

Series 4500 · Heavy Duty Rigid Insulated Impact Door

INSTALLATION INSTRUCTIONS

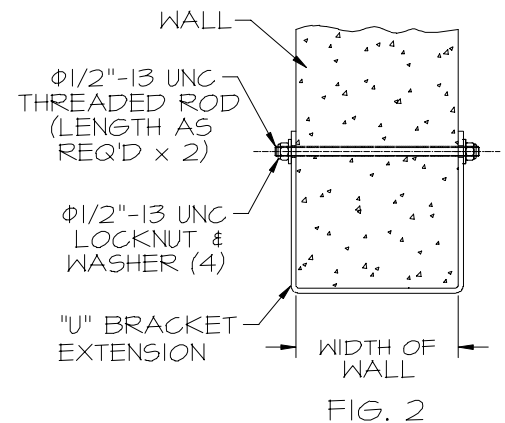
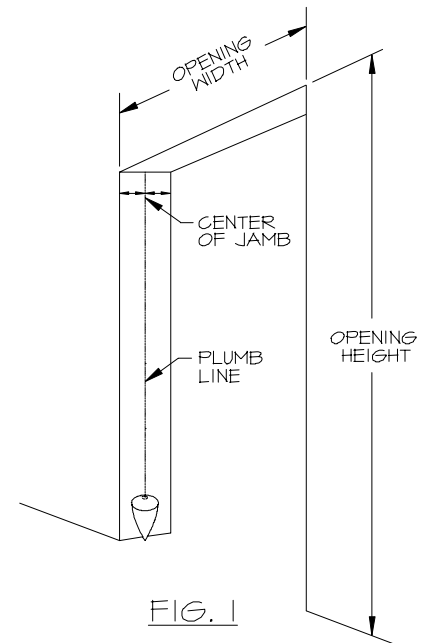
READ ALL INSTRUCTIONS BEFORE INSTALLING DOOR. SUPER SEAL MFG. LTD. WILL NOT BE HELD RESPONSIBLE FOR IMPROPER INSTALLATION OF ANCHORING DEVICES, OR FOR INSTALLATION INTO AGED OR UNSOUND CONCRETE, CONCRETE BLOCK, OR OTHER WALL OR FLOOR MATERIAL WHICH MAY RESULT IN PREMATURE PRODUCT WEAR, PRODUCT FAILURE, PROPERTY DAMAGE, OR PERSONAL INJURY.

1. Check Order

- a. **Measure door opening height and width.** Compare to Purchase Order. The allowable tolerance is $\pm 1/8"$.
- b. **Check Components List and Hardware Supplied list.** Make sure all components and hardware are present.
- c. **Recommended Door Jamb:** Steel, 1/4" thick by 8" wide. If the door jamb does not meet this standard, the customer must have Super Seal's "U" Bracket Extension.
- d. **Check Recommended Tools List.** Make sure all recommended tools are available.

2. Prepare Door Frame

- a. **Correct door opening height and width.**
 - **Measure left and right sides** of door opening from top to bottom. The height of the left and right sides of the opening should be the same.
 - **Measure the top and bottom** of door opening from side to side. The width of the top and bottom of the opening should be the same.
 - **Prepare shims** to correct any problems.
- b. **Prepare jamb.**
 - **Mount "U" Bracket Extension**, if needed.
 - * **Place top "U" bracket** at top of jamb.
 - * **Through bolt "U" bracket** to jamb (Figure 2).
 - * **Place bottom "U" bracket** at bottom of jamb and through bolt.
 - * **Place center "U" bracket** at marks noted in Figure 4, so that the hinge holes are centered on the "U" bracket. Through bolt to jamb.
 - **Measure the jamb width** at the top of the door jamb (Figure 1).
 - **Mark the center point.**
 - **Drop a plumb line** from the center point to the floor and mark.
 - **For corner installation**, drop plumb line from top corner of jamb to floor and mark.
- c. **Install Double Dutch**, if needed.
 - **See Double Dutch installation instructions**, Step DD1.
- d. **Install 4500APO**, if needed.
 - **See 4500 APO installation instructions**, Step APO1.



