

## **INTRODUCTION**

In order to achieve maximum production and reliability from this system, it is necessary to be familiar with its capabilities. Knowledge of installation, components and set up are essential to initiate operations and maintain the machine. Keep manual near machine for easy reference. This information will provide steps to improved operations and enhanced production. Thorough understandings of these basics are essential.

## STANDARD TBS100FC CASE SEALER DESCRIPTION

This **COMBI PACKAGING SYSTEMS LLC TBS100FC CASE SEALER** is a medium speed automatic case sealer. This sealer is designed to seal standard **RSC (Regular Slotted Case)** type cases in the vertical position. Cases can be sealed top and bottom with pressure sensitive tape. (Hot melt glue options can be purchased also.) The case, when presented to the machine, is belt driven through the sealer with precise and positive application.

Due to deviations in case dimensions and product sizes, minor adjustments and variations in set up procedures may be required.

Machine speeds are dependent on case size and construction.

**CAUTION:** ALL ADJUSTMENTS SHOULD BE MADE WITH THE **EMERGENCY STOP** BUTTON DEPRESSED. THIS MACHINERY CAN CYCLE **AUTOMATICALLY** WITHOUT MANUAL MANIPULATION. TO PREVENT INJURY, DURING NORMAL OPERATION, KEEP ALL SAFETY COVERS IN PLACE AND **DO NOT** DISENGAGE SAFETY SWITCHES.

This machine has been manufactured to be used in conjunction with a variety of automatic case erecting and loading equipment, providing a complete packaging system.

Main components consist of frame, covers, upper FC 4-point adjust assembly, 0-line or center-line adjust assembly, scale adjust assembly, pneumatics, tape head, electrical components and belt drive.

The photos in this manual may vary slightly or be mirrored image of actual machine, depending on systems' direction of execution and options purchased.

### **IMPORTANT:**

**Adjust the belt drives to accommodate the desired case. There are two different types of drive side orientation. One is the center-line, where both sides move when adjusted. The other is the Zero-line, where only the outer side and tape head(s) move when adjusted. Using the adjustment handle, adjust the belt drive assembly to accommodate the desired case. If adjustments are needed for Zero-line systems, move outer belt drive so case is secure against side, but not tight. Adjust the height of the taping head for machines with a top taper. Place an erected case in the system and jog belts until the case is under the upper tape head. Crank the taping head to the desired position.**

## GENERAL INSTALLATION INSTRUCTIONS

### 1. Site Location

Ideally, the main electrical enclosure should be located away from direct heating and cooling or windows where it can “bake” in direct sunlight. Equipment should be located convenient to the required utilities, such as compressed air and power, as well as being convenient to related production facilities.

There should be clearance around the equipment to accommodate production and maintenance functions. A minimum of 36” clearance must be left to the front of the electrical enclosure (check your local electrical codes).

The flooring must be suitable to secure the proper anchor bolts as they are required to maintain structural alignment and keep the equipment from “walking”.

### 2. Structural Erection

When the exact location has been determined, the location for the anchor bolts should be marked on the floor.

The use of tightly drawn wire as a “centerline”, and a plumb bob to transfer the stations and centerline to the floor, is an excellent way to begin the anchor bolt layout.

Proper use of a transit and/or triangulation may be used to determine the exact anchor bolt locations. The use of a transit could make it possible to note and record the variation in floor elevation at each anchor location.

The structure should be leveled both longitudinally and transversely by means of the adjustable foot bolts in each leg. Connecting brackets, provided by Combi Packaging Systems, are used to interconnect equipment. Most connections will be labeled.

Exercising proper care in this phase of erection will help to assure that all sections will fit together properly, will contribute to the reliability of the system, and to minimize unnecessary damage.

## **GENERAL INSTALLATION INSTRUCTIONS CONT.**

### **3. Electrical Connections**

All electrical connections between equipment are made terminal to terminal. A junction box is provided on each piece of equipment, other than that which has the main enclosure. A set or row of terminal strips are located on each subpanel in each terminal box. The terminals are prewired with the internal wiring to that specific component. The terminals are numbered to coincide with the external wiring which is also numbered. The wiring is disconnected at one end and left generally in flexible conduit ready to reconnect. Check the electrical schematic located in the electrical enclosure for incoming power required.

### **4. Compressed Air Connections**

Compressed air is brought in to one or more locations, (see your equipment layout). Air should be delivered via a 3/4" or larger air line, 80 psi minimum supply, to the filter regulator.

Air connections between equipment is generally via polyflow tubing. These must be reconnected directly into the valve or cylinder via a quick connect fitting. Both ends, fitting and tube, will frequently be labeled, (unless connection is obvious).

## TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES

### WARNING!

Carefully follow the Combi installation and set up procedures. The manufacturer will not be responsible for damages caused by improper installation and set up.

