
56FM 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 laminator, 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.

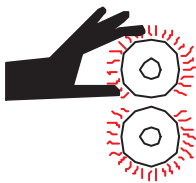
 The safety alert symbol precedes each safety notice in this manual. The symbol indicates a potential personal safety hazard to you or others, as well as laminator or property damage.

 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 56FM laminator.

| | | | |
|---|--|---|--|
| ▲ ADVERTENCIA | ▲ ATTENTION |   | ▲ WARNING |
| Riesgo de choque eléctrico. No abra: Adentro no hay piezas reparables por el usuario. Mantenimiento solamente por personal calificado. | Risque de secousse électrique. Ne pas ouvrir: Pas de pièces réparables par l'utilisateur. Entretien seulement par personnel qualifié. | | Electrical shock hazard. Do not open. No user serviceable parts inside. Refer servicing to qualified service personnel. |

This safety notice means that you could be seriously hurt or killed if you open the laminator and expose yourself to hazardous voltage.

| | | | |
|---|--|---|---|
| ▲ ADVERTENCIA | ▲ ATTENTION |  | ▲ CAUTION |
| RODILLOS CALIENTES. PUNTO DE PINCHAMIENTO. Mantener manos y ropa a distancia. | ROULEAUX CHAUDS. POINT DE PINCEMENT. Tenir mains et vêtements à l'écart. | | HOT ROLLS. PINCH POINT. Keep hands and clothing away. |

This safety notice means that you could be burned and 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.

| | | | |
|---|--|---|---|
| ▲ ADVERTENCIA | ▲ ATTENTION |  | ▲ CAUTION |
| NAVAJA FILOSA. Mantener manos y dedos a distancia. | LAME COUPANTE. Tenir mains et doigts à l'écart. | | SHARP BLADE. Keep hands and clothing away. |

This safety notice means that you could cut yourself if you are not careful.

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 SAFETY

- Keep hands, long hair, loose clothing, and articles such as necklaces or ties, away from the front of the rollers to avoid entanglement and entrapment
- Do not use the laminator for other than its intended purpose.
- The heat rollers can reach temperatures of 300 °F (167 °C). Avoid contact with the heat rollers during operation and after the laminator has been turned off.
- Do not place the laminator on an uneven surface. 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.
- Do not defeat or remove electrical and mechanical safety equipment such as interlocks, shields or guards.
- Do not insert objects unsuitable for lamination or expose the equipment to liquids.

ELECTRICAL SAFETY

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.

2. WARRANTY

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 other than rolling it on its casters across even surfaces.

3. SPECIFICATIONS

| | |
|---|--|
| Operating Speed <ul style="list-style-type: none"> • Variable • Fixed – Safety shield removed | 1 to 9 fpm (0.3 to 4 mpm) 3 fpm (0.9 mpm) |
| Dimensions <ul style="list-style-type: none"> • Width • Height • Depth • Weight | 69 in (170 cm) 54 in (140 cm) 30 in (76.4 cm) 300 lbs. (136 kg) |
| Electrical Requirements <ul style="list-style-type: none"> • Voltage • Current • Power • U.S. Receptacle | 220 V 60 Hz 18 Amps 4000 W NEMA 6-30R |

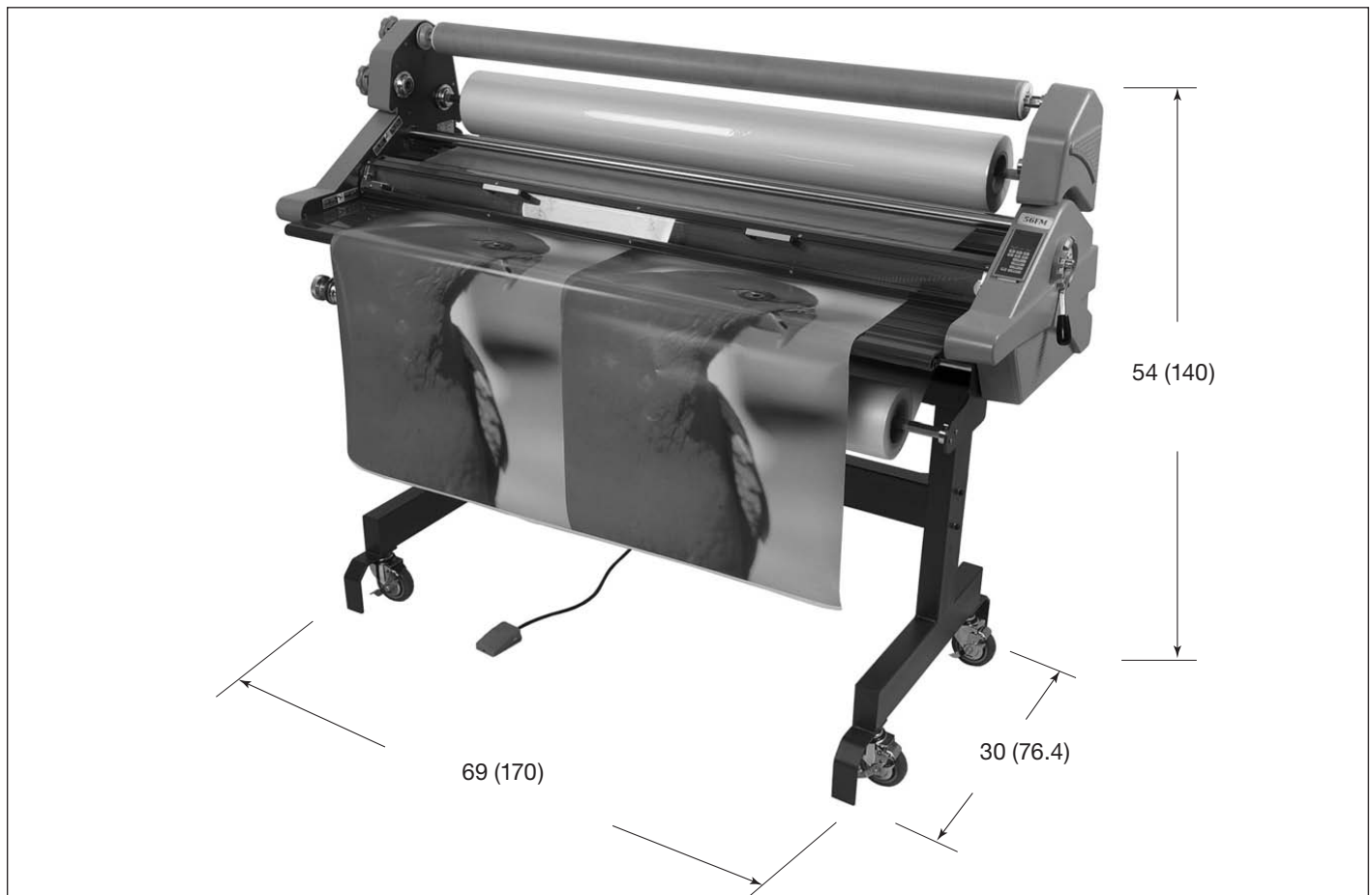


Fig. 3-1. 56FM Dimensions. (Shown in inches (cm).)

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

This chapter describes how to install the laminator. There are no operator serviceable parts to the laminator 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 an even floor capable of supporting the weight of the laminator loaded with films and any other materials.
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 laminator.
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 56FM laminator. The laminator is mounted to a floor stand that has locking castor wheels.

