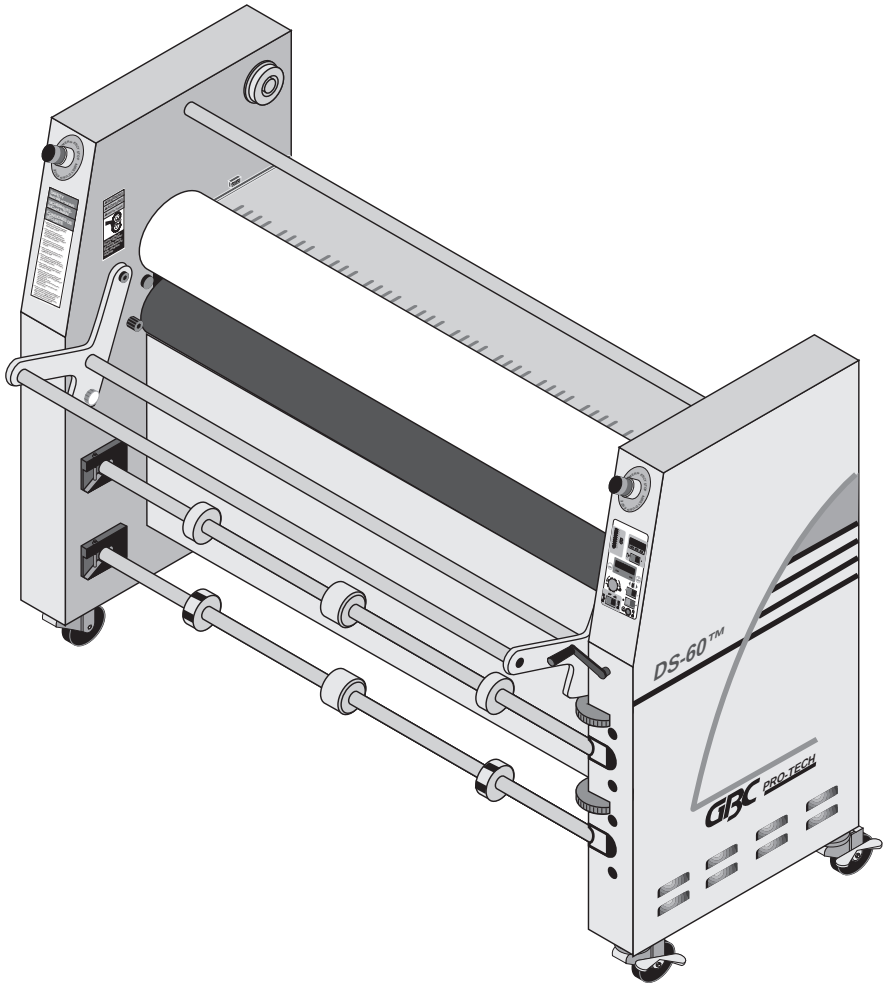
DS-60 Heat Press Service Manual



GBC Pro-Tech
4151 Anderson Road
De Forest, Wisconsin 53532
Tel: 608-246-8844
Fax: 608-246-8645

Part Number 930-012

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Section 1 : Safety and Warranty Information

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 dye sublimation. The forces required to accomplish these tasks 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 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.

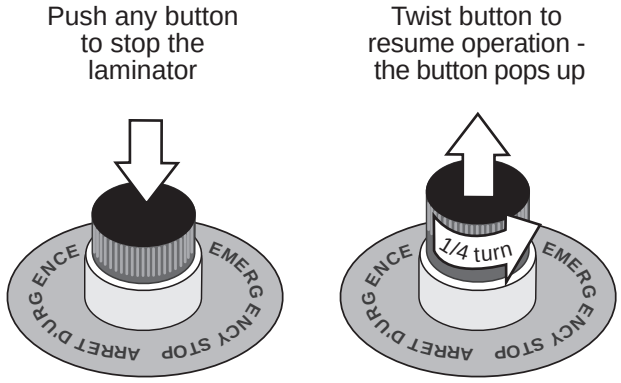

Figure 1-1: Using the Emergency Stop Buttons

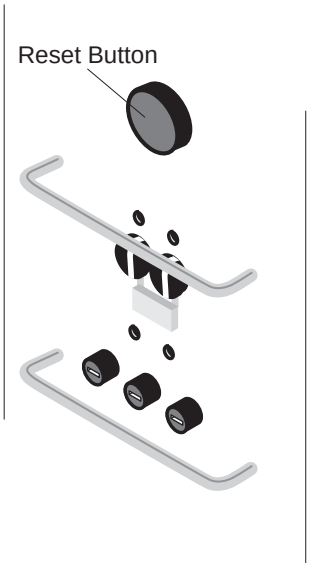

Figure 1-2: Resetting the Heat Press

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 power 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.

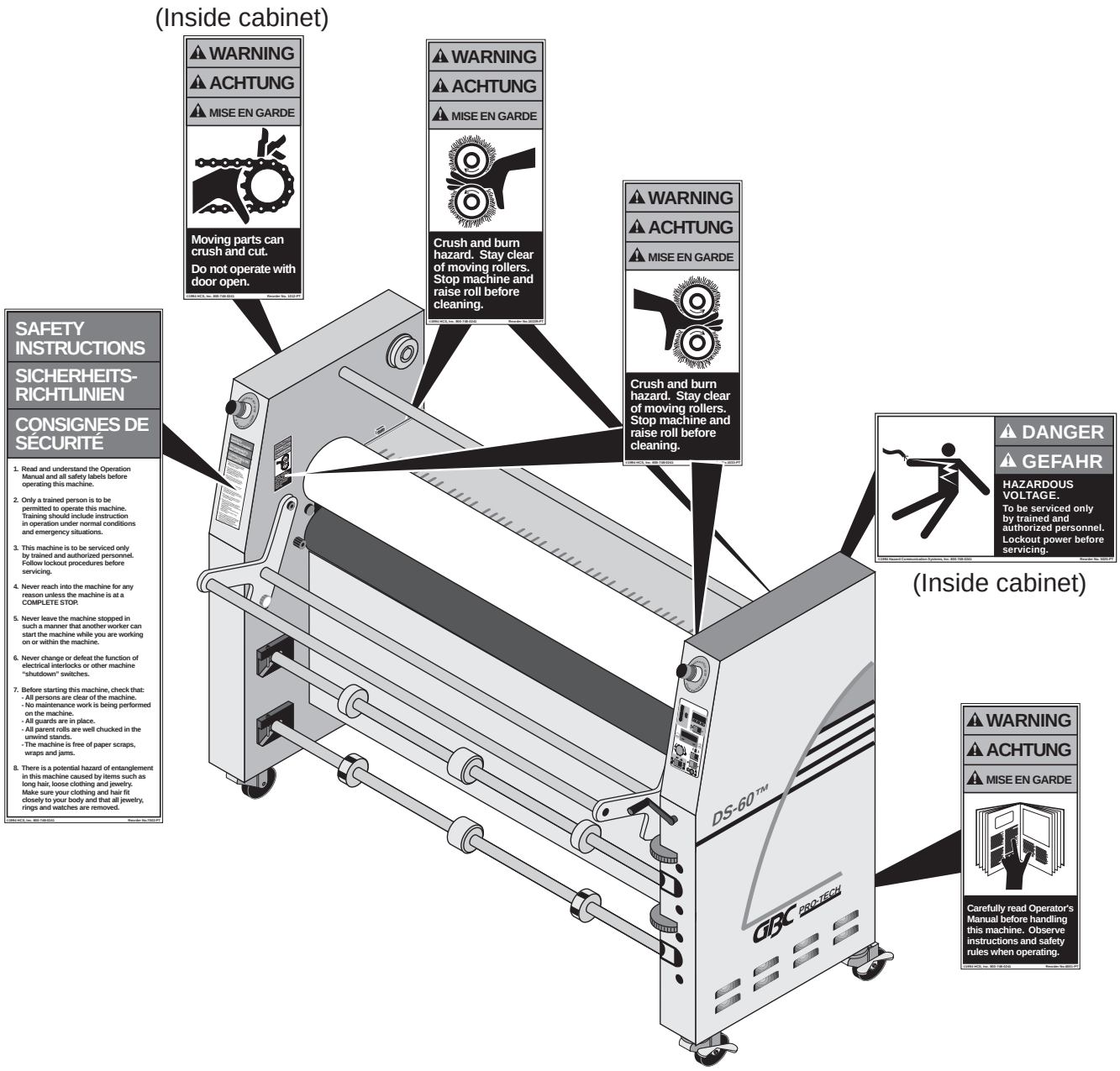

Figure 1-3: Locations of Safety Labels

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 2 : Characteristics

Specifications

Table 2-1. 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 the infeed side of the nipping rolls • Four emergency stop buttons • Front hinged guard
Options	• Heated upper main roll
Installation Requirement	220 VAC, 50 to 60 Hz single phase, 30A

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Section 3 : 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 3-1 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. It must not be located where there is air blowing directly on the machine.

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.

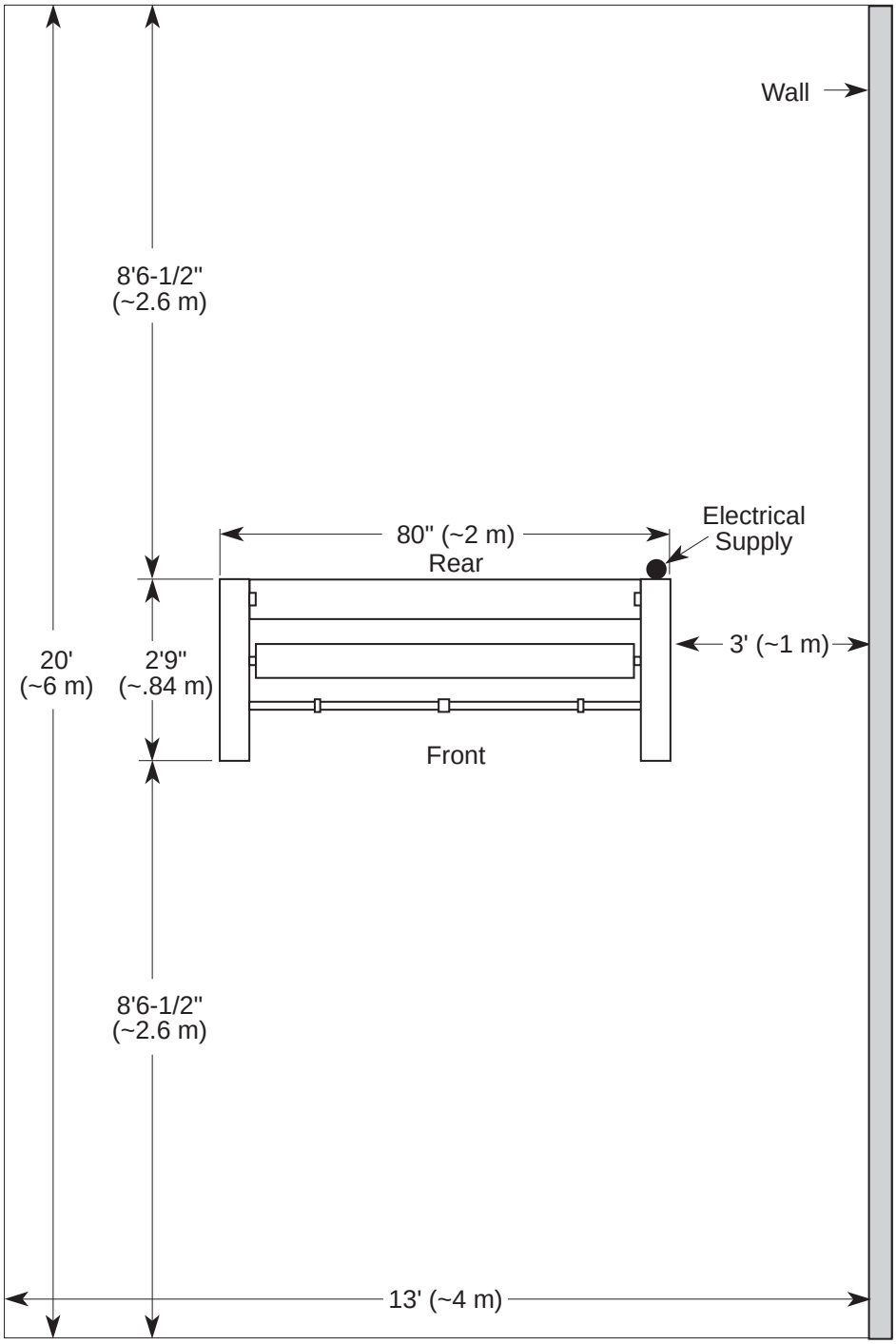

Figure 3-1: Heat Press Space Requirements

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 plywood 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 3-2.

