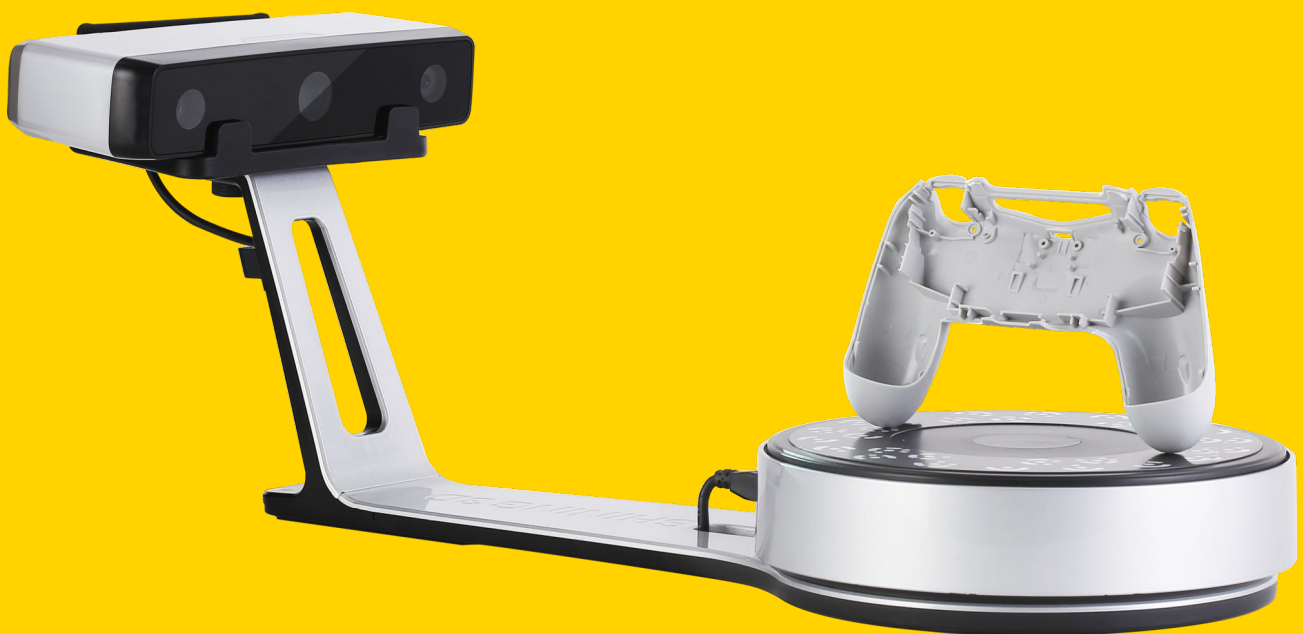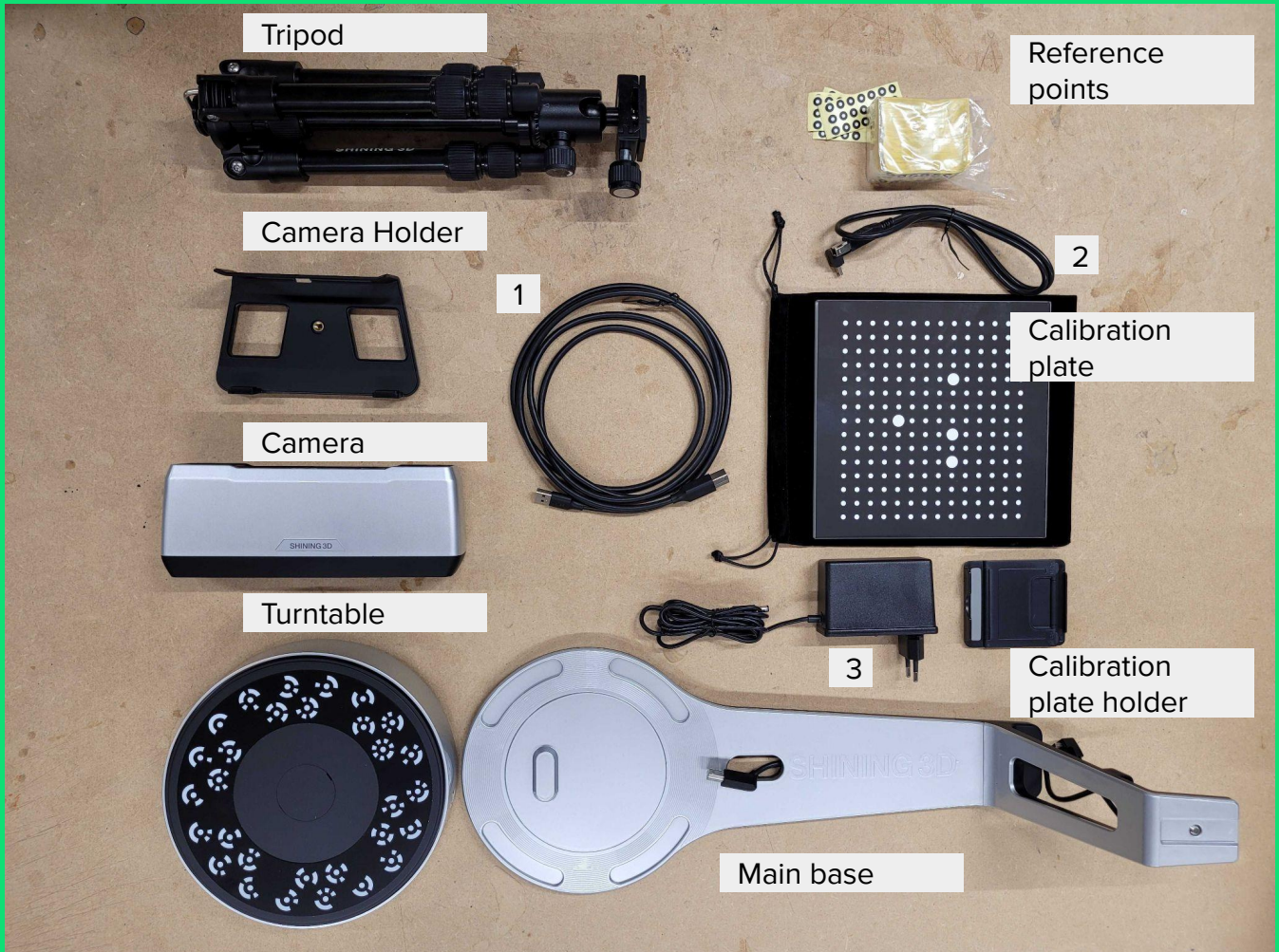# EINSCAN-SP

