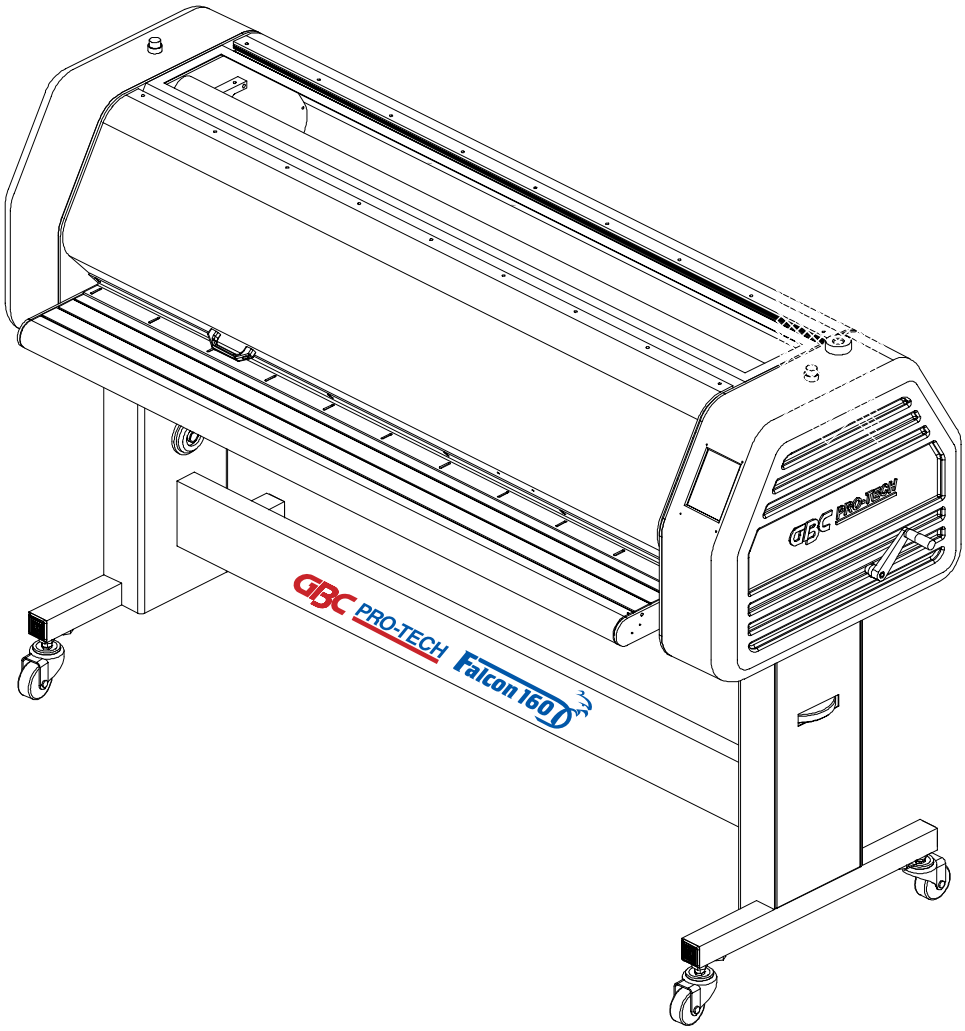
F - 160 OPERATION AND

MAINTENANCE MANUAL



GBC Pro - Tech
4151 Anderson Road
DeForest, WI 53532
Ph: (608) 246 - 8844
Fx: (608) 246 - 8645

Revision : B
Part number : 930 - 031

Read Me File . . . . . .

The information in this publication is provided for reference and is believed to be accurate and complete. GBC Pro - Tech is not liable for errors in this publication or for incidental or consequential damage in connection with the furnishing or use of the information in this publication, including, but not limited to, any implied warranty of fitness or merchantability for any particular use.

GBC Pro - Tech reserves the right to make changes to this publication and to the products described in it without notice. All specifications and information concerning products are subject to change without notice.

Reference in this publication to information or products protected by copyright or patent does not convey any license under the rights of GBC Pro - Tech or others. GBC Pro - Tech assumes no liability arising from infringements of patents or any other rights of third parties.

In the electronic version of this publication, the hand will change to a pointer finger identifying hyperlinked. When moving from page to page, use |◀ to return to the **first PAGE**, use ▶| to advance to the **last PAGE**, use ◀ to **go back one PAGE** and use ▶ to **advance one PAGE**. When moving from view to view, use ◀◀ to **return** to a previous **VIEW** and use ▶▶ to **advance** to the next **VIEW**.

Should you find an error within this publication or would like to make a suggestion, please utilize the fax correspondence sheet following this read me file and fax it to the number provided. Your comments and help will ensure up to date information. Thank you.

This page intentionally left blank.

Fax Correspondence

Fax number : (608) 246 - 8645 **Date : _____**

To : Sean Flood @ GBC Pro - Tech
4151 Anderson Road
DeForest, WI 53532

From : _____

Company : _____

Address : _____

Phone number : (_____)_____ Fax number : (_____) _____

Re : Falcon 160 Operations and Maintenance Manual (Rev. A)

What section ? _____ What Page # ? _____

What needs correcting ? _____

_____

_____

_____

_____

_____

Additional comments: _____

_____

_____

_____

_____

_____

_____

This page intentionally left blank.

Table of Contents

Section 1: Safety

Section 2: Warranty

Section 3: Specifications

Section 4: Installation

Section 5: Operations

Section 6: Applications

Group 1: No heat

Group 2: Top heat only

Group 3: Top and bottom heat

6.10 Parameter charts and diagrams

Section 7: Troubleshooting

Section 8: Maintenance

This page is intentionally left blank

Section 1 Safety

CAUTION

Do not attempt to operate your Falcon 160 laminator until you have read this section carefully!

Your safety, as well as the safety of others, is important to GBC Pro - Tech. This section contains important safety information.

The following symbols are used throughout this manual to indicate **Information, Caution**, **Warning**, **Danger** and **Electrical Shock** conditions.

1.1 Symbols

INFORMATION

Indicates helpful information that should be considered before, during, or after an action, step or procedure is given.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, or alerts against unsafe practices or alerts against actions which could damage the product.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in serious injury.

DANGER

Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.

ELECTRICAL SHOCK

Indicates an electrical shock situation which, if not avoided, could result in serious paralyzation of the body or death.

1.2 Safety features

The F-160 laminator has been designed with safety as a primary consideration; however, you must become thoroughly familiar with the controls, proper operation, proper service procedures and safety features of the laminator before using or servicing the unit.

GBC Pro - Tech laminators are powerful machines that are designed to mount, laminate, and encapsulate. The forces required to accomplish these tasks can vary from negligible to very large.

The motorized main roll lift mechanism used to provide downward pressure on the top roll is capable of producing forces greater than 400 pounds. This force is applied to any object presented in the opening (called the nip) between the two rolls.

Use care in lowering the top laminating roll and know how to react quickly in an emergency. The main laminator roll up / down control is located on the right side of the machine within the front control panel. The GAP up / down arrows controls the motion of the top main laminating roll. Before pressing the GAP down arrow, ensure that nothing is in the nip area.

In addition, the main laminating rolls of the F-160 can reach temperatures of over 200°F (100°C).

DANGER

At these temperatures there is a danger of severe burn if the rolls are touched during setup, operation or servicing.

INFORMATION

Only a qualified service technician should perform any procedure in Part B of this manual.

The word qualified is defined below;

Qualified ;

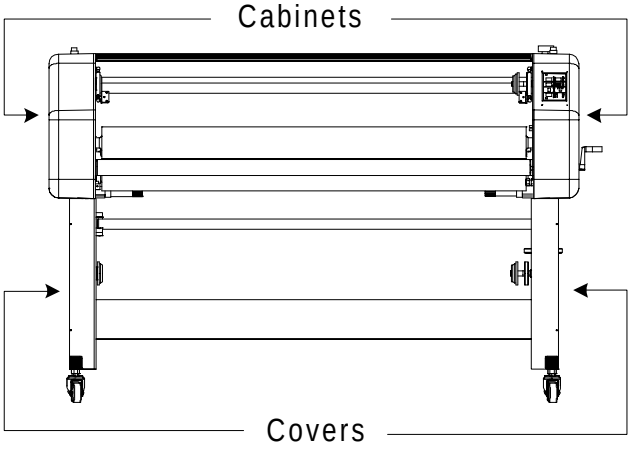
• Any engineer that has experience with electrical and mechanical design of lamination equipment.The engineers should be fully aware of all aspects of safety with regards to lamination equipment.

• Any commissioning or service engineer must be of competent nature, trained and qualified to GBC Pro-Tech standards to fulfill that job. This person will have completed and passed the full service training course from GBC Pro-Tech.

• Any GBC Technician, GBC Specialist, and / or GBC Pro-Tech Technician that has been through the GBC Pro-Tech service training course.

The F-160 laminator has steel cabinets and leg panels that are bolted close to isolate the electrical and drive system components for the safety of the operator. **Figure 1.2.1** illustrates placement of the cabinets and covers.

Figure 1.2.1 Cabinets and covers

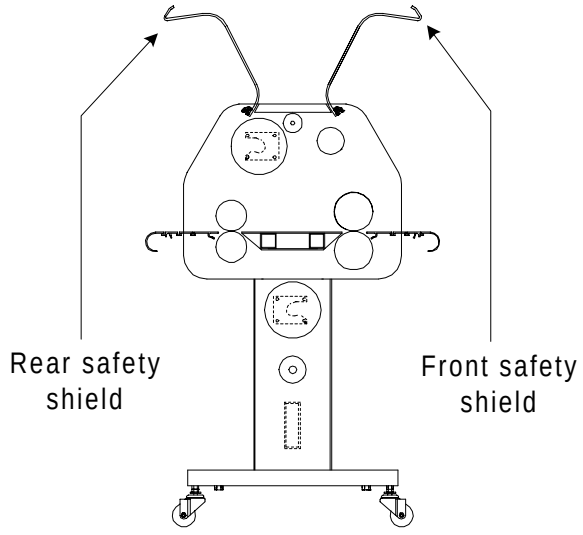


An important feature of the F-160 laminator are the safety shields, when raised, the auto run is disabled and drive control is transferred to the footswitch. **Figure 1.2.2** illustrates the safety shields in the up position.

WARNING

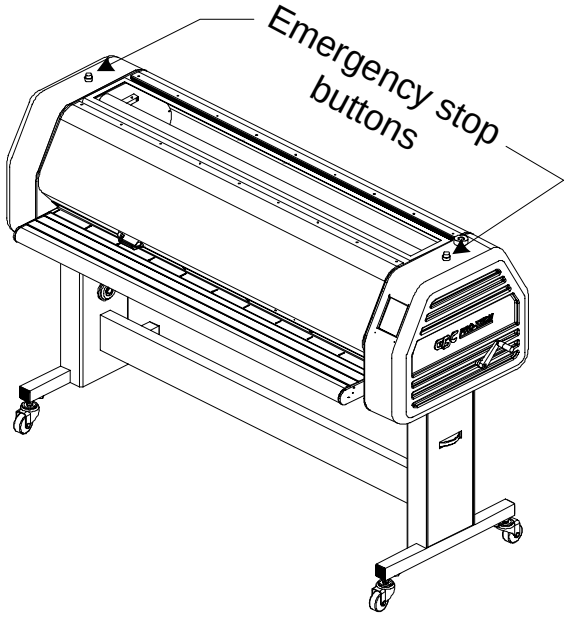
Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

Figure 1.2.2 Safety shields raised



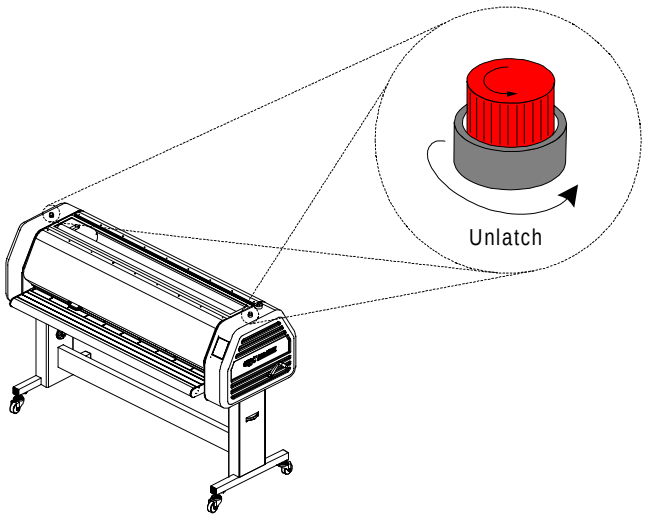
The laminator is equipped with two **EMERGENCY STOPS** located on the top of either side of the laminator. To engage the **EMERGENCY STOP** feature, press down on either one. Either of these, when engaged, stops the laminator. Refer to **Figure 1.2.3** for illustration.

Figure 1.2.3 Emergency stops

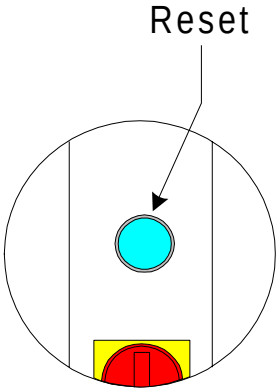


To continue operation, both **EMERGENCY STOPS** (E-STOPS) must be in the up position. To reset the **E-STOP,** twist the button 1/4 turn clockwise. Refer to **Figure 1.2.4** for illustration.

Figure 1.2.4 Reset E-Stop buttons



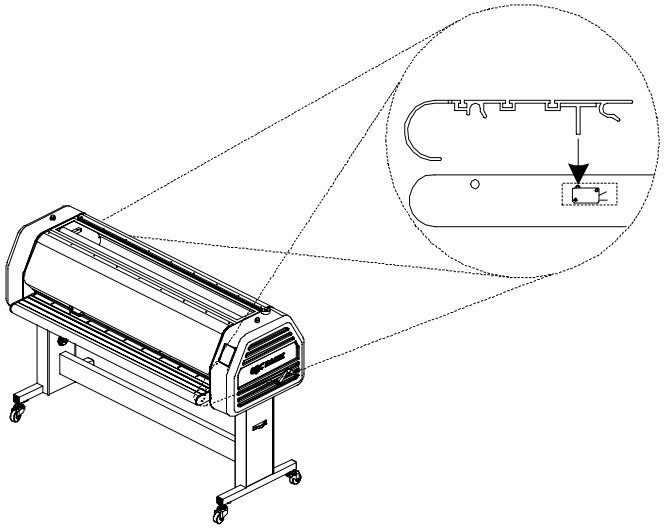
Press **RESET** located on the left leg at the rear of the machine.



The front and rear tables must be in proper position for the laminator to operate under normal condition. **Figure 1.2.5** illustrates the tables and keys.

If these tables are removed, you may operate the laminator using the variable speed footswitch. The speed is controlled through a “accelerator pedal” style footswitch. Please see footswitch in section 3 of this manual.

Figure 1.2.5 Tables and keys



1.3 Installation

The following symbols are positioned at various points in **Section 4 Installation.**

CAUTION

Failure to follow the pre-installation check list can result in damage to the laminator.

WARNING

The operating environment must be free of dust, flammable liquids and vapors. You can be injured by inhaling chemical vapors.

WARNING

Vapor build up or stored flammable liquids can cause a fire. Excessive dust can damage the laminator.

CAUTION

Do not locate the laminator where air is blowing directly on the machine. The air flow can cool the rolls unevenly and result in poor quality output.

WARNING

Be sure to follow the correct wiring diagram when supplying power to the laminator. If improperly connected, you can be seriously injured or cause damage to the laminator.

WARNING

The unpacking process requires at least two people. You can be severely injured, crushed or cause damage to the laminator.

INFORMATION

*ALL SHIPMENTS ARE EX-WORKS.*At our dock, title passes to the buyer. Please review your insurance coverage prior to shipment, as you are responsible for all subsequent freight charges and risks.

CAUTION

Do not use a knife or other sharp object to remove the shrink wrap from around the laminator. You can cause irreparable damage to the rollers.

INFORMATION

Before signing the Bill of Lading, you should be sure to inspect the crate and / or pallet for signs of damage or missing items; if applicable, make note of this on the Bill of Lading.

WARNING

Do not attempt to move the laminator across anything other than a flat level surface without trained and qualified riggers. You can be crushed or seriously injured.

INFORMATION

Depending on the destination and customer preference, the Falcon 160 may be shipped in various ways. The laminator may arrive shrink wrapped or in a plywood crate on a skid. Please follow the unpacking procedure that pertains to your method of shipment.

CAUTION

Do not allow the top to fall into the crate. It can damage the laminator.

INFORMATION

Do not put packing screws on the floor. They can cause problems when trying to roll the laminator into position or you can become injured if stepped on.

CAUTION

Do not allow the top to fall into the crate. It can damage the laminator.

CAUTION

A second person must support the side labeled 5 in Figure 4.4.1 It can fall and damage the laminator or cause harm to you and others.

WARNING

Do not attempt to use the ramps if they are not secured to the pallet. Make sure you have the pallet on a flat even surface before attempting to roll the machine off using the ramps.

WARNING

The Falcon 160 Laminator is a large and heavy piece of equipment. It is necessary to employ LICENSED RIGGERS ONLY to move the laminator. The laminator is not designed to be tipped up or sideways in any way. Such action disturbs the exact alignment of the rolling parts of the machine and requires extensive realignment. You can be crushed or seriously injured.

INFORMATION

About recycling: The crate components can be reused for shipping the laminator again or can be disassembled and the wood and screws recycled. The shrink wrap is not recyclable, so it must be discarded.

INFORMATION

GBC Pro-Tech's warranty does not cover malfunction of the equipment due to mishandling and / or tipping. GBC Pro-Tech bears no responsibility for personal injury or damage due to moving the laminator improperly.

INFORMATION

Improper leveling, will result in poor output quality.

INFORMATION

The side frame provides a more accurate reading than the cabinet.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

INFORMATION

A second person can read the level while you make the appropriate adjustments.

WARNING

If you find a safety feature not working properly, you should contact your local service representative immediately

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

INFORMATION

Do not put packing screws on the floor. They can cause problems when trying to roll the laminator into position.

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

INFORMATION

The SAFETY indicator should not be flashing when the tables are properly seated and the safety shields are in the closed position..

INFORMATION

Notice that the footswitch speed is not indicated in the SPEED DISPLAY on the front control panel.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE.
You can be CRUSHED or BURNED!

1.4 Operations

The following symbols are positioned at various points in **Section 5 Operations.**

INFORMATION

When the safety shield is in the lowered position and "Footswitch" mode is engaged, speed is controlled through the control panel.

INFORMATION

Read the following warnings and cautions before attempting to operate or service the Falcon 160 Laminator.

INFORMATION

If the variable speed footswitch is not close to the speed of the control panel, output quality may be affected by the speed difference.

INFORMATION

When any command is pressed on the control panel, a "beep" will sound. If the command is held down, the panel will "beep" only once.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers.
You may be CRUSHED or BURNED!

INFORMATION

When adjusting the pressure, the gap will be affected as well.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

INFORMATION

Footswitch speed is not indicated in the SPEED DISPLAY on the control panel.

INFORMATION

When the safety shield is lowered, speed reverts to the panel speed setting.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised.
You can be seriously HURT or INJURED!

WARNING

At these temperatures there is a danger ofsevere burn if the rolls are touched duringsetup, operation or servicing.

INFORMATION

When a safety shield is raised while pressing on the variable speed footswitch, the speed may be faster or slower than the indicated panel speed.

INFORMATION

When an EMERGENCY STOP is engaged, all motion stops. The nip will not change from the operating setting.

INFORMATION

When the safety shield is raised, the laminator will only run while the variable speed footswitch is depressed.

INFORMATION

Twisting the roll of film while sliding makes loading the film onto the unwind shaft easier.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

INFORMATION

Slow speed will assists with heat up times and distributes heat evenly.

INFORMATION

When the laminator is first turned on, the front control panel will go into the default mode.

Default mode; TOP TEMP. = 68 ºF (20 ºC), BOT. TEMP. = 68 oF (20 oC), GAP = 1 in., PRESSURE = no bars are solid, JOB = 0, no motion direction selected, SPEED = 00.0 and SLEEP = flashing

INFORMATION

For the lower unwind shaft, add 1/4 in. to the measurement.

INFORMATION

When requiring top and bottom heat, it is recommended to set both temperatures to the same set point.

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

INFORMATION

Do not add PRESSURE when heating the laminating rollers, this allows the high release silicone to expand with minimum restrictions.

INFORMATION

When storing parameters within the JOB SAVE feature of the laminator, PRESSURE is not a storable setting.

CAUTION

If you accidentally press SAVE at any time, the old parameters will be replaced with the new parameters.

INFORMATION

Density of the substrate will determine the amount of pressure you may use.

INFORMATION

You should store each job location with its parameters on the chart provided in Figure 5.4.1

INFORMATION

If the main laminating rollers are heated, mounting application may be run from the rear operating position of the machine.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

CAUTION

If not installed properly, you can be injured or cause damage to the table or laminator.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

1.5 Applications

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

The following symbols are positioned at various points in **Section 6 Applications.**

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

INFORMATION

Twisting the roll of craft paper while sliding makes loading the film onto the unwind shaft easier.

INFORMATION

The mount adhesive must not exceed 1 in. the width of the substrate. If it does, you will experience complications with this application.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

CAUTION

Ensure the roll of mount adhesive is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.1 Manually nip adjustment.

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

INFORMATION

PRESSURE will vary with the thickness and width of the laminate you are using. Adjust as necessary.

INFORMATION

When requiring top and bottom heat, it is recommended to set both temperatures to the same set point.

INFORMATION

The leading edge is the first part of the board or image that enters the nip of the rollers.

INFORMATION

If the main laminating rollers are heated, mounting application may be run from the rear operating position of the machine.

INFORMATION

Position the leader board squarely onto the mount adhesive.

INFORMATION

Do not add PRESSURE when heating the laminating rollers, this allows the high release silicone to expand with minimum restrictions.

CAUTION

Prolonged contact can form flat spots on the rollers.

INFORMATION

Slow speed will assists with heat up times and distributes heat evenly.

CAUTION

When manually setting the main roll nip, observe the substrate to prevent crushing.

INFORMATION

Avoid tacking at the ends first and pressing towards the center, you may create a tunnel once you have reached the center. This will make for a difficult mounting application.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap.
You can be CRUSHED!

INFORMATION

If the board is not squarely positioned, you may experience difficulties with this application.

INFORMATION

Do not lower the pull roller so that the substrate is crushed when passing through. This will prevent the boards from bowing.

INFORMATION

If the image is not conformed to the roller, you may experience difficulties with this application.

CAUTION

Caution should always be exercised when using a utility knife near the rollers.
You can put cuts into the rollers!

INFORMATION

Use a slow speed. If the tack point enters the rollers nip, you will not be able to pull the release liner.

INFORMATION

Stopping the rollers on the print will leave a pressure line on the image.

1.6 Troubleshooting

The following symbols are positioned at various points in **Section 7 Troubleshooting.**

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

INFORMATION

For optimal temperature settings of various laminates, contact your supplier or sales representative.

CAUTION

Exercise care when cleaning the laminating rollers with 80% isopropyl alcohol:

- **Use only in a well ventilated area**
- **Wear rubber gloves**
- **Use only on cool rolls**

CLEANING HEATED ROLLERS CAN IGNITE THE FUMES!

CAUTION

Prolonged contact can form flat spots on the rollers.

CAUTION

If silicone adhesive contacts the laminating rollers, remove it IMMEDIATELY using 80% isopropyl alcohol. It can harden within an hour and bond to the rollers.

1.7 Maintenance

The following symbols are positioned at various points in **Section 7 Troubleshooting.**

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

INFORMATION

Below is a recommended maintenance schedule. Before performing any of the steps listed, read through the procedures first. Please follow the instructions pertaining to the step you are performing.

CAUTION

Excessive pressure can destroy the silicone layer by pressing to hard or scrubbing too long in one spot.

ELECTRICAL SHOCK

Remove power from the laminator before servicing. You can be severely shocked, electrocuted or cause a fire.

CAUTION

Do NOT pick or pull heat activated adhesive off the rolls when they are cold. You can cause irreparable damage to the laminating rolls.

INFORMATION

If improperly performed, you may encounter other problems with the output quality.

INFORMATION

When cleaning the bottom main roller, switch the motion direction to reverse. When cleaning the bottom pull roller, switch the motion direction to forward. This will prevent anything from being pulled into the nip.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE.
You can be CRUSHED or BURNED!

CAUTION

Use only isopropyl alcohol or rubber cement eraser to clean the rollers. Harsh chemicals like toluene, acetone, or MEK can destroy the silicone covering of the rolls.

ELECTRICAL SHOCK

Remove power from the laminator before cleaning. You can be severely shocked, electrocuted or cause a fire.

CAUTION

Exercise care when cleaning the laminating rollers with 80% isopropyl alcohol:

- Use only in a well ventilated area
- Wear rubber gloves
- Use only on cool rolls

CLEANING HEATED ROLLERS CAN IGNITE THE FUMES!

ELECTRICAL SHOCK

Do not use liquid or aerosol cleaners on the laminator. Do not spill liquid of any kind on the laminator. You can be severely shocked, electrocuted or cause a fire. Use only a damp cloth for cleaning unless other wise specified.

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP.
You can be CRUSHED or BURNED!

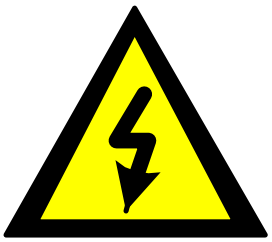
1.8 Label locations

Cautions / Warning Label Locations

Posted at various locations on the Falcon 160 Laminator are important safety labels. **Pay careful attention to these labels at all times! Figure 1.8.1** illustrates the location of each of these labels.

Chain Pinch Point: Exercise extreme caution when working around this area. Moving chains and sprockets are present.

Read Manual: Read the operations manual before attempting to operate this machine.

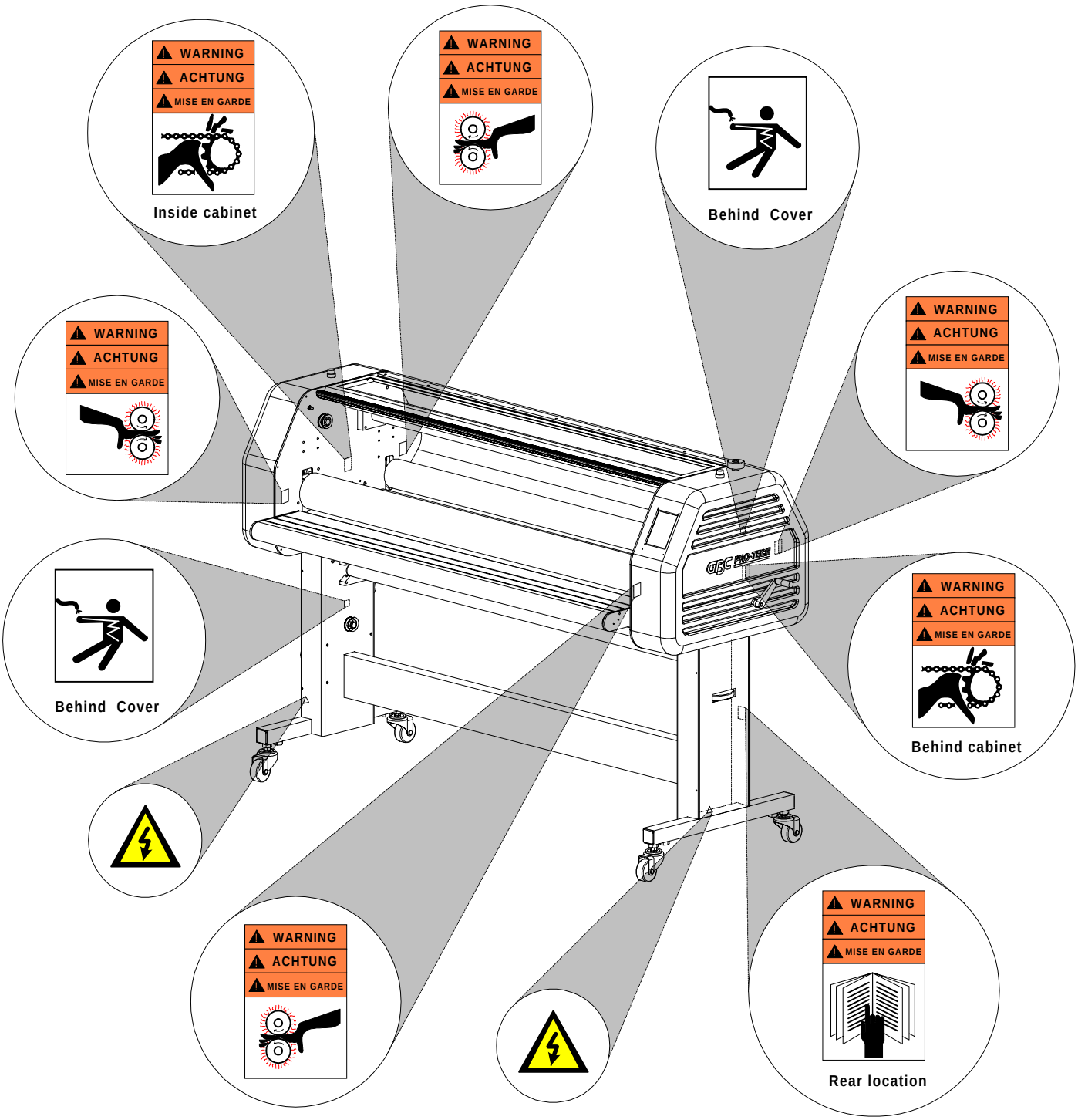


Electrical Shock: Live voltage present. Exercise extreme caution. You may be electrocuted!

Roller Pinch Point: Keep hands and fingers away. You may be crushed and/ or burned.

Danger Voltage: High voltage wires. You may be shocked, electrocuted, paralyzed or die!

Figure 1.8.1 Label locations



Section 2 Warranty

GBC Pro-Tech warrants the equipment sold is free from defects in material and workmanship for a period of **one (1) year parts and 90 days labor** from the date of installation. This warranty is the only warranty made by GBC Pro-Tech and connot be modified or amended.

GBC Pro-Tech's sole and exclusive liability and the customer's sole and exclusive remedy under this warranty shall be, at GBC Pro-Tech's option, to repair or replace any such defective part or product. These remedies are only available if GBC Pro-Tech's examination of the product discloses to GBC Pro-Tech's satisfaction that such defects actually exist and were not caused by misuse, neglect, attempt to repair, unauthorized alteration or modification, incorrect line voltage, fire, accident, flood, or other hazard.

2.1 Limited Warranty

This warranty specifically does not cover damage to the laminating rollers caused by knives, razor blades, other sharp objects, failure caused by adhesives or improper use of the machine. Warranty repair or replacement does not extend the warranty beyond the initial one year period from the date of delivery.

CAUTION

Unauthorized customer alterations will void this warranty.

THE WARRANTY MADE HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. GBC PRO-TECH WILL NOT BE LIABLE FOR PROPERTY DAMAGE OR PERSONAL INJURY (UNLESS PRIMARILY CAUSED BY ITS NEGLIGENCE), LOSS OF PROFIT OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE EQUIPMENT.

2.2 Exclusions to the Warranty

This warranty specifically does not cover;

1. Damage to the laminating rolls caused by knives, razor blades, other sharp objects or failure caused by adhesives.

2. Damage to the machine caused by lifting, tilting and/or any attempt to position the machine other than rolling on the installed castors on even surfaces.

3. Improper use of the machine.

4. Damage due from unqualified person(s) servicing the machine.

Qualified

• Any engineer that has experience with electrical and mechanical design of lamination equipment.The engineers should be fully aware of all aspects of safety with regards to lamination equipment.

• Any commissioning or service engineer must be of competent nature, trained and qualified to GBC Pro-Tech standards to fulfill that job. This person will have completed and passed the full service training course from GBC Pro-Tech.

• Any GBC Technician, GBC Specialist, and / or GBC Pro-Tech Technician that has been through the GBC Pro-Tech service training course.

Section 3.1 General

Description :

- Mid level, wide format color finisher for the sheet fed ink jet market. The Falcon 160 is a self standing, bi directional laminator..

Features :

- Two unwinds (1 upper, 1 lower)
- Two rewinds (1 upper front, 1 lower center)
- Safety shielded
- Infeed and oufeed tables
- Accelerator footswitch
- Job programmable
- Bi-directional system

Applications :

- Single sided lamination
- Encapsulation
- Mounting
- Decaling

Section 3.2 Consumables

Film Types :

- Pressure sensitive laminates
- Pressure sensitive adhesives
- Low melt laminates
- Thermal laminates
- Thermal adhesives

Film Diameters :

- Up to a 8" roll diameter (20.3 cm)

Core Size :

- 3" core standard (7.62 cm)
- 2-1/4" optional (must have optional core adapters) (5.72 cm)

Film Widths :

- 64" Pressure sensitive (162.6 cm)
- 62" Thermal (157.8 cm)

Paper Widths :

- 62" maximum paper width (157.8 cm)

Mounting Thickness :

- Up to 1" inch thick (2.54 cm) either direction

Section 3.3 Function

Speed : • 0 - 15 ft / min (0 - 4.6 m / min)

Motor : • 2-1/4 horse power drive motor
• Bi-directional D.C. motor

Heating Capabilities : • 68°F - 290°F (20°C - 143°C)

Controls : • Front control panel
• Variable speed footswitch

Job Save : • Save up to 9 job parameters

Roll Design : • High release silicone rolls

Section 3.4 Electrical Requirements

United States : • 230 - 240 VAC, 50/60 Hz, single phase, 55 amps.

Europe : • 230 - 240 VAC, Wye 3 phase, 32 amps/ phase

B.T.U. output : • 31,732 B.T.U. / hour

Heater Wattages : • 4650 watts per heater

Amperage Draw : • No heat, motor only : 1 - 3 amps
• Top heat and motor : 20 - 23 amps
• Both heat and motor : 40 - 43 amps

D/C Voltage used : • 24 vdc
• 12 vdc isolated x 2
• 24 vdc isolated

A/C Voltage used: • 230 vac (minimum)

Section 3.5 Dimensions

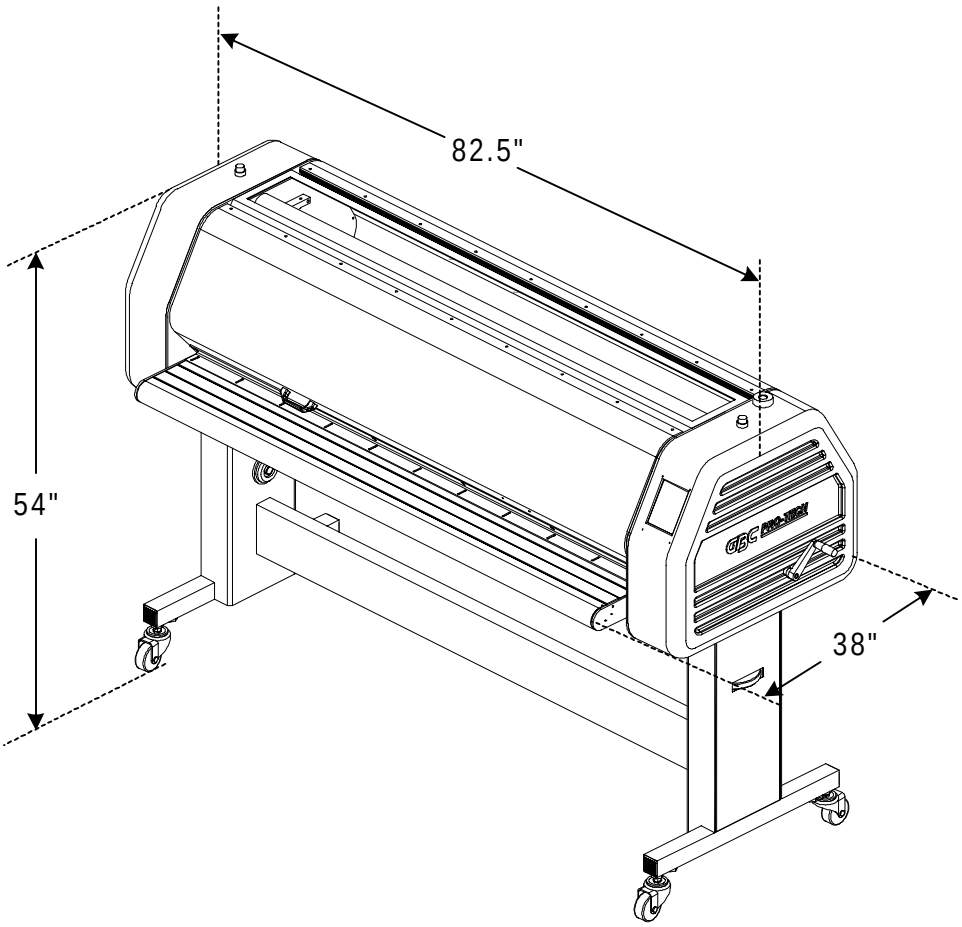
Weight :
- Crated : 1568 lbs. (711 kg.)
- Uncrated : 1200 lbs. (544 kg.)

Dimensions :
- Crated : 90 in. (H) x 46 in. (W) x 72 in. (L)
  (229 cm (H) x 117 cm (W) x 183 cm (L))
- Uncrated : 54 in. (H) x 38 in. (W) x 82.5 in. (L)
  (137 cm (H) x 96 cm (W) x 209 cm (L))
  Refer to **Figure 3.5.1**

Nip Height :
- 37 3/16 in. (95 cm)

Safety Shield Raised Height :
- 66 5/8 in. (169 cm)

Figure 3.5.1 Dimensions



This page intentionally left blank.

Section 4 Installation

GBC Pro-Tech is committed to a program of ongoing product improvement. As a result, we are providing these instructions so that you can insure that your new Falcon 160 Laminator is properly and securely unpacked, moved, and installed.

Before a Falcon 160 Laminator can be installed, there are a few requirements that must be met. Make certain that each of the requirements listed in the following pre-installation checklist are met before beginning installation.

CAUTION

Failure to follow the pre-installation check list can result in damage to the laminator.

4.1 Pre-installation

- ☐ Are doorways and hallways wide eneough for the laminator to be moved to the installation site?
- ☐ Is there ample room for the laminator?
- ☐ A work area must be established that allows for operation in both the front and rear of the laminator and provides space for efficient material flow. **Figure 4.1.1** illustrates a typical machine area layout.
- ☐ Is the environment appropriate for the laminator? The laminator requires a clean, dust and vapor free environment to operate properly. It must not be located where there is air blowing directly on the machine.
- ☐ Have you contacted a certified electrician to both wire the laminator and ensure that adequate power is being supplied, having the appropriate capacity, over current protection and safety lockouts are available.

WARNING

The operating environment must be free of dust, flammable liquids and vapors. You can be injured by inhaling chemical vapors.

WARNING

Vapor build up or stored flammable liquids can cause a fire. Excessive dust can damage the laminator.

CAUTION

Do not locate the laminator where air is blowing directly on the machine. The air flow can cool the rolls unevenly and result in poor quality output.

- ☐ The laminator requires 230 to 240 vac, 50/60 Hz, 55 amps. Or, in Europe only, 3-N phase, 220 vac, 32 amps per phase.

WARNING

Be sure to follow the correct wiring diagram when supplying power to the laminator. If improperly connected, you can be seriously injured or cause damage to the laminator.

Figure 4.1.2 illustrates proper wiring for single phase for the U.S..

Figure 4.1.3 illustrates proper wiring for Wye 3 phase for Europe.

WARNING

The Falcon 160 Laminator is a large and heavy piece of equipment. It is necessary to employ LICENSED RIGGERS ONLY to move the laminator. The laminator is not designed to be tipped up or sideways in any way. Such action disturbs the exact alignment of the rolling parts of the machine and requires extensive realignment. You can be crushed or seriously injured.

Figure 4.1.1 Suggested Floor Layout

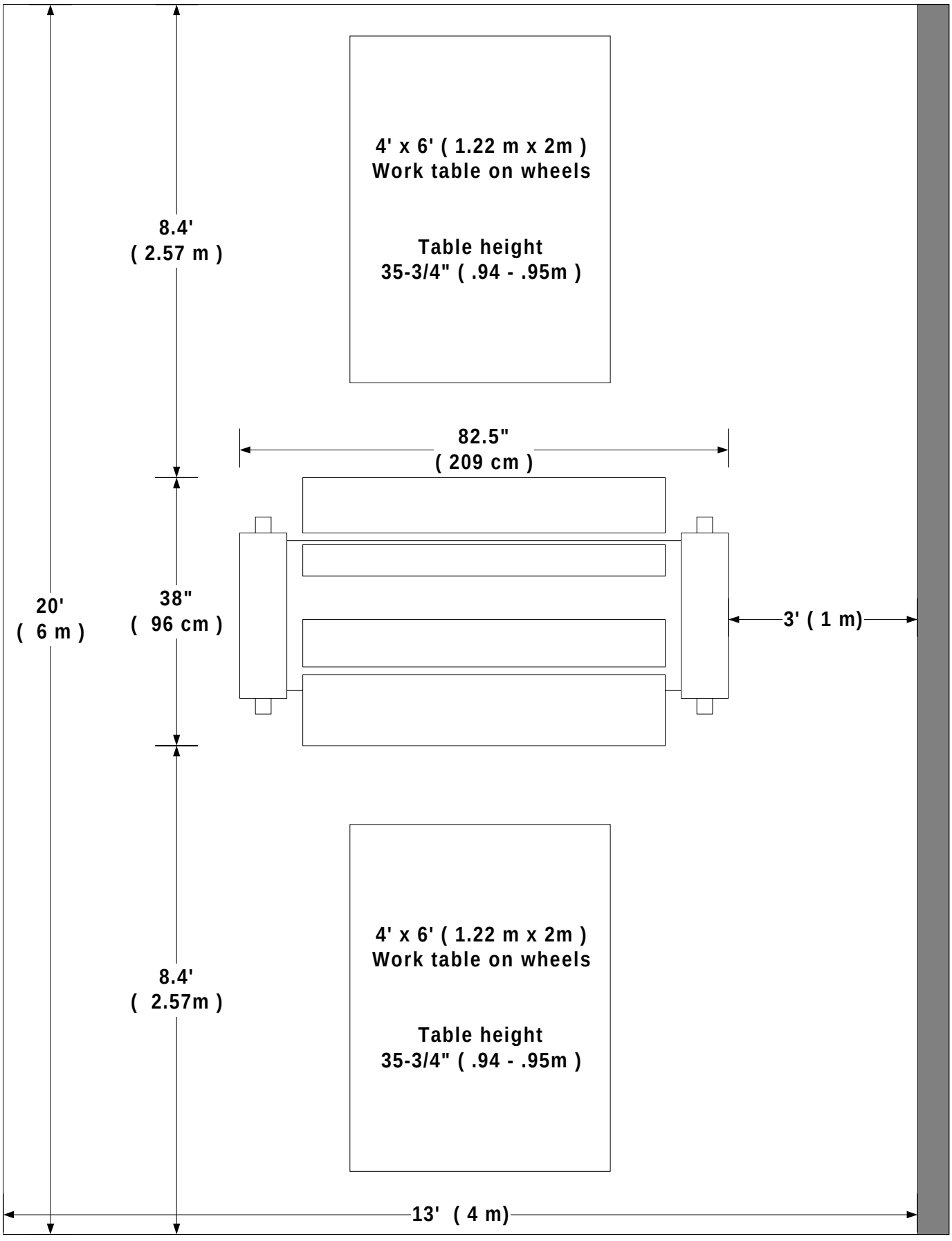


Figure 4.1. 2 Single phase, U.S.

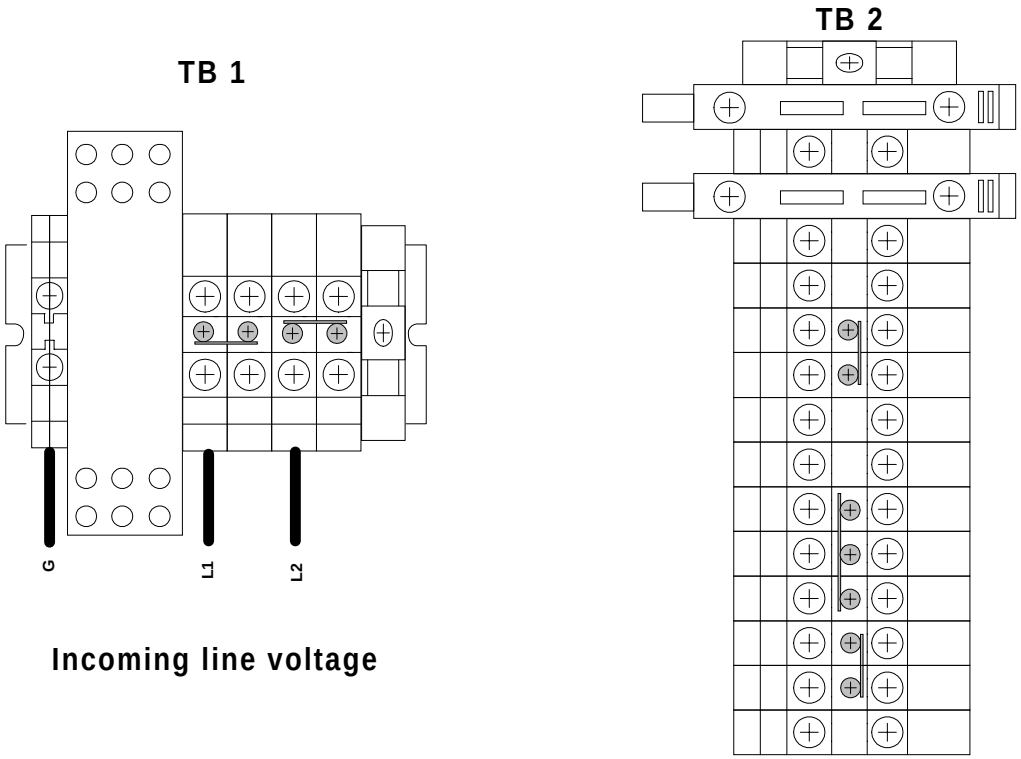
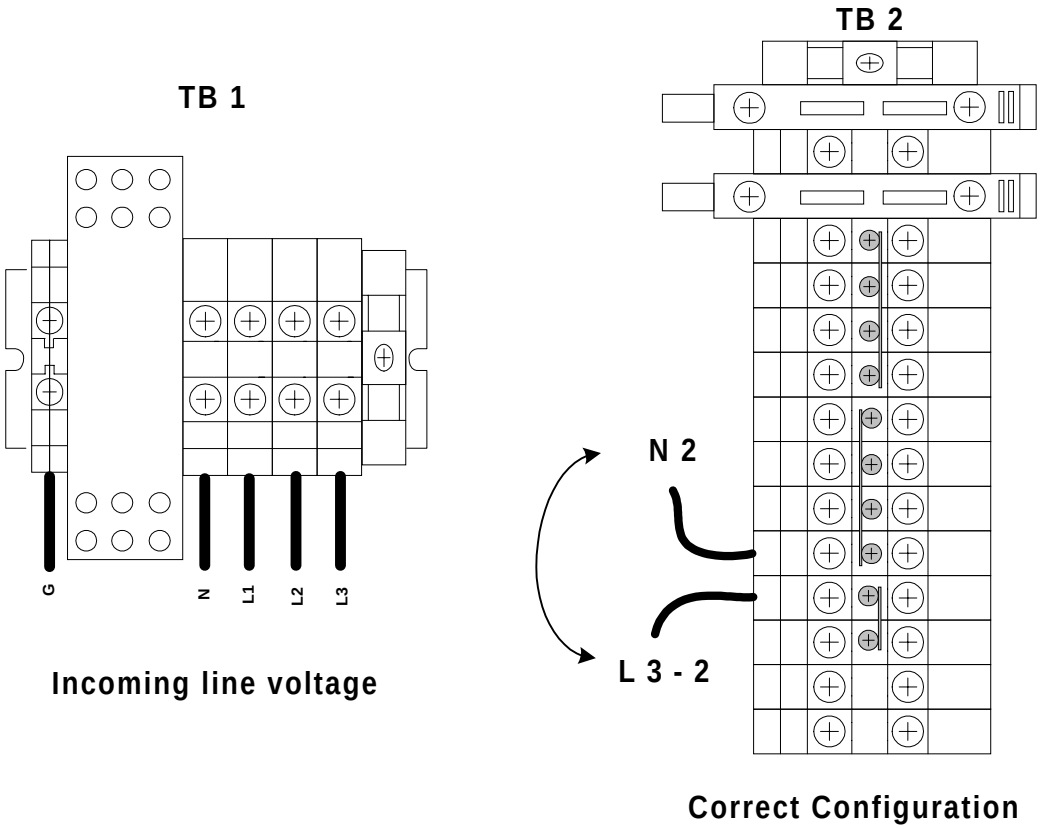


Figure 4.1.3 Wye 3 phase, Europe only



4.2 Unpacking

With regards to your shipping methods, use one of the following procedure described to safely and properly unwrap / uncrate your laminator.