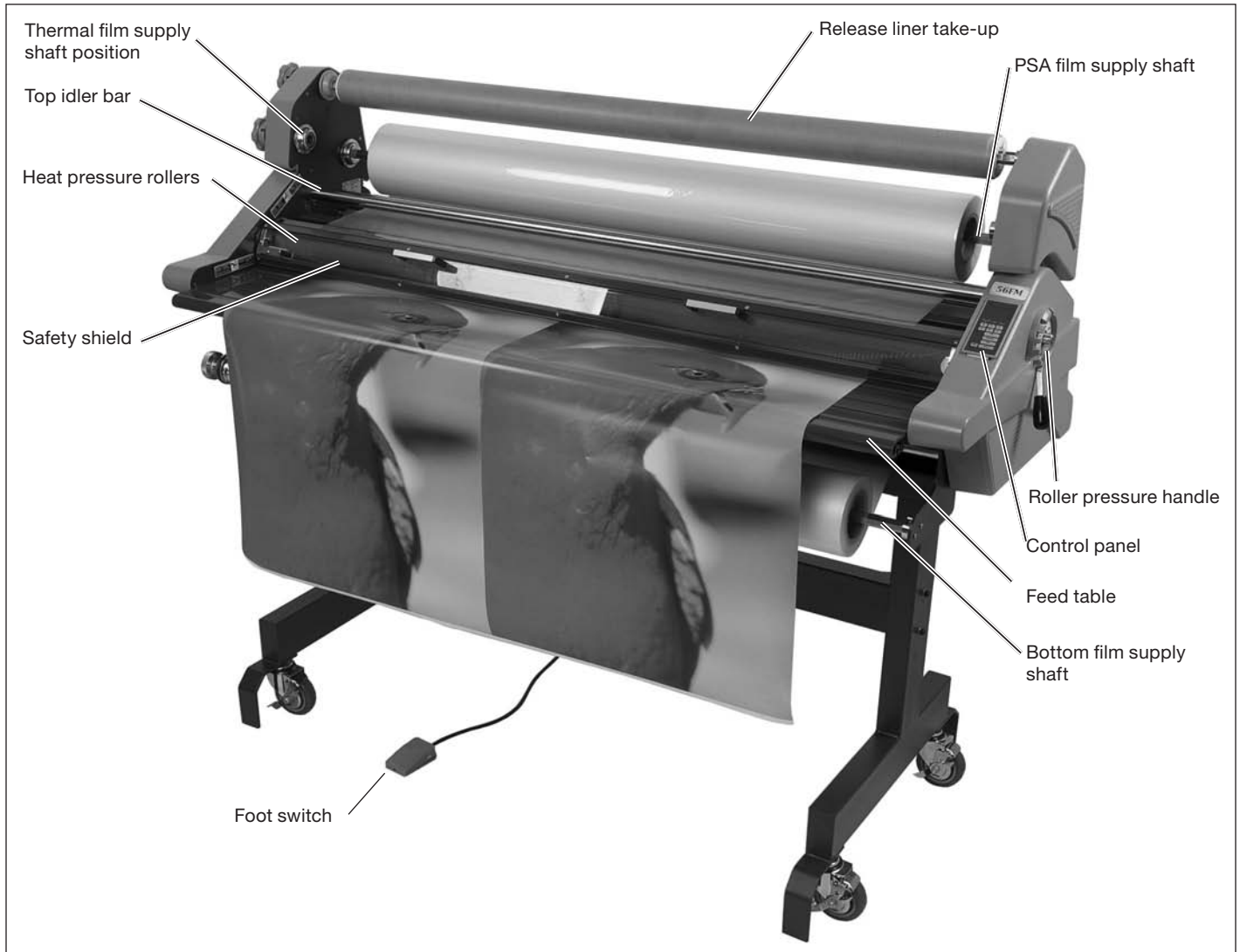


Fig. 5-1. Component Identification from Front of the 56FM Laminator.

FRONT OF LAMINATOR

THERMAL FILM SUPPLY SHAFT

Holds the thermal film supply on the laminator. It is set up in the front position. One supply shaft is provided with the laminator that is used for thermal or PSA films.

PSA FILM SUPPLY SHAFT

Holds the PSA film supply on the laminator. It is set up in the rear position as shown in Fig. 5-1.

TOP IDLER BAR

The idler bar directs the film to the roller. It assists in keeping the film flat on the heat rollers.

RELEASE LINER TAKE-UP

Rewinds the release liner of pressure sensitive (PSA) films. The core is supplied with the laminator.

HEAT PRESSURE ROLLERS

Two silicone coated steel rollers heat the laminating film and press the heated film to the items being laminated. Heat is provided by an internal heating element. Each roller is heated independently.

NIP POINT

(Not shown.) The point at which the top and bottom heat 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. **The laminator will operate in the continuous mode only when the safety shield is located in the fully locked position.** The foot switch operates the rollers at 3 fpm (0.9 mpm). The safety shield is removed only when you load films or clear jams.



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

FEED TABLE

Used to position items for laminating and mounting.

Table Interlock Latch

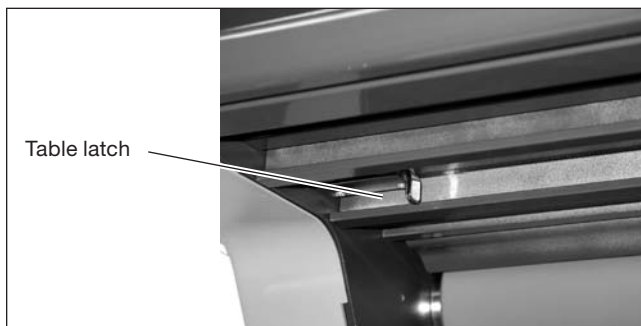


Fig. 5-2. Table Interlock Latch Under the Table.

The interlock latch locks the feed table into position and activates an interlock switch. **The laminator will not operate in the continuous mode when the table is removed or the latch is retracted.**

BOTTOM IDLER BAR

(Not shown) The idler bar directs the film to the roller. It assists in keeping the film flat on the heat rollers.

BOTTOM FILM SUPPLY SHAFT

Holds the film or kraft paper on the laminator.

PULL ROLLERS

(Not shown.) These motor-driven rollers pull the film through the laminator. Located towards the back of the laminator.

ROLLER PRESSURE HANDLE



Fig. 5-3. Roller Pressure Adjustment.

The roller pressure handle adjusts the amount of roller pressure needed for various laminating and mounting applications. Two main function settings are provided.

Mounting – Used to bond prints to rigid supports such as mounting boards. Thickness range is 1/8 to 1/2 in. (3.2 to 12.7 mm). The 1/2 in. setting is the widest opening between the pressure rollers and takes pressure off the rollers. This setting is used when installing new rolls of film. When the laminator is not in use, put the handle in this position.

Laminating – Used to adhere materials in single or multiple layers. The three positions are low, medium, and high pressure.

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

CONTROL PANEL

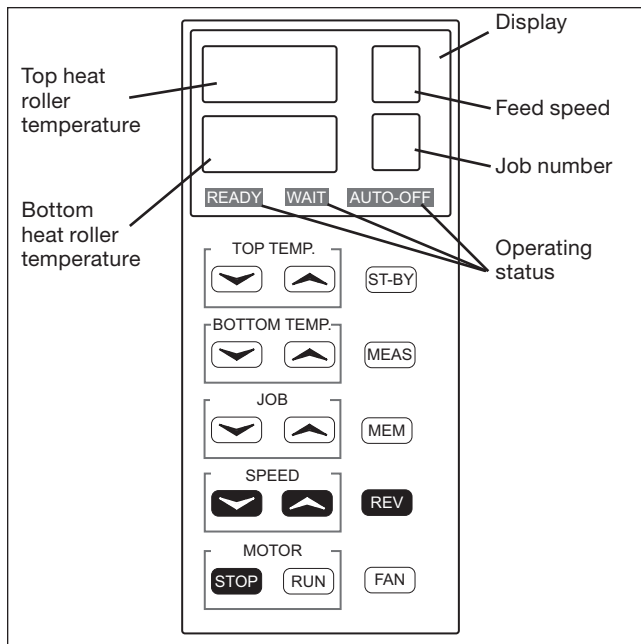


Fig. 5-4. Control Panel.

