

# D-20XX Box Size Change Procedures

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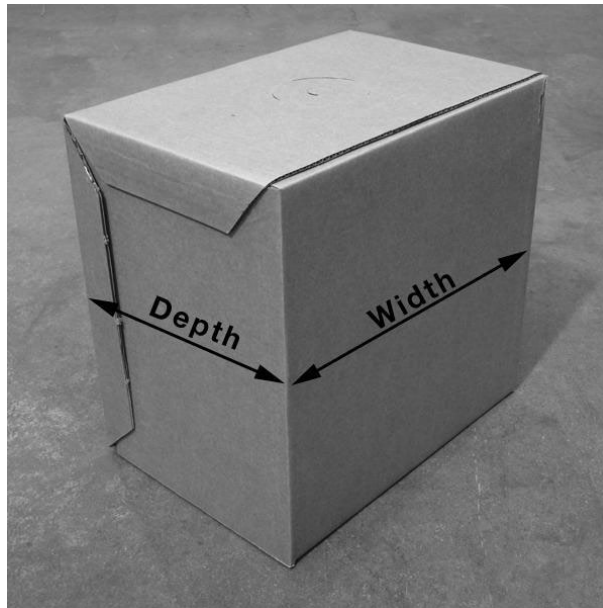
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# Quick Box Size Change Procedure

**NOTE:** Use this procedure when changing between two previously established box sizes with common depths.

The D-2000/D-2050 has adjustable stops, which allow a rapid change between two box sizes. Use the complete **D-2000/D-2050 Box Size Change Procedure** if the adjustable stops have not been set or need to be changed.

## Reference Photo

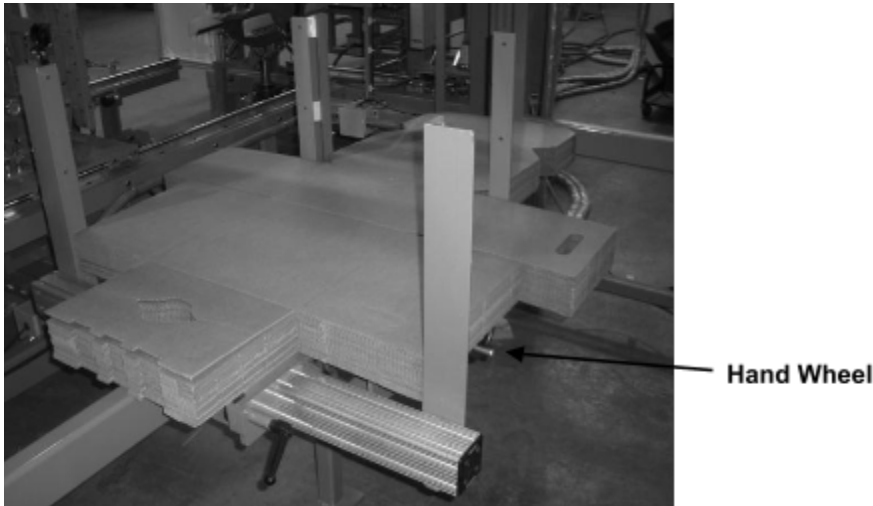


## Tools Required

- 5/32" allen wrench
- 5/16" allen wrench
- 3/16" allen wrench
- 1/4" allen wrench
- 1/2" socket with drive and extension
- 9/16" socket
- 7/16" open end wrench
- 1/2" open end wrench
- 9/16" open end wrench

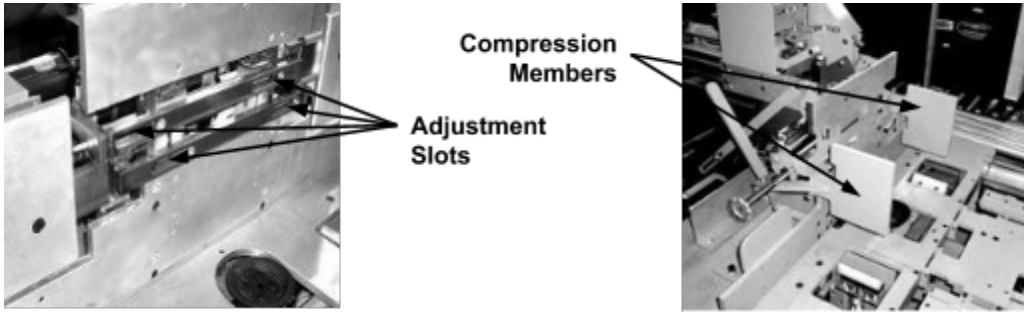
## A. Add New Size Boxes to Supply Magazine

- a. E-Stop Machine
- b. Use the hand wheel located below the box supply to adjust the new box width.
- c. Adjust position of guides with hand wheel, to provide approximately .01" (2.5mm) clearance from supply of new boxes to allow free movement of box during loading operation.