INFORMATION

ALL SHIPMENTS ARE EX-WORKS. **At our dock, title passes to the buyer. Please review your insurance coverage prior to shipment, as you are responsible for all subsequent freight charges and risks.**

INFORMATION

Before signing the Bill of Lading, you should be sure to inspect the crate and / or pallet for signs of damage or missing items; if applicable, make note of this on the Bill of Lading.

INFORMATION

Depending on the destination and customer preference, the Falcon 160 may be shipped in various ways. The laminator may arrive shrink wrapped or in a plywood crate on a skid. Please follow the unpacking procedure that pertains to your method of shipment.

WARNING

The unpacking process requires at least two people. You can be severely injured, crushed or cause damage to the laminator.

4.3 Shrink Wrapped

a) Inspect the machine for any obvious shipping damages upon receipt.

b) Carefully unwrap the shrink wrap from around the laminator.

CAUTION

Do not use a knife or other sharp object to remove the shrink wrap from around the laminator. You can cause irreparable damage to the rollers.

c) With another person, carefully wheel your F - 160 Laminator to the installation site.

WARNING

Do not attempt to move the laminator across anything other than a flat level surface without trained and qualified riggers. You can be crushed or seriously injured.

4.4 Crated

Tools required

- # 2 Phillips head screwdriver
- 7/8” open end wrench or adjustable wrench
- Crow bar
- A second person

To uncrate the laminator

a) Remove the top of the crate and then the sides in the order shown in **Figure 4.4.1**

CAUTION

Do not allow the top to fall into the crate. It can damage the laminator.

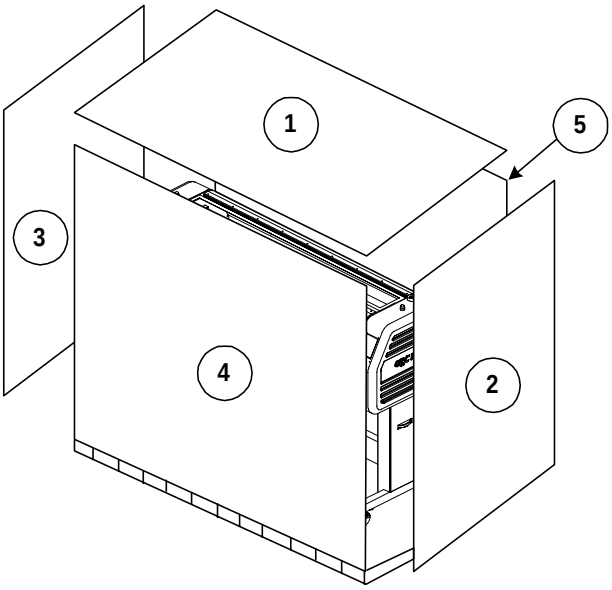
INFORMATION

Do not put packing screws on the floor. They can cause problems when trying to roll the laminator into position or you can become injured if stepped on.

CAUTION

A second person must support the side labeled 5 in Figure 4.4.1 It can fall and damage the laminator or cause harm to you and others.

Figure 4.4.1 Disassembling of the crate



Removing the shrink wrap

a) Gently unwrap the shrink wrap from around the laminator.

CAUTION

Do not use a knife or other sharp object to remove the shrink wrap from around the laminator. You can cause irreparable damage to the rollers.

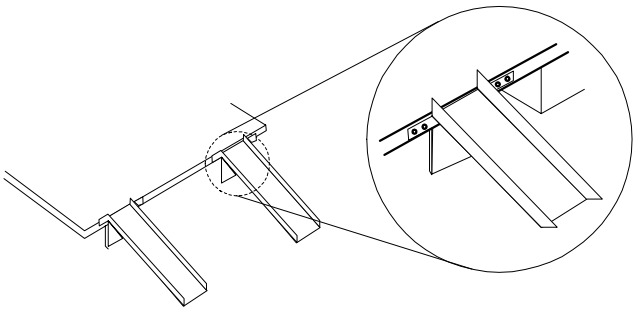
Moving the laminator

a) Have the laminator rolled off the skid and placed on the floor by licensed riggers. The ramps included with the laminator can be secured utilizing screws removed from the disassembled crate. **Figure 4.4.2** illustrates positioning of the ramps.

WARNING

Do not attempt to move the laminator across anything other than a flat level surface without trained and qualified riggers. You can be crushed or seriously injured.

Figure 4.4.2 Positioning of the ramps



WARNING

Do not attempt to use the ramps if they are not secured to the pallet. Make sure you have the pallet on a flat even surface before attempting to roll the machine off using the ramps.

WARNING

The Falcon 160 Laminator is a large and heavy piece of equipment. It is necessary to employ LICENSED RIGGERS ONLY to move the laminator. The laminator is not designed to be tipped up or sideways in any way. Such action disturbs the exact alignment of the rolling parts of the machine and requires extensive realignment. You can be crushed or seriously injured.

INFORMATION

GBC Pro-Tech's warranty does not cover malfunction of the equipment due to mishandling and / or tipping. GBC Pro-Tech bears no responsibility for personal injury or damage due to moving the laminator improperly.

b) Remove any plastic strapping and/or packing paper taped to the rolls.

CAUTION

Do not use a knife or other sharp object to remove the shrink wrap from around the laminator. You can cause irreparable damage to the rollers.

c) Remove all packing materials to a safe distance from the laminator and dispose of properly.

d) Use two people to carefully roll the laminator to the desired location.

INFORMATION

About recycling: The crate components can be reused for shipping the laminator again or can be disassembled and the wood and screws recycled. The shrink wrap is not recyclable, so it must be discarded.

4.5 Accessory pack

Once the Falcon 160 Laminator has been unpacked and moved into final position, open the accessory pack and verify the contents.

Accessory Pack contents

- One T-handle allen wrench (475-200)
- One Zippy knife (475-620)
- One Terry clothe towel (475-950)
- One Operators manual (930-031)
- One roll masking tape (475-000)
- Two Polyurethane O-rings (480-005)
- One strain relief for main power (175-201)
- One rubber cement pad (930320)
- One crankhandle (629-018)
- One fuse, 0.5A (186-022)
- Two fuses, 2.5A (186-220)

If you are missing any of the itemslisted above, contact your local service technician or sales representative.

4.6 Leveling

Leveling of the laminator is very important in the way the machine performs. Leveling is crucial to the tram (tracking) of the materials through the machine.

INFORMATION

Improper leveling, will result in poor output quality.

Tools required

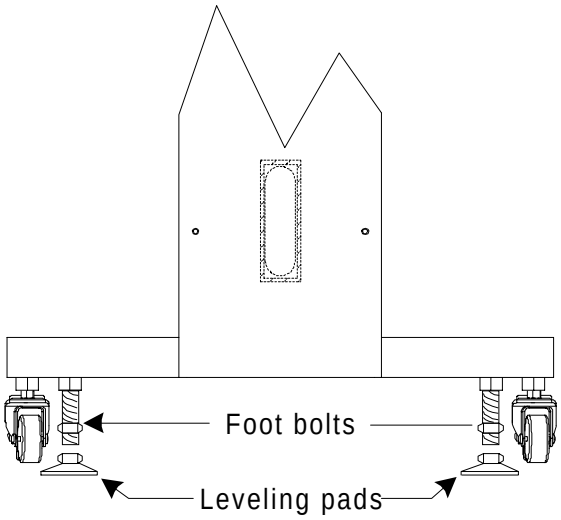
- Torpedo level
- (2) 3/4” open end wrenches
- Four leveling pads
  (from the accessory pack)
- Second person

Preparation

a) Verify that the laminator has sufficient room around it to load film, walk around and serviced if necessary.

b) Attach one leveling pad to each one of the four foot bolts near the castors. Refer to **Figure 4.6.1**

Figure 4.6.1 Foot bolts



:

c) Lock the castors in place to prevent the laminator from rolling while leveling.

Leveling

a) Position the level on the top of the control side frame. Not on the cabinet. Refer to **Figure 4.6.2**

INFORMATION

The side frame provides a more accurate reading than the cabinet.

b) Level the control side from front to back.

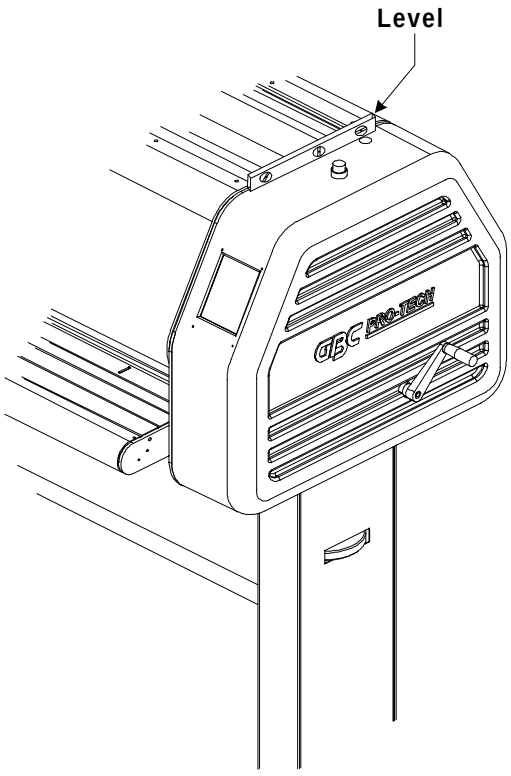
INFORMATION

A second person can read the level while you make the appropriate adjustments.

c) Position the level on the top of the drive side frame. Not on the cabinet.

d) Level the drive side from front to back.

Figure 4.6.2 Front to back



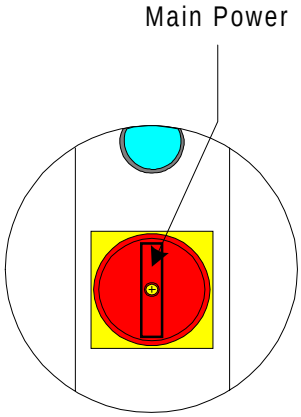
e) Ensure that nothing is in the path of the main roll nip.

f) Confirm that power is supplied to the laminator.

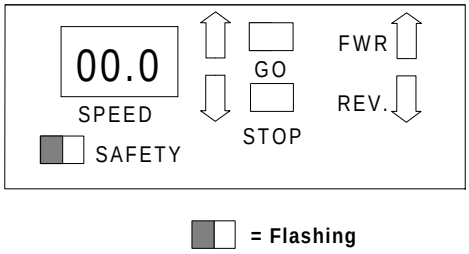
WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

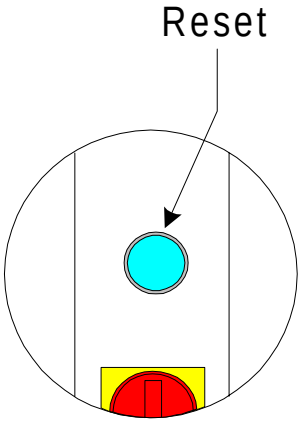
g) Turn the **MAIN POWER** to **"ON"** position.



i) Raise the front safety shield. The **SAFETY** indicator will begin flashing.



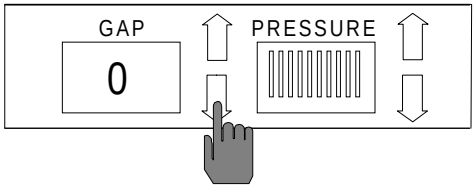
h) Press **RESET**. The front control panel should be illuminated at this point.



WARNING

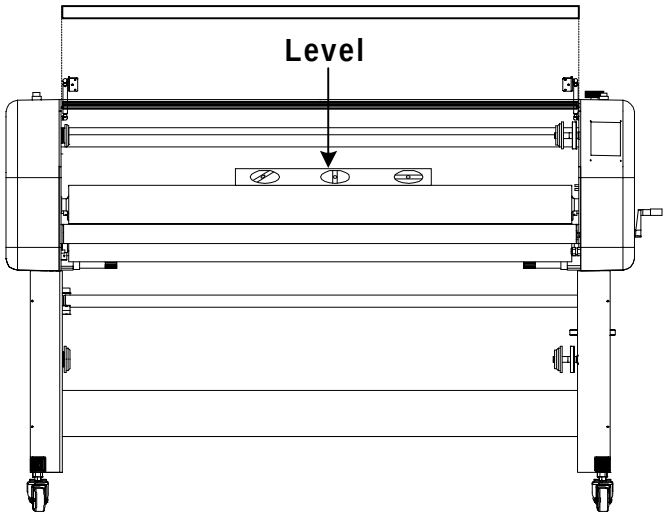
Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

j) Press **GAP** ▼ to "0".



k) Place the level across the top of the upper main roll in the center. Refer to **Figure 4.6.4**

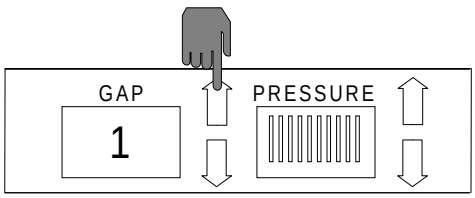
Figure 4.6.4 Left to right



l) Level the machine from left to right.

m) Verify your adjustments when finished.

n) Press GAP ▲ to 1 in. setting.



o) Remove the level.

p) Lower the front safety shield.

q) Turn **MAIN POWER** to "**OFF "**.

4.7 Safety check

The safety check will ensure that all safety devices and interlock switches are functioning properly.

WARNING

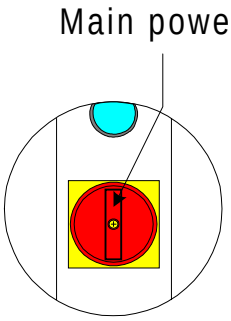
Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

WARNING

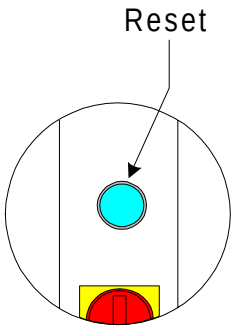
If you find a safety feature not working properly, you should contact your local service representative immediately

4.7.1 Front and rear infeed tables

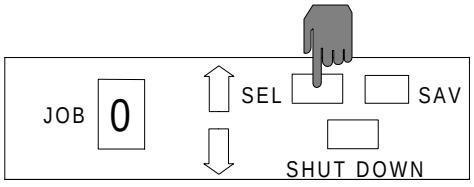
a) Turn **MAIN POWER** to **"ON"** .



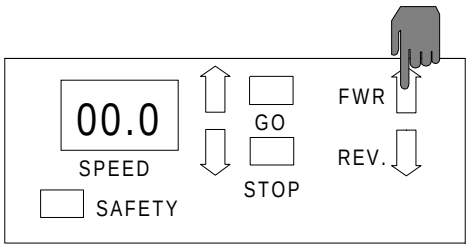
b) Press **RESET**. The front control panel will be illuminated.



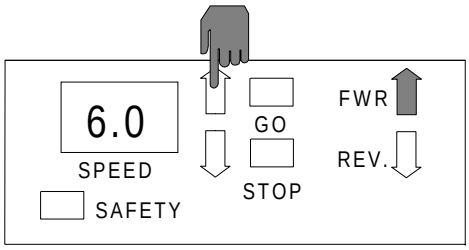
c) Press **SEL**. The **SEL** key should stop flashing.



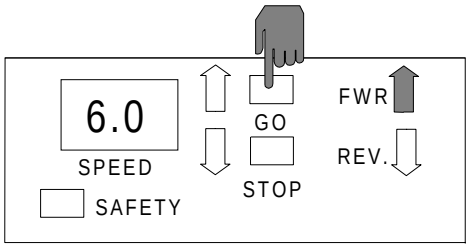
d) Press **FWD** ▲ to set a forward motor direction.



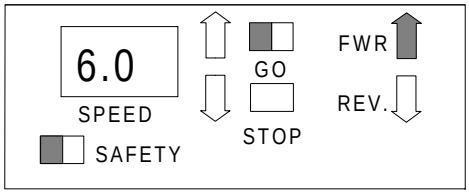
e) Press **SPEED** ▲ to set a speed of 6 ft/min.



f) Press **GO**. The bottom rollers will begin to turn.

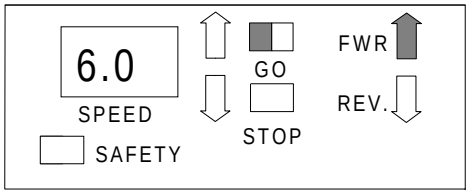


g) Slightly lift the front infeed table. **SAFETY** indicator and **GO** begin flashing and the bottom rollers stop.



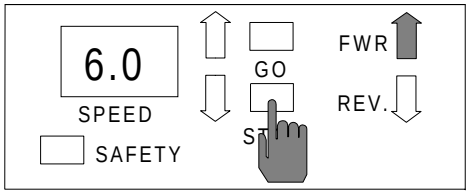
= Flashing

h) Lower the front infeed table.**SAFETY** indicator reverts to white and **GO** remains flashing.

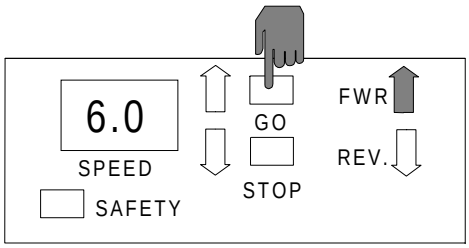


= Flashing

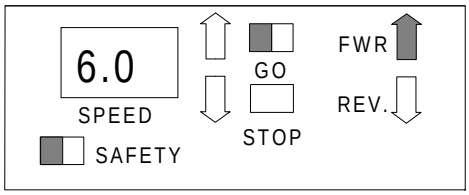
i) Press **STOP**. **GO** stops flashing.



j) Press **GO**. The bottom rollers begin turning.

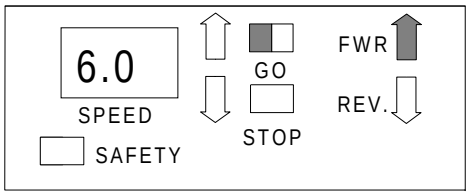


k) Slighly lift the rear infeed table. **SAFETY** indicator and **GO** begin flashing and the bottom rollers stop.



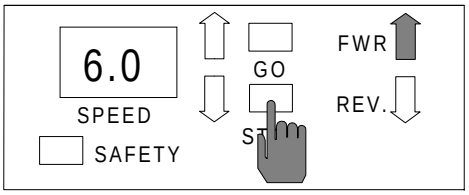
= Flashing

l) Lower the rear infeed table. **SAFETY** indicator reverts to white and **GO** remains flashing.

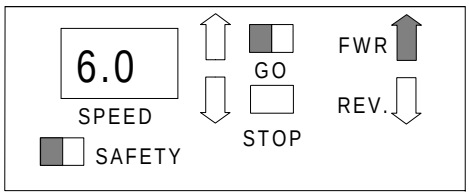


= Flashing

m) Press **STOP**. **GO** stops flashing.



b) Raise the front safety shield. **SAFETY** indicator and **GO** begin flashing and the bottom rollers stop.

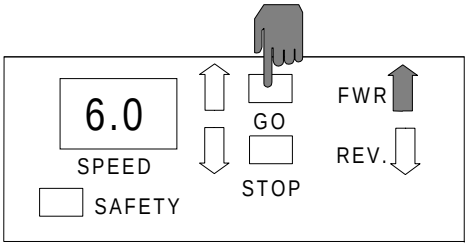


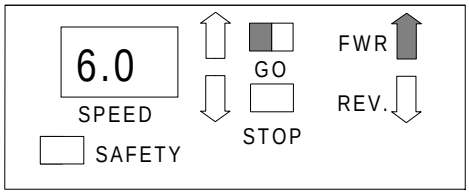
= Flashing

4.7.2 Front and rear safety shields

h) Lower the front safety shield. **SAFETY** indicator reverts to white and **GO** remains flashing.

a) Press **GO**. The bottom rollers begin turning.



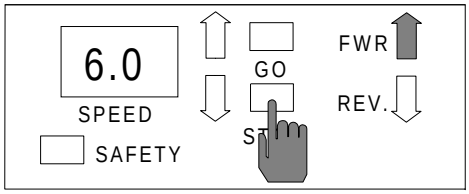


= Flashing

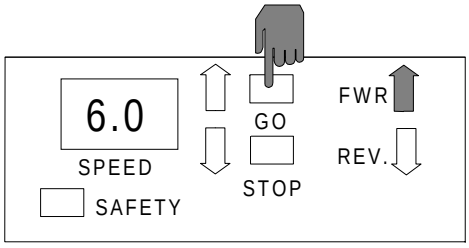
i) Press **STOP** .**GO** stops flashing.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!



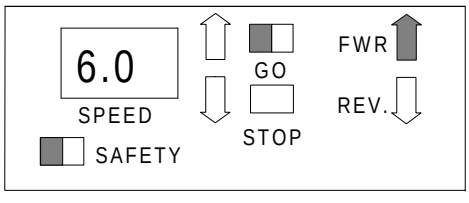
j) Press **GO**. The bottom rollers begin turning.



WARNING

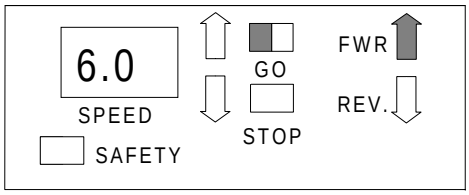
Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

k) Raise the rear safety shield. **SAFETY** indicator and **GO** begin flashing and the bottom rollers stop.



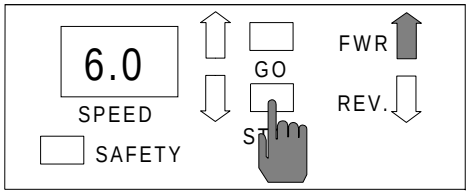
= Flashing

l) Lower the rear safety shield. **SAFETY** indicator reverts to white and **GO** remains flashing.



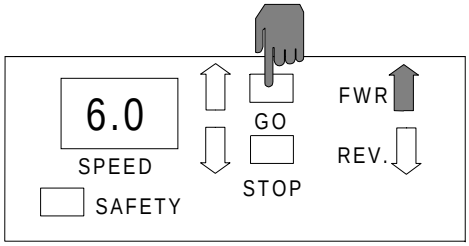
= Flashing

m) Press **STOP**. **GO** stops flashing.

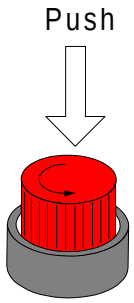


4.7.3 EMERGENCY STOPS (E-STOP)

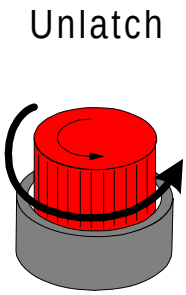
a) Press **GO**. The bottom rollers begin turning.



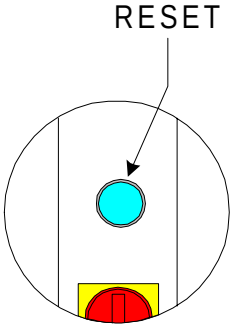
b) Press down on the control side **E-STOP**. The **E-STOP** latches in the down position, bottom rollers stop, and the control panel is blank



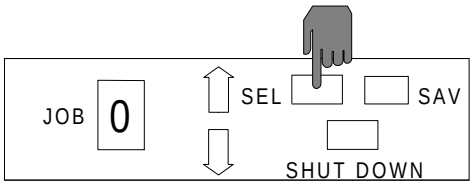
c) Unlatch the **E-STOP** as illustrated below.



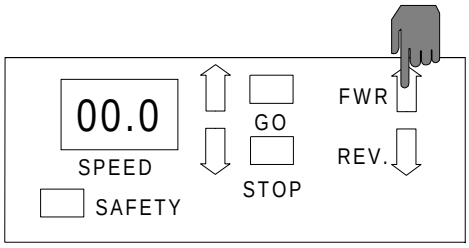
d) Press **RESET**. The front control panel is illuminated.



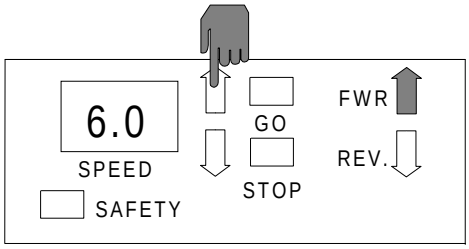
e) Press **SEL**. **SEL** stops flashing.



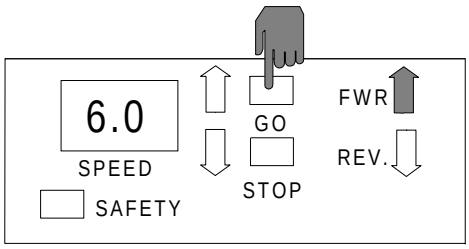
f) Press **FWD** ▲ for a forward motor direction.



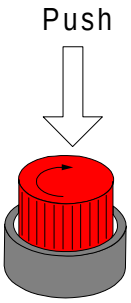
g) Press **SPEED** ▲ to a speed of 6 ft/min.



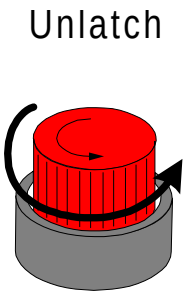
h) Press **GO**. The bottom rollers will begin to turn.



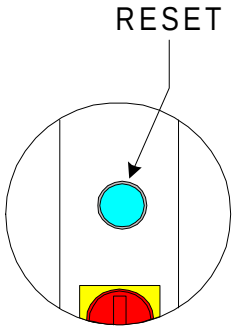
i) Press down on the drive side **E-STOP**. The **E-STOP** latches in the down position, bottom rollers stop, and the control panel is blank.



j) Unlatch the **E-STOP** as illustrated below.



k) Press **RESET**. The front control panel is illuminated.



4.8 Function check

The function check ensures that the laminator functions properly when operating. This check is recommended before performing any applications.

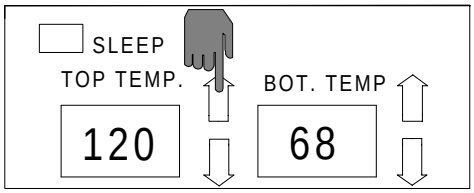
If you find a step that does not react according to the description, call your local area service representative immediately.

WARNING

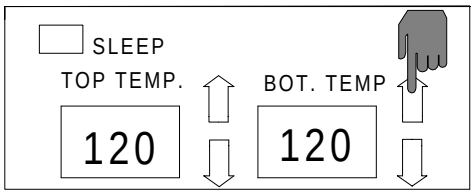
Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

4.8.1 Control panel

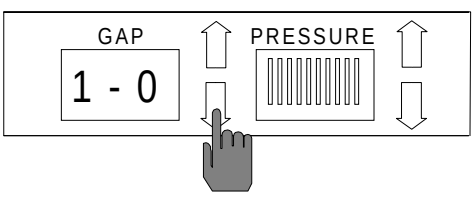
a) Press **TOP TEMP.** ▲ to a value of 120°F (48 °C). **TOP TEMP DISPLAY** begins flashing.



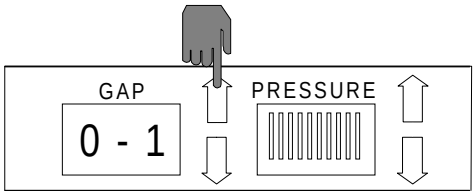
b) Press **BOT TEMP** ▲ to a value of 120°F (48 °C). **BOT TEMP DISPLAY** begins flashing.



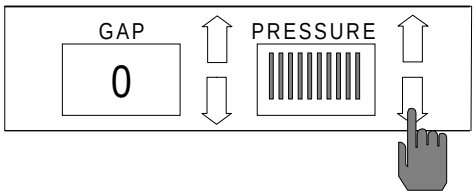
c) Press **GAP** ▼ once. **GAP DISPLAY** decreases 1/16th of an inch per press. The upper main roller moves accordingly. Once to "0", the upper main roller is contacting the lower main roller.



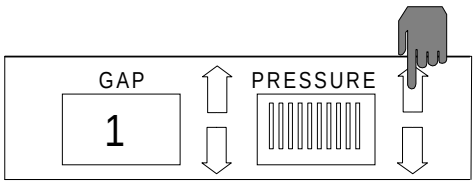
d) Press **GAP** ▲. **GAP DISPLAY** increases 1/16th of an inch per press. The upper main roll moves accordingly. Once to "1", the upper main roller stops.



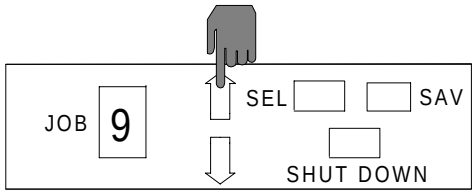
e) Press and hold **PRESSURE** ▼. The upper main roller travels in a constant downward motion. Once making contact with the lower main roller, the bars turn solid one at a time until all 10 bars are solid.



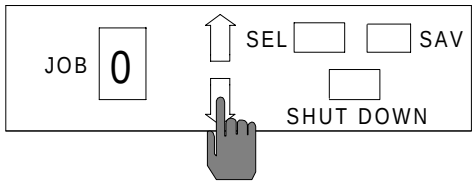
f) Press and hold **PRESSURE** s. The upper main roller travels in a constant upward motion. The pressure bars turn hollow one at a time until no bars are solid and **GAP DISPLAY** changes to "1" then stops.



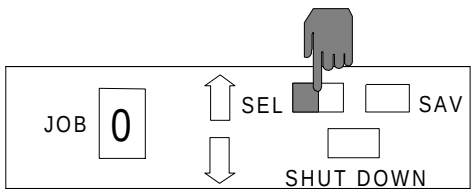
g) Press **JOB** ▲. The **JOB DISPLAY** should increases in increments of 1 to 9.



h) Press **JOB** ▼. The **JOB DISPLAY** should decreases in increments of 1 from 9 to 0.



i) SEL can not be tested until you have saved parameters within a **JOB** location. Refer to **Section 5.4 Job programming** for **SEL** and **SAV**.

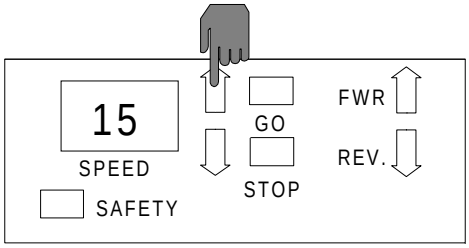


= Flashing

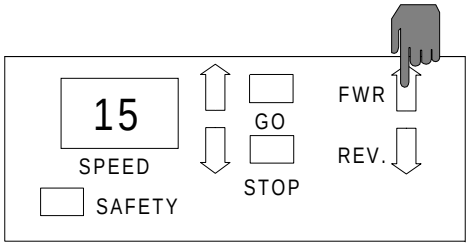
INFORMATION

To continue with the function checks, you must press SEL so that it discontinues flashing.

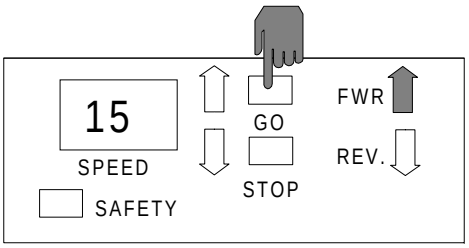
j) Press **SPEED** ▲ once. **SPEED DISPLAY** increases in increments of .5 per press up to 15.



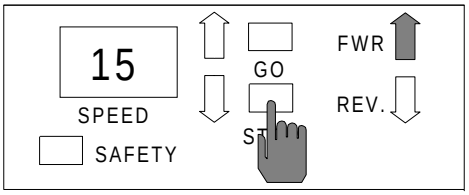
k) Press **FWD** ▲. **FWD** is solid.



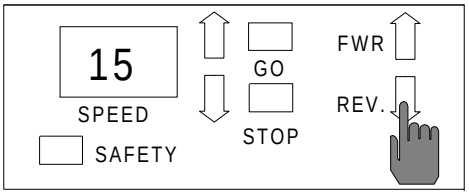
l) Press **GO**. The bottom rollers turn in a forward motion at a speed of 15 ft./min. (4.57 m / min.).



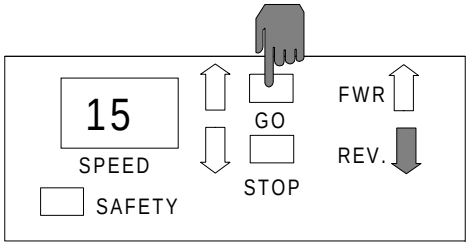
m) Press **STOP**. The bottom rollers stop turning.



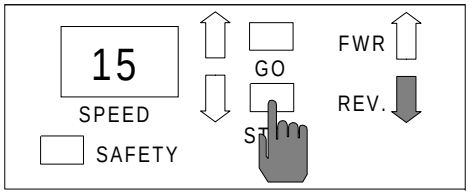
n) Press **REV ▼** . **REV** is solid and **FWD** reverts to hollow.



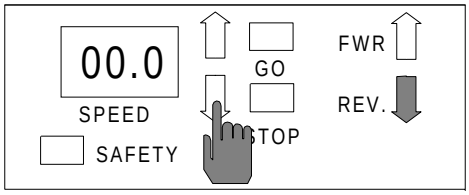
o) Press **GO**. The bottom rollers turn in a reverse motion at a speed of 15 ft./min. (4.57 m / min.).



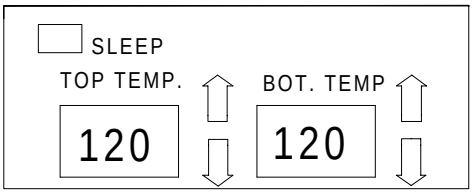
p) Press **STOP**. The bottom rollers stop turning.



q) Press **SPEED ▼** once. **SPEED DISPLAY** decreases in increments of .5 per press down to 00.0.



r) The **TOP TEMP DISPLAY** and **BOT TEMP DISPLAY** are solid indicating the actual temperature is within a +/- 10°F of the set point temperature.



u) Press **SHUTDOWN**. The laminator reverts to the default settings and **SLEEP** is solid. Refer to **Figure 4.8.1**

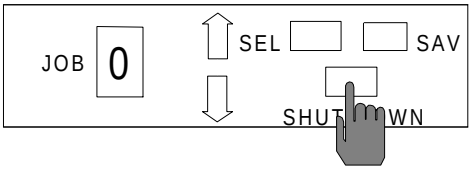


Figure 4.8.1 Default settings

WARNING

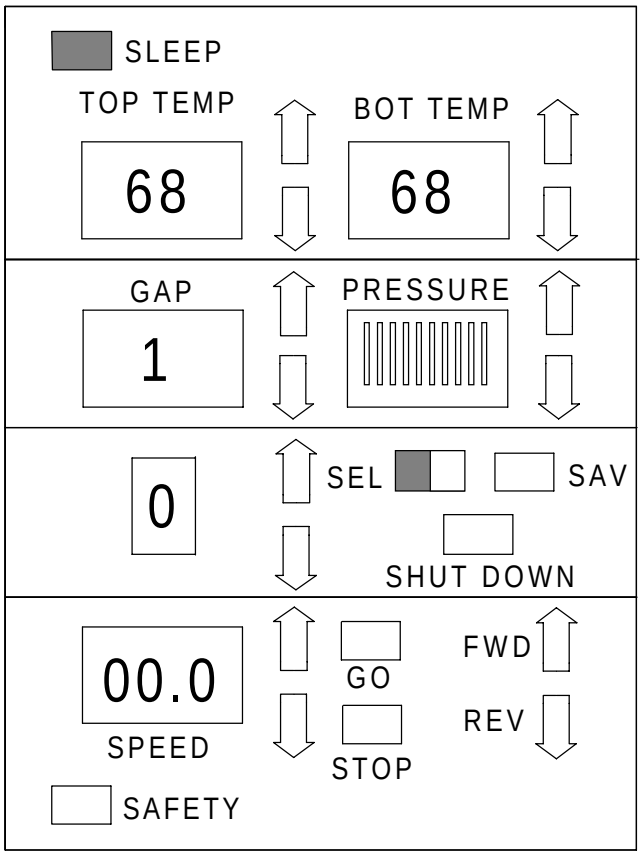
Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

s) Raise the front safety shield, remove the front infeed table and touch the two main rollers. They should feel warm to the touch.

t) Replace the front infeed table and lower the front safety shield.

INFORMATION

The SAFETY indicator should not be flashing when the tables are properly seated and the safety shields are in the closed position..

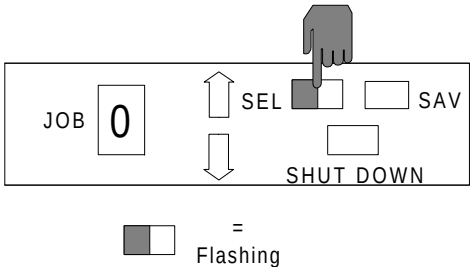


= Flashing

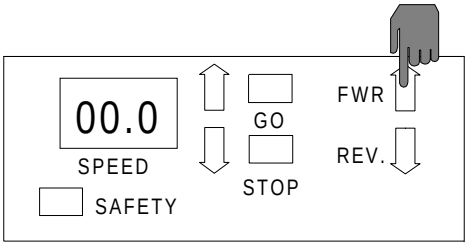
4.8.2 Variable speed footswitch

This check is to ensure that the footswitch works. For complete instructions on the footswitch and its relation to "Footswitch" mode to " Panel" mode, refer to **Section 5.1 Controls / (28) Footswitch.**

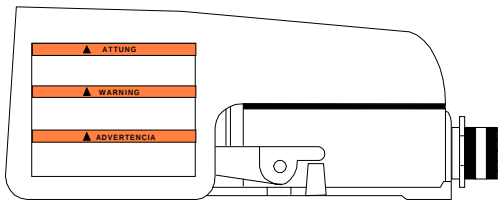
a) Press **SEL** on the front control panel to "**wake**" the laminator from **SLEEP** mode. **SLEEP** indicator reverts to hollow.



b) Press **FWD ▲** for a forward motor direction. **FWD** is solid.



c) Press down on the variable speed footswitch. **GO** begins flashing and the bottom rollers are turning.



INFORMATION

Notice that the footswitch speed is not indicated in the SPEED DISPLAY on the front control panel.

4.8.3 Unwind shafts and unwind brakes

The unwind shafts swing out and the unwind brakes tension the turning of the shaft from no tension to complete stop tension.

Should you detect or experience complications with the unwind shaft movement or the unwind brake tension, call you local area service representative.

WARNING

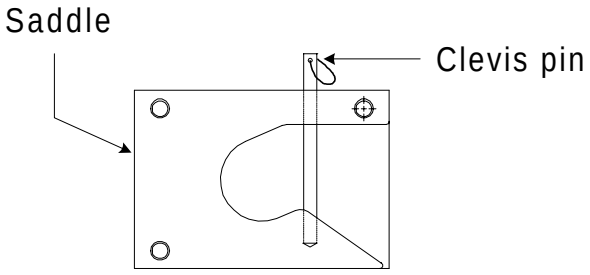
Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

INFORMATION

Steps "*e*" and "*f*" will be performed simultaneously.

a) Raise the rear safety shield.

b) Lift the clevis pin up from the saddle of the upper unwind shaft.

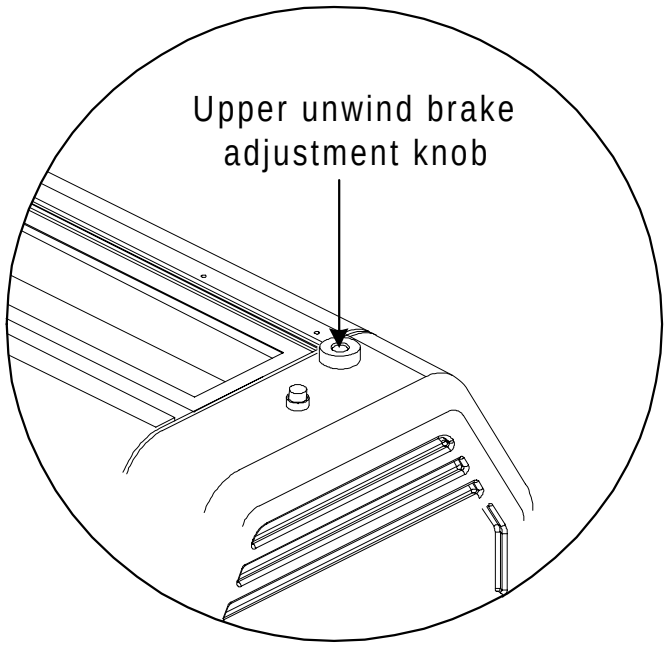


c) Swing the upper unwind shaft to its fully extended position. Swing back and reseat the shaft in the saddle. The swing movement should be smooth and easy.

d) Ensure that the upper unwind brake adjustment knob is backed off completly. The counter clockwise turn should be easy.

e) With one hand, slowly turn the upper unwind shaft in either direction.

f) With the other hand, slowly turn the upper unwind brake adjustment knob clockwise.



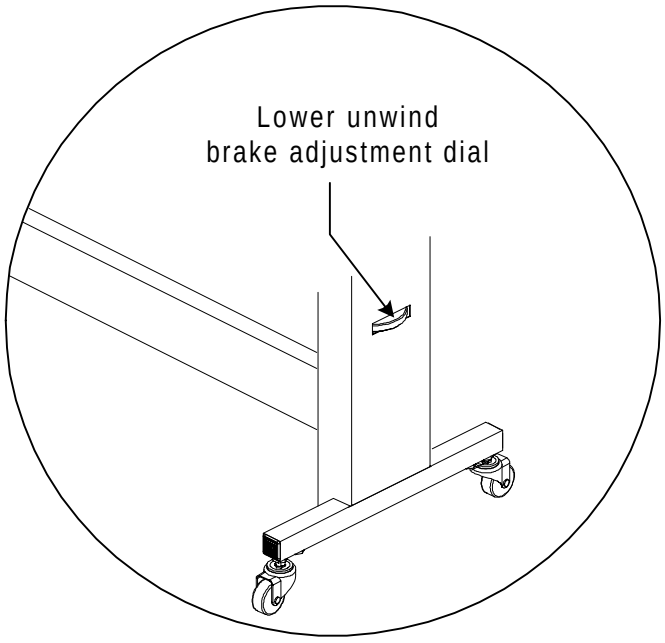
g) You should feel an increase in resistance on the turning of the upper unwind shaft as you turn the upper unwind brake adjustment knob clockwise.

h) Slowly turn the upper unwind brake adjustment knob counter clockwise.

i) You should feel a decrease in resistance on the turning of the upper unwind shaft as you turn the upper unwind brake adjustment knob counter clockwise.

j) Lower the rear safety shield.

k) Now perform steps “b” through “h” again for the lower unwind shaft.



Section 5 Operations

The operator control panel for the Falcon 160 Laminator is located on the front of the machine, to the right of the front operating position.

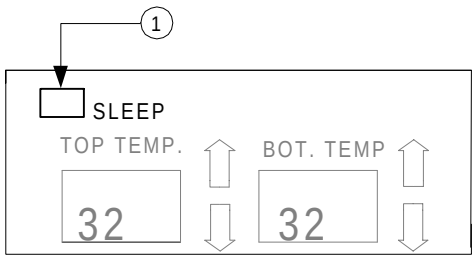
For an illustration of the complete front control panel, please refer to **Figure 5.1.1.** The names and functions of these controls are as follows:

INFORMATION

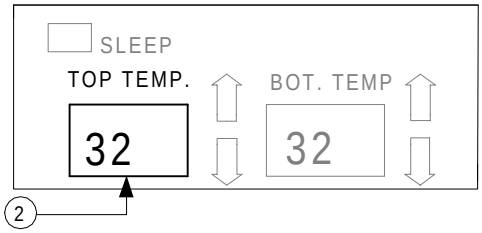
When any command is pressed on the control panel, a "beep" will sound. If the command is held down, the panel will "beep" only once.

5.1 Control Panel

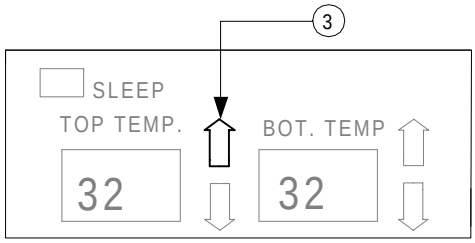
(1) SLEEP: If flashing, the machine is in sleep mode. This will occur after 3 hours of no activity. To wake the laminator from sleep mode, press any command.



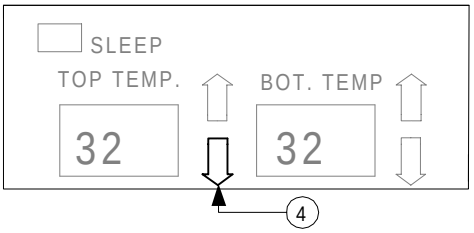
(2) TOP TEMP DISPLAY : The display will show the set point temperature of the top main roller as the default display. When the top roller temperature has reached in the +/- 10°F range of the set point, the display will be solid. When outside of this range, the display will flash.



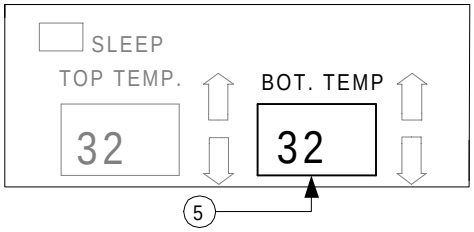
(3) TOP TEMP ▲ : When pressed, will increase the set point value of the top main roller in increments of 2 degrees. If held down, it will only increase to the maximum temperature setting of 290°F (143°C).



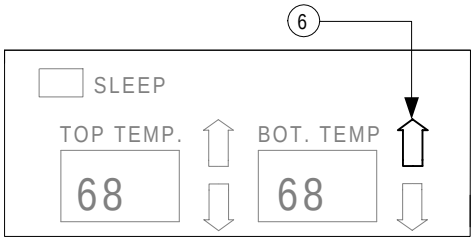
(4) TOP TEMP ▼ : When pressed, will decrease the set point value of the top main roller in increments of 2 degrees. If held down, it will only decrease to the minimum temperature setting of 68°F (20°C).



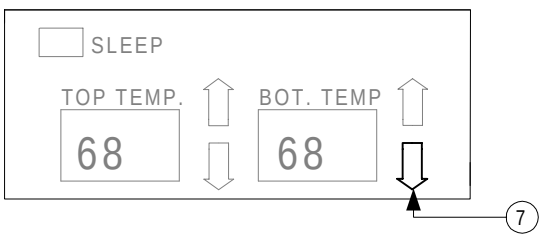
(5) BOT. TEMP. DISPLAY : The display will show the set point temperature of the bottom main roller as the default display. When the bottom roller temperature has reached in the +/- 10°F range of the set point, the display will be solid. When outside of this range, the display will flash.



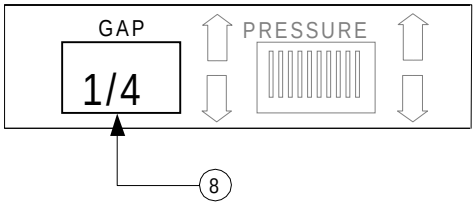
(6) BOT. TEMP. ▲ : When pressed, will increase the set point value of the bottom main roller in increments of 2 degrees. If this key is held down, it will only increase to the maximum temperature setting of 290°F (143°C).



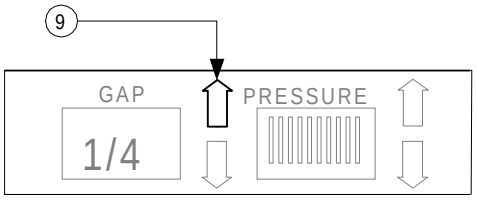
(7) BOT. TEMP. ▼ : When pressed, will decrease the set point value of the bottom main roller in increments of 2 degrees. If held down, it will decrease to the minimum temperature setting of 68°F (20°C).



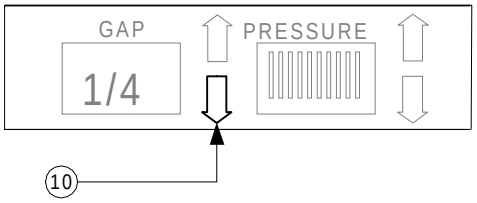
(8) GAP DISPLAY : Displays the current main roller nip opening. The nip has a range of 0 to 1" gap.



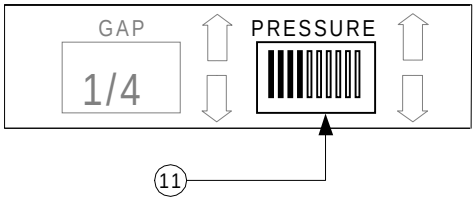
(9) GAP ▲ : When pressed, will increase the gap by 1/16 in. increments. If held down, it will automatically increase the gap by 1/16 in. increments until it has reached a maximum opening of 1 in. on the **GAP DISPLAY**.



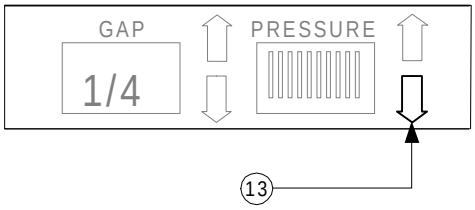
(10) GAP ▼ : When pressed, will decrease the gap by 1/16 in. increments. If held down, it will automatically decrease the gap by 1/16 in. increments until it has reached a minimum opening of 0 in. on the **GAP DISPLAY**.



