GBC F-60H
Roll Laminator

Instruction Manual

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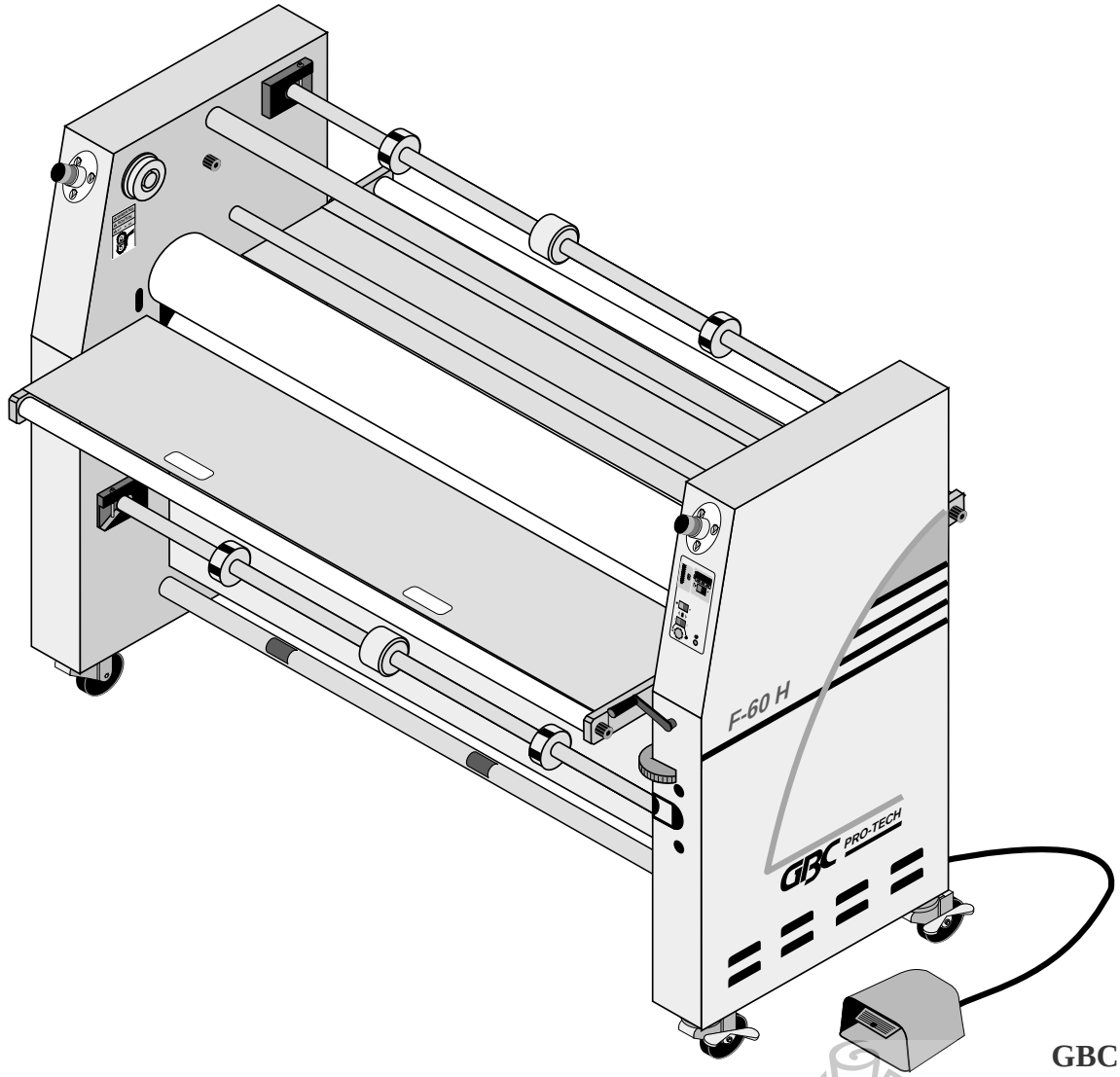
FALCON 60 H
OPERATION & MAINTENANCE MANUAL



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Read Me File . . . . . .

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Re : F 60 H Operations and Maintenance Manual (930063A)

Section #: _____ **Page #:** _____

Correction (s): _____

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Additional comments: _____

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1.0 Safety

CAUTION

Do not attempt to operate your Falcon 60 H laminator until you have read this section carefully!

Your safety, as well as the safety of others, is important to GBC Films Group. 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 precautions

The Falcon 60 H 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.

The manual main roller lift mechanism used to provide downward pressure on the upper main roller 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 rollers.

Use care in lowering the upper laminating roller 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. Before turning the crank handle to set the **GAP** down, ensure that nothing is in the nip area.

WARNING

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

In addition, the main laminating rollers of the Falcon 60 H can reach temperatures up to 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.

The word qualified is defined below;

Qualified;

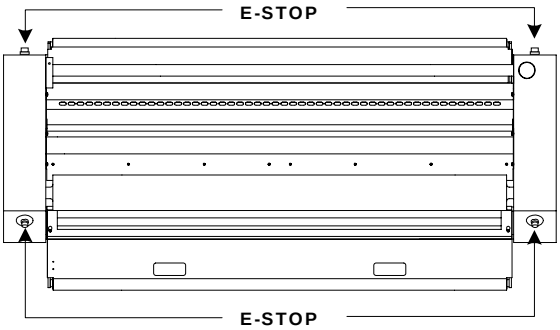
• Any engineer that has experience with electrical and mechanical design of lamination equipment. The engineers should be fully aware of all aspects of safety with regards to lamination equipment.

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

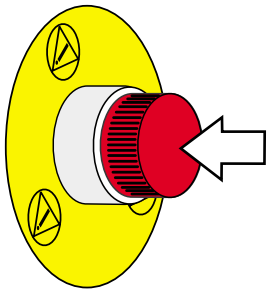
• Any GBC Technician, GBC Specialist, and / or GBC Films Group Technician that has been through the GBC Pro-Tech service training course.

1.3 Safety features

The laminator is equipped with four emergency stops (**E-STOP**). Two are located at the front of the cabinets and two are at the rear of the cabinets.



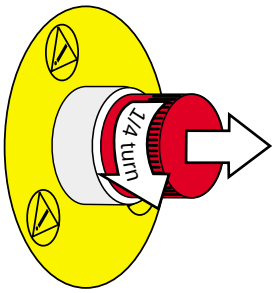
To engage an **E-STOP**, press down on any of the four. Any **E-STOP**, when engaged, removes power to the laminator.



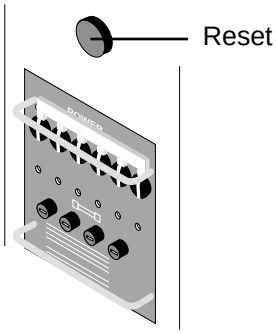
INFORMATION

The machine will only operate if all four E-STOPS are in the unlatched position.

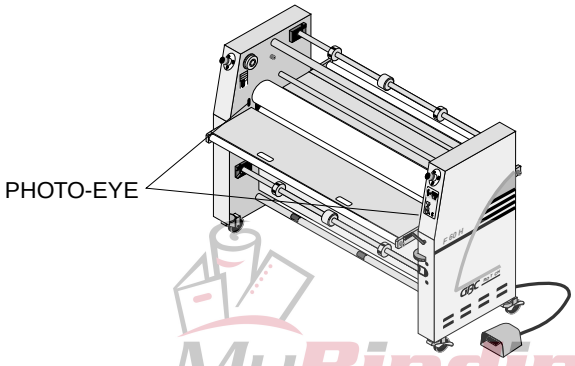
To continue operation, all **E-STOP**s must be in the unlatched position. To reset**,** twist the **E-STOP** 1/4 turn counter clockwise.



Press **RESET** located on the control side cabinet at the rear of the machine just above the main power on/ off.



The nip area is protected by a electric photo-eye which shoots a beam in front of the nip across the width of the rollers. When this beam is broken, power to the drive motor is removed. The objetc must be removed to clear the photo-eye. The motor engage switch must be pressed again to continue motor operation.



1.4 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 Falcon 60 H where air is blowing directly on the machine. The air flow can cool the rolls unevenly and result in poor output quality.

WARNING

The Falcon 60 H 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

***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.

WARNING

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

INFORMATION

Depending on the destination and customer preference, your machine 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.

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

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.

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.

CAUTION

A second person must support the side labeled 5 in Figure 4.5.1 It can fall and damage the laminator or cause harm to you and others.

INFORMATION

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

WARNING

Do not attempt to use the ramps if they are not secured to the pallet. Ensure the pallet is on a flat even surface before attempting to roll the machine off.

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.

WARNING

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.

CAUTION

Do not move the leveling nut when securing the inside nut to the cabinet.

WARNING

Do not wear ties, loose fit 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

You will need the control side cabinet cover off to connect the electrical power.

WARNING

If a safety feature is not working properly, contact your local service representative immediately.

ELECTRICAL SHOCK

Only a qualified electrician should connect power to the laminator. You can be severely shocked, electrocuted or cause a fire if power is improperly applied.

CAUTION

Do not use a hard substrate or a substrate with sharp edges. You may cause damage to the laminating rollers!

1.5 Operations

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

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!

WARNING

Do not wear ties, loose fit 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

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

INFORMATION

The machine will only operate if all four emergency stops are unlatched and RESET has been pressed.

WARNING

Do not operate the laminator, except during web set up, without the front and rear feed tables in position.

WARNING

It is unsafe to sheet feed without the pressure plate properly placed on the front feed table.

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!

WARNING

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

INFORMATION

The Poly-in/ Poly-out diagrams refer to the upper rolls of film only. The mount adhesive and craft papers are for reference only.

WARNING

Never leave the unwind shaft out of the unwind support saddle unless loading or unloading film.

CAUTION

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

CAUTION

When using two rolls on the machine, ensure the film widths are identical. Exposed adhesive can cause complications.

CAUTION

Objects other than media, film or approved substrates, will cause irreparable damage to the rollers if caught in the nip.

CAUTION

Never use an open blade near the laminating rollers. You may cut the rollers or your self.

CAUTION

Sharp edges on a substrate should be filed smooth. Sharp edges can CUT the rollers!

INFORMATION

Always use the minimum amount of brake for the job.

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

INFORMATION

If more brake is needed, add an O-ring to the brake side of the rewind.

INFORMATION

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

1.6 Applications

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

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

WARNING

Do not wear ties, loose fit 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

Excessive brake tension may cause the image to curl. Always use the minimum amount of brake for the job.

INFORMATION

Use film brake tension to control the separation point of the release liner.

CAUTION

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

INFORMATION

Speeds and temperatures will affect the bond strength of Lo-Melt adhesives.

INFORMATION

Never stop the laminator when an image is within the nip of the rollers.

INFORMATION

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

INFORMATION

Laminates and papers should always be stored in a controlled enviroment.

1.7 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.

1.8 Maintenance

The following symbols are positioned at various points in **Section 8 Maintenance.**

WARNING

Do not wear ties, loose fit 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.

ELECTRICAL SHOCK

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

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.

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

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

WARNING

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

ELECTRICAL SHOCK

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

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

Remove ALL power to the laminator before removing any cabinet covers. You may be shocked or electrocuted!

WARNING

Always practice lock out/ tag out procedures when performing any type of service or maintenance work on the machine.

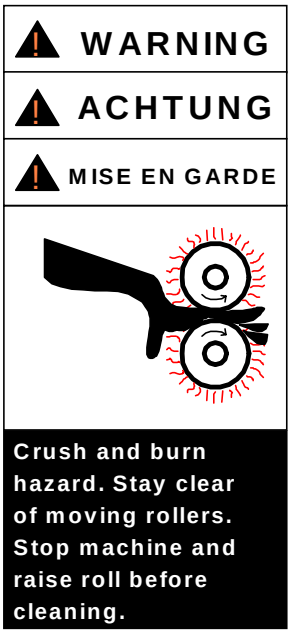
INFORMATION

The motor controls the tension of the both chains. If one chain is still too loose, a half link may be removed.

1.9 Label locations

Posted at various locations on the Falcon 60 H Laminator are important safety labels. **Pay careful attention to these labels at all times! Figure 1.12.1** illustrates the location of each of these labels.

Hazardous Voltage: Do not open these cabinets. This machine is to be serviced only by trained and authorized personnel.

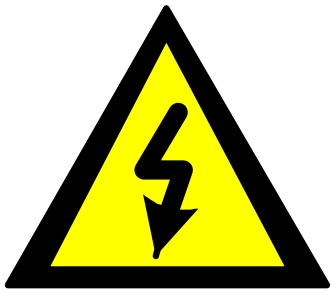


Roller Pinch Point: Keep hands and fingers away. You may be crushed and/ or burned.

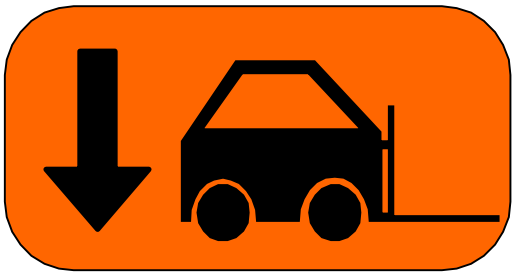
Moving Parts: Keep hands and fingers away. You may be crushed and/ or cut.

Read Manual: Read and understand the Operations Manual before attempting to run this machine.

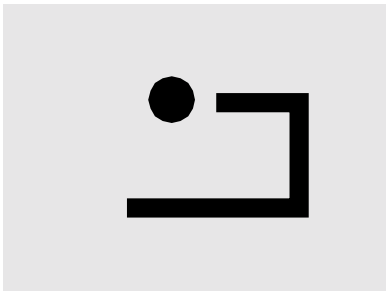
Refer to Figure 1.9.1 Label Placement illustrates the location of each of these labels.



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

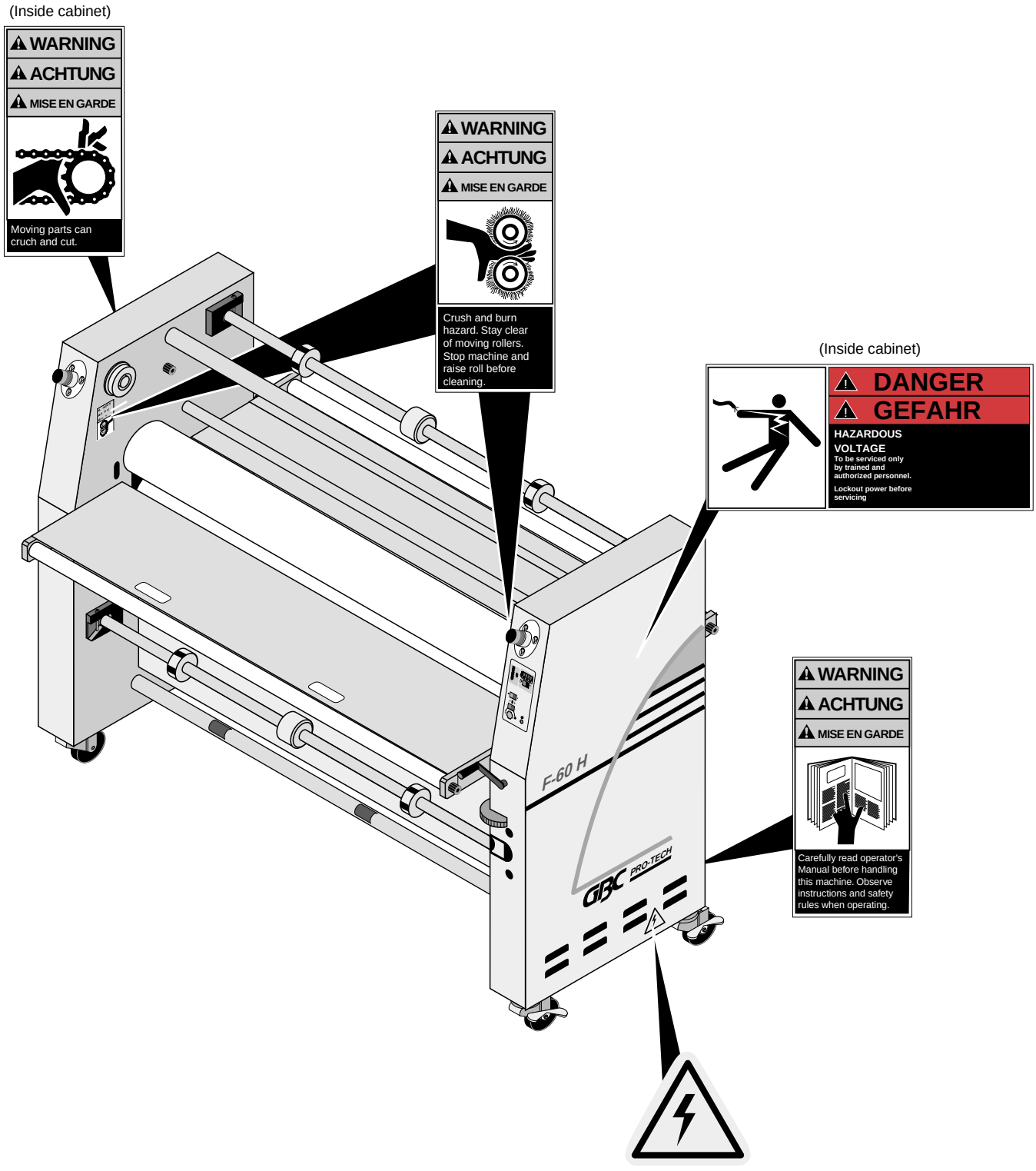


Lift Here: This point may be used as a lifting point. If ignored, damage will occur to the laminator.



Reset: Machine reset. Press after initiating power to the laminator or after an E-STOP or E-CABLE has been engaged then reset.

Figure 1.9.1 Safety label locations



2.0 Warranty

GBC Films Group warrants the equipment sold is free from defects in material and workmanship for a period of **one (1) year parts (excludes normal wear items) and 90 days labor** from the date of installation. This warranty is the only warranty made by GBC Films Group and cannot be modified or amended.

GBC Films Group's sole and exclusive liability and the customer's sole and exclusive remedy under this warranty shall be, at GBC Films Group's option, to repair or replace any such defective part or product. These remedies are only available if GBC Films Group's examination of the product discloses to GBC Films Group'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.

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 FILMS GROUP 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.

2.1 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.

2.2 Exclusions to the Warranty

This warranty specifically does not cover;

1. Damage to the laminating rollers 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 Films Group 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 Films Group Technician that has been through the GBC Pro-Tech service training course.

3.0 Specifications

Specifications provide all of the technical data for the Falcon 60 H Laminator.

3.1 General

Description:

- Cost efficient, wide format color finisher for the sheet fed ink jet market. The Falcon 60 H is a self standing, bi-directional cold mounter and laminator with the abilty to run Lo-Melt overlaminate.

Features:

- Two unwinds (1 upper, 1 center/ front)
- One rewind (upper front)
- Infeed and oufeed tables
- Footswitch
- Front and rear table idlers
- Bi-directional system
- Four E-STOPs
- Photo-eye nip protection
- Roll to roll capability (option)

Applications:

- Single sided lamination
- Mounting
- Decaling
- Low melt film

3.2 Consumable

Film types:
- Pressure sensitive laminates
- Pressure sensitive adhesives
- Low melt laminates

Film diameters:
- Up to a 8 in. roll diameter (20.3 cm)

Core size:
- 3 in. core standard (7.62 cm)
- 2-1/4 in. optional (must have optional core adapters) (5.72 cm)

Film widths:
- 62 in. Pressure sensitive (162.6 cm)
- 60 in. Low Melt (157.8 cm)

Paper widths:
- 62 in. maximum paper width (157.8 cm)

Mounting thickness:
- Up to 1 in. thick (2.54 cm) either direction

Safety:
- Designed to UL safety standards

3.3 Function

Speed:
- 0 - 16 ft / min (0 - 4.6 m / min)

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

Heating capabilities:
- 68°F - 200°F (20°C - 93°C)

Controls:
- Front control panel
- Footswitch

Roll design:
- High release silicone rollers

3.4 Electrical

United Statesand Canada:	• 230 ~ 240 VAC, 50/60 Hz, single phase, 40 amps
B.T.U. output:	• 18,520 B.T.U. / hour
Heater wattages:	• 5429 watts per heater @ 240 vac
Amperage draw:	• No heat, motor only : 1 - 3 amps • Top heat and motor : 25 - 30 amps
D/C voltage used:	• 24 vdc
A/C voltage used:	• 230~ 240 vac (minimum)

3.5 Dimensions

Weight:

Uncrated: • 1350 lbs. (612 kg.)

Crated: • 1625 lbs. (737 kg.)

