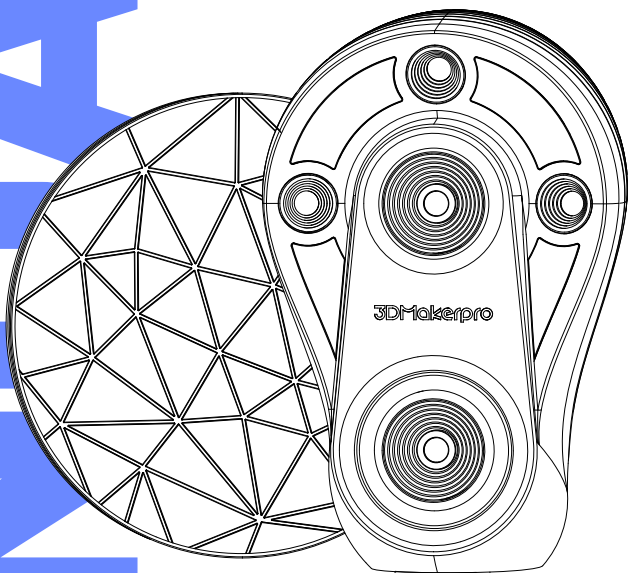


V1.1

3DMakerpro

store.3dmakerpro.com



3DMakerpro

f @3DMakerProCares

@official3DMakerPro

@3DMakerPro

https://store.3dmakerpro.com/

service@3dmakerpro.com

JimuMeta

@JimuMeta @JimuMeta

https://www.jimumeta.com/

service@jimumeta.com



WHALE

Hardware Connection **P1**

Packing List **P3**

Computer Requirements



Minimum

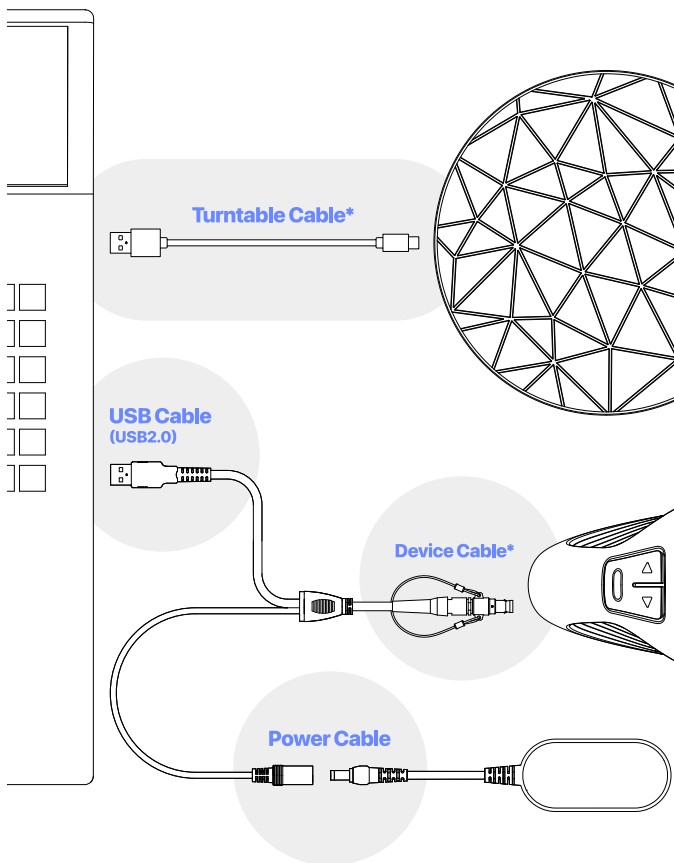
Intel Core i5 8th, 16GB RAM,
MX250 GPU with 2GB VRAM

Recommended

Intel Core i7 8th, 16GB RAM,
NVIDIA1060 GPU with 4GB VRAM

P1

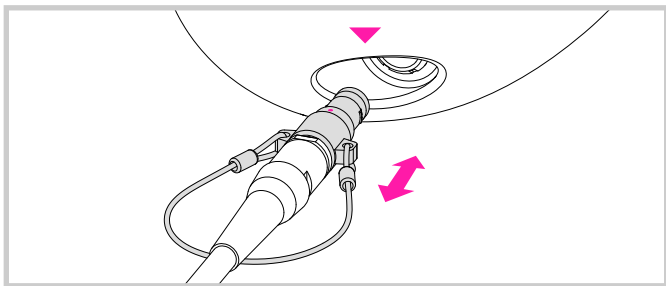
HARDWARE CONNECTION



One end of the device is plugged into the navigation plug, and the other side is plugged into the power cord and computer USB 2.0 or above port respectively.

P2

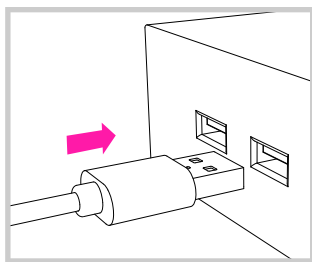
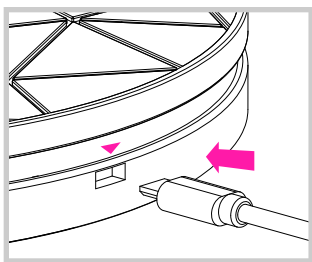
* Device Cable



Insert the power plug at the device end by aligning the raised point with the interface dot mark.

Pull the cord on the plug when pulling it out.

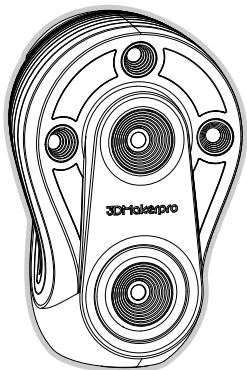
* Turntable Cable



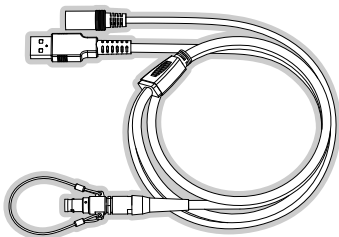
The turntable power cord can be plugged into the computer through usb power supply, or use the phone charger for its power supply.

P3

PACKING LIST



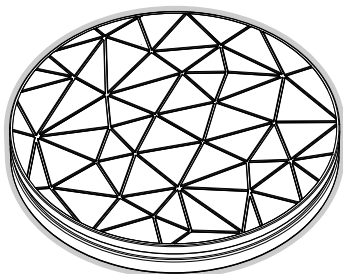
Host



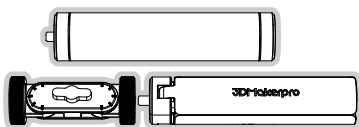
Device Cable



Turntable Cable*



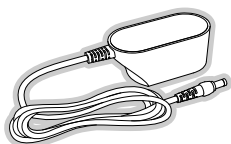
Turntable*



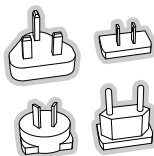
Tripod*



USB Drive



Power Supply



Changeover Plug



Manual

* Not included in the standard package.



To prevent antivirus software from blocking the driver, please uninstall the antivirus software.

| **Software Installation**

Operating System Requirement

How to Install

Software Upgrade

| **User Interface**

| **Shortcut Key**

| **Scanner Settings**

| **Scanning Workflow**

Preparation

Preview and Adjustment

Easy Scan

Table Scan

| **Editing**

Data Editing

Align

Process

Reorientate

| **Export the Model**



JMStudio

macOS | Windows

MANUAL

Download latest **JMStudio** from

<https://forum.jimumeta.com/home/help/download.html>



Get latest **Manual** from

<https://forum.jimumeta.com/home/help/manual.html>



Software Installation

Operating System Requirement

Recommended Computer Configurations

Intel Core i7 8th, 16GB RAM, NVIDIA1060 GPU with 4GB VRAM

Minimum Computer Configurations

Intel Core i5 8th, 16GB RAM, MX250 GPU with 2GB VRAM

How to Install

You can acquire the application file by visiting our website.

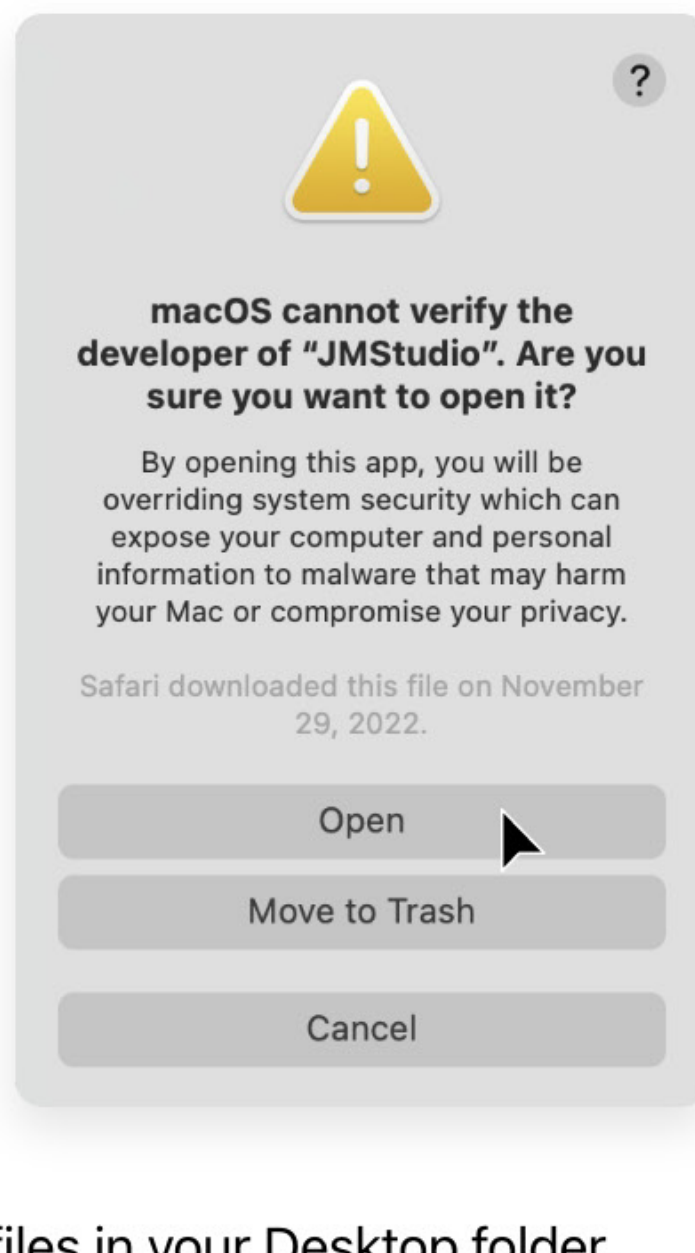
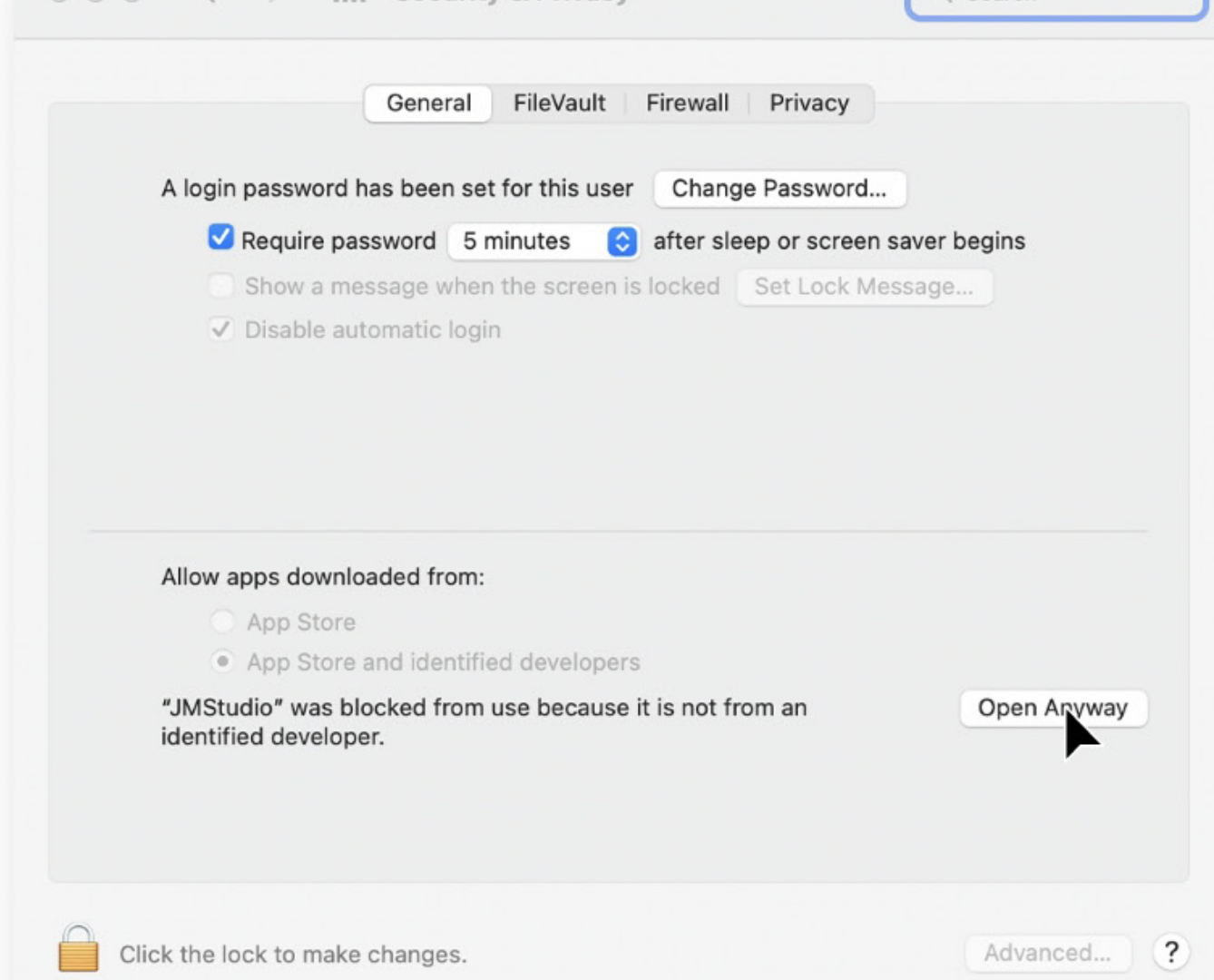
Follow the steps below to install the software.

