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# **44DT Laminator**

## **INSTALLATION & OPERATION MANUAL**

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# 1. SAFETY

Your safety, as well as the safety of others is important. Before you install or use the machine, read and follow all the safety notices carefully in this chapter. In this instruction manual, and on the laminator, you will find important safety notices regarding the laminator. Read all of the instructions and save these instructions for further use.

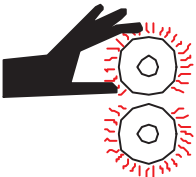
 The safety alert symbol precedes each safety notice in this manual. The symbol indicates a potential personal safety hazard to you or others, as well as laminator or property damage.

 This safety alert symbol indicates a potential electrical shock. It warns you to not open the laminator and expose yourself to hazardous voltage.

The following warnings are found on the 44DT laminator.

<b>⚠ ADVERTENCIA</b> Riesgo de choque eléctrico. No abra: Adentro no hay piezas reparables por el usuario. Mantenimiento solamente por personal calificado.	<b>⚠ ATTENTION</b> Risque de secousse électrique. Ne pas ouvrir: Pas de pièces réparables par l'utilisateur. Entretien seulement par personnel qualifié.	 	<b>⚠ WARNING</b> Electrical shock hazard. Do not open. No user serviceable parts inside. Refer servicing to qualified service personnel.
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This safety notice means that you could be seriously hurt or killed if you open the laminator and expose yourself to hazardous voltage.

<b>⚠ ADVERTENCIA</b> RODILLOS CALIENTES. PUNTO DE PINCHAMIENTO. Mantener manos y ropa a distancia.	<b>⚠ ATTENTION</b> ROULEAUX CHAUDS. POINT DE PINCEMENT. Tenir mains et vêtements à l'écart.		<b>⚠ CAUTION</b> HOT ROLLS. PINCH POINT. Keep hands and clothing away.
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This safety notice means that you could be burned and your fingers and hands could be trapped and crushed in the hot rollers. Clothing, jewelry and long hair could be caught in the rollers and pull you into them.

<b>⚠ ACUIDADO</b> PUNTO DE PINCHAMIENTO entre rodillos. Mantener manos y dedos a distancia.	<b>⚠ ATTENTION</b> POINT DE PINCEMENT entre les rouleaux. Tenir mains et doigts à l'écart.		<b>⚠ CAUTION</b> PINCH POINT between rollers. Keep hands and fingers away.
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This safety notice means that your fingers and hands could be trapped and crushed in the rollers. Clothing, jewelry and long hair could be caught in the rollers and pull you into them

## WARNINGS

- Do not attempt to service or repair the laminator.
- Do not connect the laminator to an electrical supply or attempt to operate the laminator until you have completely read these instructions. Maintain these instructions in a convenient location for future reference.
- To guard against injury, the following safety precautions must be observed when installing and using the laminator.

Failure to observe these warnings could result in severe bodily damage or death.

## GENERAL

- Keep hands, long hair, loose clothing, and articles such as necklaces or ties, away from the front of the heat and pull rollers to avoid entanglement and entrapment
- The heat rollers can reach temperatures of over 300 °F (166.7 °C). Avoid contact with the heat rollers during operation or shortly after power has been removed from the laminator.
- Do not use the laminator for other than its intended purpose.
- Do not place the laminator on an unstable cart, stand or table. An unstable surface may cause the laminator to fall resulting in serious bodily injury. Avoid quick stops, excessive force and uneven floor surfaces when moving the laminator on a cart or stand.
- Do not defeat or remove electrical and mechanical safety equipment such as interlocks, shields and guards.

- Do not insert objects unsuitable for lamination or expose the equipment to liquids.

## ELECTRICAL

The laminator should be connected only to a source of power as indicated in these instructions and on the serial plate located on the rear of the laminator. Contact an electrician should the attachment plug provided with the laminator not match the receptacles at your location.



**WARNING:** Do not attempt to service or repair the laminator. Failure to observe this warning could result severe personal injury or death.

Disconnect the plug from the receptacle and contact your dealer/distributor when one or more of the following has occurred.

- The power supply cord or attachment plug is damaged.
- Liquid has been spilled into the laminator.
- The laminator is malfunctioning after being mishandled.
- The laminator does not operate as described in these instructions.



**CAUTION:** The receptacle must be located near the equipment and easily accessible.

Disconnect the attachment plug from the receptacle to which it is connected and keep the power supply cord in your possession while moving the laminator.

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## 2. WARRANTY

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### LIMITED 90-DAY WARRANTY

The Manufacturer warrants to the original purchaser for a period of ninety days on labor and one year on parts after installation that this laminator is free from defects in workmanship and material under normal use and service. The Manufacturer's obligation under this limited warranty is limited to replacement or repair, at the Manufacturer's option, of any part found defective by the Manufacturer without charge for material or labor.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. ANY REPRESENTATIONS OR PROMISES INCONSISTENT WITH, OR IN ADDITION TO, THIS LIMITED WARRANTY ARE UNAUTHORIZED AND SHALL NOT BE BINDING UPON THE MANUFACTURER. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER OR NOT FORESEEABLE.

This limited warranty shall be void if the laminator has been misused; mishandled; damaged by negligence, by accident, during shipment, or due to exposure to extreme conditions; repaired, altered, moved, or installed by anyone other than the Manufacturer or its authorized agents; or if incompatible film was used. The Manufacturer's obligation under this limited warranty does not include routine maintenance, cleaning, adjustment, normal cosmetic or mechanical wear, or freight charges.

Without limiting the generality of the previous paragraph, the Manufacturer's obligation under this limited warranty does not include:

1. Damage to the rollers caused by knives, razors, or other sharp tools; by any foreign objects falling into the working area of the laminator; or by cleaning the laminator with solutions or materials that harm its surfaces;
2. Damage caused by adhesives; nor
3. Damage caused by lifting, tilting or attempting to position the laminator.



3. SPECIFICATIONS

<b>Operating Speed</b> <ul style="list-style-type: none"><li>• Variable</li><li>• Fixed – Safety shield removed</li></ul>	2.5 to 10 fpm (0.8 to 3 mpm) 3 fpm (0.9 mpm)
<b>Dimensions</b> <ul style="list-style-type: none"><li>• Width</li><li>• Height</li><li>• Depth</li><li>• Weight</li></ul>	55 in (137 cm) 22 in (56 cm) 22 in (56 cm) 222 lbs. (100 kg)
<b>Electrical Requirements</b> <ul style="list-style-type: none"><li>• Voltage</li><li>• Current</li><li>• Power</li><li>• U.S. Receptacle</li></ul>	220 V 60 Hz 12.5 Amps 2800 W NEMA 6-15R
<b>Heat Capacity</b> <ul style="list-style-type: none"><li>• Max. temperature</li><li>• Warm up from ambient</li></ul>	300 °F (167 °C) 10 Minutes to 220 °F (122 °C)

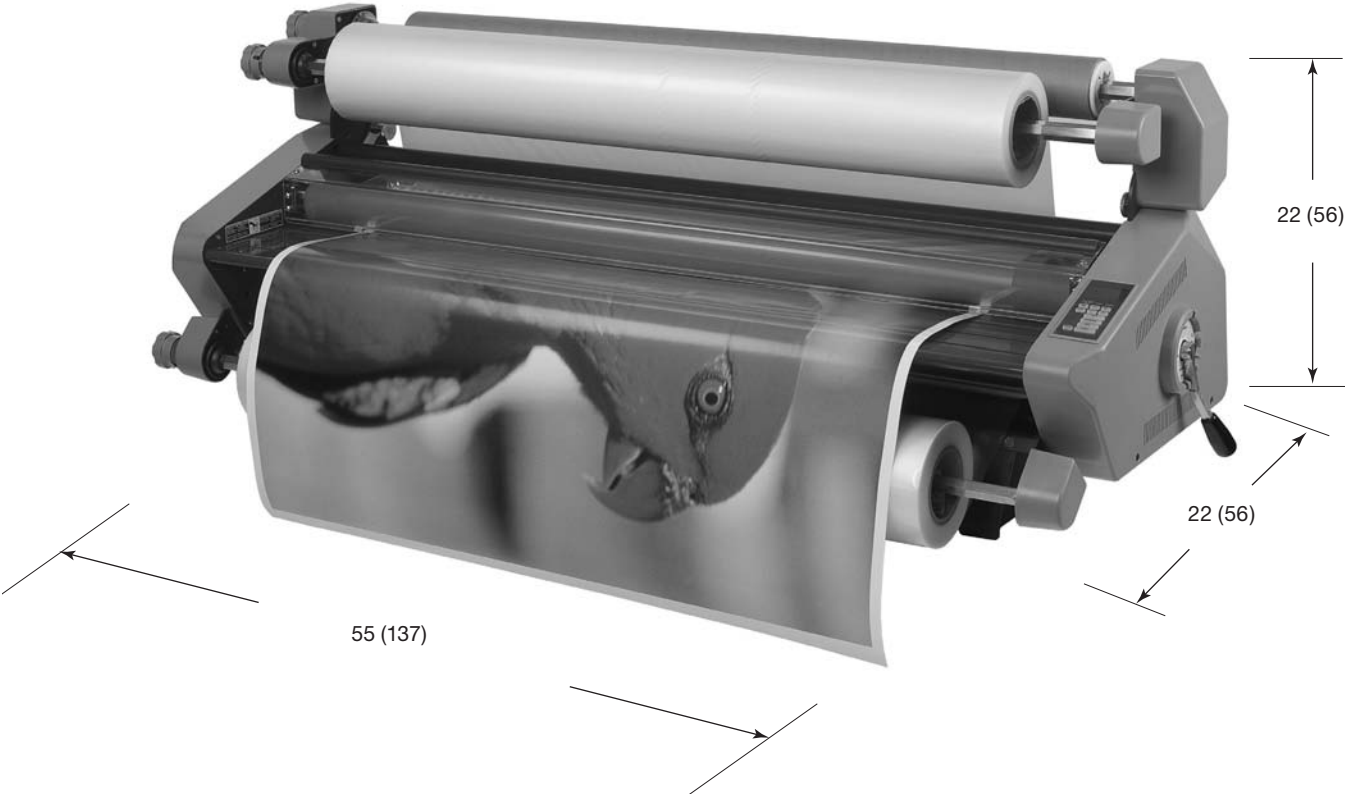


Fig. 3-1. 44DT Dimensions Shown in Inches (cm).

