

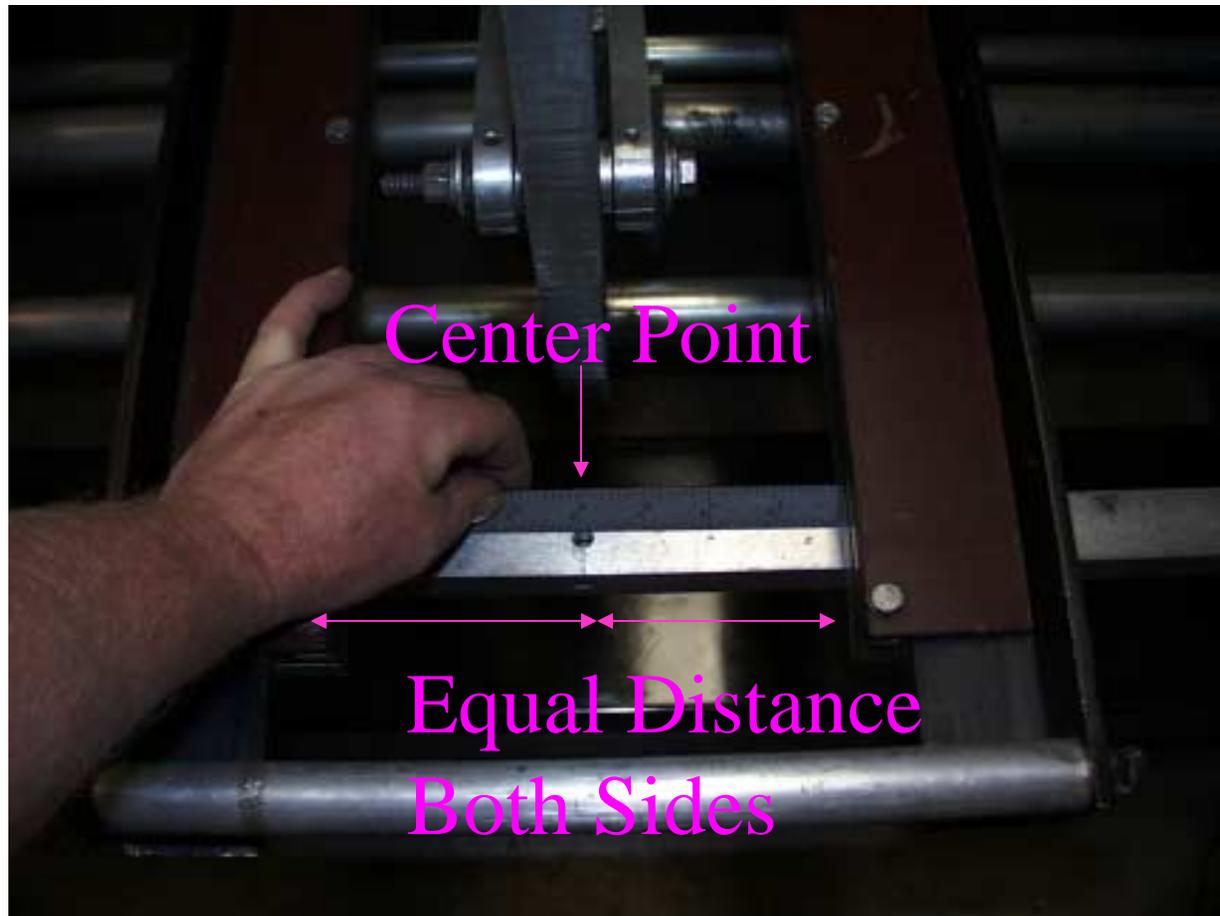
# Size paper to mandrel

- The mandrel needs to fit the corrugation snugly. If the mandrel is too small the compression on the box will be light, if the mandrel is too big the machine will have a hard time folding the box around it.

# Center Mandrel in Machine

## (Equal Distance Both Sides)

- With the Mandrel Installed in the Machine, Slide the Mandrel From Side to Side until an Equal Measurement Is Obtained From the Center Hole on the Frame Spreader Bars on Both Sides in the Front and the Back.

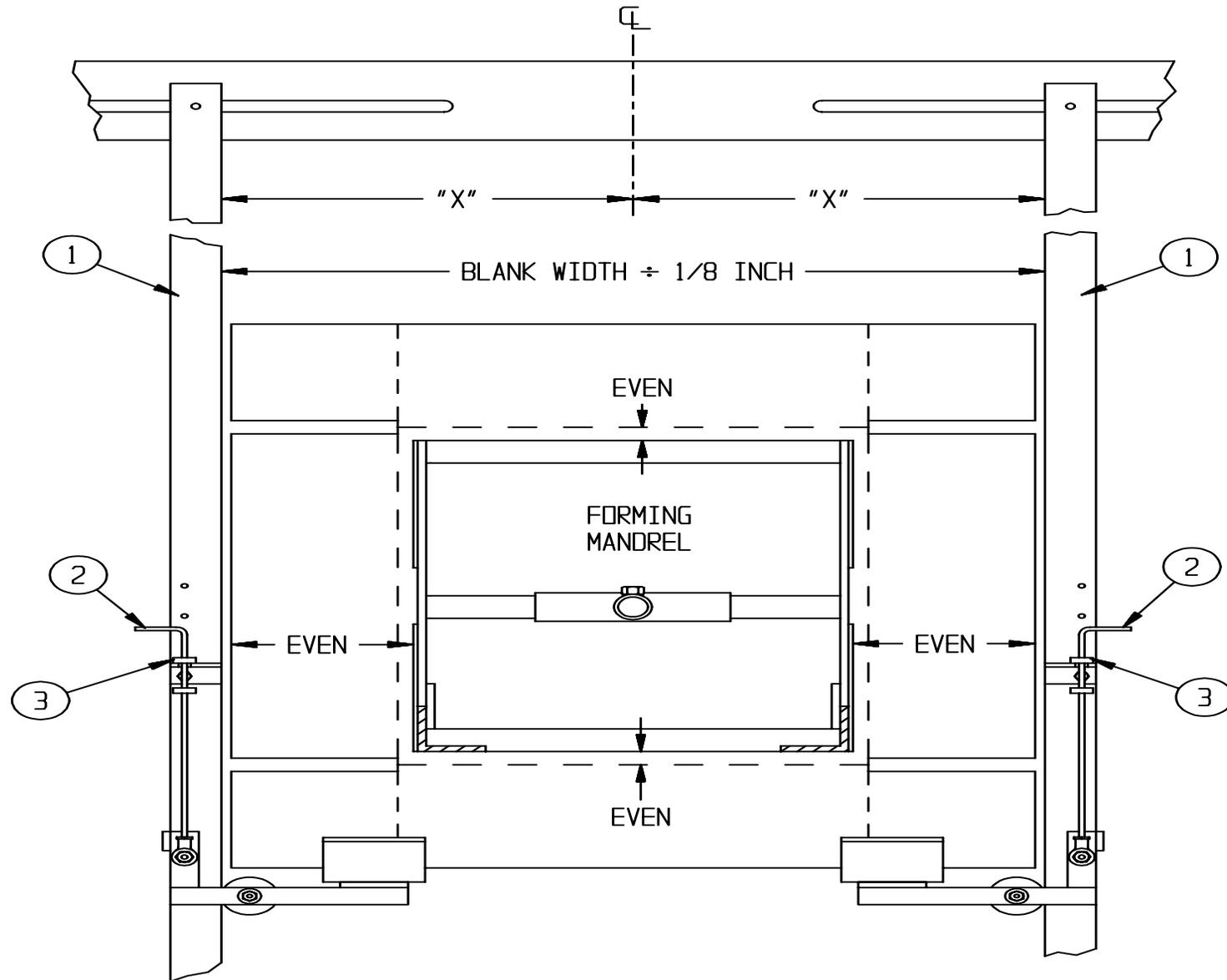


# Center trees on top

Width of blank + 1/8" divide in half = distance from center



# Center trees to mandrel



## ADJUST VERTICAL GUIDE BARS (trees)

To adjust the Vertical Guide Bars, measure the overall width of the Blank and add 1/8 inch; this establishes the distance between the bars. After establishing this dimension, subtract the overall width measurement of the Mandrel. Then divide by 2 the remainder after the subtraction step (See Example Below). This method will give the required distance between the outside of the Mandrel and the inside of the Vertical Guide Bars. The distance should be equal on both sides. This assures that the lower part of the Vertical Guide Bars have been adjusted properly. Run a Blank down the Vertical Guide bars to check clearances set.

Example:

Tray Blank Overall Dimension	18 13/16"
Vertical Guide Bar Clearance	+ 1/8"
Distance between Vertical Guide Bar	18 15/16"
Overall Width of Mandrel	- 14 1/16"
	= 4 7/8"

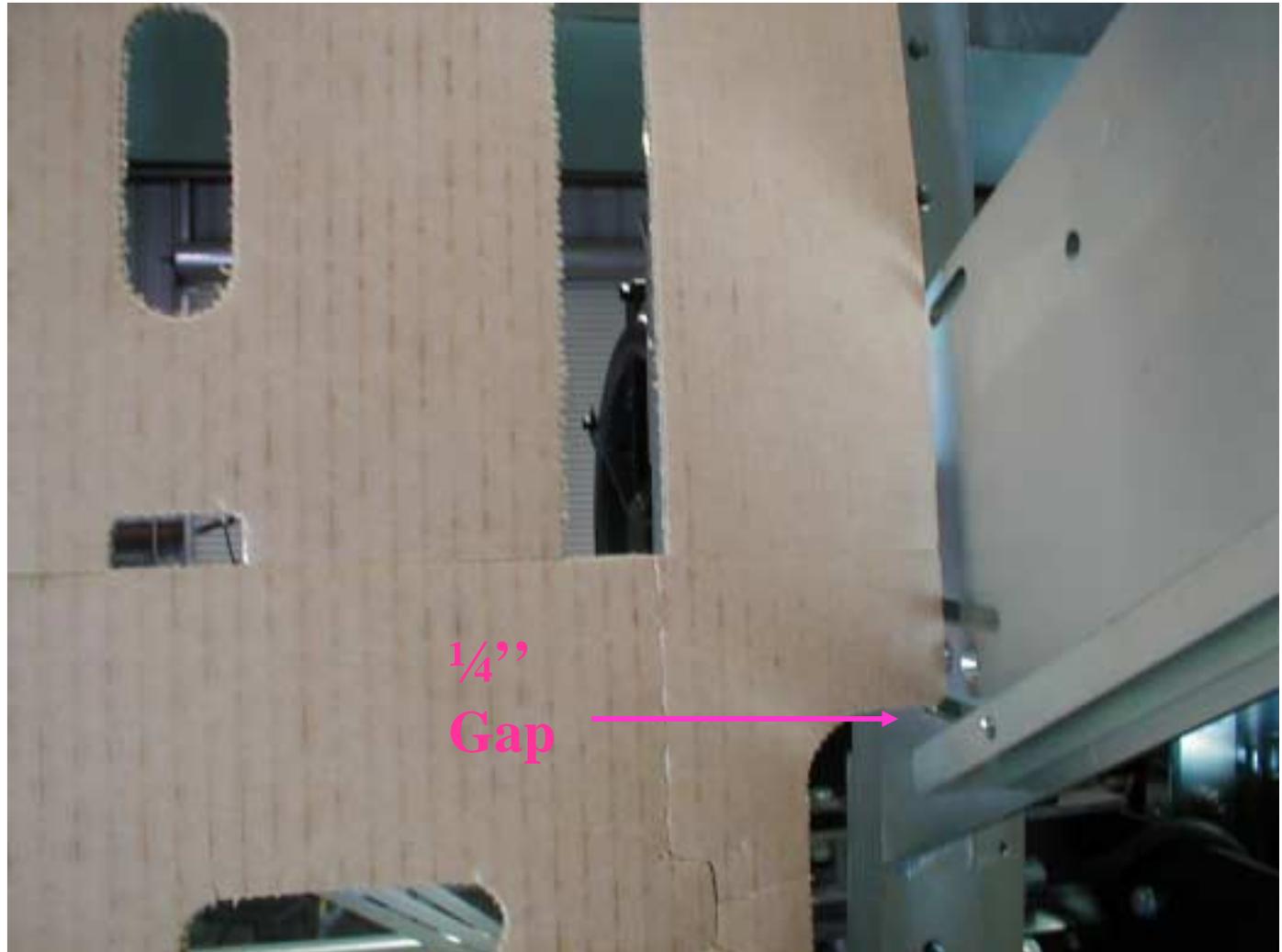
Divide by 2  $4 \frac{7}{8}'' \div 2 = 2 \frac{7}{16}''$

Dimension from outside of Mandrel to inside edge of Vertical Guide Bars should be  $2 \frac{7}{16}''$ .

