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 DRAWN BY: MLW

### PREPARATION

MEASURE WIDTH AND HEIGHT OF FRAMED OPENING AND COMPARE WITH OTHER DIMENSIONS.

FRAMED OPENING DIMENSIONS MUST MEET ORDER DIMENSIONS WITHIN THE FOLLOWING TOLERANCES:  
 SINGLE DOORS: HEIGHT: +1" -1/2"  
 WIDTH: +0" -1/2"  
 DOUBLE DOORS: HEIGHT: +1" -1/2"  
 WIDTH: +3/8" -1"

IF THE FRAMED OPENING DOES NOT MEET THE ORDER DIMENSIONS WITHIN THESE TOLERANCES CALL THE FACTORY AT 1-800-547-6856

### FOR PROPER INSTALLATION

FRAMED OPENINGS MUST BE SQUARE AND PLUMB. MAKE ANY NECESSARY ADJUSTMENTS TO SQUARE AND PLUMB OPENING. DURALITE DOORS MUST BE INSTALLED PLUMB.

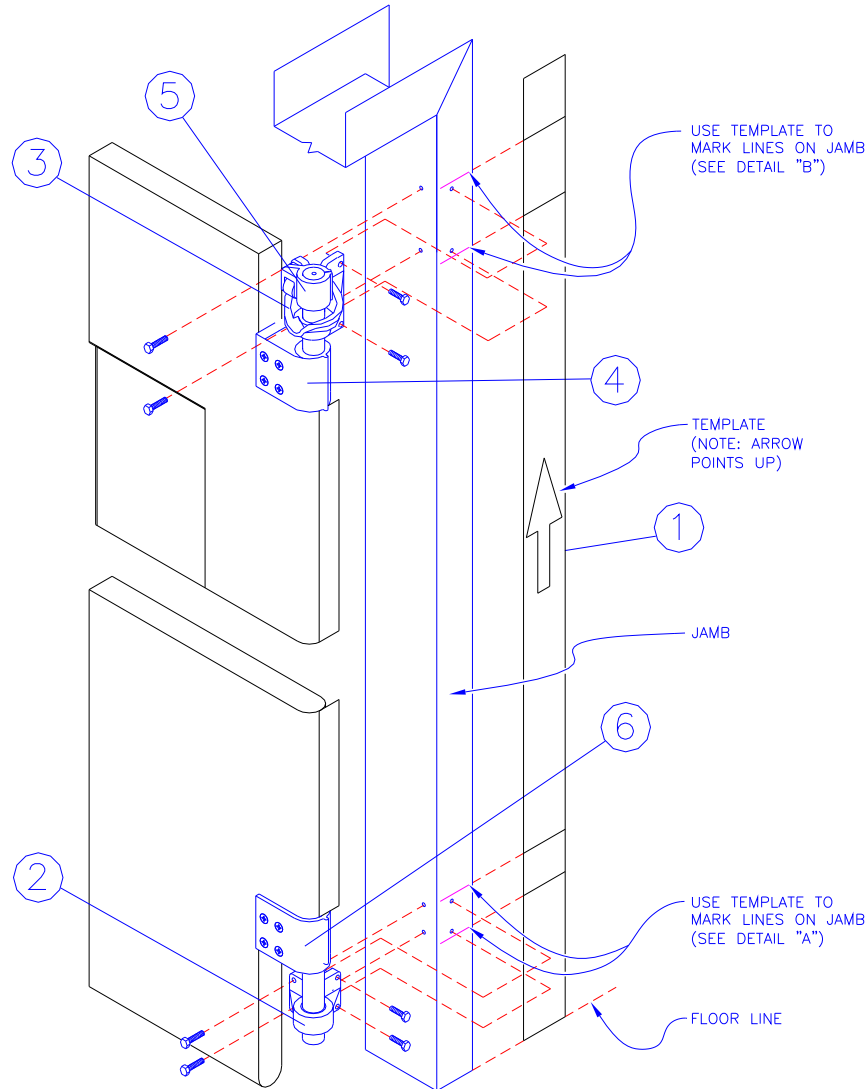
### DRILL BIT SIZES

FOR: ② ③  
 FOR STEEL JAMBS UP TO 3/8" THICK  
 USE: 1/8" DRILL BIT.  
 FOR STEEL JAMBS 3/8" THICK AND ABOVE  
 USE: 13/64" DRILL BIT.  
 FOR SECURITY DOORS  
 USE: #7 DRILL BIT.  
 (ON SECURITY DOORS USE A 1/4-20 TAP ON ② AND ③ ONLY)

### FASTENERS

FOR: ② ③  
 FOR STEEL JAMB  
 USE: 1/4" X 1-1/2 TEK SCREW.  
 FOR SECURITY DOORS  
 USE: 1/4-20 X 7/8" SOCKET HEAD.

