by Gary Katz

INSTALLING Metal Door Jambs

Most residential contractors install metal jambs only occasionally, not often enough to get a good handle on them. But metal jambs and prefit doors are becoming more and more popular, and though they can be sharp along the edges, they don't bite. A wide variety of aluminum and metal frames are marketed in my area of California, and I often install them on tenant improvement (T.I.) jobs in commercial buildings. But I've installed these frames for both security and fireproofing in custom homes, too. Trust me, it's a lot harder to order metal jambs and prefit doors correctly than it is to install them; if they're ordered right, they go in fast.

Follow this fastening sequence for a perfect installation every time

Ordering Is Key

First, be certain to order the proper wall condition. A metal jamb is similar to a wood jamb, but the sizes are usually different. I order a stock $4^{7}/_{8}$-inch metal jamb in place of a standard $4^{3}/_{4}$-inch wood jamb, and a $5^{3}/_{8}$-inch metal jamb instead of a $5^{1}/_{4}$-inch wood jamb. I suspect that the metal jamb industry has accepted the reality that the sum of stud width and drywall thickness is greater than their ideal measurements, in contrast with the wood jamb industry, which still believes that a 2x4 wall with $^{5}/_{8}$-inch drywall on each side measures exactly $4^{3}/_{4}$-inches. Check with your metal jamb manufacturer for recommended rough opening sizes, before framing. Those sizes vary from one manufacturer to the next.

Second, order the correct swing and discuss the handing thoroughly, because different manufacturers use different methods for handing a door. Some use the back-to-the-butts method: With your back against the hinges, the handing of the door is the same as the swing of your arm. Other manufacturers use the hinge-side method: Facing the hinge side of the door, if the hinges are on the right, the opening is considered a right-hand door. On one job, I ordered jambs from one manufacturer and doors from another, and was surprised to learn that each company used a different handing method. Fortunately, the numbers were almost even and I only ate two doors, but that was more than I was game for.

Third, choose the lockset and deadbolt before ordering the door and jamb, and include that information, along with the hinge specifications (the size and thickness of the hinges), with the prefit order. Most manufacturers will prepare a jamb and door for almost anything, from mortise locks to flushbolts — I've even had prefits prepped for panic hardware.

Figure 1. A dolly makes it easy to move doors on site (left), and also supports them while hinges are installed (right). It's convenient to use two cordless drills for this task — one with a Vix bit and the other with a Phillips bit.

Scatter the Jambs and Doors

Once the doors and jambs are on site, I scatter every jamb to its correct opening before installing anything. I then check every opening, sometimes twice. It's easier to move them around before they're screwed into the trimmers than it would be after.

I do the same thing with the doors. On a large job, I like to install all the hinges onto the doors in one central location, using an electric drill and screw shooter, then wheel each door to its correct opening. There I double-check the door size and swing, and match the door to the jamb. I use a Rok Buk door dolly (IDMM System, 6047 Fallbrook, Woodland Hills, CA, 91367; 818/709-6916) to wheel doors around. On a small job, like this one, I hinge the doors with cordless tools while they're standing in the dolly next to the opening (see Figure 1).

To prevent splitting the door stile, always drill a pilot hole for every hinge screw. A Vix bit centers each hole perfectly, speeds up the process dramatically, and ensures that the screws won't move the hinge. I use two cordless drills, one for the Vix bit and one for my magnetic bit holder. It's a lot quicker to stick the bit holder into my nail pouch and pick up a few screws than to use my fingers.

Start at the Top

Metal jambs are manufactured by many companies whose designs vary considerably, but almost all installations begin with the head jamb. Be sure the door rabbet is facing the right direc-

Figure 2. Installing a metal door jamb starts at the top: Slip the head jamb over the header (left), then angle the legs into the corners and push them into place (right).

tion, then angle the jamb up and slip it over the header (Figure 2). Push it up as far as it will go. Next, install one of the legs, it doesn't matter which one, but be certain to install the hinge jamb on the hinge side! Check the door rabbet again and start by angling the leg up toward the corner of the header, then straighten it vertically and slip it over the drywall. Repeat the same procedure for the opposite leg.

Once the jamb is "kicked in," pull the head down onto the tops of the legs, and check that the legs are seated firmly on the floor. Metal jambs have different types of corner fastening systems. Some, like the one shown in the photos, have alignment tabs. The tabs help to lock the head into the jamb. Use an awl or screwdriver to pull the head down tightly against each leg (Figure 3). If the jamb has a different fastening system, like screw-on corner clips, install the clips now.

Swinging the Door

I'm usually alone when I install prefit doors, even 8-foot doors, so I've developed an easy way to get the door and hinges onto the jamb. Set the door in the opening at a 90-degree angle. Slide the hinge stile of the door back about halfway into the opening, and then rock the door up on the strike stile, so that the top hinge comes up near the mortise in the jamb (Figure 4, next page). If the door is too high, give it a light kick near the bottom with your foot

Figure 3. Use an awl to pry the head jamb downward, eliminating any gaps between the head and side jambs.