(Dimension should be equal on each side.)

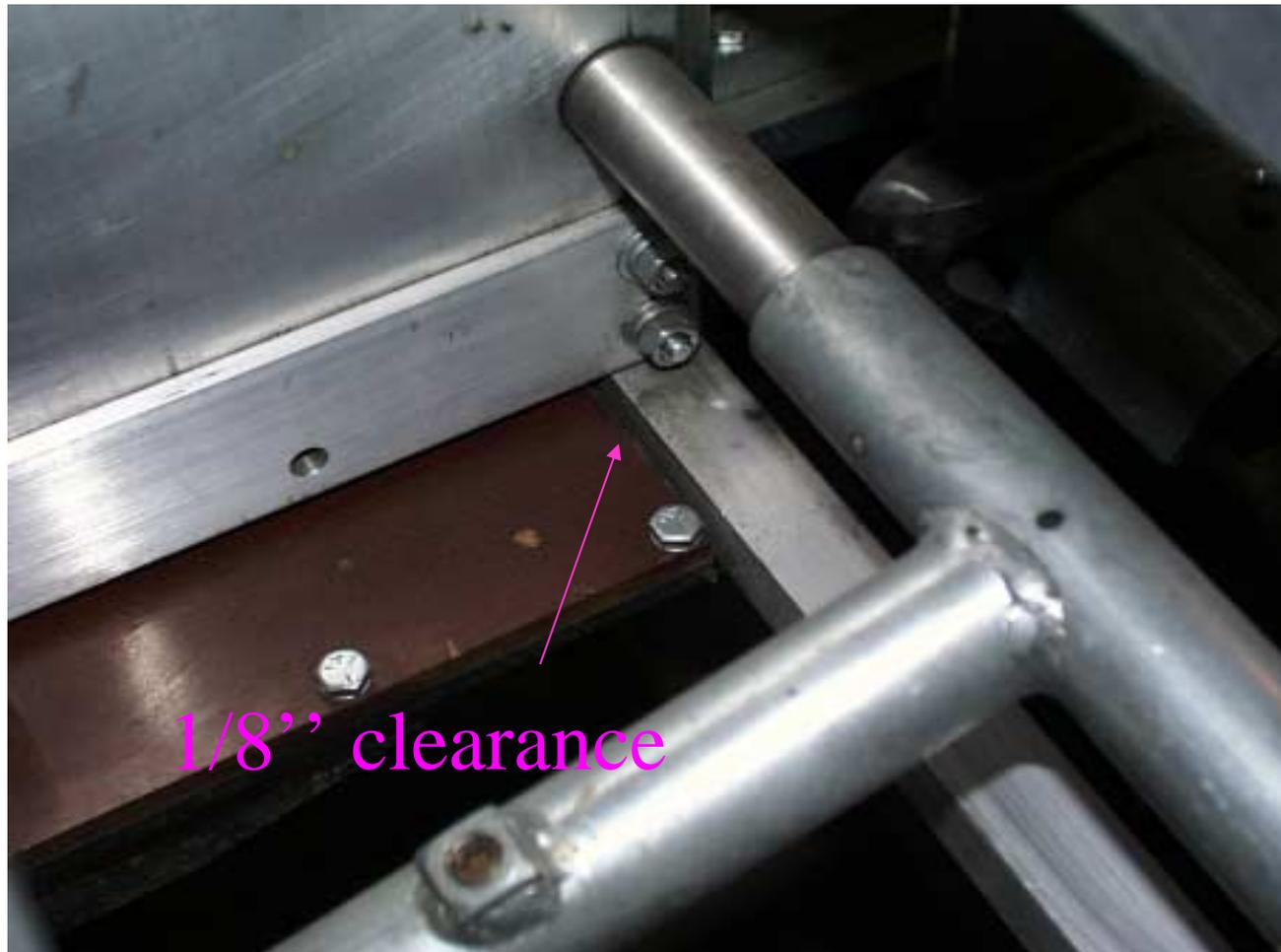
# Set Upper Hopper Blades

The blank support hoppers are set so that with a blank resting in the hopper the end of the blank support is  $\frac{1}{4}$ " below the blank.



## Set mandrel rear position

- With the mandrel installed in the machine, jog the machine until the feed post arm is in the rear most position. At this point slide the mandrel forward or back on the con rod until a 1/8" gap is obtained between the bottom mandrel spreader bar and the front of the mandrel guides.

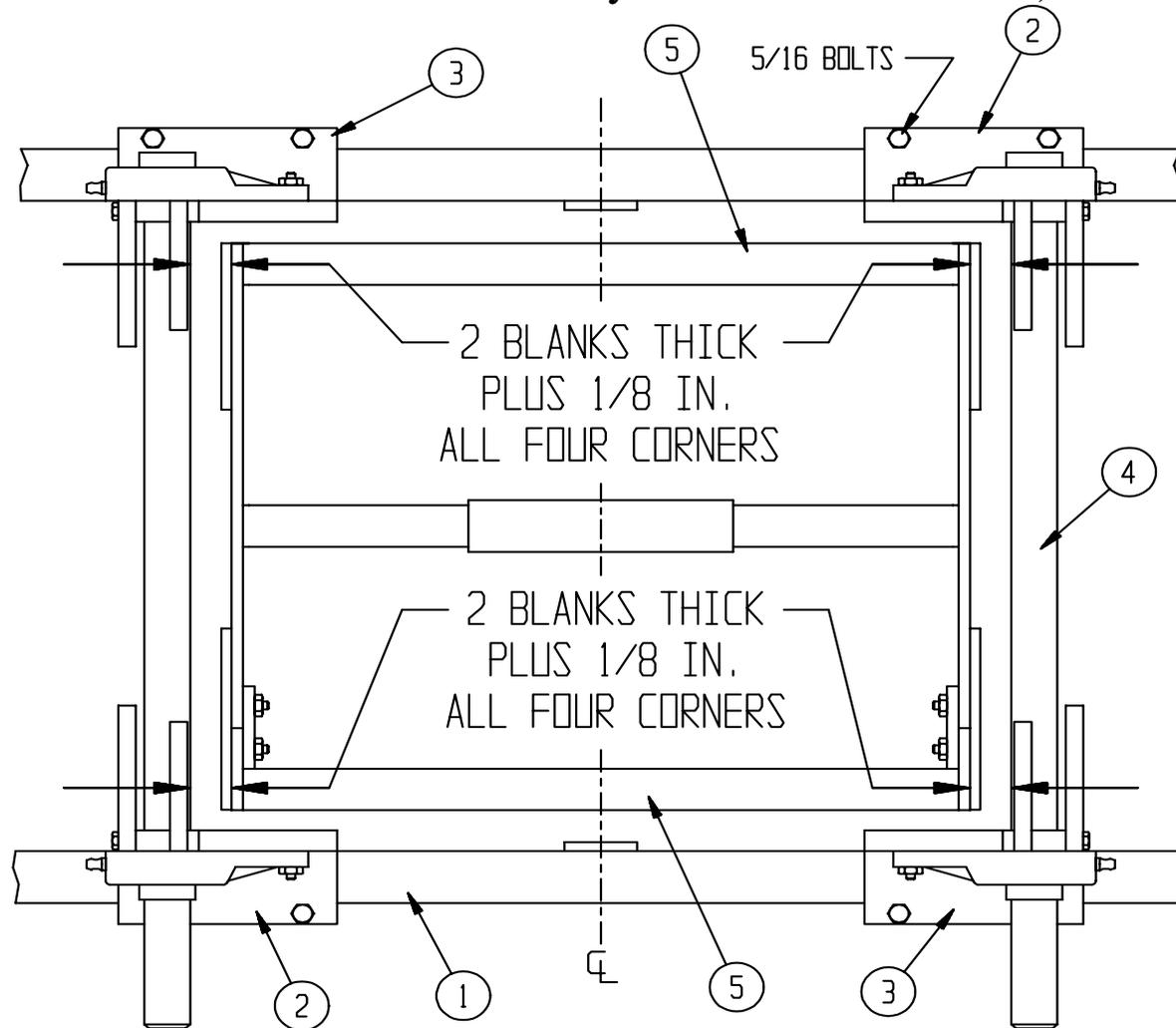


# Set forward stroke of mandrel

- Set stroke of the mandrel so that the box that is being formed travels past the strippers by approximately 1''. This will allow for clearance box back stops.

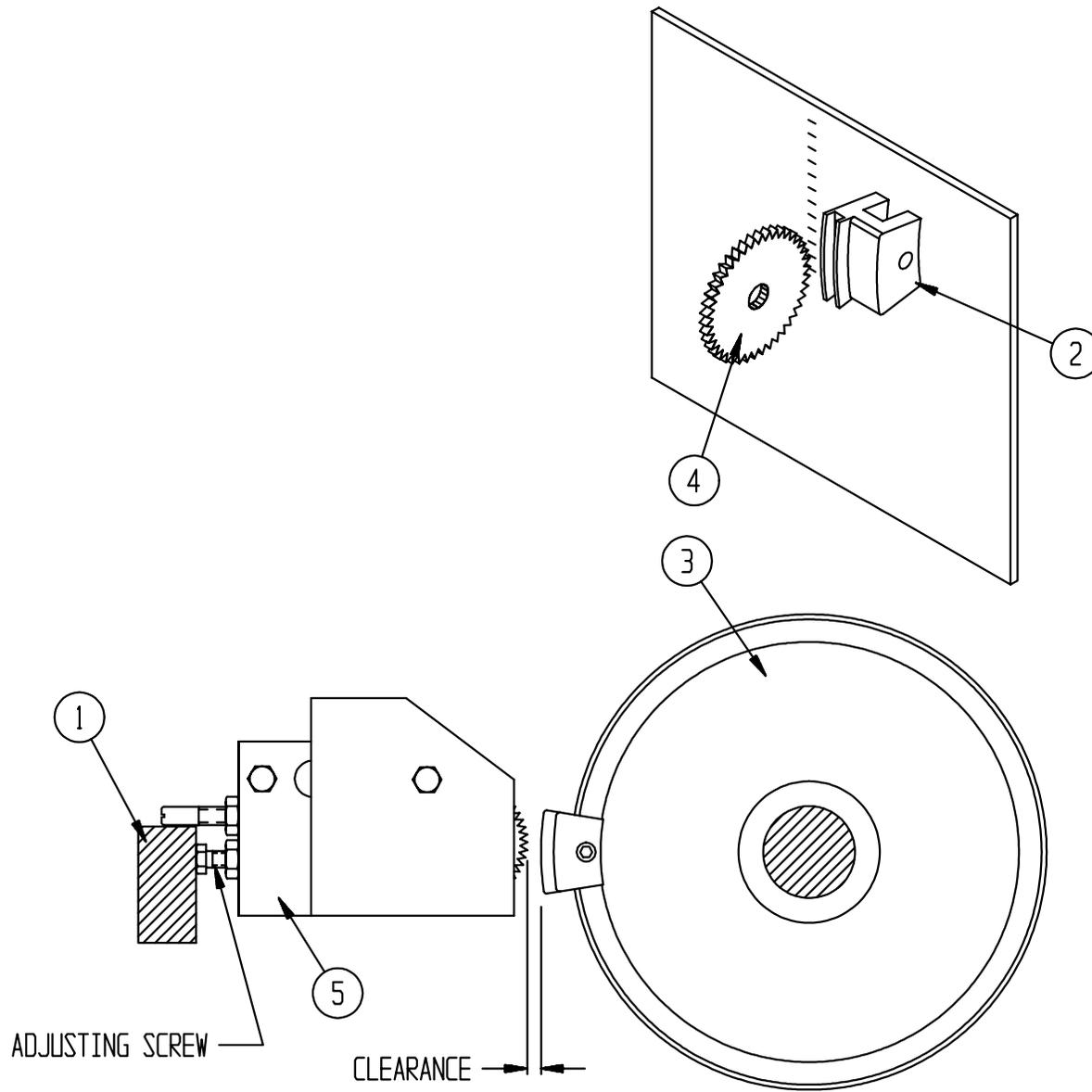
# Set side compression

Two blank thickness' + 1/8" from edge of the compression rollers to the side of the mandrel (note if mandrel wear plates go all the way to the front of the mandrel then the clearance is only two blank thickness')