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.

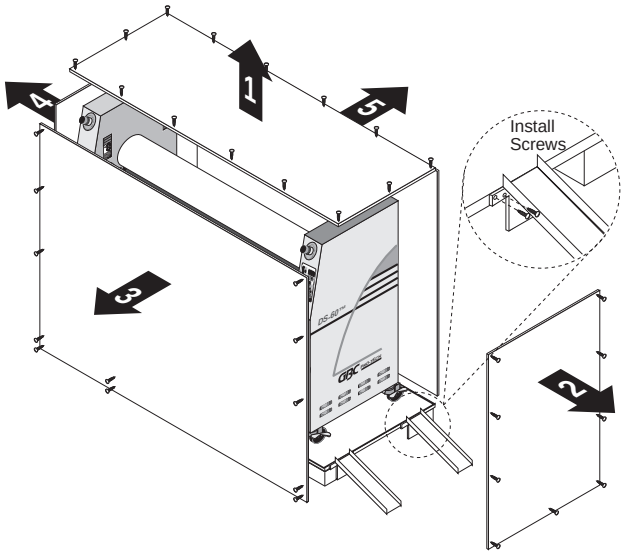

Figure 3-2: Removing the Crate

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
   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 ten 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 cabinet nuts at the four bottom corners of the heat press. Thread third nut on stud above cabinet.
2. Thread studs 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 cabinet nuts 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.

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

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

Section 4 : Equipment Location

The following illustrations show the location of the main parts of the DS-60 Heat Press.

