DOUBLE EXTERIOR DOOR SYSTEM
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

Safety Glasses • Gloves • 48”-72” Level • Hammer • Tape Measure • Flashing Tape • 24” Square • Screw Gun • #2 Phillips Screwdriver • Exterior Caulk (Paintable Silicone Recommended) • 2-½” Wood Screws Qty.11 • Wood Shims(2pkgs.) • Fiberglass Insulation

**WARNING**
Door Units Are Heavy! Use an adequate number of people to set the unit and prevent injuries or damage to the door.

*Note:* These instructions are recommended installation methods and not a substitute for local building codes. Please consult your local building codes prior to any door installation.

1) Preparation of Rough Opening and Door Unit

- **fig. 1**
  - Clean the floor area around the door opening. If necessary, scrape off mortar or plaster spills. Double check the rough opening dimensions. The rough opening should be roughly ½” taller and ¾” wider than the outside frame dimensions of the door unit. (fig.1-3)

- **fig. 2**
  - CRITICAL STEP!!! Make sure the floor is level (fig.4). If the floor is not level it will adversely affect the rest of the installation.

- **fig. 3**
  - Check the opening for plumb and square. Check both walls for plumb and all four corners for square in the rough opening. Make the necessary corrections prior to installing the door unit (fig.5-6).

- **fig. 4**
  - Cut the water resistive barrier.

- **fig. 5**
  - Make (2) 45 degree, 6” cuts extending from the corners of the rough opening (fig.7).

- **fig. 6**
  - Following the front edge of the opening, cut the barrier across the length of the header.

- **fig. 7**
  - Fold the water resistive barrier up and tape it in place. It will be folded back down at the end of the installation. (fig. 8)

- **fig. 8**
  - Apply sill flashing tape by:

  - **fig. 9**
    - Cut one piece of flashing tape 12” longer than the width of the door opening.

  - **fig. 10**
    - Begin applying the flashing tape 6” up from the rough opening floor on one end and hanging over the exterior side ½” At the corner cut a ½” wide tab (fig.9-10). Repeat through the other side. *Note:* Press the flashing firmly against the water resistant barrier and the sub-floor.

  - **fig. 11**
    - If necessary, apply a second strip of flashing to the inside of the rough opening overlapping the first strip by at least 1”. *Note:* Do not extend the flashing beyond the interior framing.
DOUBLE EXTERIOR DOOR SYSTEM

2) Preparation of the Door Unit

a) Cut the cardboard to remove the bracing board from the bottom of the door (fig.11).
b) Remove the door handles from the door unit (fig.12).

Inswing Units only: Your door is shipped with two installation clips at the top of each door and a door plug in the lockset location.

a) Remove the three screws connecting the top of the clips to the frame but leave the clips connected to each of the doors. The clips will help keep the door square during installation. (fig.13)
b) Leave the bore plug in place for now.

3) Setting the Door Unit

a) Apply a triple bead of silicone caulking to the sub-floor of the rough opening (fig.14).
b) Apply a second bead of caulking around the perimeter of the door sill (fig.15).
c) Apply a bead of caulking around the backside perimeter of the door’s brickmould (fig.16).
d) Using two people, set the sill into the rough opening. Center the frame into the opening and tip the unit into place (fig.17).

Using a 6’ level, plumb the hinge side of the door unit. (fig. 19)

Note: A door that is installed “Out Of Plumb” is the most common reason for a door unit to leak air or water.

g) Place shims behind the top hinge on the active door. (fig.20) Tack the unit into place by opening the active door, and removing one hinge screw from the top hinge and installing a 2½” wood screw through the top hinge and into the rough opening (fig. 21)

b) Continue adding shims until the margin between the active door and the head jamb is even and the margin between the active door and the inactive door astragal are even. (refer to fig 28 on next page)

Note: We recommend the use of screws when installing your door system. Screws allow you the opportunity for easy removal if adjustments need to be made to the installation.

4) Shimming the Door Unit

a) Moving the door frame as little as possible, carefully close the active door. Place shims behind the middle and lower hinge locations and at each of the three corresponding hinge locations on the inactive door. (fig.22)
b) Continue adding shims until the margin between the active door and the head jamb is even and the margin between the active door and the inactive door astragal are even. (ref to fig 28 on next page)

Note: An even margin across the top of the header and down the center of the door will ensure that the door unit is square in the opening. Uneven margins will result in the door unit being out of square.

NOTE: The door slabs are heavy! During the initial installation, the weight will cause the jams to twist, increasing the margin between the active door and the astragal. This twist must be shimmed out to ensure proper 1/8” margin between the active door and the astragal. (fig.23)

b) Open the active door carefully and re-check for plumb. Finish screwing the hinge jamb into place by removing one screw from the middle and bottom hinges and installing a 2-1/2” construction screw into those hinges at the shim locations and into the rough opening (fig.24). Install a second 2-1/2” screw into the top hinge to prevent the door from sagging.
**6) Fastening the Inactive Door Side Frame**

**a)** Retract the head and foot pins for the inactive door slab. (fig. 25)

**b)** Carefully open the inactive door and re-check for plumb. Make sure the bubble is dead center on the level, even a slight variation can cause major installation issues. Finish screwing the hinge jamb into place by removing one screw from the middle and bottom hinges and installing a 2-1/2" construction screw into those hinges at the shim locations and into the rough opening (fig.26). Install two 2-1/2" screws into the top hinge to prevent the door from sagging.