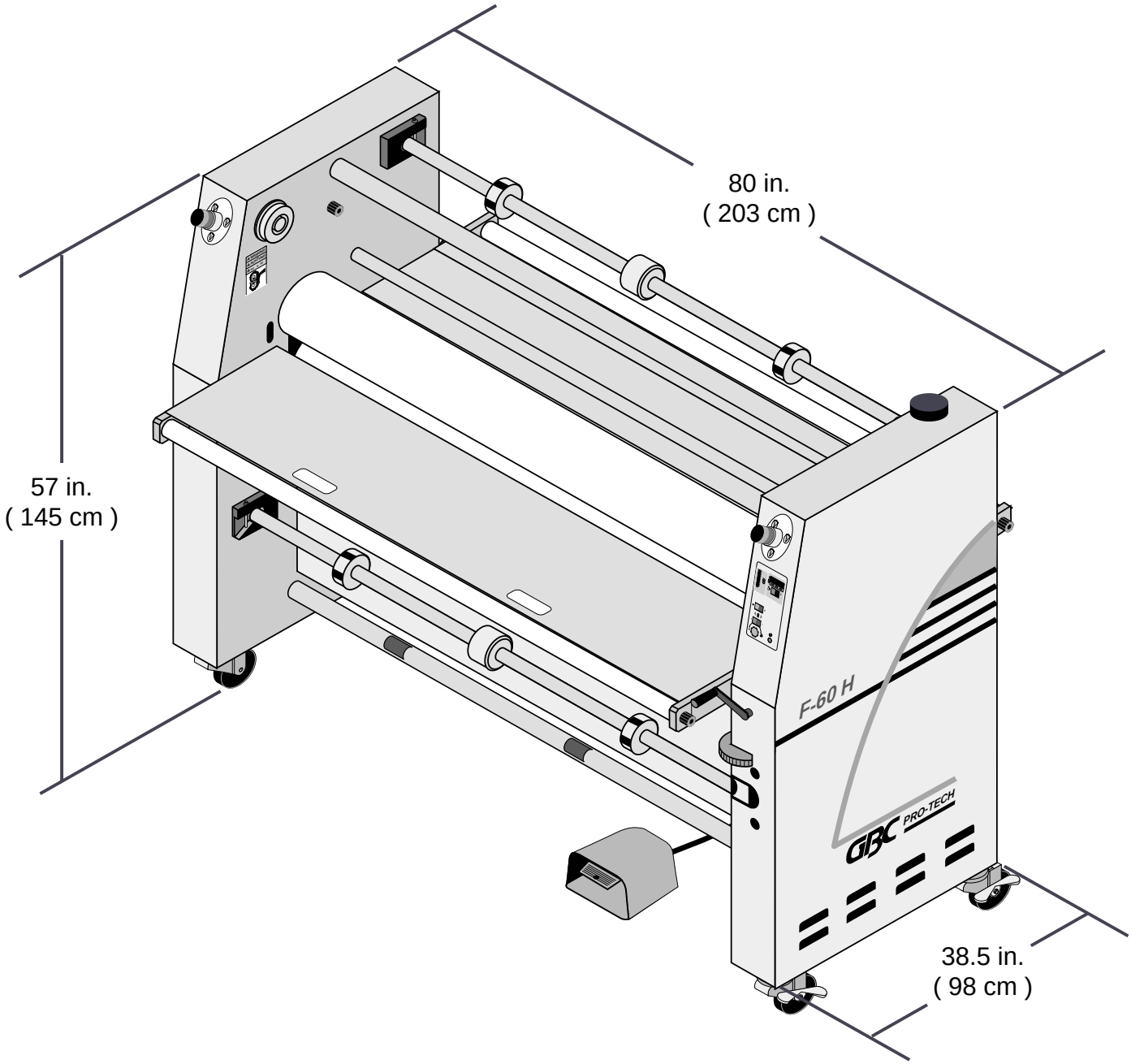
Dimensions

Uncrated: • 80 in. (L) x 38.5 in. (W) x 57 in. (H)
(203 cm (H) x 98 cm (W) x 145 cm (L))
Refer to **Figure 3.5.1 Dimensions**

Crated • 90 in. (L) x 44 in. (W) x 68 in. (H)
(229 cm (H) x 112 cm (W) x 173 cm (L))

Nip Height: • 38 in. (96.5 cm)

Figure 3.5.1 Dimensions



4.0 Installation

GBC Films Group is committed to a program of ongoing product improvement. As a result, we are providing these instructions so you can insure that your new Falcon 60 H Laminator is properly and securely unpacked, moved, and installed. Installation should be performed by a qualified technician.

Before a Falcon 60 H 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 enough 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. Do not locate it 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 Falcon 60 H where air is blowing directly on the machine. The air flow can cool the rolls unevenly and result in poor output quality.

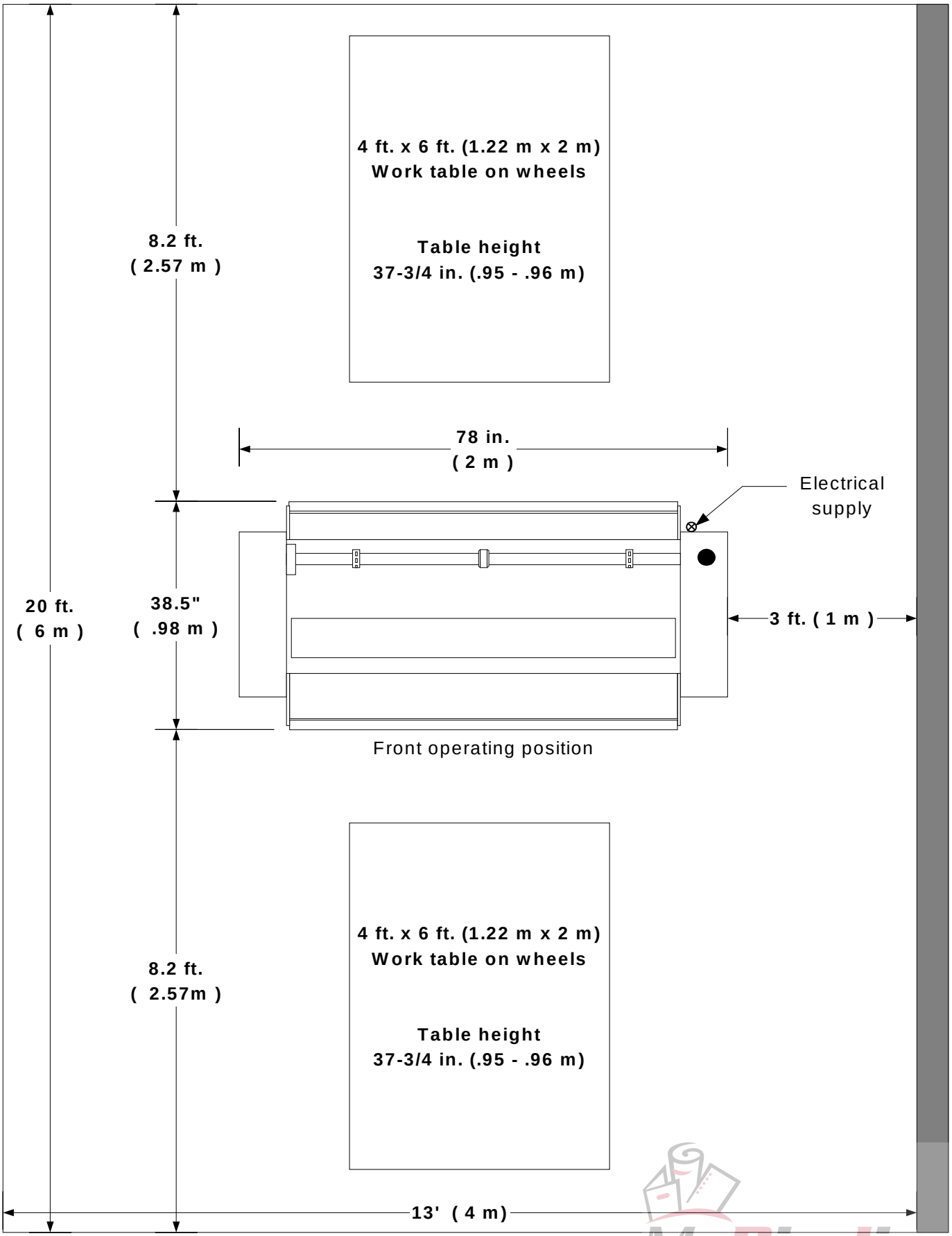
- The Falcon 60 H requires single phase, 230 to 240 vac, 50/ 60 Hz, 40 amp service. No other type of connection is permitted.

WARNING

The Falcon 60 H 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.

For instructions on how to connect power, proceed to **4.9 Connecting power** in this section.

Figure 4.1.1 Suggested Floor Layout



4.2 Know your machine

Before performing any procedure within this manual, it is recommended that you take time to know the parts of your new machine.

Figure 4.2.1 The laminator

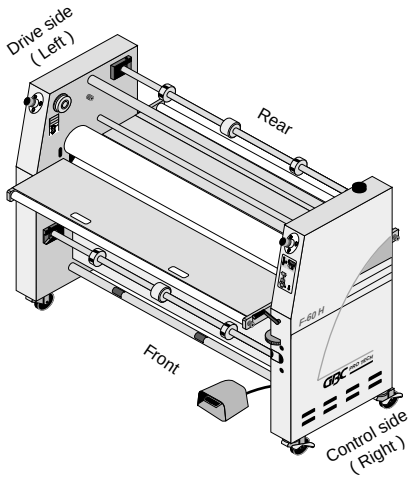


Figure 4.2.2 Safety and controls

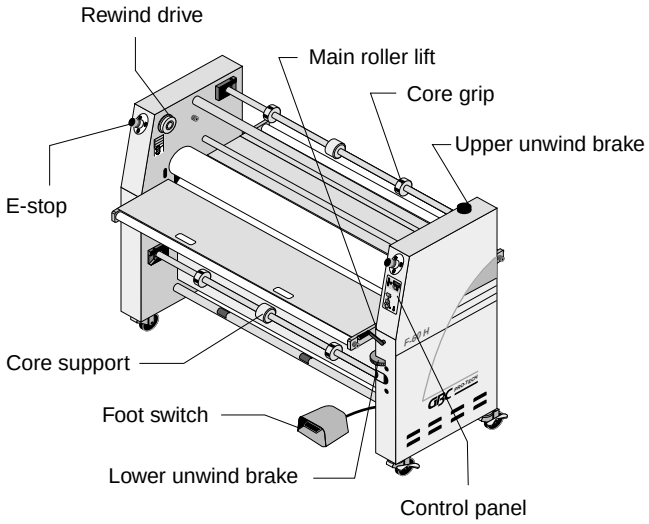


Figure 4.2.3 Idlers and unwinds

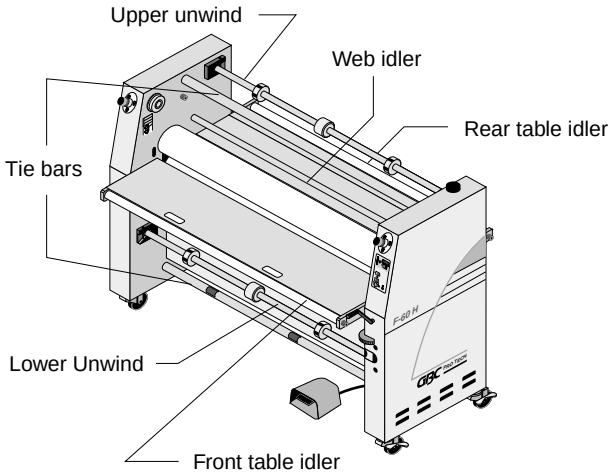


Figure 4.2.4 Misc.

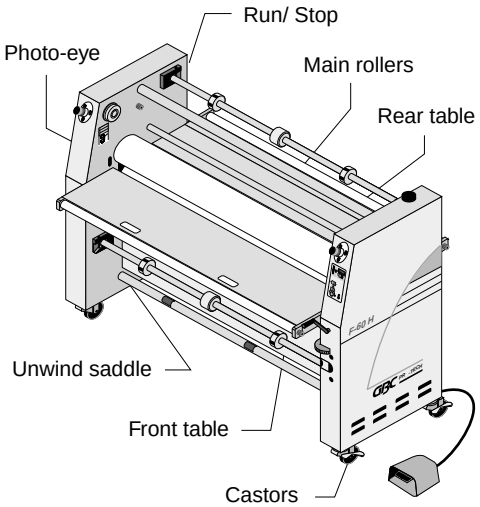
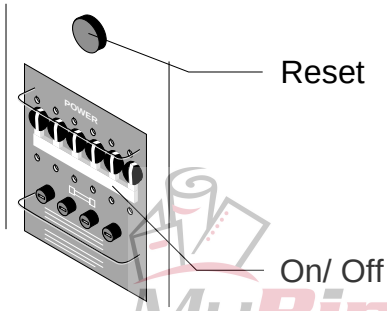


Figure 4.2.5 Power



4.3 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, your machine 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.

4.4 Shrink Wrapped

a) Inspect the machine for any obvious shipping damages upon receipt. Report any damage to your carrier.

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) Carefully wheel your Falcon 60 H Laminator with a second person 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.

4.5 Crated

To uncrate the laminator

WARNING

The Falcon 60 H 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.

a) Remove the top of the crate and then the sides in the order shown in **Figure 4.5.1**

CAUTION

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

INFORMATION

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

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.

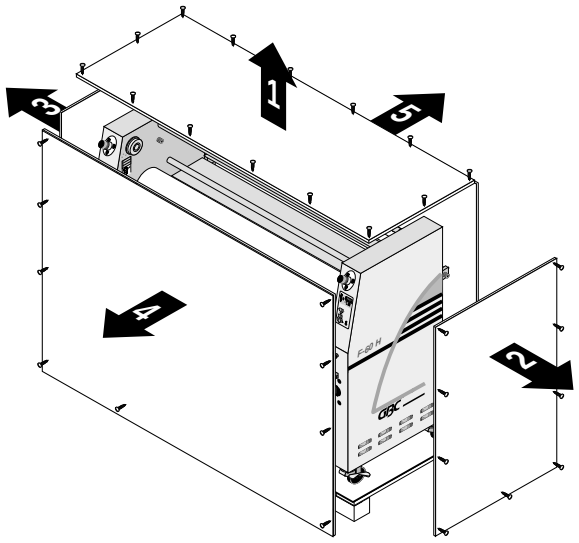
Tools required

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

CAUTION

A second person must support the side labeled 5 in Figure 4.5.1 It can fall and damage the laminator or cause harm to you and others.

Figure 4.5.1 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.

b) Move all packing materials to a safe distance.

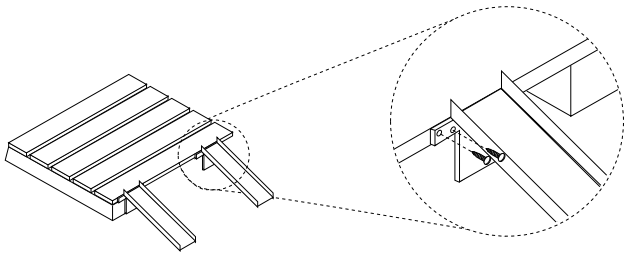
Moving the laminator

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 4.5.2** illustrates positioning of the ramps.

WARNING

Do not attempt to use the ramps if they are not secured to the pallet. Ensure the pallet is on a flat even surface before attempting to roll the machine off.

Figure 4.5.2 Positioning of the ramps



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

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.

4.6 Accessory pack

Once the Falcon 60 H Laminator has been unpacked and moved into final position, open the accessory pack and verify the contents.

Accessory Pack contents

- One Fuse, 250 V, 20 amp (186 - 135)
- Two Fuses, 2,5 amp (186 - 220)
- One fuse, 0.5 amp (186-016)
- One Operators Manual (930 - 063)
- One Towel (475 - 950)
- One Zippy knife (475 - 620)
- One strain relief for main power (175-201)
- One rubber cement pad (930320)
- One crank handle (629-018)
- One O-ring (480 - 005)
- Four leveling pads (470 - 101)
- One T-handle, 1/4 in. (475 - 210)
- One roll of masking tape (475 - 000)
- One crank handle (??? - ???)
- One BHCS (floor stock item)

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

Contacts:

GBC Parts (800) 790 - 7787

GBC Europe parts 33 - 45 - 535 - 7676

4.7 Installing levelers

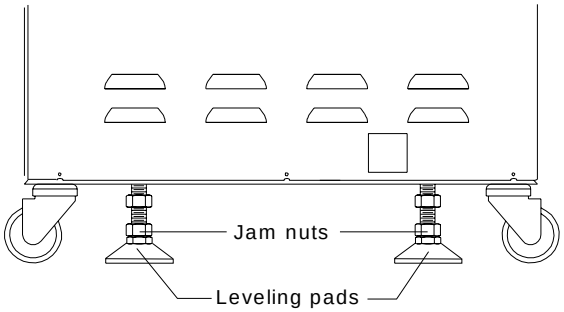
Leveling of the machine is a customer option. If you choose not to level the laminator and you encounter output problems, please level the machine and try your application again before calling for technical support.

Tools required

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

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

b) Place one leveling pad on each of the four leveling bolts on the laminator.



c) Use a 3/4 in. open end wrench to secure the jam nut against the leveling pad.

4.8 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.

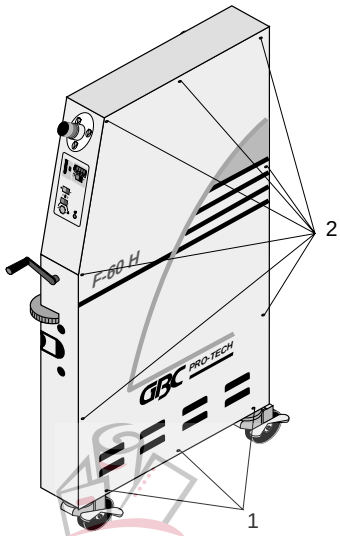
Tools required

- (2) 3/4 in. open end wrenches
- 1/8 in. allen wrench
- Level
- A second person

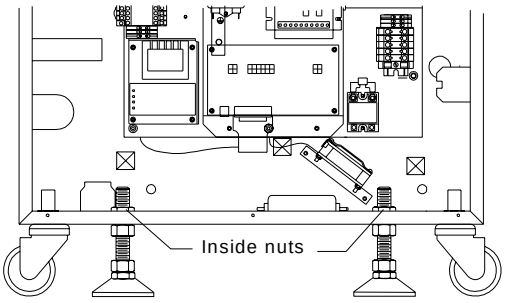
a) With a 1/8 in. allen wrench, remove the drive side and control side cabinet covers by;

1) Loosen the three screws along the bottom.

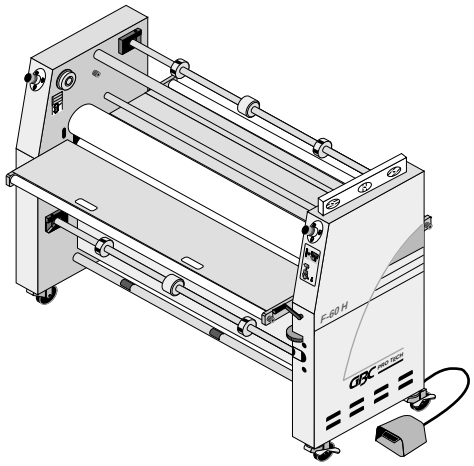
2) Remove the seven screws along the top and sides of the cover.



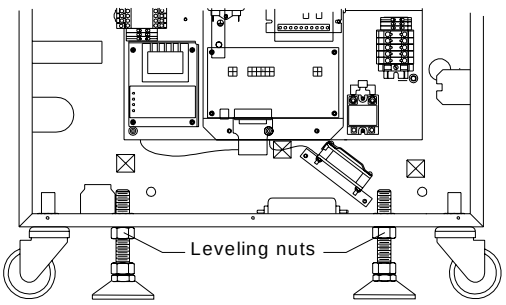
b) Loosen the nut on the inside of both cabinets securing the leveling bolt with a 3/4 in. wrench.



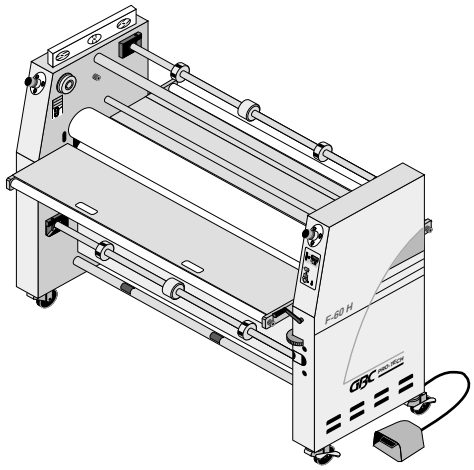
c) Position the level on the top of the control side cabinet.



d) Level the control side from front to back by turning the leveling nut clockwise to raise or counter clockwise to lower.

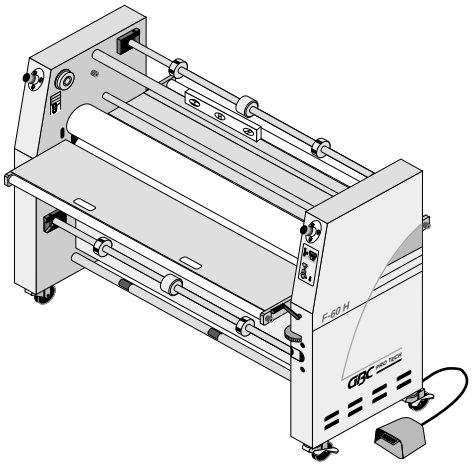


e) Position the level on the top of the drive side cabinet.



f) Level the drive side from front to back by turning the leveling nut clockwise to raise or counter clockwise to lower.

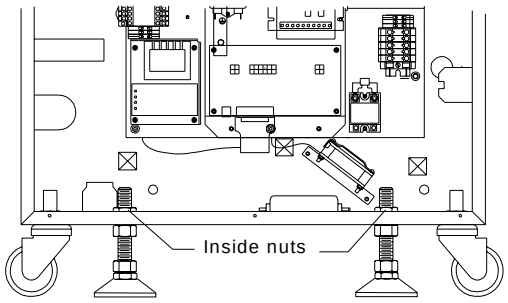
g) Position the level center of the upper tie bar.



h) Level the laminator from drive side to control side by turning the leveling nut clockwise to raise or counter clockwise to lower.

i) Verify that all three points are still leveled.

j) Hold the leveling nut in place with a 3/4 in. open end wrench while you secure the inside nut to the cabinet. Do this for both sides.



CAUTION

Do not move the leveling nut when securing the inside nut to the cabinet.

k) Replace the drive side cabinet cover at this time.

INFORMATION

You will need the control side cabinet cover off to connect the electrical power.

4.9 Connecting power

ELECTRICAL SHOCK

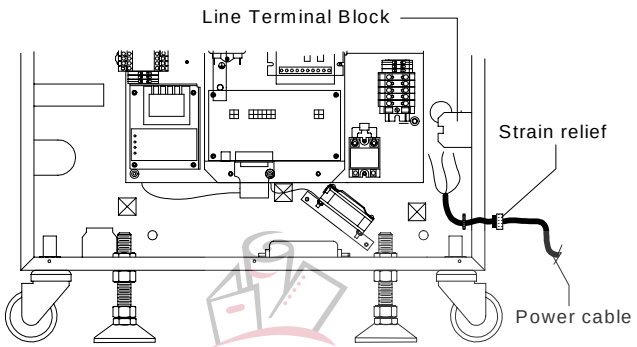
Only a qualified electrician should connect power to the laminator. You can be severely shocked, electrocuted or cause a fire if power is improperly applied.

Tools required

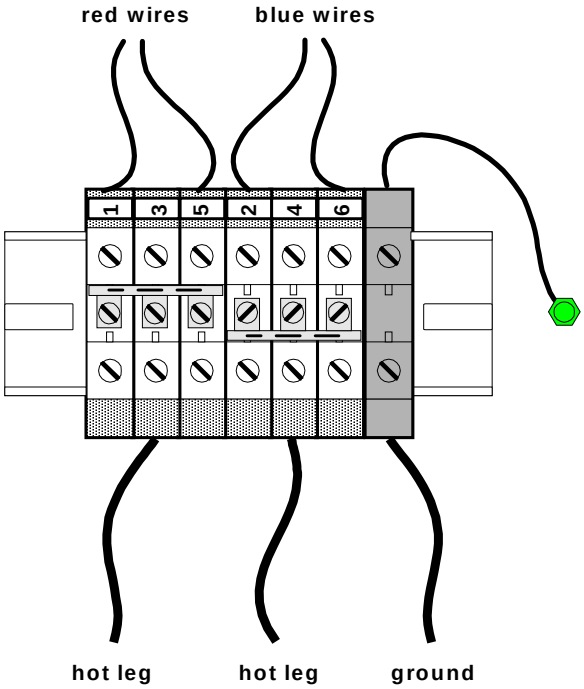
- 1/8 in. allen wrench
- # 2 phillips head screw driver
- Multi meter

a) Ensure the power at the junction box is in the **OFF** position.