**FCC NOTE**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

(Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.)

## 4. INSTALLATION

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This chapter describes how to install the machine. There are no operator serviceable parts to the machine other than periodic cleaning. Refer to the *Operator Maintenance* chapter.



**WARNING:** Do not attempt to service or repair the laminator. Failure to observe this warning could result severe personal injury or death.

Disconnect the plug from the receptacle and contact your dealer/distributor when one or more of the following has occurred.

- The power supply cord or attachment plug is damaged.
- Liquid has been spilled into the laminator.
- The laminator is malfunctioning after being mishandled.
- The laminator does not operate as described in these instructions.

### PRIOR TO INSTALLATION

Inspect the package for damage. Shipping damage should be brought to the immediate attention of the delivering carrier.

### INSTALLATION

#### To set up the laminator for the first time:

1. Place the laminator on a stable flat surface capable of supporting the weight of the machine and any materials. The surface should be at least 30 inches (0.76 m) high to assure comfortable positioning during operation. All four rubber support feet should be positioned completely on the supporting surface. The supporting surface may also be large enough to hold the material to be laminated.
2. The laminator should be located so that exiting film drops freely to the floor or to a table that is lower than the exit point of the laminator. Accumulation of laminate immediately behind the laminator as it exits the equipment may cause the film to wrap around the rollers, jamming the machine.
3. Avoid locating the laminator near sources of heat or cold. The laminator should not be in the direct path of forced heated or cooled air.
4. Connect the attachment plug provided with the laminator to a suitably grounded outlet only.  
**Avoid connecting other equipment to the same branch circuit to which the laminator is connected, as this may result in nuisance tripping of circuit breakers or blowing fuses.**



## 5. FEATURE GUIDE

This chapter identifies the main components of the laminator.

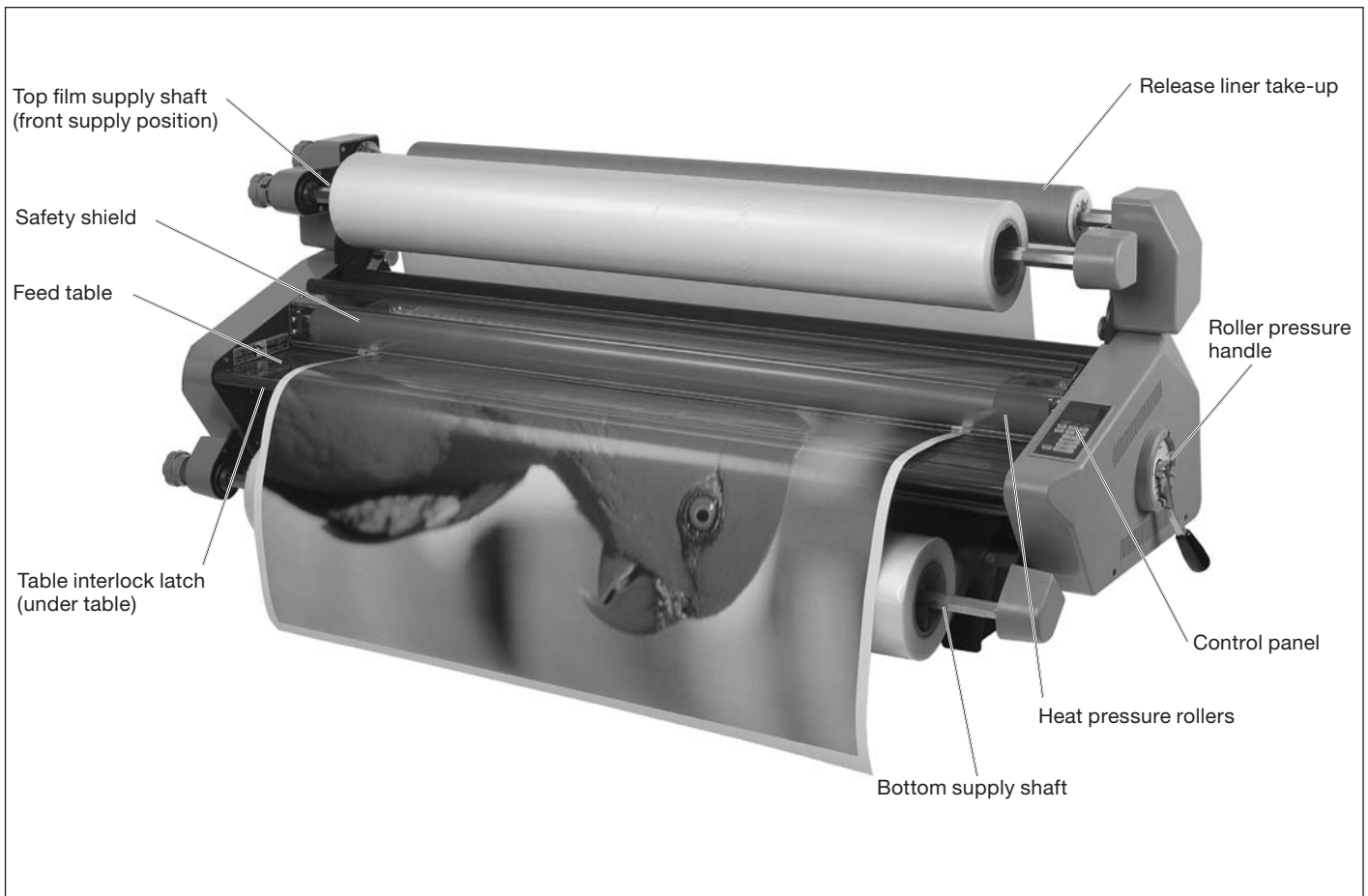


Fig. 5-1. 44DT Laminator Identification.

### TOP FILM SUPPLY SHAFT

Holds the film supply on the laminator.

### RELEASE LINER TAKE-UP

Rewinds the release liner of pressure sensitive films and AccuShield™.

### IDLER BAR

(Not shown.) The idler bar directs the top supply film to the heat pressure roller.

### HEAT PRESSURE ROLLERS

Two heat pressure rollers apply pressure to the film and the print being laminated or mounted. Heat is provided by an internal heating element. When using pressure sensitive adhesive films, the heat is turned off. The rollers pull the print and films into the laminator.

### NIP POINT

(Not shown.) The point at which the top and bottom rollers come into contact and the point at which the items for lamination are introduced into the laminator.

### SAFETY SHIELD

The safety shield prevents entanglement, entrapment, and inadvertent contact with the rollers. **When the safety shield is removed, the laminator runs at 3 fpm (0.9 mpm) when you press the RUN button.** The safety shield is removed only when you load films.

**⚠ WARNING:** Keep your fingers and hands away from the nip point. Failure to observe this warning could result in severe personal injury.

## FEED TABLE

The feed table is used to position items for laminating and mounting. **When the feed table is removed, the laminator runs at 3 fpm (0.9 mpm) when you press the RUN button.** The feed table is removed only when you load film.

## TABLE INTERLOCK LATCH

(Not shown.) The interlock latch locks the feed table into position and activates an interlock switch. The latch is located on the left, underside of the feed table. Move the latch to the right to release the table. Then lift the table upwards and away from the laminator.

## BOTTOM FILM SUPPLY SHAFT

Holds the film or kraft paper on the machine.

## FILM WEB

(Not shown.) The path the laminating film and/or mounting film mounted on the machine takes through the machine.

## CORE ADAPTORS

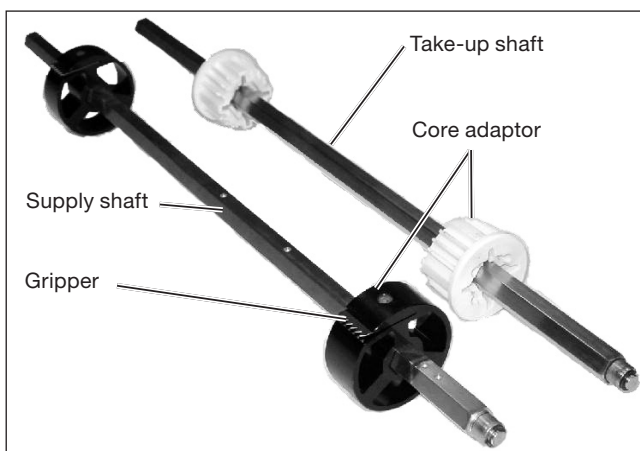


Fig. 5-2. Core Adaptors on the Shafts.

The core adaptors hold and lock the rolls of film and release liner on the shafts to prevent side to side shifting. Grippers on the supply shafts ensures proper tension on the film. The supply shaft core adaptors lock in place with a set screw. The release liner take-up core adaptors are held in place by friction.

## ROLLER PRESSURE HANDLE

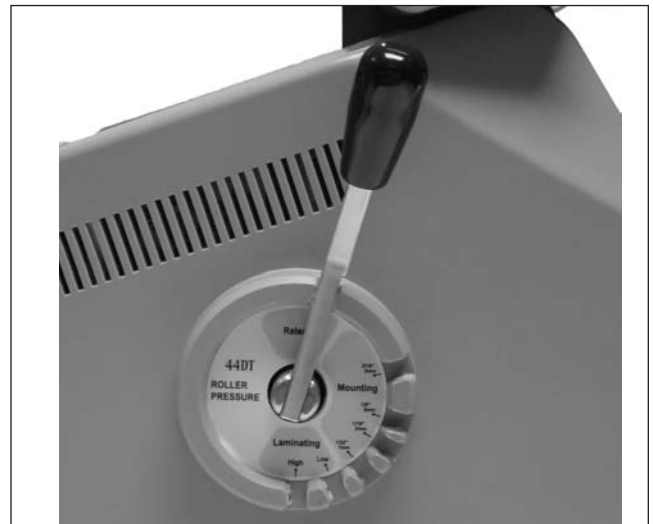


Fig. 5-3. Roller Pressure Handle.