(11) PRESSURE DISPLAY : Displays the amount of pressure being used. Each bar represents 10% of the maximum allowable pressure. All ten bars illuminated equals 100% of the maximum allowable pressure.



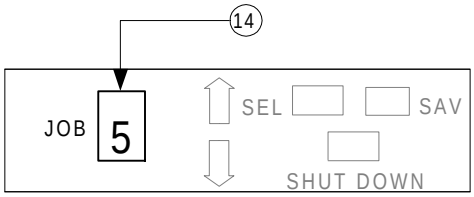
(13) PRESSURE ▼ : When pressed once, will increase the pressure by 5%. If held down, it will increase from 0% of the minimum allowed pressure to 100% at which point all bars will be illuminated.



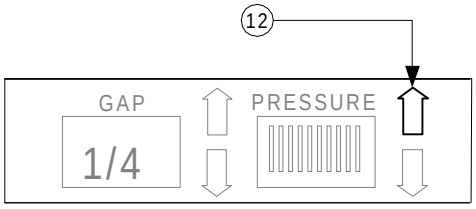
INFORMATION

When adjusting the pressure, the gap will be affected as well.

(14) JOB DISPLAY : Displays the job number selected and will set the operating parameters saved for that number once **SEL** has been pressed.



(12) PRESSURE ▲ : When pressed once, will decrease the pressure by 5%. If held down, it will decrease from 100% of the maximum allowed pressure to 0% at which point no bars will be illuminated.



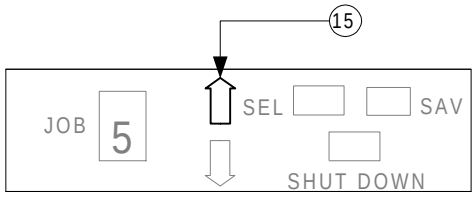
INFORMATION

Job programming is explained in Section 5.4

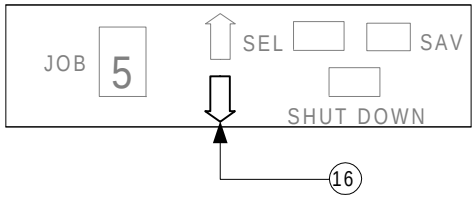
WARNING

**Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE.
You can be CRUSHED or BURNED!**

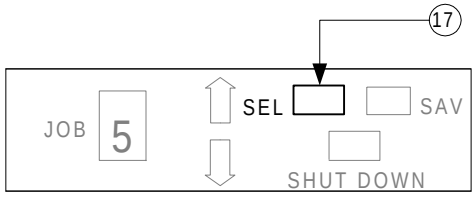
(15) JOB ▲ : When pressed once will increase the job number in **JOB DISPLAY** by increments of 1. If pressed and held, the **JOB DISPLAY** will increase to 9 at which point it will stop.



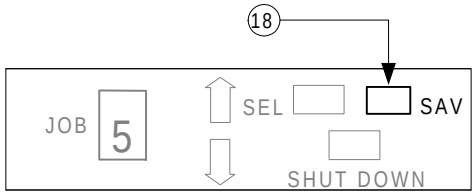
(16) JOB ▼ : When pressed once will decrease the job number in **JOB DISPLAY** by increments of 1. If pressed and held, the **JOB DISPLAY** will decrease to 0 at which point it will stop.



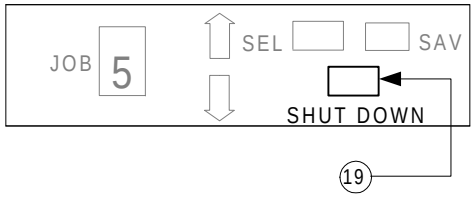
(17)SEL : When pressed will send the operating parameters for the stored job number selected to the correct devices. Any time **JOB ▲** or **JOB ▼** is pressed, **SEL** will flash indicating a change in job number.



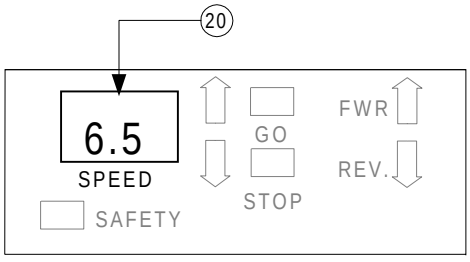
(18) SAVE : When pressed, will save the current settings for the number showing in the **JOB DISPLAY**. For more information, refer to **Section 5.4 Job Programming** on how to save parameters.



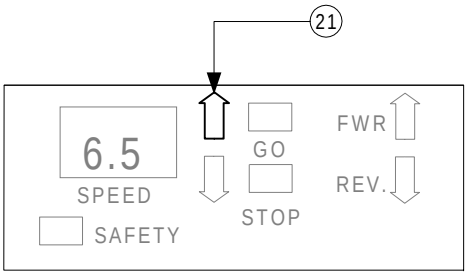
(19) SHUTDOWN : When pressed, automatically raises the main roller gap setting to 1 in., turns the top and bottom temperature controller units off and stops the drive motor. The LCD on the control panel remains illuminated and the **SLEEP** indicator will be solid.



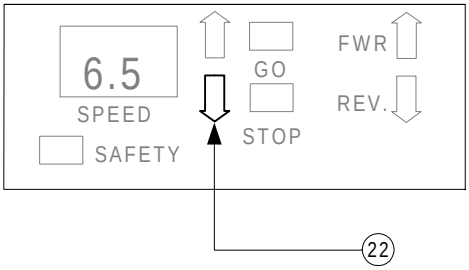
(20) SPEED DISPLAY : Displays the current speed setting of the laminator.



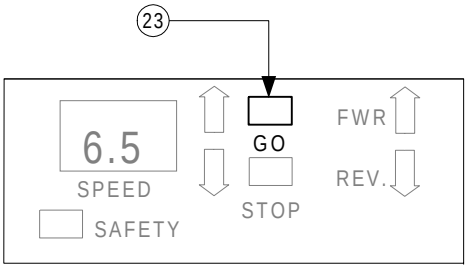
(21) SPEED ▲: When pressed, increases the speed of the laminator in increments of 0.5 ft/min. When pressed and held, speed will automatically increase by 0.5 ft/min increments until it has reached the maximum allowed speed of 15 ft/min.



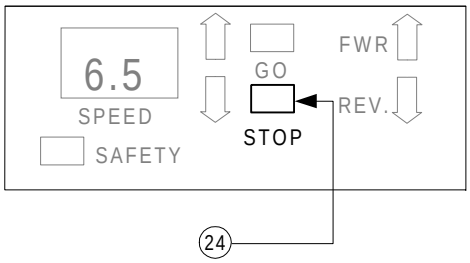
(22) SPEED ▼: When pressed, decreases the speed of the laminator in increments of 0.5 ft/min. When pressed and held, speed will automatically decrease by 0.5 ft/min increments until it has reached 0 ft/min.



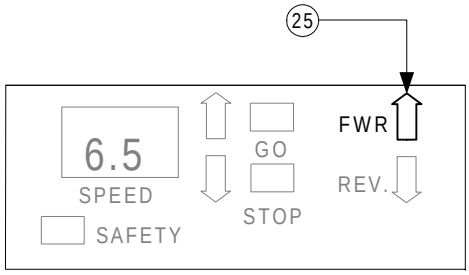
(23) GO: When pressed, starts the rollers in motion. **GO** is solid. This solid indication is referred to as the "panel mode". If a safety shield is raised during "panel mode", **GO** and **SAFETY** (refer to **(27) SAFETY** for explanation) begin flashing enabling "footswitch" mode. (refer to **(28) FOOTSWITCH** for explanation)



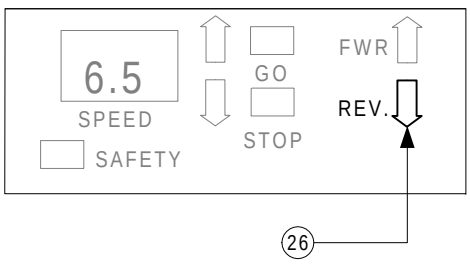
(24) STOP : When pressed, stops the rollers and **GO** becomes white.



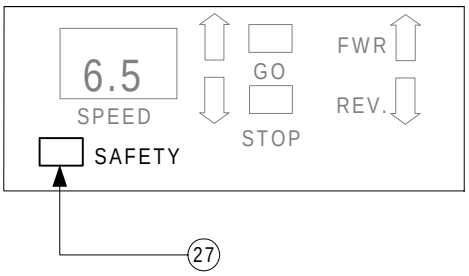
(25) FORWARD ▲ : When pressed, signals the laminator to run in a forward motion and **FORWARD ▲** becomes solid.



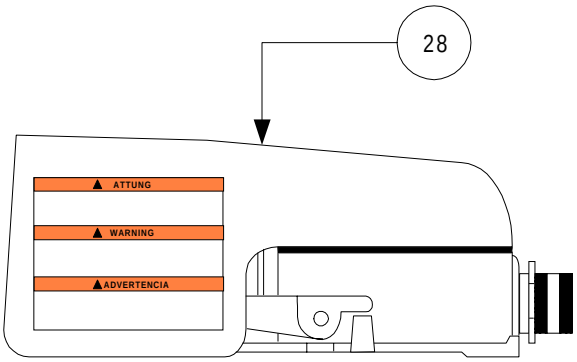
(26) REVERSE ▼ : When pressed, signals the laminator to run in a reverse motion and **REVERSE ▼** becomes solid.



(27) SAFETY : Begins flashing anytime the front or the rear safety shield is in the raised position. This is an indication for the operator to be very careful when operating the laminator in the “Footswitch” mode.



(28) Variable Speed Footswitch : The variable speed footswitch, operates the laminator in “Footswitch” mode. Within this mode, if the safety shield is up, speed is determined by the variable speed footswitch. If the safety shield is down, the speed is controlled through the control panel.



Panel to Footswitch

1. To switch from “Panel” mode (**GO** is solid) to “Footswitch” mode (**GO** is flashing) with the safety shields in the down position. Perform the following steps;

- Press on the variable speed footswitch. **GO** begins flashing identifying “Footswitch” mode.
- Once the variable speed footswitch is released, the rollers will stop.
- To make the rollers turn, simply press on the variable speed footswitch.

INFORMATION

When the safety shield is in the lowered position and "Footswitch" mode is engaged, speed is controlled through the control panel

Footswitch to Panel

2. To switch from “Footswitch” mode (**GO** is flashing) to “Panel” mode (**GO** is solid) with the safety shields in the down position. Perform the following steps;

• Press and hold the variable speed footswitch down.

• Press and hold **GO** for 3 -4 seconds before releasing the variable speed footswitch.

• Release the variable speed footswitch.

• Release **GO**. **GO** should be solid.

3. In the event that the safety shield must be raised while the laminator is running, Perform the following steps;

INFORMATION

If the variable speed footswitch is not close to the speed of the control panel, output quality may be affected by the speed difference.

To raise the safety shield

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

• Press and hold on the variable speed footswitch. (approximately 1/2 the travel distance of the variable speed footswitch)

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

• Raise the safety shield.

INFORMATION

When a safety shield is raised while pressing on the variable speed footswitch, the speed may be faster or slower than the indicated panel speed.

INFORMATION

When the safety shield is raised, the laminator will only run while the variable speed footswitch is depressed.

• Adjust for desired speed using the variable speed footswitch.

INFORMATION

Footswitch speed is not indicated in the SPEED DISPLAY on the control panel.

To lower the safety shield

• Lower the safety shield.

INFORMATION

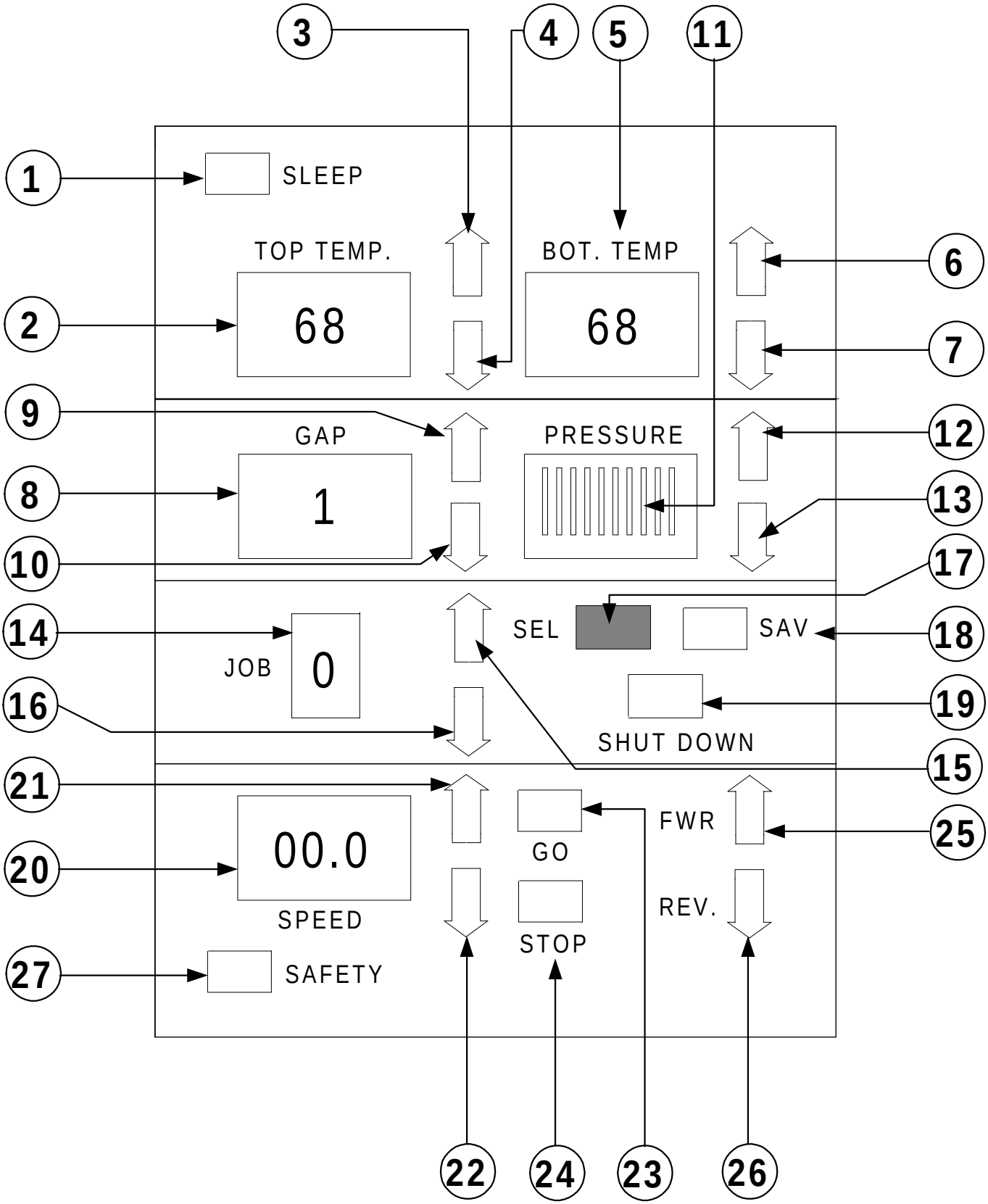
When the safety shield is lowered, speed reverts to the panel speed setting.

• Press and hold **GO** for 3 -4 seconds before releasing the variable speed footswitch.

• Release the variable speed footswitch.

• Release **GO**. **GO** reverts to solid.

Figure 5.1.1 Front control panel



5.2 Emergency

The F-160 laminator has been designed with safety as a primary consideration; however, you must become thoroughly familiar with the controls, proper operation, proper service procedures, and safety features of the laminator before using or servicing the unit.

GBC Pro - Tech laminators are powerful machines that are designed to mount, laminate, and encapsulate. The forces required to accomplish these tasks can vary from negligible to very large.

The motorized main roll lift mechanism used to provide downward pressure on the top roll is capable of producing forces greater than 400 pounds. This force is applied to any object presented in the opening (called the nip) between the two rolls.

Use care in lowering the top laminating roll and know how to react quickly in an emergency. The main laminator roll up down keys are located on the right side of the machine within the front control panel. These keys control the up / down (gap) motion of the top main laminating roller. Before pressing the down arrow key , ensure that nothing is in the nip area.

In addition, the main laminating rolls of the F-160 can reach temperatures over 200°F (93°C).

WARNING

At these temperatures there is a danger ofsevere burn if the rolls are touched duringsetup, operation or servicing.

Reacting to an emergency situation

a) In the event of an emergency, press one of the two **E-STOP** located on the top of the drive side and control side cabinets. The control panel display will go blank.

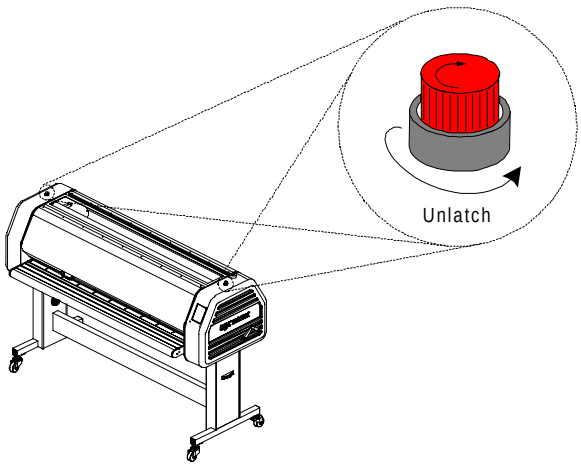
INFORMATION

When an EMERGENCY STOP is engaged, all motion stops. The nip will not change from the operating setting.

b) Resolve the emergency situation.

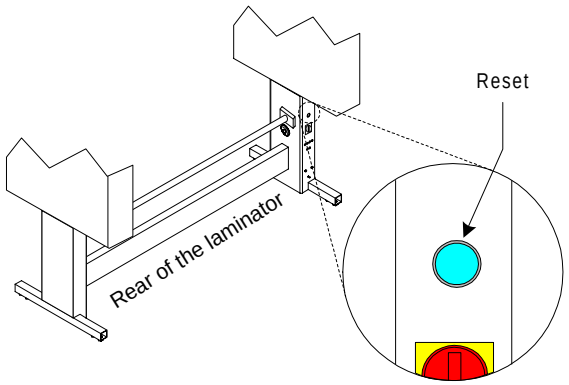
c) Reset the **E-STOP** by rotating 1/4 turn counter clockwise. The **E-STOP** will unlatch. Refer to **Figure 5.2.1**

Figure 5.2.1 Emergency stop



d) Press **RESET** at the rear of the machine on the drive side Please refer to **Figure 5.2.2**

Figure 5.2.2 RESET



INFORMATION

Once RESET has been engaged, power will be restored, Laminating rollers will reset to 1 in. GAP and the display will return to it's default settings.

Default mode; TOP TEMP. = 68 ºF (20 ºC), BOT. TEMP. = 68 oF (20 oC), GAP = 1 in., PRESSURE = no bars are solid, JOB = 0, no motion direction selected, SPEED = 00.0 and SLEEP = flashing

e) Enter the desired operating parameters or select the job number prior to the emergency stop situation.

f) You may now resume operating the laminator.

5.3 Set up

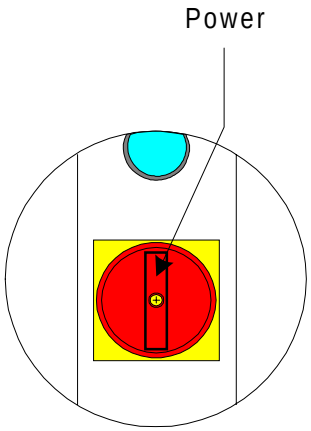
Initial set up of the Falcon 160 laminator is easily attained when instructions are followed exactly. It is suggested and helpful if you take the time to read this section thoroughly before attempting to do any of the steps.A complete understanding of this section will enable you to follow the procedures descibed in **Section 6.1 Application**.

5.3.1 Power

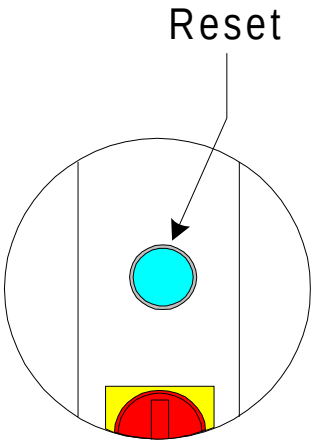
a) Clear the area around the laminating rollers and pull rollers nip..

b) Make sure the laminator is plugged in.

c) Turn the **MAIN POWER** to the "**ON**" position.



d) Press **RESET**. The front control panel will illuminated.



5.3.2 Film loading

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

a) Raise the rear safety shield if placing a roll of laminate onto the upper unwind shaft.

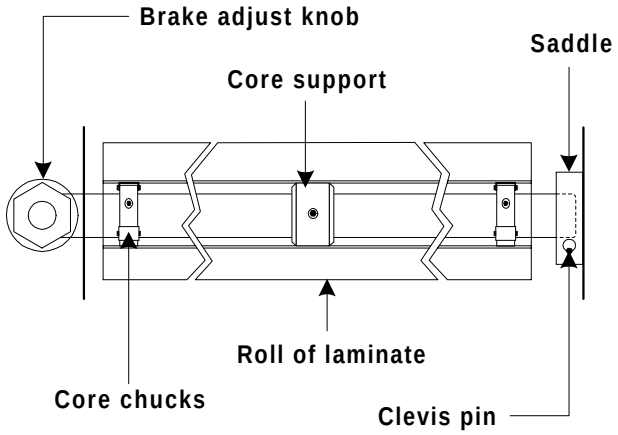
b) Lift the clevis pin located in the saddle of the upper unwind shaft.

c) Swing the unwind shaft out enough to slide the roll of laminate over the core chucks and onto the unwind shaft. Refer to **Figure 5.3.2**

INFORMATION

Twisting the roll of film while sliding makes loading the film onto the unwind shaft easier.

Figure 5.3.2 Unwind shaft



d) Onceloaded, swing the unwind shaft back into the saddle.

CAUTION

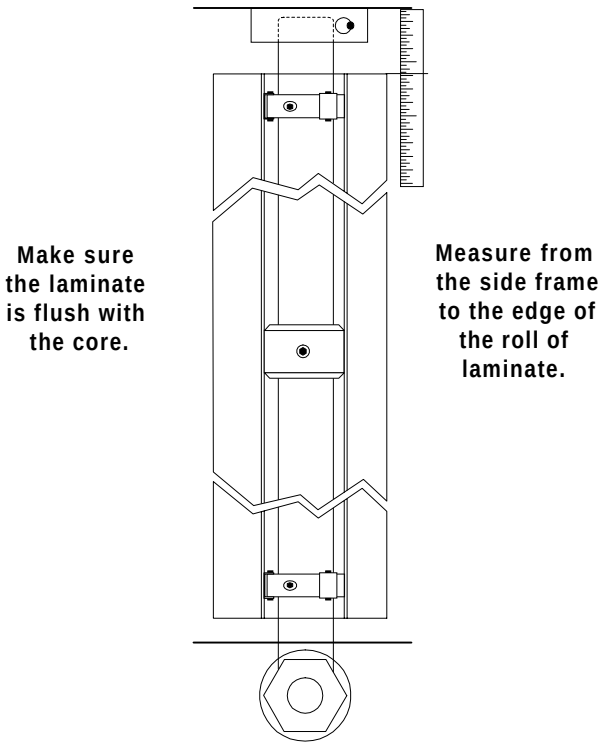
Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

e) Push the clevis pin back down to secure the unwind shaft its saddle.

f) Now you must center the roll of laminate on the unwind shaft. Refer to **Figure 5.3.3** for measurements. For centering measurements, refer to **Figure 5.5.4**.

g) For the lower unwind shaft, repeat steps “b” through “f” again.

Figure 5.3.3 Centering the roll



h) Close the rear safety shield when finished.

Figure 5.3.4 Measurement chart

Common film widths	
Film width	Measurement
12 "	28 "
24 "	22 "
31 "	18.5 "
37 "	15.5 "
38 "	15 "
41 "	13.5 "
47 "	10.5 "
49 "	9.5 "
51 "	8.5 "
55 "	6.5 "
58 "	5 "
60 "	4 "
62 "	3 "

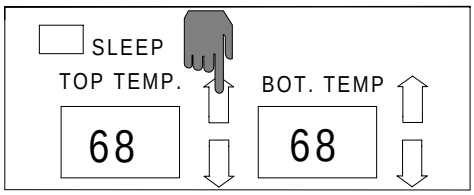
INFORMATION

For the lower unwind shaft, add 1/4 in. to the measurement.

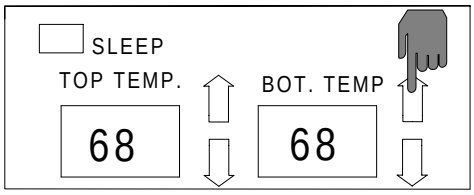
5.3.5 Heating

Perform the following steps.if the application requires heat. Allow the rolls to heat up while rotating for even heat disbursement.

a) Press **TOP TEMP.** ▲ to set your upper roller temperature.



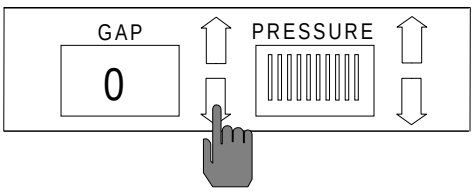
b) If required, press **BOT. TEMP.** ▲ to set your lower roller temperature.



INFORMATION

When requiring top and bottom heat, it is recommended to set both temperatures to the same set point.

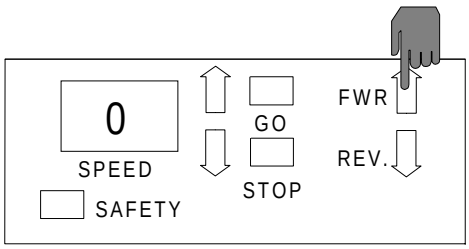
c) Press **GAP** ▼ to set the gap to "**0**".



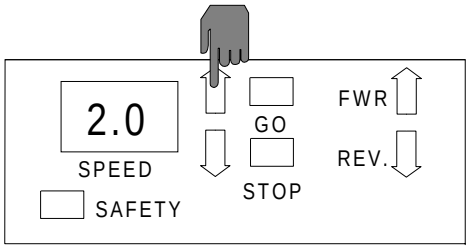
INFORMATION

Do not add PRESSURE when heating the laminating rollers, this allows the high release silicone to expand with minimum restrictions.

d) Press **FWD** ▲ to set a forward motion direction.



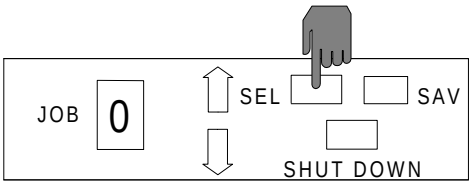
e) Press **SPEED** ▲ to set a speed of 2 ft/min (.61 m / min.).



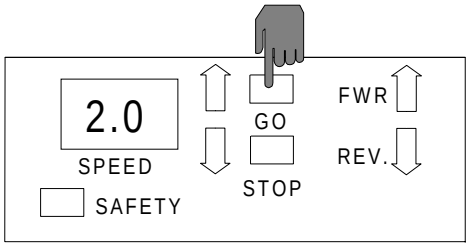
INFORMATION

Slow speed will assists with heat up times and distributes heat evenly.

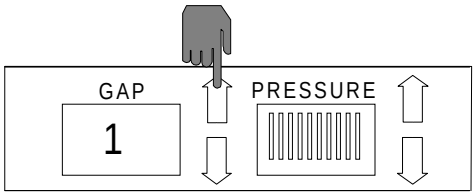
f) Press **SEL** to engage the parameters.



g) Press **GO** to engage the motor drive system.



h) When the rollers are close to it's set point value, the temperature displays stop flashing, press**STOP** and raise the gap to 1 in. by pressing **GAP ▲**



5.4 Job programming

The job save feature is very convenient if the same parameters are required to perform various applications. This procedure will guide you step by step through this feature.

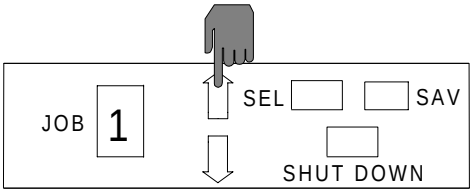
a) Follow the prcedure in **Section 5.3.1 Power**.

INFORMATION

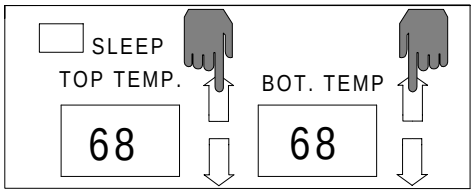
When the laminator is first turned on, the front control panel will go into the default mode.

Default mode; TOP TEMP. = 68 ºF (20 ºC), BOT. TEMP. = 68 oF (20 oC), GAP = 1 in., PRESSURE = no bars are solid, JOB = 0, no motion direction selected, SPEED = 00.0 and SLEEP = flashing

b) Press **JOB ▲** to enter the desired job number for the parameters you require to be stored.



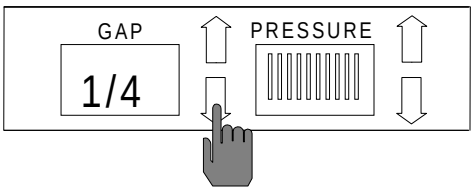
c) If heat is required, press **TOP TEMP.** ▲ and **BOT. TEMP.** ▲ to desired settings. If no heat is required, leave the settings at 68 °F (20 °C).



WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

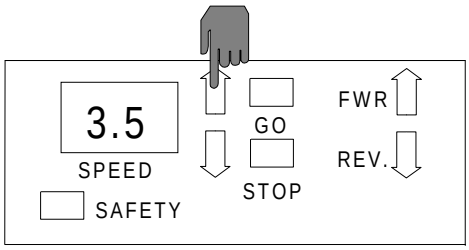
d) Enter in the **GAP** setting desired by pressing **GAP** ▼.



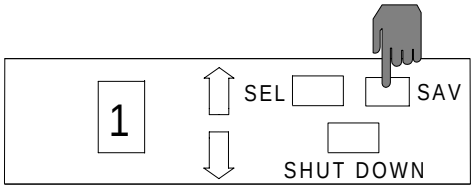
INFORMATION

When storing parameters within the JOB SAVE feature of the laminator, PRESSURE is not a storable setting.

e) Enter a desired speed by pressing **SPEED** ▲.



f) Press **SAVE** to store the parameters in the job location selected.



h) Repeat steps "**b**" through "**f**" to save other parameters in job location numbers.

CAUTION

If you accidentally press SAVE at any time, the old parameters will be replaced with the new parameters.

INFORMATION

You should store each job location with its parameters on the chart provided in Figure 5.4.1

Figure 5.4.1 Job save chart

JOB #	TOP TEMP.	BOT. TEMP.	GAP	SPEED
1				
2				
3				
4				
5				
6				
7				
8				
9				

5.5 Manual nip adjustment

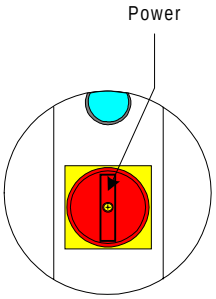
If the substrate does not fall with in the preset **GAP** settings available, a manual nip setting must be performed.

If you are unsure of a substrate thickness, it is recommended that you use the manual nip setting procedure.

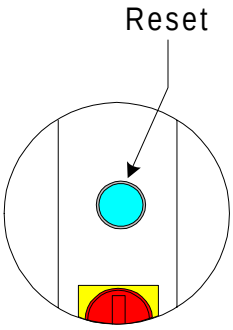
If you are performing a mounting application from the rear of the machine, the pull rollers must be set manually. Refer to **Section 5.5.2 Pull roller nip adjustment procedure**.

5.5.1 Main roller manual nip adjustment

a) Turn the **MAIN POWER** to the "**ON**" position.



b) Press **RESET**. The front control panel will illuminated.

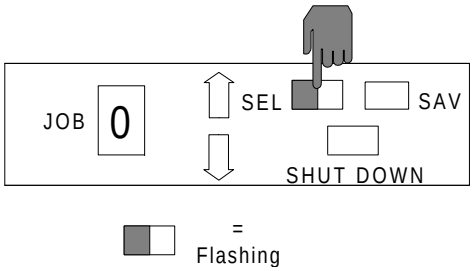


WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

c) Raise the front safety shield.

d) Press **SEL.**



e) Position the leader board in the center of the main rollers between the nip.

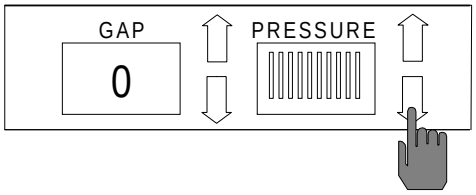
CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

f) At eye level with the main rollers, press **PRESSURE ▼** until you see the upper main roller make contact with the substrate.



CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

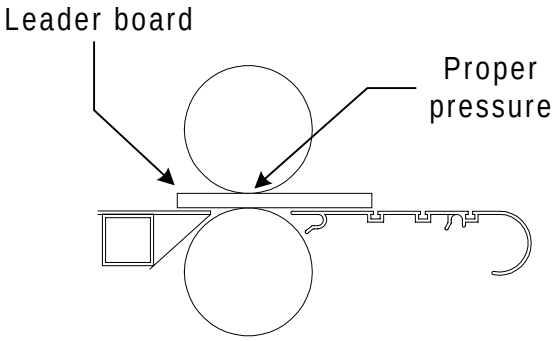
INFORMATION

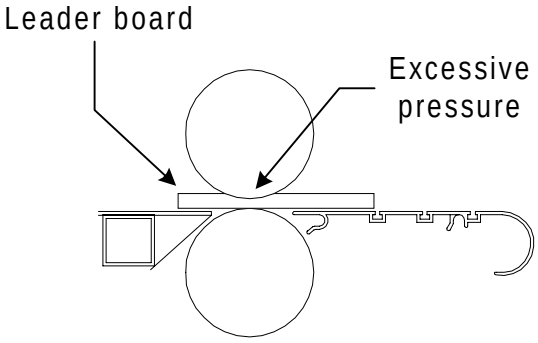
Density of the substrate will determine the amount of pressure you may use.

INFORMATION

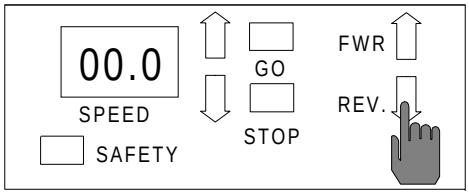
Refer to Figure 5.5.1 for proper roller pressure.

Figure 5.5.1 Main roller pressure





g) Press **REV ▼** for a reverse motor direction.



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

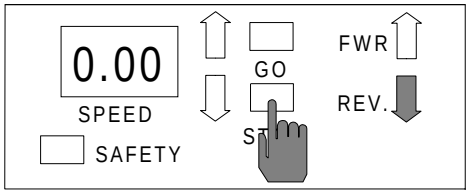
h) Step on the variable speed footswitch to back the leader board out.

CAUTION

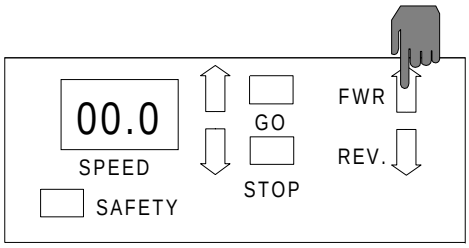
Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

i) The main roller nip has now been manually set.

j) Press **STOP.**



k) On the control panel press **FWD ▲** for a forward motor direction.



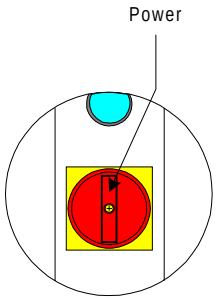
k) You may now begin mounting from the front operating position.

5.5.2 Pull roller manual nip adjustment

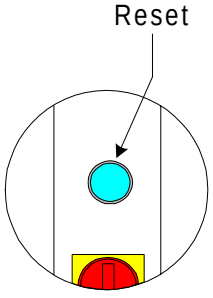
INFORMATION

If the main laminating rollers are heated, mounting application may be run from the rear operating position of the machine.

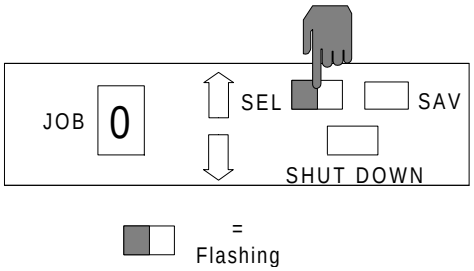
a) Turn the **MAIN POWER** to the "**ON**" position.



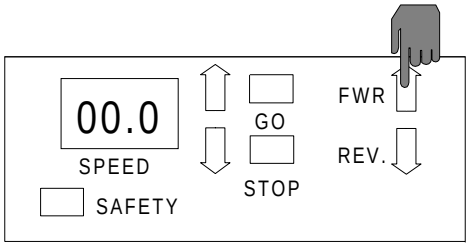
b) Press **RESET**. The front control panel will illuminated.



c) Press **SEL.**



d) Press **FWD ▲** for a forward motor direction.



e) Bring the footswitch around to the rear of the laminator.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

f) Raise the rear safety shield.

g) Position the leader board in the center of the pull rollers between the nip.

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

INFORMATION

Density of the substrate will determine the amount of pressure you may use.

g) At eye level with the pull rollers, turn the pull roll crank handle clockwise until you see the upper pull roller make contact with the substrate.

INFORMATION

Refer to Figure 5.5.2 for proper roller pressure.

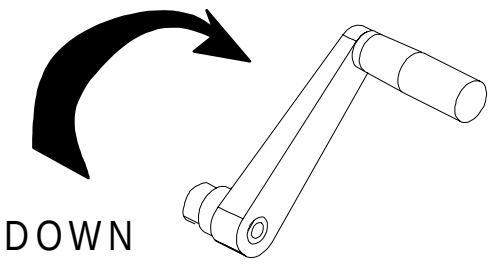
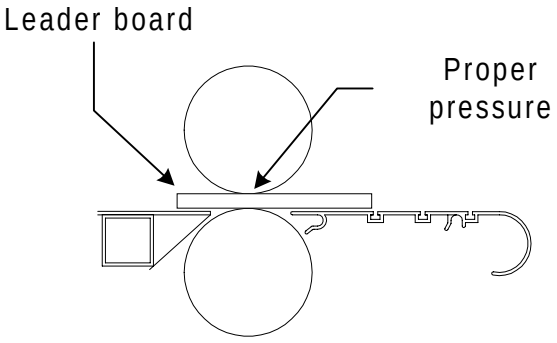
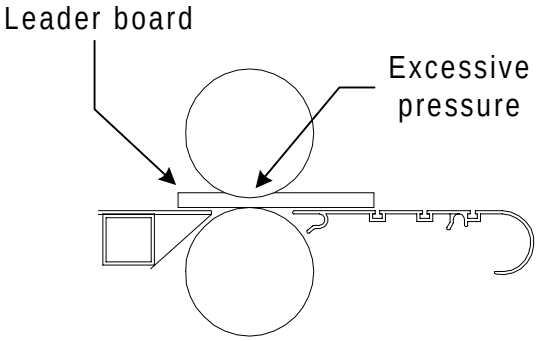


Figure 5.5.2 Pull roller pressure





WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

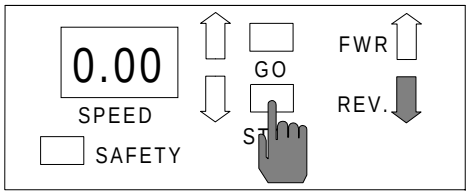
g) Step on the variable speed footswitch to back the leader board out.

CAUTION

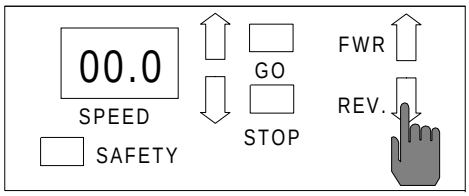
Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

h) The pull roller nip has now been manually set.

i) Press **STOP.**



j) Press **REV ▼** for a reverse motor direction.



k) You may now begin mounting from the rear operating position.

5.6 Infeed tables

These tables are part of the Falcon 160 safety features. It is neccessary to have the two infeed tables properly positioned before running the laminator.

CAUTION

If not installed properly, you can be injured or cause damage to the table or laminator.

5.6.1 Removing the table

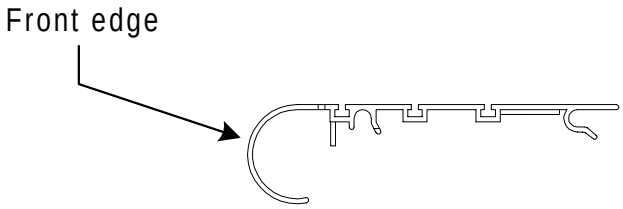
WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

a) Raise the safety shield.

b) With both hands, grip the front edge of the infeed table and lift up and then out. Refer to **Figure 5.6.1**

Figure 5.6.1 Front edge

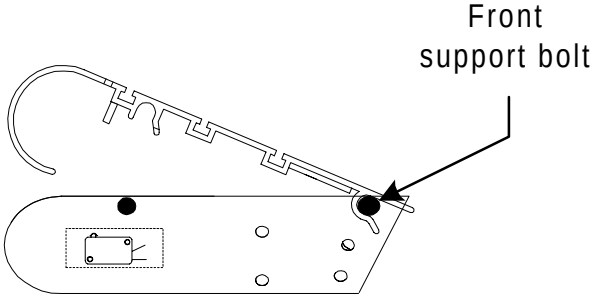


5.6.2 Replacing the infeed table

a) Ensure the safety shiled is in the raised position.

b) With both hands, grip the front edge of the infeed table and align the back edge with the support bolts. Refer to **Figure 5.6.2**

Figure 5.6.2 Back edge

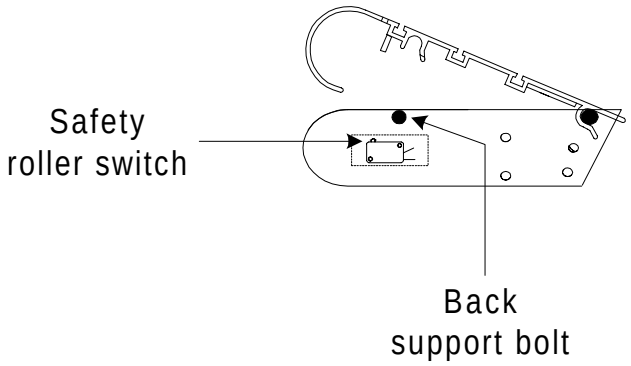


c) Now lower the front edge while ensuring that the pin aligns with the safety roller switch and the back support bolt. Refer to **Figure 5.6.3**

INFORMATION

If the tables are not properly seated, the laminator will not operate in "Panel" mode.

Figure 5.6.3 Safety roller switch



Section 6 Applications

To assist you with a variety of web ups, please refer to the process control charts and diagrams.

Process control charts allow you to record the way you thread film through the machine's rollers (called webbing) and the control settings for each application with regards to your products.

This section contains a blank process control chart and diagram for the Falcon 160 as well as completed charts and diagrams for the basic operations of the laminator. It is recommended that you make copies of the blanks and fill them in as needed.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

The procedures and parameters described in this section are reference points only. Parameters will vary with regards to laminate thickness, laminate widths, laminate types, print types, ink or toner types, environment conditions, operator experience and various substrates.

Group 1 : No heat

No heat applications do not require heat to activate the adhesive.

6.1 Precoating substrates

This application may be performed from the front of the laminator using the main rollers or from the rear of the laminator using the pull rollers in the event the main rollers are heated. This application is explained in detail using the main rollers at the front operating position of the laminator. Use **Chart 1** and **Diagram 1** for assistance.

Materials needed

- Roll of Pro Mount or Premium Mount adhesive (or comparable material)
- Substrates to precoat (Foamcore, Gator Board, etc....)
- Leader board
- Trailer board
- Second person
- Utility knife
- Cutting blade with an enclosed casing.

INFORMATION

The mount adhesive must not exceed 1 in. the width of the substrate. If it does, you may experience complications with this application.

Set up

a) Cut two leader boards 6 inch in length of the material you are about to precoat.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

b) Place these two pieces by the laminator for future use.

INFORMATION

The two pieces cut in step "a" will be used as the leader board and trailer board. These two pieces can be saved and reused for other applications.

c) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.1.1**

d) Press **RESET**. Refer to **Figure 6.1.1**

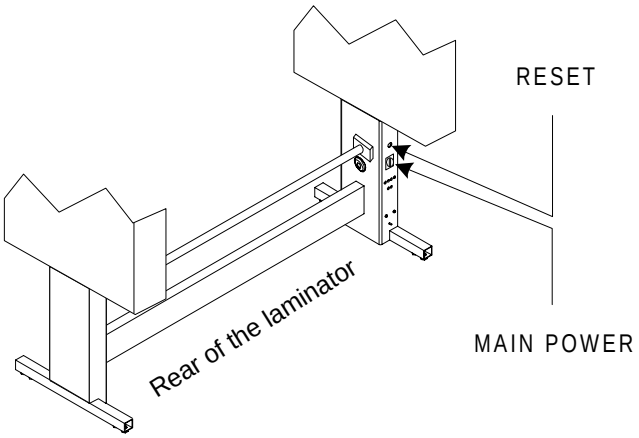
e) Be sure the front and rear tables are in position and the pull rollers are in the up position.

f) Raise the rear safety shield.

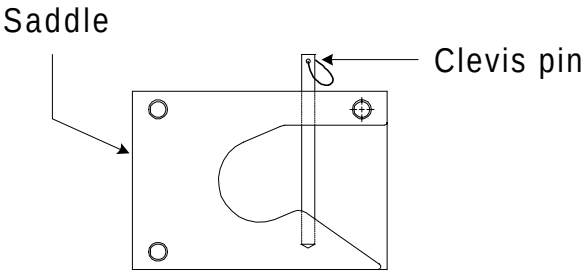
WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

Figure 6.1.1 MAIN POWER / RESET



g) Lift the clevis pin located in the saddle of the upper unwind shaft.

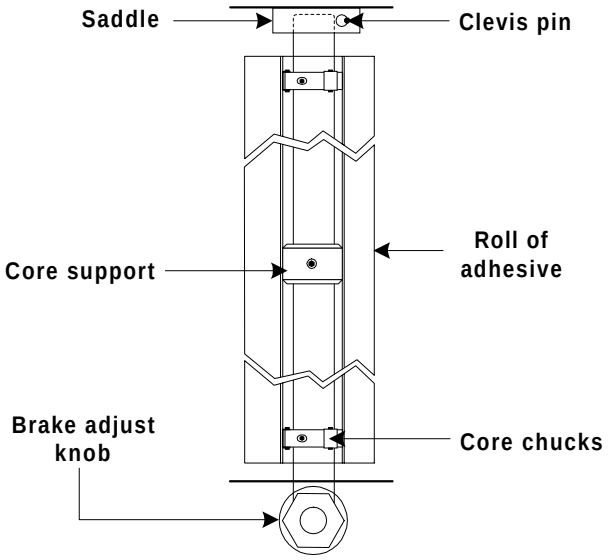


h) Swing the upper unwind shaft out enough to slide the roll of mount adhesive over the core chucks and onto the upper unwind shaft. Refer to **Figure 6.1.2**.

INFORMATION

Twisting the roll of laminate while sliding makes loading the film onto the unwind shaft easier.

Figure 6.1.2 Unwind shaft



WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

INFORMATION

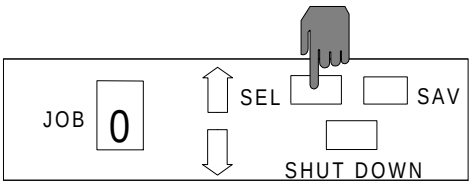
If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *o*", other wise continue with step " *l*".

i) Once loaded, swing the upper unwind shaft back into the saddle.

l) Press **SEL**. **SEL** will stop flashing.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!



j) Push the clevis pin back down to secure the unwind shaft in its saddle.

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can CRUSHED or BURNED!

k) Raise the front safety shield.

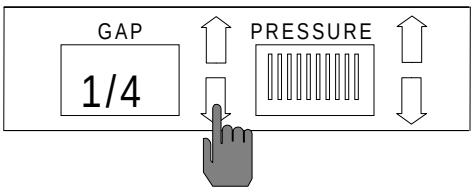
CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

m) Press **GAP ▼** to the required gap setting for the substrate being used. The **GAP DISPLAY** should reflect your desired setting.



o) Press on the variable speed footswitch while guiding the leader board into the nip to confirm that the board is secure.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

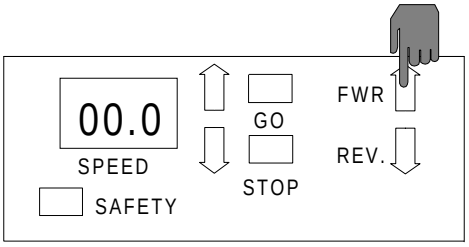
INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.1 Manual nip adjustment.