### MAIN AIR

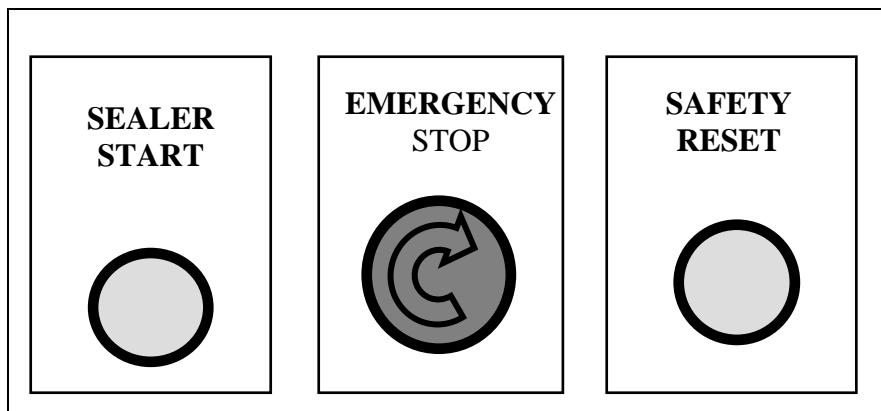


**Figure 1 - Filter Regulated Soft Start (FRSS)**

Photo may vary from actual machine.

1. Push **EMERGENCY STOP** before starting set up. (See figure 1).
2. Close the Main Air Shutoff Valve at the FRSS Main Air handling unit. (Push Orange Tab Down).  
**NOTE:** Airflow to the machine must be stopped to manually set up the machine.
3. Stopping the Main Air releases air pressure to all Pneumatic Components and allows them to be moved manually. See Final Step to reset the FRSS.

## TBS100FC OPERATOR CONTROL PANEL



**Figure 2A** - Operator Control Panel. Controls vary depending on options purchased.



**Figure B2** - Located on upper frame or on electrical box. Shown here on electrical box.

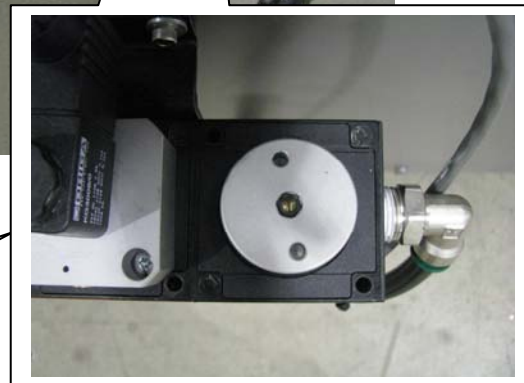
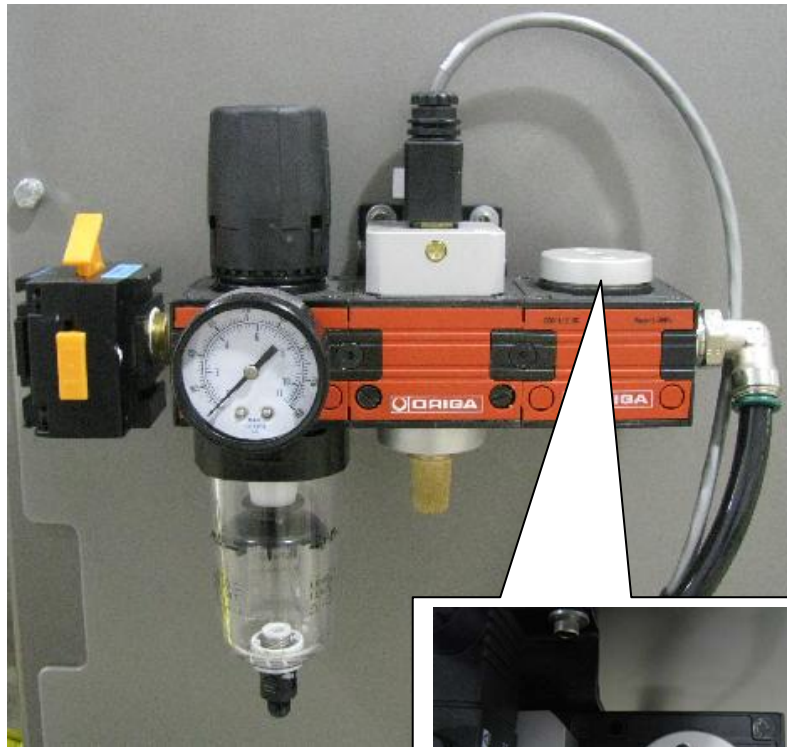
**NOTE:** SOME PANEL LAYOUTS AND SWITCH LABELS MAY VARY SLIGHTLY FROM MACHINE TO MACHINE.

The operator control panel is used to control the automation of the system.