Display – Provides the laminator’s status.

- Temperature of top heat roller.
- Temperature of bottom heat roller.
- Speed of the feed.
- Operating status – **READY**, **WAIT**, or **AUTO-OFF**. **READY** means the laminator has reached the set temperatures and is ready for laminating or mounting. **WAIT** means the laminator is not up to the set temperatures. **AUTO-OFF** means the laminator is in the stand-by mode.

TOP TEMP – Press the up or down arrows to set the temperature of the top roller. The range is room temperature to 300 °F (up to 150 °C).

BOTTOM TEMP – Press the up or down arrows to set the temperature of the bottom roller. The range is room temperature to 300 °F (up to 150 °C)

JOB– Press the up or down arrows to select a job number. Set ups can be saved to job numbers.

SPEED– Press the up or down arrows to set the speed. Adjustable from 1 to 9 feet per minute (fpm) (0.3 to 3 mpm).

MOTOR – STOP and RUN

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

Press and release the **RUN** button for continuous running.

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

ST-BY – Press to put the laminator into the stand by mode. Use this whenever the laminator will not be used for an hour or more.

MEAS – Measure. Press the button to display the current temperature of each heat roller. Temperature is indicated in the display.

REV– Reverse. Press and hold the button to reverse the direction of the rollers. Release the button to stop.

FAN – Turns the cooling fan on and off to cool the cooling idler and the film. Not used for PSA films or when mounting items.

FILM WEB

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

FILM AND TAKE-UP TENSION ADJUSTMENT KNOBS

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

FOOT SWITCH

Starts and stops the laminator when pressed and released. When the safety shield is removed, use the foot switch to move the rollers forward.

POWER SWITCH

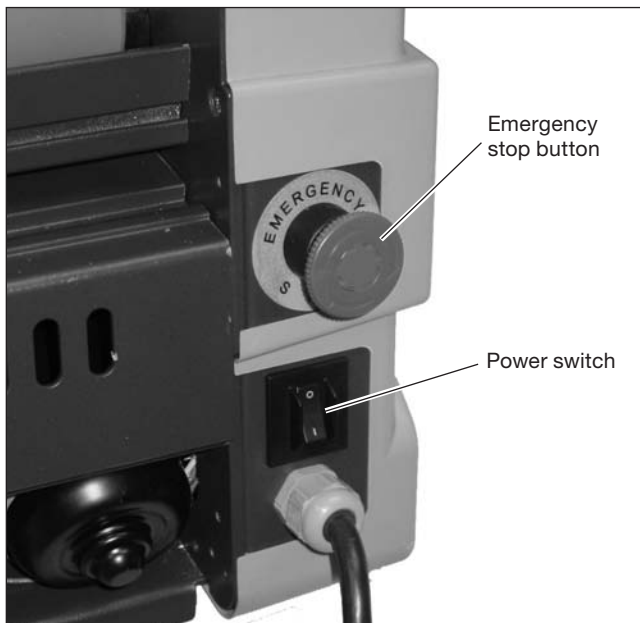


Fig. 5-5. Power Switch and Emergency Stop Button.

The power switch is located at the back of the laminator. Press the "I" on the switch to turn it on. The off position, marked "O", turns the laminator off.

EMERGENCY STOP BUTTON

Press to stop the motor only in an emergency. Press and turn clockwise to release.

CORE ADAPTORS

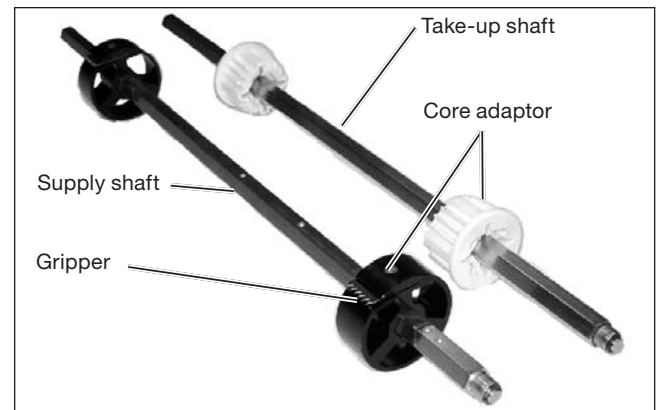


Fig. 5-6. Core Adaptors on Film and Take-up Shafts.

The core adaptors on the supply shafts hold the rolls of film on the shafts to prevent side to side shifting. Grippers on the supply shaft adaptors ensure proper tension on the film or take-up. The adaptor is held in place with a screw.

The release liner take-up core adaptors are held in place by friction.

6. OPERATION

This chapter describes how to:

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

GENERAL OPERATION

For thermal processes, the heat rollers need to be brought up to the proper temperature before you load films or run items through the laminator. If the laminator will be idle for more than four hours, lower the temperature of both rollers to 165 °F (75 °C).

For PSA films and mounting processes, remove the chill idler. Refer to the *Removing and Installing the Chill Idler* section in this chapter.

To run the laminator:



WARNING: Make sure the safety shield and feed tray are in their proper positions and latched. 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.

1. Turn the laminator **On (I)** with the power switch located at the back of the laminator.
2. Load the desired film.
Refer to the *Loading Film* section in this chapter.
3. Do one of the following.
 - a. For thermal processes, set the desired temperature and wait until **READY** appears on the display.
 - b. For PSA processes, set the temperature to the lowest settings.
4. Set the roller pressure handle for the thickness of the item that is to be laminated or mounted.
5. Set the desired speed.
6. Press the **RUN** button.
The rollers will begin to turn.
7. For thermal processes, turn the cooling fan **ON**.

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

STANDBY MODE

Whenever the laminator is not being used for an hour or more, it should be put in the standby mode. **AUTO-OFF** appears on the LCD when the laminator is in this mode. The heat roller temperature is lowered to 176 °F (80 °C), if they were on.

The 56FM also automatically goes to standby mode after 3 hours of inactivity. At this time, the temperature is lowered to the standby setting. After another hour of inactivity, the heat is turned off. **AUTO-OFF** blinks on the LCD.

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

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

To put the laminator in standby:

1. Press the **ST-BY** button on the control panel.
2. Set the roller pressure handle to **Release**.

SETTING JOBS INTO MEMORY

Job settings can be saved into memory for easy retrieval later.

To save a job into memory:

1. Press the **JOB** button to select a job number.
2. Set the temperature and speed for the job application.
3. Press the **MEM** button.

REMOVING AND INSTALLING THE CHILL IDLER

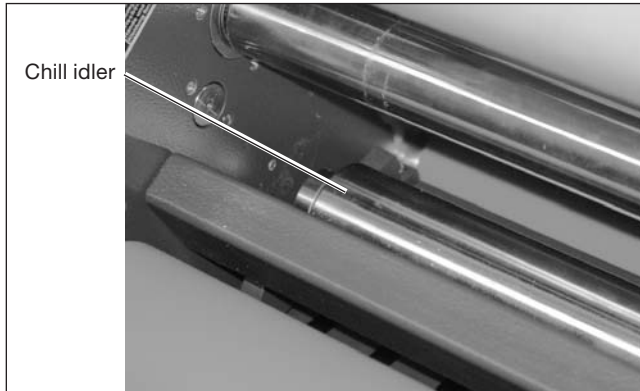


Fig. 6-1. Chill Idler in the Laminator.