For macOS

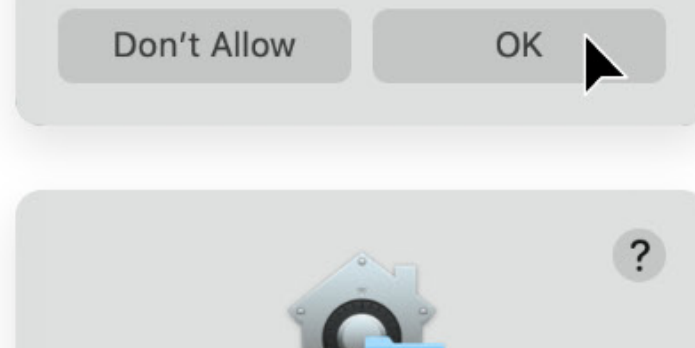
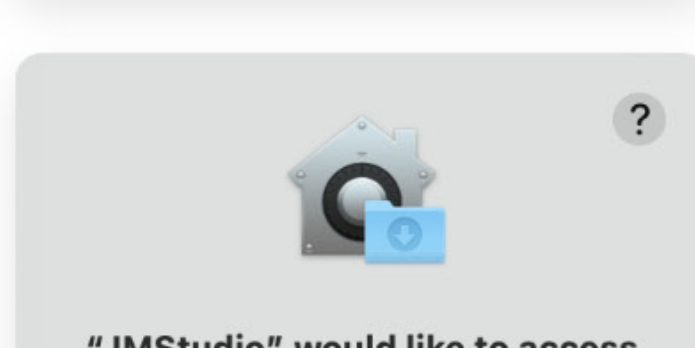
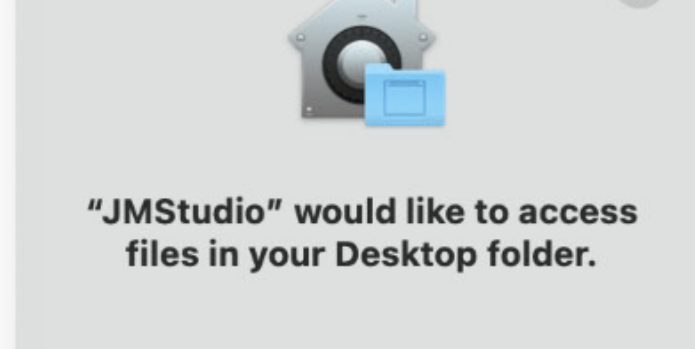
① Double-click the application file and drag it to the Applications folder.



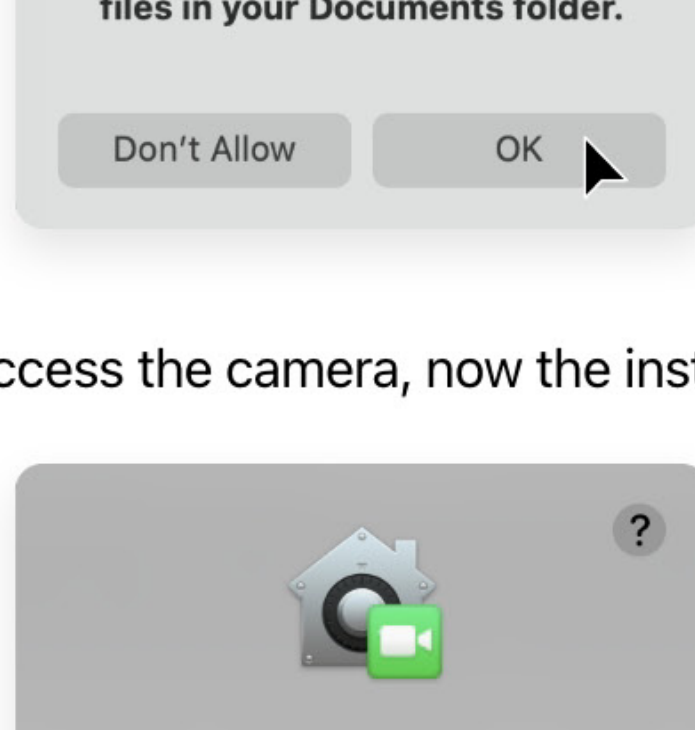
② When this error occurs, please go into your Security & Privacy, check the App Store and Identified Developers radio button, and click Open Anyway.



③ Allow JMStudio to access files in your Desktop folder.

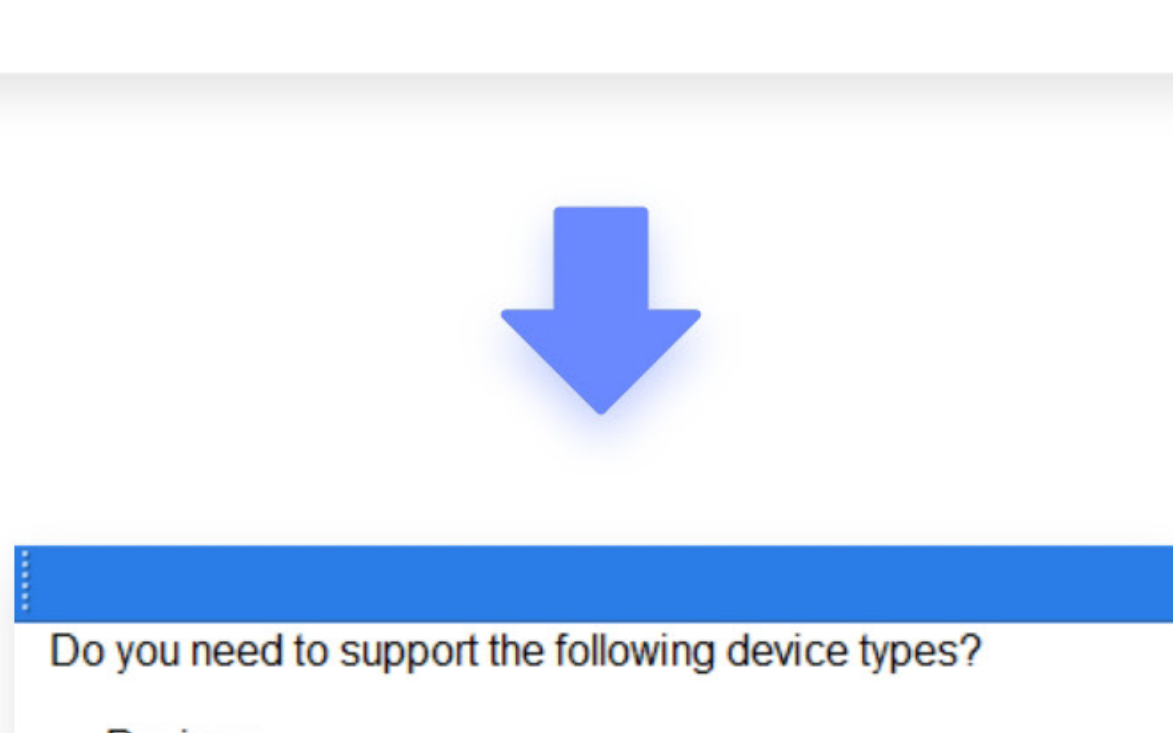
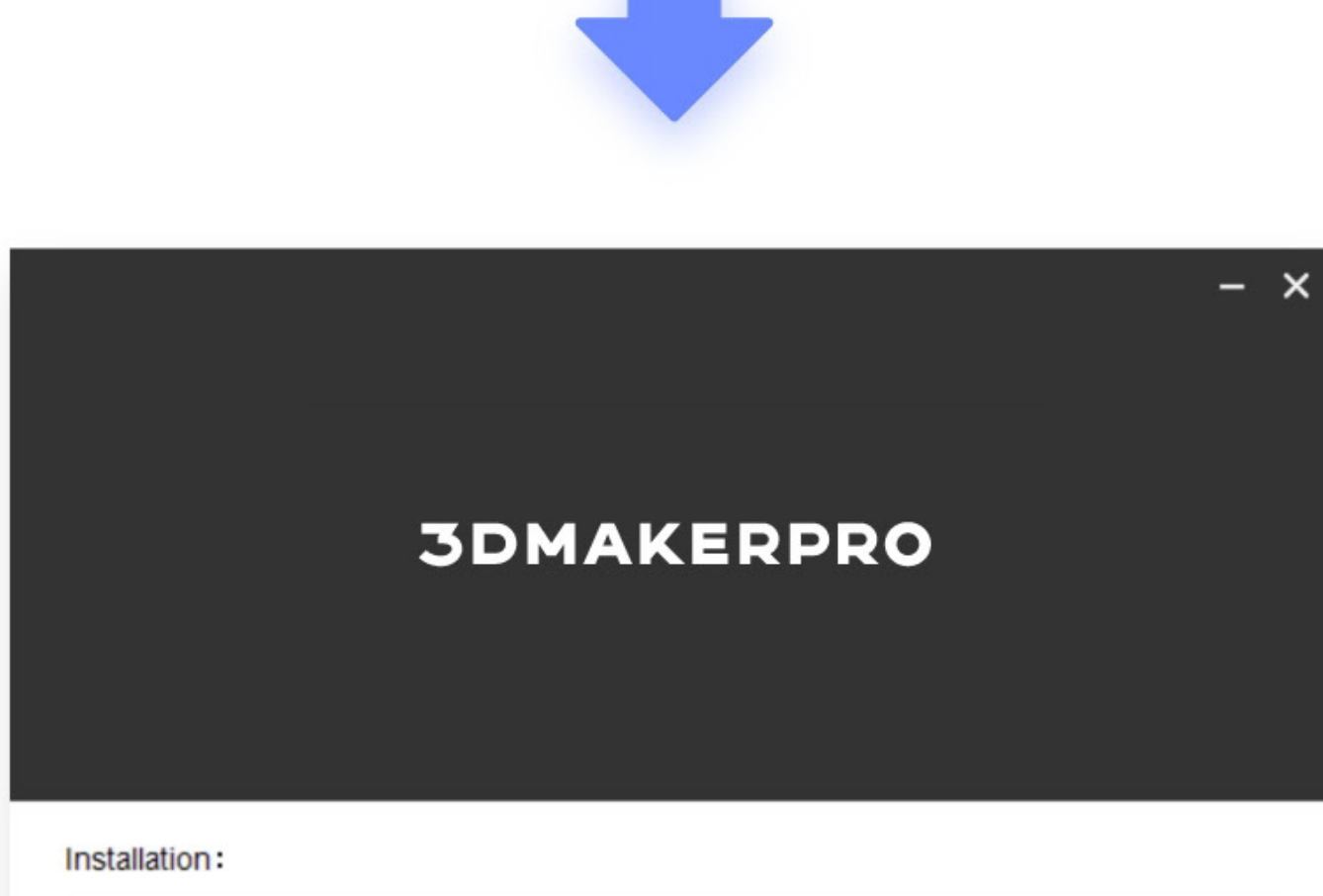
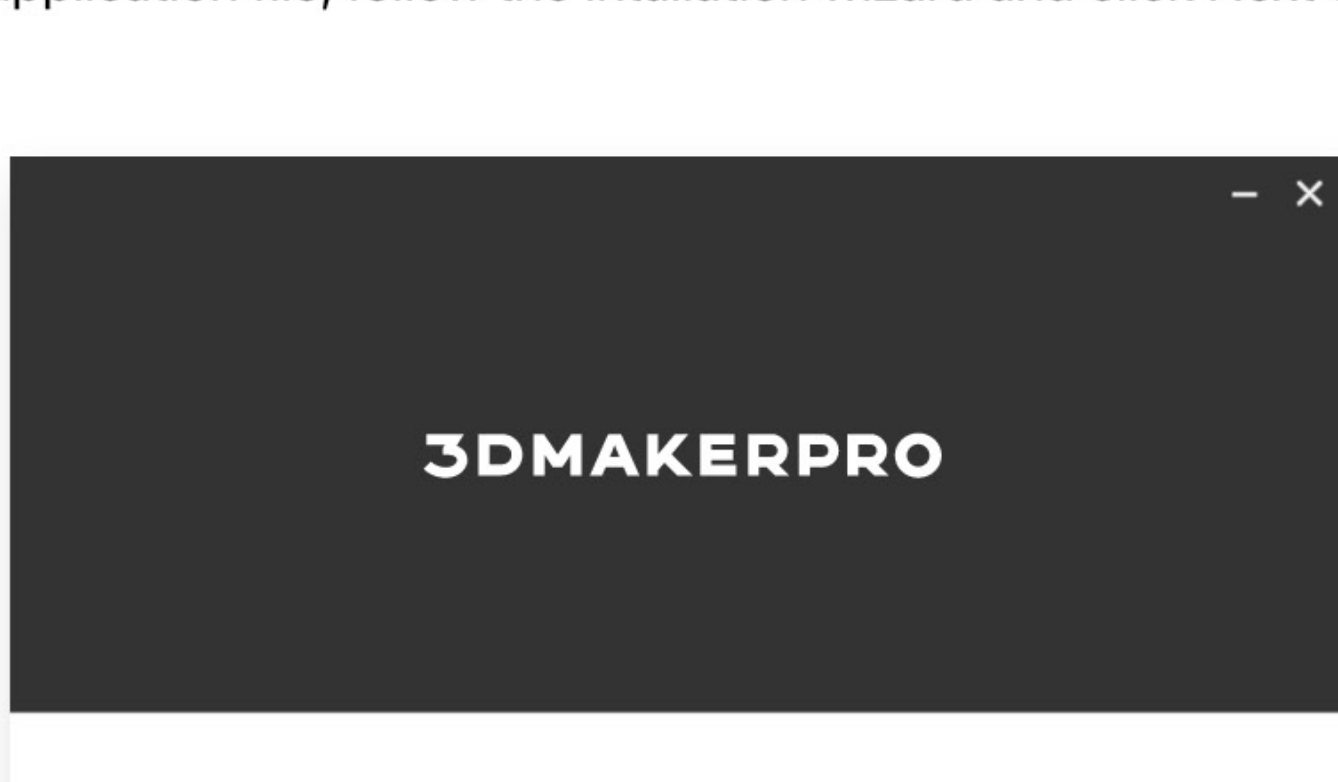


④ Run JMStudio, allow it to access the camera, now the installation is completed.



For Windows

① Click on the application file, follow the installation wizard and click Next to install the software.



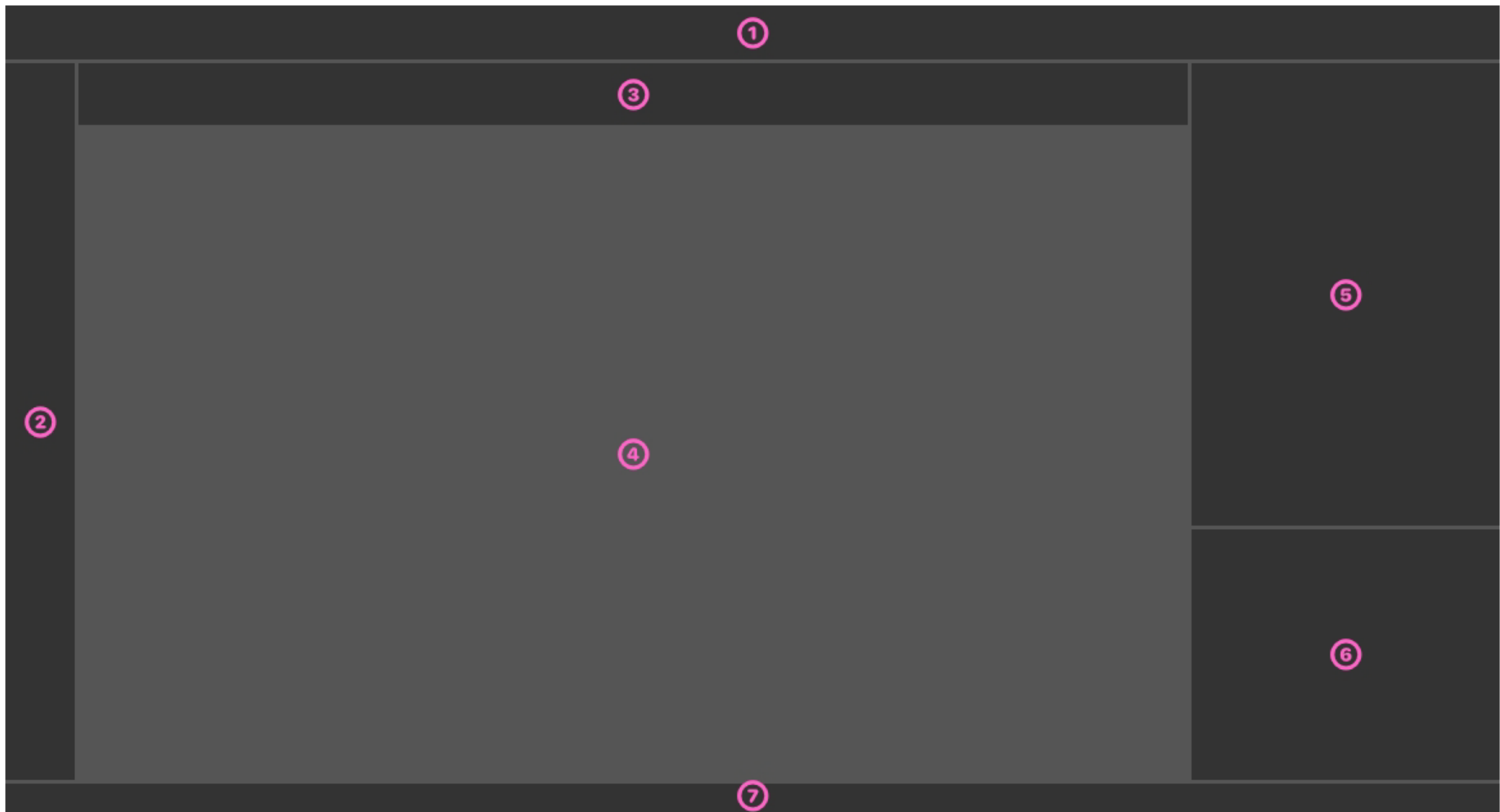
Software Upgrade

Please make sure you're running the latest version of software.