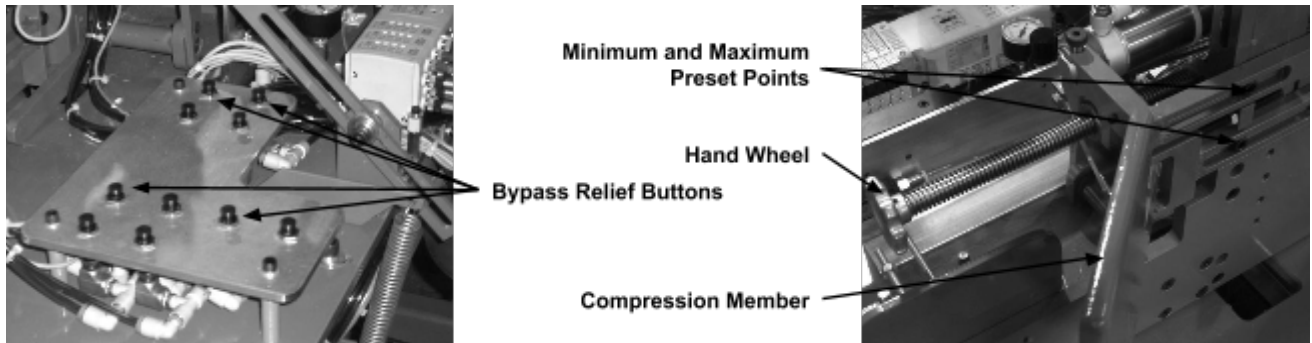


## B. Adjust for Box Width (Side Compression)

- a. Loosen four bolts with 3/16" allen wrench, in adjustment slots on front of vertical table assembly.



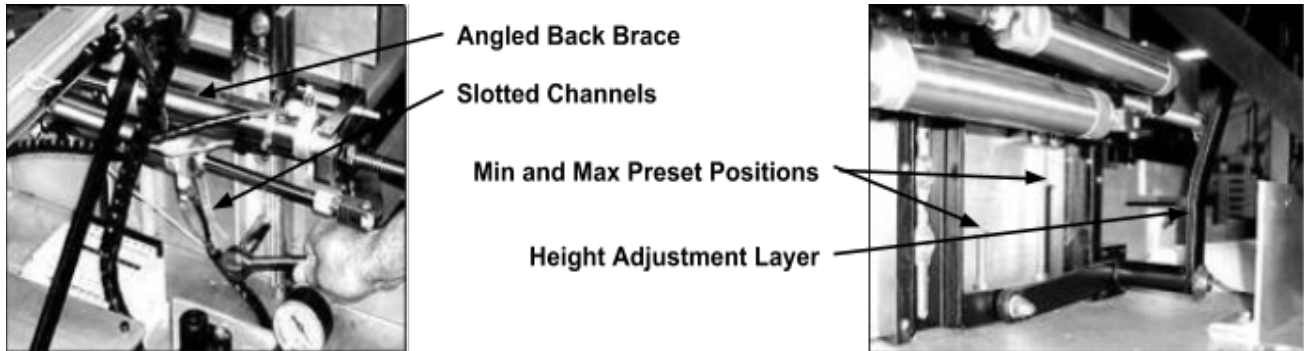
- b. Pivot side compression members (aluminum plates) out into parallel condition. Use the bypass relief buttons at the rear of the vertical table to unlock the compression members.



- c. Using hand wheel, adjust compression member assemblies to minimum or maximum preset position.
- d. Tighten four bolts in adjustment slots.

## C. Adjust for Box Height and Depth (Box Table)

- Loosen two (2) bolts with a 9/16" open-end wrench, on both ends of angled back brace.
- Loosen four (4) bolts with a 1/2" socket, securing both slotted channels supporting the top portion of vertical table assembly.

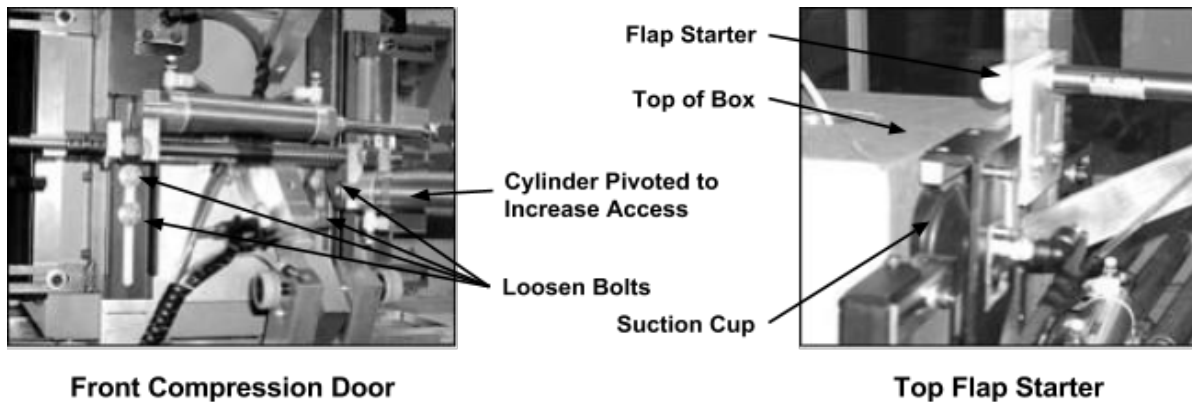


- Adjust top portion of vertical table to minimum or maximum preset position with height adjustment lever.

d.

Tighten bolts including back brace.

