| rame | Item | Source | Qty. | Unit Cost | Ext. Cost | Link | Comments | Additional Comments |
|------------|---|-------------------|------|-------------------|--|--|---|---|
| Ē | V Slot Extrusion | Open Builds Store | Qiy. | Omi Cost | LAL. COSE | LIIIK | Frame sized for 200x300mm bed and 325mm print height | OpenBuilds occasionally has free shipping promos |
| | - 20x20x1500mm | Open Builds Store | 2 | \$15.00 | \$30.00 | V Slot Linear Rail | Traine sized for zooksoomin sed and szsmin print height | Openios decasorary has nee suppring promos |
| Ö | - 20x40x1500mm | Open Builds Store | 2 | \$19.50 | | V Slot Linear Rail | | |
| ᇤ | - 20x40x1000mm | Open Builds Store | 2 | \$13.00 | | V Slot Linear Rail | | |
| | E3D v6 Hot End 1.75 w/ Bowden extras | Filastruder | 1 | \$78.89 | | 1.75 E3D v6 w/bowden extras | E3Dv6 with bowden tube and coupling | For half the cost, E3D v6 lite would work well for PLA, PETG, ABS (any plastic below 245c) |
| | Nema 17 Stepper Motor | Amazon | 5 | \$9.98 | | Stepper Motor | | |
| | Ramps 1.4 Kit | Ebay | 1 | \$32.00 | | Ramps 1.4 kit | Ebay links expire too often to update every time but look at the link for a refe | rence to see what to look for |
| | Heated Bed | Ebay | 1 | \$24.00 | | PCB Heated Bed | 200mmx300mm (~8"x~12") 12v | This heated bed works for 60C but it has difficulty maintaining 100C. Consider alternative if printing ABS. |
| | Endstop 3 pack, v1.2 | Ebay | 1 | \$4.49 | | Endstop Pack | 3 pack | Alternate link - Faster shipping but more expensive |
| | XH2.54 Connector Kit | Ebay | 1 | \$2.00 | | XH2.54 4 Pin Connectors | To plug into the three endstop jacks | Requires a crimping tool, or careful soldering of wire to each pin |
| | 100k 3950 Thermistor for bed | Ebay | 1 | \$1.00 | | Single 3950 Thermistor | For heated bed temperature | Alternate link - Faster shipping but more expensive |
| | Alternate fan for E3Dv6 heatsink | Digi-key | 1 | \$1.00 | J1.00 | 30mm Fan | Optional, Alternate quieter fan for the E3D V6 heatsink | Alternate link - raster simpping but more expensive |
| | 40mm cooling fans | Amazon | 2 | \$2.04 | ¢4.00 | 40mm fan | Ducted print fan and Ramps board cooling | |
| | 12V/30A Power Supply | Amazon | 1 | \$19.98 | | Power Supply | Ducted print lan and kamps board cooling | |
| æ | Solid State DC Relay | | 1 | \$11.22 | | SSR DC DC Relay | Don't confuse with the CC AC color, they look similar and the label | |
| <u>.::</u> | 2.54mm Connector kit | Banggood | 1 | | | | Don't confuse with the SS AC relay, they look similar, read the label | Partition of estimation had an according addition of tributes to each air |
| ᅻ | | Amazon | | \$10.00 | | 2.54 Connector Kit Example | For 1, 2, 3, 4 pin connections to Ramps board headers | Requires a crimping tool, or careful soldering of wire to each pin |
| | Wire Receptacle/Switch for 120v power | Amazon Amazon | 1 | \$10.00 \$4.05 | | Wire Kit Example IEC320 Male Jack with Switch | 22awg wire for motors, endstops, fans, thermistors. Optional, also needs a 5A fuse | 14awg wire for heated bed and Ramps supply 5A Fuse |
| _ | 12v 5050 LED Strip ~45" | Amazon | | \$8.00 | | | Optional Optional | Optional controller w/ remote, LED strip can also be connected directly to 12v supply |
| | V-Slot Mini V Wheel | | 20 | | | 5m 5050 LED Strip Mini V Wheel | | Optional controller w/ remote, LED strip can also be connected directly to 129 supply |