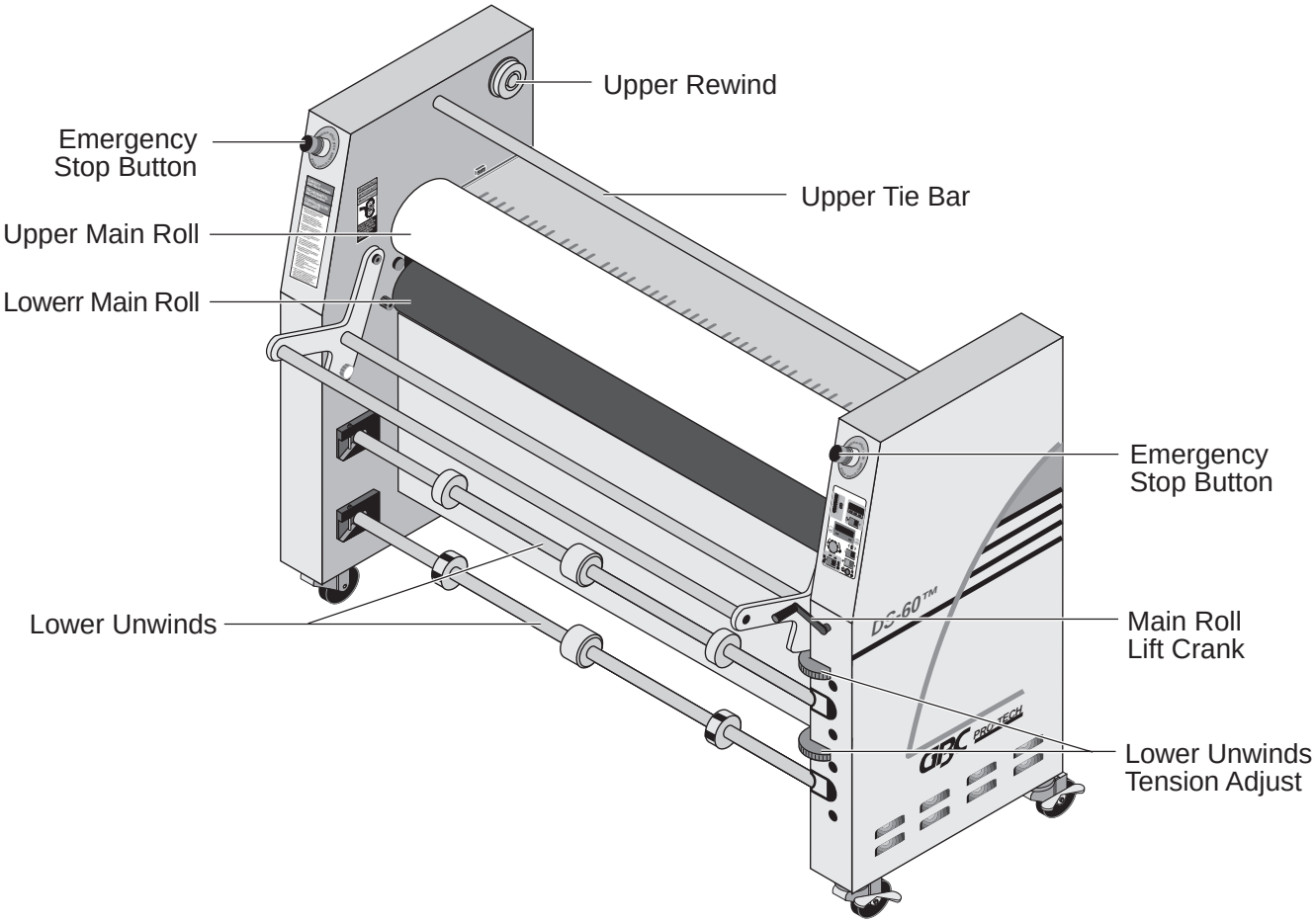

Figure 4-1: Exterior Equipment Locations - Front View

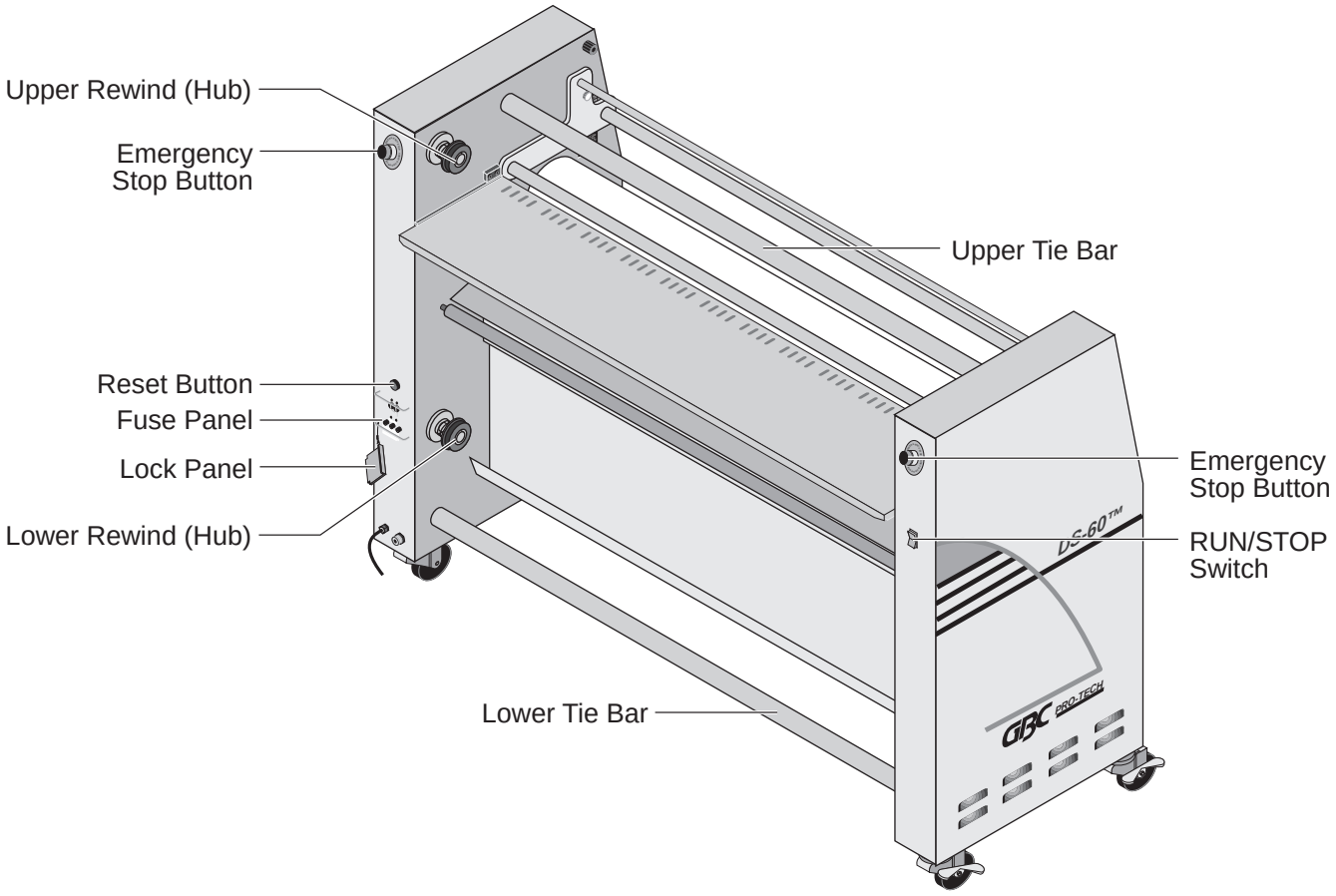

Figure 4-2: Exterior Equipment Locations - Rear View

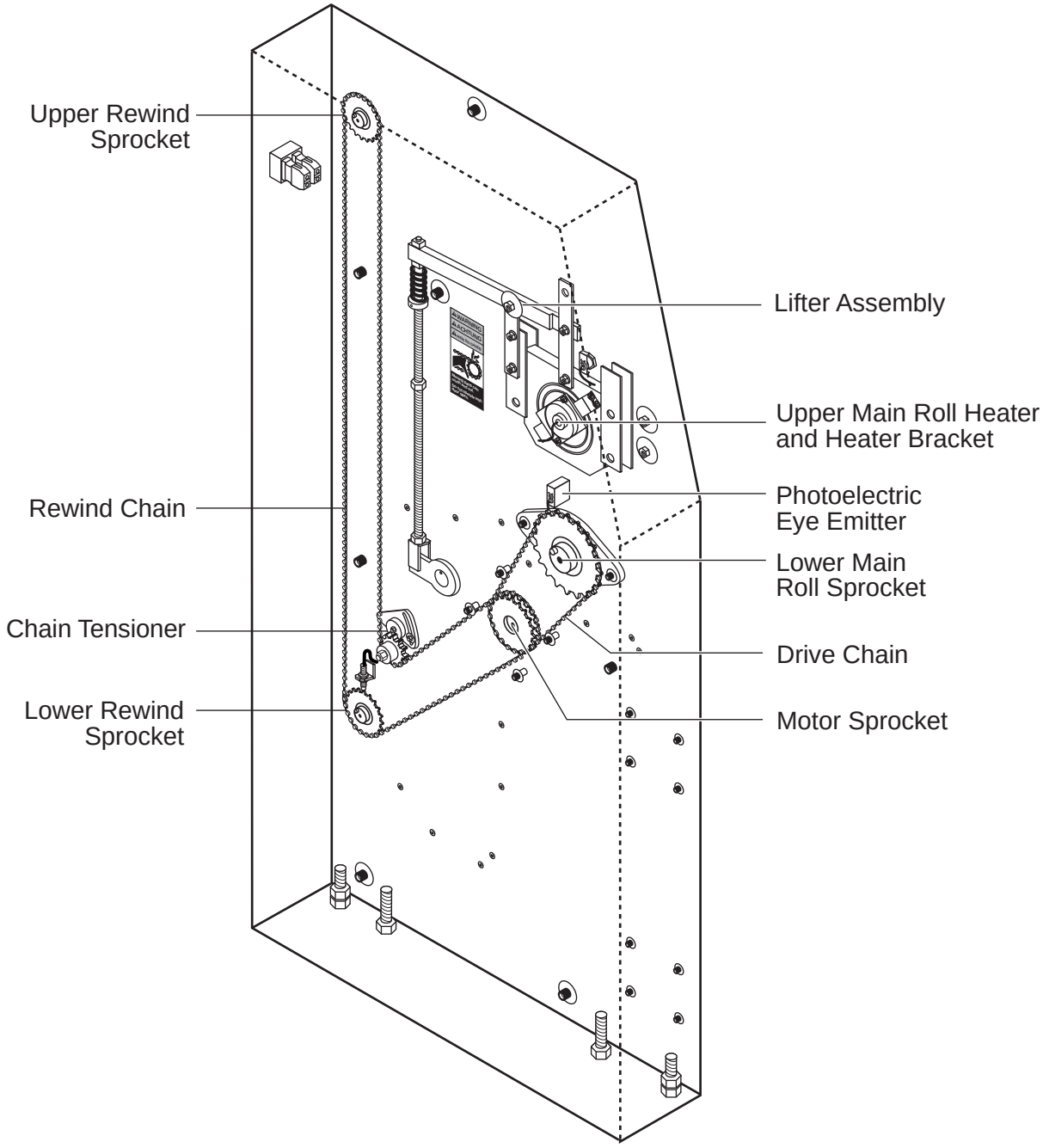

Figure 4-3: Drive Side Equipment Locations

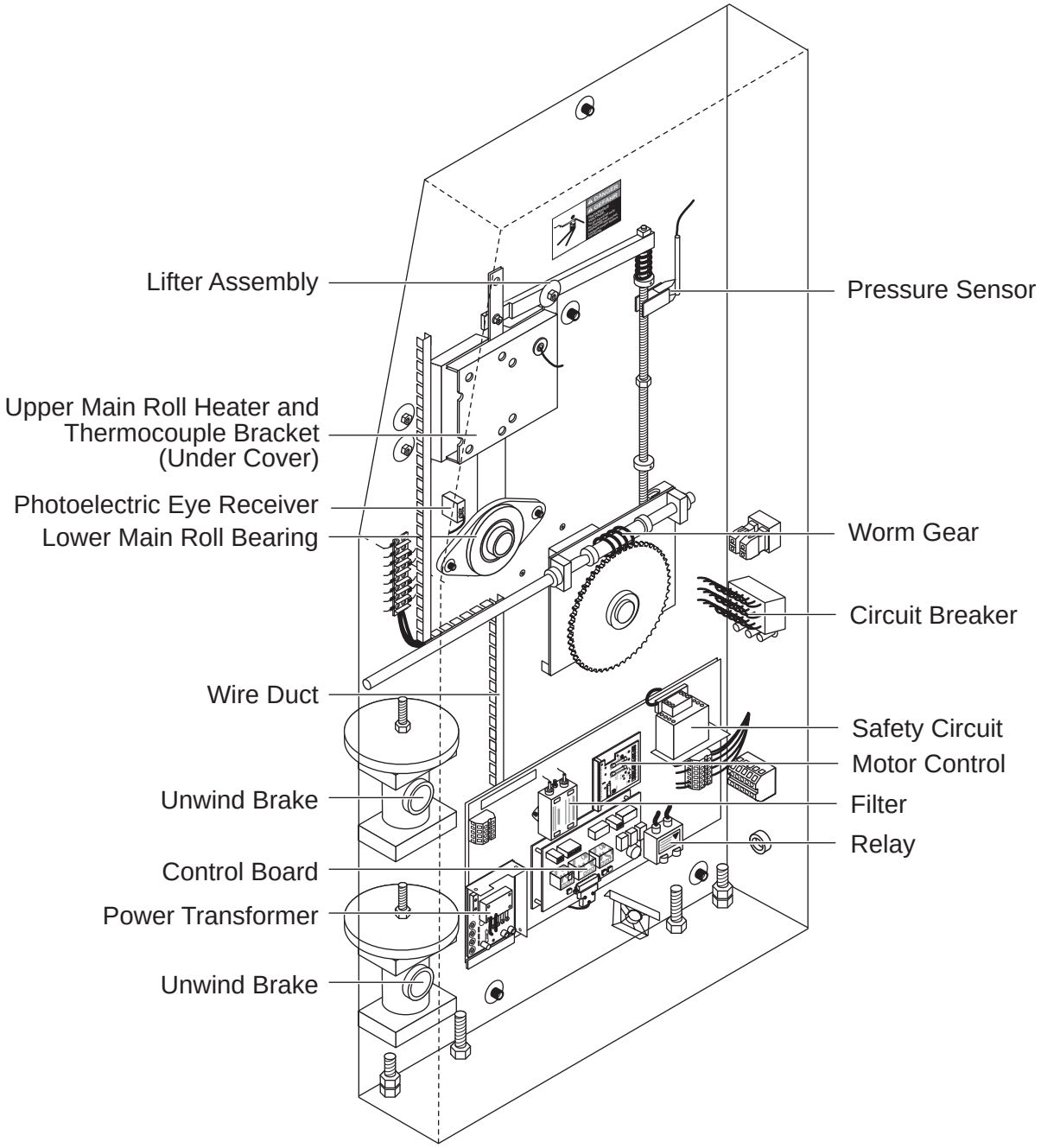

Figure 4-4: Control Side Equipment Locations

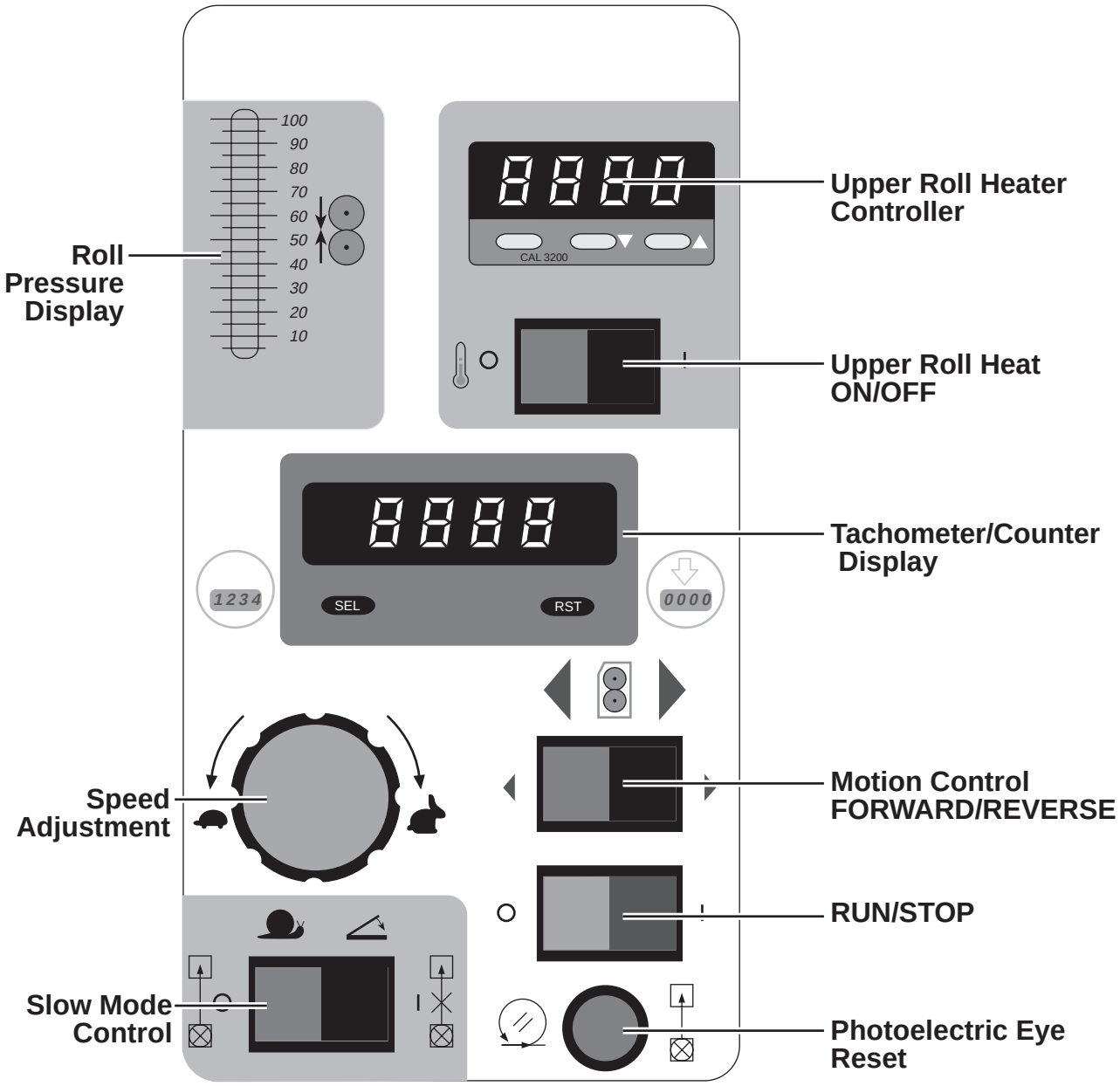

Figure 4-5: Front Control Panel

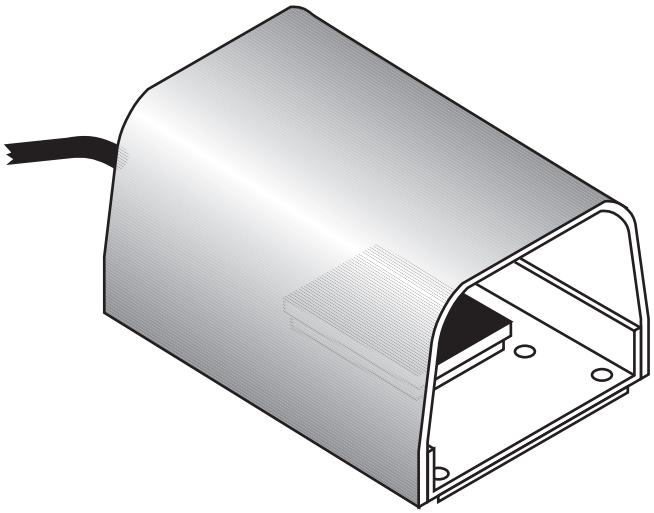

Figure 4-6: Footswitch

WARNING

Use extreme caution when operating the heat press with the footswitch. The photoelectric eye system is overridden and your fingers can get caught in the nip. You can be crushed or burned.

Section 5 : Adjustments

When a DS-60 Heat Press is not operating properly, there are several adjustments you can make to return it to normal operation. Some of these adjustments need to be made on a regular basis and are listed in the Maintenance Schedule in *Section 6: Maintenance.* The others only need to be done when the heat press is not functioning properly. This section begins with instructions for removing the cabinet covers and includes both mechanical and electrical adjustments to the heat press.