## D. Adjust for Box Height

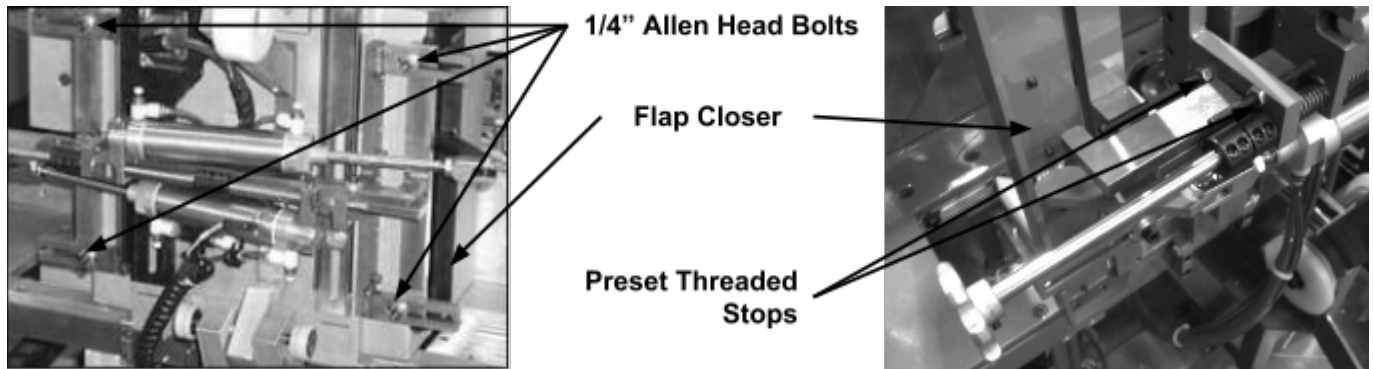


- Lift front compression door to full vertical position.
- Loosen four (4) bolts with a 9/16" socket, securing a slotted channel, supporting the top portion of the compression door. Remove c-clips from cylinder clevis and pivot cylinder out of the way to increase accessibility if necessary.
- Adjust door to new box height, aligning top edge of door with top edge of box.
- Tighten four bolts and replace c-clips.
- Loosen two bolts securing the flap starter.
- Adjust the flap starter to contact the flap 1.50 inches above the top of the box.
- Tighten bolts.

**NOTE:** One position can serve multiple box sizes providing the suction cup remains in contact with box (see picture above right), and the flap starter adjustment range can provide the 1.50 inch clearance ([Step f](#)).

## E. Adjust for Box Width (Front Glue Flaps)

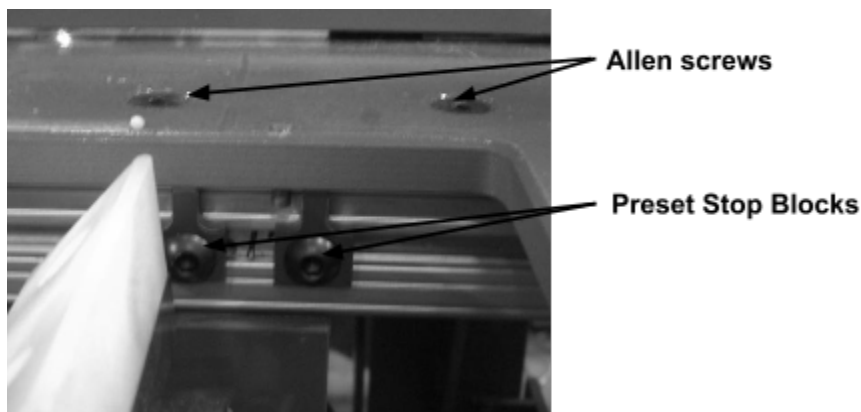
- Lift front compression door to full vertical position.
- Loosen four (4) bolts with a 1/4" allen wrench, securing front flap closing assembly adjustment points.



- Using hand wheel, adjust glue flap closing assembly to preset position, with min/max threaded stops near hand wheel.
- Tighten four bolts.

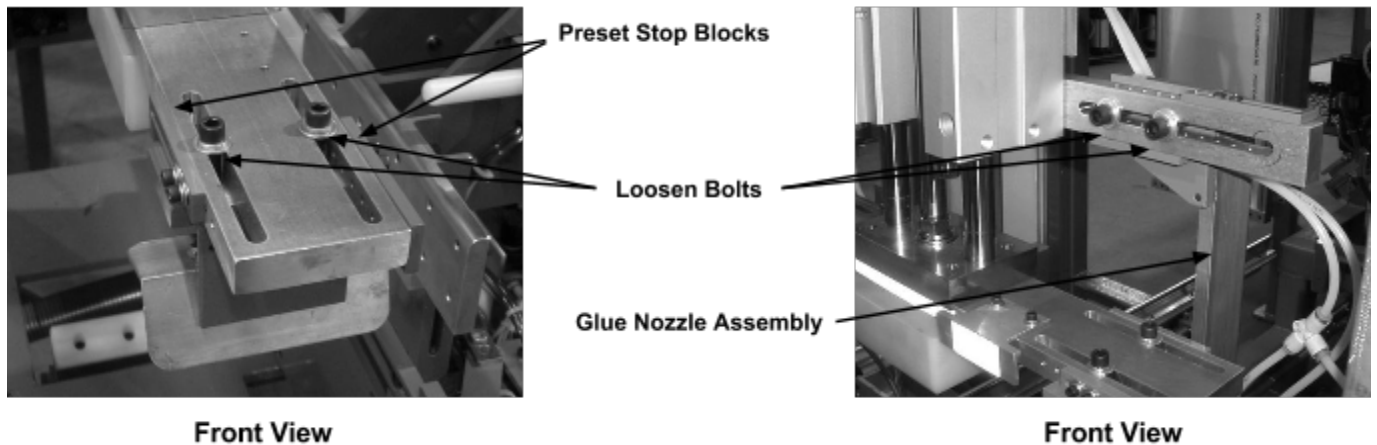
## F. Adjust for Box Width (Lower Flap)

- Loosen four (4), 3/16" flat head allen screws on top of table.
- Slide assemblies to preset stop blocks.
- Tighten screws.



## G. Adjust for Box Top Closer Width and Glue Nozzle Spacing

- a. Before starting, use purge buttons located on top of the frame to lower assemblies for access, and be sure Box Loader is directly above box stack.
- b. Position boxing table in glue position. Rotate ball screw or use Troubleshooting Program to move table.
- c. Fully lower top flap closer assembly.
- d. Lower glue nozzle assembly to approximately 4" (100mm) from the end of its travel.