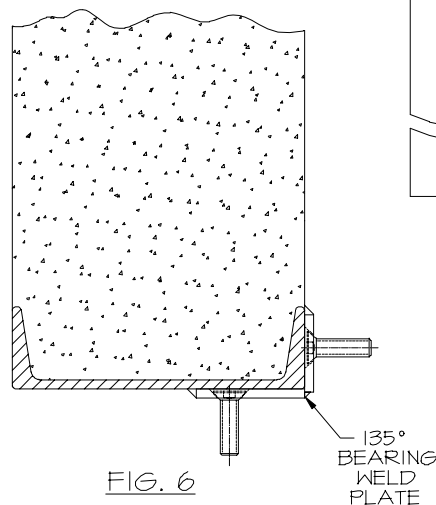
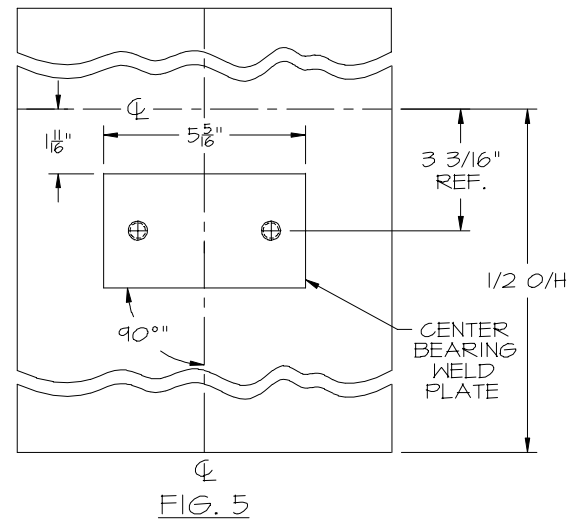
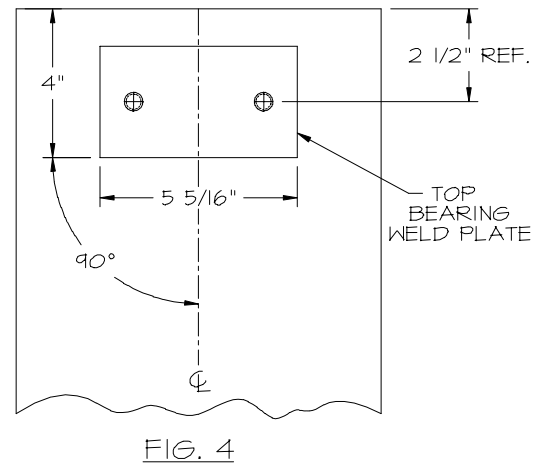
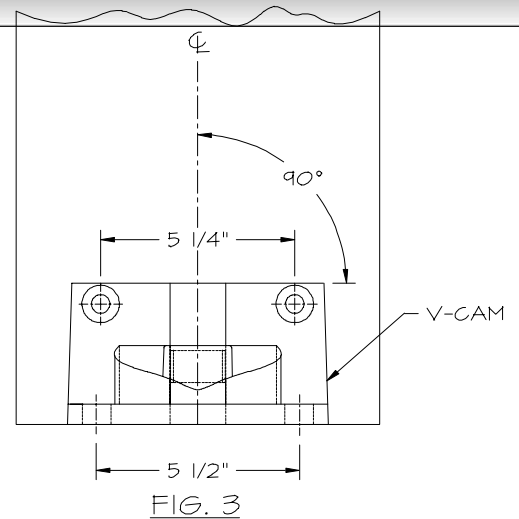
3. Attach Weld Plate to Jamb

- a. If using "U" bracket extension, only attach V-cam. No weld plates are required.
- b. Obtain permits for welding.
- c. Center Jamb Mount