User Interface

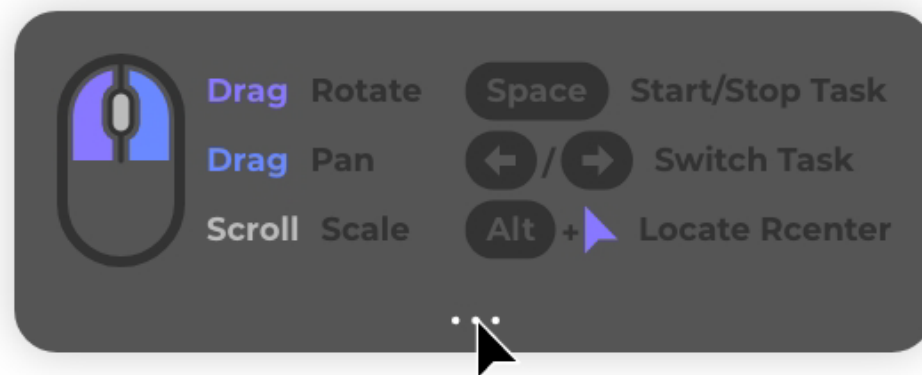
The user interface consists of the following parts:

① Title Bar ② Tool Bar ③ Work Mode ④ 3D Viewer ⑤ Work Panel ⑥ Data Panel ⑦ Status Bar




Shortcut Key

The upper-left area in the 3D Viewer shows you the commonly used mouse and keyboard shortcuts; check all the shortcuts by hovering over this area and clicking the ellipsis below. You can also view or modify more shortcuts by going Settings_Shortcut Key.



Shortcut Key



Mouse Left
Mouse Wheel
Mouse Right

Edit Mode

Windows	macOS	
Ctrl + Drag	⌘ + Drag	Select Object
Alt + Drag	⌘ + Drag	Deselect Object
Ctrl + A	⌘ + A	Select All

Windows	macOS	
Drag	Drag	Rotate View
Drag	Drag	Pan View
Scroll/Pinch	Scroll/Pinch	Scale View
Ctrl + ↑	⌘ + ↑	Enlarge View
Ctrl + ↓	⌘ + ↓	Reduce View
Space	Space	Start/Stop Task
← / →	← / →	Switch Task
Alt + Click	⌘ + Click	Locate Rcenter

Scanner Settings

The first-time scan requires you to calibrate the scanner by importing the calibration file. Before that, please refer to Connect the Cables to ensure the scanner is well-connected.

Make sure your PC is networked to download the calib file. For Windows, JMStudio can automatically identify your scanner and download the calib as well; for macOS, it requires you to set the scanner type first then download it.

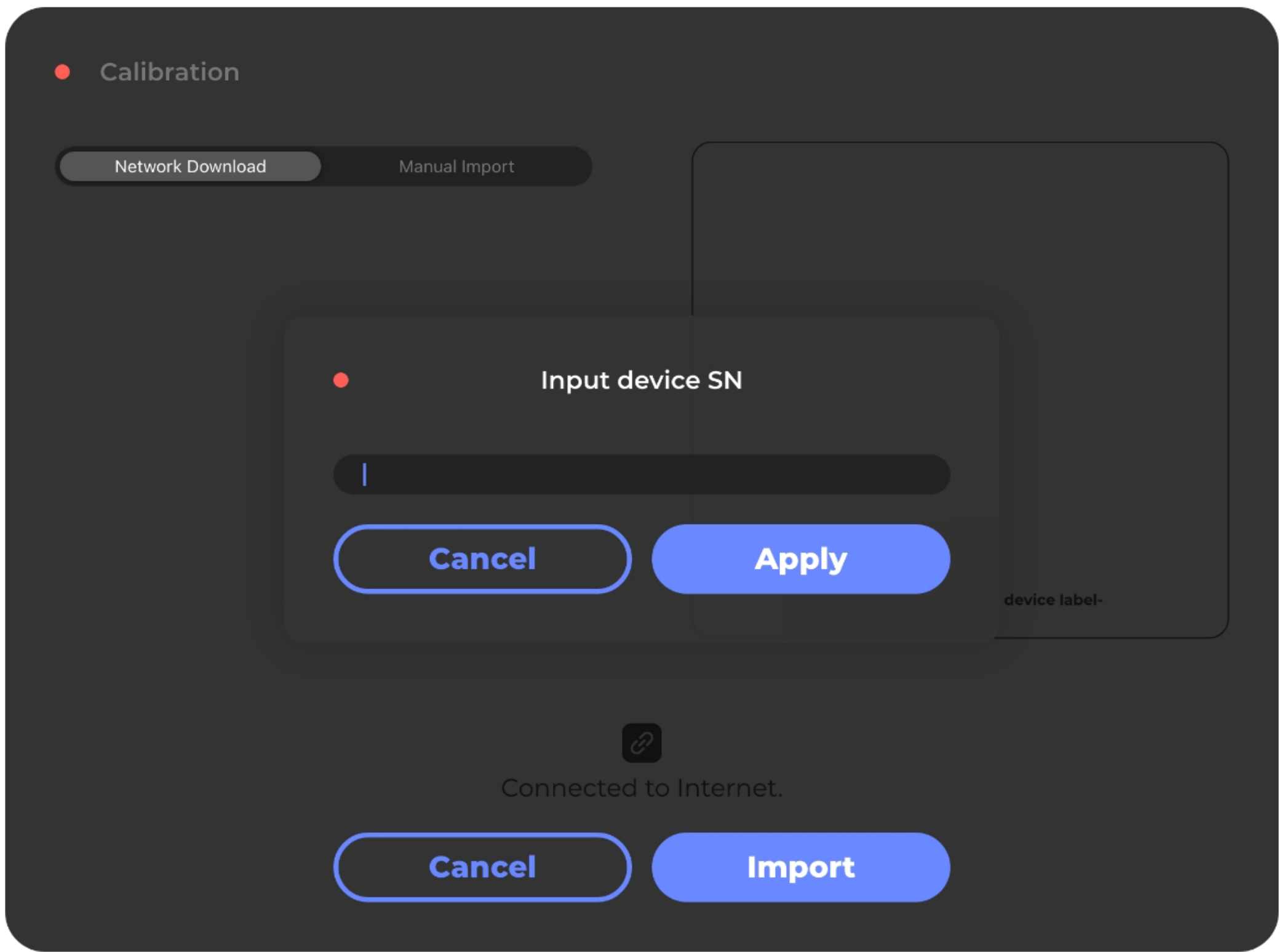
Follow the steps below to calibrate your scanner:

For macOS

① In the Title Bar, click File_Import calib and go into Network Download, then input the device SN and click "Import".

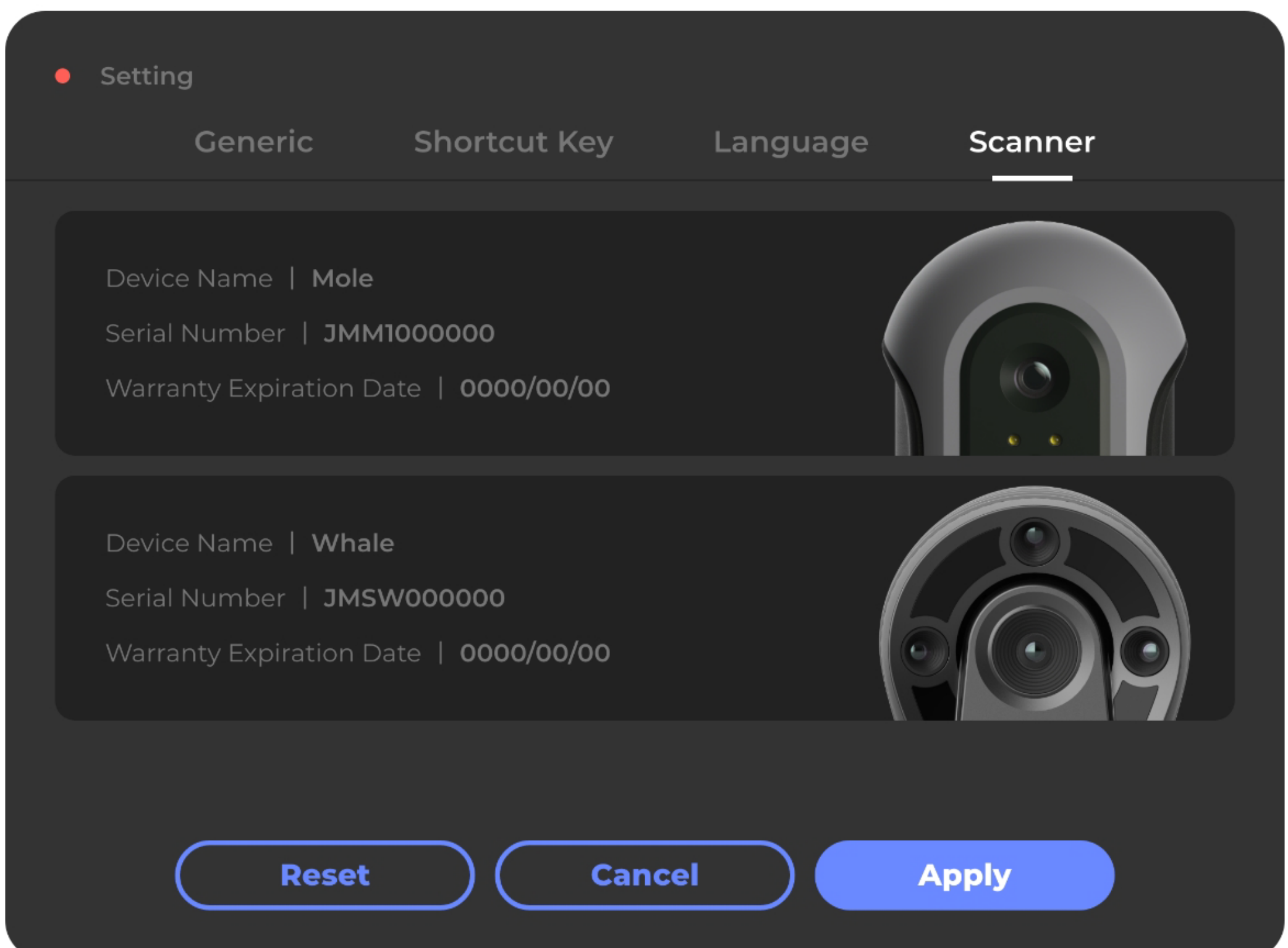
The device SN can be found at the bottom of the scanner body, then input the letters and numbers and apply to await the prompt "Import successfully".

Note: Please input the last 7 numbers if you are using CR-Scan Lizard.



② The models that have been added and selectable will show in the Settings-Scanner menu, right corner of the Work Mode panel. You can add multiple models once and for all for future reference.

Please make sure the selected calibration file matches your connected model.



Scanning Workflow

Preparation

Preparation for special objects

Seal: Seal is a macro scanner with an accuracy of up to 0.01mm and a capture range of 100mm, suitable for ultra-fine scanning of small objects.

Seal Lite: Seal Lite is a macro scanner with an accuracy of up to 0.02mm and a capture range of 100mm, suitable for ultra-fine scanning of small objects.

Lynx: With 400mm wide capture range, lynx is capable of capturing as many as details, and scanning large sized objects in a smooth and fast manner.

Mole: Mole has a standard format of 200mm and an accuracy of 0.05mm, which can capture more target features and is suitable for fine scanning of small objects.

Whale: With two cores both in one, Whale is able to scan large-sized objects by activating its wide core; while captures the greatest details of small-sized objects with the micro core at work.

MagicSwift Plus: With 400mm wide capture range, MagicSwift Plus is capable of capturing as many as details, and scanning large sized objects in a smooth and fast manner.

CR-Scan Lizard: CR-Scan Lizard has a standard format of 200mm and an accuracy of 0.05mm, which can capture more target features and is suitable for fine scanning of small objects.

