

The logo features the word "Tiger" in a large, bold, black, italicized sans-serif font. The number "3D" is positioned above the "er" in a smaller, orange, italicized sans-serif font. Below "Tiger 3D", the word "APEX" is written in a smaller, orange, all-caps sans-serif font, followed by a trademark symbol (TM).

**Tiger** 3D  
APEX™

SCANNER

OPERATION MANUAL

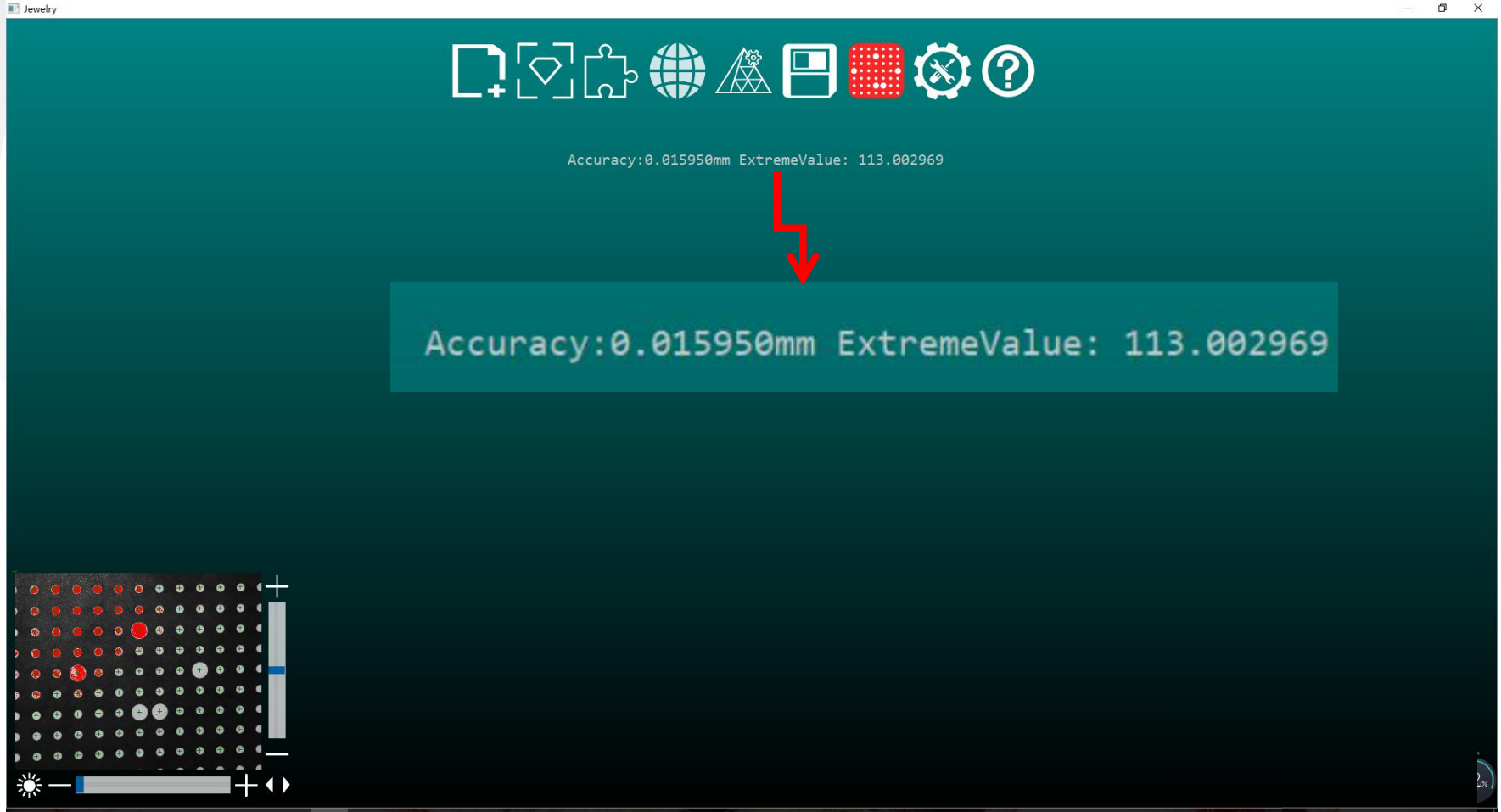
# Section 1.1: Start Camera Calibration

**Step 1:** Put the calibration board on the automatic rotating axis.

**Step 2:** Click this red icon to start camera calibration, and below sheet image shows up

**Step 3:** Click apply to start the process

# Section 1.2: Finishing Camera Calibration



# Section 2.1: Scanning

The screenshot shows the software interface with a teal background. At the top, there is a toolbar with icons for file operations, scanning, and settings. A red arrow points to the scanning icon (a square with a plus sign). Below the toolbar, text instructions describe the steps. A red arrow points from the scanning icon to a settings dialog box. Another red arrow points from the dialog box to a larger settings dialog box. A third red arrow points from the larger dialog box to the 'Apply' button. In the bottom left corner, there is a 3D view of a scanned object on a rotating axis, with a red arrow pointing to it. The larger settings dialog box has the following fields: Name, No., Target (Onesie selected, Whole & Parts), Scan Mode (Single-item Scan selected, Multi-item Scan), Workflow (HD scan, Fast scan selected), and Saving path (D:\Think3D\).

Step 2: Select the following icon to start the scanning process. The following menu will appear

Step 1: Place the object to be scanned on the automatic rotating axis

Step 3: Choose your preferred setting and click "apply" to start scanning

# Section 2.2: Plane Adjustment

Jewelry

The software interface features a teal header with a toolbar containing icons for file operations, navigation, and settings. Below the toolbar, a text prompt reads "Please elevate plane by '+' and '-'". The main workspace shows a 3D model of a gold ring on a dark grey plane. A red arrow points from the text "Please elevate plane by '+' and '-'", through the "Step 1" instruction, to a vertical slider on the left. Another red arrow points from the "Step 2" instruction to a checkmark button at the bottom right. A third red arrow points from the checkmark button to the 3D model. A small inset window in the bottom left shows a top-down view of the ring with a red dot indicating the scan point.

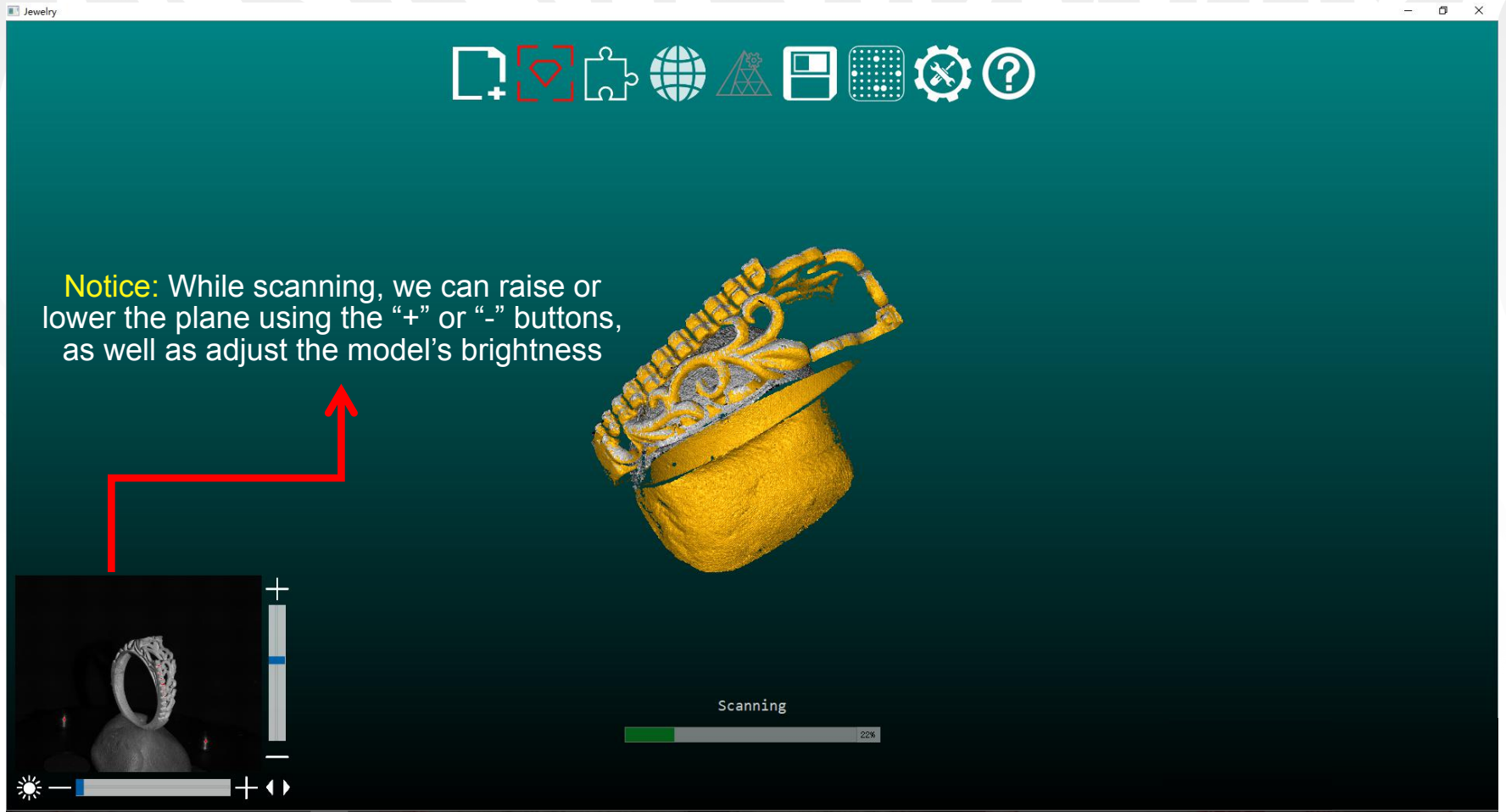
Please elevate plane by "+" and "-"