The chill idler must be removed when you are using PSA films or mounting items. The chill idler is located between the heat rollers and pull rollers.



WARNING: Hot surfaces and pinch points. Keep fingers and hands away from the heat pressure and pull rollers. Clothing, jewelry and long hair could be caught in the rollers and pull you into them. Failure to adhere to this warning could result in serious personal injury.

To remove the chill idler:

1. Turn the laminator off.
2. From the back of the laminator, lift the chill idler out of the laminator and place it where it cannot be damaged or dropped. Be careful to not damage the bearings on the ends.

To install the chill idler:

1. Turn the laminator **Off (0)**.
2. Clean the idler. Refer to the *Operator Maintenance* chapter.
3. Set the bearing ends of the idler in the bearing cradles. Spin the idler to ensure that it rotates freely.

LOADING FILM

The 56FM laminator runs poly-in pressure sensitive adhesive (PSA) and thermal films. Poly-in means the adhesive side of the film is on the inside of the web. The shiny side of clear film must contact the heat rollers. The dull side of the film contains the adhesive. Use extreme caution when loading delustered (matte) film as both sides appear dull.

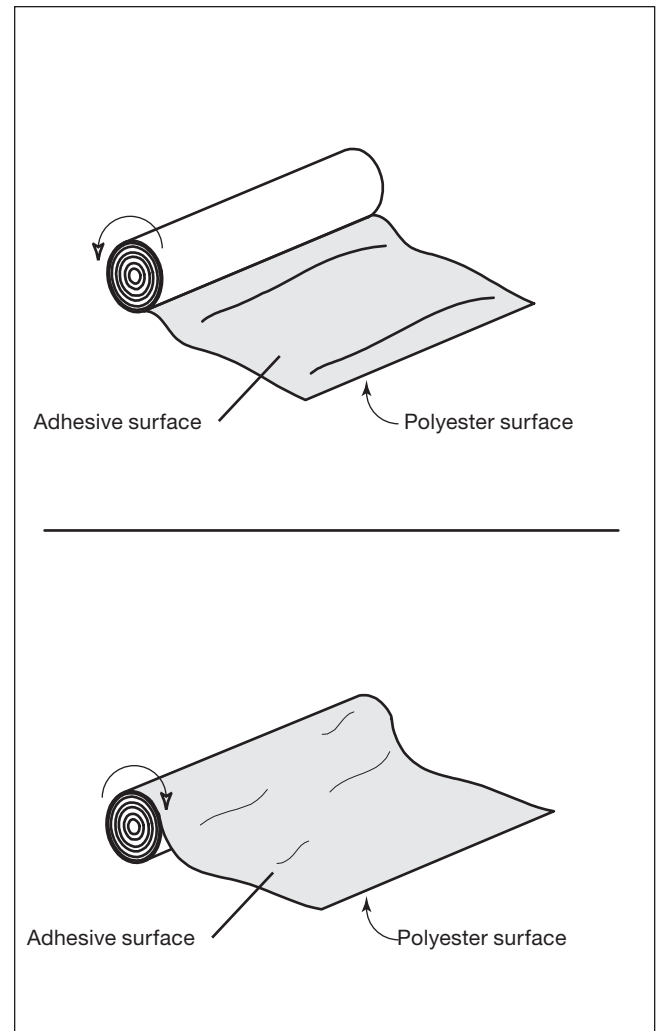


Fig. 6-2. Poly-in and Poly-out Films.

The laminator can perform three functions:

- Laminating (encapsulating the item between two layers of film)
- Decaling (laminating and applying an adhesive to the back of the item)
- Mounting

IMPORTANT NOTES:

- The top and bottom rolls of laminating film must be the same width and present simultaneously.
- A small amount of adhesive will squeeze out during lamination. Hardened adhesive deposits can damage the main rollers. To avoid any damage, rotate the rollers at the slowest speed if **READY** is not displayed on the control panel. Refer to the **Operator Maintenance** chapter for cleaning instructions.
- 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.

REMOVING AND INSTALLING THE SAFETY SHIELD

Prior to loading film, the safety shield and feed table need to be removed. The safety shield should not be removed except to install films and when cleaning the rollers. When the shield is off, the laminator will not run in the continuous mode. Use the foot switch to advance the rollers.



WARNING: Hot surfaces and pinch points. Keep fingers and hands away from the heat pressure and pull rollers when the laminator is running. Failure to adhere to this warning could result in serious personal injury.

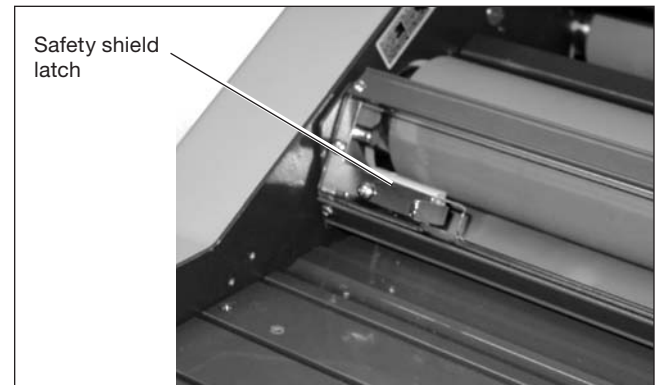


Fig. 6-3. Safety Shield and Latch.

To remove the shield:

1. Slide the safety shield latch to the right.
2. Rotate the back edge of the shield forward.
3. Lift the shield up and out of the laminator.

To install the shield:

1. Set the front pins of the shield in the slots on the laminator.
2. Tilt the top edge backwards, ensuring that it seats in its guides on the sides.
3. Slide the latch to the left.

REMOVING AND INSTALLING THE FEED TABLE

The feed table should not be removed except to install films. The laminator will not operate in the continuous mode when the table is removed or the latch is retracted. Refer to Fig. 6-4. for the following instructions.

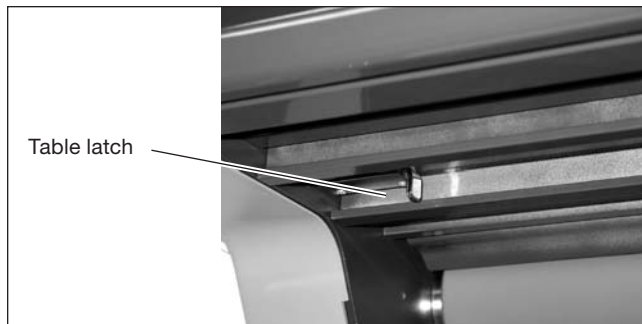


Fig. 6-4. Feed Table Latch.

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 laminator.
2. Slide the feed table latch to the left.

LOADING FILM ONTO THE SUPPLY SHAFTS

If you are replacing existing films, perform the following first 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 onto the supply shafts*. These procedures are performed from the front of the laminator.

To remove existing films:

1. Put the roller pressure handle to the **Release** position.
2. Cut the remaining top and bottom films just ahead of the pressure rollers.
Do not allow the remaining film to pass through the laminator if there is any exposed liquefied or tacky adhesive.
3. Pull the remaining film out the back of the laminator.
4. Remove the release liner from the take-up core by doing the following.
 - a. Lift the right end of the shaft out of its bearing cradle and then pull the hex end out of the left side.
 - 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 laminator by inserting the left end (hex end) in the drive on the left and then set the bearing end into the cradle.
5. To remove the film supply shaft, lift the right end of the shaft out of its bearing cradle and then pull the hex shaft out of the brake hub.
Do this for the top and bottom supply shafts.
6. Slide the core off the shaft and core adaptors.
Twisting the shaft as you pull makes it easier to extract it.
7. Clean the rollers and idlers if needed.
See the *Operator Maintenance* chapter in this manual.