| | | Open Builds Store | | \$0.90 | | | Select the 20pk for a price break | |
| | Mini V Wheel Precision Shim | Open Builds Store | 20 | \$0.20 | | Precision Shims | Alternate option is to use printed shims | |
| | MR105ZZ 5mmx10mmx4mm bearings | Ebay | 40 | \$0.38 | | Wheel Bearings 10pk | Need 40, order 4x 10pk | International Processing Control of Control |
| ē | F623ZZ Flange Bearing 3x10x4mm | Ebay | 16 | \$0.79 | | Flanged Bearing | Need 16, order 2x 10pk | Alternate link - Faster shipping but more expensive. |
| | 8mm lead Screw, 400 mm | Amazon | 2 | \$13.23 | | <u>Lead Screw</u> | Comes with nut | |
| an | 625ZZ Bearing | Amazon | 1 | \$1.98 | | 625ZZ Bearing | For Extruder | |
| Ρį | 5mm x 8mm Flex Coupling | Amazon | 2 | \$2.50 | | Flex Coupling | Order 2pk | |
| 20 | Kit, 2 GT2 Pulley and 2m GT2 belt | Amazon | 1 | \$9.59 | | Pulleys and Belt | Comes with (2) GT2 16t Pulley and (1) 2m GT2 Belt | |
| _ | GT2 Belt, 2m | Amazon | 1 | \$9.00 | | GT2 Belt | Total of 2x2m belts needed | |
| | 1.75mm MK8 drive pulley | Amazon | 1 | \$2.29 | | 1.75mm MK8 Pulley | | |
| | Spring Kit | Hardware Store | 1 | \$2.00 | | Spring Kit | Four bed leveling springs and one extruder tensioner spring | |
| | Glass to match heated bed | Hardware Store | 1 | \$6.00 | \$6.00 | | Size to fit onto the heated bed PCB | |
| | Binder clips | Desk Drawer | 8 | \$0.10 | \$0.80 | Binder Clips | Raid your local office supply cabinet or desk drawer | |
| | Thermal adhesive | Amazon | 1 | \$2.00 | | For heatsinks, thermistors | | |
| <i>(</i> ; | Rubber Feet | Amazon | 4 | \$0.50 | \$2.00 | Rubber Feet | Need 4, ordered 5pk | |
| S | Insulation for bottom of bed | Amazon | 1 | \$2.00 | \$2.00 | Corkboard | Optional, Attach corkboard to bottom of heatbed with JBweld | |
| Misc. | Wire Spiral Wrap, 3m | Amazon | 1 | \$3.00 | \$3.00 | Wiring Tube | Optional, For wire management | |
| _ | PLA Spool, 1kg | Amazon | 1 | \$22.98 | \$22.98 | Hatchbox 1.75mm Green | At least one spool is needed to print all parts | |
| | M3 Socket Bolt, 8mm | MrMetric | 33 | \$0.07 | \$2.31 | M3 x 8mm Bolt | | |
| | M3 Socket Bolt, 10mm | MrMetric | 9 | \$0.07 | \$0.63 | M3 x 10mm Bolt | | |
| | M3 Socket Bolt, 20mm | MrMetric | 13 | \$0.11 | \$1.43 | M3 x 20mm Bolt | | |
| | M3 Socket Bolt, 25mm | MrMetric | 15 | \$0.18 | \$2.70 | M3 x 25mm Bolt | | |
| | M3 Nut | MrMetric | 32 | \$0.02 | \$0.64 | M3 Nut | | |
| | M3 Nyloc Nut | MrMetric | 17 | \$0.02 | \$0.34 | M3 Nylock Nut | | |
| | M3 Washer | MrMetric | 82 | \$0.03 | \$2.46 | M3 Washer | | |
| | M4 Bolt, 30mm | MrMetric | 4 | \$0.14 | | M4 x 30mm Bolt | | |
| | M4 washer | MrMetric | 4 | \$0.01 | | M4 Washer | | |
| | M5 Socket Bolt, 10mm | MrMetric | 196 | \$0.08 | | M5 x 10mm Bolt | | |
| | M5 Socket Bolt, 12mm | MrMetric | 1 | \$0.17 | \$0.17 | M5 x 12mm Bolt | | |
| | M5 Socket Bolt, 20mm | MrMetric | 1 | \$0.14 | \$0.14 | M5 x 20mm Bolt | | |
| | M5 Socket Bolt, 40mm | MrMetric | 22 | \$0.20 | \$4.40 | M5 x 40mm Bolt | | |
| | M5 Socket Bolt, 75mm | MrMetric | 1 | \$0.46 | \$0.46 | M5 x 75mm Bolt | | |
| e e | M5 Nut | MrMetric | 9 | \$0.03 | \$0.27 | M5 Nut | | |
| ä | M5 Nyloc Nut | MrMetric | 14 | \$0.07 | \$0.98 | M5 Nylock Nut | | |
| | M5 Square Nut | MrMetric | 185 | \$0.04 | | M5 Square Nut | The equivalent amount of OpenBuilds T-nuts is \$40. | Square nuts are used instead because they are much cheaper and function nearly the same. |
