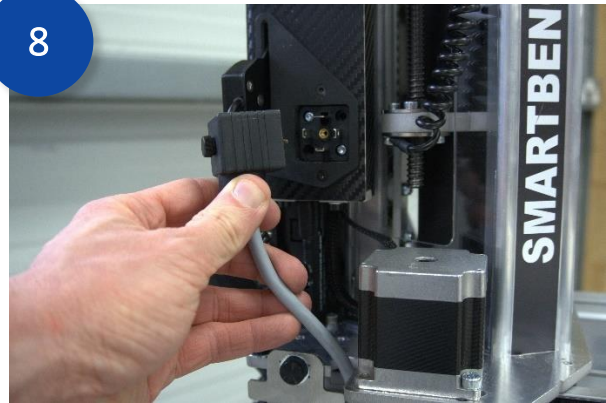
Place the drag chain latch plate over the protruding face on the side of the *Z Head*.

7



Secure this in place with the thumbscrew provided.

8



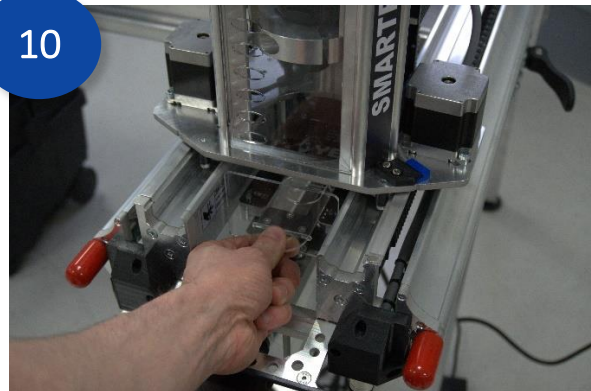
Plug in the power cable and secure with the thumbscrew.

9



You can now push the Z head onto the X Beam Upper until all wheels are engaged.

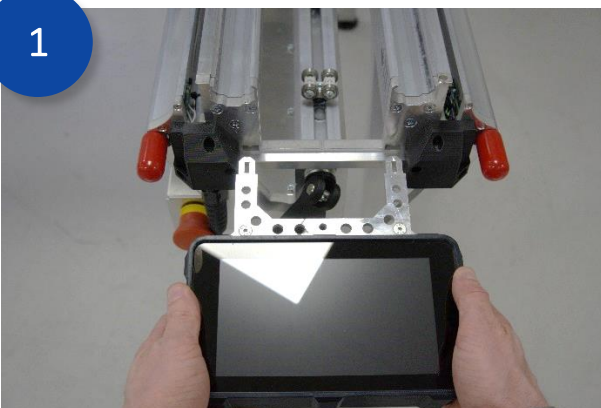
10



Fit the dust shoe plug into the front of the dust shoe.

Fit the Console

1



The Console attaches to the end of the X Beam Upper by locating the 2 forks into the end plate. Ensure the forks are inserted fully.

2



Plug the console cable into the XLR connector as shown above.

Fit the Amphenol Cable



The Amphenol connector connects to the socket on the underside of the *X Beam Lower*.



Plug the cable into the connector and rotate the cuff clockwise to secure.

Fit the *Extractor*

SmartBench has a dedicated power outlet for extractors, to enable auto-extraction, but the extractor must not draw more than 10 amps. If the extractor draws more than 10 amps, the extractor must be powered from a separate power outlet and operated manually.



Attach the extraction hose to the underside of the *X Beam Lower*



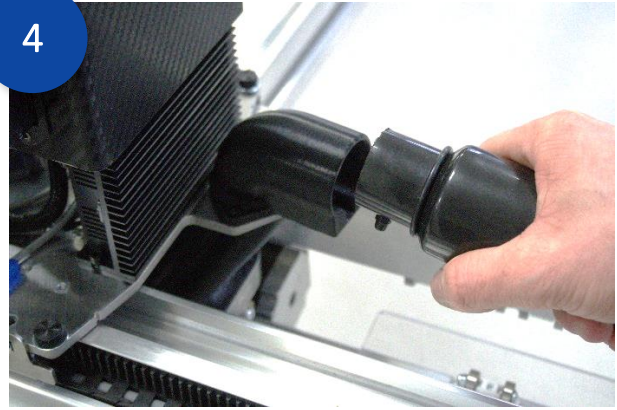
Either: plug in your extractor to a separate power outlet...

3



OR: If the extractor does not exceed the power rating, plug in your extractor into SmartBench extractor power outlet

4



Attach the extraction hose to the Z head by inserting the connector into the elbow and rotating clockwise.

Fit the Power Cable

1



The power cable input is on the underside of the X Beam Lower.

2



Plug the cable into the connector on the underside of the X Beam Lower.

Check cable connections

Check that all cables are connected correctly:

1. Z Head Signal
2. Z Head Power
3. X Beam Amphenol connector
4. Extraction power (if using the auto-extraction system)
5. Console XLR
6. Mains Power

