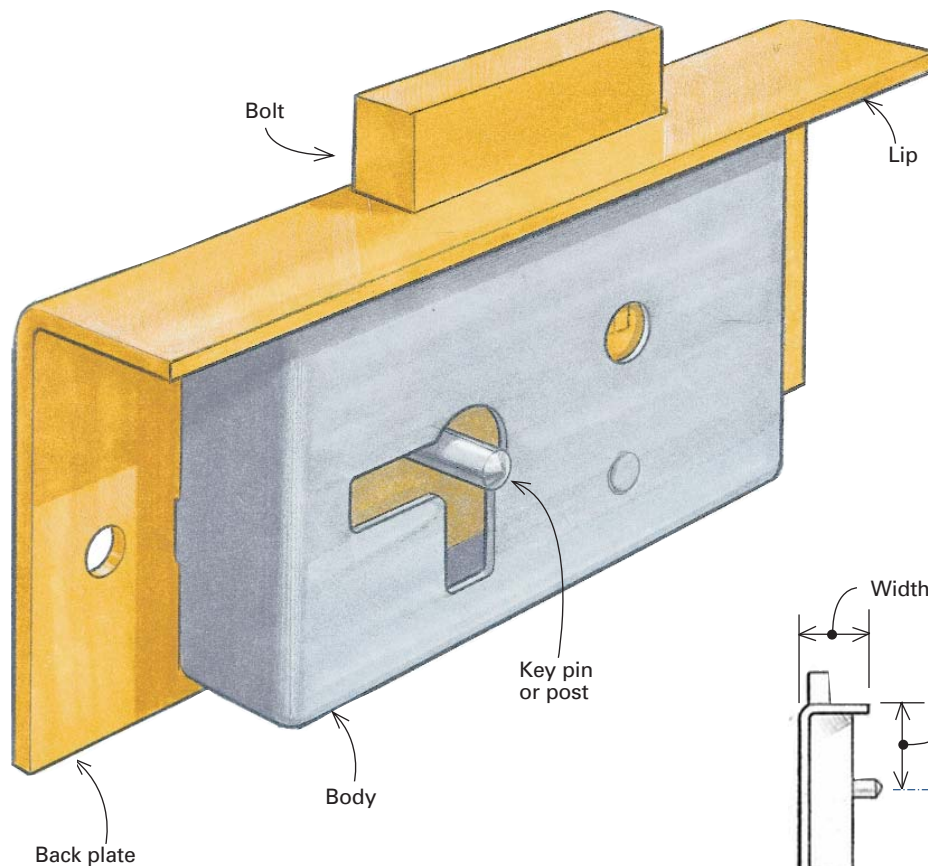


Installing a Half-Mortise Lock

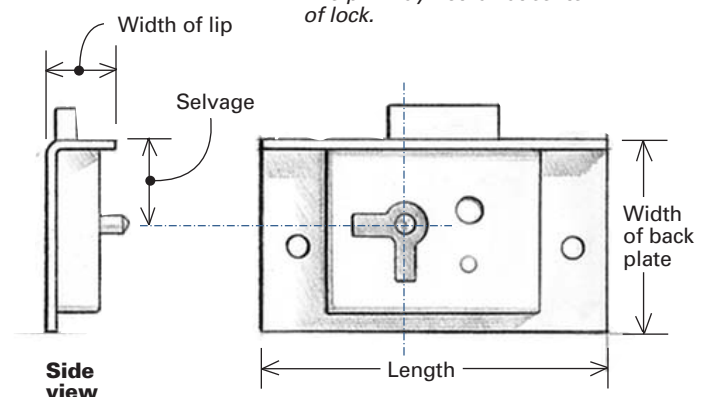
When you do it right, the result is your reward

by Philip C. Lowe



Half-mortise lock

Locate key pin to fall on center of door stile or drawer front. The pin may not fall at center of lock.



As a younger man, I served a stint in the Navy. I spent much of the time aboard the repair ship USS Jason out of San Diego, where I worked in the same shop alongside an older German patternmaker. I learned from him the importance of details. Not until some years later, after I'd set up shop as a furnituremaker, did I learn something (the hard way) about the value of details. I told a client who had commissioned a chest of drawers that I would throw in four locks with escutcheons for the cost of materials only. I figured the extra hardware would add just a few hours of labor to the project, and I could handle that.

