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# CRAFTY COMPUTER DESK

For most computer owners, finding a desk with enough space for all the computer's components plus enough room to work is a challenge. While many models are on the market, most are made of pressed wood products lacking any redeeming aesthetic qualities.

This computer desk was carefully designed to satisfy the need for a functional work space and the desire for quality furniture.

A typical computer system has four basic pieces: a hard drive unit, monitor, keyboard and printer. These pieces must be hooked together with an array of plugs and cables. Through the pictures, drawings and text, you'll see how this center has been designed to accom-modate these parts and hide unsightly cables.

The computer center consists of a desk and a hutch. Each is built as a separate unit, then assembled to complete the design. For both units, you will use 3/4″ solid oak lumber, 3/4″ MDF oak and 1/44" oak ply-wood. The solid oak is available in any length; the MDF and oak ply-wood come in 4' x 8' sheets.

A rule every experienced wood-worker lives by is "measure twice, cut once." Even though you're get-ting the most exact measurements possible, you should double check before cutting.

To begin, build the desk face frame from oak stiles and rails **(parts A-F),** using **diagram 1** and the **Materials List** as a guide. Special consideration should be given to the location of the shelf rails to accommodate your computer's

## DIAGRAM 1

### Materials List

**Desk**

Desk Face Frames (¾" solid oak)

| | | |
|---|---|---|
| A | 2 ends | 1⅝" x 29¼" |
| B | 1 middle | 1⅝" x 27⅝" |
| C | 1 top | 1⅝" x 53¾" |
| D | 1 divider | 1" x 20" |
| E | 2 dividers | ¾" x 20" |
| F | 1 base | 2¾" x 20" |

Desk Bulkheads (¾" MDF oak)

| | | |
|---|---|---|
| G | 2 outer | 23¾" x 29¼" |
| H | 1 inner | 23¾" x 29¼" |
| I | 1 back rail | 2⅛" x 33" |

Desk Shelves (¾" MDF oak)

| | | |
|---|---|---|
| J | 3 | 22½" x 23⅜" |

Drawers - (Overall 19" x 22", allowing ½" each side for the drawer slides.)

Top Drawer (¾" MDF oak)

| | | |
|---|---|---|
| K | 2 sides | 2⅜" x 22" |
| L | 2 ends | 2⅜" x 17½" |
| M | 1 bottom | ¼" oak 18⅛" x 21⅛" |

Printer Drawer (¾" MDF oak)

| | | |
|---|---|---|
| N | 1 side | 2" x 22" |
| O | 1 side | 11" x 22" |
| P | 2 ends | 11" x 17½" |
| Q | 1 bottom | ¼" oak 18⅛" x 22¾" |

Drawer Fronts

| | | |
|---|---|---|
| R | 1 | 1¾" solid oak 3¼" x 20½" |
| S | 1 | 1¾" solid oak 12¼" x 20½" |

Pull Out (¾" MDF oak)

| | | |
|---|---|---|
| T | 1 | 19⁵⁄₁₆" x 20" |
| U | 1 | ¾" x ¾" x 20½" solid oak |

Guides (glue 2-¾" pieces together)

| | | |
|---|---|---|
| V | 2 | 1½" x 2" x 17" (⅝"x⅝" rabbet) |

Stop Piece

| | | |
|---|---|---|
| W | 1 | ¾" x ¾" x 17" |

Desk Top (¾" solid oak)

| | | |
|---|---|---|
| X | 1 | 25½" x 59" |

**Hutch**

Face Frame (¾" solid oak)

| | | |
|---|---|---|
| AA | 2 ends | 1⅝" x 37¼" |
| BB | 1 middle | 1⅝" x 22¾" |
| CC | 1 top | 2½" x 53¾" |
| DD | 1 left bott. | 1⅝" x 24⅜" |
| EE | 1 right bott. | 1⅝" x 27¾" |

Bulkheads (¾" MDF oak)

| | | |
|---|---|---|
| FF | 2 outer | 12¾" x 37¼" |
| GG | 1 inner | 12¾" x 25¼" |

Fixed Shelves (¾" MDF oak)

| | | |
|---|---|---|
| HH | 1 shelf | 12⅜" x 26" |
| II | 1 shelf | 12⅜" x 30¼" |