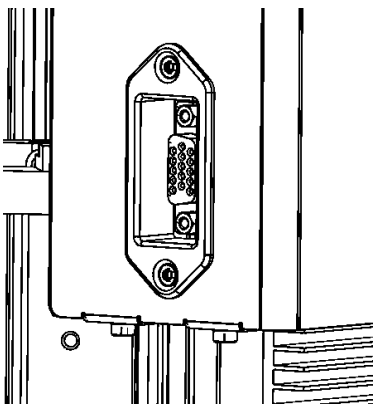


Figure 7: Z Head Signal

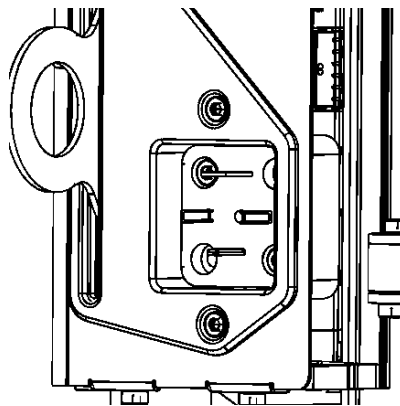


Figure 8: Z Head Power

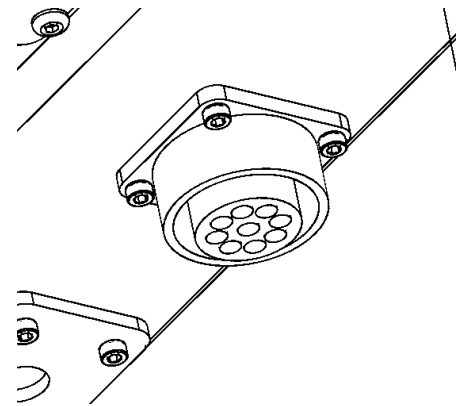


Figure 9: X Beam Amphenol

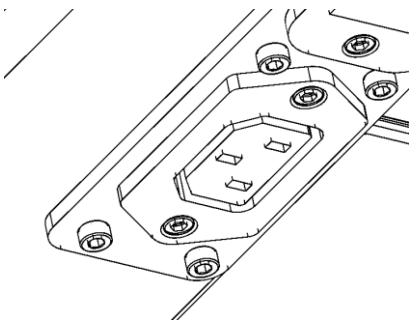


Figure 10: Extraction Power

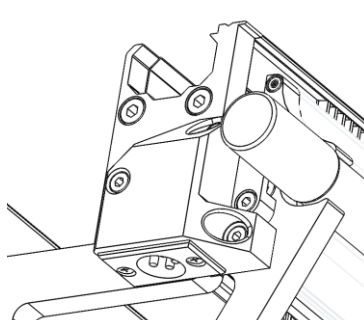


Figure 11: Console XLR

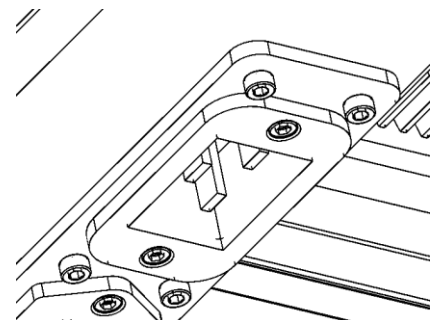


Figure 12: Mains Power

Turning on SmartBench

When the above instructions have been followed correctly, SmartBench can now be powered on by releasing the Emergency stop button. To release the button, it must be twisted clockwise.

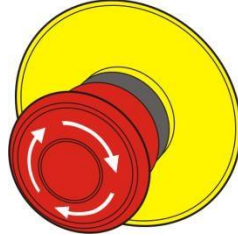
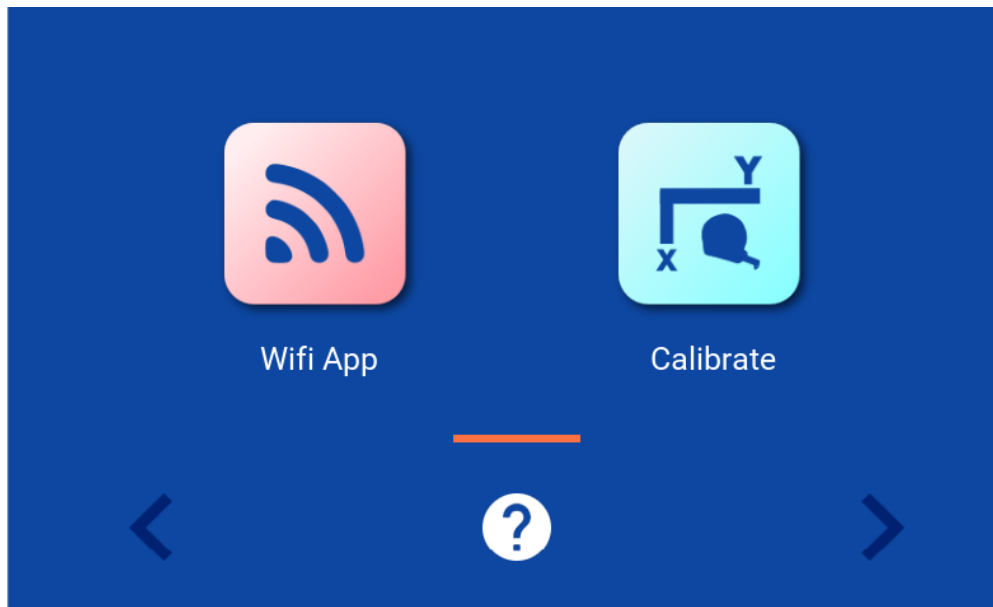


