GBC Dye Sub 60 Laminator

Instruction Manual

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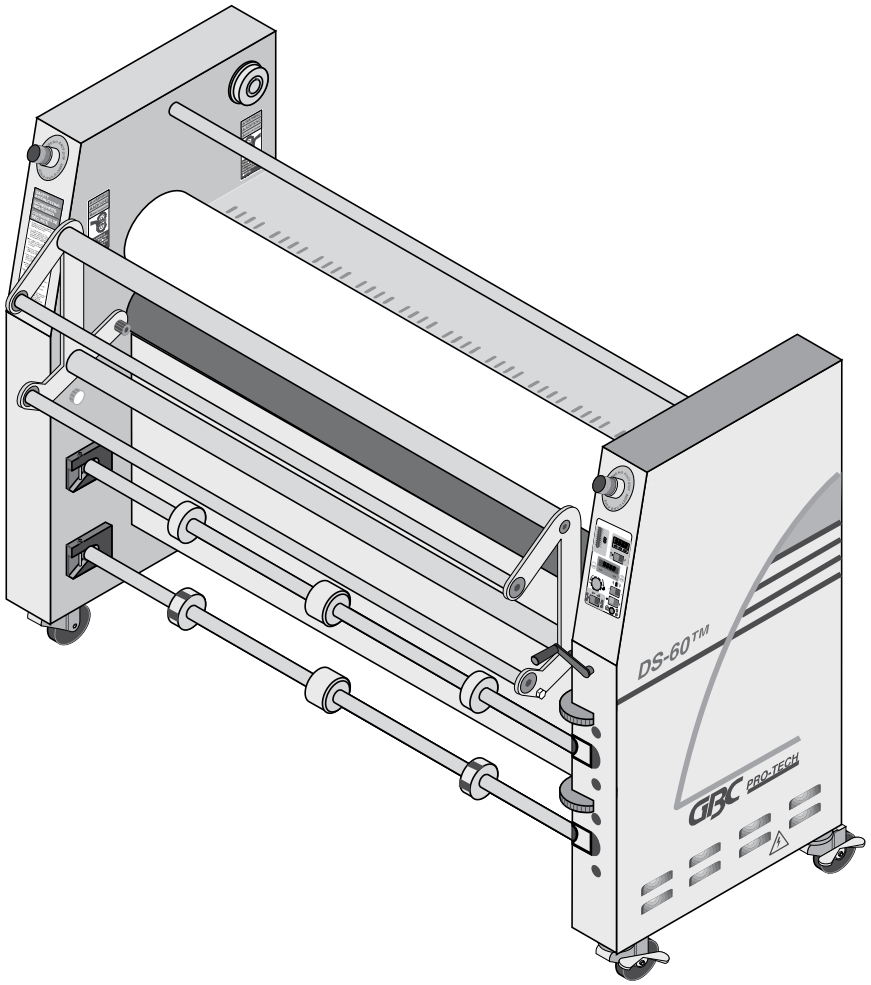
DS-60 Operation and Maintenance Manual



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Section 1 : Safety

DO NOT ATTEMPT TO OPERATE YOUR DS-60 HEAT PRESS UNTIL YOU HAVE READ THIS SECTION CAREFULLY!

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

The following symbols are used throughout this manual to indicate warnings and cautions.

DANGER

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

WARNING

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

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.

The DS-60 Heat Press 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 Heat Press before using or servicing the unit.

GBC Pro-Tech DS-60 Heat Press is a powerful machine that is designed to perform vinyl transfer and dye sublimation. The forces required to accomplish this task can vary from negligible to very large.

In addition, the main roll of the DS-60 can reach temperatures of 475 °F (235 °C). At these temperatures there is a danger of a severe burn if the roll is touched during set-up, operation or servicing.

Safety is an important feature of the DS-60 Heat Press. It has emergency stop buttons and photoelectric eye protection on both the infeed and outfeed sides of the nipping rolls to prevent objects from entering the nip.

The heat press is equipped with four emergency stop buttons located on the top front and back of either side of the heat press. Any of these, if engaged, stops the heat press. To continue operation all emergency stop buttons must be in the up position and you must press the reset button above the fuse panel on the back of the heat press (see Figure 1-2).

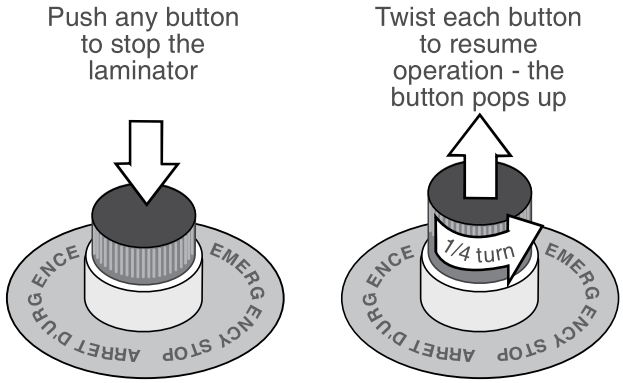


Figure 1-1: Using the Emergency Stop Buttons

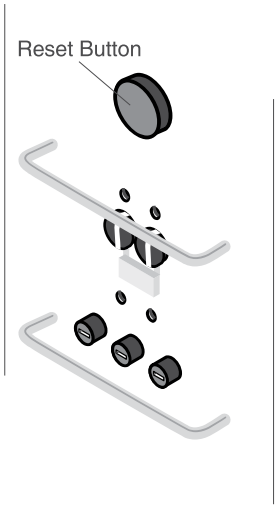


Figure 1-2: Resetting the Heat Press

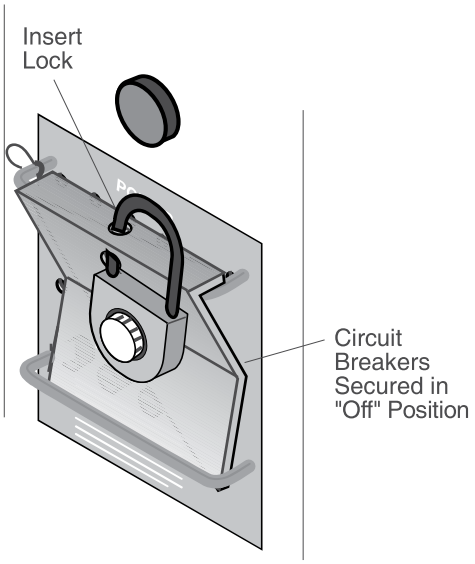


Figure 1-3: Power Lockout

Despite the safety features built into the DS-60 Heat Press, extreme caution must be used when operating or servicing the unit. **READ THE FOLLOWING WARNINGS AND CAUTIONS BEFORE ATTEMPTING TO OPERATE OR SERVICE THE DS-60 HEAT PRESS.**

WARNING

Never place fingers or arms between the rolls when they are turning or when the rolls are in the closed position. You can be crushed or burned.

WARNING

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

WARNING

Do not operate the heat press near water. You can be severely shocked, electrocuted or cause a fire.

DANGER

Remove and lockout power (see Figure 1-3) from the heat press before servicing. You can be severely shocked, electrocuted or cause a fire.

WARNING

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

WARNING

Exercise care when cleaning the rolls with 80% isopropyl alcohol:

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

Cleaning heated rolls can ignite the fumes.

CAUTION

Use only 80% isopropyl alcohol or a rubber cement eraser to clean the main rolls. Harsh chemicals like toluene, acetone or MEK destroy the silicone covering of the rolls.

CAUTION

Raise the upper main roll when the heat press is not in operation. Prolonged contact can damage the rolls.

CAUTION

Excess pressure can damage the main rolls. Always select the minimum roll pressure necessary to complete the task.

