

## Building Desk Drawers

Including a drawer in your desk may be the most difficult part of its construction. Still it is worth the effort as a drawer adds both utility and value to the desk. Building a drawer can also be a good way to learn a new woodworking skill.

Below are many helpful hints on building drawers for any of the Woodware computer desk. We include them to help you suit the design to your specific needs.

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### 1. Good Drawer Requirements

There are a number of qualities that a drawer must have:

- A drawer must have strong joints between the front and the side pieces. This is the most important aspect of drawer design.
- A drawer must not bind even with changes in temperature and humidity.
- The drawer must be well centered in its opening.
- The drawer must stop at the right depth.
- A drawer must be of a size that is useful, such as a holder for disks or file folders.

All these things combine to make the construction of the drawer the most demanding part of building most desks.

## 2. Size

Most of the desk drawers in Woodware designs are described a 'Pencil Drawers'. This simply means a shallow drawer that is fitted into the available space. Their depth is set by other requirements, such as keyboard height, that have nothing to do with the use of the drawer. The result, of course, is that these drawers are not very useful.

If space is available, as in the Corner Desk, then the drawer depth should be set to achieve a useful purpose, such as storing data media. A separate document in this package covers making media storage boxes and gives the dimensions needed for storage of the different media (disks, CD, tapes, etc.).

The best way to size a paper filing cabinet drawer is to first buy a metal hanging folder frame and set of hanging folders. You can then size the filing drawer around this frame. These frames are available at any office supply store and can be adjusted to any length.

You should consider both filing drawer arrangements that pull straight out and those that pull out side ways.

## 3. Buying a Drawer Kit

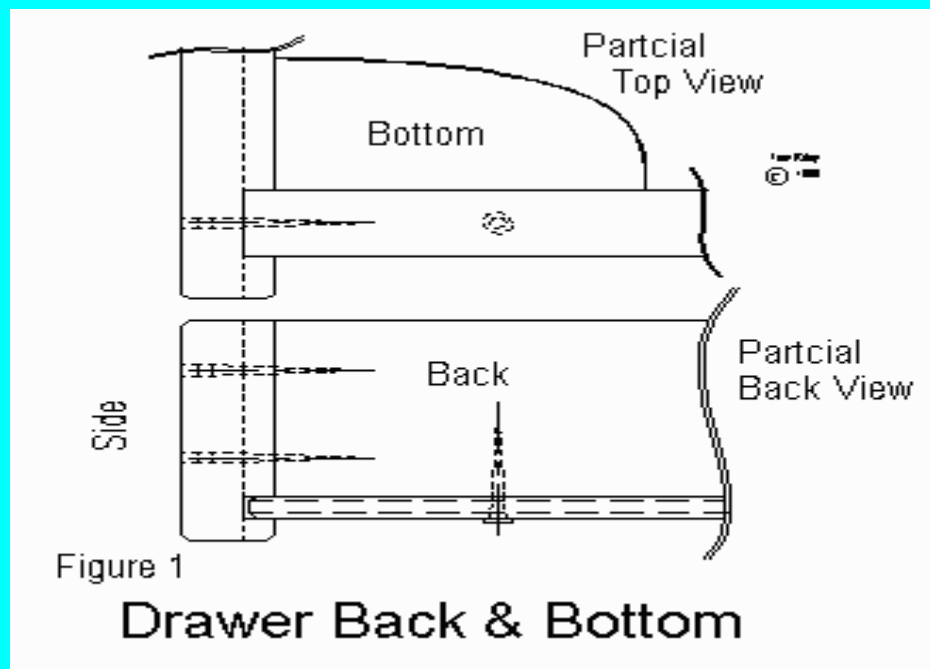
You can purchase a drawer kit from woodworkers' mail order houses. These usually feature pre-cut boards for the front, back, and sides. The better ones are made of hardwood and have commercial dovetail joints in the front. The cheaper ones are made of medium density particle board and are usually unsatisfactory.