Select "+" or "-" to adjust the camera brightness

Step 1: Select "+" or "-" to elevate the plane

Step 2: Click  to start scan

# Section 2.2: Plane Adjustment



# Section 2.2: Adding Additional Scans

Jewelry

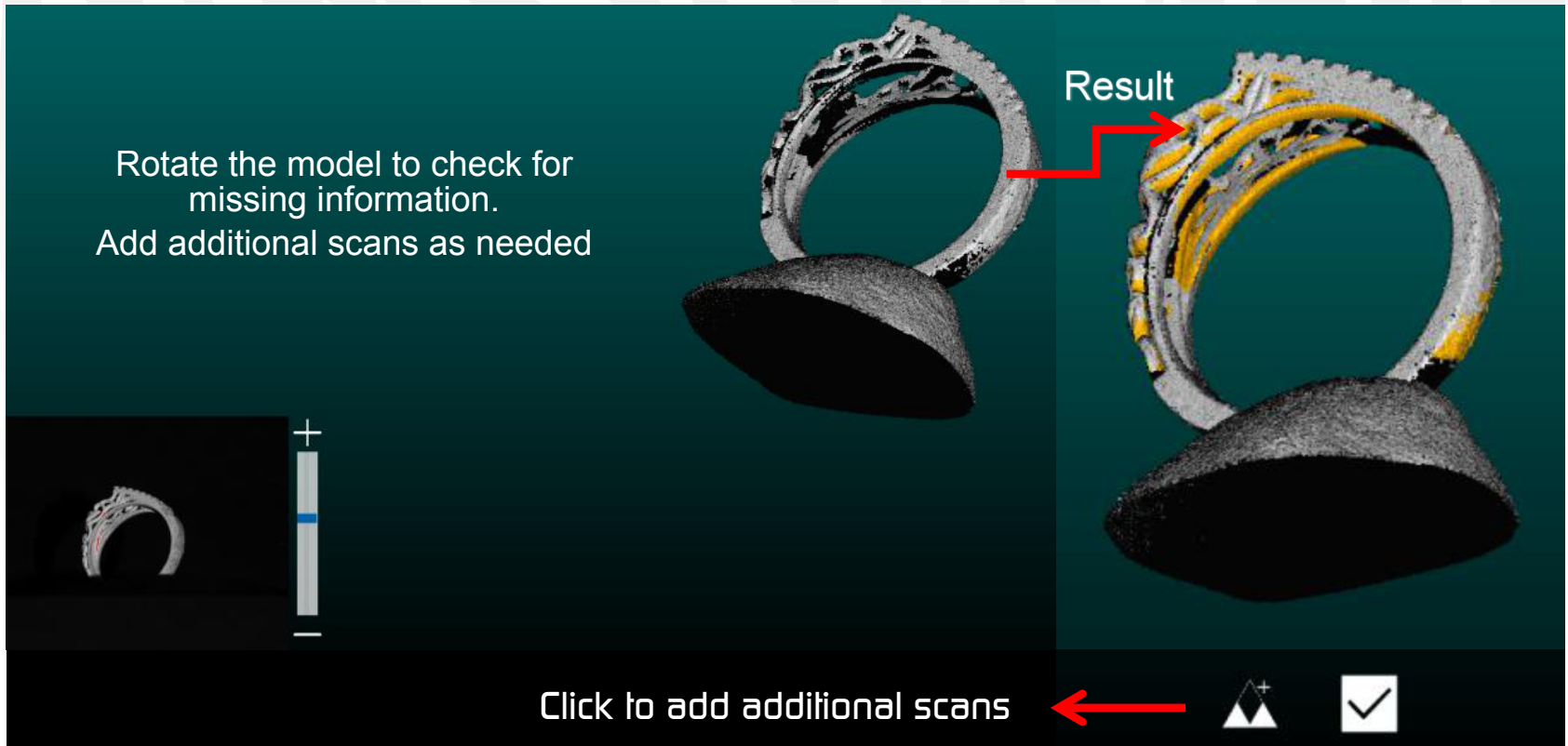
**Notice:** Rotate the model to check for missing information. If needed, add additional scans.

Click the “add scan” icon to start the scanning process.

