



MakerStudio  
@GCLS

**MakerBot Digitizer  
3D Scanner**

Quick Start Guide

- Turn on computer connected to the MakerBot Digitizer



- Locate power switch in the bottom rear of the MakerBot Digitizer and turn on.



## What can be Scanned?

Some objects will produce better scans than others. Here are a few guidelines to help you determine what will produce a good scan.

### GREAT TO SCAN

- Objects that are larger than a 50 x 50 mm (2 x 2 in) cylinder
- Objects that are smaller than a 203 x 203 mm (8 x 8 in) cylinder
- Objects weighing less than 3 kg (6.6 lbs)
- Stationary objects
- Opaque objects

### DIFFICULT TO SCAN

- Transparent objects
- Shiny or reflective objects
- Very dark objects
- Fuzzy objects

### DO NOT SCAN

- Moving objects
- Objects that weigh more than 3 kg (6.6 lbs)
- Objects that are larger than a 203 x 203 mm (8 x 8 in) cylinder
- Objects that are smaller than a 50 x 50 mm (2 x 2 in) cylinder

**i Tip:** You can reduce glare on reflective surfaces or lighten dark surfaces by applying corn starch with a paint brush. For more tips, go to the **Learn More** section at [makerbot.com/digitizer](https://makerbot.com/digitizer)

- Open Makerbot Digitizer software on computer.

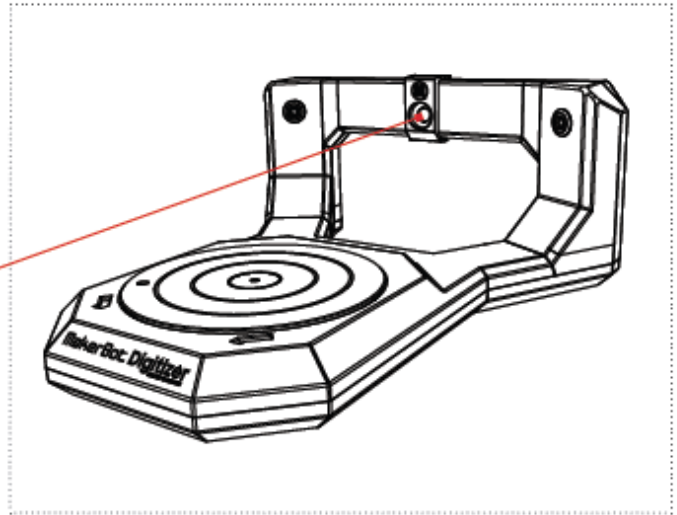
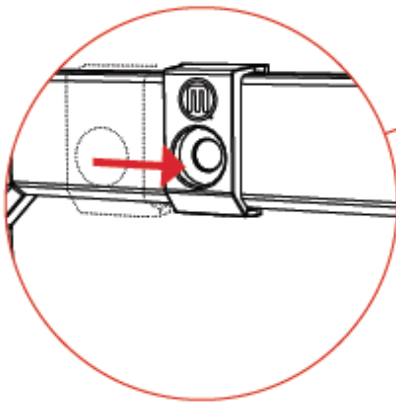


To begin a new scan, MakerWare for Digitizer must be in the New Scan state. You will be taken to the New Scan screen at the end of the initial calibration and setup routine. You can also access the New Scan screen at any time by choosing *New Scan* from the *Scanner* menu.

## TO SCAN AN OBJECT

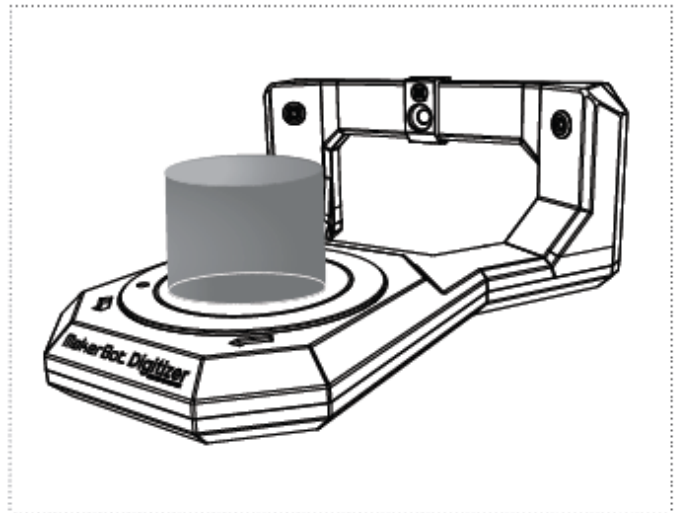
### 1 Position Filter on Camera Lens

Ensure that the camera filter is positioned over the camera lens. Avoid touching the camera filter or camera lens.



