

Bilco Ultra Series Basement Door Installation Instructions

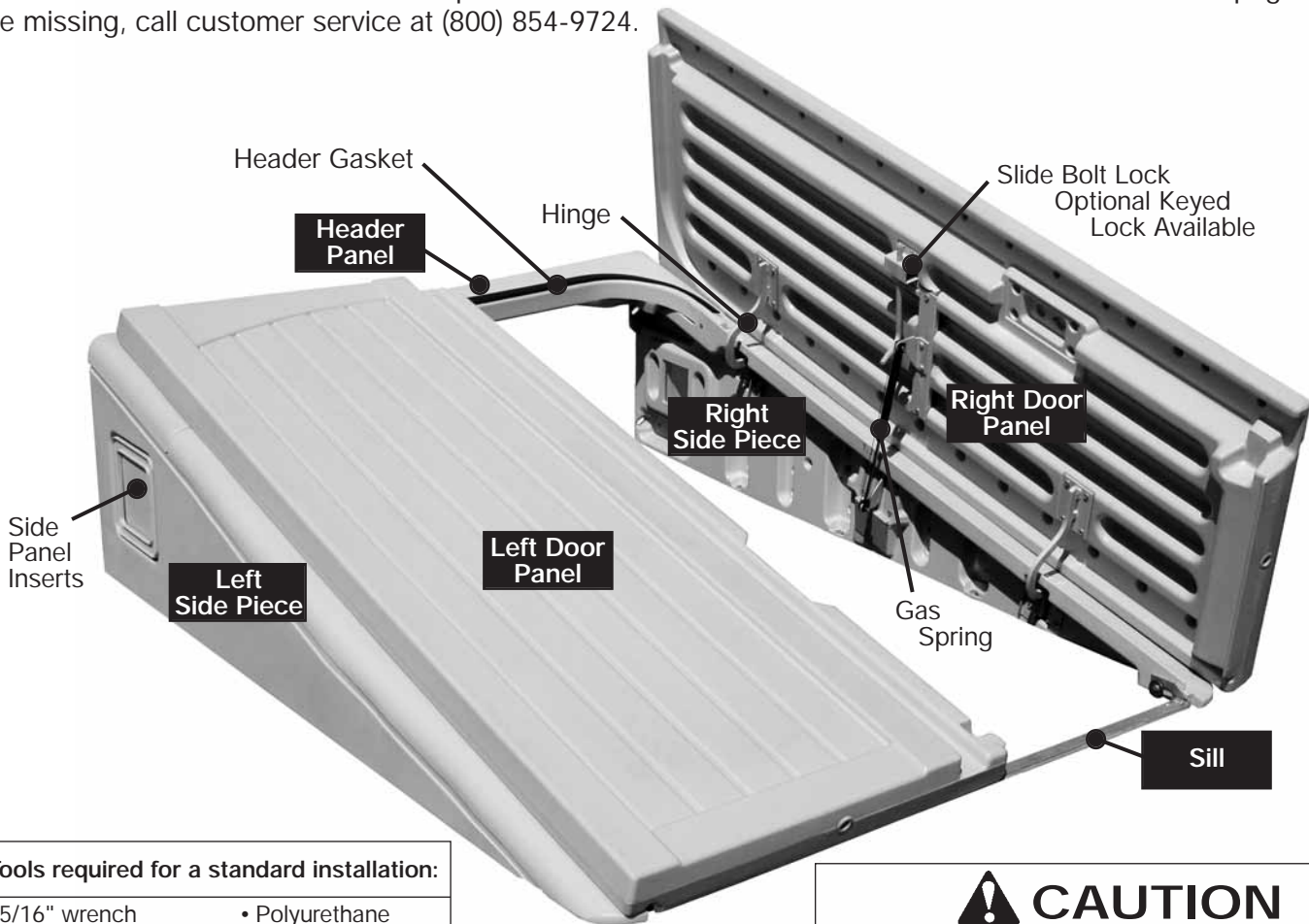


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www.bilco.com

About These Instructions

It may be helpful to look through this entire folder before proceeding with the detailed assembly and installation instructions. The names of the various parts referred to in the instructions are indicated below and on page 2. If parts are missing, call customer service at (800) 854-9724.