There are two problems in using drawer kits. First, they come in standard sizes that do not fit many Woodware desk designs. Our desks are sized to fit keyboards and to reduce stress on the user. Most of the drawers are just fitted into the remaining space.

Many of commercial drawers can be cut down in height and shortened in length, but it is very difficult to adjust their width. You may have to adjust the width of the keyboard tray instead.

The second problem is that the front wood will not match the desk wood. This can often be addressed by adding a matching front board to the commercial drawer.

I do not think the lower cost commercial drawers made of medium density particle board will last. The front joints on a drawer just see too much stress for this material. I do not think it will do your new desk justice.



#### 4. General Drawer Construction

All the Woodward drawer variations have several parts in common: the back-to-side joints, the back, and the bottom. Figure #1 shows details of the rear joint. The fronts and front-to-side joints vary with the construction technique used and are elaborated below.

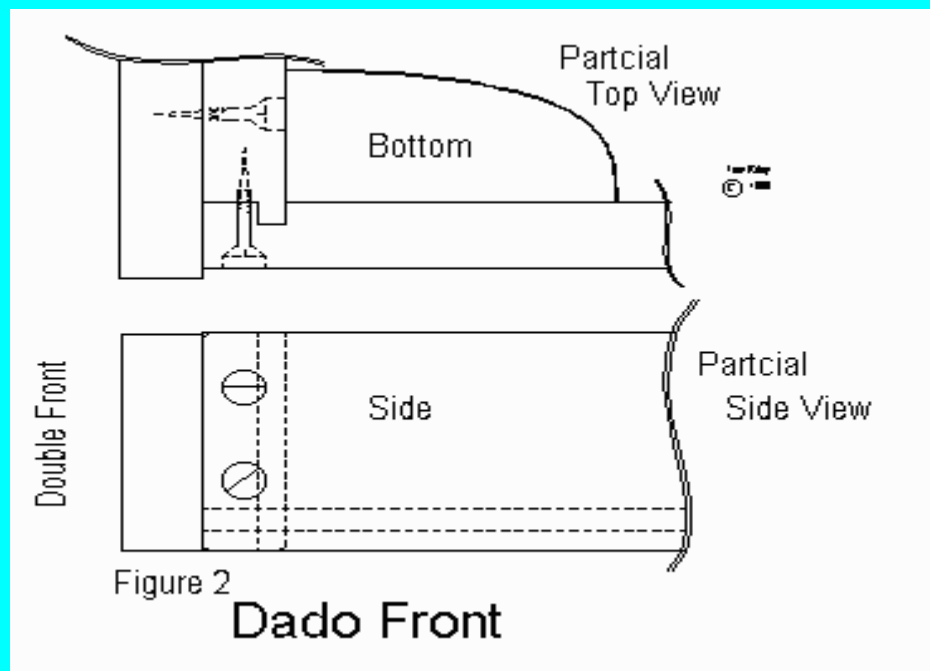
The back piece fits into dado grooves in the side panels and is nailed and glued. You can screw it if you wish. It is cut narrow enough for the bottom board to ship under it.

If you have a power planner, you may wish to reduce the thickness of the sides, back, and inside front boards to .5 inch. This gives much better proportions in a small drawer.

The bottom board is made of 1/4-inch plywood and is not glued. It fits into a dadoed slot in the front and side boards. It should be a slightly loose fit so that any expansion will apply force to the side boards.

For classic designs, such as the Shaker Tables, you can make the drawer bottoms of thin planks edge glued together. Even then don't use your best wood, but use a secondary wood that is less expensive. Old-time craftsmen did not waste good wood.

The bottom is held in place with a few nails up into the back board. For very hard wood, you will need to predrill for the nails.