add scan

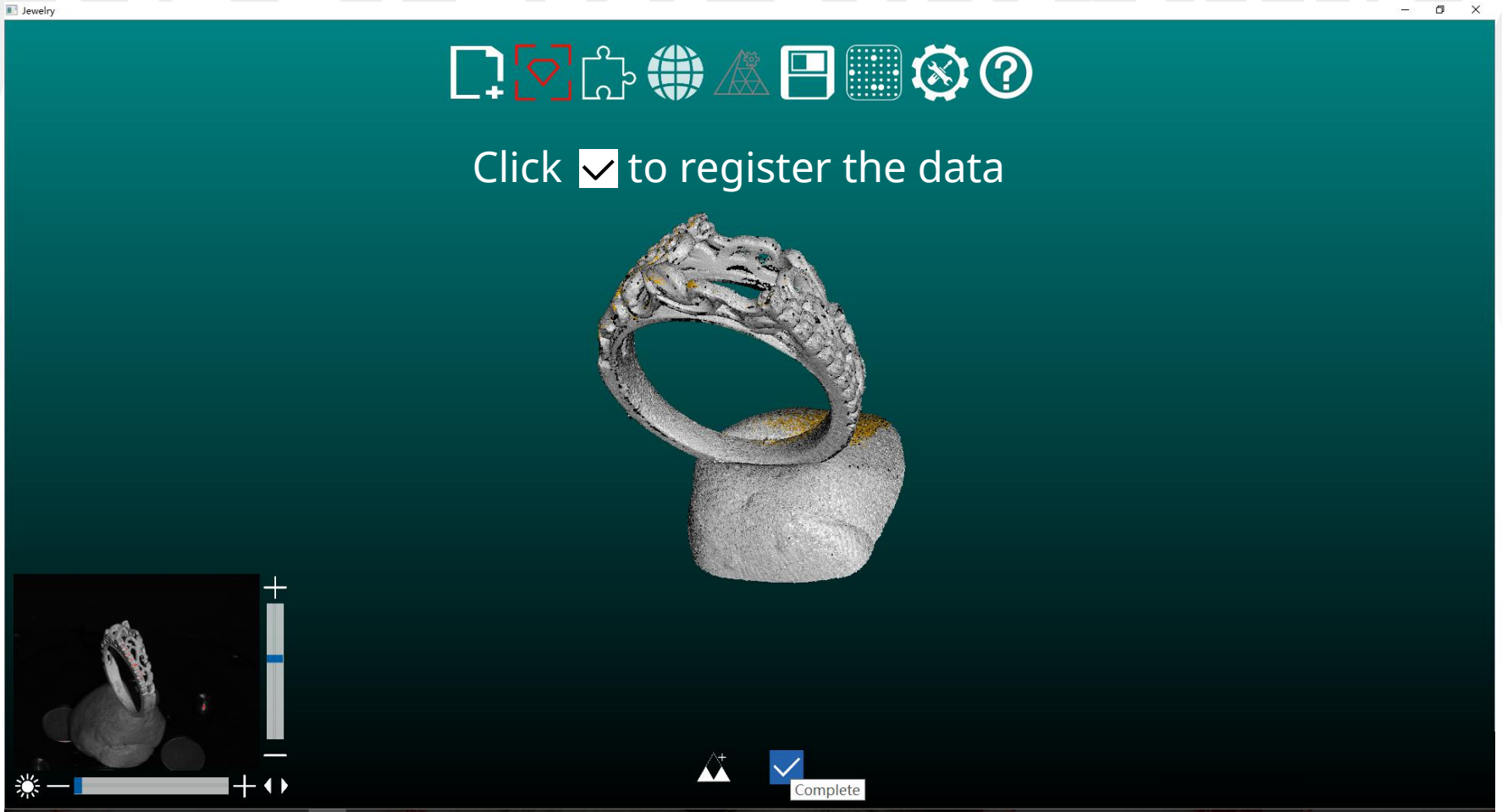


# Section 2.2: Adding Additional Scans





# Section 2.3: Scan Registration




# Section 2.4: Removing Unneeded Data


Jewelry


1: Select the desired data. The selected sections will turn red.

2: Delete the selected part by clicking the “delete” icon.

3: To delete the unselected data, first select the “reverse selection” icon, then click the “delete” icon.

Delete 


Cancel Selection 


Reverse Selection 


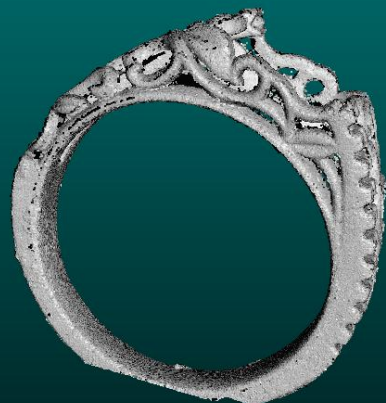
The screenshot shows a 3D CAD software interface with a teal background. In the center is a 3D model of a ring. The ring's band is highlighted in red, indicating it is selected. Above the ring is a toolbar with several icons: a selection tool (a square with a plus sign), a delete tool (a square with a red 'X'), a reverse selection tool (a square with a red 'X' and a dashed border), a globe, a puzzle piece, a camera, a file icon, a grid, a gear, and a question mark. To the right of the ring is a legend with three entries: 'Delete' with a red line and a trash can icon, 'Cancel Selection' with a red line and a square with an 'X' icon, and 'Reverse Selection' with a red line and a square with a checkmark icon. In the bottom left corner, there is a dark panel with a sun icon and a slider. In the bottom center, there are navigation icons: a play button, a zoom in button (a triangle with a plus sign), a zoom out button (a circle with an 'X'), and a checkmark button.

# Section 2.5: Creating New Groups


Jewelry



Click the  icon to start the scanning process for the new group.



**Notice:** It's recommended to change the object's axis position before scanning using the rotating axis.



# Section 2.6a: Auto Group Alignment

Jewelry

Click  to start the alignment process

Final result of new group

# Section 2.6a: Auto Group Alignment

Jewelry

Auto alignment result

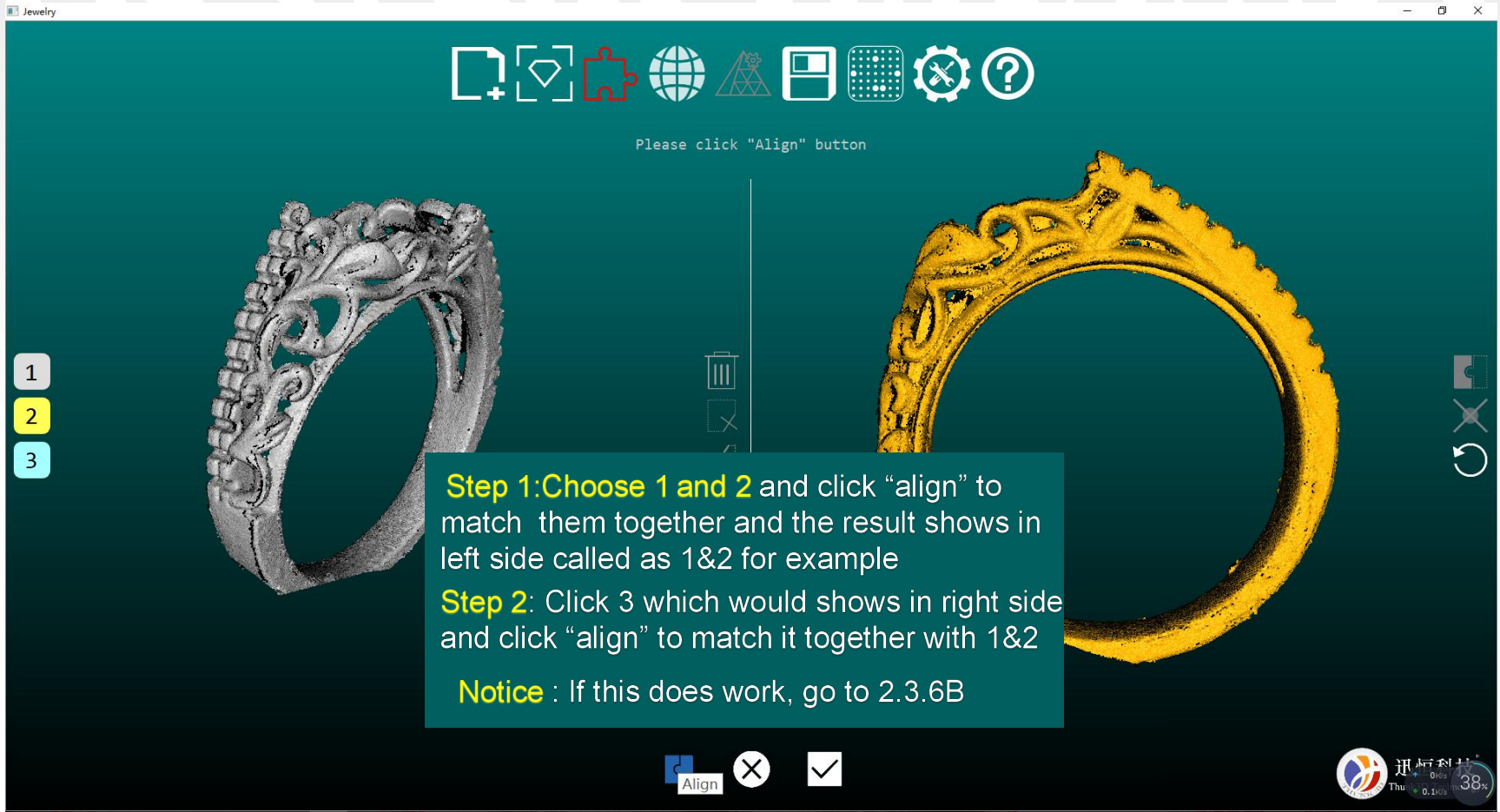
Please select data

Click  to finish

**Notice:** If the result is misaligned, try "Manual Group Alignment. See Section 2.6b



# Section 2.6b: Manual Group Alignment



The screenshot shows the Tiger APEX software interface with a teal background. At the top, there is a toolbar with icons for selection, alignment, and other functions. Below the toolbar, the text "Please click 'Align' button" is displayed. The main workspace is divided into two panels. The left panel shows a 3D model of a ring with a grey and blue color scheme. The right panel shows a 3D model of a ring with a yellow and blue color scheme. A vertical line separates the two panels. On the left side of the interface, there are three numbered buttons: 1 (grey), 2 (yellow), and 3 (cyan). A text box in the center of the workspace contains the following instructions:

**Step 1:** Choose 1 and 2 and click "align" to match them together and the result shows in left side called as 1&2 for example

**Step 2:** Click 3 which would shows in right side and click "align" to match it together with 1&2

**Notice :** If this does work, go to 2.3.6B

At the bottom of the interface, there is a toolbar with an "Align" button, a close button (X), and a checkmark button. In the bottom right corner, there is a logo for "迅恒科技" (Xunheng Technology) and a zoom level of "38x".

