

BONDMASTER 1600 Cold Laminator BONDMASTER 1600 Plus Laminator



User's Manual

Lamination System Pty Ltd www.lamination.com.au

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Introduction

Lamination System would like to take this opportunity to thank you for selecting the Bondmaster 1600 Applicator PLUS

The Bondmaster 1600 Applicator PLUS has been designed to produce high quality lamination and mounting with a minimal level of skill and machine control.

To ensure you receive optimum results from your laminator and prolong its working life please follow the installation, operation and maintenance instructions in this manual.

Please fill out the warranty form at the back of this manual and return it to Lamination System.

Installation

The laminator should be positioned on an unobstructed level surface* with access to all sides, particularly the front and rear when the machine will be used for mounting large substrates.

The work place should be dry with adequate ventilation, All electrical cabling should be routed in a manner in which it will not incur damage or hinder walkways.

Unpacking

The machine is supplied crated. The machine is only movable with the aid of a forklift or pallet truck.

Unbolt the top of the crate first then the sides (requires 12/13/14mm spanners) and finally unbolt the four bolts retaining the machine to the base pallet (requires 17mm spanner or socket). It is recommended that machine is moved to ground level by lifting under the two lowest cross bars of machine with a forklift.

Remove all packaging, unwrap machine, there are four other packages in the bottom of the machine crate, these are

- Front Feed Tray with Paper Guide
- Rear Feed Tray
- Foot Controller
- Bag with power lead, Levelling feet and tools.

Insert front and rear trays on locating pins on machine body. Attach foot controller lead to socket on the front lower right of machine.

Attach power lead to socket on rear of machine.

Levelling feet are required only if your floor is not level, the machine must be level to operate correctly.

Machine Specifications

The following chart gives specifications of the **Bondmaster 1600 COLD Laminator**

•	Weight	280 Kg.
•	Length	2000 mm
•	Depth	600 mm
•	Height	1250mm
•	Max. Laminating Width	1620mm
•	Operating speed	0-5.5 m/min
•	Roller Diameter	132mm
•	Power Requirement	240v 50/60Hz
		(5 Amp Max)
•	Roller Pressure	Manual
•	Max. Mounting Thickness	25mm
•	Max film length	100m
•	Film mandrels	5 (interchangeable)
•	Foot control	1
•	Emergency Stops	3
•	Auto cut-off	Infrared photo cell

Machine Specifications

The following chart gives specifications of the **Bondmaster 1600 PLUS Laminator**

•	Weight	280 Kg.
•	Length	2000 mm
•	Depth	600 mm
•	Height	1250mm
•	Max. Laminating Width	1600mm
•	Operating speed	0-5.5 m/min
•	Roller Diameter	132mm
•	Power Requirement	240v 50/60Hz
		(15 Amp Max)
•	Heating Capacity	2500 watts
•	Roller Pressure	Manual
•	Max. Mounting Thickness	25mm
•	Max film length	100m
•	Film mandrels	5 (interchangeable)
•	Foot control	1
•	Emergency Stops	3
•	Auto cut-off	Infrared photo cell

Controls & Components



MANDRELS



Rotate mandrel to line slot with drive tab when fitting mandrels to laminator

ROLLER SETTING CONTROL



Mandrel holder Drive Tab



Mandrel Drive Slot



Used to open and close the rollers, turn clockwise to open, anticlockwise to close.

Please do not force the wheel past the close point. When the wheel stops in either direction the maximum close/pressure has been achieved, forcing it further will only result in damage to the balanced roller system.

Tension Controls





Tension control knobs are adjusted by rotating them either clockwise (+) to increase or anticlockwise (-) to decrease.

Minimal tension is all that is required on all knobs to achieve a good operating result, with the exception of the **Film Tension** that requires moderate to high tension to suit the film being used.