- e. Loosen four (4) bolts with a 1/2" socket, securing cycle pivot bar assemblies.
- f. Loosen four (4) bolts with a 5/16 allen wrench, securing Glue Nozzle Arms assembly mounting brackets.
- g. Slide top closer pivoting assemblies and Glue Nozzle Arm assemblies to preset stop blocks.
- h. Tighten eight (8) bolts.
- i. Rotate glue pattern adjustment knob to desired box size.

## H. Adjust for Box Top Closer Width and Glue Nozzle Spacing

- a. Loosen stop on tube retainer cylinder.
- b. Adjust so the retainer stops with approximately 1" of the tube protruding through the top of the box. Adjust preset stops found on top of cylinder guide block to change between box sizes.



1" between tube flange and box panel

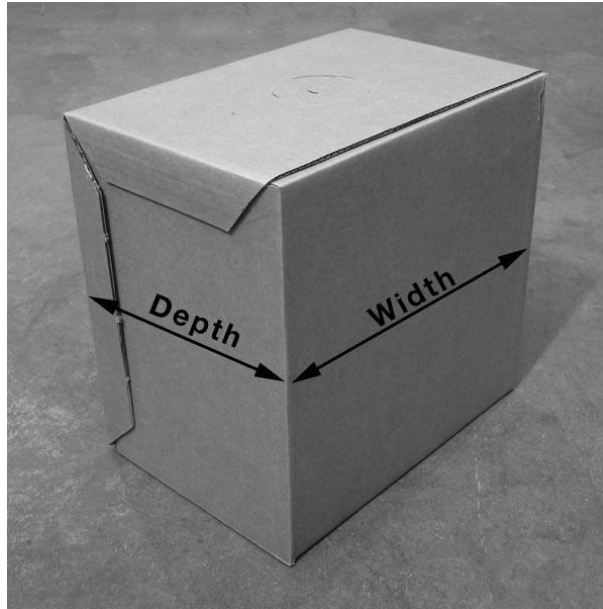
- c. Resume operation with standard reset. Be sure the Box Loader is positioned over the box stack before resetting.

# Normal Box Size Change Procedure

**NOTE:** Use this procedure to establish preset stops for future use or when adjustment settings need to be determined for a new box size.

A sample box is necessary for proper adjustment. Fold the sample box manually and tape it closed. Leave the glue flaps open for setup purposes. The adjustments must be made after a complete reset, followed by an E-STOP to insure that mechanical components are positioned correctly.

## Reference Photo

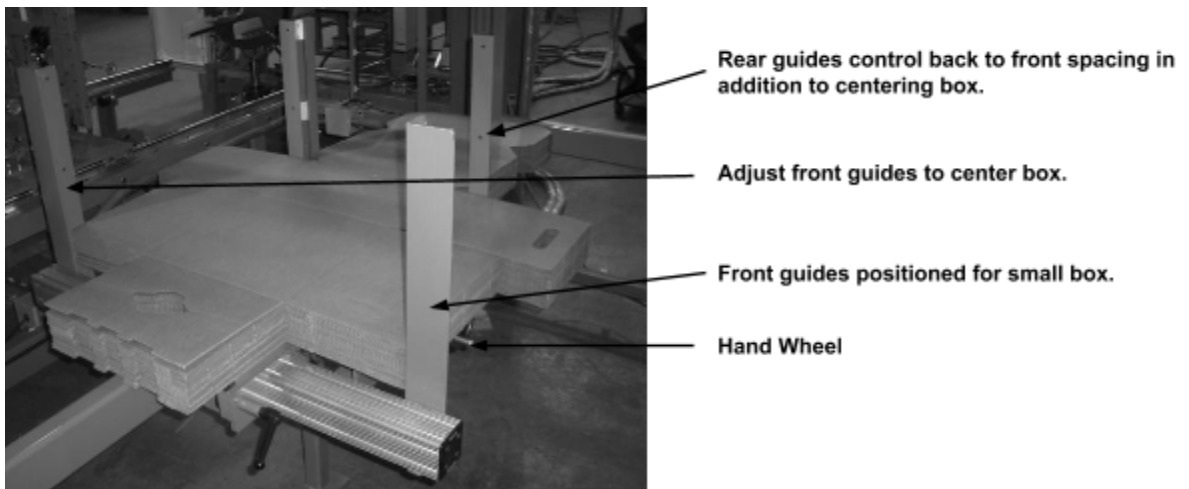


## Tools Required

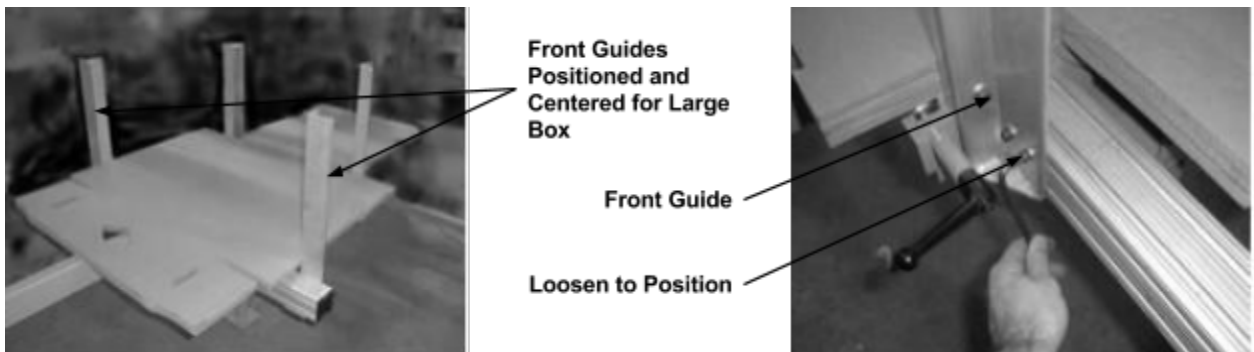
- 5/32" allen wrench
- 5/16" allen wrench
- 3/16" allen wrench
- 1/4" allen wrench
- 10mm allen wrench
- 1/2" socket with drive and extension
- 9/16" socket
- 7/16" open end wrench
- 1/2" open end wrench
- 9/16" open end wrench
- 24" ruler
- Soft-Faced Mallet