# Section 2.6b: Manual Group Alignment

The screenshot displays the Tiger Apex software interface. At the top, there is a toolbar with icons for file operations, alignment, and help. The main workspace shows two 3D models of a ring: a grey one on the left and a yellow one on the right. A vertical line separates the two models. On the left side of the workspace, there is a vertical list of numbers 1, 2, and 3, with the number 3 highlighted in yellow. In the center, there are icons for deleting, undoing, and redoing. A text box at the bottom of the workspace contains the following instructions:

Choose the three dots on each model at the same position, the select "align"

If neither auto or manual alignment works, please rescan the model and try again.

At the bottom right of the interface, there is a system tray with a logo, the date 'Thu 09/05', and the time '38%'. The window title bar at the top left says 'Jewelry'.



# Section 2.7: Creating a Mesh

Jewelry

Quality: 6  
Smoother: 10  
Edge denoise: 0  
Decimate rate: 100

Click  to start the mesh process

Complete

38%


# Section 2.7: Creating a Mesh



# Section 2.8: Mesh Refinement

Jewelry

Click  to apply refinement settings



Quality: 6  
Smoothen: 0  
Edge denoise: 0  
Decimate rate: 100

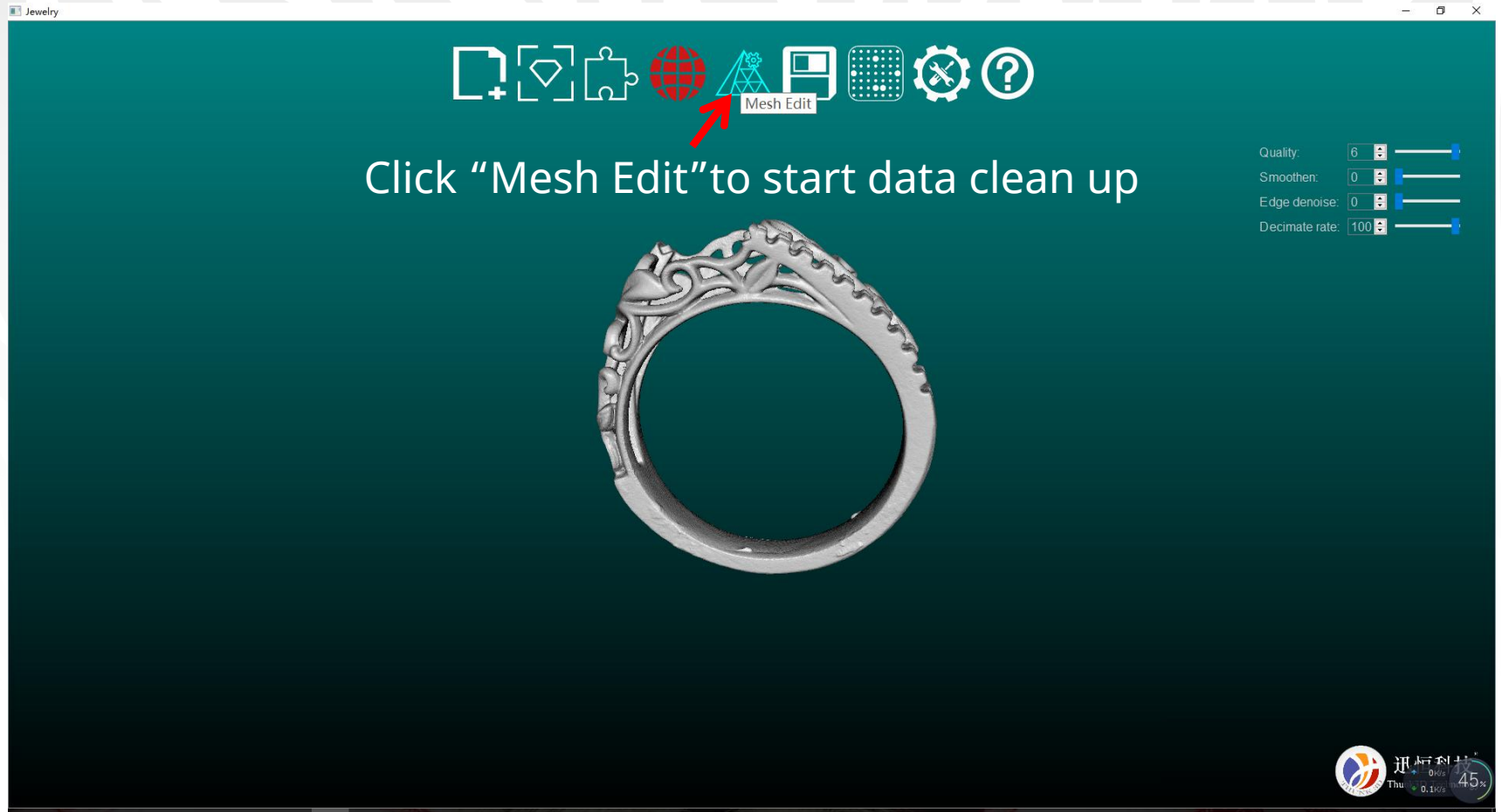
Quality: 6  
Smoothen: 0  
Edge denoise: 0  
Decimate rate: 100