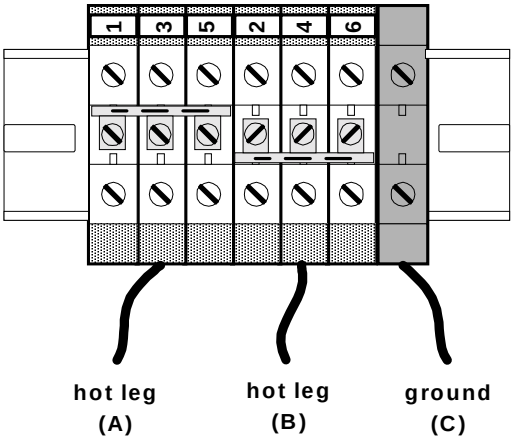
b) Feed the power cable through the main power strain relief from the accessory pack, then through the hole provided below the circuit breaker on/ off.



c) Connect the wires to the Line Terminal Block (LTB) as illustrated below.



f) Verify line voltage with regards to the type of power being supplied to the laminator at the line terminal block.



- **(A) - (B) = 230 ~ 240 VAC**
- **(A) - (C) = 115 ~ 120 VAC**
- **(B) - (C) = 115 ~ 120 VAC**

WARNING

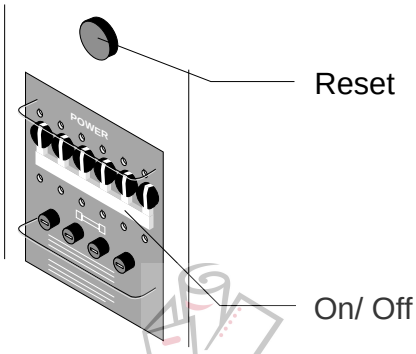
Follow the correct wiring diagram when supplying power to the laminator. If improperly connected, you can be seriously injured or cause damage to the laminator.

g) Replace the control side cabinet cover.

h) Turn the On/ Off to the "ON" position by flipping the handle to the up position and press reset.

d) Secure the main power strain relief to the cabinet.

e) Turn the junction box power to the **ON** position.



4.10 Safety check *E-STOPs*

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

This procedure describes how to check one **E-STOP** and the **PHOTO-EYE**. Repeat the steps for the remaining three **E-STOPS**. **ALL SAFETY FEATURES MUST BE CHECKED!**

WARNING

Do not wear ties, loose fit 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

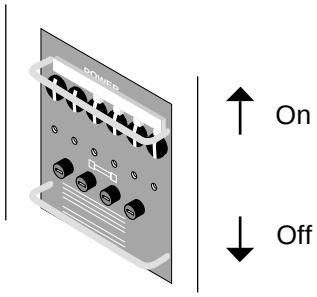
If a safety feature is not working properly, contact your local service representative immediately.

Contacts:

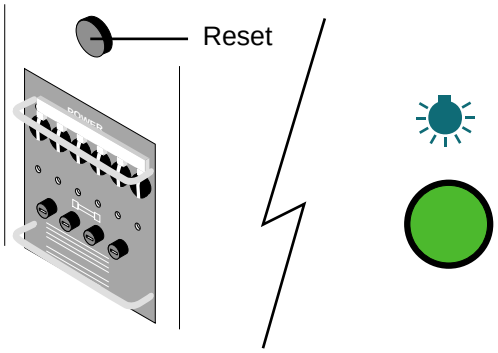
GBC National Service: (800) 790 - 7787

My service rep:_____

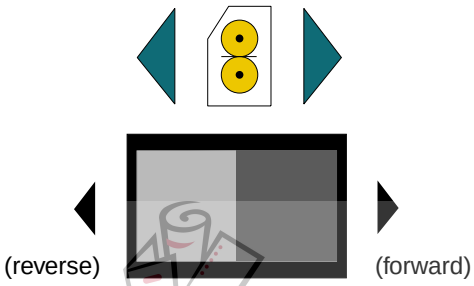
a) Turn MAIN POWER to **ON** .



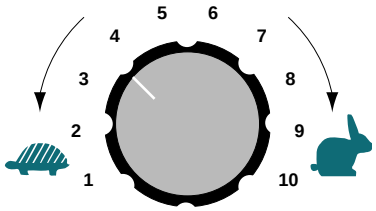
b) Press **RESET**. The power indicator on the front control panel will be illuminated.



c) Press the motor direction to **FORWARD**.



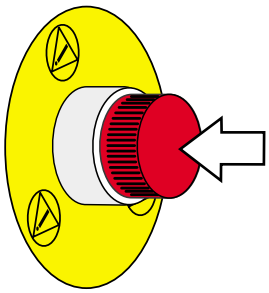
d) Rotate the speed dial to a setting greater than 1.



e) Press the motor engage/ disengage to **ENGAGE**.

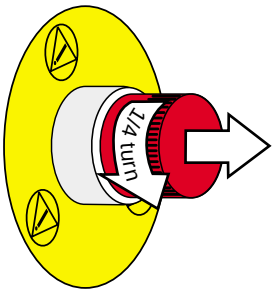
f) Press the temperature on/off to **ON**.

g) Press one of the four **E-STOP**s.



h) The bottom main roller stops turning, the power indicator light goes out, the display on the temperature controller unit goes out.

i) Turn the **E-STOP** 1/4 turn counter clockwise to unlatch.



j) Repeat steps **b)** through **i)** for the remaining three **E-STOP**s.

PHOTO-EYE

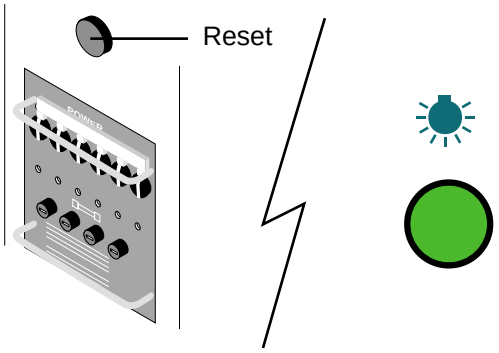
a) Cut a piece of 1/2 inch (1.3 cm) thick foam board to 4 inches x 6 inches. (10 cm x 15 cm) This piece will be referred to as the “finger board”.

CAUTION

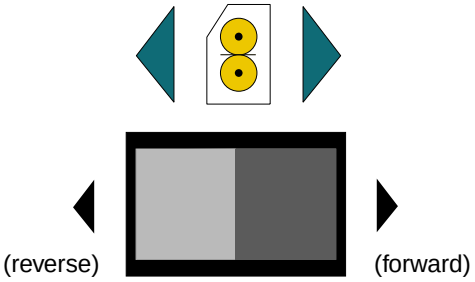
Do not use a hard substrate or a substrate with sharp edges. You may cause damge to the laminating rollers.

b) Ensure all E-STOPs are in the unlatched position and remove the pressure plate from the front feed table.

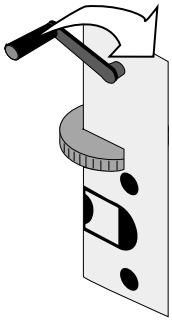
c) If the power indicator on the control panel is not illuminated, press **Reset**.



d) Set the motor direction to **FWD**.

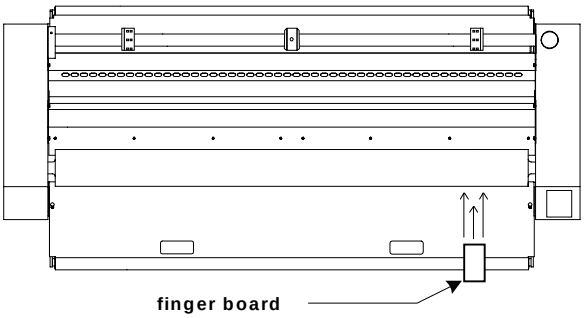


e) Lower the main roller to initial contact (one bar on the pressure display is illuminated).



f) Press the motor engage/ disengage to **ENGAGE**.

g) Slide the "finger board" on the front feed table towards the nip about 10 in. (25 cm) from the control side.

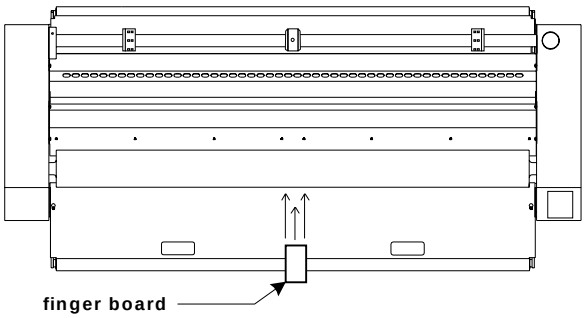


h) The rollers should stop just before the finger board can enter the roller nip.

i) Slide the finger board back away from the rollers nip. Press the motor engage/ disengage to **ENGAGE**.

j) If the finger board comes in contact with the rollers while they are turning, contact your service representative to adjust the **PHOTO-EYE**s.

k) Slide the "finger board" towards the roller nip about center of the front feed table.

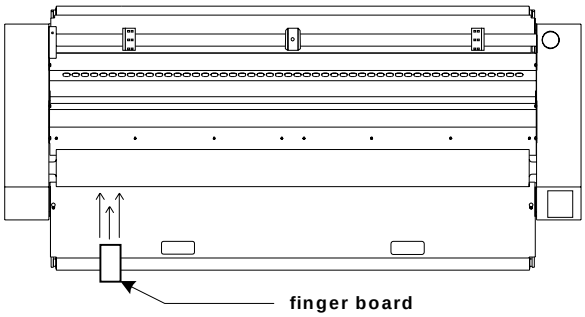


l) The rollers should stop just before the finger board can enter the roller nip.

m) Slide the finger board back away from the rollers nip. Press the motor engage/ disengage to **ENGAGE**.

n) If the finger board comes in contact with the rollers while they are turning, contact your service representative to adjust the **PHOTO-EYE**s.

o) Slide the "finger board" on the front feed table towards the nip about ten in. (25 cm) from the control side.

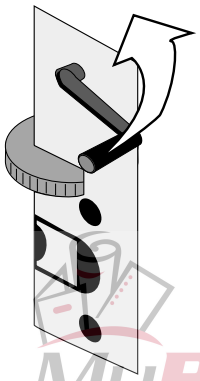


p) The rollers should stop just before the finger board can enter the roller nip.

q) Slide the finger board back away from the rollers nip.

r) If the finger board comes in contact with the rollers while they are turning, contact your service representative to adjust the **PHOTO-EYE**s.

s) Raise the main roller.



5.0 Operations

In this section you will find information on how to properly turn your Falcon 60 H Laminator on, learn functions of the control panel, increase and decrease temperature, properly load and unload film, use of the unwind brake tensioning system, rewind brake tensioning, how to manually set the nip for mounting, and foot switch function.

The following general rules should always be adhered while operating this machine.

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!

WARNING

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

WARNING

Do not wear ties, loose fit 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

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

INFORMATION

The machine will only operate if all four emergency stops are unlatched and RESET has been pressed.

WARNING

Do not operate the laminator, except during web set up, without the front and rear feed tables in position.

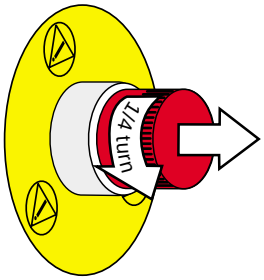
WARNING

It is unsafe to sheet feed without the pressure plate properly placed on the front feed table.

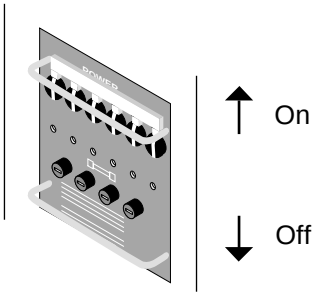
5.1 Power On/ Off

Power on

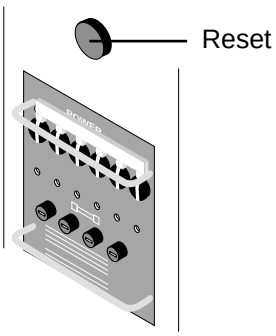
a) Ensure the laminator is plugged in and that all **E-STOP**s are in the unlatched position.



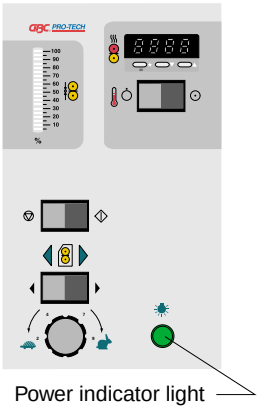
b) Turn the **MAIN POWER** to the up position.



c) Press **RESET** located above the main power on/off.

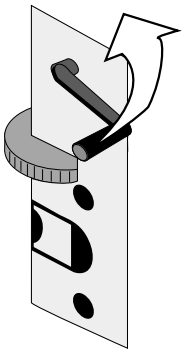


d) Power indicator on the control panel should be illuminated at this time.

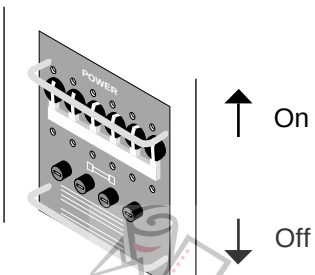


Power off

a) Ensure the rollers are in the up position.



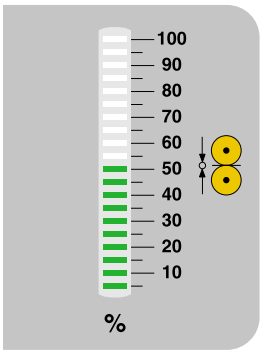
b) Turn the **MAIN POWER** to the down position.



5.2 Control panel

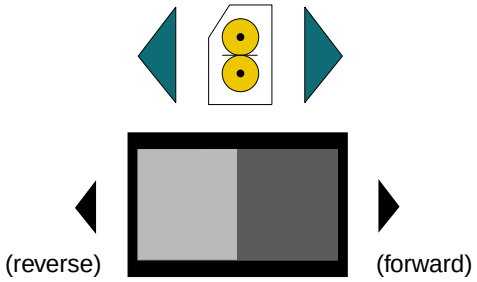
The operator control panel for the Falcon 60 H Laminator is located to the right of the front operating position. For an illustration of the complete front control panel, please refer to **Figure 5.2.1 Falcon 60 H.** The names and functions of these controls are as follows:

(1) NIP PRESSURE DISPLAY: When pressure at the nip of the rollers is applied, bars on the nip pressure display are illuminated in increments of 5% up to 100%.

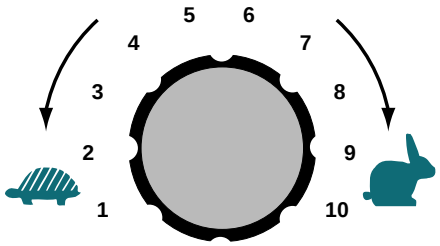


(2) MOTOR ENGAGE/ DISENGAGE: When pressed to the right, power to the motor is supplied and the rollers will begin to turn. When pressed to the left, power to the motor is removed and the rollers stop turning.

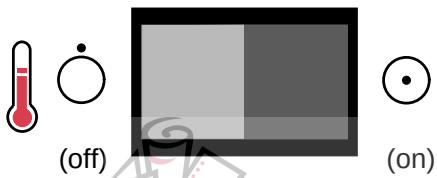
(3) FWD / REV: When pressed to the right, the motor turns in a forward direction as illustrated by the image above the switch. When pressed to the left, the motor turns in a reverse direction.



(4) SPEED DIAL: When turned clockwise, increases the speed of the motor. Turning it counter clockwise will decrease motor speed.



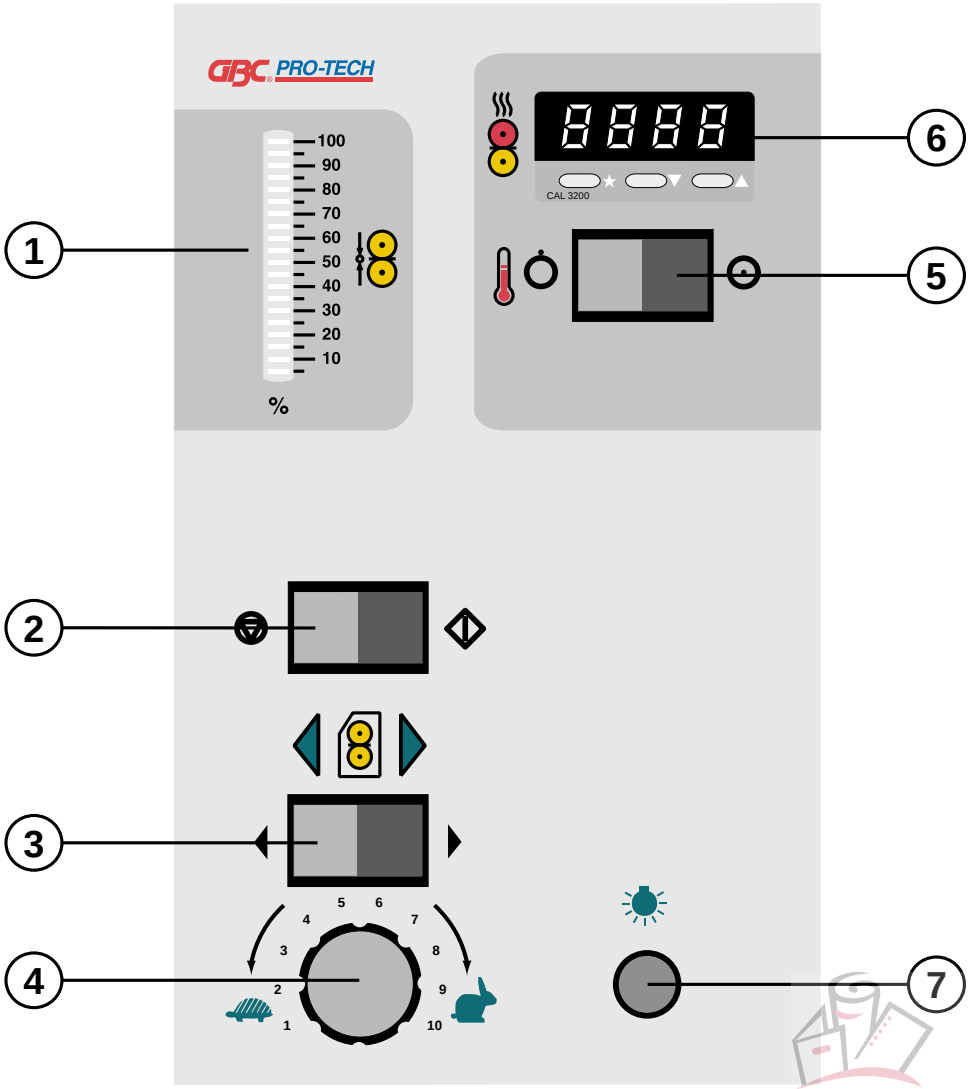
(5) TEMP ON/ OFF: When pressed to the right, supplies power to the temperature controller unit located just above it. When pressed to the left, removes power to the temperature controller unit.



(6) TEMPERATURE CONTROLLER UNIT : Displays the current temperature of the upper roller. Allows the operator to control the operating temperature of the upper roller. To set temperature refer to **Section 5.3.**

(7) POWER INDICATOR: When illuminated represents power to the laminator is supplied. If not illuminated, power to the laminator has been removed via an E-STOP, no RESET, circuit breaker is the off position or line voltage has been removed.

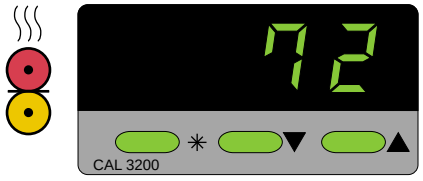
Figure 5.2.1 Front control panel



5.3 Set Temperature

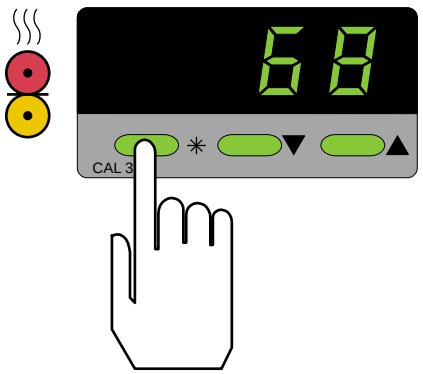
The Falcon 60 H has upper roller heating capabilities which enables the machine to run Lo-Melt film. You can set a desired temperature from 32 ^{O}F (0 ^{O}C) up to 200 ^{O}F (93 ^{O}C).

When power to the temperature controller unit is supplied, the display indicates the current temperature of the upper roller.



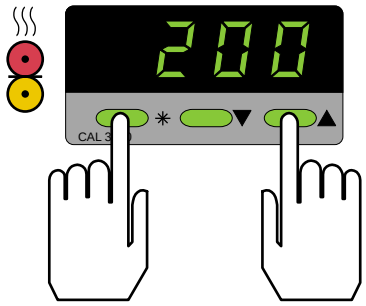
(72 is an example of room temperature)

To display the current set point value of the temperature controller unit, press and hold the star key located just to the left just below the temperature display. When the star key is released, the temperature display reverts to the current temperature of the upper roller.



Increase set point

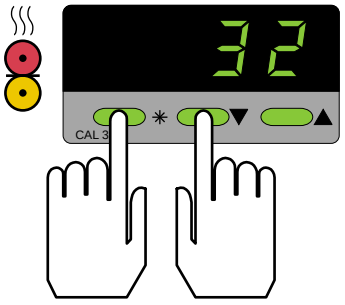
a) Press and hold ✻ key while pressing ▲ key to increase the set point temperature. Single presses of the ▲ key increases the set point by increments of one while holding the key down will increase by increments of ones then tens.



b) Release the ✻ key and ▲ key once desired set point has been obtained.

Decrease set point

a) Press and hold ✻ key while pressing ▼ key to decrease the set point temperature. The same increments apply.



b) Release the ✻ key and ▼ key once desired set point has been obtained.

5.4 Load/ Unload film

The film supply shafts, commonly known as unwind shafts, pivot out for ease of loading and unloading of film. Always pay particular attention to which side is the adhesive side and which side is the carrier side. The adhesive side will always face away from the rollers. Refer to **Figure 5.4.1 and Figure 5.4.2**.

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

The Poly-in/ Poly-out diagrams refer to the upper rolls of film only. The mount adhesive and craft papers are for reference only.