WARNING

The operating environment must be free of dust, flammable liquids and vapors. You can be injured by inhaling chemical vapors. Vapor build up or stored flammable liquids can cause a fire. Excessive dust can damage the heat press.

CAUTION

Do not use a knife or other sharp instrument during installation or while servicing the heat press. You can cause irreparable damage to the rolls.

WARNING

Do not operate the heat press if the power cord is damaged or frayed. You can be severely shocked, electrocuted or cause a fire. Contact a qualified electrician to replace the cord.

WARNING

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

The DS-60 Heat Press is a large and heavy piece of equipment. It is necessary to employ LICENSED RIGGERS ONLY to move the machine. The heat press 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. GBC Pro-Tech's warranty does not cover malfunction of the equipment due to mishandling and/or tipping.

GBC Pro-Tech bears no responsibility for personal injury or damage due to moving the heat press improperly.

WARNING

Do not allow anything to rest on the power cord. Do not locate the cord where people can walk on it. You or others can be severely shocked, electrocuted or cause a fire.

ALWAYS USE GOOD SAFETY PRACTICES WHEN OPERATING OR SERVICING THE HEAT PRESS AND KNOW HOW TO REACT QUICKLY IN AN EMERGENCY.

Caution/Warning Label Locations

Posted at various locations on your DS-60 Heat Press are important safety labels. PAY CAREFUL ATTENTION TO THESE LABELS AT ALL TIMES! Figure 1-3 shows the location of each of these labels.

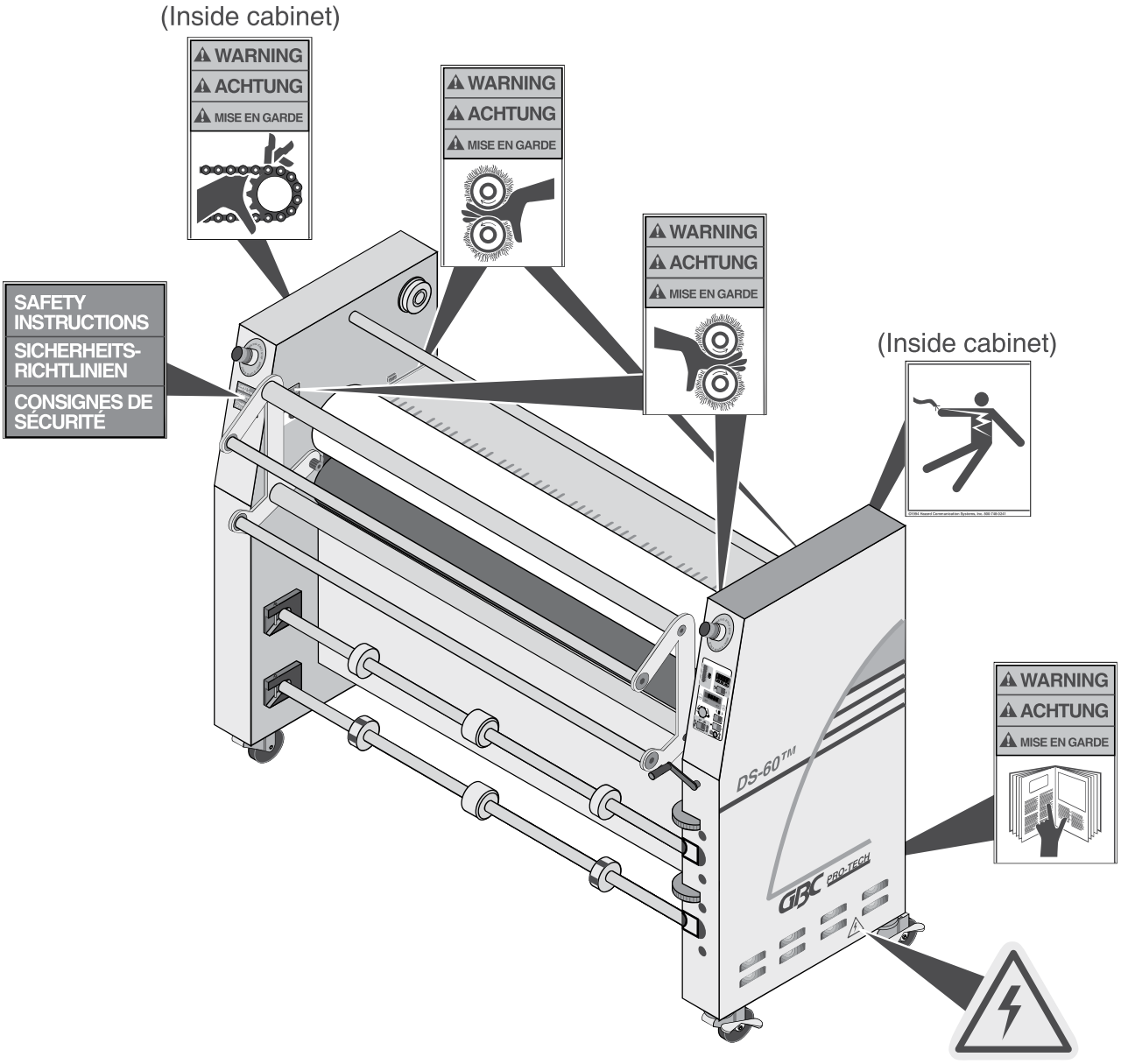
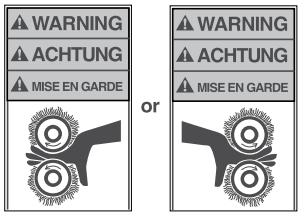
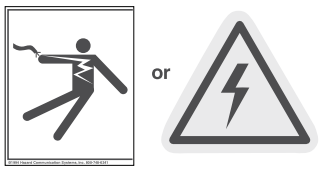
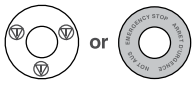


Figure 1-4: Locations of Safety Labels

The following are typical safety hazard decals used on GBC Pro-Tech machines, with a brief description ("Meaning" column) of each decal.

Decal	Meaning
	**WARNING!** Moving parts can crush and cut. Do not operate with guard or door open.
	**WARNING!** Crush and burn hazard. Stay clear of moving rollers. Stop machine and raise roll before cleaning.
	**WARNING!** Carefully read Operator's Manual before handling this machine. Observe instructions and safety rules when operating.
	**WARNING!** HAZARDOUS VOLTAGE. To be serviced only by trained and authorized personnel. Lockout power before servicing.
	**CAUTION!** Surface is hot. A burn hazard exists.
	**CAUTION!** Rolls are heavy. Use proper lifting techniques to prevent injury.

Decal	Meaning
	**WARNING!** 1. Read and understand the Operation Manual and all safety labels before operating this machine. 2. Only a trained person is to be permitted to operate this machine. Training should include instruction in operation under normal conditions and emergency situations. 3. This machine is to be serviced only by trained and authorized personnel. Follow lockout procedures before servicing. 4. Never reach into the machine for any reason unless the machine is at a COMPLETE STOP. 5. Never leave the machine stopped in such a manner that another worker can start the machine while you are working on or within the machine. 6. Never change or defeat the function of electrical interlocks or other machine "shutdown" switches. 7. Before starting this machine, check that: - All persons are clear of the machine. - No maintenance work is being performed on the machine. - All guards are in place. - All parent rolls are well chucked in the unwind stands. - The machine is free of paper scraps, wraps and jams. 8. There is a potential hazard of entanglement in this machine caused by items such as long hair, loose clothing, and jewelry. Make sure your clothing and hair fit closely to your body and that all jewelry, rings and watches are removed.
	**CAUTION!** Air pressure must be less than 100 PSI (700 kPa) to avoid damaging the machine.
	Reset.
	**WARNING!** EMERGENCY STOP BUTTON Press this button to stop the machine cycle, remove electric power, and separate (open) rolls to eliminate a pinch point (on some machines).
	Electric power disconnect and lock out location.