The roller pressure handle adjusts the amount of roller pressure needed for various laminating and mounting applications. Pull the handle out of a position, rotate it to the desired pressure, and press it into the slot. Three main function settings provided are.

**Release** – Provides the widest opening between the pressure rollers and takes pressure off the rollers. This is used when installing new rolls of film. When the machine is not in use, put the handle in this position.

**Mounting** – Used when bonding to a rigid substrate such as mounting boards. Thickness range is 1/32 to 3/16 in. (1 to 5 mm).

**Laminating** – Used to adhere materials in multiple substrates. The two positions are low and high pressure.

**IMPORTANT:** Use a pressure setting that is appropriate for the material you are laminating or mounting.

## FILM AND TAKE-UP TENSION ADJUSTMENT KNOBS

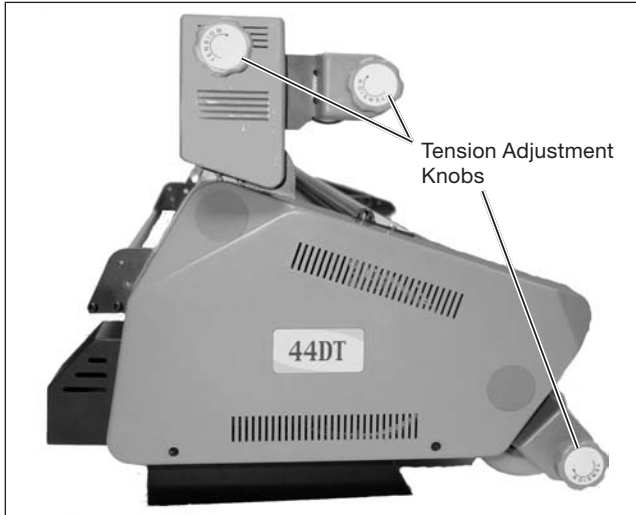


Fig. 5-4. Tension Adjustment Knobs.

Allows the operator to increase or decrease film web and release liner tension as needed to reduce curl and wrinkles.

## CONTROL PANEL

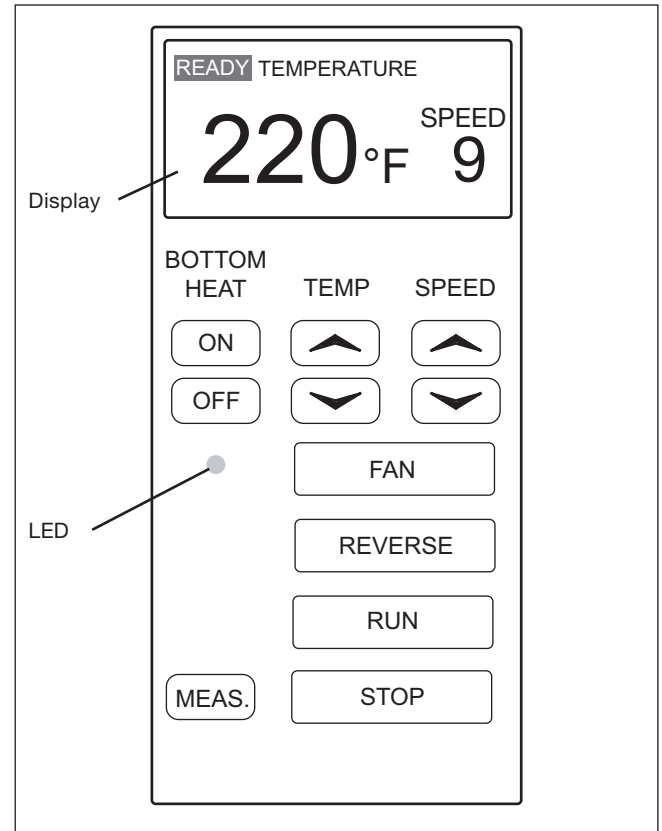


Fig. 5-5. Control Panel.

### Display

The LCD shows the following information.

**READY** – Appears when the heat pressure rollers have reached the set temperature. It flashes when the heat is out of range.

**TEMPERATURE** – Displays the programmed temperature setting. Also displays current temperature when the **MEAS.** button is pressed.

**SPEED** – Displays the set speed.

### Functions

The following describes the buttons on the control panel. Refer to Fig. 5-5.

**BOTTOM HEAT** – Press the **ON** button to turn on the bottom heat pressure roller heater. Press the **OFF** button to turn it off. When the bottom heat is turned on, an LED illuminates below the **OFF** button.

**IMPORTANT:** To change from a process where only the top roller is heated to a process that requires heat on both rollers, you must first turn off the laminator and allow the top roller to cool to room temperature. Once the roller is cool, both rollers can be heated simultaneously. See *General Operation* in the Operation chapter.

**TEMP** – Press the up or down arrow buttons to increase or decrease the temperature. When the bottom heat roller is turned off, these buttons set the top roller temperature only. When the bottom heat roller is turned on, these buttons set the temperature for both rollers, if they are heated from room temperature.

**SPEED** – Press the up or down buttons to set the speed. It is adjustable from 2.5 to 10 feet per minute (fpm) (0.8 to 3 mpm).

**FAN** – Turns the cooling fan on and off. Illuminates when the fan is on.

**REVERSE** – Press and hold the **REVERSE** button to reverse the direction of the rollers. Release the button to stop.

**RUN** – Press and release the **RUN** button for continuous running. The safety shield must be installed.



**WARNING:** Keep your fingers and hands away from the nip point (the point where the upper and lower rollers meet). Failure to observe this warning could result in severe personal injury.

**STOP** – Press the **STOP** button to stop the laminator.

**MEAS.** – Press and hold the button to show the actual temperature of the top heat roller on the LCD.

## PULL ROLLERS

(Not shown.) The pull rollers, located at the back of the laminator, are motor driven. They simultaneously pull the laminate and improve the quality of the laminated item.

## POWER SWITCH

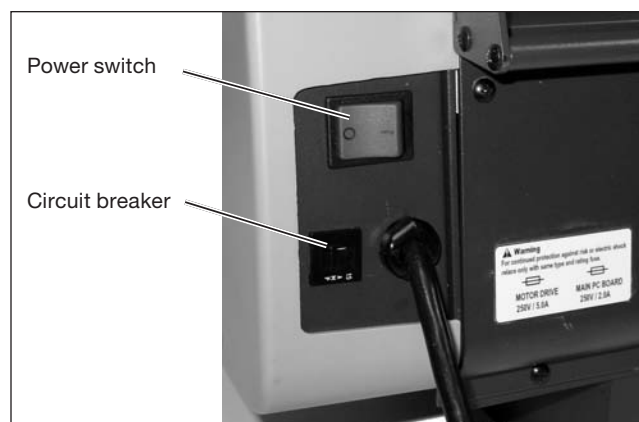


Fig. 5-6. Back of Laminator.

The power switch is located at the back of the machine. Press the “I” on the switch to turn it on. The LCD will illuminate on the control panel. The off position, marked “O”, turns the machine off.

## CIRCUIT BREAKER

Electrical safety device which can be reset by the operator if tripped.

## 6. OPERATION

This chapter describes how to use the laminator to to:

- Operate the machine
- Load films (web the machine)
- Laminate items
- Mount items

### GENERAL OPERATION

These instructions assume that the films have been loaded. For information about loading films, see the *Loading Film* section in this chapter.

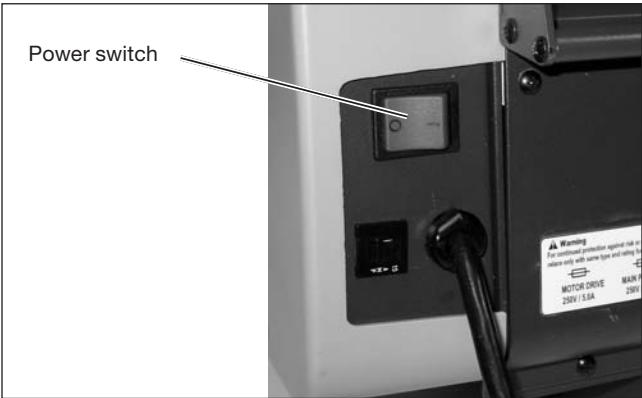



Fig. 6-1. Power Switch on the Back of The Machine.



Fig. 6-2. Roller Pressure Handle.

#### To run the laminator:

1. Turn the laminator On (I) with the power switch located at the back of the machine.
- **WARNING:** Make sure the safety shield and feed tray are in their proper positions. You could be burned and your fingers and hands could be trapped and crushed in the hot rollers. . Clothing, jewelry, and long hair could be caught in the rollers and pull you into them.
2. Set the roller pressure handle for the thickness of the item that is to be laminated or mounted.

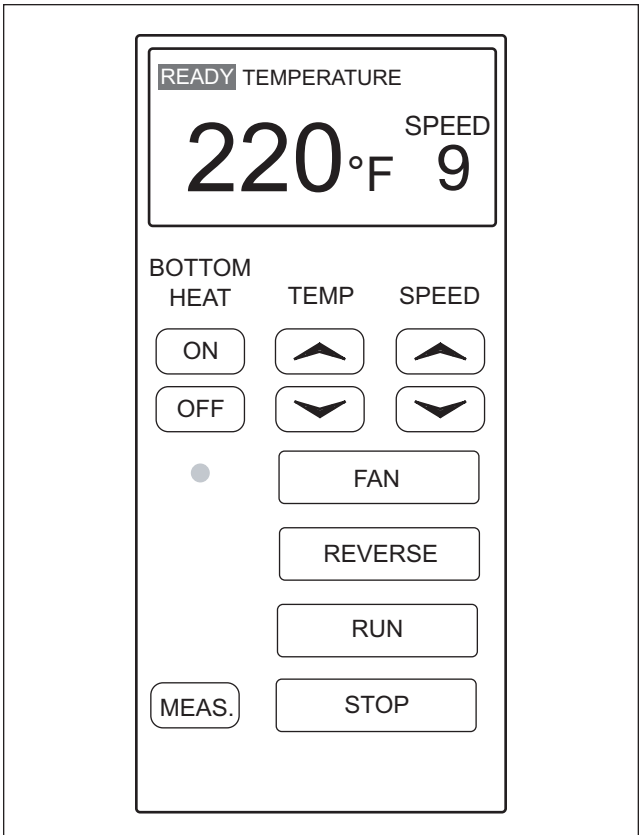


Fig. 6-3. Control Panel.