1. **“SEALER START”** Green push button – push to start sealer system.
2. **“EMERGENCY STOP”** - Red “mushroom” button. Push in for Emergency Stop. Twist and pull out to reset.
3. **“SAFETY RESET”** – Green push button. Push to reset safety devices.

**TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES**

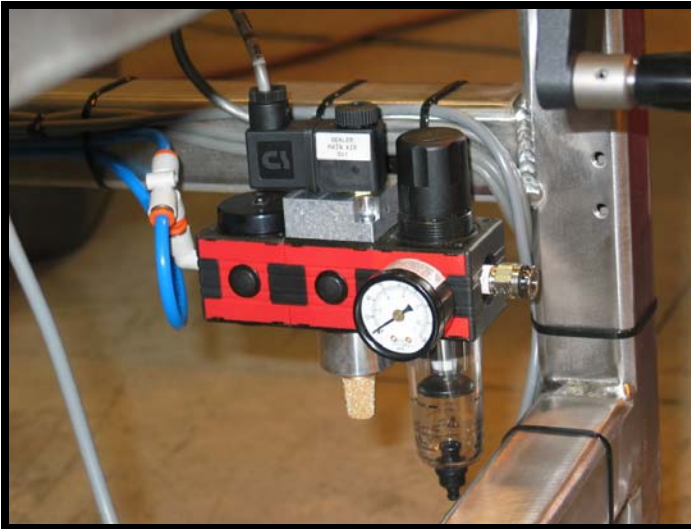
**FILTER REGULATED SOFT START**



**Figure 3A & B - Screw adjustment for FRSS.**

View overlooking top of  
FRSS.  
Screw located in center

## MAIN AIR/FILTER REGULATED SOFT START MACHINE LOCATION



**Figure 4A** - Sealer Main Air (Filter Regulated Soft Start)

**Figure 4B** - Location of Main Air on Left Hand Execution Stand Alone Machine.

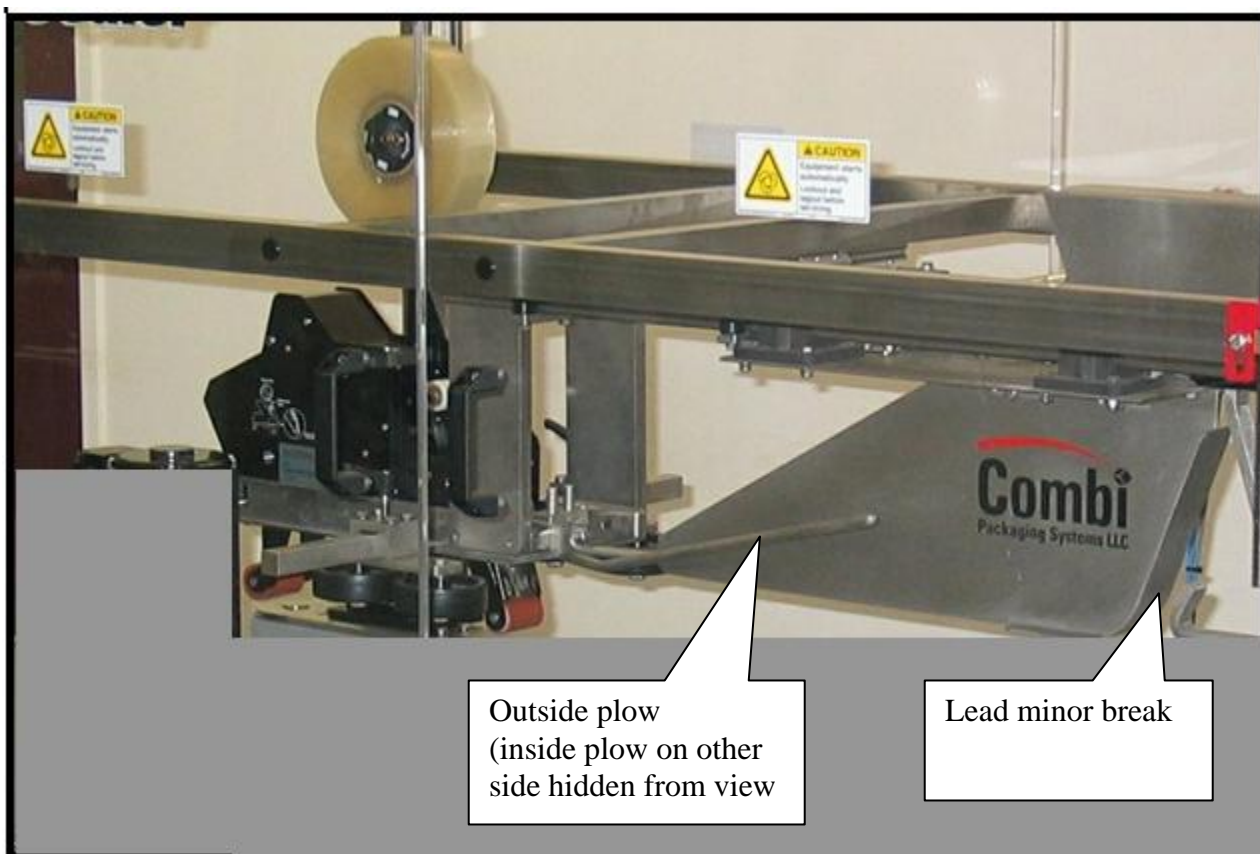


**Figure 4C** - Location of Main Air on Right Hand Execution Stand Alone Machine.

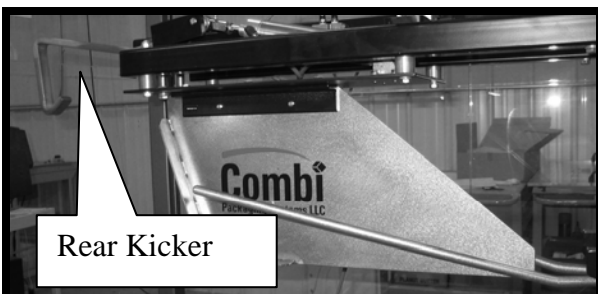