## A. Add New Size Boxes to Supply Magazine

- a. Use the hand wheel located below the box supply to adjust the new box width. Boxes are configured in 2 types. The 14" box pictured below is used with 8-inch mandrels. This configuration will accommodate up to a 17" diameter coil. Note position of front guides.



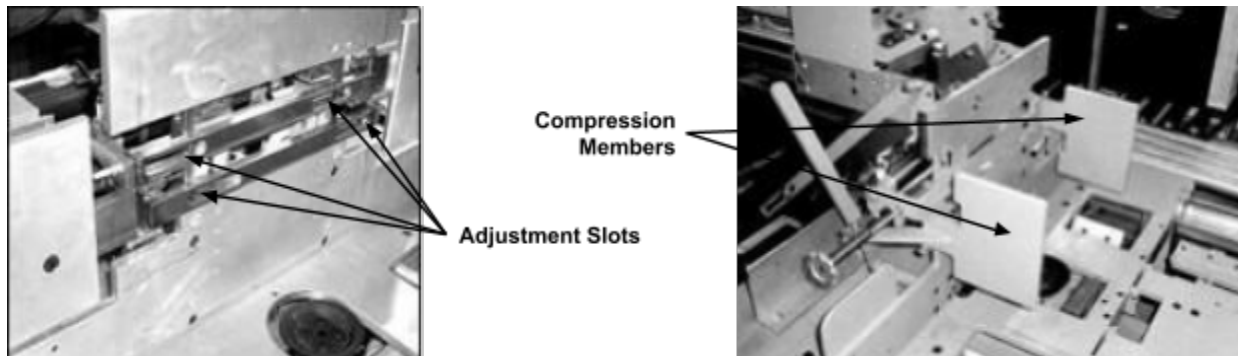
- b. The box pictured below is typical of a box for a coil with a diameter larger than 17". This box would be used primarily with 10" mandrels.
- c. When changing between the two type boxes, the front guides need to be repositioned, and centered for the new box. This requires loosening bolts and exchanging two front guides.



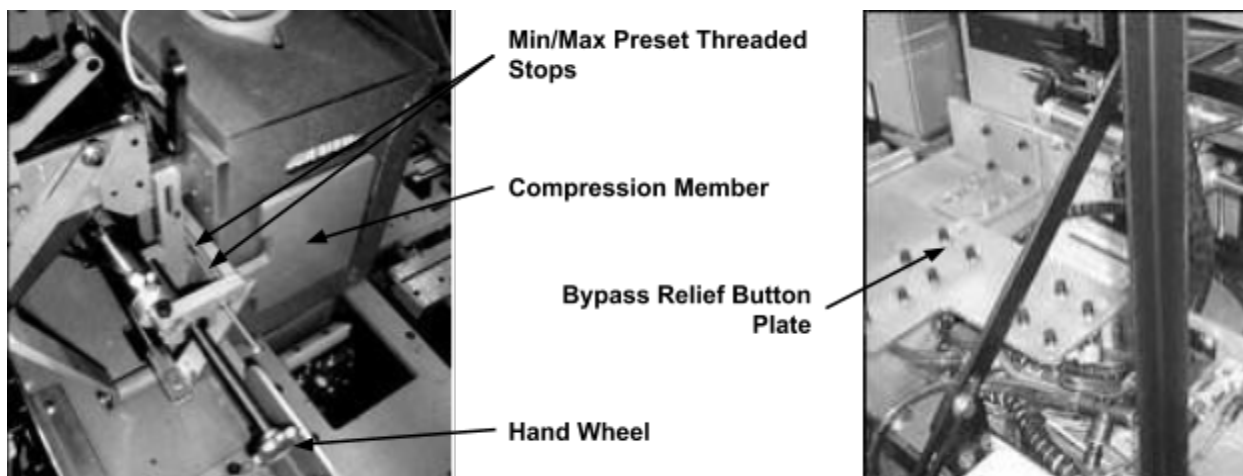
- d. Tighten bolts, confirming that guides are perpendicular and centered.
- e. Adjust position of guides and width spacing, with hand wheel, to provide approximately .01"(2.5mm) clearance from supply of new boxes to allow free movement of box during loading operation.

## B. Adjust for Box Width (Side Compression)

- a. Loosen four bolts with 3/16" allen wrench, in adjustment slots in front of vertical table assembly.



- b. Pivot side compression members (steel plates) out into parallel condition. Use the bypass relief buttons on the rear of the vertical table to unlock the compression members.