Please choose the right scan mode according to the size of the object, for more information: [Scan Mode](#)

Objects needing special treatment

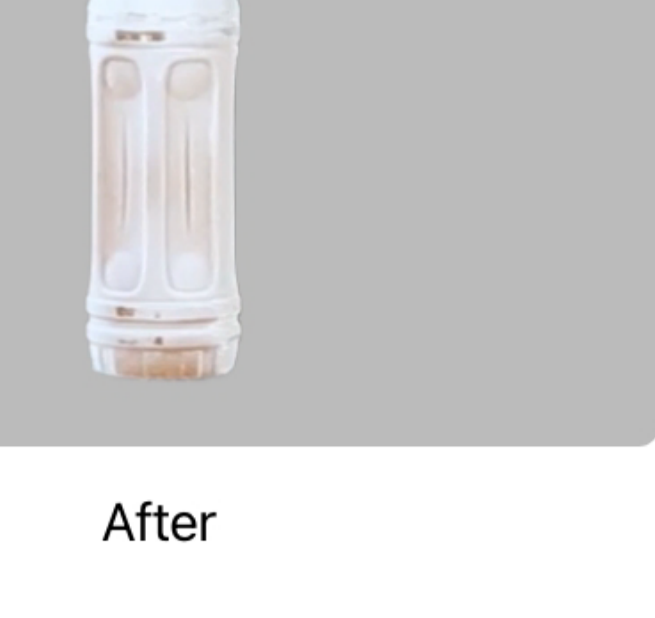
In order to get a better scanning result, please use spray, dry shampoo, powder, etc. on the following types of objects before scanning:



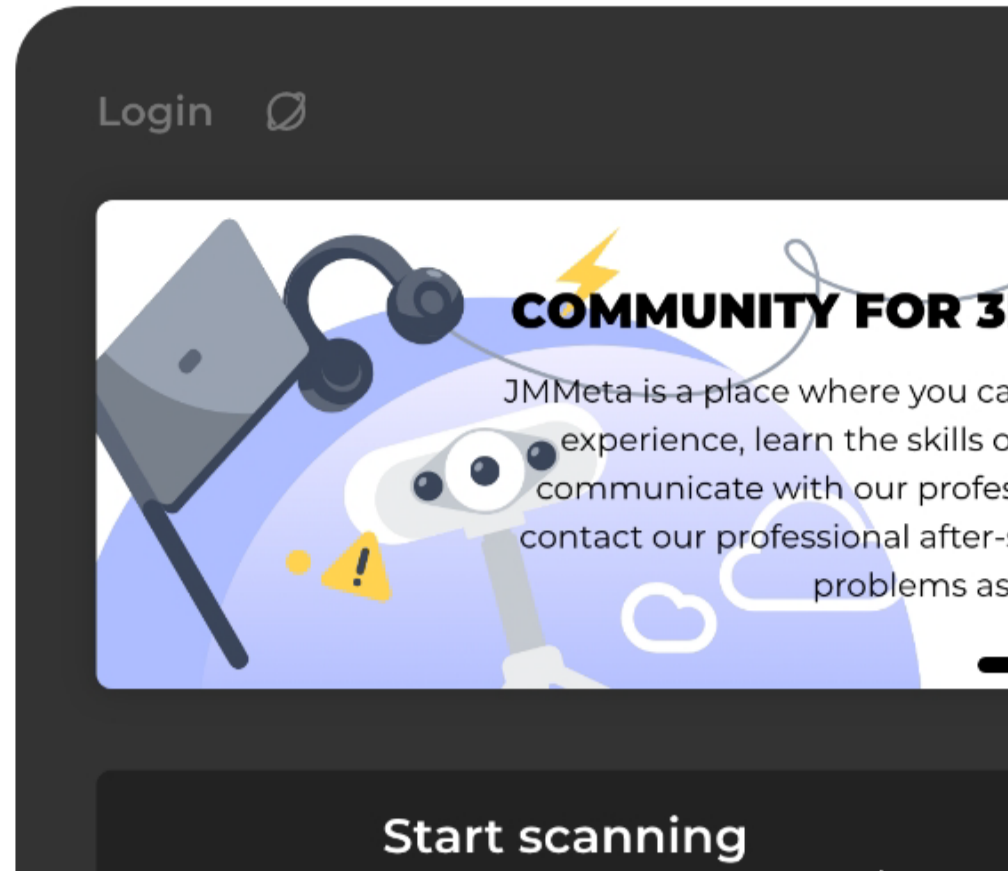
①transparent objects
(glass products, plastic bottles, etc.)



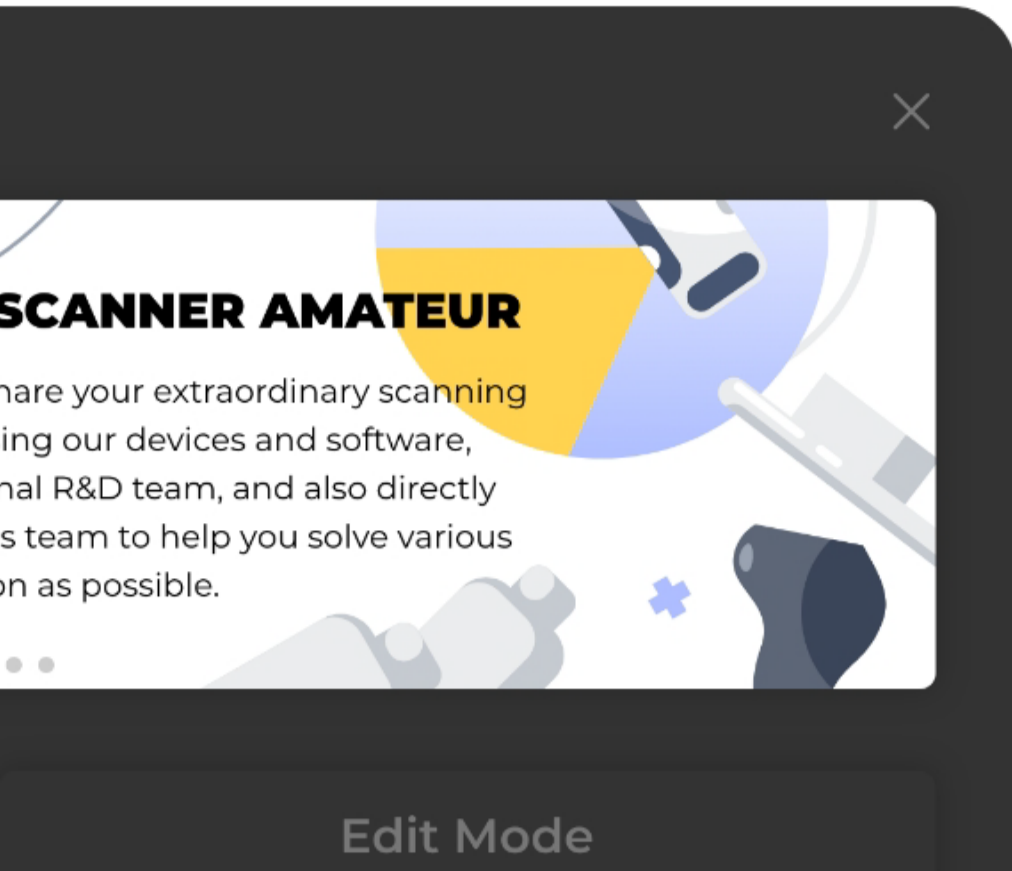
②deformable objects
(clothes, animals, etc.)



③reflective, shiny objects
(metal products, electroplated parts, etc.)



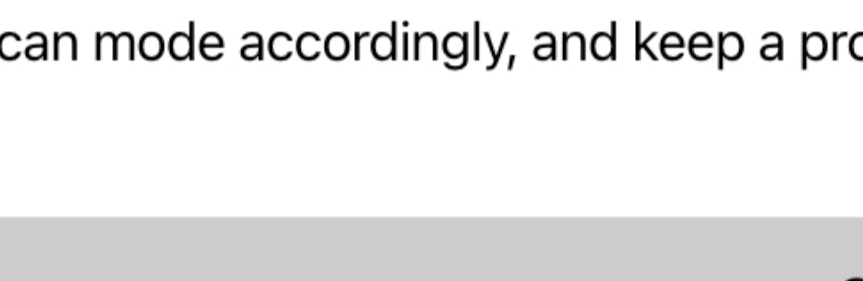
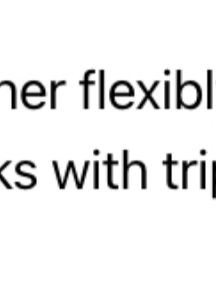
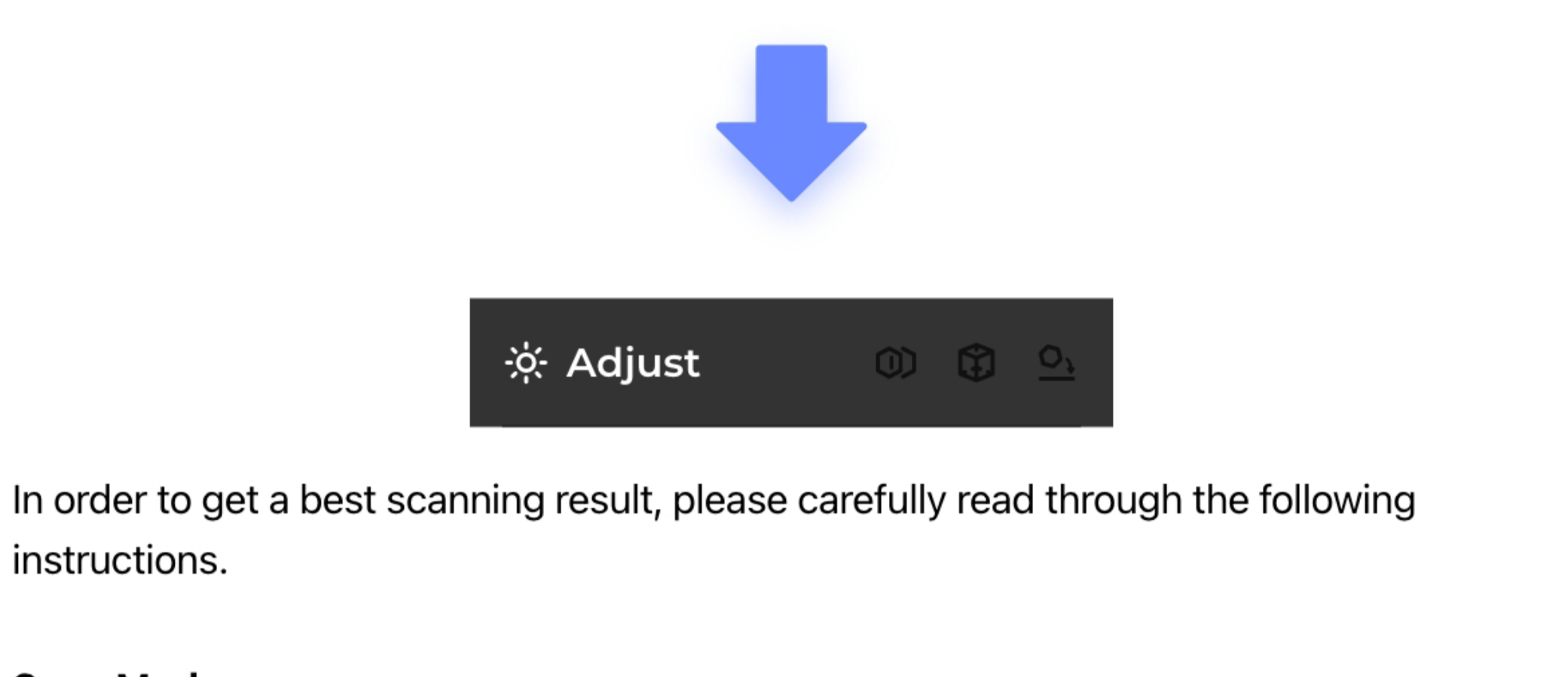
Before



After

Preview and Adjustment

Click "Start Scanning" in the splash screen and will go into scanning preview. In the preview, the Work Panel will switch into "Adjust" panel.



In order to get a best scanning result, please carefully read through the following instructions.

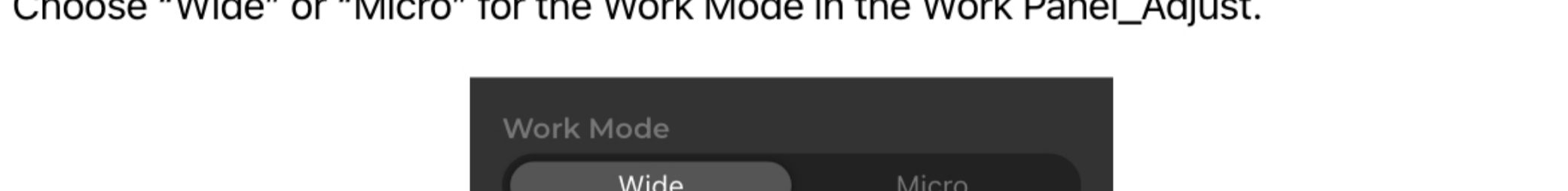
Scan Mode

In Easy Scan, you can operate the scanner flexibly to scan large sized objects in irregular shapes; In Table Scan, the scanner works with tripod and turntable to scan small sized objects and free your hands.

Please choose the right scan mode accordingly, and keep a proper working distance as follows.

unit: mm	Working Distance	Object Size	
		Easy Scan	Table Scan
Seal	180-280	10-300	10-100
Seal Lite	180-280	10-300	10-100
Lynx	400-900	100-2000	100-500
Mole	200-400	15-1500	15-300
Whale	wide-core	400-900	200-2000
	micro-core	200-400	15-2000
MagicSwift Plus	400-900	100-2000	100-500
MagicSwift	400-900	200-2000	200-500
CR-Scan Lizard	200-400	15-1500	15-300
CR-Scan 01	400-900	200-2000	200-500

Choose "Easy Scan" or "Table Scan" in the Work Mode.



For Whale

We suggest you scan an object of around 20x20x20cm at your first attempt.

If the data cannot be captured or the software says "tracking lost", please follow the above sheet to adjust the distance between the scanner and the object, and make sure the latter is clear of clutter. If the scanning goes well, please adjust the scanner's angle and confirm again; if not, please contact us.

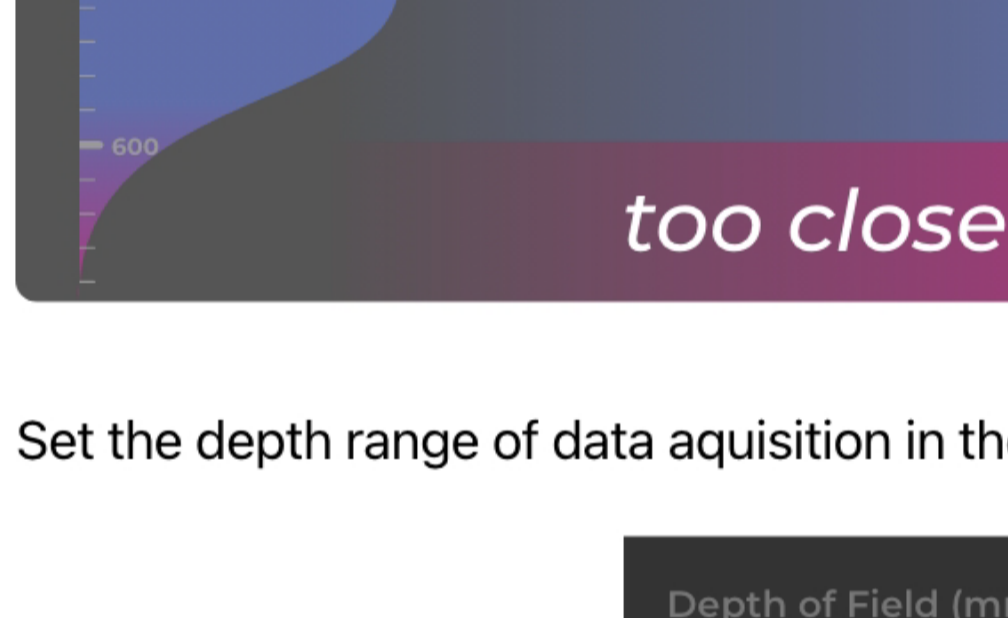
Choose "Wide" or "Micro" for the Work Mode in the Work Panel_Adjust.



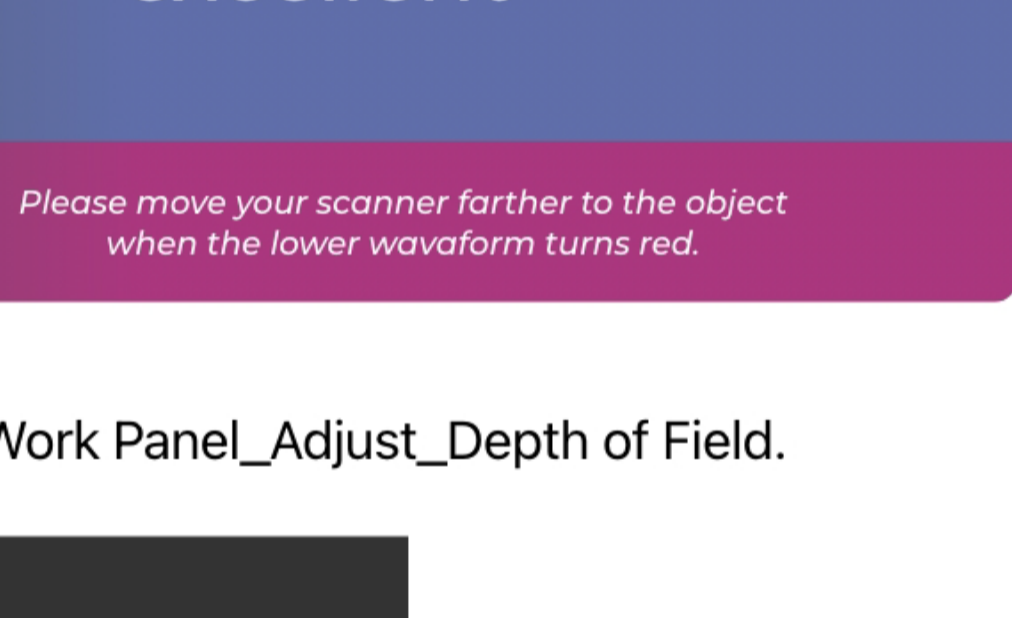
SLAM Mode

Choose "Geometry Mode" if the scanned object is bumpy and has great geometric features; while choose "Texture Mode" when scanning objects with vivid colors, patterns and textures.