## DURALITE 180° X 90° INSTALLATION INSTRUCTIONS



### STEP 1. MARKING AND DRILLING JAMB FOR HARDWARE.

FACE THE OPENING FROM THE 180° SWING SIDE. ALL REFERENCES TO LEFT AND RIGHT SIDES IN THESE INSTRUCTIONS SHOULD BE TAKEN AS VIEWING THE JAMB FROM THIS PERSPECTIVE. THE V-CAMS ③ ARE MARKED WITH AN "L" FOR LEFT SIDE AND AN "R" FOR RIGHT SIDE. THEY ARE MARKED ON THEIR LOWER SURFACE, INSTALL V-CAMS WITH THE MARKED SURFACE DOWN. PILLOW BLOCK ② ARE MARKED WITH A PART NUMBER ON THEIR UPPER SURFACE, INSTALL PILLOW BLOCKS WITH THE MARKED SURFACE UP.

PLACE TEMPLATE ① ON FACE OF JAMB ON 180° SWING SIDE. WITH BOTTOM OF TEMPLATE ① TOUCHING FLOOR, MARK THE FOUR LINES ON TEMPLATE ① ONTO FACE OF JAMB. REMOVE TEMPLATE ①. EXTEND THE FOUR LINES ACROSS THE FACE OF THE JAMB WITH A STRAIGHT EDGE. PLACE PILLOW BLOCK ② ON LOWER SET OF TWO LINES ON JAMB FACE (SEE DRAWING "A" AT BOTTOM OF PAGE). MARK THE FOUR PILLOW BLOCK ② MOUNTING HOLES ONTO JAMB WITH A CENTER PUNCH. PLACE V-CAM ③ ON TOP SET OF LINES (SEE DRAWING "B" AT BOTTOM OF PAGE). MARK THE FOUR V-CAM ③ MOUNTING HOLES ONTO JAMB WITH A PUNCH. DRILL THE EIGHT HARDWARE MOUNTING HOLES AT THE LOCATIONS MARKED (SEE DRILL BIT SIZES FOR V-CAM ③ AND PILLOW BLOCK ② AT LEFT)

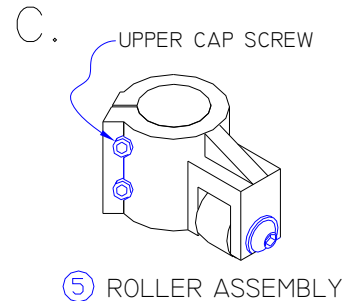
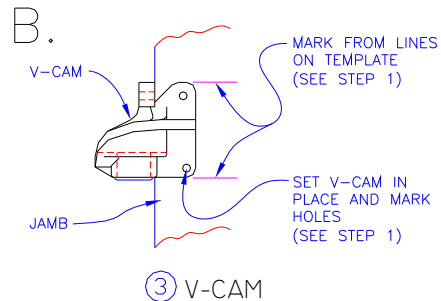
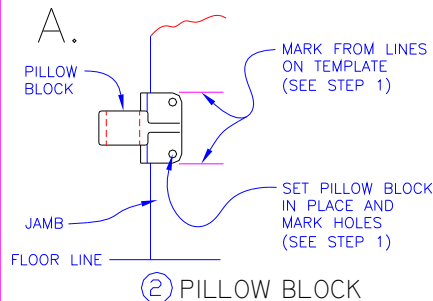
### STEP 2. ATTACHING HARDWARE AND HANGING DOOR.