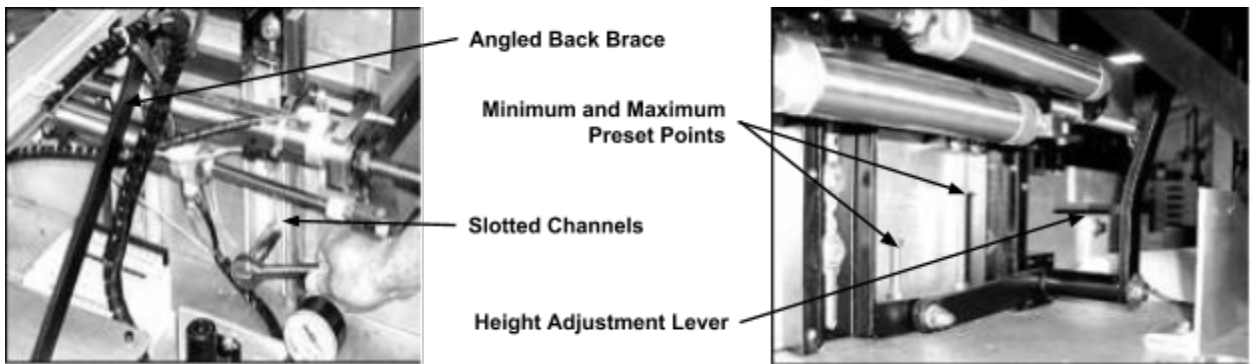


- c. Place a sample box on the center of the boxing table.
- d. Using the hand wheel, adjust compression members to the new box width.
- e. It may be necessary to loosen and back off the preset stops with a 7/16" open-end wrench, if the new sample box is outside the previously set range.
- f. Adjust spacing of the parallel steel compression members to loosely contact both sides of the sample box. A nominal gap of 1/16" between the side of the box and the compression member is desirable.
- g. Readjust and tighten minimum or maximum threaded stops for future reference.

## C. Adjust for Box Height and Depth (Box Table)

- a. Replace sample box on the center of the boxing table.
- b. Loosen two (2) bolts with a 9/16" open-end wrench, on both ends of angled back brace.

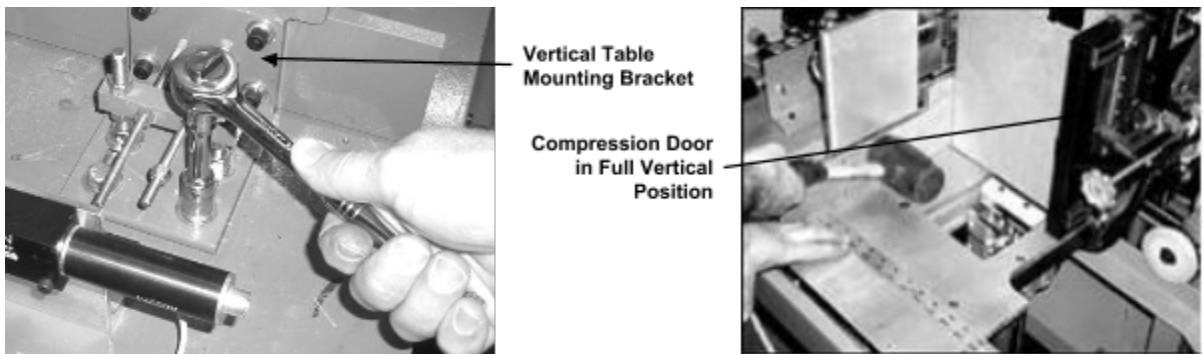
- c. Loosen four (4) bolts with a 1/2" socket, securing both slotted channels supporting the top portion of vertical table assembly.



- d. Adjust top portion of vertical table with height adjustment lever to new box height. Radius edge of table should be level with top of new box.



- e. Check both ends of the assembly with the ruler to maintain parallel condition with the table. It may be necessary to back off preset stops if the new box is outside the previously set range.
- f. Tighten bolts, adjust min/max preset stops for future reference.
- g. When the depth of the sample box has changed from previous production, it is necessary to reposition the vertical table assembly. If box depth has not changed, proceed to [Section D](#).

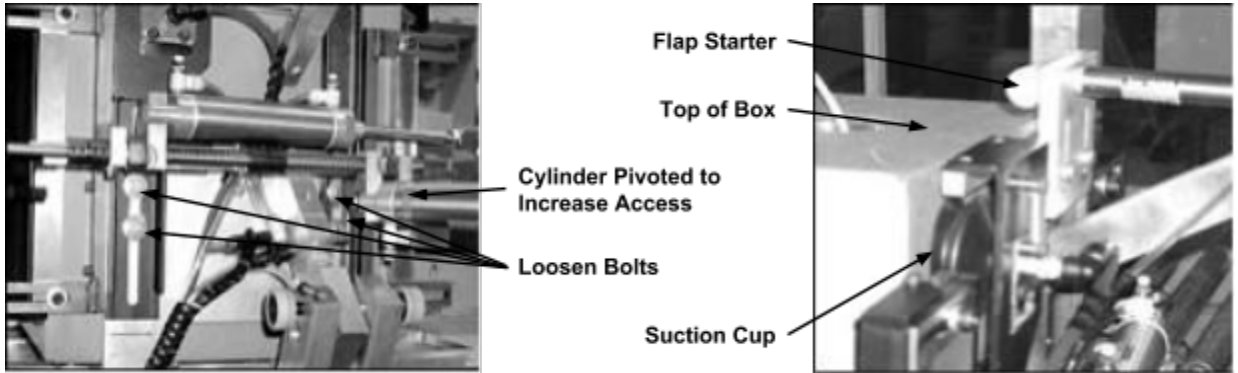


- h. Loosen eight (8) main bolts with a 9/16" socket, holding vertical table mounting brackets.
- i. Lift front compression door to full vertical position.

- j. Adjust vertical table assembly for new box depth using sample box, check both ends of assembly with ruler to maintain parallel condition with front edge of table. Use a soft-faced mallet to move vertical table assembly. A gap of approximately .20" (5mm) should result between sample box and compression when the door is in a vertical position.