Tools required for a standard installation:

- 5/16" wrench
- Flatblade screwdriver
- Phillips screwdriver
- Electric drill
- 5/16" carbide masonry drill bit
- Polyurethane caulk (opaque)
- Level
- Tape measure
- Work gloves
- Safety goggles

Depending upon the type of installation, some or all of the following may be required:

- Hammer and nails
- Sledge hammer
- Masonry chisel
- Circular saw
- Shovel and trowel
- Wheelbarrow

Patent no. 7,356,968

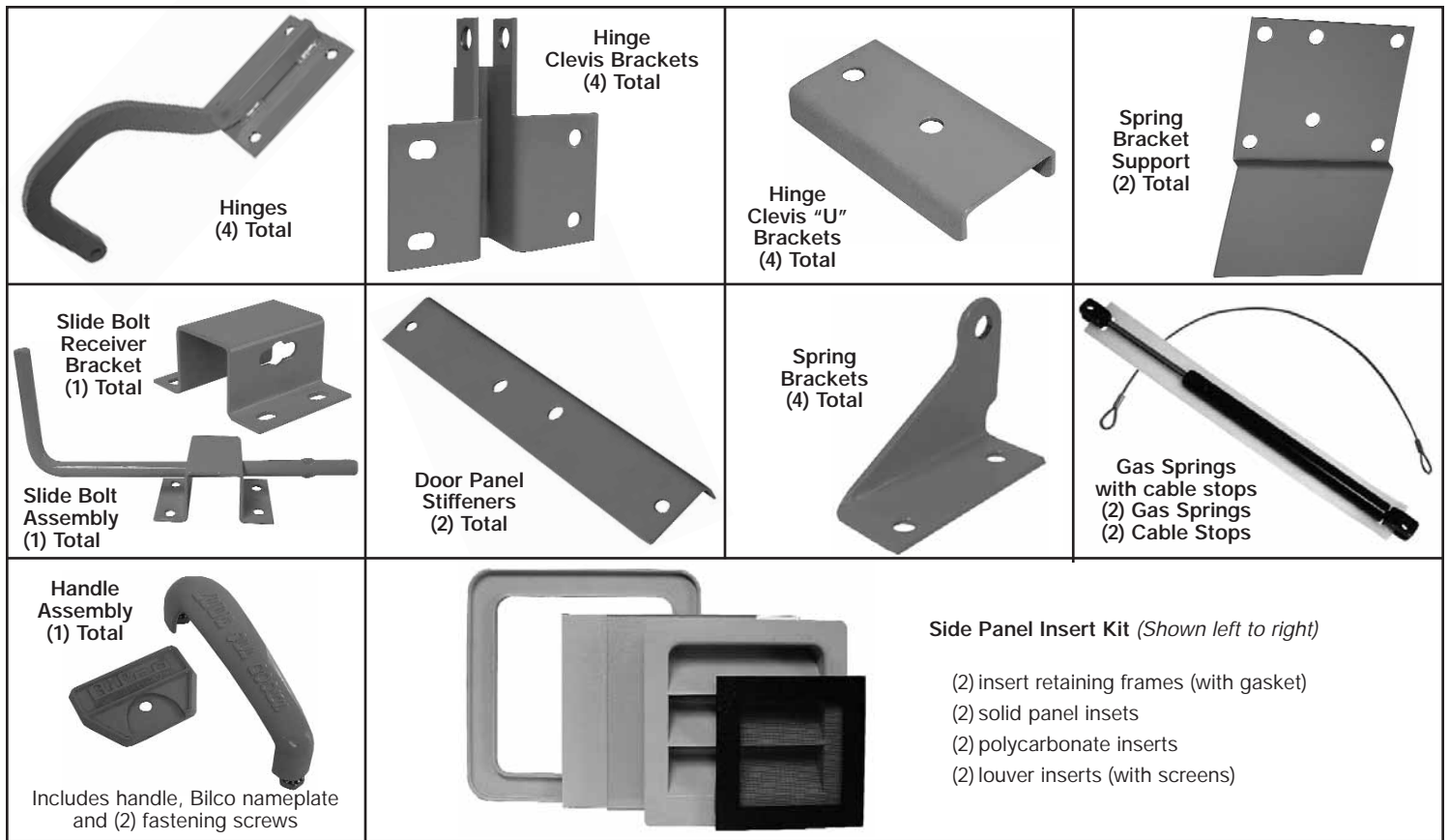
CAUTION

When the doors are open for access, the area should be personally guarded to prevent anyone from falling down the stairs. Surface may be slippery. Doors should be closed and locked when not in use.

KEEP OFF DOORS TO AVOID INJURY

The Bilco Ultra Door is engineered to the highest specifications to meet exacting tolerances. Due to the properties of the HDPE (High Density Polyethylene), some components of the door may vary slightly in appearance compared to others following installation and regular operation. These variations are normal and will not affect the performance of the product, nor its 10-year warranty.