Figure 5.4.1 Lo-Melt Poly-in/ Poly-out

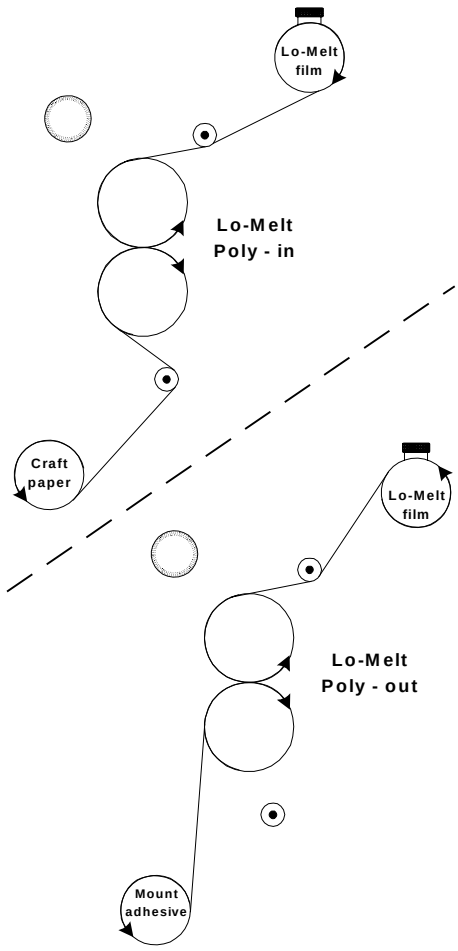
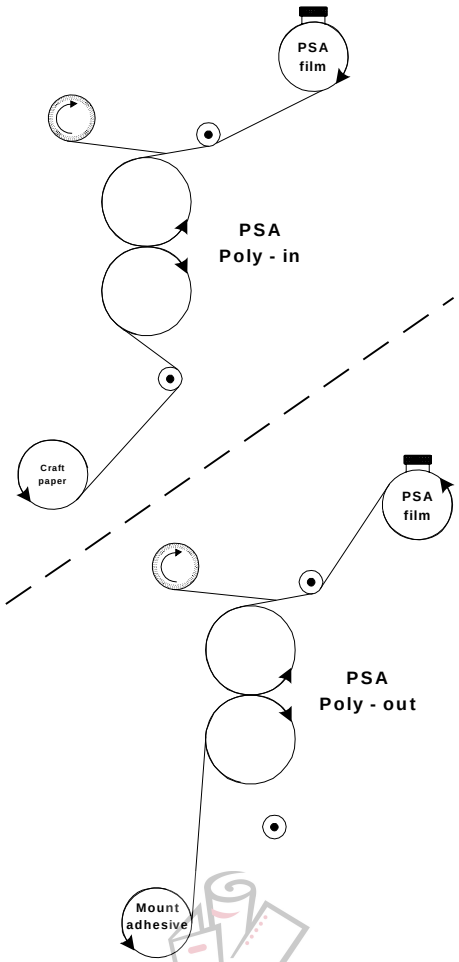
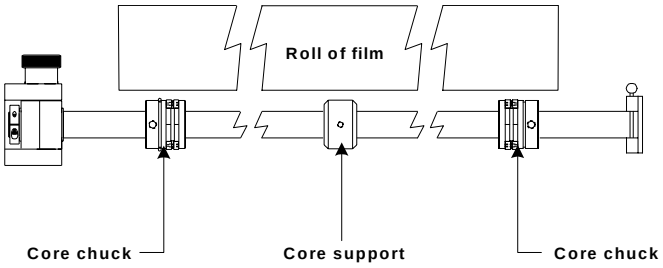


Figure 5.4.2 PSA Poly-in/ Poly-out

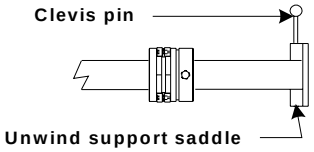


Load film

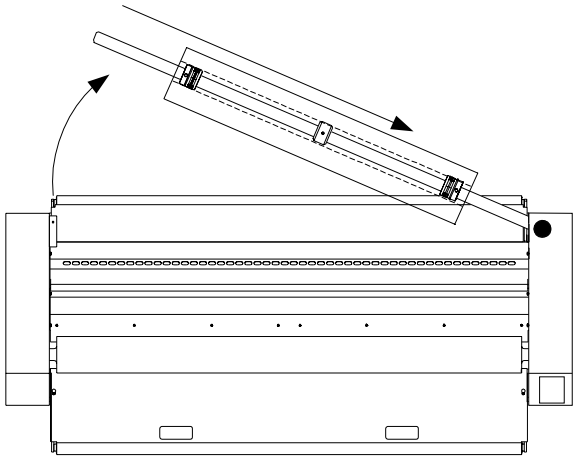
a) Adjust the core grips so they are close to the edge of the roll of film being used but remain inside the core when the roll of film is positioned on the unwind shaft.



b) Lift up on the clevis pin to the unwind shaft located in the unwind support saddle.



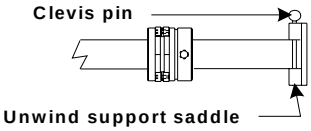
c) Swing the unwind shaft out far enough to slide the roll of film completely on.



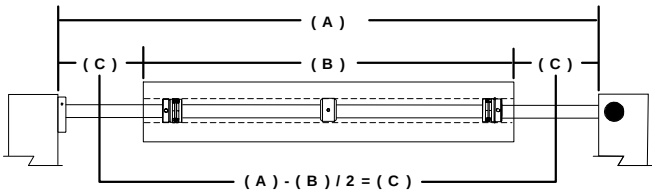
WARNING

Never leave the unwind shaft out of the unwind support saddle unless loading or unloading film.

d) Swing the unwind shaft completely back into the unwind support saddle and push the clevis pin down.



e) If using the lower unwind, center the upper roll of film on the laminating rollers.

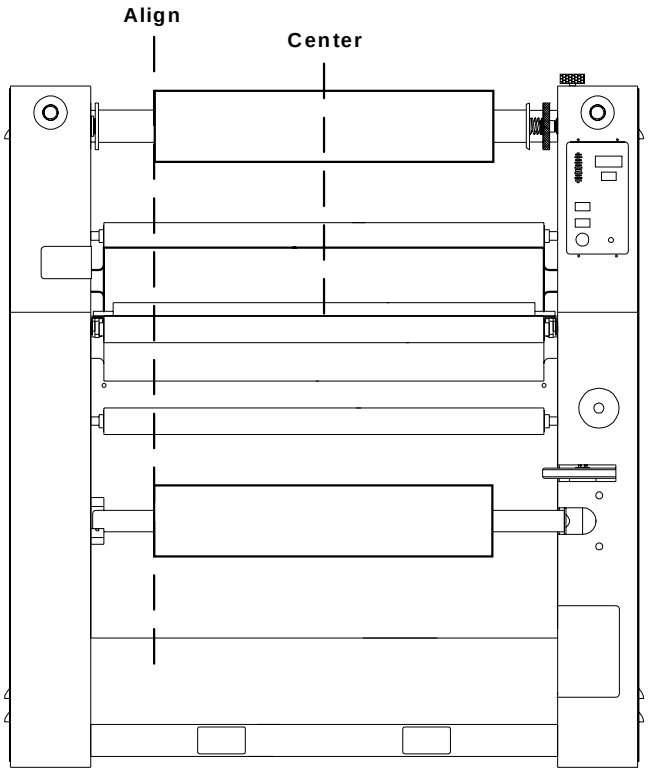


CAUTION

When using two rolls on the machine, ensure the film widths are identical. Exposed adhesive can cause complications.

f) Repeat steps **a)** through **c)** to load film on the lower unwind shaft.

g) Measure the distance from the side frame to the edge of the upper roll of film. Use this measurement to evenly align the roll of mount adhesive or craft paper.



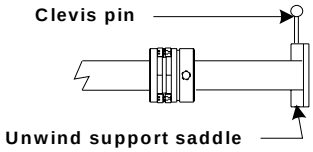
Unload film

a) Cut the roll of film from the web using an enclosed blade.

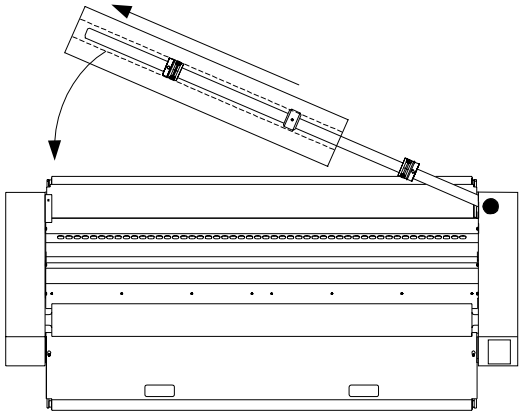
CAUTION

Never use an open blade near the laminating rollers. You may cut the rollers or your self.

b) Lift up on the clevis pin to the unwind shaft located in the unwind support saddle.



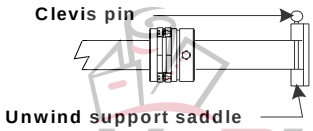
c) Swing the unwind shaft out far enough to slide the roll of film completely off.



CAUTION

When using two rolls on the machine, ensure the film widths are identical. Exposed adhesive can cause complications.

d) Swing the unwind shaft completely back into the unwind support saddle and push the clevis pin down.



5.5 Unwind brake tension

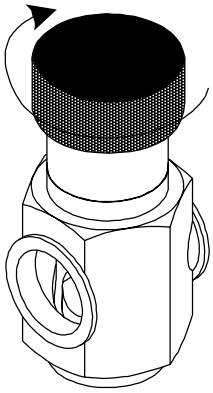
The unwind brakes are uniquely designed to allow you to change rolls of film without changing your current brake setting. Brake tension may vary from roll to roll so some adjustments may be required for optimal output.

INFORMATION

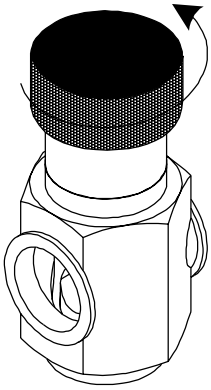
Always use the minimum amount of brake for the job.

a) Turn the upper black brake knob (shown below) or the lower gray brake disc (not shown) clockwise to increase unwind brake tension.

Increase



decrease



b) Turn the upper black brake knob (shown above) or the lower gray brake disc (not shown) counter clockwise to decrease unwind brake tension.

5.6 Rewind brake tension

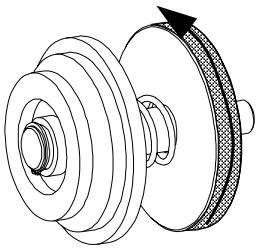
The rewind brake controls the tension of the rewind tubes. Rewind brakes along with the unwind brakes allow for precise control of the release liner in PSA films. If your Falcon 60 H is equipped with the roll to roll option, the rewind brakes are helpful as the finished product rewind becomes heavier by adding more friction to the rewind tube.

a) Turn the brake dial counter clockwise to increase rewind brake tension.

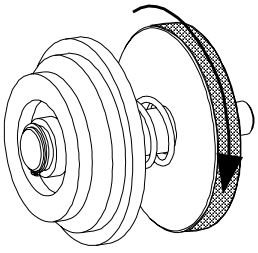
INFORMATION

If more brake is needed, add an O-ring to the brake side of the rewind.

Increase



Decrease



b) Turn the brake dial clockwise to decrease rewind brake tension.

5.7 Setting the nip

Setting the nip is made easy when it comes to performing a mounting application. Pressure will vary with regards to the types of substrate being used. An incorrect nip setting can cause complications with output quality.

For safe nip setting, always adhere to the following rules listed below.

WARNING

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

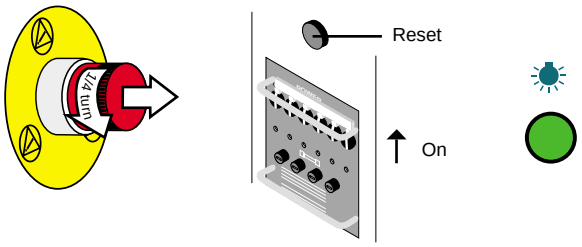
CAUTION

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

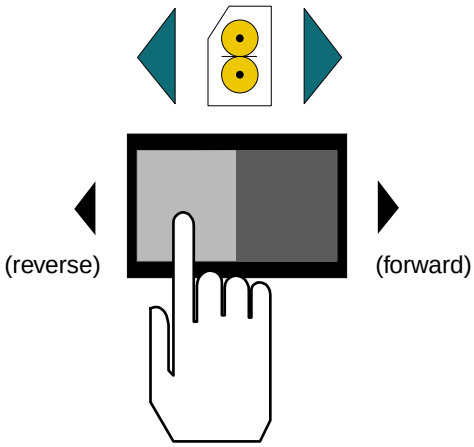
CAUTION

Objects other than media, film or approved substrates, will cause irreparable damage to the rollers if caught in the nip.

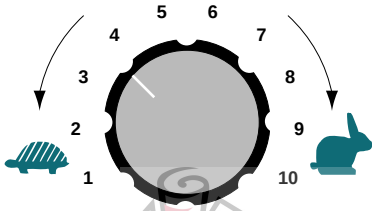
a) Ensure all **E-STOP**s are unlatched, power is on and **RESET** has been pressed.



b) Set the motor direction to **REV**.



c) Set a comfortable speed for the application you are performing.



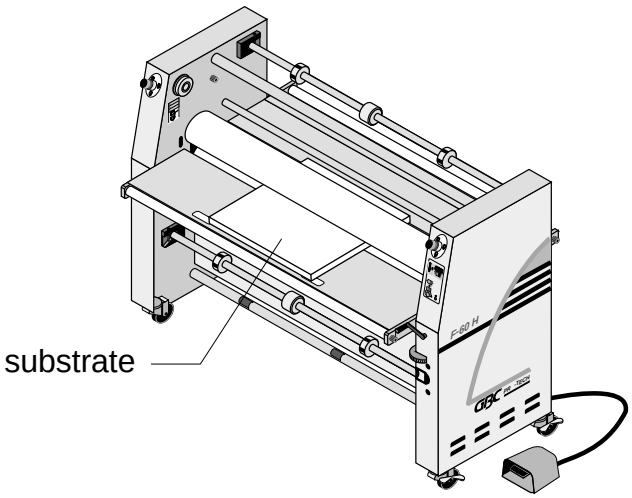
CAUTION

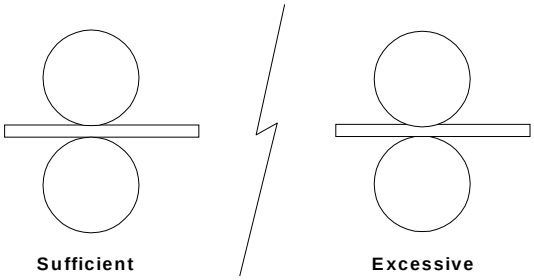
Sharp edges on a substrate should be filed smooth. Sharp edges can CUT the rollers!

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

d) Position the substrate center of the feed table between the two rollers.

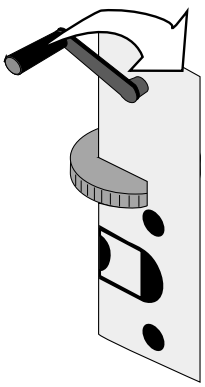




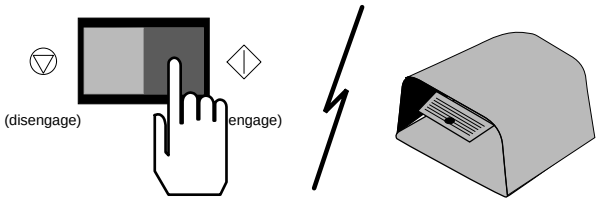
INFORMATION

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

e) Lower the upper main roller until it makes contact with the substrate. Lower enough to apply sufficient pressure without crushing the substrate.



f) Press the motor engage/ disengage to **engage** or step on the footswitch to back the board out from the nip.



f) The nip is now set for the substrate being used. Remember to set the motor direction to **FWD**.

5.8 Footswitch

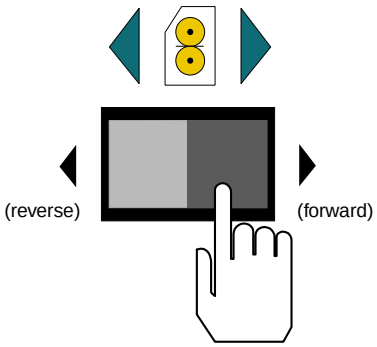
WARNING

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

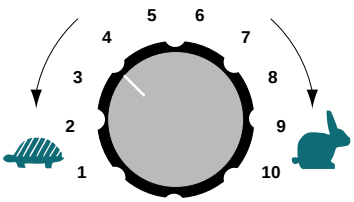
The footswitch operates differently based on the motor direction setting.

Forward

a) Press the motor direction to **FWD**.



b) Set your speed dial to a comfortable operating speed.



WARNING

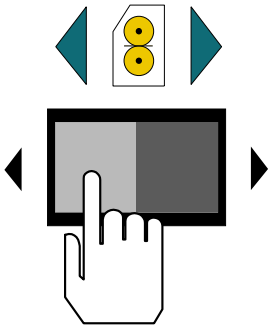
The variable speed footswitch over-rides the PHOTO-EYE safety circuit !

c) When the footswitch is pressed, roller speed is dependent on what you have selected on the speed dial.

d) You may adjust speed while the footswitch is depressed.

Reverse

a) Press the motor direction to **REV**.



b) Press on the footswitch. The footswitch speed is limited to 1 foot per minute (30 cm/ minute) regardless of motor speed dial setting..

6.0 Applications

The Falcon 60 H can accommodate Poly-in or Poly-out films. Poly-out means the adhesive is on the outside of the roll.

The shiny side of clear film must contact the main rollers with the dull sides (adhesive side) facing out. Use caution when loading matte or de-luster film since both sides appear dull.

The top and bottom rolls of laminating film must be of the same width and be present simultaneously. If performing a single sided lamination process, a craft paper carrier or a substrate of the same width must be used in place of the bottom laminate.

WARNING

Do not wear ties, loose fit 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 process control charts and web diagrams illustrated 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, paper types, environment conditions and operator experience.

6.1 Helpful hints

Pressure sensitive materials

In most cases, a little heat (120 °F / 49 °C) helps the adhesive in pressure sensitive films flow smoothly to prevent what we call “silvering” in the laminate.

The release liner on pressure sensitive films should separate just above the main roller.

INFORMATION

Use film brake tension to control the separation point of the release liner.

Lo-Melt film materials

Most Lo-Melt adhesives activate around 180°F ~ 200°F (82°C ~ 93°C) which is below the boiling point for water based inks. For thicker Lo-Melt films, adjust the speed to allow for a longer dwell time in the nip.

INFORMATION

Speeds and temperatures will affect the bond strength of Lo-Melt adhesives.

Mounting

Mounting on the Falcon 60 H is achieved from the front operating position. Heat can also assist with mounting, it follows the same hints as pressure sensitive materials.

INFORMATION

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

Pressure

Most lamination is performed at 50 ~ 70% of pressure on the rollers. Once again, there are variables that may require some adjustments of the above mentioned pressures.

Typically the thicker the paper, the more pressure required and for thinner paper (tissue paper/ light bond paper) you can use less pressure (as little as 50 %) on the roller.

When it comes to mounting, the one general "rule" is to not crush the substrate. Most substrates only require about 20-50 % of pressure, but variables can effect how much pressure is actually needed. (width, thickness, density, etc.)

INFORMATION

Excessive pressure will cause the substrate to bow or flatten.

Brake tension

Brake tension should always be minimal. Brake tension should always be even from the top roll of film to the lower roll of film. Never use excessive amount of brake tension.

INFORMATION

Excessive brake tension may cause the image to curl. Always use the minimum amount of brake for the job.

General

CAUTION

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

INFORMATION

Never stop the laminator when an image is within the nip of the rollers.

INFORMATION

Laminates and papers should always be stored in a controlled enviroment.

6.2 Temp conversion chart

A temperature conversion chart has been included for your convenience. Use the chart below for converting temperatures from **ºF** to **ºC** and vice a versa.

Figure 6.2.1 Temperature conversion chart

º F		º C	º F		º C	º F		º C	º F		º C
68	=	20	102	=	38.9	136	=	57.8	170	=	76.7
69	=	20.6	103	=	39.4	137	=	58.3	171	=	77.2
70	=	21.1	104	=	40	138	=	58.9	172	=	77.8
71	=	21.7	105	=	40.6	139	=	59.4	173	=	78.3
72	=	22.2	106	=	41.1	140	=	60	174	=	78.9
73	=	22.7	107	=	41.7	141	=	60.6	175	=	79.4
74	=	23.3	108	=	42.2	142	=	61.1	176	=	80
75	=	23.9	109	=	42.8	143	=	61.7	177	=	80.6
76	=	24.4	110	=	43.3	144	=	62.2	178	=	81.1
77	=	25	111	=	43.9	145	=	62.8	179	=	81.7
78	=	25.6	112	=	44.4	146	=	63.3	180	=	82.2
79	=	26.1	113	=	45	147	=	63.9	181	=	82.8
80	=	26.7	114	=	45.6	148	=	64.4	182	=	83.3
81	=	27.2	115	=	46.1	149	=	65	183	=	83.9
82	=	27.8	116	=	46.7	150	=	65.6	184	=	84.4
83	=	28.3	117	=	47.2	151	=	66.1	185	=	85
84	=	28.9	118	=	47.8	152	=	66.7	186	=	85.6
85	=	29.4	119	=	48.3	153	=	67.2	187	=	86.1
86	=	30	120	=	48.9	154	=	67.8	188	=	86.7
87	=	30.6	121	=	49.4	155	=	68.3	189	=	87.2
88	=	31.1	122	=	50	156	=	68.9	190	=	87.8
89	=	31.7	123	=	50.6	157	=	69.4	191	=	88.3
90	=	32.2	124	=	51.1	158	=	70	192	=	88.9
91	=	32.8	125	=	51.7	159	=	70.6	193	=	89.4
92	=	33.3	126	=	52.2	160	=	71.1	194	=	90
93	=	33.9	127	=	52.8	161	=	71.7	195	=	90.6
94	=	34.4	128	=	53.3	162	=	72.2	196	=	91.1
95	=	35	129	=	53.9	163	=	72.8	197	=	91.7
96	=	35.6	130	=	54.4	164	=	73.3	198	=	92.2
97	=	36.1	131	=	55	165	=	73.9	199	=	92.8
98	=	36.7	132	=	55.6	166	=	74.4	200	=	93.3
99	=	37.2	133	=	56.1	167	=	75			
100	=	37.8	134	=	56.7	168	=	75.6			
101	=	38.3	135	=	57.2	169	=	76.1			

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6.3 Charts and diagrams

Process control charts allow you to record the way you thread film through the machine's rollers and idlers (called webbing) and the control settings for each product and process. Process control charts are an excellent tool for training new operators. They provide a "road map" for correct machine setup and operation.