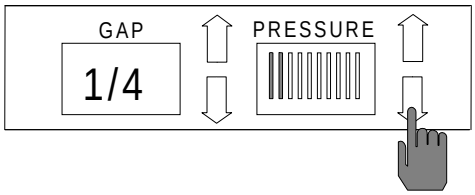
WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

n) Press **FWD ▲**.



p) If the board is loose, press **PRESSURE ▼** to adjust the gap between the main rollers.



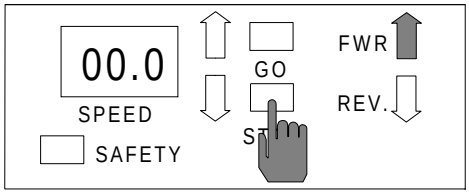
INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

q) Press **STOP**.

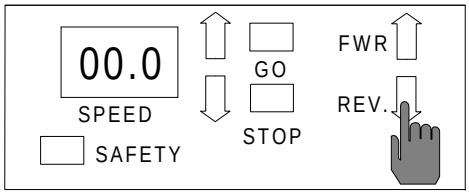


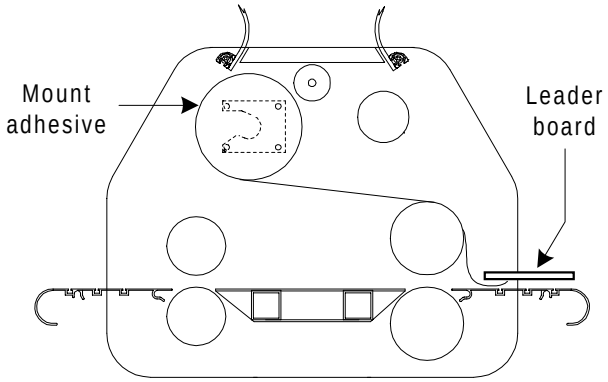
Process

a) Pull the roll of mount adhesive straight down toward the front infeed table so that approximately 6 in. is resting on the front infeed table. Refer to Figure **6.1.3**

r) Press **REV ▼** to reverse the direction of the motor.

Figure 6.1.3 Leader board





WARNING

When operating the laminator through the variable speed footswitch, keep your hands away from the nip of the rollers. You may be crushed or burned.

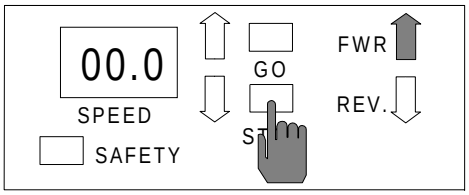
b) Position the leader board so that half is adhered to the mount adhesive. Refer to **Figure 6.1.3**

INFORMATION

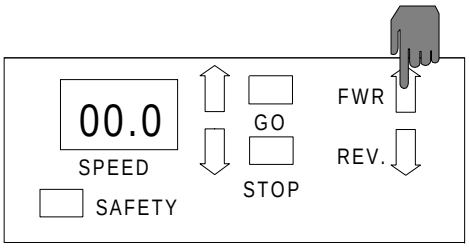
Position the leader board squarely onto the mount adhesive.

s) Press on the variable speed footswitch to back the board out of the main rollers.

c) Press **STOP**.



d) Press **FWD ▲**.



INFORMATION

Steps "*e*" and "*f*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

e) Push the leader board into the main roller nip while stepping on the variable speed footswitch.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

f) Apply the minimum amount of brake tension on the roll of mount adhesive to prevent it from free spinning.

INFORMATION

Excessive tension will cause the substrate to bow.

g) Have the second person stand at the rear of the laminator.

INFORMATION

Steps "*h*" and "*i*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

INFORMATION

The 1/2 in. gap between boards will allow for easier separation of the boards by the second person.

h) With the stack of substrates within reach of the first person, step on the variable speed footswitch while sliding one board in after the leader board with a 1/2 in. gap between the two. Refer to **Figure 6.1.4**

WARNING

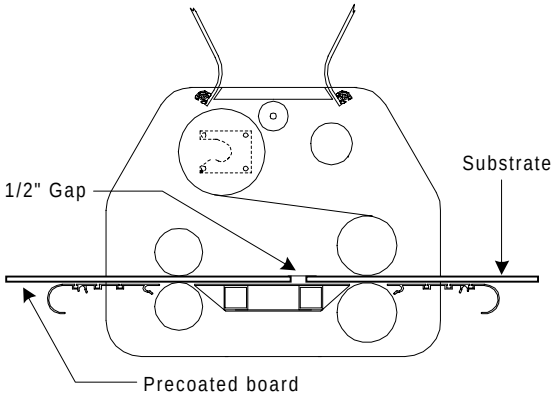
Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

i) The person at the rear of the laminator will guide and lower the upper pull roller onto the leader board as it passes through the nip opening.

Figure 6.1.4 (1/2 in.) Gap



INFORMATION

Do not lower the pull roller so that the substrate is crushed when passing through. This will prevent the boards from bowing.

j) As the boards come through, the person at the rear of the machine will use the utility knife to separate the boards.

CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

CAUTION

Caution should always be exercised when using a utility knife near the rollers. You can put cuts into the rollers!

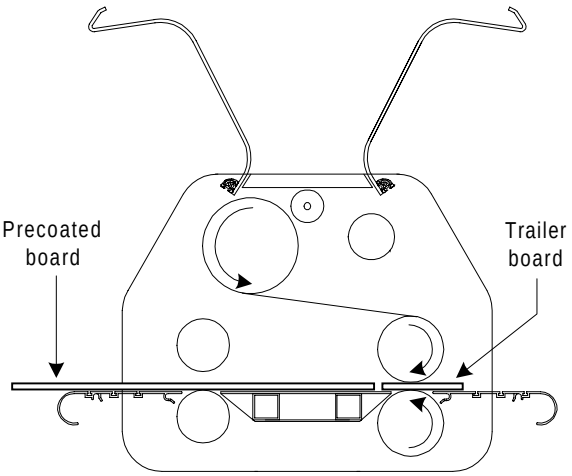
k) Inform the second person of the last board to be precoated before feeding the trailer board into the main roller nip. Refer to **Figure 6.1.5**

INFORMATION

Before stopping the rollers, position the pull rollers up. This will prevent an impression in the last pre-coated board.

l) The second person will raise the rear pull roller by turning the crank handle counterclockwise until separated.

Figure 6.1.5 Trailer board



m) Stop the laminator when the trailer board is in the main roller nip. Refer to **Figure 6.1.5**

INFORMATION

Do not stop in the middle of a board, an impression of the roller footprint will be evident on the board. This can cause a tunnel effect in the mounting process.

n) Trim any excess mount adhesive from the boards.

CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

Finishing

a) Cut the web of mount adhesive at the upper unwind shaft with an enclosed blade.

CAUTION

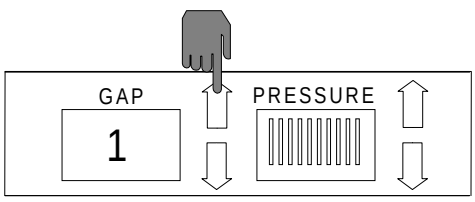
Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) Pull the precoated board and trailer board out from the laminator.

INFORMATION

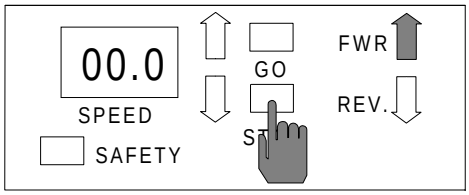
This will prevent any exposed adhesive from contacting the rollers.

c) Raise the main rollers to a 1 in. gap by pressing **GAP ▲**.



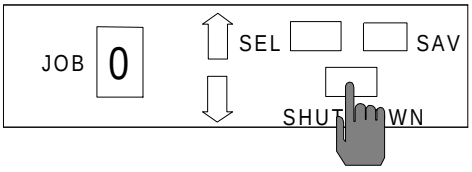
d) Remove the roll of material from the upper unwind shaft.

e) Press **STOP**.



f) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

g) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

6.2 Mounting only

This application may be performed from the front of the laminator using the main rollers or from the rear of the laminator using the pull rollers in the event the main rollers are heated. This application is explained in detail using the main rollers from the front of the laminator. Use **Chart 2** and **Diagram 2** for assistance.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Materials needed

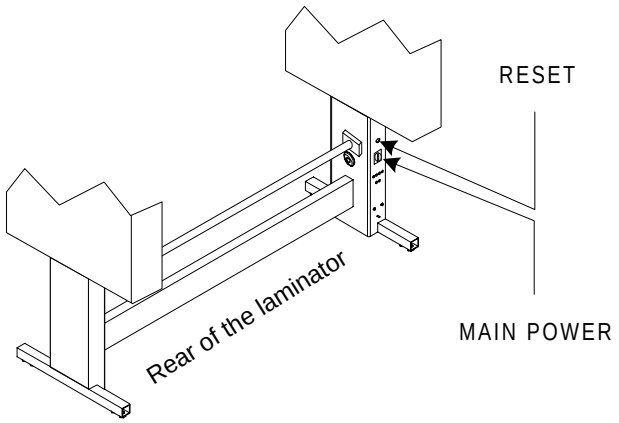
- Prints
- P.S.A. mount boards
- Utility knife
- Leader board

Set up

a) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.2.1**

b) Press **RESET**. Refer to **Figure 6.2.1**

Figure 6.2.1 MAIN POWER / RESET



c) Be sure the front and rear tables are in position and the rear pull rollers are in the up position.

d) Raise the front and rear safety shields.

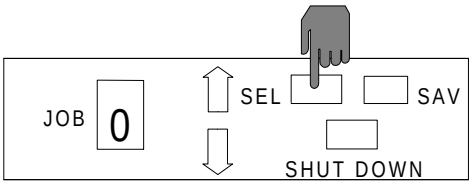
WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *h*", other wise continue with step " *e*".

e) Press **SEL**. **SEL** will stop flashing.



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

WARNING

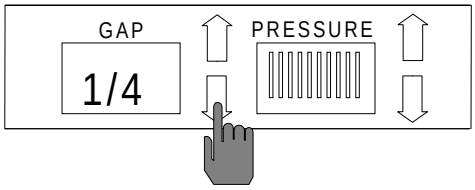
Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

h) Press on the variable speed footswitch while guiding the leader board into the nip to confirm that the board is secure.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

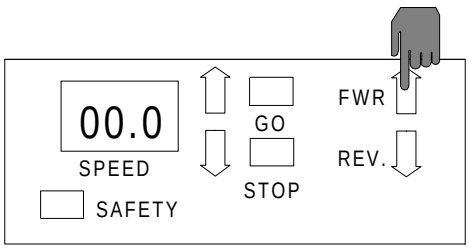
f) Press **GAP ▼** to the required gap setting for the substrate being used. The **GAP DISPLAY** should reflect your desired setting.



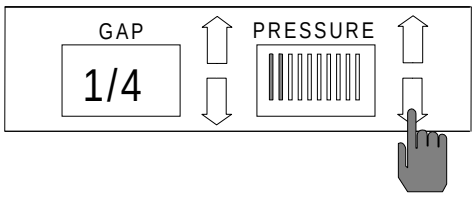
WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

g) Press **FWD ▲**.



i) If the board is loose, press **PRESSURE ▼** to adjust the gap between the main rollers.



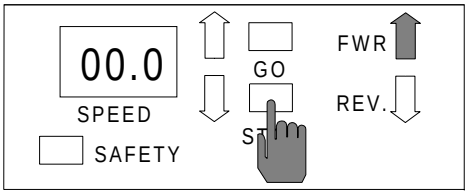
CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

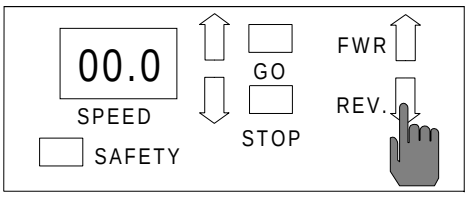
INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

j) Press **STOP**.



k) Press **REV ▼** to reverse the direction of the motor.



WARNING

When operating the laminator through the variable speed footswitch, keep your hands away from the nip of the rollers. You may be crushed or burned.

l) Press on the variable speed footswitch to back the board out of the main rollers.

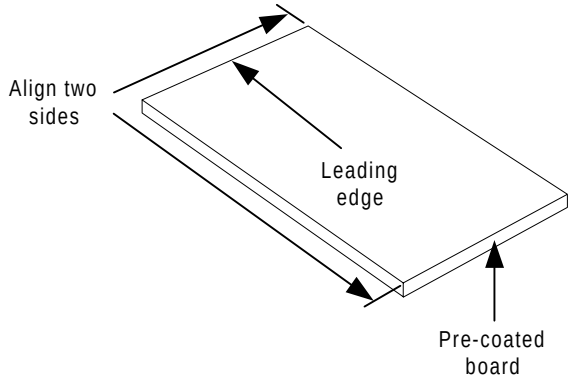
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Process

a) Align the leading edge of the image with the leading edge of the precoated board and one other side. Refer to **Figure 6.2.2**

Figure 6.2.2 Align edges



INFORMATION

The leading edge is the first part of the board or image that enters the nip of the rollers.

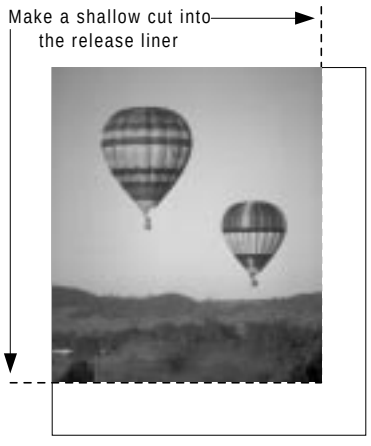
b) Place a padded paper weight or similar object in the center of the image to help hold the image in place.

- If the pre coated board is larger than the image, you must trim the board or make an incision in the release liner so that only the desired amount of release liner is removed. Refer to **Figure 6.2.3**

CAUTION

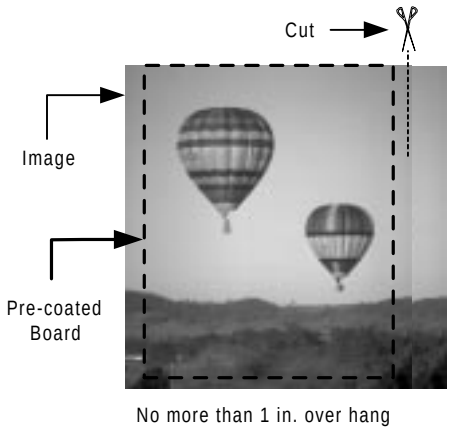
Caution should always be exercised when using a knife . Sharp knife can cut you!

Figure 6.2.3 Trim the release liner



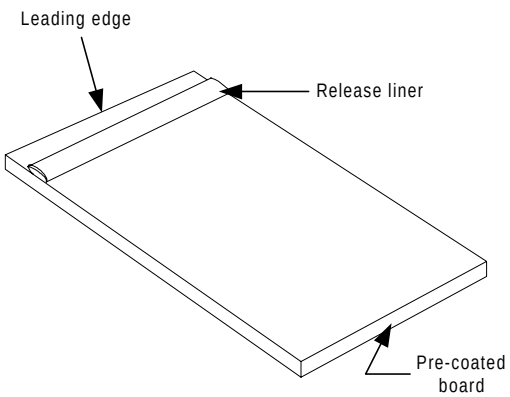
- If the image is larger , you must trim the image so that no more than 1 in. exceeds the precoated board all the way around. Refer to **Figure 6.2.4**

Figure 6.2.4 Trim the image



c) Peel back about 1 in. of the release liner from the precoated board and fold back. Refer to **Figure 6.2.5**

Figure 6.2.5 Peel back release liner

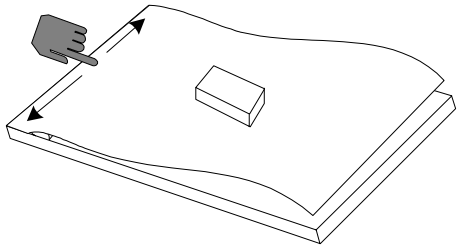


d) From the center, use one finger to tack down the leading edge of the image to the leading edge of the precoated board. Refer to **Figure 6.2.6**

INFORMATION

The leading edge is the first part of the board or image that enters the nip of the rollers.

Figure 6.2.6 Tack leading edge

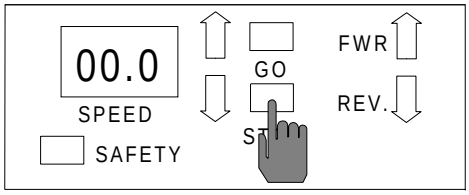


INFORMATION

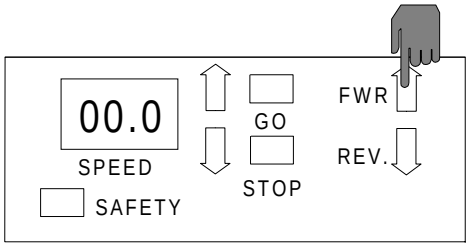
Avoid tacking at the ends first and pressing towards the center, you may create a tunnel once you have reached the center. This will make for a difficult mounting application.

e) Set the precoated board with the image tacked to it in the center of the front infeed table.

f) Press **STOP**.



g) Press **FWD ▲**.



h) Push the leading edge of the precoated board up to the nip of the main rolls.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

i) Using the variable speed footswitch, slowly work the precoated board into the nip of the rollers. Stop just before the end of the tacked down section of the image enters the nip.

INFORMATION

Use a slow speed. If the tack point enters the rollers nip, you will not be able to pull the release liner.

- If the tack point enters the rollers nip perform the following steps then continue with this procedure.

1) Press **STOP**

2) Press **REV ▼**

3) Press on the variable speed footswitch to back the tack point out of the rollers nip.

4) Press **STOP**

5) Press **FWD ▲**

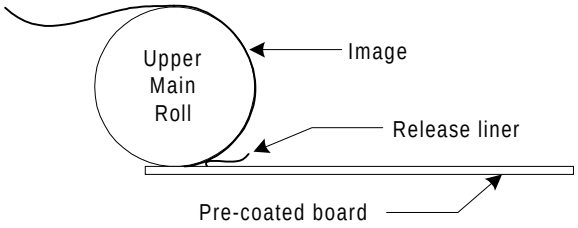
6) Continue from step **i)**.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

j) Drape the loose part of the image over the upper main roller. Refer to **Figure 6.2.7**

Figure 6.2.7 Draping the image

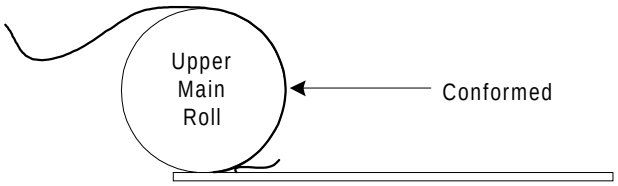


k) Make sure the image is conformed to the upper main roller. Refer to **Figure 6.2.8**

INFORMATION

If the image is not conformed to the roller, you may experience difficulties with this application.

Figure 6.2.8 Conformed print



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

- If it is not, slowly move the board into the nip until the image is conformed. Refer to **Figure 6.2.9**

CAUTION

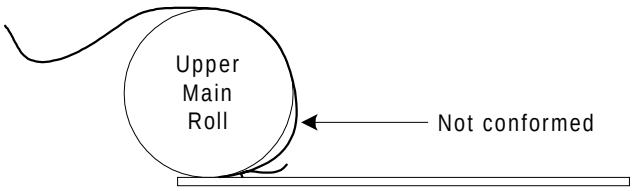
Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

l) Press down on the variable speed footswitch just enough to give yourself a comfortable work speed.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Figure 6.2.9 Non conformed print



WARNING

When the laminator rollers are in motion, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

INFORMATION

Steps "*l*" and "*m*" will be performed simultaneously.

m) Use one hand to pull the release liner off as the substrate moves towards the nip and the other hand to apply slight back tension to the decal.

n) Once the board and the image are completely through the main rolls, let off the variable speed footswitch.

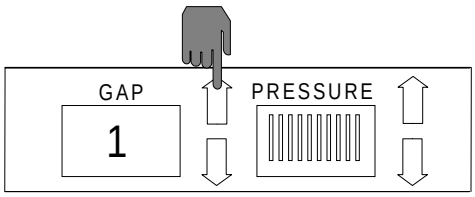
WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

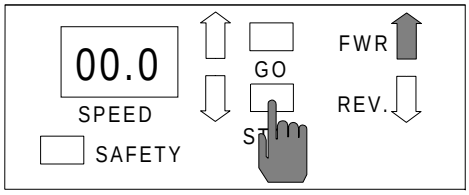
o) The mounted image can now be removed from the rear of the laminator.

Finishing

a) Raise the main rollers to a 1 in. gap by pressing **GAP ▲**.

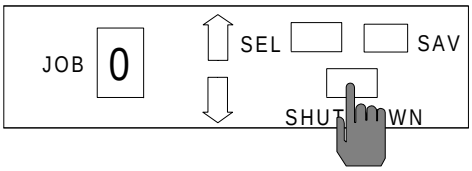


b) Press **STOP**.



c) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

d) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

6.3 Single sided lamination (Sled method)

This application may be performed from the front of the laminator using the main rollers or from the rear of the laminator using the pull rollers in the event the main rollers are heated. This application is explained in detail using the main rollers from the front of the laminator. Use **Chart 3** and **Diagram 3** for assistance.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Materials needed

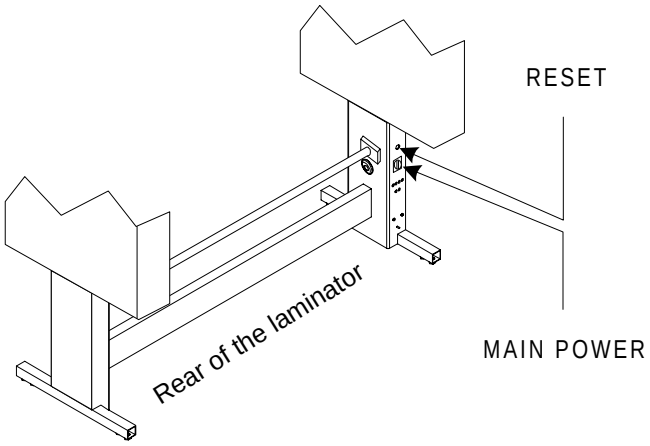
- Roll of pressure sensitive over laminate
- Precoated board (same width as laminate)
- Print (smaller than the precoated board)
- Roll of masking tape
- Utility knife
- Cutting blade with an enclosed casing.
- Leader board
  (same material as the precoated board)

Set up

a) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.3.1**

b) Press **RESET**. Refer to **Figure 6.3.1**

Figure 6.3.1 MAIN POWER / RESET



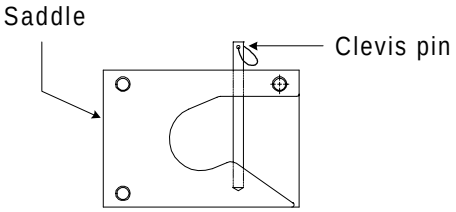
c) Ensure that the front and rear tables are in position and the rear pull rollers are in the up position..

d) Raise the rear safety shield.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Lift the clevis pin located in the saddle of the upper unwind shaft.

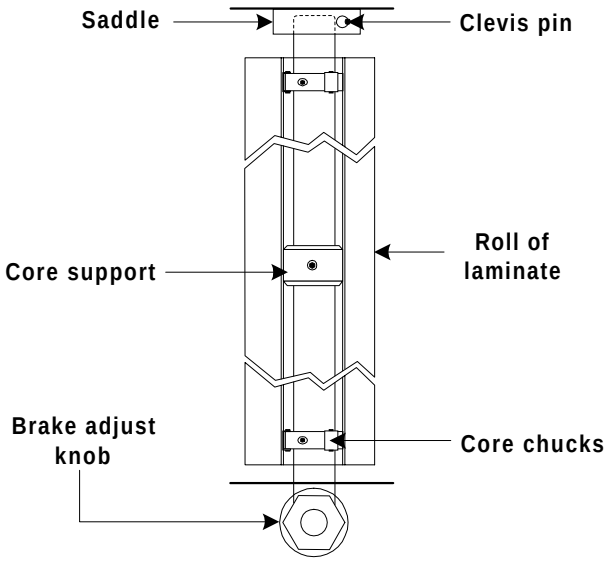


f) Swing the upper unwind shaft out enough to slide the roll of laminate over the core chucks on the upper unwind shaft. Refer to **Figure 6.3.2**

INFORMATION

Twisting the roll of laminate while sliding makes loading the film onto the unwind shaft easier.

Figure 6.3.2 Unwind shaft



g) Once loaded, swing the upper unwind shaft back into the saddle.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

h) Push the clevis pin back down to secure the unwind shaft in its saddle.

i) Raise the front safety shield.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

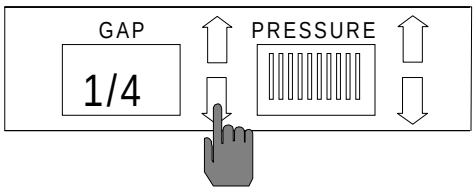
INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *m*", other wise continue with step " *j*".

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can CRUSHED or BURNED!

j) Press **GAP ▼** to the required gap setting for the substrate being used. The **GAP DISPLAY** should reflect your desired setting.



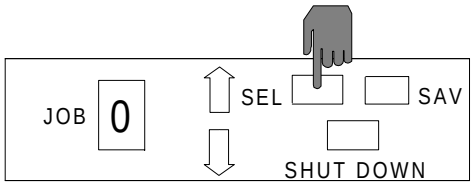
CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

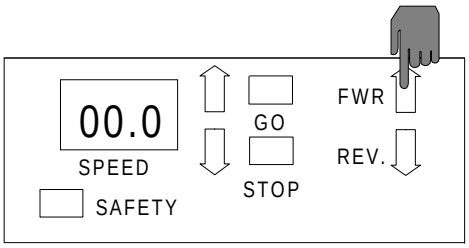
INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.1 Manual nip adjustment.

k) Press **SEL**.



l) Press **FWD ▲**.



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

m) Press on the variable speed footswitch while guiding the leader board into the nip to confirm that the board is secure.

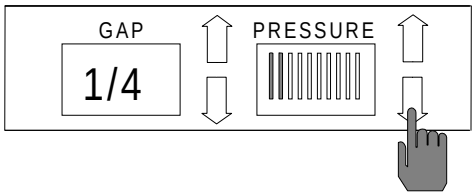
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can CRUSHED or BURNED!

n) If the board is loose, press **PRESSURE ▼** to adjust the gap between the main rollers.



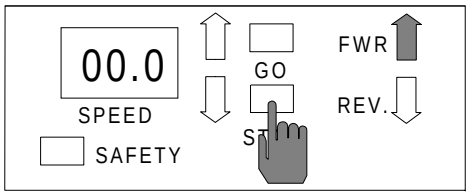
CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

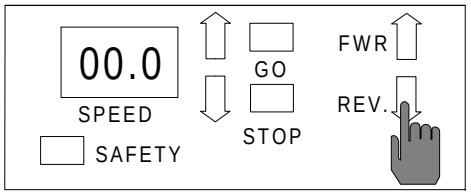
INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

o) Press **STOP**.



p) Press **REV ▼** to reverse the direction of the motor.



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

i) Press on the variable speed footswitch to back the leader board out of the main rollers.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

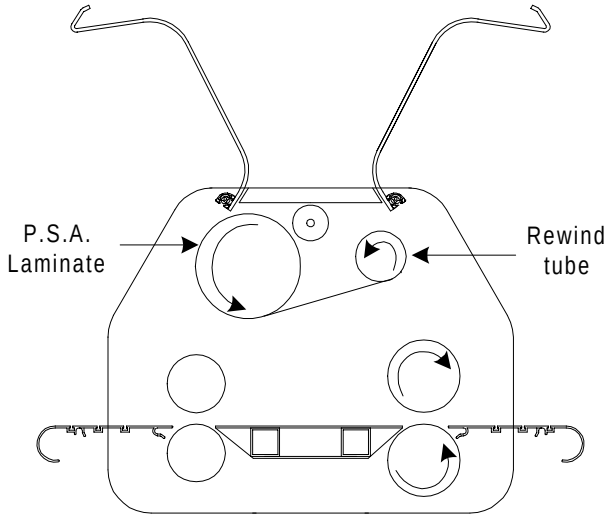
Process

a) Pull the laminate to the upper rewind tube. Refer to **Figure 6.3.3**

CAUTION

Make note of the rewind tube drive direction when taping the laminate. The laminate should separate under the rewind tube.

Figure 6.3.3 Laminate to rewind



b) Use a piece of masking tape, to adhere the leading edge of the laminate to the upper rewind tube.

c) Wrap one full turn of laminate onto the upper rewind tube.

INFORMATION

Do not cut too deeply into the laminate, you can cut into the release liner.

d) With the utility knife, make an incision across the width of the laminate.

CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

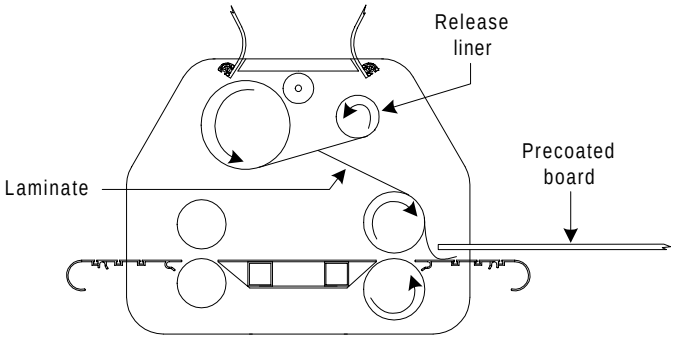
e) Pull the laminate straight down toward the front infeed table so that about 6 in. is resting on the front infeed table. Refer to **Figure 6.3.4**

f) Position the precoated board so that about 3 in. of the board is adhered to the laminate. Refer to **Figure 6.3.4**

INFORMATION

Position the leader board squarely onto the mount adhesive.

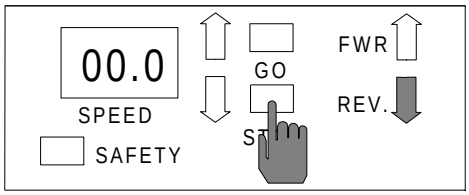
Figure 6.3.4 Laminate separation



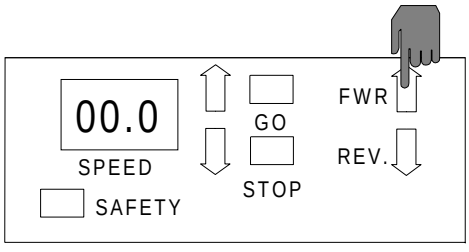
CAUTION

If the board is not squarely positioned, you may experience difficulties with this application.

g) Press **STOP**.



h) Press **FWD ▲**.



INFORMATION

Steps "*i*" and "*j*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

i) Push the leader board into the main roller nip while stepping on the variable speed footswitch.

CAUTION

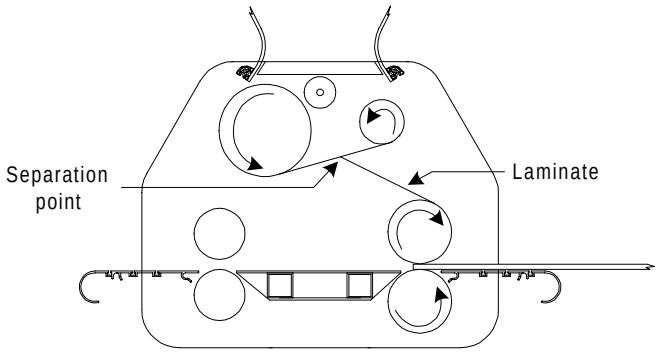
Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

j) Apply the minimum amount of brake tension on the roll of laminate to prevent it from free spinning. Refer to **Figure 6.3.5**

INFORMATION

Excessive brake tension may cause the image to curl when separated from the precoated board.

Figure 6.3.5 Separation point



k) Once you have the brake tension set and the laminate looks smooth entering the main roller, release the variable speed footswitch.

l) Now lay the image to be laminated on the precoated board.

INFORMATION

The laminate will not adhere to the release liner of the precoated board which makes the board reusable.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

m) Press on the variable speed footswitch.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

When the laminator rollers are in motion, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

n) Once the image passes through the main rollers, it is safe to release the variable speed footswitch.

INFORMATION

Stopping the rollers on the print will leave a pressure line on the image.

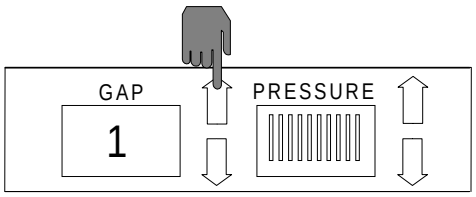
Finishing

a) Cut the web of laminate at the upper unwind shaft with an enclosed blade.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put irreparable cuts into the rollers.

b) Raise the main rolls to a 1 in. gap by pressing **GAP ▲**.

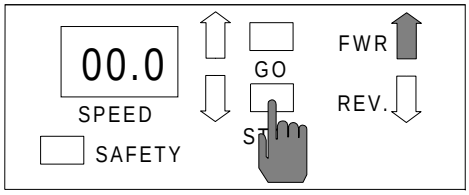


c) Pull the material out the front of the laminator.

INFORMATION

This will prevent any exposed adhesive from contacting the rollers.

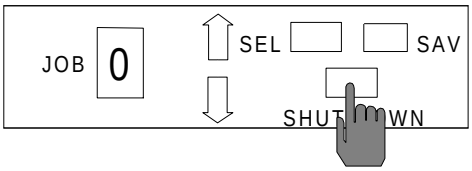
d) Press **STOP**.



e) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

f) Remove the roll of laminate from the upper unwind shaft and remove the release liner from the rewind tube.

g) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

6.4 Single sided lamination (Craft paper method)

This application may be performed from the front of the laminator using the main rollers or from the rear of the laminator using the pull rollers in the event the main rollers are heated. This application is explained in detail using the main rollers from the front of the laminator. Use **Chart 4** and **Diagram 4** for assistance.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Materials needed

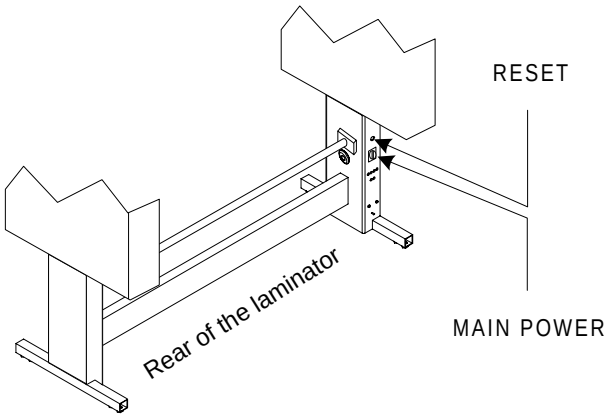
- Roll of pressure sensitive over laminate
- Roll of craft paper (same width as the laminate)
- Print (smaller than the laminate)
- Roll of masking tape
- Utility knife
- Cutting blade with an enclosed casing.
- Piece of cardboard (film width x 6 in.)

Set up

a) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.4.1**

b) Press **RESET**. Refer to **Figure 6.4.1**

Figure 6.4.1 MAIN POWER / RESET



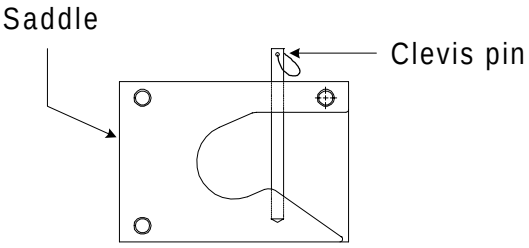
c) Ensure that the front and rear tables are in position and the rear pull rollers are in the up position..

d) Raise the rear safety shield.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Lift the clevis pin located in the saddle of the upper unwind shaft.

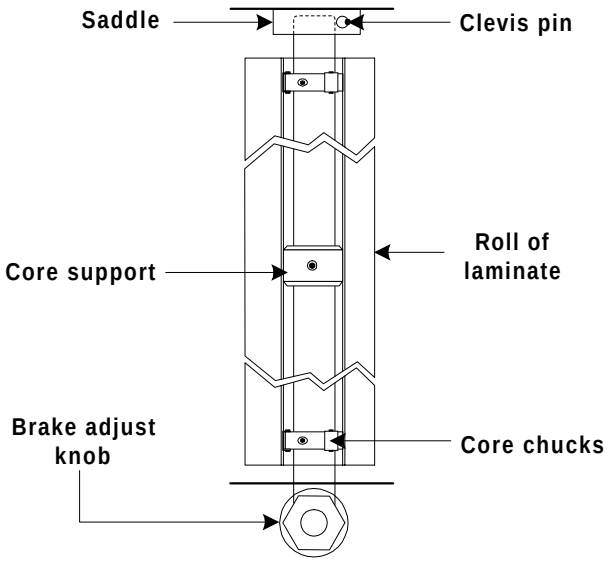


f) Swing the upper unwind shaft out enough to slide the roll of laminate over the core chucks on the upper unwind shaft. Refer to **Figure 6.3.2**

INFORMATION

Twisting the roll of laminate while sliding makes loading the film onto the unwind shaft easier.

Figure 6.3.2 Unwind shaft



g) Once the roll of laminate is on the upper unwind shaft, swing the upper unwind shaft back into the saddle.

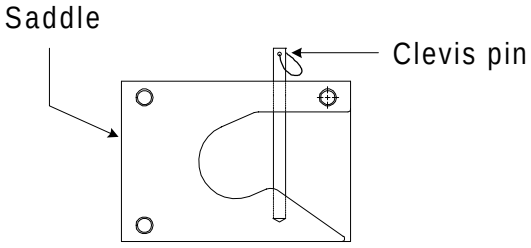
CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

h) Push the clevis pin back down to secure the unwind shaft in its saddle.

i) Leave the safety shield in the up position.

j) Lift the clevis pin located in the saddle of the lower unwind shaft.



k) Swing the lower unwind shaft out enough to slide the roll of craft paper over the core chucks on the lower unwind shaft. Refer to **Figure 6.4.2**

INFORMATION

Twisting the roll of craft paper while sliding makes loading the film onto the unwind shaft easier.

l) Once the roll of craft paper is on the lower unwind shaft, swing the lower unwind shaft back into the saddle.

INFORMATION

The roll of craft paper has no preference to side since both sides are the same.

m) Push the clevis pin back down to secure the unwind shaft in its saddle.

n) Center the upper roll and the lower roll of material on the unwind shafts. You may refer to your measurement chart in **Section 5.3.2 Loading film (Figure 5.3.4)**

INFORMATION

For the lower unwind shaft, add 1/4 in. to the measurement.

Process

a) Apply just enough brake tension to prevent the roll of laminate from free spinning.

INFORMATION

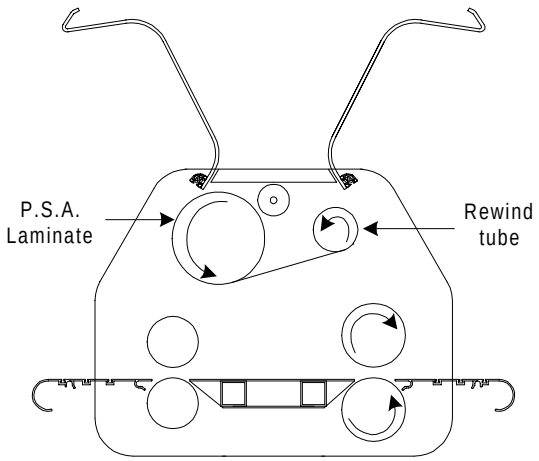
Excessive brake tension may cause the image to curl when separated from the craft paper.

b) Pull the laminate to the upper rewind tube. Refer to **Figure 6.4.3**

CAUTION

Make note of the rewind tube drive direction when taping the laminate. The laminate should separate under the rewind tube.

Figure 6.4.3 Laminate to rewind



c) Use a piece of masking tape, to adhere the leading edge of the laminate to the upper rewind tube.

d) Wrap one full turn of laminate onto the upper rewind tube.

CAUTION

Do not cut too deeply into the laminate, you can cut into the release liner.

e) With the utility knife, make an incision across the width of the laminate.

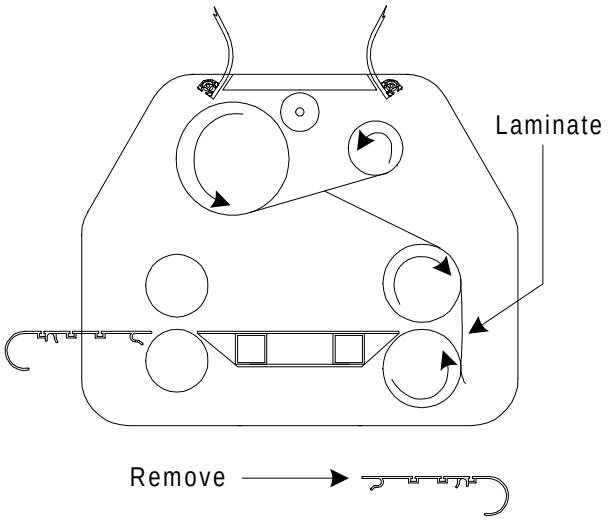
CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

f) Remove the front infeed table.

g) Pull the laminate straight down toward the front of the lower main roller. Refer to **Figure 6.4.4**

Figure 6.4.4 Laminate separation



h) Apply just enough brake tension to prevent the roll of craft paper from free spinning.

INFORMATION

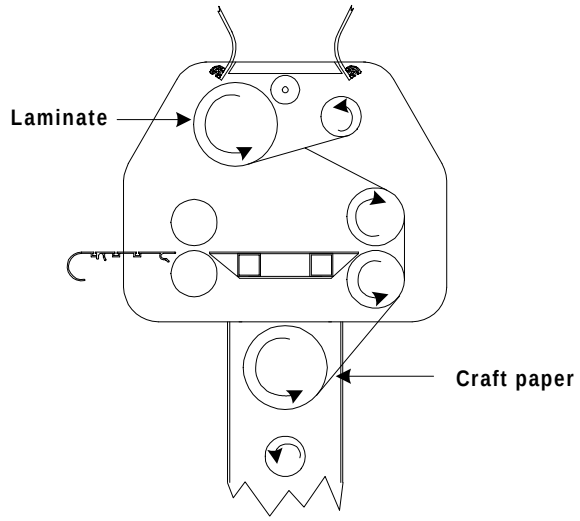
Excessive brake tension may cause the image to curl when separated from the craft paper.

i) Pull the craft paper up towards the upper main roller and tack it the laminate. Refer to **Figure 6.4.5**

INFORMATION

The craft paper will adhere to the exposed adhesive from the laminate.

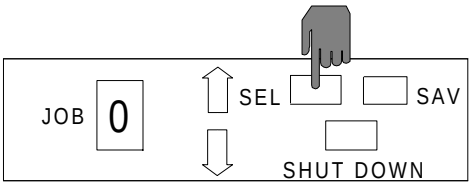
Figure 6.4.5 Craft paper



INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *m* ", other wise continue with step " *j* ".

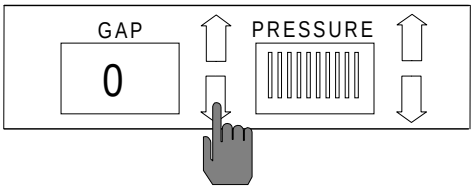
j) Press **SEL.**



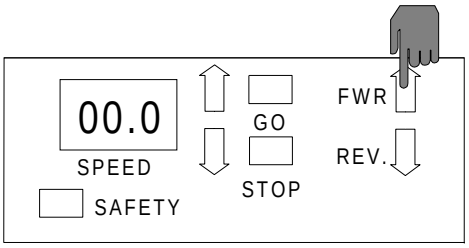
WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

k) Press **GAP ▼** to enter a 0 in. gap setting.



l) Press **FWD ▲**



INFORMATION

Steps "*m*" and "*n*" will be performed simultaneously.

m) Use a piece of cardboard to push the material into the nip of the main rollers.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

n) Press on the variable speed footswitch to guide the cardboard, craft paper and laminate through the main rollers.

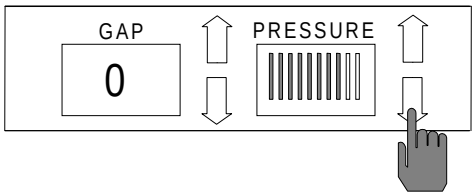
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

o) When the cardboard has travel pass the main rollers, press **PRESSURE ▼** to set a pressure of 60 - 80%.



CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

p) Once the cardboard has passed through the pull rollers, lower the upper pull roller onto the web. Turn the pull roll crank handle 3/4 turn clockwise after you feel the initial contact. Refer to **Figure 6.4.6**

INFORMATION

PRESSURE will vary with the thickness and width of the laminate you are using. Adjust as necessary.

q) Cut the cardboard from the webbed material. Refer to **Figure 6.4.6**

CAUTION

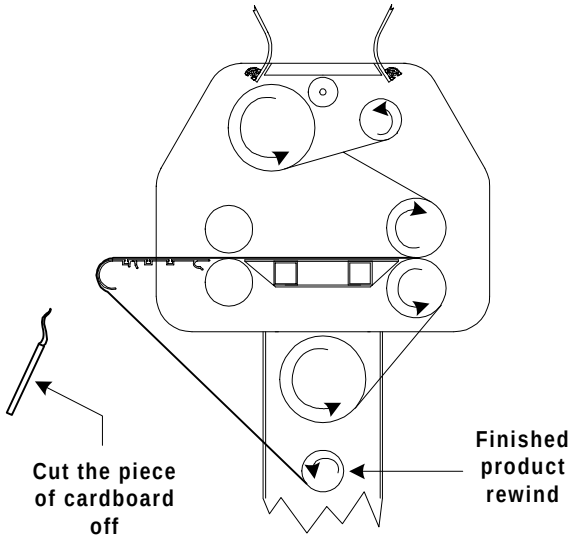
Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

r) Tape the web to the lower rewind tube or let the web run out to a work table. Refer to **Figure 6.4.6**

INFORMATION

If you choose to use the lower rewind tube, make note of the direction of travel.

Figure 6.4.6 Finish product rewind



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

- Press on the variable speed footswitch to lengthen the web enough to get one full wrap around the lower rewind tube.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

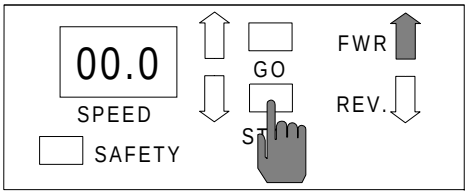
s) Replace the front infeed table. Ensure that the table is seated properly.

t) Close the front and rear safety shields.

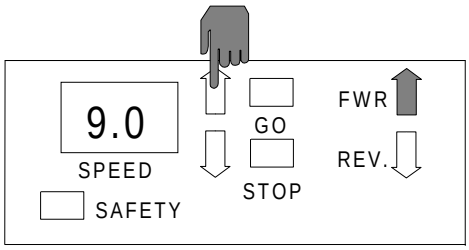
INFORMATION

The SAFETY indicator should not be flashing when the tables are properly seated and the safety shields are in the closed position..

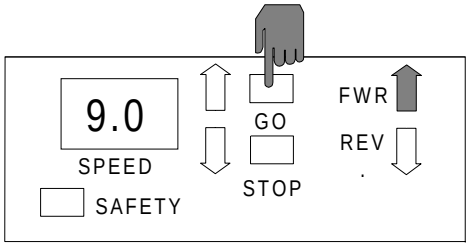
u) Press **STOP**.



v) Press **SPEED ▲** to a speed you feel comfortable working with. It is recommended that **SPEED** not exceed 9 ft./ min. (2.74 m/ min.) .



w) Press **GO**.

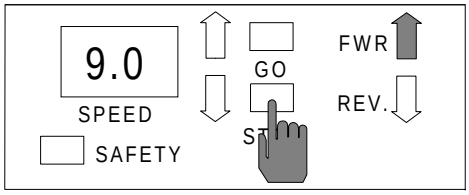


WARNING

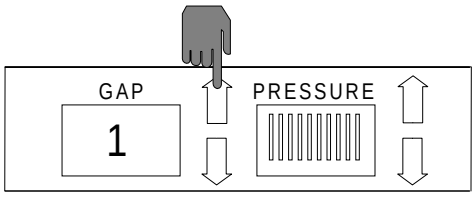
When the laminator rollers are in motion, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

x) Feed the images through the main rollers from the front operating position of the laminator.

y) After the last print has passed through the pull rollers, press **STOP**.



z) Press **GAP ▲** to a 1 in. setting.



Finishing

a) With an enclosed blade, cut the finished product from the web.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) The prints are now ready to be trimmed. When trimmed, the craft paper will fall away from the back of the print.

c) If you used the lower rewind, remove the rewind tube and bring it to a trimming station. Replace the rewind tube when finished.

d) Raise the front and rear safety shields to the up position.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Raise the pull roller up by turning the crank handle counter clockwise until the pull rollers are separated.

f) Remove the front infeed table.

g) Cut the web of laminate and craft paper at the upper and lower unwind shafts with an enclosed blade.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

h) Remove the web from the front of the laminator and the rolls of material from the upper and lower unwind shafts.

