Build A Modern Hoosier CABINET

Eighty years ago, before built-in cabinets were common, every modern homemaker wanted a “Hoosier” cabinet in her kitchen. As a baking center, it was the last word in efficient design and convenience, packed with labor-and time-saving features. Millions of Hoosiers, almost all manufactured by companies in Indiana, were sold before styles changed and built-in kitchen cabinets became the rage in the 1940s.

Why not put a Hoosier in your kitchen? Use it as a bread making center, a coffee bar, or to store dishes and linens or pots and pans. It’s still perfectly suited to today’s modern kitchens.

This Hoosier is loaded with useful features. The center section slides in and out to maximize the usefulness of the porcelain enamel work surface. Two drawers are mounted under the work surface and slide with it, so their contents are always within reach. A tambour door provides access to the cabinet

Although it’s a big project with many pieces, this Hoosier cabinet is not hard to build. It’s made from dimensional 3/4-in.-thick wood. The cabinet joinery is simple, using dadoes, dowels and rabbets. The doors and cabinet sides are made with routed stiles and rails. The drawers are done on the tablesaw, and both the drawers and doors overlay the openings, so fitting them is a breeze. All the hardware surface mounts and you can buy the tambour ready to install!

without the nuisance of swinging doors.

GETTING STARTED

You'll need a dado set for your tablesaw, a router, router table, and bits (stile and rail, round-over, and flush trim), a doweling jig and a drill. A jointer and planer are handy, but optional.

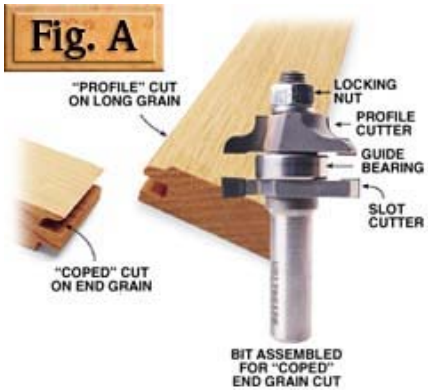
For materials, you need 40 board feet of oak, one and one-half sheets of 3/4-in. A-1 grade oak plywood, two sheets of 1/4-in. A-1 grade oak fibercore plywood, and 15 board feet of 4/4 birch for drawer sides and runners—not bad for such a large piece. All the hardware, from the porcelain enamel top to the "ant traps" is available from companies that specialize in the restoration of antique Hoosiers (see Sources). Your cost will be about $475 for lumber and $300 for the tambour system and cabinet hardware. If you want to dress up the interior, as we did, with internal bins and canisters, you'll spend another $200.

Straight Grain Looks Best

Give a sense of order to the cabinet's structure by using straight-grained material for all face, door and side frame pieces. Cut straight-grained stock from the edges of plain-sawn boards or buy rift-sawn oak (about $50 extra). Either way, it's worth the effort.

Make the Doors and Cabinet Sides First

It may seem odd to make doors before the cabinets are done, but it's a good idea. The doors are the first thing you see, so they should get the best-looking panels (Photo 2). Besides, they're lipped doors that overlay their openings, so an exact fit isn't critical. Cut all of the door and side frame stiles and rails (A1 - A6 and B1 - B9) at the same time. Use flat stock. Bowed or twisted



FRAME AND PANEL CONSTRUCTION
A reversible stile and rail cutter cuts both ways. As a stile cutter it makes a "profile" cut on long grain. As a rail cutter it makes a matching "coped" cut on the end grain. After routing, the two parts fit neatly together in a decorative version of a tongue and groove joint. Coped cuts are made with the workpiece face up, profile cuts are made with it face down. Changing from cope to profile cutting means disassembling the cutter, rearranging the guide bearing, profile and slot cutting wings, and reassembling.

MAKE COPE CUTS in the end-grain of all of the rails first. A shop-made sled holds them safely in position while cutting. Glue a block of wood with one squarely cut end on top of a longer piece of 1/4-in. plywood. Screw on a toggle clamp. The sled assures a square cut and the block acts as a backer, preventing blow-out.