Ultra Series Basement Door Components and Hardware



Installing the door on an areaway that is smooth and level and properly sized to fit the door

The Bilco basement door will shed water in all normal conditions only when installed and caulked in accordance with these instructions. If there are no rain gutters above, a diverter must be installed to prevent roof water from flowing directly onto the Bilco basement door. If the foundation areaway that you are installing the door on is not smooth and level, or does not fit the door properly, see page 5 and 6 of these instructions.

Before installing the door, verify that you have all the parts shown above and that you have the tools required for installation that are listed on page 1 of these instructions. If you are replacing an existing door, Mix a small batch of concrete and patch any holes in the present concrete caused by the anchors that held the old door in place.

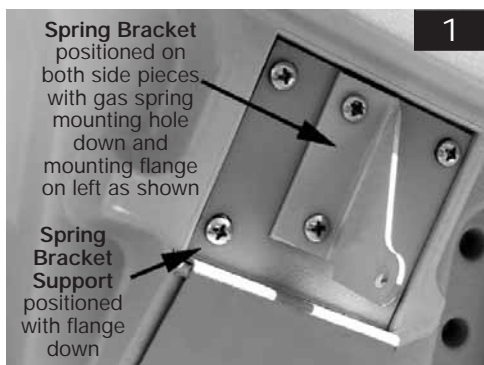
STEP 1: Assembling the Door Frame

Remove side panels, header panel and sill from carton. Position spring bracket supports and spring brackets on each side panel as shown in **Figure 1** and attach using (6) 1/4-20 x 1" pan head screws. Stand up side pieces and connect header panel to each side piece with #10 x 1" drive screws as shown in **Figure 2**. Next, connect the aluminum door sill piece to each side piece with 1/4-20 x 1" pan head screws, 1/2" O.D. X 1/8" nylon spacers, and 7/8" O.D. steel washers as shown in **Figure 3**.

Hardware Package Contents

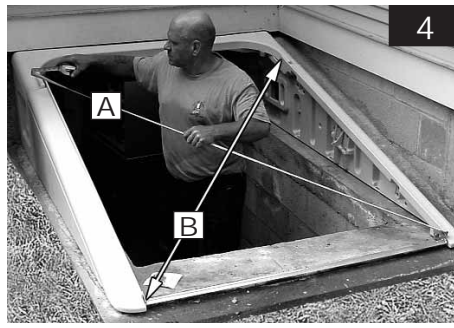
- (8) 5/16" x 1" clevis pins
- (8) 5/64" x 1" cotter pins
- (10) #12 x 1-1/2" slotted hex head screws
- (13) Plastic anchors
- (4) #10 x 2-1/2" deck screws
- (2) 1/2" O.D. X 1/8" nylon spacers
- (10) 1/2" O.D. X 1/4" nylon spacers
- (62) 1/4-20 x 1" pan head screws
- (3) #10 x 1-1/2" flat head screws
- (2) #10 x 1" drive screws
- (12) 7/8" O.D. steel washers
- (4) 3/4" O.D. x 5/16" nylon washers
- (18) spring steel nuts

* Extra fasteners are included in package



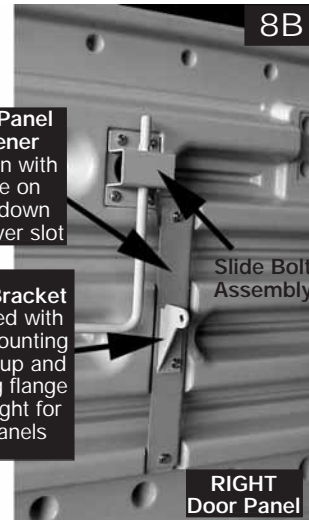
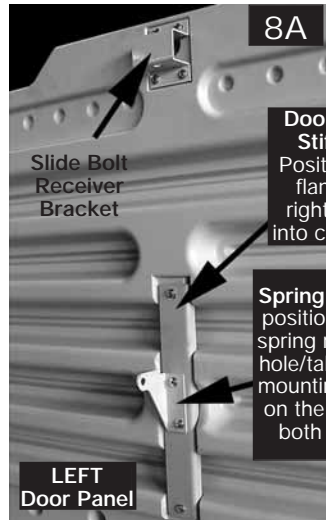
STEP 2: Anchoring the Door Frame to the house and areaway Foundation

