

Materials

| Notes | Material | Quantity | Where/ How Used |
|-------|---|-----------------|--|
| | 1x4 x 8 ft. | 1 | Frame |
| | 2x4 x 8 ft. | 1 | Frame |
| | 15 x 15 x 3/4" board | 1 | Table: Can be plywood, MDF, or cutting board plastic of different thickness. |
| | Bronze bushings 1/2 inch ID by 5/8 inch or 11/16 inch OD by 1-1/8 long | 11 | 4 for X Slides for all axes 3 for Y 4 for Z |
| | 1/2" Copper Couplers if 5/8" OD Bushings are used | One per Bushing | Bushings slide into copper coupler so they fit tightly in EMT clamp. |
| | 1/2" steel rod 9 ft. total Can be cold rolled, hot rolled or plated | 3 @ 3' | 2 @ 24" for X 2 @ 18" for Y 2 @ 12" for Z |
| | 1/2" EMT (Electrical Metallic Tubing) Single Hole Electrical Conduit Strap-Clamp | 11 | Support bushings |
| | #8-32 x 1/2" Round Head Machine Screws | 2 | Spindle tie, wood to metal angle |
| | #8-32 x 1/2" Flat Head Machine Screws | 2 | Spindle tie-plumbing strap to wood |
| | #8-32 x 1-1/4" Flat Head Machine Screws | 11 | One for each EMT bushing mount |
| | #8-32 x 1-1/4" Round Head Machine Screws | 9 | 3 X stepper mount 2 Top Z bushing adjust 2 Z leadnut 2 Z Dremel tie |
| | #8-32 x 2" Round Head Machine Screws | 4 | 2 X leadnut 2 Y leadnut |
| | #8-32 Nuts | 26 | 11 for bushing mounts 3 for X stepper 2 for X leadnut 2 for Y leadnut 2 for Z leadnut 2 for Z spindle tie wood to angle 2 for Z spindle strap to wood 2 for Z Dremel tie |
| | #8 or #10 Washers | 62 | 2 X leadnut 2 Y leadnut 2 Z leadnut 16 X and Y rail ties 4 Spindle strap 4 Cross tie 11 One per bushing mount 6 Y stepper mount 8 Z stepper mount 3 X stepper mount 4 Dremel mount |
| | #10 Finish washers | 2 | Z leadnut support |

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|-------|---|-----------------|--|
| | #10-24 or 32 x 2-1/2 inch machine screws | 7 | 4 for Z stepper mount 3 for Y stepper mount |
| | #10-24 or 32 Nuts for above Machine Screws | 21 | 9 for Y Stepper mount 12 for Z Stepper mount |
| | 1/4-20 Threaded Rod | 8' (3 @ 36") | 24.5" X leadscrew 20" Y leadscrew 11.5" Z lead screw 2 @ 14" Z ties 4 @ 3" Hold downs |
| | 1/4-20 Nuts | 20 | 4 X leadscrew 4 Y leadscrew 10 Z threaded rod ties 1 Spindle mount 1 Cable tie |
| | 1/4-20 Tee Nuts | 7 | 3 One for each leadnut 4 Hold downs |
| | 1/4-20 x 1" Bolt | 1 | Spindle (Porter Cable) mount strap |
| | 1/4-20 x 1-1/2" Bolt | 2 | 1 Spindle mount (Porter Cable) 1 Spindle mount strap (Dremel) |
| | 1/4" Washers | 32 | 4 X leadscrew 4 Y leadscrew 6 Z threaded rod ties 4 Spindle mount 8 Tie downs on table under knobs 6 Leadnut clamps (may be unnecessary) |
| | 1/4" Lock Washers | 4 | Spindle mount cross tie brackets |
| | One Inch Metal Right Angle Brackets | 2 | Cross tie spindle supports |
| | Screws from Package of One Inch Metal Right Angle Brackets | 5 | 3 for Y Pivot point for bushings 2 for Z Pivot point for bushings |
| | 1" Drywall Screws | 16 | Rail supports X and Y axis |
| | 1-5/8" Drywall Screws | 22 | 4 X front to sides 4 Y sides to X sides 4 Y bottom brace to Y sides 4 Y sides to Y top brace 2 X leadnut 2 Y leadnut 2 Z leadnut |
| | 2-1/2" Decking Screws | 8 | 4 X back to sides 4 X sides to Y bottom brace |
| | #6 x 1/2" Sheet Metal Screws | 4 | Cable ties |
| | #4 Hose Clamps | 6 | Stepper to leadscrew connection |
| | 1/4" ID Automobile Fuel Line or Hose | 3" | Stepper to leadscrew connection |
| | Hanger Strap (Plumber's Tape) 3/4" Wide | 2' | 12 inches for rail support ties ~10 inches for router mount |
| | Thin Aluminum | 4 sq. in. | Cable ties (metal from drink can) |
| | Paint Paddle | 1 | Cross tie and Dremel support |
| | Wood Glue | 1 Bottle | Used on wood - wood connections |
| | Non Hardening Thread Locker (Loctite - Green) | 1 Tube | Used on all hardware |