Section 2 : Installation

GBC Pro-Tech is committed to a program of ongoing product improvement. As a result, we are providing these instructions so that you can insure that your new DS-60 Heat Press is properly and securely unpacked, moved and installed.

Before a DS-60 Heat Press can be installed, there are a few requirements that must be met. Make certain that each of the requirements listed in the following preinstallation checklist are met before beginning installation.

CAUTION

Failure to follow the preinstallation checklist can result in damage to the heat press.

Preinstallation Checklist

- ❑ Are doorways and hallways wide enough for the heat press to be moved to the installation site?
- ❑ Is there ample room for the heat press?
  A work area must be established that allows for operation in both the front and the rear of the machine and provides space for efficient material flow. Figure 2-1 shows a typical machine area layout.
- ❑ Is the environment appropriate for the heat press?
  The heat press requires a clean, dust and vapor free environment to operate properly, such as an air conditioned office area with forced 10% make up air. However, the heat press must not be located where there is air blowing directly on it. Major fluctuation in temperature and humidity are to be avoided.

WARNING

The operating environment must be free of dust, flammable liquids and vapors. You can be injured by inhaling chemical vapors. Vapor build up or stored flammable liquids can cause a fire. Excessive dust can damage the heat press.

CAUTION

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

- ❑ Is there an appropriate power outlet available or has a certified electrician been contacted to wire the heat press directly?
  The heat press requires 30A single phase service and a power receptacle that accepts a 30A 250V NEMA L6-30P plug.

WARNING

Do not attempt to defeat the grounding feature of the ground plug on the heat press. You can be severely shocked, electrocuted or cause a fire. The three prong plug fits only into a grounding-type power outlet. If you are unable to insert the plug into the existing outlet, contact a qualified electrician to replace the obsolete outlet.

WARNING

Do not use an extension cord on this heat press. You can be severely shocked, electrocuted or cause a fire. If you need a longer cable contact a qualified electrician.

WARNING

Do not operate the heat press if the power cord is damaged or frayed. You can be severely shocked, electrocuted or cause a fire. Contact a qualified electrician to replace the cord.

WARNING

Do not allow anything to rest on the power cord. Do not locate the cord where people can walk on it. You or others can be severely shocked, electrocuted or cause a fire.

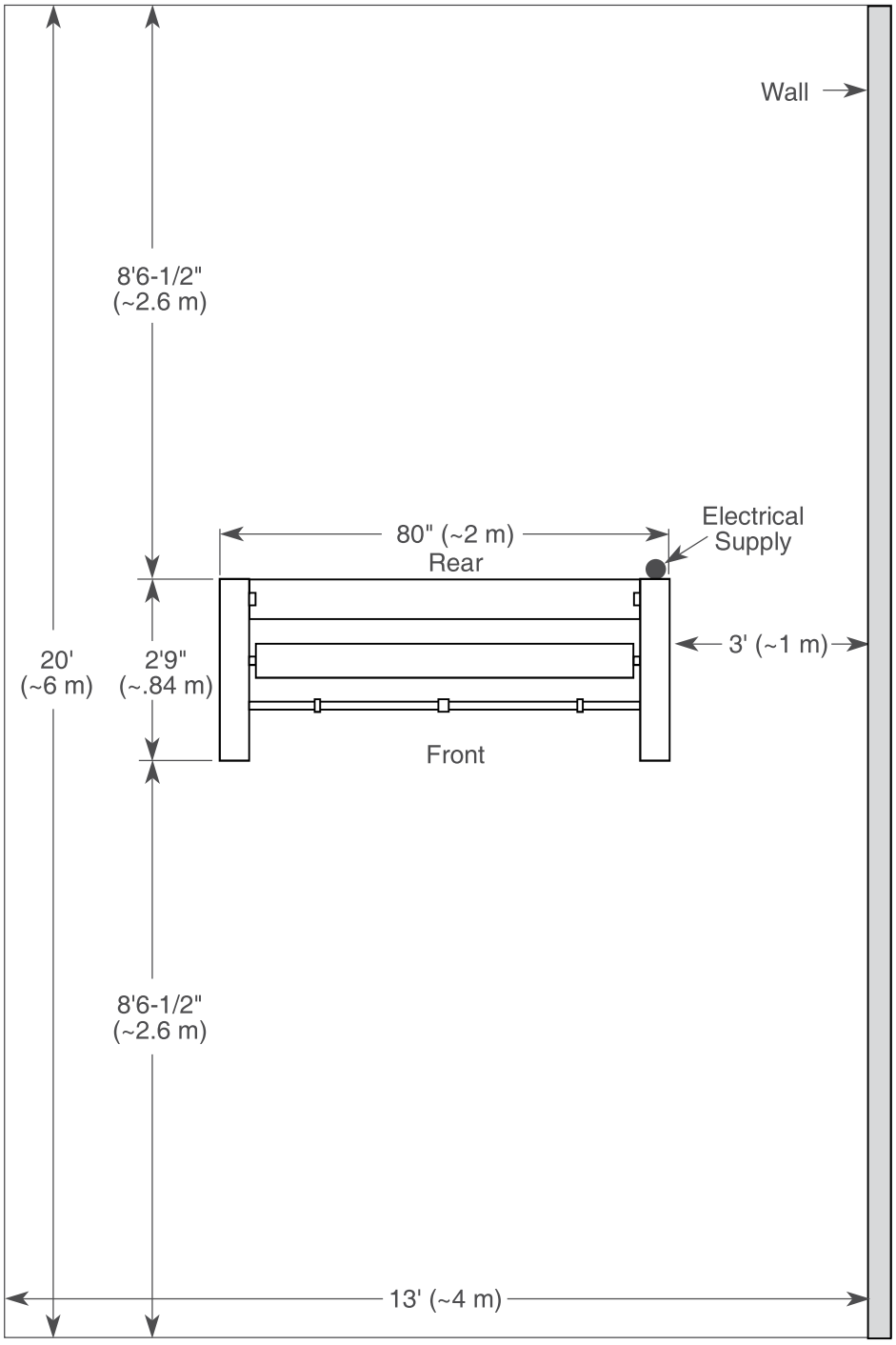


Figure 2-1: Heat Press Space Requirements

Unpacking

☞ **NOTE**

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. 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 a note of this on the Bill of Lading.

The DS-60 Heat Press is shipped in a wood crate on a skid.

WARNING

The unpacking process requires at least two people. You can be severely injured or crushed.

Tools required:

- Phillips head screwdriver
- $^{7}/_{8}$" open end wrench or adjustable wrench

To uncrate the heat press:

1. Remove the top of the crate and then the sides in the order shown in Figure 2-2.

CAUTION

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

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

A second person must support the side labeled (5) in Figure 2-2. It can fall and damage the heat press.

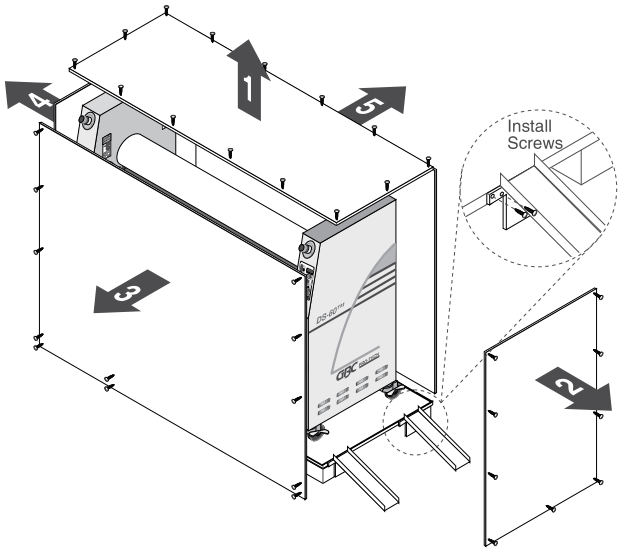


Figure 2-2: Removing the Crate

2. Gently unwrap the shrink wrap from around the heat press.

CAUTION

Do not use a knife or other sharp instrument during installation or while servicing the heat press. You can cause irreparable damage to the rolls.