Move assembled door frame into place on foundation areaway. Make sure that vertical edge of side pieces are flush against the house. For replacement applications, siding may need to be removed and replaced to position door frame properly. **Place a level against side piece and check plumb. Square door by measuring diagonals as shown in Figure 4 and shift frame as required until measurements A and B are equal.** Distance across opening, between anchor holes in side pieces, should be no less than 53-1/2" on center for proper operation. Mark all anchor hole locations on foundation areaway and wall with pencil or marker. Remove frame from areaway and drill all anchor holes using 5/16" carbide tip masonry bit as shown in **Figure 5**. Once all anchor holes are drilled, insert plastic anchors into all anchor holes flush with concrete and reposition frame on areaway. Anchor side pieces to areaway foundation and foundation wall using #12 x 1-1/2" slotted hex head screws, 1/2" O.D. X 1/4" nylon spacers, and 7/8" O.D. steel washers as shown in **Figure 6**. Anchor Sill to areaway foundation using (3) #10 x 1-1/2" flat head screws. (Note: spring nuts are discarded in this application). Finish anchoring frame by securing header panel to house using (4) #10 x 2-1/2" deck screws as shown in **Figure 7**. Note that Indents are provided in header panel to show proper screw location. Make sure header panel is level before securing. When anchoring is complete, **caulk all around the exterior of the frame where it meets the masonry with polyurethane caulk (opaque).**



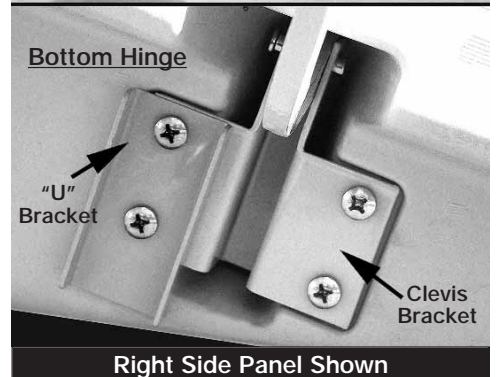
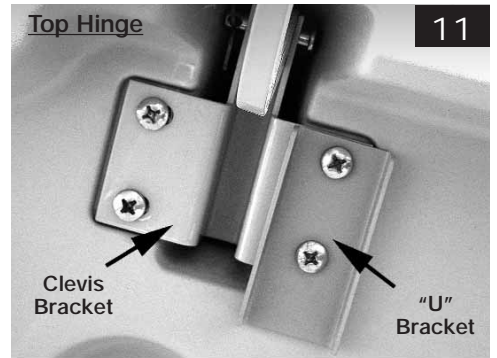
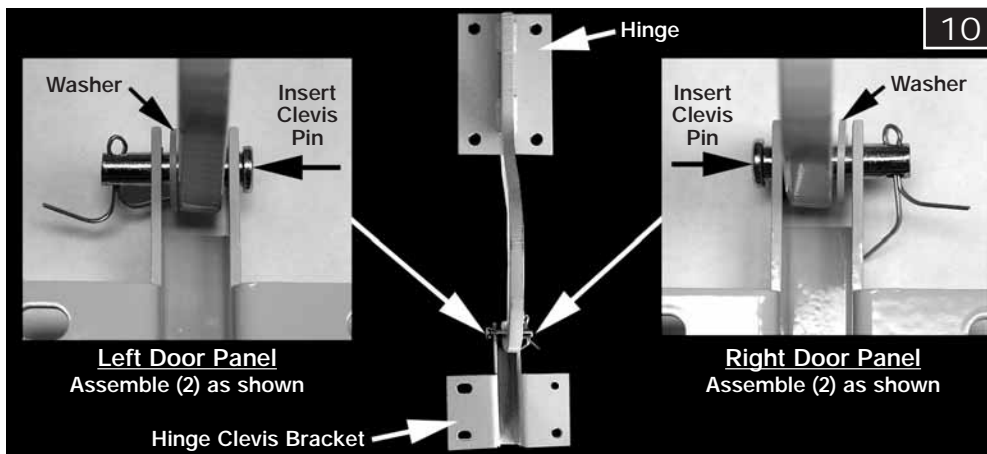
STEP 3: Install hardware on Door Panels

Remove door panels from carton and lay both flat on the ground with exterior or grain texture side down. Use packing cardboard under door panels to protect panels while installing hardware. Refer to picture on page 1 of instructions to identify right and left door panels. Note that door panels are also indented to indicate hardware location. Attach hardware to right door panel using 1/4-20 x 1" pan head screws as shown in **Figure 8B**. Hardware includes (1) spring bracket, (1) Door panel stiffener, and (1) slide bolt assembly. Attach handle assembly to exterior of right door panel using (2) screws as shown in **Figure 9**. Attach hardware to left door panel using 1/4-20 x 1" pan head screws as shown in **Figure 8A**. Hardware for this panel includes (1) spring bracket, (1) Door panel stiffener, and (1) slide bolt receiver bracket. Note: Hinges are not installed on door panels at this time. **Do not fully tighten the spring bracket fasteners until after the gas springs are installed.**