This section contains a blank process control chart and diagram for the Falcon 60 H as well as completed charts for the basic operations of the laminator. The process control charts should be kept in this manual or in a book close to the laminator.

The Falcon 60 H laminator responds in a very accurate and repeatable manner. The charts provide a way to set up each time, every time for repeatable performance by assuring that all controls are set to optimum.

The completed process control charts included in this section are based on GBC films, GBC boards and typical prints. Charts and diagrams start on page 6-6. If your machine is equipped with the roll to roll option, webbing diagrams for related applications are aslo incleded.

PROCESS CONTROL CHART

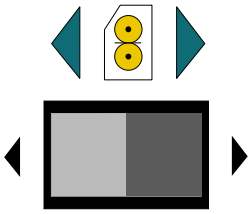
Materials - _____

Top material :

Bottom material :

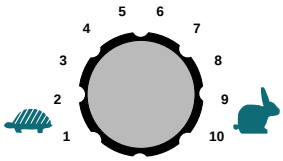
Other material (s) :

Motor Direction

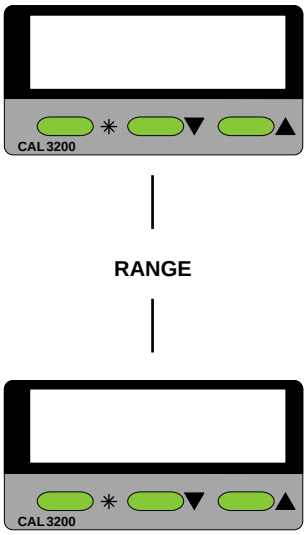


Heater

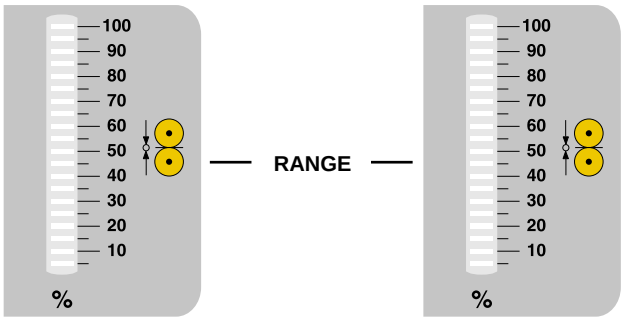
Motor Speed



Upper Roller Temperature



Roller Pressure



Notes : _____

_____

_____

_____

_____

Diagram - Blank

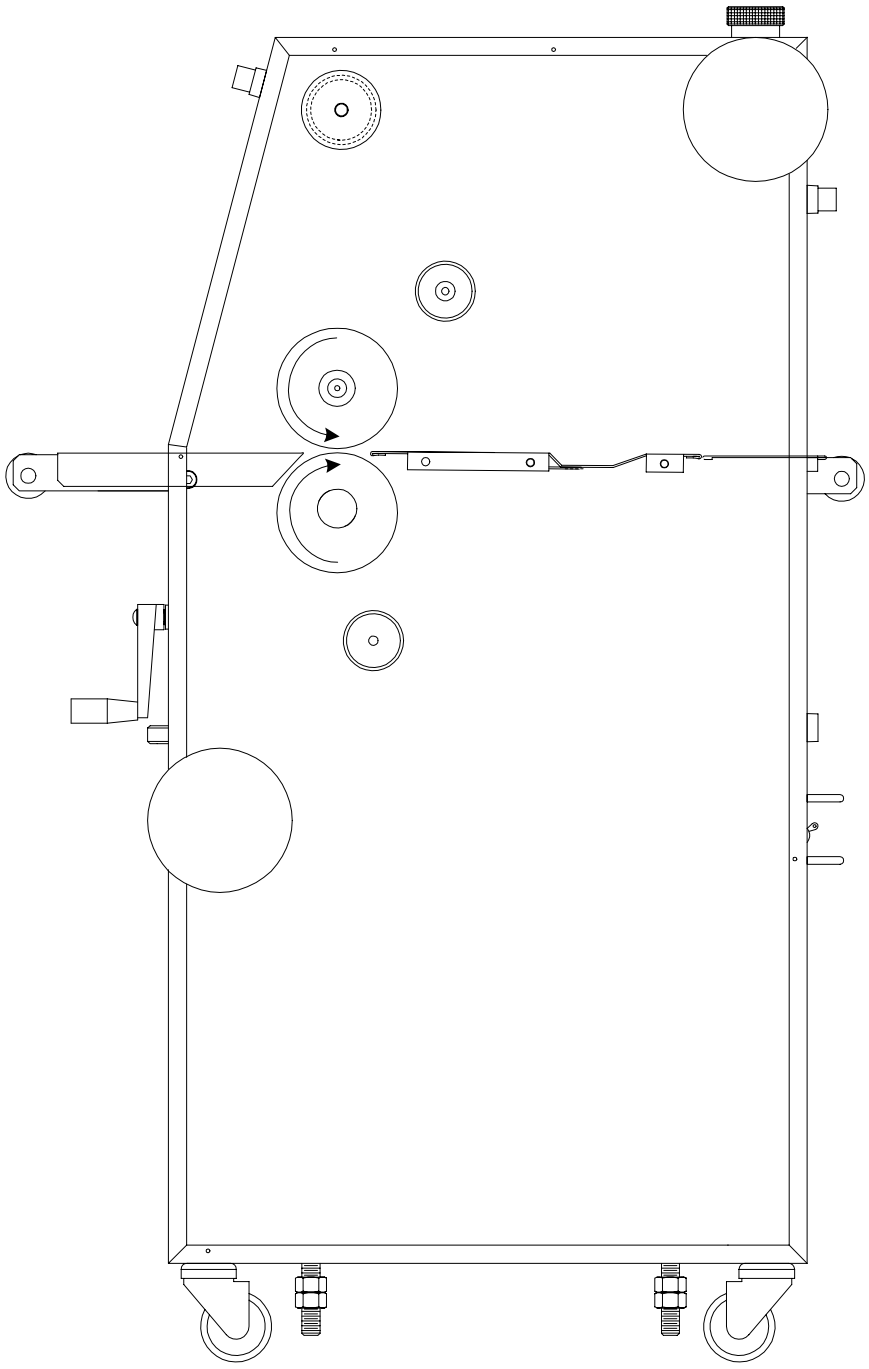


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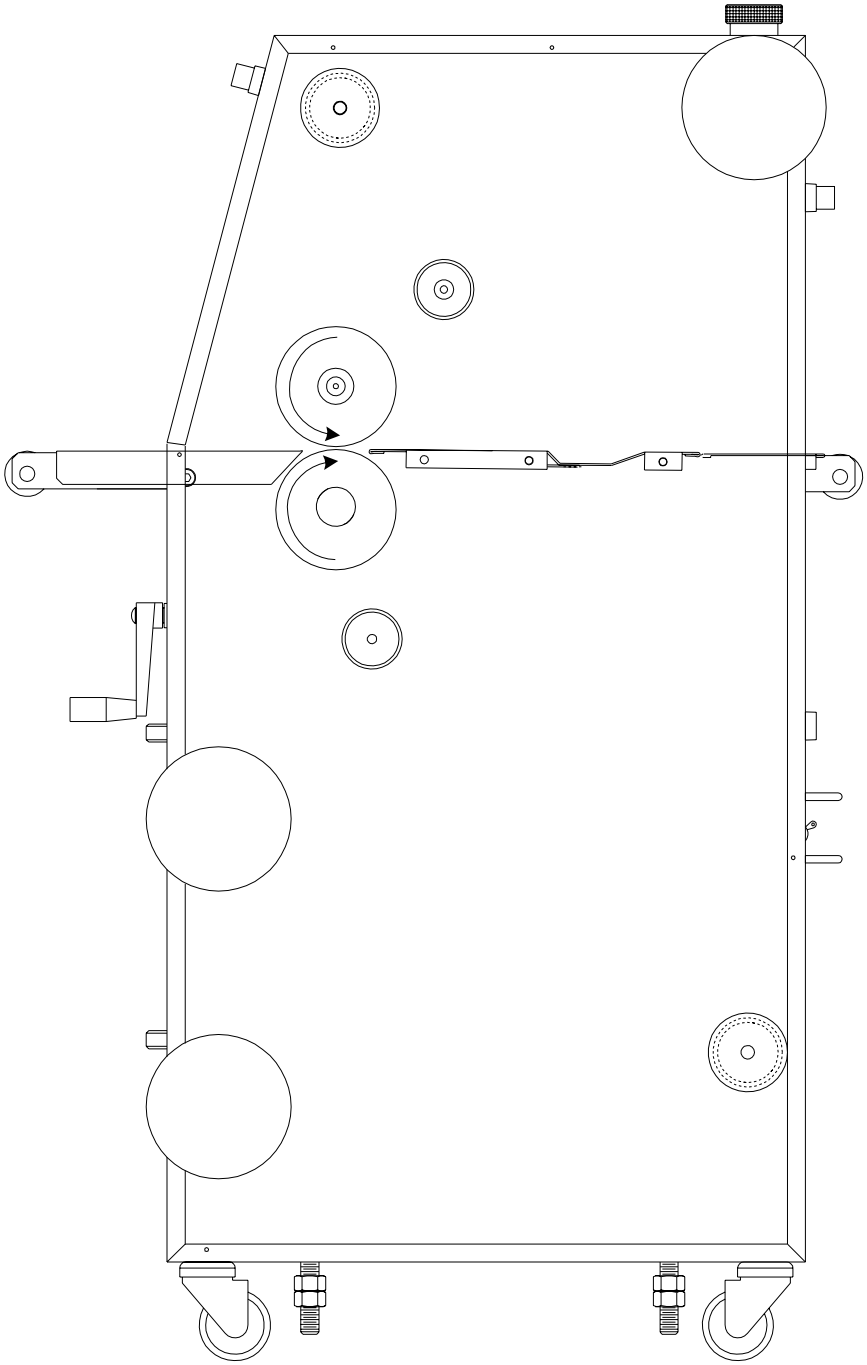
Diagram - Blank w/ roll to roll options



PROCESS CONTROL CHART

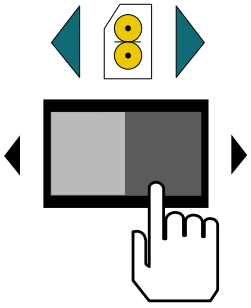
Materials - Pre-coating substrates

Top material : Roll of pressure sensitive mount adhesive

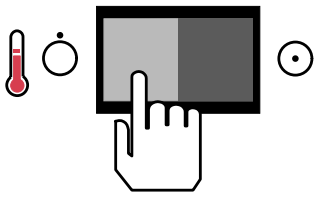
Bottom material : N/A

Other material (s) : Substrates, leader board and trailer board

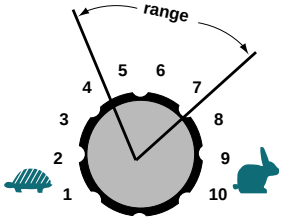
Motor Direction



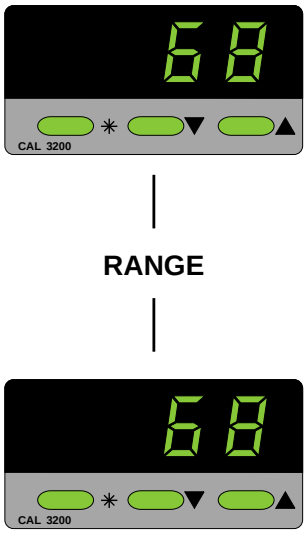
Heater



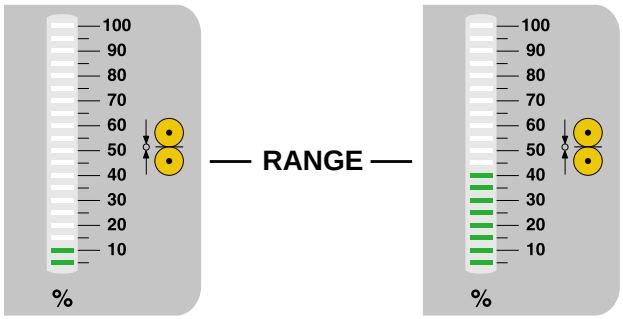
Motor Speed



Upper Roller Temperature

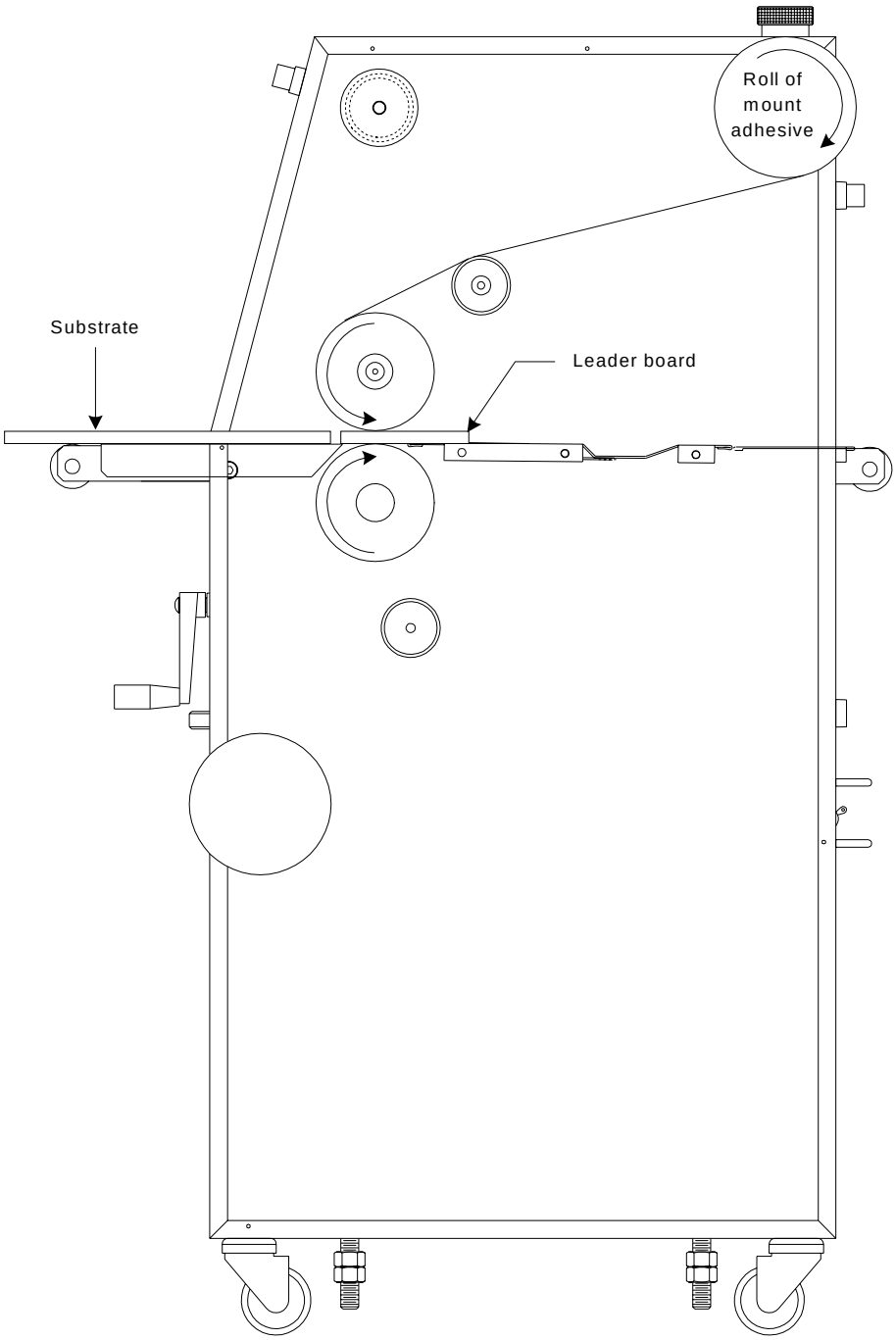


Roller Pressure



Notes : The roll of mount adhesive should not exceed the substrate by more than 1 in. (2.5 cm). Speed will be determined by what is comfortable with the operator. Pressure is dependent on the substrate. Do not crush the substrate. Use a leader board to start the run and stop the run when the trailer board is in the nip of the rollers. Stopping on a subtsrate will leave an impression on the board. Refer to helpful hints for pressure sensitive materials and mounting.

Diagram - Pre-coating substrates



PROCESS CONTROL CHART

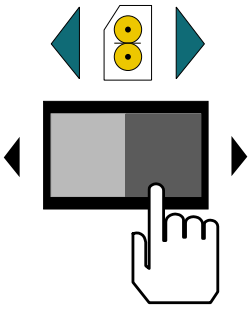
Materials - Mounting an image

Top material : N/A

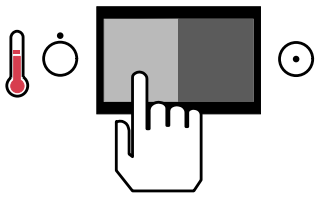
Bottom material : N/A

Other material (s) : Image and a Pre-coated board

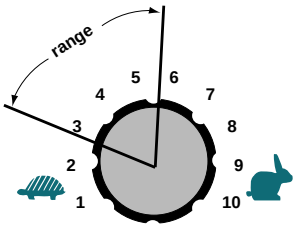
Motor Direction



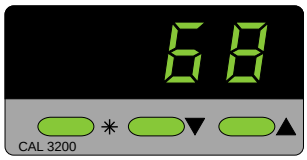
Heater



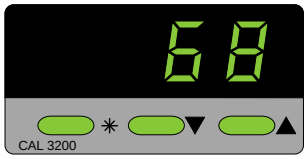
Motor Speed



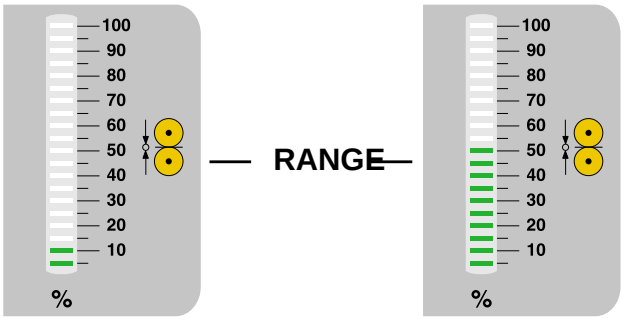
Upper Roller Temperature



RANGE

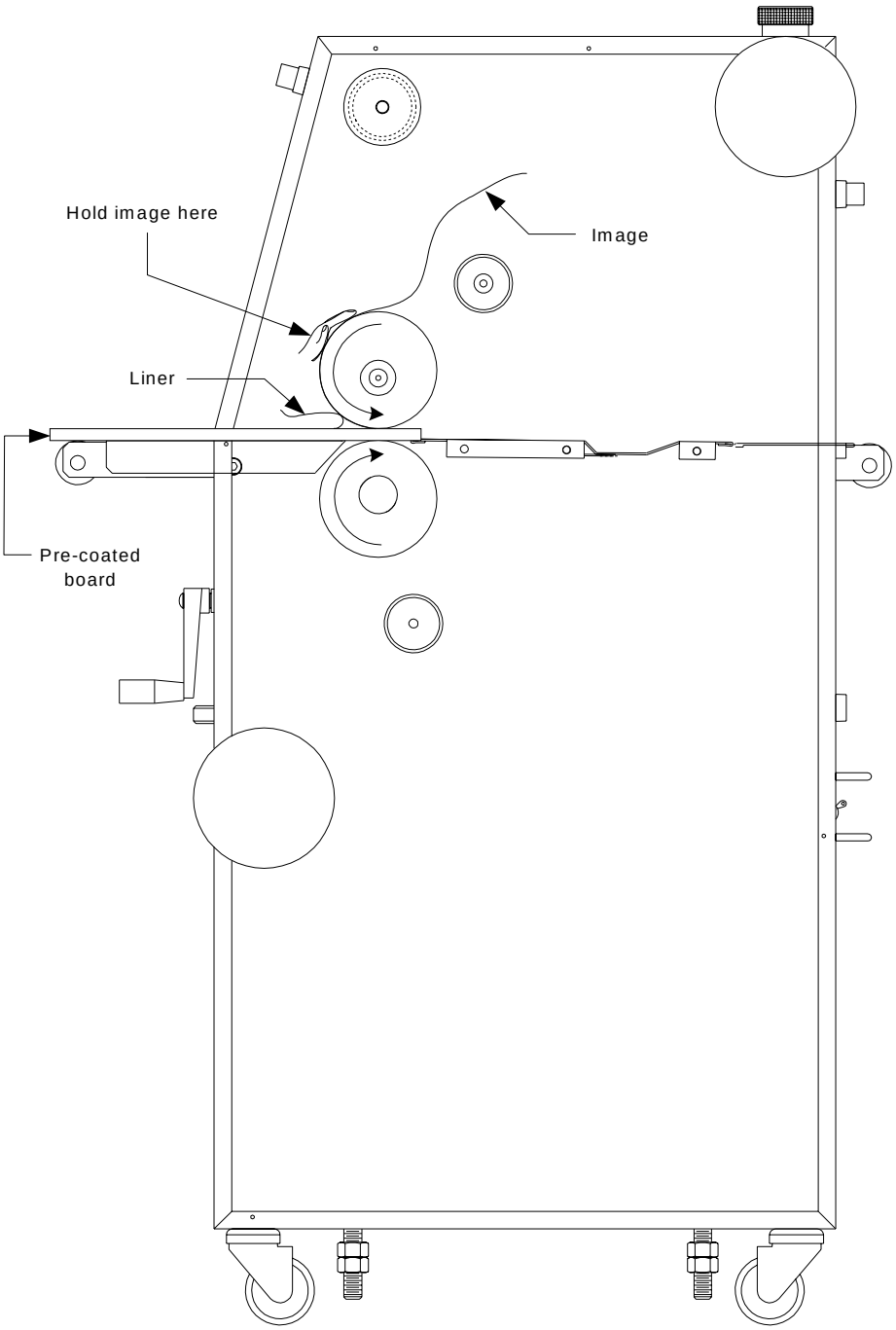


Roller Pressure



Notes: The image shoud not exceed the pre-coated board by more than 1 in. (2.5 cm). If the image is smaller than the precoated board, trim the board or pre-trim the release liner around the image. Speed for mounting should be comfortable for the operator. Use the footswitch for this application. Pressure will be dependent on the type of subtrate. No heat is required for this application. Do not crush the substrate. Do not stop in the middle of the run. Refer to helpful hints for mounting.