# Set Program to Pump Star Wheel Clearance

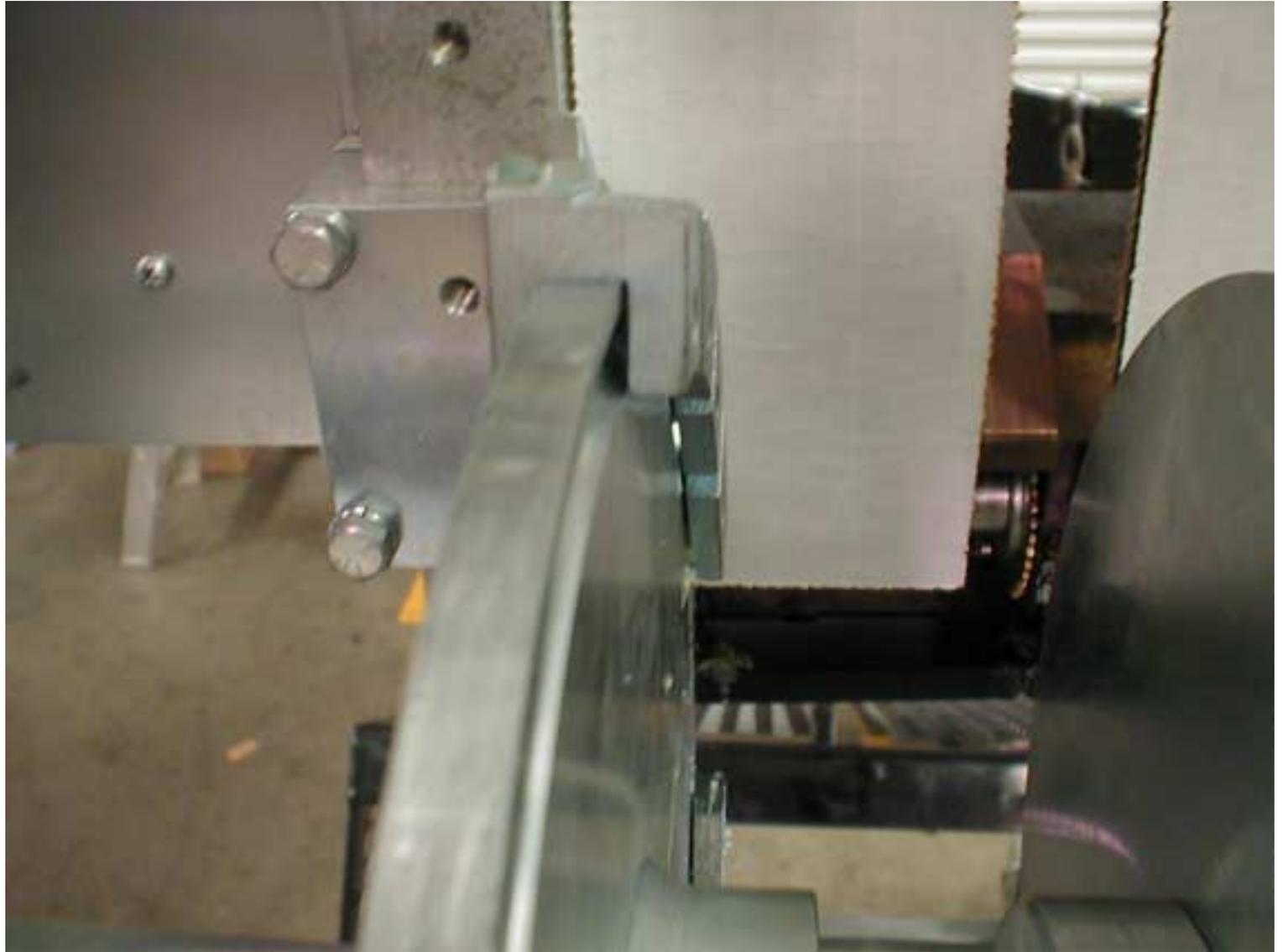
- **ADJUST CLEARANCE BETWEEN PROGRAM SEGMENT AND APPLICATOR WHEEL**
- This clearance varies with the thickness of the Blank. Blanks should show distinct teeth marks from the Adhesive Pump Drive Wheel. To obtain this adjustment, use the adjustment screw located in front of the Glue Pump Housing. When turned, it pushes against the Blank Feed Idle Roller Mount Bar. Re-tighten the lock nut on the adjustment screw.



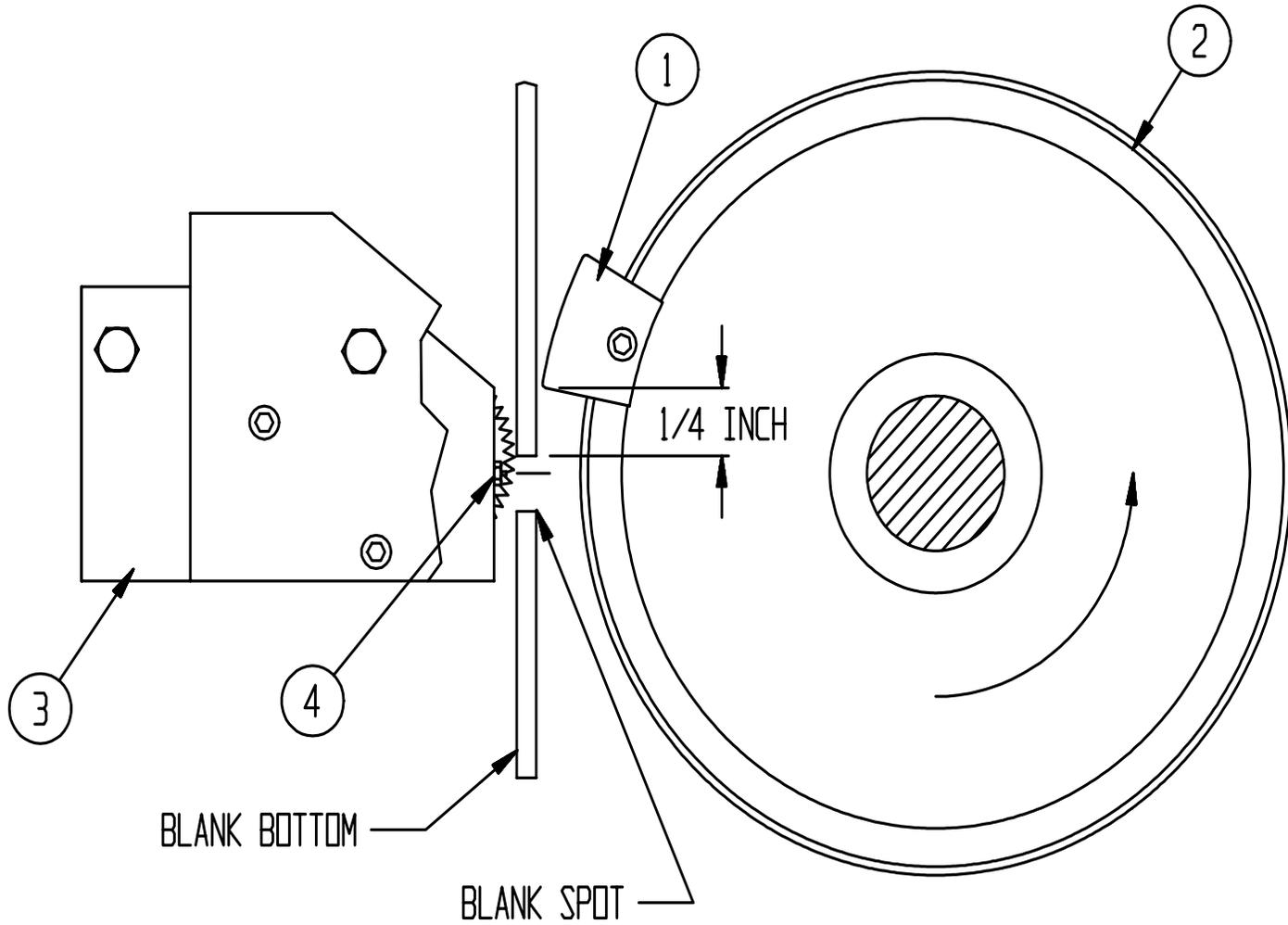
# Set Glue Program

- **ADJUST ADHESIVE PROGRAM SEGMENTS**
- The Adhesive Program Segments are located on the Adhesive Program Discs which are fitted on the Blank Feed Roller Shaft. To be sure program Segments are centered with the Glue Dump Drive Wheel, mount one (1) Segment on the Program Disc. Slide the Program Disc (with Segment) over to the Glue Pump Drive Wheel and center the slot in the Segment with the Drive Wheel. After centering, use the Set Collar located outside of the Program Disc as a stop by locating it flush with the Program Disc and tightening the set screw in the Set Collar. With the Hopper full of Blanks, rotate the machine in its correct forming direction feeding the Blank down until the first slot aligns with the Glue Pump Jets. The Glue Jets are located on the rear face of the Glue Pump Housing. Adjustment is made by the 5/16 set screw holding the Program Segment to the Program Wheel. Slide the Program Disc cover to the Set Collar Stops. Slide the first Segment around until its leading edge is 1/4 inch above the cut-out on the Blank. Rotate the machine in its forming direction until the second cut-out of the Blank is aligned with the Glue Pump Jets. Referring to Figure 5-17B, slide the last Program Segment around until its trailing edge is 1/4 inch below the cut-out on the Blank. Be sure the 5/16 set screws are tight in all Segments.