Multi-functional 3D scanner
Min scan volume: 30×30×30 mm
Max scan volume: 700×700×700 mm
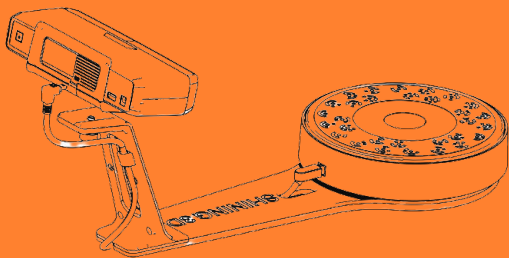
PARTS CHECK

Tripod

Reference points

Camera Holder
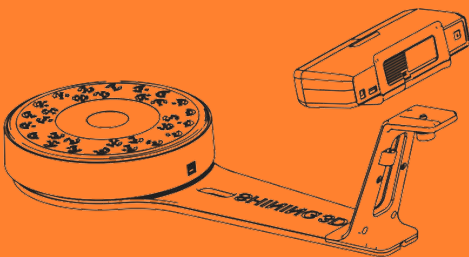
1

2

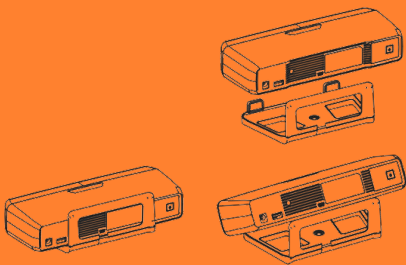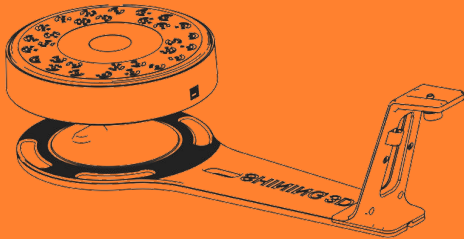Calibration plate