### 2 Place Object on Platform

Note that parts of an object that extend outside of the scan cylinder will be excluded from the scan and may affect overall scan quality.

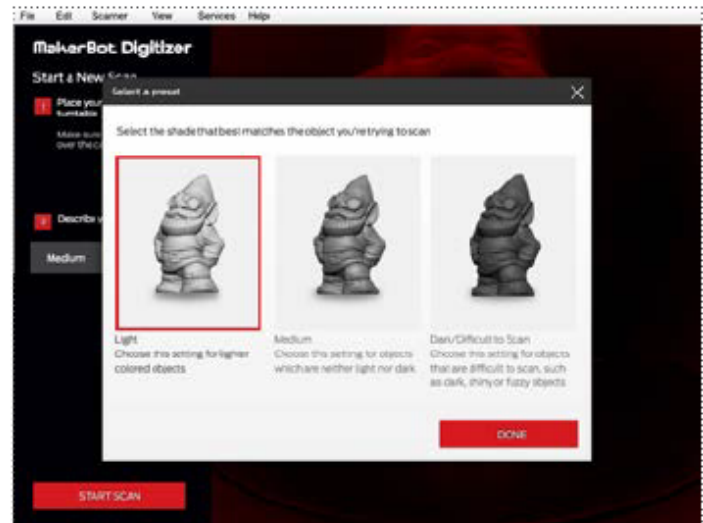


### 3 Select a Scan Preset

Choose **Light** to scan a white or light-colored object.

Choose **Medium** to scan a brightly colored object or an object that is neither light nor dark.

Choose **Dark/Difficult to Scan** to scan dark, reflective or fuzzy objects. Keep in mind that these objects might not scan well using any settings.



### 4 Check the camera view

If you can see yourself in the camera view, step out of the camera's line of sight. Before starting to gather scan data, the Digitizer will capture an image of your object and its background and use it to filter the background out of the scan images.

- You may want to place a piece of cardboard behind your scan to alleviate unwanted “noise” in your 3D render file.

## 5 Click Start Scan

During the scan, data points will appear in the viewport as the MakerBot Digitizer identifies points on the surface of your object. A progress bar will also appear, showing the estimated time remaining in the scan. During the scan, you can use your mouse to view the partial point cloud from different angles.

**i Note:** Do not touch or move the object being scanned while the scan is in progress.



- **To rotate:** left-click and drag within the viewport
- **To pan:** middle-click and drag within the viewport OR shift key + left-click and drag within the viewport
- **To zoom:** scrollwheel

After the MakerBot Digitizer finishes scanning your object, MakerWare for Digitizer will automatically turn the generated point cloud into a manifold 3D mesh. A manifold 3D mesh is completely enclosed and has no holes, reversed faces or extra geometry.

The meshing process should take approximately two minutes. When the mesh is complete, it will appear in the viewport.

**i Note:** Did you get a mesh that doesn't look like your object? If some parts of your object look much better than others, try adding an additional scan using MultiScan Technology. If the whole scan looks wrong, and you've double-checked your lighting, object placement and calibration, it's possible that you just have an object that doesn't scan well. We're working on making sure there are fewer of those, and you can help by sending us some information about your failed scan. See page 58 in the Troubleshooting section for more details.

Once your scan is complete, you can name your file and crop any unwanted data from the top and bottom of your mesh and add additional scans before you save a final 3D model file.

## NAME YOUR SCAN

Enter a name for your scan file in the **Name your Scan** field. Your file will be saved to your Things (on a Mac computer) or My Things (on a Windows computer) folder as a Thing file. If you do not enter a name into the **Name your Scan** field, the Thing file will be saved as "My Scan at [timestamp]."