Mechanical Adjustments

There are three main mechanical adjustments for the DS-60 Heat Press:

- Nip Adjustment for the Main Rolls
- Photoelectric Eye Adjustment
- Chain Tensioning

Removing Drive and Control Side Cabinet Covers

WARNING

Always remove power from the heat press before removing the cabinet cover(s). You could be burned or get your fingers caught in the drive mechanisms.

Tools required:

- $^1/_8$" hex wrench

To remove a cabinet cover:

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 ten screws attaching the cover to the heat press using the $^1/_8$" hex wrench. (See Figure 5-1.)
2. Lift the cover off.

CAUTION

Do not lean the cabinet covers against the stand. They can scratch the paint.

To replace a cabinet cover:

1. Lift and place the cover into position
2. Replace each of the ten screws.

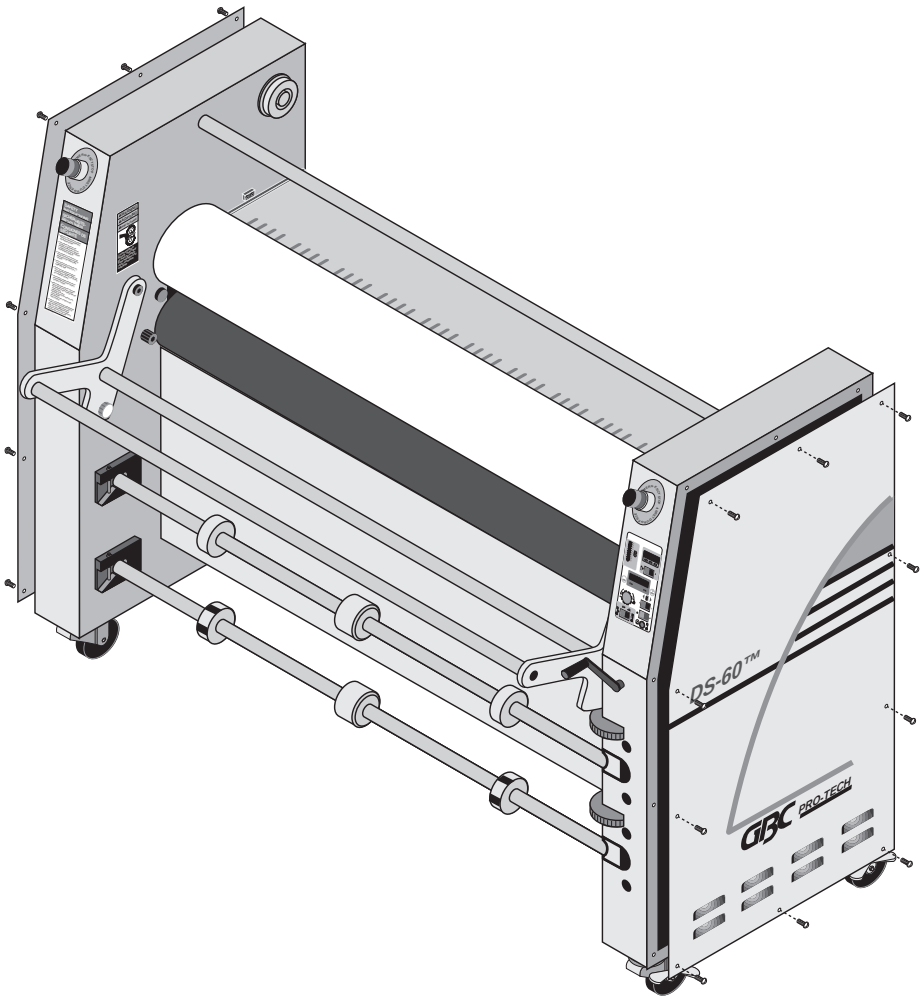

Figure 5-1: Removing Frame Cabinet Covers

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

3/4" 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 ten 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 3/4" 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.

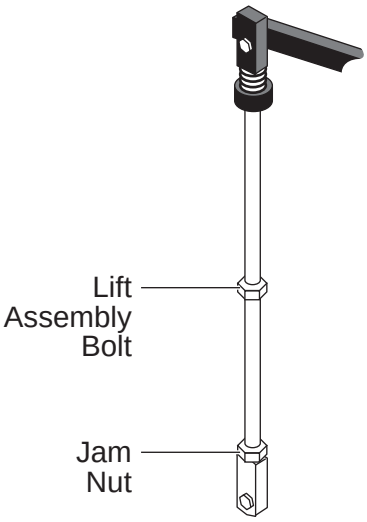

Figure 5-2: Nip Setting Assembly

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.

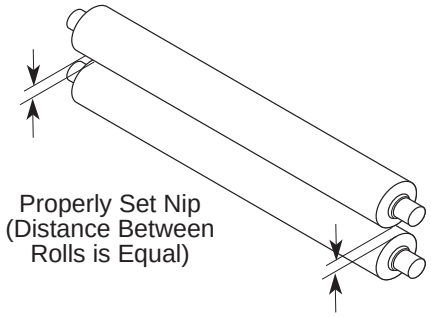

Figure 5-3: Properly Set Nip

6. Replace both cabinet covers.

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% 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 (on the rod behind 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.

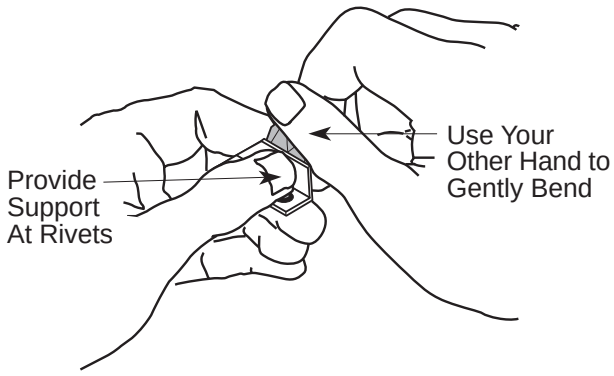

Figure 5-4: Adjusting the Thermocouple

Once installed, the critical point of the thermocouple MUST make direct contact with the roll as shown in Figure 5-5.

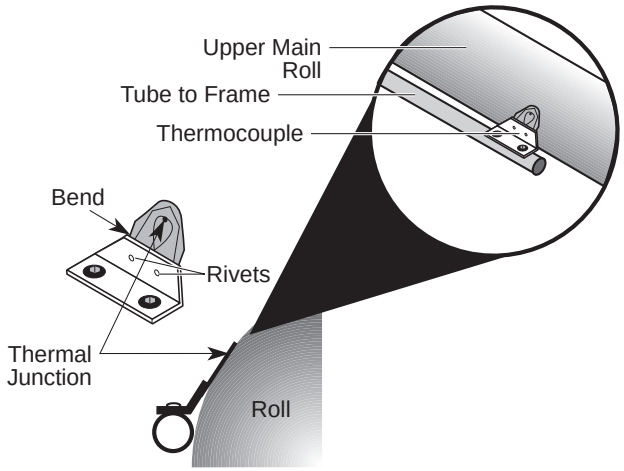

Figure 5-5: Correct Thermocouple Contact

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.

Photoelectric Eye Adjustment

DANGER

EXERCISE EXTREME CAUTION WHEN REMOVING THE CABINET COVERS WHILE THE HEAT PRESS IS OPERATIONAL! You can be severely shocked or electrocuted.

Tools required:

- $^1/_8$" hex wrench
- Small screwdriver

To adjust the photoelectric eye:

1. Remove the control side cabinet cover using the $^1/_8$" hex wrench by removing the ten screws holding each cover in place.
2. Using the small screwdriver, remove the guard from the photoelectric eye receiver (control side).
3. Turn the white plastic screw to set the photoelectric eye to the "light" setting. (This means that the photoelectric eye reacts when the beam is interrupted.) You may need to try each extreme to determine which is the "light" setting.
4. Turn the main roll lift crank in a clockwise direction to lower the upper main roll.
5. Turn the **SPEED** adjustment knob to the full counter clockwise position to stop roll movement.
6. Block the photoelectric eye at the frame.
7. Confirm that the photoelectric activation lamp (red LED) lights.

WARNING

When making this adjustment, use extreme caution. Your fingers and hands could be crushed .

8. If the lamp does not light, first check the "dark" setting, then turn the adjusting screw to adjust the sensitivity. Be sure to check at different locations across the whole width of the table.
9. Raise the upper main roll until the rolls are not touching.
10. Replace the photoelectric eye guard and cabinet cover.

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 10 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.

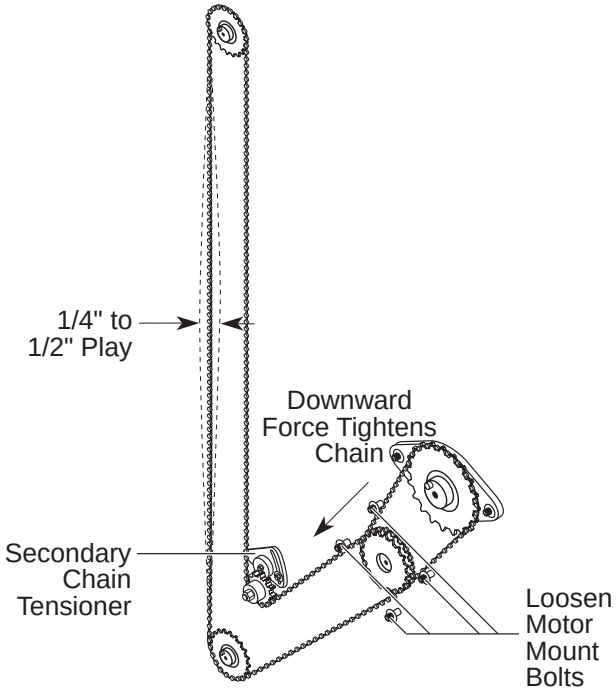

Figure 5-6: Adjusting the Chain Tension

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 no 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, then tighten the tensioner.
7. Replace the cabinet cover and reapply power to the heat press.

Electrical Adjustments

Electrical adjustments for the DS-60 Heat Press consist of programming the heater control, setting the motor control board potentiometers, and adjusting the pressure sensor. The heater control sets the temperature of the upper main roll, the potentiometers control the speed settings for the heat press, and the pressure sensor monitors the roll pressure between the main rolls.

Motor Control Board Potentiometers

Tools required:

- Small screwdriver (potentiometer adjusting size)
- Tachometer (optional)
- Volt meter

To set the motor control potentiometers:

1. Apply power to the heat press.
2. Remove the control side cabinet cover (see page 5-1).

DANGER

EXERCISE EXTREME CAUTION WHEN REMOVING THE RIGHT CABINET COVER WHILE THE HEAT PRESS IS OPERATIONAL! You can be severely shocked or electrocuted.

3. Set the **FWD/REV** switch to the **FWD** position and the **RUN/STOP** switch to **STOP**.
4. Turn the **SPEED ADJUST** knob on the control panel to the full clockwise position (maximum speed).

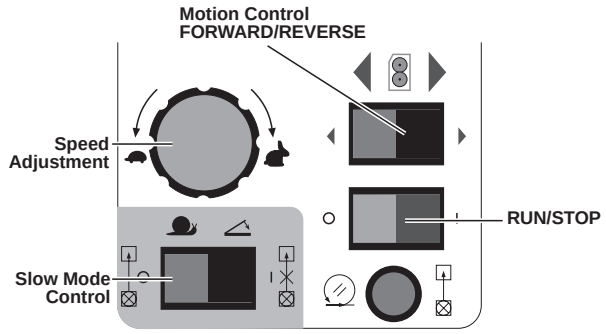

Figure 5-7: Motor Controls

5. Locate the barrier board. You can set the potentiometers on the board through the openings on the barrier board. (See Figure 5-8.) Check the output voltage to the motor from terminals A+ and A- on the barrier. The output voltage (DC) should be between 80 and 90V. If it is too low or too high, adjust the MAX potentiometer accordingly.