## **UPPER ASSEMBLY WITH SEALER PLOW**

The upper assembly aligns the sealer plow. The sealer plow is the mechanism that holds down the major and minor flaps of the case until case is sealed. The main parts of the plow are the lead minor break, inside plow, outside plow and rear flap kicker.



**Figure 5 - Upper Assembly**



**Figure 6 - Rear Kicker, Plow Break and Plow Bars.**

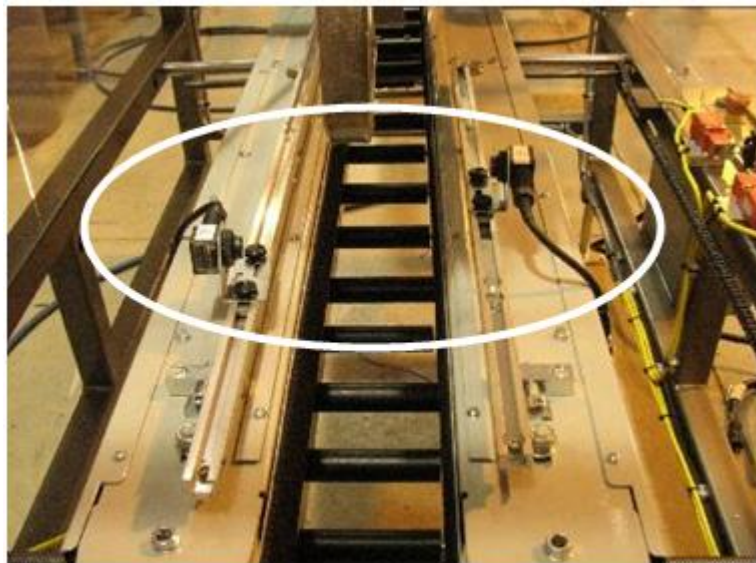
## TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES

### BELT DRIVE AND MOTORS

A case is presented to the system and the belt drives' continuous movement directs the cases toward the sealing system.



**Figure 7** - Belt Drive and Motors.

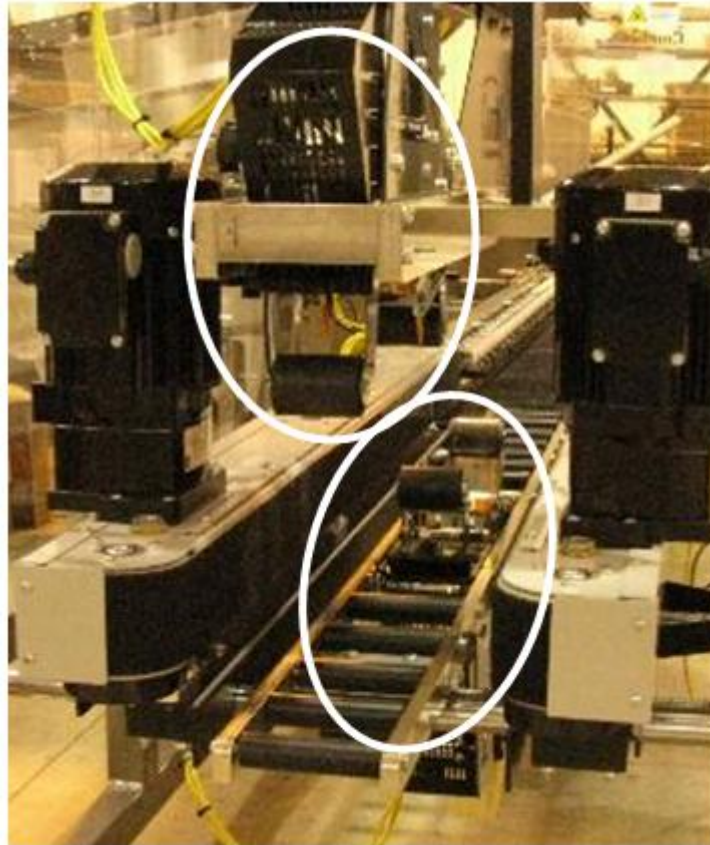


**Figure 8** - Flap Kicker and Indexer Photo Eyes

## TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES

### TAPING UNIT

The TBS100FC Case Sealer can be purchased with bottom only taper, top only taper or top and bottom taper. The taping unit precisely secures tape onto case before discharging the case onto awaiting conveyor. Refer to tape head manual in section five for specific set up, maintenance and safety procedures.