## 5. Dadoed Drawer

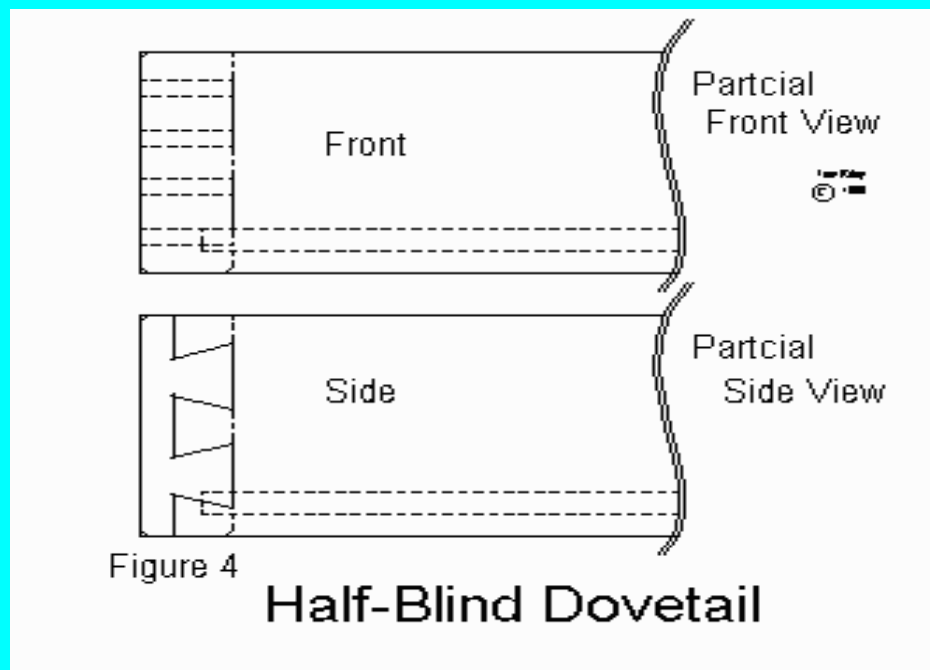
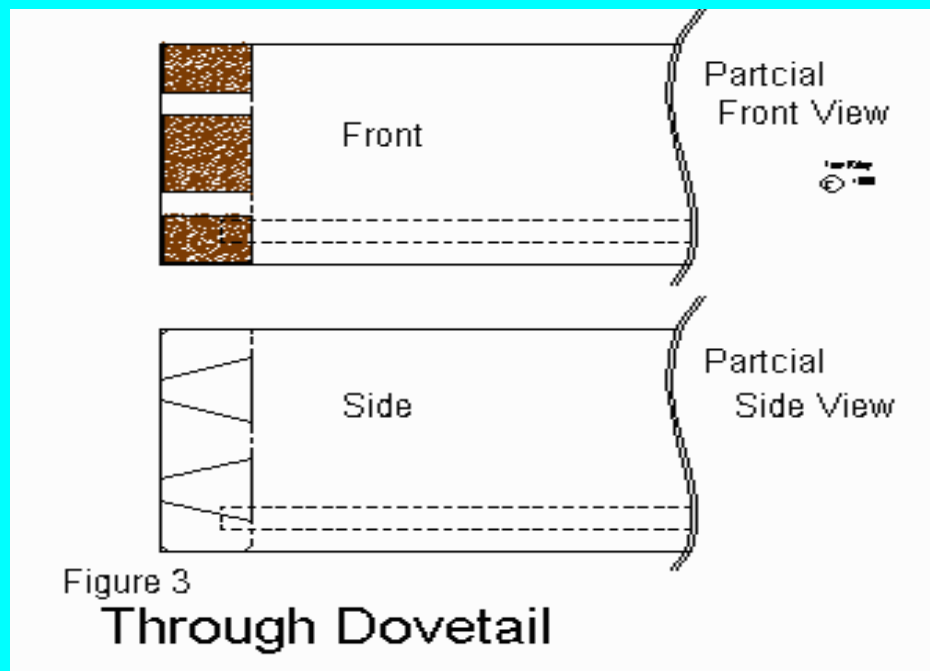
Figure #2 shows the front joints for a simple drawer. Its construction requires only a table saw, radial arm saw, or router. It features a separate front piece to make alignment easy and dadoed front joints strengthened with glue and screws.