Note: You can adjust settings such as "smoothing" or "quality" to your liking

Complete

迅利科技 0.3% 43%


# Section 2.9: Edit Mesh






# Section 3.1 a: Data Clean-up

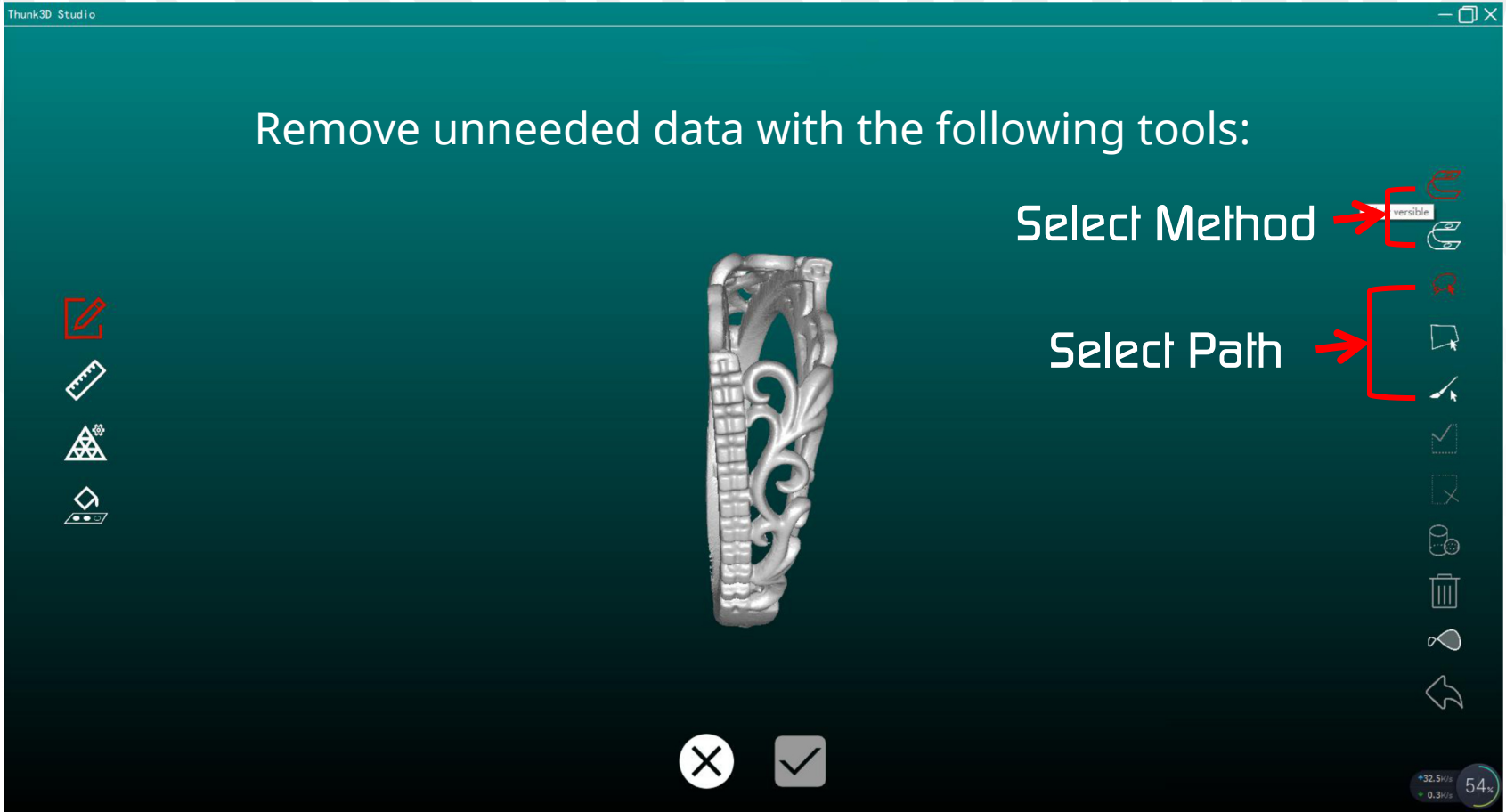
Thunk3D Studio

Remove unneeded data with the following tools:



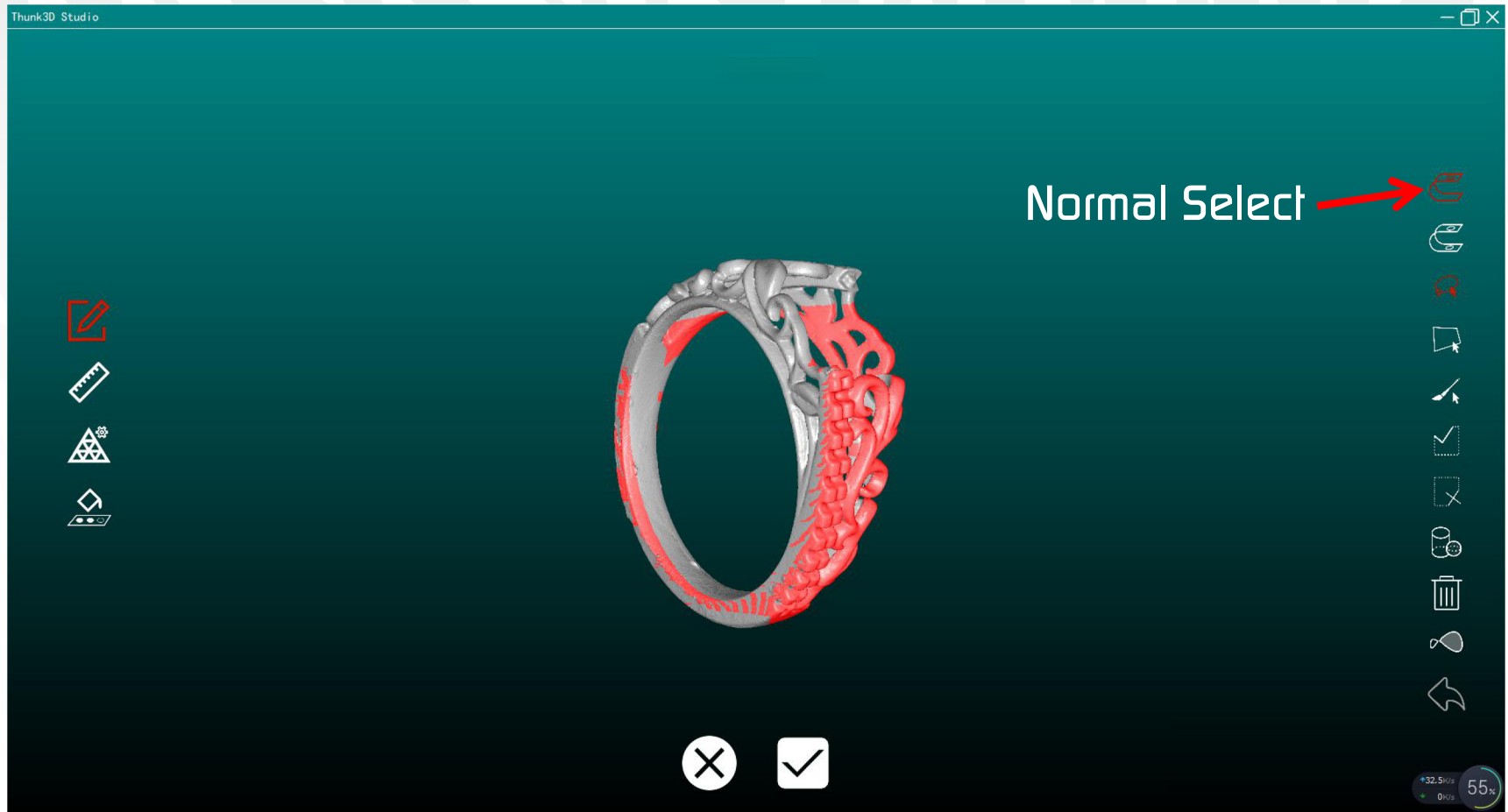
Select Method →  

Select Path → 

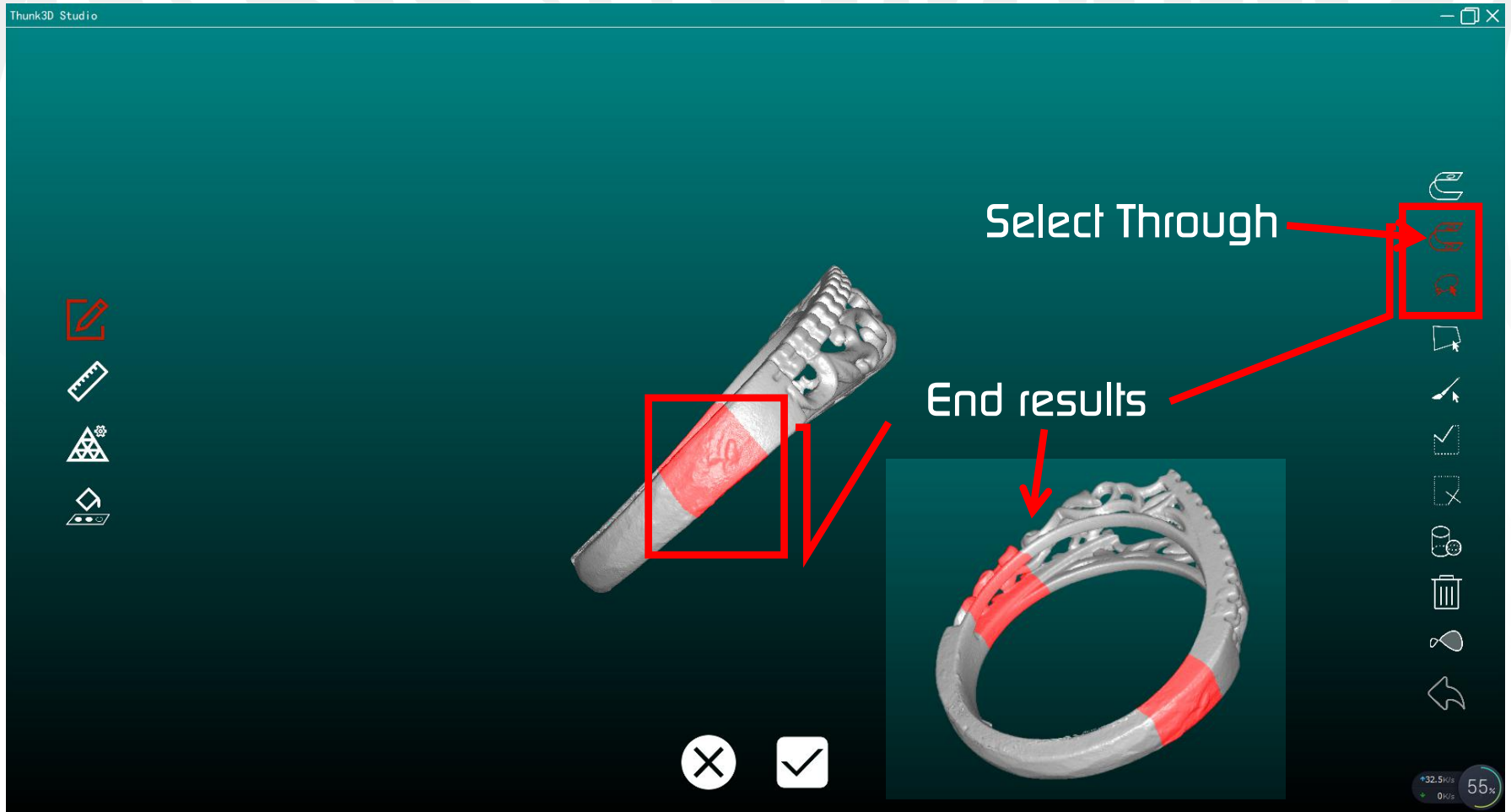


Thunk3D Studio interface showing various tool icons on the left and right sides, and a central 3D model of a ring. The interface includes a top bar with window controls, a left sidebar with icons for edit, measure, and assembly, and a right sidebar with icons for various modeling tools. A red arrow points from the text 'Select Method' to the 'Invert' and 'Reverse' tool icons. Another red arrow points from the text 'Select Path' to the 'Path' tool icon. At the bottom, there are 'Cancel' and 'Apply' buttons, and a status bar showing file size changes and a zoom level of 54x.