Camera

Turntable

3

Calibration plate holder

Main base

1. USB cable to connect PC
2. Extra cable to connect Turntable and Camera when not using Main base
3. Power cable

ASSEMBLING THE MACHINE

- The turn table will fit on the main base.
- Slide the camera on the camera holder.
- The camera can then be fixed to the main base with a screw.
- Connect the turntable to the camera with the wire.

- If you plan on using the tripod you don't need the main base but only the turntable.
- You can connect the turntable to the camera with the extra wire.
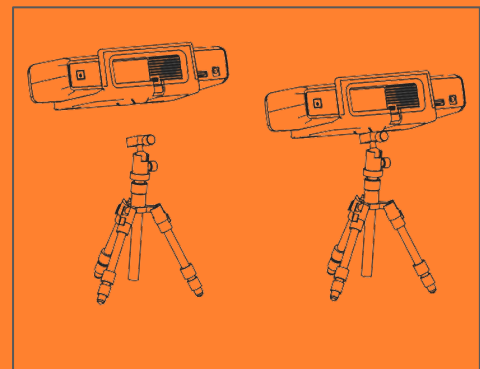
CONNECTING TO THE PC

Getting the software running

- Connect the USB cable between the camera and PC
- Connect the camera to the power supply and turn it on by pressing the On button in the back of the camera.
- When the camera is on the button led will glow.
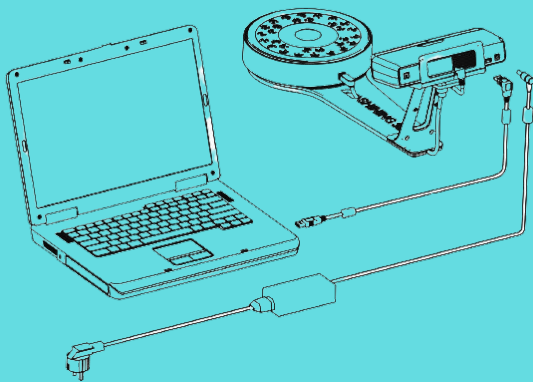
Normal Setup
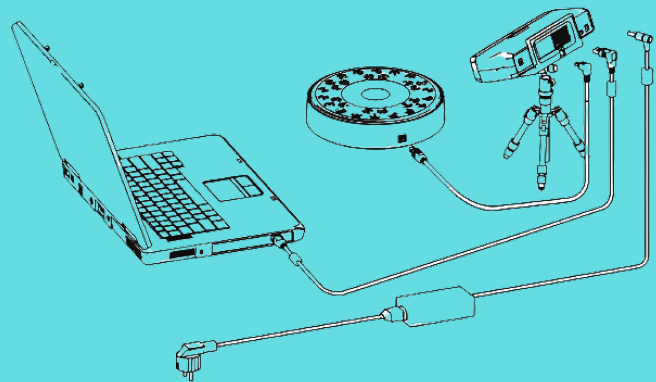
Tripod Setup

- Open the Software for EinScan-SP on the PC
- Verify the machine
- If the machine is not recognised ("see picture") try to close and reopen the software and check if the USB cable is plugged and that the scanner is on.

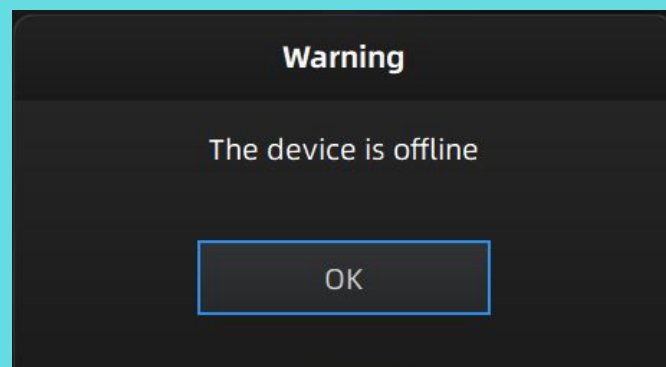# NEW PROJECT

Choose the scanner

The first picture that will appear when you open the software and the scanner is connected to the PC will be the option to choose a scanner to use the software with.be sure to select the EinScan-SP option.

