

# FORMAX<sup>®</sup>

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FD 280  
Double-Head Edge Tabbing System

10/2011

Operator Manual  
First Edition



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# 1. INTRODUCTION

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## 1.1 Organization Of This Operating Manual

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This manual starts with a description of your FD 280, then describes its set up, operation and maintenance. Finally, information is offered to help you determine what can go wrong and what to do about it. There are many helpful tips along the way, and it is strongly suggested that you become familiar with this entire manual prior to operating the FD 280.

## 1.2 ET Description

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The FD 280 is an automatic tabbing machine used to seal open mail pieces. Tabs are peeled from rolls or fan folds of backing paper and applied to mail pieces such as self-mailers, booklets, brochures, newsletters and double postcards.

Mail pieces are fed into the FD 280 using a feeding device such as the Formax FD 260-10 Feeder, a feeder or labeler from another manufacturer. If the FD 280 is to work correctly, mail pieces must be fed into it correctly -- with a gap of about one inch between mail pieces. This manual does not cover the operation of the various feeding devices that may be used to supply the FD 280 with mail pieces. Please read your feeding device operating manual before using it in-line with the FD 280.

### **NOTE**

**Some feeding devices require a stand in order to operate in-line with the FD 280. Check with your Formax dealer.**

The FD 280 uses two tabbing heads to advance pressure-sensitive tabs past a peel bar. Partially peeled tabs hang from the backing paper, ready to be peeled at the peel bar before they contact the mail piece. Tabs are pressed and folded onto mail pieces between a set of belts and rollers. The tabbed mail pieces exit the FD 280 and can be collected in an optional Catch Tray or stacked by a Formax FD 260-20 Conveyor.

Tab quality is as important as mail piece quality. Poor quality tabs and mail pieces take longer to run, jam often and produce poor results. Only genuine Formax brand tabs are 100% guaranteed to run on Formax Tabbers. Imitation tabs can be run on Formax Tabbers, but are not guaranteed to run problem-free.

The FD 280 depends on a smooth flow of both tabs and mail pieces. This flow is monitored by a set of sensors and a microprocessor. As with most microprocessor-controlled machines, the FD 280 needs a few seconds to get itself ready to run. When you turn the power on, the FD 280 takes 5 seconds to boot up. During this time the tab ready light flashes and the control panel is inoperative.

Signals from sensors and the encoder are fed to the microprocessor which monitors the length of pieces fed and calculates the average length of the piece. Without correct measuring, the FD 280 will not tab. The FD 280's sensors work like all other electric eyes. When an object breaks the beam of light (the SENSOR BEAM) between them, an electrical signal is generated. It is imperative that this SENSOR BEAM PATH be maintained in its proper condition and alignment at all times.

Debris and stray tabs can become caught in the paper path and sensor beam. Rough, careless handling of the FD 280 can cause the sensors to become mis-aligned. Both of these conditions must be prevented. The FD 280 requires periodic cleaning and reasonable handling. Paper dust build-up or abuse will bring the successful operation of the FD 280 to an end. Take care of your FD 280 by following the set up, operation and maintenance instructions in this manual.



Figure 1.1 – Formax FD 280 with FD 280-10 High Volume Feeder and stand.

### 1.3 Items Included

The following items are shipped together in one box. Take note of each as you unpack the box.

- FD 280 Tabber with input shafts
- Power cord
- Catch Tray
- 2 Magnetic Tab Guides
- Operating Manual

**WARNING**  
**THE FD 280 IS A HEAVY MACHINE.**  
**USE PROPER LIFTING TECHNIQUES**  
**TO SET IT ON A WORK SURFACE.**

## 1.4 Operating Manual Safety Terms

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The following highlighted blocks are used throughout this manual to emphasize important information.

**Pay careful attention to this information.**

### **WARNING**

**ALERTS YOU TO ACTIONS OR CONDITIONS  
THAT MAY PRESENT HAZARDS OR CAUSE  
INJURY TO PERSONNEL.**

### **CAUTION**

**ALERTS YOU TO ACTIONS THAT MAY CAUSE  
LOSS OF MATERIALS (MAIL PIECES AND TABS)  
OR DAMAGE TO EQUIPMENT.**

### **NOTE**

**Draws your attention to an important  
statement or action.**

### **TIP**

**A suggestion to enhance the  
FD 280's productivity.**

## 1.5 Safety Precautions

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Observe the following safety precautions and warnings when operating, cleaning or repairing the FD 280. Failure to do so may result in physical injury or damage to the FD 280. The manufacturer assumes no liability for your failure to comply with these requirements.

**WARNING**  
**NEVER CLEAN, CLEAR OR DISASSEMBLE THE FD 280 WITHOUT FIRST UNPLUGGING THE POWER CORD.**

**WARNING**  
**KEEP LOOSE CLOTHING, TIES, SCARVES AND HAIR AWAY FROM ALL MOVING PARTS.**

**WARNING**  
**DO NOT PLACE FINGERS OR TOOLS BETWEEN OR NEAR MOVING PARTS.**  
**OBSERVE ALL POSTED WARNING DECALS**

## 1.6 Operating Manual Terms

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The following terms are used throughout this manual:

<b>input end</b>	where mail pieces enter
<b>output end</b>	where mail pieces exit
<b>operator side</b>	side where the controls are located
<b>non-operator side</b>	opposite the operator side

## 1.7 Warranty

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### **NOTE**

**Your FORMAX FD 280 is covered under warranty by the dealership from which you purchased it.**

Formax warrants your FD 280 against defects in materials and workmanship for a period of six months from the original ship date when used in accordance with the operating instructions in this manual. This warranty covers the cost of parts when the machine is presented by its original purchaser to an authorized FORMAX Service Center. Should warranty repairs become necessary, the service provider, at his/her option, will repair or replace such parts required to restore the FD 280 to serviceable condition.

This warranty does not cover consumable parts such as belts, rollers and sweeps used to contact and transport mail pieces and tabs. This warranty does not extend to incidental or consequential damages arising out of a warranty claim, or to costs associated with maintenance of the equipment. This warranty does not cover damages resulting from shipping, accident, misuse, abuse, neglect, mishandling, alteration or modification. Your rights under this warranty may vary from state to state.

## **2. SPECIFICATIONS & OPERATING REQUIREMENTS**

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### **2.0 Specifications**

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#### **Size & Weight**

20" L x 18" H x 24" W

67 lb. assembled

#### **Power**

Possible line voltages are 240V, 230V, 220V, 120V, and 100V at 50-60 Hz

### **2.1 Operating Requirements**

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#### **Mail Piece Size**

Height: 3<sup>1</sup>/<sub>2</sub>" minimum, 9" maximum

Width: 5.5" minimum, 12" maximum

#### **Mail Piece Thickness**

Minimum: single sheet of 20 lb. bond paper  
tri-folded – 2 tabs.

Maximum: .200"

#### **Tab Specs**

Tab width: 1" and 1.5" fan fold or roll

Tab length: 1", 1.5"

Backing paper width: between 1.125" (1" tab) and  
1.625" (1.5" Tabs)

Maximum roll diameter: 10.00" Core Diameter: 3"

Fan Fold: Case Based

Clear or translucent tabs require blacked out tab  
areas.