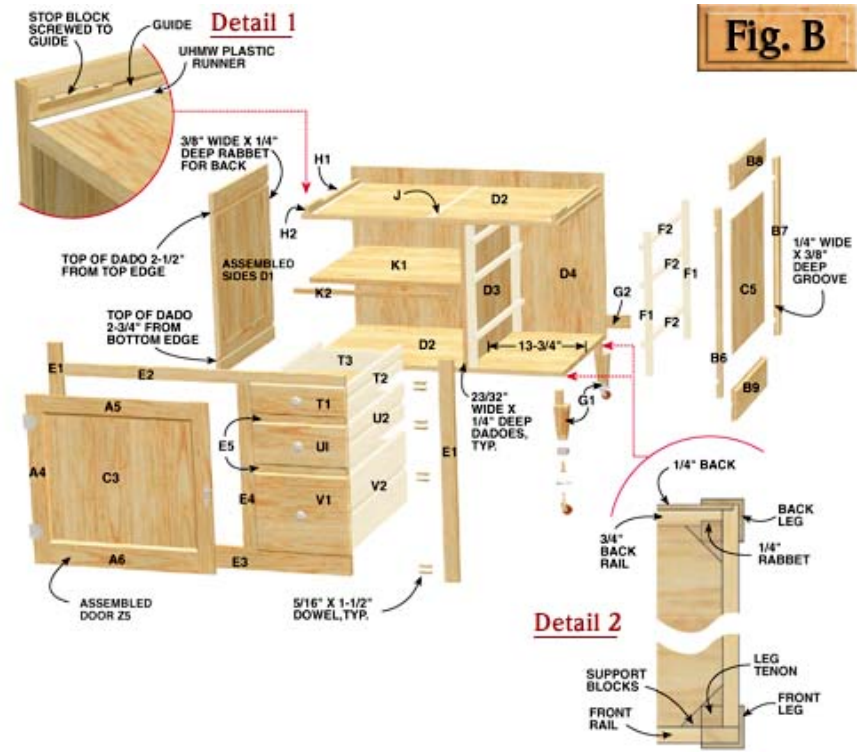
pieces will make your life miserable.

Make these pieces into frames for the doors and sides using stile and rail cutters (see Sources) mounted in your router table. A reversible cutter set (Fig. A) won't break your budget ($40 to $85) and making the change from one cut to the other only takes a few minutes. Make coped cuts (Photo 1), then rearrange the cutters for the profile cuts.

Assemble the routed frames and find panels (C1 - C5). Finally, glue the parts together into doors (Z1, Z2 and Z5) and cabinet sides (D1 and L1).

BE SELECTIVE when choosing panels for the doors and cabinet sides. Slide the frames around on the plywood until you find attractive panels. Don't worry about wasting a little plywood. Locate panels for the upper doors first. Then find panels for the lower door and cabinet sides.

BUILD THE TWO CABINETS

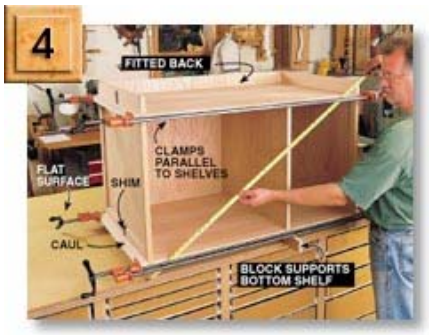


EXPLODED VIEW OF LOWER CABINET. The lower cabinet is simply dadoed together, with an applied face frame and fitted plywood back for rigidity. The feet are glued inside the frame below the bottom shelf. The drawers slide on runners dadoed into assemblies that are screwed to the cabinet interior. Guides screwed to the top shelf contain the sliding center section.

The upper and lower cabinets share joinery methods and have similar components. Make one and you'll have no trouble with the other.

Build the lower cabinet first (Fig. B). After making the sides (D1) and cutting them to width (Photo 3), square one end with a router and straightedge, then cut the other to finish length on the tablesaw. Make the top and bottom rails an extra 1/8-in. wide and the stiles an extra 1/4-in. long so you'll have plenty of extra height to square the sides. After the sides are cut to size, cut rabbets in the back stiles for the plywood back. Cut the plywood shelves (D2) and divider D3). Then cut dadoes for them, after using scrap stock to set the depth and width. Fit the plywood back (D4) and then assemble the lower cabinet (Photo 4).

TRIM THE CABINET SIDES to width and the front stiles to size at the same time. Routing the narrow front stiles is dangerous. Instead, it's good practice (and faster) to make them the same width as the back stiles and cut away the excess width after the side is glued up.



KEYS TO A SUCCESSFUL, SQUARE GLUE-UP. Work on a flat surface. Keep the bottom shelf from sagging with a long support block under the center divider. Slide the back into place. Align the cauls and clamps with the dadoed shelves. A shim centered on the cauls distributes pressure along the joint; apply even clamp pressure front and back. Measure diagonals to check squareness. Have help. If you don't have help, use glue that has a long open time.