- Attach v-cam to jamb.
 - * Place v-cam on finished floor at bottom of door jamb, center and square to the plumb line (Figure 2). Shim as needed.
 - * Drill and tap holes for 1/2" (13) C.S. Allen bolt, using v-cam as a template.
 - * Bolt v-cam to jamb only. Do not secure v-cam to floor.
- Attach top bearing weld plate to jamb.
 - * Measure 4" down from top of jamb (Figure 3).
 - * Mark line square to plumb line at 4" mark.
 - * Place bottom of weld plate along mark, center on plumb line.
 - * Weld into place.
- Attach center bearing weld plate to jamb for doors over 8'6" with a center bearing.
 - * Measure opening height along plumb line and mark the halfway point.
 - * Measure and mark 1-11/16" below the halfway point (Figure 4).
 - * Mark a line square to plumb line at 1-11/16" mark.
 - * Place top of center weld plate along mark, center to plumb line.
 - * Weld into place.

- d. 135° Jamb Mount

- Attach v-cam to corner of jamb.
 - * Place v-cam on finished floor at corner of jamb, center and square to corner plumb line. Shim as needed.
 - * Drill and tap holes for 1/2" (13) C.S. Allen bolt, using v-cam as a template.
 - * Bolt v-cam to jamb only. Do not secure v-cam to floor.
- Attach top bearing weld plate to jamb.
 - * Measure 4" down from top of door opening on both jamb and face of door.
 - * Mark a line across jamb and face, square to corner plumb line.
 - * Place bottom of weld plate along line, with longer side on jamb (Figure 5).
 - * Weld into place.
- Attach center bearing weld plate for doors over 8'6" with a center bearing.
 - * Measure opening height along corner plumb line and mark the halfway point.
 - * Measure and mark 1-11/16" below halfway point.
 - * Mark a line across jamb and face, square to corner plumb line at 1-11/16" mark.
 - * Place top of weld plate along line, with longer side on jamb.
 - * Weld into place.



4. Attach Door To Jamb

- a. Place v-cam follower on bottom shaft (Figure 9).
 - Tighten set screw.
- b. Place top hinge hardware onto shaft in the following order (Figure 7):
 - locking collar
 - spring
 - spring washer
 - top bearing
- c. Lift panel into place.
 - Position bottom shaft into v-cam.
- d. Place top bearing and center bearing, if needed, onto top and center weld plates.
- e. Secure bearings to weld plates with supplied hardware.
- f. For two-panel door, repeat step for other panel.

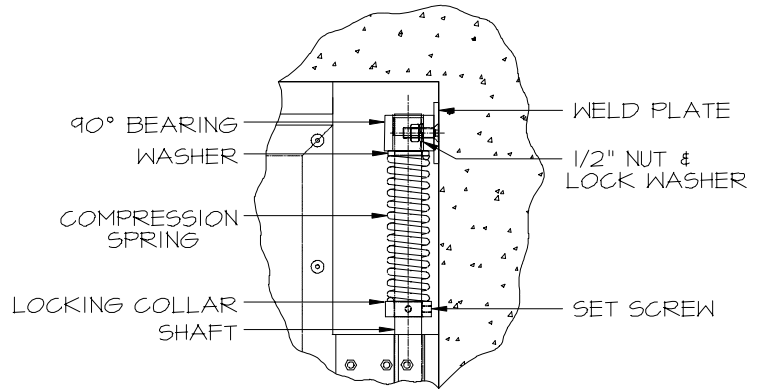


FIG. 7

5. Position Panel in Opening

- a. Loosen set screw in bottom v-cam follower.
- b. Center panel in opening (Figure 8).
- c. Check that door panel is level and even at the top and centered in the opening.
- d. Tighten set screw in v-cam follower.
- e. For two-panel door, repeat step for other panel.