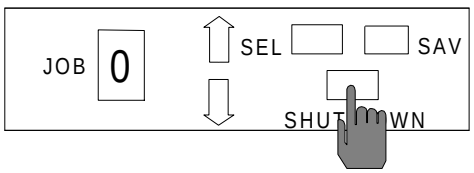
INFORMATION

This will prevent any exposed adhesive from contacting the rollers.

i) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

j) Replace the front infeed table.

k) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

6.5 Decal and mount

This application may be performed from the front of the laminator using the main rollers or from the rear of the laminator using the pull rollers in the event the main rollers are heated. This application is explained in detail using the main rollers from the front of the laminator.

This is a two pass mount and laminate process. Two pass meaning that the print will pass through the laminator twice. The first pass (Decal) will apply a mount adhesive to the back of the print while applying a laminate to the front of the print. Use **Chart 5** and **Diagram 5** for assistance. The second pass (Mount) will adhere the decal to a substrate. Use **Chart 6** and **Diagram 6** for assistance.

This application can be performed in various methods. The process described in this manual is the most common method.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Pass 1: Decal

Use **Chart 5** and **Diagram 5** for assistance.

Materials needed

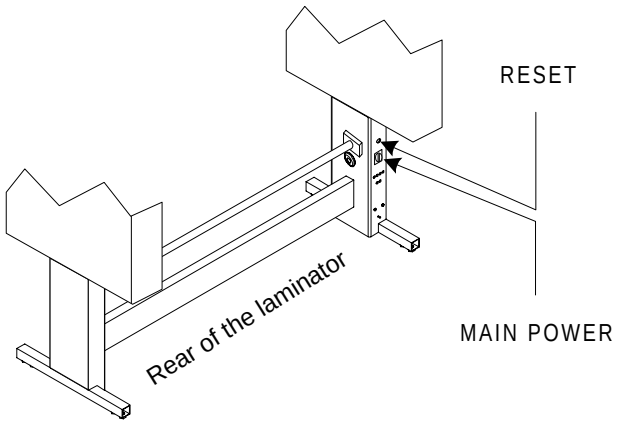
- Roll of pressure sensitive over laminate
- Roll of mount adhesive (same width as the laminate)
- Print (smaller than the laminate)
- Roll of masking tape
- Utility knife
- Cutting blade with an enclosed casing.
- Piece of cardboard (film width x 6")

Set up

a) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.5.1**

b) Press **RESET**. Refer to **Figure 6.5.1**

Figure 6.5.1 MAIN POWER / RESET



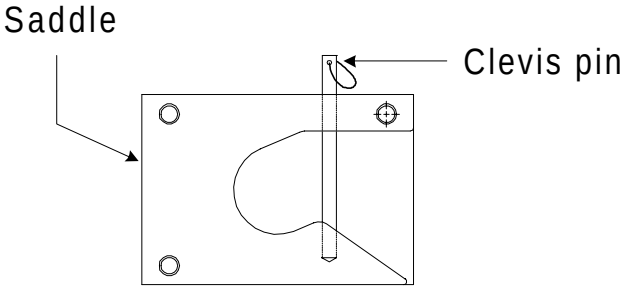
c) Ensure that the rear pull rollers are in the up position..

d) Raise the front and rear safety shields.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Lift the clevis pin located in the saddle of the upper unwind shaft.

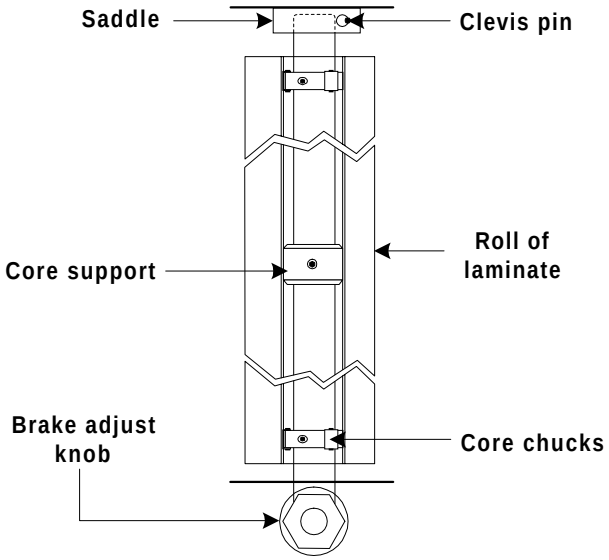


f) Swing the upper unwind shaft out enough to slide the roll of laminate over the core chucks on the upper unwind shaft. Refer to **Figure 6.5.2**

INFORMATION

Twisting the roll of laminate while sliding makes loading the film onto the unwind shaft easier.

Figure 6.5.2 Unwind shaft



g) Once the roll of laminate is on the upper unwind shaft, swing the upper unwind shaft back into the saddle.

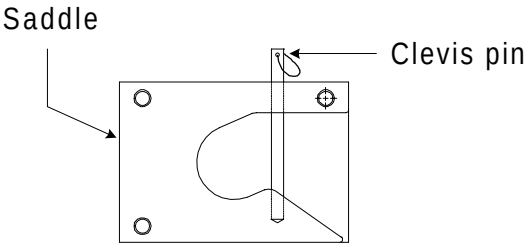
CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

h) Push the clevis pin back down to secure the unwind shaft in its saddle.

i) Leave the safety shield in the up position.

j) Lift the clevis pin located in the saddle of the lower unwind shaft.



k) Swing the lower unwind shaft out enough to slide the roll of mount adhesive over the core chucks on the lower unwind shaft. Refer to **Figure 6.5.2**

INFORMATION

Twisting the roll of mount adhesive while sliding makes loading the film onto the unwind shaft easier.

l) Once the roll of mount adhesive is on the lower unwind shaft, swing the lower unwind shaft back into the saddle.

CAUTION

Ensure the roll of mount adhesive is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

m) Push the clevis pin back down to secure the unwind shaft in its saddle.

n) Center the upper roll and the lower roll of material on the unwind shafts. You may refer to your measurement chart in **Section 5.3.2 Loading film (Figure 5.3.4)**

INFORMATION

For the lower unwind shaft, add 1/4 in. to the measurement.

Process

a) Apply just enough brake tension to prevent the roll of laminate from free spinning.

INFORMATION

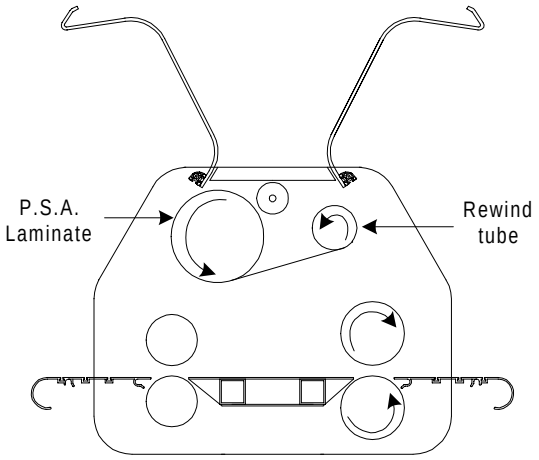
Excessive brake tension may cause the output to curl. This can create complications with the second pass of this application.

b) Pull the laminate to the upper rewind tube. Refer to **Figure 6.5.3**

CAUTION

Make note of the rewind tube drive direction when taping the laminate. The laminate should separate under the rewind tube.

Figure 6.5.3 Laminate to rewind



c) Use a piece of masking tape, to adhere the leading edge of the laminate to the upper rewind tube.

d) Wrap one full turn of laminate onto the upper rewind tube.

CAUTION

Do not cut too deeply into the laminate, you can cut into the release liner.

e) With the utility knife, make an incision across the width of the laminate.

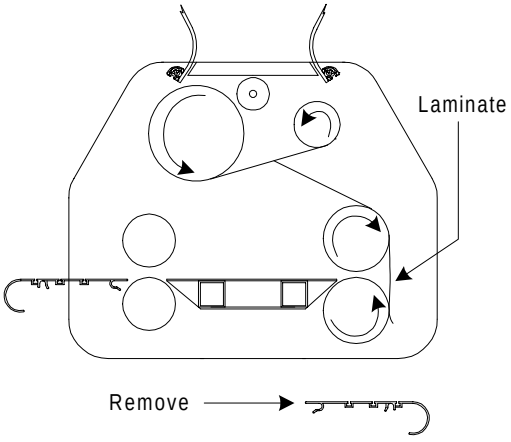
CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

f) Remove the front infeed table.

g) Pull the laminate straight down toward the front of the lower main roller. Refer to **Figure 6.5.4**

Figure 6.5.4 Laminate separation



h) Apply just enough brake tension to prevent the roll of mount adhesive from free spinning.

INFORMATION

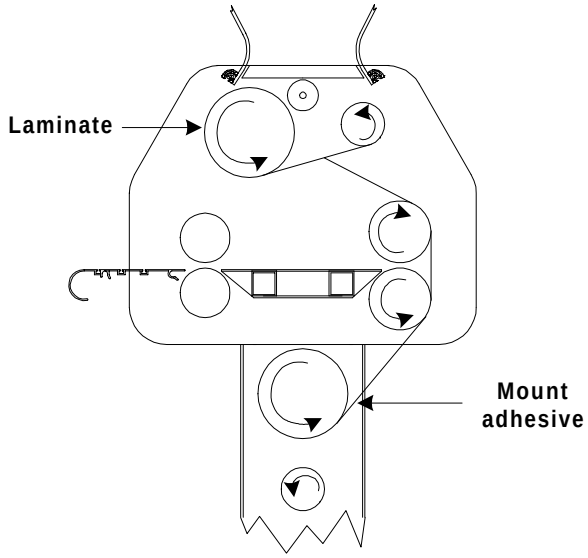
Excessive brake tension may cause the output to curl. This can create complications with the second pass of this application.

i) Pull the mount adhesive up towards the upper main roller and tack it the laminate resting on the upper main roller. Refer to **Figure 6.5.5**

INFORMATION

The mount adhesive will adhere to the exposed adhesive from the laminate.

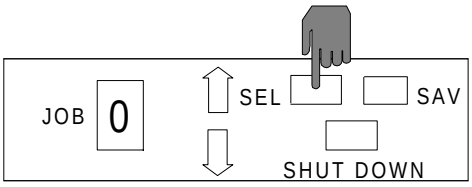
Figure 6.5.5 Mount adhesive



INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *m* ", other wise continue with step " *j* ".

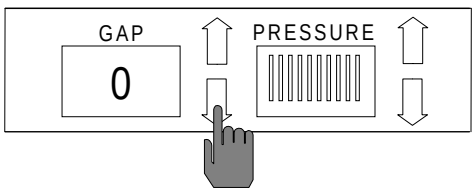
j) Press **SEL.**



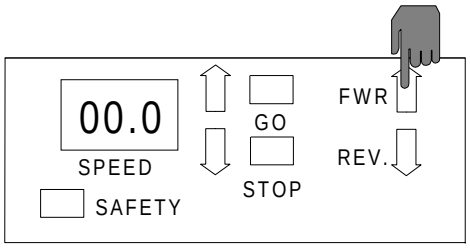
WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

k) Press **GAP ▼** to enter a 0 in. gap setting.



l) Press **FWD ▲**



INFORMATION

Steps " *m* " and " *n* " will be performed simultaneously.

m) Use a piece of cardboard to push the material into the nip of the main rollers.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

n) Press on the variable speed footswitch to guide the cardboard, mount adhesive and laminate through the main rollers.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

WARNING

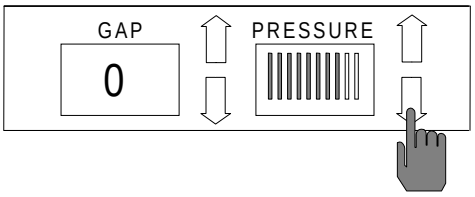
Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

p) Once the cardboard has passed through the pull rollers, lower the upper pull roller onto the web. Turn the pull roll crank handle 3/4 turn clockwise after you feel the initial contact. Refer to **Figure 6.5.6**

o) When the cardboard has travel pass the main rollers, press **PRESSURE ▼** to set a pressure of 60 - 80%.

INFORMATION

PRESSURE will vary with the thickness and width of the laminate you are using. Adjust as necessary.



q) Cut the cardboard from the webbed material. Refer to **figure 6.5.6**

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

CAUTION

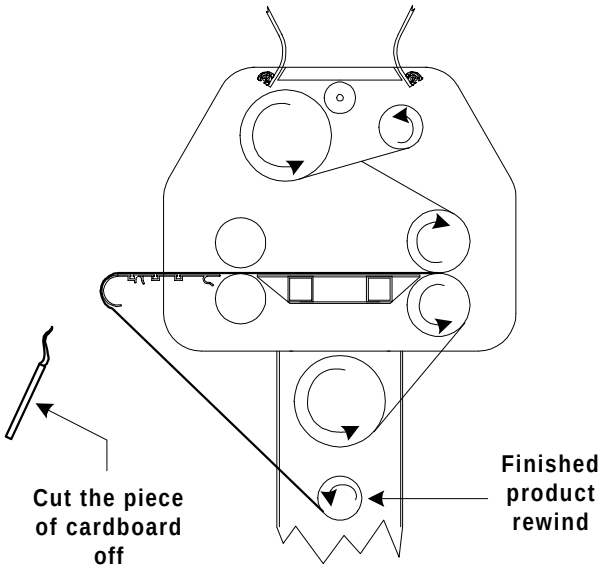
Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

r) Tape the web to the lower rewind tube or let the web run out to a work table. Refer to **Figure 6.5.6**

INFORMATION

If you choose to use the lower rewind tube, make note of the direction of travel.

Figure 6.5.6 Finish product rewind



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

- Press on the variable speed footswitch to lengthen the web enough to get one full wrap around the lower rewind tube.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

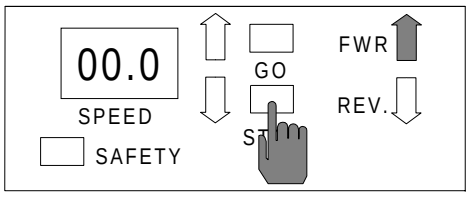
s) Replace the front infeed table. Ensure that the table is seated properly.

t) Close the front and rear safety shields.

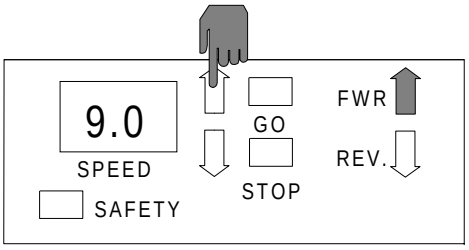
INFORMATION

The SAFETY indicator should not be flashing when the tables are properly seated and the safety shields are in the closed position..

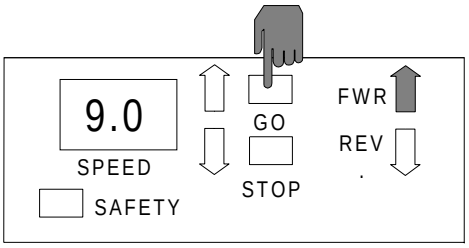
u) Press **STOP**.



v) Press **SPEED ▲** to a speed you feel comfortable working with. It is recommended that **SPEED** not exceed 9 ft./ min. (2.74 m/ min.) .

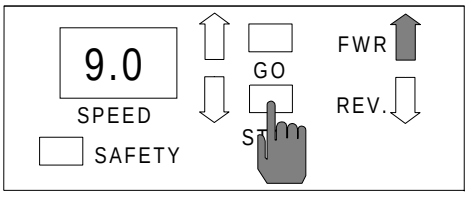


w) Press **GO**.

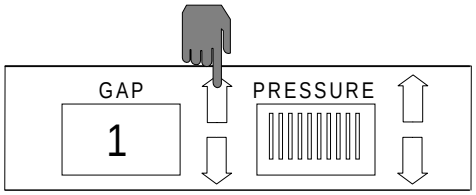


x) Feed the images through the main rollers from the front operating position of the laminator.

y) After the last print has passed through the pull rollers, press **STOP**.



z) Press **GAP ▲** to a 1 in. setting.



Finishing

a) With an enclosed blade, cut the finished product from the web.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) The decals are now ready to be trimmed.

c) If you used the lower rewind, remove the rewind tube and bring it to a trimming station. Replace the rewind tube when finished.

d) Raise the front and rear safety shields to the up position.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Raise the pull roller up by turning the crank handle counter clockwise until the pull rollers are separated.

f) Remove the front infeed table.

g) Cut the web of laminate and craft paper at the upper and lower unwind shafts with an enclosed blade.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

h) Remove the web from the front of the laminator and the rolls of material from the upper and lower unwind shafts.

INFORMATION

This will prevent any exposed adhesive from contacting the rollers.

i) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

INFORMATION

If the rollers have no adhesive on them, proceed to the second pass of this application.

Pass two : Mount

Use **Chart 6** and **Diagram 6** for assistance.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Materials needed

- Prints (Decals)
- Substrates
- Utility knife
- Leader board (substrate width x 6")

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.1 Manually nip adjustment.

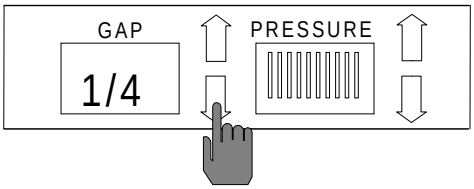
Set up

a) Replace the front infeed table.

WARNING

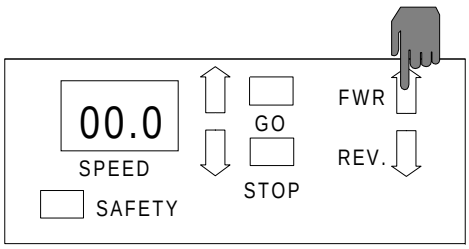
Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

b) Press **GAP ▼** to the required gap setting for the substrate being used. The **GAP DISPLAY** should reflect your desired setting.



c) Position the leader board in the middle between the upper and lower main rollers.

d) Press **FWD ▲**.



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

e) Press on the variable speed footswitch while guiding the leader board into the nip to confirm that the board is secure.

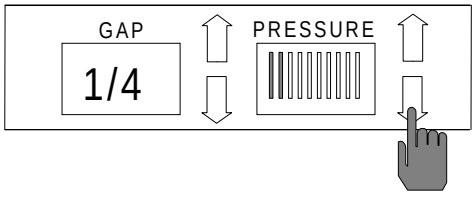
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

f) If the board is loose, press **PRESSURE ▼** to adjust the gap between the main rollers.



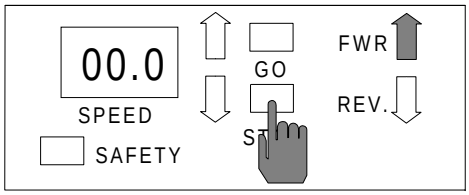
CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

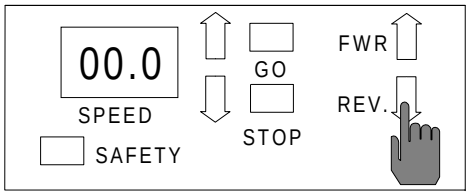
INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

g) Press **STOP**.



h) Press **REV ▼** to reverse the direction of the motor.



WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

i) Press on the variable speed footswitch to back the leader board out of the main rollers.

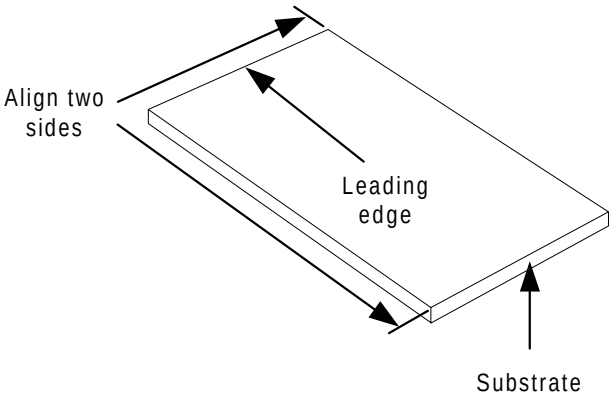
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Process

a) Align the leading edge of the image with the leading edge of the board and one other side. Refer to **Figure 6.5.7**

Figure 6.5.7 Align edges



INFORMATION

The leading edge is the first part of the board or image that enters the nip of the rollers.

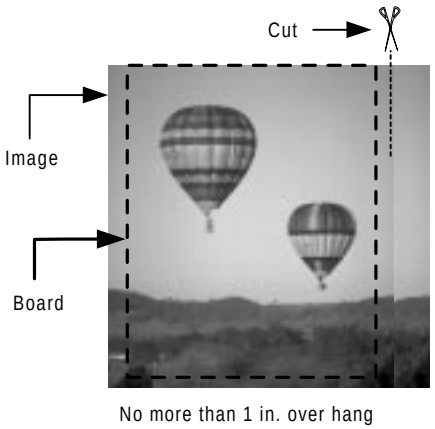
b) Is the decal compatible with the substrate?

- If the substrate is larger than the decal, you can position the image any where on the board. **Figure 6.5.8**

Figure 6.5.8 Setting the decal

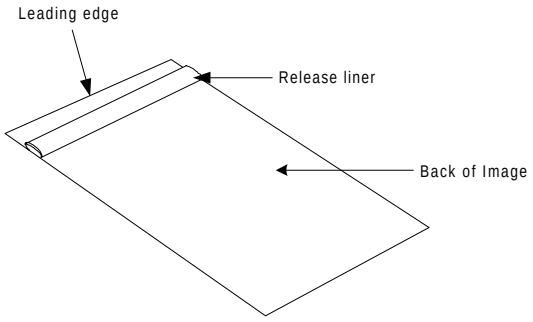
- You must trim the decal so that no more than 1 in. exceeds the size of the substrate. Refer to **Figure 6.5.9**

Figure 6.5.9 Trim the decal



c) Peel back about 1 in. of the release liner from the decal and fold back. Refer to **Figure 6.5.10**

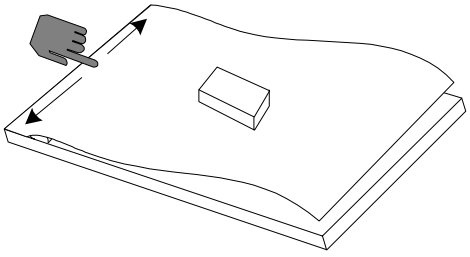
Figure 6.5.10 Peel back release liner



d) Place a padded paper weight or similar object in the center. This will help hold the image in place.

e) From the center, use one finger to tack down the leading edge of the decal to the leading edge of the substrate. Refer to **Figure 6.5.11**

Figure 6.5.11 Tack leading edge

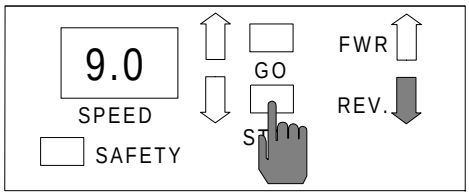


INFORMATION

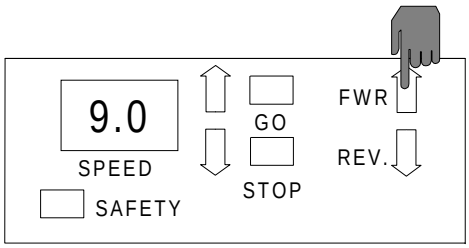
Avoid tacking at the ends first and pressing towards the center, you may create a tunnel once you have reached the center. This will make for a difficult mounting application.

f) Set the substrate and decal in the center of the front infeed table.

g) Press **STOP**.



h) Press **FWD ▲**.



INFORMATION

Steps "*j*" and "*k*" will be performed simultaneously.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

j) Push the leading edge of the substrate with the decal up to the nip of the main rollers.

- If the tack point enters the rollers nip perform the following steps.

1) Press **STOP**

2) Press **REV ▼**

3) Press the variable speed footswitch to back the tack point out of the rollers nip.

4) Press **STOP**

5) Press **FWD ▲**

6) Continue from step **i)**.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

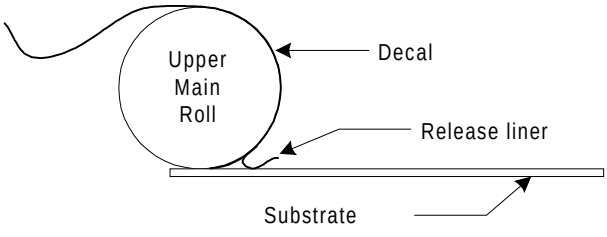
k) Using the variable speed footswitch, slowly work the substrate into the nip of the rollers and stop just before the end of the tacked down section of the image enters the nip.

l) Drape the loose part of the decal over the upper main roller. Refer to **Figure 6.5.12**

Figure 6.512 Draping the decal

INFORMATION

Use a slow speed. If the tack point enters the rollers nip, you will not be able to pull the release liner.

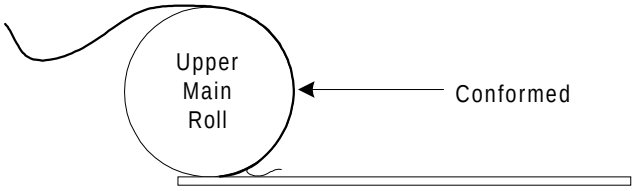


m) Make sure the image is conformed to the upper main roller. Refer to **Figure 6.5.13**

INFORMATION

If the image is not conformed to the roller, you may experience difficulties with this application.

Figure 6.5.13 Conformed print



WARNING

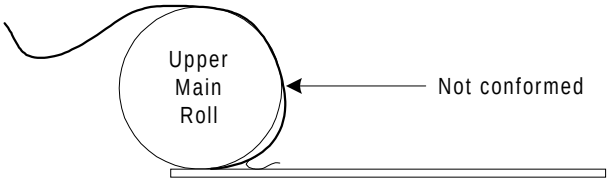
When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

- If its not, slowly move the substrate into the nip until the decal is conformed. Refer to **Figure 6.5.14**

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Figure 6.5.14 Non conformed decal



INFORMATION

Steps "*n*" and "*o*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

n) Press down on the variable speed footswitch just enough to give yourself a comfortable work speed.

Finishing

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

When the laminator rollers are in motion, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

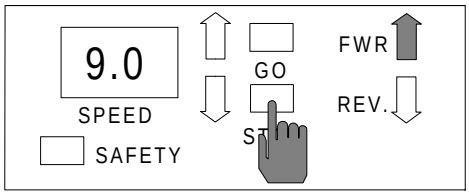
o) Use one hand to pull the release liner off as the substrate moves towards the nip and the other hand to apply slight back tension to the decal.

p) Once the substrate and the decal are completely through the main rolls, you can let off the variable speed footswitch.

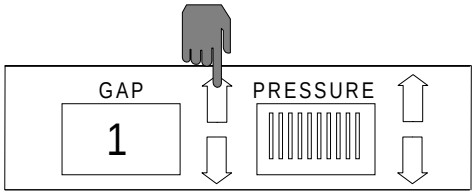
q) The mounted image can now be removed from the rear of the laminator.

r) Trim the mounted piece as necessary.

a) Press **STOP**.

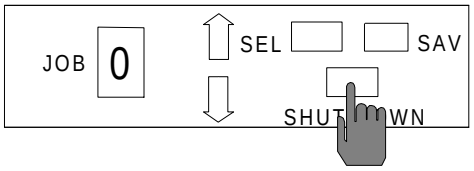


b) Press **GAP ▲** to a 1 in. setting.



c) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

d) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

Group 2 : Top heat only

Top heat only applications are very similar to the applications described in **Group 1: No heat**. Thermal type (heat activated) laminating film will replace the pressure sensitive type laminating film used in **Group 1: No heat.**

The procedures and parameters described in this section are starting references only. Parameters will vary with regards to laminate thickness, laminate widths, laminate types, print types, ink or toner types, environment conditions, operator experience and various substrates.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

6.6 Precoating substrates

This application can only be performed from the front of the laminator using the main rollers. Use **Chart 7** and **Diagram 7** for assistance.

Materials needed

- Roll of Hot Tissue Mount adhesive (or comparable material)
- Substrates to precoat (Must have a porous surface)
- Leader board
- Trailer board
- Second person
- Utility knife
- Cutting blade with an enclosed casing.

INFORMATION

The Hot Tissue must not exceed 1 in. the width of the substrate. If it does, you will experience complications with this application.

Set up

a) Cut two leader boards 6 inch in length of the material you are about to precoat.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

b) Place these two pieces by the laminator for future use.

INFORMATION

The two pieces cut in step "a" will be used as the leader board and trailer board. These two pieces can be saved and reused for other applications.

c) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.6.1**

d) Press **RESET**. Refer to **Figure 6.6.1**

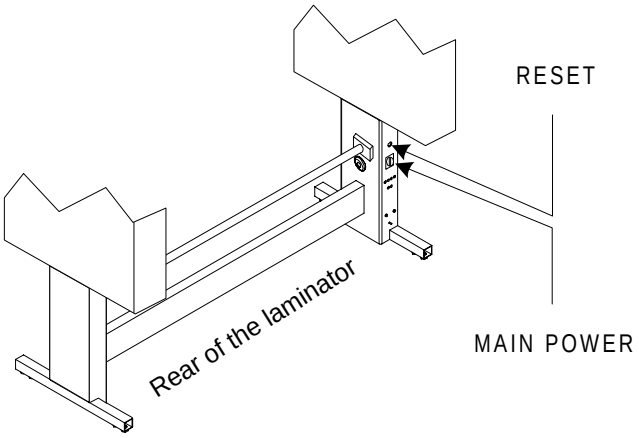
e) Be sure the front and rear tables are in position and the pull rollers are in the up position.

f) Raise the rear safety shield.

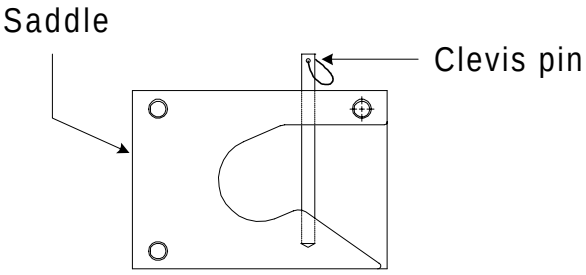
WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

Figure 6.6.1 MAIN POWER / RESET



g) Lift the clevis pin located in the saddle of the upper unwind shaft.

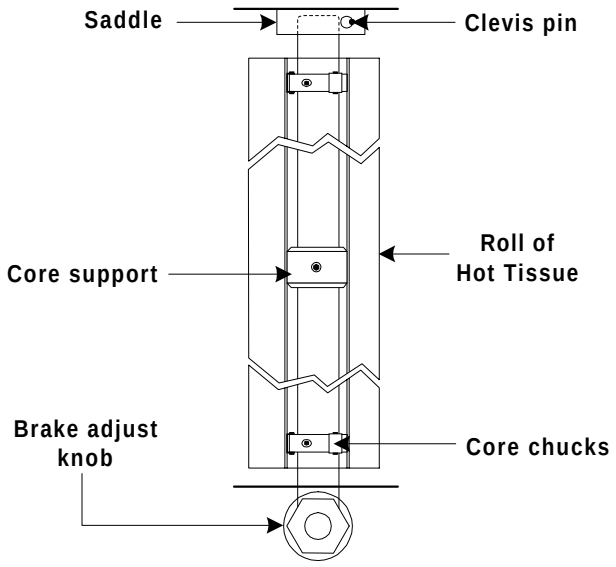


h) Swing the upper unwind shaft out enough to slide the roll of Hot Tissue over the core chucks and onto the upper unwind shaft. Refer to **Figure 6.6.2**.

INFORMATION

Twisting the roll of Hot Tissue while sliding makes loading the film onto the unwind shaft easier.

Figure 6.6.2 Unwind shaft



i) Once loaded, swing the upper unwind shaft back into the saddle.

INFORMATION

The roll of Hot Tissue has no preference to side since both sides are the same.

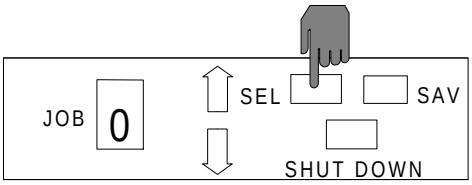
j) Push the clevis pin back down to secure the unwind shaft in its saddle.

k) Lower the rear safety shield.

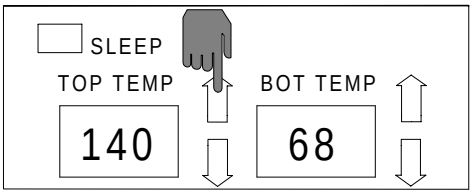
INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *p*", other wise continue with step " *l*".

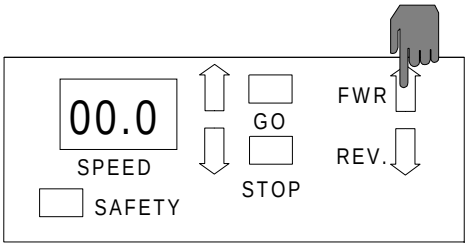
l) Press **SEL**. **SEL** will stop flashing.



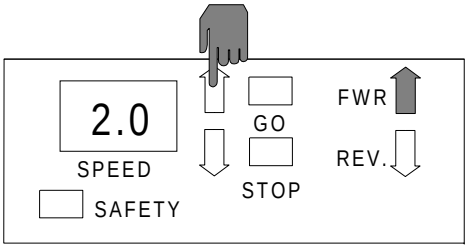
m) Press **TOP TEMP ▲** to set a temperature of 140-160 ºF (60-71 ºC).



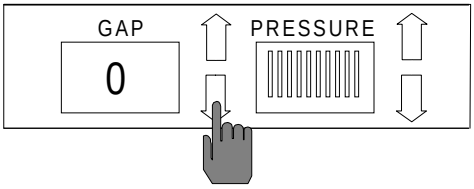
n) Press **FWD ▲**



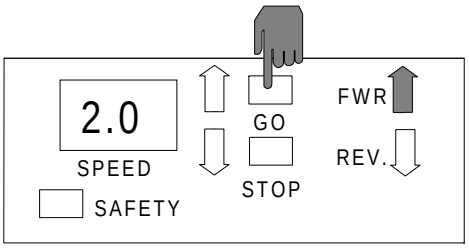
o) Press **SPEED ▲** to set a motor speed of 2 ft. / min. (.6 m / min.)



p) Press **GAP ▼** to enter a 0 in. gap setting.

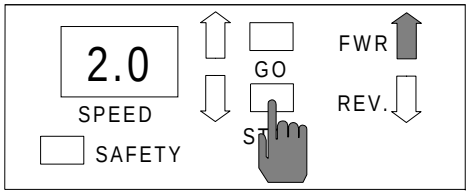


q) Press **GO**.

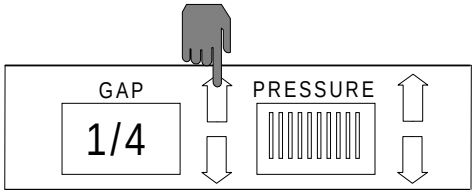


r) Continue with step **s)** when the **TOP TEMP DISPLAY** stops flashing.

s) Press **STOP**.



t) Press **GAP ▲** to the required gap setting for the substrate being used. The **GAP DISPLAY** should reflect your desired setting.



INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.1 Manual nip adjustment.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

u) Press on the variable speed footswitch while guiding the leader board into the nip to confirm that the board is secure.

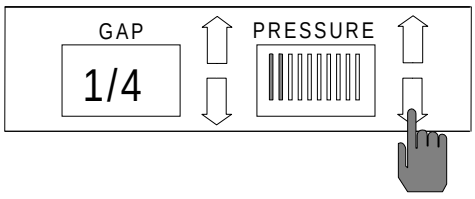
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

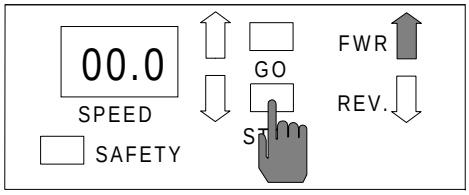
v) If the board is loose, press **PRESSURE ▼** to adjust the gap between the main rollers.



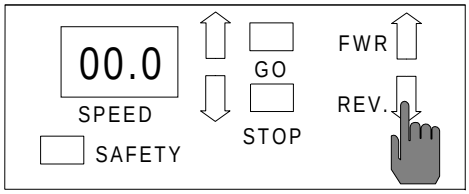
INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

w) Press **STOP**.



x) Press **REV ▼** to reverse the direction of the motor.



WARNING

When operating the laminator through the variable speed footswitch, keep your hands away from the nip of the rollers. You may be crushed or burned.

y) Press on the variable speed footswitch to back the board out of the main rollers.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

INFORMATION

Position the leader board squarely onto the mount adhesive.

c) Press **STOP**.

Process

a) Pull the roll of Hot Tissue straight down toward the front infeed table so that approximately 6 in. is resting on the front infeed table. Refer to **Figure 6.6.3**

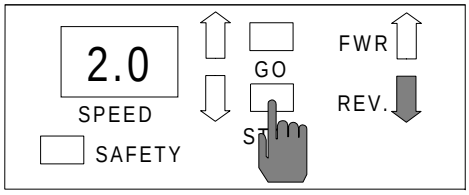
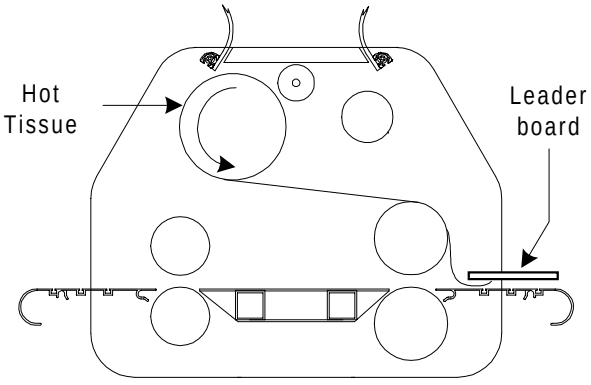
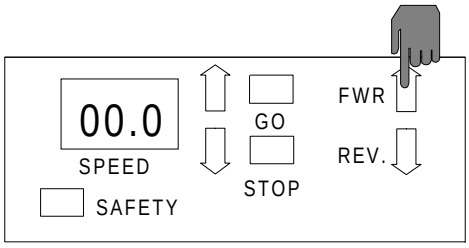


Figure 6.6.3 Leader board

d) Press **FWD ▲**.





b) Position the leader board so that half is adhered to the Hot Tissue. Refer to **Figure 6.6.3**

INFORMATION

Steps "*e*" and "*f*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

e) Push the leader board into the main roller nip while stepping on the variable speed footswitch.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

f) Apply the minimum amount of brake tension on the roll of Hot Tissue to prevent it from free spinning.

INFORMATION

Excessive tension will cause the substrate to bow.

g) Have the second person stand at the rear of the laminator.

INFORMATION

Steps "*h*" and "*i*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

h) With the stack of substrates within reach of the first person, step on the variable speed footswitch while sliding one board in after the leader board with a 1/2 inch gap between the two. Refer to **Figure 6.6.4**

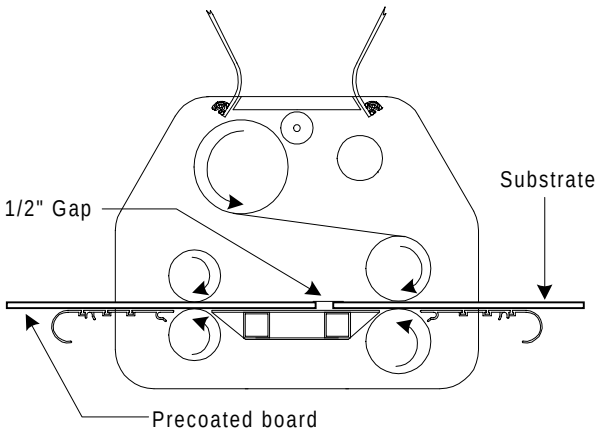
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

INFORMATION

The 1/2 in. gap between boards will allow for easier separation of the boards by the second person.

Figure 6.6.4 (1/2") Gap



WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

i) The person at the rear of the laminator will guide and lower the upper pull roller onto the leader board as it passes through the nip opening.

INFORMATION

Do not lower the pull roller so that the substrate is crushed when passing through. This will prevent the boards from bowing.

j) As the boards come through, the person at the rear of the machine will use the utility knife to separate the boards.

CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

CAUTION

Caution should always be exercised when using a utility knife near the rollers. You can put cuts into the rollers!

k) Inform the second person of the last board to be precoated before feeding the trailer board into the main roller nip. Refer to **Figure 6.6.5**

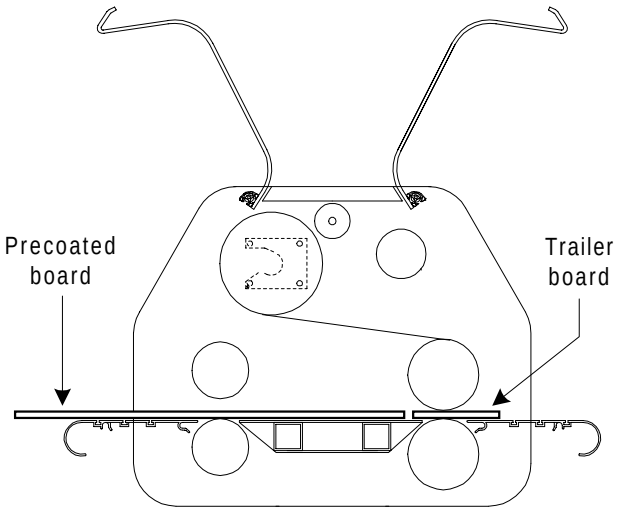
INFORMATION

Before stopping the rollers, position the pull rollers up. This will prevent an impression in the last pre-coated board.

l) The second person will raise the rear pull roller by turning the crank handle counterclockwise until separated.

m) Stop the laminator when the trailer board is in the main roller nip. Refer to **Figure 6.6.5**

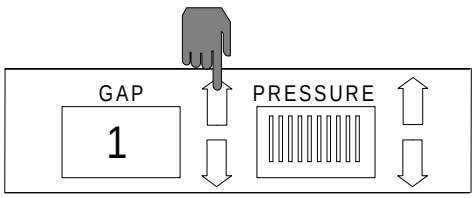
Figure 6.6.5 Trailer board



INFORMATION

Do not stop in the middle of a board, an impression of the roller footprint will be evident on the board. This can cause a tunnel effect in the mounting process.

n) Raise the main rollers to a 1 in. gap by pressing **GAP ▲**.



Finishing

a) Cut the web of Hot Tissue at the upper unwind shaft with an enclosed blade.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) Pull the precoated board and trailer board out from the front of laminator.

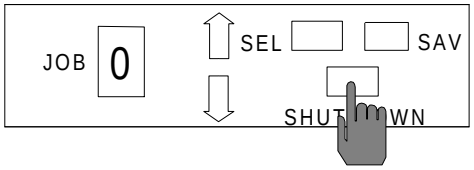
INFORMATION

This will prevent any activated adhesive from contacting the rollers.

c) Remove the roll of material from the upper unwind shaft.

d) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

e) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



f) Trim any excess Hot Tissue from the boards.

CAUTION

Caution should always be exercised when using a knife . Sharp knife can cut you!

End of application

6.7 One pass mount and laminate

This application can only be performed from the front of the laminator using the main rollers. Use **Chart 8** and **Diagram 8** for assistance.

This application can save time but is limited to the type of prints you can use. This process requires more heat and a longer dwell time in the nip. Heat sensitive images should not be used for this process.

Heat sensitive images would be of ink jet types, and medias that have plastic characteristics to them. For these type of images, use GBC Low Melt film or comparable laminate.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Materials needed

- Sheet of Hot Tissue Mount adhesive (or comparable material)
- Substrates (Must have a porous surface)

- Leader and trailer board
- Roll of thermal laminate
- Glue stick
- Prints
  (print that are not heat sensitive)
- Utility knife
- Cutting blade with an enclosed casing.

INFORMATION

The laminate must not exceed 1 in. the width of the substrate. If it does, you will experience complications with this application.

Set up

a) Cut two leader boards 6 inch in length of the material you are about to precoat.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

b) Place these two pieces by the laminator for future use.

INFORMATION

The two pieces cut in step "a" will be used as the leader board and trailer board. These two pieces can be saved and reused for other applications.

c) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.7.1**

d) Press **RESET**. Refer to **Figure 6.7.1**

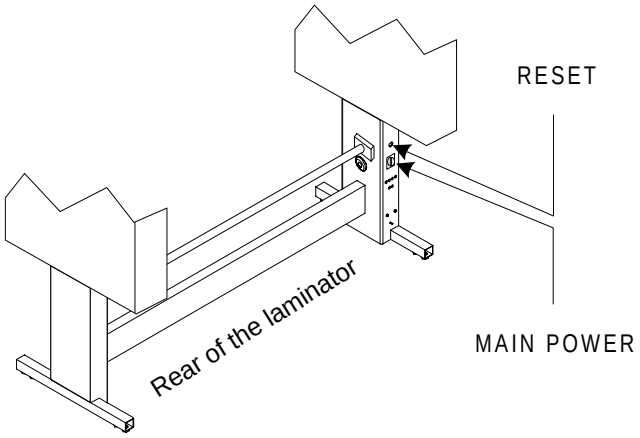
e) Be sure the front and rear tables are in position and the pull rollers are in the up position.

f) Raise the rear safety shield.

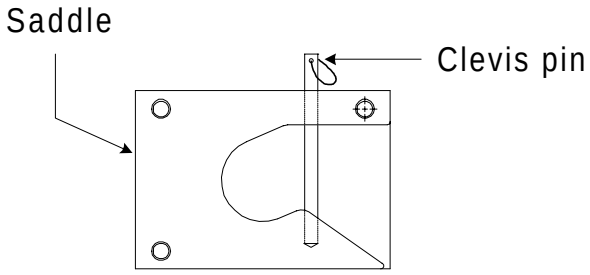
WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

Figure 6.7.1 MAIN POWER / RESET



g) Lift the clevis pin located in the saddle of the upper unwind shaft.

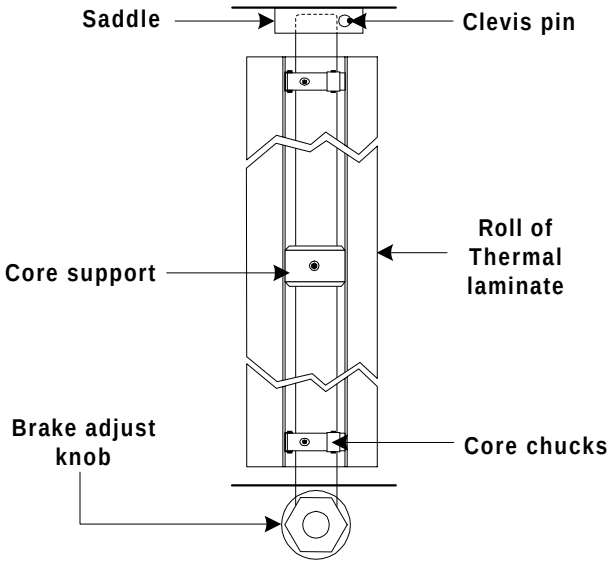


h) Swing the upper unwind shaft out enough to slide the roll of thermal laminate over the core chucks and onto the upper unwind shaft. Refer to **Figure 6.7.2**.

INFORMATION

Twisting the roll of thermal laminate while sliding makes loading the film onto the unwind shaft easier.

Figure 6.7.2 Unwind shaft



i) Once loaded, swing the upper unwind shaft back into the saddle.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

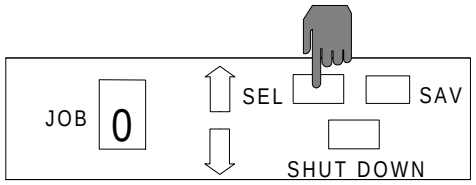
j) Push the clevis pin back down to secure the unwind shaft in its saddle.

k) Lower the rear safety shield.

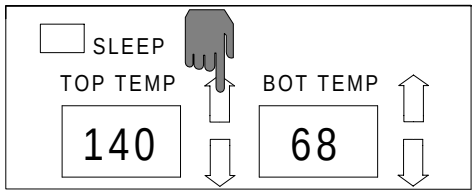
INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *p*", other wise continue with step " *l*".

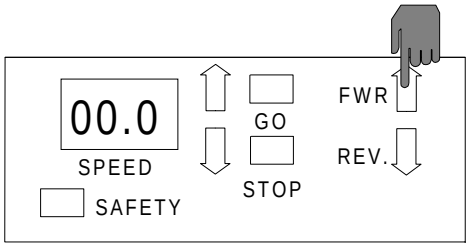
l) Press **SEL**. **SEL** will stop flashing.



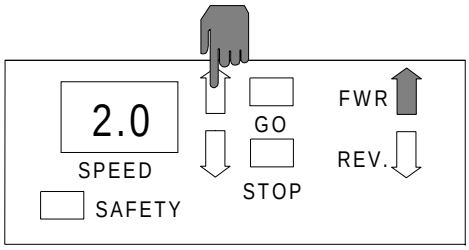
m) Press **TOP TEMP** ▲ to set a temperature of 240-260 ºF (115-126 ºC).