Figure 13: E-Stop Button

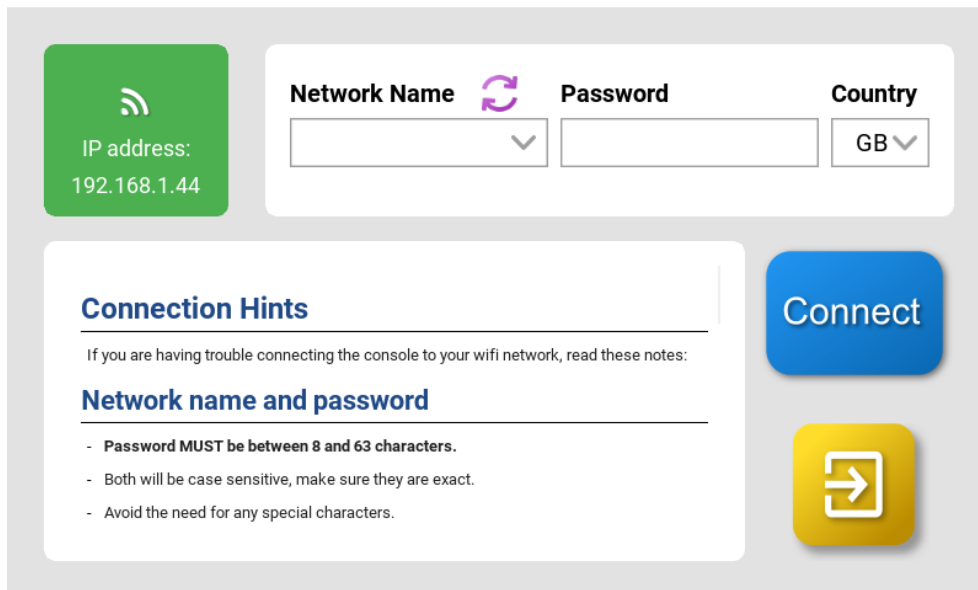
Connecting to Wi-fi

Connecting SmartBench your local network gives the following functionality:

- Software updates
- File transfer via your Wi-Fi network



1. Navigate to the Wi-Fi app in the main lobby

A screenshot of the Wi-Fi connection screen. On the left, a green box displays a Wi-Fi icon and the text 'IP address: 192.168.1.44'. To the right, there are three input fields: 'Network Name' with a refresh icon and a dropdown arrow, 'Password', and 'Country' with a dropdown arrow showing 'GB'. Below these fields is a 'Connect' button. On the left side, there is a 'Connection Hints' section with a title and a list of instructions: 'If you are having trouble connecting the console to your wifi network, read these notes:', 'Network name and password', '- Password MUST be between 8 and 63 characters.', '- Both will be case sensitive, make sure they are exact.', and '- Avoid the need for any special characters.' At the bottom right, there is a yellow button with a white right-pointing arrow.


2. Select your network

- Touch on the network name box
- Select your network name from the list
- Use the refresh button to update the list

3. Network Password:

- Touch on the Network password box
- Enter your network password

4. Connect to Wi-Fi:

- Close the keyboard using the  button in the lower right corner
- Press the connect button.

Please note the system will then automatically reboot.

The console screen will go black as the console restarts – this is normal.

If you have problem connecting to Wi-Fi, please see our hints and tips guide here: <https://www.yetitool.com/support/knowledge-base/software-easycut-setup-connecting-to-wifi>

Status LED's

The LED's on the Z Head indicate the status of SmartBench.

Green – Status is good, a job is running, no action is to be taken

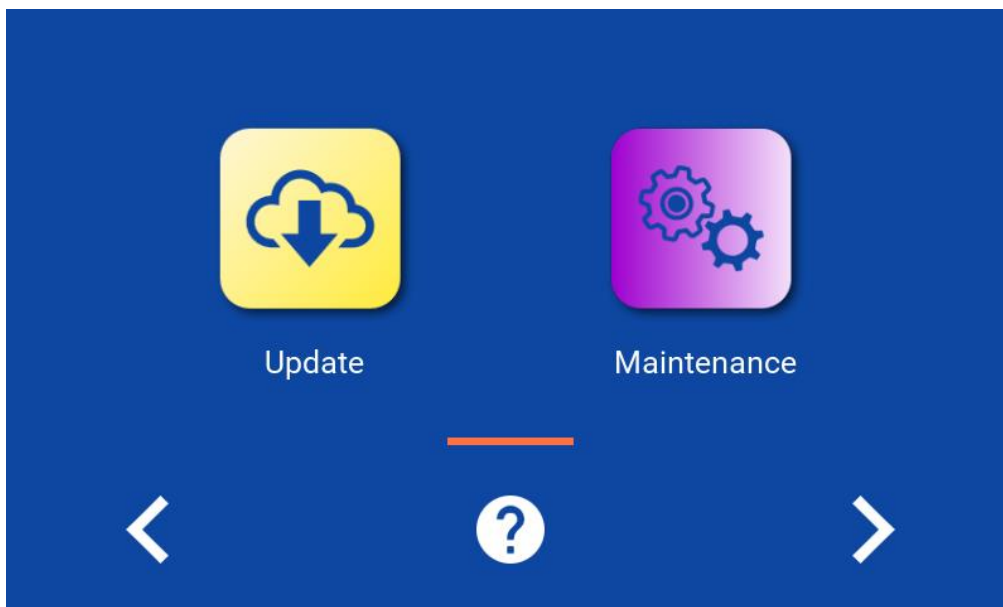
Yellow – SmartBench needs to be homed, action needs to be taken.

Red – SmartBench is in an alarm state, action needs to be taken.

Update software

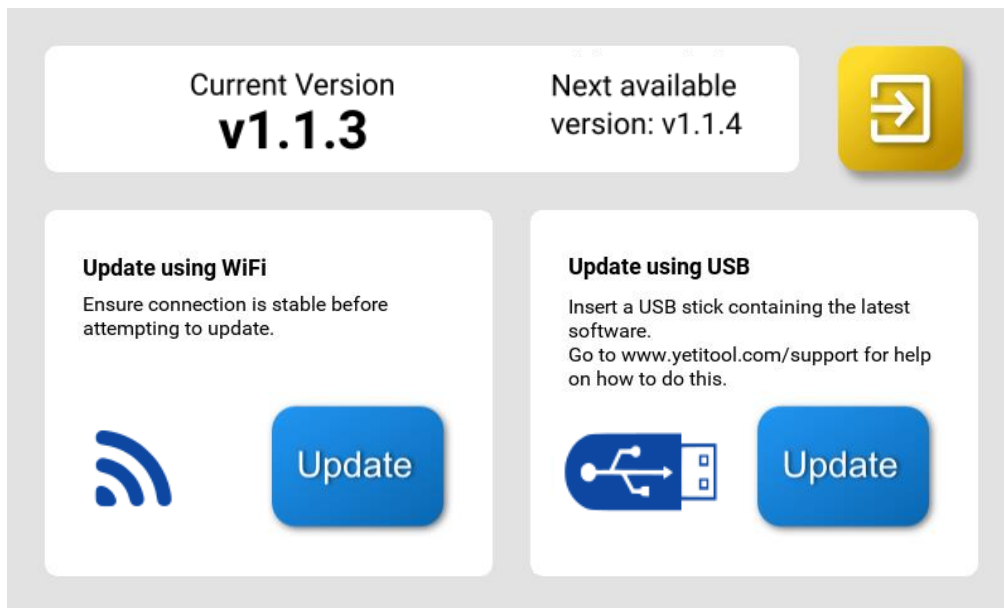
To complete the setup, update the software. In doing this you will get the benefit of the following updates:

- Additional functionality to improve our customers user experience



You will find the software update button in the lobby. You can update the software either via Wi-Fi or USB

Updating via Wi-Fi



Ensure you have a stable Wi-Fi connection. Press the update button.

The system will automatically connect to our server, download, and update the latest version, **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

Updating via USB

1. Download the latest version of software from our website: www.yetitool.com/support/downloads
2. Save the file into the root of your USB stick.
3. Insert the USB into the console and press update.

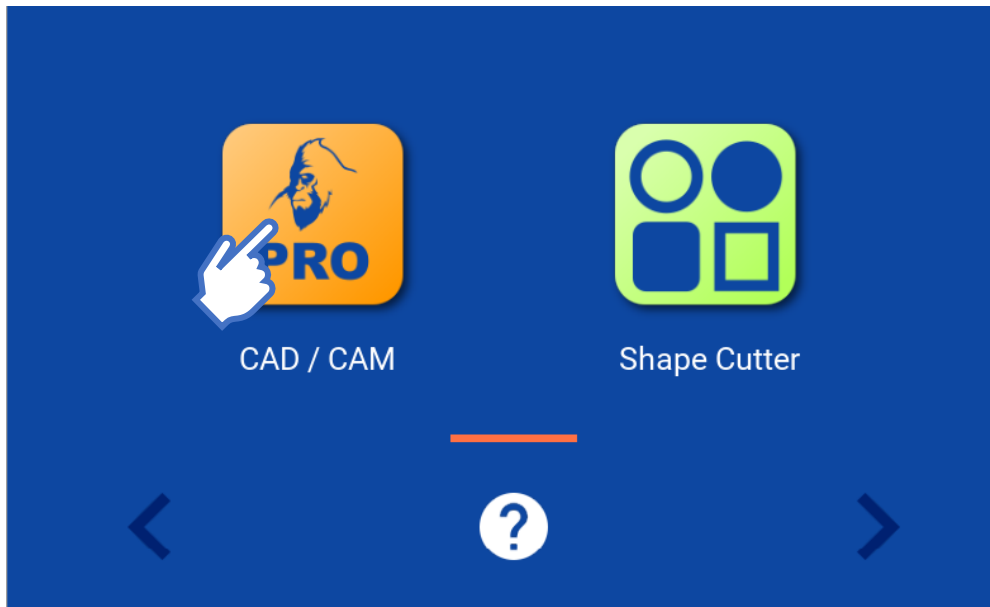
The system will automatically update the latest version of, **and then reboot.**

It is important to note:

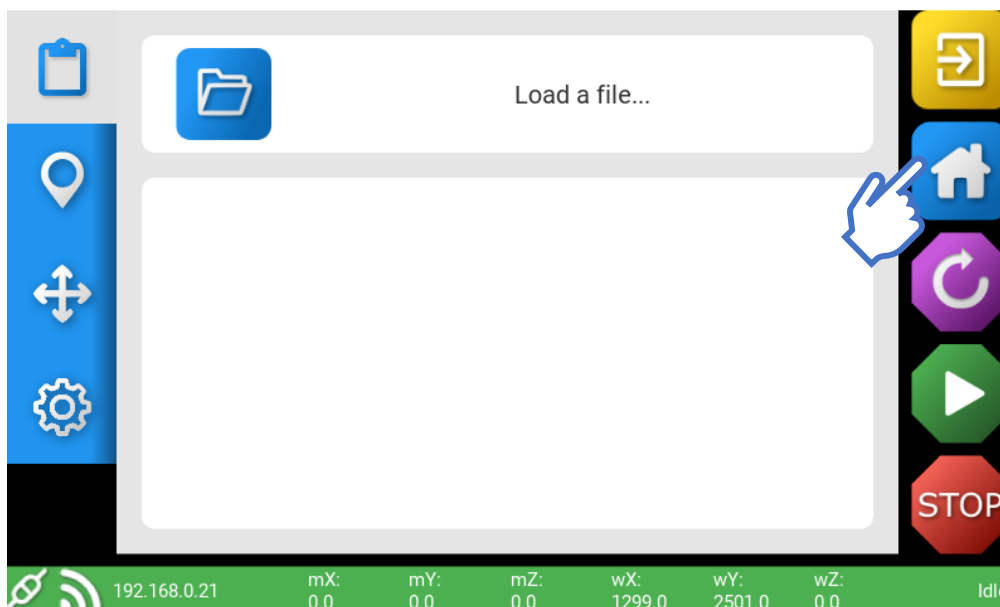
- None of your job files will be touched, and
- The last set datum or park points will be retained

Home SmartBench

1. From the Lobby screen press to go to CAD/CAM operation



2. Press the home button. The home button will appear on all screens



- You have the option to either square SmartBench manually or use the auto-square feature. Please see details of each feature below:

Manual Square

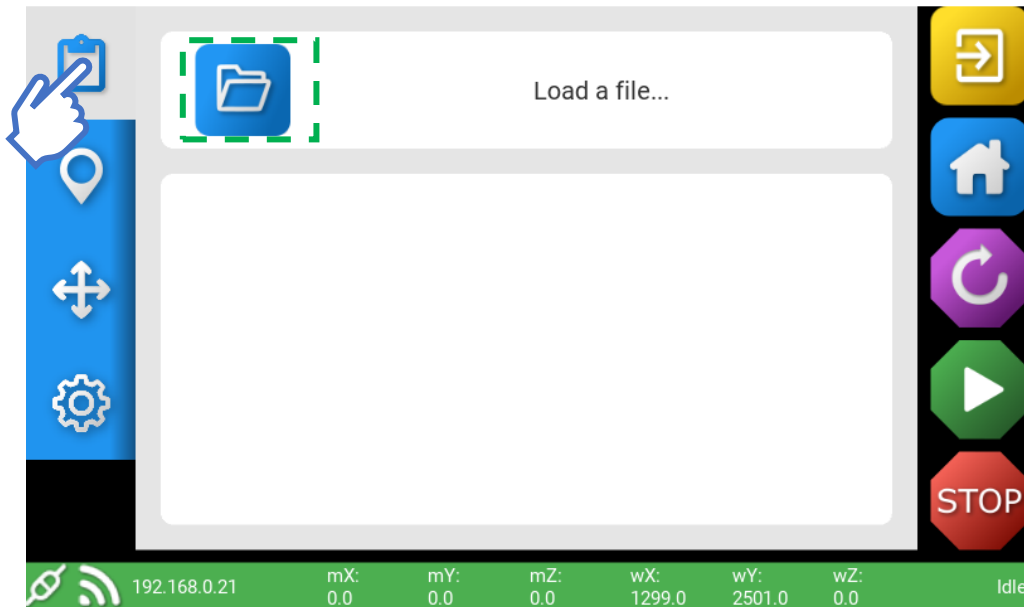
Before power up, the user manually pushes the X beam up against the bench legs at the home end. The power is then switched on. The motor coils lock the X beam into position with a high degree of reliability. Thus, mechanical adjustments to square the beam can be repeated.

Auto Square

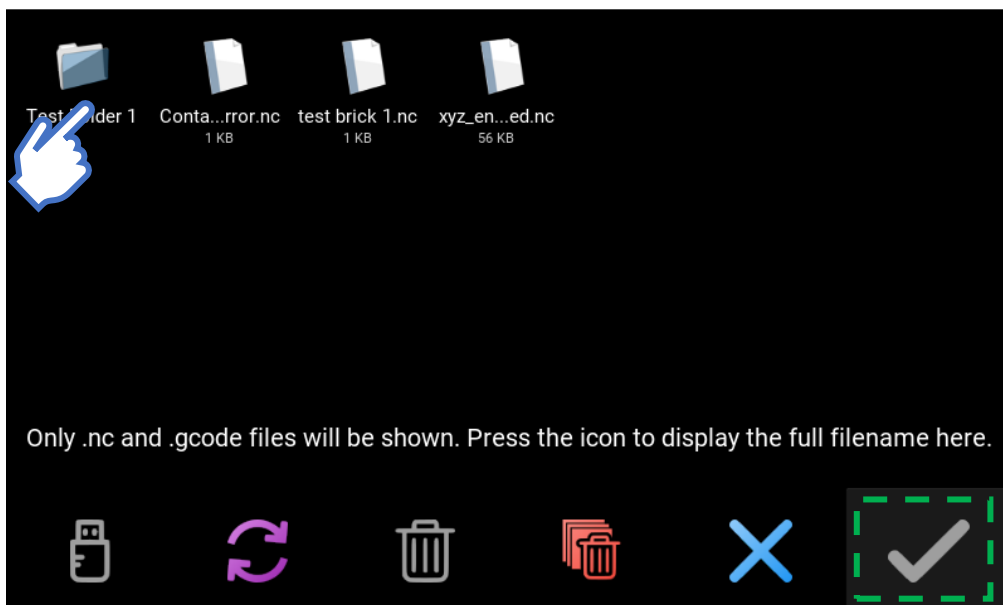
No special preparation from the user is needed. When homing, the lower beam automatically drives into the legs to square the X beam against the bench legs. The stalling procedure can offer a general squareness. But at the end of the movement, the motor coils can bounce into a different step position. Thus, mechanical adjustments to square the beam can be repeated less reliably than manual squaring.

Open a file

1. Go to Job screen
2. Press the file explorer (Green)



3. Choose your file
4. Accept your file choice (Green)



- For full details on file transfer/ loading go to the console user manual

Set X/Y datum

The X/Y datum refers to the point at which you have set your datum in your file. This is set by moving the cutter to the intended point and setting the datum to that position.