Create a new work

Then you can create a new Work and save it wherever you want on the PC.
I you plan to use the software to modify an already existing existing Work you can always open it with the second option.
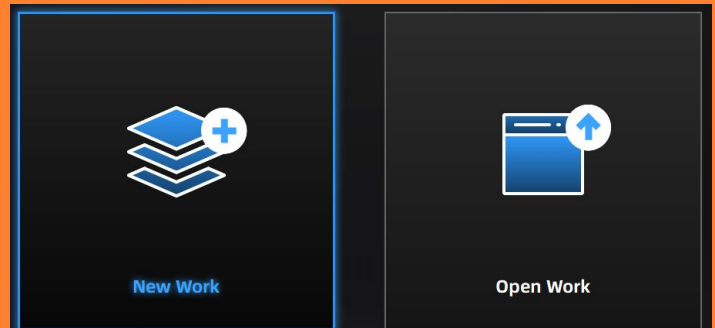
Scan type

The scanner can do 2 different types of scan:
With texture (other than the 3D data the scanner will save a material wrapped on the object created from photos of the original object).
Better for digitalization of objects
Without texture (the data saved will be only the 3D data and the object will have no material assigned to it, so it will require less space).
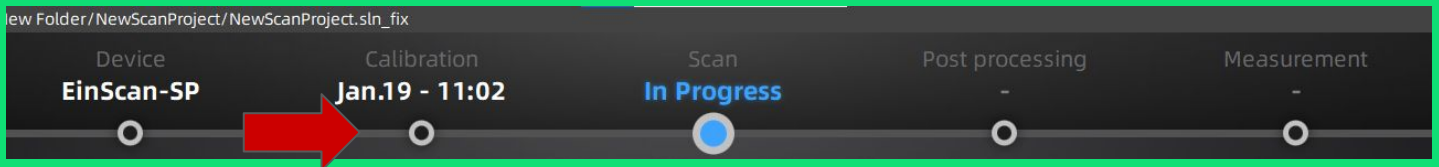Better if you plan on 3D print the object.
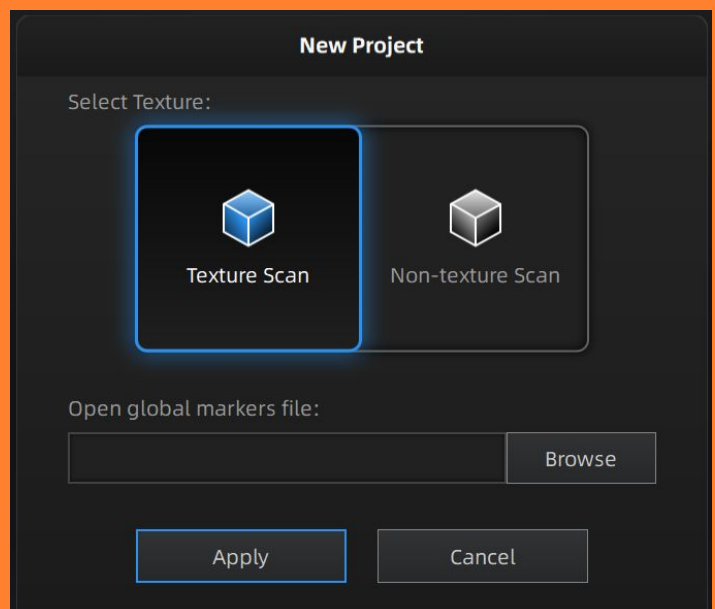
BEFORE YOU SCAN

Calibration

If you notice that the date of the last calibration is very far or if the lighting settings are different from normal you will have to calibrate the machine.
By pressing the the circle under "Calibration" you can start the calibration process. Please follow the instructions.