Adjustable Shelves

| | | |
|---|---|---|
| JJ | 1 | 12¼" x 25" |
| KK | 2 | 12¼" x 29¼" |

Inner Rails (¾" solid oak)

| | | |
|---|---|---|
| LL | 1 | 2⅛" x 29½" |
| MM | 1 | 2⅛" x 25¼" |

Base Molding (¾" solid oak)

| | | |
|---|---|---|
| NN | 1 | 2" x 60" |
| OO | 1 | 2" x 30" |

Hutch Crown Molding (¾" solid oak)

| | | |
|---|---|---|
| | 1 | ⅞" x 62" |
| | 2 | ⅞" x 16" |

Top (¾" solid oak)

| | | |
|---|---|---|
| PP | 1 | 14¾" x 59" |

**Doors** (¾" solid oak)

Panels

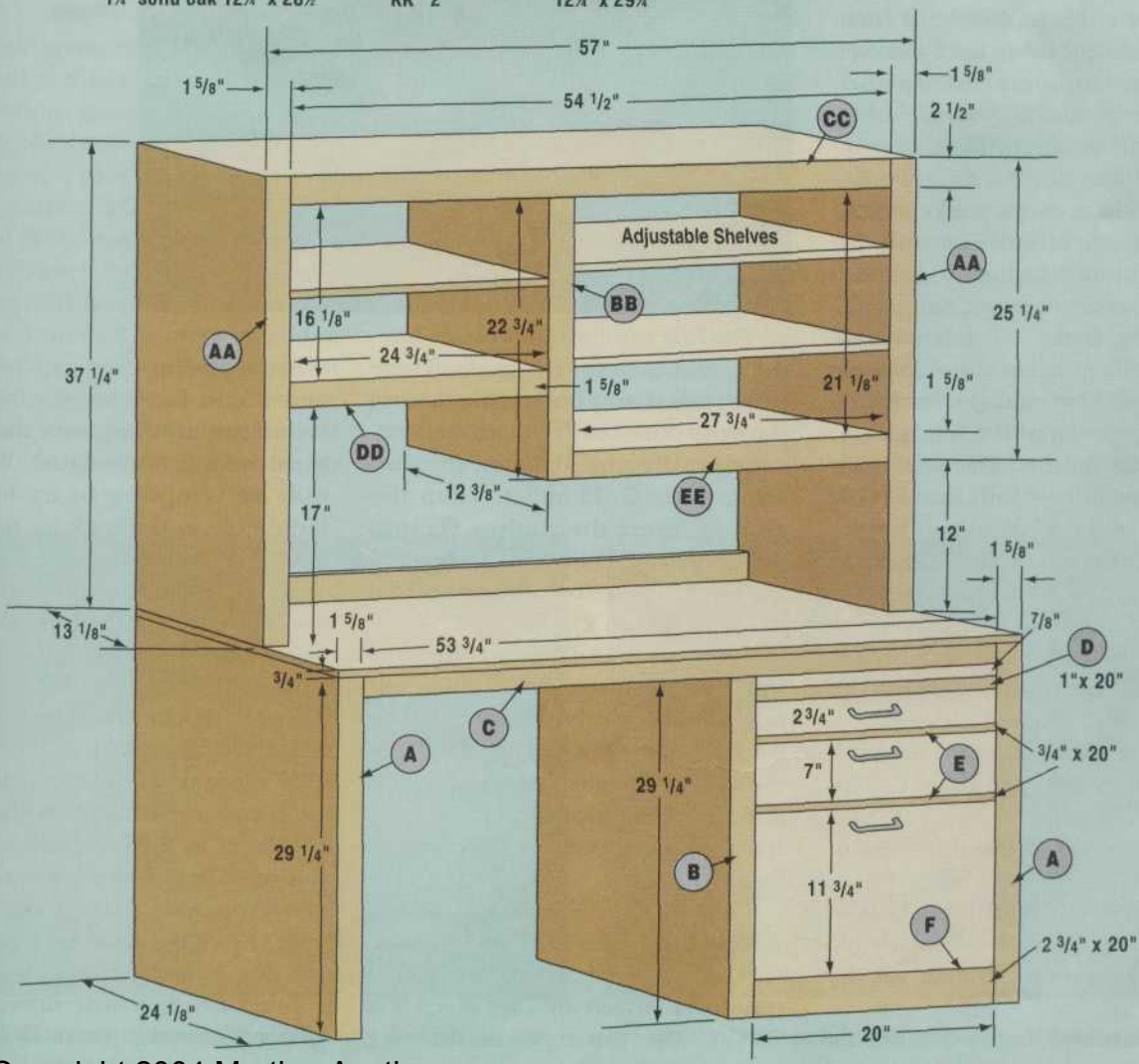
| | |
|---|---|
| 2 | 8¾" x 12⁹⁄₁₆" |
| 2 | 10⅜" x 17¾" |