STEP 4: Hinge Assembly and Attachment

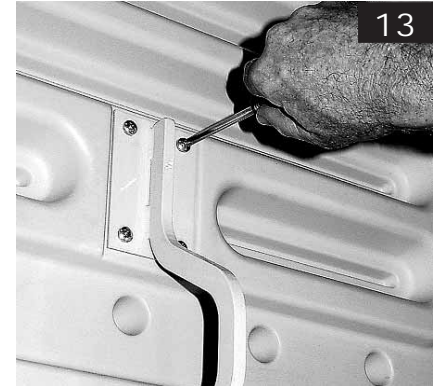
Attach each of the four hinges to a hinge clevis bracket using a 5/16" x 1" clevis pin, 3/4" O.D. x 5/16" nylon washer, and 5/64" x 1" cotter pin as shown in **Figure 10**. **IMPORTANT:** clevis pin direction and placement of washer varies for each door panel. Position two hinges and hinge clevis "U" brackets on each door side piece as shown in **Figure 11**. Note that the "U" bracket is positioned on the lower holes on the top hinge and the higher holes on the bottom hinge. Attach each bracket using (4) 1/4-20 x 1" pan head screws as shown.



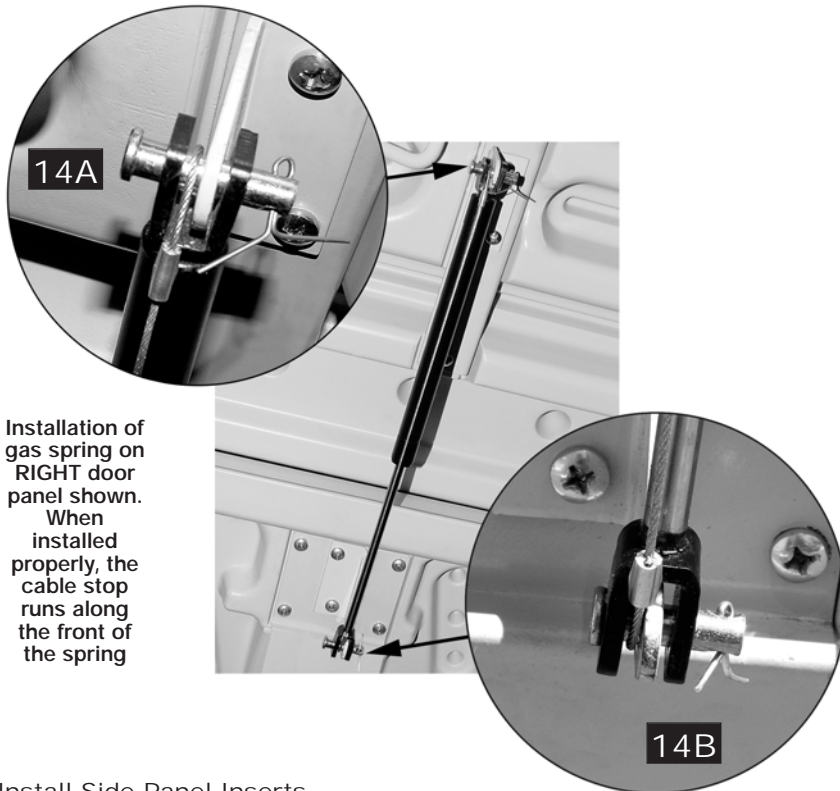
STEP 5: Install Door Panels on Frame

Note: Because of the size of the doors, it may take two people to attach the door panels to the door frame.

Starting with either door panel, position panel on side piece so that the door is in the closed position. Note that there are (8) hinge mounting holes in each door panel, (4) for each hinge. Start by attaching the top hinge to the door panel with (1) 1/4-20 x 1" pan head screw, hand-tightened about half way. Position bottom hinge on cover panel and hand tighten all four mounting screws. Insert remaining three screws into top hinge and hand tighten. Once all eight hinge attachment screws are in place, tighten securely with a screw driver as shown in **Figure 13**.



