This is a Bill of Materials for the kit we offer. It is similar to the Prusa Iteration 2, with a few changes. The x-ends we use are not push-fit, they go all the way through and are held in with a cap screw on each end. We use a different endstop holder to get a little more printing area. We use different z-couplers, they look and work better. We include belt-guides for the belt to ride on instead of just the bearings. We include holders for the RAMPS electronics and to hold a spool of filament on top. Here is what you need:

Hardware

The frame consists of threaded rod for the main supporting structure of the frame and round/smooth rod for the axis to travel on. There is also some threaded rod used to drive the head up and down as well as a small piece to be used as an idler on one end of the x-axis belt. Overall the rods that you need for the frame are:

- 6x M8 x 14-9/16" (370mm) Threaded Rod - for the sides
- 4x M8 x 11-9/16" (294mm) Threaded Rod - for the front and back
- 3x M8 x 17-5/16" (440mm) Threaded Rod - for the top and bottom
- 2x M8 x 8-1/4" (210mm) Threaded Rod - to drive the Z axis up and down
- 1x M8 x 2" (50mm) - Small piece or rod to hold the bearing on the idler end
- 81x M8 Nuts
- 1x M8 Nyloc Nut
- 2x M4 Nuts
- 46x M3 Nuts
- 85x M8 Washers
- 2x M4 Washers
- 26x M3 Washers
- 1x 8mm x 18mm Smooth Rod - for a bearing in the extruder
- 2x 8mm x 420mm Smooth Rod - bars for the X axis to slide on
- 2x 8mm x 406mm Smooth Rod - bars for the Y axis to slide on
- 2x 8mm x 350mm Smooth Rod - bars for the Z axis to slide on
- 9x 608ZZ Bearings (6 for belt-guides, 3 for extruder)
- 11x LM8UU linear bearings
- M8 Hobbed Bolt
- 2x M4x20mm Cap Screws
- 5x M3x40mm Cap Screws
- 4x M3x25mm Cap Screws
- 22x M3x22mm Cap Screws
- 6x M3x16mm Cap Screws

- 13x M3x10mm Cap Screws
- 3x M3x8mm Grub Screws
- 900mm T5 Belt for X-axis
- 840mm T5 Belt for Y-axis
- 1x Small Spring
- 2x 8mm Inside Diameter Springs

RepRapped Parts

These are the parts that are created by another 3D printing machine. The parts that a replicatible. There are many variations on these parts, but we aim to mostly provide the standard parts. Unless you kow someone that has a RepRap, you cannot source these parts locally. These are the parts that are needed:

- 8x bar-clamp - Used to connect to bars together
- 2x belt-clamp-nut-holder - Bottom part of a belt clamp
- 2x belt-clamp - Top part of a belt clamp
- 4x z-half-coupler-8mm-5mm - Z coupler, connects motor shaft to threaded rod
- 1x y-endstop-holder - for the y endstop
- 1x minimal-xy-endstop - for the x endstop
- 1x endstop - for the z endstop
- 4x frame-vertex-foot - Bottom frame vertices
- 2x frame-vertex - Top frame vertices
- 2x belt-pulley - Pulleys to drive the belts
- 2x rod-clamp - Clamps Z axis smooth rod to Z mount
- 1x dualfanxcarriage - Holds the extruder
- 1x x-end-idler - Holds the x-axis belt idler
- 1x x-end-motor - Holds the x-axis motor
- 4x lm8uu-y-bushing - Attaches the bed to the y-axis
- 1x ybrac-t - Holds the y-axis motor onto the back
- 2x z-motor-mount - Holds the Z-axis motors
- 3x belt-guide - for the belt to ride on

Electronics

This is one of the hardest sections to source locally, but could technically be all put together by you. We use RAMPS which is a shield that goes onto the top of an Arduino. Don't be confused by the term shield, it basically just means it plugs onto the top of it. Down the line we may offer support for more types of electronics. The electronics is what drives everything. It communicates to the computer and recieves the GCODE that drives the machine. It has stepper drivers that plug onto it which drive the motors to move everything around and squirt out plastic. It also controls the current going to the hot end/extruder and the heated bed after monitoring the temperature with a thermistor. I will write up a component list to assemble RAMPS 1.4 down the line, but for now I'll provide the electronics. Unless you know how to solder, you probably don't want to assembly this part of the electronics yourself. Fully assembled kits are available. These are the required electronics:

- Assembled RAMPS 1.4
- Arduino Mega 2560
- USB Cable
- Power Supply - 12v DC 20A (16+A needed for heatbed)
- 1x 3-prong plug and cord
- 4x A4988 Polulu Stepper Drivers
- 1x B57540G0104F000 Thermistor (2nd with the hot-end)
- 3x Mechanical Endstops
- 18AWG Wire - Wire to the extruder and heatbed
- 24AWG Wire - Wire to the thermistors and endstops
- 7x 24-18AWG Insulated Spade Terminals
- 6x 26-22AWG Insulated Quick D/C Terminals
- 5x NEMA 17 Stepper Motors

- 5x 4-pin Header Connectors
- 5x 2-pin Header Connectors
- 30x Female Pins for header connectors

Extruder

Various types of extruders are available or you can just make your own. The most common/standard version of the cold end is called the Wade's Extruder and is what we currently use. We currently also use Makergear hotends. It consists of:

- Extruder Body
- Extruder Idler

- Large Extruder Gear
- Small Extruder Gear
- Hardware already included in the list above
- Hot End
- Mounting plate

Bed

A heated bed is pretty much a necessity if you want to print out any of the larger sized parts. This list of materials includes all that's needed to have a heated bed.

- Thick sheet material for bed base
- Prusa PCB Heatbed MK1
- 2x Green LED SMT 0805 Size
- 1x SMT Resistor 1kOhm 0805 Size
- 8" x 8" x 1/8" Piece of Glass
- 4x Small binder clips

Miscellaneous

- 30+x Zip Ties
- 2-1/2 feet of Cable Management (Spiral)
- ramps-holder - printed part to hold the electronics
- 2x filament-holder - printed parts to hold a spool of filament

If you are ready to put everything together, head on over to the RepRap Assembly section .