#### **Tab Position Accuracy**

±<sup>1</sup>/<sub>8</sub>" guaranteed when using Formax<sup>®</sup> Tabs within  
their specified shelf life

#### **Mail Piece Fold Quality**

Folds in mail pieces should result in flush panels.  
Mail piece squareness is important when meeting  
USPS tab tenting specifications.

#### **Production**

Over 15,000 mail pieces (8.4" long) per hour

## 3. POWER CONNECTION

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**WARNING**  
**BEFORE PLUGGING THE FD 280 INTO AN OUTLET, CAREFULLY READ THE FOLLOWING INFORMATION ABOUT VOLTAGES, FUSES AND THE POWER CORD.**

### 3.1 Safety

---

The FD 280 can connect to any power distribution system, including the European IT Power System. Because the European IT Power System does not have a grounded neutral leg, the FD 280 uses protective fusing in both the neutral and hot supply lines of power.

**WARNING**  
**A BLOWN FUSE IN THE NEUTRAL LEG COULD MEAN INTERIOR PARTS OF THE FD 280 REMAIN AT A HAZARDOUS VOLTAGE. ALWAYS UNPLUG THE POWER CORD BEFORE REMOVING COVERS FROM THE FD 280.**

### 3.2 Line Voltage

---

The FD 280 is rated for continuous operation using a variety of supply voltages. Possible line voltages are 240V, 230V, 220V, 120V and 100V at 50 or 60 Hz. The manufacturer configures the FD 280 to operate with the voltage requested by the customer.

**CAUTION**  
**VERIFY THE CORRECT VOLTAGE SETTING BEFORE PLUGGING THE FD 280 INTO AN OUTLET.**

Read the current voltage setting through the **VOLTAGE SELECTOR WINDOW** on the non-operator side of the FD 280. (Refer to **Figure 3.1**.) Use the following instructions to change the voltage setting:

## NOTE

The detachable POWER CORD may need to be changed to match the particular power-source output.

1. Unplug the POWER CORD.
2. Use a small screwdriver or similar tool to push up on and release the FUSE DRAWER LOCKING TAB.
3. Pull the FUSE DRAWER out of the POWER ENTRY CASING.
4. Pull the VOLTAGE SELECTOR out of the FUSE DRAWER.
5. Rotate the VOLTAGE SELECTOR until the correct voltage is on the same side as the VOLTAGE SELECTOR WINDOW.
6. Place the VOLTAGE SELECTOR in the FUSE DRAWER and verify the correct voltage selection.
7. Place the FUSE DRAWER in the POWER ENTRY CASING.

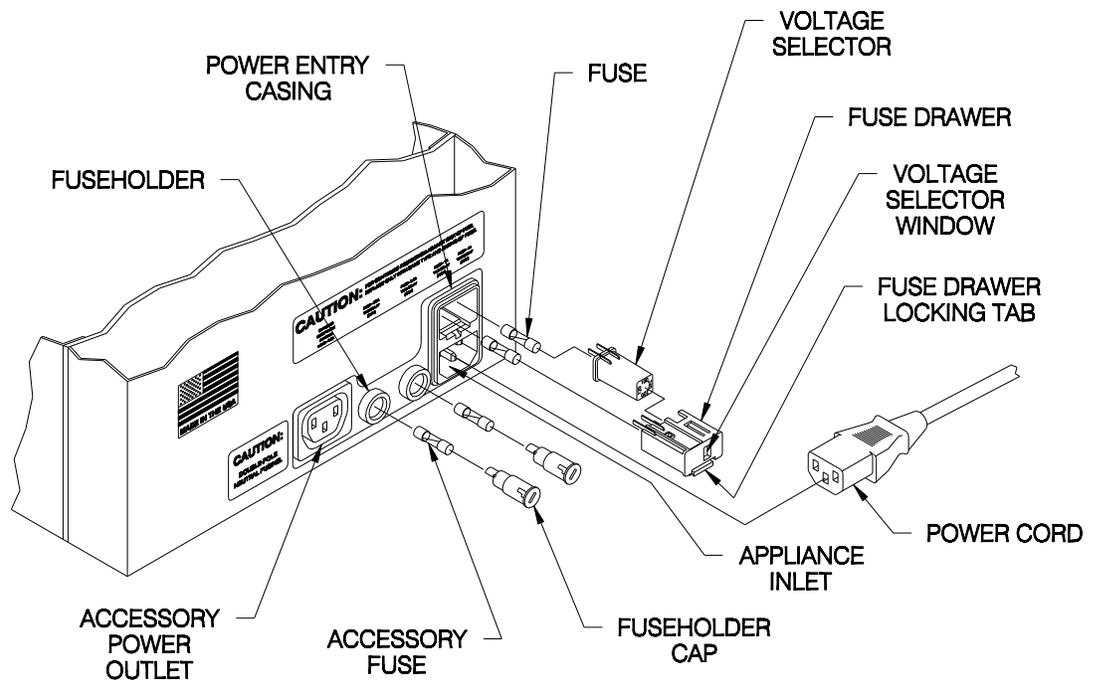


Figure 3.1 – FD 280 Power Connection

### 3.3 Line Fuses

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The FUSE DRAWER located on the non-operator side contains two LINE FUSES. (Refer to **Figure 3.1.**) The neutral and hot lines of power are fused. Both LINE FUSES must be intact for the FD 280 to operate properly.

**CAUTION**  
**VERIFY THAT THE LINE FUSE VALUE IS**  
**CORRECT FOR THE VOLTAGE SETTING.**  
**UNPLUG THE FD 280 BEFORE STARTING THIS**  
**PROCEDURE.**

Use the following instructions to verify that the LINE FUSES installed have the proper fuse value or to replace a blown fuse:

1. Unplug the POWER CORD.
2. Use a small screwdriver or similar tool to push up on and release the FUSE DRAWER LOCKING TAB.
3. Pull the FUSE DRAWER out of the POWER ENTRY CASING. The LINE FUSES are inside.
4. Determine the proper fuse value as well as the condition of the LINE FUSE. The fuse value is shown on the metal tip of the LINE FUSE. The chart below lists the selected voltage in the left column followed by the proper fuse value in the right column.

<u>Selected Voltage</u>	<u>Line Fuse Value</u>
100V.....	1.0A (250V time delay)
120V.....	1.0A (250V time delay)
220V.....	0.5A (250V time delay)
240V (or 230V).....	0.5A (250V time delay)

5. Replace the LINE FUSE if necessary. Both LINE FUSES must be intact for the FD 280 to operate properly.
6. Install the FUSE DRAWER in the POWER ENTRY CASING.

### 3.4 Accessory Fuses

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Two FUSEHOLDERS are located on the non-operator side between the APPLIANCE INLET and the ACCESSORY POWER OUTLET. (Refer to **Figure 3.1.**) The FUSEHOLDERS hold two ACCESSORY FUSES which protect the ACCESSORY POWER OUTLET. As with the LINE FUSES mentioned previously, both the neutral and hot lines are fused. Both ACCESSORY FUSES must be intact for the FD 280 to properly supply power to in-line equipment.