1. Go to Move Screen
2. Move the X Axis (Red)
3. Move the Y axis (Green)

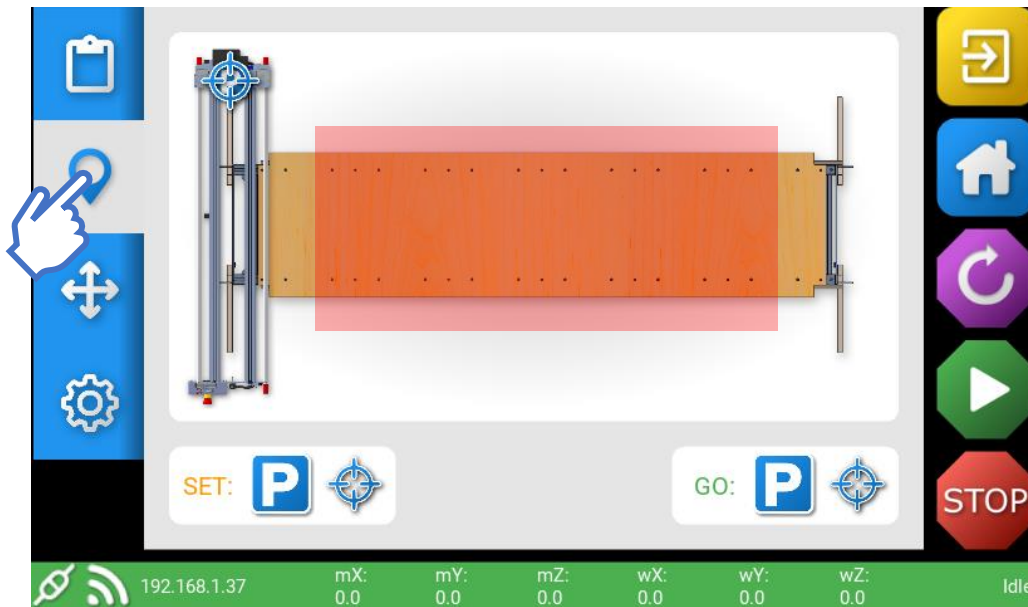


4. Set the job start point, the LED will flash GREEN to confirm



Check that your job location fits within SmartBench's bounds:

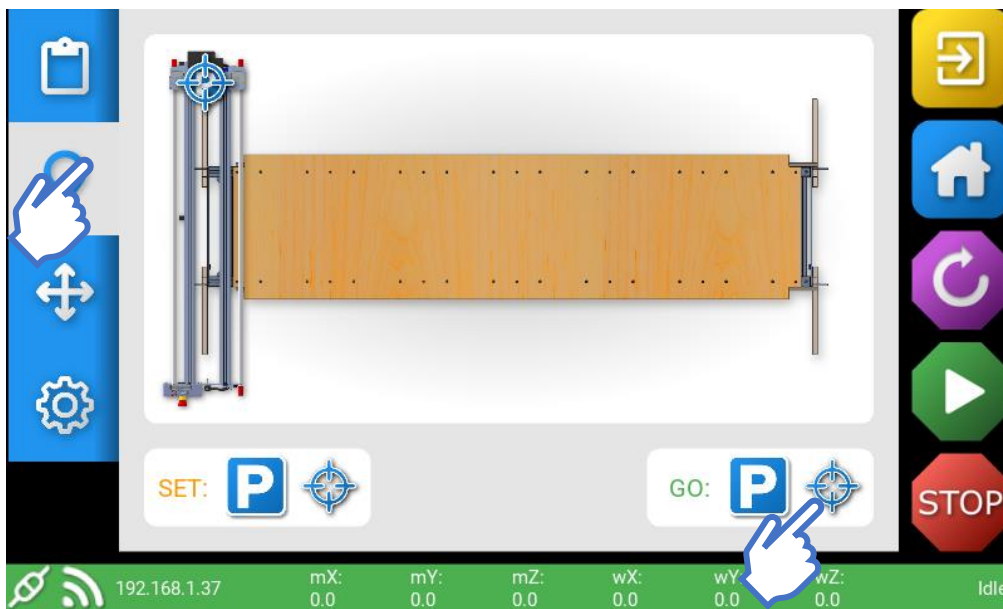
5. Go to Map screen
6. Make sure the X/Y Datum  is in the right position and your job does not reach beyond the extents of the X/Y space.
7. If not, repeat the previous steps to reposition the datum.



Set Z datum (start point for the job)

Once the X/Y datum is defined, the tip of the router cutter needs to be registered relative to the material. This is referred to as setting the Z datum and should be done near the X/Y datum. Start by going to the X/Y datum:

1. Go to the Map Screen
2. Press 'Go to X/Y Datum' to place the Z Head at the X/Y datum

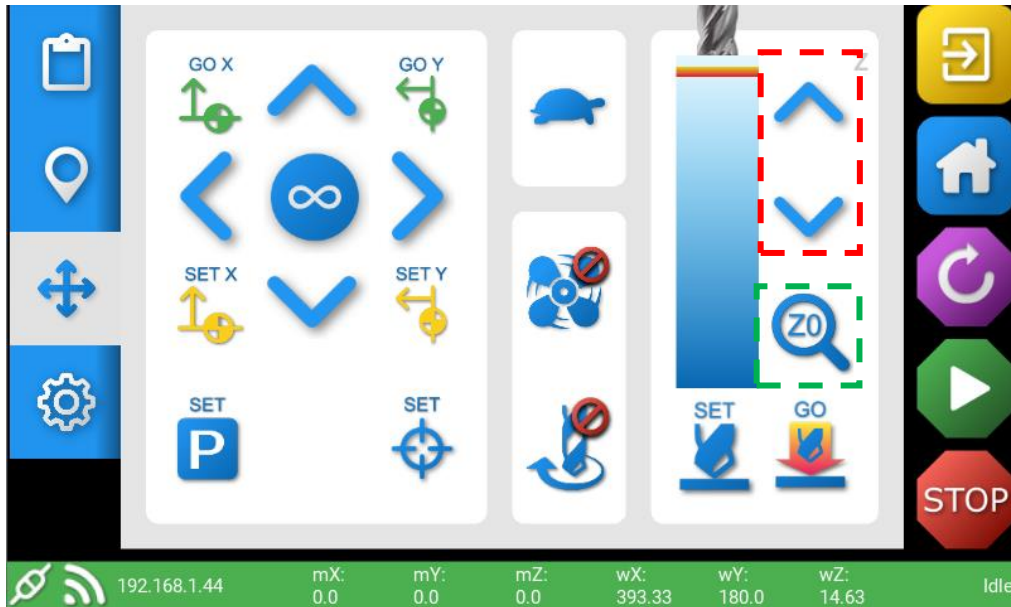


Now you need to place the cutter at the height you want your Z datum (typically either the top or bottom surface of the material, depending on the job).