Please choose the right SLAM mode for your target objects.



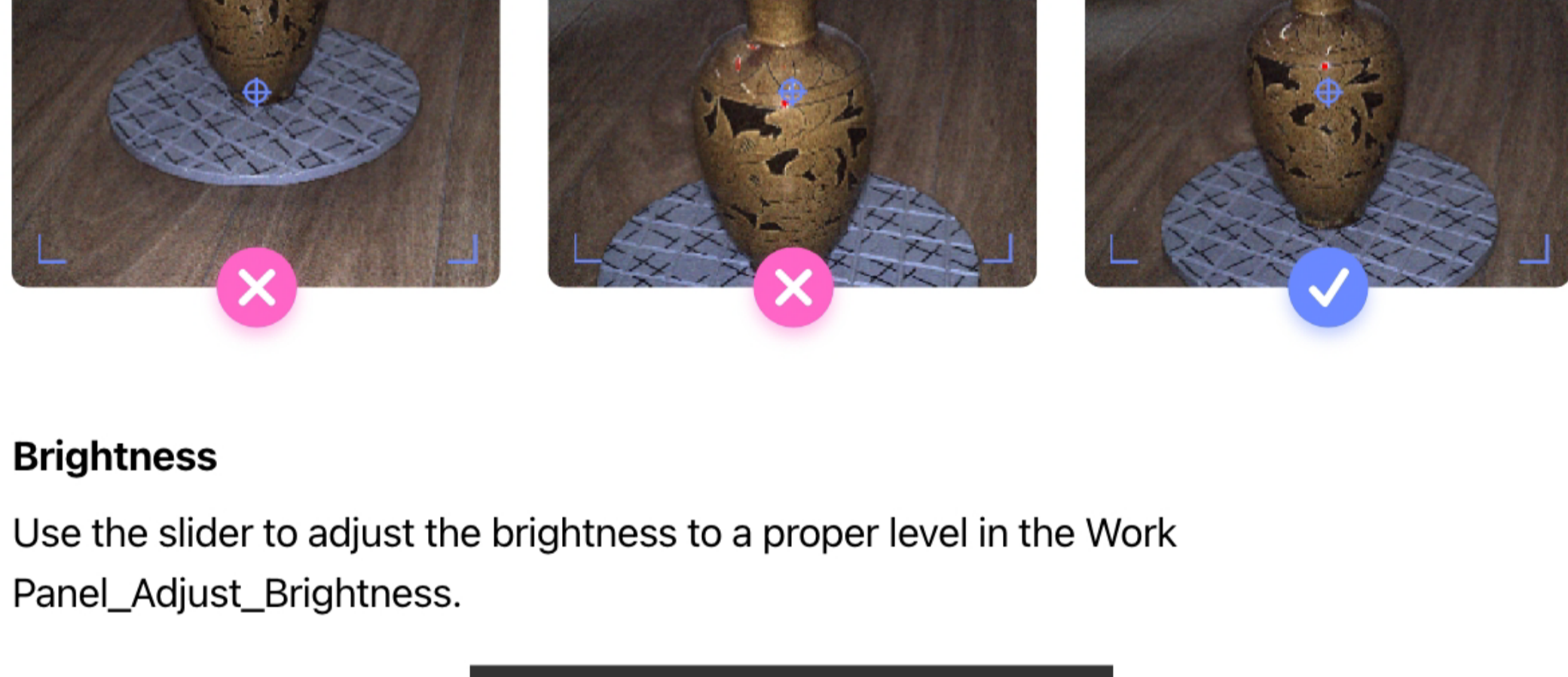
Geometry



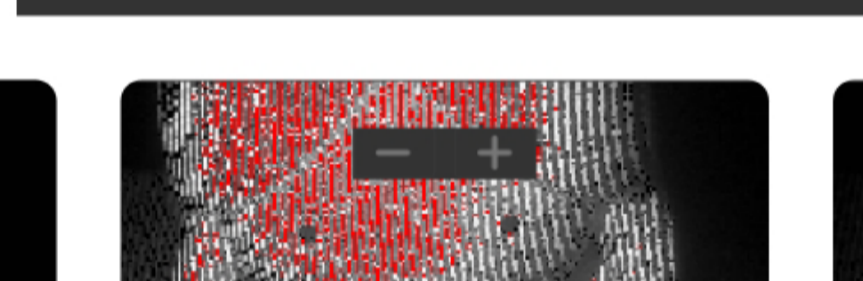
Texture

Working Distance

The distance indicator on the left side of the 3D viewer can help you find the optimal working distance.

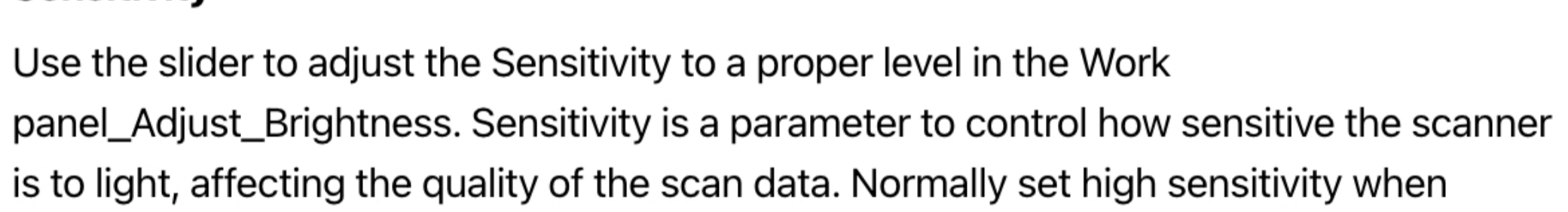


Set the depth range of data acquisition in the Work Panel_Adjust_Depth of Field.



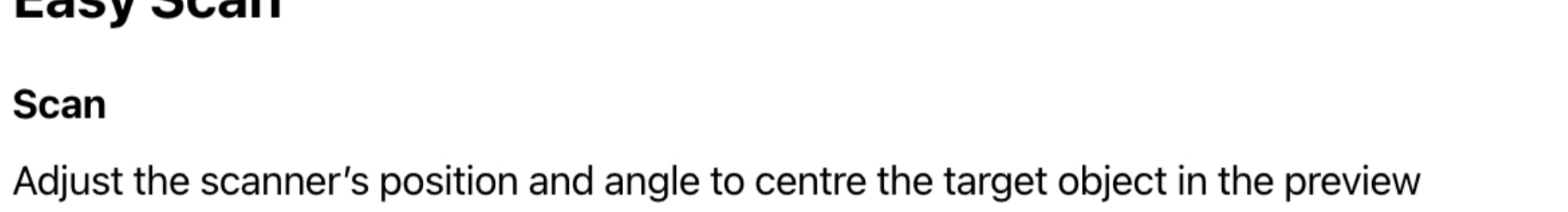
Locate the Object

The preview window on the top right of the 3D viewer helps you locate the object. Make sure it fully exposed in the preview window.



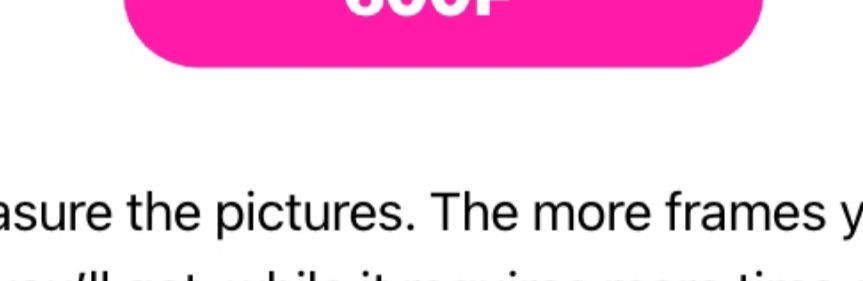
Brightness

Use the slider to adjust the brightness to a proper level in the Work Panel_Adjust_Brightness.



Sensitivity

Use the slider to adjust the Sensitivity to a proper level in the Work panel_Adjust_Brightness. Sensitivity is a parameter to control how sensitive the scanner is to light; adjust the quality of the scan data. Normally set high sensitivity when scanning dark objects, as it allows the scanner to pick up more details while also making the scan data noisier; it's often the opposite at low sensitivity. We can adjust this parameter to balance the data quality and noise reduction according to the type and color of the target object.



Easy Scan

Scan

Adjust the scanner's position and angle to centre the target object in the preview window; check if they're kept in a proper distance by focusing on the distance indicator.

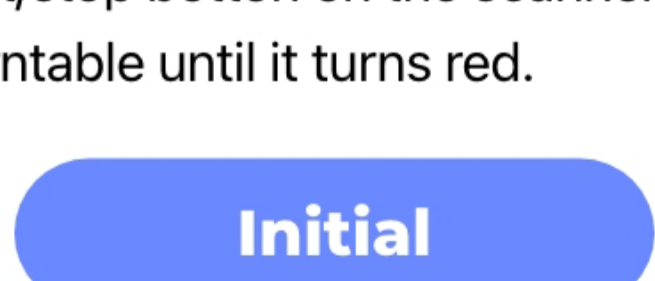
For more information: [Working Distance](#) , [Locate the Object](#) , [Brightness](#)

Click "Scan" on the work panel, hit the spacebar or press the start/stop button on the scanner(supported on specific models) to start scanning.



Stop

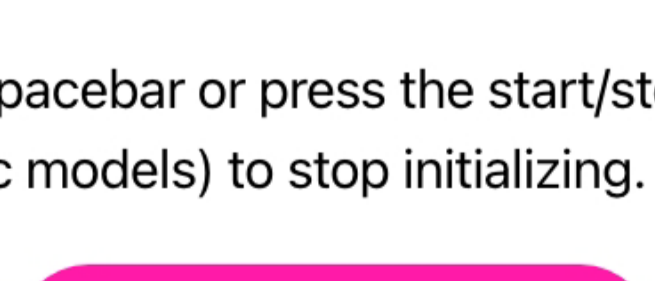
Click the red counter, hit the spacebar or press the start/stop button on the scanner(supported on specific models) to stop scanning.



*F: Frame is used to measure the pictures. The more frames you've collected, the larger and more complete data you'll get, while it requires more time and a stronger PC to process the data. It's suggested to limit the single scan within 2000F.

Append

If you want to scan at a different angle and add a new scan, click "Append", hit the spacebar or press the start/stop button on the scanner(supported on specific models).



Process

Click "Process", hit the spacebar or press the start/stop button on the scanner(supported on specific models) to go into the Edit Mode and process the scan data. You can also hit right or left arrow keys to the next or last step.

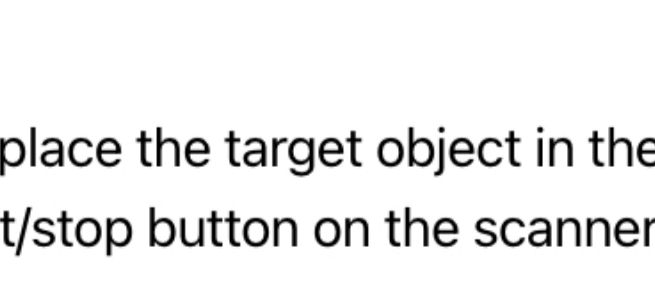


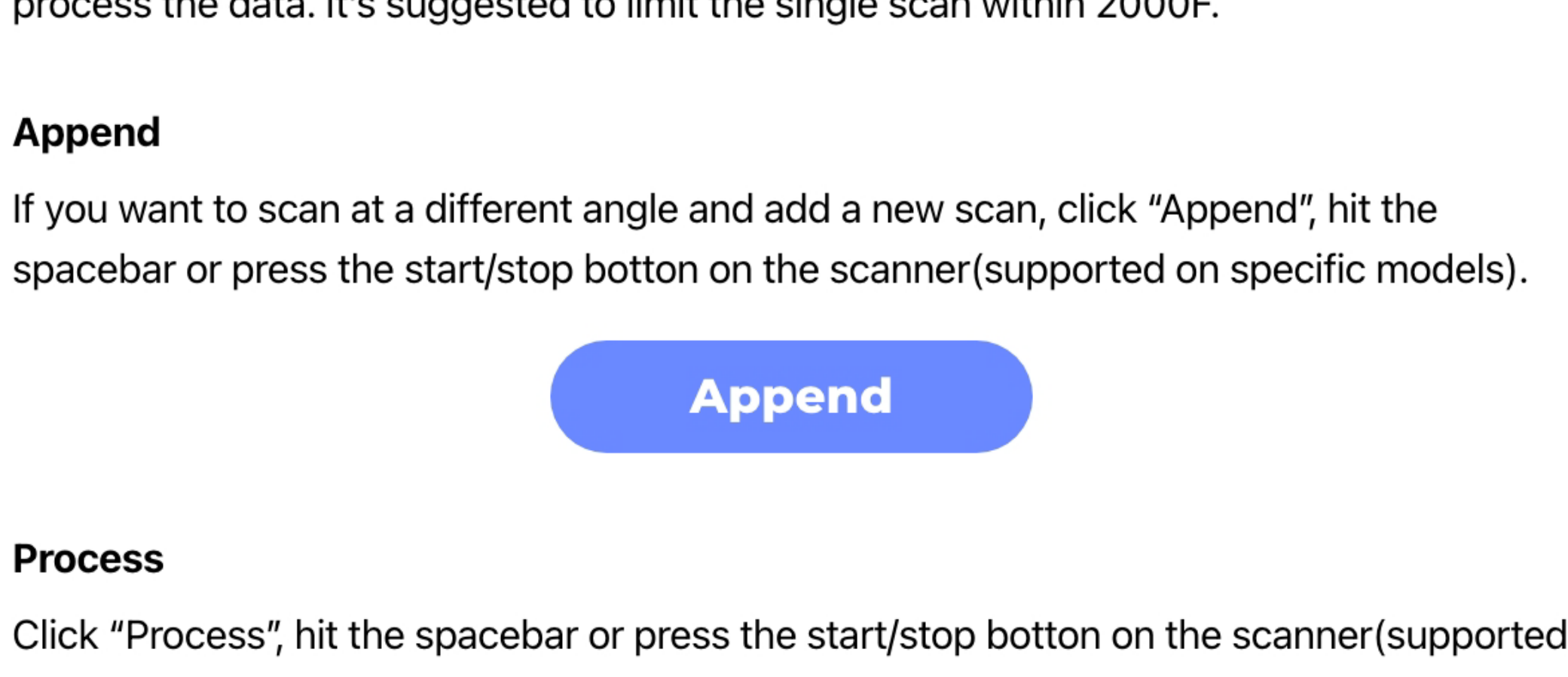
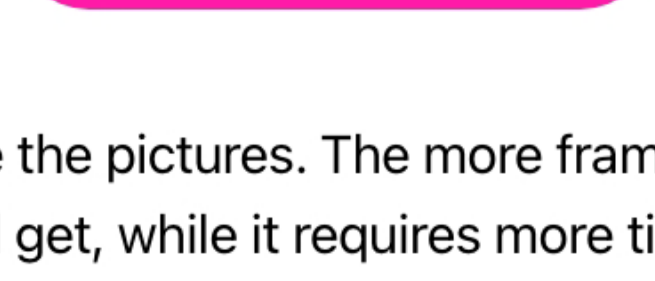
Table Scan

Initial

Adjust the scanner's position and angle to centre the target object in the preview window; check if they're kept in a proper distance by focusing on the distance indicator.