Tighten bolts.

## D. Adjust for Box Height

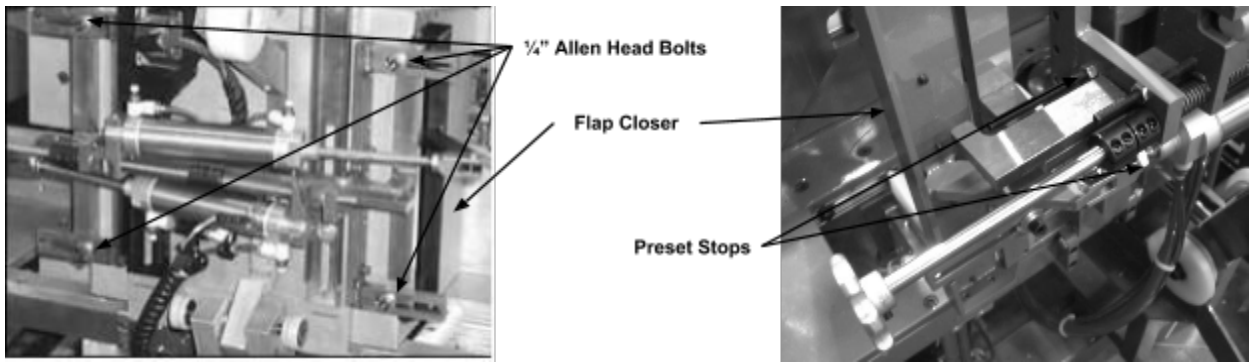


**NOTE:** One position can serve multiple box sizes providing the suction cup remains in contact with the box (see picture above right), and the flap starter adjustment range can provide the 1.5 inch clearance (Step [E](#)).

- a. Lift front compression door to full vertical position.
- b. Loosen four (4) bolts with a 9/16" socket, securing a slotted channel, supporting the top portion of the compression door. Remove c-clips from cylinder clevis and pivot cylinder out of the way to increase accessibility if necessary.
- c. Adjust door to new box height, positioning suction cup relative to box.
- d. Tighten four bolts and replace c-clips (if removed).
- e. Loosen two bolts securing the flap starter.
- f. Adjust the flap starter to contact the flap 1.5 inches above the top of box.
- g. Tighten bolts.

## E. Adjust for Box Width (Front Glue Flaps)

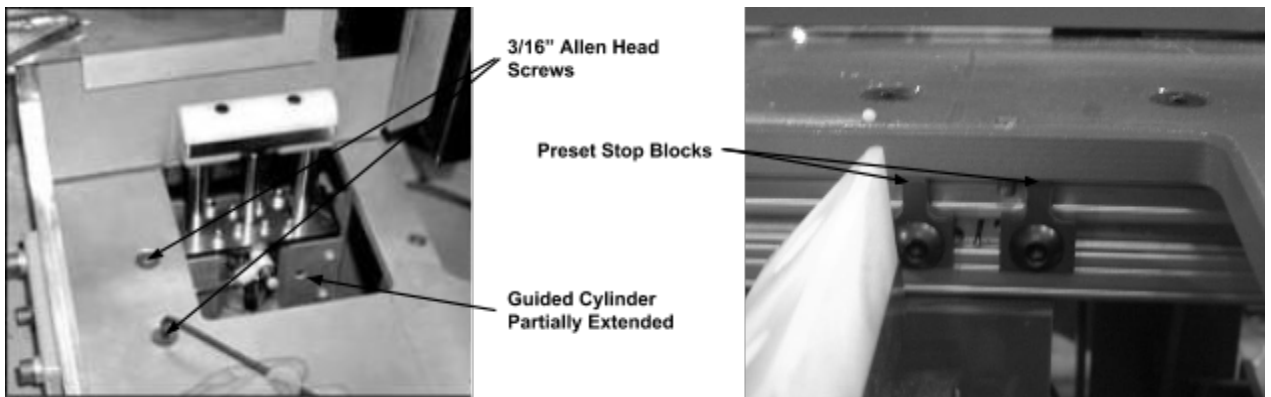
- a. Lift front compression door to full vertical position.
- b. Loosen four (4) bolts with a 1/4" allen wrench, securing front flap closing assembly adjustment points.
- c. Extend glue flap closer cylinders, putting flap closer elements in parallel position



- d. Using a hand wheel, adjust the glue flap closing assembly to the new box width. It may be necessary to loosen and back off the stops (7/16" open-end wrench) if the new sample box is outside the previously set range.
- e. Adjust spacing of flap closing elements to fully compress both glue flaps of the sample box.
- f. Tighten four bolts, adjust minimum or maximum bolt stop for future reference.

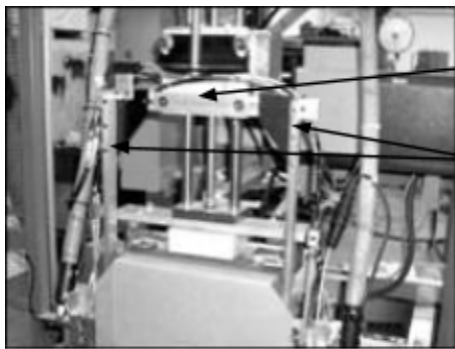
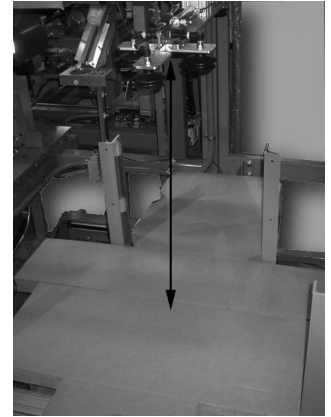
## F. Adjust for Box Width (Lower Flap)

- a. Loosen four (4), 3/16" flat head allen screws on top of table.
- b. Adjust lower flap starters (partially extend guided cylinder) to contact sides of the sample box located on the center of the boxing table. Center box by closing side compression assemblies. Loosen and back off preset stop blocks if new box width is outside the previously set range.
- c. Tighten 3/16" allen screws.
- d. Adjust stop blocks for minimum or maximum settings for future reference.



