

This Instructable has many, many steps because

A. It is a complex project!

B. It is difficult with the current interface to have many pictures, each with their own text below them. So I broke it up into sub-steps, each titled with a heading like "**Bookholder**" or "**Material Acquisition**", followed by substeps.

On another forum, someone suggested I make an overview step to make clear what is necessary to build this scanner. In retrospect, this is an obvious addition. I think it makes more sense to have this instructable conform to convention, so here is a proper materials list, broken down by section. Materials are still detailed before every new heading, so if you have questions, look there first. Please consider this a rough checklist to guide you on your way; when you build one of these things, you will likely find a few things missing. Please let me know in the comments.

General/Tools:

- Drill/drill bits.
- Saw/Miter box.
- Screwdriver.
- Soldering Iron.
- Hot glue gun.
- 3 clamps.
- Big ruler or measuring tape.
- Some wood screws.
- Soldering iron.
- Solder.
- Multimeter.

Material Acquisition. (steps 1-3)

Necessary:

- Gloves.

Nice:

- Flashlight.
- Camera.

Base. (steps 4-12)

Necessary:

- 8' 2x4 or the equivalent in smaller chunks.
- 4 bolts at least 4 inches long, with 4 matching nuts.
- A 20x22 or larger piece of countertop material, melamine, or some other slippery material.

Nice:

- A power strip with at least 2 outlets.
- An angled piece of aluminum or plastic to make a drilling template.

Bookholder Part 1. (steps 13-18)

• **Necessary:**

- 14" Miter box. Harbor Freight Part #99932.
- 2 Plastic (HDPE) or aluminum strips or angle at least 9" long. (A cutting board will also work).

Nice:

- Hot glue gun.

Bookholder Part 2. (steps 19-24)

Necessary:

- 2 Coroplast, wood, or MDF pieces 11x15" or larger.
- 2 Coroplast, wood, or MDF pieces 5x15" or larger.
- Two angle brackets -- mine were 3".
- Tool box drawer liner material.
- Spray glue (I use 3M Super77 or Super74).

Nice:

- A friend to help you.
- Permanent marker.
- Black duct tape.

Platen: (steps 25-30)

Necessary:

- 2 11x15" cuts of 1/8" clear acrylic.
- 2 6x6" squares of 1/4" clear acrylic.
- Some methylene chloride.
- A syringe or applicator.
- Something square.
- A tongue hinge.
- A chunk of scrap wood (or two).
- Some machine screws and nuts that will fit the hinge.

Nice:

Column Extension. (step 31)

Necessary:

- Some wood -- just a 4' section of your 2x4.

Nice:

- Smaller, thinner piece of wood (I had 1" square maple stock)
- Plastic or MDF (but you can make this part from 2x4, too)

Lighting. (steps 32-36)

Necessary:

- Two halogen bulbs of the type used in outdoor lights.
- Some kind of socket system to put them in. Mine was premade,
- but you might need to buy wire and sockets, depending on what you can find.

Nice:

- Pre-made light bar.(see step 36 for an idea)

Firmware Setup/Cameras. (step 37)

Necessary:

- Two cameras compatible with StereoData Maker. (See <http://stereo.jpn.org/eng/sdm/index.htm> for compatible cameras)
- Memory cards (I use 4GB SDHC cards).
- SDHC capable card reader.
- SDM and installer (see above URL and video in step 37)

Nice:

- Patience, a copy of Windows.

Video Switch. (steps 38-42)

Necessary:

- 3 RCA jacks.
- A SPDT or DPDT switch.

Nice:

- A pre-made video switch.

Display Systems. (steps 43-50)

Necessary:

- An old TV with composite input.

Nice:

- Access to old devices with LCDs that you can scrap out. This step is really not conducive to a materials list.

Camera Support. (steps 51-56)

Necessary:

- A board to make some arms.
- Bolts/matching wingnuts or thumbscrews.
- 2 2" angle brackets.
- 2X1/4 20 thumbscrews, nuts, and washers.

Nice:

- Pre-made arms. I used arms on a copystand and arms from Elmo Classroom Presenters.

Handle/Electronics. (steps 57-72)

Necessary:

- USB hub.
- Cheap LED flashlight, the kind that uses 3AAA batteries.
- 3 NiMH rechargeable AAA batteries.
- Some kind of insulated, two conductor wire; mine came from a discarded cell phone charger. (Better if it's a coil cord.)
- A momentary switch. The best kind are the "Reset" switches from old computers, though almost any will do.
- A loooong 1/4 20 bolt or threaded rod (or whatever thread you like).
- A wingnut, threaded to match the bolt.
- A couple nuts, threaded to match the bolt.
- A hunk of plastic or wood about 2" long and 1" thick.
- Some washers that will fit inside the flashlight body (about 3/4").

Nice:

- Alligator clips for testing.
- Heat shrink tubing.
- Industrial adhesive Velcro.

Final Steps. (73-end)

Necessary:

- Black paint and paintbrush.
- Stir stick.
- Plastic or paper tarp for painting.

Nice:

- A long afternoon to troubleshoot.