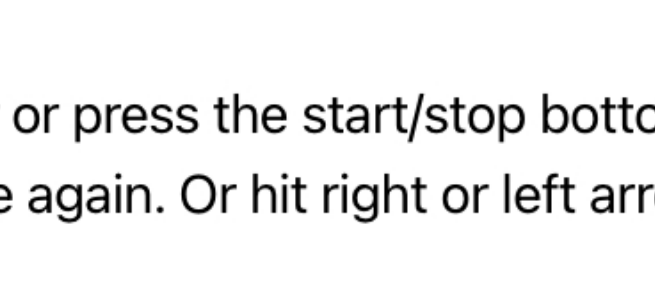
For more information: [Working Distance](#) , [Locate the Object](#) , [Brightness](#)

Remove the object from the turntable as the scanner is well positioned. Click "Initial", hit the spacebar or press the start/stop button on the scanner(supported on specific models) to scan the empty turntable until it turns red.



Stop Initializing

Click the red counter, hit the spacebar or press the start/stop button on the scanner(supported on specific models) to stop initializing.



*F: Frame is used to measure the pictures. The more frames you've collected, the larger and more complete data you'll get, while it requires more time and a stronger PC to process the data. It's suggested to limit the single scan within 2000F.

Scan

Leave the turntable there and place the target object in the centre of it. Click "Scan", hit the spacebar or press the start/stop button on the scanner(supported on specific models) to start scanning.

If you find the initialization result unsatisfactory, can also hit right or left arrow keys to the next or last step. Click the button "1", hit the spacebar or press the start/stop button on the scanner(supported on specific models) to re-initialize.

Stop

Click the red counter, hit the spacebar or press the start/stop button on the scanner(supported on specific models) to stop scanning.

*F: Frame is used to measure the pictures. The more frames you've collected, the larger and more complete data you'll get, while it requires more time and a stronger PC to process the data. It's suggested to limit the single scan within 2000F.

Append

If you want to scan at a different angle and add a new scan, click "Append", hit the spacebar or press the start/stop button on the scanner(supported on specific models).

Process

Click "Process", hit the spacebar or press the start/stop button on the scanner(supported on specific models) to go into the Edit Mode and process the scan data. Or hit right or left arrow keys to the next or last step.

Reset

Click "Reset", hit the spacebar or press the start/stop button on the scanner(supported on specific models) to initialize again. Or hit right or left arrow keys to the next or last step.

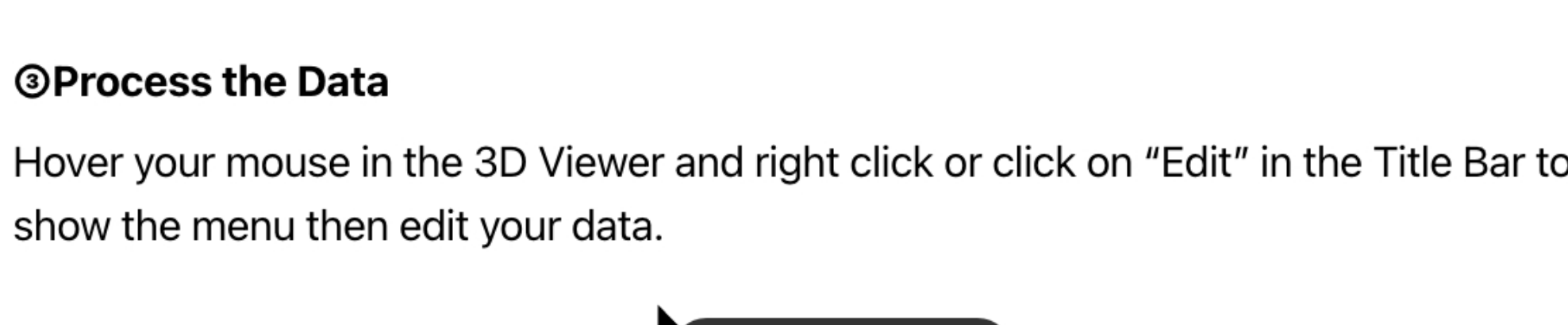
Editing

Data Editing

Before meshing the point cloud data, you can do simple editing on it to delete excess data and ensure the quality of the model.

Select Tools

Hover your mouse over the Tool Bar on the left side of the interface, here are a few selection tools available.



Select the Data

Hold Ctrl and press left mouse button in the 3D Viewer to select an area, the selected place will turn red.

Process the Data

Hover your mouse in the 3D Viewer and right click or click on "Edit" in the Title Bar to show the menu then edit your data.



Select All: Select all visible data.

Reverse Selection: Select the data outside the selected area.

Boundary Selection: Select an area that falls with a given region or boundary.

Plane Selection*: Select all the data on one fitting plane.

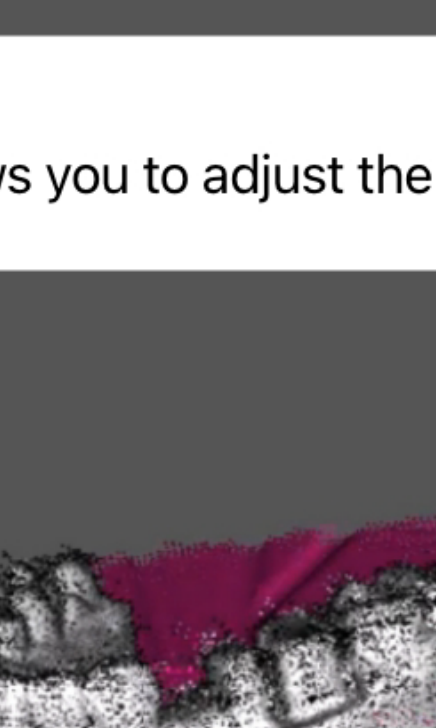
Clear Selection: Deselect the data.

*Plane Selection

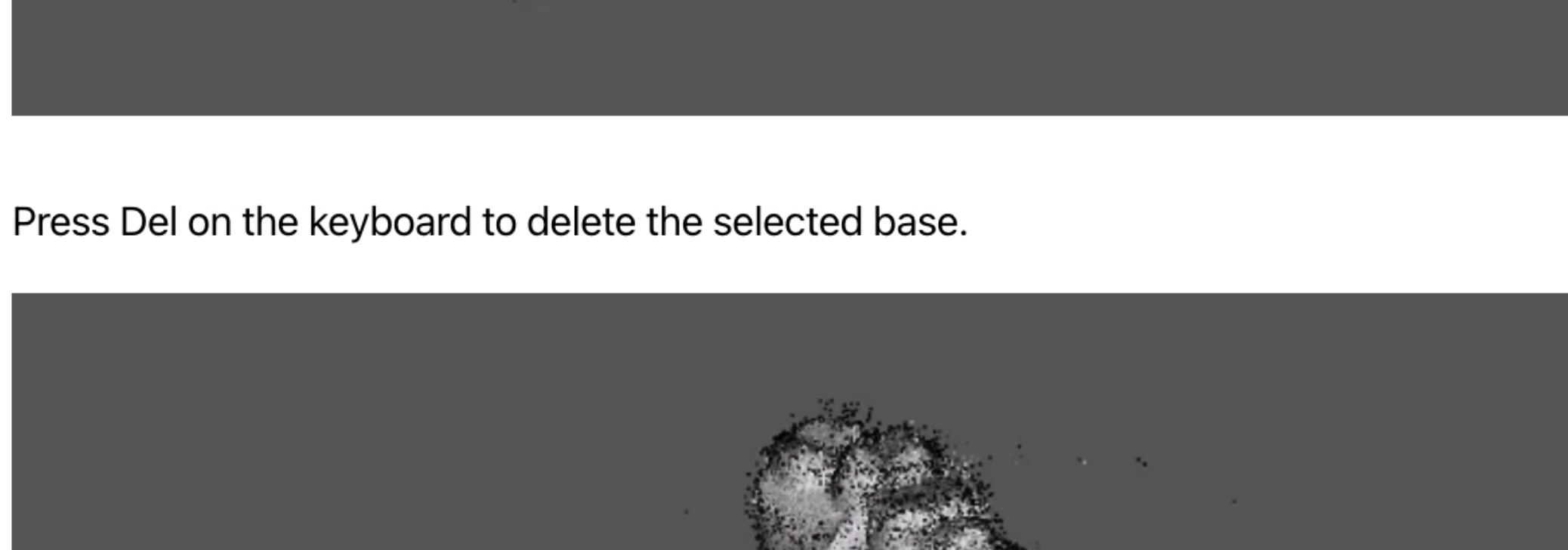
Plane Selection is for selecting and deleting the turntable top, floor, wall and other flat surfaces.

Watch the tutorials below to learn more:

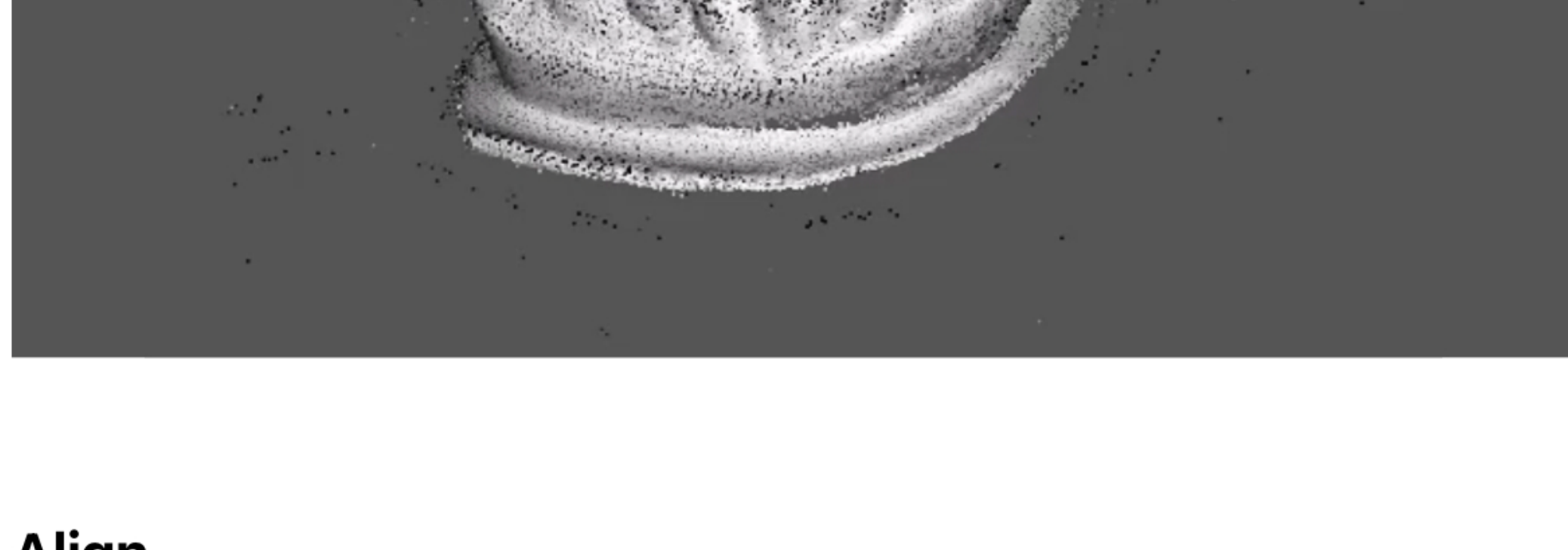
https://youtu.be/ad_Sch4v54M



Firstly, use the **Select Tools** to select part of the plane (no need to select the entire plane); right click your mouse and select "Plane Selection" in the menu to automatically recognize the entire plane.



The top right pop-up window allows you to adjust the plane thickness.



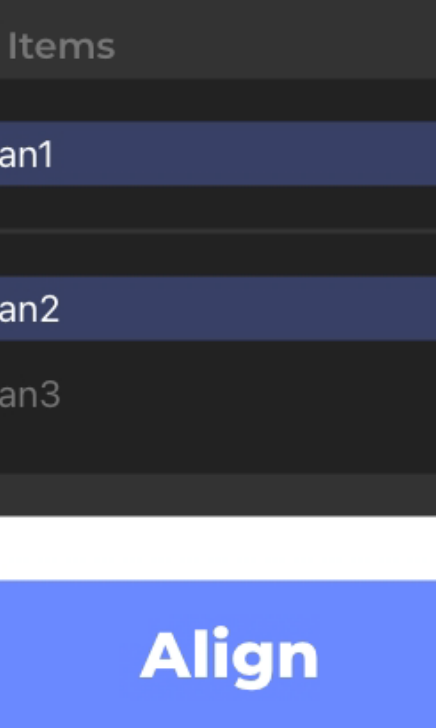
Press Del on the keyboard to delete the selected base.