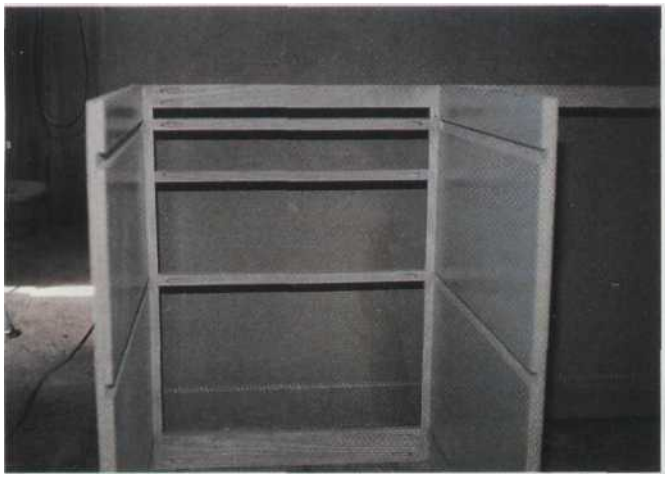
Frames

| | |
|---|---|
| 4 Rails | 2⅛" x 8¹⁄₁₆" |
| 4 Rails | 2⅛" x 10⅛" |
| 4 Stiles | 2⅛" x 21⅝" |
| 4 Stiles | 2⅛" x 16⅝" |

**Drawer Hardware**

| | |
|---|---|
| 1 Set | 22" full extension |
| 1 Set | 22" heavy duty full extension |





1 Mirrored dadoes in the drawer bulkheads are ready to receive the drawer shelves.

2 The assembled drawer section with shelves in place. The face frame has already been glued on.

hard drive unit and printer. If you find the spaces inappropriate for your system, adjust the spacing accordingly.

There are a number of ways to attach the stiles and rails to form the face frame, but we used a doweling jig as the simplest option. Remember to lay out your doweling lines exactly before drilling.

If you'd like to try a different fastening method, screw pockets using a Kreg jig works well not only for the face frame attachment, but also for the carcase construction.

Once the frame has been assembled and the glue has dried, remove the clamps. Flat sand the back side joints to get a flat gluing surface.

Using the finished face frame, lay out the two drawer bulkheads (G & H) to make the *3/8"* dado cuts for the shelves **(photo 1).** The top dado holds the shelf to support the pull out board. The second dado is for the hard drive unit's shelf. The bottom dado houses the shelf for the bottom printer drawer.

Spacers will be needed on both bulkheads to allow the drawer slides to clear the face frame. You may need to custom fit the thickness of these pieces.

On the outside bulkheads (G), cut a 3/8″ x 3/8″ rabbet on the inside rear edge to accommodate for the 1/4″ back.

Before assembling, pre-sand the visible sides of the bulkheads and the 1/4" oak used for the backs. These pieces are almost impossible to sand properly once they're put together.

3 The three backs in the desk unit shown in place. Notice the wire chase hole for the printer drawer.

Assemble the drawer section using parts G, H and I. Then use glue to insert the shelves (J) into the dadoes in G and H. Clamp the assembly, check for squareness and let it dry **(photo 2).**