To load films onto the supply shafts:

1. If the supply shaft is on the laminator, remove it by lifting the right end out of its bearing cradle and then pull the hex end out of the left side. This applies to the top and bottom supply shafts.
2. Slide the new roll on to the shaft and core adaptors, referring to Fig. 6-2 to determine how the film unwinds from the roll.
Tip: Twisting the shaft in the opposite direction as the grippers point as you push the roll makes it easier to insert the shaft.
 Use the set screws in the core adaptors to move the adaptors if needed. They should be out towards the ends of the film roll. The grippers on the core adaptors should be pointing in the opposite direction that the film unwinds from the roll. See Fig. 6-6.

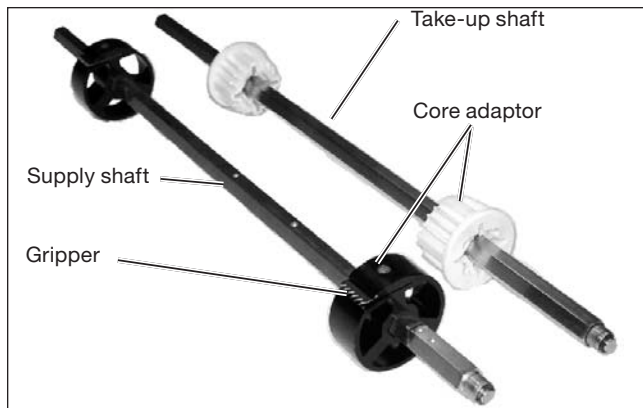


Fig. 6-5. Core Adaptors on the Shafts.

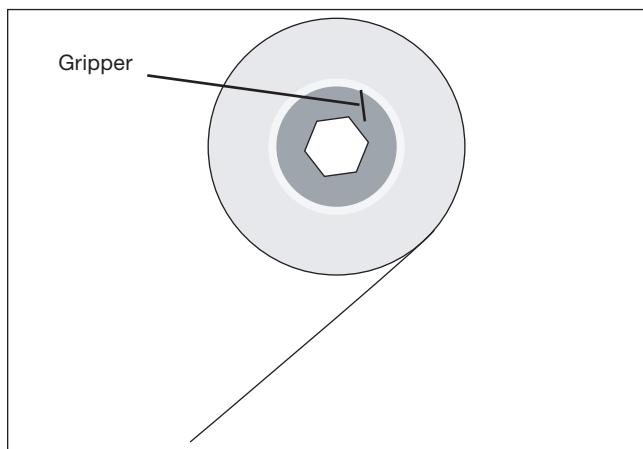


Fig. 6-6. Direction of Core Adaptor Gripper on Poly-in Film.

4. Center each supply roll on the shafts by doing the following.
 - a. Use a ruler to measure the distance between the left edge of the roll to the brake hub support.
 - b. Measure the distance between the right side of the roll to the bearing support side. Shift the roll side to side to ensure that it is centered on the shaft.
 - c. 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.
6. Adjust the brake tension of the supply and take up shafts if necessary.
 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. The take up roll should keep the release liner tight without excessive pulling.
 Refer to the *Film Tension* section in this chapter for more information.

3. Insert the hex end of the shaft into the brake hub on the left and then set the bearing end in its cradle.

LOADING FILMS WITH A THREADING CARD

The following procedures use a film threading card that is sometimes provided with new rolls of film. If one is not provided, a scrap piece of stiff cardboard or poster board with a straight edge is suitable. Either can be reused. Instructions are given for thermal or PSA films. Prior to loading (webbing) film, remove the safety shield and feed table. Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.

GENERAL WEBBING INSTRUCTIONS

To prepare the laminator for webbing:

1. Load the film on the supply shafts as described in *Loading Film Onto the Supply Shafts*.
2. When webbing thermal films, the laminator should be turned on and at the proper temperature for the selected film.
3. Set the roller pressure handle to the **1/2" Mounting** position.

WEBBING THERMAL FILMS

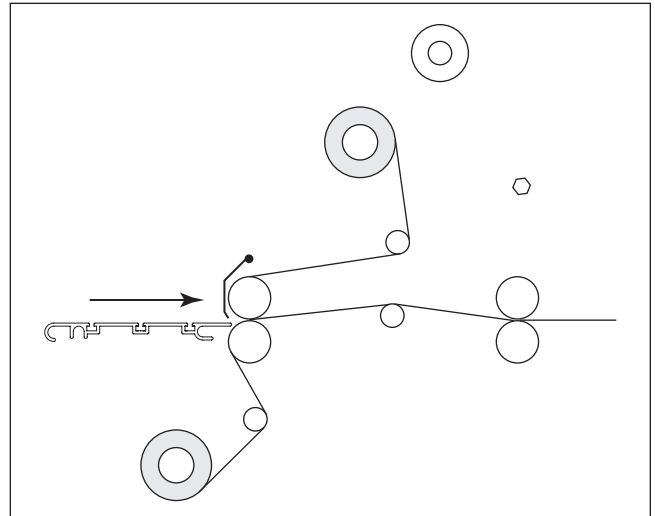


Fig. 6-7. Web Configuration for Poly-in Thermal Films.

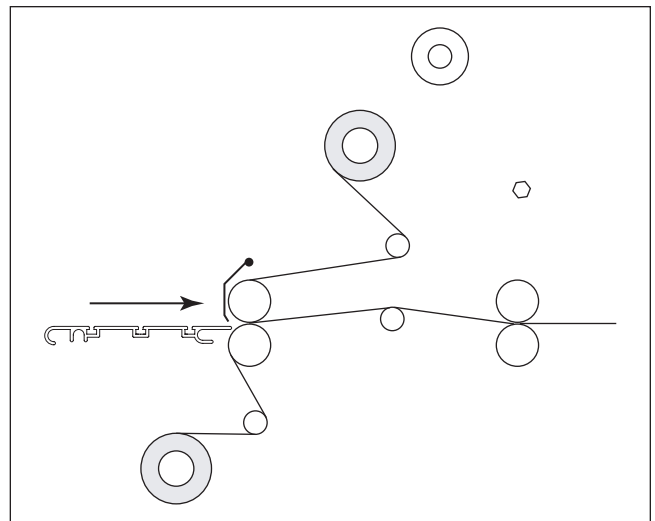


Fig. 6-8. Web Configuration for Poly-out Films.

To web (load the films) the laminator with thermal films:

1. Thread the top film under the top idler and drape the loose end over the top heat pressure roller so that it extends a little past the bottom of the top heat pressure roller.

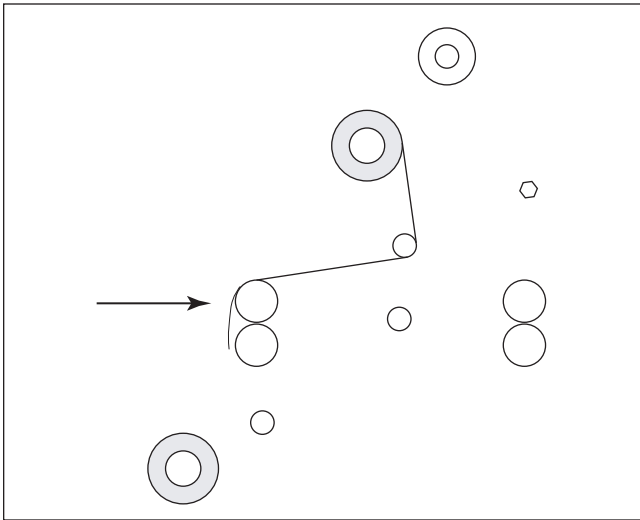


Fig. 6-9. Top Film Draped Over Top Roller.