It is very easy to build and strong, but it is not elegant. It really is not suited for classical designs like the Shaker tables.

The front is made of two pieces. The outside piece matches the desk and is installed only after the drawer is fitted. The inside piece is there only to make construction easy, the true front piece has plenty of strength.

Note that the sides have a vertical dadoed slot for the a tung cut on the end of the inside front piece. This joint is called a 'barefaced housing joint', but I can't think why.

The bottom fits in a dado slot in the sides. You may either dado it into the inside front piece or cut off the front piece, just like the back, and nail the bottom to it.



## 6. Dovetail Drawer

Dovetailing is the joinery ideally suited for the front-to-side joints of a drawer. It is also an excellent exercise in craftsmanship. It can be done with a few hand tools -- for centuries this is the only way it was done -- or it can be done with speciality jigs for a router. Either way the result is worth the effort.

Dovetailing is often featured in woodworking magazines and how-to books. You will want to check your local library for some of these before you settle for lesser joinery. A good place to start is Albert Jackson, David Day, and Simon Jennings, *The Complete Manual of Woodworking*, pages 238-245. You can certainly do this job with a little practice.

Figure #3 shows a dovetailed front joint with the dovetails passing all the way through the front piece and showing from the front. The end grain of the side boards will finish to a quite different color and contract with the front board. You may even choose to use wood of a contrasting color as an accent. This can be very eye catching and requires very beautiful joinery work.

Figure #4 shows a dovetailed front joint with the dovetails hidden from the front. This is a 'half-blind dovetail joint' and provides the needed strength without being overly showy.

## 7. Hand Dovetailing

This is the only way to go for classic designs like the Shaker Tables. You will need a small, stiff-backed saw and marking gauges. Hand dovetailing takes practice but the results are beautiful and the effort fulfilling.

Check your local library for books giving a detailed procedure. Dovetailing is also regularly featured on the woodworking TV shows. The key is simply to practice on scrap until you can do good joints dependably.

## 8. Router Jigs

Router jigs are expensive to buy and take time to set up, but the results can be wonderful.

Take care setting the jig up and follow all the manufacturers safety rules. And practice on scrap first.

## 9. Drawer Guides

Good drawer glides can be made of metal or wood.

Good metal ones are expensive and do not suit the style of classic furniture designs.

Woodware usually calls for heavy-duty metal drawer guides for keyboard shelves. These shelves must have a good, solid feel when pulled out or typing will be difficult. The metal guides must be the best types with steel ball bearing and no plastic wheels. Two good examples are:

8400 Full Extension Box & File Slide by Knap & Vogt, carried at Home Depot

Full Extension Box Drawer Slide, by mail order from the Woodworkers's Store

Metal guides provide stopping places or detentes at the fully closed and fully open positions. This

is an excellent feature for the keyboard tray but is less important for small drawers.

Metal guides are generally over kill for small drawers but are justified for the keyboard tray and filing cabinet drawers with their heavy loads.

Wooden guides can be bought or shop made. Sometimes they are simply a integral part of the desk frame. Wood guides are much better than cheap metal guides with plastic parts.

Commercial wooden guides are easily trim to length and glide well. They are usually made from woods chosen not to bind with changes in humidity and temperature. You may use a single guide on the bottom center of the drawer or one on each side.

Candle wax is a good lubricant for wood sliding on wood. It is easy to apply, simply rub a candle stump on both contacting areas. This must be done after all finishing is complete.

Metal guides come lubricated. Take care not to smear the grease onto any wood surface that will be finished.

## Closing

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