3. Do any of the following.
  - a. If using thermal films, turn on the bottom heat if needed, and then use the **TEMP** up or down buttons to set the desired temperature.
  - b. If using PSA films, go to the next step.

4. Set the desired speed.  
Refer to the *Lamination Guide* chapter.
5. Press the **RUN** button.  
The rollers will begin to turn.  
If using thermal films, allow the heat lines to pass the heat pressure rollers before inserting items into the rollers.

**NOTE:** Do not press **RUN** until **READY** appears on the display.

6. Position the item(s) to be laminated or mounted on the feed table.
7. Push the item(s) squarely into the roller nip point (where the two rollers meet). Additional items can be laminated or mounted without stopping and starting the machine.
8. Press the **STOP** button to stop the laminator when all of the items have completely exited the rear of the machine.

**IMPORTANT:** To change from a process where only the top roller is heated to a process that requires heat on both rollers, you must first turn off the laminator and allow the top roller to cool to room temperature. Once the roller is cool, both rollers can be heated simultaneously.

If the laminator will be used within one hour, you may leave it turned on.

## STANDBY MODE

The 44DT automatically goes into a standby mode after it has been idle for 3 hours. The heat roller temperature is lowered to 176 °F (80 °C), if they were on. After another hour of inactivity, the heat is turned off.

To take the laminator out of standby mode, press the **RUN** button. If the heat was lowered or turned off, you will have to wait until **READY** is displayed on the control panel. To run the laminator, press the **RUN** button again.

**IMPORTANT:** Whenever the laminator will be idle for an hour or more, set the roller pressure handle to **Release**.

## LOADING FILM

The machine can perform three functions:

- Decaling (laminating and applying a mounting adhesive to the back of the item).
- Mounting, using one film.
- Mounting, using no film.

The 44DT laminator runs poly-in and poly-out pressure sensitive adhesive (PSA) and thermal films. Poly-in means the adhesive side of the film is on the inside of the web. Poly-out means the adhesive is on the outside of the web.

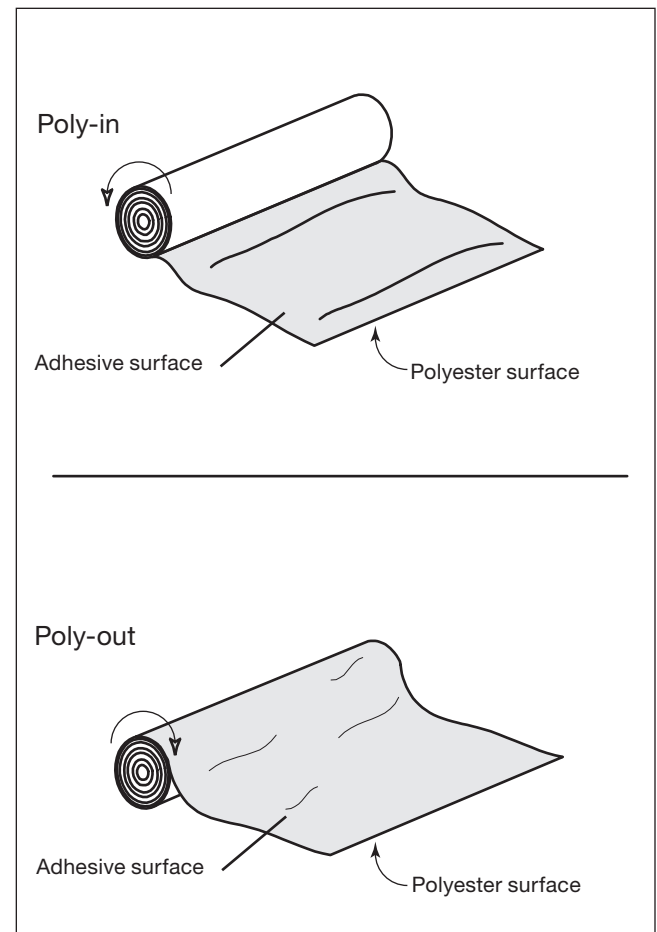


Fig. 6-4. Poly-in and Poly-out Films.

**IMPORTANT:** The top and bottom rolls of laminating film must be the same width.

Always change the top and bottom supply rolls at the same time. Near the end of each roll of most laminating film is a label stating, **Warning – End of Roll**. The appearance of this label on either the top or bottom roll requires that new rolls of film be installed as soon as the item presently being laminated completely exits the rear of the laminator. Do not introduce any additional items into the laminator when the warning label is visible.

Adhesive will deposit on the rollers if:

- One or both rolls of film are allowed to run completely off its core.
- Only one roll is used.
- Different widths of rolls are loaded together.
- Either roll is loaded with the adhesive side against a roller.

There are two methods of loading film.

- Using a threading card.
- Tacking new film to existing film.

Prior to loading film, the safety shield and feed table need to be removed.

## REMOVING AND INSTALLING THE SAFETY SHIELD

The safety shield should not be removed except to install films and when cleaning the rollers. When the shield is off, the laminator runs at a fixed speed of 3 fpm (0.9 m).



**WARNING:** Keep fingers and hands away from the rollers when the machine is running. They could be burned and trapped and crushed in the rollers. Clothing, jewelry, and long hair could be caught in the rollers and pull you into them.

### To remove the shield:

1. Tilt the bottom of the shield out.
2. Lift shield up and out.

### To install the shield:

1. Align the pins at the back of the shield with the slots on the machine.
2. Lower the shield so that it engages the safety switch.

## REMOVING AND INSTALLING THE FEED TABLE

The feed table should not be removed except to install films. When the table is off, the laminator runs at a fixed speed of 3 fpm (0.9 m).

### To remove the feed table:

1. Slide the feed table latch to the right.
2. Lift the table upwards and away from the laminator.

### To install the feed table:

1. Place the table on the machine.
2. Slide the feed table latch to the left.

## LOADING FILM ONTO THE SUPPLY SHAFTS

If you are replacing existing films, perform the following set of instructions, *To remove existing films*. If you are loading film for the first time, skip these instructions and start with the next instructions, *To load films*.

### To remove existing films:

1. Put the roller pressure handle to **Release**.

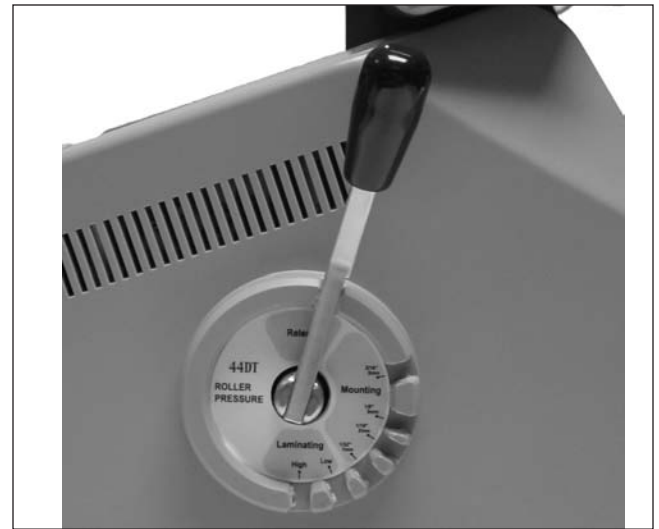


Fig. 6-5. Roller Pressure Handle.

2. Cut the remaining top and bottom films just ahead of the heat pressure rollers.  
Do not allow the remaining film to pass through the laminator if there is any exposed adhesive. Liquefied or tacky adhesive will deposit on the rollers if the following step is not followed.
3. Pull the remaining film out the back of the machine with a quick motion.

**CAUTION:** Be careful to not cut the heat pressure rollers. Failure to observe this notice can damage the rollers.

4. Remove the release liner from the take-up core by doing the following.
  - a. Lift the right end upward and out of the support and then pull the hex end out of the support.
  - b. Unwind or cut the liner from the core. Do not damage or throw away the core.
  - c. Put the shaft, with the core, back on the machine by inserting the left end (hex end) in the left side of the drive and lower the bearing into the right side of the machine.
4. To remove the film supply shaft, grasp the shaft, press it to the right until the left end of the hex shaft clears the brake hub, and raise the left end of the shaft out of the machine. Do this for the top and bottom supply shafts.
5. Slide the core off the shaft and core adaptors.
 

**Tip:** Twist the shaft while pulling to remove the core easier.
1. Clean all rollers and idlers if needed. See the *Operator Maintenance* chapter.

#### To load films onto the supply shafts:

1. If the supply shaft is on the machine, remove it by grasping it, pressing it to the right until the left end of the hex shaft clears the brake hub, and lift the left end out of the machine. This applies to the top and bottom supply shafts.
2. Use the set screws in the core adaptors to move the adaptors if needed. The grippers on the core adaptors should be pointing in the opposite direction that the film unwinds from the roll.

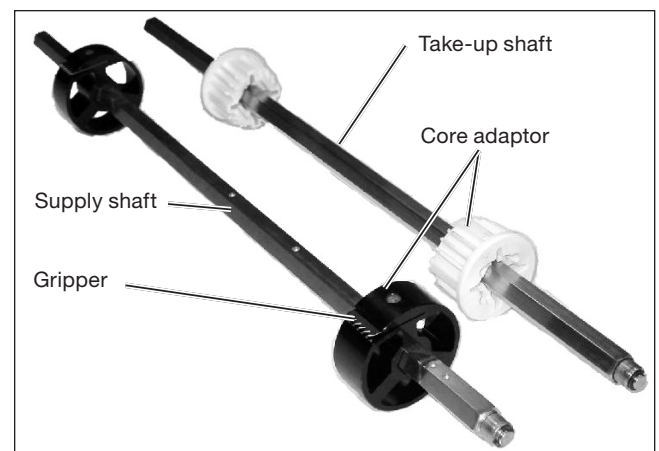


Fig. 6-6. Core Adaptors on the Shafts.