ATTACH RIGHT AND LEFT PILLOW BLOCKS ② TO JAMB WITH FASTENERS. LOCATE THE UPPER HINGE POST ④ AND PLACE V-CAM ③ AND ROLLER ASSEMBLY ⑤ ON HINGE POST (MAKE SURE LEFT HAND AND RIGHT HAND V-CAMS ARE ON THE PROPER DOORS. WHEN THE DOORS ARE IN THE CLOSED POSITION THE BACK GASKET SHOULD BE ANGLED BACK TOWARD THE JAMB). MAKE THE TOP OF THE ROLLER ASSEMBLY ⑤ FLUSH WITH THE TOP OF THE UPPER HINGE POST AND ALIGN ROLLER ON ROLLER ASSEMBLY ⑤ WITH THE CENTERLINE OF THE DOOR. TIGHTEN UPPER CAP SCREWS (SEE DRAWING "C" AT BOTTOM OF PAGE) WITH ALLEN WRENCH PROVIDED. RAISE ONE DOOR AND PLACE LOWER HINGE POST ④ INTO PILLOW BLOCK. REST BOTTOM OF DOOR ON 2"x4" WOOD BLOCK. ATTACH THE V-CAM ③ TO THE JAMB WITH FASTENERS. REMOVE THE 2"x4" WOOD BLOCK. FOLLOW PREVIOUS FOUR STEPS TO MOUNT SECOND DOOR ON JAMB. (COMPLETE SPRING ASSIST STEP "A" NOW, SEE SECTION "D" PAGE 2).

### STEP 3. DOOR SWING AND HEIGHT ADJUSTMENT.

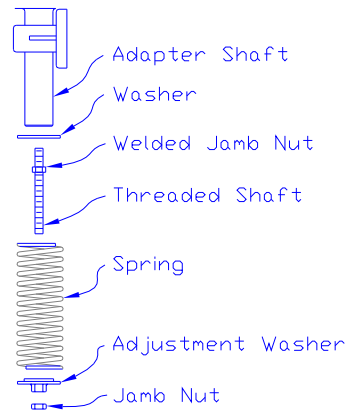
PLACE 7/8" DOOR ADJUSTER PIPE UNDER DOOR. LOOSEN THE UPPER CAP SCREW ON THE ROLLER ASSEMBLY ⑤. PLACE ROLLER ON THE ROLLER ASSEMBLY ⑤ ON THE LOWEST POSSIBLE POSITION OF THE V-CAM ③. SWING DOOR UNTIL IT IS PARALLEL TO THE JAMB HEADER AND TIGHTEN THE UPPER CAP SCREW. (REPEAT SWING ADJUSTMENT ON SECOND PANEL). WITH BOTH DOORS PARALLEL TO THE JAMB HEADER, CHECK THE LEADING EDGE SEAL OF THE DOORS. IF THE DOORS DO NOT SEAL THE ENTIRE HEIGHT, LOOSEN THE UPPER CAP SCREW ON EITHER DOOR AND ADJUST THE SWING UNTIL A SEAL IS OBTAINED IN THE CENTER OF THE OPENING. (IF THE GASKETS SEAL AT THE TOP OR BOTTOM ONLY, THE JAMBS ARE NOT PLUMB). \*SEE NOTE BELOW BEFORE PROCEEDING\* REMOVE THE DOOR ADJUSTER PIPE. TIGHTEN THE UPPER CAP SCREW AS TIGHT AS POSSIBLE. CAREFULLY OPEN THE DOOR AND TIGHTEN THE LOWER CAP SCREW ON THE ROLLER ASSEMBLY. CHECK THE FUNCTION IN BOTH DIRECTIONS. BE SURE TO CHECK THE ALIGNMENT AND HEIGHT ADJUSTMENT OF THE DOORS BEFORE PINNING THE ROLLER ASSEMBLY. PLEASE REFER TO PAGE 2 SECTIONS "D" AND "E" AT THIS TIME.

\*NOTE: ON FULLY GASKETED DOORS ONLY - LOOSEN THE ROLLER ASSEMBLY UPPER CAP SCREW SLIGHTLY AND RAISE OR LOWER DOOR UNTIL BOTTOM GASKET JUST TOUCHES FLOOR.



## D. SPRING ASSIST INSTALLATION.

**CAUTION:** SPRING COILS MUST NOT TOUCH WHEN DOOR IS IN THE OPEN POSITION. OVER TIGHTENING THE SPRING ASSIST WILL SEVERELY DAMAGE YOUR ROLLER ASSEMBLY.



FOLLOW DOOR INSTALLATION THROUGH ATTACHING HARDWARE AND HANGING DOOR, THEN:

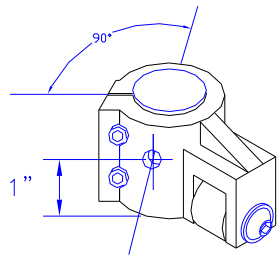
A. PLACE WASHER ON BOTTOM OF LOWER HINGE ADAPTER SHAFT. INSERT THREADED SHAFT INTO LOWER HINGE ADAPTER POST UNTIL THE WELDED LAMB NUT BOTTOMS OUT. TIGHTEN ONE HALF TURN WITH AN OPEN END WRENCH. PLACE SPRING OVER THREADED SHAFT AND THEN PLACE ADJUSTMENT WASHER ONTO THREADED SHAFT. DO NOT TIGHTEN AT THIS TIME.