**WARNING**  
**UNPLUG THE POWER CORD BEFORE STARTING THIS PROCEDURE.**

Use the following instructions to verify that the ACCESSORY FUSES installed have the proper fuse value or to replace a blown fuse:

1. Unplug the POWER CORD.
2. Use a small screwdriver or similar tool to press in and rotate the FUSEHOLDER CAP **counterclockwise** to release this cap.
3. Pull the FUSEHOLDER CAP (with the ACCESSORY FUSE inside) out of the FUSEHOLDER.
4. Verify the fuse value. Inspect fuses, replace if blown.

<u>Selected Voltage</u>	<u>Line Fuse Value</u>
100V.....	6.3A (250V time delay)
120V.....	6.3A (250V time delay)
220V.....	3.15A (250V time delay)
240V (or 230V).....	3.15A (250V time delay)

5. Install the ACCESSORY FUSE and the FUSEHOLDER CAP in the FUSEHOLDER. Both ACCESSORY FUSES must be intact for the FD 280 to properly supply power to in-line equipment.
6. Using the screwdriver, press in and turn the FUSEHOLDER CAP **clockwise** to lock it.

### **3.5 Accessory Power Outlet**

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The ACCESSORY POWER OUTLET is located next to the FUSEHOLDER on the non-operator side. (Refer to **Figure 3.1.**) This outlet supplies power to equipment running in-line with the FD 280.

Typical in-line equipment includes feeders and labelers. Since the ACCESSORY POWER OUTLET gets its power from the FD 280, you can control power to in-line equipment using the FD 280's POWER SWITCH. Additionally, the FD 280 features an automatic interrupt that disables the ACCESSORY POWER OUTLET in case of a jam. The ACCESSORY POWER OUTLET is limited to a 6.3A maximum for 100V and 120V, and 3.15A maximum for 220V and 240V.

### **3.6 Power Cord**

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The FD 280 comes with a three-wire POWER CORD. The POWER CORD grounds the FD 280 when connected to an approved three-contact electrical outlet.

1. Plug the POWER CORD into the APPLIANCE INLET on the non-operator side. (Refer to **Figure 3.1.**)
2. Plug the POWER CORD into a grounded outlet.

**WARNING**  
**TO PREVENT ELECTRICAL SHOCK, ONLY PLUG THE POWER CORD INTO A GROUNDED OUTLET.**

## 4. CONTROLS

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### 4.1 Power Switch

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The POWER SWITCH is located on the bottom of the operator side panel. Turn the POWER SWITCH on to supply power to the FD 280.

### 4.2 LCD Counter

---

The LCD COUNTER is located on the right of the operator side panel. The LCD COUNTER displays the current number of tabbed mail pieces fed through the FD 280. Reset the LCD COUNTER by pressing its reset button.



Figure 4.1 - FD 280 Operator Panel Controls

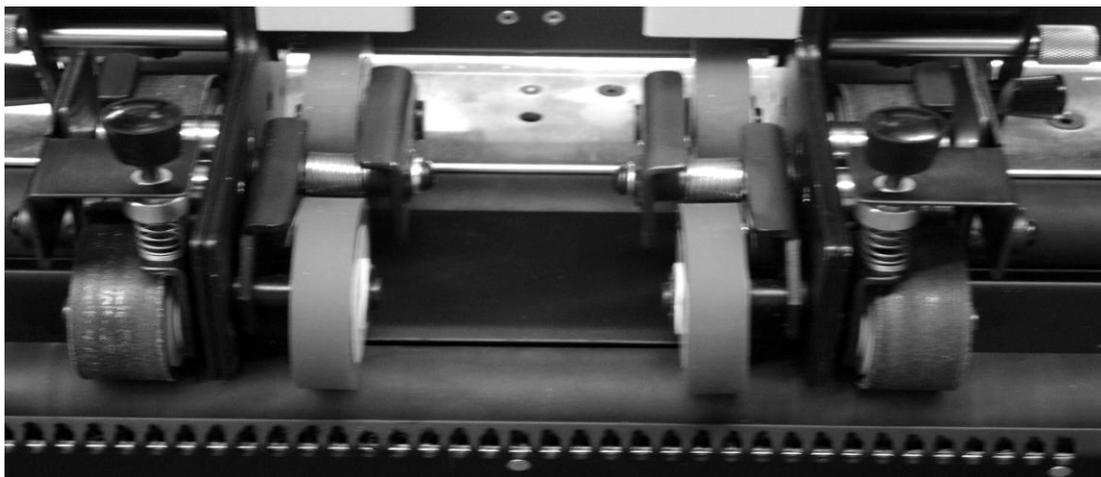


Figure 4.2 Tab Pressure Controls

## 4.3 Control Panel

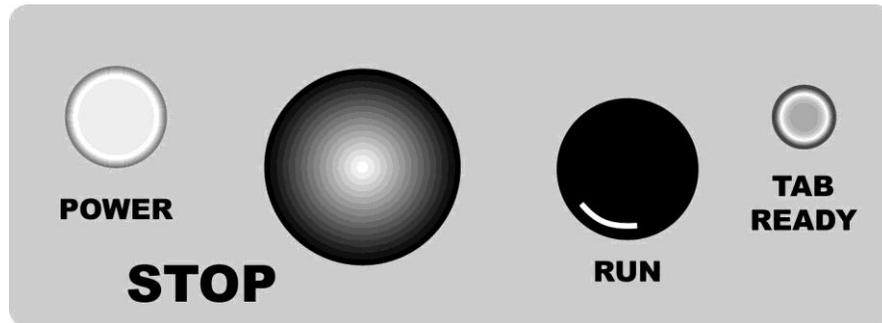


Figure 4.3 - FD 280 Control Panel

### 4.3.1 Power Indicator

The orange Power Indicator light illuminates when the power switch is turned on.

### 4.3.2 Stop

The STOP (red pushbutton mushroom) Switch interrupts the movement of all moving parts and resets the microprocessor. Once the STOP button has been pressed, it must be lifted up into the run position. Lifting the button will not start the machine. Press the STOP switch to change tab mode settings.

### 4.3.3 Start

The Start button is a momentary switch that causes the resumption of movement after the Stop Switch has been pressed.

### 4.3.4 Tab Ready

The green Tab Ready light illuminates when enough (usually 3-4) pieces have been fed regularly through the machine to allow precise and regular tabbing. If the Tab Ready light stays unlit, there is a problem with the feed mechanism as pieces are not being counted well.

#### 4.4 Head Position Knob

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Turning the Head Position Knob moves the tabbing heads closer together or farther apart. The decal indicates the direction. *Move heads only while machine is running.*

#### 4.5 Tab Size Switch

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This three position switch indicates 1.0 inch tabs (up, used for self mailers), 1.5 inch tabs (down used for booklets) and Set Up (Center – no tabs).