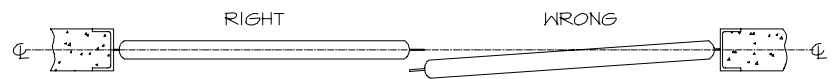


FIG. 8

6. Make Final Door Adjustment

- a. Allow panel to swing fully in both directions.
 - Adjust Double Dutch panels, if needed.
- b. If panel does not close in line repeat Step 5 until it does (Figure 8).
- c. If panel binds or does not swing freely, adjust hinge hardware slightly to make sure shaft moves freely.
- d. Drill 3/8" hole through v-cam follower and shaft. Use 3/8" spring pin pilot hole as guide.
- e. Insert spring pin.
- f. For two-panel door, repeat step for other panel.

7. Lubricate Shaft

- a. Clean away any filings from shaft.
- b. Open door 90°.
- c. Grease 2" portions of shaft above bottom hinge bearing, top v-cam hinge, and center bearing, if available.
- d. Swing panel back and forth a few times and repeat greasing until shaft is thoroughly lubricated at all friction points.
- e. For two-panel door, repeat step for other panel.

8. Adjust Door Tension

- a. Loosen set screws on the top bearing locking collar (Figure 7).
- b. Relocate locking collar to suitable position.
 - To increase tension, raise the locking collar.
- c. Tighten locking collar set screws into desired position.
- d. Drill through bottom v-cam to floor for 5/8" wedge anchor bolts (Figure 9).
- e. Properly shim v-cam to floor, if needed
- f. Insert bolts and tighten.
- g. For 4500APO, see Step 11.

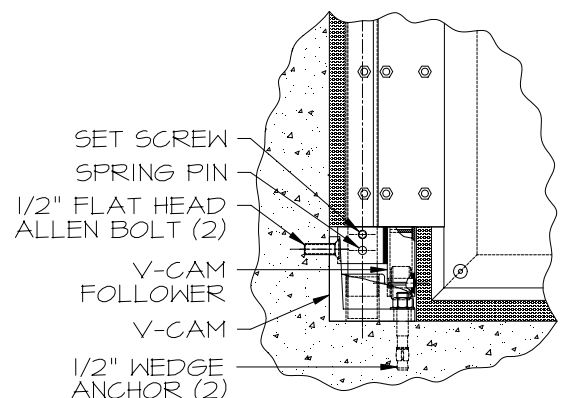


FIG. 9

9. Attach Top Vinyl Hinge Covers

- a. **Make sure jamb surface is clean and dry**, or hinge cover will not adhere properly.
- b. **Remove protective covering** from back of Velcro tape in hinge cover.
- c. **Press** one side of hinge cover onto jamb surface (Figure 10).
- d. **Position vinyl loop** so it just touches door panel.
- e. **Attach** remaining side of Velcro tape.
- f. **Repeat** for each hinge cover.
- g. **For 4500APO**, see Step 11.

Note: If the doors are completely installed and are misaligned, complete the following steps:

- **Remove door** from opening.
- **Remove the spring pin** from the v-cam follower
- **Remove the v-cam follower** from the shaft
- **Drill a new 3/8" hole** through both sides of the v-cam follower (Figure 11).
- **Slide the v-cam follower** on the shaft.
- **Re-install the door panel** according to the installation instructions above.