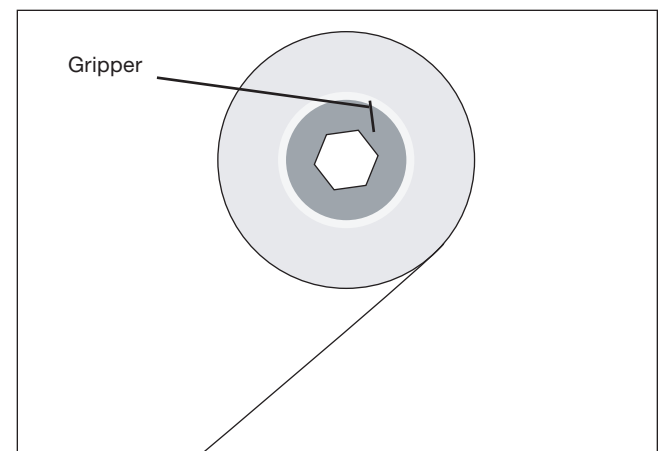


Fig. 6-7. Direction of Core Adaptor Gripper on Poly-in Film.

3. Slide the new roll on to the shaft and core adaptors. Refer to Fig. 6-4. *Poly-in and Poly-out Films* to determine how the film unwinds from the roll.

4. Insert the bearing end of the shaft into its support on the right side of the machine, press to the right, and then insert the left end of the hex shaft into the brake hub.
5. Center each supply roll on the shafts by doing the following.
  - a. Use a ruler to measure from the left edge of the roll to the left side frame.
  - b. Do the same on the right side.
  - c. Shift the roll side to side so that both measurements are equal. It is important that the edges of the films are aligned so that adhesive does not get on the rollers.
5. Center the take-up core on its shaft.

## THERMAL AND ACCUSHIELD™ FILMS CONFIGURATION

Thermal and Accushield films are loaded as shown in Figs. 5-9 and 5-10. The top supply is in the front unwind position. When loading thermal films, the bottom supply shaft is also loaded. When loading AccuShield films, nothing is loaded on the bottom supply shaft and the separator bar must be in place.

If the top supply shaft is not positioned on the front position, follow the instructions below. When set up properly, the brake assembly will be on the left as you face the front of the laminator.

### To move the supply shaft:

1. Unscrew the thumb screws on the brake assembly and the shaft support brackets.

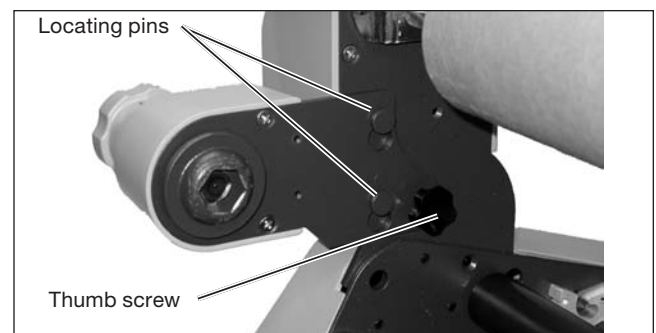


Fig. 6-8. Top Supply Shaft Brake Assembly in the Rear Position.

1. Lift the brake assembly up and out of the machine.
2. Lift the shaft support assembly up and out of the machine.
3. Go to the opposite side (front or rear) of the laminator and slide the brake housing over the pins on the left side as you face the laminator.
4. Insert the thumb screw into the corresponding hole and hand tighten.
5. Slide the shaft support assembly over the pins on the right side of the laminator.
6. Insert the thumb screw into the corresponding hole and hand tighten.

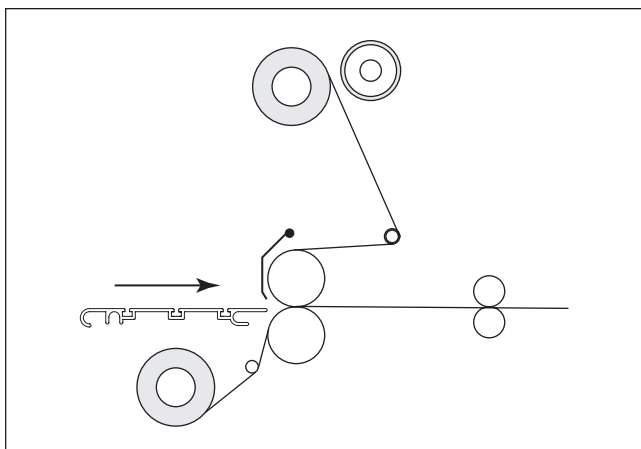


Fig. 6-9. Configuration for Thermal Film.

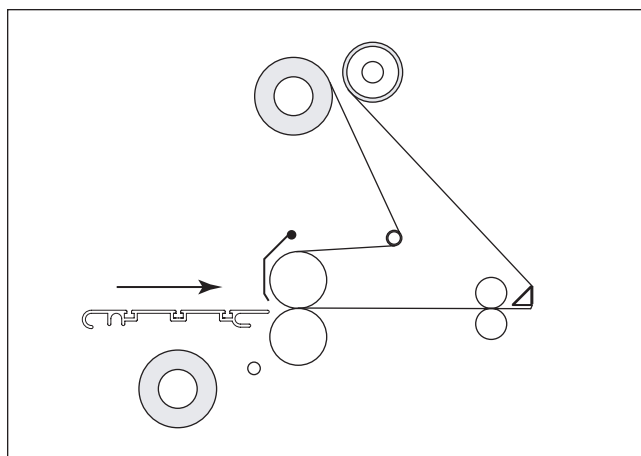


Fig. 6-10. Configuration for AccuShield Film

## CONFIGURATION FOR PSA FILMS

PSA films are loaded with the top supply shaft assembly in the rear position as shown in Fig. 6-12. Notice that the supply shaft is mounted on the rear of the machine.

The brake and support must be positioned in the rear position for PSA films. To move the supply shaft, see *To move the supply shaft* in the *Configuration for Thermal and Accushield Films* section.



Fig. 6-11. Supply Shaft and Brake Assemblies Mounted on the Rear Position.

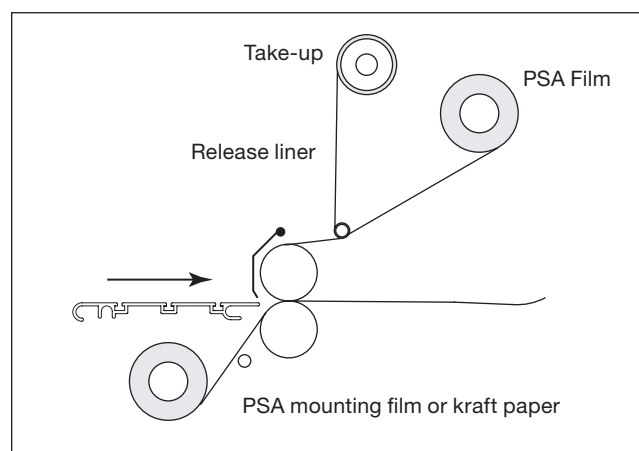


Fig. 6-12. Configuration for Poly-in PSA Film.

## LOADING FILM WITH A THREADING CARD

The following procedure uses a film threading card that is sometimes provided with new rolls of film. If one is not provided, a scrap piece of cardboard or poster board with a straight edge is suitable. Either can be reused.

### To prepare the laminator for loading:

1. Position the top supply shaft assembly as appropriate for the process.  
Refer to the *Configuration for Thermal and Accushield Films* or *Configuration for PSA Film* sections in this chapter.
2. Turn the laminator on and if using thermal films, turn on the bottom roller heat and set the proper temperature for the film.
3. Remove the safety shield and feed tray.  
Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
4. Release the brake tension on the supply shafts.

**Note:** These instructions are for loading (webbing) laminating and mounting films for decaling. The top supply shaft is used for laminating films and the bottom supply shaft is used for mounting film or kraft paper. If you are not applying mounting film to a laminate, kraft paper should be used on the bottom supply shaft to prevent adhesive from sticking to the rollers. For more information about loading films for other processes, refer to the appropriate section in this chapter

## Webbing Thermal Films

Refer to the *Configuration for Thermal and Accushield Films* section in this chapter for the proper configuration.

### To web the laminator with thermal films:

1. Pull the top film down, thread it under the idler bar and drape it over the top heat roller.

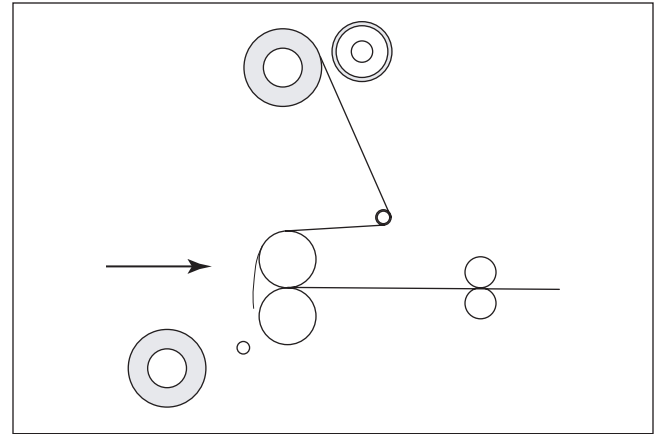


Fig. 6-13. Top Film Draped Over the Top Heat Roller.

6. Pull the mounting film (or kraft paper) behind the idler bar and then up to about even with the top of the top pressure roller without touching the sticky laminating film.
7. While pulling evenly, carefully align the edges of the mounting (or kraft paper) film with the laminating film, and press the two together. It is important that the tension is even from one end of the supply rolls to the other.

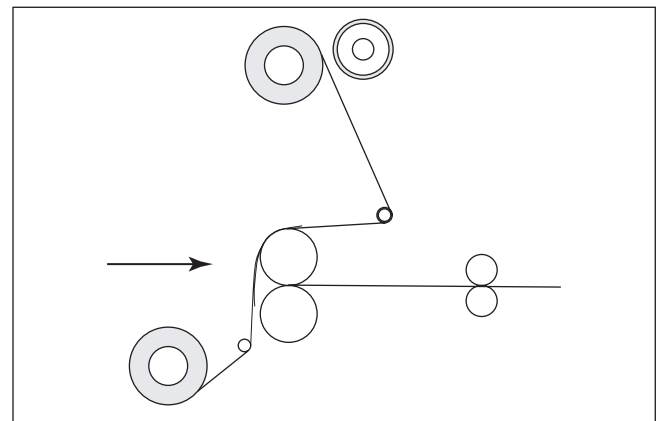


Fig. 6-14. Bottom Film Stuck to Top Film.