#### 4.6 Tab Mode Touch Pad

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The Tab Mode Touch Pad offers the ability to select the number, location and type of the tabs as well as to change location of tabs. *Changing mode settings can only be done with the STOP button pressed.*



**Figure 4.4** FD 280 Tab Mode Touch Pad

Once the Tab Size Switch has been moved off Set Up to a tab size, pressing the key pad selects the tabs to be run as well as their general location on the piece. There are three buttons per Tab Head - one for the lead edge, the center and the trail edge.

A typical booklet setting will call for two tabs to be selected on one head (lead and trail) and one on the opposite (trail). To do a Booklet, use 1.5 inch tabs.

To adjust the position of the tabs, press the Stop Button and hold down the key pad for the tab to be moved. After a second or two, the tab select light on that pad will begin to flash. Use the Lead /Trail arrows on the right of the touch pad to move the tab toward the lead edge or trail edge. Ten touches of a position arrow will result in about half an inch in movement in the direction selected. If corresponding tabs on the opposite head are selected, both will move as one. Starting the transport will save your changes.

## **5. FEEDING DEVICES**

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### **5.1 Placing The FD 280 In-Line**

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To operate the FD 280 in-line with your feeding device, place the output end of the feeding device next to the input end of the FD 280. Leave about an  $\frac{1}{8}$ " gap between the machines. Align machines to place tabs where desired on the mail pieces.

The gap between the feeding device and the FD 280 may need adjusting if the mail pieces are curled or rigid. If the mail pieces' leading edge curls up, the gap should be larger than  $\frac{1}{8}$ " to allow the curled edge to come down before entering the FD 280. If the leading edge curls down, the gap should be as small as possible, so the mail pieces will not fall between the two machines. A rigid mail piece may require a larger gap if it hits the bracket above the FD 280 PAPER PATH.

#### **NOTE**

**Turn on the FD 280 before turning on any feeding device. If the FD 280 is not turned on first, it will not accept the fed mail pieces.**

## **NOTE**

**Some equipment, when run in-line with the FD 280, requires a stand to raise it to the level of the FD 280. When ordering additional equipment, specify which machine you plan to operate in-line with the FD 280.**

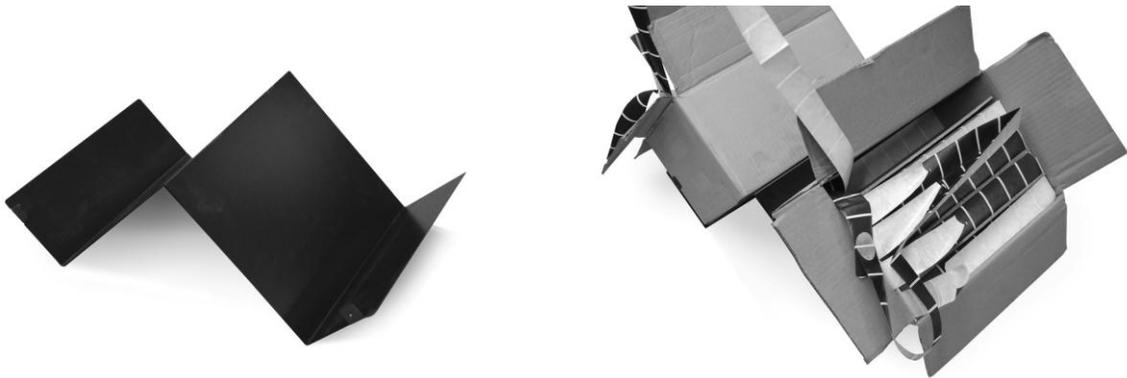
## **5.2 Accessory items**

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### **5.2.1 FD 280-50 Fan Fold Tab Stand**

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The FD 280-50 Tab Stand is a simple accessory that greatly improves the operation of the machine with fan fold tabs.



Boxes are placed on the stand – one on each side. The boxes are tilted at the correct angle to allow for smooth tab removal from the box. Tab columns are spliced lead to tail to run continuously. (See Fig. 1.1)

### **5.2.2 FD 280-30 Stand**

---

The FD 280-30 Adjustable Height Stand holds the FD 280 and a Fan Fold Tab Stand. It features adjustable height legs to allow the FD 280 to be used in line with a number of different machines.

### **5.2.3 FD 280-40 Stand**

The FD 280-40 Adjustable Height Stand holds the FD 280-20 High Volume Tab Delivery Module Stand.

### **5.2.4 FD 280-20 High Volume Tab Delivery Module**



The FD 280-20 automatically delivers tabs from high volume spools to the FD 280. One per head is needed.

## 6.0 OPERATION

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### **WARNING**

**KEEP LOOSE CLOTHING, TIES, SCARVES AND HAIR AWAY FROM ALL MOVING PARTS. DO NOT PLACE FINGERS OR TOOLS BETWEEN OR NEAR MOVING PARTS.**

## 6.1 Splicing Tabs

---

It is highly recommended that splicing one tab strip to another be the way to add or change strips of tabs. Splicing is much quicker than threading and the machine is delivered threaded. Splices can be made between tab sizes.

**When changing tab sizes, make sure that the backing paper width of the tabs being run is less than the tab width specification.**

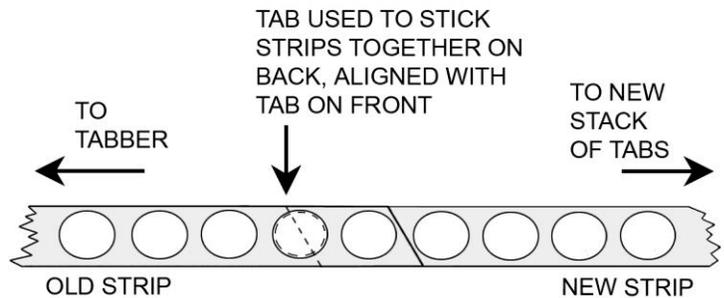
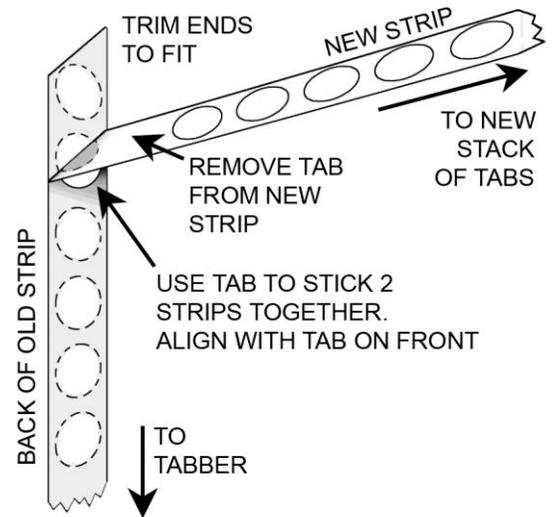
To splice tabs:

1. Stop tabbing with at least 12 inches of tab material between the peel bar and the end of the strip.
2. Trim the last tab so that the end of the strip is square.
3. Trim the end of the new tab strip square and attach a tab to the underside of the strip so that it is half on, half off the strip.
4. Remove the first few tabs from the new strip and the last few from the old.
5. Attach the new strip to the old strip so that the end on the old strip is on top of the new strip and in the place of the first tab that was peeled off the new strip. Use the tab on the new strip to stick the two strips together.