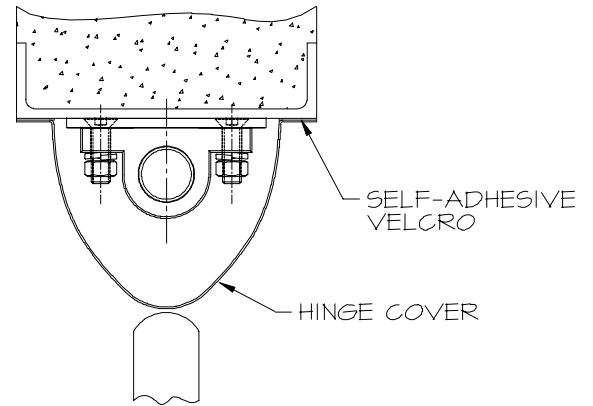


FIG. 10

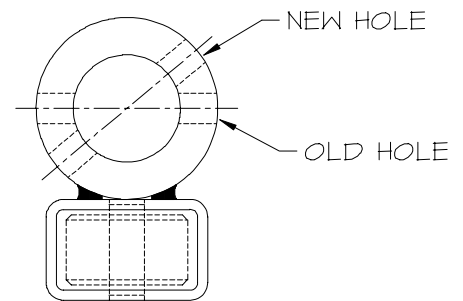


FIG. 11

Double Dutch Installation

DD1. Prepare Double Dutch Door Frame

- a. **Determine overall height** of Double Dutch panel.
 - **Measure** panel from top of upper gasket to bottom of lower gasket.
- b. **Mark** Double Dutch panel height on jamb.
 - **Measure and mark down** from top of jamb (Figure 12).
- c. **Measure overall height** of door panel.
 - **Measure** panel from top of upper gasket to bottom of lower gasket.
- d. **Mark** door panel height on jamb.
 - **Measure and mark up** from finished floor.
- e. **For two-panel Double Dutch**, repeat step for other panel.

DD2. Prepare Hinge Mounting Holes

- a. **If using "U" bracket extension with studs**, move to Step DD3.
- b. **Standard Installation**
 - **Prepare top v-cam hinge mounting holes.**
 - * **Measure and mark 4-7/8"** from top of jamb along plumb line (Figure 13).
 - * **Measure and mark two point 1-3/4"** on both side of plumb line at 4-7/8" mark. Make sure marks are square to the plumb line.
 - * **Drill and top** holes for 1/2" bolts at two points.
 - **Prepare bottom bearing hinge mounting holes.**
 - * **Measure and mark 9-3/8"** up from overall Double Dutch height mark along plumb line (Figure 14).
 - * **Measure and mark two point 1-3/4"** on both sides of plumb line at 9-3/4" mark. Make sure marks are square to the plumb line.
 - * **Drill and tap** holes for 1/2" bolts at two points.