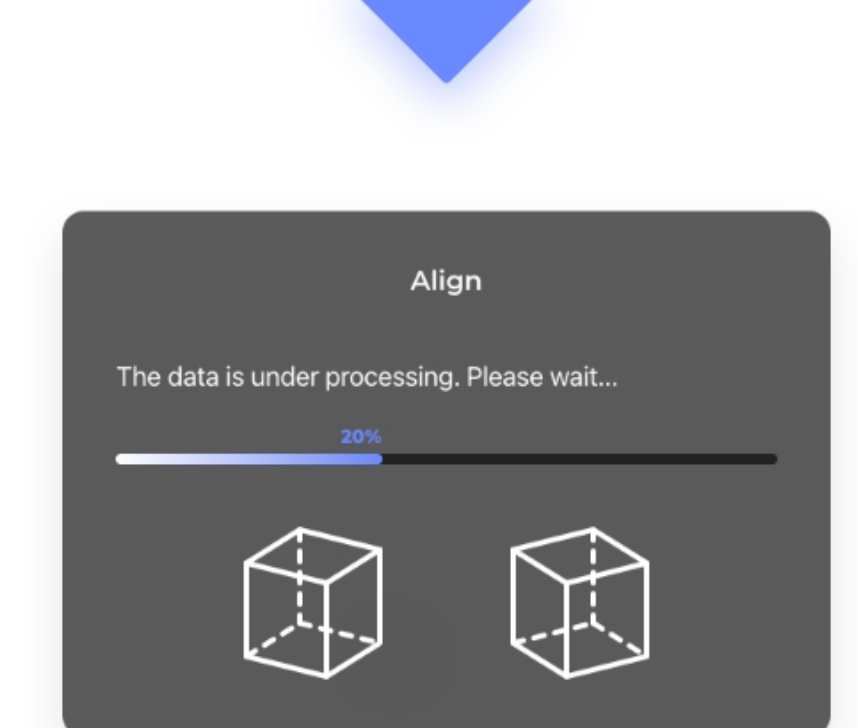
Align

Watch the tutorial below to learn more about Align:

<https://forum.jimumeta.com/home/tutorial/a911d93894004ba7a618ac0e7b309d04.html>

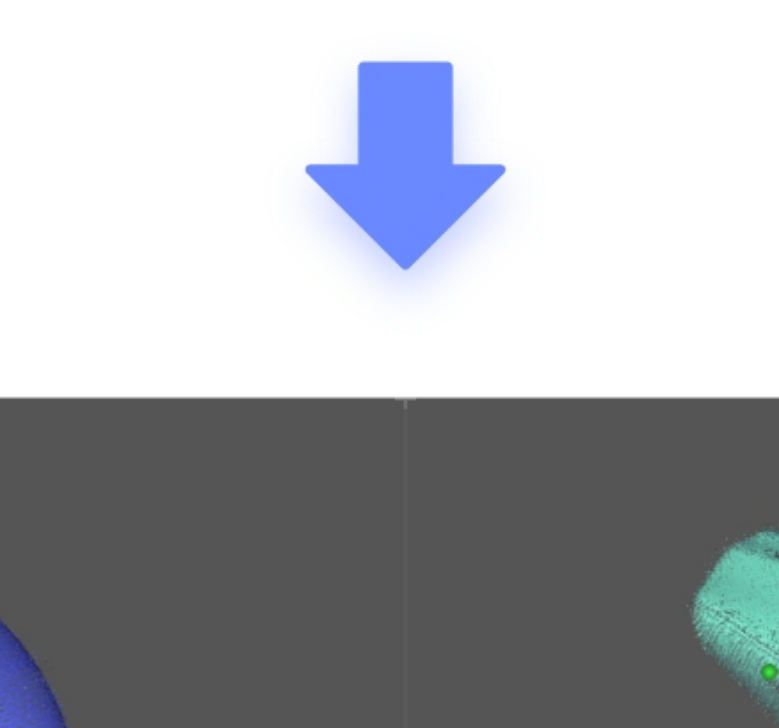
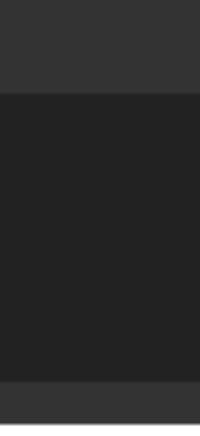
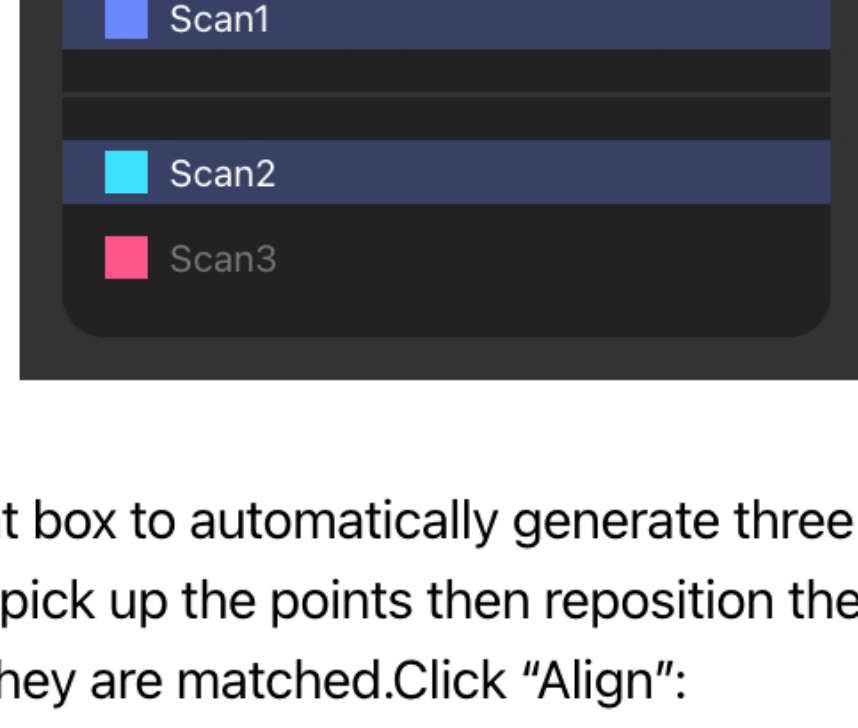


Go into "Align" in the Work Panel and select the align mode.



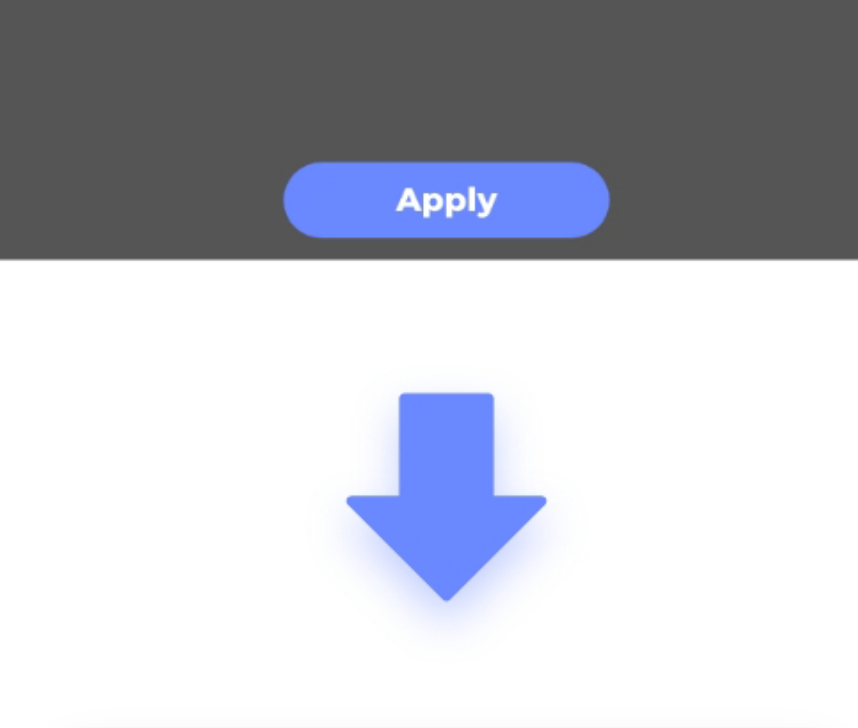
Auto Align

Select the scans that need to be aligned to in the "Work Panel". Drag one in the above highlighted box as the reference, another in the box below as the floating scan. Click "Align" to merge them together.

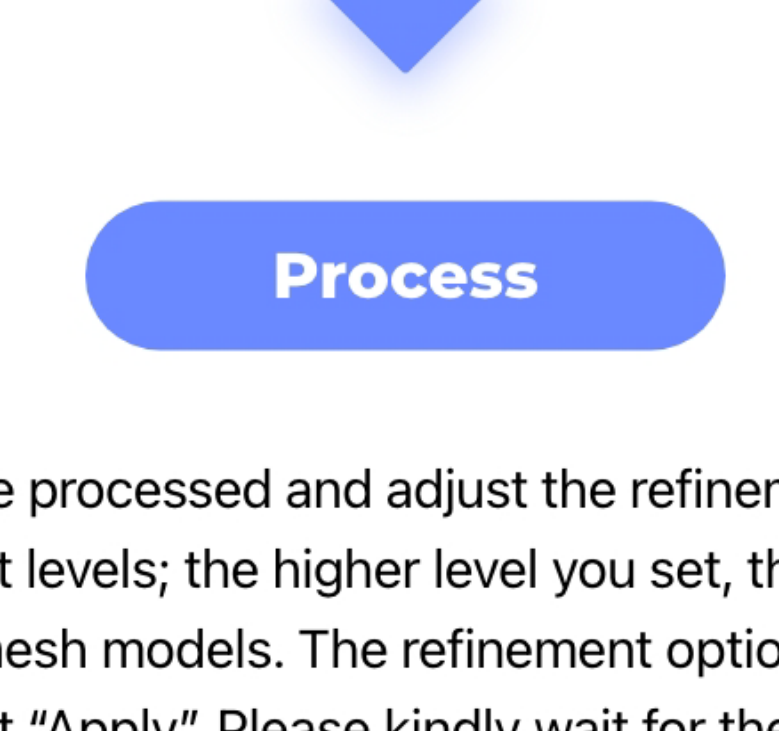
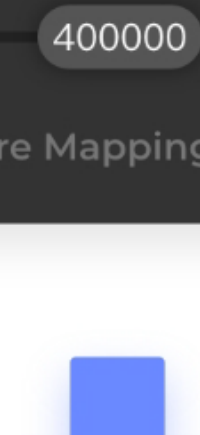
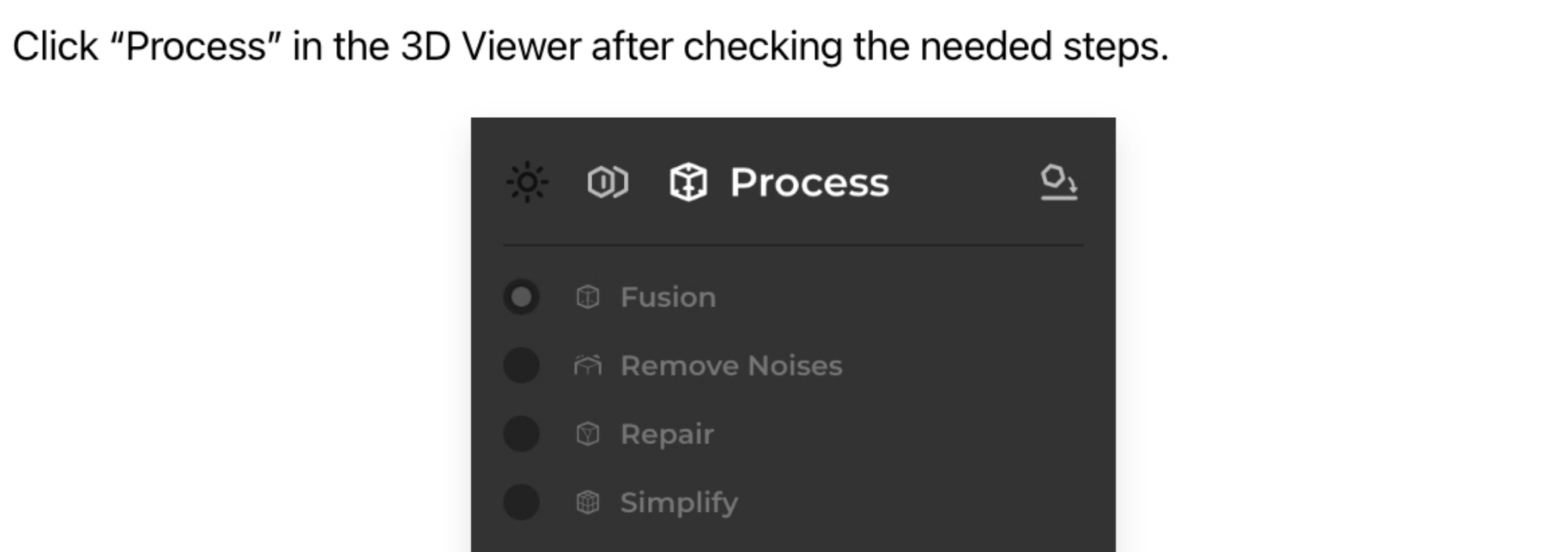
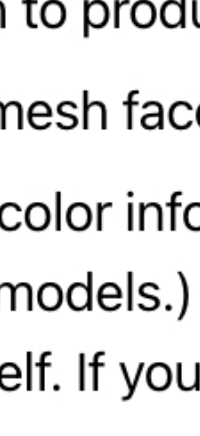
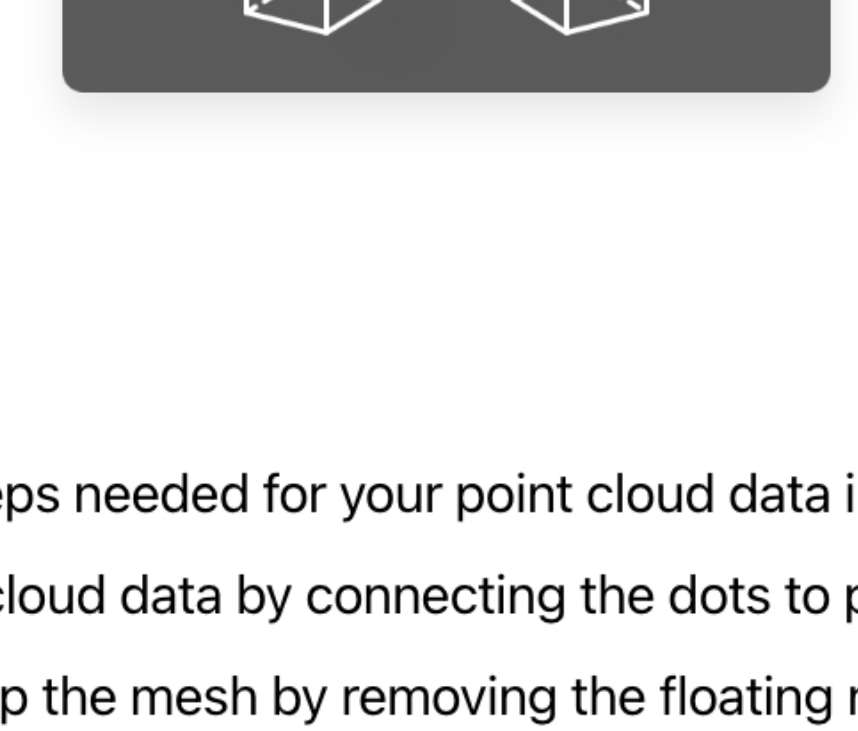


Manual Align

Select the scans that need to be aligned to in the "Work Panel". Drag one in the above highlighted box as the reference, another in the box below as the floating scan.



Click "+" in the mark-point box to automatically generate three pairs of mark points. Right-click to pick up the points then reposition them, and drag each pair to the place you want until they are matched. Click "Align":



Process

Check the processing steps needed for your point cloud data in the Work Panel_Process:

[Fusion] Mesh the point cloud data by connecting the dots to produce a complete model.

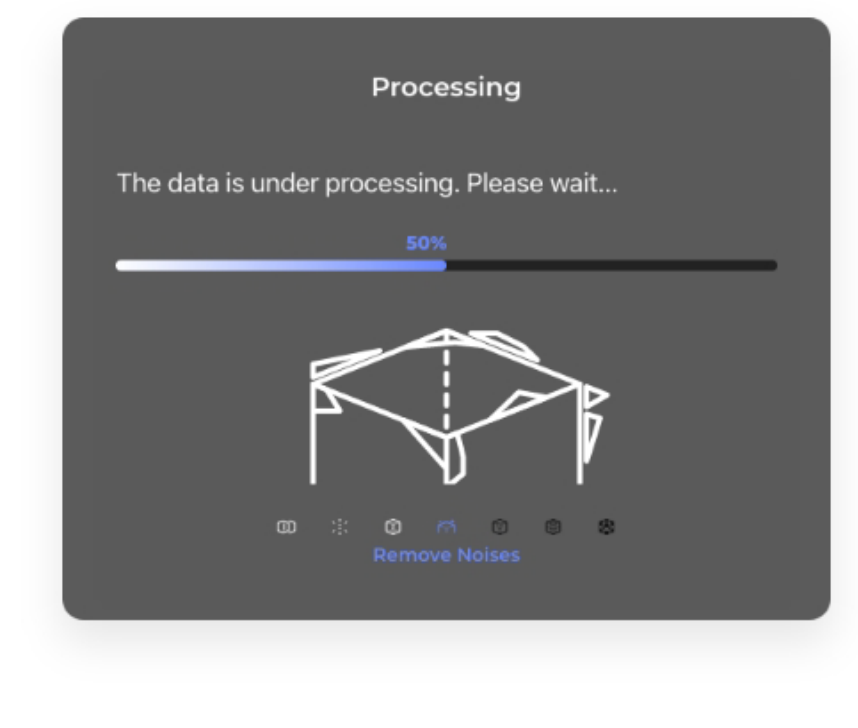
[Remove Noises] Clean up the mesh by removing the floating noises from the scans.