- When a splice is made correctly no tabs will be missed.

When running fan folded tabs, splice the last tab in one stack to the first in the succeeding stack for continuous operation. The tabs are arranged in the box to allow splicing at any time.

Two things to remember with fan fold tabs. First, run the stacks in order from one side of the box to the other, removing stack separators as stacks are consumed. Second, set the box at an angle so that the tabs will always tend to fall away from the tabber. A Formax FD 280-50 tab stand is a simple means of accomplishing this.



**Figure 6.1 – Splicing Tabs**

## 6.2 Threading Tabs

Threading tabs is a more involved process. The tab peeling mechanism must be removed and replaced. Before threading take careful note of the threaded tabs.

- Peel at least 1-2 feet of tabs from the lead edge of the strip to be threaded into the machine.

2. Remove the peel bar mechanism by unscrewing the knurled stainless steel knob located on the side of the assembly.
3. Thread the strip of backing paper down through the assembly behind the round bar and over the edge of the peel bar.
4. Holding the backing paper up against the back of the mechanism, replace it on the machine using the long Stainless Steel knob.
5. Run the backing paper up and over the black rubber roll from behind the roller. To allow space between the black roller and the red rollers, press the threading release lever.
6. Bring the backing paper up over the front of the red roller, taking the slack out of the strip and squaring it under the various rollers in the paper path. Take care that the edge of the strip is not caught in the peel bar.
7. Take the strip back over the top plastic guide roller and attach it to the take up spool. Check for squareness.



Figure 6.2 Threaded Formax FD 280

## 6.3 Feeding Portrait Mail Piece

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1. Switch the Tab Size Switch to Set-Up
2. Turn FD 280's POWER SWITCH on. Push Stop button.
3. Place a sample of the piece to be tabbed between the input guides and lock the guides tight to the edge of the piece without binding the piece.



**Figure 6.3 Setting up Input Guides on the FD 280**

4. Take the same sample piece and set it between the vertical tab indicator plates on the exit side of the tab heads. Run the transport and rotate the Head Position control to bring the heads close (to within a sixteenth of an inch) to both edges of the piece. Some pieces are not folded square. Use the widest part of the piece to set the distance between the heads.
5. Stop the transport and slide a feeder up into position. Start the transport and send sample pieces through. Make sure that guides are set and locked and that the heads are not too close together to jam pieces. Pieces must travel smoothly through the machine.



**Figure 6.4 Setting the heads to match a piece on the FD 280**

## **6.4 Feeding Landscape Mail Pieces**

---

The FD 280 is capable of accepting pieces in either Portrait or Landscape orientation. Booklets are typically edge tabbed in Portrait direction while self mailers are often top tabbed in landscape. The typical folded self mailer is narrower than the minimum space between the self centering input guides. In order to top tab accurately the piece needs to be registered against the operator side input guide and the operator side head set to apply either 1 or 2 tabs to the piece.

1. Press the Stop Button and select SET UP on the Tab Size Switch. Tab Ready Light will be off.
2. Set the feeder to the width of the narrow piece to be run.
3. Set the Input Guides about 1 inch wider than their narrowest setting.
4. Adjust the space between the heads to about 1 inch. This will put the Operator side head wider than it should be for good top tabbing.
5. Feed pieces. Carefully bring the tab heads together so that the edge of the piece to be tabbed runs just free of the tab fold mechanism. The edge should be just under the edge of the tab fold belt.
6. Press the Stop Button
7. Select the correct tab mode (see Sec. 6.5).

8. Lift the Stop button, Press start and feed pieces. Three will feed before tabbing begins.

**TIP**

To register the narrow piece against the operator side input guide, try to offset the guide bar(s) in their mounting holes. Thin material may require a single bar to be offset, thick material may require both to be offset. Run the material under one of the set of rollers only. See Figure 6.5

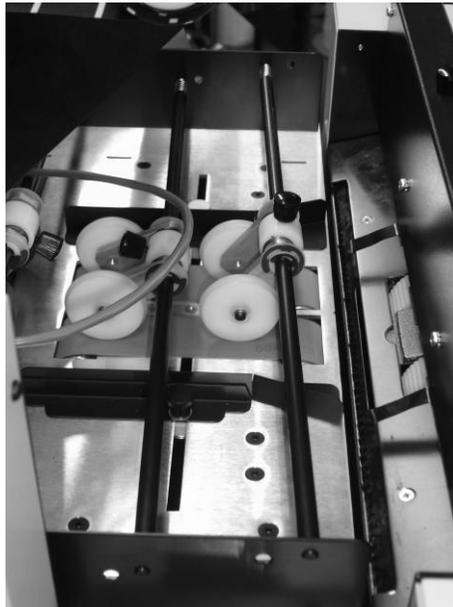


Figure 6.5 Roller Offset for stiff self mailers.

## 6.5 Tabbing Mail Pieces

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1. Make sure tabs are threaded correctly and peel point area is clear.
2. Turn the POWER SWITCH on.

**CAUTION**

**TO AVOID A JAM, TURN THE FD 280 ON *BEFORE* TURNING ON THE FEEDING DEVICE.**



**Figure 6.6 Tab Selection Key Pad**

3. Stop the machine with the Stop Switch
4. Select the correct tab size on the Tab Size Switch
5. Press the Tab Selection Key Pad to set the number of tabs per head. Typically there will be at least one tab selected (lit) per head.
6. Double check to be sure that the paper guides and the tab guides are set for the correct piece width.
7. Lift the Stop Button and press Start.
8. Feed pieces through the machine until the tab ready light comes on (usually three).
9. The FD 280 begins tabbing in the mode selected. Tabs are placed and folded per the USPS regulations.

**TIP**

**When finishing a tabbing job, leave tabs threaded in the machine and press the Stop Button before turning off the Power.**

## **6.6 Adjusting Tab Position**

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1. Press the STOP button.
2. Determine which tab or pair of tabs that need to be moved and in which direction.
3. Press on the Tab Selection Key Pad corresponding to the tab(s) that need to be moved. Hold it for a second or two until the light flashes.

4. Press the Lead or Trail arrows to move the tab (s). Two presses of the arrow will move the tabs almost one eighth of an inch.
5. Lift the Stop Button and run tabs.
6. Repeat as needed to place tabs where desired.
7. If tab placement is drastically altered, tab positions are interfering with one another (ex. Lead tab in Center area). Stop and move tabs clear of one another or restore factory settings (Section 6.8) and begin the adjustment process again.

## **6.7 Removing Waste Backing Paper**

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1. Tear the waste backing paper, leaving enough to reach and wrap around the TAKE-UP SPINDLE.
2. Pull the waste backing paper off the TAKE-UP SPINDLE.
3. Place backing paper under the TAKE-UP SPINDLE from the input end.
4. Secure the backing paper to the underside of the SPINDLE with tape.