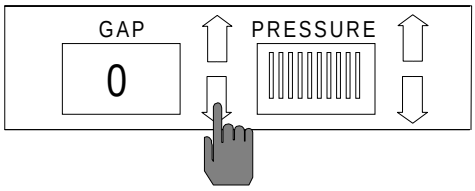
n) Press **FWD** ▲



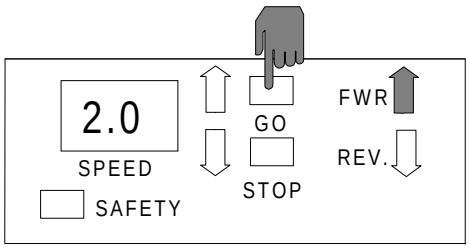
o) Press **SPEED** ▲ to set a motor speed of 2 ft. / min. (.6 m / min.)



p) Press **GAP** ▼ to enter a 0 in. gap setting.

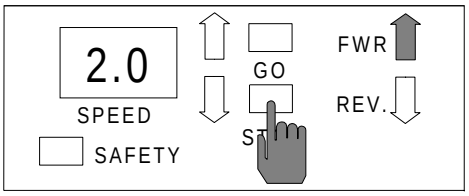


q) Press **GO**.

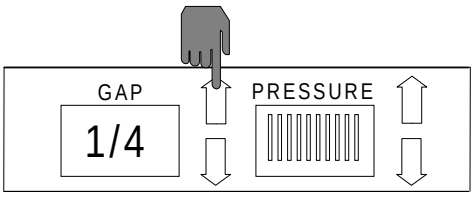


r) Continue with step **s)** when the **TOP TEMP DISPLAY** stops flashing.

s) Press **STOP**.



t) Press **GAP ▲** to the required gap setting for the substrate being used. The **GAP DISPLAY** should reflect your desired setting.



INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.1 Manual nip adjustment.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

u) Press on the variable speed footswitch while guiding the leader board into the nip to confirm that the board is secure.

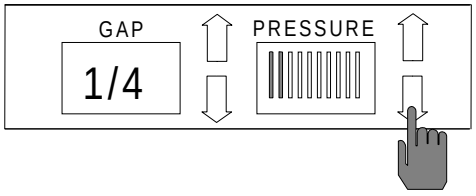
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

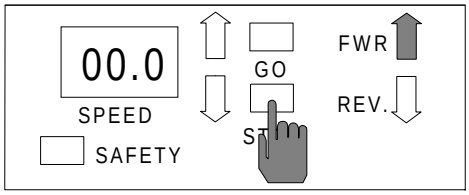
v) If the board is loose, press **PRESSURE ▼** to adjust the gap between the main rollers.



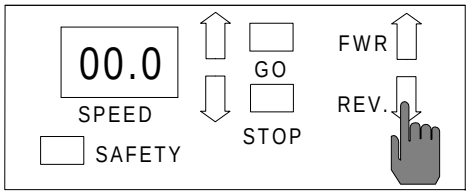
INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

w) Press **STOP**.



x) Press **REV** ▼ to reverse the direction of the motor.



WARNING

When operating the laminator through the variable speed footswitch, keep your hands away from the nip of the rollers. You may be crushed or burned.

y) Press on the variable speed footswitch to back the board out of the main rollers.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Process

INFORMATION

If you are using precoated Hot Tissue boards, proceed to step "d)".

a) Cut a sheet of Hot Tissue the same size as the image. Refer to **Figure 6.7.3**

b) Run a thin line of glue across the leading edge of the substrate. Refer to **Figure 6.7.3**

INFORMATION

The leading edge is the first part of the board or image that enters the nip of the rollers.

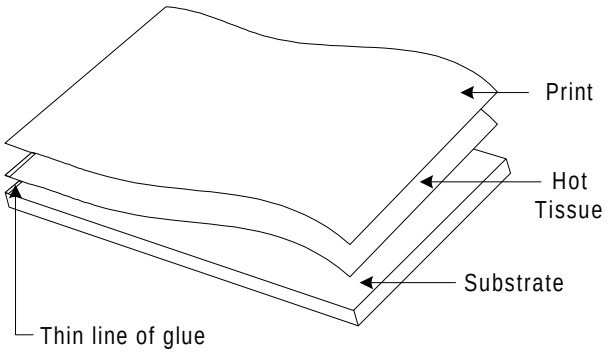
c) Lay the sheet of Hot Tissue on the board so the two leading edges are aligned. Refer to **Figure 6.7.3**

INFORMATION

The thin line of glue will assist with holding the layers to the board.

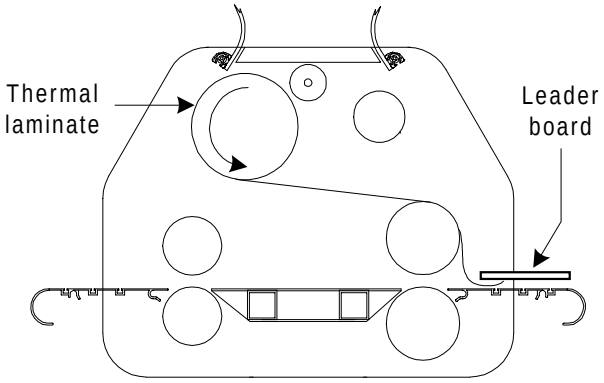
d) Run a thin line of glue across the leading edge of Hot Tissue just placed on the board.

Figure 6.7.3



e) Pull the thermal laminate straight down toward the front infeed table so that approximately 6 in. is resting on the front infeed table. Refer to **Figure 6.7.4**

Figure 6.7.4 Leader board

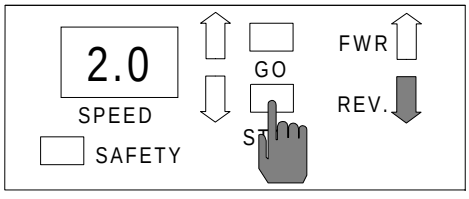


f) Position the leader board so that half is pressed against the thermal laminate resting on the front table. Refer to **Figure 6.7.4**

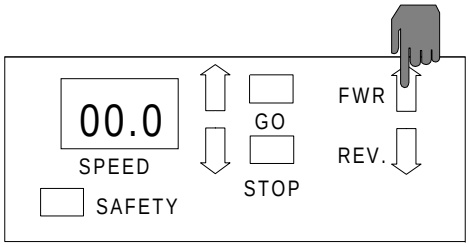
INFORMATION

Position the leader board squarely onto the thermal laminate.

g) Press **STOP**.



h) Press **FWD ▲**.



INFORMATION

Steps "*i*" and "*j*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

i) Push the leader board into the main roller nip while stepping on the variable speed footswitch.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

j) Apply the minimum amount of brake tension on the roll of thermal laminate to prevent it from free spinning.

INFORMATION

Excessive tension will cause the substrate to bow.

k) Once tentioned, let off the variable speed footswitch/

l) Position the board with the glued sheet of Hot Tissue and image against the leader board.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

m) using a slow speed, press on the variable speed footswitch while guiding the board into the main roller nip.

INFORMATION

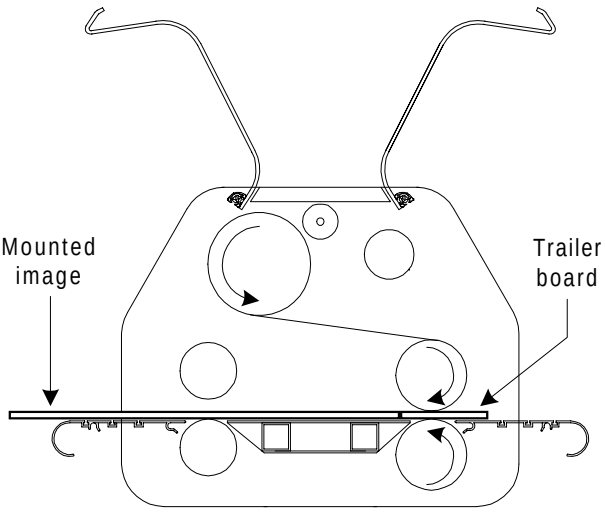
The heat must penetrate through the thermal laminate, image, Hot Tissue and to the board. Dwell time is crucial for the success of this application.

WARNING

When the laminator rollers are in motion, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

n) Stop the laminator when the trailer board is in the main roller nip. Refer to **Figure 6.7.5**

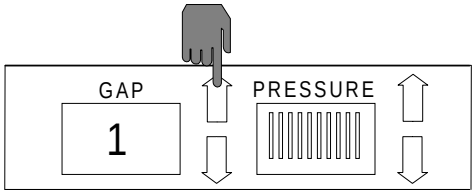
Figure 6.7.5 Trailer board



INFORMATION

Stopping the rollers on the print will leave a pressure line on the image.

o) Raise the main rollers to a 1 in. gap by pressing **GAP ▲**.



Finishing

a) Cut the web of thermal laminate at the upper unwind shaft with an enclosed blade.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) Pull the leader board, mounted image and trailer board out from the front of laminator.

INFORMATION

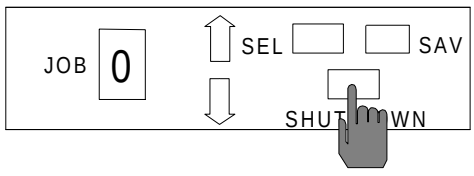
This will prevent any activated adhesive from contacting the rollers.

c) Remove the roll of material from the upper unwind shaft.

d) Trim as necessary.

e) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

f) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

6.8 Thermal decal and mount

This is a two pass mount and laminate process. Two pass meaning that the print will pass through the laminator twice. The first pass (Decal) will apply a mount adhesive to the back of the print while applying a laminate to the front of the print. The second pass (Mount) will adhere the decal to a substrate.

The first part of this application (Decal) can only be performed from the front of the laminator using the main rollers. Use **Chart 9** and **Diagram 9** for assistance.

The second part (Mount) is described from the rear of the laminator since the main rollers are heated. Use **Chart 10** and **Diagram 10** for assistance.

This application can be performed in various methods. The process described in this manual is the most common method.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Pass 1: Decal

Use **Chart 9** and **Diagram 9** for assistance.

Materials needed

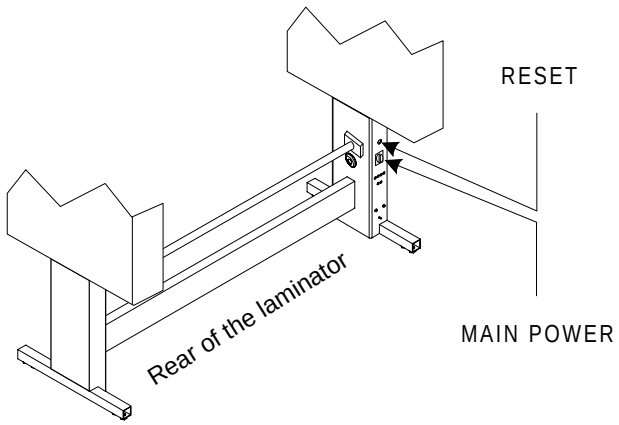
- Roll of thermal laminate
- Roll of mount adhesive (same width as the laminate)
- Print (smaller than the laminate)
- Roll of masking tape
- Utility knife
- Cutting blade with an enclosed casing.
- Piece of cardboard (film width x 6")

Set up

a) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.8.1**

b) Press **RESET**. Refer to **Figure 6.8.1**

Figure 6.8.1 MAIN POWER / RESET



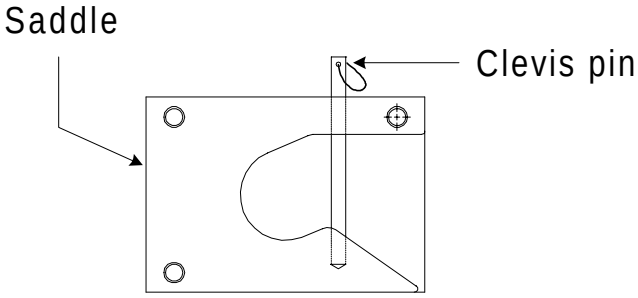
c) Ensure that the rear pull rollers are in the up position..

d) Raise the front and rear safety shields.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Lift the clevis pin located in the saddle of the upper unwind shaft.



f) Swing the upper unwind shaft out enough to slide the roll of laminate over the core chucks on the upper unwind shaft. Refer to **Figure 6.8.2**

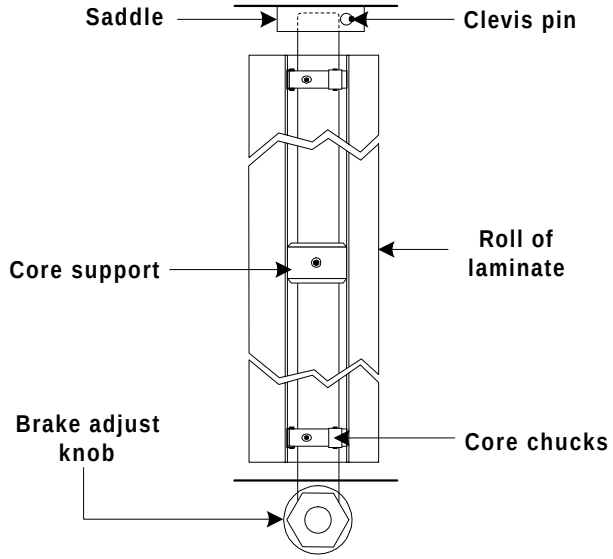
INFORMATION

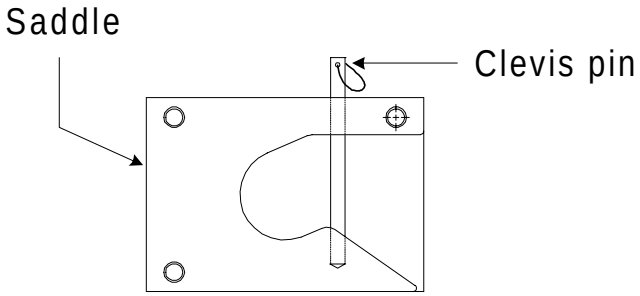
Twisting the roll of laminate while sliding makes loading the film onto the unwind shaft easier.

h) Push the clevis pin back down to secure the unwind shaft in its saddle.

i) Lift the clevis pin located in the saddle of the lower unwind shaft.

Figure 6.8.2 Unwind shaft





j) Swing the lower unwind shaft out enough to slide the roll of mount adhesive over the core chucks on the lower unwind shaft. Refer to **Figure 6.8.2**

g) Once the roll of thermal laminate is on the upper unwind shaft, swing the upper unwind shaft back into the saddle.

INFORMATION

Twisting the roll of mount adhesive while sliding makes loading the film onto the unwind shaft easier.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

k) Once the roll of mount adhesive is on the lower unwind shaft, swing the lower unwind shaft back into the saddle.

CAUTION

Ensure the roll of mount adhesive is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

l) Push the clevis pin back down to secure the unwind shaft in its saddle.

m) Center the upper roll and the lower roll of material on the unwind shafts. You may refer to your measurement chart in **Section 5.3.2 Loading film (Figure 5.3.4)**

INFORMATION

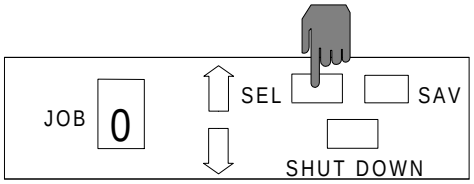
For the lower unwind shaft, add 1/4 in. to the measurement.

n) Lower the safety shields.

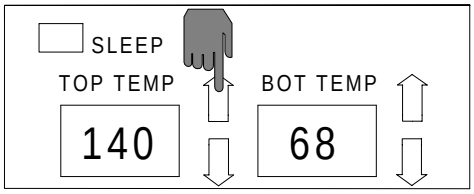
INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *p*", other wise continue with step " *l*".

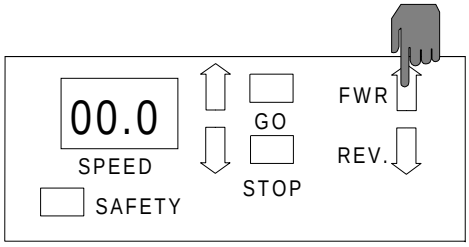
o) Press **SEL**. **SEL** will stop flashing.



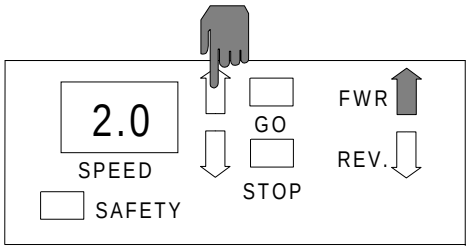
p) Press **TOP TEMP ▲** to set a temperature of 220-230 °F (104-110 °C).



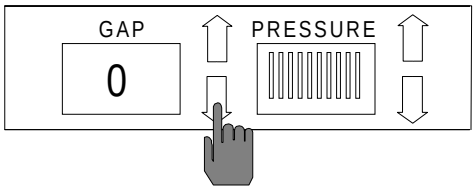
q) Press **FWD ▲**



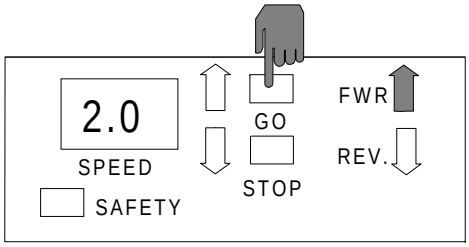
r) Press **SPEED ▲** to set a motor speed of 2 ft. / min. (.6 m / min.)



s) Press **GAP ▼** to enter a 0 in. gap setting.

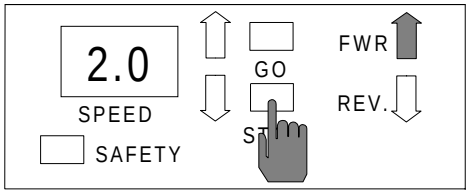


t) Press **GO**.



u) Continue with step **"v"** when the **TOP TEMP DISPLAY** stops flashing.

v) Press **STOP**.



Process

a) Raise the front safety shield and remove the front infeed table.

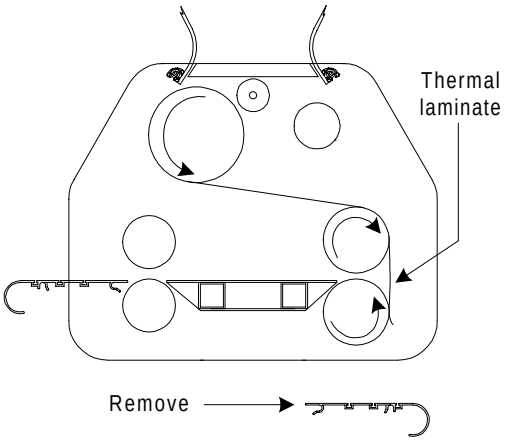
b) Apply just enough brake tension to prevent the roll of thermal laminate from free spinning.

INFORMATION

Excessive brake tension may cause the output to curl. This can create complications with the second pass of this application.

c) Pull the thermal laminate straight down toward the front infeed table so that approximately 6 in. is resting on the front infeed table. Refer to Figure **6.8.3**

Figure 6.8.3 Laminate



d) Apply just enough brake tension to prevent the roll of mount adhesive from free spinning.

INFORMATION

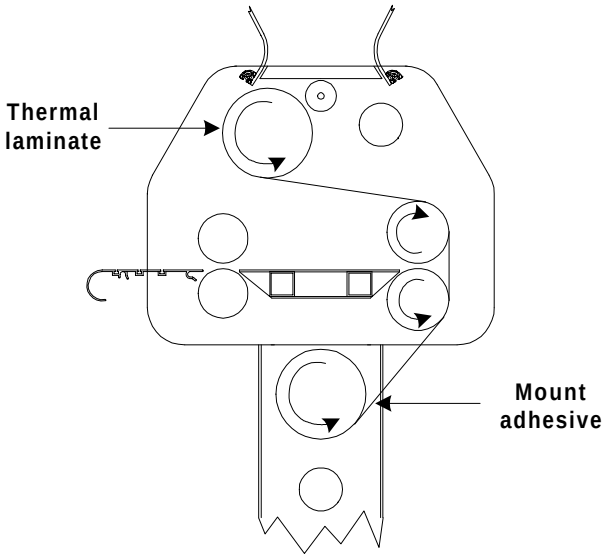
Excessive brake tension may cause the output to curl. This can create complications with the second pass of this application.

e) Pull the mount adhesive up towards the upper main roller and tack it the laminate resting on the upper main roller. Refer to **Figure 6.8.4**

INFORMATION

The mount adhesive will adhere to the activated adhesive from the laminate.

Figure 6.8.4 Mount adhesive



f) Use a piece of cardboard to push the material into the nip of the main rollers.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

g) Press on the variable speed footswitch to guide the cardboard, mount adhesive and laminate through the main rollers.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

WARNING

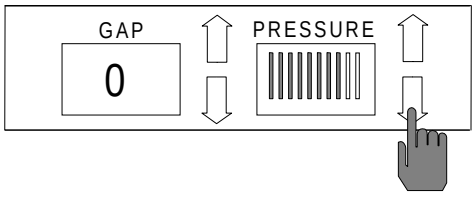
Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

i) Once the cardboard has passed through the pull rollers, lower the upper pull roller onto the web. Turn the pull roll crank handle 3/4 turn clockwise after you feel the initial contact. Refer to **Figure 6.8.6**

h) When the cardboard has traveled pass the main rollers, press **PRESSURE ▼** to set a pressure of 60 - 80%.

INFORMATION

PRESSURE will vary with the thickness and width of the laminate you are using. Adjust as necessary.



j) Cut the cardboard from the webbed material. Refer to **figure 6.8.5**

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

k) Tape the web to the lower rewind tube or let the web run out to a work table. Refer to **Figure 6.8.5**

INFORMATION

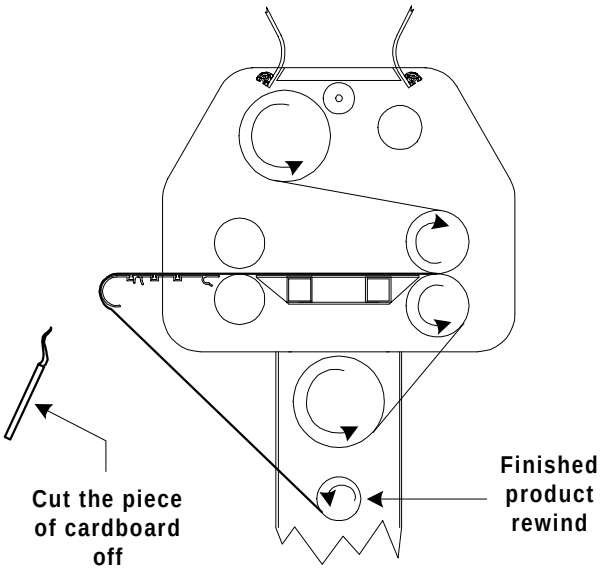
If you choose to use the lower rewind tube, make note of the direction of travel.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

- Press on the variable speed footswitch to lengthen the web enough to get one full wrap around the lower rewind tube.

Figure 6.8.5 Finish product rewind



l) Replace the front infeed table. Ensure that the table is seated properly.

m) Close the front and rear safety shields.

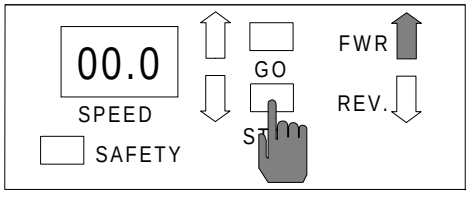
INFORMATION

The SAFETY indicator should not be flashing when the tables are properly seated and the safety shields are in the closed position..

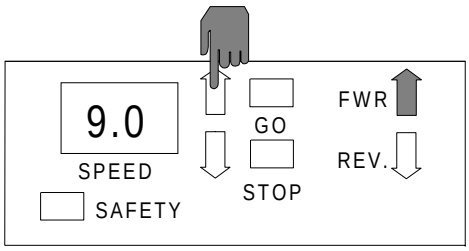
n) Press **STOP**.

WARNING

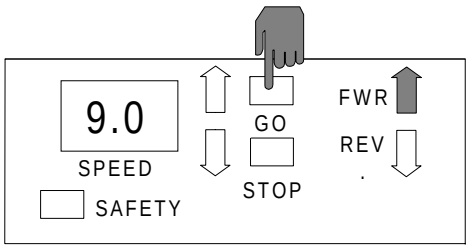
When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!



o) Press **SPEED ▲** to a speed you feel comfortable working with. It is recommended that **SPEED** not exceed 5 ft./ min. (1.52 m/ min.) .

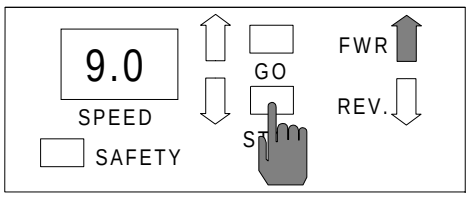


p) Press **GO**.

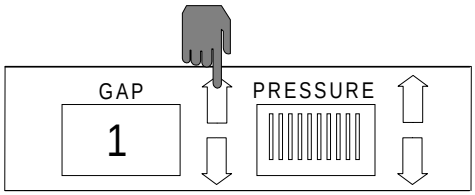


q) Feed the images through the main rollers from the front operating position of the laminator.

r) After the last print has passed through the pull rollers, press **STOP**.



s) Press **GAP ▲** to a 1 in. setting.



Finishing

a) With an enclosed blade, cut the finished product from the web.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) The decals are now ready to be trimmed.

c) If you used the lower rewind, remove the rewind tube and bring it to a trimming station. Replace the rewind tube when finished.

d) Raise the front and rear safety shields to the up position.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Raise the pull roller up by turning the crank handle counter clockwise until the pull rollers are separated.

f) Remove the front infeed table.

g) Cut the web of thermal laminate and mount adhesive at the upper and lower unwind shafts with an enclosed blade.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

h) Remove the web from the front of the laminator and the rolls of material from the upper and lower unwind shafts.

INFORMATION

This will prevent any exposed adhesive from contacting the rollers.

i) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

INFORMATION

If the rollers have no adhesive on them, proceed to the second pass of this application.

Pass two : Mount

Use **Chart 10** and **Diagram 10** for assistance.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

Materials needed

- Prints (Decals)
- Substrates
- Utility knife
- Leader board (substrate width x 6")

Set up

a) Replace the front infeed table.

WARNING

Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

b) Position the leader board between the pull rollers.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

c) While observing the leader board at eye level, lower the upper pull roller by turning the pull roll crank handle clockwise until contact with the leader board has been made.

CAUTION

Sharp edges on a substrate should be filed smooth and GAP manually adjusted. Sharp edges can CUT the rollers!

INFORMATION

If the thickness of the substrate is not known, follow the procedure to manually set the nip in Section 5.5.2 Manually nip adjustment.

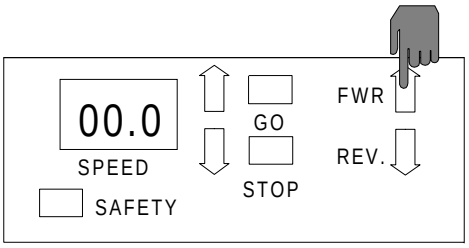
CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

d) Press **FWD ▲**.



WARNING

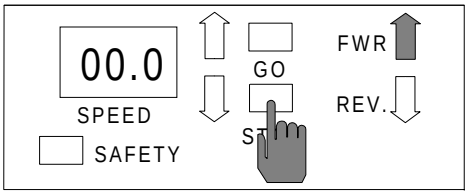
When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

e) Press on the variable speed footswitch to back the leader board out.

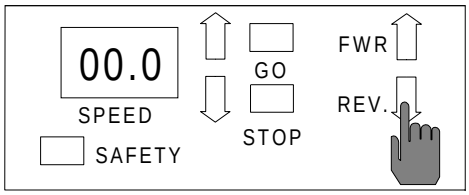
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

f) Press **STOP**.



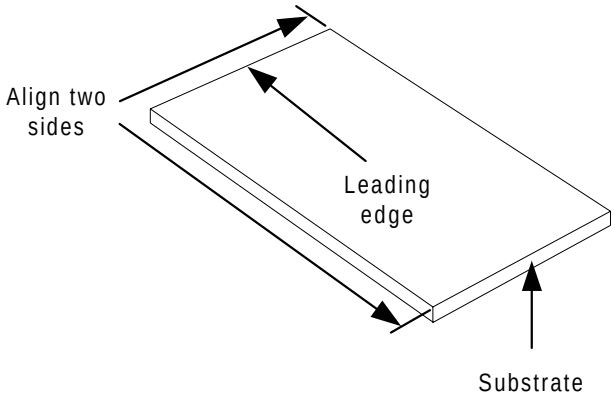
g) Press **REV ▼** to reverse the direction of the motor.



Process

a) Align the leading edge of the image with the leading edge of the board and one other side. Refer to **Figure 6.8.6**

Figure 6.8.6 Align edges



INFORMATION

The leading edge is the first part of the board or image that enters the nip of the rollers.

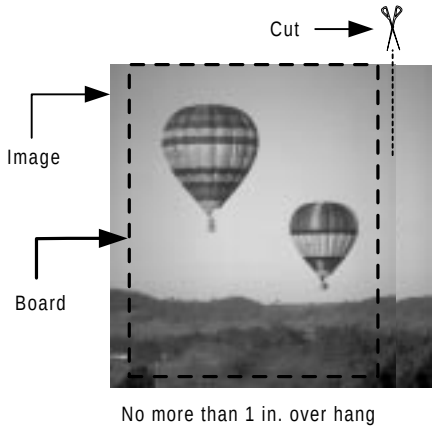
b) Is the decal compatible with the substrate?

- If the substrate is larger than the decal, you can position the image any where on the board. Refer to **Figure 6.8.7**

Figure 6.8.7 Setting the decal

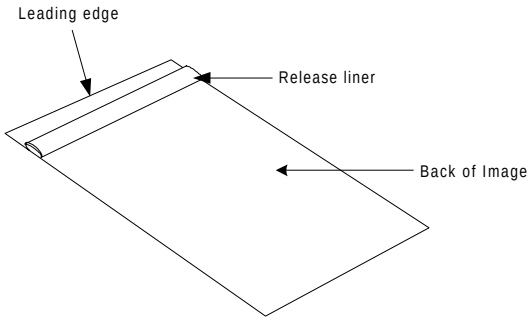
- You must trim the decal so that no more than 1 in. exceeds the size of the substrate. Refer to **Figure 6.8.8**

Figure 6.8.8 Trim the decal



c) Peel back about 1 in. of the release liner from the decal and fold back. Refer to **Figure 6.8.9**

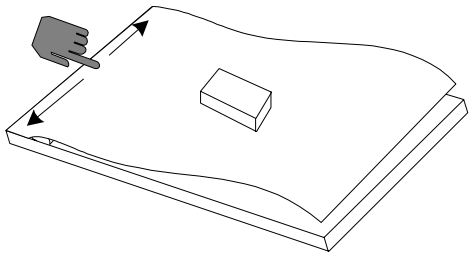
Figure 6.8.9 Peel back release liner



d) Place a padded paper weight or similar object in the center. This will help hold the image in place.

e) From the center, use one finger to tack down the leading edge of the decal to the leading edge of the substrate. Refer to **Figure 6.8.10**

Figure 6.8.10 Tack leading edge



INFORMATION

Avoid tacking at the ends first and pressing towards the center, you may create a tunnel once you have reached the center. This will make for a difficult mounting application.

f) Set the substrate and decal in the center of the rear infeed table.

INFORMATION

Steps "*g*" and "*h*" will be performed simultaneously.

g) Push the leading edge of the substrate with the decal up to the nip of the pull rollers.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

h) Using the variable speed footswitch, slowly work the substrate into the nip of the rollers and stop just before the end of the tacked down section of the image enters the nip.

INFORMATION

Use a slow speed. If the tack point enters the rollers nip, you will not be able to pull the release liner.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

- If the tack point enters the rollers nip perform the following steps.

1) Press **STOP**

2) Press **FWD ▲**

3) Press the variable speed footswitch to back the tack point out of the rollers nip.

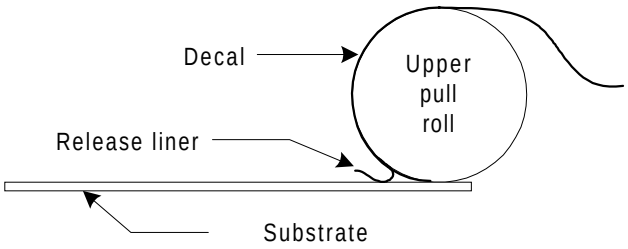
4) Press **STOP**

5) Press **REV ▼**

6) Continue from step **" i"**.

i) Drape the loose part of the decal over the upper main roller. Refer to **Figure 6.8.11**

Figure 6.8.11 Draping the decal



WARNING

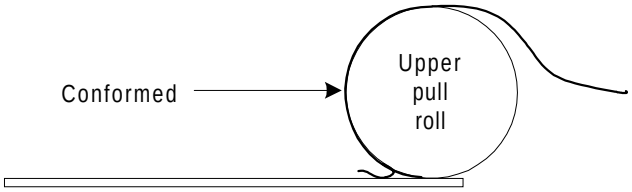
When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

j) Make sure the image is conformed to the upper main roller. Refer to **Figure 6.8.12**

INFORMATION

If the image is not conformed to the roller, you may experience difficulties with this application.

Figure 6.8.12 Conformed print

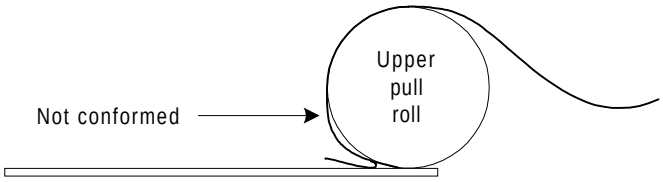


- If its not, slowly move the substrate into the nip until the decal is conformed. Refer to **Figure 6.8.13**

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Figure 6.8.13 Non conformed decal



INFORMATION

Steps "*n*" and "*o*" will be performed simultaneously.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

k) Press down on the variable speed footswitch just enough to give yourself a comfortable work speed.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

When the laminator rollers are in motion, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

l) Use one hand to pull the release liner off as the substrate moves towards the nip and the other hand to apply slight back tension to the decal.

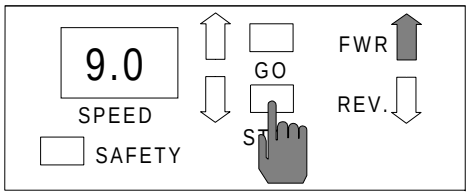
m) Once the substrate and the decal are completely through the pull rollers, you can let off the variable speed footswitch.

n) The mounted image can now be removed from the front of the laminator.

o) Trim the mounted piece as necessary.

Finishing

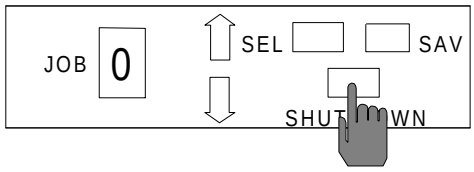
a) Press **STOP**.



b) Raise the pull roller up by turning the crank handle counter clockwise until the pull rollers are separated.

c) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

d) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

Group 3 : Top / bottom heat

Group three contains applications requiring heat to activate the upper and lower materials.

The procedures and its parameters described in this section are starting references only. Parameters will vary with regards to laminate thickness, laminate widths, laminates types, print types, ink or toner types, enviroment conditions, operator experience and various substrates.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

6.9 Encapsulation

This application can only be performed from the front of the laminator using the main rollers. This application is explained in detail using the main rollers at the front operating position of the laminator. Use **Chart 11** and **Diagram 11** for assistance.

Materials needed

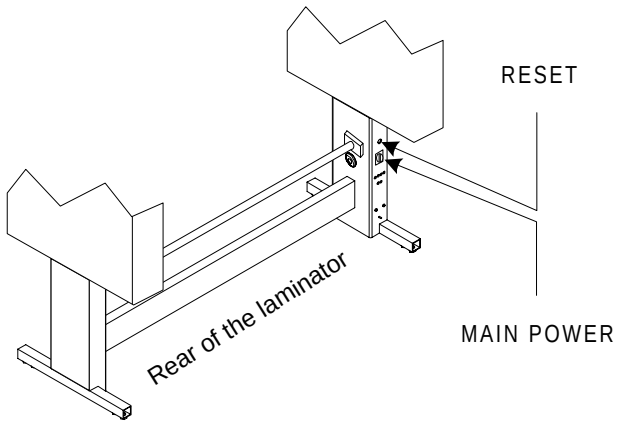
- Two rolls of thermal laminate
  (Both rolls should be of equal widths)
- Prints
  (smaller than the laminate)
- Roll of masking tape
- Utility knife
- Cutting blade with an enclosed casing.
- Piece of cardboard (film width x 6")

Set up

a) Turn **MAIN POWER** to "**ON**". Refer to **Figure 6.9.1**

b) Press **RESET**. Refer to **Figure 6.9.1**

Figure 6.9.1 MAIN POWER / RESET



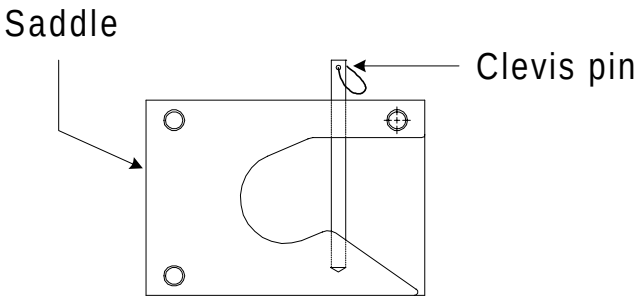
c) Ensure that the rear pull rollers are in the up position..

d) Raise the front and rear safety shields.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Lift the clevis pin located in the saddle of the upper unwind shaft.

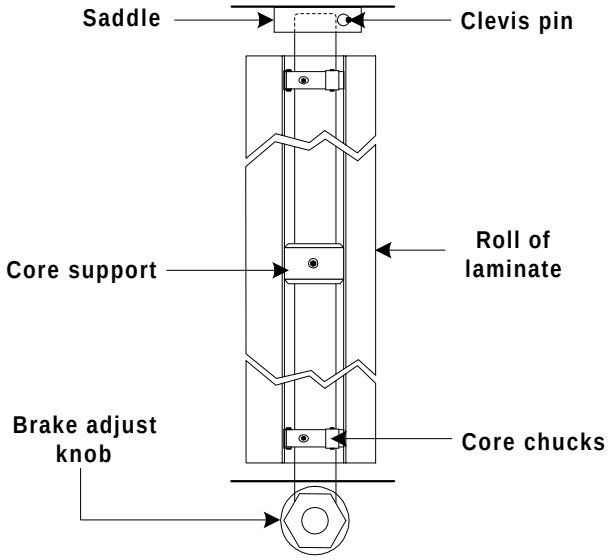


f) Swing the upper unwind shaft out enough to slide the roll of laminate over the core chucks on the upper unwind shaft. Refer to **Figure 6.9.2**

INFORMATION

Twisting the roll of laminate while sliding makes loading the film onto the unwind shaft easier.

Figure 6.9.2 Unwind shaft



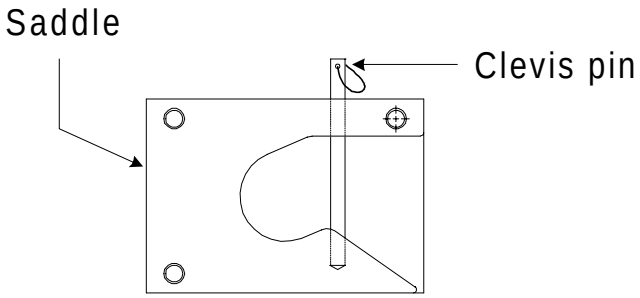
g) Once the roll of thermal laminate is on the upper unwind shaft, swing the upper unwind shaft back into the saddle.

CAUTION

Ensure the roll of laminate is loaded properly on the unwind shaft. Exposed adhesive should be facing away from the rollers. This will prevent hours of roll cleaning!

h) Push the clevis pin back down to secure the unwind shaft in its saddle.

i) Lift the clevis pin located in the saddle of the lower unwind shaft.



j) Swing the lower unwind shaft out enough to slide the roll of thermal laminate over the core chucks on the lower unwind shaft. Refer to **Figure 6.9.2**

INFORMATION

Twisting the roll of thermal laminate while sliding makes loading the film onto the unwind shaft easier.

k) Once the roll of thermal laminate is on the lower unwind shaft, swing the lower unwind shaft back into the saddle.

l) Push the clevis pin back down to secure the unwind shaft in its saddle.

m) Center the upper roll and the lower roll of material on the unwind shafts. You may refer to your measurement chart in **Section 5.3.2 Loading film (Figure 5.3.4)**

INFORMATION

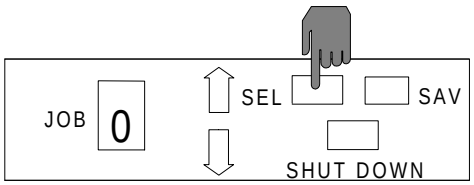
For the lower unwind shaft, add 1/4 in. to the measurement.

n) Lower the safety shields.

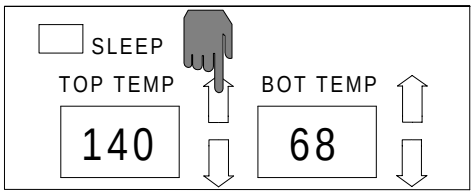
INFORMATION

If you have the parameters stored as a JOB number enter it now then press SEL and skip to step " *p*", other wise continue with step " *l*".

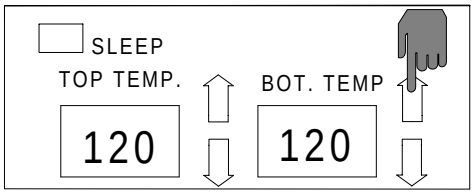
o) Press **SEL**. **SEL** will stop flashing.



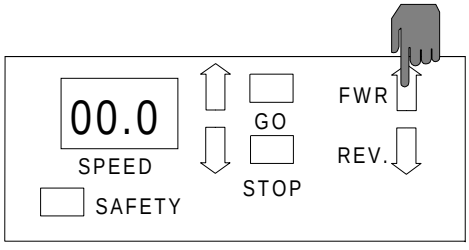
p) Press **TOP TEMP ▲** to set a temperature of 220-230 °F (104-110 °C).



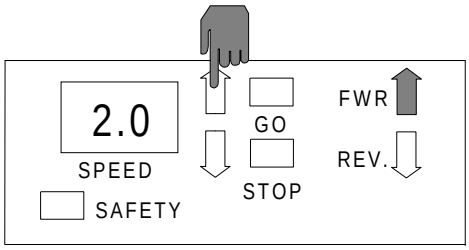
q) Press **BOT TEMP ▲** to set a temperature of 220-230 °F (104-110 °C).



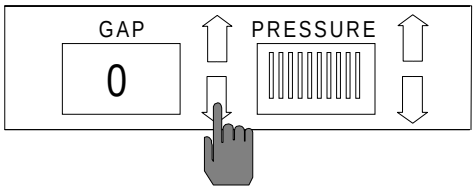
r) Press **FWD ▲**



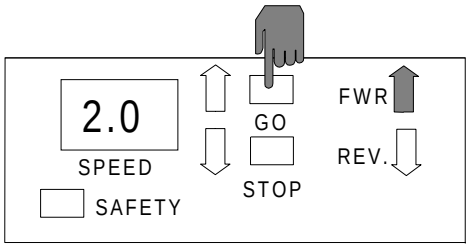
s) Press **SPEED ▲** to set a motor speed of 2 ft. / min. (.6 m / min.)



t) Press **GAP ▼** to enter a 0 in. gap setting.

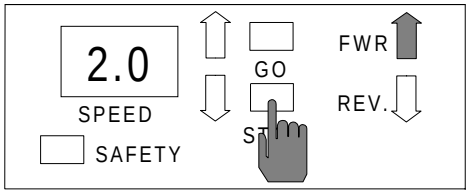


u) Press **GO**.



v) Continue with step **"w"** when the **TOP TEMP DISPLAY** and **BOT TEMP DISPLAY** stops flashing.

w) Press **STOP**.



Process

a) Raise the front safety shield and remove the front infeed table.

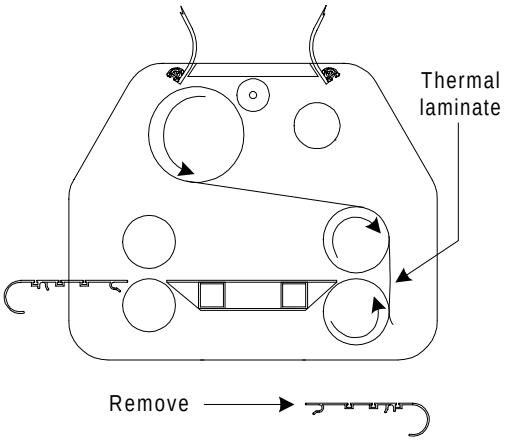
b) Apply just enough brake tension to prevent the roll of thermal laminate from free spinning.

INFORMATION

Excessive brake tension may cause the output to curl. This can create complications with the second pass of this application.

c) Pull the thermal laminate straight down toward the front infeed table so that approximately 6 in. is resting on the front infeed table. Refer to Figure **6.9.3**

Figure 6.9.3 Laminate



d) Apply just enough brake tension to prevent the roll of thermal laminate from free spinning.

INFORMATION

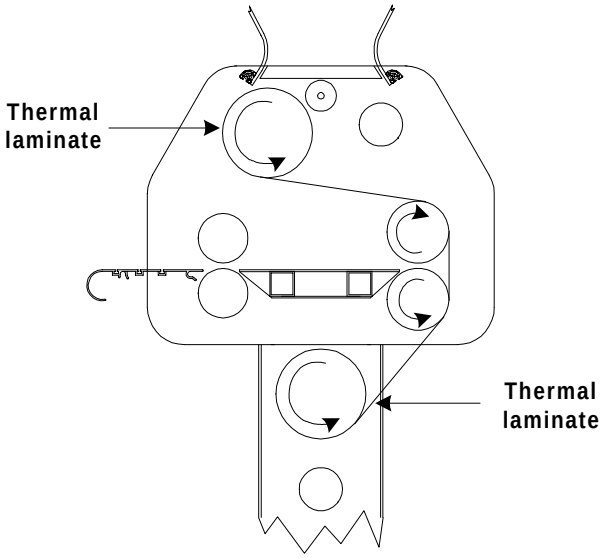
Excessive brake tension may cause the output to curl. This can create complications with the second pass of this application.

e) Pull the thermal laminate from the bottom unwind shaft up towards the upper main roller and tack it the laminate resting on the upper main roller. Refer to **Figure 6.9.4**

INFORMATION

The mount adhesive will adhere to the activated adhesive from the laminate.

Figure 6.9.4 Lower laminate



f) Use a piece of cardboard to push the material into the nip of the main rollers.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

g) Press on the variable speed footswitch to guide the cardboard and thermal laminate through the main rollers.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

Keep hands and fingers clear of the pull roller nip when changing the gap. You can be CRUSHED!

WARNING

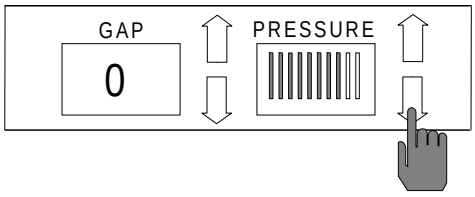
Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

i) Once the cardboard has passed through the pull rollers, lower the upper pull roller onto the web. Turn the pull roll crank handle 3/4 turn clockwise after you feel the initial contact. Refer to **Figure 6.9.5**

h) When the cardboard has traveled pass the main rollers, press **PRESSURE ▼** to set a pressure of 60 - 80%.

INFORMATION

PRESSURE will vary with the thickness and width of the laminate you are using. Adjust as necessary.



j) Cut the cardboard from the webbed material. Refer to **figure 6.9.5**

CAUTION

Excess pressure can damage the laminating rollers. Always use the minimum roll pressure necessary to complete the task.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

k) Tape the web to the lower rewind tube or let the web run out to a work table. Refer to **Figure 6.9.5**

INFORMATION

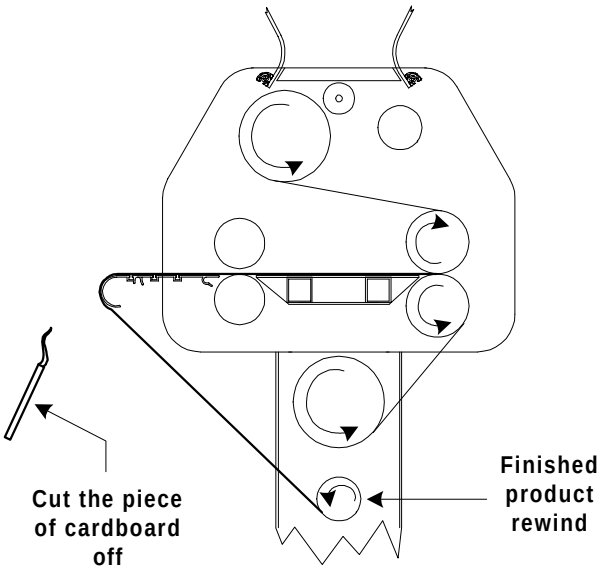
If you choose to use the lower rewind tube, make note of the direction of travel.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

- Press on the variable speed footswitch to lengthen the web enough to get one full wrap around the lower rewind tube.