8. Press the straight edge of the threading card into the two films at the nip (the point between the two pressure rollers) until the card and films are slightly past the nip.

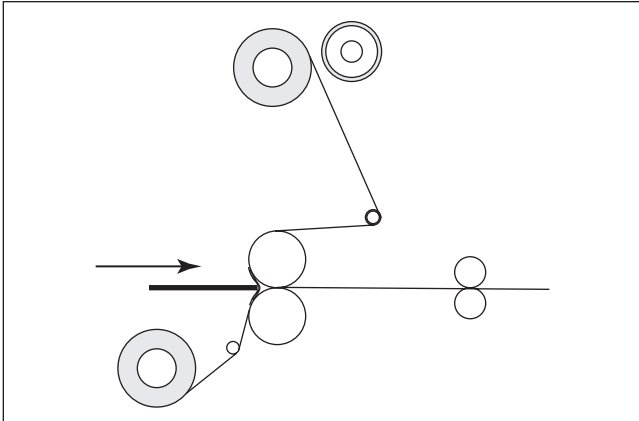


Fig. 6-15. Threading Card Inserted Between Films.

9. Move the roller pressure handle to where it applies pressure to the threading card.
10. Press the **RUN** button on the control panel and guide the threading card into the machine until the rollers pull the card on its own.

**WARNING:** Keep your fingers and hands away from the nip point while the machine is running. They could be trapped and crushed in the rollers. Clothing, jewelry, and long hair could be caught in the rollers and pull you into them.

11. Release the card and ensure that both films and card are being pulled into the laminator. The card will guide the film webs into the rollers.
12. Replace the safety shield and feed table. Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
13. Check the film alignment and adjust the tension as needed. See the *Film Alignment* section in this chapter.

## Webbing AccuShield Films

The threading card for webbing AccuShield film can be any stiff print.

**IMPORTANT:** When starting to laminate, always start the rollers **BEFORE** applying pressure to the rollers to prevent AccuShield build up on the roller. When stopping, release the pressure on the rollers **BEFORE** stopping the motor.

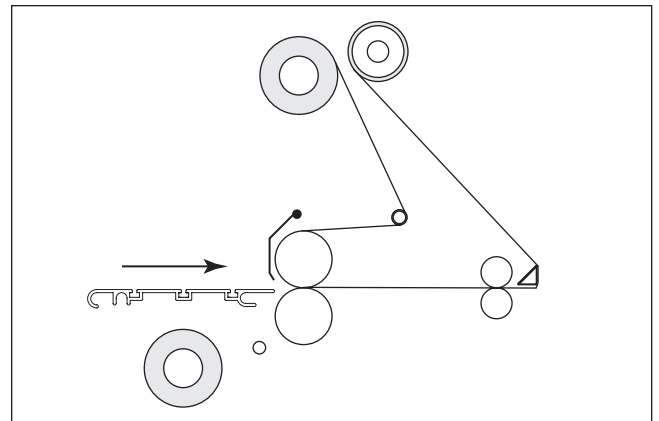


Fig. 6-16. Configuration for AccuShield Film.

## To web the laminator with AccuShield film:

1. Pull the film down, thread it under the idler bar and drape it over the top heat roller.

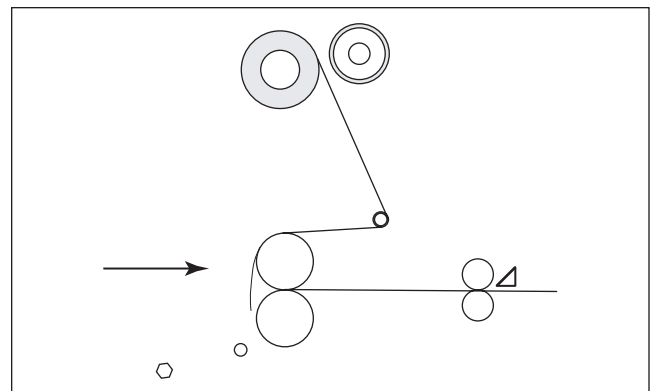


Fig. 6-17. AccuShield Draped Over the Top Heat Roller.

2. Press the straight edge of the threading card into the film at the nip (the point between the two pressure rollers) until the card and film is slightly past the nip. The film should be wrapped around the leading edge of the card.

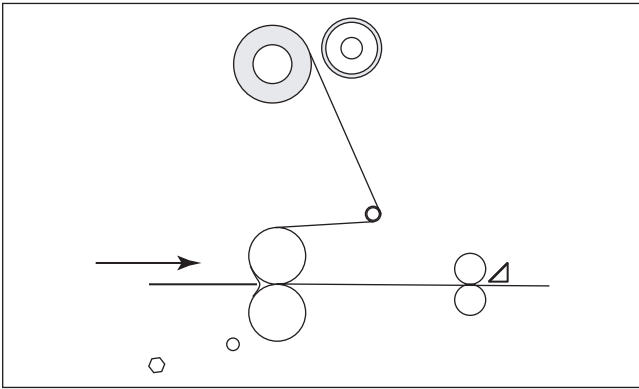


Fig. 6-18. Threading Card Inserted Into the Film.

3. Press the **RUN** button on the control panel.
4. Move the roller pressure handle so that it applies pressure to the threading card and guide the card into the machine until the rollers pull it on its own.

**WARNING:** Keep your fingers and hands away from the nip point while the machine is running. They could be trapped and crushed in the rollers. Clothing, jewelry, and long hair could be caught in the rollers and pull you into them.

4. Release the card and ensure that both films and card are being pulled into the laminator. The card will guide the film into the rollers.
5. After the threading card exits the laminator, set the roller pressure handle to **Release**.
6. Press the **STOP** button.
7. Separate the release liner from the card.
8. Pull the film up to the take-up core and tape it to the core.
9. Replace the safety shield and feed table. Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
10. Check the film alignment and adjust the tension as needed. See the *Film Alignment* section in this chapter.

11.

## Webbing PSA Films

Refer to the *Configuration for PSA Film* section in this chapter for the proper configuration.

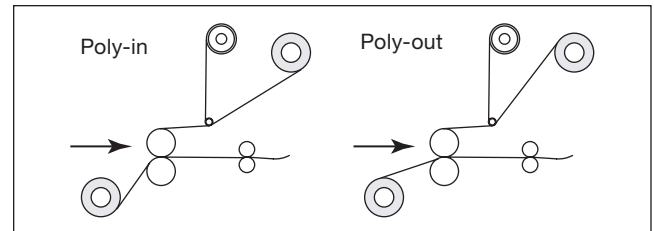


Fig. 6-19. Configuration for Poly-in or Poly-out PSA Films.

1. Pull the top film down, thread it under the idler bar, and pull the film back up to the take-up core.
2. Lightly tape both corners of the film to the take-up core.
3. Turn the take-up one full turn. Ensure that the film is pulled evenly and that no bulges exist at either end of the idler bar.
4. Using a very sharp utility knife, lightly score the laminating film approximately 4 in (10 cm) above the upper pressure roller. Be careful to not cut through the release liner.
5. Pull the laminating film away from the liner and drape it over the front of the pressure rollers so that it extends a little past the bottom of the top pressure roller.

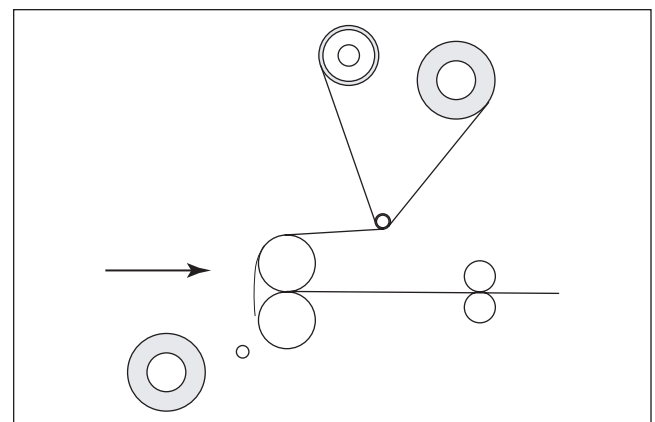


Fig. 6-20. Top Film Draped Over the Pressure Rollers and Release Liner Attached to Take-up.

6. Pull the mounting film (or kraft paper) up to about even with the top of the top pressure roller without touching the sticky laminating film.

7. While pulling evenly, carefully align the edges of the mounting film (or kraft paper) with the laminating film, and press the two together. It is important that the tension is even from one end of the supply rolls to the other.

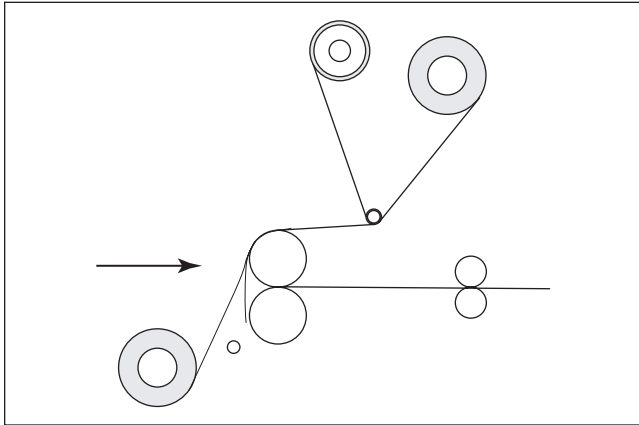


Fig. 6-21. Bottom Film Stuck to Top Film.

8. Press the straight edge of the threading card into the two films at the nip (the point between the two pressure rollers) until the card and films are slightly past the nip.