⇒ **NOTE**

Note the location of the horsepower resistor in Figure 5-8. It should be a 0.1Ω resistor.

CAUTION

Do not operate the heat press without the correct horsepower resistor in place. An improper resistor damages the circuit board.

6. Turn the **SPEED ADJUST** on the control panel to the full counter clockwise position.
7. Press the footswitch and monitor the output voltage to the motor from terminals A+ and A-. Adjust the MIN potentiometer until the roll begins to turn.
8. Turn the MIN potentiometer back to the point where there is no output voltage going to the motor. There should be no voltage going to the motor when the **SPEED ADJUST** is set to the full counterclockwise position (minimum speed).
9. Check the MAX setting again to see if it is within tolerance. If not, repeat this procedure until MIN and MAX settings are within tolerance.
10. The IR, CL, and ACC potentiometers are factory set. See Figure 5-8 for typical settings.
11. Replace the cabinet cover.

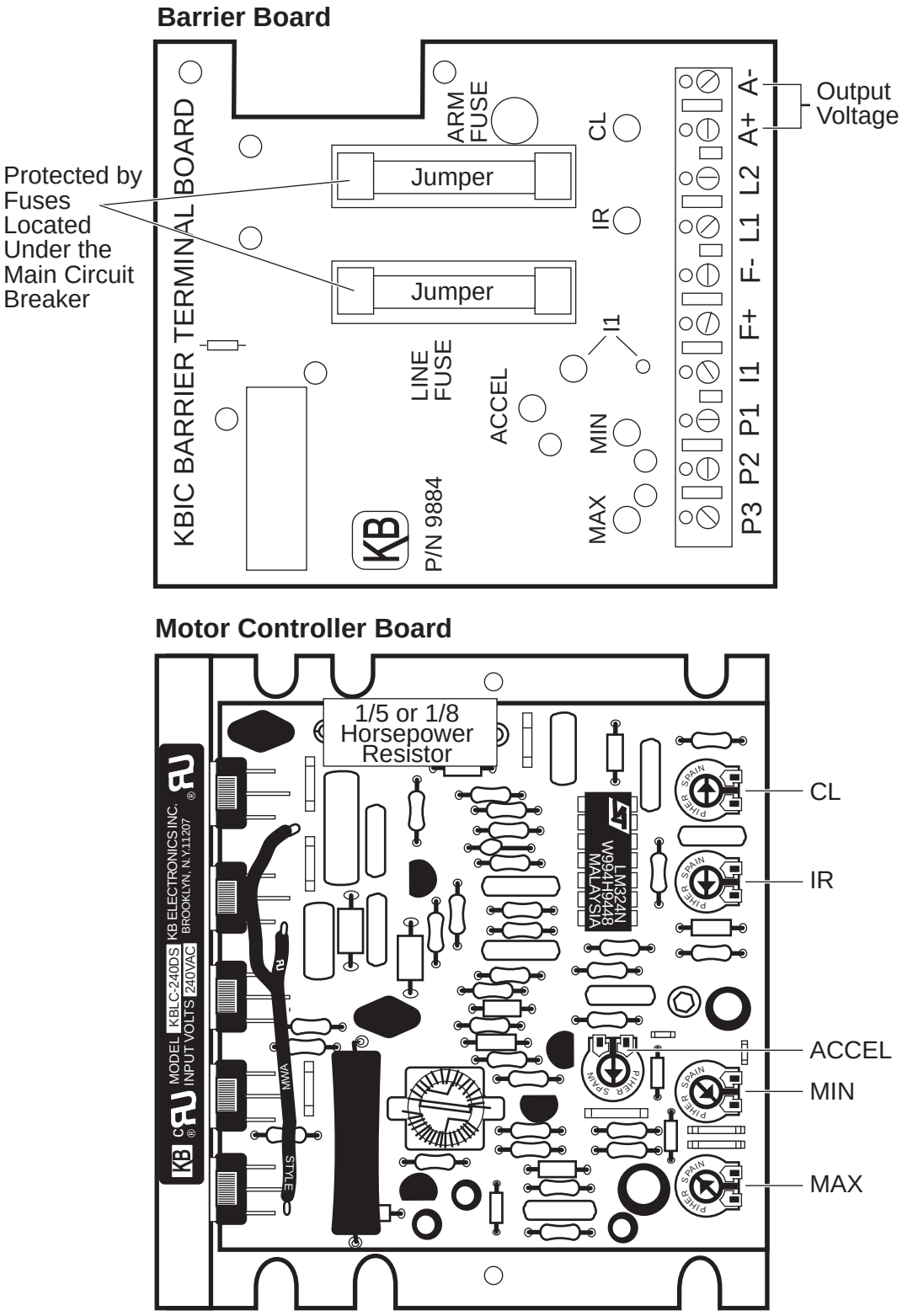

Figure 5-8: Barrier Board and Motor Controller Board Showing Default Setting

Heater Control Programming

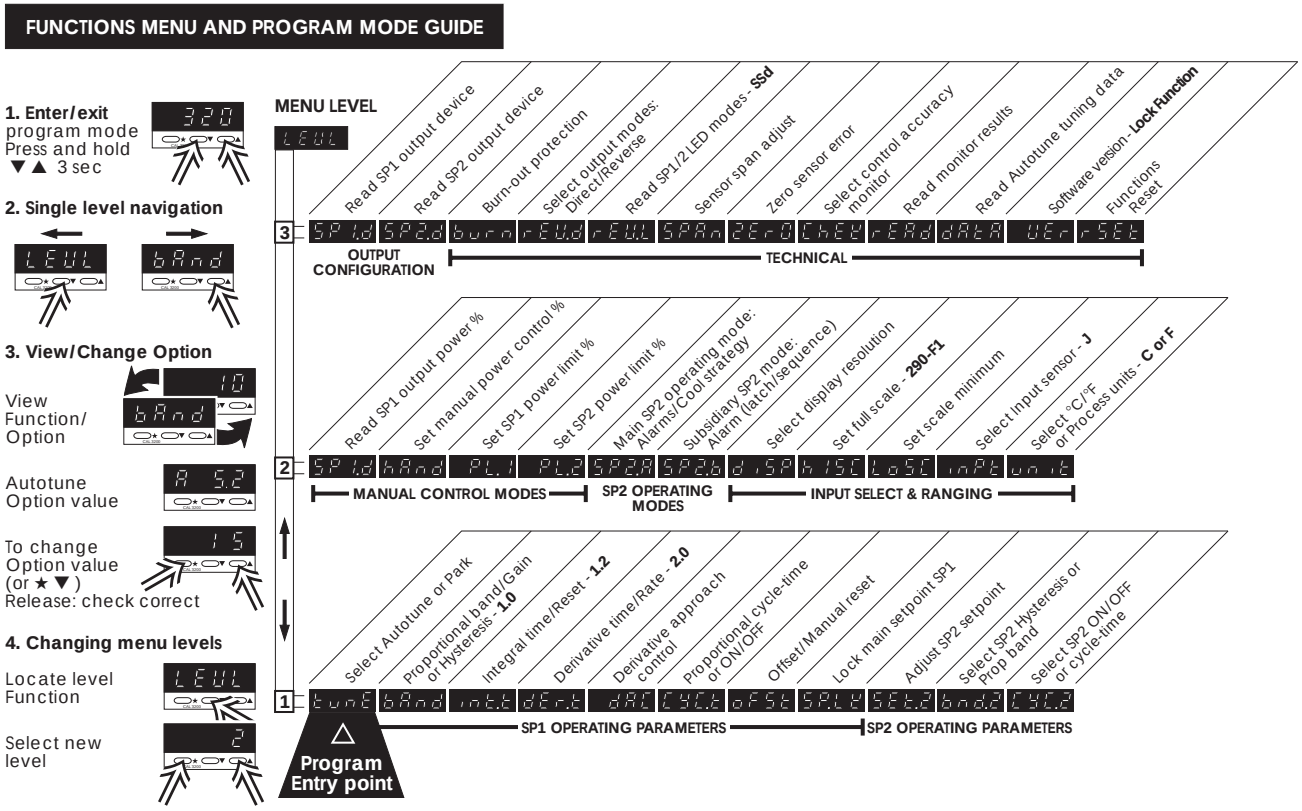

Figure 5-9: *Heater Control Menu and Program Mode Guide*

1. Press the up and down buttons simultaneously until **LEVL** appears. The commands **LEVL** and **5** flash back and fourth.
2. Press the up or down button until **inPt** appears. The commands **inPt** and **nonE** flash back and forth.
3. Press and hold the star button while pressing the up or down button until **tcJ** appears. (If you accidentally pass **tcJ**, use the up or down button to return to it.) The commands **inPt** and **tcJ** flash back and forth.
4. Press the up or down button until **unit** appears. The commands **unit** and **nonE** flash back and forth.
5. Press and hold the star button and press the up or down button until **°F** appears. The commands **unit** and **°F** flash back and forth.
6. Press the up or down button until **SP1.d** appears. **SP1.d** and **nonE** flash back and forth.
7. Press and hold the star button while pressing the up or down button until **SSd** appears. The commands **SP1.d** and **SSd** flash back and forth.
8. Press the up or down button until **LEVL** appears.
9. Press and hold the star button and press the up or down button until **1** appears. The commands **LEVL** and **1** flash back and forth.
10. Press the up or down button until **bAnd** appears.
11. Press and hold the star button and press the up or down button until **25** appears. The commands **bAnd** and **25** flash back and forth.
12. Press the up or down button until int.t appears. The commands **int.t** and **5.0** flash back and forth.
13. Press and hold the star button and press the up or down button until **20** appears. The commands **int.t** and **20** flash back and forth.

14. Press the up or down button until **dEr.t** appears. The commands **dEr.t** and **25** flash back and forth.
15. Press and hold the star button and press the up or down button until **70** appears. The commands **dEr.t** and **70** flash back and forth.
16. Press the up or down button until **LEVL** appears. The commands **LEVL** and **1** flash back and forth.
17. Press and hold the star button and press the up or down button until **2** appears. The commands **LEVL** and **2** flash back and forth.
18. Press the up or down button until **hi.SC** appears. The commands **hi.SC** and **1472** flash back and forth.
19. Press and hold the star button and press the up or down button until **270** appears. The commands **hi.SC** and **270** flash back and forth.
20. Press the up or down button until **LEVL** appears. The commands **LEVL** and **2** flash back and forth.
21. Press and hold the star button and press the up or down button until **3** appears. The commands **LEVL** and **3** flash back and forth.
22. Press the up or down button until **VER** appears. The commands **VER** and **2** flash back and forth.
23. While **VER** is displayed, press both the up and down button at the same time (make sure you press them when the panel displays **VER** and not **2**). Hold the buttons down until **LOCK** appears (about 10 seconds). The commands **LOCK** and **nonE** flash back and forth.
24. Press and hold the star button and press the up or down button until **ALL** appears. The commands **LOCK** and **ALL** flash back and forth.
25. Press the up or down button until **PARK** appears.
26. Press and hold the star button and press up or down button until a number appears. That number is the temperature of the roll.

Pressure Sensor Adjustment

The pressure sensor on the DS-60 Heat Press monitors the pressure between the two main rolls.

Tools required:

- $^{5}/_{32}$" hex wrench

To align the pressure sensor:

1. Remove the control side cabinet cover (See page 5-1).
2. Loosen the magnet bracket using the $^{5}/_{32}$" hex wrench. If the magnet requires replacement, you can remove the entire magnet bracket and replace it now.
3. Move the bracket until the bottom of the top "tooth" aligns with the bottom of the sensor plug as shown in Figure 5.9. There should be a $^{1}/_{8}$" gap between the "tooth" and the sensor plug.

