Plumbing and Bracing Frames

**Plumbing the frame** (see fig. 1)

The contractor should be equipped with a carpenter level, square and wood spreaders. Where welded frames are provided with spreader bars, they shall be removed before setting frames. Set the frame in the desired location and level the header. Square jambs to header. Shim under jambs if necessary. With frame on line, set wood spreader and fasten jambs to floor through floor anchors.

**Bracing the frame** (see fig. 2)

Brace the frame as shown or shore to a structure above. *Do not brace in the direction of intended wall.* Plumb and square jambs. Install vertical brace to support header for openings over 4'0" wide.

**Spreader** (see fig. 3)

Wood spreader shall be square and fabricated from lumber no less than 1" thick. Correct length is the door opening width between the jambs at the header (i.e., single door 3'0" = 36"). Cut clearance notches for frame stops. Spreader shall be nearly as wide as frame jamb depth for proper installation.

NOTE: Spreader bars for shipping purposes should not be used as installation spreaders.

**Accessories**

**Install rubber silencers** (see fig. 4)

Cut the point from a #6d box or finishing nail. Insert nail in hole to elongate rubber silencers. Moisten the end and insert rubber silencers in predrilled holes on frame stop, remove nail. The thickness of the silencer shall permit latching of door with 1/16" clearance between face of door and stop of frame.

NOTE: Install rubber silencers before frame erection to avoid grout filling rubber silencer holes.

**Extended base anchor** (see fig. 5)

Extended base anchors are supplied upon request only. (If required for tool attachment.)

**New Masonry Construction** (see fig. 6)

a. Assemble frame  
b. Install wood spreaders, set brace and plumb frame.  
c. Set second spreader at the mid point of the door opening to maintain the door opening dimensions.  
d. Install anchors (see fig. 7). Grout frame in the area of the anchors as block courses are laid up. Frame should be fully grouted. Frames have been tested fully grouted using T anchors or wire anchors. Frames may also be supplied with anchors welded in place.  
e. Continually check plumb and square as wall progresses.
Existing Masonry Construction (see fig. 8)

a. Assemble frame.
b. Install snap-in anchors to align with pierced holes in jambs. (Frames may also be supplied with anchors welded in place).
c. Slide frame into wall opening; install wood spreaders.
d. Use tapered shims between anchors and wall and spreaders to maintain squareness and alignment of frame, and to maintain door opening.
e. Where possible, one jamb should be butted tightly to the wall. Backer rod or caulking shall be used where gaps occur between frame and wall.
f. Insert anchor bolts and tighten securely, checking for frame alignment periodically (see fig. 9).

NOTE: The space between the wall and the frame should be 1/8" or less.
g. Install plugs to cover bolt heads (if so equipped).

Steel Stud Wall Construction (see fig. 10)

a. Assemble frame.
b. Install anchors. Position anchors in frame through the throat and tap in with a hammer. Frames may also be supplied with anchors welded in place.
c. Square, brace and plumb frame as shown.
d. Set spreader. Attach jambs to floor through floor anchor or floor extension. Install jamb studs to floor and ceiling runners and tightly against frame anchors.
e. Position studs in frame throat and attach to anchors with screws or weld. If using screws, drill from the back side of the stud, through both the stud and anchor, then attach with (2) screws per anchor location (see fig. 11)
f. or, when anchors are strap type, attach anchor to face of stud through the anchor strap (2) per anchor. Screws shall be #6 x 3/8" (min.) steel sheet metal or self tapping type.

NOTE: When attaching header stud to jamb studs, be sure the stud is above frame header. This will assure ample room for attaching plaster lath or drywall and will not interfere with installation of hardware attached to frame header.

NOTE: Drywall must extend at least 1/2" into frame at fire rated installations.

Anchor Installation – Wood Stud Wall Const. (see fig. 12)

a. Install anchors. Position anchors in frame throat and tap in with a hammer. Frames may also be supplied with anchors welded in place.
b. Set spreader. Attach jambs to floor through floor anchor or floor extension. Install double jamb studs to floor and ceiling runners and header (see fig. 12).
c. Bend anchor tabs around stud leaving desired clearance between frame return and stud for inserting finished wall material.
d. Square and nail top anchor to stud on ONE JAMB ONLY. Check plumb and square and continue to nail balance of anchors to stud. Repeat for opposite jamb.