To set the Z height with the Z probe:

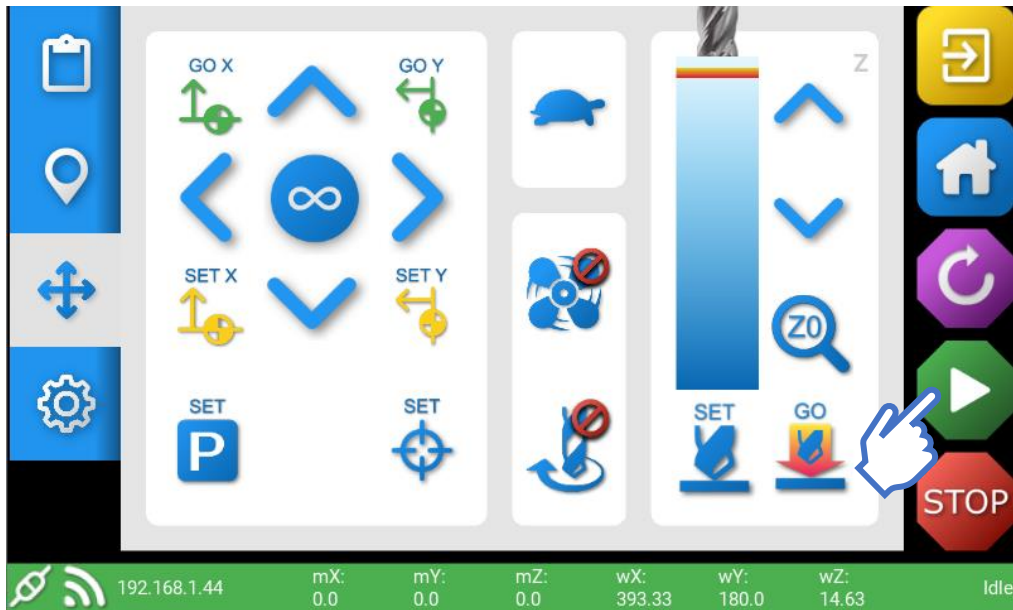
1. Go to the Move screen.
2. Take out the Z probe plate from its holder.
3. Remove the front of the dust shoe.
4. Place the Z probe plate directly below the cutter tip.
5. Make sure the back of the probe plate lies flat on the surface you are trying to probe. The probe plate should be silver side up.
6. If the tip of the cutter is not close to the top of the stock, manually move it downwards to about 10mm (3/8") away from the probe using the Z down button (Red). Take care not to overshoot!

7. When close, press the 'Z0' button (Green). The Z head will automatically lower until the tool tip touches the probe plate (on touching, an electrical circuit is closed, the software remembers this position, and subtracts the thickness of the probe plate).
8. When the cutter retracts, the Z datum is set. The LED will flash GREEN