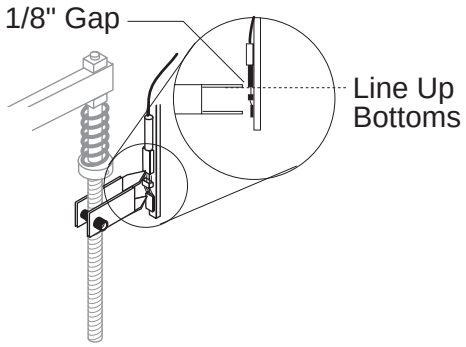

Figure 5-10: Aligning the Pressure Sensor

4. Tighten the magnet bracket.
5. Replace the cabinet cover.

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Section 6 : Maintenance

Performing regular maintenance on the DS-60 Heat Press is critical to the proper operation of the machine. A maintenance schedule and a section of procedures for disassembling and reassembling the serviceable areas of the heat press are included in this section.

Table 6-1: Maintenance Schedule

Daily	• Clean the rolls • Adjust the thermocouple • 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

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 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 and control side cabinet covers using the $^1/_8$" hex wrench by removing the ten screws holding each cover in place.
2. Using the grease gun, lubricate each grease fitting with one squirt of high temperature grease.
3. Apply a small amount of high temperature grease to the worm gear.
4. Lubricate the chain using a soft cloth and automotive oil.
5. Replace the cabinet covers and reapply power to the heat press.

Cleaning

Tools required:

- 80% isopropyl alcohol (or dishwashing detergent)
- Several 100% 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 roll 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 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.

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.

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 cabinet nuts at the four bottom corners of the heat press. Thread third nut on stud above cabinet.
2. Thread studs into 4 leveling pads and 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 cabinet nuts to lock the pads in their current position.

Removing Flat Spots on the Main Rolls

Main rolls will develop a flat spot if the operator forgets to raise the upper main roll when the heat press is not in operation.

CAUTION

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

To remove a flat spot on a main roll:

1. Set the top roll temperature to 255ºF (124ºC).
2. Set the speed to the slow speed setting.

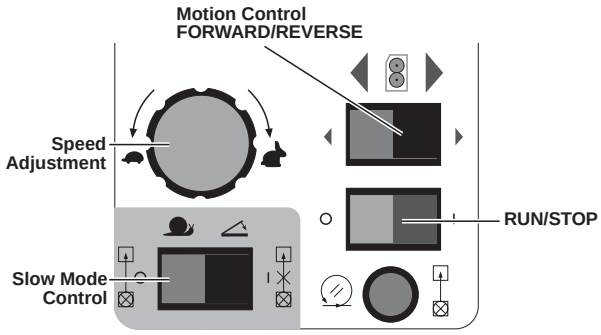

Figure 6-1: Speed and Motion Controls

3. Using the main roll lift crank, lower the main roll to a pressure of 0-90%.
4. Allow the heat press to run for 4 to 5 hours.

WARNING

Do not leave the heat press unattended while it is running. There is a possibility of fire or overheating which can melt the silicone coating on the rolls and cause serious outgassing.

Disassembly/Reassembly Instructions

The following procedures guide you through disassembly and reassembly of the serviceable parts of the heat press.

WARNING

Remove power from the heat press and make sure it won't be reapplied while you are servicing the heat press. You can be severely shocked, electrocuted or cause a fire. MAKE SURE NO ONE CAN REAPPLY POWER TO THE HEAT PRESS WHILE YOU ARE WORKING.

WARNING

Do not attempt to service the heat press if it is still hot. You can be severely burned. Remove power and allow it to cool.

Drive and Rewind Chains

Tools required:

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

To remove the chains:

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 (see page 5-1).
2. Back the automatic tensioner off rewind chain.
3. Loosen the four bolts that hold the motor to the frame using the $^{3}/_{16}$" hex wrench, lift the motor and tighten the bolts. This loosens the chain.
4. Locate and remove the master links and release the chains.
5. Remove the chains.

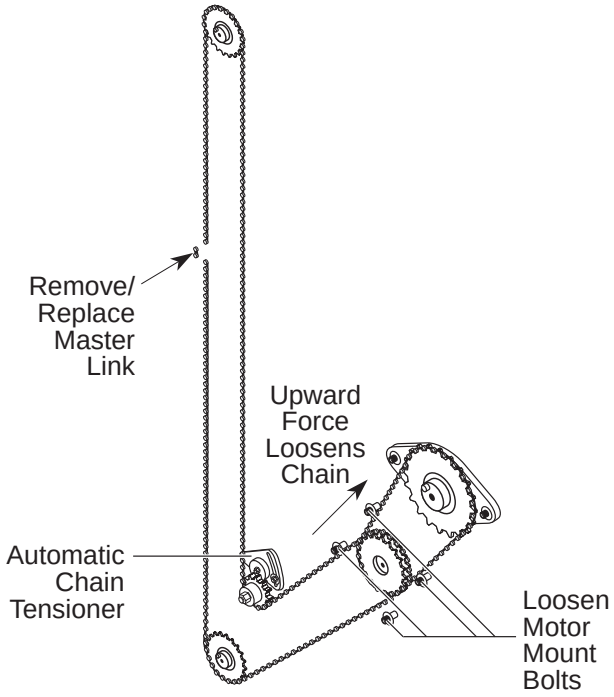

Figure 6-2: Removing/Replacing the Chains

To reinstall the chains:

1. Thread each chain around the sprockets.
2. Replace the master link.
3. Adjust the chain tension using the procedure in Section 5. (This may need to be done regularly for the first month.)
4. Replace the cabinet cover.

Sprockets

There are five types of sprockets on the DS-60 Heat Press:

- Rewind sprocket (2)
- Motor sprocket (1)
- Main roll sprocket (1)
- Automatic chain tensioner (1)

The assembly illustrations show how each type of sprocket is constructed. Instructions for assembling and disassembling the automatic chain tensioner are not included here.

Tools required:

- $^1/_8$" hex wrench
- $^3/_8$" hex wrench

To disassemble a rewind sprocket:

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 (see page 5-1).
2. Loosen the drive chain by loosening the four bolts holding the motor to the frame using the $^3/_{16}$" hex wrench.
3. The rewind sprockets are bolted directly to the heat press. To remove the a rewind sprocket, remove the bolt holding the sprocket on.

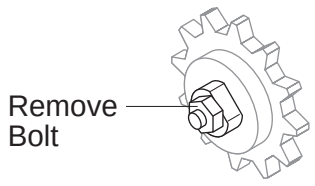

Figure 6-3: Removing a Rewind Sprocket

4. Remove the rewind sprocket.

To reassemble a rewind sprocket:

1. Reassemble by following the disassembly instructions in reverse.
2. Replace the cabinet cover.

To disassemble the motor sprocket:

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.

Tools required:

- $^1/_8$" hex wrench
- $^3/_{16}$" hex wrench

1. Remove the drive side cabinet cover (see page 5-1).
2. Loosen the chain tensioner in the rewind chain loop to loosen the chain.
3. Loosen the drive chain by loosening the four bolts holding the motor to the frame using the $^3/_{16}$" hex wrench. Raise the motor to loosen the chain.
4. Loosen the two $^1/_8$" set screws on the motor sprocket.

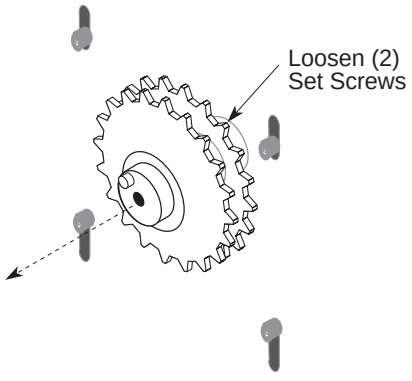

Figure 6-4: Removing the Motor Sprocket

5. Pull the sprocket off the motor, taking care not to lose the key stock.

To reassemble the motor sprocket:

1. Reassemble the motor sprocket by following the disassembly instructions in reverse order. Ensure that the sprocket alignment is correct before tightening set screws.
2. Replace the cabinet cover.

To disassemble the main roll sprocket:

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.

Tools required:

- $^{1}/_{8}$" hex wrench
- $^{5}/_{32}$" hex wrench
- $^{7}/_{16}$" open end wrench
- Screwdriver

1. Remove the drive side cabinet cover (see page 5-1).
2. Loosen the chain tensioner in the rewind chain loop to loosen the chain.
3. Loosen the drive chain by loosening the four bolts holding the motor to the frame using the $^{3}/_{16}$" hex wrench. Raise the motor to loosen the chain.
4. Disconnect the heater wire and remove the heater bracket. (See the procedure for removing the main rolls later in this section if you are unsure how to do this.)
5. Remove the main drive sprocket by removing the two bolts that secure it and inserting one of them into the threaded hole in the bushing. Use the screwdriver as a lever to keep the assembly from turning as you tighten the bolt into the bushing, which will be forced out and separated from the sprocket.

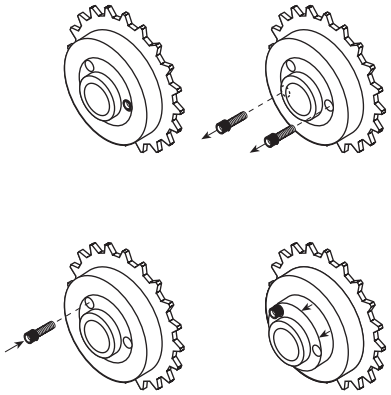

Figure 6-5: Removing the Main Roll Sprocket

6. Remove the main roll sprocket.

To reassemble the main roll sprocket:

1. Put the sprocket onto the shaft.
2. Put the bushing on the shaft and use the two bolts to pull the bushing into the sprocket. Be sure to tighten the bolts evenly to "lock" the bushing snugly into the sprocket.
3. Replace the chain.
4. Measure the distance between each sprocket and the side frame of the heat press. Make sure the distances are all the same. Recheck these distances after all the screws are tightened to ensure proper alignment.
5. Tighten the chains using the chain tensioning instructions in this section.
6. Replace the cabinet cover.

Motor

Tools required:

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

To remove the motor:

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 (see page 5-1).
2. Remove the motor sprocket. (See the *Sprockets* procedure earlier in this section.)
3. Disconnect the three wires (green, black and white) from the terminal block.
4. Loosen the strain relief and pull the wires through it.
5. Support the motor as you remove the four bolts holding the motor to the frame using the $^{3}/_{16}$" hex wrench.

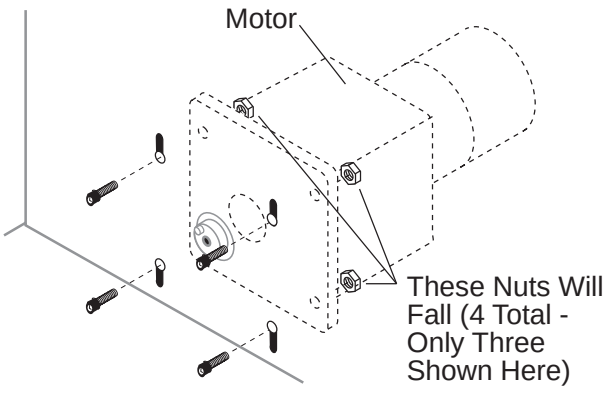

Figure 6-6: Removing the Motor

6. There are four nuts on the motor that will fall as you lift it away from the frame.

To replace the motor:

Reinstall the motor by following the disassembly instructions in reverse order.

Control Board

Tools required:

- $^{3}/_{32}$" hex wrench

To remove the control board:

1. Remove the control side cabinet cover (see page 5-1).
2. Unplug the connector at the bottom of the board.
3. Remove the four $^{3}/_{32}$" bolts holding the control board to the side of the heat press.

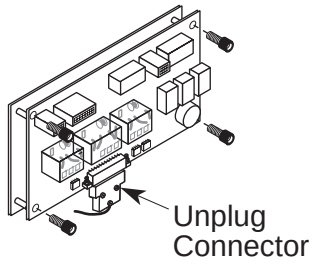

Figure 6-7: Removing the Control Board

Circuit Breaker

Tools required:

- $^{1}/_{8}$" hex wrench
- Straight slot screwdriver

To remove a circuit breaker:

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 control side cabinet cover (see page 5-1).