OOPS!
I cut a dado in the wrong place—an easy mistake to make. If it happens to you, here's a good repair. Cut three pieces that fit the dado and match the grain of the surrounding areas. Plane them flush after gluing and they'll be almost unnoticeable.

Build The Two Cabinets

The upper cabinet (Fig. D) is similar to the lower cabinet, but has a middle half-width shelf (L5), which requires extra dadoes. It also has a rabbet for the top shelf (L2) instead of a dado. It's easier to glue this cabinet together in two stages. Keep the top shelf in place but unglued while gluing up everything else and glue it separately later.

Face frames (E1 - E5 and M1 - M5) give the cabinets strength and a clean appearance (Fig. G). Doweling jigs (see Sources) make assembly fast and accurate (Photos 5 and 6). You'll need cauls and at least a dozen clamps with 30-in. capacity to glue the face frames on the bottom cabinet and even more for the top. Or you can use a nail gun and glue and nail the face frames to the cabinet. After gluing, ease the side, top and tambour opening edges with a 1/4-in. round-over bit.

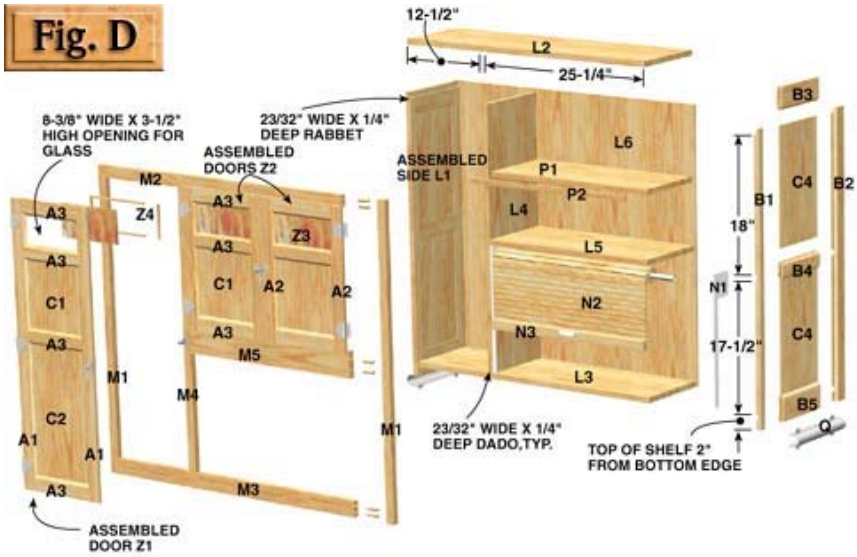
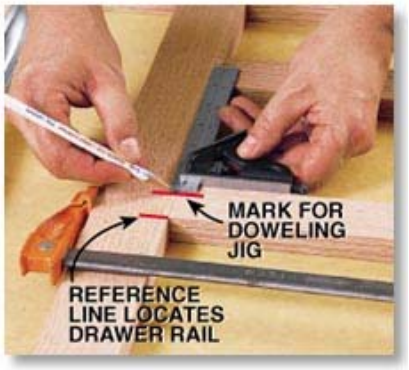


FIG. D EXPLODED VIEW OF UPPER CABINET

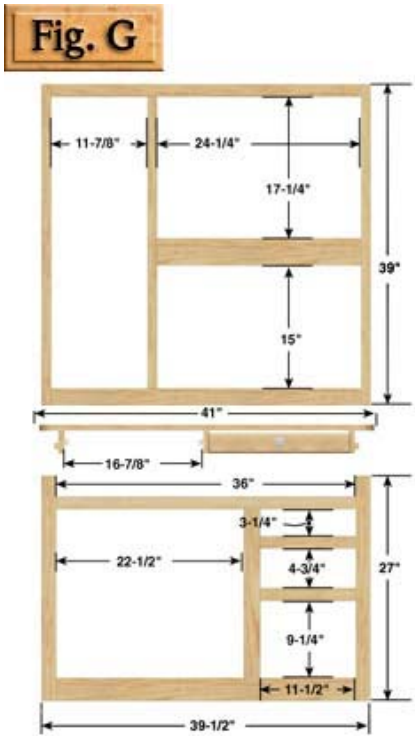
The upper cabinet is dadoed, like the bottom cabinet, except for the flush-fitting top, which is rabbeted. The tambour track hardware mounts to the walls behind the face frame. Cabinet side brackets hold this cabinet above the lower one leaving room for the center section in between.