# Section 3.1 b: Data Clean-up - Normal Select

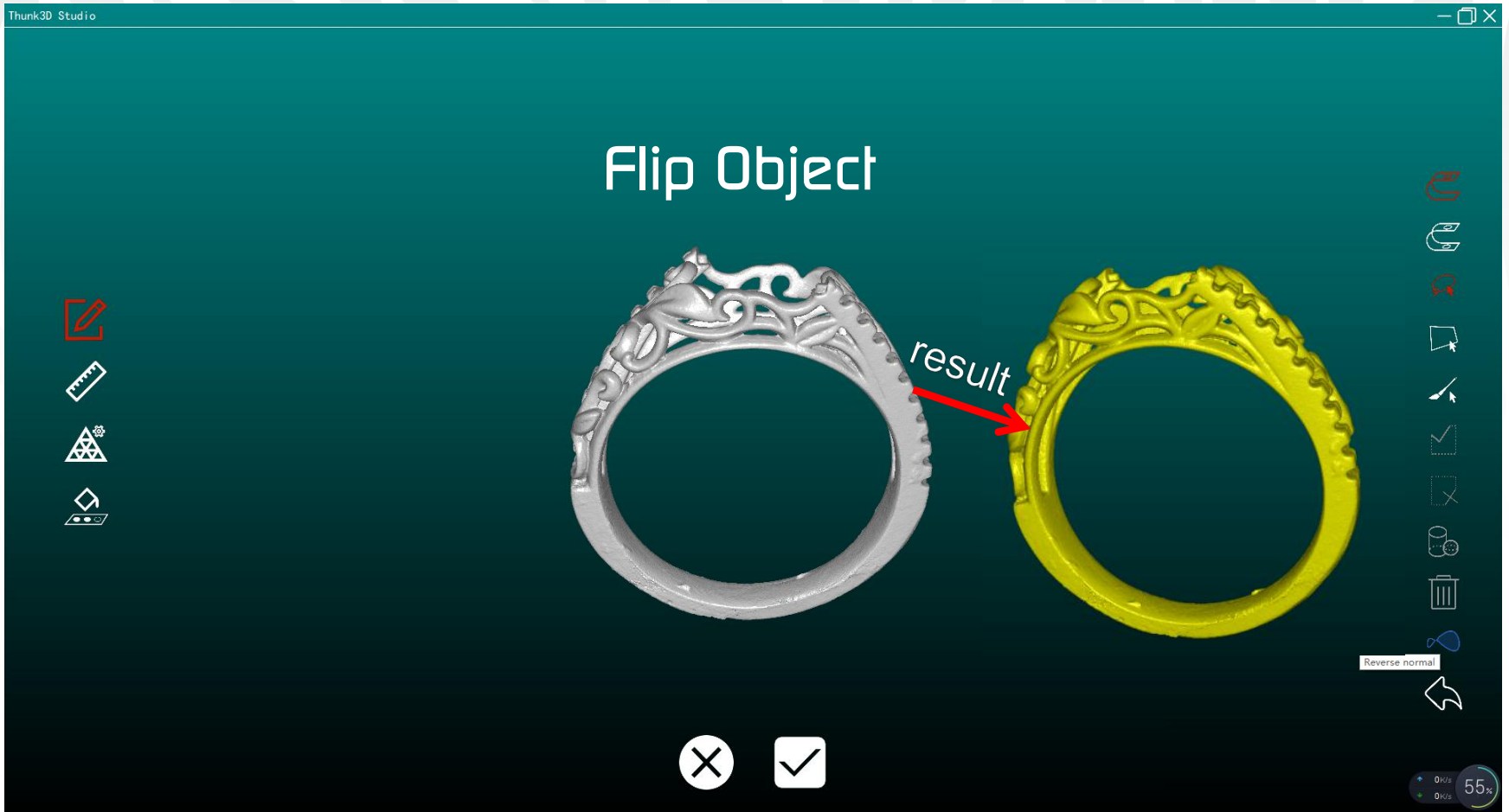


# Section 3.1 c: Data Clean-up - Select Through

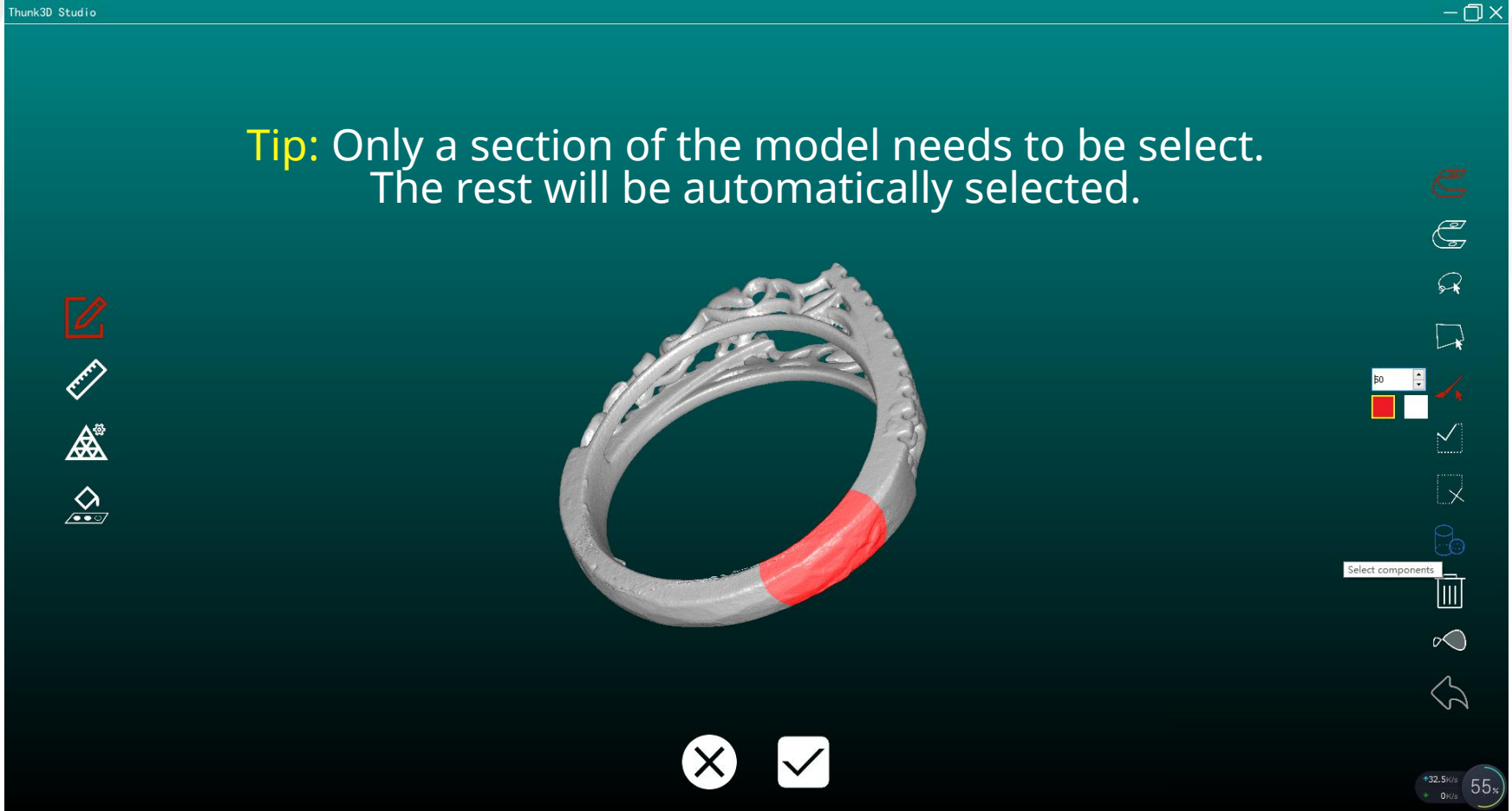




# Section 3.1 d: Data Clean-up - Flip Object




# Section 3.1 e: Data Clean-up - Component Selection



# Section 3.1 f: Data Clean-up - Measurement

Think3D Studio




**Tip:** Measure points, coordinates and distance



point coordinates

Distance between point to point

Distance between point to plane



# Section 3.1g: Data Clean-up - Point to Plane

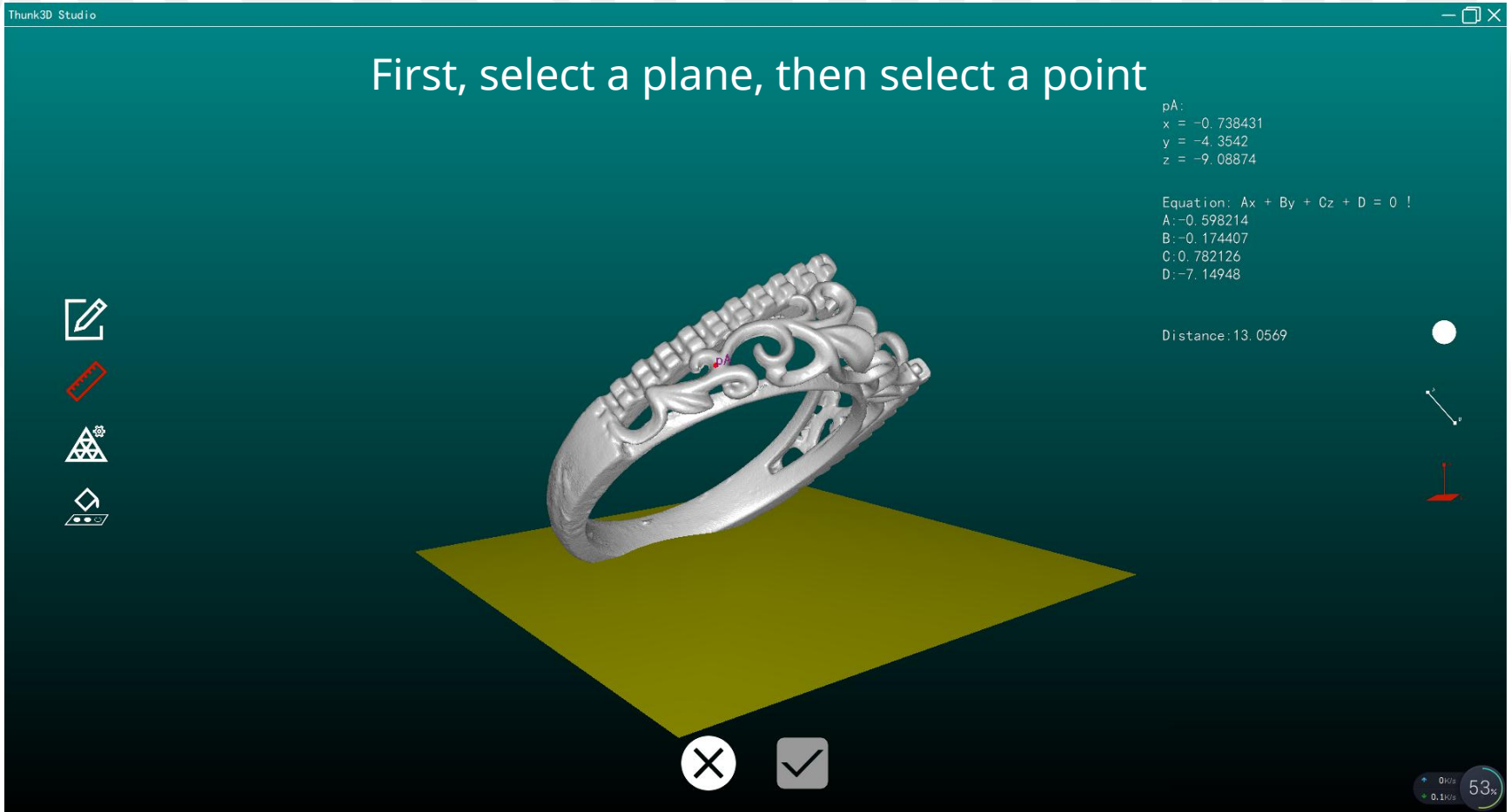
Think3D Studio

First, select a plane, then select a point

pA:  
x = -0.738431  
y = -4.3542  
z = -9.08874

Equation:  $Ax + By + Cz + D = 0$  !  
A: -0.598214  
B: -0.174407  
C: 0.782126  
D: -7.14948


Distance: 13.0569







# Section 3.1 h: Data Clean-up - Optimize Mesh

Thunk3D Studio

To fill imperfections in the model, use the following tools:



-  **Delete spikes**
  - Removes high points in model
  - \*Can remove individual points
-  **Smooth tool**
  - Smooths out uneven surfaces


