Install Inset Doors With Ease

Four-step process uses the jointer and tablesaw to guarantee a perfect fit

BY J. SPEETJENS

Over the years I've had to hang hundreds of inset cabinet doors. In that time, I have refined an efficient process for fitting them accurately to their openings. The method works for most styles of furniture and cabinetry.

As with any door fitting, the process is easiest if the door and the opening are reasonably square and free of twist to start with. However, my process makes it easy to compensate for typical variances in squareness—generally gaps less than ⅛ in.

What is different about this trimming and fitting process is that it relies on the jointer and tablesaw, as opposed to handplanes, to make all of the necessary cuts, whether straight or slightly angled. To reduce the amount of trimming, I build doors just a hair (no more than 1⁄32 in.) larger than the case opening. The ease and accuracy of the fitting process come with making light trim cuts in a specific sequence, and using simple but precise shims to check your progress and mark the next cut. I make furniture for a living, and this process lets me fit a typical door in about 15 minutes, leaving a thin, uniform gap all around—the calling card of a skilled craftsman.

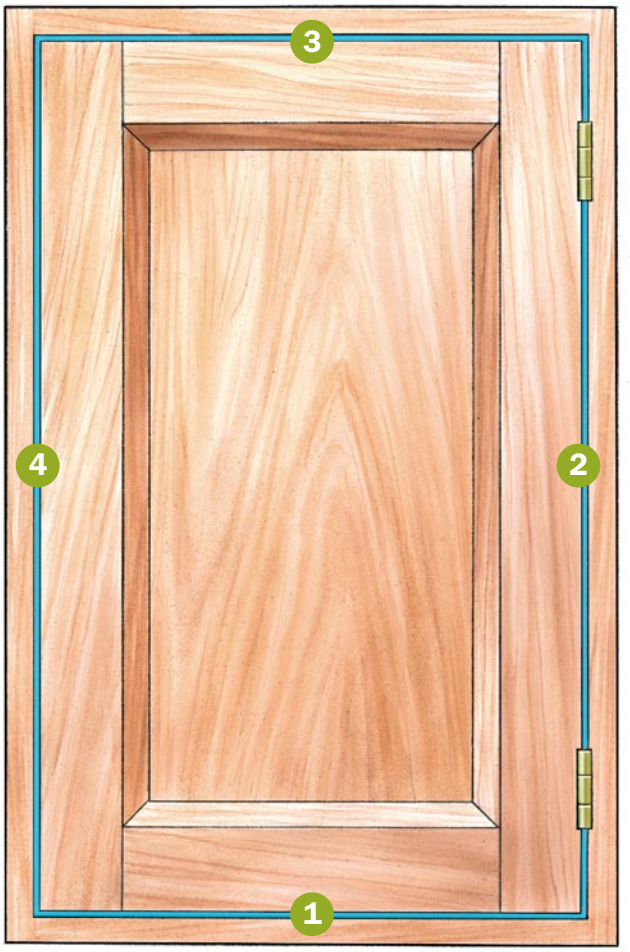
Choose shims and prepare the case and door

The fitting process starts with an inspection of the hinges. When they're closed, butt hinges have a gap between the leaves, which creates the gap on the hinge side of the door after the leaves have been mortised in flush to the edge of the door and the case. To

Photos: Marcia Ryan

Steps to a perfect fit

When fitting an inset door in a cabinet, Speetjens starts with the bottom edge and the hinge side, making light, tapered cuts on each to avoid overcutting any one edge. Then he proceeds with the top edge, and finally trims the latch side once before and once after setting the hinges.



1 CUT THE BOTTOM

Set the door in the opening and check the fit at the hinge side. If there is a gap at the top or bottom corner, make a tapered cut along the bottom edge to remove most but not all of the gap.

2 TRIM THE HINGE SIDE

Check the fit at the hinge side again and remove any remaining gap by making a tapered cut on the jointer.

3 FIT THE TOP NEXT

Place the door on shims to check the top edge, and trim it on the tablesaw using the crosscutting sled. This cut determines the gap along both the top and bottom edges.

4 FIT THE LATCH SIDE

Check the fit of the last edge and trim it just short of the layout marks before hanging the door. Once the door is hung, verify the marks and make the final trim cut.

create a uniform gap along all four sides of the door, you must use shim stock that matches the hinge gap. I've found that a single thickness of laminate will yield a gap around the door that is between 1⁄32 in. and 1⁄16 in. thick, matching the gap in most high-quality extruded brass hinges. I use high-pressure Formica chips, but any hard shim stock will do. You also will need thinner shim stock, such as veneer.

After assembling the door, letter its top hinge-side corner and place a corresponding mark on the inside edge of the opening to keep track of the door's proper orientation throughout the process.