CLAMP THE FACE FRAME pieces together after positioning them carefully. Then, mark them for doweling. Make sure the drawer rails are properly spaced.



MARK EACH JOINT for doweling. One line drawn straight across the joint marks both pieces for the doweling jig. Label both pieces of each joint so they don't get mixed up.

DRILL HOLES FOR DOWELS. This doweling jig allows you to drill two holes, even on narrow pieces, from a single pencil mark. Clamp the piece in a vise. When narrow pieces have to be mounted off to one side for drilling, a spacer block



IT'S IMPORTANT that face frames are square and their parts positioned exactly. It's also good practice to make the frames slightly oversized. It's easier to glue them to the cabinet when there's room to adjust the fit. Make the outer stiles and upper rails an extra 1/16-in. wide. After gluing, trim the excess with a flush trim bit in your router.

evens clamp pressure. I like to hold the jig while drilling to keep it steady.

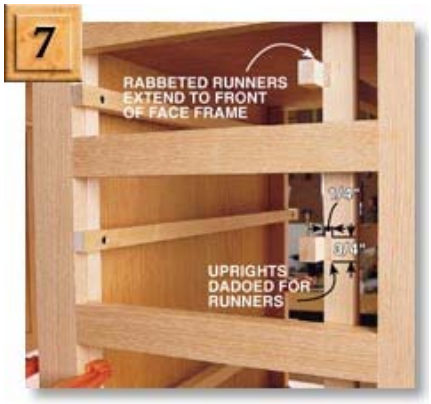
Finish the Lower Cabinet

Install drawer runner assemblies in the lower cabinet. They fit behind the face frame so only the runners protrude into the drawer openings (Photo 7). Make the birch uprights (F1) first. They fit against the divider on the left and the cabinet side on the right. To locate the positions of the runners (F2), set one of the uprights in place behind the face frame and mark it for dadoes centered in each drawer opening. Use this piece to set up and cut the dadoes in all four pieces. Mill the runners from straight-grained birch stock so they're flat and square. Cut rabbets in their front edges so they'll extend beyond the uprights to the front of the face frame. Then screw them in place.

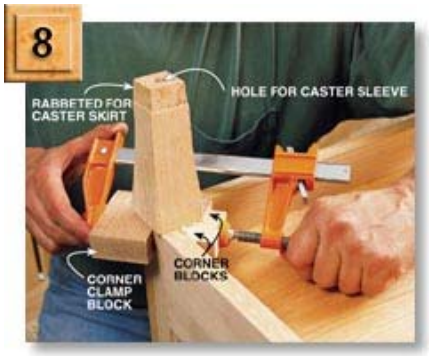
The legs (G1) have long tenons for gluing behind the cabinet frame (Fig. B, detail 2). With the cabinet upside down, fit the tenons to the front inside corners of the cabinet, making sure the leg shoulders butt solidly against its bottom edges. Then glue them in place. Glue a rail (G2) to the back edge of the bottom shelf for the back legs, rabbeted so it fits between the leg tenon and cabinet back. After gluing, add corner blocks (Photo 8). Then drill holes in the legs and insert the caster sleeves.

Turn the cabinet upright. Add guides (H1), stops (H2) and ultra-high molecular weight (UHMW) plastic strips (J) (see Sources) for the sliding center section in the cavity at the top of the cabinet (Fig. B, detail 1). Make sure the guides are perpendicular to the cabinet front and flush with the inside edge of the face frame stiles.

Install the Tambour in the Upper Cabinet



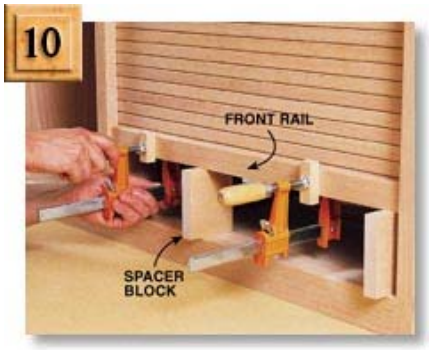
BIRCH RUNNERS in simple frames support the side-hung drawers. The dadoed uprights center the runners in the drawer openings. Screw these frames to the back of the face frame and to the inside walls at the back of the cabinet.



GLUE THE LEG to the lower cabinet. Then glue corner blocks to the leg tenon and cabinet frame. These mail-order legs (see Sources) are authentic Hoosier replicas, ready for skirts and casters.