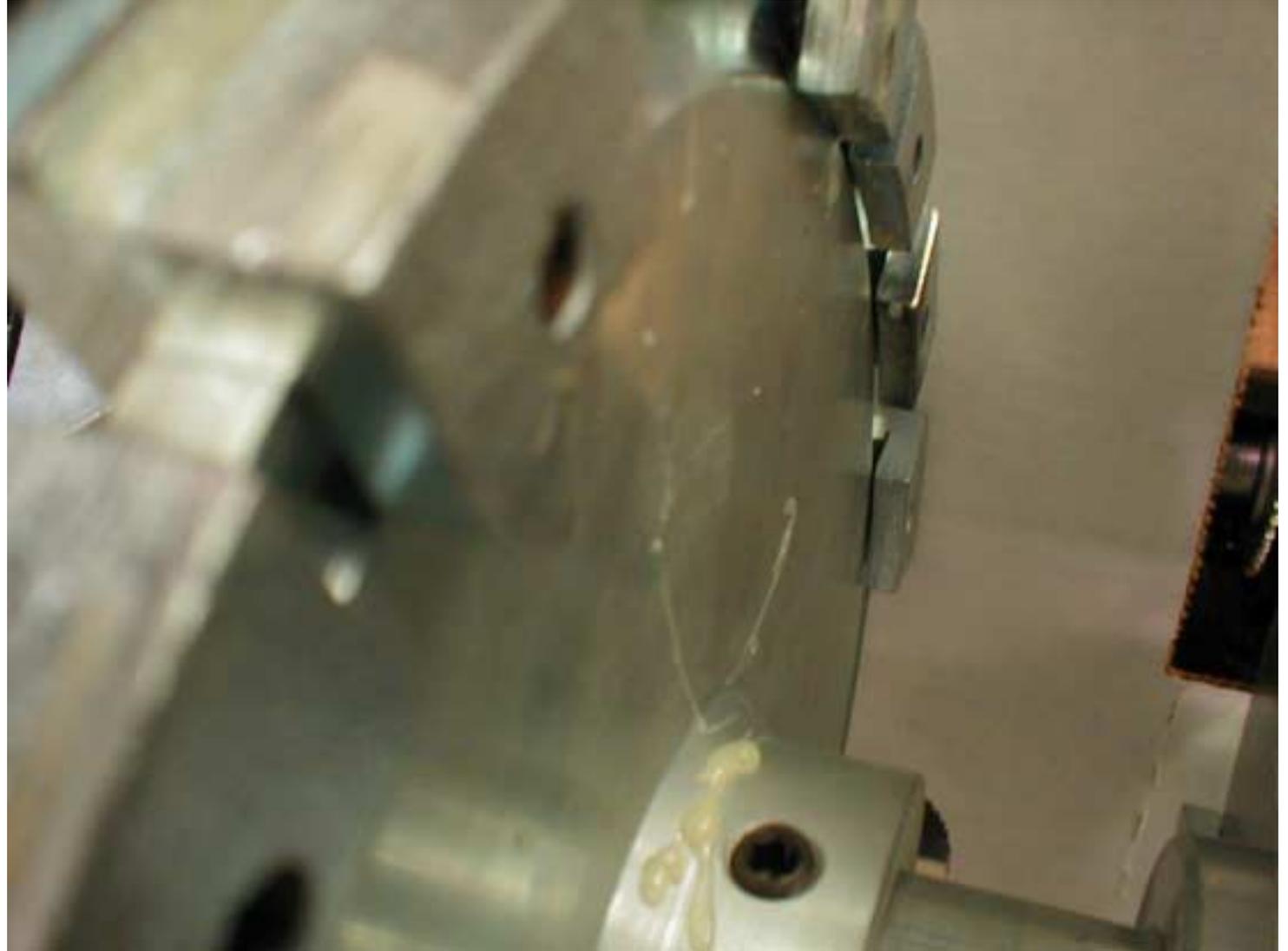
# First Glue Pattern Outside



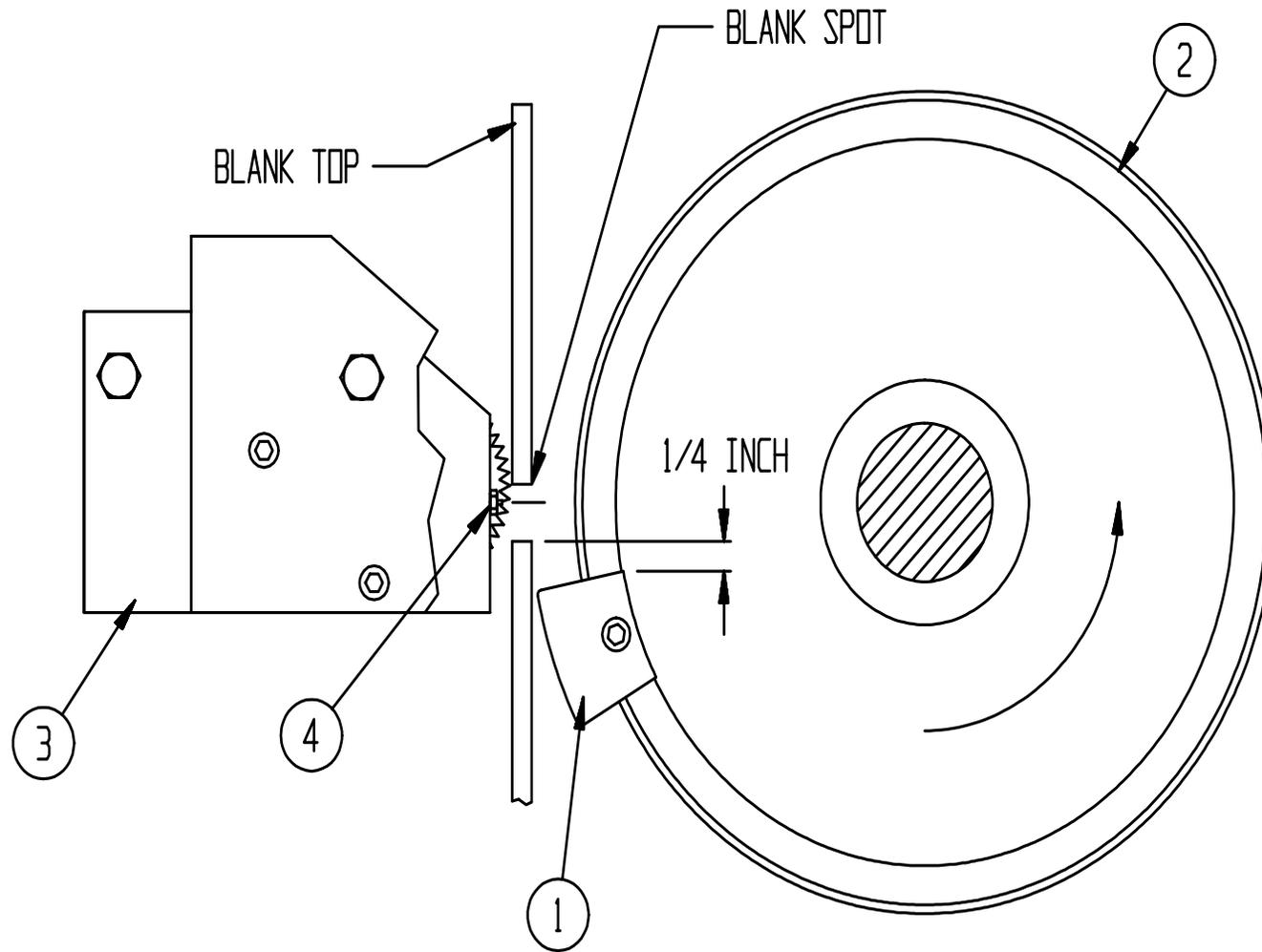
# First Pattern



# Second Glue Pattern Outside

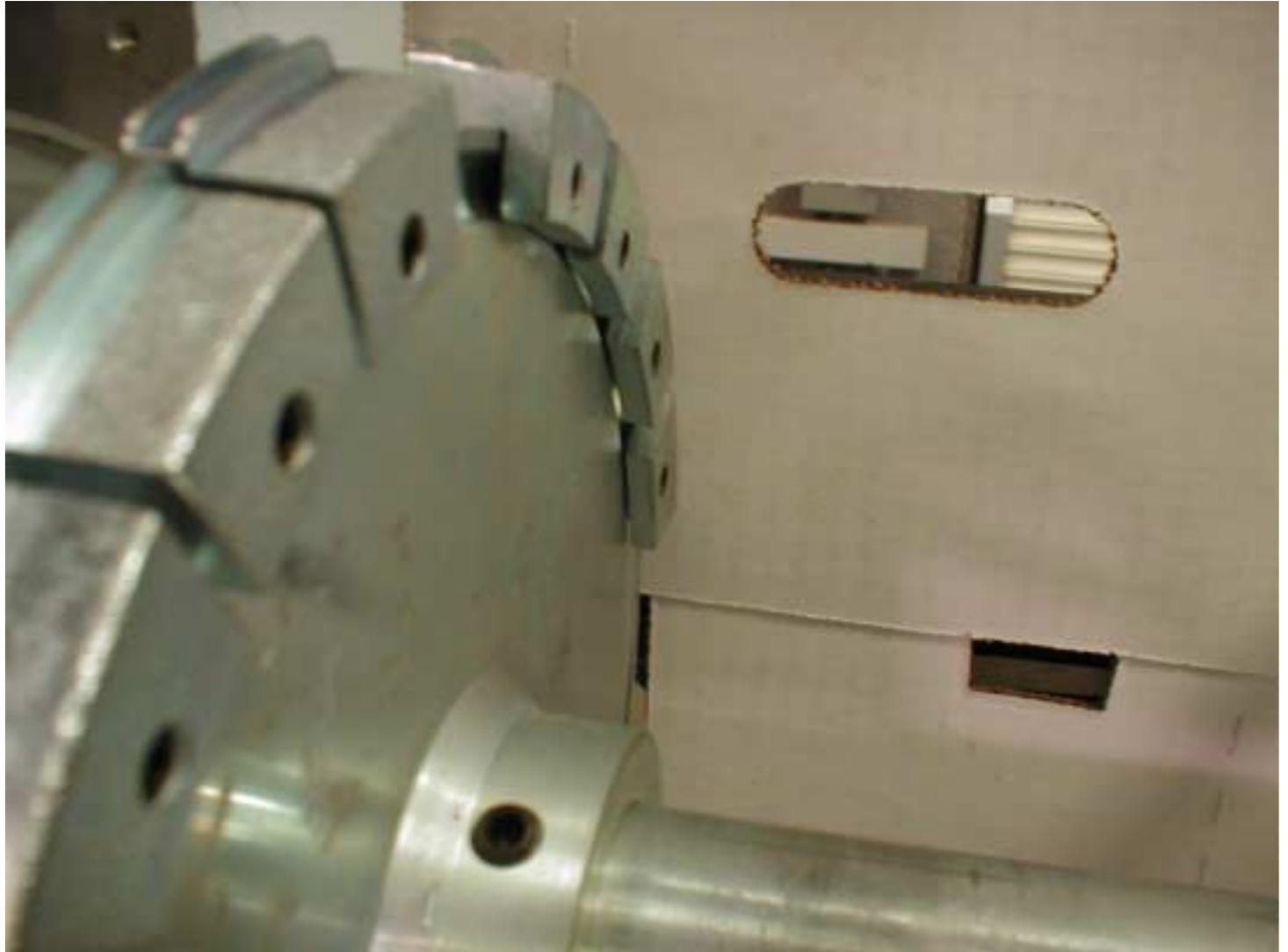


# Second Glue Pattern



# Inside Glue Pattern

The inside glue pattern is set using the same procedures as the outside glue uses.



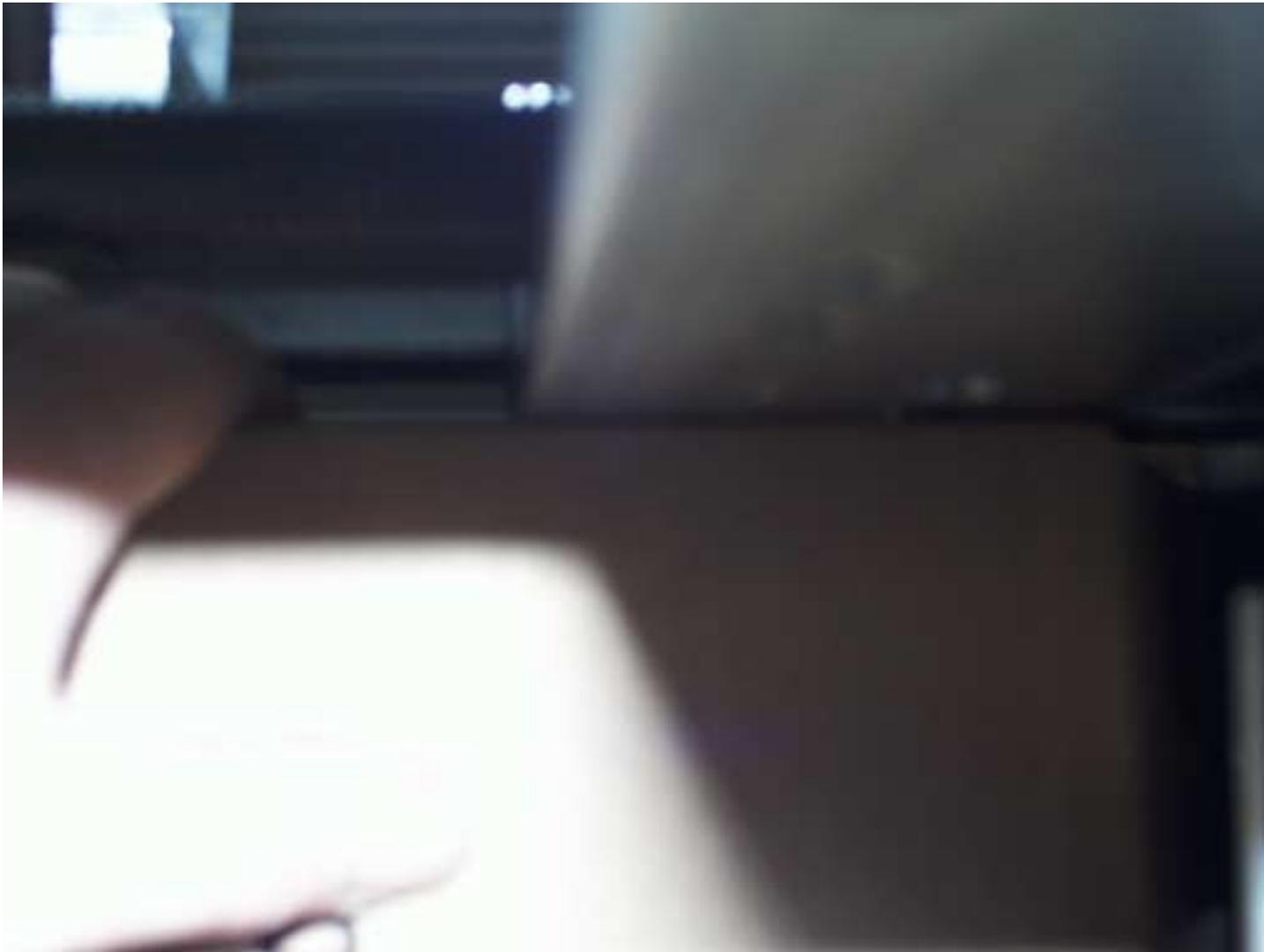
## Set bottom stops

- With a blank in front of the mandrel, move the bottom stops up or down so that the top score is even with the top of the mandrel.