[Repair Gaps] Fill the holes on the mesh to produce a watertight model.

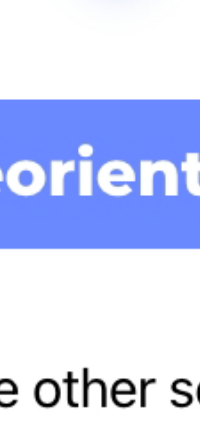
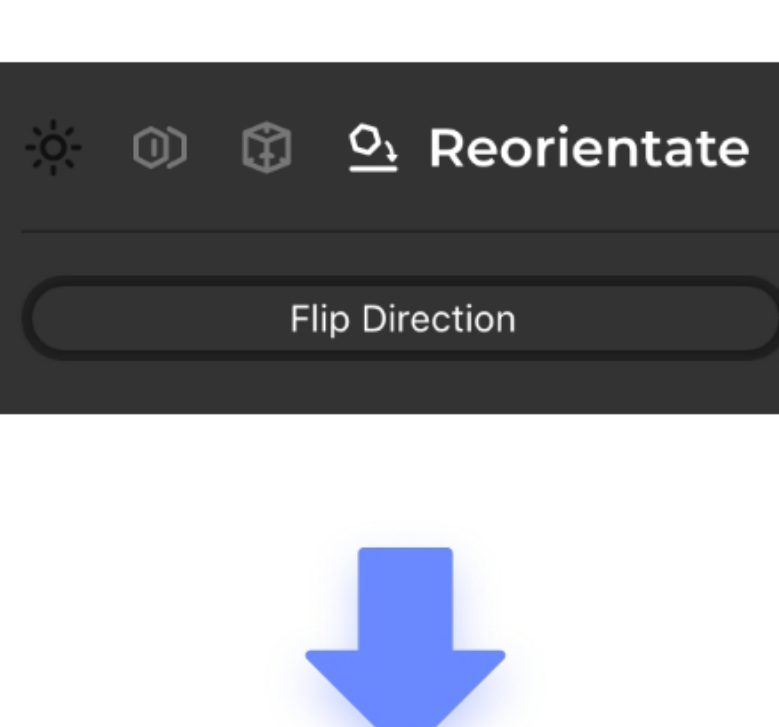
[Simplify] Narrow down the amount of mesh faces to reduce the data size.

[Texture Mapping] Apply the texture or color information onto the mesh surface. (Colors only available for some of 3DMakerpro models.) Note: here "Texture Mapping" refers to the texture capturing by the scanner itself. If you need to do "External Texture Mapping", please uncheck this step.

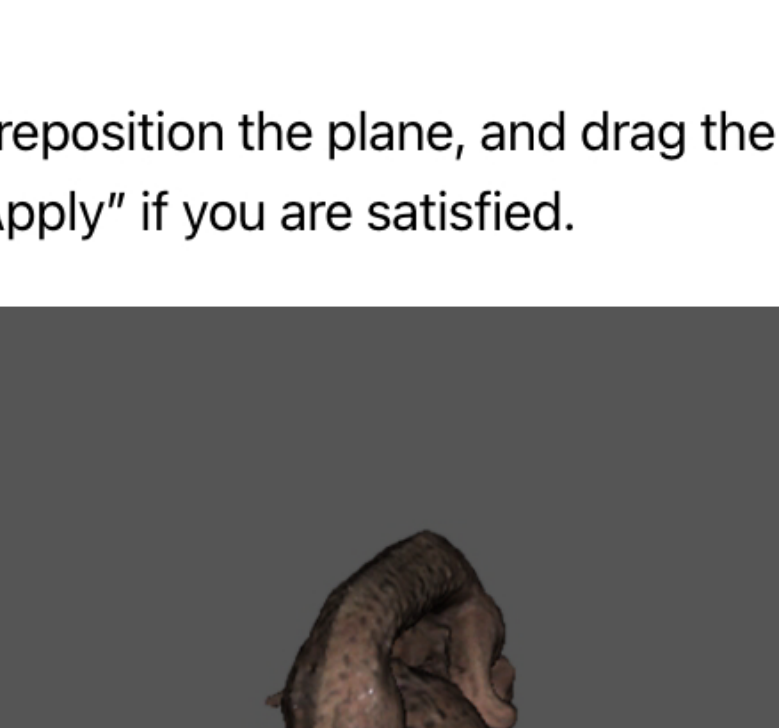
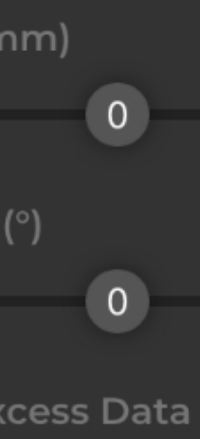
Click "Process" in the 3D Viewer after checking the needed steps.



Please select the data to be processed and adjust the refinement of fusion as needed. You'll be given 7 refinement levels; the higher level you set, the finer results you'll get, and more triangles in the mesh models. The refinement options are as shown below, use the slider to adjust it and hit "Apply". Please kindly wait for the data processing:



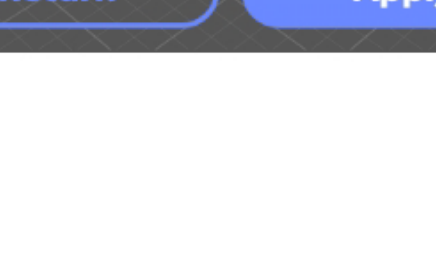
	Model		Recommended Levels of Refinement
Lynx	MagicSwift Plus	Whale Wide-Core	1-2
Mole	CR-Scan Lizard	Whale Micro-Core	3-4
	Seal	Seal Lite	5-7



You can further edit on the mesh model to delete excess data with the selection tools available. For more information: [Data Editing](#)

Watch the tutorial below to learn more:

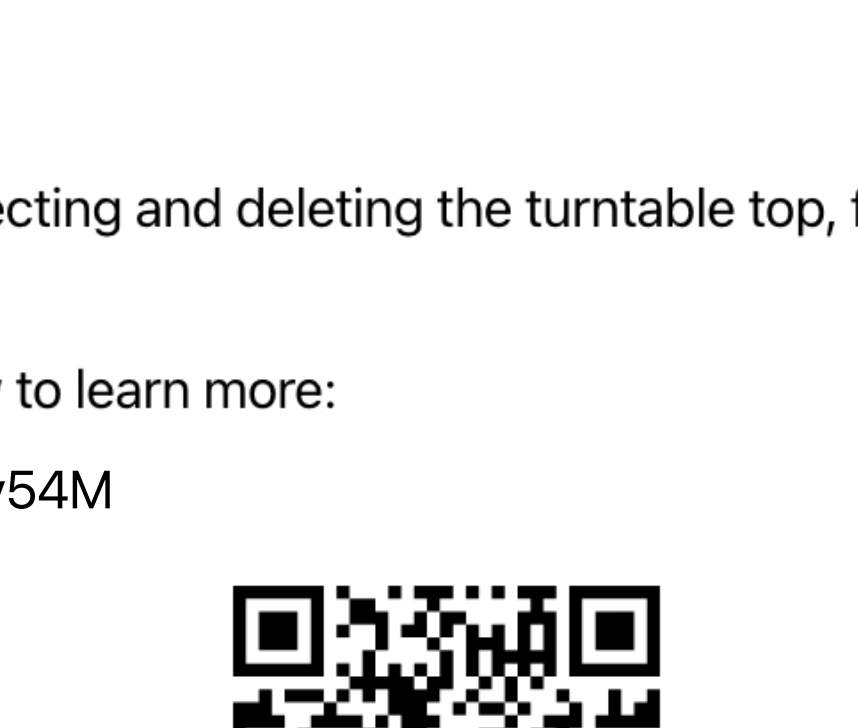
<https://forum.jimumeta.com/home/tutorial/fee6bfaad70e41a1b251ed0c555a8496.html>



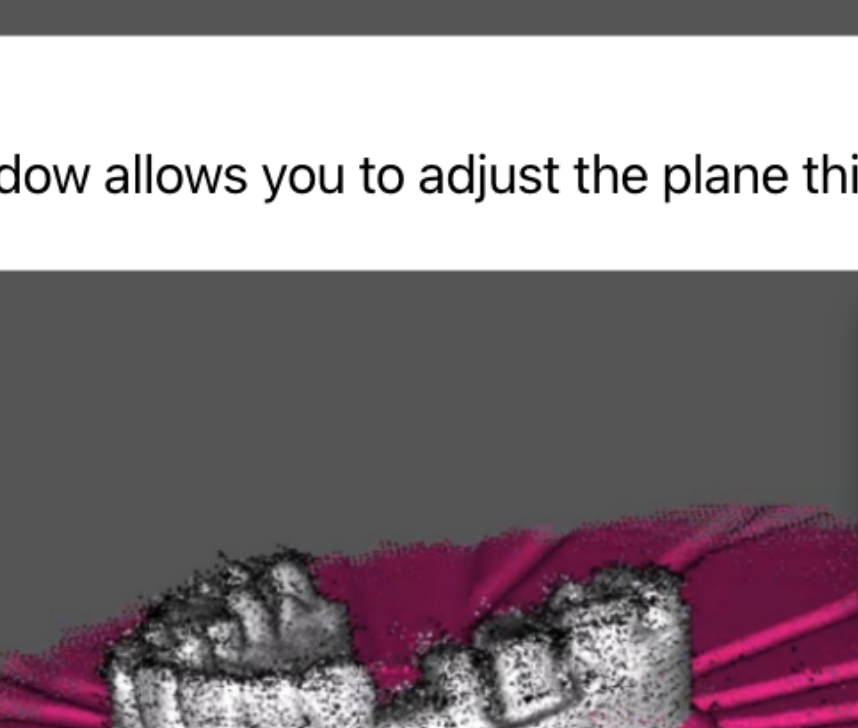
Reorientate

Adjust the model's posture, align its base to XY axis of the coordinate system for further model editing and 3D printing.

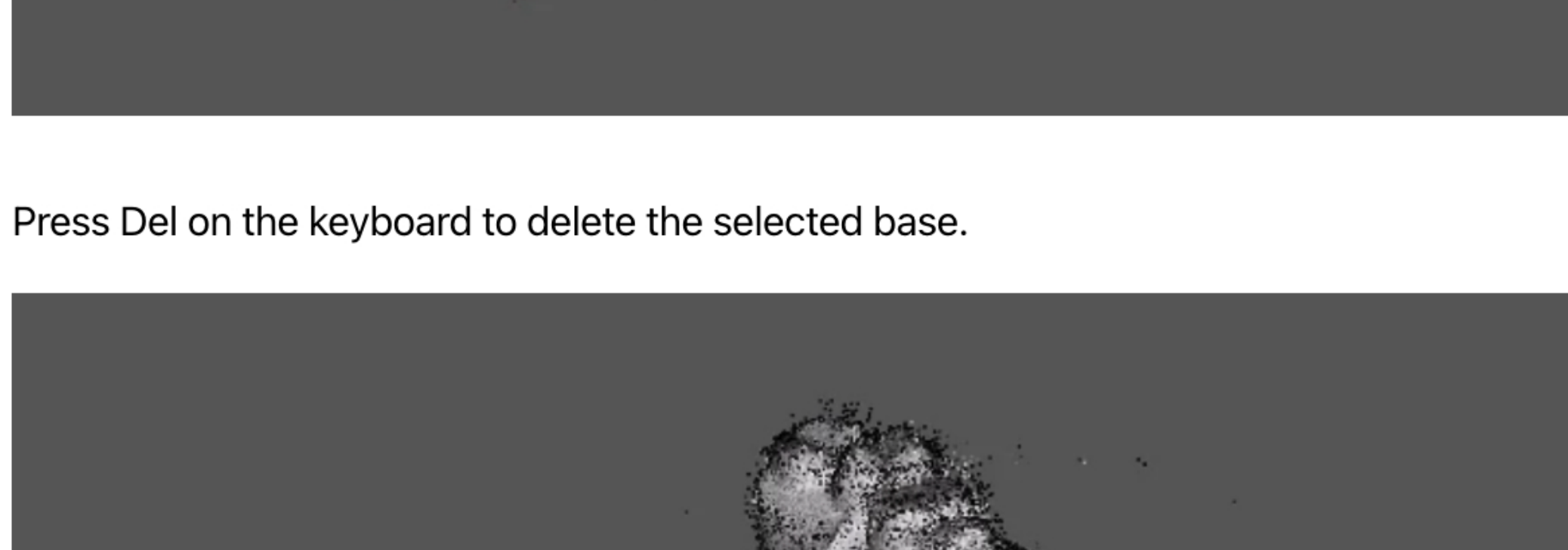
Reorientate your 3D model by going into the Work Panel_Reorientate. Three mark points will be automatically created to generate a plane; right-click to reposition them but not make them in a line; flip directions of the normal line in the Work Panel_Reorientate; click "Reorientate" to execute it.



In the Work Panel_Reorientate, there are other settings such as changing the view types, moving the plane, rotating the model and deleting the highlighted excess data below the plane.

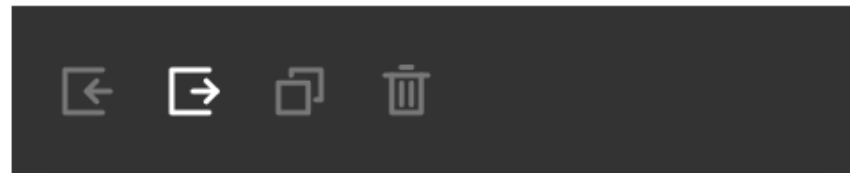


Drag four anchor points to reposition the plane, and drag the arrow in the middle to move the plane vertically; click "Apply" if you are satisfied.

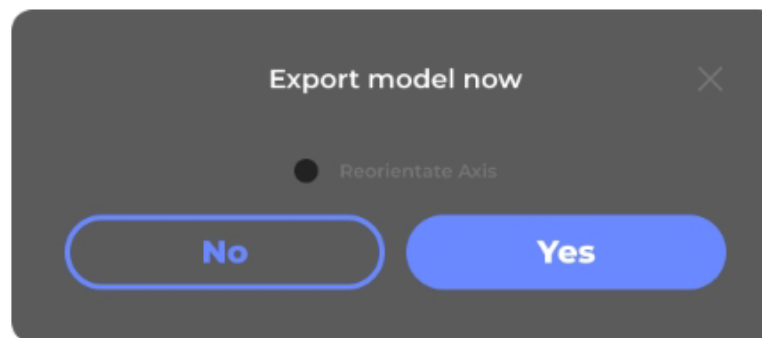


Export the Model

Click "Export" in the Title Bar_File or the export icon in the Data Panel to export the model.



Click "Yes" in the pop-up, will go to reorientate the model if checking "Reorientate Axis".
For more information: [Reorientate](#)



JMStudio now supports model exported in obj, stl and ply format, stay tuned for more available formats. Thank you for your time!