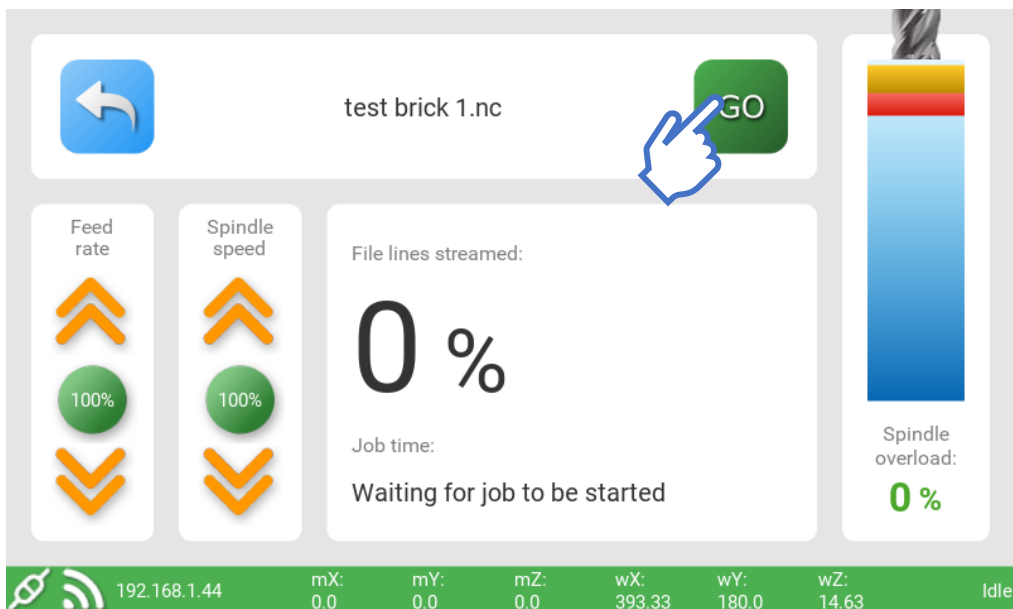


Run job

1. To run your job, press the play button.



2. Confirm you wish to run your file by pressing the 'GO' button

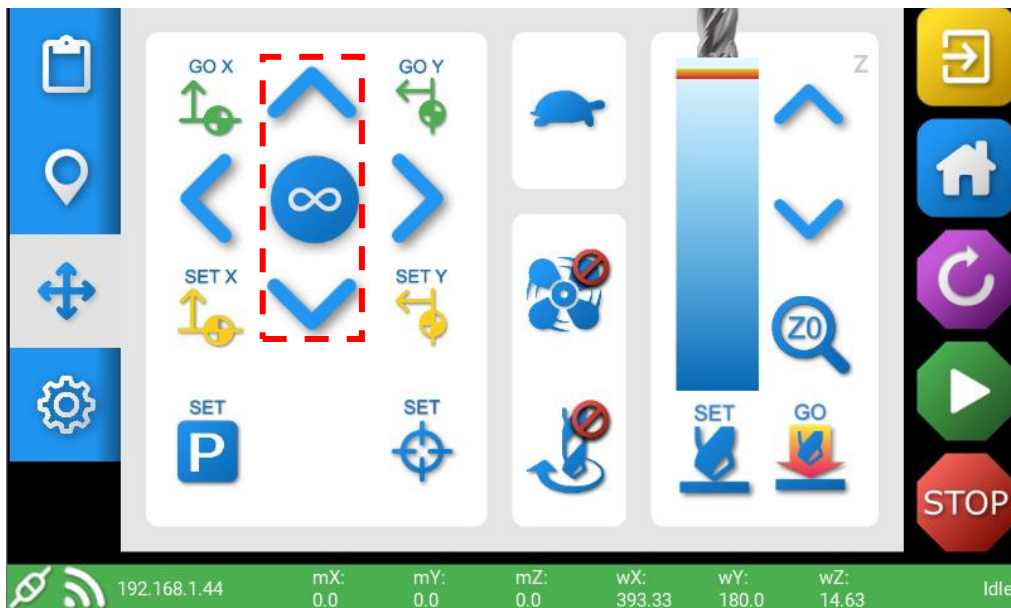


For more details on the console software, please download the full user manual from: www.yetitool.com/support/downloads

Removing and Replacing a Spindle

This guide uses the SmartBench Precision as an example, which includes a grey speed control cable as well as the power cable. You can ignore references to this wire if you have the Standard version of SmartBench.

To change the spindle, you will want to move the Z head closer to the X0(X home) position for easier access. To do this, use the arrows highlighted below (red) to move the Z head along the X axis.



You will need:

6mm hex driver (this is provided with your SmartBench)



Step 1: Disconnect cables

Disconnect the spindle power cable and speed control cable

1



Disconnect the power cable from the IEC connector

2



Remove the speed control cable

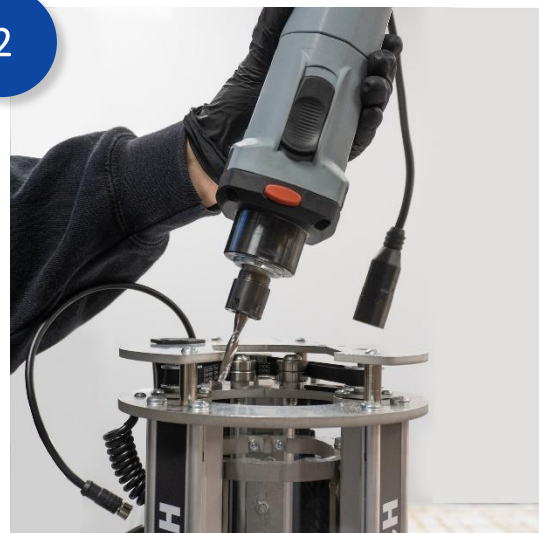
Step 2: Loosen spindle cage collar

1



Insert the 6mm hex driver into the spindle cage bolt and rotate left to loosen the bolt.

2



Then lift your spindle out of the top of the cage. The spindle may need to be rotated to remove it.

Step 3: Replace spindle

1



Once you have changed your cutter, carefully replace your spindle in the cage with the spindle switch facing forward.

2



Tighten the spindle cage bolt by turning to the right.

Step 4: Connect cables

1



Reconnect the speed control cable ensuring to tighten the threaded collar.

2



Push the power cable back into the IEC connector.

Troubleshooting

If you are experiencing problems with you SmartBench, please see the troubleshooting guides below that may be able to help you. If for any reason you cannot find your answer below. Please do not hesitate to contact support@yetitool.com

SmartBench will not power on

- Check your power connections into the lower beam are secure
- Ensure the emergency stop button is released (with the green part of the button released)
- Check the fuses (these can be found on the underside of the lower beam)
- Ensure your console is connected to the XLR connector on the upper beam
- Ensure the Z head power and signal cables are connected, and the retaining screws tightened

Console will not boot

- Ensure the Z head power and signal cables are connected, and that the retaining screws tightened
- Ensure your console is connected to the XLR connector on the upper beam
- If you are seeing the blue YetiTool Splash screen, you may need to reflash your software. Please contact support for instructions.

SmartBench will not home correctly

- Ensure there are no items that could foul the movement of SmartBench
- If SmartBench is stalling in any axis, please contact support.

Software will not update

- Ensure your console is connected to a network using the Wi-fi app on the console
- If you are updating via USB, ensure you have saved the file to the root of the USB drive

Console will not connect to the Wi-Fi

- Ensure you have selected the correct Wi-Fi network
- Ensure you have entered the Wi-Fi password correctly. The password is case sensitive
- Ensure you have the correct country code selected. GB works for most regions

USB will not read

- Ensure that you have saved your files as the correct file type. They should be either .gcode or .nc format
- Ensure your USB stick is correctly formatted to either: NTFS, FAT32, HFS+, EXT2, EXT3 or EXT4

SmartBench is in an alarm state

- Clear the alarm using the resume button on screen
- Clear the alarm by pressing the purple reset icon
- Check that the stop bars are not depressed

Spindle does not power on

- Ensure the spindle power cable (and speed control cable - for precision models) are plugged in
- Ensure the switch on the spindle is turned on
- Check your brushes by removing the back cover of the spindle

Extraction does not power on

- Ensure the extraction is plugged into the extraction cable provided by SmartBench.
- Ensure your extraction is turned on

Support

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

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