Well into the eighth hour of installing the locks, I learned my lesson. When your livelihood depends on what you can accomplish in a given work day, time really *is* money. Now, when clients want an estimate on any job with doors or drawers, I always ask if they expect locks and escutcheons. They're usually amazed that such simple hardware can add so much to the total, but when they see a finished piece, they understand why.

What matters most is the kind and quality of lock you choose. If economy of time and material is important to you, a simple cylin-

der lock can be installed by drilling one hole and securing the lock with two screws. Surface locks are even easier because they are quickly attached with screws, no mortising.

I often use half-mortise locks. They're more expensive, but they really dress up a piece of furniture. They are set into the back surface of doors or drawers and flush to the edge. First-rate hardware for half-mortise locks is available from a number of suppliers (see *FWW* #112, pp. 68-73).

Before you pick up your tools

The size and kind of lock you use on a piece of furniture will affect basic design decisions. When I build a cupboard door with a lock, I like the keyhole to fall dead center on the width of the visible stile—not the actual width, which might also include a rabbet for overlapping doors or a piece of applied molding. So I refer to hardware catalogs and check the critical dimensions: the width of the lip, the selvage, and the length and width of the back plate (see the drawing above). For a selvage dimension of 1¼ in., I would make my cupboard-door stile 2½ in. wide.



FIND THE CENTER

1) Set the marking gauge to the selvage first. All other layout dimensions flow from here.

2) Mark the center point for the key-pin hole, where the selvage meets the centerline of the workpiece.

3) Drill a small hole through the center point, using a bit just a little larger than the key-pin diameter. This hole will have to be enlarged later, depending on the type of escutcheon you choose.

4) Lay out mortise for the body. The lock is not on-center, but the key pin is. Designs vary, so be sure to check this detail when you lay out your lock.



I also determine whether the door (and required lock) are right- or left-handed. This specification can be very confusing, especially because not all manufacturers and dealers follow the same guidelines. But to make it simple, if you're standing in front of a cabinet with two doors (both hinged on the outside), the one on the left gets a right-hand lock. Be sure to check with your supplier on this detail. With drawer locks, the keyholes run perpendicular to the lip, so they are nonhanded. Some locks have the keyhole cut both horizontally and vertically, so they can be used with either a door or a drawer.

Installing a half-mortise lock

I'm ready to install and fit a half-mortise lock once a door has been hinged or a drawer carcass has been assembled. With a small drawer, you might want to do the mortising before assembly for easier access to the drawer front.

Find the center, and fit the body first—You always should start by drawing a centerline on the outside face of the drawer front,

extending the line across the top edge. Set a marking gauge to the selvage, the distance between the top of the lip to the center of the pin, and etch a short line where the selvage intersects the centerline (see photo 2 above). Drill a hole slightly larger than the diameter of the pin. Place the lock against the back of the drawer front, aligning the pin with the hole. Then draw two pencil lines on the top edge to indicate the width of the body (see photo 4). Using a square, transfer these lines to the back surface of the drawer front.

Set the marking gauge to the height of the body. Allow a little extra room if the bolt protrudes through the bottom of the lock body in the unlocked position. Some do, some don't. This little detail varies with the size of the lock and with the manufacturer. Scribe the back surface (parallel to the top edge), starting and stopping at your pencil lines. Then set the marking gauge to the thickness of the body, and transfer that line along the top edge.

With a backsaw, make two angled relief cuts along your pencil lines, stopping at the corners on the back and the top edge (see photo 5 on p. 90). Chisel away, flat side against the lines, removing waste as you go deeper into the mortise. I find that this method



MORTISE THE BODY

5) Saw to the line to define the boundaries of the body mortise and to make chiseling easier. Some people might prefer to use a Japanese dozuki saw to make these cuts.

6) Relieve the inside edges of the mortise to prevent splitting and tear-out as material is removed. (The author made this chisel from an old jointer blade, a scrap of apple wood and a piece of copper pipe for the ferrule.)



works better if I dig out a little at a time, chopping firmly against the grain and then cutting out the waste as I work down to the finished depth.