Adapting a dedicated tambour and track system made for a kitchen "appliance garage" (see Sources) saves the trouble of making a tambour and routing tracks for it in the cabinet. Instead, simply cut the plastic tracks (N1) to fit the opening and make an access slot in them for the tambour (N2) (Photo 9). Cut the tambour to width and then install the system following the manufacturer's instructions. Make and attach the front rail (N3). Drill holes through the bottom slats of the tambour for fastening (Photo 10).

THE TAMBOUR SYSTEM is a snap to install. The system works like a window shade, using spring tension to help lift and roll the tambour, which travels up and down in grooves in the plastic tracks.



CLAMP THE FRONT rail to the tambour and attach it from the backside with screws. The tambour and rail rest on spacer blocks that allow room for the clamps.

CENTER SECTION & DOORS

Cabinet side brackets (Q) (see Sources) hold the upper cabinet above the lower so the center section (Fig. E) has room to fit between them. The center section slides inside the cavity at the top of the lower cabinet, limited by stop blocks (H2 and S3) and the cabinet back. The porcelain enamel work surface (R1) fits neatly inside the concave curve of the side bracket. It contains a web frame for rigidity (Photo 11).

Three rails (S1) support the center

ASSEMBLE THE WEB FRAME inside the porcelain enamel work surface. It fits inside the lip. Fit the stiles first. They have access cuts in them so the rails drop in place and

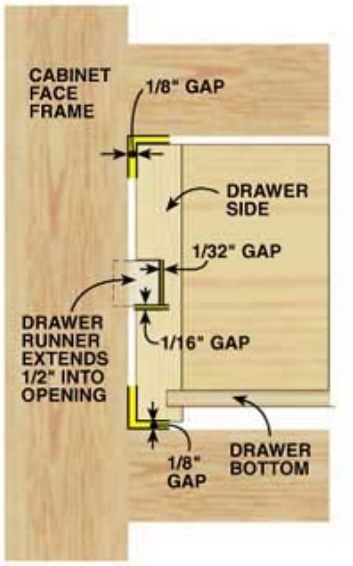
section and allow it to slide. The outer rails, spaced 1/32-in. narrower than the opening between the lower cabinet stiles, limit side-to-side travel. Dadoed runners (S2) in these rails hold narrow drawers (Fig. E). Cut dadoes in the rails and glue the runners in them before drilling holes for the mounting screws. Position the rails 11/4-in. back from the front edge of the porcelain enamel work surface to allow a sufficient overhang once the drawers are in place.

Make the Drawers

All the drawers (parts T, U, V and X) are side hung (Fig. C). Their joints are made using simple tablesaw cuts (Fig. F and Photo 13).

The cabinet drawer fronts are lipped 3/8 in. on all four sides so they overlay the openings. The cutlery drawer fronts have lipped edges, but are flush top and bottom to maximize their depth. Drill centered holes for the knobs before gluing the drawers together.

Fig. C



SIDE-HUNG DRAWERS . Dadoes in the drawer sides fit around frame-mounted rails, allowing drawers to slide in and out. The assembled lower cabinet drawers leave a 1/8-in. gap around the opening, which is covered by the slide into position.

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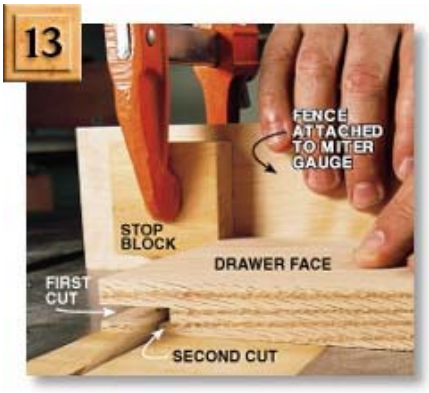
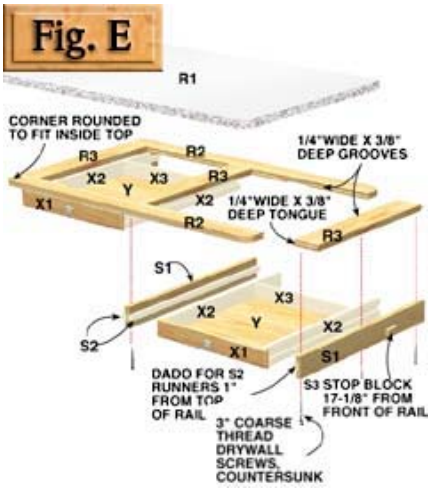