Diagram - Mounting an image



PROCESS CONTROL CHART

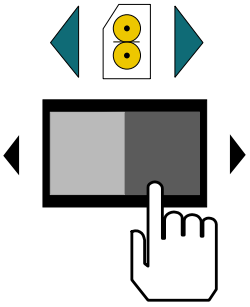
Materials - PSA Decaling

Top material : Roll of pressure sensitive laminate

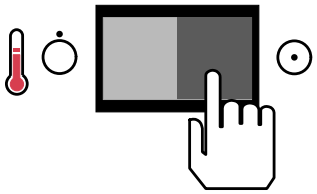
Bottom material : Roll of pressure sensitive mount adhesive

Other material (s) : prints

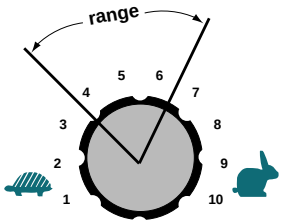
Motor Direction



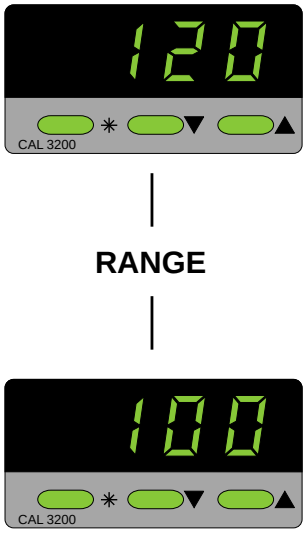
Heater



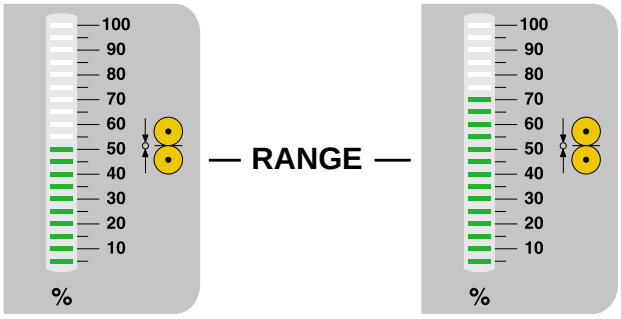
Motor Speed



Upper Roller Temperature



Roller Pressure



Notes: Speed should be comfortable for the operator. Pressure will vary depending on the weight and width of the image and laminate. Heat is optional. Some will assist the flow of the adhesive in pressure sensitive films. Refer to helpful hints for pressure sensitive films.

Diagram - PSA decaling

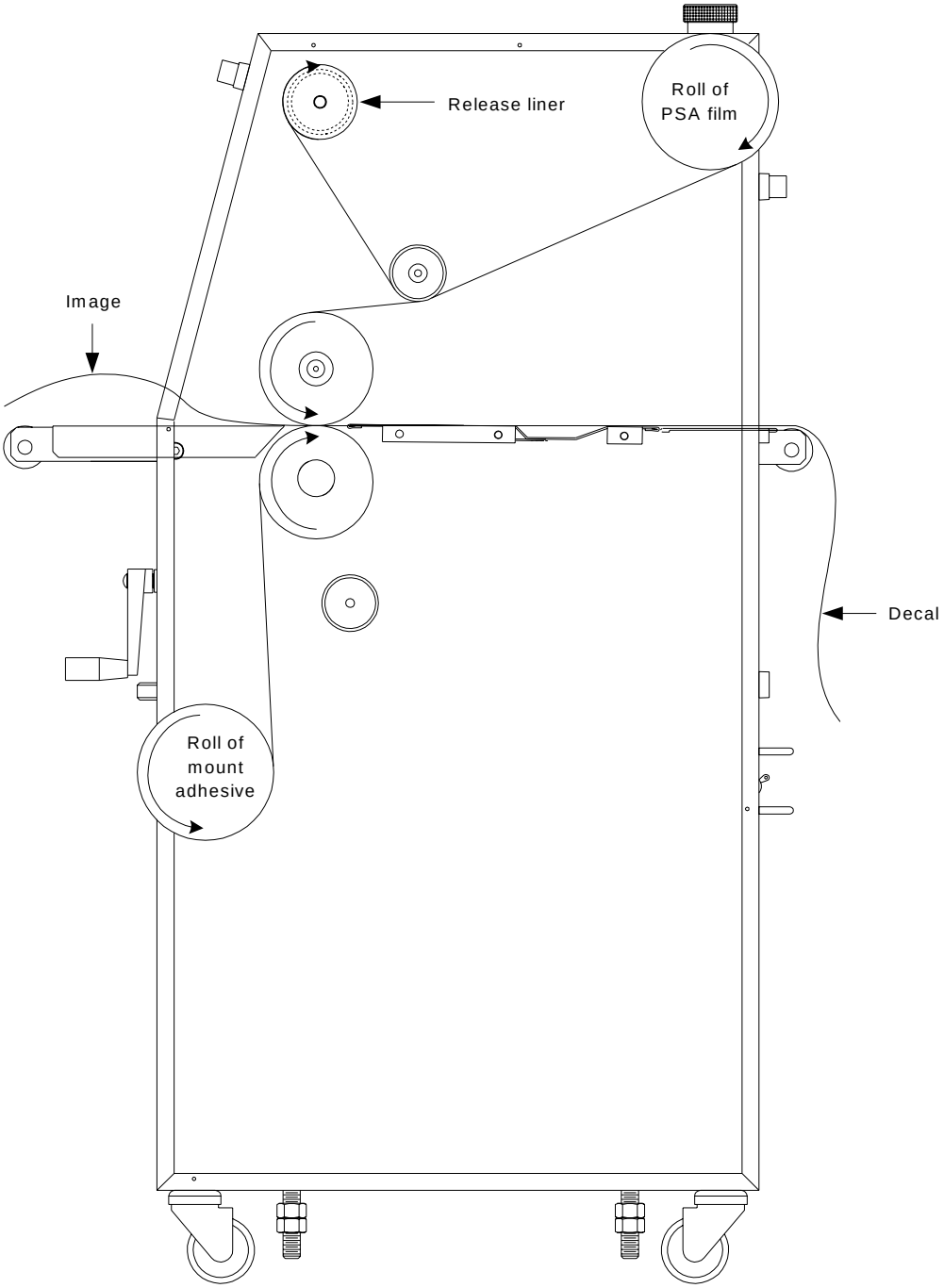


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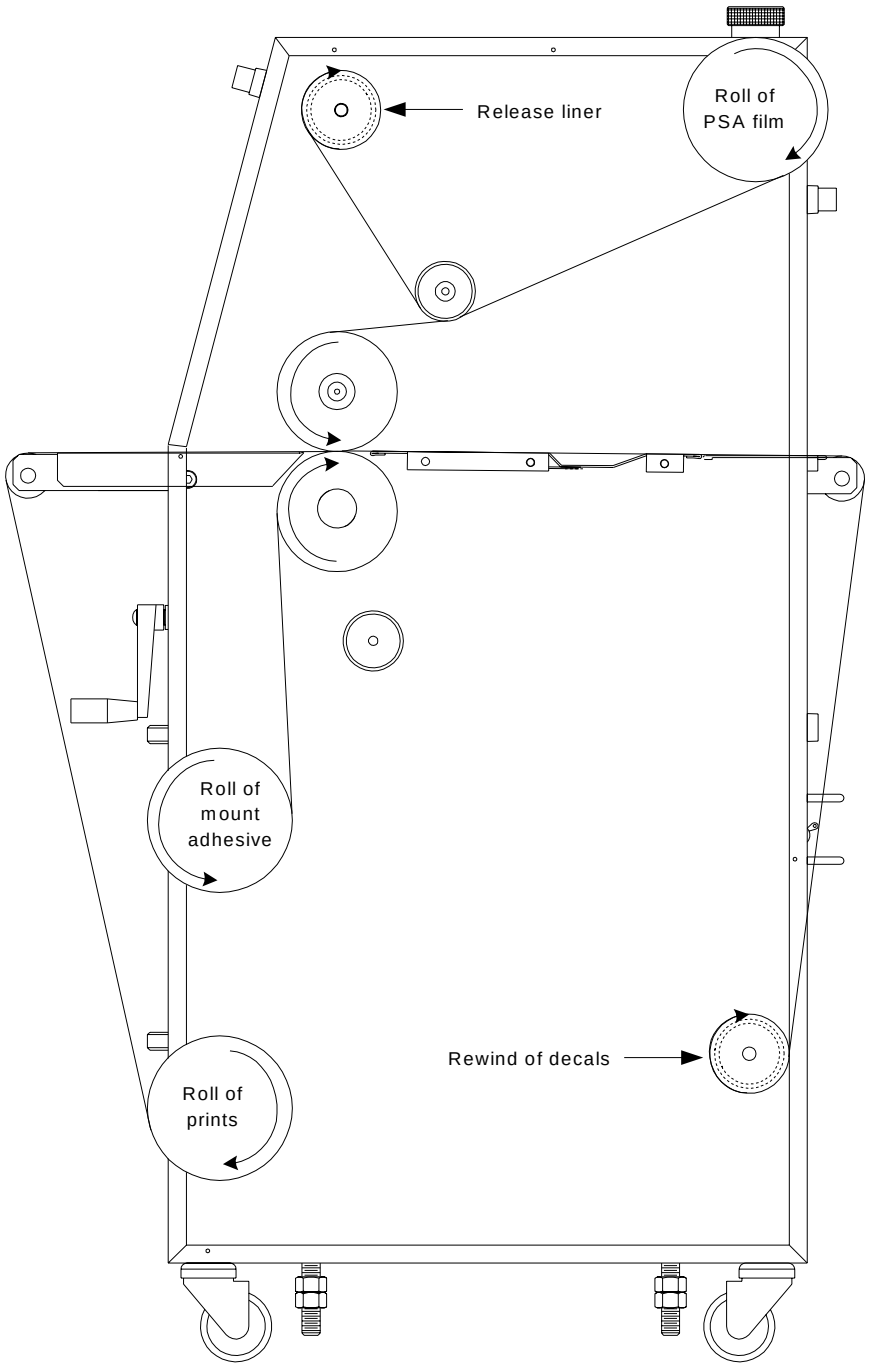
Diagram - PSA decaling w/ roll to roll options



PROCESS CONTROL CHART

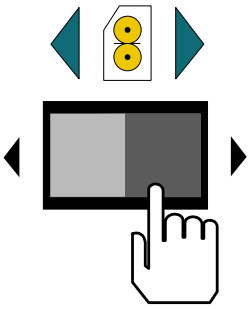
Materials - Lo-Melt Decaling

Top material : Roll of Lo-Melt film

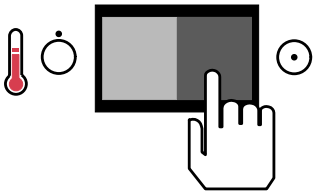
Bottom material : Roll of pressure sensitive adhesive

Other material (s) : prints

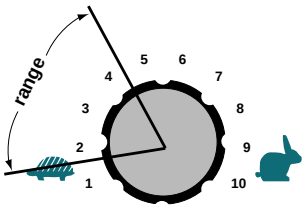
Motor Direction



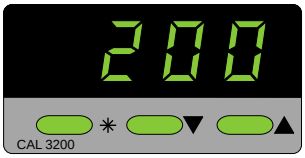
Heater



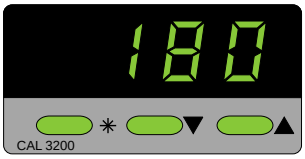
Motor Speed



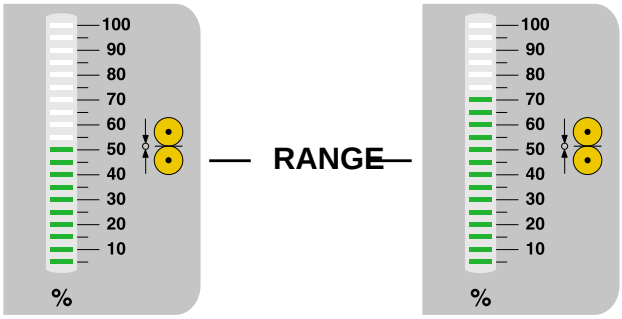
Upper Roller Temperature



RANGE



Roller Pressure



Notes : Speed will be dependent on the activation of the Lo-Melt adhesive. If the output appears cloudy or milky, reduce the speed. Pressure will vary depending on the weight and width of the image and laminate. For thinner laminates, use the 180 ^{O}F (82 ^{O}C) and for thicker films, use the 200 ^{O}F (93 ^{O}C).

Diagram - Lo-Melt decaling

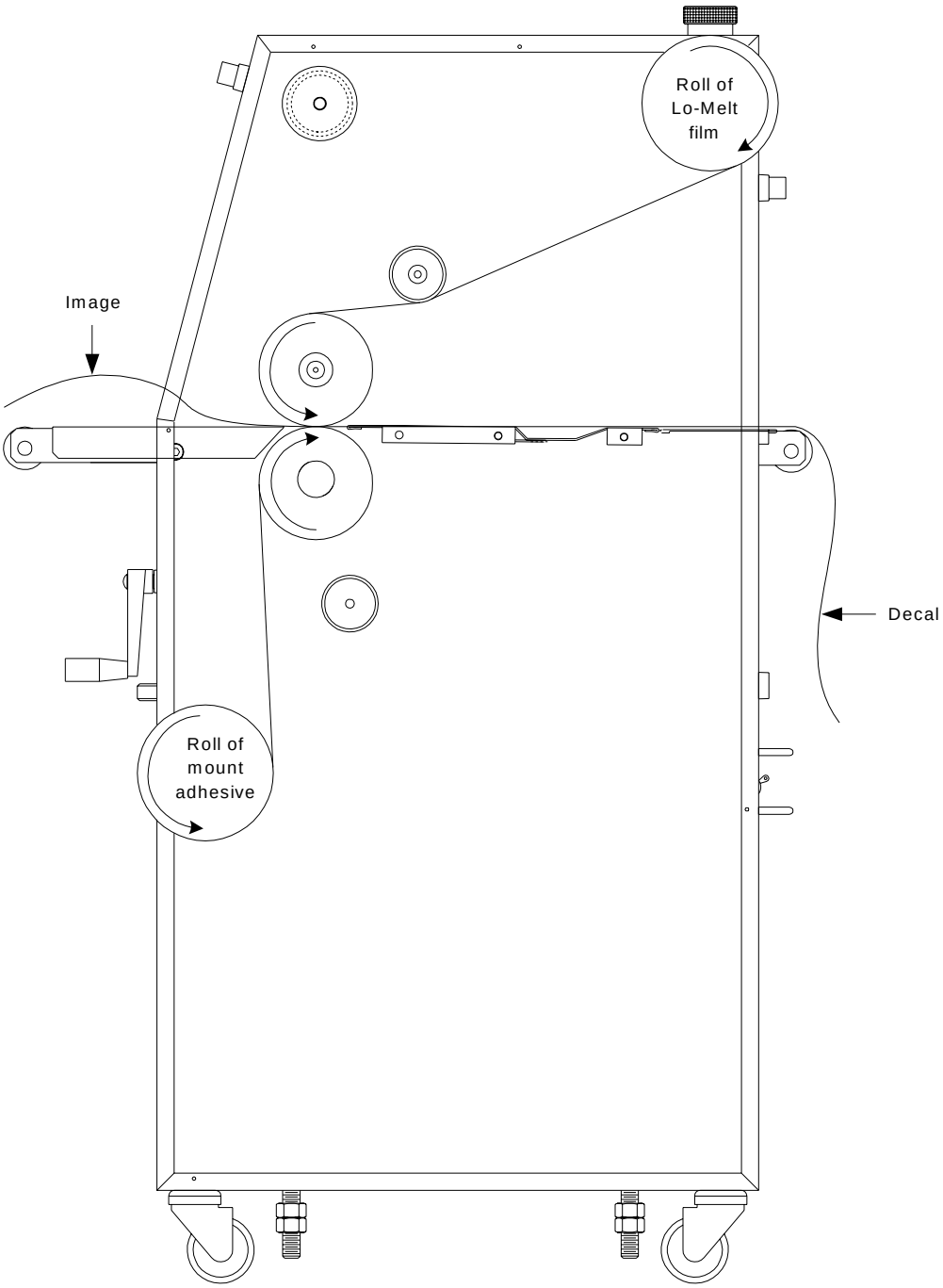


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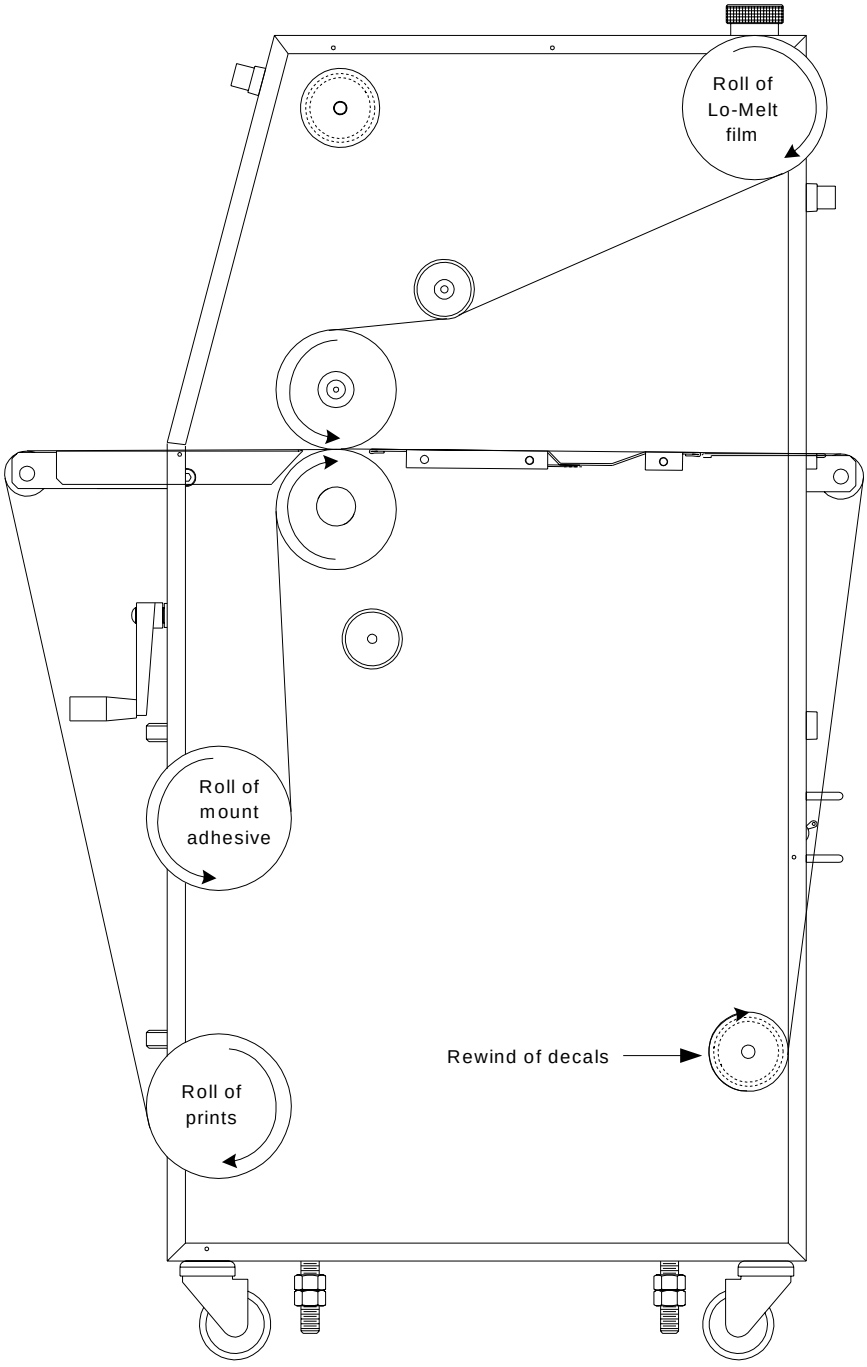
Diagram - Lo-Melt decaling w/ roll to roll options