3. Carefully remove any accessories packed with the heat press. The accessory pack should contain:

   1 Set, hex wrenches
   1 Slitting knife
   1 Manual
   1 Set, spare fuses
   1 Tape measure
   1 Roll of masking tape
   1 100% cotton terry cloth
   1 Bottle 80% isopropyl alcohol
   4 Leveling studs
   4 Leveling pads

4. Have the heat press rolled off the skid and placed on the floor by licensed riggers. The ramps included with the heat press can be secured to the edge of the crate bottom using the screws left over from the crate disassembly (see Figure 2-2).

WARNING

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

The DS-60 Heat Press is a large and heavy piece of equipment. It is necessary to employ LICENSED RIGGERS ONLY to move the machine. The heat press 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. GBC Pro-Tech's warranty does not cover malfunction of the equipment due to mishandling and/or tipping.

GBC Pro-Tech bears no responsibility for personal injury or damage due to moving the heat press improperly.

5. Remove any plastic strapping and packing paper taped to the rolls.

CAUTION

Do not use a knife or other sharp instrument during installation or while servicing the heat press. You can cause irreparable damage to the rolls.

6. Remove all packing materials to a safe distance from the heat press.

☞ **A NOTE ABOUT RECYCLING**

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

7. Level the heat press using the procedure later in this section.

Setup

Once the DS-60 Heat Press has been unpacked and moved into final position check each of the following items.

Tools required:

- $^1/_8$" hex wrench
- Adjustable wrench

Setup Procedure

1. Inspect the heat press for any obvious shipping damage.
2. Remove the left and right side cabinet covers with the $^1/_8$" hex wrench by removing the eight screws holding each cover in place.
3. Inspect all the bolts and tighten any that were loosened during shipping.
4. Set the nip. (See *Maintenance* for the procedure.)
5. Verify that thermocouple makes contact with the upper main roll. (See *Maintenance* for the procedure.)

WARNING

ALWAYS CHECK THE POSITION AND CONDITION OF THE THERMOCOUPLE PRIOR TO OPERATION! The thermal junction of the thermocouple MUST make contact with the upper main roll to maintain proper roll operating temperatures. The thermocouple must also be free of adhesive and dirt. The roll can overheat and cause a fire or seriously damage the heat press.

6. Replace both cabinet covers.

Leveling

Tools required:

- Adjustable wrench
- Carpenter's level

To level the heat press:

1. Raise each end, remove the castors and install a leveling pad and stud onto each of the foot brackets at the four bottom corners of the heat press. Thread third nut on stud above foot bracket.
2. Thread stud into 4 leveling pads lock down with nut. Thread second nut onto stud.
3. Place a carpenter's level front to rear across the two lower tie bars at one end of the machine.
4. Level this end of the machine front to rear, raising or lowering the leveling pads by adjusting the middle nuts on the foot bolts.
5. Move the level to the other end of the machine and level front to rear.
6. Place the level directly on one of the tie bars and level the machine side to side.
7. Recheck the front to rear level condition to insure that it has not changed. If it has, repeat the leveling procedure.
8. When all the measurements indicate that the machine is level, tighten down the top nuts on the foot brackets to lock the pads in their current position.

Startup

The first time the heat press is started and every time it is serviced you should use the following checklist to confirm that the unit is operating properly and that all safety mechanisms are functioning.

Startup Checklist

Start the heat press and go through the following checklist.

❑ Are the emergency stop buttons working?
Push down on one of the emergency stop buttons. The heat press should stop. Pull up on the button and push the reset button on the lower back of the heat press. The heat press should resume operation. Always check all buttons.

WARNING

Never operate the heat press unless all of the emergency stop buttons are functioning properly. You can be crushed or burned.

❑ Is the photoelectric eye system working?
With the heat press running, place an object approximately the size of your hand just in front of the nip to confirm that the photoelectric eye system is functioning. The rolls should stop. Move the object away from the nip. Press the Photoelectric Eye Reset button on the front control panel. The heat press should resume operation.

WARNING

Never operate the heat press unless the photoelectric eye system is functioning properly. You can be crushed or burned.

❑ Is the motor functioning?
Test the motor at various speeds ranging from 0-18. At 0 the rolls should stop turning.
Run the motor in both forward and reverse.

❑ Are the heaters working?
Verify that the heater controller heats the top roll.

Once you have completed the startup checklist you can safely run a test sample.

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Section 3 : Operation

Safety

GBC Pro-Tech DS-60 Heat Press is a powerful machine that is designed to perform dye sublimation. The forces required to accomplish this task can vary from negligible to very large.

In addition, the main roll of the DS-60 can reach temperatures of 475 °F (235 °C). At these temperatures there is a danger of a severe burn if the roll is touched during set-up, operation or servicing.

The DS-60 Heat Press has a steel cabinet that is bolted closed to isolate the electrical and drive system components for the safety of the operator. Only a qualified service technician should open these cabinets.

The heat press is equipped with four emergency stop buttons located on the top front and back of either side of the heat press. Any of these, if engaged, stops the heat press. To continue operation all emergency stop buttons must be in the up position and you must press the reset button above the fuse panel on the back of the heat press (see Figure 3-2).

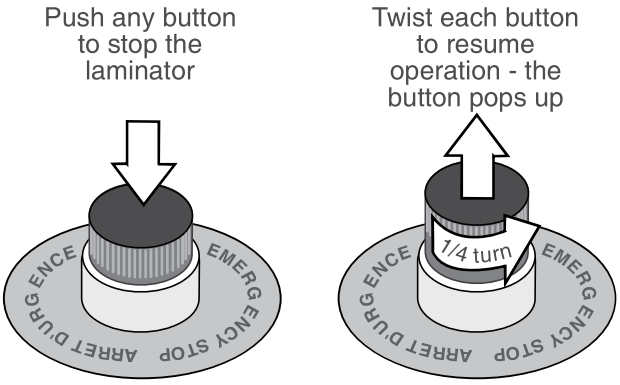


Figure 3-1: Using the Emergency Stop Buttons

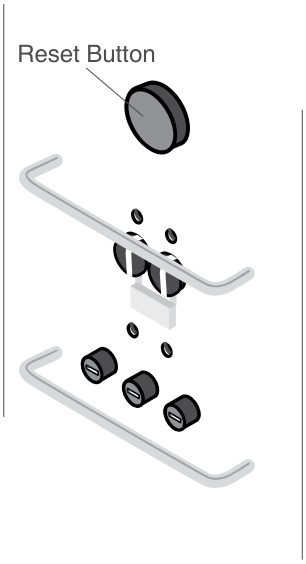


Figure 3-2: Resetting the Heat Press

Operator Controls

The operator controls for the DS-60 Heat Press are located on the front and rear of the unit, to the right of the operator position. The names and functions of these controls are as follows:

Control Panel

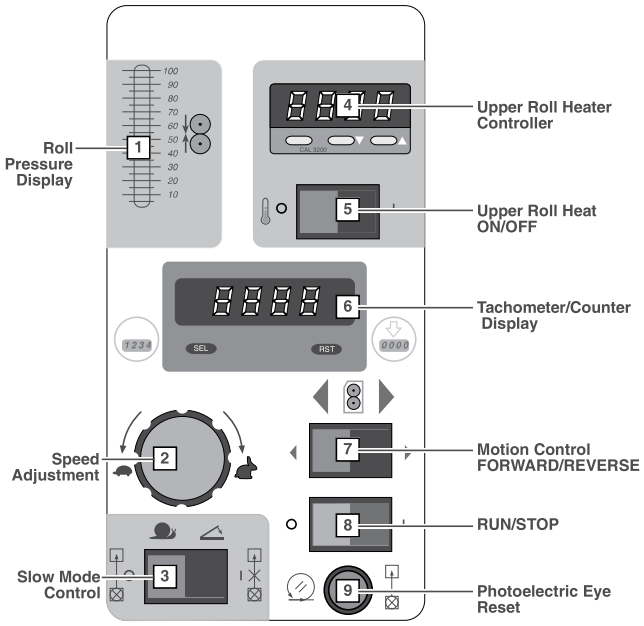


Figure 3-3: Control Panel

1. **ROLL PRESSURE DISPLAY** - Displays the pressure pushing the main roll down.
2. **SPEED ADJUSTMENT** – Adjusts the speed of the machine from zero to the maximum as the control is turned clockwise. (Turtle is slow, rabbit is fast.)
3. **SLOW MODE CONTROL** – Switches the photoelectric eye system on and off. If the left side of the toggle switch is pressed, the photoelectric eye system is on and the heat press runs at any speed. If the right side of the toggle switch is pressed, the photoelectric eye system is off and the heat press runs only by using the footswitch and only at 1 m/min maximum speed.
4. **UPPER ROLL HEATER CONTROLLER –** Provides a readout of the temperature of the upper roll and the set-point for the desired temperature.
5. **UPPER ROLL HEAT ON/OFF** – Turns the heater controller for the upper main roll on or off.
6. **TACHOMETER/COUNTER DISPLAY** – Displays the operational rate or the amount of material processed.
7. **MOTION CONTROL FORWARD/REVERSE -** Controls the direction of the drive system, forward, reverse, or stop.
8. **RUN/STOP** – Turns the drive system on or off.
9. **PHOTOELECTRIC EYE RESET** – Resets the photoelectric eye system. (The photoelectric eye system must be reset any time the heat press is turned off and back on.)

Setup

Setup of the DS-60 Heat Press is quick and straightforward when instructions are followed exactly.

To adjust the nip, please see *Maintenance*.

Heat Press Roll Pressure

Use only the minimum amount of roll pressure needed to accomplish the task. Excess pressure can damage the rolls. Wrinkles and ripples have causes that generally cannot be cured by applying more pressure.

CAUTION

Excess pressure can damage the main rolls. Minimum heat press roll pressure is consistent with good results.

A maximum roll pressure for dye sublimation is 40% at 390-400 ºF (199-204 ºC) with a suggested speed of 2-3 fpm (60-90 cpm).

Loading the Materials

Loading the materials is very simple. Remove the unwind shaft from the position where the material is to be installed. Slide the material onto the unwind shaft, making sure that the orientation of the roll is correct. Return the unwind shaft and material to the machine and center the material between the side frames using a tape measure. Once all the materials are loaded, the machine can then be webbed. Some fabrics have a right and a wrong side based on the fabric bias.

Heating

Use the following instructions when heating the upper main roll.

1. Set the heater switch to ON.
2. Adjust the temperature controller for the desired operating temperature using the temperature controller push buttons.
3. When heating the rolls, keep the top roll down and turning at a moderate speed to prevent uneven heating.
4. It will take approximately 30 minutes for the main roll(s) to reach operating temperature. When the preset operating temperature has been reached, the machine is ready to use.

Process Control Charts

Process control charts allow you to record the way you thread material through the machine's rolls 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 DS-60 as well as completed charts for the basic operations of the heat press.

GBC Pro-Tech Heat Presses respond 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 process control charts should be kept in this manual or in a book close to the heat press. Encapsulate the popular charts so they can withstand food and coffee spills and so they are always available for ready reference.

☞ **NOTE**

When trying new products and processes, remember that GBC Pro-Tech's customer service representatives are only a phone call away.

Roll to Roll Transfer

1. See process chart 3-2 and diagram 3-2a.
2. Make sure the infeed idler assembly is in the lowered position.
3. Set the heater controller to operational temperature and confirm that it is rotating with the lower main roll.
4. Once the upper main roll is at operating temperature, center the fabric and transfer paper on the unwinds and secure.
5. Stop the rolls from turning and raise the upper main roll.
6. Web the fabric through the machine, based on its bias characteristics, all the way to the rear lower rewind.
7. Web the transfer paper through the main roll nip and lower to the main roll. Make sure the fabric and paper are taut while webbing the machine.
8. Pivot the idler assembly into its up position and secure it.
9. Start the heat press turning and take the transfer paper up to the upper rewind and tape it to the rewind.
10. Begin transfer.
11. To stop the transfer, stop the machine, lower the idler assembly, and raise the main roll. The web can be left this way indefinitely.
12. Heat Press Roll Pressure: 40% maximum.
13. Speed: 1-4 fpm (30-90 cpm).
14. Upper Heat Press Roll Heat: 395 °F (200 °C) maximum.

Sheet Feed Transfer

1. See process chart 3-3 and diagram 3-3a.
2. Make sure the infeed idler assembly is in the lowered position.
3. Set the heater controller to operational temperature and confirm that it is rotating with the lower main roll.
4. Once the upper main roll is at operating temperature, center the craft paper on the unwind and secure.
5. Stop the rolls from turning and raise the upper main roll.
6. Web the craft paper through the machine all the way to the rear lower unwind.
7. Pivot the idler assembly into its up position and secure it.
8. Perform the transfer by inserting the materials into the craft paper/main roll nip using the infeed table.
9. Start the heat press.
10. To stop the transfer, stop the machine, lower the idler assembly, and raise the main roll. The web can be left this way indefinitely.
11. Heat Press Roll Pressure: 40% maximum.
12. Speed: 1-4 fpm (30-90 cpm).
13. Upper Heat Press Roll Heat: 395 °F (200 °C) maximum.

PROCESS CONTROL CHART 3-1

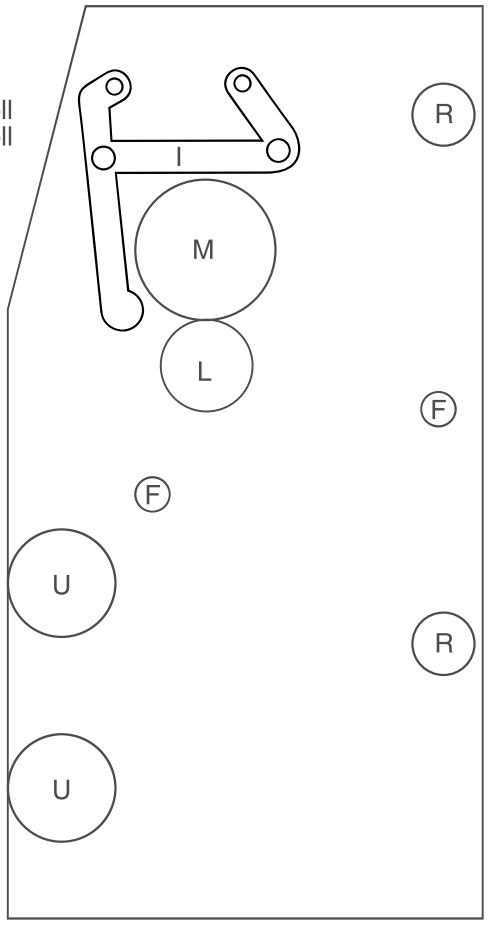
Product:_____ Process: _____ Date:_____

FRONT CONTROL SETTINGS	
Speed (Ft/min):	**Reverse/Forward:**
Roll Up/Down:	**Top Heater On/Off:**
Roll Pressure:	**Top Temp. Set:**