2. Remove the linking shaft from the circuit breaker switch handles by removing the clip at one end of the shaft and sliding the shaft out. Be sure to catch the white plastic spacers (2) as the shaft is removed.
3. Remove the screws holding the circuit breaker from the fuse panel.
4. Pull the circuit breaker back away from the cabinet.
5. Cut the heat shrink tubing from the wires on the circuit breaker.
6. Remove the wires using the straight slot screwdriver.

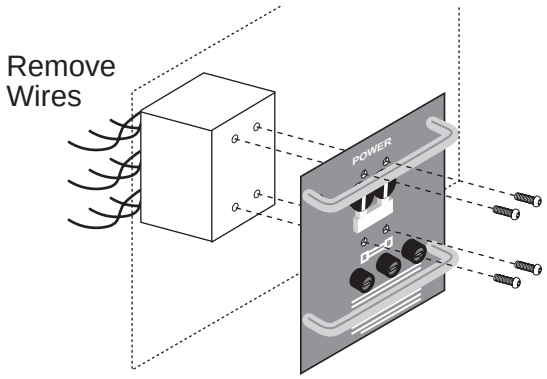

Figure 6-8: Removing the Circuit Breaker

To replace a circuit breaker:

Reinstall the circuit breaker by following the disassembly instructions in reverse order.

Thermocouple

Tools required:

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

To remove a thermocouple:

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 control side cabinet cover (see page 5-1).
2. Disconnect the two thermocouple wires attached to the heater controller.
3. Remove the two screws securing the thermocouple to the rod.
4. Pull the wires out of the tube and remove the thermocouple.

To replace a thermocouple:

Reinstall the thermocouple by following the disassembly instructions in reverse order. Be sure to realign the new thermocouple using the procedure in Section 5.

CAUTION

Thermocouple leads are fragile and can be damaged by kinks or scrapes.

Motor Controller Board

Tools required:

- $^{1}/_{8}$" hex wrench
- $^{5}/_{32}$" hex wrench

To remove the motor controller board:

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 control side cabinet cover (see page 5-1).
2. Loosen and pull the barrier board out of the way. It is not necessary to disconnect the terminations to the board.
3. Remove the two bolts holding motor controller board to the frame using the $^{5}/_{32}$" hex wrench and remove the motor controller board and the mounting frame.

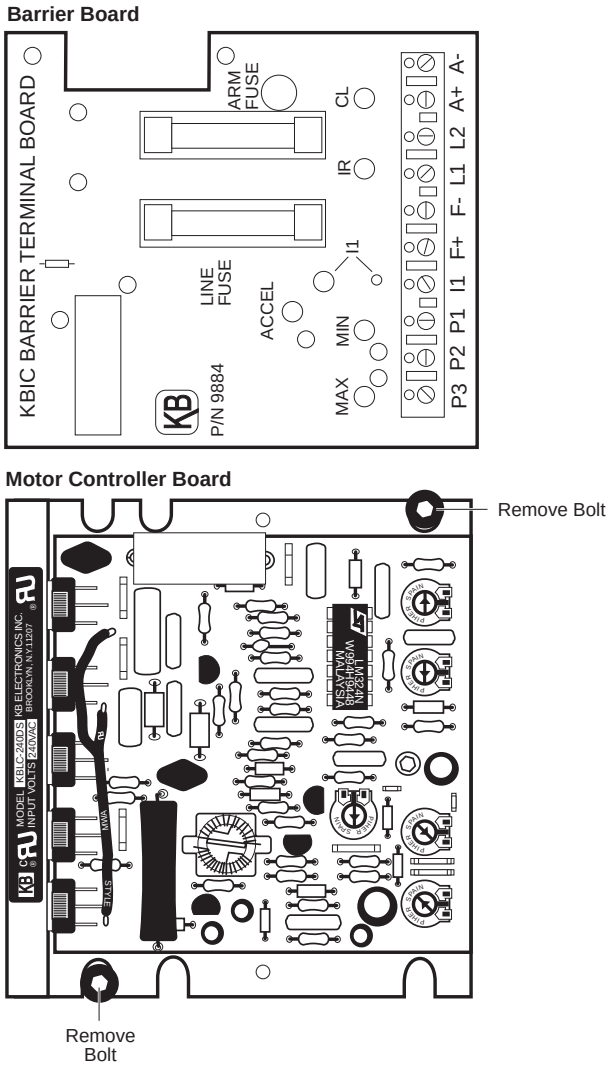

Figure 6-9: Barrier Board and Motor Controller Board

4. Reset the motor control potentiometers (see the *Motor Controller Board* procedure in *Section 5: Adjustments*).
5. If new motor controller board did not come with a horsepower resistor, remove the horsepower resistor from the old controller and install it in the new one.

To replace the motor controller board:

Reinstall the motor controller board by following the disassembly instructions in reverse order.

Control Panel Switches

Tools required:

- $^1/_8$" hex wrench

To remove a control panel switch:

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 control side cabinet cover (see page 5-1).
2. Pull back on the green tab and disconnect the connector.
3. Remove the plastic frame.
4. Pull the switch through the front of the control panel.

To replace a control panel switch:

Replace the control panel switch by following the disassembly instructions in reverse order.

Heater Controller

Tools required:

- none

To remove the heater controller:

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 control side cabinet cover (see page 5-1).
2. Disconnect the wires to the heater controller. The terminal strip will come off the temperature controller without removing the wires. Slide the green locking tab back and lift the terminal block off the temperature controller.
3. Squeeze the black tabs on the retainer and pull the temperature controller out through the front of the control panel.

To replace the heater controller:

1. Push the heater controller through the front of the control panel. Attach and secure retainer.
2. Reconnect the wires using the old controller as a guide.

Heater

Tools required:

- $^{5}/_{32}$" hex wrench
- $^{3}/_{16}$" hex wrench

To remove a heater:

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 control and drive side cabinet covers (see page 5-1).
2. Remove the barrier tubing from both heater ends and disconnect the wires.
3. Remove the heater wires using the $^{5}/_{32}$" hex wrench.
4. Loosen the set screw on either side of the heat press using the $^{3}/_{16}$" hex wrench.
5. Slide the heater out of the control side of the heat press.

Brakes

Tools required:

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

To disassemble a brake:

1. Loosen the top locking stud.
2. Loosen the lock collar set screw using the $^{3}/_{16}$" hex wrench and remove the lock collar.

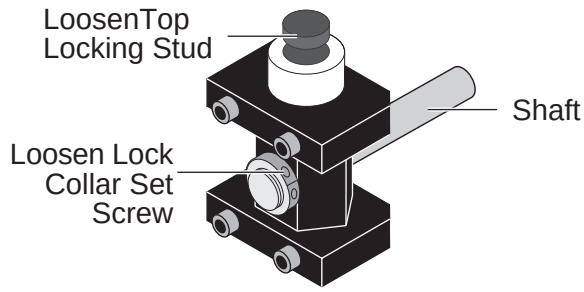

Figure 6-10: Loosening the Top Locking Stud and Removing the Lock Collar

3. Remove the two bolts from the top plate using the $^{3}/_{8}$" hex wrench. (The bottom unwind requires the removal of the electrical panel mounting bolts. Note where the ground wire is attached to the panel and then swing it out of the way.)
4. Remove the top plate and hex pivot pin.

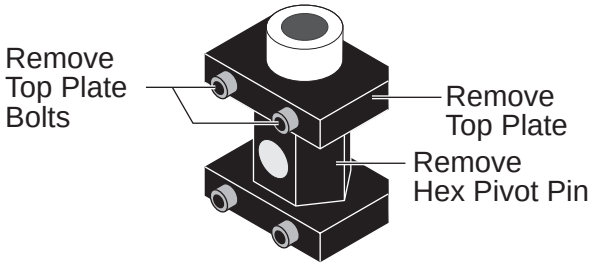

Figure 6-11: Removing the Top Plate and Hex Pivot Pin

To reassemble a brake:

1. Make sure that the two bushings are firmly seated in the new pivot pin.
2. Grease the area around the hex pivot pin in the two areas shown in the following figure.

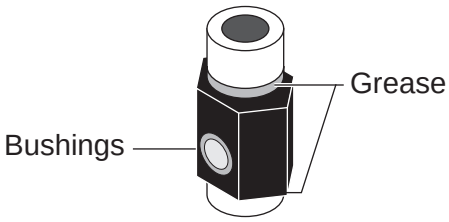

Figure 6-12: Greasing the Hex Pivot Pin

3. Install the top plate and pivot pin into the bottom plate. Make sure that the thrust washer is between the pin and the bottom plate. Nickel plated brackets do not have thrust washers.
4. Slide the assembled brake mechanism into the pivot pin. The bottom unwind may require removal of the knob while installing the brake.

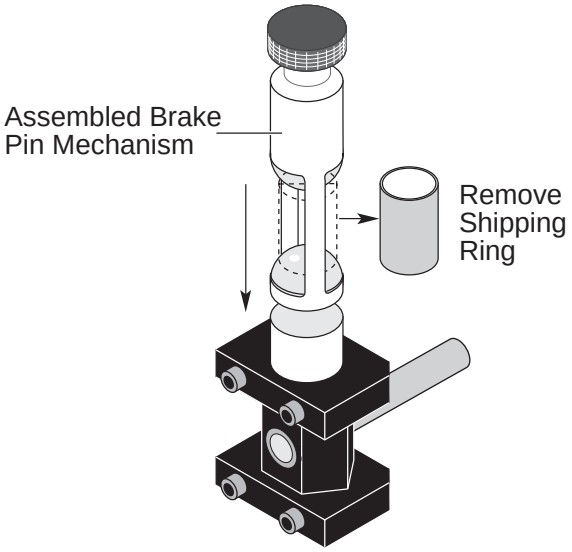

Figure 6-13: Assembling the Brake

5. Secure the brake assembly to the heat press with two bolts using the $^{3}/_{8}$" hex wrench.
6. Examine the shaft for marks or scratches that could cause rapid deterioration and premature failure of the brake pads.
7. Being careful not to let the top brake pad, springs and piston fall from the brake, loosen the knob several turns.
8. Remove the shipping ring from the inside of the new brake assembly (cardboard tube).
9. While holding the brake assembly with the top pad, slide the shaft through the bushings and the brake pads. (This may be easier with two people.)

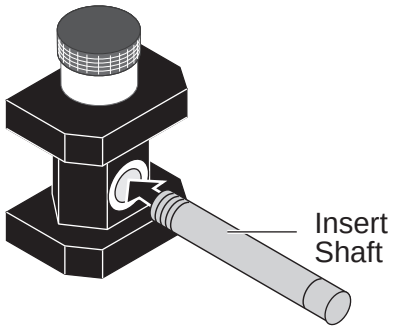

Figure 6-14: Installing the Brake on the Shaft

10. Seat the bushing firmly against the shaft.
11. Spin on the lock collar until it is snug against the bushing. Tilt the shaft up and down as you are spinning it on. Back off ¼" turn and tighten the set screw.
12. Swing the shaft into normal operating position. With the adjustment knob loose the shaft should spin freely. If it does not, loosen the lock collar another 1/8 turn and recheck the shaft for smooth rotation.