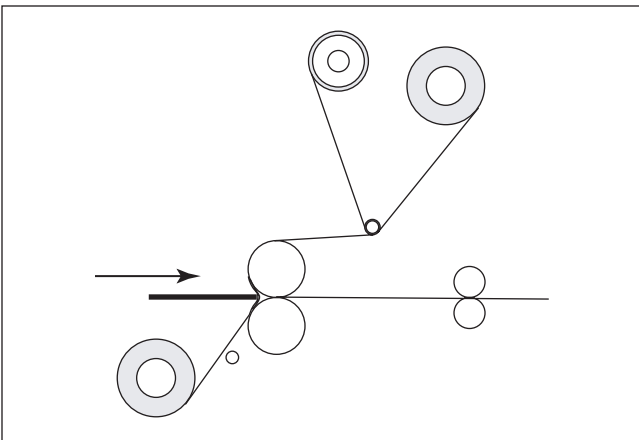


Fig. 6-22. Threading Card Inserted Between Films.

9. Move the roller pressure handle to where it applies pressure to the threading card.
10. Press the **RUN** button on the control panel and guide the threading card into the machine until the rollers pull the card on its own.

**! WARNING:** Keep your fingers and hands away from the nip point while the machine is running. They could be trapped and crushed in the rollers. Clothing, jewelry, and long hair could be caught in the rollers and pull you into them.

11. Release the card and watch the leading edge of the card to ensure that it enters the nip area of the rollers squarely and is being pulled into the laminator. The card will guide the film webs into the rollers.
12. Replace the safety shield and feed table. Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
13. Check the film alignment and adjust the tension as needed. See the *Film Alignment* section in this chapter.

## TACKING NEW FILM TO EXISTING FILM

The following describes a method for loading thermal or PSA film whereby the existing film on the rollers may be used in place of the threading card to draw the new film through the laminator. Leading edges of the new film will be overlapped onto the adhesive of the old film. The existing film and the new film will be pulled through the laminator together.

1. Remove the safety shield and feed tray.  
Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
2. Cut remaining bottom film web between the supply roll and rollers.
3. Remove the existing bottom supply roll and replace with new film.  
Refer to the *Loading Film Onto the Supply Shafts* section in this chapter.
4. Unroll enough film from the bottom roll of film to tack to the existing bottom film.  
Make sure to carefully align the edges of the films before tacking them together.
5. Cut remaining top film web between the supply roll and rollers.  
Do not allow the adhesive to stick to the rollers or the bottom film.
6. Remove the existing top supply roll and replace with new film.
7. Unroll enough film from the top supply roll shaft to tack to the existing top film. Make sure to carefully align the edges of the films before tacking them together.

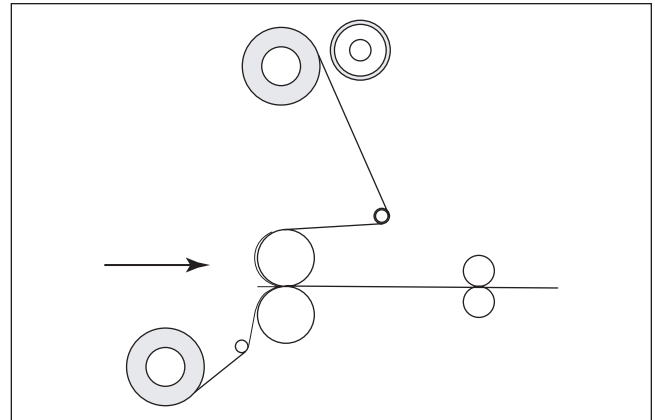


Fig. 6-23. New Thermal Films Attached to Old Films.

8. Install the feed table and safety shield.
9. Set the speed for the slowest speed setting and press **RUN**.
10. Watch the film being pulled through the laminator to ensure that the remaining existing film and the new film are advancing concurrently and evenly. Any separation between the films will require stopping the motor immediately and the situation corrected.
11. Press **STOP** once the newly threaded film completely exits the laminator.
12. Check the film alignment and adjust the tension as needed.  
See the *Film Alignment* section in this chapter.

## DECALING IN TWO PASSES WITH PSA FILM

Decaling is where you laminate items and then mount them on other materials such as Foam Core or mounting board. It is performed in two passes. The first pass laminates and applies the mounting adhesive, encapsulating the item. The second pass mounts it on the other material.

This two pass operation requires pressure sensitive laminating film on the top supply shaft and pressure sensitive mounting film on the bottom supply shaft. Refer to Fig. 6-19 for the proper configuration of Poly-in or Poly-out film.

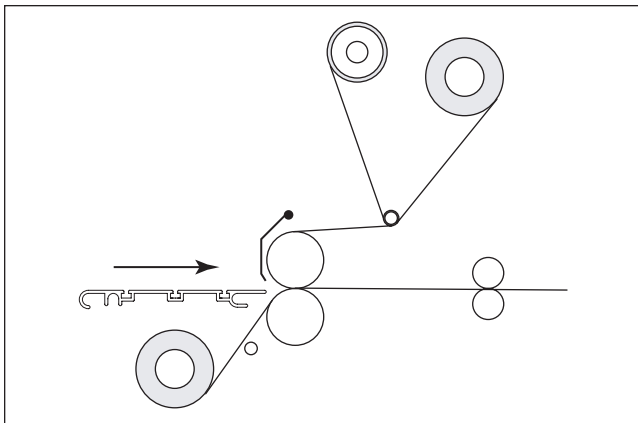


Fig. 6-24. Laminator Loaded for Decaling the First Pass with Film (Poly-in Shown).

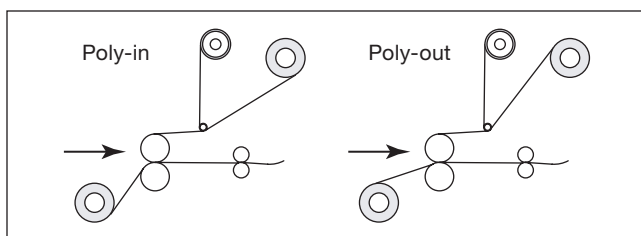


Fig. 6-25. Configurations for Poly-in and Poly-out Films.

### To run the first pass:

1. Load the laminator as shown.
2. Adjust the roller pressure handle to the proper laminating setting.
3. Place the item to be laminated on the feed table, then press **RUN**.

4. Guide the item into the rollers.
5. Once the item has cleared the back of the machine, press **STOP**.
6. Remove the web and trim out the encapsulated item.

### To run the second pass:

Unweb (unload the films) the laminator before running the second pass.

1. Adjust the roller pressure handle to the proper mounting setting and set the motor speed to **1**.
2. Peel back the leading edge of the release liner of the laminated item approximately 2 inches (5 cm).
3. Place the item on the mount board.
4. Tack the exposed adhesive edge of the item, from the center out, to the leading edge of the board. Be sure to not introduce wrinkles or air bubbles.
5. Butt the leading edge of the board up against the rollers.
6. Drape the encapsulated item over the safety shield. Do not allow the print to flop backwards towards you.

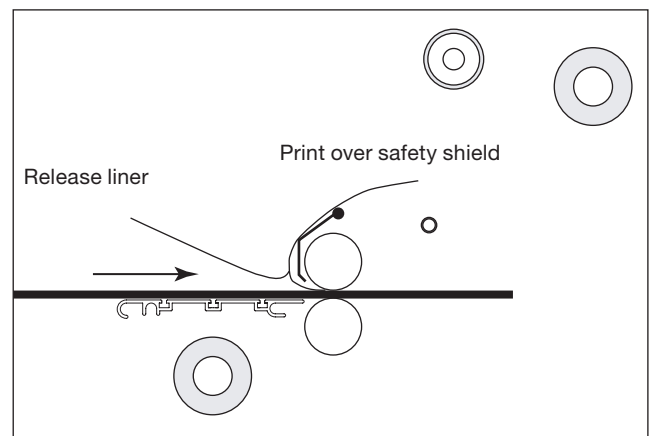


Fig. 6-26. Laminator Ready for Mounting.

7. Press **RUN** and immediately grasp the release liner for separation as the board is pulled into the rollers.  
Do not allow the release liner to be pulled into the rollers.
8. After the board has cleared the rollers press **STOP**.

## TIPS FOR THREADING PRESSURE SENSITIVE ADHESIVE (PSA) FILM

- Use kraft paper for one-sided lamination.
- Refer to Fig. 6-19 for the proper film configuration.
- Whenever possible, pull the remaining web of film out the back of the laminator after the finished item has been removed.

## MOUNTING

### PRE-TREATING BOARDS

You may wish to pre-coat mounting boards ahead of time with PSA mounting film.

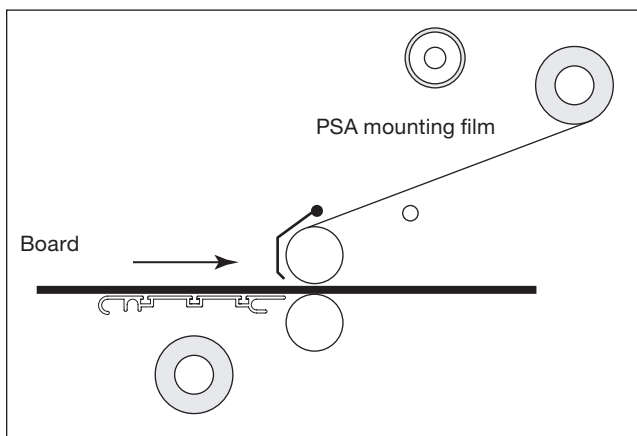


Fig. 6-27. Laminator Set Up for Pre-treating Boards With Single Liner Mounting Film.

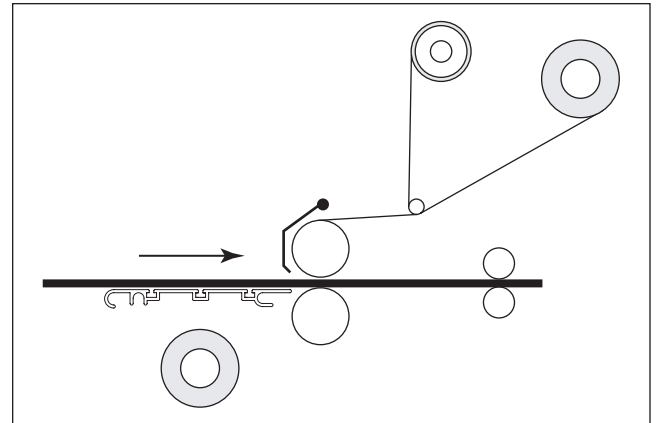


Fig. 6-28. Laminator Set Up for Pre-treating Boards With Double Liner Mounting Film.