**Figure 9** - Upper and lower tape head

### ALARMS

**This only pertains if the alarm options were selected at time of purchase.**

**Any tape faults will shut down the taper automatically.**

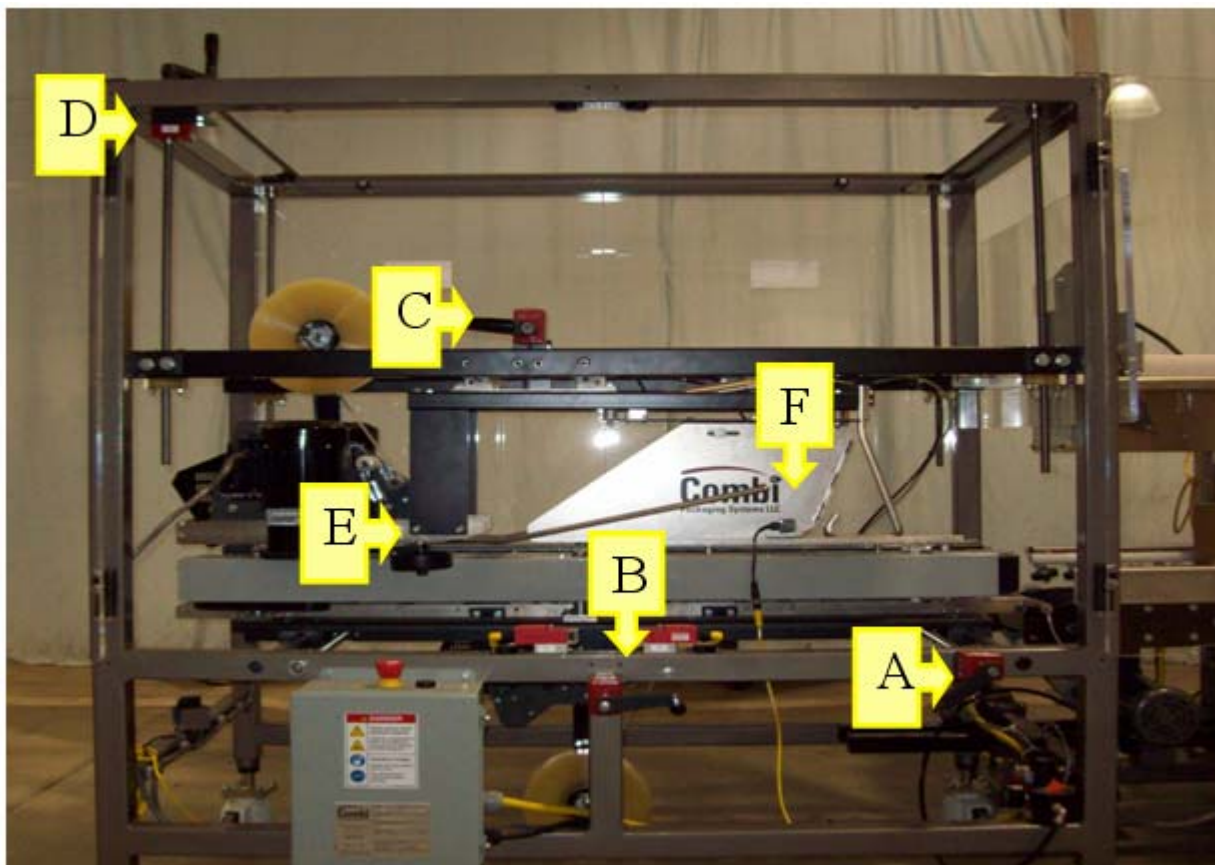
<b>BLUE - SOLID</b>	<b>Low Case or Low Tape</b>
<b>BLUE - FLASHING</b>	<b>No Tape or No Tape Cut</b>

TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES

## CASE SEALER SET UP AND MACHINE ADJUSTMENTS

**CAUTION:** BEFORE ATTEMPTING TO SET UP OR CHANGE OVER THE TBS100FC SEALER, BE SURE THE EMERGENCY STOP BUTTON HAS BEEN DEPRESSED.