Figure 6.9.5 Finish product rewind



l) Replace the front infeed table. Ensure that the table is seated properly.

m) Close the front and rear safety shields.

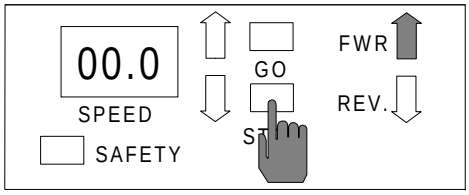
INFORMATION

The SAFETY indicator should not be flashing when the tables are properly seated and the safety shields are in the closed position..

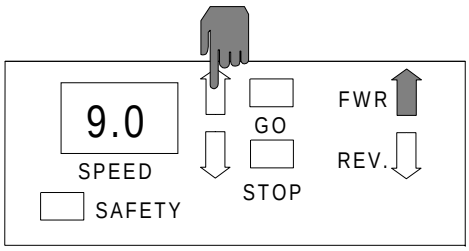
n) Press **STOP**.

WARNING

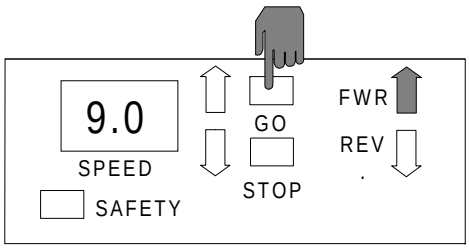
When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!



o) Press **SPEED** ▲ to a speed you feel comfortable working with. It is recommended that **SPEED** not exceed 5 ft./ min. (1.52 m/ min.) .

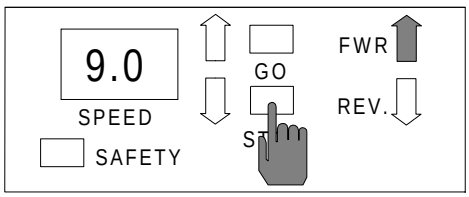


p) Press **GO**.

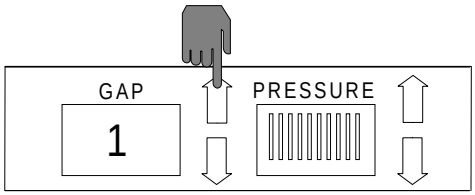


q) Feed the images through the main rollers from the front operating position of the laminator.

r) After the last print has passed through the pull rollers, press **STOP**.



s) Press **GAP** ▲ to a 1 in. setting.



Finishing

a) With an enclosed blade, cut the finished product from the web.

CAUTION

Do not use an open blade to cut the web near the rollers. You can put cuts into the rollers!

b) The prints are now ready to be trimmed.

c) If you used the lower rewind, remove the rewind tube and bring it to a trimming station. Replace the rewind tube when finished.

d) Raise the front and rear safety shields to the up position.

WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

e) Raise the pull roller up by turning the crank handle counter clockwise until the pull rollers are separated.

f) Remove the front infeed table.

g) Cut the web of thermal laminates at the upper and lower unwind shafts with an enclosed blade.

h) Remove the web from the front of the laminator and the rolls of material from the upper and lower unwind shafts.

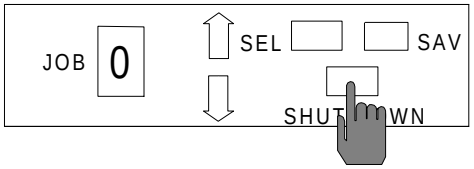
INFORMATION

This will prevent any exposed adhesive from contacting the rollers.

i) Clean the rollers as described in the maintenance section. (**Section 8.2 Cleaning the rollers**)

j) Replace the front infeed table.

k) Lower the front and rear safety shields and press **SHUTDOWN** if finished with the laminator.



End of application

6.10 Charts and Diagrams

Use the parameter charts and web up diagrams can to assist you with the applications described. It is recommended that you keep these parameter charts and web up diagrams in the manual for reference. Make copies if you require them in other locations.

Use the blank parameter chart and blank web up diagram to record specific applications not illustrated in this section. For converting degrees Fahrenheit to degrees Celsius, refer to **Figure 6.10.1**

Parameters will vary with regards to laminate thickness, laminate widths, laminates types, print types, ink or toner types, enviroment conditions, operater experience, and various substrates.

Figure 6.10.1 Temperature conversion chart

⁰ F		⁰ C	⁰ F		⁰ C	⁰ F		⁰ C	⁰ F		⁰ C	⁰ F		⁰ C
68	=	20	113	=	45	158	=	70	203	=	95	248	=	120
69	=	20.6	114	=	45.6	159	=	70.6	204	=	95.6	249	=	120.6
70	=	21.1	115	=	46.1	160	=	71.1	205	=	96.1	250	=	121.1
71	=	21.7	116	=	46.7	161	=	71.7	206	=	96.7	251	=	121.7
72	=	22.2	117	=	47.2	162	=	72.2	207	=	97.2	252	=	122.2
73	=	22.7	118	=	47.8	163	=	72.8	208	=	97.8	253	=	122.8
74	=	23.3	119	=	48.3	164	=	73.3	209	=	98.3	254	=	123.3
75	=	23.9	120	=	48.9	165	=	73.9	210	=	98.9	255	=	123.9
76	=	24.4	121	=	49.4	166	=	74.4	211	=	99.4	256	=	124.4
77	=	25	122	=	50	167	=	75	212	=	100	257	=	125
78	=	25.6	123	=	50.6	168	=	75.6	213	=	100.6	258	=	125.6
79	=	26.1	124	=	51.1	169	=	76.1	214	=	101.1	259	=	126.1
80	=	26.7	125	=	51.7	170	=	76.7	215	=	101.7	260	=	126.7
81	=	27.2	126	=	52.2	171	=	77.2	216	=	102.2	261	=	127.2
82	=	27.8	127	=	52.8	172	=	77.8	217	=	102.8	262	=	127.8
83	=	28.3	128	=	53.3	173	=	78.3	218	=	103.3	263	=	128.3
84	=	28.9	129	=	53.9	174	=	78.9	219	=	103.9	264	=	128.9
85	=	29.4	130	=	54.4	175	=	79.4	220	=	104.4	265	=	129.4
86	=	30	131	=	55	176	=	80	221	=	105	266	=	130
87	=	30.6	132	=	55.6	177	=	80.6	222	=	105.6	267	=	130.6
88	=	31.1	133	=	56.1	178	=	81.1	223	=	106.1	268	=	131.1
89	=	31.7	134	=	56.7	179	=	81.7	224	=	106.7	269	=	131.7
90	=	32.2	135	=	57.2	180	=	82.2	225	=	107.2	270	=	132.2
91	=	32.8	136	=	57.8	181	=	82.8	226	=	107.8	271	=	132.8
92	=	33.3	137	=	58.3	182	=	83.3	227	=	108.3	272	=	133.3
93	=	33.9	138	=	58.9	183	=	83.9	228	=	108.9	273	=	133.9
94	=	34.4	139	=	59.4	184	=	84.4	229	=	109.4	274	=	134.4
95	=	35	140	=	60	185	=	85	230	=	110	275	=	135
96	=	35.6	141	=	60.6	186	=	85.6	231	=	110.6	276	=	135.6
97	=	36.1	142	=	61.1	187	=	86.1	232	=	111.1	277	=	136.1
98	=	36.7	143	=	61.7	188	=	86.7	233	=	111.7	278	=	136.7
99	=	37.2	144	=	62.2	189	=	87.2	234	=	112.2	279	=	137.2
100	=	37.8	145	=	62.8	190	=	87.8	235	=	112.8	280	=	137.8
101	=	38.3	146	=	63.3	191	=	88.3	236	=	113.3	281	=	138.3
102	=	38.9	147	=	63.9	192	=	88.9	237	=	113.9	282	=	138.9
103	=	39.4	148	=	64.4	193	=	89.4	238	=	114.4	283	=	139.4
104	=	40	149	=	65	194	=	90	239	=	115	284	=	140
105	=	40.6	150	=	65.6	195	=	90.6	240	=	115.6	285	=	140.6
106	=	41.1	151	=	66.1	196	=	91.1	241	=	116.1	286	=	141.1
107	=	41.7	152	=	66.7	197	=	91.7	242	=	116.7	287	=	141.7
108	=	42.2	153	=	67.2	198	=	92.2	243	=	117.2	288	=	142.2
109	=	42.8	154	=	67.8	199	=	92.8	244	=	117.8	289	=	142.8
110	=	43.3	155	=	68.3	200	=	93.3	245	=	118.3	290	=	143.3
111	=	43.9	156	=	68.9	201	=	93.9	246	=	118.9		=	
112	=	44.4	157	=	69.4	202	=	94.4	247	=	119.4		=	

Parameter Chart - Blank

MATERIALS

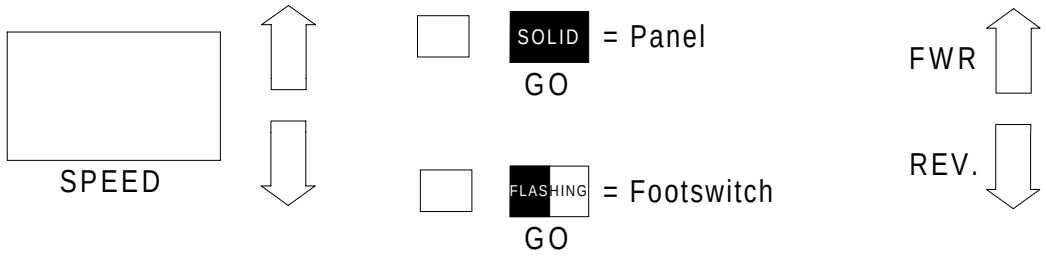
UPPER UNWIND : _____ SUBSTRATE : _____

LOWER UNWIND : _____ PRINTS : _____

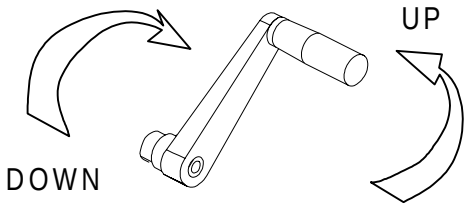
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



PULL ROLL SETTINGS



PRESSURE

- ☐ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☐ 3/4 Turn

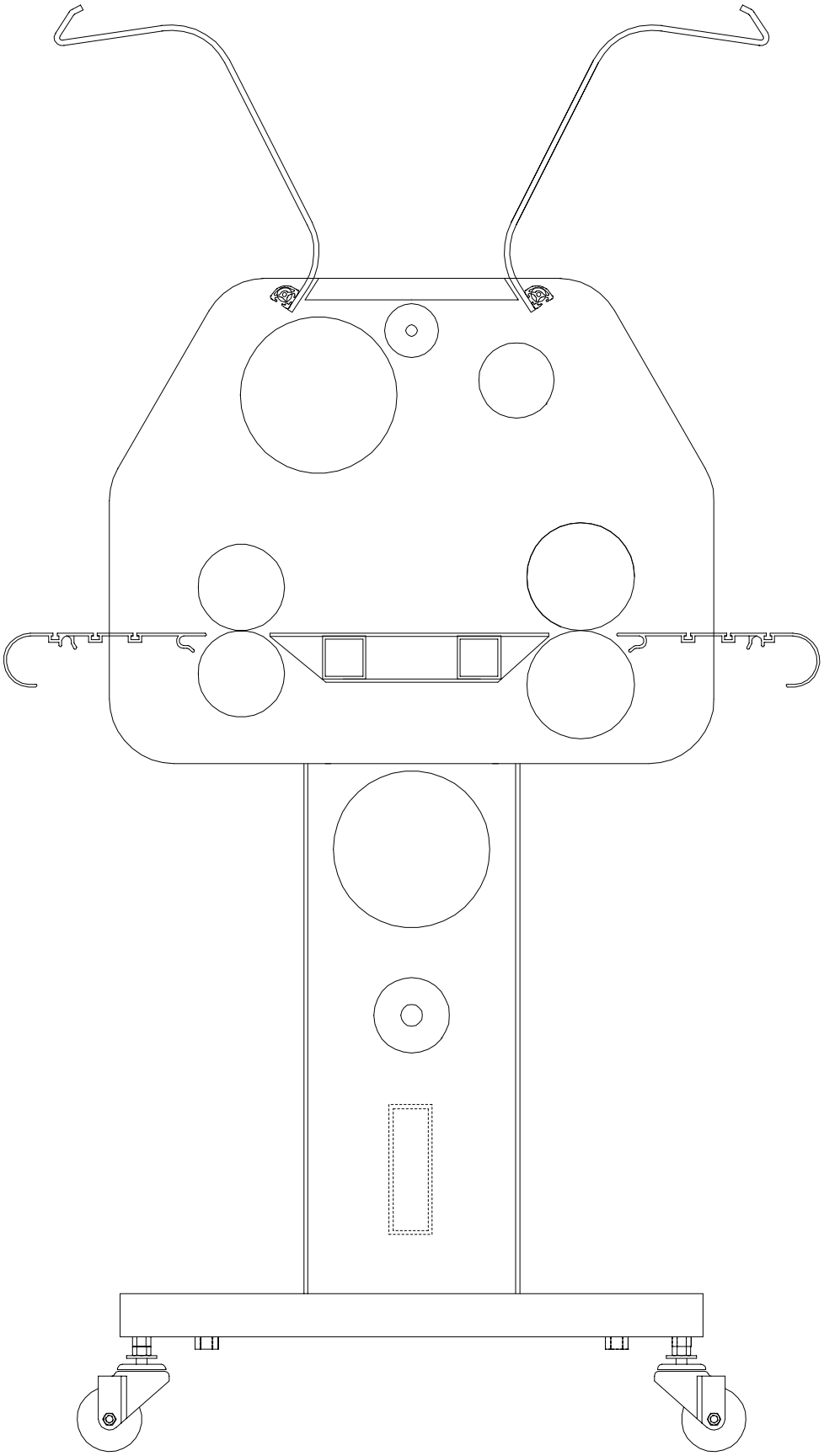
NOTES

_____

_____

_____

Web Diagram - Blank



Parameter Chart 1 - Precoating substrates

MATERIALS

UPPER UNWIND : Pro Mount

SUBSTRATE : 1/4" Foam Core

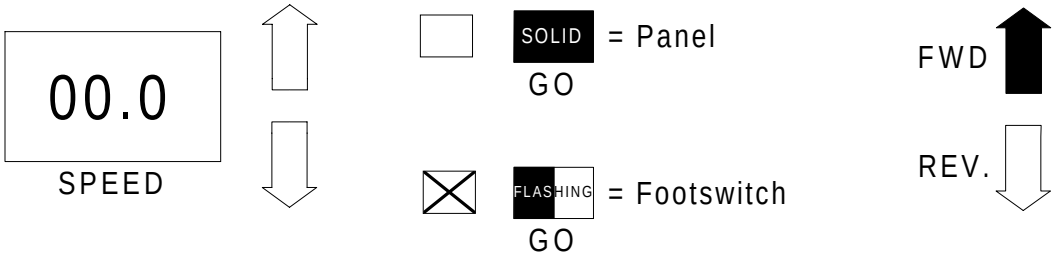
LOWER UNWIND : N / A

PRINTS : N / A

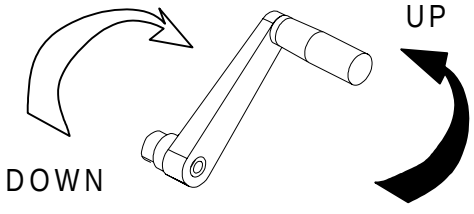
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



PULL ROLL SETTINGS



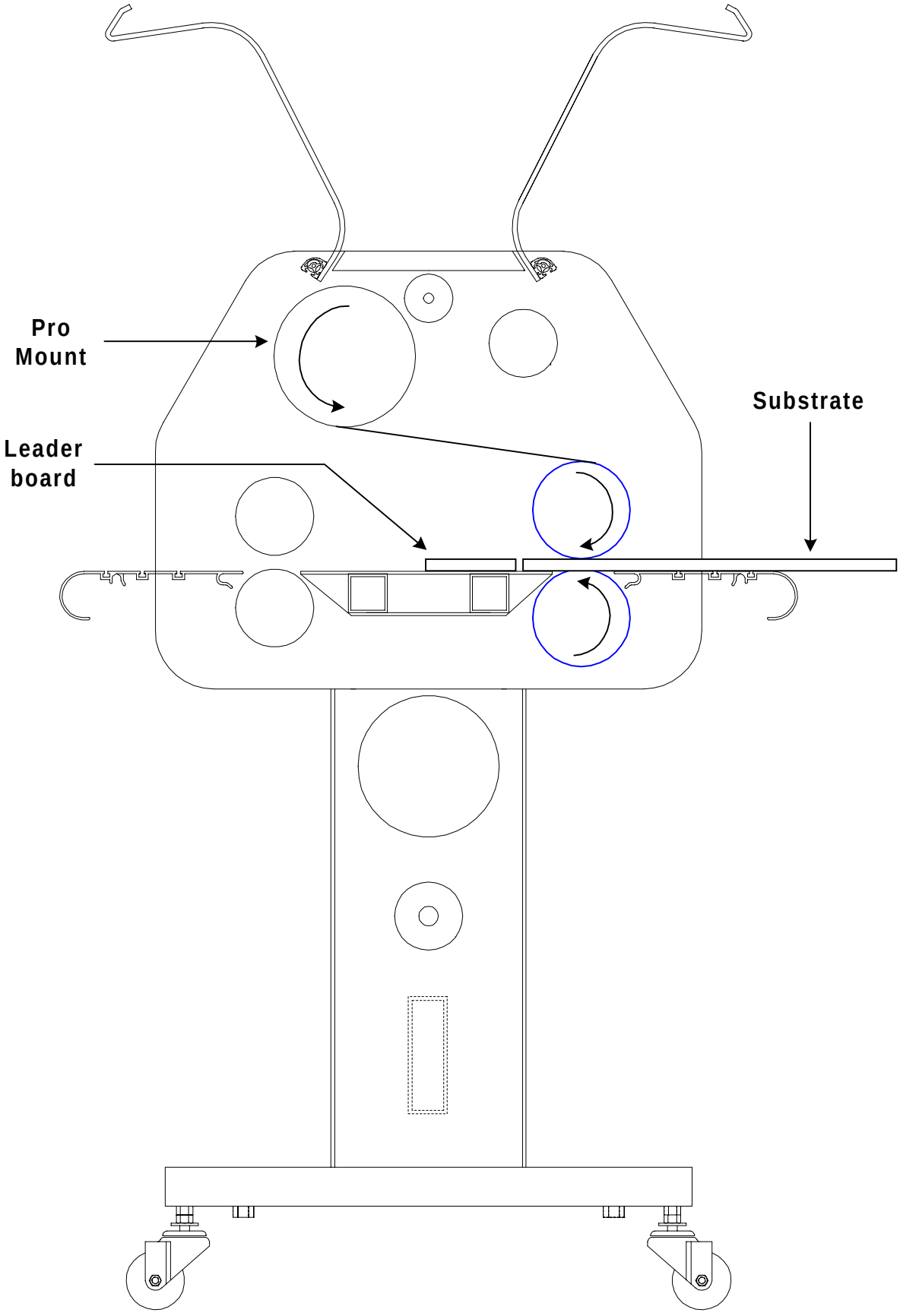
PRESSURE

- ☒ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☐ 3/4 Turn

NOTES

Pro Mount can be substituted with a similar product. Substrate can vary. GAP will be dependent on the substrate thickness. Pressure will be determined by operator. Speed is not indicated in Footswitch mode. Because the process is described from the front of the laminator, motor direction is FWD and the pull rolls are not required for this application.

Web Diagram 1 - Precoating substrate



Parameter Chart 2 - Mounting only

MATERIALS

UPPER UNWIND : N / A

LOWER UNWIND : N / A

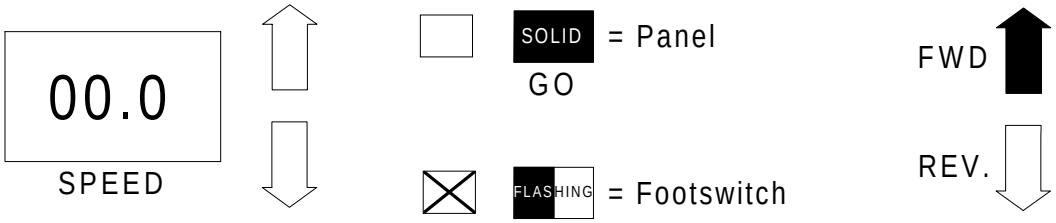
SUBSTRATE : Precoated boards

PRINTS : Inkjet prints

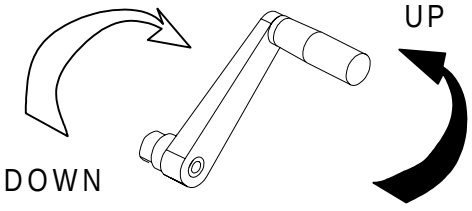
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



PULL ROLL SETTINGS



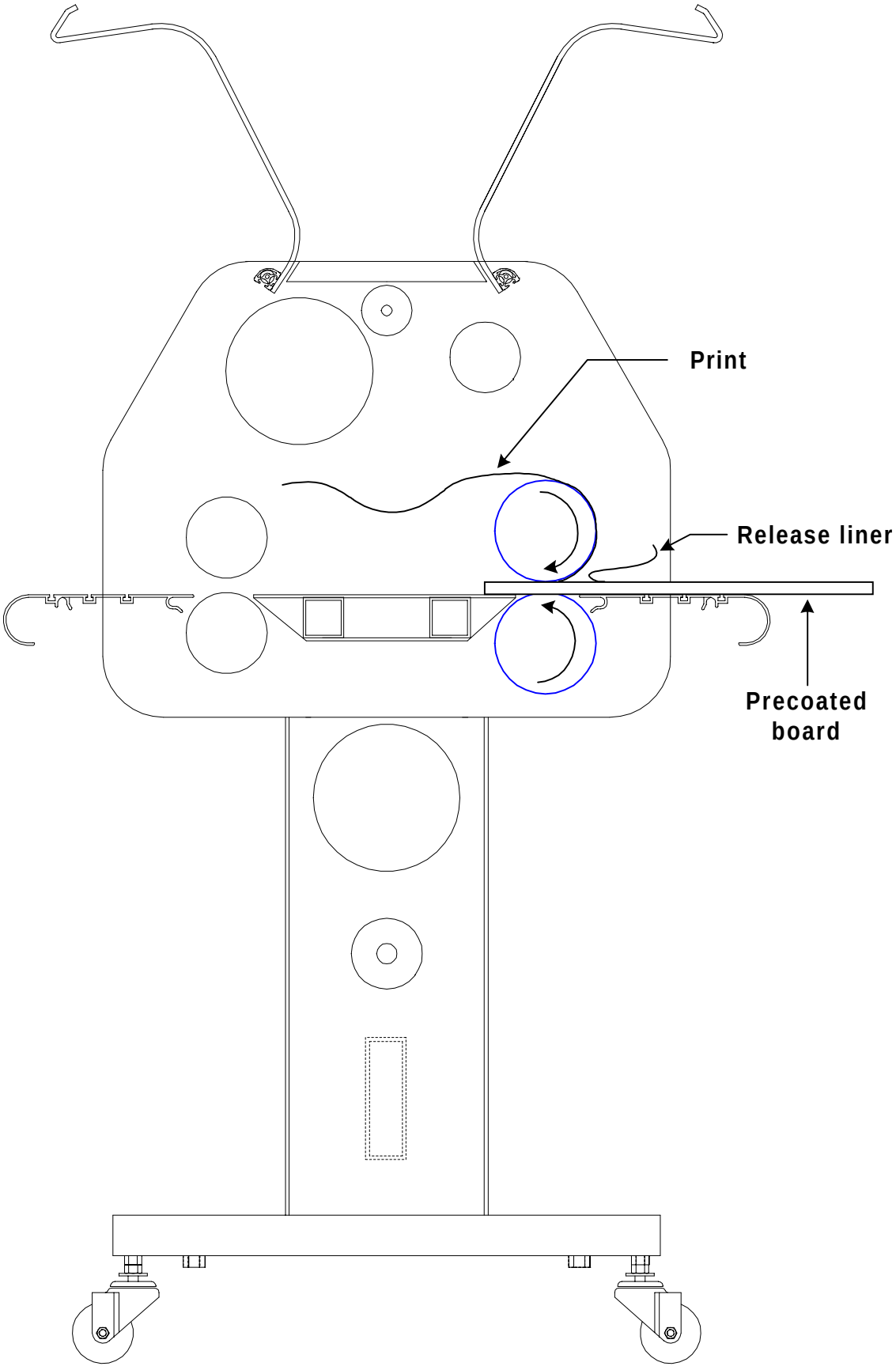
PRESSURE

- ☒ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☐ 3/4 Turn

NOTES

Substrate will vary. Print can be of any type. GAP will be dependent on the substrate thickness. Pressure will be determined by operator. Speed is not indicated in Footswitch mode. Because the process is described from the front of the laminator, motor direction is FWD and the pull rolls are not required for this application.

Web Diagram 2 - Mounting only



Parameter Chart 3 - Single sided (Sled)

MATERIALS

UPPER UNWIND : Pro Gloss

SUBSTRATE : 1/4" Foam Core

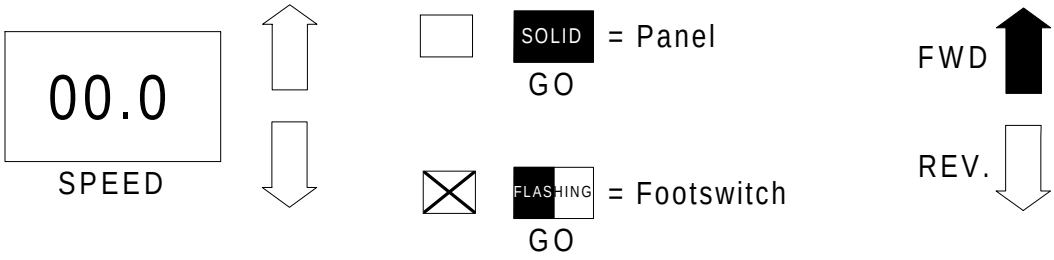
LOWER UNWIND : N / A

PRINTS : Inkjet prints

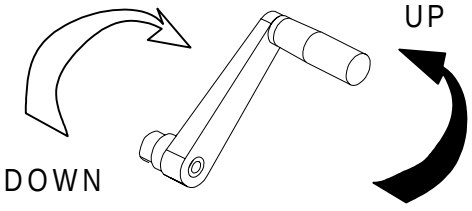
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



PULL ROLL SETTINGS



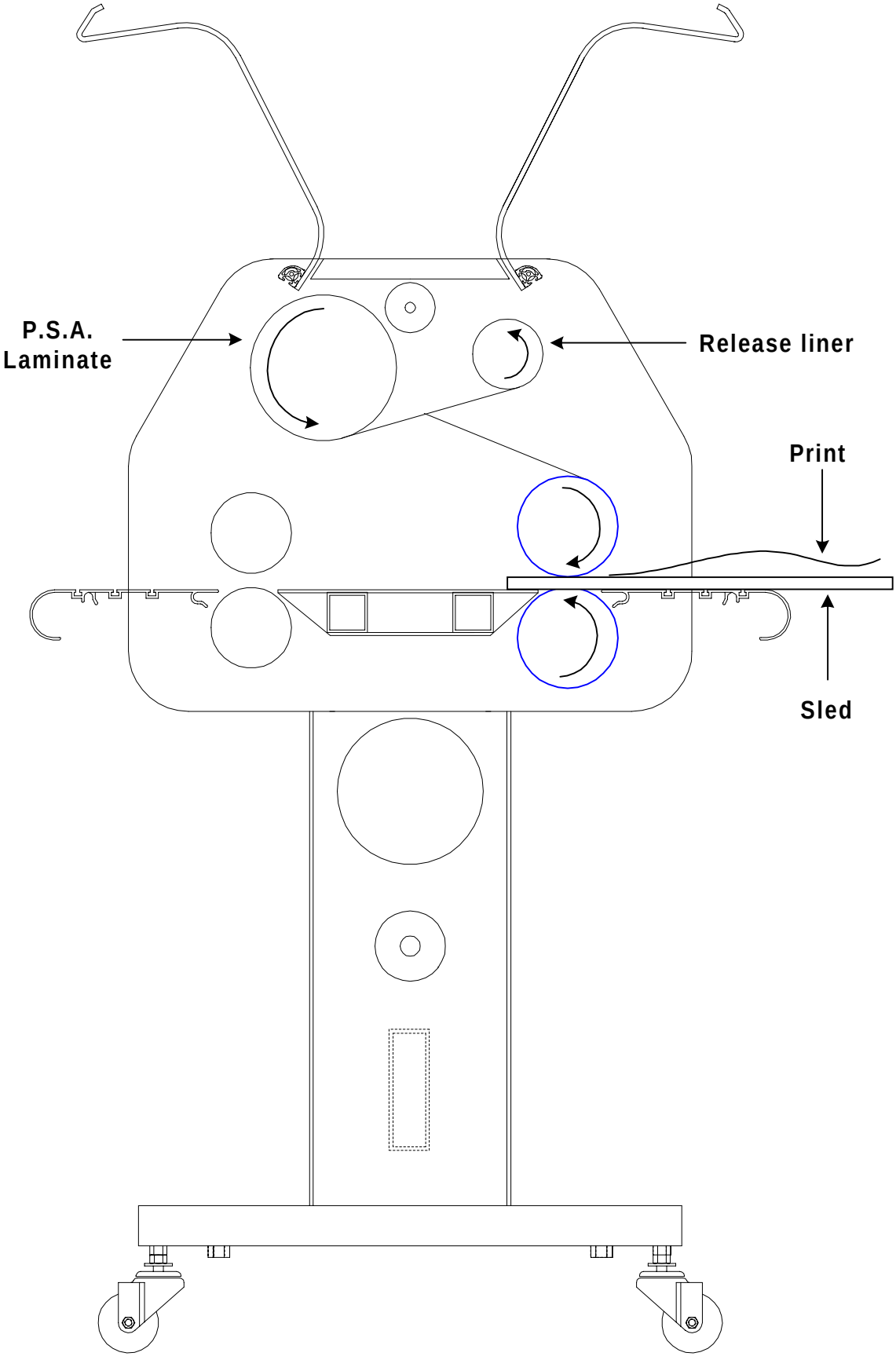
PRESSURE

- ☒ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☐ 3/4 Turn

NOTES

Substrate will vary. Print can be of any type. GAP will be dependent on the substrate thickness. Pressure will be determined by operator. Speed is not indicated in Footswitch mode. Because the process is described from the front of the laminator, motor direction is FWD and the pull rolls are not required for this application.

Web Diagram 3 - Single sided (Sled)



Parameter Chart 4 - Single sided (Craft paper)

MATERIALS

UPPER UNWIND : Pro Gloss

SUBSTRATE : N / A

LOWER UNWIND : Craft Paper

PRINTS : Inkjet prints

TEMPERATURE

TOP TEMP. 68

BOT. TEMP. 68

GAP & PRESSURE

GAP 0

PRESSURE

MOTOR DIRECTION & SPEED

3 - 6 SPEED

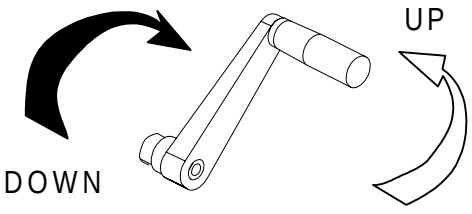
☒ SOLID = Panel GO

☐ FLASHING = Footswitch GO

FWD

REV.

PULL ROLL SETTINGS



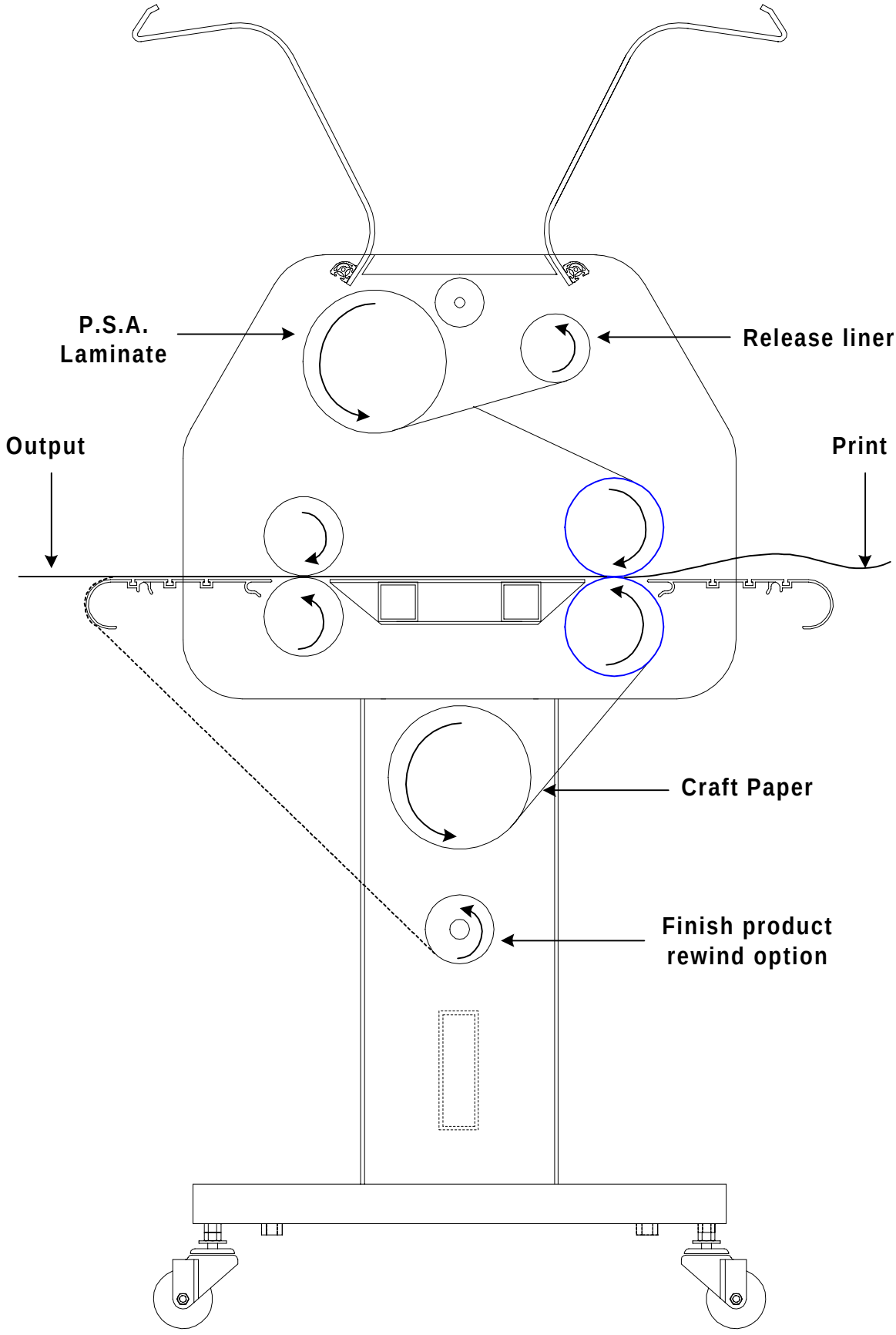
PRESSURE

- ☐ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☒ 3/4 Turn

NOTES

Upper unwind material can be of similar product. Print can be of any type. Pressure will will vary slightly with regards to quality of the output. Speed will be determined by the operator. Pull roll pressure may vary between 1/2 turn and 3/4 turn. Because the process is described from the front of the laminator, motor direction is FWD.

Web Diagram 4 - Single sided (Craft paper)



Parameter Chart 5 - Decal and mount (Decal)

MATERIALS

UPPER UNWIND : Pro Gloss

LOWER UNWIND : Pro Mount

SUBSTRATE : N / A

PRINTS : Inkjet prints

TEMPERATURE

TOP TEMP. 68

BOT. TEMP. 68

GAP & PRESSURE

GAP 0

PRESSURE

MOTOR DIRECTION & SPEED

3 - 6 SPEED

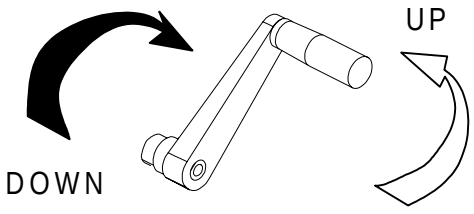
☒ SOLID = Panel GO

☐ FLASHING = Footswitch GO

FWD

REV.

PULL ROLL SETTINGS



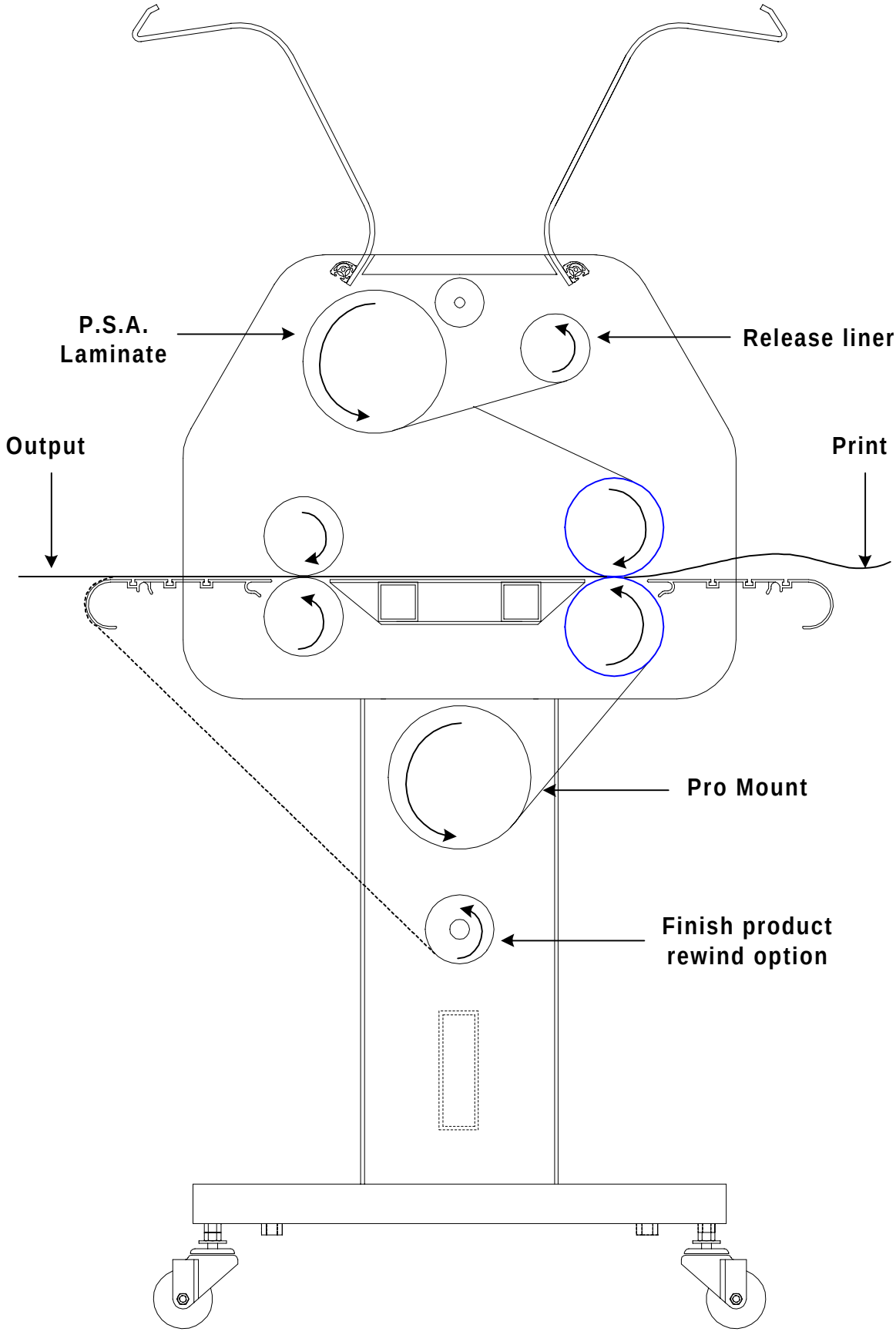
PRESSURE

- ☐ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☒ 3/4 Turn

NOTES

Upper and lower unwind material can be of similar product. Print can be of any type. Pressure will will vary slightly with regards to quality of the output. Speed will be determined by the operator. Pull roll pressure may vary between 1/2 turn and 3/4 turn. Because the process is described from the front of the laminator, motor direction is FWD.

Web Diagram 5 - Decal and mount (Decal)



Parameter Chart 6 - Decal and mount (Mount)

MATERIALS

UPPER UNWIND : N / A

LOWER UNWIND : N / A

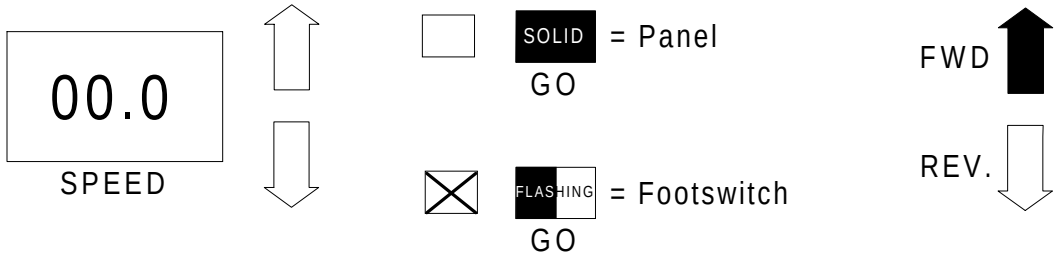
SUBSTRATE : 1/4" Foam Core

PRINTS : Decals

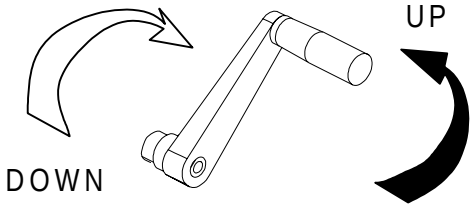
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



PULL ROLL SETTINGS



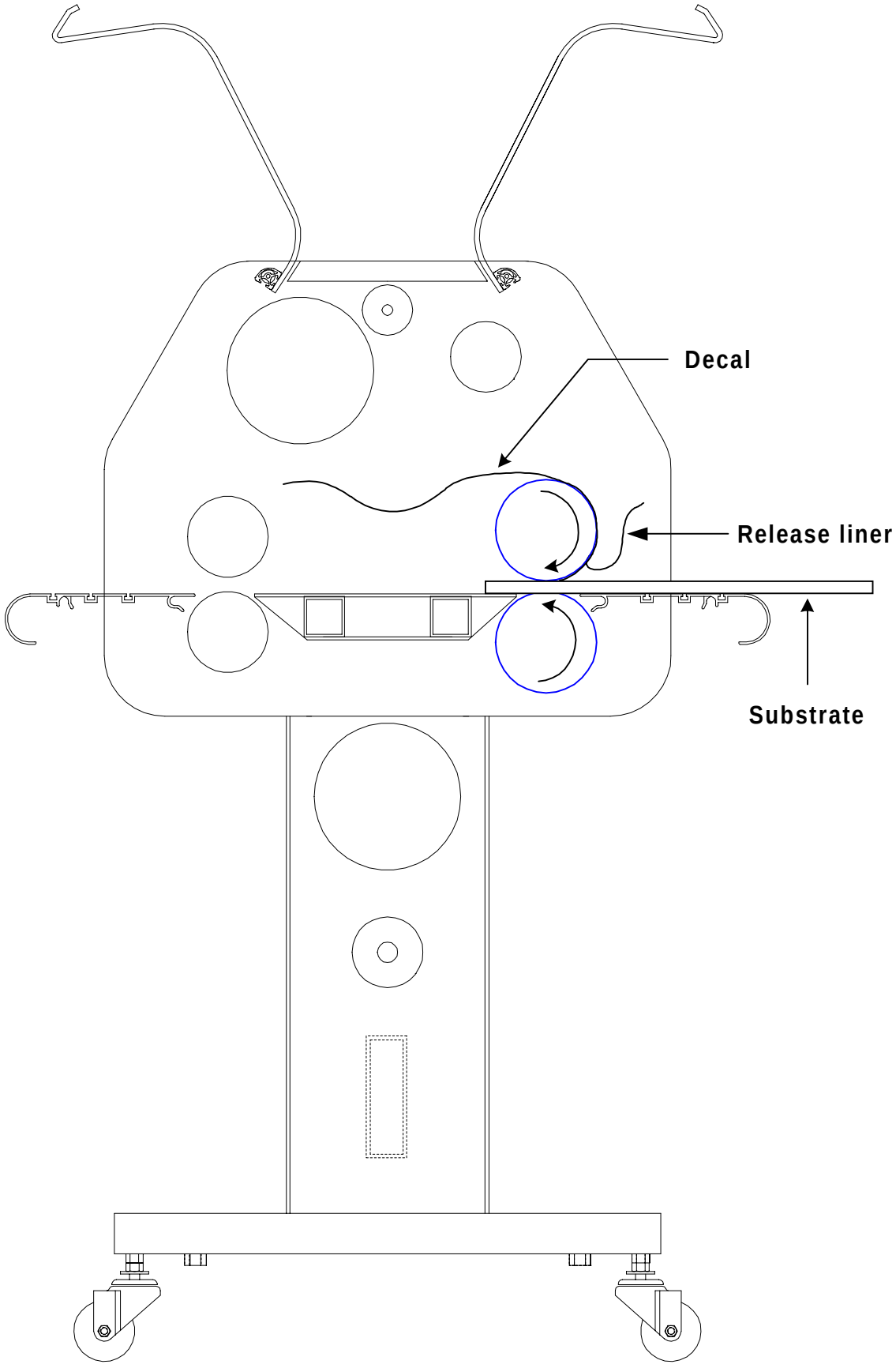
PRESSURE

- ☒ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☐ 3/4 Turn

NOTES

Decal will come from the previous chart and diagram application. Substrate can vary. GAP will be dependent on the substrate thickness. Pressure will be determined by operator. Speed is not indicated in Footswitch mode. Because the process is described from the front of the laminator, motor direction is FWD and the pull rolls are not required for this application.