## **6.8 Restore Default Tab Settings**

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All FD 280's are set at the factory to meet USPS recommended settings. Each "C" tab is set to the center of a piece. To quickly restore these settings.

1. Press Stop.
2. Press and hold Head 1 and 2 "L" keys plus both the Lead and Trail keys until the lights begin to flash.
3. Release keys and wait until all lights stop flashing. Lift Stop and resume tabbing by selecting the correct tab positions for the piece being run.

NOTE: It is always advisable to go through the set up procedure when changing the size of the piece being tabbed.

## 6.9 Change Piece Size

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Feeding and transport are critical to good tabbing. When changing piece sizes, use the SET UP mode first.

1. Press the RED Stop Button
2. Switch to the SET UP mode on the size selection switch.
3. Make all mechanical adjustments to the feeder, input guides and tab plates.
4. Send as many pieces through as necessary to achieve smooth operation.
5. Press Stop and switch to the tab size and location
6. Lift Stop and feed three pieces. The TAB READY light will come if the three pieces have fed regularly and have been measured correctly by the machine.

## 7.0 MAINTENANCE

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### 7.1 General Cleaning

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Your FD 280 will need regular cleaning. How often you'll need to clean it depends on the amount of paper dust your mail pieces generate. Wipe surface dust or debris from the FD 280 with a damp cloth as necessary.

**TIP:**

**It is easier to move heads apart and together when the rollers are turning.**

Periodically check for peeled tabs stuck on the roller near the bottom of the PEEL PLATE.

To remove tabs and debris from peel point area:

**WARNING**  
**DO NOT PLACE FINGERS OR TOOLS BETWEEN**  
**OR NEAR MOVING PARTS.**

1. Spread the heads as far apart as possible to expose the transport rollers.
2. Hit the Stop Button
3. Turn the POWER SWITCH off and/or unplug the unit.
4. Gently remove the tabs from the roller using a roller cleaning solvent.

## 7.2 Replacing Fuses

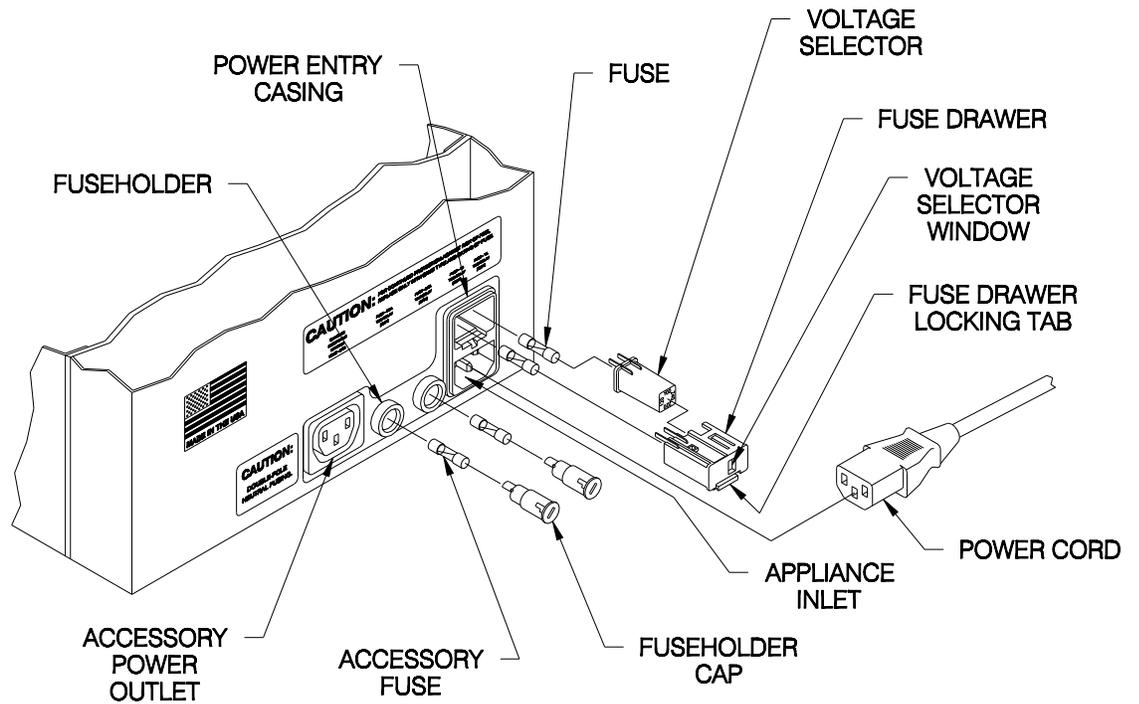
When one or both LINE FUSES are blown, the FD 280 will appear to have no power and the LINE FUSE must be replaced. Press the STOP Button and turn Power OFF before replacing a fuse.

**WARNING**  
**UNPLUG THE POWER CORD BEFORE OPENING**  
**THE FUSE DRAWER.**

### 7.2.1 To replace a LINE FUSE:

1. Use a small screwdriver or similar tool to push up on the FUSE DRAWER LOCKING TAB to release this locking tab. (Refer to **Figure 7.1.**)

2. Pull the FUSE DRAWER out of the POWER ENTRY CASING. (Refer to **Figure 7.1.**)



**Figure 7.1 Replacing FD 280 Fuses**

3. Inspect the FUSES; look for blackened glass, melted wire or a disconnected wire between the ends of the tube. If you find any of these problems in either FUSE, that FUSE is blown and must be replaced.
4. Pull the blown FUSE from its slot.

**WARNING**  
**REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE. (REFER TO CHART BELOW.)**

<u>Selected Voltage</u>	<u>Line Fuse Value</u>
100V.....	1.0A (250V time delay)
120V.....	1.0A (250V time delay)
220V.....	0.5A (250V time delay)
240V (or 230V).....	0.5A (250V time delay)

5. Place the new FUSE into the same slot.
6. Install the FUSE DRAWER. (Refer to **Figure 7.1.**)

**Accessory Fuse**

When one or both ACCESSORY FUSES are blown, the ACCESSORY POWER OUTLET and the machine plugged into this outlet lose power.

**WARNING**  
**UNPLUG THE POWER CORD BEFORE OPENING THE FUSE DRAWER.**

**7.2.2 To replace an ACCESSORY FUSE:**

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1. Use a small screwdriver or similar tool to press in and slightly rotate the FUSEHOLDER CAP counterclockwise. (Refer to **Figure 7.1.**)
2. Inspect the FUSE; look for blackened glass, melted wire or a disconnected wire between the ends of the tube. If you find any of these problems in the FUSE, it is blown and must be replaced. If the first FUSE is fine, repeat steps 1 and 2 for the second FUSE.
3. Pull the blown FUSE from its slot.