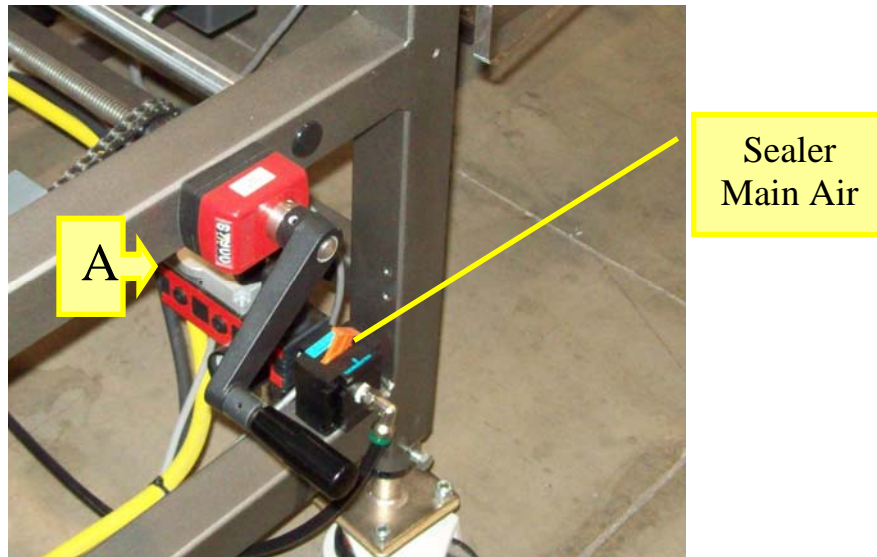
**Warning!** Carefully follow the Combi installation and set up procedures. The manufacturer will not be responsible for damages caused by improper installation and set up. Photos may be mirror image of system, depending on direction of machine execution purchased.



**Figure 1 – Zero Line Sealer Adjustments**

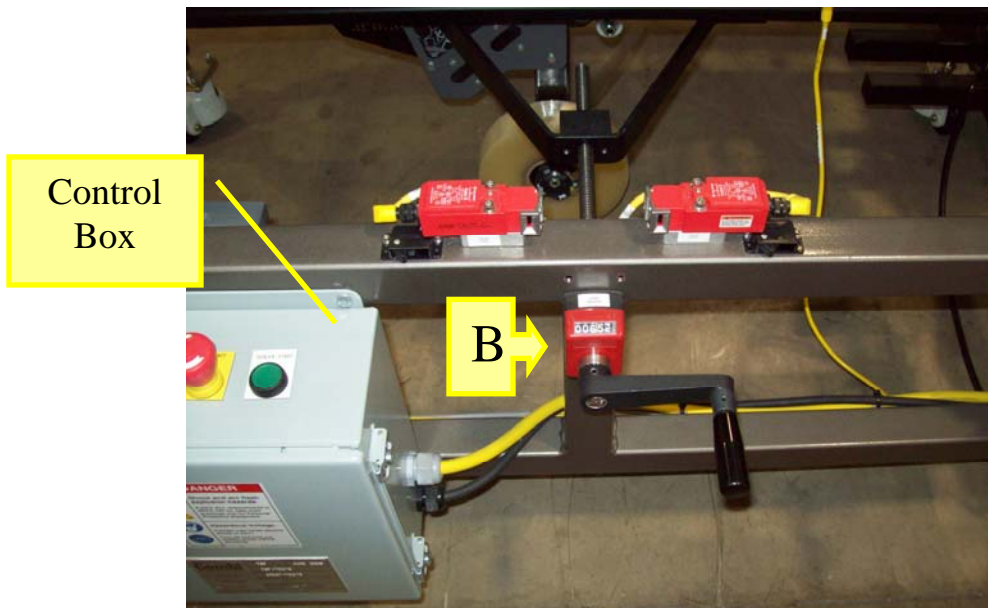
- A. Sealer belt adjustment (case width)
- B. Sealer lower tape head adjustment (case width)
- C. Sealer top tape head and center plow adjustment (case width)
- D. Sealer top hold down adjustment (case height with top and bottom flaps folded)
- E. Sealer case side guide adjustment
- F. Sealer trailing minor kicker adjustment

**TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES**



**Figure 2 - Case Side Belt Adjustments**

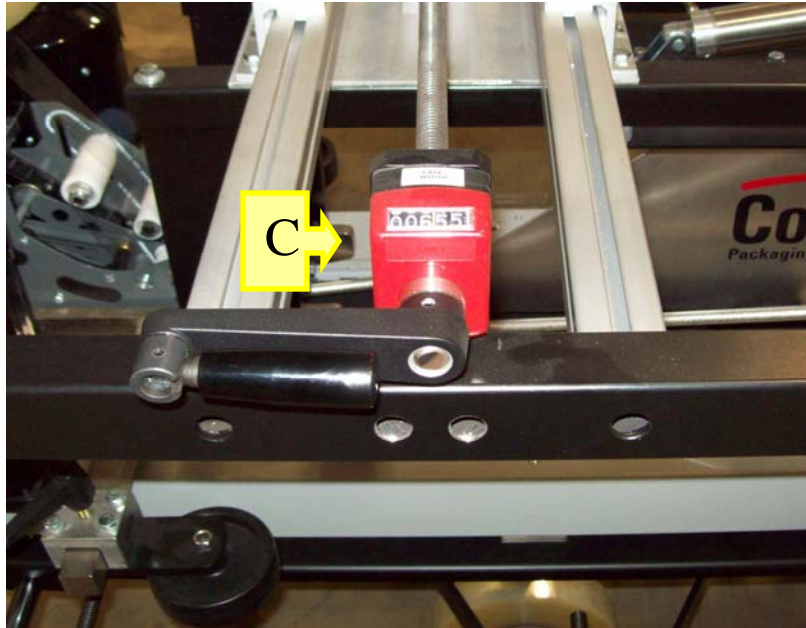
- 1. Belt adjustment set (A) to case width (figure2)**



**Figure 3 - Bottom tape head adjustment**

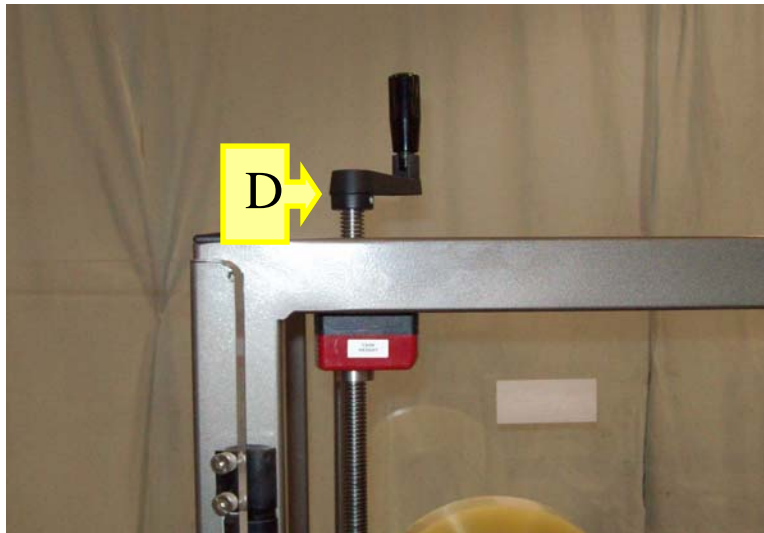
- 2. Bottom tape head adjustment (B) set to case width (figure 3)**

**TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES**



**Figure 4 - Top tape head and center plow adjustment**

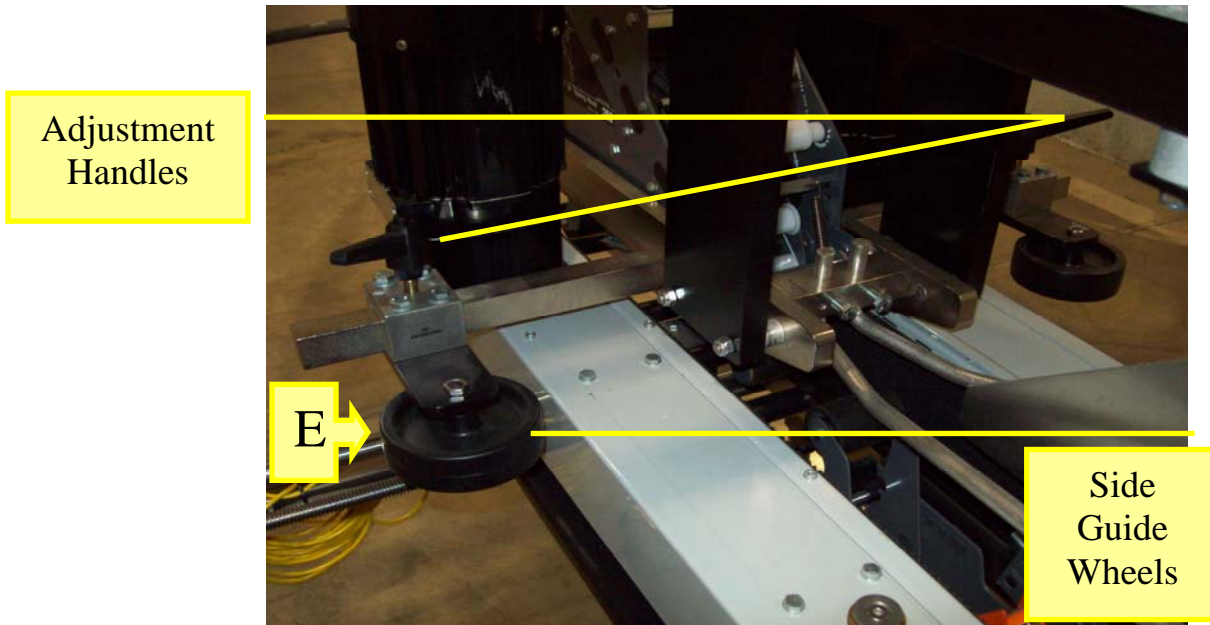
3. Sealer top tape head and center plow adjustment (C) set to case width (figure 4)