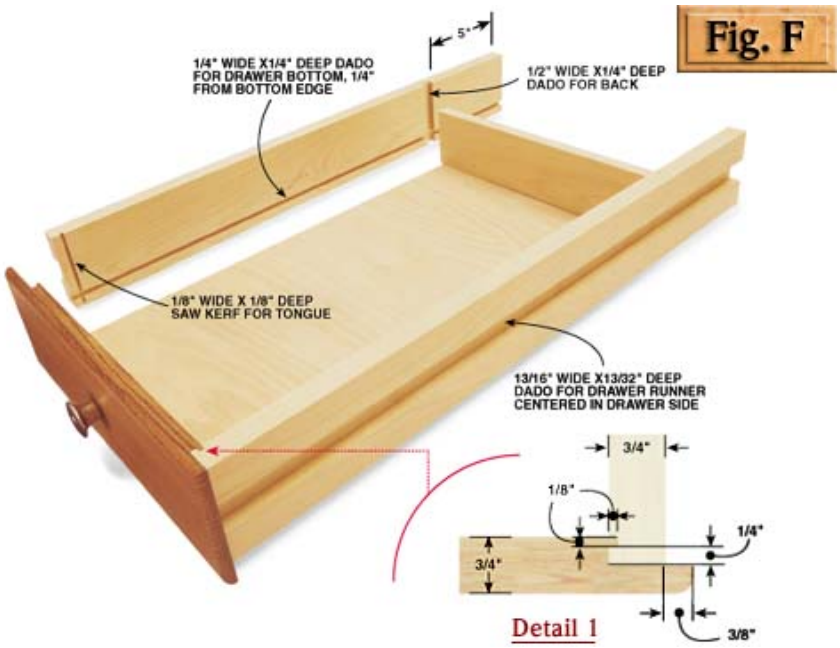
TRIM THE TONGUE on the drawer front. First cut a vertical slot, leaving 3/8-in. at the front (the same thickness as the door lips) and 1/8-in. at the back. Then cut the tongue to length.

Fig. E



THE CENTER SECTION. The porcelain enamel work surface is stiffened by an internal web frame. Screwed-on rails hold cutlery drawers on dadoed, side-hung runners. To install or remove the center section, simply lift its front slightly so the stop blocks miss one another.

overlaying front. The dadoes in the sides center the drawer top to bottom and allow 1/16-in. of side-to-side movement.



DRAWER CONSTRUCTION. The drawer joint is a simple tongued rabbet. The drawer fronts require only two cuts (Photo 13). The sides are dadoed on the outside for runners and on the inside for the drawer front, back and bottom. Extending the rails beyond the drawer back is the 20s version of a full-extension drawer.

FINISH & MOUNT THE DOORS

Rabbet the backsides of the openings at the top of the doors for the glass (see Sources). Then create the 3/8-in. lip on the door fronts by cutting a 3/8-in. square rabbet around their back edges (Photo 14). Test fit the offset hinges to make sure the lip is the right thickness. Put a door in its opening and lay a hinge on it. If the lip is too thick, the hinge won't lay flat on the cabinet and the door will bind. First mount the hinges on the doors (Photo 15), then mount the doors on the cabinet (Photo 16).

ROUND THE DOOR EDGES with a 1/4-in. bit after cutting rabbets around the backs. The two adjacent edges of the small upper cabinet doors (Z2) are not rabbeted.

Apply a Finish

This Hoosier is finished with a medium-brown colored, oil-based

gel stain topped with three coats of amber-toned waterborne poly. Before using them, I made double sure these two different finish products were compatible. First, both were made by the same manufacturer. Second, I read the labels, which verified compatibility by name.

Gel stains are easy to apply and color surfaces evenly. I used two coats because I wanted a deep color. Toning the poly (see “Just Finishing” p. 106, December 1999 issue.) warms the color of the stained wood. Each coat enhances the effect. It’s an easy way to get a nice looking, durable finish.

Before finishing, remove all of the hardware, sand everything and remove the sanding dust. Dampen the surfaces and sand again, lightly, because the waterborne finish will raise the grain, even through the oil stain.

After letting the finish dry thoroughly, mount the glass (Z3) in the doors, reassemble your Hoosier, and (have your spouse) start baking!

USE A SPACER to locate the door hinges and drill centered holes for the screws. The hardware comes with plated brass screws, which break easily. Either use a steel screw to cut threads in the holes first and lubricate the brass screws before using them, or replace them altogether with stainless steel screws.