| Q | M5 Washer | MrMetric | 205 | \$0.01 | | M5 Washer | | |
| | M5 Washer 15mm OD | MrMetric | | \$0.03 | | M5 Washer 15mm OD | | |
| В | | | 2 | | | | | |
| <u>a</u> | M5 Phillips Flathead Bolt, 8mm | MrMetric | 2 | \$0.16 | | M5 x 8mm Phillips Flathead | Optional, for printed cable chain ends | |
| <u>a</u> | M5 Phillips Flathead Bolt, 8mm | | | | | M5 x 8mm Phillips Flathead | Optional, for printed cable chain ends | |
| На | | | 2 | \$0.16 | \$0.32 | M5 x 8mm Phillips Flathead | Optional, for printed cable chain ends | |
| На | M5 Phillips Flathead Bolt, 8mm See sheet two for hardware detail | | 2 | \$0.16 | \$0.32 | | Optional, for printed cable chain ends | |
| На | | | 2 | \$0.16 | \$0.32 | | Optional, for printed cable chain ends | |
| На | | | 2 | \$0.16 | \$0.32 | | Optional, for printed cable chain ends | |
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| На | | | 2 | \$0.16 | \$0.32 | | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | | 2 | \$0.16 | \$0.32 | der extra if needed. | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | | 2 | \$0.16 | \$0.32 | | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 | der extra if needed. | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 | der extra if needed. | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 | der extra if needed. Frame Total Electrical Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 | der extra if needed. | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 | der extra if needed. Frame Total Electrical Parts Total Mechanical Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 | der extra if needed. Frame Total Electrical Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 | der extra if needed. Frame Total Electrical Parts Total Mechanical Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | der extra if needed. Frame Total Electrical Parts Total Mechanical Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total Hardware Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total Hardware Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total Hardware Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total Hardware Total | Optional, for printed cable chain ends | |
| На | See sheet two for hardware detail HW Misc. Mechanical | MrMetric | 2 | \$0.16 | \$0.32 quantities, or \$95.00 \$259.61 \$103.90 \$40.78 | Frame Total Electrical Parts Total Mechanical Parts Total Miscellaneous Parts Total Hardware Total | Optional, for printed cable chain ends | |

| | Qty | Туре | Diameter | Length | Application Notes | | | | | | |
|----------------|-----|---------------------|----------|---------|---|-------------|--|----------------|-------------------|---------------|--|
| Frame | 196 | Bolt | M5 | 10mm | See subtotal box> | | stic bolted to Vslot) | | | | |
| | 182 | Square Nut | M5 | | Less 14 for M5 tapped mounts | 50 | 3x3 Plates (5 Ea.) | | | | |
| | 179 | Washer | M5 | | Less 17 for countersunk mounts | 28 | Corner brackets (2 Ea.) | | | | |
| Wheel Axles | 20 | Bolt | M5 | 40mm | | 24 | Rear XY Idlers (12 ea.) | | | | |
| | 12 | Nyloc Nut | M5 | | H Bar Ends and print carrraige | 20 | X/Y Motor Mounts (10 E | a.) | | | |
| | 8 | Nut | M5 | | Z wheels | 12 | Z guides (3 Ea.) | | | | |
| | 24 | Washer | M5 | | 2 per axle, none on Z axles | 12 | Heated Bed Brackets (3 E | a.) | | | |
| Extruder | 1 | Bolt | M5 | 40mm | Spring Loaded Flange | 10 | Miscellaneous/ Future | | | | |