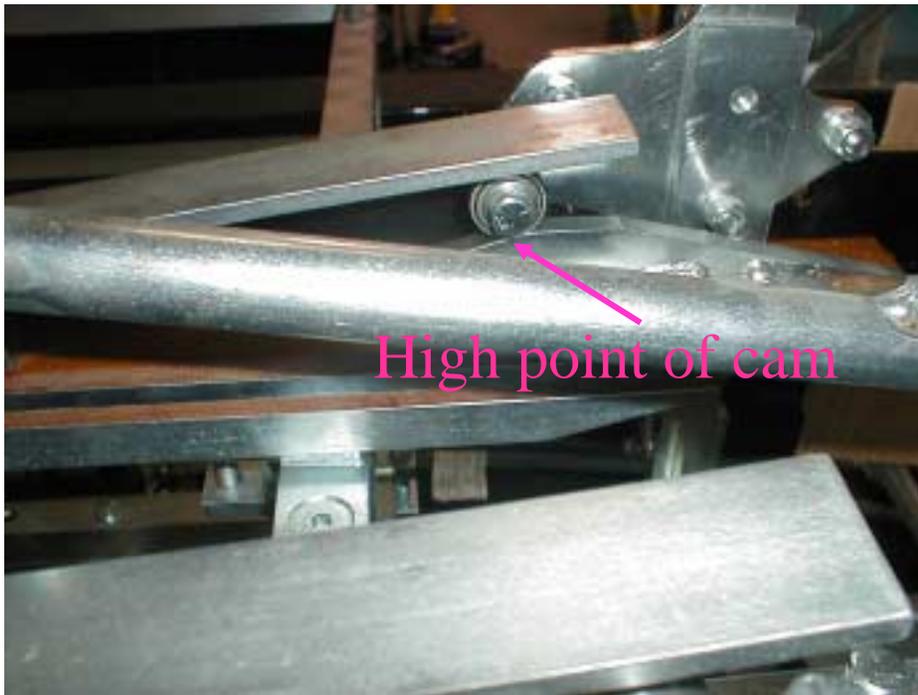
## Set top compression

- Move the top compression up or down so that there is roughly 1/16" clearance from the formed box and the forming shoe.



## 15. Set pushers (if applicable)

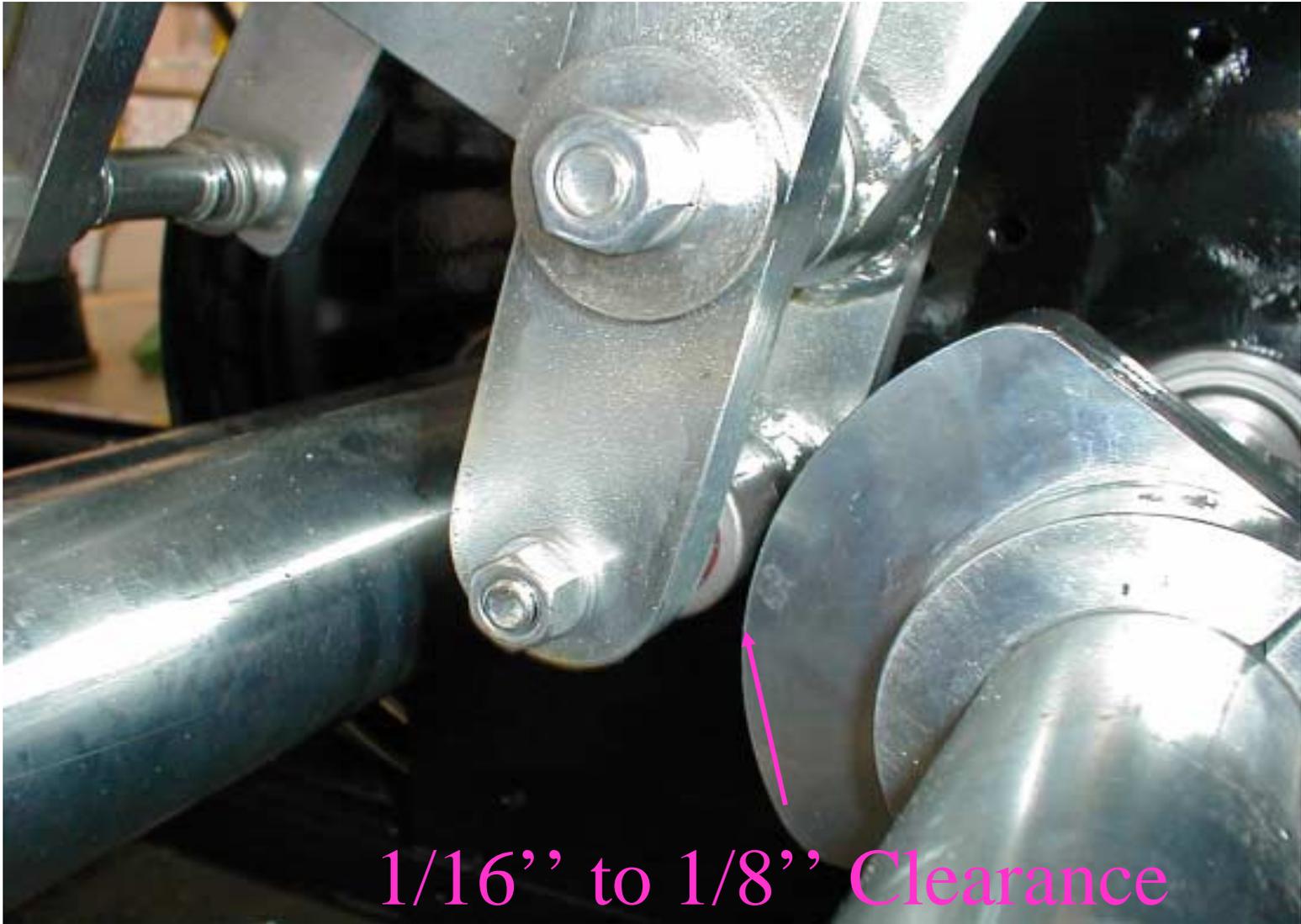
- With a blank in front of the mandrel, jog the mandrel forward in-till the cam follower on the pusher tomahawk is on the high point of the pusher cam. At this point slide the pusher pawl forward in-till the minor flap of the box is setting squarely in the bottom of the box. (Be careful not to push the box off of the mandrel)



# Cable Safety Adjustment

- The cable is adjusted so that there is 1/16'' to 1/8'' clearance between the cam and the cam follower. This adjustment is made first. With the proper clearance set, the linkage and cable will be able to freely move through it's entire range of movement.

(see photo on next page)



1/16'' to 1/8'' Clearance

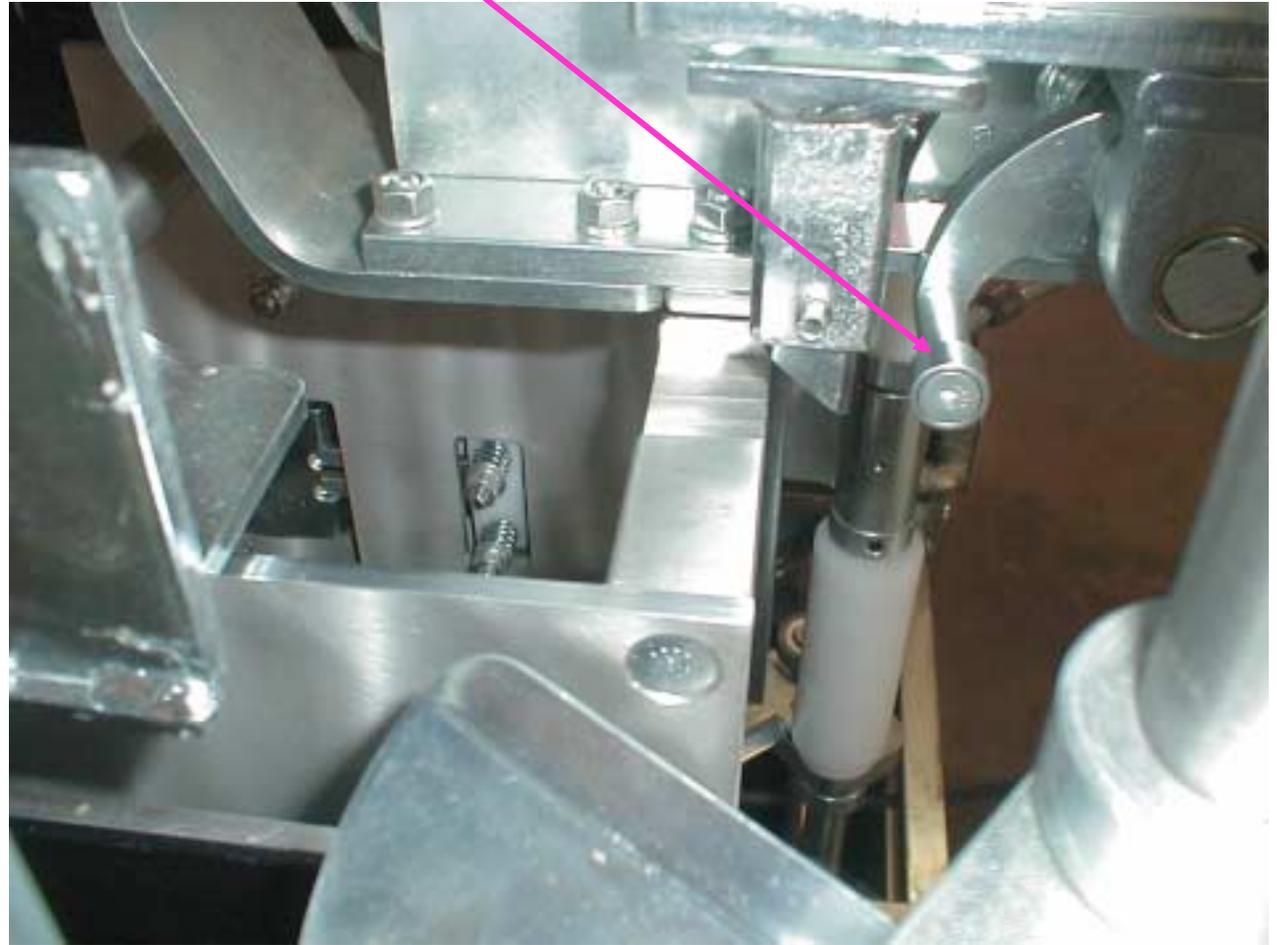
# Minor Flap Breaker



The minor flap breakers are used to pre-break the minor flaps from the main blank as the mandrel is on its forward forming stroke. The arms are operated by the small lobed cam that is located on the right side of the machine. The cam is timed so that it comes up on the high point as the front of the mandrel reaches the center of the vertical trees.

# Top & Bottom Inside Flap Folder

This flap folder is used to fold the inside flap of the box up & down and hold it there until the vertical flap folders fold the flaps on the side of the box.



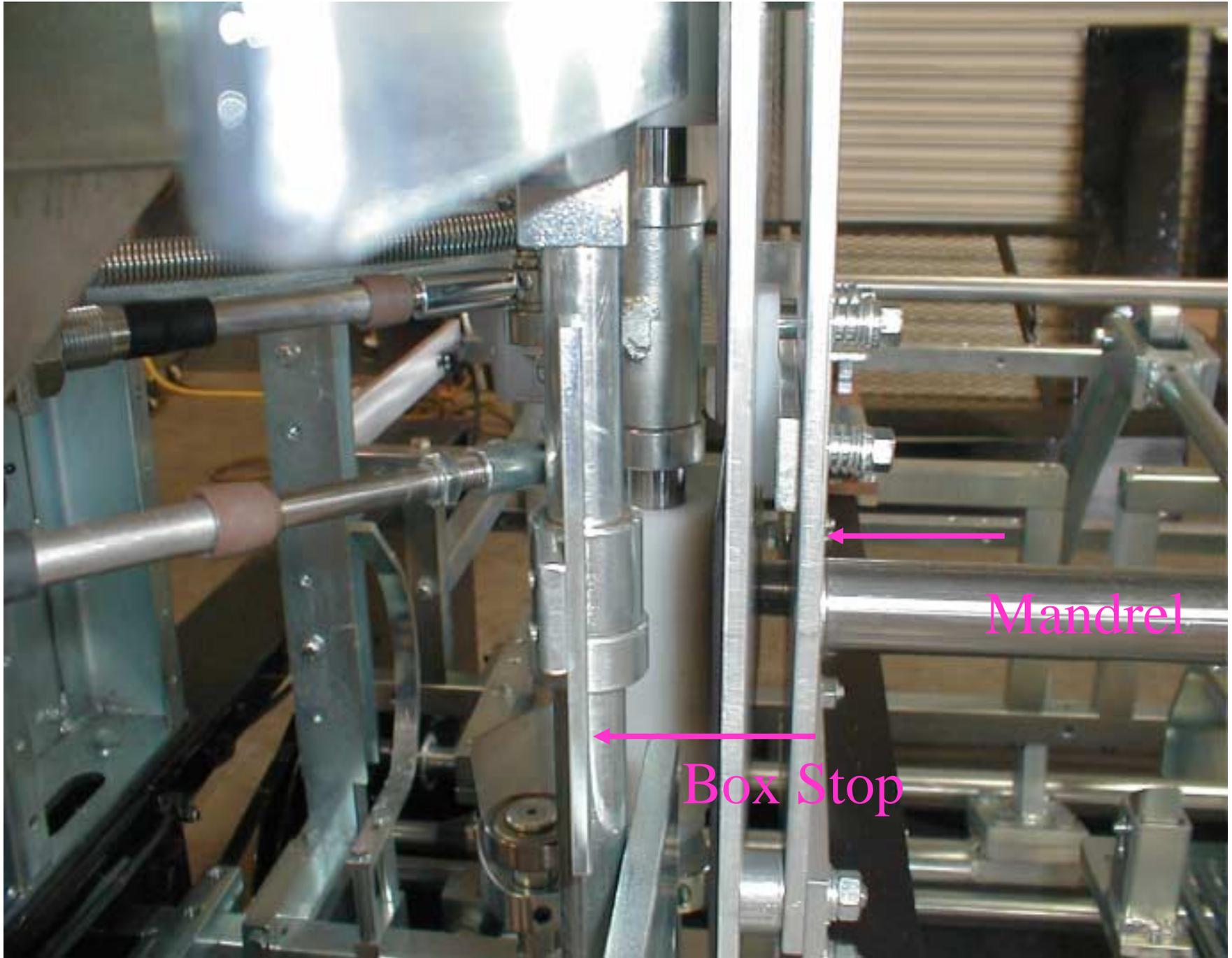
# Top & Bottom Inside Flap Folder Timing



The inside flap folder is operated by the cam the is located on the left side of the machine. The cam is timed so that when the mandrel if on it's back stroke and the front of the mandrel is just clear of the box strippers, at this point the cam is just starting to come up on the high point.