CONTROL PANEL



Temperature Controller See instructions

Off Switch (Illuminated when mains power is connected) Push to stop laminating

On Switch (Illuminated when machine is operating) Push to start laminating

Speed Control 0 to 5.5 metres per minute

Forward/Reverse Controls rotating direction of laminator

Temperature ON/OFF Switch Turn on to use roller heating

HEIGHT INDICATOR & SAFETY EYE



Height Indicator Used as a guide for setting the rollers to the correct opening to suit various substrates (Units in CM, 0 to 3)

Safety Eye (Auto Power Down)

This uses an infrared photo cell to prevent any accidental or foreign objects from entering the laminator **NOTE:** The safety eye can only be over ridden by the Foot Switch



TEMPERATURE CONTROLLER

PV / Present Value

The current roller temperature in degree's C

SV / Set Value

The set roller temperature in degree's C

Function Button

The controller functions are factory set, it is not recommended to change any of these parameters

Up Arrow

Push this button to increase temperature, the SV display will flash in the bottom right corner, release when the desired temperature is reached, the setting will automatically confirm after 5 seconds.

Down Arrow

Push this button to decrease temperature, the SV display will flash in the bottom right corner, release when the desired temperature is reached, the setting will automatically confirm after 5 seconds.

To use the heat assist function on your Bondmaster 1600 PLUS simply turn on the temperature switch, the controller will now start. Set the desired temperature you require (commonly between 30 to 50 deg C for cold laminates or media) (90 to 110 deg C for thermal laminates).

It is normal for the laminator to take around 30 minutes to heat up, as it is heating a large roller.

Maximum operating temperature is 110 deg C, any temperatures above 140 deg C will damage your machine and voids all warranties.

As mentioned before the functions of this controller are factory set, if these parameters are changed or lost please contact Lamination Systems for assistance. Failure to do so could result in damage to your machine.

Left Arrow Push this button to move the row in the SV display to be changed.

Principles of pressure sensitive lamination

The lamination process consists of various over laminating films and coatings being applied to enhance and protect printed media. These are applied via a pair of matched nip rollers.

Tension is added to the film as it is applied to maintain a smooth and even finish.

In addition the release liner (backing paper) is removed by the rewind mandrel.



Principles of mounting to substrates

The mounting process consists of various printed media's and vinyl's being applied onto substrates. Some commonly used substrates are Foam Core, MDF, Corflute, Hips, and metal sheeting.

This is achieved by laying the lead edge of the media on to the substrate then using the nip rollers of the laminator to evenly apply.

The roller opening is set to suit the job, it is then inserted in the laminator, and the release liner is then removed as the job moves through the laminator.



Laminating Guide

Laminating with matched film and media sizes



Place the roll of film flat on a table, insert the film mandrel. Push the mandrel straight through the roll, Do not twist or turn the mandrel as this will cause the mandrel rubbers to lock in the core of the film.

Now return mandrel to laminator.

Centre the film on the mandrel using the Rule Guides.



Remove front feed table then continue



Feed film through the "S" rollers



And then over the nip rollers



Fit a 76mm Core to the release liner rewind mandrel and centre using Rule Guides



Separate release liner from film



Attach release liner to core



Use a feed sheet to push film through the open nip rollers

Insure release liner is attached squarely

Insure film is smooth and even

A feed sheet can be any stiff card or board, it must slightly wider than the film



Close the nip rollers



Return feed tray to machine



Print to be laminated loaded onto job delivery mandrel



Insure print is aligned with film



Move print into nip and use foot switch to start the machine, once started the ON button can be pressed



Discard feed sheet



Moving to the rear of the machine. Fit a 76mm core to job rewind mandrel



Attach print to job rewind core



Continue now to laminate print, insure the film is running evenly over the roller, this can be adjusted with the film tension knob, increase tension if necessary to stop any creasing etc.

Release liner tension can now be set. This tension needs only to be enough to remove the liner, too much tension and the release liner will draw the film up off the nip roller and can cause the film to become uneven.

Speed can now also be adjusted. Because we are laminating with matched film and media it is required that there is always a sheet handy for stopping on, this can be your start sheet or an off cut of the same width media. If you don't use a stop sheet the film will adhere to and try to wrap around the bottom roller. If this occurs slowly reverse the laminator remove. *Do not ever attempt to cut the film from rollers, this will damage the most critical part of the laminator.* See maintenance section in this manual for further details.