Web Diagram 6 - Decal and mount (Mount)



Parameter Chart 7 - Precoating substrates (Thermal)

MATERIALS

UPPER UNWIND : Hot Tissue Mount

SUBSTRATE : 1/4" Foam Core

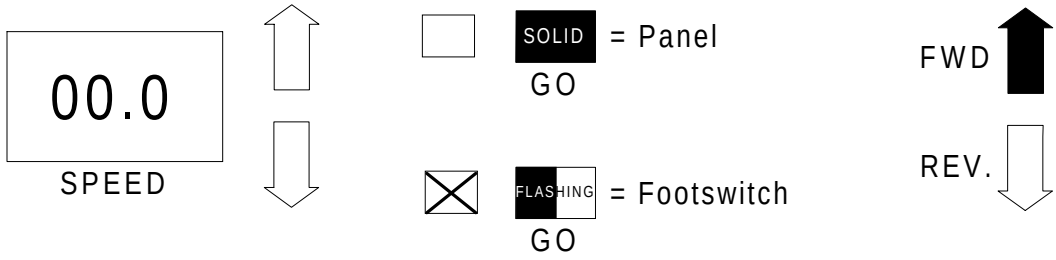
LOWER UNWIND : N / A

PRINTS : N / A

TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED

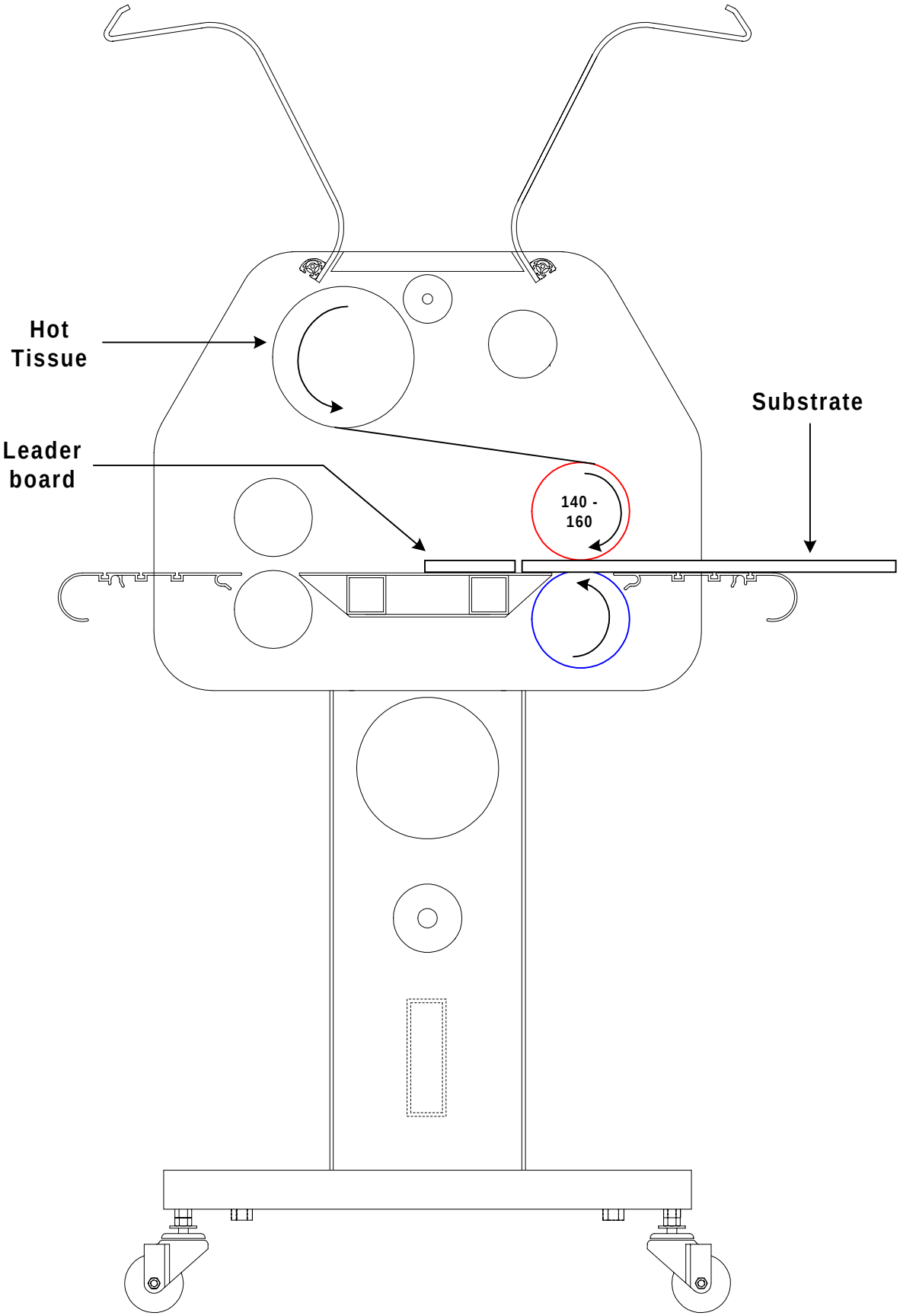


PULL ROLL SETTINGS

NOTES

Upper unwind material may be sibstituted with similar product. Substrate can vary. Top temperature will vary slighly between 140 - 160 ^{0}F. Gap will be dependent on the substrate thickness. Pressure will be determined by the operator. Speed is not indicated in Footswitch mode. Because the process is described from the front of the laminator, motor direction is FWD and the pull rolls are not required for this application.

Web Diagram 7 - Precoating substrate (Thermal)



Parameter Chart 8 - One pass mount and laminate

MATERIALS

UPPER UNWIND : 3 mil Octiva Gloss

SUBSTRATE : 1/4" Foam Core

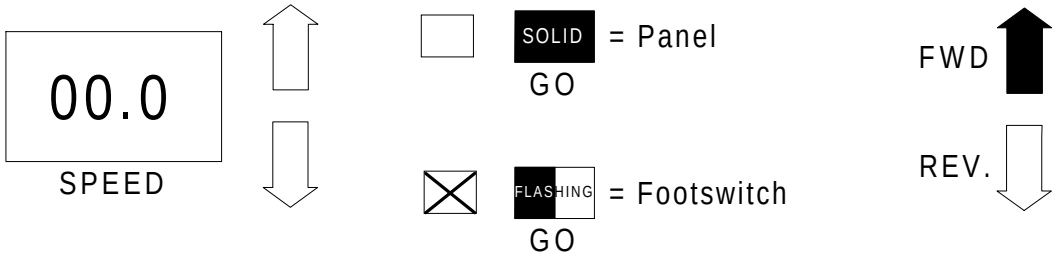
LOWER UNWIND : N / A

PRINTS : Electrostatic images

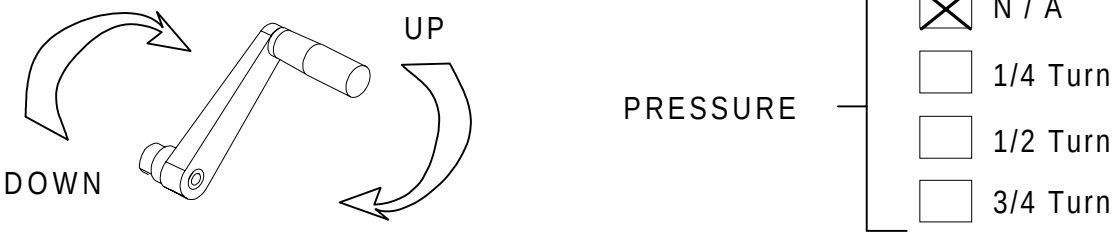
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



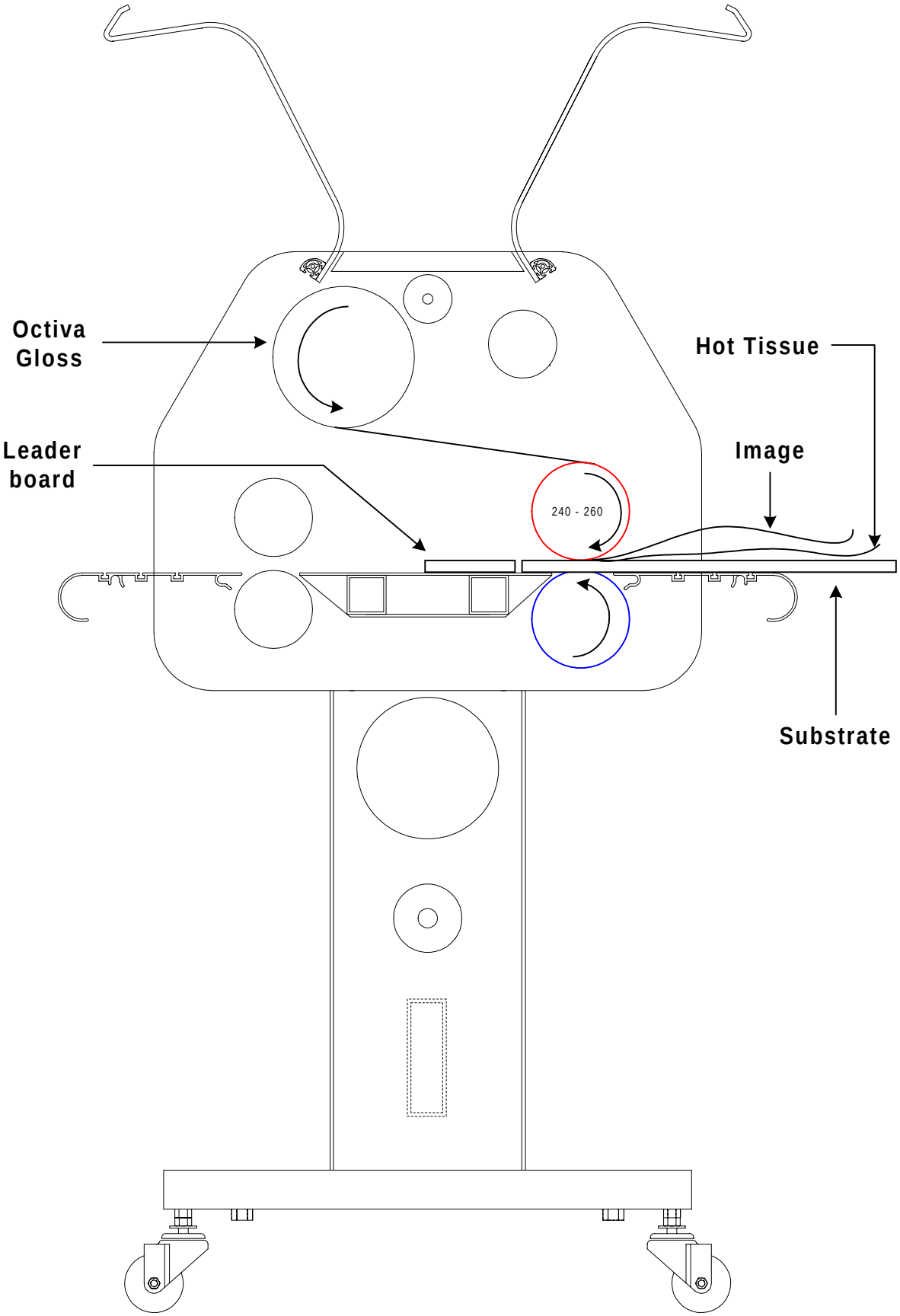
PULL ROLL SETTINGS



NOTES

Upper unwind material may be sibstituted with similar product. Substrate can vary. Top temperature will vary slighly between 240 - 260 ^{0}F depending on laminate thickness. Gap will be dependent on the substrate thickness. Pressure will be determined by the operator. Speed is not indicated in Footswitch mode. Because the process is described from the front of the laminator, motor direction is FWD and the pull rolls are not required for this application.

Web Diagram 8 - One pass mount and laminate



Parameter Chart 9 - Thermal decal and Mount (Decal)

MATERIALS

UPPER UNWIND : 3 mil Octiva Gloss

SUBSTRATE : N / A

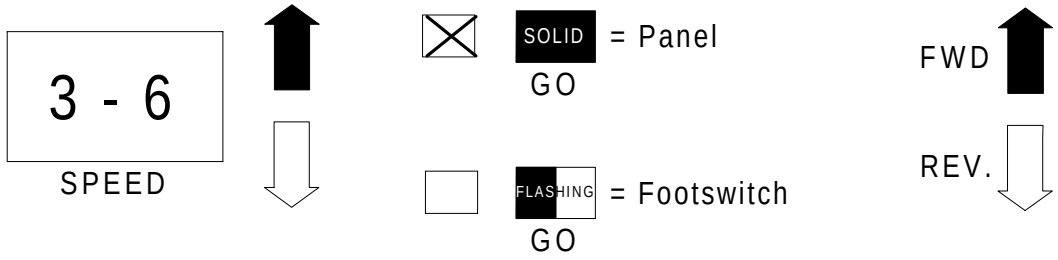
LOWER UNWIND : Pro Mount

PRINTS : Any type

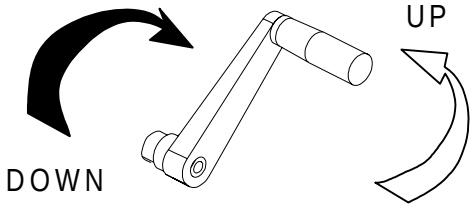
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



PULL ROLL SETTINGS



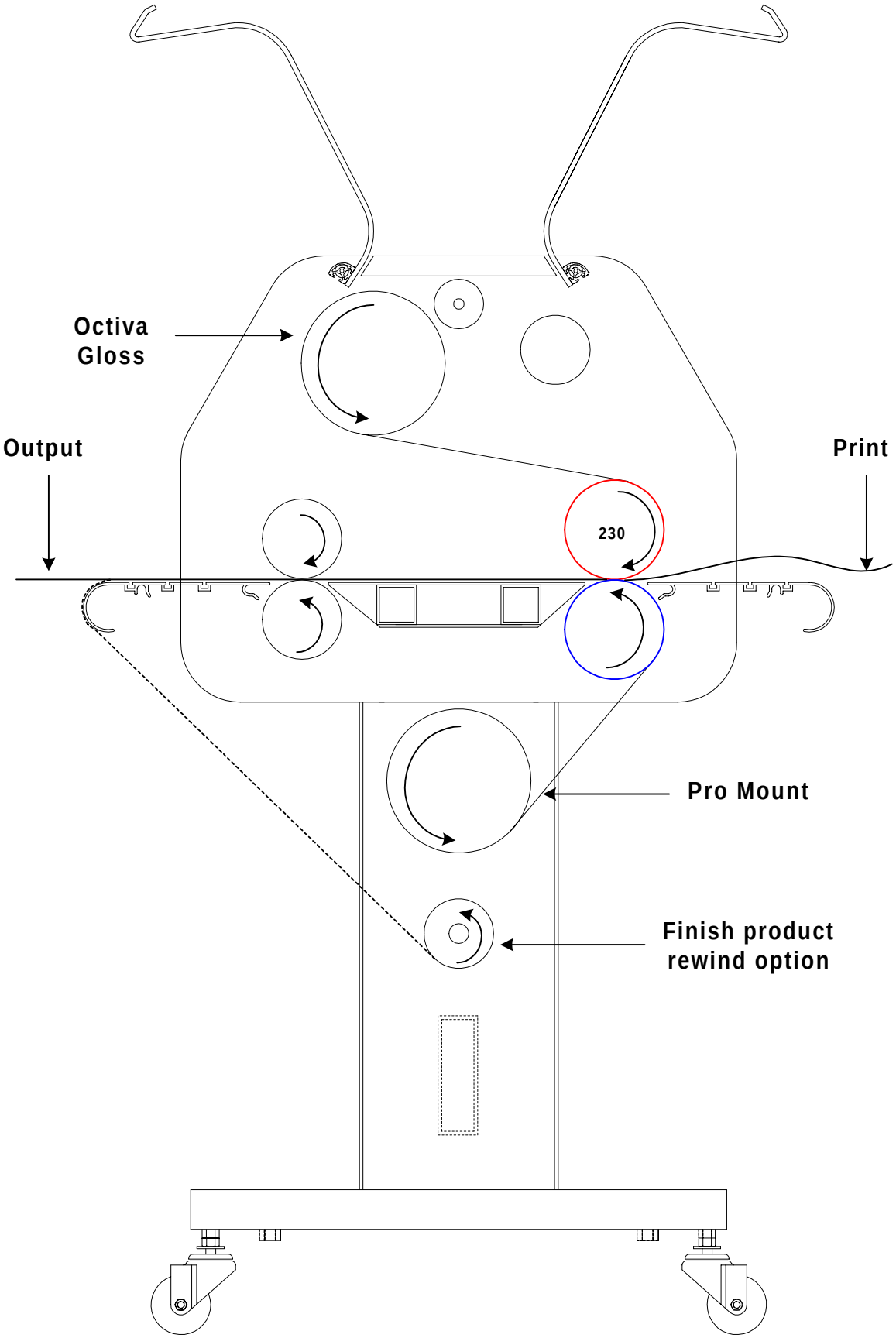
PRESSURE

- ☐ N / A
- ☐ 1/4 Turn
- ☐ 1/2 Turn
- ☒ 3/4 Turn

NOTES

Upper and lower unwind material can be of similar product. Print can be of any type. Pressure will will vary slightly with regards to quality of the output. Speed will be determined by the operator. Pull roll pressure may vary between 1/2 turn and 3/4 turn. Because the process is described from the front of the laminator, motor direction is FWD.

Web Diagram 9 - Thermal decal and mount (Decal)



Parameter Chart 10 - Thermal decal and Mount (Mount)

MATERIALS

UPPER UNWIND : N / A

LOWER UNWIND : N / A

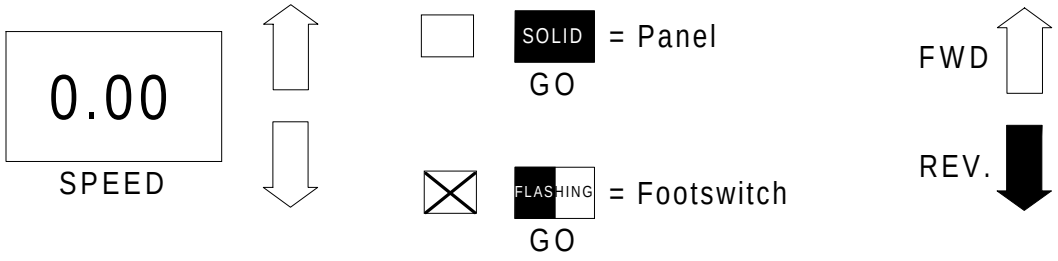
SUBSTRATE : N / A

PRINTS : Decals

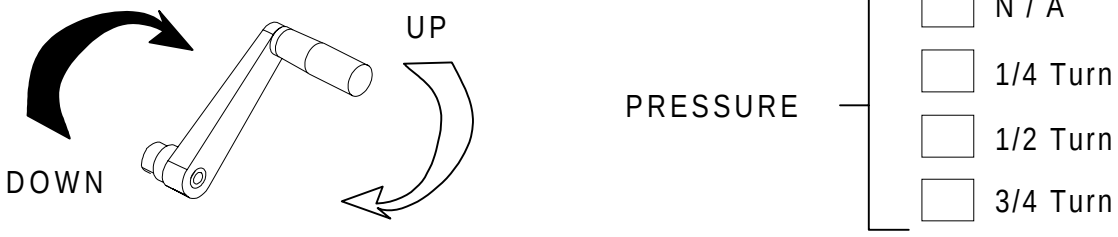
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



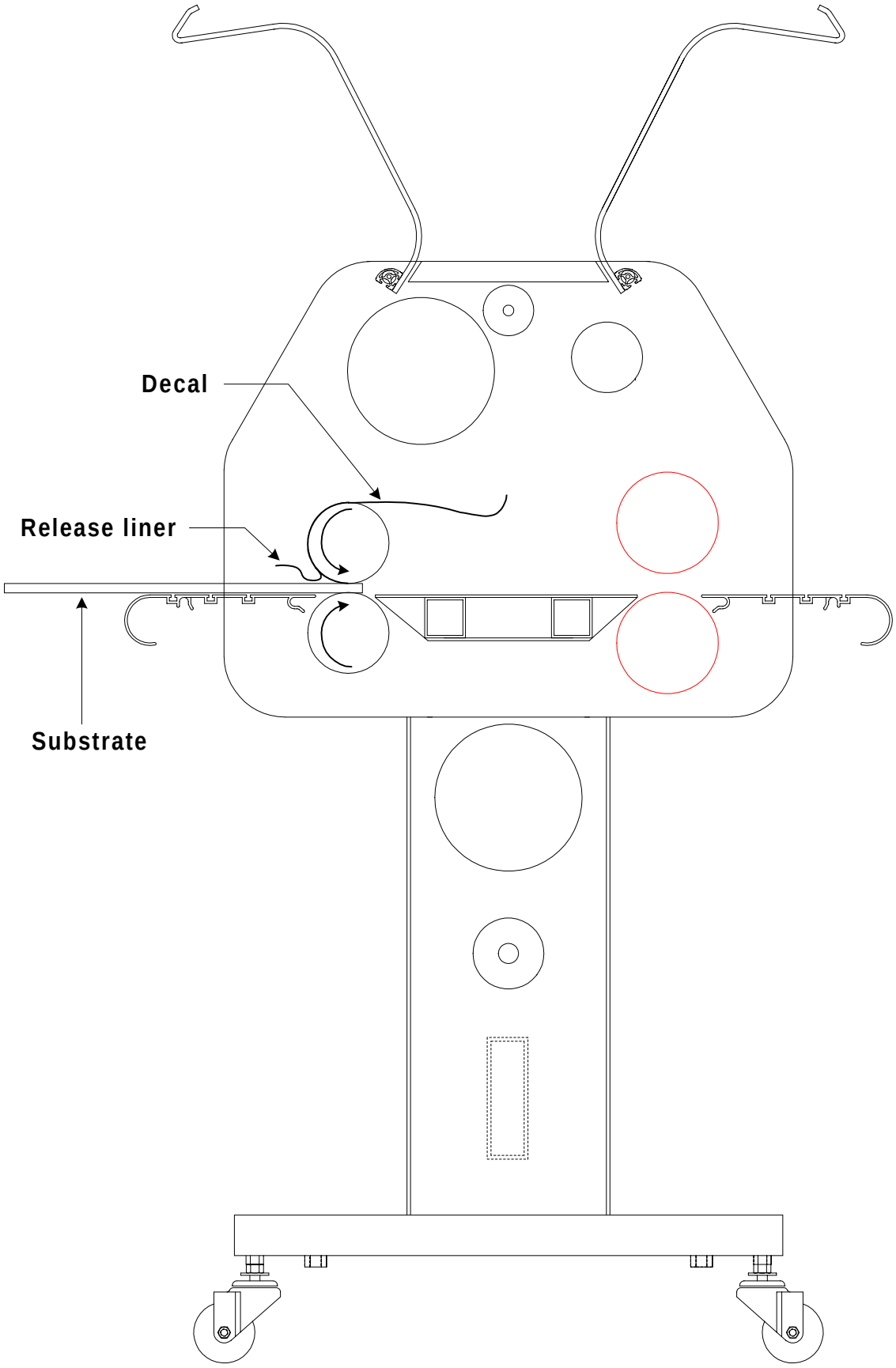
PULL ROLL SETTINGS



NOTES

The mounting process is done from the rear position of the laminator to avoid the waiting period involved with cooling down the main rollers. The rollers may be left heated or turn them down 68 ^{o}F. Pull roller pressure with be dependent of the substrate. Apply the necessary pressure without crushing the board.

Web Diagram 10 - Thermal decal and mount (Mount)



Parameter Chart 11 - Encapsulation

MATERIALS

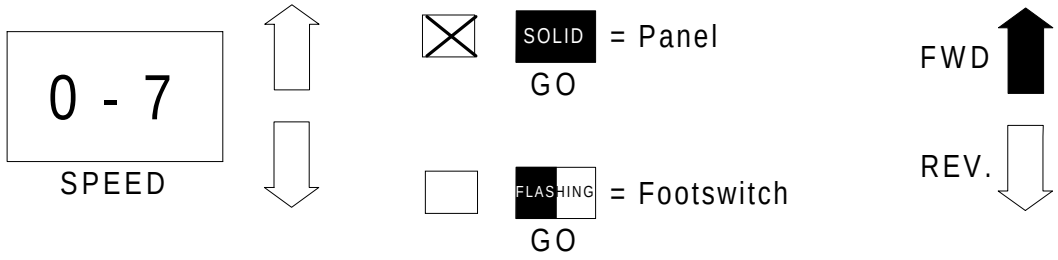
UPPER UNWIND : 3 mil Octiva Gloss SUBSTRATE : N / A

LOWER UNWIND : 3 mil Octiva Gloss PRINTS : Any type

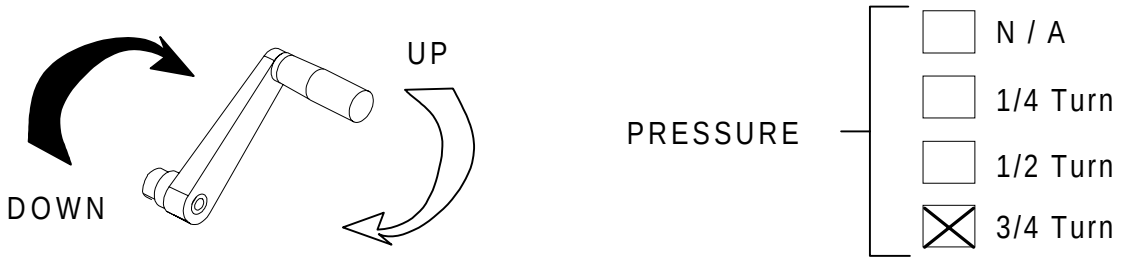
TEMPERATURE

GAP & PRESSURE

MOTOR DIRECTION & SPEED



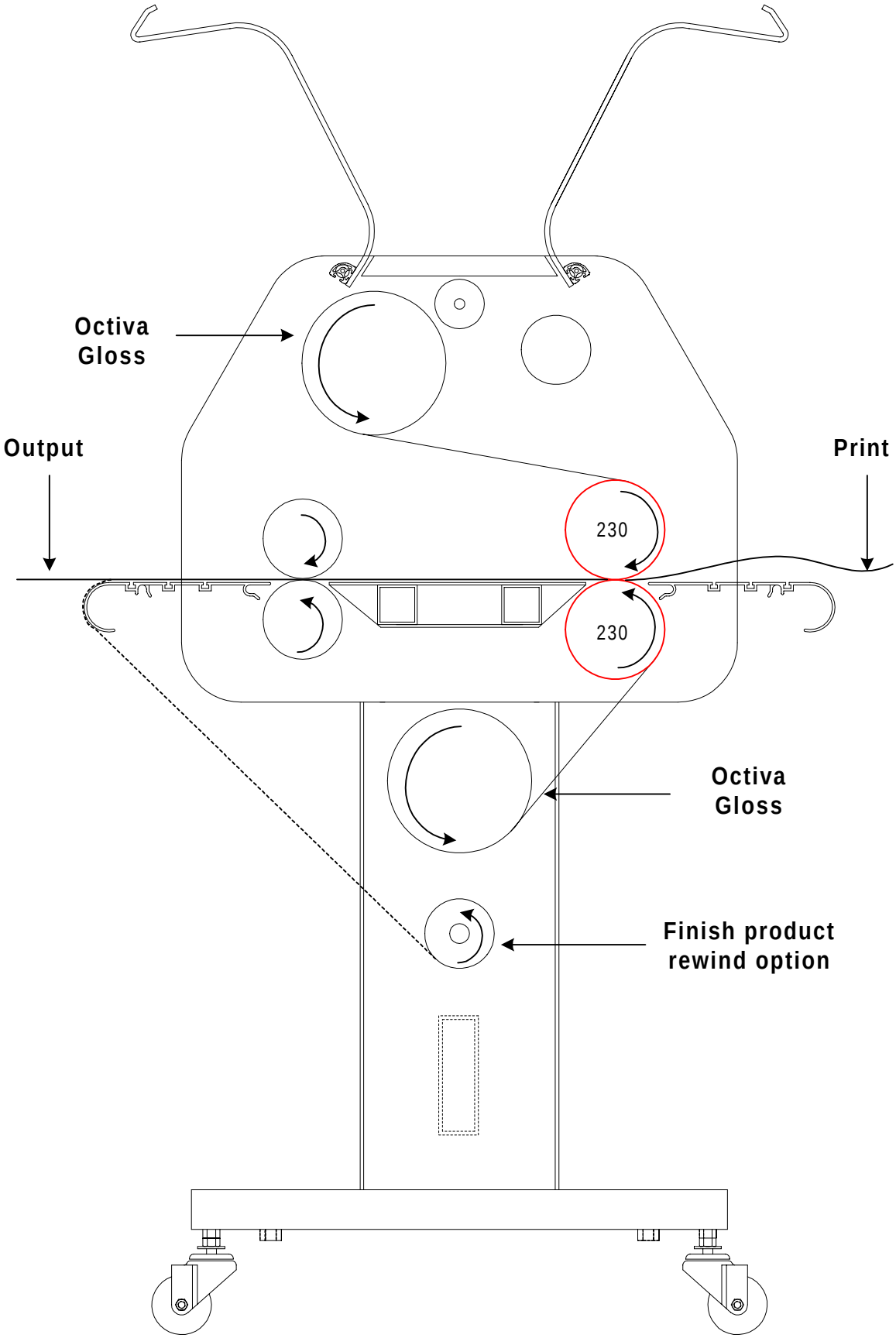
PULL ROLL SETTINGS



NOTES

Upper and lower unwind material may be sibstituted with similar products. Top and bottom temperature will be dependent on film thickness . Pressure may vary acording to the output. Speed will be dependent on image type. Pull roll pressure will very between 1/2 turn and 3/4 turn, depending on the film output quality. Because the process is described from the front of the laminator, motor direction is FWD.

Web Diagram 11 - Encapsulation



This page intentionally left blank.

Section 7 Troubleshooting

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

As an operator, you can perform some simple troubleshooting in attempt to correct your typical output type problems. Use the easy to follow guide for assistance.

7.1 Wave problems

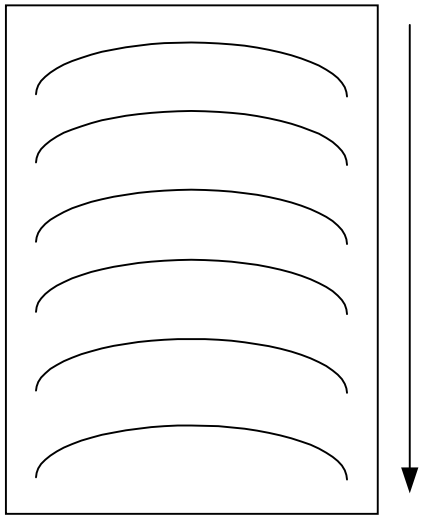
The following is a list of common output wave problems you may encounter.

The arrow along the length of the output represents the direction of feed (travel).

INFORMATION

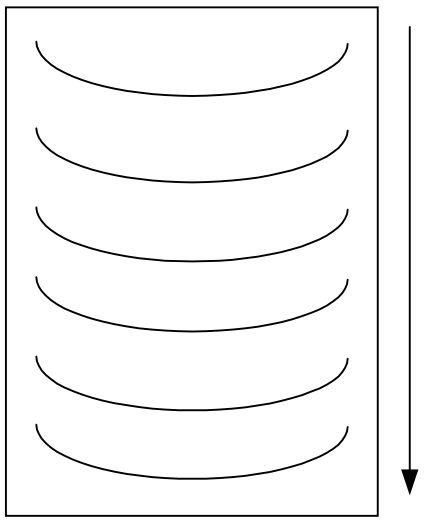
For optimal temperature settings of various laminates, contact your supplier or sales representative.

Problem: D waves in the image but not in the laminate



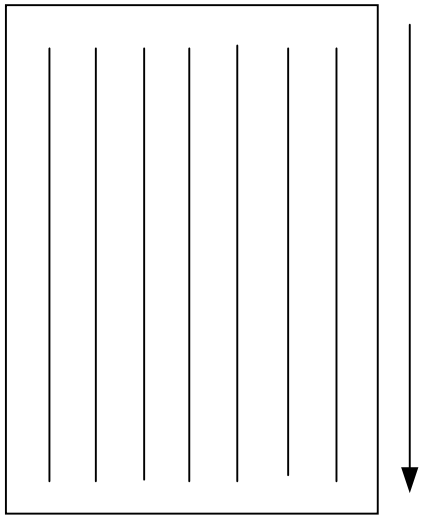
Hints: • Check paper tension
• Check relative moisture content of the paper

Problem: D Waves in the laminate



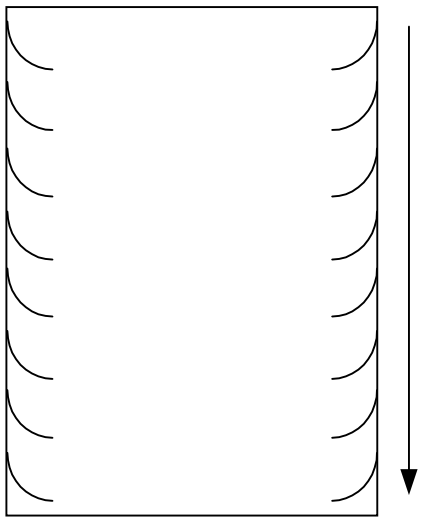
Hints: • Check the roll pressure
• Check the main roll nip settings
• Check the pull roll nip settings

Problem: Straight waves in the output



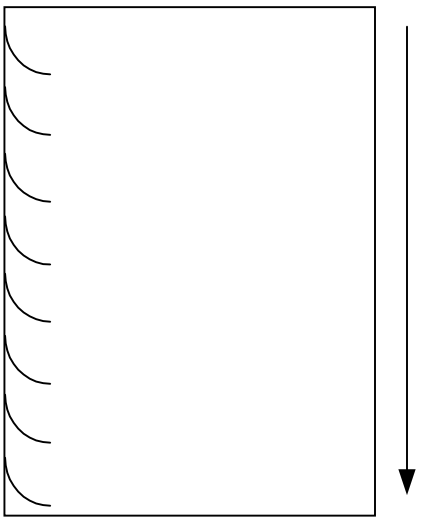
Hints: • Check operational settings for materials being used.

Problem: Angled waves in the output on both sides



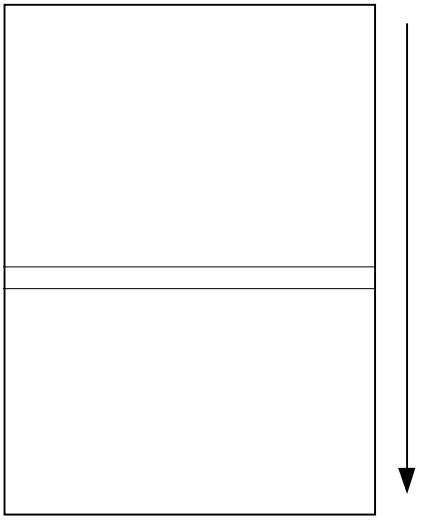
Hints: • Check for insufficient main roller pressure
• Check for insufficient pull roller pressure
• Check the main roller nip settings
• Check the pull roller nip settings

Problem: Waves on only one side of the output



Hints: • Check the nip setting of main rolls
• Check the nip setting of pull rolls
• Check for even paper tension

Problem: Indent waves in output after the pull rollers



Hints: • Insufficient cooling time
• Allow output to cool before handling
• Check operating temperatures of material

7.2 Film problems

The following is a list of common film problems you may encounter.

For definitions of terminologies, please refer to **7.4 Glossary of terminology**.

7.2.1 Thermal laminates

Problem: Blistering within the image

Hints: • Increase the speed
• Decrease the operating temperature
• Allow a longer drying time for the image

Problem: Coiling or curling of encapsulated images

Hints: • Balance the upper and the lower brake tension
• Make sure set point temperatures are the same
• Change the chill idler configuration (if applicable)

Problem: Silvering in the laminate

Hints: • Decrease the speed
• Increase the operating temperature

Problem: Delamination

Hints: • Check operating temperatures
• Check operating speed
• Laminate compatibility with ink
• Ink compatibility with paper

7.2.2 Pressure sensitive

Problem : Silvering in the laminate

Hints : • Add 100 - 120°F (37 - 49°C) to the temperature
• Increase pressure to laminating rolls

Problem : Tunneling

Hints : • Print should be wound image side out.
• Do not roll tightly
• Do not roll at all.

Problem : Image creases when mounting

Hints : • Press down on leading edge from center outwards.
• Be sure image is conformed to the roll
• Use a speed you are comfortable with
• Be sure even tension is supplied to the image

Problem: Delamination

Hints: • Check operating pressures
• Check operating speed
• Laminate compatibility with ink
• Ink compatibility with paper

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

7.3 Machine problems

Once the **Hints** are all checked, and your problem still exists, a service call must be placed for a qualified service personnel to fix the problem.

You may do this by dialing 1 (800) 790 - 7787. This will connect you with GBC National Service dispatch . You will be required to give the serial number of your machine when placing a service call.

A space below has been provided to keep this number readily available if and when needed.

My Falcon 160 Laminator serial number is :

At no time does GBC Pro-Tech suggest or recommend that you attempt to fix the machine by removing the cabinets or leg covers of yourself.

Problem : No illumination to the control panel

Hints : • Ensure an E-stop has not been pushed down
• Press **RESET**.
• Confirm that the **MAIN POWER** is to the on position.
• Be sure power is supplied to the laminator

Problem : I can only operate in "**Footswitch**" mode.

Hints : • Be sure the tables are properly seated in the table brackets.
• Be sure the safety shields are in the down position.
• If the **SAFETY** indicator is flashing, place a service call.

Problem : I press **GO**, it will always be flashing.

Hints : • Be sure the tables are properly seated in the table brackets.
• Be sure the safety shields are completely in the down position.

Problem : I press **GO**, and the rolls will not turn.

Hints : • Be sure a speed has been entered.
• Make sure a motion direction has been selected.
• Make sure **GO** or **SEL** is not flashing.

CAUTION

Prolonged contact can form flat spots on the rollers.

Problem : Jerking, stuttering, or excessive noise from the laminator.

Hints : • Check for excessive brake tension
• Confirm that the rolls of laminate are on correctly.
• Place a service call.

Rolls in the up position

Problem : The control panel is locked up

Hints : • Push the blue reset button.
• Press an E-stop, then unlatch the E-stop and push **RESET**.
• Place a service call.

Rollers in the down position

Problem : The control panel is locked up

Hints : • Press **RESET**.
• Press an E-stop, then unlatch the E-stop and push **RESET**.
• Disconnect power and then reconnect power.
• Place a service call immediately and remove all power to the laminator.

7.4 Glossary

The glossary can help you in understanding some of the terminology used when referring to the laminator, applications, or troubleshooting aspects of the machine.

Blistering

A condition where the paper coating is bubbled up from the image paper causing a “blister”. It is created by using excessive heat during the lamination process. Blistering is most commonly found with photographic and ink jet media.

Bond strength

Refers to one of three conditions; 1) the anchor strength of adhesive to laminate substrate, 2) the anchor strength of the laminating film to the product that has been laminated, or 3) when two layers of film are laminated together, the strength of the adhesive to adhesive bond.

Center mount

A mounting technique where an image is mounted centrally on a substrate to provide a decorative border.

Clutch tension

The tension that is applied to the laminated material between the main and pull rolls. This tension is applied by having the pull rolls turn faster than the main rolls, and then having some form of clutching or torque limiting applied to the pull rolls. This tension is important for maintaining a smooth flat finished image.

Coiling

A term used to describe an image rolling up on itself. This is caused by differences in the brake tension used between the upper and lower laminates during and application process.

Cold laminate

Film that does not require heat to activate the adhesive. Please see P.S.A. for more information.

D waves

A term used to describe a wave pattern caused, generally, by incorrect paper tension.

Delamination

Refers to either one of two conditions; 1) the adhesive separating from the laminate substrate, or 2) the laminate separating from the product being laminated.

Edgewrap

A mounting technique where the image wraps around the edges of the mounting substrate so as to provide a finished edge.

Encapsulation

When an image is completely encased in laminating film, it is encapsulated. A border of laminate on laminate exists around the perimeter of the product.

Film

A two part material consisting an adhesive layer and a substrate. The adhesive and the substrate may or may not be clear. This is the material used for lamination. Please refer to laminate.

Foamboard

A material commonly used as a mounting substrate. It is made up of foam sandwiched between two layers of paper, or paper like media.

Inkjet

A term used to describe a type of printing where an ink is projected topically onto a paper or paper like media. This is a noncontact form of printing.

Craft paper

A strong brown paper commonly used for single sided applications.

Laminate

A two part material consisting an adhesive layer and a substrate. The adhesive and the substrate may or may not be clear. This is the material used for lamination.

Main rollers

These are the rolls that perform the actual lamination. They are rolls capable of being heated in thermal roll laminators and are usually larger in diameter than the pull rolls.

Media

Term used to describe the materials used to print an image, i.e. the papers, inks, toners, etc.

Mount adhesive

A term used to describe a two sided pressure sensitive adhesive used in mounting images to various substrates. This material can come with one or two release liners and may be optically clear for face mounting applications.

Mount tissue

A thermally activated mount adhesive used in either a vacuum or roll type laminator. Primarily used for mounting bond type papers to porous substrates.

Nip

The interrelationship of any two rolls. The distance between the closest points of the two rolls is referred to as the nip of the rolls.

Outgassing

The term that describes the phenomenon where the heat from the laminating process turns components of the printed media into a gas. This is seen as a cloudy or murky finished image. It can also be caused by a chemical incompatibility between the overlaminate's adhesive and the printed media.

Pull rollers

These rolls provide for tension of the laminated media. Tensioning of the laminated media helps to make it flat and smooth. In most laminators they may also be used for cold mounting and laminating applications. Usually these rolls are of smaller diameter than the main rolls.

P.S.A.

Stands for **P**ressure **S**ensitive **A**dhesive. An adhesive that requires no heat to activate, only pressure. It is employed by removing a protective release liner and then pressed onto the material to be laminated. This type of film is commonly used on materials that are temperature sensitive.

Release liner

A coated paper or other media used to protect the adhesive side of a pressure sensitive material.

Rewind

A system that rolls up media. The rewind tubes used on the Falcon 160 laminator is a prime example.

Scarring

The visual effect of folding papers or laminates and breaking the surface. When done to a printed material it will be seen as a white crack in the image.

Second surface

A term to denote the back side of a substrate. Commonly referenced when discussing front mounted images to a clear substrate with an optically clear mount adhesive.

Silvering

A term used to describe one of two occurrences; 1) air bubbles trapped between the product and a thermal laminate, generally caused by insufficient heat being applied to the laminator or 2) the adhesive not fully activated in a pressure sensitive film, which will disappear once the adhesive is fully activated. This activation process can be sped up if a small amount of heat is applied during the application.

Substrate

The material to which an adhesive is to be bonded. In film, the substrate is the polyester and in mounting, the substrate is the material being mounted to.

Tunneling

When a laminated image is rolled up for any period of time and the laminate separates from the image. Generally in a pattern that follows the direction the laminated image was rolled up in. This is very common with pressure sensitive laminates and finished products that have been wound tightly.

Unwind

A system that unwinds media. Unwinds are used on all laminators to dispense laminate for lamination.

Web

The path that rolled media unwinding from a supply roll takes through a machine or array of rollers.

Section 8 Maintenance

GBC Pro-Tech laminators require minimal maintenance. However, regular maintenance is essential to keep any piece of precision machinery at peak performance. A maintenance schedule and a section of procedures are included in this section.

WARNING

Do not wear ties, loose fitting clothing or dangling jewelry while operating or servicing the laminator. These items can get caught in the nip and choke you or you can be crushed or burned.

INFORMATION

Improper maintenance, can result in poor output quality.

8.1 Maintenance Schedule

INFORMATION

Below is a recommended maintenance schedule. Before performing any of the steps listed, read through the procedures first. Please follow the instructions pertaining to the step you are performing.

Daily

- Clean the rolls
  (See cleaning in this section)
- Inspect the electrical cord for damage.
  (If damaged, you should replace or repair it immediately)
- Inspect the footswitch cord for damage.
  (If damaged, you should replace or repair it immediately)

Monthly

- Adjust the nip if needed.
  (See calibrations in this section)
- Check the chain tension.
  (See calibrations in this section)
- Inspect the area around the laminator for possible hazards
  (dust buildup, combustible items stored too close, etc.)

Semi-Annual

- Lubricate the grease fittings, chain, and gears.
  (See Lubrication in this section)
- Check wire termination tightness.

ELECTRICAL SHOCK

Remove power from the laminator before servicing. You can be severely shocked, electrocuted or cause a fire.

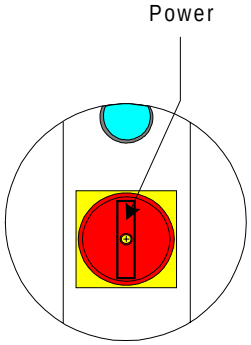
8.2 Cleaning the rollers

Tools required

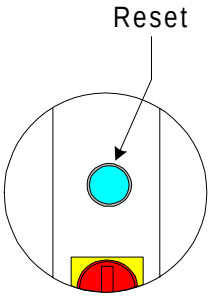
- Adhesive coated boards
  (picks up dust and particles off of the rolls)
- Protective rubber gloves
  (This will protect your hands from the isopropyl alcohol)
- 80% isopropyl alcohol
  (a mild dishwashing detergent and water may be used instead)
- Rubber cement eraser
  (a belt sander dressing block may be used instead)
- Several 100% cotton terry cloths
  (best for lint free cleaning)

Preparation of the laminator

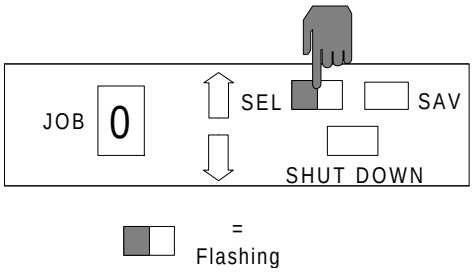
a) Turn the **MAIN POWER** to the "**ON**" position.



b) Press **RESET**. The front control panel will illuminated.



c) Press **SEL.**



WARNING

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously HURT or INJURED!

d) Open the front and rear safety shields.

e) Remove the front and rear tables.

Removing adhesive build up

a) For pressure sensitive adhesives: put on the rubber gloves and use isopropyl alcohol and a terry cloth towel.

b) For thermal adhesives: while the laminator is at normal operating temperature, put on the rubber gloves and use the rubber cement eraser. This allows the eraser to bead up the adhesive.

c) Wipe away the beads with isopropyl alcohol and a cotton terry cloth.

d) Since the safety shields are raised and the tables removed, you must use the footswitch to rotate the bottom rollers after cleaning a section.

INFORMATION

When cleaning the bottom main roller, switch the motion direction to reverse. When cleaning the bottom pull roller, switch the motion direction to forward. This will prevent anything from being pulled into the nip.

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

CAUTION

Excessive pressure can destroy the silicone layer by pressing to hard or scrubbing too long in one spot.

CAUTION

Do NOT pick or pull heat activated adhesive off the rolls when they are cold. You can cause irreparable damage to the laminating rolls.

CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

Cleaning the beads of adhesives, dust and dirt from the rolls

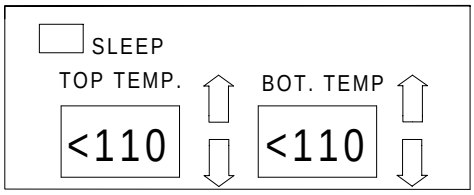
CAUTION

Use only isopropyl alcohol or rubber cement eraser to clean the rollers. Harsh chemicals like toluene, acetone, or MEK can destroy the silicone covering of the rolls.

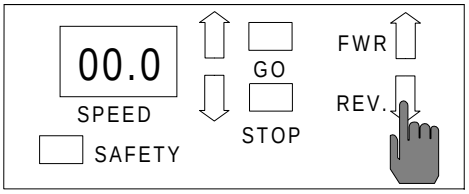
This can be done one of two different methods. Both are acceptable forms of cleaning the beads of adhesives, dust, and dirt from the rolls.

Method 1

a) Allow the laminator to cool slightly to no higher than 110°F (43°C).



b) Set the motion direction to **REV ▼**.



c) With the rubber gloves on, clean the rolls using a moderate amount of 80% isopropyl alcohol on a cotton terry cloth.

CAUTION

Exercise care when cleaning the laminating rollers with 80% isopropyl alcohol:

- **Use only in a well ventilated area**
- **Wear rubber gloves**
- **Use only on cool rolls**

CLEANING HEATED ROLLERS CAN IGNITE THE FUMES!

WARNING

When operating the laminator using the variable speed footswitch, keep hands and fingers away from the nip of the rollers. You may be CRUSHED or BURNED!

d) Since the safety shields are raised and the tables removed, you must use the footswitch to rotate the bottom rollers after cleaning a section.

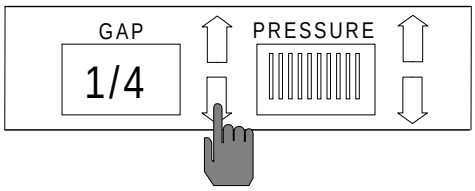
CAUTION

Speed is controlled through the variable speed footswitch when the safety shield is in the raised position.

WARNING

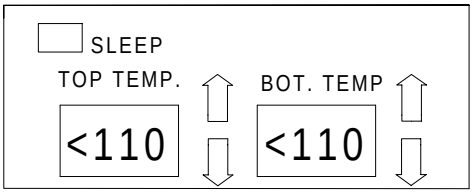
Keep hands and fingers clear of the laminator roller nip when changing GAP. You can be CRUSHED or BURNED!

b) Set the nip of the rollers to the thickness of the adhesive coated boards.



Method 2

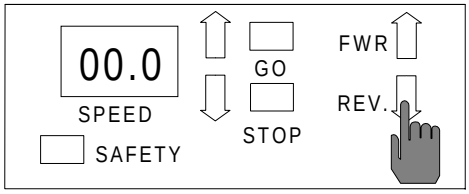
a) Allow the laminator to cool slightly to no higher than 110°F (43°C).



WARNING

Keep hands and fingers clear of the laminator roller nip when adjusting PRESSURE. You can be CRUSHED or BURNED!

b) Set the motion direction to **REV ▼**.



c) Using the variable speed footswitch, run the adhesive coated boards through the rolls.

d) Do this as many times as needed to clean the laminator rolls.

8.2.1 Clean the cabinets and covers

ELECTRICAL SHOCK

Remove power from the laminator before cleaning. You can be severely shocked, electrocuted or cause a fire.

a) Use a damp cotton terry cloth (water only), clean the exterior of the laminator.

b) If water is not strong enough, you may use a mild dishwashing detergent with water and a cotton terry cloth.

ELECTRICAL SHOCK

Do not use liquid or aerosol cleaners on the laminator. Do not spill liquid of any kind on the laminator. You can be severely shocked, electrocuted or cause a fire. Use only a damp cloth for cleaning unless other wise specified.

8.2.2 Cleaning the touch screen

ELECTRICAL SHOCK

Remove power from the laminator before cleaning. You can be severely shocked, electrocuted or cause a fire.

a) Use only a slightly damp (water only) non abrasive cloth.

b) The same type of cloth used to clean eye glasses may be used instead.

ELECTRICAL SHOCK

Do not use liquid or aerosol cleaners on the laminator. Do not spill liquid of any kind on the laminator. You can be severely shocked, electrocuted or cause a fire. Use only a damp cloth for cleaning unless other wise specified.