For inset doors to hang nicely in their openings, the case needs to sit in a plumb and level position. Level the case by setting it on a flat surface such as

Drawings: Don Mannes

1. Make light trim cuts as necessary. *The door should go at least partially into the opening. Then push the door against the hinge side.*

1 Trim the bottom

The first step in the process is to measure the gap along the hinge side and eliminate some of it by trimming the bottom edge of the door.

a benchtop or a tablesaw top, or, for a larger case, by sliding wedges under the appropriate corners as it sits on the shop floor.

Now hold the door up to the opening and assess the general fit. If you sized the parts properly, the door should be just a bit longer or wider than the opening. However, the door must be placed at least partially into the opening for this fitting process to work. So make light trim cuts until the length and width of the door just slip into the opening. If the case is a bit out of square, the door may not fit entirely into the opening, but you will take care of that in the next step. Throughout the process, I make all cuts across the grain using a crosscutting sled on the tablesaw; for light cuts along the grain I use a jointer.

Start the fitting process at one corner

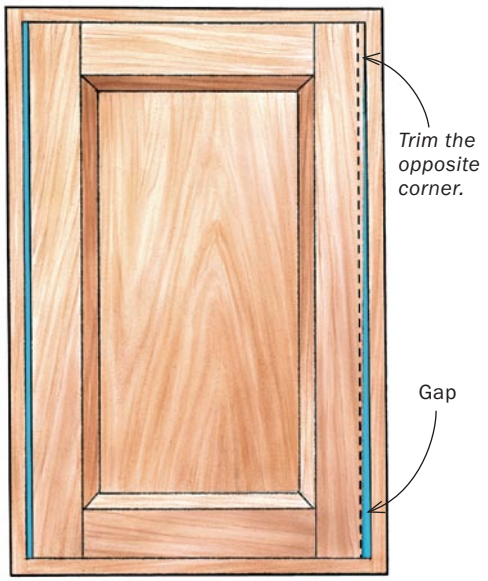
The first area of the door to be fit to the case is the entire corner formed by the hinge side and the bottom edge. Press the door as far as it will go into the opening, checking the fit along the hinge side. Try to keep the bottom of the door flat against the bottom of the opening. If an uneven gap of 1/32 in. or greater exists on the hinge side, you'll need to correct for some of that gap by making a light, tapered trim cut on the bottom edge of the door using the crosscutting sled on the tablesaw. This cut

2. Measure the gap and mark the corner. *With a few thin shims, measure the thickness of the gap on the hinge side of the door. Then mark the corner of the bottom edge to be tapered.*

3. Trim the door bottom using a tablesaw crosscutting sled. *To make the precise, tapered cut, place shims against the fence equal in thickness to half or more of the hinge-side gap.*

2 Finish fitting the hinge side

After trimming the bottom edge, Speetjens removes the uneven gap left along the hinge side using a simple tapering technique on the jointer.



Check the gap and mark the cut. *Reposition the door against the hinge side. In this case, the gap is at the bottom (above left), so the tapered cut is marked at the top corner (above right). Trust your eye for layout.*

also might help the door slip all the way into the opening, if it won't do so already. It is critical that you don't trim too much off the bottom edge: Aim for eliminating only one-half to two-thirds of the gap. Later you'll eliminate the remainder by trimming the hinge side of the door, thereby not taking too much off any one edge.

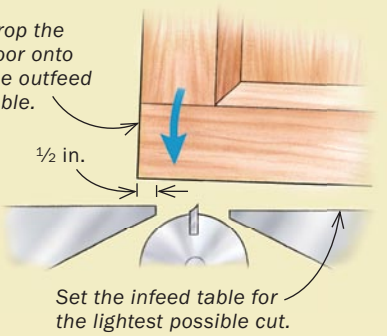
When measuring the thickness of the gap, use a stack of thin veneer shims. The advantage of using multiple shims is that you can take a few away when setting up the crosscutting sled to make an incremental cut that removes just a fraction of the actual gap. While the door is still in the opening, mark the bottom edge of the door at the point of the maximum depth of the taper. Then place a few of the veneer shims between the door and the back fence of the sled to set up the cut. With the tablesaw turned off, slide the sled forward and backward to check the position of the sawcut. I prefer to keep the door faceup on the crosscutting sled so that any blowout is on the back of the door.

Afterward, clean up the sawmarks along the bottom edge of the door using a sanding block or a block plane. To make the sanding block easier to balance on the edge—and less prone to rounding the edge—the width of the block should be no more than ¼ in. greater than the thickness of the door.

When one side of the case is bowed slightly, I've found that a cabinet scraper, such as a

PRECISE TAPERS ON THE JOINTER

This technique works well for light, tapered cuts along the grain. Use a combination of normal cuts and tapered cuts to sneak up on the layout marks.