**7) Fasten the Head Jamb**

**a)** Place shims in 3 locations across the head of the door unit. Make sure not to over-shim the head of the unit as it will interfere with the margin across the top of the door. Open both doors and hold back the weatherstrip (fig.27). Install one 2-1/2" construction screw into the head and through each of the shim locations. Screw holes can be filled for a more finished look.

**b)** Close the door unit and re-check the margin around the door unit, it should be even horizontally across the top of the head and vertically from the header to the sill. Make adjustments to the shimming as needed. (fig.28)

**8) Adjusting the Frame**

**a)** Remove the installation clips by opening both doors and removing the two screws that extend through the clip into the door head on each door. (fig.29)

**b)** Close both doors and re-check the margin around the door unit. It should be even horizontally across the top of the head jamb and vertically from the head to the sill. Make adjustments to the shimming as needed. (refer to fig.28)

**c)** If your door system has an adjustable sill: Using a #2 phillips screw driver, adjust the set screws on the top of the sill crown to allow your door to operate properly and create a proper seal (fig.30). A good test for the compression of the sweep on the sill crown is to 1.) Close the door on a piece of paper. 2.) Pull the paper from between the sweep and the threshold (fig.31). You should be able to pull the paper out slowly, while feeling the tension on the door. If the paper tears, the threshold is adjusted too high and it will prematurely wear out the sweep. If there is no tension on the paper, there will be potential for water leakage.

**9) Operating the Astragal**

**a)** The top catch (fig.32) and bottom catch (fig.33) will be pre-installed on the door unit. The catch plates are oval and allow for 1/16" tolerance in each direction. If the top and bottom pins do not fit into the catch plate holes, re-check the margins on the installation. (refer to fig.28)

**10) Installing the Lockset**

**a)** All MASTERCRAFT® doors are set up with a 2-1/8" bore hole set at either a 2-3/8" or a 2-3/4" backset (depending on door size). All crossbores are set for a 1" drivepoint latch. This is done to allow installers to utilize drive point latch systems, radius plate systems, or square plate systems (fig.34).

**b)** To install the backset as a drivepoint system, simply follow the lock manufacturers instructions for converting to a drivepoint. Hammer the drivepoint into place making sure the angled portion of the backset faces the jamb (fig.35).

**c)** Using the manufacturers instructions, install the lockset (fig.36). “For added security, use 2 ½” screws when installing all strike plates.

**d)** Your double door unit will arrive with strike plates pre-installed on the astragal. Depending on the installation of the door unit, these plates can be adjusted using a #2 phillips screwdriver. Loosen the plates and slide them up or down as needed (fig.37).

**11) Insulating the Door Unit**

**a)** Before applying casing to the interior of your door unit you will need to insulate around the frame opening. We recommend using “Fiberglass Blanket Insulation.” Do not use expanding foam, it will affect the margin around the door unit. (fig.38).
12) Sealing The Door Unit

a) Apply flashing tape along the edges of the brickmould by cutting two pieces of flashing tape 4" longer than the height of the brickmould. The tape should extend 2" above and 2" below the door. Bend the tape so that it covers about 1/2 of the brickmould thickness. (fig. 39)

b) Cut a third piece of flashing tape for the header. It should be cut so that it extends at least 1" beyond the edge of the two flashing tapes applied in the previous step. (fig. 40)

c) Fold the water barrier over the flashing tape. (fig. 41)

d) Cut two pieces of flashing tape at least 1" longer than the diagonal cuts in the water barrier. Apply them over the diagonal cuts overlapping the top corners of the nailing fin. (fig. 42)

e) Make sure the corner seals are in place. If they have been removed during finishing, please make sure they are replaced. There will be one seal per hinge jamb, and one applied to the bottom of the astragal flush with the bottom of the rubber astragal boot. (fig. 43)

NOTE: Corner seals are an important part of the sealing process. All door units have a version of corner seals.

It is very important that you finish your door system properly. To ensure maximum efficiency please caulk at the following locations:

- Where the brickmould contacts the frame. (fig. 45)
- At the nose of the sill, where it contacts the sill plate. (fig. 47)
- Where the brickmould contacts the wall. (For existing construction where the flashing tape could not be used.) (fig. 46)
- Where the frame contacts the sill. From the nose of the sill on the exterior of the house, over the crown, and to the edge of the sill heel on the interior of the house. (fig. 44)

13) Casing The Door Unit

a) Remove all excess shimming material by first scoring the shims, then breaking them off with a hammer. (fig. 48)

b) Apply casing to the unit as desired. (fig. 49)

c) Where the brickmould contacts the wall. (For existing construction where the flashing tape could not be used.) (fig. 46)

14) Disposal of Waste Materials

a) For proper handling and disposal of construction waste materials please consult your local building codes. Additional disposal and recycling recommendations can be found on the EPA website at www.epa.gov

Questions or Concerns: For guest assistance contact MASTERCRAFT by sending an email to: MastercraftDoorHelp@MidwestManufacturing.com

For more information, including troubleshooting help and videos, please visit: www.MastercraftDoors.com