



## TaoSubmarines Prusa i3 Bill of Materials

Notes: This is the exact list of what we use in our assembly classes, and should get anyone building an i3 using RAMPS to 99% completion. Some things may be slightly different because of the parts we're using. For threaded rods and hardware we use all stainless steel. For smooth rods we use all chromed / hardened rods. All bolts are socket cap type. If you're ordering nuts and bolts, order some spares. These counts assume that your frame is tapped, not drilled. If it's drilled you'll need a lot more M3 nuts. This build assumes you're using the sgraber i3ext for the extruder.

Assembly documentation is available from [taosubmarines@mail.ru](mailto:taosubmarines@mail.ru) - This was updated 03/1/16

### Basic Parts

	qty	Notes
450X100x12, Wood	6	Default is 12mm thick wood. Get something that is strong and not likely to warp (change shape) due to temperature and humidity! The thickness is mostly needed to hold the screws used hold the frame together and to mount parts onto it. The entire frame structure must be stiff, holding its shape regardless of what it's sitting on. Any wood <u>over</u> 12mm thickness will not work for the bottom plate with default config, the Y will then be lifted from the ground. So if you are using thicker wood for the frame, be sure to change board_thickness in configuration.scad before printing parts
475X100X15, Wood	1	
230X230, base	1	
Printed parts	tdb	
Hotend, E3D Clone	1	
Heated build platform - MK2A	1	
Heated build platform glass - borosilicate	1	

### Electronics

Arduino mega 2560	1
RAMPS 1.4 shield	1
Pololu stepper drivers	5
Endstop switches, or opto-endstops	3
Power Supply - 12v 30A, server	1
Four conductor 14AWG wire (meters)	1
Stepper motor, 42BYGHW811 - 4.9kg-cm	5

### Hardware

Z-axis		
M5 threaded - length 370mm		2 You could play with the Z lengths to increase building height. For this you will need longer wood cut for 4 of the 450x100mm plates;
M8 smooth - length 405mm		2 The plates are (Z rod length + 45mm) long
X-axis		
M8 smooth - length 470mm	2	
M8 smooth - length 20mm		1 Extruder idler axle
Y-axis		
M8 threaded - length 205mm	4	
M10 threaded - length 400mm	2	
M8 smooth - length 370mm	2	
M10 washer	8	
M10 nut	12	
M8 washer	22	
M8 nut	22	
M10 fender washer	4	
M3X10	23	
M3x16	6	
M3x18	5	
M3x25	1	
M3 locking nut	13	
M5 nut	2	
M5 locking nut	1	
M5 washer	2	
M3 nut	6	
M3x40	2	
M3 washers	2	
M3 x 30	6	
	2	

### Bearings

LM8UU	10	
623zz	2	2 Can also use 624's, but will need to print appropriate belt guides.
625zz	2	
608zz	1	

### Misc

2 lengths of wood screw		
Spring Coupler 5mm x 5mm	2	
Extruder springs	2	
Heated Bed springs	4	
Nylon spacers	4	4 You need at least 20mm if you're using prusa3-vanilla parts - our X-moto
MK7 filament drive gear - 5mm shaft	1	
40mm 12v fan for extruder	1	
Wires	1	1 You'll need a set of wires for the motors, endstops, thermistors, etc.
100k Thermistor	2	2 Some electronic sets ship with them, as do some HBP kits. Some hotend
GT2 Belts	2	2 You need 2 meters
GT2 Pulleys	2	
Zip ties	tons	4" and 6"
Power cable	1	1 To go from PSU to wall outlet
USB cable	1	1 To go from PC to Arduino
Wire loom or 'techflex' cable mesh	2	2 (meters)
Heat shrink		
Binder clips	4	

Complimentary PLA filament for 3D printing!

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