MOUNT THE DOORS on the cabinet, centered in the openings. Their 3/8-in.-wide lips allow room for minor adjustments. A straightedge clamped evenly across the top of the cabinet aligns the door tops.

DIMENSIONS

OVERALL DIMENSIONS 74" H X 42" W X 27" D

Ref. - Qty. - Dimensions - (Parts)
Middle Section: 41"W x 27"D x 3’9/16"H
R1 1 41" x 27" x 1" (porcelain enamel top)
R2 2 3/4" x 3 x 40-3/4" (web frame stiles)
R3 3 3/4" x 3-1/2 x 21-3/8" (web frame rails)
S1 3 3/4" x 2-3/4 x 25-3/8" (rails)
S2 4 3/4" x 3/4" x 25-3/8" (drawer runners)
S3 2 1/2" x 3/4" x 2" oak (middle section stops)

Ref. - Qty. - Dimensions - (Parts)
Doors
A1 2 3/4” x 2" x 36" (upper left door stiles)
A2 4 3/4" x 2" x 17-3/4" (upper right door stiles)
A3 10 3/4" x 2" x 9-1/8" (upper rails)
A4 2 3/4" x 2-3/8" x 20-3/4" (lower stiles)
A5 1 3/4" x 2-3/8" x 19" (lower top rail)
A6 1 3/4" x 3" x 19" (lower bottom rail)

Drawers
T1 1 3/4" x 9-3/4" x 12" (top face)
T2 2 3/4" x 9" x 23" (sides)
T3 1 1/2" x 8-1/2" x 10-1/4" (back)
U1 1 3/4" x 5-1/4" x 12" (middle face)
U2 2 3/4" x 4-1/2" x 23" (sides)
U3 1 1/2" x 4" x 10-1/4" (back)
V1 1 3/4" x 3-3/4" x 12" (bottom face)
V2 2 3/4" x 3" x 23" (sides)
V3 1 1/2" x 2-1/2" x 10-1/4" (back)
W 3 1/4" x 18-7/8" x 10-1/4" plywood (drawer bottoms)
X1 2 3/4" x 2-3/8" x 17-5/16" (cutlery faces)
X2 4 3/4" x 2-3/8" x 23" (sides)
X3 2 1/2" x 1-7/8" x 15-9/16" (backs)
Y 2 1/4" x 15-9/16" x 17-7/8" plywood (drawer bottoms)

Doors
Z1 1 3/4" x 12-3/8" x 36" (upper left)
Z2 2 3/4" x 12-3/8" x 17-3/4" (upper right)
Z3 3 1/8" x 4-1/8" x 9" (amber slag glass)
Z4 12 1/4" x 1/4" trim to fit (glass stops)
Z5 1 3/4" x 23" x 20-3/4" (lower)
Q2 1 1/4" x 3/4" x 24-7/8" (edging)

Middle Section: 41"W x 27"D x 3’9/16"H
R1 1 41" x 27" x 1" (porcelain enamel top)
R2 2 3/4" x 3 x 40-3/4" (web frame stiles)
R3 3 3/4" x 3-1/2 x 21-3/8" (web frame rails)
S1 3 3/4" x 2-3/4 x 25-3/8" (rails)
S2 4 3/4" x 3/4" x 25-3/8" (drawer runners)
S3 2 1/2" x 3/4" x 2" (middle section stops)

Drawers
T1 1 3/4" x 3-3/4" x 12" (top face)
T2 2 3/4" x 3" x 23-1/2" (sides)
T3 1 1/2" x 2-1/2" x 10-1/4" (back)
U1 1 3/4" x 5-1/4" x 12" (middle face)
U2 2 3/4" x 4-1/2" x 23-1/2" (sides)
U3 1 1/2" x 4" x 10-1/4" (back)
V1 1 3/4" x 9-3/4" x 12" (bottom face)
V2 2 3/4" x 9" x 23-1/2" (sides)
V3 1 1/2" x 8-1/2" x 10-1/4" (back)
W 3 1/4" x 18-7/8" x 10-1/4" plywood (drawer bottoms)
X1 2 3/4" x 2-3/8" x 17-3/8" (cutlery faces)
X2 4 3/4" x 2-3/8" x 23-1/2" (sides)
X3 2 1/2" x 1-7/8" x 15-5/8" (backs)
Y 2 1/4" x 15-5/8" x 18-7/8" plywood (drawer bottoms)