# Box Stops





Mandrel

Box Stop





Adjustment Point

# Box Back Stop Adjustment

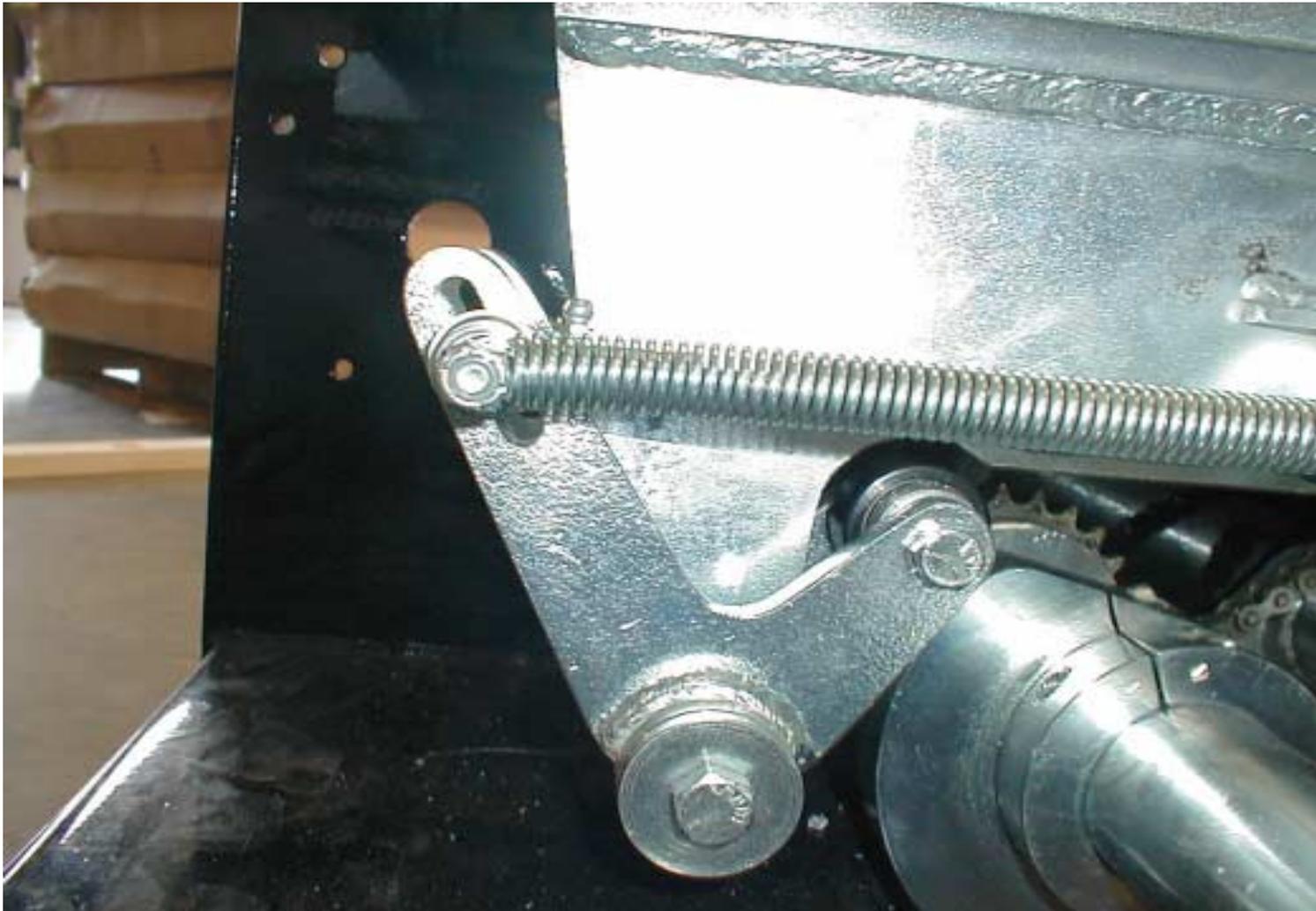
- The box stops are used to hold the box snugly to the box strippers so that the flap on the box can be folded to 90 deg.
- Stops are adjusted to be at 90 deg.
- With the cam follower on the high point of the cam, adjust the cable so that the box stops are at 90 deg.

# Box Stop Timing

The box backstops are used too hold the box snugly next to the strippers.

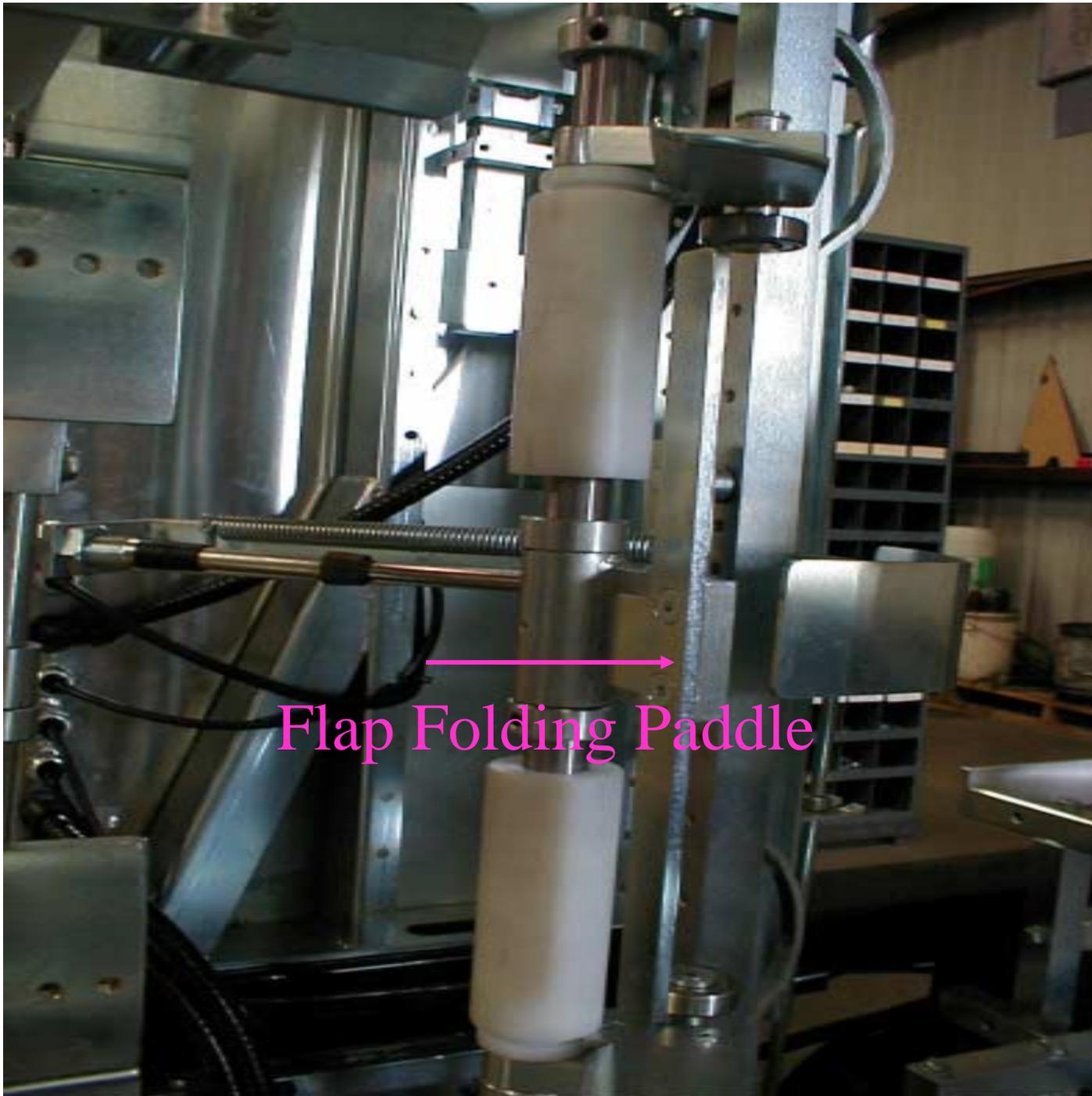
The stops are timed to start coming in as the mandrel starts its backward movement. Once the mandrel has pulled the box back to the strippers the box backstops need to be at 90deg.

These paddles are controlled by the cam and linkage located on the left side of the machine.



# 90 deg. Flap folding paddles

- These paddles are used to fold the box flange to 90 deg so that the rotating plows can fold the outer flange to the box.