STEP 6: Install Gas Springs

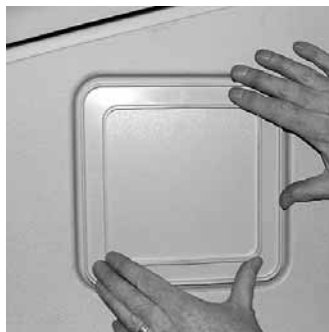


Installation of gas spring on RIGHT door panel shown. When installed properly, the cable stop runs along the front of the spring

IMPORTANT: Do not remove the gas spring restraining straps until instructed. Starting with either side, connect gas spring and cable stop to the door panel bracket using (1) 5/16" x 1" clevvis pin and (1) 5/64" x 1" cotter pin as shown in **Figure 14A**. Make sure that cable stop is inserted between bracket and gas spring as shown. **IMPORTANT:** Clevvis pin must be angled with the head on the higher end for a proper connection. Connect lower end of gas spring and cable stop to the side piece bracket using (1) 5/16" x 1" clevvis pin and (1) 5/64" x 1" cotter pin as shown in **Figure 14B**. Make sure that cable stop is inserted between bracket and gas spring as shown. Once the gas spring is secured on both ends, cut and discard the restraining strap. Repeat instructions for installation of gas spring on other door panel. **After gas springs are both installed, close both covers and tighten the fasteners for the gas spring brackets from below.**

STEP 7: Install Side Panel Inserts

The Ultra Series basement door is equipped with interchangeable side panel inserts. Inserts allow you to add light and/or ventilation to your basement areaway. A description of insert options is provided below and complete installation instructions are supplied in the insert kit.



Solid Panel Insert

Used when light and ventilation are not required in areaway



Clear Panel Insert

Adds light to basement areaway. Features polycarbonate panel and full gasketing



Vent Panel Insert

Adds ventilation to basement areaway. Features full gasketing and insect screen

Painting and Maintaining your Ultra Series Basement Door

The Bilco Ultra Series basement door is made from a corrosion resistant high-density polyethylene material that cannot be painted. The door also features corrosion resistant materials and is designed to be virtually maintenance free. The door can be cleaned as required using standard, non abrasive household cleaners. Occasional lubrication of all moving parts with a standard spray lubricant is recommended.

DO NOT PAINT DOOR

IMPORTANT:
An interior door at the bottom of the steps is required to prevent heat loss and reduce condensation.

Replacing a door where new concrete capping is required

If this is a replacement door installation requiring a new concrete cap, first remove top 3" to 4" of deteriorated masonry to permit pouring the cap without increasing the height of the present top step. Or, roughen the top of wall with hammer and chisel to ensure good bond between old and new masonry. Build a simple wood form as shown in **Figure 16** ensuring that the form is level and square. The top of the new concrete capping should be a little higher than the surrounding grade. A height of at least 4" is desirable.

Assemble door frame per STEP 1 on page 2 of these instructions. Move the assembled frame into place over capping form as shown in **Figure 17**. Position frame exactly as it will be when the capping is poured. This is done by blocking up the frame temporarily so bottom of side pieces are at the same height as the top of the inside form board. **All parts of the Bilco basement door must rest on top of the concrete capping and must not be buried in it.** Siding above the door may need to be removed and replaced to position door flush against the house. **Place a level against side piece and check plumb. Square door by measuring diagonals and shifting frame as required.** Place the #12 x 1-1/2" slotted hex head screws with washers and spacers in anchor slots as shown in **Figure 17**. Attach two spring nuts to each of the screws as shown.

Attach hardware to door panels and door panels to assembled frame by following STEPS 3, 4, 5 starting on page 3 of these instructions. **Note: Do not install gas springs per STEP 6 at this time.** Install header gasket and side panel inserts by following the instruction in STEPS 7 and 8 on page 4.

Pour capping and close doors to recheck alignment. Be sure capping is level to prevent water accumulation around base of door frame. After concrete hardens remove forms and tighten all anchor screws. Install gas springs on each door by following STEP 6 on page 4. **Caulk all around the exterior of the frame where it meets the masonry and at the seams between the new capping and foundation walls with exterior grade silicone caulk.**