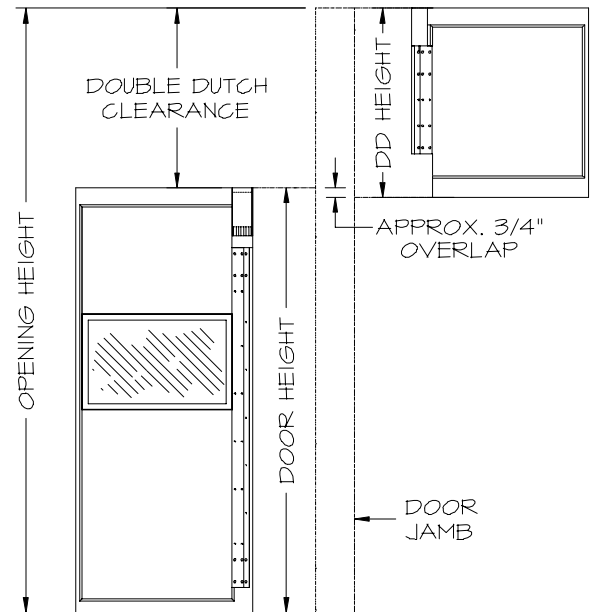


FIG. 12

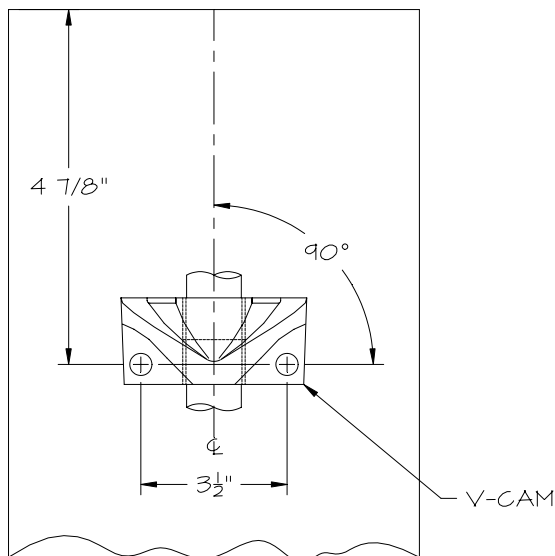


FIG. 13

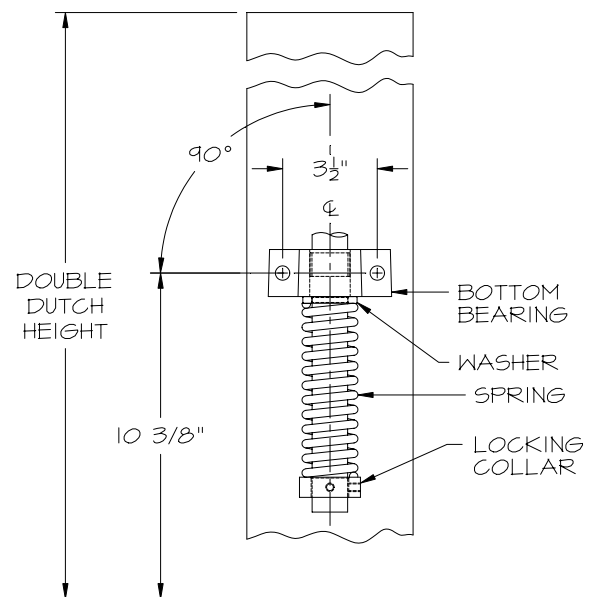


FIG. 14

DD2. Prepare Hinge Mounting Holes, continued

c. Weld Plate Installation

- * For corner weld plate installation, center the weld plates on the corner plumb line. The longer side of the corner weld plate goes on the jamb.
- **Obtain permits** for welding.
- **Prepare top v-cam weld plate.**
 - * **Measure and mark 6" down** from top of jamb (Figure 15).
 - * **Mark** a line square to plumb line at 6" point.
 - * **Place** bottom of weld plate along line, centered to plumb line.
 - * **Weld** into place.
- **Prepare bottom bearing weld plate.**
 - * **Measure and mark 10-7/8" up** from overall Double Dutch height mark (Figure 16).
 - * **Mark** a line square to plumb line at 10-7/8" point.
 - * **Place** top of weld plate along line, centered to plumb line.
 - * **Weld** into place.

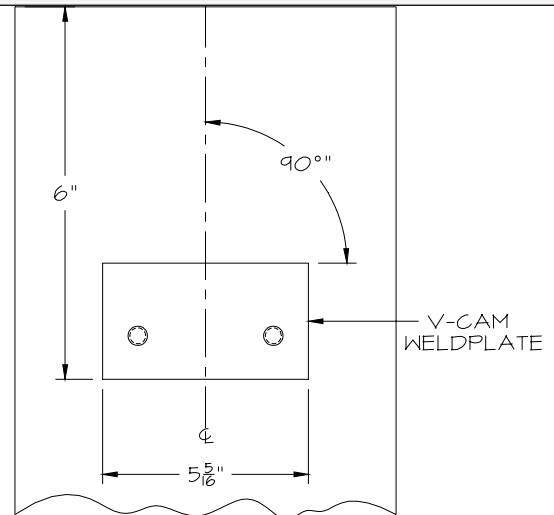


FIG. 15

d. Corner Installation

- **Prepare top v-cam hinge mounting holes.**
 - * **Measure and mark 4-7/8" down** from top of jamb along corner plumb line (Figure 12).
 - * **Measure and mark 2-1/16"** from corner plumb line to inside the jamb and 1-1/8" from corner plumb line to face of frame at 4-7/8" mark. Mark sure marks are square to the plumb line (Figure 17).
 - * **Drill and tap** holes from 1/2" bolt at two points.
- **Prepare bottom bearing hinge mounting holes.**
 - * **Measure and mark 9-3/8" up** from overall Double Dutch height mark along plumb line (Figure 12).
 - * **Measure and mark 2-1/16"** from corner plumb line to inside the jamb and 1-1/8" from corner plumb line to face of frame at 9-3/8" mark. Make sure marks are square to the plumb line (Figure 17).
 - * **Drill and tap** holes for 1/2" bolt at two points.