COMPLETE DOOR SWING AND HEIGHT ADJUSTMENT AND PIN ROLLER ASSEMBLY, THEN:

B. TIGHTEN ADJUSTMENT WASHER UNTIL THE DESIRED CLOSING ACTION IS OBTAINED. THREAD JAMB NUT ONTO THREADED SHAFT UNTIL IT BINDS WITH ADJUSTMENT WASHER. PLACE OPEN END WRENCHES ON THE ADJUSTMENT WASHER AND THE JAMB NUT, TURN ONE AGAINST THE OTHER TO LOCK THE ADJUSTMENT WASHER IN PLACE.

## E. ROLLER PINNING INSTRUCTIONS.

**NOTES:** 1. DO NOT PIN ROLLER ASSEMBLY UNTIL SPRING ASSIST INSTALLATION STEP "A" IS COMPLETED.  
2. AS THIS PROCEDURE WILL PERMANENTLY FIX THE DOORS IN THEIR OPERATIONAL ARC. THE DOORS MUST BE IN EXACT ADJUSTMENT PRIOR TO DRILLING.



LOCATE AND DRILL ROLL PIN HOLE AS FOLLOWS:  
AT THE PUNCH MARK ON THE ROLLER, DRILL A 5/16" DIA. HOLE PARALLEL TO THE SOCKET HEAD CAP SCREWS, THROUGH THE ROLLER ASSEMBLY AND THE CENTER OF THE HINGE POST.

DRIVE THE 5/16" ROLL PIN THROUGH THE ROLLER ASSEMBLY, LOCKING IT TO THE HINGE ADAPTER SHAFT.

CHECK THE ALLIGNMENT OF THE SECOND (UNPINNED DOOR) WITH THE PINNED DOOR AND MAKE ANY ALIGNMENT CORRECTIONS BEFORE PINNING.

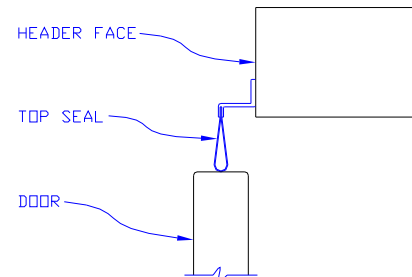
## F. TOP SEAL INSTRUCTIONS.

PLACE TOP SEAL EXTRUSION ON HEADER FACE, CENTER TOP SEAL ABOVE OPENING.

ADJUST FOR HEIGHT AS SHOWN AT RIGHT.

DRILL PILOT HOLES WITH A 1/8" DRILL BIT.

ATTACH TO HEADER FACE WITH 1/4" x 1" TEK SCREWS.



## DRILL BIT SIZES

**FOR:** ⑧ ⑨ ⑩

FOR STEEL JAMBS UP TO 3/8" THICK, USE: 1/8" DRILL BIT.  
FOR STEEL JAMBS 3/8" THICK AND OVER, USE: 13/64" DRILL BIT.

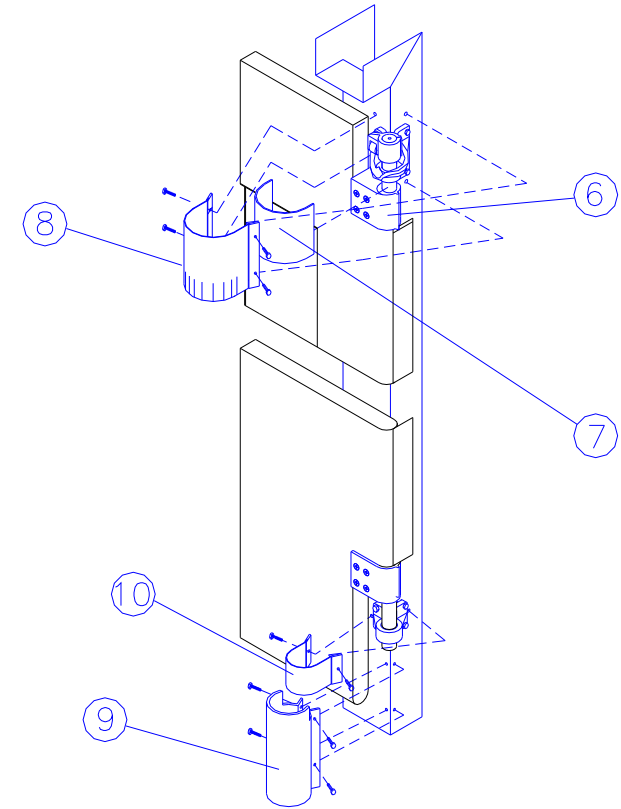
## FASTENERS

**FOR:** ⑧ ⑩

FOR STEEL JAMB  
USE: 1/4" X 1" TEK SCREW.