Replacing a door where there are sloping masonry sidewalls

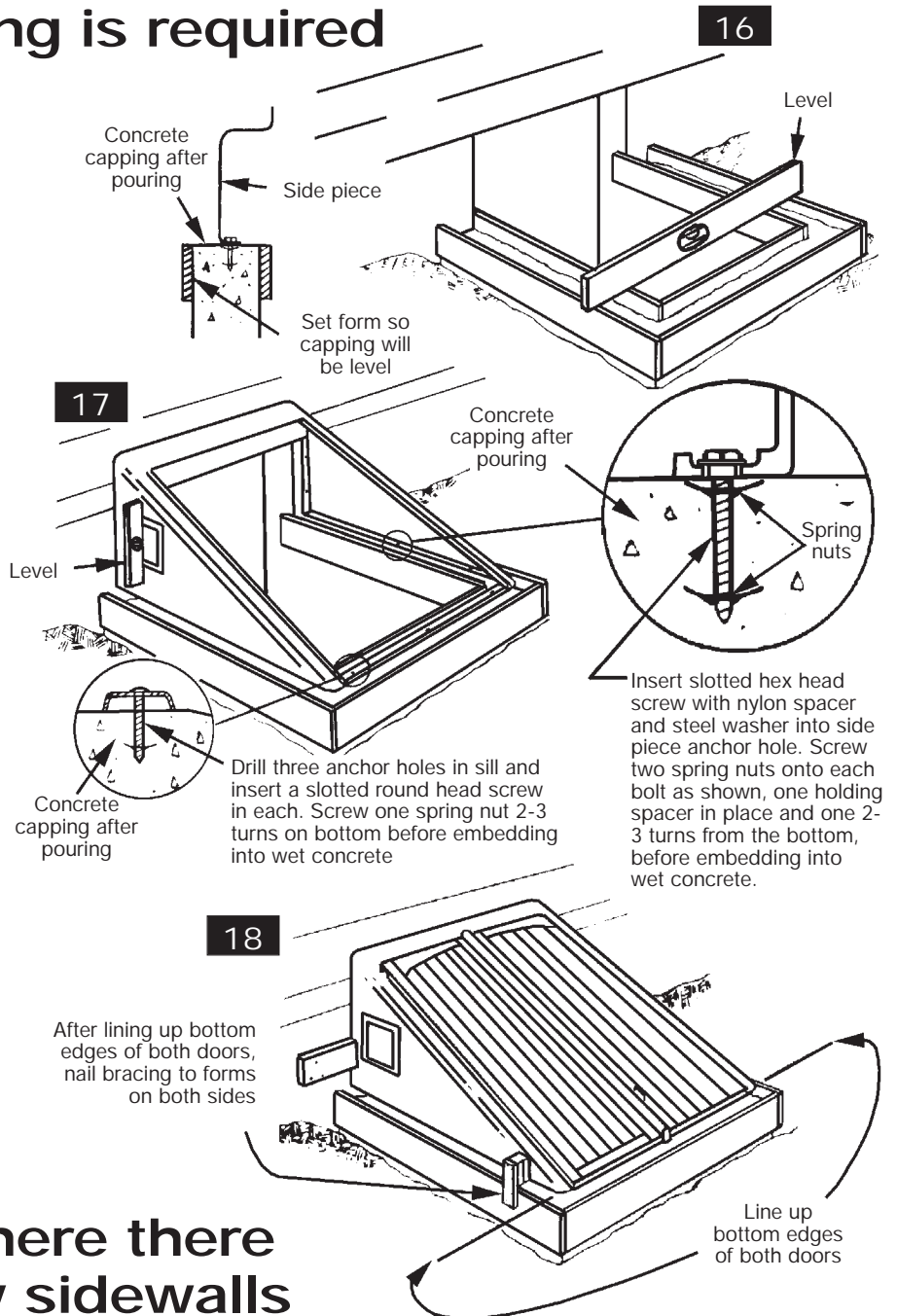
Sidewalls in poor condition

If the sloped masonry sidewalls of your areaway have loose or crumbling masonry and are not structurally sound, they can be removed and an Ultra Series door can be installed on the new flat areaway. Remove and discard existing basement door. If sloping masonry sidewalls are of stone, brick, block, or poured concrete, they can usually be removed by striking them with a sledge hammer (see photo on right). Be sure to wear safety goggles. Usually more than 10 to 20 blows are required before the masonry will start to crack. Once sidewalls are removed and debris has been cleared, follow the above section (Replacing a door where new concrete capping is required) to cap your areaway and install your door.

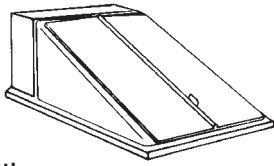


Sidewalls in good condition

A Bilco Door can be installed on your sidewalls if they are structurally solid, have no loose or crumbling masonry, and have a uniformly flat and level surface on which to anchor a door. If your sidewalls meet these conditions, it is best to return the Ultra Series door and use a Bilco Sloped Wall Basement Door. The SLW Door (shown on left) will simplify your installation by capping over your existing sidewalls. Note: the SLW door is only available in prime painted steel construction.

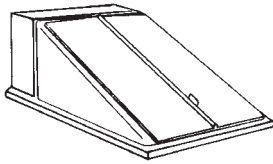


Adapting the Bilco basement door to unusual conditions



To increase length:

If additional door length is needed, extensions are available for Size C Ultra Series Bilco basement doors. Easily assembled and installed, Bilco extensions are manufactured in 6" and 12" lengths. Two or more extensions can be mounted together if even more length is needed. Caulk between extension sides and provide flashing at the joint against the house.