PROCESS CONTROL DIAGRAM 3-1A

IDENTIFICATION DIAGRAM

(F) Fixed Idler
(U) Unwind Shaft
(R) Rewind
(M) Upper Main Roll
(L) Lower Main Roll
(I) Infeed Idler (In starting "up" position)



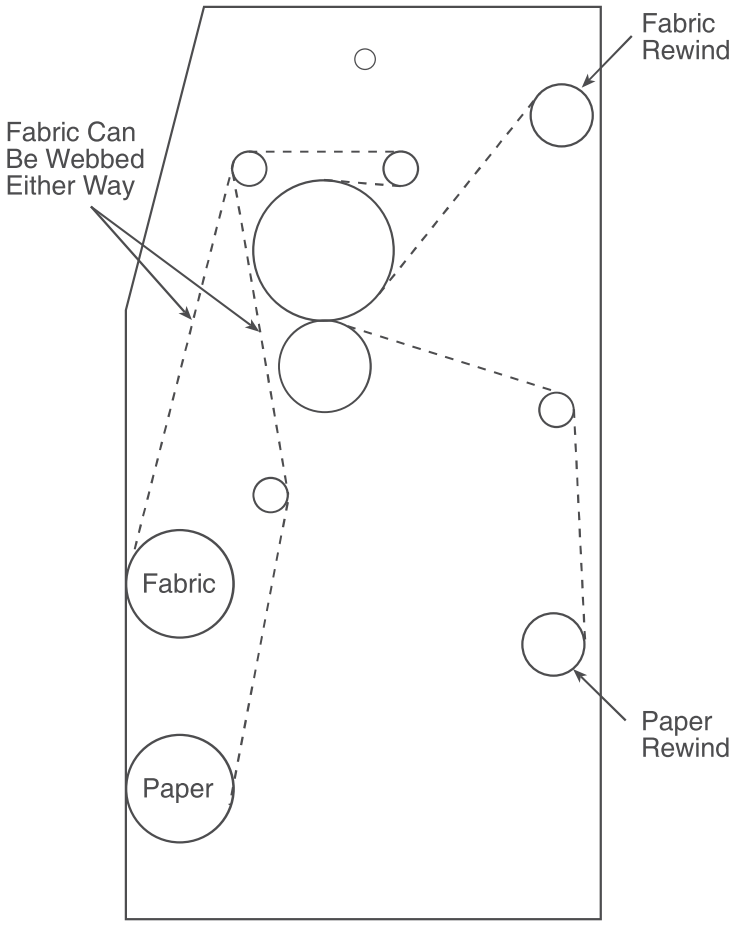
PROCESS CONTROL CHART 3-2

Product: _____ Process: Roll to Roll Transfer_____ Date: _____

FRONT CONTROL SETTINGS	
Speed (Ft/min): 1-4 (30-90 cm/min)	Reverse/Forward: Forward
Roll Up/Down: Down	Top Heater On/Off: On
Roll Pressure: 15-40%	Top Temp. Set: 395 ºF (200 ºC)

PROCESS CONTROL DIAGRAM 3-2A

Roll to Roll Transfer For Biased or Stretchy Fabric



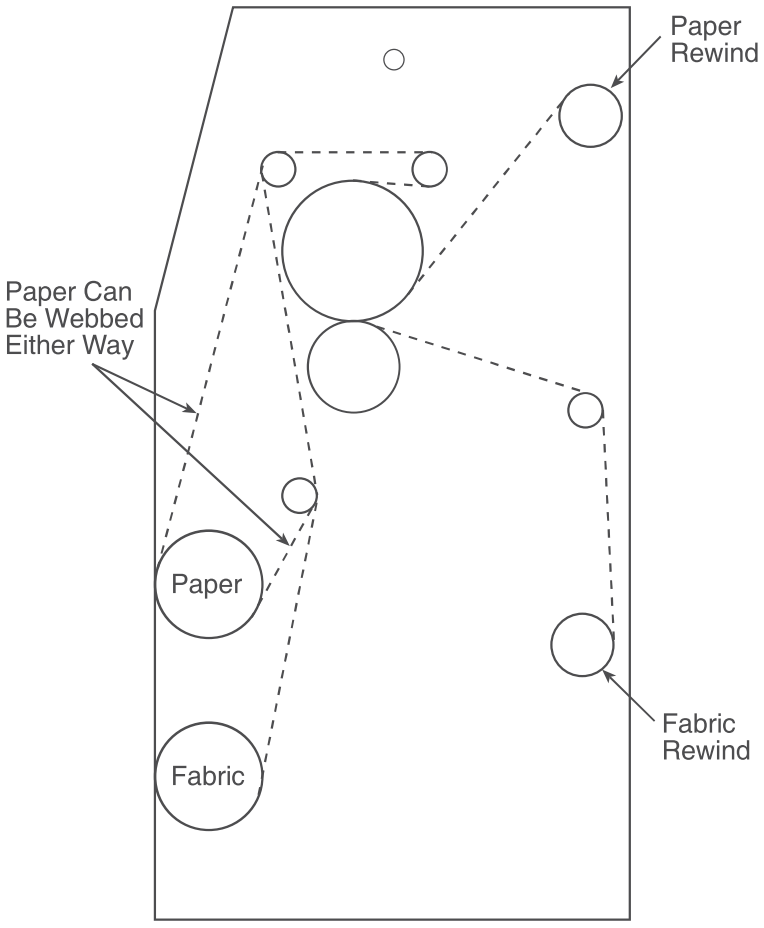
PROCESS CONTROL CHART 3-3

Product:_____ Process: Roll to Roll Transfer _____ Date:_____

FRONT CONTROL SETTINGS	
Speed (Ft/min): 1-4 (30-90 cm/min)	Reverse/Forward: Forward
Roll Up/Down: Down	Top Heater On/Off: On
Roll Pressure: 15-40%	Top Temp. Set: 395 ºF (200 ºC)

PROCESS CONTROL DIAGRAM 3-3A

Roll to Roll Transfer For Non or Mild-Biased Fabrics



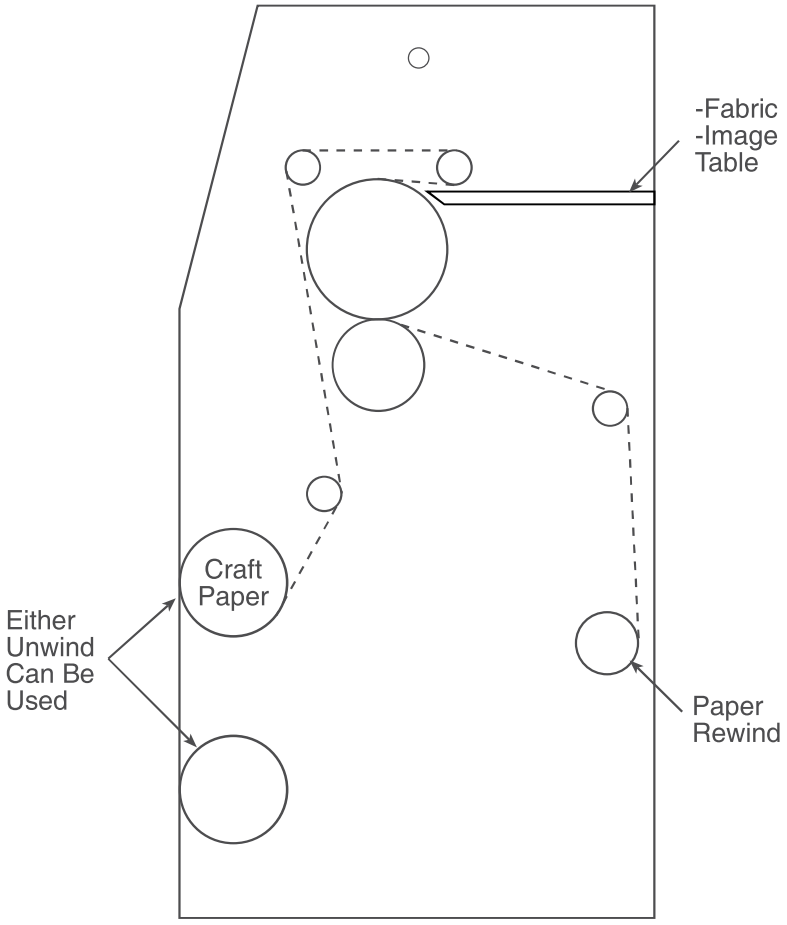
PROCESS CONTROL CHART 3-4

Product: _____ Process: Sheet Feed Transfer _____ Date: _____

FRONT CONTROL SETTINGS	
Speed (Ft/min): 1-4 (30-90 cm/min)	Reverse/Forward: Forward
Roll Up/Down: Down	Top Heater On/Off: On
Roll Pressure: 15-40%	Top Temp. Set: 395 ºF (200 ºC)