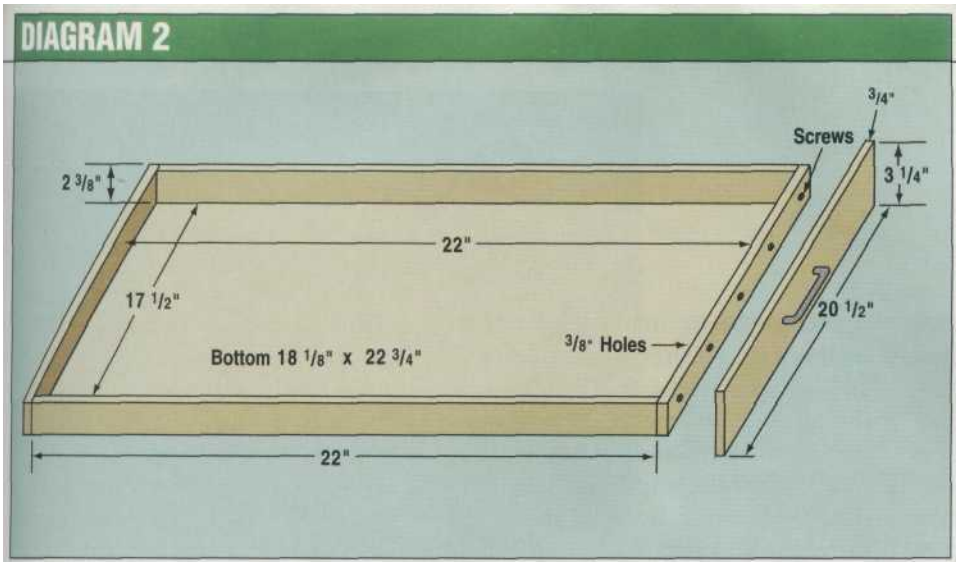
Next, glue and clamp the face frame to the assembled drawer section and the left bulkhead (G). Finish nail the back rail (I) between the two bulkheads. The back rail is important for supporting the knee space section and the 1/4" plywood back.

Using 1 1/4" finish nails, attach a 1/4" x 33 3/4" x 29 1/4" piece of oak plywood to the back of the knee space **(photo** 3). Attach another piece 5" x 22 1/2" to the top right behind the pull out shelf and the top drawer.

Since all the computer's components must hook together with the hard drive unit, space for the cables must be accommodated. While it may be tempting to try to cut a large hole in the back for this area, it's actually easier to leave the entire space between the top drawer and the second shelf open to allow access for hooking up the hard drive unit.

Enclose the area behind the printer drawer with a 1/4″ x 15 1/4" x 22 1/2" piece of oak plywood. Cut a 3" hole in this piece to match the hole you'll cut in the back of the printer drawer. These holes are essential to allow for cable passage and to prevent the cables from tangling when the drawer is opened or closed.

Build two box style drawers **(diagram 2)** using parts K-Q. The upper drawer is standard, but the




printer drawer has been designed to allow easier access to the printer and paper. Three sides of the drawer are 11" high, but the left-hand side is only 2".

When making the drawers, dado 1/4" x 3/8 deep, 1/4″ up from the bottom of the sides and ends to allow for the 1/4″ bottom. Use glue and nails or an air powered stapler to attach one end and two sides. Then slide the bottom into the groove and attach the last end. Square the drawer and turn the box upside down, running a heavy bead of glue around the bottom's inside.

The drawer fronts (R & S) are constructed from solid oak. The smaller front can be created from a single piece, but the bottom front will probably need to be glued-up. Alternate the growth ring pattern on the end grain of the boards to prevent bowing. Pay attention to the grain pattern while you're arranging the drawer fronts.

Glue-up the pull out board made of MDF oak (T) with a 3/4″ oak piece (U) glued on the front edge. Before you start gluing, cut a finger pull on the underside of **part T,** using either the table saw or a cove bit in a router.

Next, cut the rabbets in the pull out guide pieces (V). When in place, these will act as the top guide for the pull out. The top shelf will be the bottom guide and support, thereby creating a slot for the pull out to ride in **(photo 4).**Corner braces in three of the four corners add stability to the unit and will fasten the top.

Screw the stop piece (W) to the top of the pull out board at the desired length. The pull out board and the desk top will be easier to finish unassembled, so don't glue the stop strip to the pull out.

The top of the desk (X) is fashioned from multiple oak boards. The lumber you have available will determine how many pieces will be necessary for its construction.

Joint the edges to be glued, then glue and clamp, making sure the top will dry on a flat. Again, pay attention to the growth rings while gluing.

Unless you're fortunate enough to have a multitude of double clamps, it's important that you alternate them about 8" apart (one on top, the next on the bottom, etc.) to keep the top flat **(photo 5).** When dry, the top is sanded with a random orbital sander and smoothed with a palm sander.

Next, attach the top. (Even if you finish the top unattached, you should attach it now to make final assembly easier.) To attach the top's back right-hand side, use a hole saw or expansion bit to create a 3" hole in the top shelf, then drill a 3/16" pilot hole in the right back corner brace. This gives you accessibility in fastening the desk top through the shelf to the corner brace.