Figure 4. With the door turned 90 degrees to the opening, rock it forward onto the corner of the strike stile to align the top hinge leaf with the mortise, and secure it with a single screw (left). Bring the middle hinge into alignment by pushing the hinge stile with your foot, then secure the middle hinge with a second screw (below).

until the hinge lines up with the mortise. Then drive in one screw. Now place your foot against the bottom of the door with your toe up about 4 inches up on the hinge stile. Push the door with your toe and one hand — the other hand is still holding the screw gun, which should be loaded — until the middle hinge comes up to the hinge mortise. Hold the door still with your foot and secure the hinge with one screw. It's now safe to let go of the door and install the bottom hinge and remaining screws. If the weight of the door has pushed the bottom hinge past the mortise, use a small pry bar between the jamb and the door to help align the hinge.

Adjusting and Securing the Jamb

I use a pry bar and a block of wood to move the door and jamb around, the new Super Pry bar. (The one with the really crooked U-neck works great for installing metal jambs and doors.) Place the pry bar about halfway beneath the door, but a little closer to the strike side than the hinge side of the jamb. I ready my cordless driver with a screw first, then I step lightly on the pry bar — enough to take the weight of the door off the frame but not so hard that I lift the frame off the floor. Because of the hanging weight of the door, the jamb usually only needs to be rocked back toward the hinge trimmer a bit.

Figure 5. Control the head gap by stepping on a pry bar slipped under the door, then drive a screw into the top hole in the hinge jamb (left). Drive another screw through one of the holes beneath the bottom hinge (above), then check the jamb for plumb. Finally, correct the gap at the strike jamb by pressing harder on the bar while driving an additional screw behind the top hinge (below).

As the top of the jamb comes back, the head gap between the door and jamb will close. At that point, I look for two things. First, I check the margin between the jamb and the adjoining perpendicular wall. Sometimes, I pull out my tape measure and check that the margin is equal from top to bottom. If there is no adjoining wall, before I begin I prop a level near the opening and reach for it to check that the jamb is close to plumb. I also keep my eye on the head gap. At this stage, I like to see the head just touch the jamb above the strike stile.

Fastening Sequence Is Critical

The first three screws used to secure the hinge jamb are the most important fasteners and must be placed in exact order and location. Hold the door still with one foot on the pry bar, then start by driving a screw into the very top hole in the jamb leg (Figure 5). Next, install a screw through one of the holes beneath the bottom hinge. Now check the jamb for plumb again, using a level or measuring to the adjacent wall. If the jamb isn't plumb, remove one of the screws to correct the problem.

The critical part of installing any metal jamb is the next step. Keep in mind that the weight of most doors will cause a small belly or bow in the hinge jamb, right at the top hinge. Naturally,

Figure 6. If necessary, correct the head gap by giving the strike jamb an upward shove with the pry bar before driving a screw through its top (left). To ensure a tight corner joint, use an awl to pull the head jamb downward before screwing the end into place (above). Starting at the top of the strike jamb, drive a screw every 12 inches or so, adjusting the strike gap with the awl as needed (below).

the bow in the jamb will increase the gap between the jamb and the door just above and below the top hinge (hinge gap). If the gap isn't corrected, the door will be too tight against the strike jamb. The door might even push the strike jamb away from the head jamb, which will ruin the fit of the casing. To correct the problem, press a little harder on the pry bar and force the top hinge and the jamb back toward the trimmer. Once again, I like to push hard enough so that the door touches the head jamb above the lock stile, and so the hinge gap above the top hinge is almost entirely closed. Then I drive a screw behind the top hinge. Once that screw is set securely, I remove my foot from the pry bar. The door will then settle back down just a little, and the hinge gap and head gap will almost always be just right.

Finishing the installation is simple stuff. Install the remainder of the screws in the hinge jamb, with two screws behind each hinge and a few in the field, too, about one every 12 inches. Next, pull the head jamb down tight against the hinge leg and place one screw at the end of the head to lock the two jambs together. Adjust the strike jamb next. Use an awl to pull the strike jamb toward the door until the gap is about 1/8 inch wide. Sometimes the strike jamb must be lifted slightly to correct the head gap. Use a small pry bar to lift the jamb. Once the head gap and strike gap are equal, install a screw in the top of the strike jamb (Figure 6). Next, use an awl to pull the head jamb down against the top of the strike jamb, so that the joints between the

Figure 7. Center the head casing, press it against the spring clips, and gently tap with a mallet to snap it home. Repeat for the legs, starting at the top miter joint and working downward.

jambs are closed up snugly, then drive a screw through the corner of the head jamb. Install a screw about every 12 inches down the strike jamb. Use an awl to adjust the strike gap as you go. I like to put two screws through the jamb near the lockset and deadbolt, for extra security.

All that's left now is installing the casing. As I said before, metal jambs vary from manufacturer to manufacturer. Each one has its own fastening system for the casing, but most rely on some type of spring clips. To save my hands, I use a rubber mallet to snap on the casing. I cover the mallet with tape so the head won't mar the jamb. But be careful: Used incorrectly, a mallet will dent the casing — I had to replace all the casing on one job because of a hopeless helper. Used correctly, a mallet speeds up the job considerably.

The first piece of casing to install is the head, but some casing kits come with corner clips that have to be installed in the head before the casing can be mounted to the jamb. Center the head over the jamb and begin fastening at the middle of the casing. I apply most of the pressure needed to snap the casing over the spring clips with my left hand, then, at the last moment, I tap the casing lightly with the mallet to nudge it that last little bit (Figure 7). The seat is almost always solid. Install the legs last, beginning at the miter and working down to the bottom of the jamb.

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