Assembled Doors
Z1 1 3/4" x 12-3/8" x 36" (upper left)
Z2 2 3/4" x 12-3/8" x 17-3/4" (upper right)
Z3 3 1/8" x 4-1/8" x 9" (amber slag glass)
Z4 12 1/4" x 1/4" x 10" trim to fit (glass stops)
Z5 1 3/4" x 23" x 20-3/4" (lower)

Cabinet Sides
B1 2 3/4" x 1-1/4"* x 39" (upper front stiles)
B2 2 3/4" x 2" x 39" (upper back stiles)
B3 2 3/4" x 3" x 8-1/2" (upper top rails)
B4 2 3/4" x 2-1/4" x 8-1/2" (upper middle rails)
B5 2 3/4" x 3-1/2" x 8-1/2" (upper bottom rails)
B6 2 3/4" x 1-3/8"* x 27" (lower front stiles)
B7 2 3/4" x 2-1/8" x 27" (lower back stiles)
B8 2 3/4" x 3-3/4" x 21" (lower top rails)
B9 2 3/4" x 4-1/2" x 21" (lower bottom rails)
* final size, see Photo 2

Panels
C1 3 1/4" x 9-1/8" x 9" plywood (upper doors)
C2 1 1/4" x 9-1/8" x 17" plywood (left upper door)
C3 1 1/4" x 19" x 16-1/8" plywood (lower door)
C4 4 1/4" x 8-1/2" x 15-7/8" plywood (upper sides)
C5 2 1/4" x 21" x 19-1/2" plywood (lower sides)

Lower Cabinet: 39-1/2"W x 24-1/2"D x 27"H (w/out legs)
D1 2 3/4" x 23-3/4" x 27" (assembled sides)
D2 2 3/4" x 23-1/2" x 38-1/2" plywood (shelves)
D3 1 3/4" x 23-1/2" x 21-1/2" plywood (divider)
D4 1 1/4" x 38-3/4" x 27" plywood (back)
E1 2 3/4" x 1-3/4" x 27" (face frame stiles)
E2 1 3/4" x 1-1/2" x 36" (upper face frame rail)
E3 1 3/4" x 2-3/4" x 36" (lower face frame rail)
E4 1 3/4" x 2" x 20-1/4" (face frame center stile)
E5 2 3/4" x 1-1/2" x 11-1/2" (face frame drawer rails)
F1 4 3/4" x 1" x 20-3/4" (drawer runner uprights)
F2 6 3/4" x 3/4" x 24" (drawer runners)
G1 4 2" x 2" x 7" (legs)
G2 1 3/4" x 2" x 38" (leg rail)
H1 2 5/8" x 3/4" x 23" (middle section guides)
H2 2 1/2" x 3/4" x 6" (middle section stops)
J 3 1/32" x 3/4" x 24" (UHMW plastic runners)
K1 1 3/4" x 22-3/4" x 23-5/8" plywood (adjustable shelf)
K2 1 1/4" x 3/4" x 23-5/8" (edging)

Upper Cabinet: 39-1/2"W x 11-3/4"D x 39"H
L1 2 3/4" x 11" x 39" (assembled sides)
L2 1 3/4" x 11" x 38-1/2" plywood (top)
L3 1 3/4" x 10-3/4" x 38-1/2" plywood (bottom shelf)
L4 1 3/4" x 10-3/4" x 36-3/4" plywood (divider)
L5 1 3/4" x 10-3/4" x 25-5/8" plywood (middle shelf)
L6 1 1/4" x 38-3/4" x 38-5/8" plywood (back)
M1 2 3/4" x 1-1/8" x 39" (face frame stiles)
M2 1 3/4" x 1-1/2" x 37-1/4" (upper face frame rail)
M3 1 3/4" x 2" x 37-1/4" (lower face frame rail)
M4 1 3/4" x 1-1/8" x 35-1/2" (face frame center stile)
M5 1 3/4" x 3-1/4" x 24-1/4" (face frame center rail)
N1 2 5/16" x 3-3/8" x 17-12" (tambour track)
N2 1 1/4" x 24-7/8" x 18" tambour (roll up door)
N3 1 1/2" x 1-7/16" x 24-1/4" (tambour rail)
P1 1 3/4" x 10-1/4" x 24-7/8" plywood (adjustable shelf)
P2 1 1/4" x 3/4" x 24-7/8" (edging)
Q 2 1-3/8" x 1-3/4" x 10-7/8" (metal brackets)