PROCESS CONTROL DIAGRAM 3-4A

Sheet Feed Transfer



Section 4 : Maintenance and Troubleshooting

GBC Pro-Tech machines 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.

Table 4-1: Maintenance Schedule

Daily	• Align/clean the thermocouple • Clean the rolls • Inspect the electrical cord for damage • Inspect the footswitch cord for damage
Monthly	• Adjust the nip • Check the chain tension • Inspect the area around the heat press for possible hazards (dust buildup, combustible items stored too close, etc.)
Every Six Months	• Lubricate the grease fittings and chain • Check wire termination tightness

Thermocouple Positioning and Cleaning

One of the most crucial adjustments to the DS-60 Heat Press is positioning the thermocouple and making sure it is clean. If the thermocouple loses contact with the roll, the roll can overheat and be seriously damaged or can even start a fire. Therefore, it is absolutely critical that the thermocouple be clean and positioned properly before operating the heat press and it should become second nature to check its condition prior to applying power to the heat press.

Tools required:

- $^1/_8$" hex wrench
- 80% isopropyl alcohol
- 100% lint free paper or cotton terry cloth

CAUTION

ALWAYS CHECK THE POSITION AND CONDITION OF THE THERMOCOUPLE PRIOR TO OPERATION! The thermal junction of the thermocouple MUST make contact with the main rolls to maintain proper roll operating temperatures. The thermocouple must also be free of adhesive and dirt. The roll can overheat and cause a fire or seriously damage the heat press.

WARNING

Do not attempt to adjust the position of the thermocouple if the roll is hot. You can be seriously burned.

To adjust a thermocouple:

1. Locate the thermocouple (in the middle of the upper main roll on the rear of the heat press).
2. Remove the two screws securing the thermocouple to the heat press using the $^1/_8$" hex wrench and take the thermocouple out.
3. Inspect the thermocouple. If there is any adhesive or dirt on the thermocouple gently clean it off with 80% isopropyl alcohol and a cotton terry cloth.

4. Grasp the aluminum base of the thermocouple on either side of the rivets to provide support as shown in Figure 4-1. Using your fingers, gently bend the thermocouple where the "guitar pick" sensor meets the aluminum base.

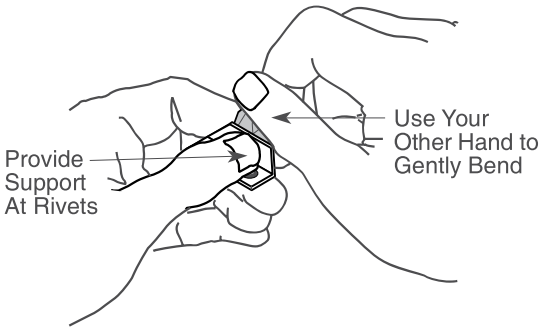


Figure 4-1: Adjusting the Thermocouple

Once installed, the critical point of the thermocouple MUST make direct contact with the roll as shown in Figure 4-2.

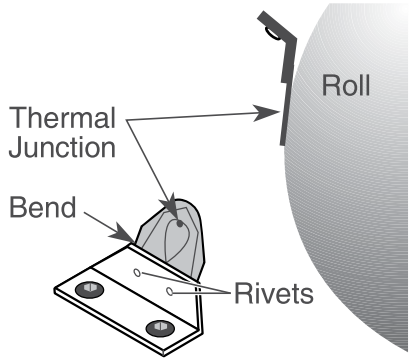


Figure 4-2: Correct Thermocouple Contact

CAUTION

Firmly hold the thermocouple where the "guitar pick" sensor is riveted to the aluminum base while bending. You can break the sensor off the base if you do not provide this added support.

5. Replace the thermocouple and tighten the screws.

Cleaning

Tools required:

- 80% isopropyl alcohol (or dishwashing detergent)
- Several 100% lint free paper or cotton terry cloths
- Protective rubber gloves
- Soft cleaning pad

To clean dust and dirt from the rolls:

The silicone (lower) main roll can be cleaned of dust and dirt by passing an adhesive coated board through the nip. (Be sure to set the nip for the thickness of the board used).

WARNING

Exercise extreme caution while cleaning the heat press. You can be caught in the turning rolls and crushed or burned.

To clean beads of adhesive from the rolls:

1. Allow the heat press to cool completely.
2. Set the FWD/REV switch to the REV position.
3. Clean the upper main roll using a fine, soft cleaning pad.
4. Clean the lower main roll with either a mild dishwashing detergent or a moderate amount of 80% isopropyl alcohol on a cotton terry cloth.

CAUTION

Use the minimum amount of pressure necessary to clean the rolls. You can destroy the silicone layer on the lower main roll by pressing too hard or scrubbing too long in one spot.

WARNING

Exercise care when cleaning the rolls with 80% isopropyl alcohol:

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

Cleaning heated rolls can ignite the fumes.

CAUTION

Use only 80% isopropyl alcohol to clean the lower main roll. Harsh chemicals like toluene, acetone or MEK destroy the silicone covering of the roll.

To clean the cabinet and covers:

WARNING

Remove and lockout power from the heat press while you are performing this procedure. You could be severely shocked, electrocuted, or get your fingers caught in the drive mechanisms.

Using a damp cotton terry cloth (water only), clean the exterior of the heat press.

WARNING

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

WARNING

Do not use compressed air to clean the machine. Blowing debris can be forced into places where it will later ignite or short electric circuits.

Adjusting the Main Roll Nip

The gap between the two main rolls is called the nip. The purpose of adjusting the nip is to ensure continuous contact between the main rolls as the media is drawn through the machine. This procedure must be done regularly.

Tools required:

- $^{1}/_{8}$" hex wrench
- ¾" hex wrench

To adjust the main roll nip:

CAUTION

The main roll must be at room temperature to achieve a proper nip setting.

1. Remove the left and right side cabinet covers with the $^{1}/_{8}$" hex wrench by removing the eight screws holding each cover in place.
2. Lower the upper main roll so that there is a small visible gap between it and the lower main roll.
3. Loosen the ¾" jam nut securing the lift assembly bolt. Adjust the nip by rotating the lift assembly bolt clockwise to lower the end being adjusted and counterclockwise to raise it.

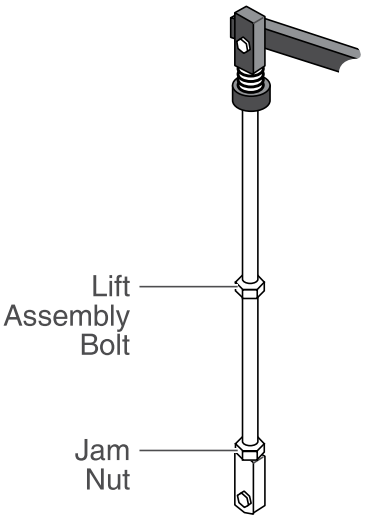


Figure 4-3: Nip Setting Assembly

4. Adjust the nip so that there is an even line of light across the width of the rolls.
5. Secure the jam nut on the lift assembly bolt.