2. Thread the bottom film under the bottom idler and pull it up to about even with the top of the top heat pressure roller without touching the sticky laminating film.

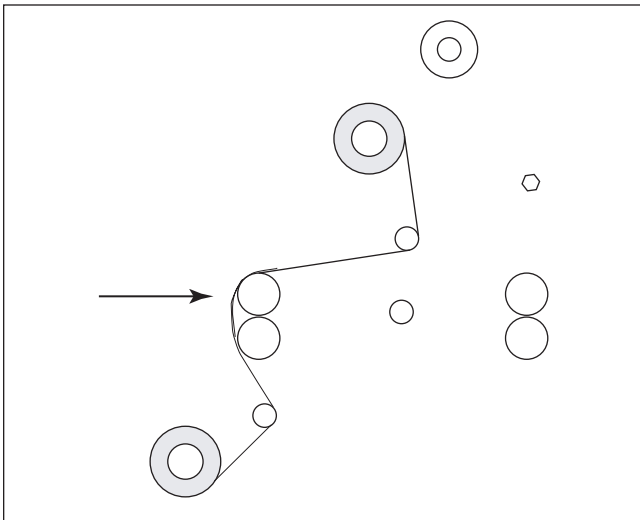


Fig. 6-10. Bottom Film Stuck to Top Film.

3. While pulling evenly, carefully align the edges of the two films, and press them together. It is important that the tension is even from one end of the supply rolls to the other.



WARNING: Hot surfaces and pinch points. Keep fingers and hands away from the heat pressure and pull rollers when the laminator is running. Failure to adhere to this warning could result in serious personal injury.

4. 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.

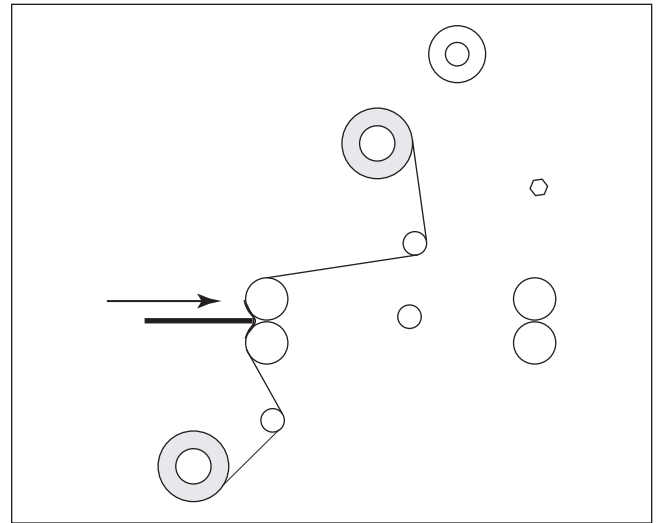


Fig. 6-11. Threading Card Pressed Into Films.

5. Move the roller pressure handle to where it applies pressure to the threading card.
6. Use the foot switch to run the laminator while guiding the threading card in until the rollers pull the card on its own.
7. 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.
8. Replace the safety shield and feed table. Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
4. Run enough laminate to reach the pull rollers.
5. Thread the laminate over the top of the chill idler and up to the pull rollers.
6. Use the foot switch to run the laminator while carefully feeding the leading edge of the laminate into the pull rollers.

7. Stop the laminator when the threading card exits and cut off the card.
8. Check the film alignment and adjust the tension as needed.
See the *Film Alignment* section in this chapter.

WEBING ACCUSHIELD™ FILM

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.

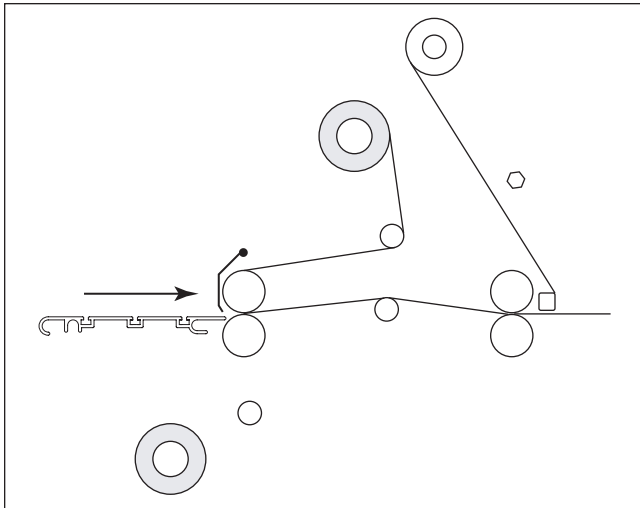


Fig. 6-12. Configuration for AccuShield Film.

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.

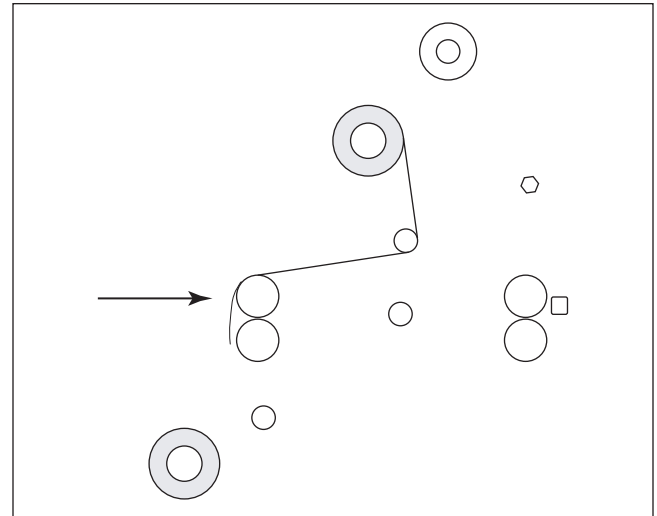


Fig. 6-13. AccuShield Draped Over the Top Heat Roller.

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.

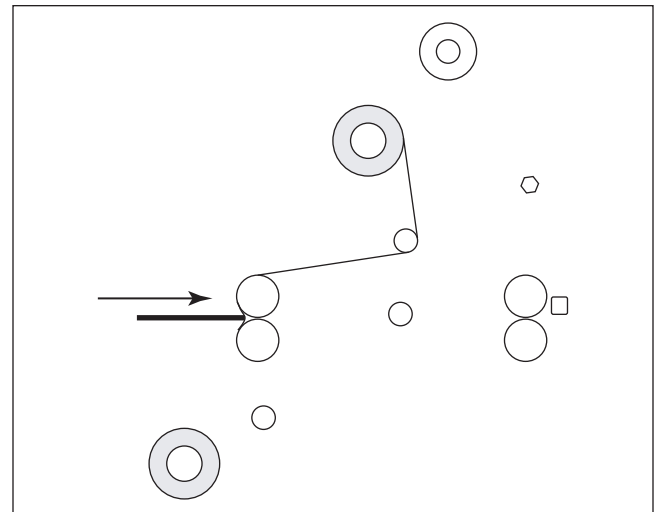


Fig. 6-14. Threading Card Inserted Into the Film.

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.