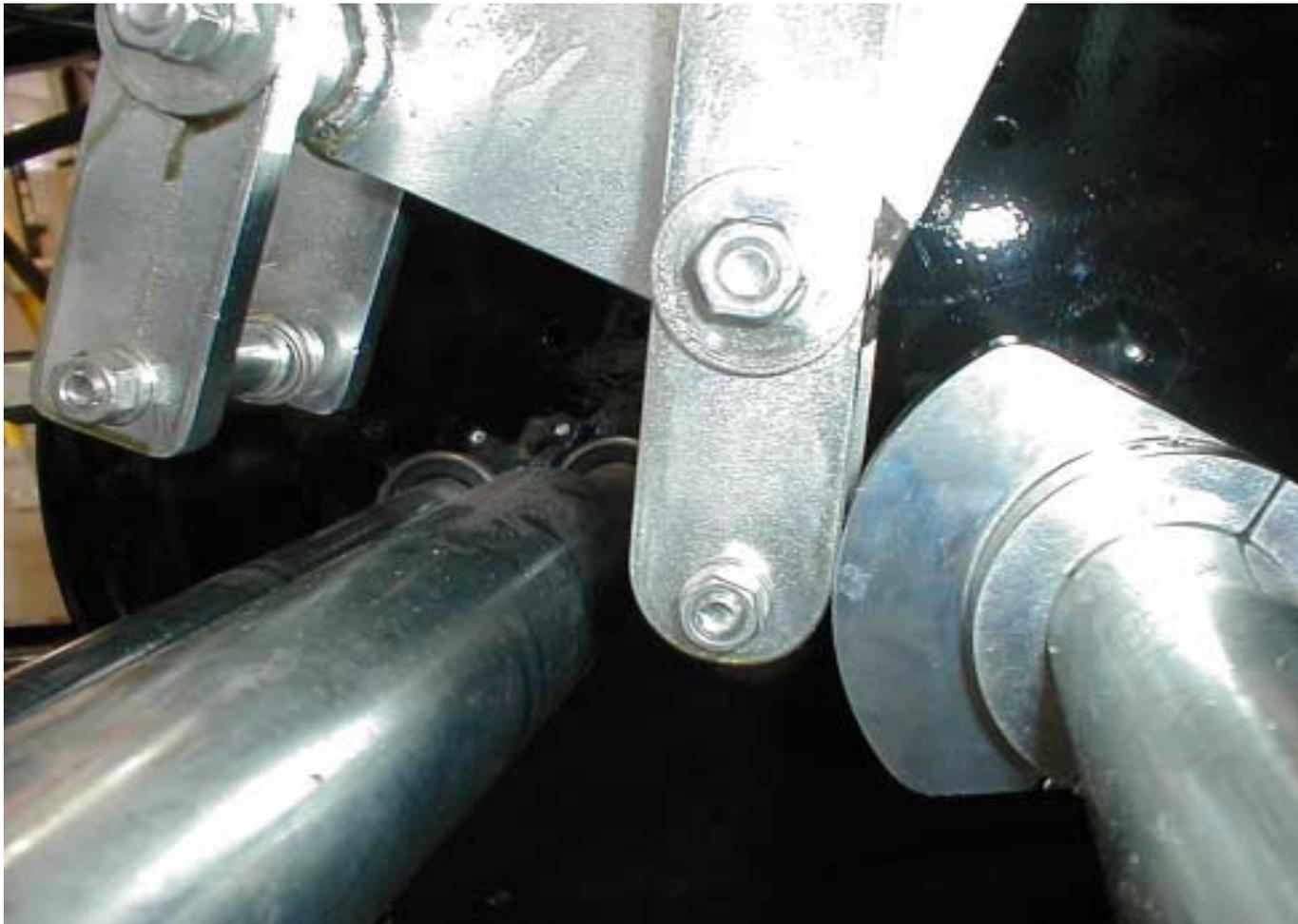


Flap Folding Paddle

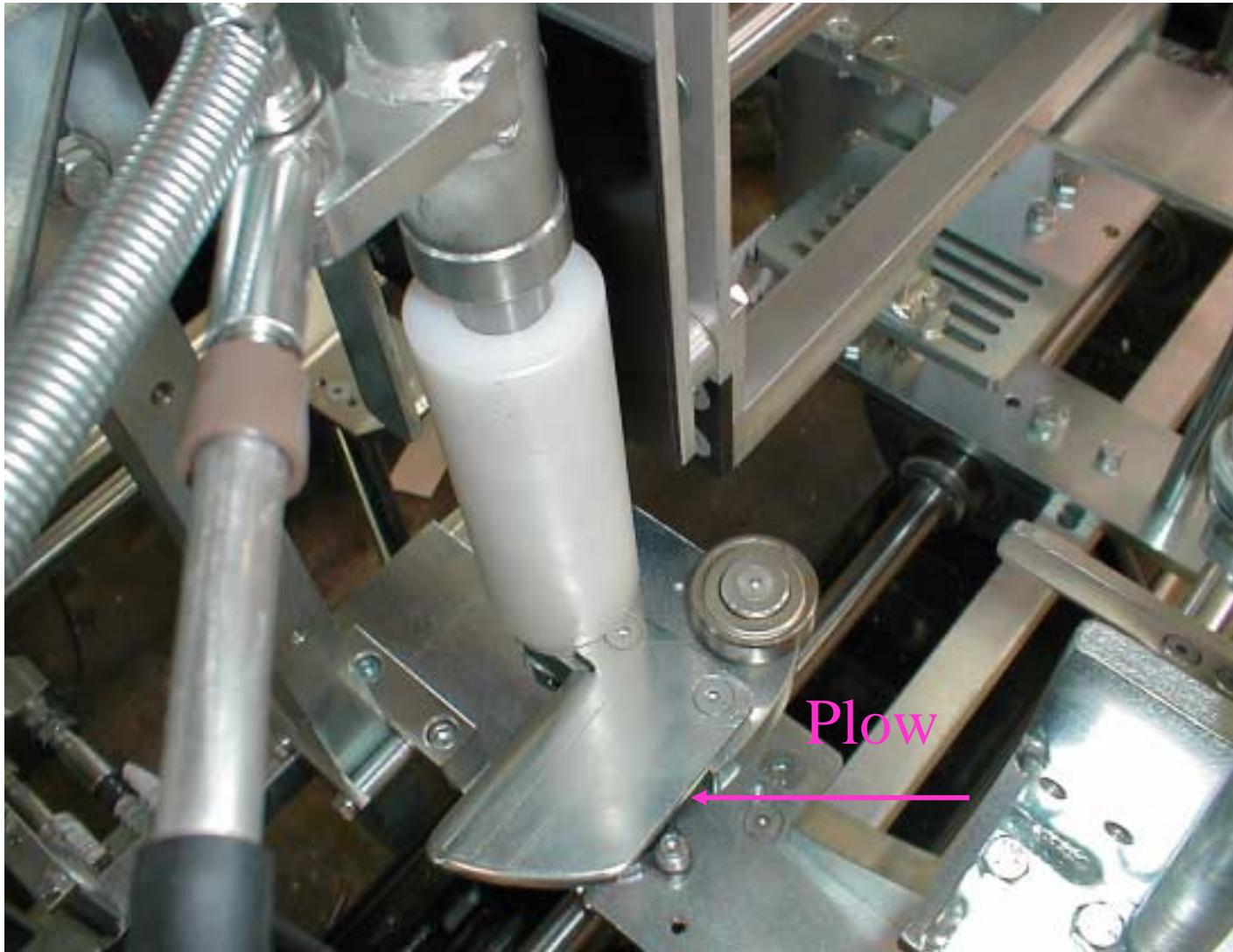
These paddles are timed to start moving as the mandrel is on it's back stroke.



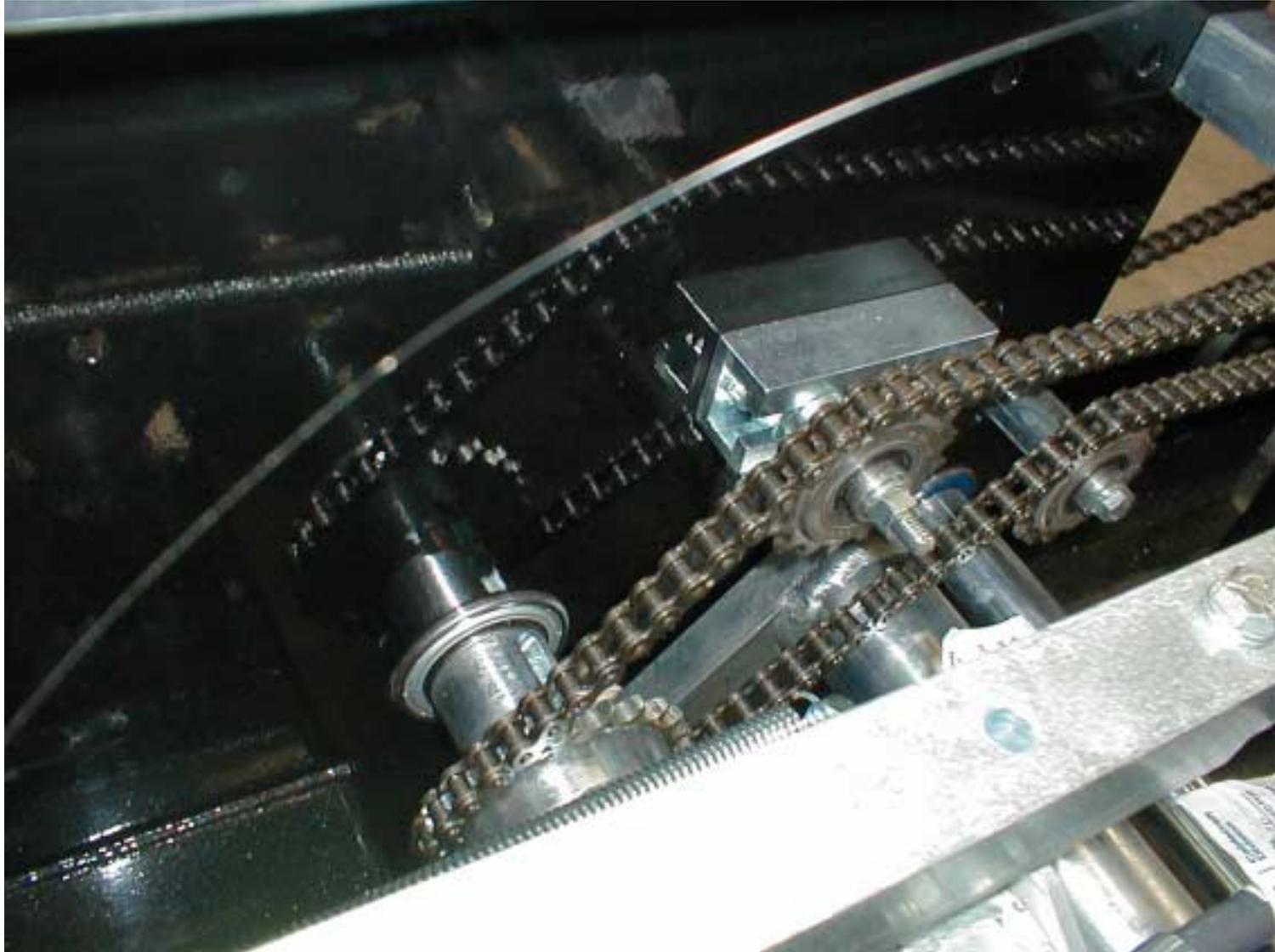
The movement of these paddles is controlled by the cam and linkage located on the right side of the machine.



# Rotating plows

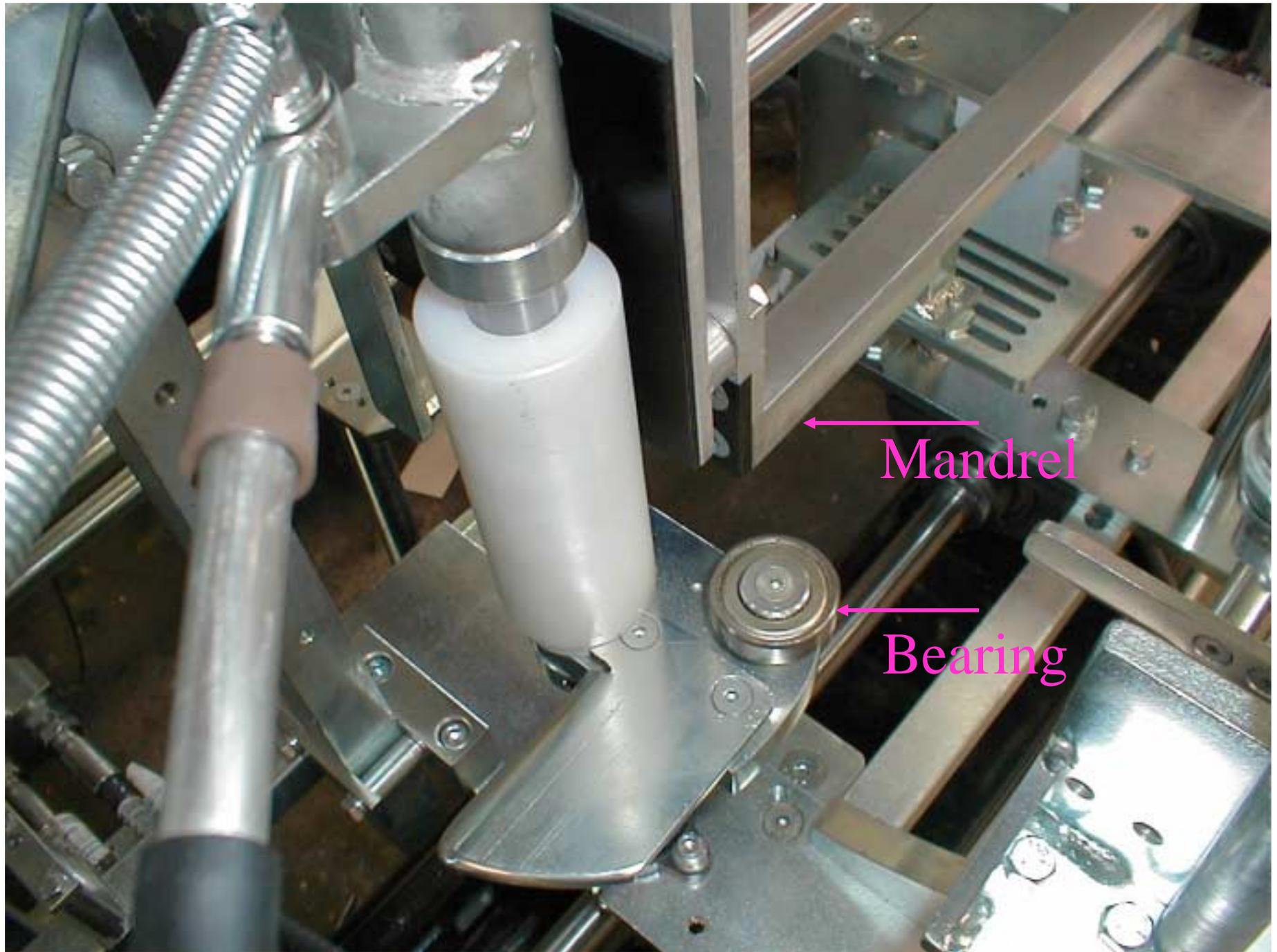


These plows are driven by the machine main shaft through a drive chain.