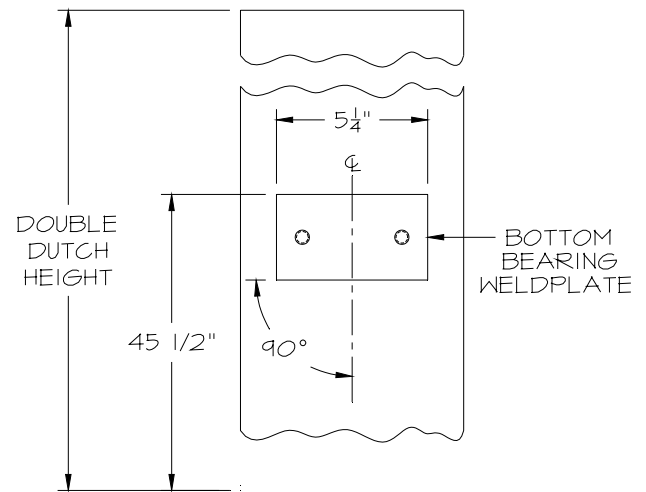


FIG. 16

- e. **For two-panel Double Dutch**, repeat step other panel.

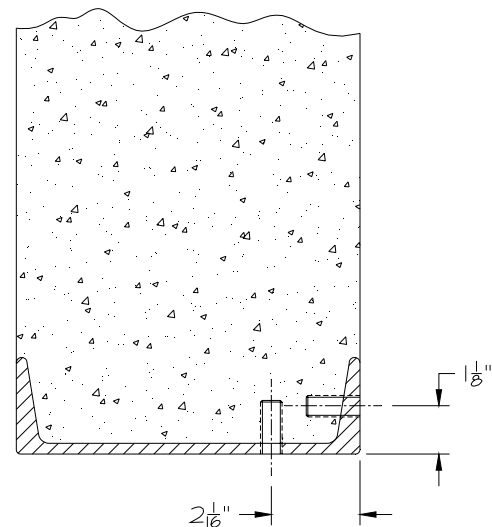


FIG. 17

DD3. Attach Double Dutch Door to Jamb

- a. **Place Double Dutch door panel on floor.** Protect door from dirt or damage.
- b. **Place bottom hinge hardware onto shaft** in the following order (Figure 14):
 - bearing
 - washer
 - spring
 - locking collar
 - Secure with set screw.
- c. **Lift Double Dutch panel** completely upright.

TIP: If not using weld plates, align bottom bearing on panel with center of jamb (Figure 18). Place supplied hardware with lock washer through hole in bearing and matching tapped hole in jamb. Barely tighten. Lift and pivot panel into place.
- d. **Place shim or jacking bar under shaft** and jack panel up to help maintain door height while installing hinge hardware.
- e. **Attach all hinges** with supplied hardware.
- f. **Tighten** mounting hardware.
- g. **Remove shim or jacking bar** from under shaft.
- h. **For two-panel Double Dutch**, repeat step for other panel.

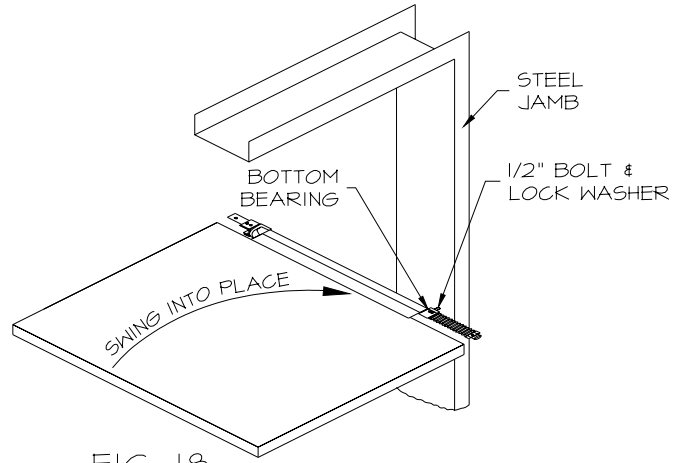


FIG. 18

DD4. Install Door panel

- a. **Install door panel after Double Dutch panel** is installed, following Steps 3-9.