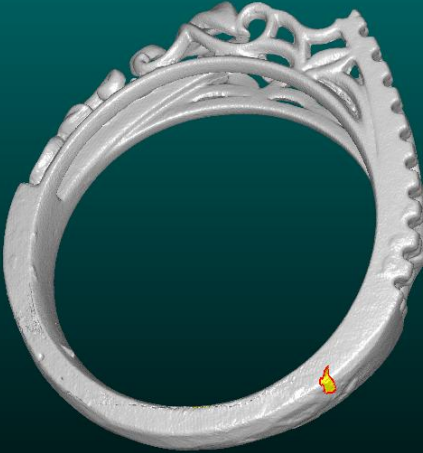






0 Kts  
+0.1 Kts 53x



# Section 3.1 i: Data Clean-up - Filling Holes

Think3D Studio

**Notice:** To fill imperfections in the model, use the following tools:

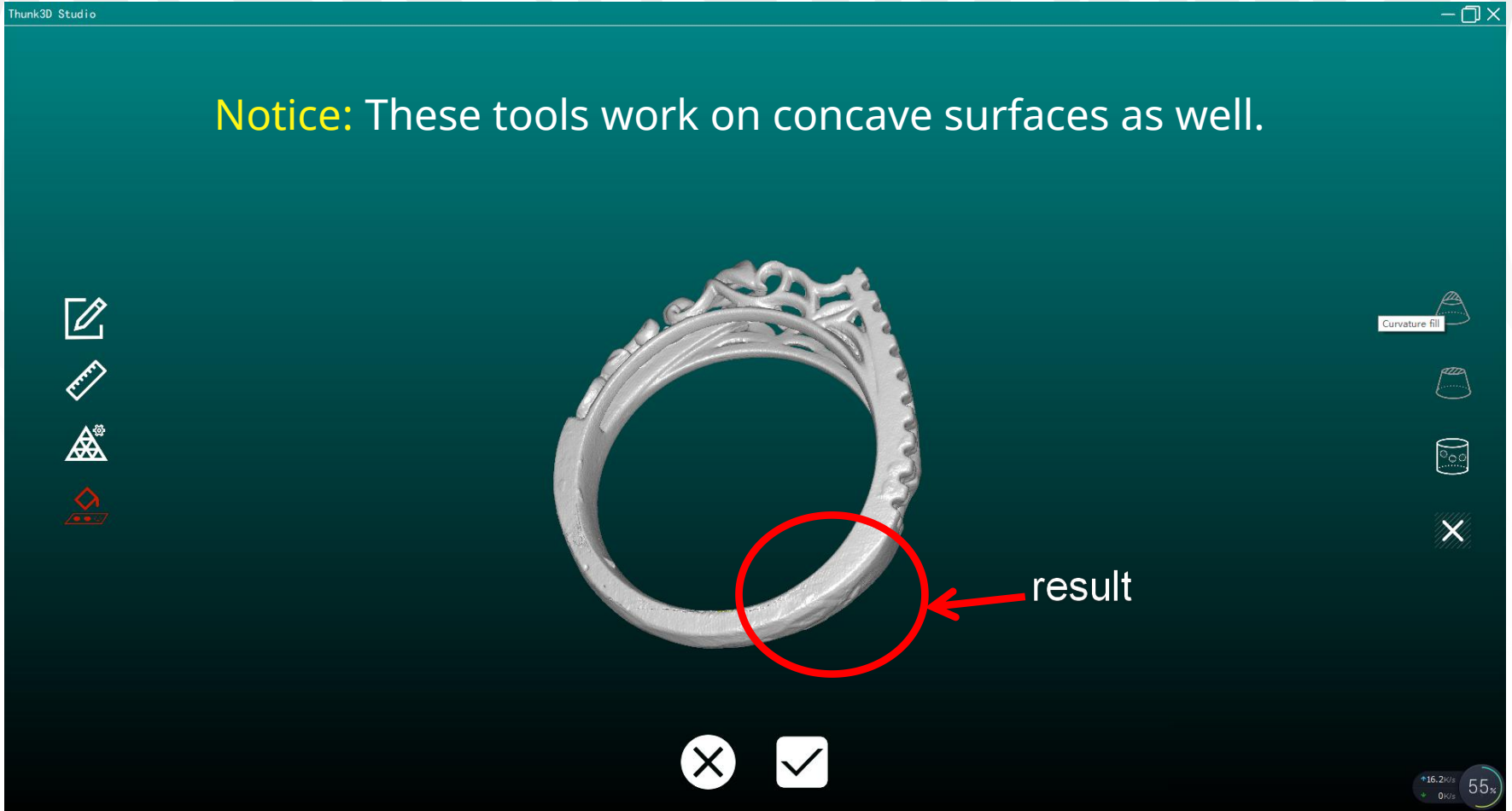


- Curvature fill 
- Flat fill 
- Fill all holes 
- 

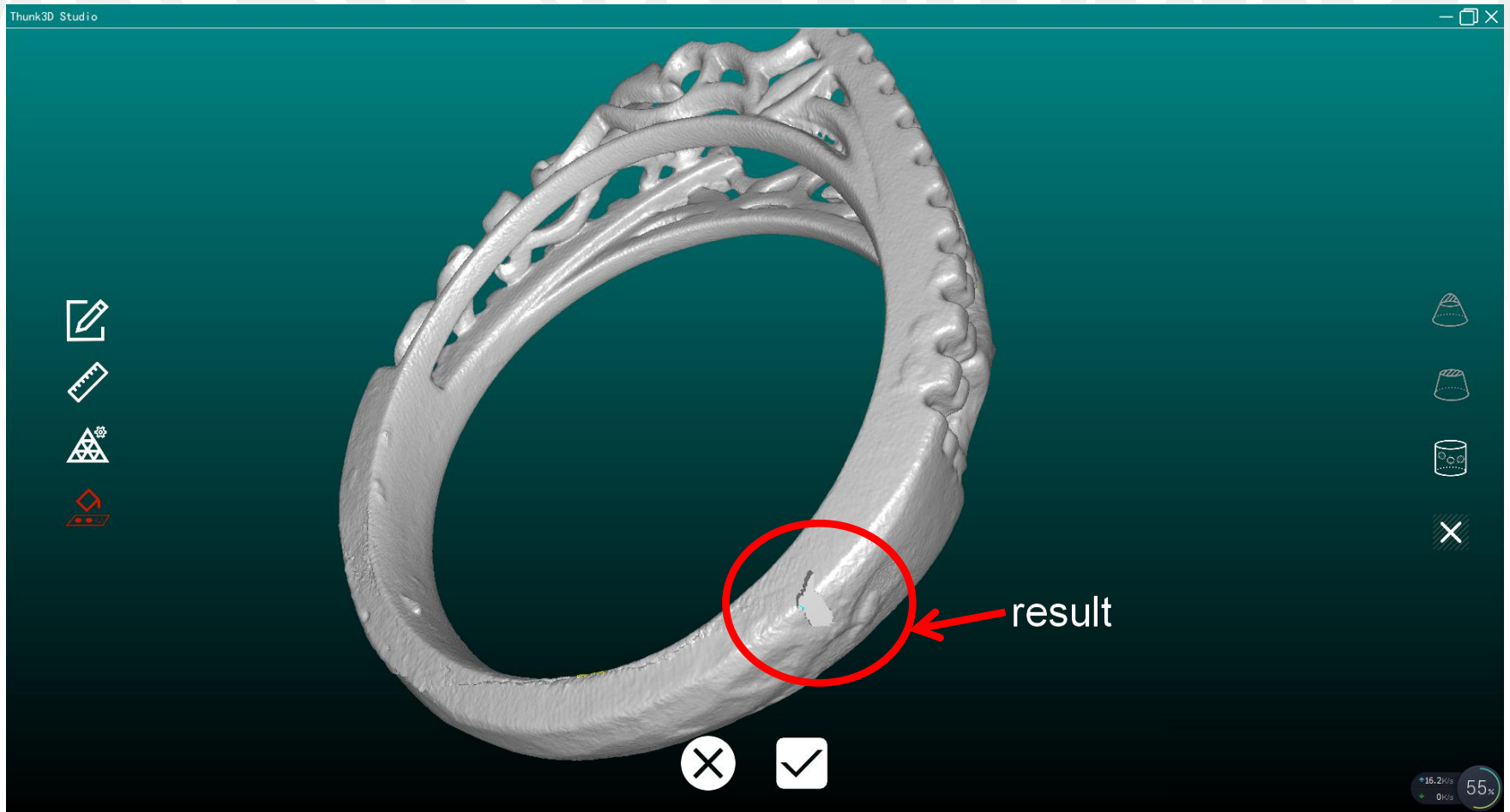
32.5K/2 0K/2 55%

# Section 3.1j: Data Clean-up - Filling Curves





# Section 3.1 k: Data Clean-up - Filling Flat Surfaces



# Section 4: Saving Data

The screenshot shows the Tiger APEX software interface. At the top, there is a toolbar with several icons. A red arrow points to the 'save' icon, which is a blue floppy disk. Below the toolbar, a teal banner contains the text: **Notice:** Select the "save" icon to open the file path. In the center, a 3D model of a ring is displayed. A red arrow points from the text 'Data path' to the ring model. On the right side, there are control sliders for Quality (6), Smoother (0), Edge denoise (0), and Decimate rate (100). At the bottom, a Windows File Explorer window is open, showing the path: This PC > Data (D:) > Jewellery3D > 2021-8-4. The file list shows a folder named 'RawData' with a date modified of 8/4/2021 10:43 AM and a type of File folder.

# Section 5: Parameter Settings

Select the "gear" icon to view mesh parameters

Quality: 6  
Smoothen: 0  
Edge denoise: 0  
Decimate rate: 100  
Denoise:  Raw data  Polished data  
Cancel Apply

**Notice:** These values can be reset after the mesh is complete

# Section 5: Dongle Model Number & Uptime

The screenshot shows the Tiger APEX software interface. At the top, there is a toolbar with several icons: a window with a plus sign, a window with a checkmark, a puzzle piece, a globe, a triangle with a gear, a floppy disk, a grid, a gear with a wrench, and a question mark. A red arrow points to the question mark icon. Below the toolbar, the text reads: "Select this icon to view scanner information." A red arrow points from this text to the question mark icon. In the center, a "Help" dialog box is open, displaying the following information:

```
Dongle No. :8003A7-8  
Running from:2020-11-30 10:11:57  
Expired:2030-11-27 0:0
```

An "OK" button is located at the bottom right of the dialog box. In the bottom left corner of the software interface, there is a dark area with a sun icon and a vertical slider.