To web (load the films) the laminator with PSA films:

1. Pull the top film down, thread it under the idler bar, and then pull the film back up to the take-up core.
2. Lightly tape both corners of the film to the take-up core.
Ensure that the film is pulled evenly and that no bulges exist at either end of the idler bar.
3. Using a very sharp utility knife, lightly score the laminating film approximately 4 in (10 cm) above the upper heat pressure roller.
Be careful to not cut through the release liner.
4. Pull the laminating film away from the liner and drape it over the front of the pressure rollers so that it extends to the bottom of the top pressure roller.
5. Do one of the following.
 - a. Pull the mounting film up to about even with the top of the top pressure roller without touching the sticky laminating film.
 - b. Pull the kraft paper under the bottom idler bar and up to about even with the top of the top pressure roller without touching the sticky laminating film.
6. While pulling evenly, carefully align the edges of the mounting film with the laminating film, and press the films together.
It is important that the tension is even from one end of the supply roll to the other.
7. 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.
Refer to Fig. 6-11 for an example.
8. Move the roller pressure handle to where it applies pressure to the threading card.
9. Use the foot switch to run the laminator while guiding the threading card in until the rollers pull the card on its own.
10. 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.
11. Replace the safety shield and feed table.
Refer to *Safety Shield Removal and Installation* and *Feed Table Removal and Installation* in this section.
12. Run enough laminate to reach the pull rollers.
13. Use the foot switch to run the laminator while carefully feeding the leading edge of the laminate into the pull rollers.
14. Stop the laminator when the threading card exits the laminator and cut off the card.
15. 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 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 existing film. The existing film and the new film will be pulled through the laminator together.

To web thermal films:

1. Preheat the laminator.
2. Cut the remaining bottom film web between the supply roll and heat pressure 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 and tack it to the existing bottom film.
Make sure to carefully align the edges of the films before tacking them together.
5. Cut the remaining top film web between the supply idler and pressure rollers and lay the film over the top pressure roller.
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 film at the top heat pressure roller.
Make sure to carefully align the edges of the films before tacking them together.
8. Install the feed table and safety shield.
9. Set the speed for the slowest speed and press **RUN**.

10. Observe 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.

To web PSA films:

1. Cut the remaining bottom film web between the supply roll and heat pressure rollers.
2. Remove the existing bottom supply roll and replace with new film (or kraft paper).
Refer to the *Loading Film Onto the Supply Shafts* section in this chapter.
3. Unroll enough film from the bottom roll of film and tack it to the existing bottom film.
If using kraft paper, tape them together. Make sure to carefully align the edges of the films (or kraft paper) before tacking them together.
4. Cut the remaining top film web between the supply idler and pressure rollers and lay the film over the top roller.
Do not allow the adhesive to stick to the rollers or the bottom film (or kraft paper).
5. Cut the remaining release liner above the idler.
6. Remove the existing top supply roll and replace with new film.
7. Unroll enough film from the top supply roll shaft to tape to the existing release liner.
Make sure to carefully align the edges of the liners before taping them together.
8. Using a very sharp utility knife, lightly score the laminating film approximately 4 in (10 cm) above the upper heat pressure roller.
Be careful to not cut through the release liner.

9. Pull the laminating film away from the liner and drape it over the existing film.
Make sure to carefully align the edges of the films before sticking them together.
10. Install the feed table and safety shield.
11. Set the speed for the slowest speed and press **RUN**.
12. Observe 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.
13. Press **STOP** once the newly threaded film completely exits the laminator.
14. Check the film alignment and adjust the tension as needed.
See the *Film Alignment* section in this chapter.

DECALING IN TWO PASSES WITH PSA FILMS

Decaling with PSA films 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.

Note: The chill idler must be removed for these processes. Refer to *Removing and Installing the Chill Idler* in this chapter.

To run the first pass:

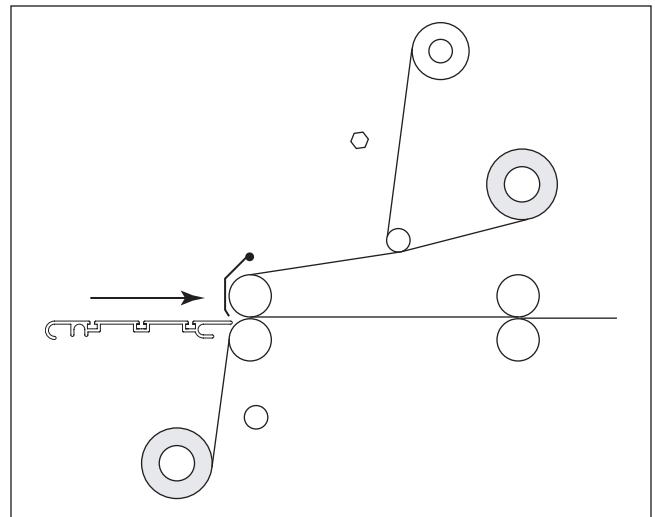


Fig. 6-17. Web Configuration for the First Pass With PSA Film.

1. Web the laminator as shown in Fig 5-17.
2. Adjust the roller pressure handle to the proper laminating setting.
3. Set the desired speed.
4. Press **RUN**.
5. Place the item to be laminated on the feed table and guide it into the rollers.
6. When the item has cleared the back of the laminator, press **STOP**.

7. Remove the laminate and trim out the encapsulated item.

To run the second pass:

Unweb (unload the films) the laminator first.

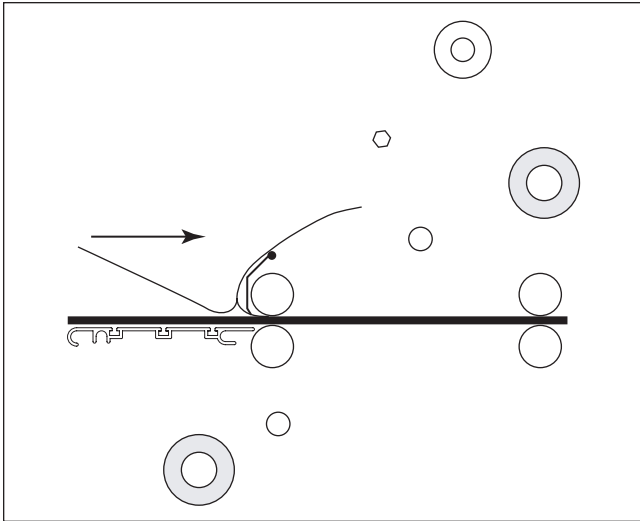


Fig. 6-18. Configuration for the Second Pass to Mount the Item.

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. Continue to pull the liner as the item is pulled into the pressure rollers.
9. When the item has cleared the pull rollers, press **STOP**.

1. Adjust the roller pressure handle to the proper mounting setting.
2. Set the speed to **1 fpm** (0.3 mpm).
3. Peel back the leading edge of the release liner of the laminated item approximately 2 inches (5 cm).
4. Place the item on the mount board and 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.
Tip: The release liner can be removed completely from short, manageable items and lightly tacked to the board prior to running it through the laminator.
5. Butt the leading edge of the board up against the rollers.
6. Hold the laminated item up or drape it over the safety shield.

MOUNTING

For all mounting processes, remove the chill idler. Refer to *Removing and Installing the Chill Idler* in this chapter.

PRE-TREATING BOARDS WITH PSA FILM

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

Tip: Whenever possible, pull the remaining web of film out the back of the laminator after the finished item has been removed.