White balance

During the scan you will probably do the white balance calibration. If you didn't do any calibration just make sure that the only thing appearing red on the scanner are the white stuffs on the brightest in general. **Make sure that there is not too much red on the screen.**
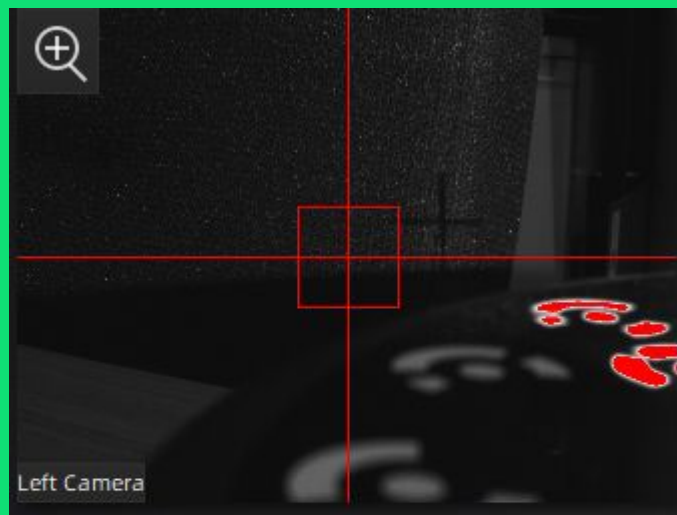
SCANNING OPTIONS
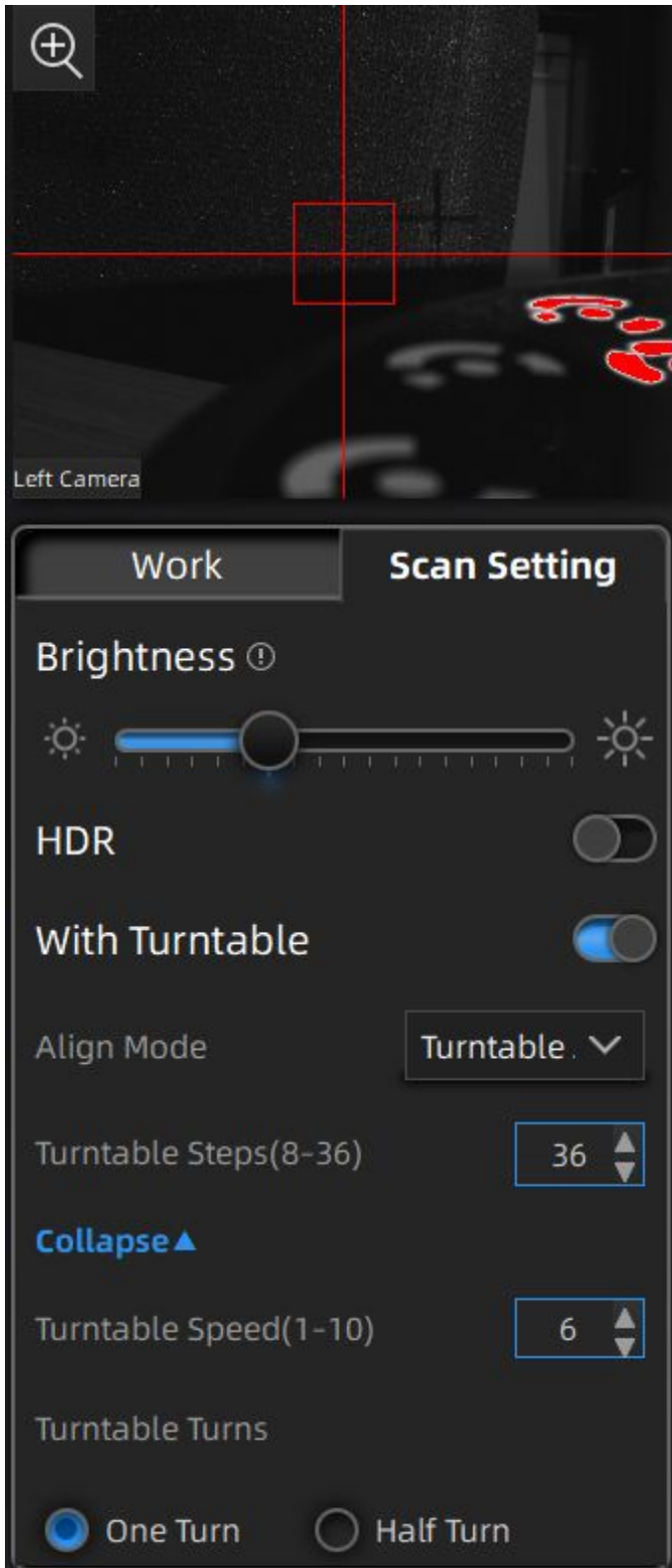
Brightness