Starting point. *With the jointer running, place the corner of the door to be trimmed onto the infeed table. Lower the opposite corner with about ½ in. overlapping the outfeed table.*

Making the cut. *Push the door through as you would for an ordinary cut. If there is enough material left, make a normal pass to clean up the edge.*

3 Use shims to fit the top edge

Two hinge-gap shims are set underneath the door, and a third is used to mark the top edge for trimming.

1. Place the door on shims. *With one shim at each bottom corner, push the door inward about ⅛ in. to prepare for the next step. The door probably will balance in this position.*

Stanley No. 80, works well for removing material along just a segment of an edge of the door. It takes some practice, though.

Finish by trimming the hinge side of the door— The door should slide more freely into the opening now. Again, slide the door along its bottom edge and against the hinge side. If the gap was very uneven earlier, there still may not be enough lateral space for the door to sit flat on its bottom edge. In that case, make straight, light jointer cuts on the hinge side of the door until it can rotate slightly in the opening and sit flat.

Now check the fit along the hinge side. You probably still will have an uneven gap, so eyeball the amount of material to be removed and lay out the cut by making a pencil mark at the maximum depth of the taper. If the gap is at the top end of the hinge side, you will need to trim an equal amount off the bottom end. If the gap is at the bottom end, trim conversely.

One of the keys to this fitting process is using the jointer to make tapered cuts along the grain. Set the jointer for as light a cut as possible, then determine the corner of the door that does not need any material removed. Place that corner about ½ in. onto the outfeed table and feed the door through the jointer normally. Light cuts will reduce the chance for tearout, and they also will leave smaller divots where the door was placed onto the cutterhead. To further reduce tearout when going against the grain, reduce the feed rate.

The door now should fit into the opening along both the bottom edge and the hinge side. If enough material is left, make a light, normal pass on the jointer to clean up the slight divot. Sand or plane away any tool marks before moving on to the next step.

Trim the top edge of the door

For this step you'll need the hinge-gap shims I described earlier. Place one at each end of the bottom

HINGES DETERMINE THE SHIM THICKNESS

Speetjens uses shims that match the gap between the hinge leaves to create gaps of even thickness around all four sides of the door.

2. Mark the gap at the top. *Hold a shim against the top of the case opening and mark the trim line at each top corner of the door.*

3. After trimming on the tablesaw, return the door to the opening. *Don't place any shims underneath the door. To check both the top and bottom gaps at once, slide two shims in the gap along the top edge.*

of the door opening. Position the door on the shims, and set it ⅛ in. back from the front of the case with the hinge side of the door tight against the case. Most doors will balance in this position. If the door won't go into the opening with the bottom shims in place, use the crosscutting sled on the tablesaw to make very light trim cuts along the top edge until it will. With the door in position in the opening, place another shim against the underside of the top of the opening and mark the thickness of the shim at each corner of the door. Use the crosscutting sled to trim to the marks.

Remove the shims and place the door in the opening in the same plane that it will hang. Using two shims that equal the desired gaps at the top and bottom edges, check the gap along the top of the door. The shims should slide smoothly. If necessary, make additional adjustments to the top edge of the door. Again, sand or plane the top edge to remove sawmarks.

Trim the latch side of the door

Before you hang the door on its hinges, the final side has to be fitted. Place the door in the opening with the front surface about ⅛ in. back from the front of the case. Slide the door to the hinge side and place two shims against the latch side of the case. Mark their thickness at the top and bottom of the latch side of the door, then use any combination of straight and angled cuts on the jointer to trim to within 1/32 in. of the marks. I like to wait until after I hang the door on its hinges before I trim the last 1/32 in. off the latch side. This extra material affords some leeway for any variances that may occur when setting the hinges.

After the door has been hung, verify the gaps with a shim above and below each hinge. If you're not satisfied with the setting of the hinges, deepen or add a veneer shim to one or more of the hinge mortises as needed (for more on installing butt hinges, see *FWW* #159, pp. 52-57). If the hinges don't need adjustment, use a shim to verify that your marks on the latch side are still accurate, and trim to the marks on the jointer. Then clean up the edge by sanding or planing the tool marks.

Remember, to ensure the success of this process, work in a methodical fashion, trimming excess material from each edge of the door in small increments. □

J. Speetjens makes furniture and cabinetry in Greensboro, N.C.

4 Fit the latch side while hanging the door

Do most of the fitting of the final edge before setting the hinges, but save some material for small adjustments afterward.

1. Mark the latch side for trimming. *Press the door against the hinge side, setting it inside the case slightly. Use two shims to lay out the opposite side. Trim this edge on the jointer to within 1/32 in. of the marks to allow for discrepancies that may occur when hanging the door.*

2. Hang the door before final trimming. *Work carefully to be sure each hinge leaf is set exactly flush with the surface.*

3. One last step. *After the door has been hung, slide a shim along the latch side to recheck your layout marks. Make the final trimming cuts on the jointer.*