Follow with the lip mortise—Position the lock in the body mortise, and using a layout knife, score the lines on the top edge for the lip cutout. Set the marking gauge for the thickness of the lip, and transfer that mark along the back surface (see photo 7 on the facing page). Chisel the mortise for the lip, using feather cuts against the grain. Go easy, this is a delicate procedure. The lip sits just flush into the top edge of the drawer.

Fitting the back plate—Place the lock into position once again, and score the back-plate outline with the knife (see photo 9 on the facing page). Follow those lines with solid chisel chops. Using the marking gauge at the previous setting (lip and back plate should be the same thickness), scribe a line along the top inside edge of the drawer, within the mortise already cut for the lip. This represents the thickness of the back plate. Removing this waste should go smoothly if you use a sharp chisel. You're paring away only a

small amount of material and pushing the chisel against the grain (see photo 10 on the facing page).

Cutting the keyhole—Determine the size hole needed for the key, which will depend on your choice for the escutcheon (see the box on p. 92). Drill it. Scribe the shape of the keyhole with a pencil, and cut the keyhole, using a coping saw with the blade assembled through the hole. With a small, sharp chisel, the waste usually will pop right out in one clean strike. If not, you can fine-tune the hole with small files and rasps. I used a keyhole rim for the job shown in photos 11-15 on the facing page. If you choose an inlaid escutcheon made of a brittle material, it's a good idea to start your hole with a countersink first and follow with a drill bit. That will prevent the cutting spur of the bit from damaging the surrounding surface. After you've cut the keyhole and fitted the escutcheon, you can dry-fit the lock in place. Bore pilot holes for the screws, and secure the lock (see photo 16 on p. 92).

Mortising for the bolt—Now it's time to make a mortise cut in the cabinet for the bolt. Place the drawer in its opening, slightly



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MORTISING THE LIP AND BACK PLATE

7) Set marking gauge for the thickness of the lip, and mark the inside face of the drawer front. Then place the lock into the body mortise, and scribe lines in the top edge with a layout knife.



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8) Chisel to the lines made by marking gauge and layout knife. These shallow mortises require a deft and patient touch.

9) Once the lock body fits, score the back plate with a layout knife. This creates an incision into which you place the chisel edge for the final cut.



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10) Mortising for the back plate is fairly easy. The author is paring away most of one side in a single, clean stroke.

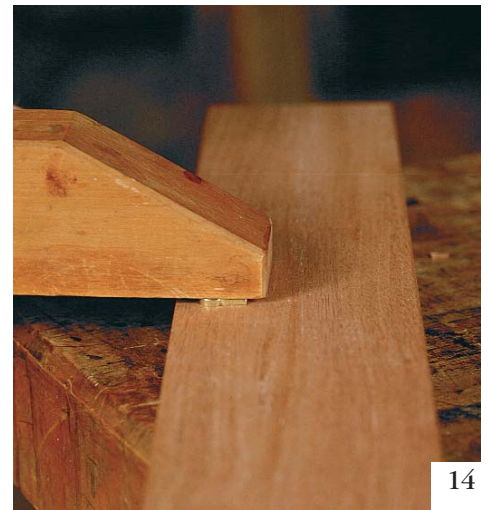


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FITTING THE ESCUTCHEON

11) Cast keyhole escutcheons taper front to back. Use the back, or smaller profile, to mark the door or drawer front.

12) Enlarge the piloted key-pin hole. Assemble the coping-saw blade through the hole, and make two straight cuts, following your traced lines.



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13) Score the back; whack the front. With the correct-sized chisel, remaining waste usually comes out with little trouble.

14) Force-fit the escutcheon with a clamp. Cast pieces often are rough and may need to be cleaned up with a file first.



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15) File and sand the good face flush. Start with 120-grit sandpaper, and work up to 400-grit silicone carbide to smooth the face and polish the brass.



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15

Choosing an escutcheon



This antique silver escutcheon is set into a bird's-eye box.

Escutcheons, the decorative plates that surround keyholes, can be purchased in a range of styles (see the photo below). You can buy everything from flat, circular or geometric shapes to cast ornamental forms with a high-relief detail and gilded ones known as ormolu.

There are three basic types of escutcheons: those mounted to the surface, inlaid designs cut to shape and set into the surface, and cast rims in keyhole shapes, which are set into the opening of the hole.