4500APO Installation

APO1. 4500 APO Installation Sequence

- a. **Obtain permits** for welding.
- b. **Center studded weld plate** at top of jamb (Figure 19).
- c. **Weld** into place.
- d. **Continue** with Steps 3, 4, 5, 6, 7, and 8.
- e. **After completing Step 8:**
 - **Attach jamb mounted jamb guard** at top of jamb.
- f. **Continue** with Step 9.
- g. **After completing Step 9:**
 - **Drill cane bolt holes** through floor and lintel.

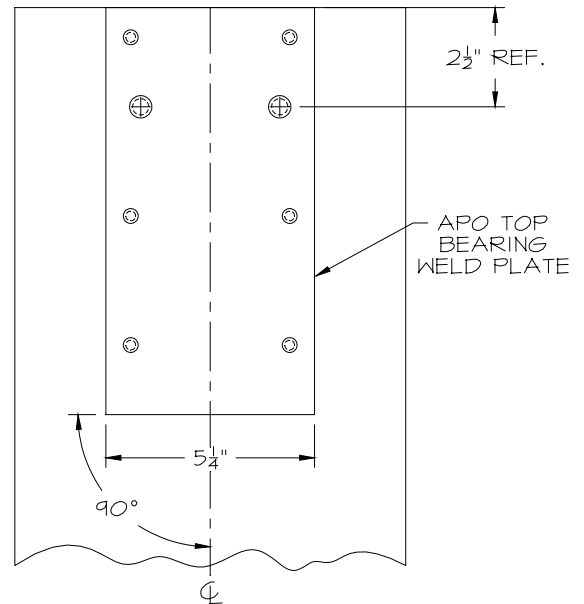


FIG. 19

Maintenance

- a. Every 4 months use General Purpose Grease BR2+ to grease the following:
 - Bottom Shaft (Figure 9), mounted in the bottom v-cam.
 - Top Shaft (Figure 7), mounted in the top bearing.
 - Center Shaft, mounted in the center bearing, if needed.

Components List (per Panel)

No.		Qty. ≤ 102"	Qty. > 102"
1	Door Panel (Assembled)	1	1

Hardware Supplied List (per Panel)

No.		Qty. ≤ 102"	Qty. > 102"
2	90° V-cam Total	1	1
3	V-cam Follower c/w 1 - 3/8" x 3/8" Set Screw	1	1
4	90° Bearing(s) Total	1	2
5	Compression Spring	1	1
6	Metal Washer	1	1
7	Locking Collar c/w 2 - 3/8" x 3/8" Set Screw	1	1
8	Vinyl Hinge Cover	1	1
9	3/8" x 2-1/4" Spring Pin	1	1
10	90° Bearing Weld Plate(s)	1	2
11	1/2" (13) Hex Nuts	2	4
12	1/2" B.S. Lock Washers	2	4
13	5/8" x 3-1/2" Wedge Anchors	2	2
14	1/2" (13) x 1-3/4" C.S. Allen Bolt	2	2
15	Installation Instructions	1	1

Recommended Tools List (Basic Installation, not including Options)

Qty.		Qty.	
1	Tape Measure	1	Hammer Drill
1	Plumb Line or Level	1	5/8" Masonry Drill Bit
1	Pencil or Marker	1	3/4" Wrench
1	Square	1	5/16" Allen Key
1	Power Drill	1	Welder (For 1/4" Mild Steel)
1	7/16" HSS Drill Bit	1	17mm or 11/16" Wrench
1	3/8" HSS Drill Bit	1	3/16" Allen Key
1	1/2" – 13 UNC Tap	1	Hammer
1	Tap Wrench		General Purpose Grease BR2+
1	Tapping Fluid		