Adjust this slider if you see that the picture is too dark or if there is too much red on the screen.

HDR

You can use HDR to get an high definition image, an HDR scan will be slightly more precise but take more time to scan.

With Turntable

If you plan to use the turntable check this option.

You will be able to set the amount of steps and speed of the turntable (make sure that the speed is not higher than 6).

Reduce the speed if your object is moving during the scan.

Depending on if you need all the object to be scanned or just half of it you can set the turnable to do a full turn or just an half turn.

Align mode

If the turntable symbols are visible to the camera use the turntable alignment mode. Else it is possible to use the stickers or just use the object itself if it has enough features. When using the stickers make sure they are homogeneous and that there is always at least 4 in the camera view.

SCANNING

Start and pause scan

Once everything is ready start a scan by pressing the play button on the right of the screen. During a scan it is possible to stop the scan by pressing the pause button. Resume the scan by pressing it again.

Camera view

Start/Pause scan

Stop and delete

Global optimization

Open/new project

Save data

Show/hide texture

Mesh model

MULTIPLE SCANS

Scan again

If after one scan your model seems incomplete you can just move the object in another position ad do a new scan. The software will try to align the multiple scans automatically.

Clean the scan

You can clean your scan by selecting the unwanted points with Left Shift + Left Click and then deleting them.

Manual alignment

If you feel that the alignment is of you can always align manually from the menu. Place alignment points by pressing Left Shift + Left Click.
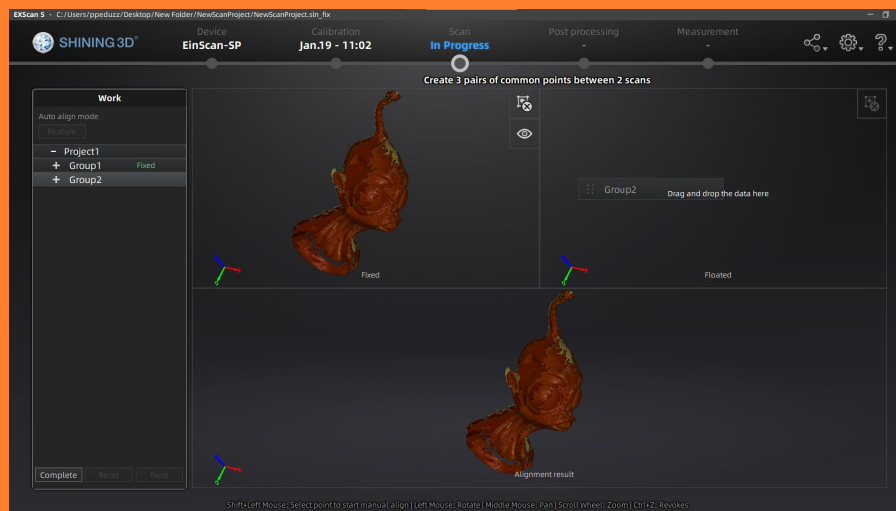
Global optimization

Once you are done with everything you can mesh your model by pressing [Global Optimization] and then [Mesh Model]

MESH PROCESS

What kind of mesh

Depending on what kind of mesh you will need you can choose between watertight mesh or not.

It is suggested to always go for a watertight mesh especially if it is planned to 3D print the model.

The software will do a pretty good job in filling all gaps.

You will then be able to do final touches as changing the polygons amount and others.