**FOR:** ⑨

USE: 1/4 X 1-1/2" TEK SCREW.



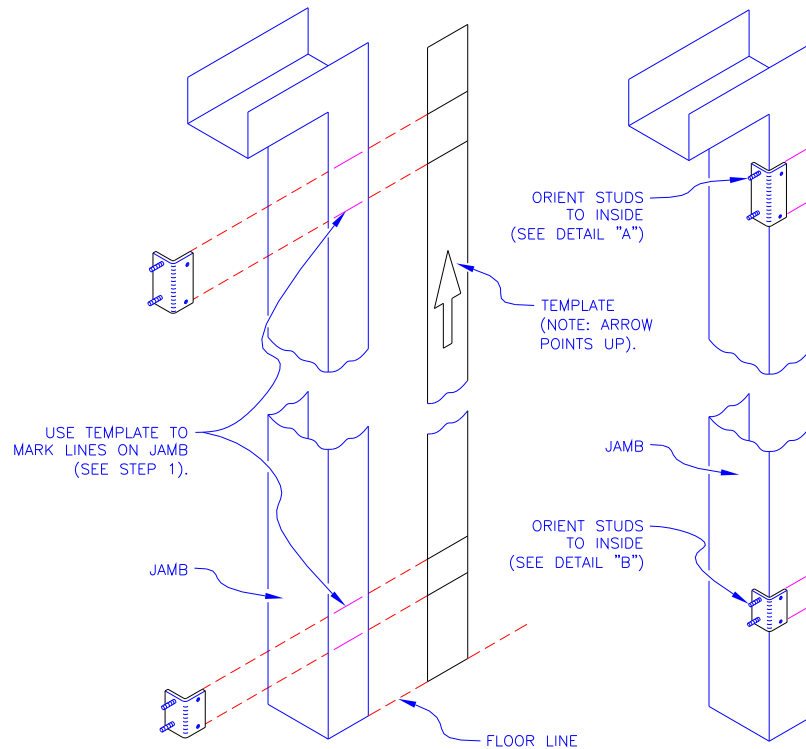
## G. HINGE SEALS AND LOWER HINGE GUARD.

**NOTE:** SPRING ASSIST MUST BE INSTALLED BEFORE LOWER HINGE GUARD.

SNAP SOLID RISER ⑦ OPEN END UP ON TO UPPER HINGE POST.  
WITH SLITS DOWN, PLACE UPPER HINGE SEAL ⑧ AROUND SOLID RISER ⑦.  
WITH DOORS CLOSED, BOTTOM OF UPPER HINGE SEAL ⑧ SHOULD JUST TOUCH UPPER HINGE POST ADAPTER ⑥.  
MARK INSIDE SET OF MOUNTING HOLES NEXT TO THE V-CAM, AND DRILL. (SEE CHART FOR DRILL BIT SIZE).  
FASTEN UPPER HINGE SEAL ⑧ TO THE INSIDE OF THE JAMB NEXT TO THE V-CAM.  
WRAP THE UPPER HINGE SEAL ⑧ AROUND THE SOLID RISER ⑦ AND ATTACH THE REMAINING SIDE TO THE JAMB FACE OR WALL ON THE 180° SIDE OF THE OPENING.

SNAP LOWER HINGE GUARD ⑨ OVER SPRING ASSIST.  
SET BOTTOM OF HINGE GUARD ⑨ ON FLOOR.  
CENTER HINGE GUARD ⑨ AROUND SPRING ASSIST, AND PRESS AGAINST JAMB.  
USE MOUNTING HOLES IN HINGE GUARD ⑨ TO MARK LOCATIONS FOR DRILLING JAMB.  
REMOVE HINGE GUARD ⑨ AND DRILL HOLES (SEE CHART FOR DRILL BIT SIZE).  
ATTACH LOWER HINGE GUARD WITH FASTENERS.  
PLACE LOWER HINGE SEAL ⑩, INSIDE NOTCH ON LOWER HINGE GUARD ⑨. (BOTTOM OF LOWER HINGE SEAL ⑩ SHOULD BE EVEN WITH LOWER EDGE OF HINGE GUARD).  
PLACE ENDS OF LOWER HINGE SEAL ⑩ ON JAMB AS CLOSE TO PILLOW BLOCK AS PRACTICAL.  
MARK AND DRILL HOLE LOCATIONS (SEE CHART FOR DRILL BIT SIZES).  
ATTACH HINGE SEAL WITH FASTENERS.