### To pre-treat boards:

1. Load the laminator as shown in Fig. 6-27 or 28.
2. Adjust the roller pressure handle to the proper mounting setting.
3. Start a leader board into the rollers.
4. Press **RUN**.
5. Continue feeding one board after another. Butt the leading edge of the next board up against the trailing edge of the previous one.
6. Press **STOP** when the last board exits the machine.

### MOUNTING ONLY

This process requires a decalred item with PSA mounting adhesive. Refer to the *To run the second pass instructions* in the *Decaling In Two Passes* section of this chapter. An alternative method is to use a PSA pre-treated board, which is described in the *Mounting and Overlamination* section.

## FILM ALIGNMENT AND TENSION

### FILM ALIGNMENT

The top and bottom supply rolls must be aligned as closely as possible. Misalignment can cause adhesives to be deposited on the rollers.

#### To align the supply rolls:

1. Use a ruler to measure the distance between the left edge of the roll to the side frame.
2. Measure the distance between the right side of the roll to the side frame.
3. Shift the roll side to side to ensure that the two measurements are equal.

### FILM TENSION

Proper film tension, known as brake tension, is the minimum amount required to eliminate wrinkles in the finished item. Tension adjustments are not necessary if you are using 1.5 or 3 mil (38 or 75 mic) film unless the lamination is curling up or down. Generally, 5 and 10 mil (125 and 250 mic) films require more tension. As the film roll becomes smaller, tension increases, thus the adjustment needs to be loosened. Film tension should be checked occasionally to assure that the adjustment is correct.

The film should be taut with no gaps between the film and pressure rollers. A properly adjusted roll of film should not require excessive force to turn by hand. Film tension should be enough to introduce a minor amount of drag as the film unrolls. Insufficient tension causes wrinkles, while too much tension causes stretching (necking). Uneven tension between the top and bottom rolls create curl. Too much upper tension creates upward curl. Too much lower tension bottom causes downward curl.

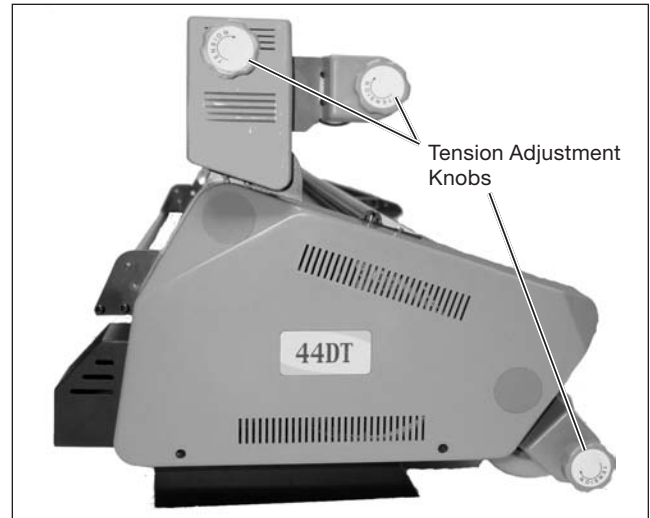


Fig. 6-29. Tension Adjustment Knobs.

The machine is equipped with external tension knobs located on the left side. Turning the knobs clockwise increases the tension while counterclockwise decreases the tension.

### Testing the Web

After webbing the machine, it is important that the films run straight and evenly.

#### To test the web:

1. Set the roller pressure handle to an appropriate position.
2. Press the **RUN** button and run approximately 6 in. (10 cm) of laminate.
3. Press the **STOP** button.
4. Visually inspect the top and bottom films where they enter the nip. The films should be tight against the rollers at both ends. If they are not, use the tension adjustment knobs to tighten the loose supply film brake and run another test.
5. Ensure that the release liner take-up is keeping the liner tight against the idler bar. If it is loose, use the tension adjustment knob to increase the tension.
6. RUN test materials before laminating good materials.

## CLEARING A FILM JAM (WRAP-UP)

Film jams (wrap-ups) may occur if the film is loaded backwards or if the area at which film exits the equipment is blocked. The film, when jammed, wraps around the rollers. Jams also occur if something is too large to pass through the rollers.

Determine the best course of action to clear the jam. It may be necessary to rotate the rollers in the reverse direction. Set the speed to **1**. Press and hold the **REVERSE** button on the control panel.

**CAUTION:** Be careful to not cut the pressure rollers when cutting the film. Failure to observe this notice can result in damage to the rollers.

### To clear a jam:

1. Immediately press the **STOP** button to stop the machine.
2. Remove the safety shield and feed tray.
3. Do one of the following.
  - a. Pull one of the webs while running the laminator in reverse.
  - b. Cut the film near the rollers, set the pressure adjustment to **Release**, and pull the film out the back of the machine.
  - c. Cut the film near the rollers, set the pressure adjustment to **Release**, grasp the loose ends of the web, and pull straight out the front of the machine.
4. Replace the safety shield and feed tray.
5. Re-load the film if necessary. See the *Loading Film* section in this chapter.

## LAMINATION GUIDE

Do not attempt to laminate abrasive or metal objects such as staples, paper clips and glitter, as they may damage the rollers.

Do not force items into the nip area of the rollers. An item that is not easily drawn into the laminator by the rollers is probably too thick to laminate.

Wrinkles may result if an attempt is made to reposition an item once it has been grasped by the rollers.

Do not stop the laminator before an item has completely exited the pull rollers. Even a momentary stop may cause a mark on the laminated item.

Good, consistent lamination is a result of combining proper tension and dwell time. Dwell time is controlled by the speed of the motor and is defined as the amount of time the material to be laminated is compressed between the rollers.

As a general rule, thicker items and film need to run at slower speeds. Setting the speed control at slower settings gives the laminator longer dwell time thus allowing proper lamination of thick items. Thinner items, such as standard copier paper (20 lb. bond) and tissue paper can be run at faster speeds.

Do not combine thick and thin items at the same time, as this will result in a poor edge seal around the thinner material. If you are unsure that the laminator is set at the proper speed for the item to be laminated, run a test piece (scrap) of the same or similar material through the laminator. Make speed adjustments if necessary.

This manual provides general guidelines and is only a general reference guide. Different settings may be suitable as the lamination time and materials change. Test materials before running good materials through the machine.

## 7. OPERATOR MAINTENANCE

### CARING FOR THE 44DT LAMINATOR

The only maintenance required by the operator is to periodically clean the rollers. The following procedure will help keep them free of dirt and adhesive, which has been deposited along the edge of the laminating film. Proper alignment of the rolls of film reduces the amount of adhesive on the rollers. Perform only the routine maintenance procedures referred to in these instructions.



#### WARNINGS:

- Do not attempt to service or repair the laminator.
- Do not apply any cleaning fluids or solvents to the rollers. Some solvents and fluids could ignite on heated rollers.
- Keep fingers and hands away from the rollers when the machine is running. They could be trapped and crushed in the rollers. Clothing, jewelry, and long hair could be caught in the rollers and pull you into them.

Failure to observe these warnings could result in severe personal injury or death or damage the machine.

### CLEANING THE ROLLERS

Keeping the rollers clean ensures that your finished items will not be damaged by dirt and adhesives. You will need a 3M™ Scotch-Brite™ pad and a clean rag moistened with water and dish soap.

- Never clean rollers with abrasive, sharp, or pointed objects.
- Do not use any other cleaning agents other than those listed above.
- Accumulated adhesive deposits on the rollers can cause damage to the rollers. Rotate the rollers at the lowest speed setting on the control panel.

#### To clean the rollers and idler bar:

1. Remove the safety shield and feed table.  
Refer to *Removing and Installing the Safety Shield* and *Removing and Installing the Feed Table* in the *Operation* chapter.
2. Remove the film from the laminator.  
Refer to *Loading Film Onto the Supply Shafts* in the *Operation* chapter.
3. Gently rub the heat and pull rollers, and idlers with a 3M Scotch-Brite pad.  
**DO NOT USE METAL SCOURING PADS!** Do not use any abrasives to clean the rollers.
4. Use the dampened rag to remove any dust, dirt, and other foreign materials from the rollers.
5. Press and release the **RUN** button to rotate the rollers to an unclean portion.  
Keep your hands, fingers, the pad, and rag away while running the machine. Be sure to remove all adhesive and dirt.
6. Install the feed table and safety shield.

## TROUBLESHOOTING

Symptom	Possible Cause	Corrective Action
Power lamp does not illuminate (next to the stop button when the power switch is in the <b>ON</b> position).	Laminator not connected to electrical supply. Fuse blown out.	Insert attachment plug into receptacle. Replace fuse or contact your dealer/distributor for assistance.
Rollers do not turn.	Safety shield not seated properly. Feed tray interlock latch not in place.	Lower safety shield. Slide interlock latch all the way to the left into the side frame.
Laminated items are curling.	Tension between the top and bottom film roll is unequal. Tension on top or bottom roll of film is too loose. Grippers on core adaptors pointing in the wrong direction. Speed setting too slow.	Adjust tension per <i>Film Tension</i> section. Adjust tension per <i>Film Tension</i> section. Load film per <i>Loading Film Onto the Supply Shafts</i> section. Slightly speed up laminator.
Adhesive deposited on rollers.	Top and bottom film webs not aligned. Laminate improperly loaded.	Align film webs per <i>Film Alignment</i> section. Load film per <i>Loading Film</i> section.
Unsatisfactory laminate adhesion.	Speed setting too fast for type of material being laminated. Laminate improperly loaded. Rollers require cleaning. Laminated item unsuitable for adhesion.	Lower speed setting by turning the speed knob to slower Speed. Load film per procedure outlined per <i>Loading Film</i> section Clean rollers per <i>Cleaning the Rollers</i> section. Item may be dirty or may have non-porous surface that is extremely difficult to laminate.