PROCESS CONTROL CHART

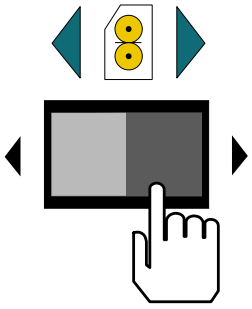
Materials - Mounting a decal

Top material : N/A

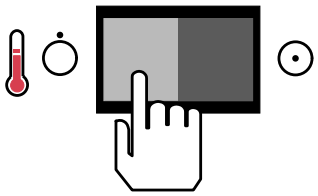
Bottom material : N/A

Other material (s) : Decal and substrate

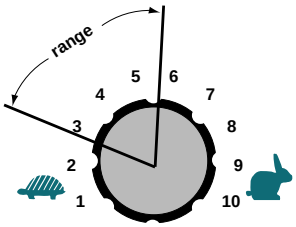
Motor Direction



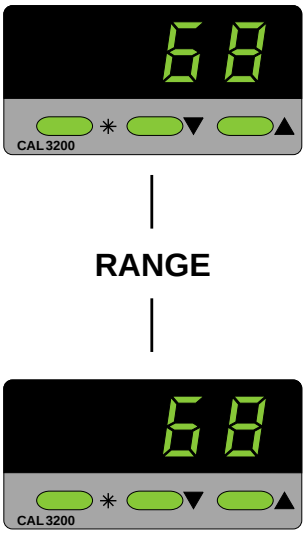
Heater



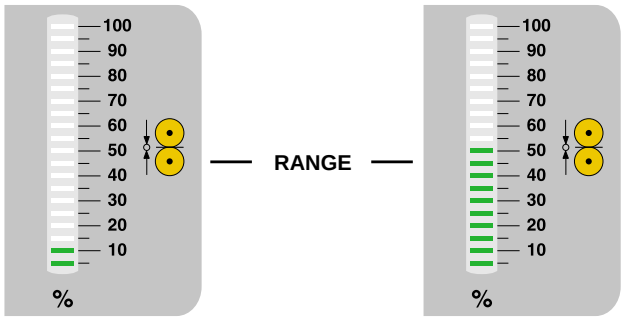
Motor Speed



Upper Roller Temperature

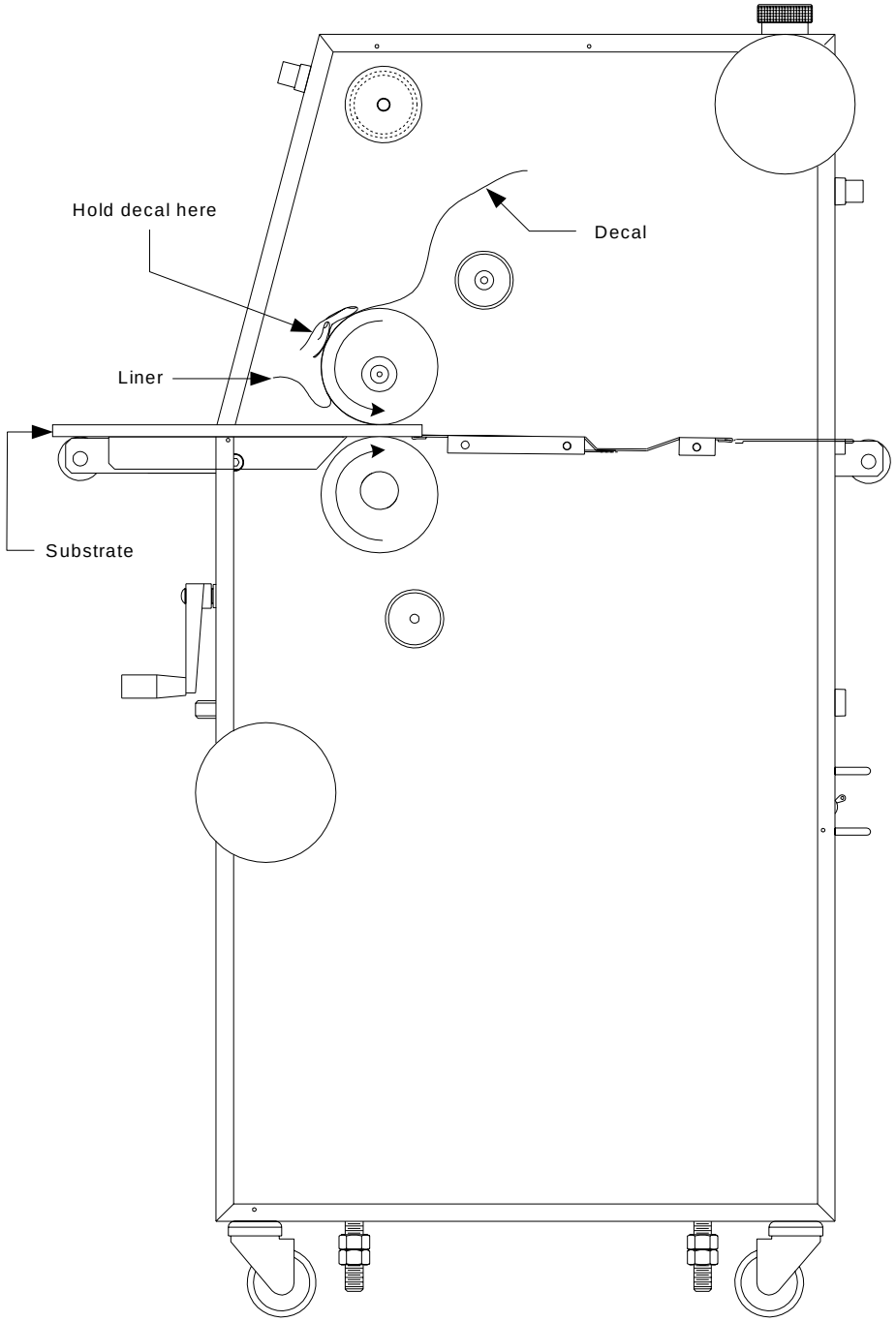


Roller Pressure



Notes: Speed for mounting should be comfortable for the operator. Use the footswitch for this application. Pressure will be dependent on the type of subtrate. No heat is required for this application. Do not crush the substrate. Do not stop in the middle of the run. Refer to helpful hints for mounting.

Diagram - Mounting a decal



PROCESS CONTROL CHART

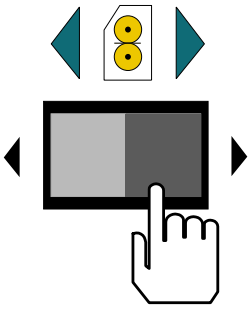
Materials - PSA Single sided lamination (sled method)

Top material : Roll of pressure sensitive laminate

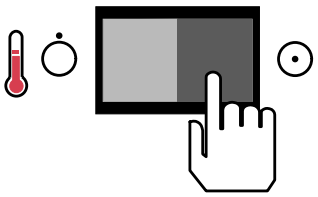
Bottom material : N/A

Other material (s) : Images, leader board, trailer board and a pre-coated board

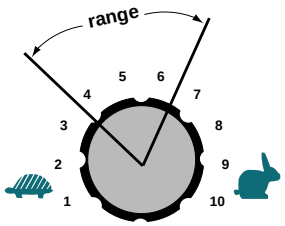
Motor Direction



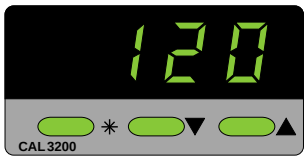
Heater



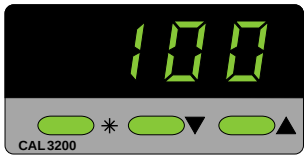
Motor Speed



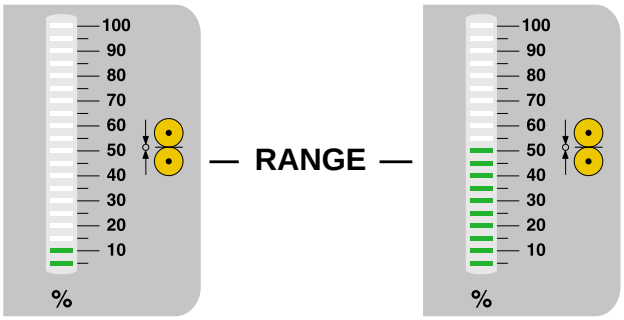
Upper Roller Temperature



RANGE

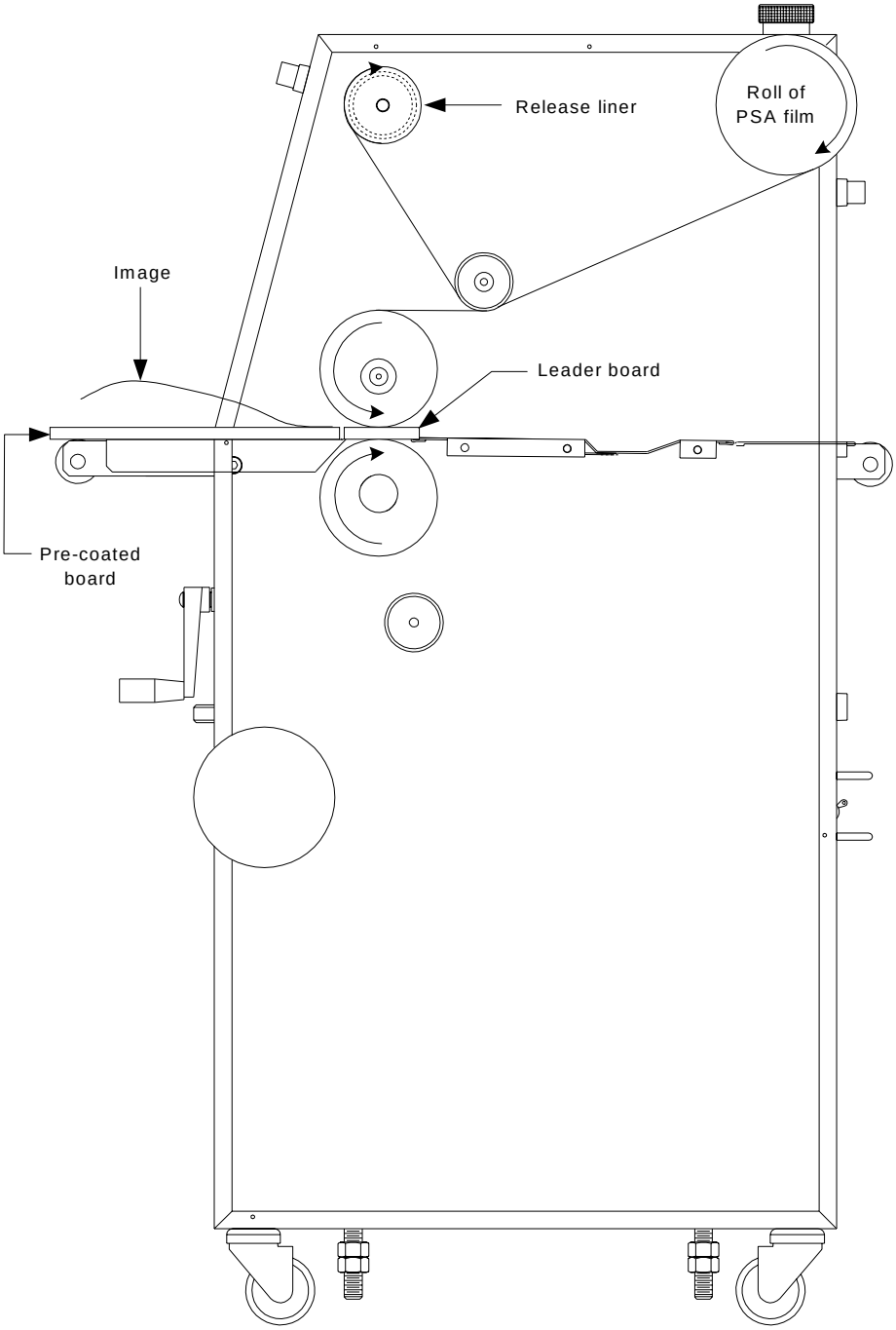


Roller Pressure



Notes : The leader board and trailer board should be the same width as the pre-coated board. The laminate should not exceed the pre-coated board by more than 1 in. (2.54 cm). Do not use excessive brake tension for this application. Pre-coated board is reusable since the laminate does not bond with the release liner from the pressure sensitive adhesive. Speed should be comfortable for the operator. Pressure will vary depending on the type of substrate. Heat is optional. Some heat will assist the flow of adhesive. Refer to helpful hints for pressure sensitive films.

Diagram - PSA single sided lamination (sled method)



PROCESS CONTROL CHART

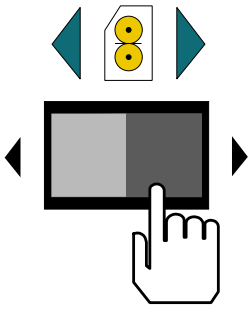
Materials - PSA Single sided lamination (craft paper method)

Top material : Roll of pressure sensitive laminate

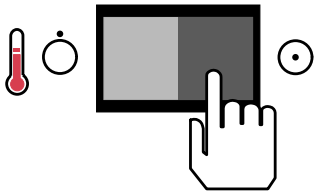
Bottom material : Roll of craft paper

Other material (s) : Prints

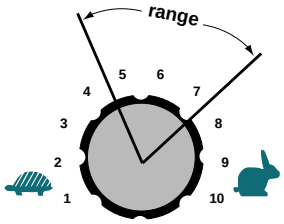
Motor Direction



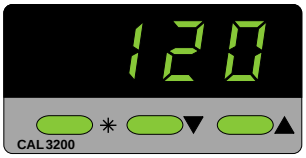
Heater



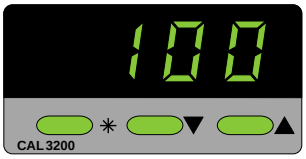
Motor Speed



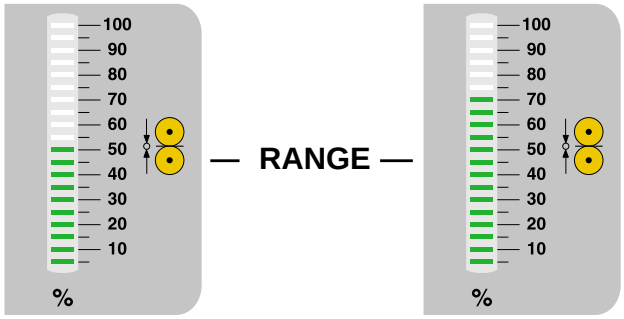
Upper Roller Temperature



RANGE



Roller Pressure



Notes: Top and bottom material should be of the same width. Do not use excessive brake tension for this application. Speed should be comfortable for the operator. Pressure will vary depending on the width and weight of the image and laminate. Heat is optional. Some heat will assist the flow of adhesive. Refer to helpful hints for pressure sensitive films.

Diagram - PSA single sided lamination (craft paper method)

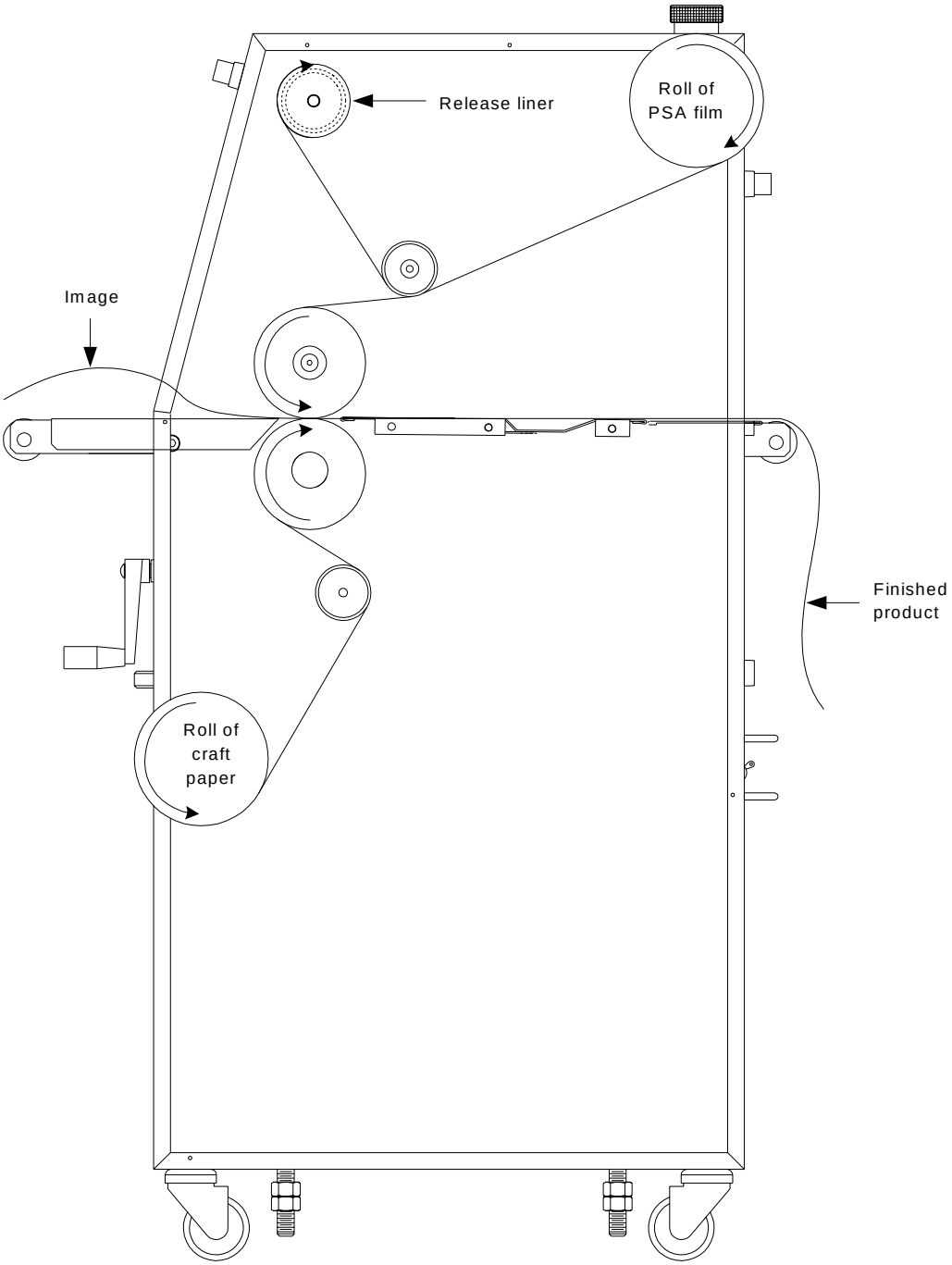


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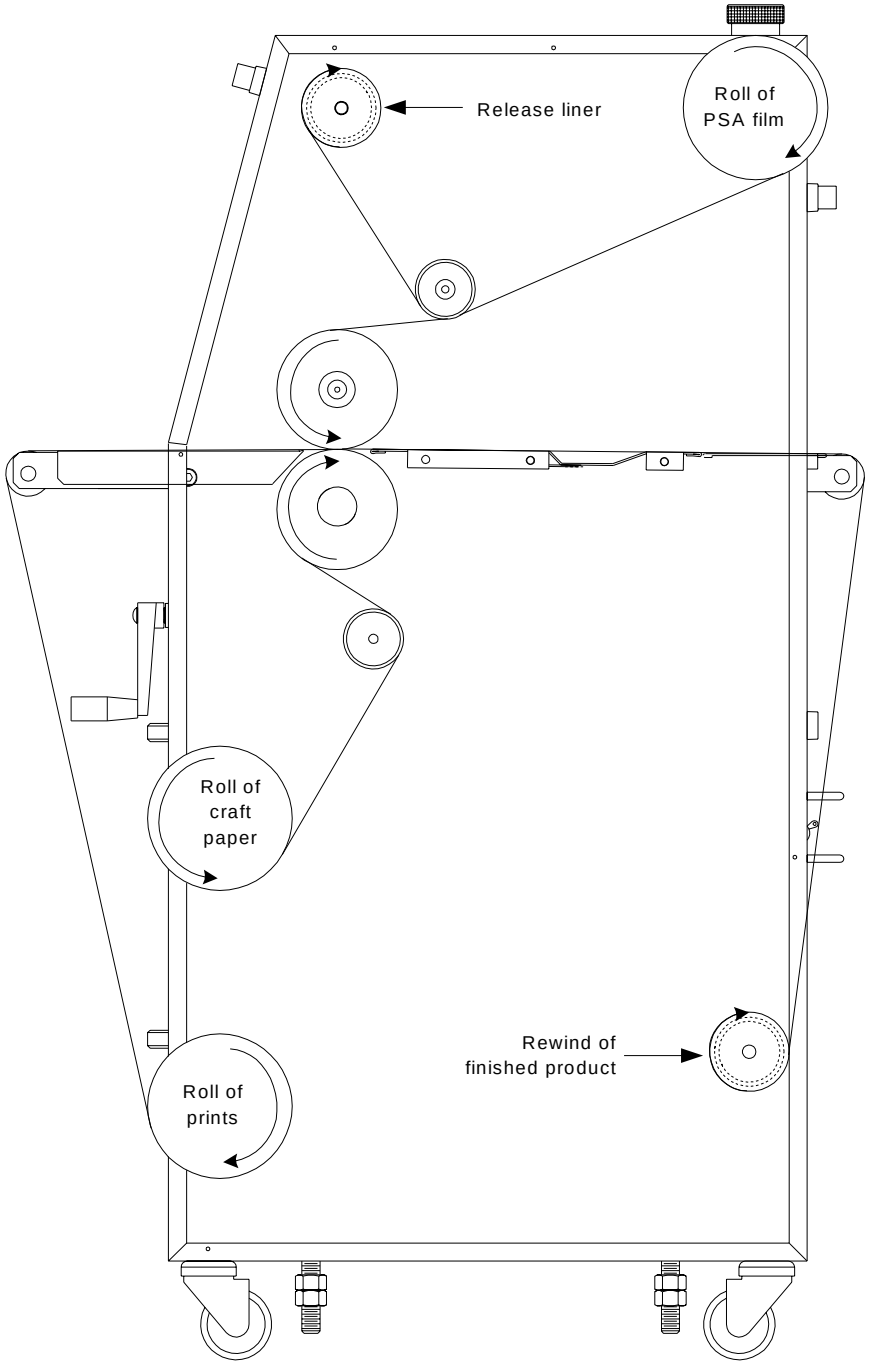
Diagram - PSA single sided lamination (craft paper method w/ roll to roll option)



PROCESS CONTROL CHART

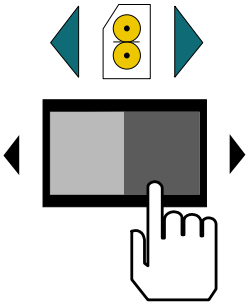
Materials - PSA over-lamination of a mounted image

Top material : Roll of pressure sensitive laminate

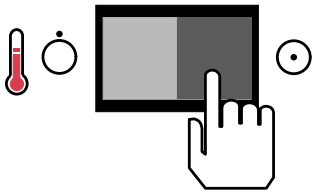
Bottom material : N/A

Other material (s) : A pre-mounted image to a board, leader board and trailer board