**WARNING**  
**REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE. (REFER TO CHART BELOW.)**

<u>Selected Voltage</u>	<u>Line Fuse Value</u>
100V.....	6.3A (250V time delay)
120V.....	6.3A (250V time delay)
220V.....	3.15A (250V time delay)
240V (or 230V).....	3.15A (250V time delay)

4. Place the new FUSE into the same slot.
5. Install the FUSEHOLDER into the same slot.  
Refer to Fig. 7.1

## 8.0 TROUBLESHOOTING

**WARNING**  
**UNPLUG THE POWER CORD BEFORE**  
**REMOVING, ADJUSTING OR REPAIRING ANY**  
**PARTS IN THE FD 280.**

Trouble	Cause	Solution
1. Nothing works, no orange Power Indicator light	<ul style="list-style-type: none"> <li>Power switch is not on.</li> </ul>	<ul style="list-style-type: none"> <li>Turn power switch on.</li> </ul>
	<ul style="list-style-type: none"> <li>Power cord is damaged or not plugged into proper outlet.</li> </ul>	<ul style="list-style-type: none"> <li>Replace power cord if damaged or plug into proper outlet if necessary.</li> </ul>
	<ul style="list-style-type: none"> <li>Outlet does not have power present.</li> </ul>	<ul style="list-style-type: none"> <li>Check circuit source for a blown fuse or circuit breaker.</li> </ul>
2. Not tabbing -- TAB READY light is on but no tabs at peel point.	<ul style="list-style-type: none"> <li>Tabs not threaded correctly</li> <li>Tab motor failure,</li> <li>Microprocessor Failure</li> <li>Out of tabs or tab sensor blocked</li> </ul>	<ul style="list-style-type: none"> <li>Check and re-thread.</li> <li>Toggle Power Off and on waiting 5-10 seconds to reset processor.</li> <li>Remove tabs from the sensor if present and re-thread.</li> </ul>
3. Not Tabbing Tab Ready Light is OFF	<ul style="list-style-type: none"> <li>Transport Failure</li> <li>Tab Mode Switch</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent tab length counts due to slippage in transport, jamming pieces. Poor Feeding.</li> <li>Tab Mode Switch on Setup</li> <li>Processor. Toggle off and on to reset</li> </ul>
4. FD 280 stops.	<ul style="list-style-type: none"> <li>Power entry fuse is blown.</li> </ul>	<ul style="list-style-type: none"> <li>Replace blown line fuse. Refer to <b>Section 3.3.</b></li> </ul>
	<ul style="list-style-type: none"> <li>FD 280 keeps blowing fuses after you replace them.</li> </ul>	<ul style="list-style-type: none"> <li>Contact authorized Formax dealer.</li> </ul>

	<ul style="list-style-type: none"> <li>• Mail piece has jammed in machine.</li> </ul>	<ul style="list-style-type: none"> <li>• Clear the jam. Refer to <b>Section 9.1.3.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• Backing paper has torn before the drive roll.</li> </ul>	<ul style="list-style-type: none"> <li>• Thread tabs from that point on. Refer to <b>Section 9.1.4.</b></li> </ul>
<b>5. Feeding stops.</b>	<ul style="list-style-type: none"> <li>• Accessory fuse is blown.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace blown accessory fuse. Refer to <b>Section 3.4.</b> If the fuse is not blown, refer to your feeding device manual.</li> </ul>
<b>6. Backing paper slack.</b>	<ul style="list-style-type: none"> <li>• Backing paper is threaded under the drive roll.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-thread tabs. Refer to <b>Section 6.1.</b></li> </ul>
<b>7. Tabbing incorrectly</b>	<ul style="list-style-type: none"> <li>• Peel plate assembly is not latched.</li> <li>• Debris and tab residue at peel and fold point.</li> <li>• Tabs set too close together</li> <li>• Piece size has changed without resetting tab placement locations</li> </ul>	<ul style="list-style-type: none"> <li>• Insert and latch peel plate assembly.</li> <li>• Thoroughly clean tab fold and seal rollers and belts. Remove all tab debris.</li> <li>• Move lead tab closer to lead edge.</li> <li>• Reset tab placements see sec. 6.9</li> </ul>
<b>8. Multiple tabs on mail piece.</b>	<ul style="list-style-type: none"> <li>• Incorrect TAB MODE selection.</li> </ul>	<ul style="list-style-type: none"> <li>• Make Mode selection for tabs and forms being run. <b>Section 9.1.2.</b></li> </ul>
<b>9. Tab placement is inconsistent.</b>	<ul style="list-style-type: none"> <li>• Mail pieces are feeding crooked.</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure mail pieces feed straight into FD 280. Refer to <b>Section 9.2.1.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• Backing paper has torn after the drive roll.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-thread backing paper from drive roll. Refer to <b>Section 9.1.4.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• Tabs Hanging up on way to tabber.</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure that tabs are being pulled from the tab source freely. The FD 280 works best with no resistance (slack) from the tabs.</li> <li>• Tilt the box of tabs.</li> <li>• Remove stack separators.</li> </ul>

<b>10. Tab fold is uneven.</b>	<ul style="list-style-type: none"> <li>• Head position needs adjustment.</li> <li>• With 1 inch tabs, the tabs are not centered</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust head position. Refer to <b>Section 9.2.2.</b></li> <li>• Make sure that the tab strip is between the hinged guides on the peel bar.</li> </ul>
	<ul style="list-style-type: none"> <li>• Tab Size Wrong</li> </ul>	<ul style="list-style-type: none"> <li>• Power Off, select tab size</li> </ul>
<b>11. Leading edge of mail piece tears at the tab.</b>	<ul style="list-style-type: none"> <li>• Head position needs adjustment.</li> <li>• Mail pieces are poorly folded.</li> <li>• Mail pieces are too thin.</li> </ul>	<ul style="list-style-type: none"> <li>• Spread the heads apart slightly.</li> <li>• If tenting is too great, move heads closer together slightly.</li> </ul>
<b>12. Mail pieces jam upon entering FD 280.</b>	<ul style="list-style-type: none"> <li>• Input Guides are too close together</li> </ul>	<ul style="list-style-type: none"> <li>• Spread guides.</li> </ul>
	<ul style="list-style-type: none"> <li>• Input device and tabber are misaligned.</li> </ul>	<ul style="list-style-type: none"> <li>• Correct alignment is critical. Carefully position the input device for correct feeding and transport.</li> </ul>
	<ul style="list-style-type: none"> <li>• Feeding device is too fast.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce speed of feeding device until tabs are being applied correctly.</li> </ul>
	<ul style="list-style-type: none"> <li>• Skew at the feeder.</li> </ul>	<ul style="list-style-type: none"> <li>• Pieces <b>MUST</b> feed straight to tab straight. Consult feeder manual to eliminate skew at the output of the feeder.</li> </ul>

## **9.0 CORRECTING TABBING PROBLEMS**

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### **9.1 No Tabs on Pieces**

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#### **9.1.1 Tab Ready Light doesn't come on**

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Make sure that pieces are being fed through the FD 280 smoothly and consistently. The FD 280 measures the first three pieces through the machine after set up and if these three are not close in measurement, the ready light will not come on.

Clean the product sensor.

Turn the machine off and on after waiting for 10 seconds.