NOTE: Drywall must extend at least 1/2" into frame at fire rated installations.
Masonry Frame Installation Instructions
for Masonry Wall Stud and Drywall Construction

Rough Opening Dimensions

Construct wall before or after frame is set with a rough opening as follows for 2" face frames:
- Height equal to nominal opening height (eg–7'0") plus 2-1/8" to 2-1/4".
- Width equal to nominal opening width (eg–3'0") plus 4-1/4" to 4-1/2".

New Masonry Construction

a. Assemble 3 frame pieces flat on floor. Install (4) #8 x 1/2" sheet metal screws (included) at corners of head to each jamb (required for fire rated frames). Locate removable spacing bar at base of frame to maintain proper opening width during installation.

b. Position assembled frame in opening and support securely in the middle and top of the frame. Plumb and level the frame. Anchor base to floor.

c. Install 3 wire anchors evenly spaced in each jamb while wall is being constructed.

NOTE: Three wire anchors is for 7'0" frames only. Will require 4 anchors for frames over 7'6", 5 anchors for frames over 10'.

Existing Masonry Construction

a. Drill (4) 9/16" diameter holes evenly spaced in each jamb for 3/8" expansion shell anchors. Install multipurpose anchor per enclosed installation sheet at each 9/16" hole.

NOTE: Cannot drill hole at a job site, must be at CURRIES or a second location.

b. Assemble 3 frame pieces flat on floor. Install (4) #8 x 1/2" sheet metal screws (included) at corners of head to each jamb (required for Underwriters Laboratories fire rating). Locate removable spacing bar at base of frame to maintain proper opening width during installation.

c. Position assembled frame in opening. Plumb and level the frame. Shim frame as required.

d. Anchor frame to wall with 3/8" expansion shell anchors.

Multi-purpose Anchor Installation

a. Bend legs of anchor 90° as shown in detail “A” (legs may have to be bent further in later steps).

b. Insert anchor into frame throat tilted at approximately a 50K angle as shown in detail “B”.

c. Twist the anchor into place by applying pressure in the opposite directions to each side of the anchor as shown in detail “B”.

d. Once the anchor has snapped into place, detail “C”, legs should be bent back to the original position in necessary.

e. Line up anchor with hole in frame for expansion bolts if used.
Knockdown (KD) Frame Installation Instructions
for Steel or Wood Stud and Drywall construction

a. Construct wall with rough opening height equal to finished frame opening height plus 3/4” (19.1) to 1” (25.4). Maximum rough opening width for a 2” face frame is opening width plus 2-1/8” to 2-3/8”.

b. Bottom of frame must set on a solid surface.

c. If wrap-around base anchor is used, notch drywall in that area.

d. Retract compression bars near the top of the jambs by turning screws counter clockwise and install one jamb in position on wall.

e. Insert frame head under the corner clips of the jamb and raise into position.

f. Insert the corner clips of the remaining jamb into the opposite end of the head and position jamb on wall.

g. Locate a removable frame spacing bar at base of centered frame to maintain proper opening width during installation.

h. Level, square, and plumb frame and install base anchor screws through countersink holes in frame face and into floor plate.

i. Square top of frame and tighten compression bars by turning screws clockwise.

**NOTE:** DO NOT OVER TIGHTEN.

j. Install (4) no. 8 x 1/2” (12.7) sheet metal screws at the corners of the head to attach head to jambs

**NOTE:** REQUIRED FOR FIRE RATED FRAMES.

Manufacturer’s Installation Instructions for Correct Location and Attachment of Anchors

A slip-in anchor must be used for each 30 inches of jamb height or fraction thereof. On the hinge jamb, each anchor must be located immediately above or below each hinge reinforcement. On the strike jamb, anchors must be located directly opposite the anchors on the hinge jamb.

Base anchors are not required on frames provided with expansion shell (existing wall) anchors. All other frame-anchor combinations must have a welded-in base anchor.

An additional jamb anchor must be added to frames using expansion shell anchors.

Anchor attachment methods may be slip-in force fit, spot welded, or arc welded to frame in proper locations.