Laminating with Backing Film/Paper

This process uses the same principles as matched film and media laminating, the difference being a sacrificial film or paper is used on the bottom/back of the prints to mask excess laminate from coming in contact with the bottom roller. This is very useful when laminating small & odd size prints that don't match a specific film size.



Backing film onto mandrel



Bring backing film up and stick to laminating film



Use a feed sheet to push film through the open nip rollers



Now various prints of different different sizes etc. can be laminated.



Close rollers and return feed tray to machine



They can then be collected by job rewind mandrel

Always open the nip rollers slightly when you have finished laminating as this will prolong the rollers life and avoid possible flat spots occurring.

More information on laminating can be found in Tips for laminating & Problem solving.

Mounting Guide

It is possible to mount to a large range of substrates, for this guide we will be using 5 mm Foamcore and mounting an adhesive backed vinyl print.





Loop print back on itself, fold back release liner appox 20 mm to expose adhesive



Return print to sheet, line up with the lead edge of the substrate, carefully push the print down.



Use Roller Setting Control Handle to set roller height to 5mm (0.5 cm) on the indictor

Move the mount into the nip rollers



With the speed set to low, use the foot switch to drive the rollers until the board is just taken and held by them, release foot switch



Keep moving print back until it is tight and even on roller



Now press the "ON" button or foot switch and continue to remove release liner as the board advances



Loop print back over the top nip roller



Locate the fold you made and peel back release liner



Completed mount

This is only a basic guide to mounting, variations in this process should be made and learnt to suit the job requirements.

Tips for better laminating

- Always ensure there is moderate tension on the film mandrel
- Only low tension is required on release liner rewind mandrel, just enough to remove liner
- Low tension applied to job delivery mandrel will aid feeding media into laminator and keep it running straight
- Film and media rolled on cores must be wound straight, if it is telescoped it will laminate/process crooked and may result in damage or loss of the job

Examples of bad winding



- The front/lead edge of media should be cut square prior to laminating, uneven hand cuts can cause media to be feed crooked and at worst badly crease and buckle
- Laminate at slow speed until you are sure your set up is correct, this can save you time and money avoiding reprints etc.
- Start the laminator with the foot switch to leave both hands free for feeding, then press the "ON" button and release foot switch to continue.

- Printed media must be cured/dried prior to laminating or reactions between the media and laminate may occur
- When laying the leading edge of a print onto a substrate for mounting it is critical to get it down straight and evenly with no curvature or distortion. This is the most common cause of problems when mounting
- Some tension must be maintained on the print while mounting to insure the adhesive does not contact the substrate before the nip rollers. This can cause air traps and creasing
- Roller height indictors are only a guide, to insure they are closed enough set them 2 mm less than the substrate to be mounted as the spring compensation in the roller control will adjust to suit
- Never try to remove film or glue build up from nip rollers by scraping with any object. Clean with a soft cloth and methylated or white spirits. Never cut film/media near or on nip rollers.
- The nip rollers are the most important part of the laminator. The laminating quality will be affected if they are damaged.

Problem solving

PROBLEM	CAUSE	SOLUTION
Creasing of laminate	Not enough tension on film mandrel	Increase film tension
	Film was not even and aligned when first set up	Open rollers and reset film alignment
	Too much tension on rewind mandrel	Adjust tension so it only removes release liner and does not lift or pull the film from nip roller
Laminate becomes loose or slack on one side	Not enough tension on film mandrel	Increase film tension
	Film is telescoped on core	Ensure film is wound correctly
	Possible nip roller imbalance	Reset roller balance See maintenance section
Creasing of media	Incorrectly fed into machine	Ensure media has a straight lead edge and is fed squarely into machine
Laminator shudders or jumps	Too much tension causing excessive load	Please check all tension settings
Laminator will not operate when "ON " button is pressed	Safety eye has something blocking or interfering with it	Check eye is clear
	Safety eye is dirty	Clean safety eye and reflector
	Safety eye has moved out of alignment	Reset safety eye See maintenance section
No power	Mains lead has been damaged/unplugged	Inspect mains lead
	Emergency stop has been depressed	Check all switches