| | 1 | Bolt | M5 | 12mm | 625zz Bearing Mount | 8 | Lead Screw Brackets (4 E | a.) | | | |
| | 1 | Nut | M5 | | Spring Loaded Flange | 8 | H Bar Ends (4 Ea.) | | | | |
| | 1 | Nylock Nut | M5 | | 625zz Bearing Mount | 8 | Z motor mounts (4 ea.) | | | | |
| | 2 | Washer | M5 | | Spring Loaded Flange | 6 | End stop mounting (2 Ea | .) | | | |
| Cable Chain | 2 | Bolt, Phillips Flat | M5 | 8mm | Cable chain ends | 6 | 2x1 Plates (3 ea.) | | | | |
| | 2 | Square Nut | M5 | | | 2 | Power Switch Mount | | | | |
| Spool Holder | 1 | Bolt | M5 | 75mm | Sized for 1kg spool | 2 | Extruder | | | | |
| SpoorTiolaci | 1 | Square Nut | M5 | 7311111 | Sized for Trig spoor | 196 | Subtotal | | | | |
| | 1 | Nylock Nut | M5 | | | | | | | | |
| | 2 | Washer 15mm OD | M5 | | | | | | | | |
| Endstops | 1 | Bolt | M5 | 40mm | Z actuator | | | | | | |
| Enusiops | 1 | Bolt | M5 | 20mm | Y actuator | Total Board | ired Hardware Quantities | | | | |
| | | | | | | | | s: . | | | |
| | 1 | Bolt | M3 | 25mm | X actuator | Qty | Туре | Diameter | Length | | |
| | 6 | Bolt | M3 | 8mm | Endstop Mounting | 33 | Bolt | M3 | 8mm | | |
| | 6 | Nut | M3 | | | 9 | Bolt | M3 | 10mm | | |
| | 10 | Washer | M3 | | 6 for X, 2 for Y, 2 for Z | 13 | Bolt | M3 | 20mm | | |
| Idler Bearings | 8 | Bolt | M3 | 25mm | | 15 | Bolt | M3 | 25mm | | |
| | 4 | Nyloc Nut | M3 | | H Bar End idlers | 32 | Nut | M3 | | | |
| | 4 | Nut | M3 | | Rear XY idlers | 17 | Nyloc Nut | M3 | | | |
| | 16 | Washer | M3 | | For H Bar idlers/ in between flanged bearings | 82 | Washer | M3 | | | |
| Print Carriage | 6 | Bolt | M3 | 8mm | Hot end clamp top, two tubing holders | | | | | | |
| | 8 | Bolt | M3 | 10mm | Belt Clamps | 4 | Bolt | M4 | 30mm | | |
| | 2 | Bolt | M3 | 25mm | Hot End Clamp bottom | 4 | Washer | M4 | | | |
| | 16 | Nut | M3 | | | | | | | | |
| | 16 | Washer | M3 | | | 2 | Bolt, Phillips Flat | M5 | 8mm | | |
| Print bed | 4 | Bolt | M3 | 25mm | Bed leveling | 196 | Bolt | M5 | 10mm | | |
| | 8 | Bolt | M3 | 20mm | Lead Screw Nut Mounts | 1 | Bolt | M5 | 12mm | | |
| | 4 | Nut | M3 | | Bed leveling | 1 | Bolt | M5 | 20mm | | |
| | 8 | Nyloc Nut | M3 | | Lead Screw Nut Mount | 22 | Bolt | M5 | 40mm | | |
| | 16 | Washer | M3 | | Bed leveling, lead screw mounts | 1 | Bolt | M5 | 75mm | | |
| Motor Mounts | 19 | Bolt | M3 | 8mm | | 9 | Nut | M5 | Ì | | |
| | 1 | Bolt | M3 | 10mm | Extruder tensioner flange hole | 14 | Nyloc Nut | M5 | j | | |
| | 16 | Washer | M3 | | Extruder motor bolts do not need washers | 185 | Square Nut | M5 | Ì | | |
| Print Fan | 5 | Bolt | M3 | 20mm | Fan to duct mounting, Fan Swivel | 205 | Washer | M5 | | | |
| | 2 | Bolt | M3 | 8mm | Mount to print carriage | 2 | Washer 15mm OD | M5 | | | |
| | 2 | Nut | M3 | | Mount to print carriage | | | - | | | |
| | 5 | Nylock Nut | M3 | | Fan Mounting, Fan Swivel | These are a | II <i>minimum</i> quantities, orde | r extra hardw | are if you like t | to have spare | |
| | 8 | Washer | M3 | | ran wounting, ran swiver | mese are a | ii iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii | i extra naravi | are ii you like t | to nave spare | |
| Power Supply | 4 | Bolt | M4 | 30mm | Power Supply Clamps | | | | | | |
| . Ower Suppry | 4 | Washer | M4 | 5011111 | Tower suppry claimps | | | | | | |
| | 7 | ** doller | 1417 | | | | | | | | |
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| | | | | | | | | | | | |