If this doesn't remedy the problem, the difficulty lies with a sensor, an encoder or the processor or their related electrical connections.

#### **9.1.2 Mail Piece Jam**

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Mail pieces usually jam during set up. The cause of a set up jam is usually obvious. Any of the piece width adjustments is not made correctly. Carefully set-up the machine and check the width of the heads and input guides. Make sure that the feed device is lined up correctly and precisely before feeding pieces. A feeder must deliver the piece as square and as straight as possible into the FD 280.

If a piece jams during tabbing, it is most likely the result of a poorly folded piece being introduced between closely set heads or skew introduced at the feeder.

Occasionally, an interruption in tab delivery will cause a partially dispensed tab to hang up a piece. Make sure that tabs flow into the machine with little or no resistance.

**To clear mail pieces from the transport tray:**

**WARNING**  
**DO NOT PLACE FINGERS OR TOOLS BETWEEN**  
**OR NEAR MOVING PARTS.**

1. Press the STOP switch quickly
2. Leave the heads in place.
3. Reverse the piece through the FD 280 by turning the transport rolls by hand. Pull the jammed mail pieces out of the input area of the transport.
4. If the jam happens upstream from the tab heads, it may be necessary to remove the transport rolls. Each set of rolls is spring loaded and is mounted on a spring loaded shaft. Release spring pressure and slide the entire roll assembly out of the machine by compressing the spring on the shaft and lifting the shaft out once one end is free from its mounting hole. Note one mounting hole is shaped like a "D" to prevent the shaft from turning. Make sure to replace the shaft as you have removed it.

**WARNING**  
**DO NOT PLACE FINGERS OR TOOLS BETWEEN**  
**OR NEAR MOVING PARTS.**

### **9.1.3 Torn Backing Paper**

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If the backing paper tears *before* the drive roll, the FD 280 will stop tabbing but continue feeding.  
To start tabbing:

**WARNING**  
**DO NOT PLACE FINGERS OR TOOLS BETWEEN**  
**OR NEAR MOVING PARTS.**

1. Turn the POWER SWITCH off.
2. Thread the FD 280 from the point where the backing paper tore. (Refer to **Section 6.1.**)

## NOTE

**When backing paper is pulled, tabs will peel at the PEEL PLATE until pulling is stopped.**

3. Remove any tabs or debris from the peel point area
4. Turn the POWER SWITCH on.
5. Toggle ON/OFF until a tab advances to the peel point and the TAB READY light illuminates.

If the backing paper tears *after* the drive roll, the backing paper may fall away from the FD 280 and tabbing will continue. If the backing paper wraps around rolls in the threading path, tabbing may continue, but tab placement may not be accurate. To continue tabbing accurately:

## WARNING

**DO NOT PLACE FINGERS OR TOOLS BETWEEN OR NEAR MOVING PARTS.**

1. Turn the POWER SWITCH off.
2. Secure the backing paper around the TAKE-UP SPINDLE with the CLIP. You may need to pull the backing paper a little to reach the TAKE-UP SPINDLE.

## 9.2 Incorrect Threading

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Threading a tab strip incorrectly can prevent tabbing. Three examples are listed below. **See Sec. 6.1**

- PEEL PLATE ASSEMBLY is not latched. The backing paper will pull the PEEL PLATE assembly out of its slot, tabs will peel in the wrong place, and the PEEL PLATE assembly will block any mail pieces entering the FD 280.
- Backing paper is threaded under the DRIVE ROLL. The backing paper will pull backward and no tabs will peel.

- Tabs are in front of steel bar at the bottom of the peel bar assembly. Make sure that you see the steel bar at the top of the peel plate when tabs are threaded.

### **9.3 Poor Tab Placement Or Appearance**

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#### **9.3.1 Tab Placement Is Inconsistent**

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If tab placement on mail pieces varies during the same run, check to see if mail pieces are feeding straight. Make sure the paper guides on your feeding device are set against the sides of the stack of mail pieces. If mail pieces can move sideways between the paper guides, they will not feed straight.

To check your tab placement:

1. Hold a stack of tabbed mail pieces. Make sure all edges are straight and even, and all tabs are on the same side.
2. Look at the tabbed side of the stack. If the tabs do not form a straight line down the stack, the mail pieces are moving sideways as they enter the FD 280.
3. Set paper guides correctly and securely on the feeding device.

Also make sure that the tabs are freely moving from the tab supply into the FD 280. If tabs hang up, they will be misplaced. Do not feed the FD 280 from rolls that do not consistently run freely and/or are not advanced to keep slack between the roll and the FD 280.

## **9.4 Tab Fold Is Uneven**

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If tabs are folding poorly, the piece may be folded badly.

The tab heads may be too tight (tearing of the tab) or too far apart (tenting). Make position adjustments very carefully. Be sure that the space between the tab heads is NEVER smaller than the space between the input guides.

Tabs may be wandering in the tab guides indicating that something in the tab path is applying too much pressure to one side of the tab web.

Tabs are made of different materials and will fold differently. For example, paper tabs may fold differently than foil tabs. Colored tabs may fold differently than white tabs because ink adds moisture and density.

Genuine Formax tabs are tested with machines and will work in the most consistent manner.

Contact an authorized Formax dealer for supplies.

## **9.5 Restoring Factory Settings**

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The FD 280 affords the operator great flexibility in tab selection and placement. For example, a delayed center position tab may be set and selected instead of the opposite trailing edge tab when it is necessary to have the tab miss important text on the piece.

The net result may be confusing at the outset of a different job and factory settings will need to be restored.

To restore these settings:

1. Stop the transport by pressing the RED Stop Switch.

2. Depress the two Lead position keys (L's) and the two tab placement keys (arrows), holding all four down until the light flashes stabilize.
3. Release and wait until lights go out.
4. Resume set up by selecting positions appropriate for the job being run.

**NOTE: When changing from a piece to one of another dimension, go through the set up process to avoid misplaced tabs.**

## **10. SERVICE**

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If any problems occur with this equipment or if you need assistance installing or operating your FD 280 contact an authorized Formax dealer.

### **10.1 Repacking Instructions**

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If it is necessary to ship your FD 280 to your authorized Formax dealer for service, pack it in the original shipping container and packaging material. If the original container is not available, the FD 280 should be carefully packed so that it will not be damaged in transit.

When calling for service, have your FD 280's serial number handy.

#### **NOTE**

**If the FD 280 is packed correctly, your Shipping Carrier is liable for any damages that occur during shipping.**

Use the following instructions to pack the FD 280 with commercially available materials.

1. Double wrap the machine in heavy plastic.
2. Use a heavy duty, double-walled container of 350-pound test material.
3. Surround the FD 280 on **ALL** sides with at least 4 to 5 inches of heavy duty shock absorbing packaging material (peanuts or wadded up newspaper do not qualify as “heavy duty”). This will provide firm cushioning and prevent movement inside the container.
4. Seal the top and bottom of the shipping container with strong tape or banding material.
5. Clearly and legibly mark the shipping container **FRAGILE**.