On the right front side, drill a 1/2″ hole about halfway through the top front rail. This pocket will give you

4 The pull out board is shown in place with the guides (V) being held in place with squeeze clamps.

5 Alternating clamps help keep the glued-up top level while drying.

room to maneuver your screwdriver or drill. Make a 3/16″ pilot hole the remainder of the way for the screw. Attaching the left side is easier. Simply screw through the corner braces into the desk top.

An effort was made to maintain as much desk top working space as possible, so the keyboard was placed underneath it on a slide-out unit. There are a variety of options for the keyboard's hardware. The type shown **(photo 6)** is mounted on a board measuring 1 1/2" (or thicker) x 6" x 17", which in turn is mounted to the top's underside in the center.

The hutch's design gives special consideration to space utilization. Computer monitors, like hard drive units, are being made bigger than in the past, so they require at least 17" in height. On this hutch, only the left side was made this height to provide maximum storage for office and computer supplies. You may prefer to make both of the shelf units equal in height.

The hutch's construction is similar to the desk's, with rails and stiles **(parts AA-EE)** fashioning the face frame. Using your face frame, mark the position for the 3/8″ shelf dadoes on the bulkheads (FF & GG). Again cut a 3/8″ x 3/8″ rabbet on the rear inside edge of the outside bulkheads (FF) to accommodate the *1/4"* back. The two back pieces (30 1/4" x 37 1/4", 26" x 37 1/4") will meet and overlap the inner bulkhead edge.

The hutch's bottom stationary shelves (HH & II) are flush with the top of the bottom face frame rails. Do not cut dadoes for the adjustable center shelves (JJ & KK).

Glue in the top rails (LL & MM) and the hutch base moldings (NN) to the inside of the back. Make sure the piece is flush with the inside of the back rabbets.

Next, cut out and glue-up the hutch top (OO). Again, remember to pay attention to the growth rings.

If you prefer not to use solid oak, make sure your crown molding covers the unfinished edges.

Next, glue the crown molding to the front and both sides. You can make your own crown molding if you have access to the proper equipment. If not, you can purchase preshaped crown molding from a local lumberyard.

Make sure your corner miters are tight before you start gluing. Attach the hutch top by gluing and clamp ing, or you can use some strategically placed screws through the front and back rails.

The doors depicted on this hutch are fashioned in the popular raised panel mode. In case of expansion, it may be beneficial for you to stain the interior of the panel prior to assembling rather than after, since the stain may not cover the unexposed areas.

**6 The keyboard retracts under the top to allow for a cleaner desk top. Notice the cable running into the side of the drawer section.**

**7 The edge view of the door shows the through tenon and groove used to assemble the stiles and rails.**

8 The back of the door shows the dadoes cut to receive the hinges.

9 This detailed photo shows the hole cut in the drawer section's left bulkhead for the keyboard wire.

The stiles and rails for the door are made on the shaper using a standard 1/4" tongue and groove **(photo** 7). Although some woodworkers find a 3/8″ or 1/2″ tongue and groove make the door stronger, the 1/4″ is sufficient. Use the sizes given in the **Materials List** to cut out and assemble the doors.

To fasten the doors to the cabinet, a knife hinge (pivot hinge) gives a more finished look. To make the hinge grooves, use a 1/4" dado blade in your table saw raised 9/16". The groove is 1 3/4" long for the type of hinge shown **(photo 8).** Always check the manufacturer's instructions for specifications.

A 1/2″ round over bit in a router was used to shape both the ends and fronts of the hutch and desk top. Shape all the edges of the doors and drawer fronts to your own style. Run a profile on the rest of the base material, then glue to the desk and hutch.

Attaching the hutch to the desk base is one of the easiest tasks. Simply drill pocket holes angled through the outside of the hutch back and screw in with face frame screws.

Now you're almost finished, with the exception of a couple modifications to allow the computer system to be hooked together.

To accommodate the cable from the keyboard to the hard drive unit, cut a 1" hole in the left side of the drawer section **(photo 9)** at the level of the hard drive unit shelf.

Next, cut a 2" hole in the back of the hutch to access the cable from the monitor to the system. The monitor will cover the hole nicely and isn't readily visible.

If you opt to cut the hole in the top of the desk, you will need to make the 1" hole in the drawer section larger (at least 2" to allow for the cable attachments).

Complete the entire piece using your favorite stain and preferred finish.