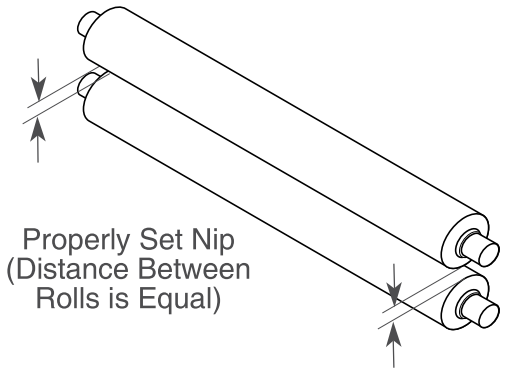


Figure 4-4: Properly Set Nip

6. Replace both cabinet covers.

Chain Tensioning

Smaller chain tensioning adjustments on the DS-60 Heat Press are handled by a secondary chain tensioner, however, when installing a new chain or when the chain tension is more seriously out of adjustment, use the following procedure to adjust the chain tension.

Tools required:

- $^{1}/_{8}$" hex wrench
- $^{3}/_{16}$" hex wrench
- Screwdriver

To adjust the chain tension:

WARNING

Remove power from the heat press and make sure it won't be reapplied while you are performing this procedure. You could be severely shocked, electrocuted, or get your fingers caught in the drive mechanisms.

1. Remove the drive side cabinet cover using the $^{1}/_{8}$" hex wrench by removing the six screws holding the cover in place.
2. Loosen the secondary chain tensioner on the secondary drive chain. The tensioner should, at this point, not be engaging its respective chain.
3. Loosen all four motor mount bolts using the $^{3}/_{16}$" hex wrench as shown in the figure below. The motor should just move freely within the slots.

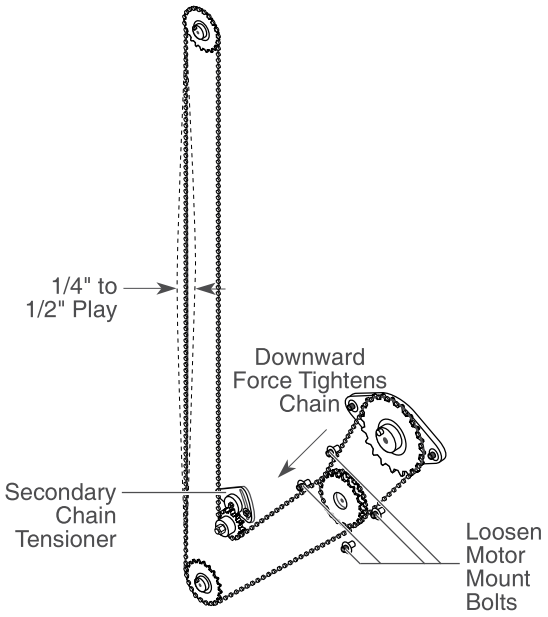


Figure 4-5: Adjusting the Chain Tension

4. Using a screwdriver, apply a small amount of downward pressure on the motor by prying against the inside of the side frame until there is ¼" to ½" play in the chain.
5. Tighten the mounting bolts while maintaining the downward pressure on the motor.
6. Engage the secondary chain tensioner and apply pressure until its chain exhibits similar tension to the primary chain tension.
7. Replace the cabinet cover and reapply power to the heat press.

Lubrication

Tools required:

- 1/8" hex wrench
- High temperature grease or lithium grease
- Grease gun

To lubricate the heat press:

WARNING

Do not lubricate the heat press when it is hot. You can be burned.

WARNING

Remove and lockout power from the heat press while you are performing this procedure. You could be severely shocked, electrocuted, or get your fingers caught in the drive mechanisms.

1. Remove the drive and control side cabinet covers using the 1/8" hex wrench by removing the six screws holding each cover in place.
2. Using the grease gun, lubricate each grease fitting with one squirt of high temperature grease.
3. Lubricate the chain using a soft cloth and automotive oil.
4. Replace the cabinet covers, close the safety shields and reapply power to the heat press.

Contacting Technical Support

For machine parts and technical service in North America, please call: 1-800-790-7787. **Please provide serial number when calling for service.** In Europe, please call: +44 (0) 1844 202 440 or fax: +44 (0) 1844 202 441.

For film and application questions in North America, please call 1-800-236-8843. In Europe, please call: +44 (0) 1844 202 440 or fax: +44 (0) 1844 202 441.

Troubleshooting

This section covers troubleshooting of the digital dye sublimation finishing system. In almost all cases, unacceptable finished image transfer quality is due to incorrect operational parameters for the heat press and consumables being used to create the finished image. To help eliminate some of the confusion, this guide provides operational parameters for running of the various materials. These guides are an excellent starting point, but there are instances where the suggested operational parameters may not produce acceptable output.

Ghosting

This is a term used to describe a shadowing of toner around a transferred image, generally caused by excessive moisture in the paper and/or fabric, or having printed the image using four color black (too much toner).

This can be remedied by either slowing down the process and letting the machine pre-dry the fabric and paper or by pre-drying the fabric and paper prior to transfer.

Wrinkling

This is a term used to describe a wrinkle-like pattern in the transferred image. It is generally caused by excessive fabric shrinkage during the transfer.

This can be remedied by either slowing down the process to let the fabric shrink some while the machine is pre-heating it, or by pre-shrinking the fabric. Slowing down the process only works if it is a minimal shrinkage problem.

Wet paper can also cause wrinkling. This can be remedied by either slowing down the process to let the fabric dry while the machine is pre-heating it, or by pre-drying the fabric.

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Section 5 : Warranty

Limited Warranty

GBC Pro-Tech Engineering Company, Inc. warrants the equipment sold is free from defects in material and workmanship for a period of ninety days (90) **from the date of delivery** to the customer. This warranty is the only warranty made by GBC Pro-Tech and cannot be modified or amended.

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

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 ninety day period from the date of delivery.

CAUTION

Unauthorized customer alterations will void this warranty.

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

Exclusions to the Warranty

This warranty specifically does not cover:

1. Damage to the main rolls caused by knives, razor blades, other sharp objects, or failure caused by adhesives.
2. Damage to the machine caused by lifting, tilting, and/or any attempt to position the machine other than rolling on the installed casters on even surfaces.
3. Improper use of the machine.

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Section 6 : Specifications

Table 6-1: DS-60 Heat Press Specifications

Characteristic	Specifications
Dimensions (L x D x H)	80" x 33" x 57" (203 x 84 x 145 cm)
Weight	Uncrated: 1000 lbs (453 kg) Crated :1350 lbs (612 kg)
Main Rolls	64" (163 cm) roll face with a chrome plated steel top roll and a high heat, high release silicone rubber coated lower roll.
Material	Uses image material and fabrics up to 62 inches (157 com) wide on a 3-inch (7.6 com) inside diameter core, maximum roll diameter of 10 inches (25.4 cm).
Speeds	0 to 18 fmp (0 to 5.5 mpm) with variable speed, reversible action, start and stop controlled either through the instrument panel or with the footswitch
Heating	Capable of operating temperatures of up to 475 ºF (235 ºC) on the upper chrome roll. High output heater to fully replace heat as it is used in the transfer process.
Safety Features	• Double redundant circuit protected safety shielding • Photoelectric eye protection on both the infeed and outfeed sides of the nipping rolls • Four emergency stop buttons
Options	Heated lower main roll
Installation Requirement	220 VAC, 50 to 60 Hz single phase, 30A

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