# 180° X 90° WELD PLATE INSTRUCTIONS



## STEP 1. TEMPLATE

FACE THE OPENING FROM THE 180° SWING SIDE. PLACE THE MOUNTING TEMPLATE ON THE FACE OF THE JAMB (THE 180° SIDE). WITH THE BOTTOM OF TEMPLATE RESTING ON THE FLOOR, MARK THE FOUR WELD PLATE MOUNTING LINES ON THE TEMPLATE, ONTO THE FACE OF THE JAMB. REMOVE TEMPLATE.

## STEP 2. HARDWARE LOCATION

WELD PLATES HAVE BEEN SHIPPED ATTACHED TO THE MOUNTING HARDWARE AND SHOULD NOT BE REMOVED UNTIL HARDWARE HAS BEEN ORIENTED TO THE APPROPRIATE JAMB. ORIENT HARDWARE TO APPROPRIATE JAMB SIDES AS FOLLOWS:  
 V-CAMS ARE MARKED "LH" FOR LEFT HAND AND "RH" FOR RIGHT HAND SIDE OF JAMBS.  
 PILLOW BLOCKS ARE MARKED WITH A PART NUMBER. FOR WELD PLATE INSTALLATIONS ONLY, MOUNT THE RIGHT PILLOW BLOCK WITH THE PART NUMBER FACING DOWN. THE LEFT PILLOW BLOCK SHOULD BE MOUNTED WITH THE PART NUMBER FACING UP.

NOTE: ALL WELD PLATE STUDS SHOULD BE LOCATED ON THE INSIDE (90° SWING SIDE) OF THE JAMB AS SHOWN IN THE DRAWING AT LEFT.

## STEP 3. MOUNTING WELD PLATES

AFTER LOCATING HARDWARE TO ITS APPROPRIATE JAMB, REMOVE WELD PLATES FROM MOUNTING HARDWARE. PLACE WELD PLATES BETWEEN SETS OF LINES MARKED ON JAMB FACE (SEE DRAWING AT LEFT). WELD THE WELD PLATES TO JAMB. DO NOT EXTEND BEADS ONTO FACE OF WELD PLATES.

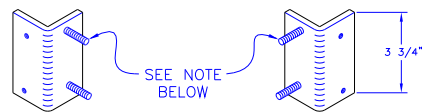
COMPLETE DOOR INSTALLATION REFERRING TO "DURULITE 180° X 90° INSTALLATION INSTRUCTIONS" BEGINNING AT STEP 2.

## DURULITE LIMITING POST LOCATION CHART

NOMINAL DOOR WIDTH	180° X 90° HARDWARE				180° X 90° DOOR SWING AREA
	STANDARD BUMPER		INDUSTRIAL BUMPER		
	X Dim	Y Dim	X Dim	Y Dim	
24"	3"	15"	4"	15"	
27"	3"	18"	4"	18"	
30"	3"	21"	4"	21"	
32"	3"	23"	4"	23"	
34"	3"	25"	4"	25"	
36"	3"	27"	4"	27"	
39-1/2"	3"	30-1/2"	4"	30-1/2"	
42"	---	---	4"	33"	
48"	---	---	4"	39"	
54"	---	---	4"	45"	
60"	---	---	4"	51"	

### A. V-CAM WELD PLATES

ORIENT WELD PLATES AS SHOWN WITH STUDS MOUNTING ON THE INSIDE (90° SWING SIDE) OF THE OPENING.

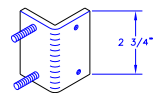


LEFT HAND      RIGHT HAND

NOTE: 1/4-20 X 1" STUD LOCATED 3/8" FROM TOP AND 13/16" FROM EDGE.

### B. PILLOW BLOCK WELD PLATES

ORIENT BOTH SIDES WITH THE STUDS MOUNTING ON THE INSIDE (90° SWING SIDE) OF THE OPENING.



RIGHT HAND PILLOW BLOCK MOUNTS WITH THE PART NUMBER DOWN.

LEFT HAND PILLOW BLOCK MOUNTS WITH THE PART NUMBER UP.