**Figure 5 - Height adjustment**

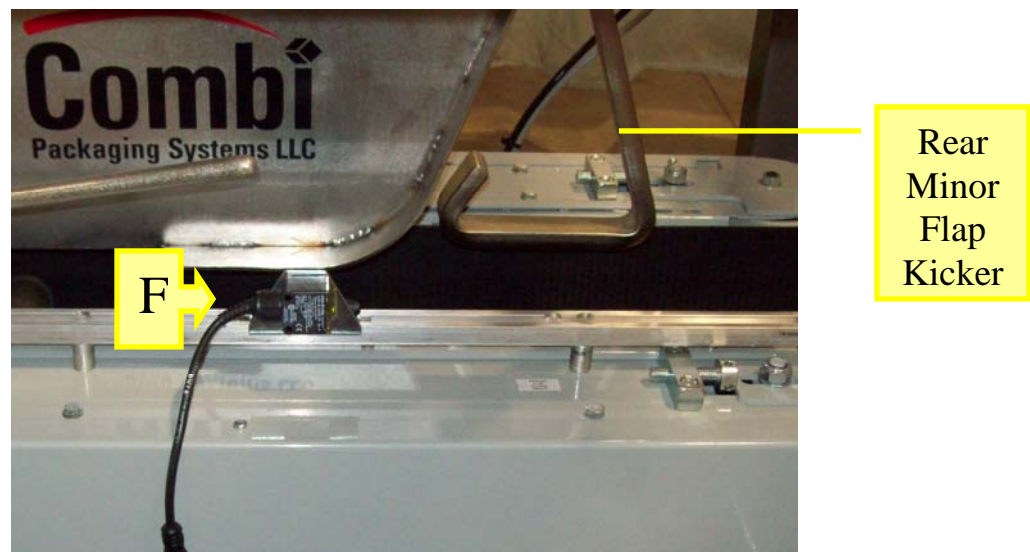
4. Sealer height adjustment for tape head and center plow (D) set to case height with top and bottom flaps folded (figure 5)

**TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES**



**Figure 6 - Case guide adjustment**

5. Case side guide adjustment (E) set to case sides with case stopped in belts (figure 6)



**Figure 7 - Trailing minor flap adjustment**

6. Case rear minor flap kicker adjustment (F) is set to kick the trailer minor flap (figure 7)
  - a. The rear flap kicker can be adjusted in relation to the plow, by adjusting the trigger reference photo eye.

## TBS100FC CASE SEALER DESCRIPTION AND SET UP PROCEDURES



**Figure 8 - Side Belts**

**8. There are two different types of belt drive orientation:**

**If the machine is a 0-line assembly, the inner belt drive is fixed and cannot be horizontally adjusted. However, the outer belt drive is horizontally adjustable.**

**If the machine is a Center-line assembly, both the inner and outer belt drives can be adjusted. If adjustments are needed, adjust the belt drive assembly to accommodate the desired case using the adjustment handle. Move belt drive so case is secure against side, but not tight**

**NOTE: ALL ADJUSTMENTS ARE TO BE USED AS A GUIDELINE FOR INITIAL SET-UP. THESE ADJUSTMENTS MAY HAVE TO BE CHANGED AFTER ACTUAL RUNNING CONDITIONS ARE ACHIEVED. EACH PRODUCT IS DIFFERENT, AND MACHINE MUST BE ADJUSTED ACCORDINGLY.**



## **SEQUENCE OF OPERATION**

### **Taper Sequence**

The case, when presented to the sealer, is guided through the machine by belts located on both sides of the case. The leading edge of the case actuates a photo eye which energizes the rear minor flap kicker. A plow is simultaneously closing the front minor flap. The major flaps are then plowed closed. The case enters the taping head where tape is applied. Depending on system options purchased, tape can be applied top and bottom or top only to the case. The cycle is then repeated.

### **Hot Melt Sequence (If Applicable)**

The case, when presented to the sealer, is guided through the machine by belts located on both sides of the case. The leading edge of the case actuates a photo eye, which energizes the rear minor flap kicker. A plow is simultaneously closing the front minor flap. The leading edge then initiates another photo eye, which actuates the glue head to apply sealant to both bottom major flaps of the case. A second photo eye is tripped by the case which initiates gluing of the top case flaps.

The major flaps are then plowed closed as the case enters the top compression unit. The case remains in the compression unit until the next case enters the machine. The cycle is then repeated.