## G. Adjust for Box Top Closer Width and Glue Nozzle Spacing

- Before starting, use purge buttons located on top of frame to lower assemblies for access, and be sure Box Loader is directly above box stack.
- Position boxing table in glue position. Rotate ball screw or use Troubleshooting Program to move table.
- Loosen four (4) bolts with a 5/16" allen wrench, securing glue nozzle arms mounting brackets and 5/32" socket cap screws securing stop blocks.
- When the sample box size is larger than the last run production, slide glue nozzle arms away from the box to increase clearance.

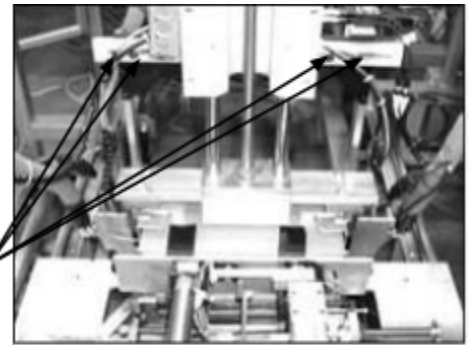


**Front View**

**Nozzle Arm Mounting Bracket**

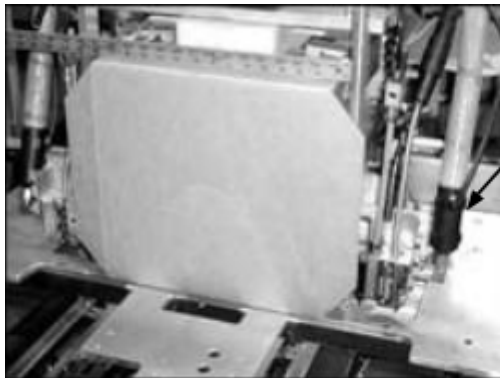
**Nozzle Arms**

**Loosen Bolts**



**Back View**

- Using purge buttons, fully lower glue nozzle assembly.



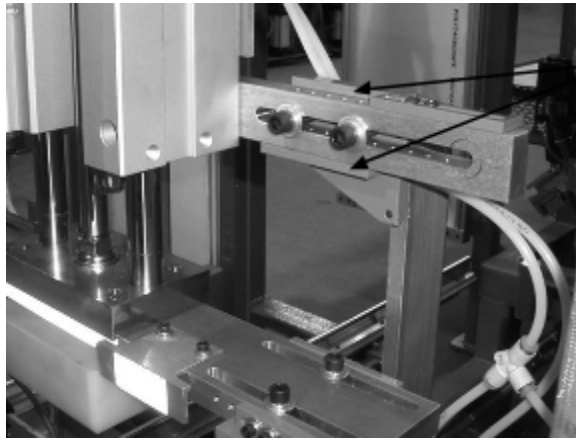
**Fully Lower**

- Adjust the glue nozzle arm to provide 0.5" (13mm) clearance from box side.



Adjust for Clearance

- g. Tighten four (4) bolts.
- h. Adjust stop blocks for minimum or maximum settings for future reference.



Adjust for future reference

- i. Remove the sample box.

## H. Adjust Tube Retainer to Reflect Change in Box Size

- a. Loosen stop on tube retainer cylinder.
- b. Adjust so the retainer stops with approximately 1" of the tube protruding through the top of the box. Adjust preset stops found on top of the cylinder guide block to change between box sizes.

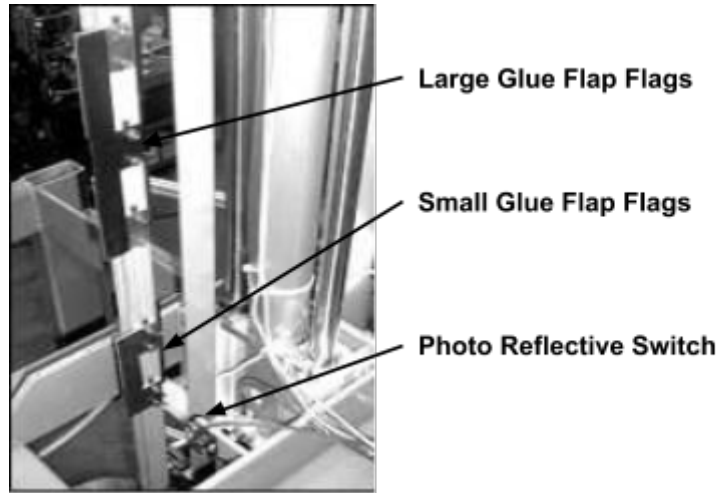


1" between tube flange and box panel

- c. Resume operation with standard reset. Be sure Box Loader is positioned over box stack before resetting.

## **I. Adjust Glue Pattern**

- a. Adjust glue flags to apply glue as required by the new size box.



- b. Glue pattern assembly rotates to allow quick changes between up to four patterns.
- c. Glue is applied when the flag breaks the switch beam.

## **J. Reset**

- a. Be sure to clear the box loader away from glue nozzles.
- b. Resume operation with standard reset.