PROBLEM	CAUSE	SOLUTION
Media continually runs crooked through laminator	Incorrectly fed	Ensure media has a straight lead edge to feed. Use tension on job delivery mandrel to hold media straight while feeding
	Wound crooked on core	Ensure media is wound well
	Possible nip roller imbalance	Reset roller pressure See maintenance section
Media being mounted creases	Incorrectly laid down lead edge	Lead edge must be laid down evenly
	No tension on media	Some tension is required to keep the media even
Media being mounted has air bubbles/air trapped	No tension on media	Insure media has tension
	Non conforming or damaged substrate	Use only conformed products
	Roller setting is incorrect	Check correct height is being used to suit substrate
	More Roller pressure is required	Close roller setting handle one full turn anticlockwise

For any further information contact info@lamination.com.au

Maintenance

Main Nip Rollers

The nip rollers should be kept clean and free from any build ups. This will prolong their service life.

They can be cleaned with a soft cloth using methylated or white spirits. If the machine has heat assist this must be switched off prior to cleaning. Do not attempt to scrape off any build ups with sharp objects. Patience and care must be used to avoid damage.

Lubrication

Bondmaster laminators run sealed bearings on most rotating parts therefore no lubrication is required under normal conditions. The chain that drives the various rollers should be lubricated every 12 months. Any standard chain oil is sufficient. First isolate the power supply, and then remove tension knobs and side panel. Inspect the chain drive & gears for any excessive wear. Lubricate chain, wipe off any excess then replace side cover and tension knobs.

Roller Settings

Roller settings are factory set and tested but occasionally they can move due to shipping, over tightening the Roller Setting Control Handle or by forcing substrates through the laminator when the rollers have been set incorrectly.

Roller Settings (cont)

Being a balanced nip roller configuration the adjustment is very finite. We recommend only adjusting one side to correct balance. First isolate the power supply, and then from the left side remove tension knobs and side panel. If the machine constantly tracks media to the right, tighten upper adjustment set screw a 1/4 turn clockwise and lock.

If the machine constantly tracks media to the Left, loosen upper adjustment set screw a 1/4 turn anticlockwise and lock.



Machine can now be tested, repeat above steps if necessary.

Safety Eye

This consists of an infrared photo cell and a reflector. A beam is sent across the front of the nip rollers that when disrupted stops the rollers. This is a safety feature to stop foreign objects from entering the rollers. The lens and reflector should be cleaned regularly to remove dust etc.

If the safety eye becomes misaligned from the reflector the laminator will not drive when the "ON' button is pressed. (It will flash green but not stay on) To realign the eye remove the right hand side panel, locate the eye, there are adjustment screws on its bracket. Correct alignment and test until the correct position is found.



The foot switch is the only control that overrides the eye.

Spare Parts

Part Number	Description	Quantity
28-001	Upper Nip Roller	1
28-002	Lower Nip Roller	1
28-003	Mandrel	5
28-004	Plastic mandrel	30
	rubber hold downs	
28-005	Mandrel rubber	15
28-006	Tension knob	5
28-007	Foot Switch	1
28-008	Power Lead 10amp	1
28-009	Drive Chain	1
28-010	Castors	4
28-011	Drive Motor 90W	1
28-012	Rule Guide Sticker	15
28-013	Power Supply	1
28-014	Capacitor	1
28-015	Fwd/Rev Switch	1
28-016	Speed control pot	1
28-017	ON Switch Green	1
28-018	OFF Switch White	1
28-019	Speed control	1
	module	
28-020	Emergency Stop	3
	Switch	
28-021	Roller setting	1
	control handle	
28-022	24v Relay	3
28-023	Safety Eye	1

More spare parts available on request.