To pre-treat boards with PSA mounting film:

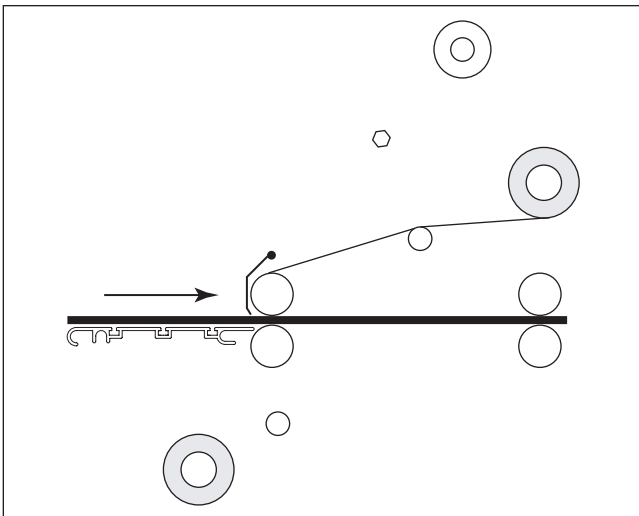


Fig. 6-19. Configuration for Pre-treating Boards With PSA Film.

1. Web the laminator as shown.
2. Adjust the roller pressure handle to the proper mounting setting.
3. Start a board into the rollers.
4. Press **RUN**.
5. Continue feeding one board after another.
Tip: Butt the leading edge of the next board against the trailing edge of the previous board.
6. Press **STOP** when the last board exits the laminator.

MOUNTING AND OVERLAMINATION

Mounting and overlamination is where you mount and laminate items in one pass. This can be performed with thermal films or thermal pouch boards.

Tip: When mounting, always start with a short leader board of the same material as the mounting board. Feed this in first and then butt the leading edge of the next board to the trailing edge of the leader board. Continue to butt boards together and finish with another scrap board.

THERMAL AND POUCH BOARDS

With thermal films, use the top supply film roll or board pouches. Board pouches come with the thermal film attached.

This process requires that the top heat pressure roller be set for the temperature for the specific film. The bottom heat pressure roller temperature is set to its lowest temperature.

For pouch boards, follow the instructions packaged with the boards.

Remove the chill idler. Refer to *Removing and Installing the Chill Idler* in this chapter.

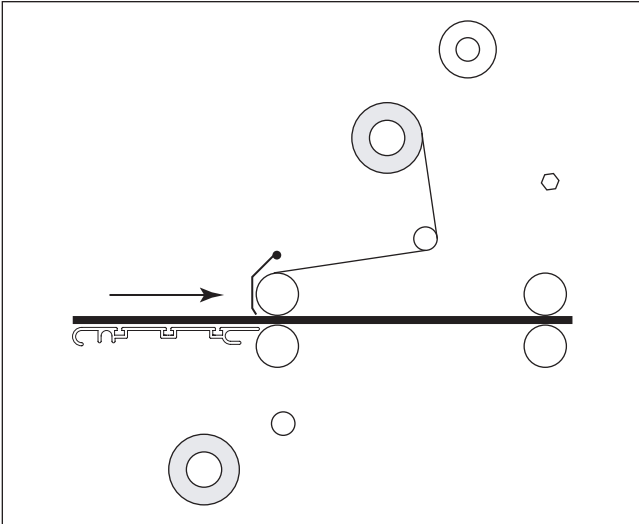


Fig. 6-20. Configuration for Mounting and Laminating With Thermal Film.

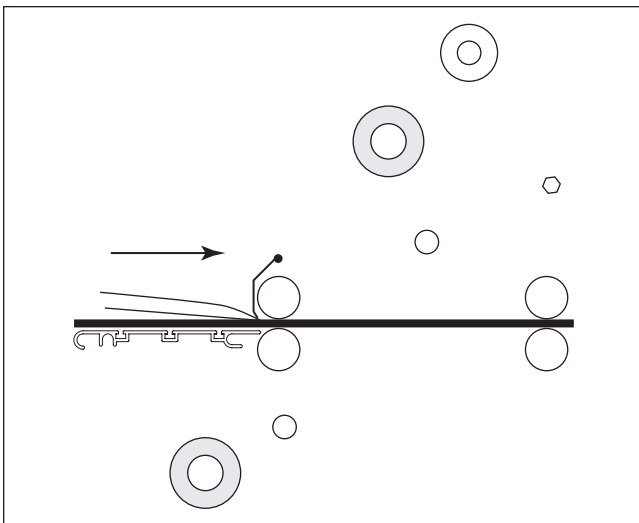


Fig. 6-21. Configuration for Mounting and Laminating With Pouch Boards.

To mount and overlaminate with thermal film or pouch boards:

1. Preheat the top heat pressure roller to the desired temperature.
2. Set the speed to **1 fpm** (0.3 m).
3. Set the roller pressure handle to the proper setting.
4. Position the item to be laminated on the board.
5. Start a board into the heat pressure rollers.
6. Press **RUN** and guide the item into the rollers.
7. Press **STOP** when the last item exits the back of the laminator.
8. For thermal film, cut the web and trim out the board if needed.

FILM ALIGNMENT AND TENSION

Proper film alignment and tension contributes to better lamination.

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 brake hub support or side frame.
2. Measure the distance between the right side of the roll to the bearing support or side frame.

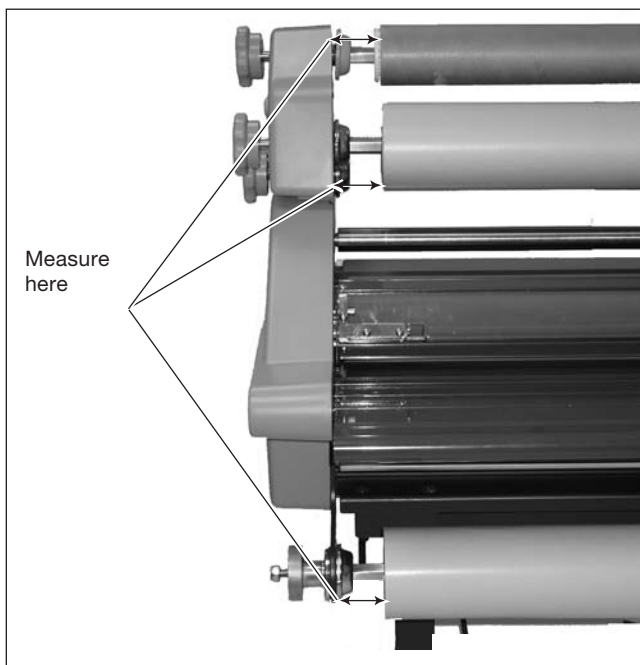


Fig. 6-22. Measuring Points.

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 film unless the lamination is curling up or down. Generally, 5 and 10 mil 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 ensure 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.

The laminator 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 laminator, 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, heat, 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.

Important: Test materials before running good materials through the laminator.

7. OPERATOR MAINTENANCE

CARING FOR THE 56FM 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.



WARNING: Do not attempt to service or repair the laminator. Failure to observe this warning could result 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.



WARNING: Hot surfaces and pinch points. Keep fingers and hands away from the heat pressure and pull rollers when the laminator is running. Failure to adhere to this warning could result in serious personal injury.

To clean the rollers and idler bars:

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. Use the foot switch to rotate the rollers to an unclean portion.
Keep your hands, fingers, and the rag away while running the machine. Be sure to remove any dust, dirt, and other foreign materials from the rollers.
6. Install the feed table and safety shield.

TROUBLESHOOTING

| Symptom | Possible Cause | Corrective Action |
|---|--|--|
| Control panel does not illuminate when the power switch is in the I position. | Laminator not connected to electrical supply. Fuse blown out or breaker open. | Insert attachment plug into receptacle. Check power supply fuse or breaker box. |
| Rollers do not turn. | Safety shield not seated properly or latch not engaged. Feed tray interlock latch not in place. | Reposition safety shield and push latch to left. 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. Insufficient heat Laminate improperly loaded. Rollers require cleaning. Laminated item unsuitable for adhesion. | Lower speed setting by turning the speed knob to slower Speed. <i>Ready</i> LCD must be illuminated or increase temperature. 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. |