The plows are timed so that the bearing that is mounted on the plow mounting plate is just clear of the mandrel coming in on the forward stroke of the machine.

(see photo on next page)



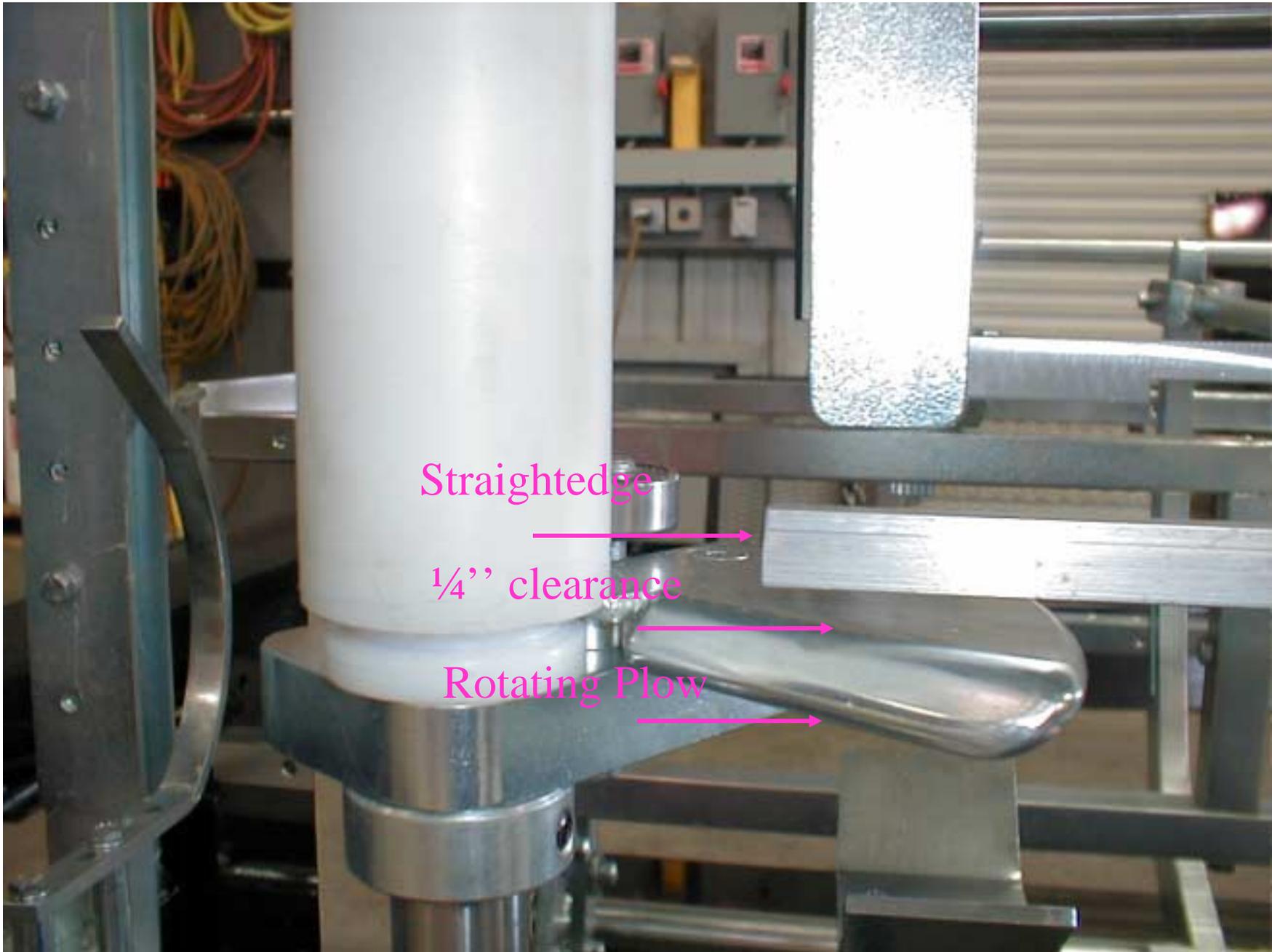
Mandrel

Bearing

# Rotating Plow Height Setting

- The rotating plows are designed to fold the outside flap down before the box is pushed into the top and bottom compression rollers.
- Once the top compression is set to the box, the rotating plows are then set too top and bottom center plate.
- A good starting point is to set the rotating plows  $\frac{1}{4}$ '' below the bottom center support plate for the bottom rotating plows and  $\frac{1}{4}$ '' above the top center support plate for the top rotating plows.
- Once this starting point has been set; the plows can be adjusted up or down by a small amount to get the flap to fold over properly (Generally  $\frac{1}{16}$ '' up or down is all that will be required.)

(see photo on next page)



Straightedge

1/4" clearance

Rotating Plow

# Top & Bottom Compression Rollers

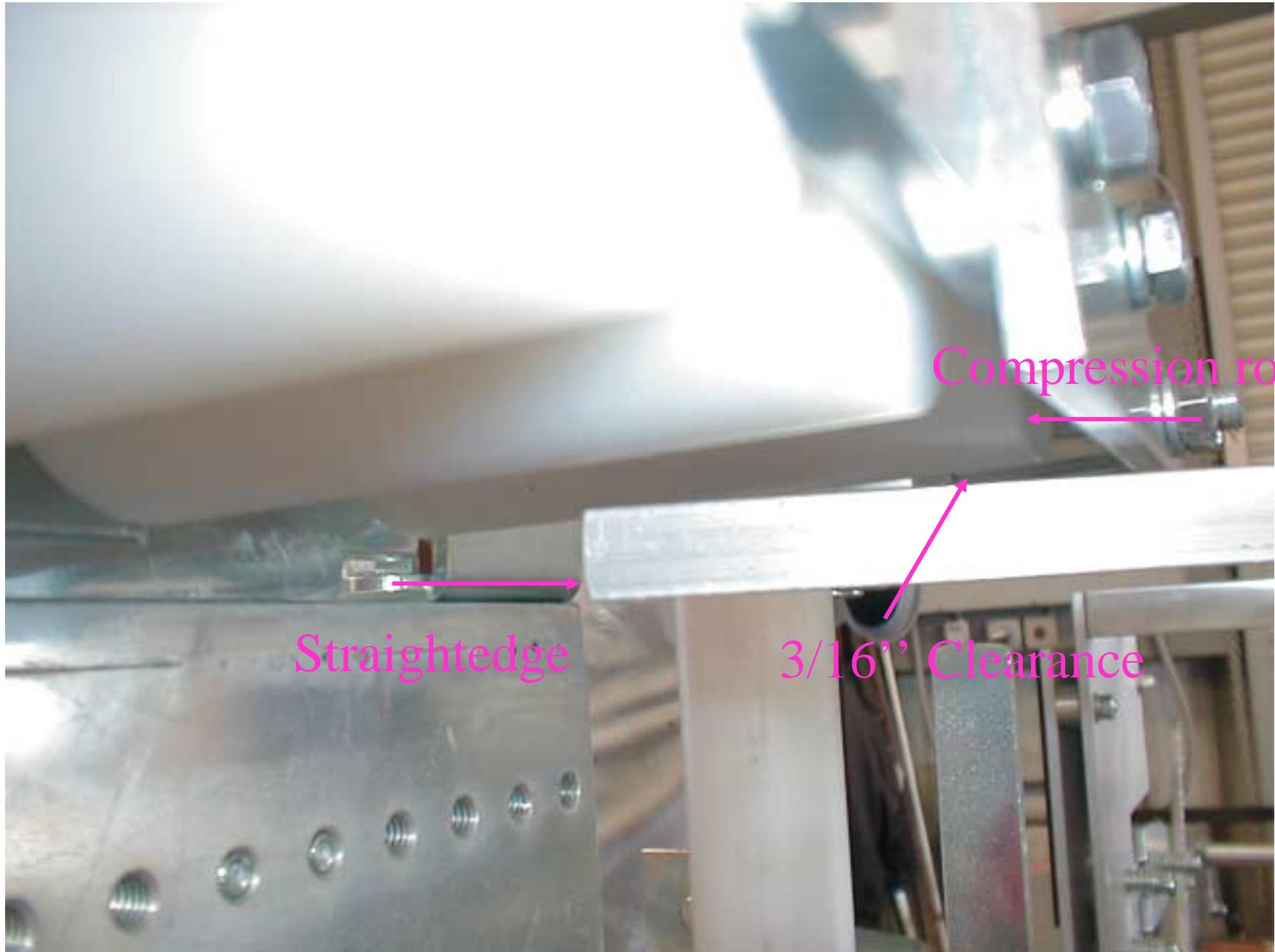


The rollers are set off of the top and bottom center plate.

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A good starting point is to set the first roller  $3/16''$  above the top plate on the top and  $3/16''$  below the bottom plate on the bottom. The last roller is set at  $1/8''$  from the plate.

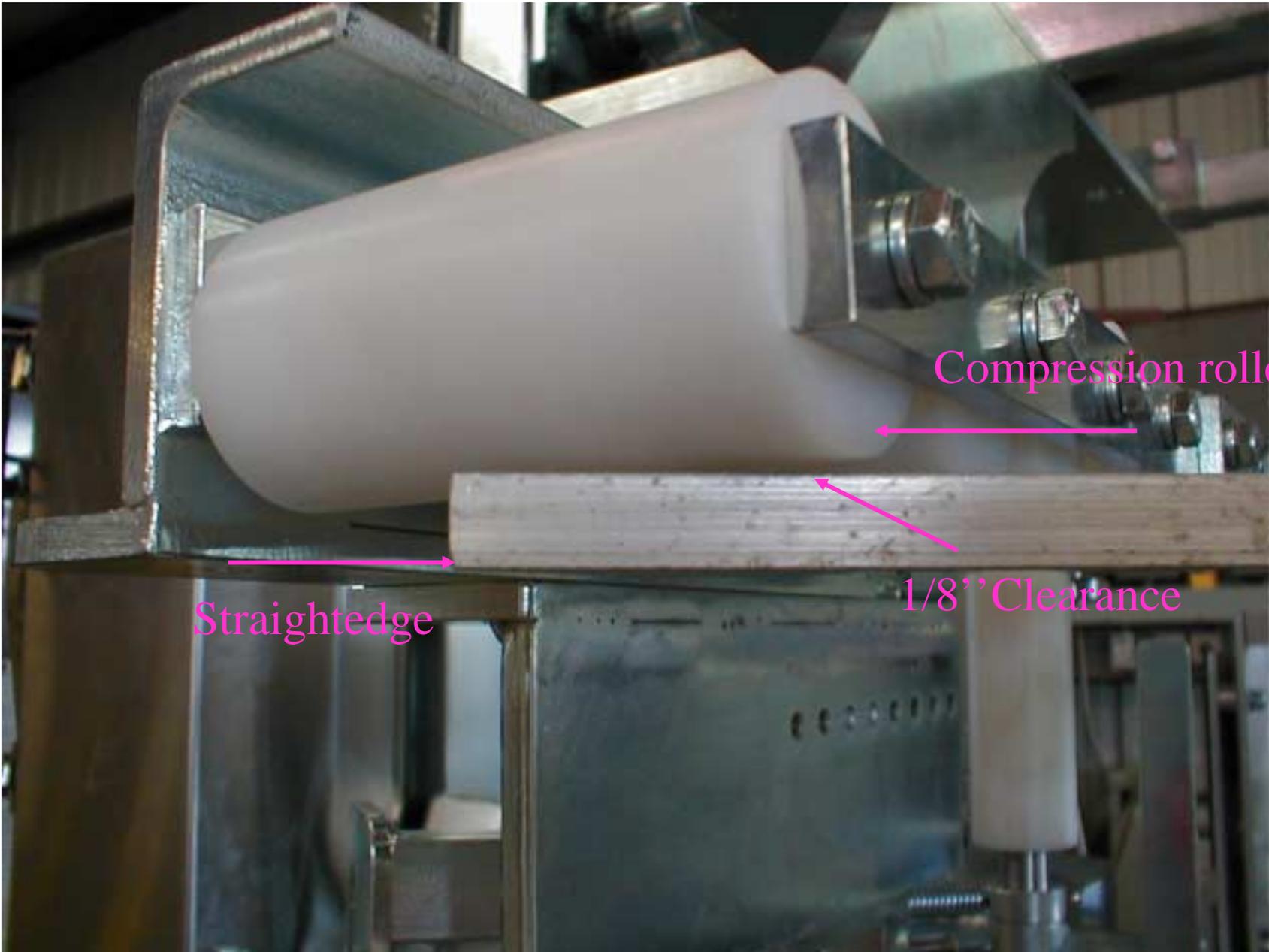
see photo on next page)



Compression roller

Straightedge

3/16" Clearance



Compression roller

Straightedge

1/8" Clearance