Watertight Model   Unwatertight Model

Save your scan

Sharpen

Smooth

Simplification

Texture remap
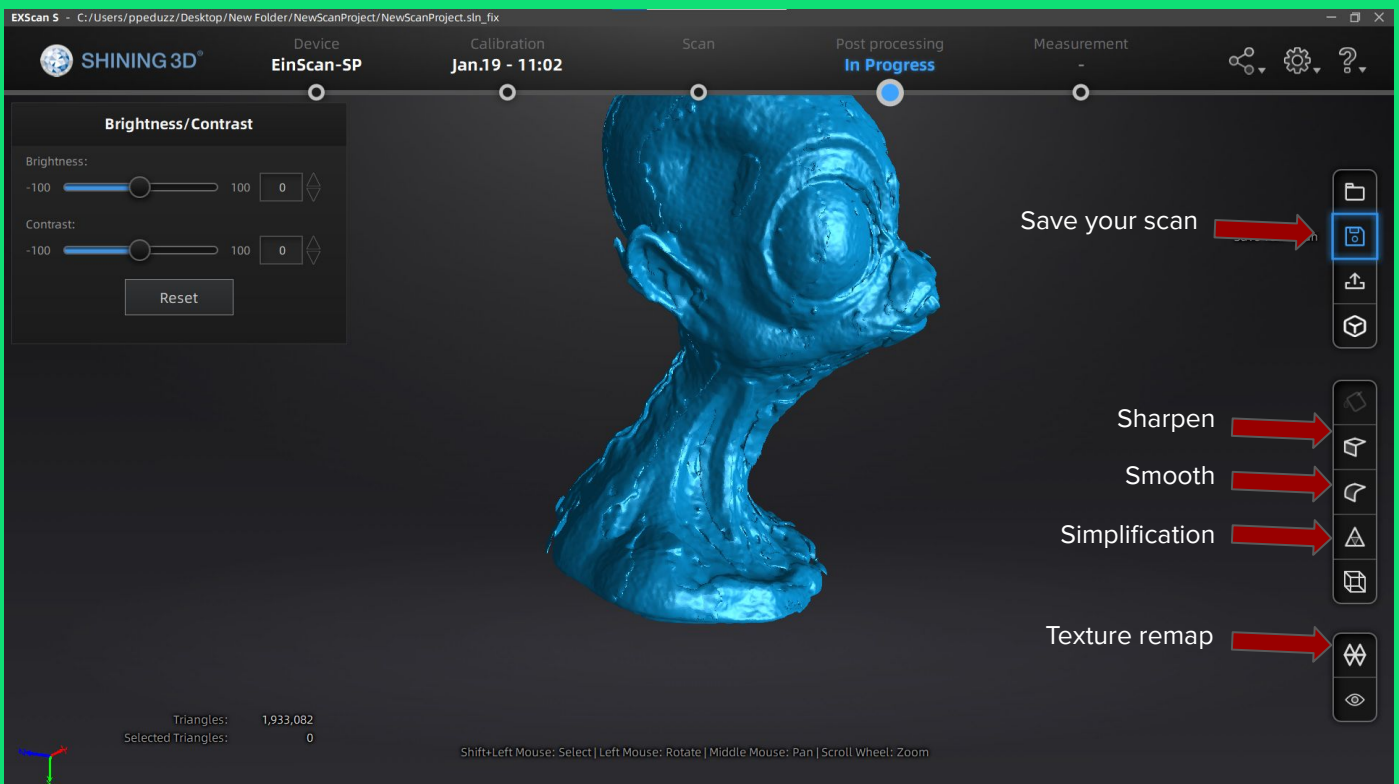
SAVE YOUR SCAN

You can save your scan by pressing the apposite button.
The project will be saved automatically on the folder you selected when creating it.

File name:	Scan		Save
Files of type:	All Files (*)	▼	Cancel

☐ .asc(whole) ☑ .stl ☐ .ply ☐ .obj ☐ .3mf

If you plan to 3D print your scan or to modify it on a CAD program I suggest you save it as a .stl file (note that .stl files will not maintain textures).

If you plan to use the file on a digital form you can save it as you wish (.obj will maintain the 3D object and textures).