When selecting an escutcheon, be sure it will fit well. Refer to the dimensions in the catalog when you're in the design stage, and make the door stile or drawer front the right size for the selvage and the lip. If possible, buy the hardware before you begin building.

Surface-mounted escutcheons come in styles to match those from William and Mary designs (early 18th century) through Arts and Crafts (early 20th century) to contemporary versions. You don't like any of those styles? Make your own, or carve a shape in wax and have it

cast. Keep in mind this approach will add a lot of time (and cost) to the project.

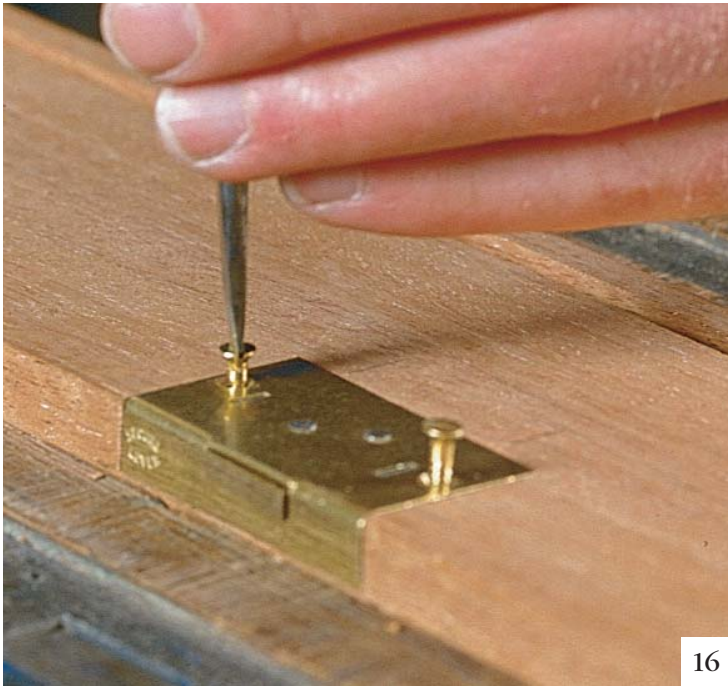
Inlaid escutcheons offer more flexibility if you want to make your own to any shape or size. You can make inlaid escutcheons out of just about anything—wood, brass, silver, nickel, gold, pewter, mother-of-pearl, ivory or stone. These can be set into the surface before the keyhole is drilled.

Keyhole rims come as rough castings, slightly tapered from front to back. On first-rate work, I usually spend some time cleaning them with fine files, inside and out, taking care not to file away the taper. When set into the surface, they are a press fit, so the layout on the door or drawer face is done using the narrow end.

Surface-mounted plates are affixed to the surface with escutcheon pins (brass nails) or brass screws. Or the plates are secured from behind with screws into threaded posts. Inlaid plates can be glued in place. Epoxy works well for metal, stone and ivory; for other materials, your standard wood glue should work just fine. —P.L.



Factory-made escutcheons—Styles can match drop pull hardware (left) and many smaller surface-mounted versions (center). Inlaid versions (right) require more work to install.



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FINISHING UP

16) Dry-fit the lock, and screw it in place before marking and cutting the mortise for the bolt. The lock should be removed before any stain or finish is applied.

17) Check the key in the lock. The bolt should turn with a smooth, firm twist of the key.



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ajar. Turn the key so the bolt is in the locked position. Gently push the drawer in place until the bolt rests against the drawer divider, and mark those lines. Using a small square, transfer the lines to the underside of the divider. Determine the distance of the bolt from the front of the drawer, accounting for any reveals when the drawer rests against its stops. Mark those lines, and chop out a mortise slightly oversized—a little play won't hurt.

If you're working within a limited space (a shallow drawer), use a chisel pitched at a steep cutting angle, so the bevel is perpendicular to the divider. On the finest work, you often will find a strike plate set flush into the divider for extra protection from the prying hands of over-zealous children or adults with criminal intent.

A good-quality mortise lock with an escutcheon can make all the difference in the finished look of a piece of furniture. Keith, a former student of mine at the North Bennet Street School in Boston, would say that it was "slicker than deer guts on a doorknob." In case that leaves you wondering, he meant it as a compliment. □

Philip Lowe is a furnituremaker and part-time sailor in the waters off Beverly, Mass.