## MULTISCAN

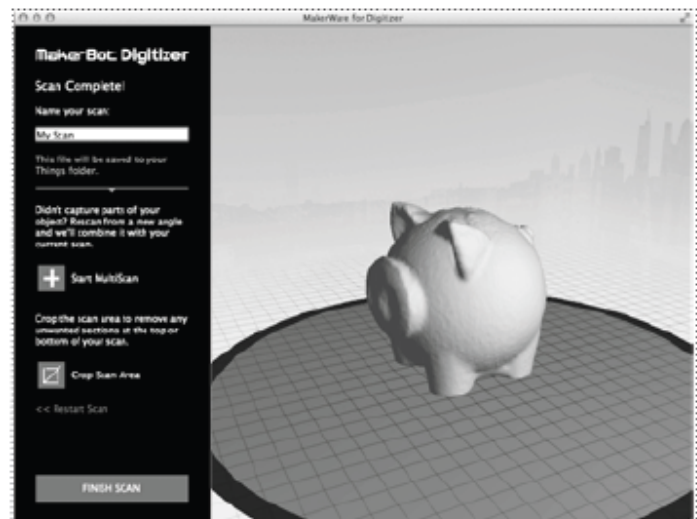
Click **Start MultiScan** to add additional scan data. MakerWare for Digitizer will walk you through adding as many scans as you need to capture every part of your object. See page 42 for instructions on using MultiScan Technology.

## CROP

Click **Crop** to go to the crop screen, where you can cut off the top or bottom of your object or remove unwanted data above or below your object. See page 43 for instructions on using the Crop feature.

## SAVE + CONTINUE

Click **Continue** to save the scan to your Things or My Things folder and continue to the next screen.



## Next Steps



### SHARE ON THINGIVERSE

If you skipped the **Share on Thingiverse** prompt after you saved your scan, you can still publish to MakerBot Thingiverse. Click this button or choose *Share* from the *File* menu to open the Share on Thingiverse dialog at any time.



**Note:** You must be logged in to MakerBot Thingiverse to share.



### PRINT WITH MAKERWARE

MakerBot MakerWare is the software that drives MakerBot 3D printers. When you click **Print with MakerWare**, the most recent scan is opened in MakerWare. You can also open the most recently saved scan in MakerWare at any time by choosing *Open in MakerWare* from the *File* menu.



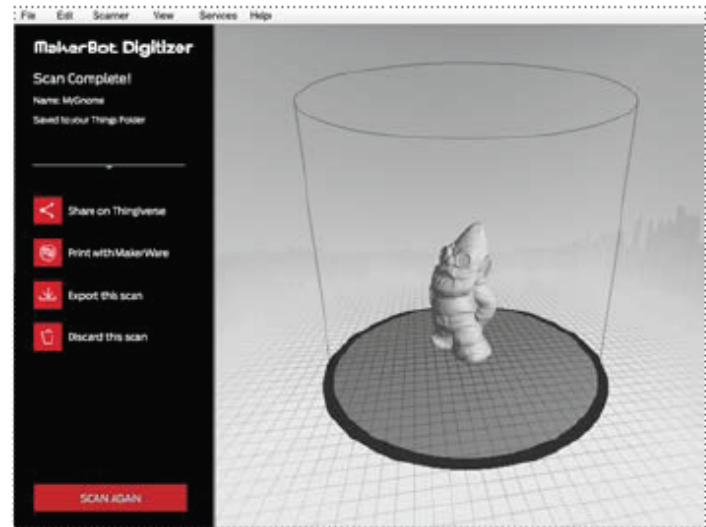
### EXPORT THIS SCAN

This allows you to save another copy of the scan with a different name or file format, or to a specific location. This new version will not replace the original file that was saved to your Things or My Things folder. You can also save the most recent scan at any time by choosing *Save* from the *File* menu.



### DISCARD THIS SCAN

If you're not happy with your scan, click **Discard this Scan** to delete the completed scan. Once you've accepted the delete confirmation prompt, MakerWare for Digitizer deletes the saved file from your Things or My Things folder and returns you to the New Scan screen.



SCAN AGAIN

### SCAN AGAIN

Click **Scan Again** to return to the New Scan screen.

## OPTIONAL:

### MultiScan™ Technology

Sometimes one scan isn't enough to capture all of an object's important features. For those times, there's MakerBot MultiScan™ Technology, which allows you to combine multiple scans of the same object.

Here's how it works:

1. First scan your object. Scan it in its tallest position first, so that any unwanted data you crop won't cut off pieces of later scans.
2. When the scan is complete, crop out any unwanted data at the top or bottom of your scan. Scans added with MultiScan Technology will only scan within the cropped area.
3. Click and drag in the viewport to examine your raw scan data and figure out which areas need more or better data. Rotate your object on the turntable to expose those areas to the camera.
4. Click **Start MultiScan** to begin a new scan. MakerWare for Digitizer will gather the new set of scan data, combine it with the scan data you already have, and create a new mesh. You can add as many additional scans as you need, but two or three are usually enough, and additional scans could reduce surface quality.