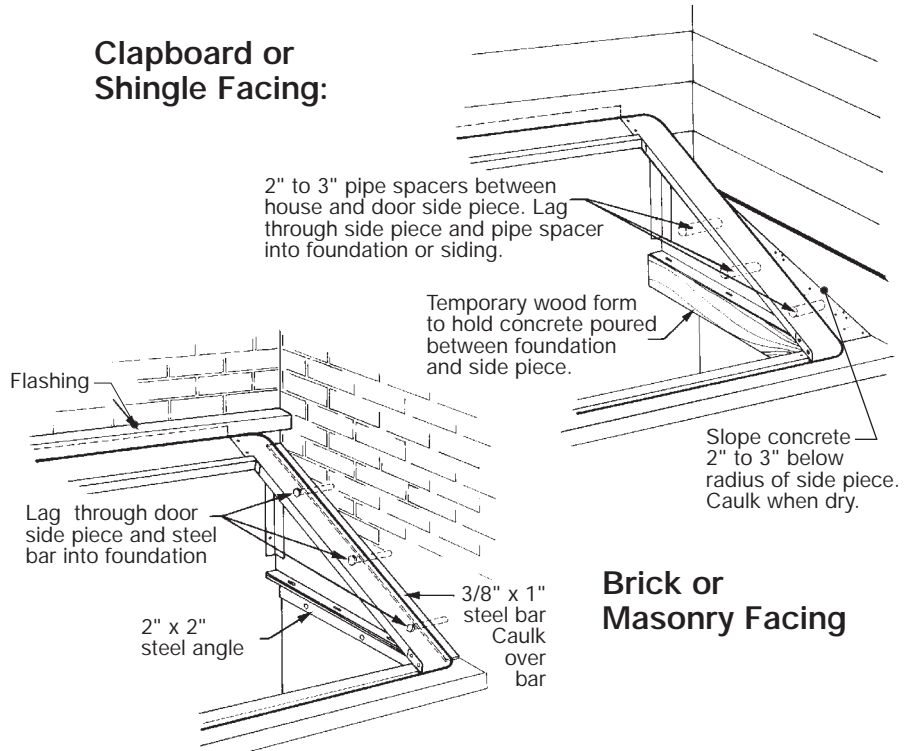
When areaway is too short, narrow or wide:

If the opening is too narrow or too short, pour additional concrete to form a ledge along one side or the front. If the opening is too wide to allow fastening the 1-1/2" flanges on the Bilco basement door, make a simple form to build a ledge extending inside the opening the amount necessary. If the required width reduction is more than eight inches, build up a course of blocks inside.

When areaway is in a corner:

On a corner installation, it is best to install the side piece as far as possible from the masonry wall. Try to leave space for a broom, and have the concrete pitched forward to allow good drainage. Where the side piece must be anchored to the building wall, the following details show methods for securing a waterproof joint:

Clapboard or Shingle Facing:



How to correct installation errors or repair minor damage*

* The Bilco basement door is carefully and adequately packed to withstand all normal shipping abuse. This information is provided to show how easily minor repairs can be made, thus saving the builder or homeowner much unnecessary inconvenience. If you require additional information or assistance, please contact our customer service department (owner may wish to use the Remarks section of the postage-paid card in the envelope packed with the door). Your satisfaction is important to us.

Customer Service: (800) 854-9724 (Available Monday - Friday 8:15 a.m. - 5:00 p.m. EST)

Door not shedding water. If your Bilco basement door does not shed water, look for and correct these installation errors.

1. **Doors do not fully close.** Stand on steps and slowly close each door to see if the bottom edge of one or both is binding on the concrete. Chip away or rub down excess concrete with mason's stone so flange is not obstructed. Refer to instructions at right for adjustments if required.
2. **Masonry not high enough.** The masonry under the Bilco basement door should be 4" higher than the surrounding grade and concrete should be level so water cannot accumulate in front of the sill.
3. **Water seeping between sides and masonry.** The unit should be caulked all around the exterior where the sides and masonry meet, as well as where the unit joins the building wall. If side pieces have been buried in concrete, the unit should be removed and stairwell recapped so assembly rests on top.
4. **Blocked header.** Make certain header is clear. Any blockage in this channel will cause water to overflow the header.

NOTE: To check your door, set garden hose on medium spray and direct it upward so water falls on the door to simulate rain.

Doors Out of Alignment or Doors Not Seated Properly. If doors do not seat themselves properly or bounce slightly when in closed position, and bottom flanges of doors are not obstructed by concrete in front of sill, loosen all fasteners on hinge and hinge clevis brackets until doors lay closed properly. Slowly retighten fasteners, alternating between location, until they are all fully tightened.

Door Warped or Bent. Place the end of the door on a block or bottom step of a nearby stairway. Step down on door and overbend with your foot.