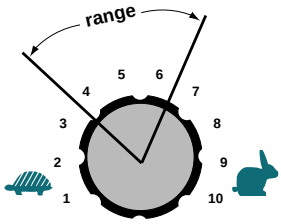
Motor Direction



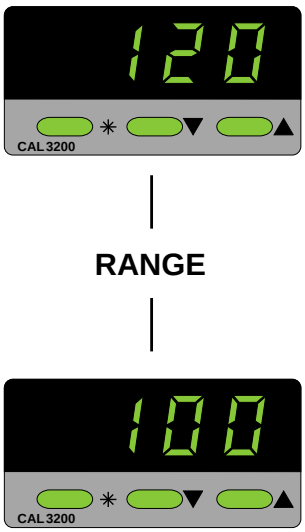
Heater



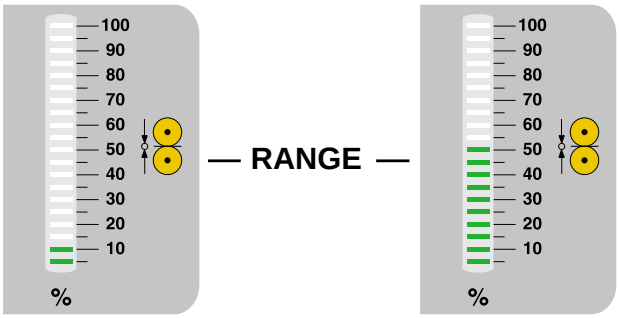
Motor Speed



Upper Roller Temperature

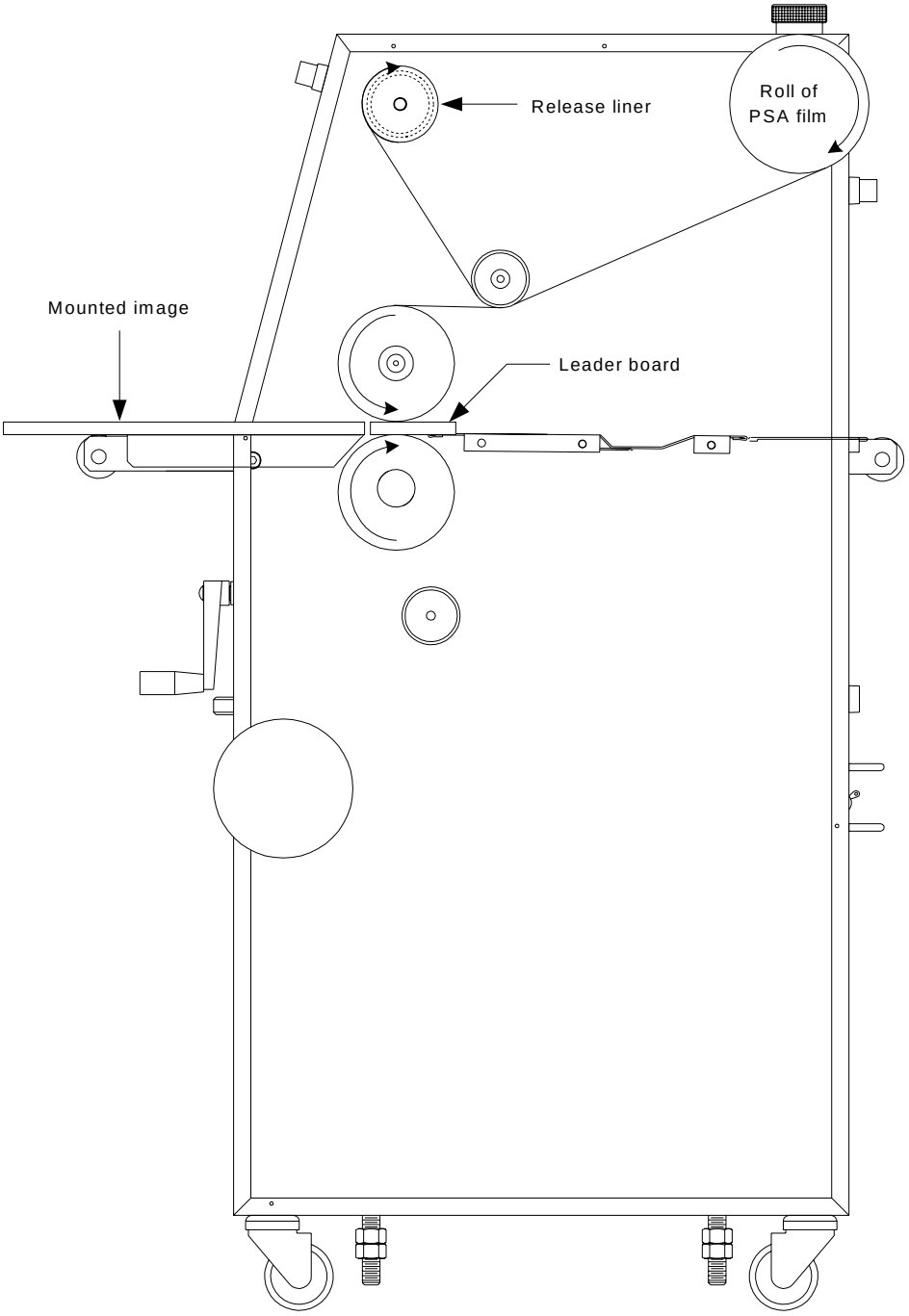


Roller Pressure



Notes : The laminate should not exceed the pre-mounted image by more than 3 in. (7.6 cm). Speed will be determined by what is comfortable with the operator. Pressure is dependent on the substrate. Do not crush the substrate. Use a leader board to start the process and finish with a trailer board. Stopping on the image will aleave an impression on the board or image. Heat is optional. Refer to helpful hints for pressure sensitive materials and mountng.

Diagram - PSA over-lamination of a mounted image



PROCESS CONTROL CHART

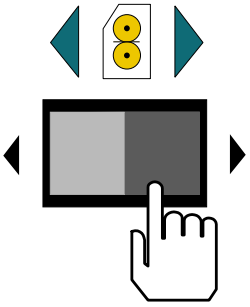
Materials - Lo-Melt over-lamination of a mounted image

Top material : Roll of Lo-Melt film

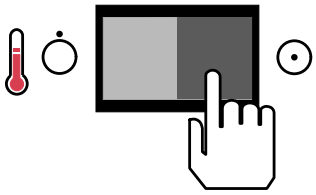
Bottom material : N/A

Other material (s) : A pre-mounted image to a board, leader board and trailer board

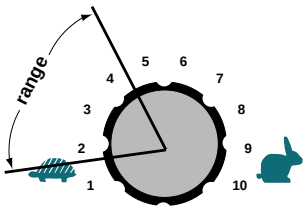
Motor Direction



Heater

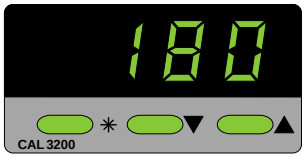


Motor Speed

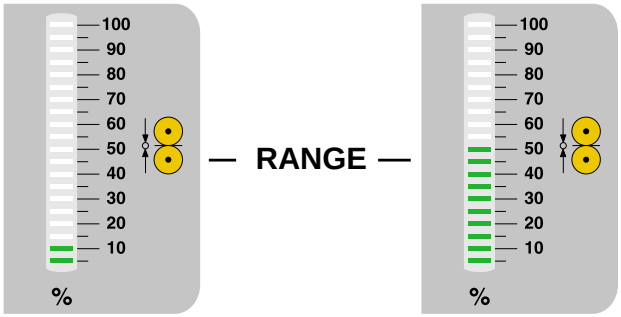


Upper Roller Temperature

RANGE

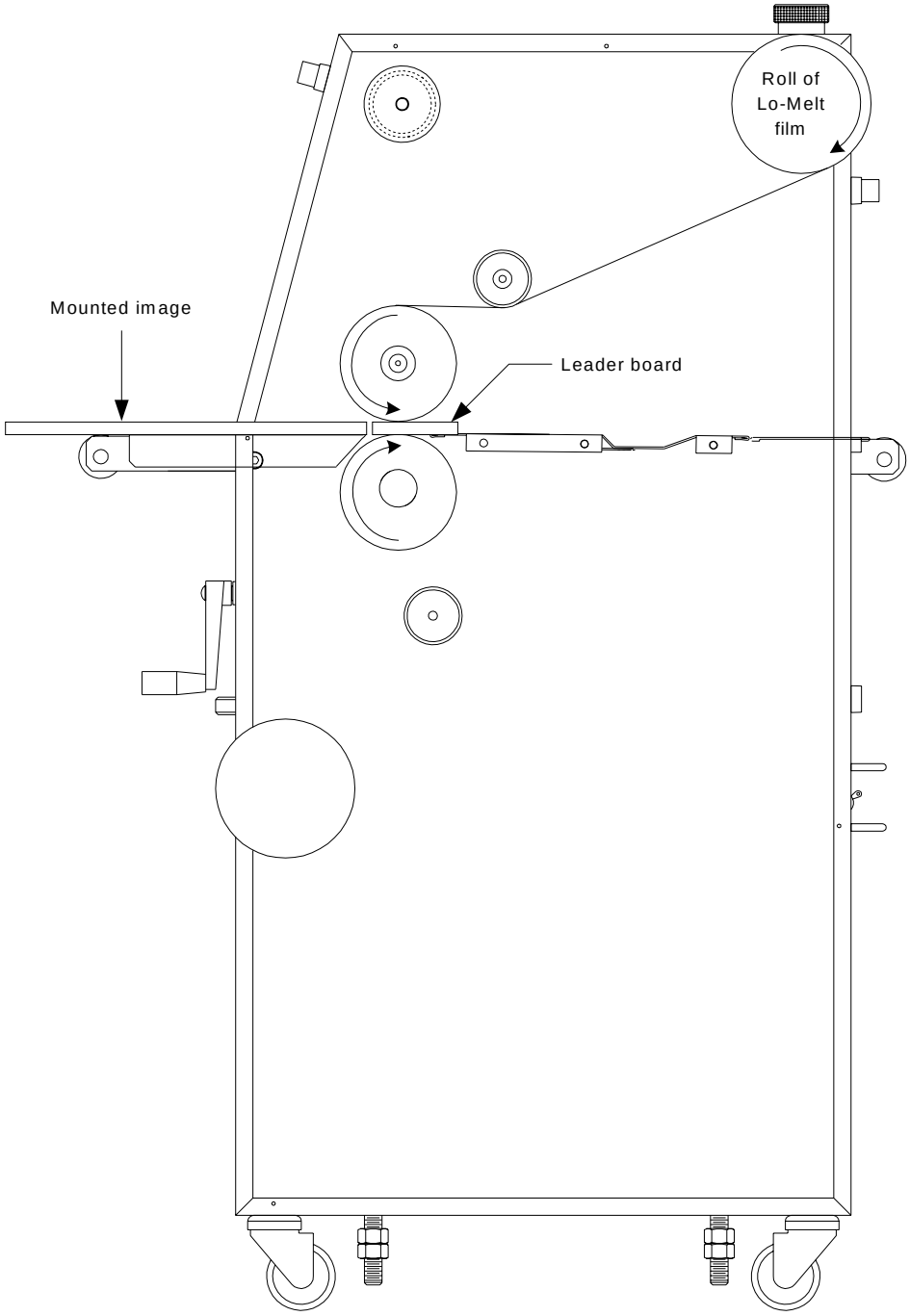


Roller Pressure



Notes : The laminate should not exceed the pre-mounted image by more than 3 in. (7.6 cm). Speed will be determined by what is comfortable with the operator. Pressure is dependent on the substrate. Do not crush the substrate. Use a leader board to start the process and finish with a trailer board. Stopping on the image will aleave an impression on the board or image. Heat is dependent on the thickness of the film. Refer to helpful hints for Lo-Melt films and mountng.

Diagram - Lo-Melt over-lamination of a mounted image



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7.0 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

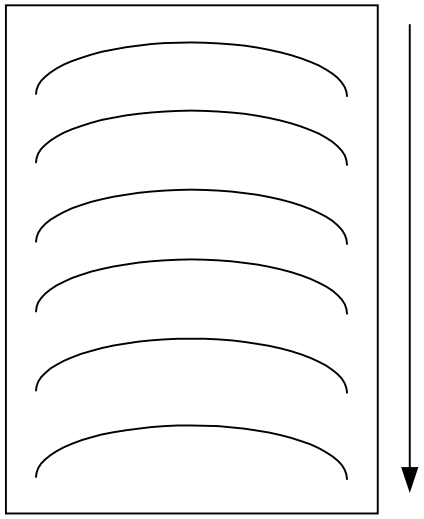
The following is a list of common output wave problems you may encounter.

The arrow along the length of the output represents the direction of feed (travel).

INFORMATION

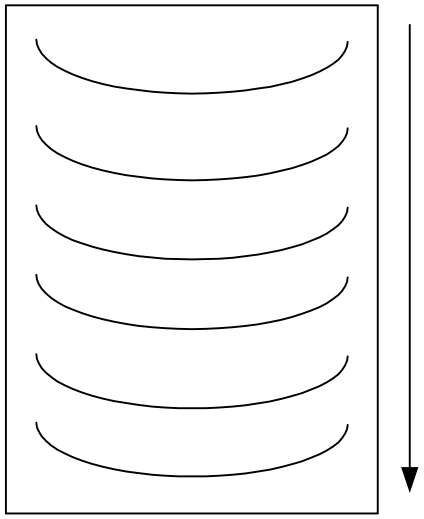
For optimal temperature settings of various laminates, contact your supplier or sales representative.

Problem: D waves in the image but not in the laminate



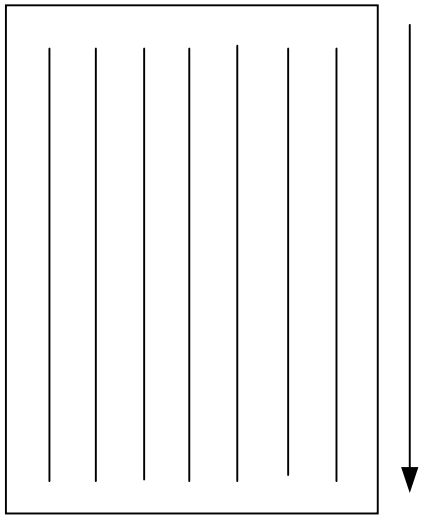
Hints: • Check paper tension
• Check relative moisture content of the paper

Problem: D Waves in the laminate



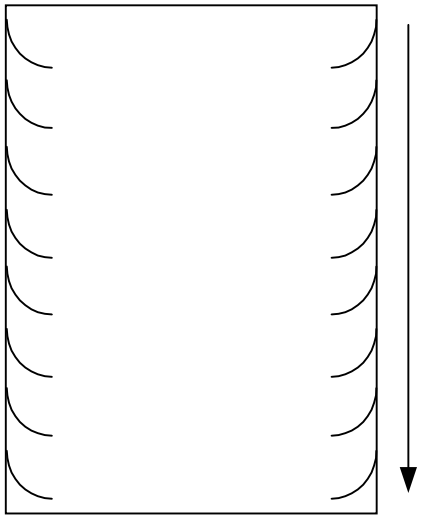
Hints: • Check the roll pressure
• Check the main roll nip settings

Problem: Straight waves in the output



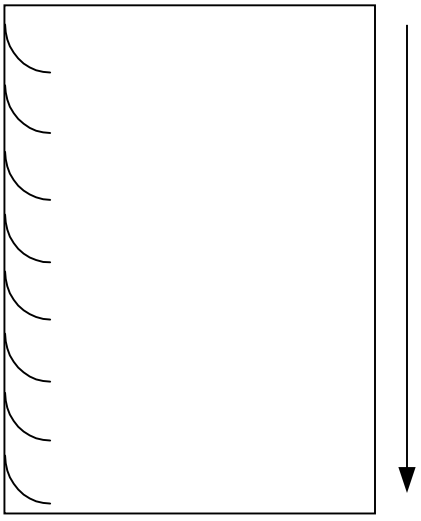
Hints: • Check operational settings for materials being used.

Problem: Angled waves in the output on both sides



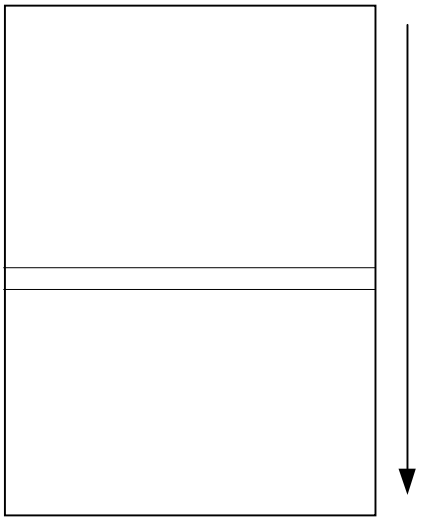
Hints: • Check for insufficient main roller pressure
• Check the main roller nip settings

Problem: Waves on only one side of the output



Hints: • Check the nip setting of main rolls
• Check for even paper tension

Problem: Indent waves in output after the pull rollers



Hints: • Output travel was hindered
• 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**.

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: Delamination

Hints: • Check operating pressures
• Check operating speed
• Laminate compatibility with ink
• Ink compatibility with paper

Lo-Melt laminates

Problem: Blistering within the image

Hints: • Increase the speed
• Decrease the operating temperature
• Allow a longer drying time for the image

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

Mounting

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

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 60 H Laminator serial # is :

At no time does GBC Films Group suggest or recommend that you attempt to fix the machine by removing the cabinets or leg covers yourself.

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.

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 using the footswitch.

Hints :
- Ensure the **PHOTO-EYE** is not blocked.
- Place a service call to calibrate sensors.

Problem : I press **ENGAGE**, the rollers will not turn.

Hints :
- Be sure a speed has been set.
- Make sure a motor direction has been selected.
- Ensure the **PHOTO-EYE** is not blocked.

Problem : Jerking, stuttering, or excessive noise from the laminator.

Hints :
- Check for excessive brake tension
- Confirm that the rolls of laminate are on correctly.
- Check for proper chain tension.
- Place a service call.

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.

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.

Craft paper

A strong brown paper commonly used for single sided applications.

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 non contact form of printing.

Laminate

A two part material consisting of an adhesive layer and a substrate. The adhesive and the substrate may or may not be clear. This is the material used for lamination.

Lo-Melt films

This is another type of thermal laminate. The name Lo-Melt describes this product simply. Low heat to activate (melt) the adhesive. Any temperature below boiling point is typically considered to be low.

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.

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.

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 tube (s) used on the Falcon 60 H laminator is a prime example.

Roll to roll

On a laminator, this means the roll of images, upper roll of material and the lower roll of material can be fed by the machine and wound on a rewind roll by the machine.

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.

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8.0 Maintenance

GBC Films Group 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 fit 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.

ELECTRICAL SHOCK

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

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 rollers
  (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.
  (performed by service technician)
- Check the chain tension.
  (performed by service technician)
- 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.
  (performed by service technician)
- Check wire termination tightness.
  (performed by service technician)

ELECTRICAL SHOCK

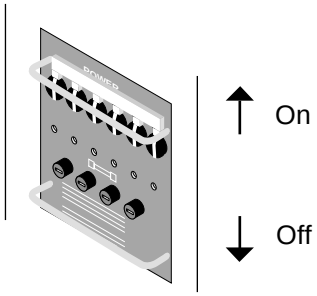
Remove power from the laminator before servicing. You can be severely shocked, electrocuted or cause a fire.

8.2 Cleaning the rollers

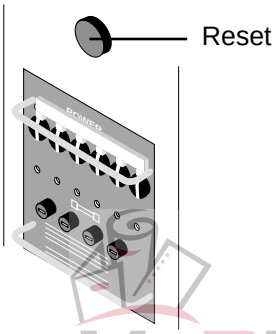
Tools required

- 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)

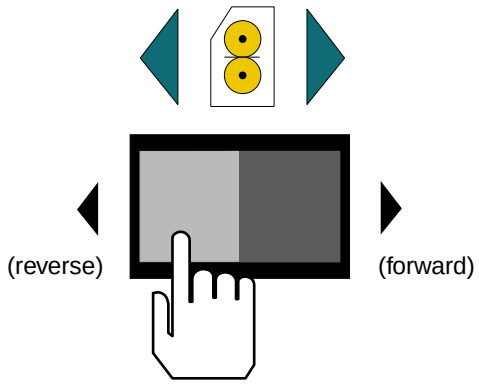
a) Turn the main power to the **ON** position.



b) Press machine **RESET**.



c) Set motor direction to **REV**.



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!

d) For pressure sensitive adhesives: put the rubber gloves on and use isopropyl alcohol and a terry cloth towel to rub the adhesive off.

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.

e) 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.

WARNING

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

f) Wipe away the beads with isopropyl alcohol and a cotton terry cloth.

d) Use the footswitch to rotate the rollers when finished cleaning that area.

8.3 Clean 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.

8.4 Clean the control panel

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.

8.5 Chain tensioning

A properly tensioned chain should have a 1/2 in (1.3 cm) of total play at the longest stretch of the chain. Read and understand the precautions below before attempting any service work.

WARNING

Do not wear ties, loose fit 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

**Remove ALL power to the laminator before removing any cabinet covers.
You may be shocked or electrocuted!**

WARNING

Always practice lock out/ tag out procedures when performing any type of service or maintenance work on the machine.

Tools required

- 1/8 inch allen wrench
- 7/16 inch wrench or socket

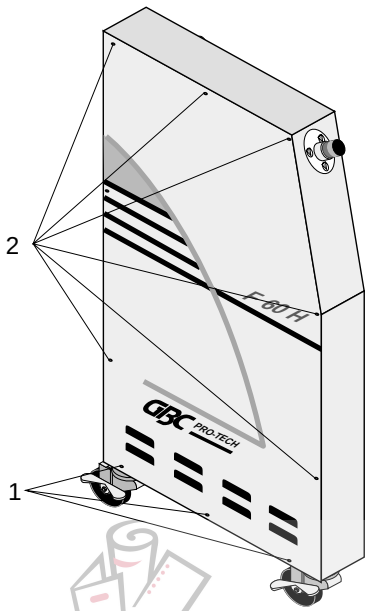
a) Ensure all power to the laminator has been removed.

b) Use proper lock out/ tag out procedure.

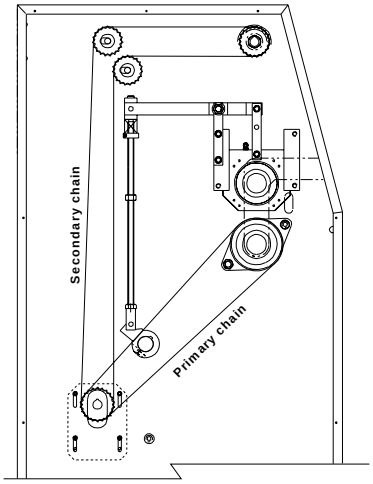
c) With a 1/8 in. allen wrench, remove the drive side cabinet cover by;

1) Loosen the three screws along the bottom.

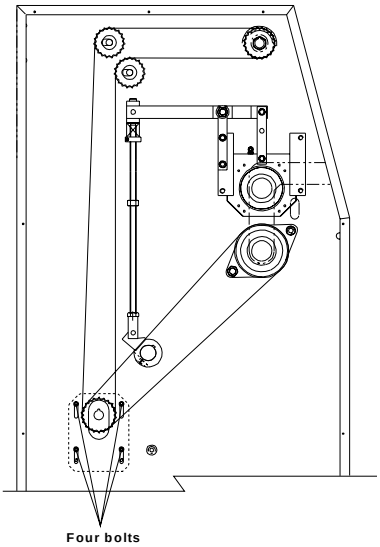
2) Remove the seven screws along the top and sides of the cover.



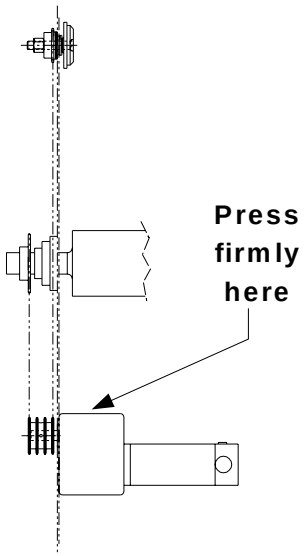
d) Check the primary chain (outer) and the secondary chain (inner) for proper chain tension.



e) If the chains require tensioning, loosen the four motor mount bolts with a 7/16 in. wrench.



f) Press firmly down on the motor housing and tighten the motor mount bolts.



g) Check the primary chain (outer) and the secondary chain (inner) again for proper chain tension.

h) Replace the drive side cabinet cover and restore power to the machine.

INFORMATION

The motor controls the tension of the both chains. If one is chain is still too loose, a half link may be removed.