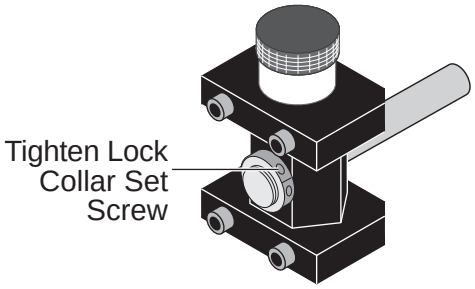

Figure 6-15: Seating the Brake and Tightening the Set Screw

Main Rolls

Tools required:

- $^{1}/_{8}$" hex wrench
- $^{5}/_{32}$" hex wrench
- $^{9}/_{64}$" hex wrench
- $^{3}/_{8}$" hex wrench
- $^{3}/_{16}$" hex wrench

To disassemble the main rolls:

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 and control side cabinet covers (see page 5-1).
2. Remove the heater and heater brackets (see the procedure earlier in this section).
3. Place foam between the main rolls and lower the upper main roll.
4. Using the $^{9}/_{64}$" hex wrench, loosen the black lock collar and move it down to relieve pressure on the spring. Repeat for the other side.

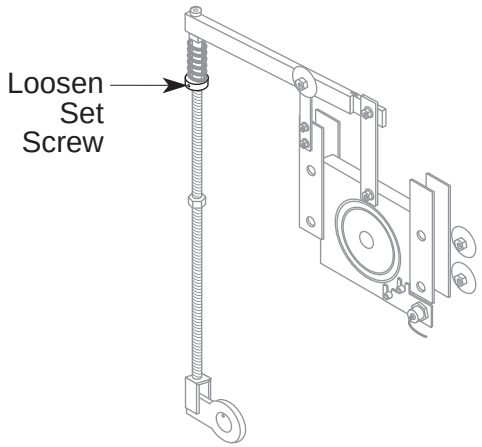

Figure 6-16: Loosening the Set Screw on the Lock Collar

5. Remove the upper shoulder bolt using a $^{3}/_{16}$" hex wrench. Secure the rod with an adjustable wrench on the central nut while you loosen the upper shoulder bolt. Repeat for the other side.

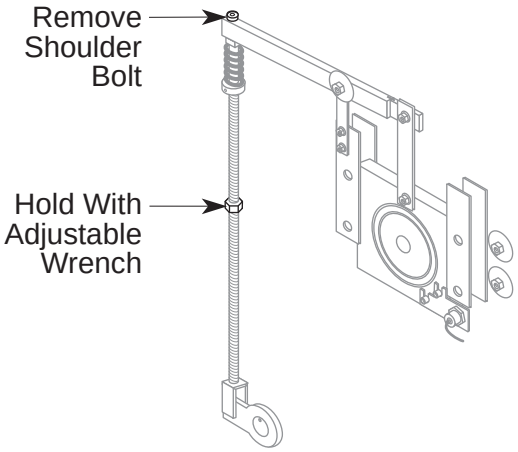

Figure 6-17: Removing the Upper Shoulder Bolt

6. Remove the arm nut using a $^{3}/_{16}$" wrench. Repeat for the other side.

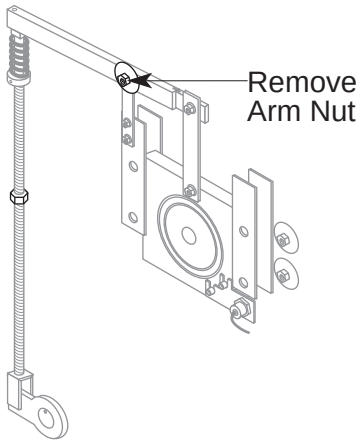

Figure 6-18: Removing the Arm Nut

7. Remove the bolts securing the ways to the side of the heat press. Repeat for the other side.

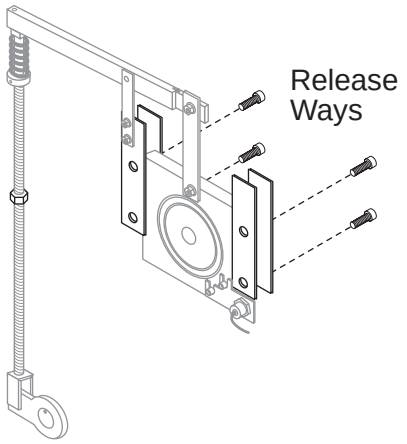

Figure 6-19: Releasing the Ways

8. Slide the lifter assembly out, keeping the assembly together. Repeat for the other side.
9. Remove the side roll end covers.
10. Lift the upper main roll out of the front of the heat press.

⇒ **Note**

If you are replacing only the top roll, go to the reassembly procedure. If you are replacing both rolls, continue with this procedure.

11. Remove the drive chain (see the procedure earlier in this section).
12. Remove the main roll sprocket (see the procedure earlier in this section). Repeat for the other side.
13. Remove the two $^{5}/_{32}$" set screws that hold the bearing to the journal. Repeat for the other side.
14. Unbolt both flanged bearings using $^{3}/_{8}$" hex wrench and remove.

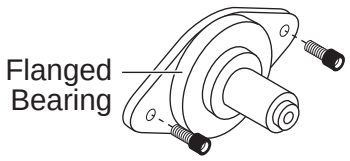

Figure 6-20: Removing the Flanged Bearings

CAUTION

When you remove both bearings, the table bracket is released and will pivot down.

15. Remove the side roll end covers.
16. Lift the lower main roll out the front side of the heat press.

To reassemble the main rolls:

Reinstall the main rolls by following the disassembly instructions in reverse order. Be sure to put a light coat of grease on the shoulder bolt and the ways before replacing the lifter assembly.

Section 7 : Principle of Operation

Mechanical

The DS-60 Heat Press is equipped with two main rolls.

Main Rolls

The lower main roll is silicone coated. The upper roll is raised and lowered via mechanical crank. This roll is free rolling and is not connected to the drive system. The lower main roll is fixed and cannot be moved or adjusted. It is connected to a sprocket that is driven by the motor via a chain.

Electrical

Motor

The heat press motor controls are located on the control panel on the front of the machine. Main power to the heat press is controlled by the circuit breaker on the back of the machine. When power is supplied to the motor it is activated when the **AUTO/STOP** switch is set to **AUTO** or when it is set to **STOP** and the footswitch is pressed. The motor direction is controlled by the **FWD/REV** switch. The **SPEED ADJUST** switch controls the speed of the motor.

The motor stops running when the **AUTO/STOP** switch is set to **STOP** and the footswitch is not being pressed. In an emergency, the motor can immediately be stopped by either emergency stop button located on either side of the top of the heat press. The motor also stops when the photoelectric eye is blocked.

Heater

The top roll heater is regulated by the heater controller on the control panel of the heat press.

When the heat press is on, the heater controller can be turned to activate the heater. The temperature of the rolls is sensed by the thermocouple. When the roll reaches the proper operating temperature as determined by the heater controller, the heater cycles off and on to maintain operating temperature.

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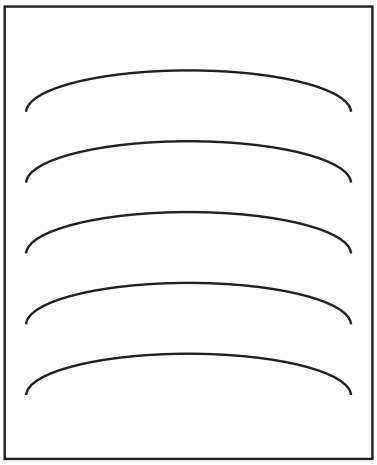
Section 8 : Troubleshooting

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.

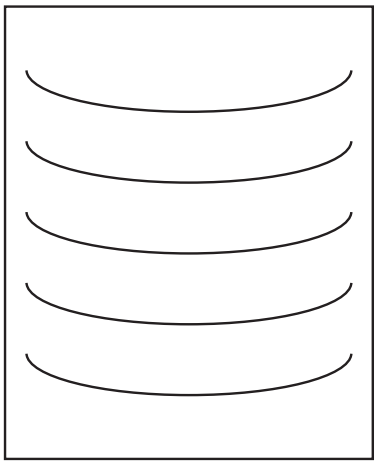
For film and application questions in North America, please call 1-800-236-8843. In Europe, please call: +44 (0) 1844 202 440 or fax: +44 (0) 1844 202 441.

Output Troubleshooting Guide



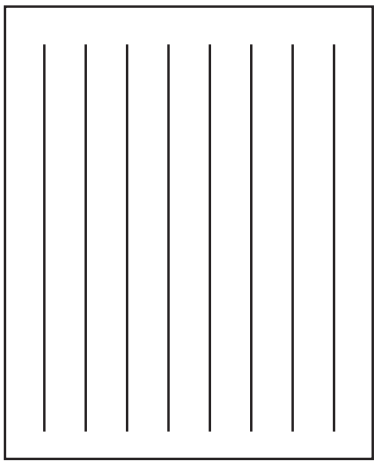
Problem:
D waves

Hints:
- Check paper tension.
- Check relative moisture content of the paper.



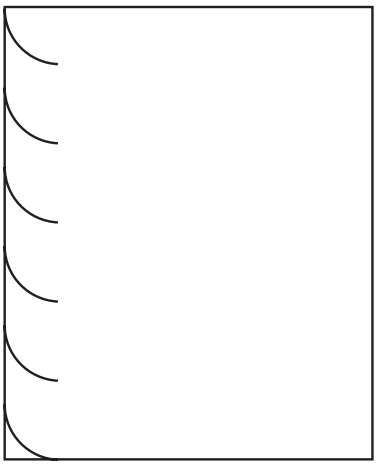
Problem:
D waves

Hints:
- Increase clutch tension.
- Check roll pressures.
- Check nip settings.



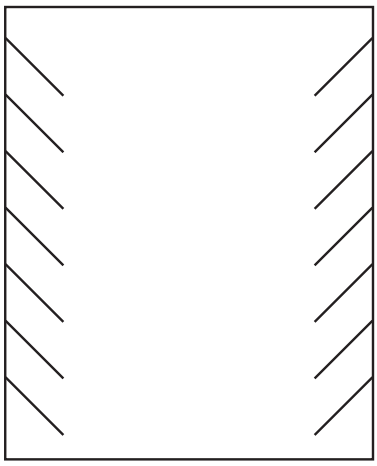
Problem:
Straight waves in the output.

Hints:
- Decrease clutch tension.
- Check operational settings for materials being used.



Problem:
Waves on only one side of the output.

Hints:
- Check nip settings.
- Check for even paper tension.



Problem:
Angled waves on the output.

Hints:
- Check for insufficient clutch tension.
- Check for insufficient main roll pressure

Other Common Problems:

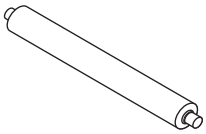
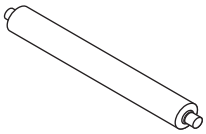
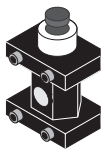
Problem:
Blistering in the image.

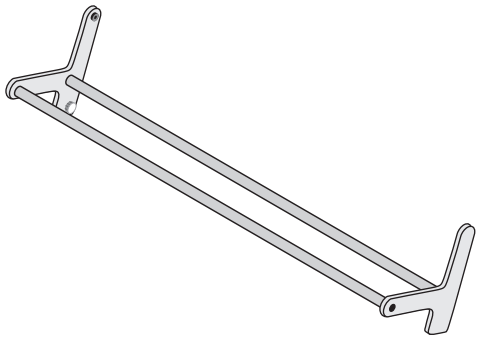
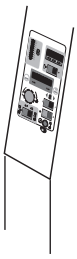
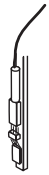
Hints:
- Increase speed or lower the operating temperature.

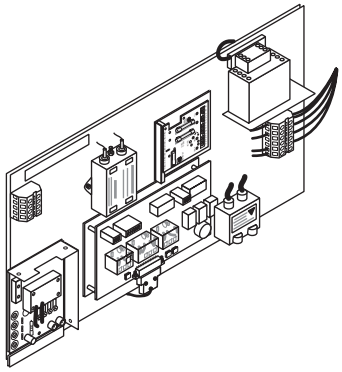
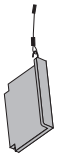
Problem:
Longitudinal waves or stuttering, jerking, or excessive noise from the drive side of the laminator.

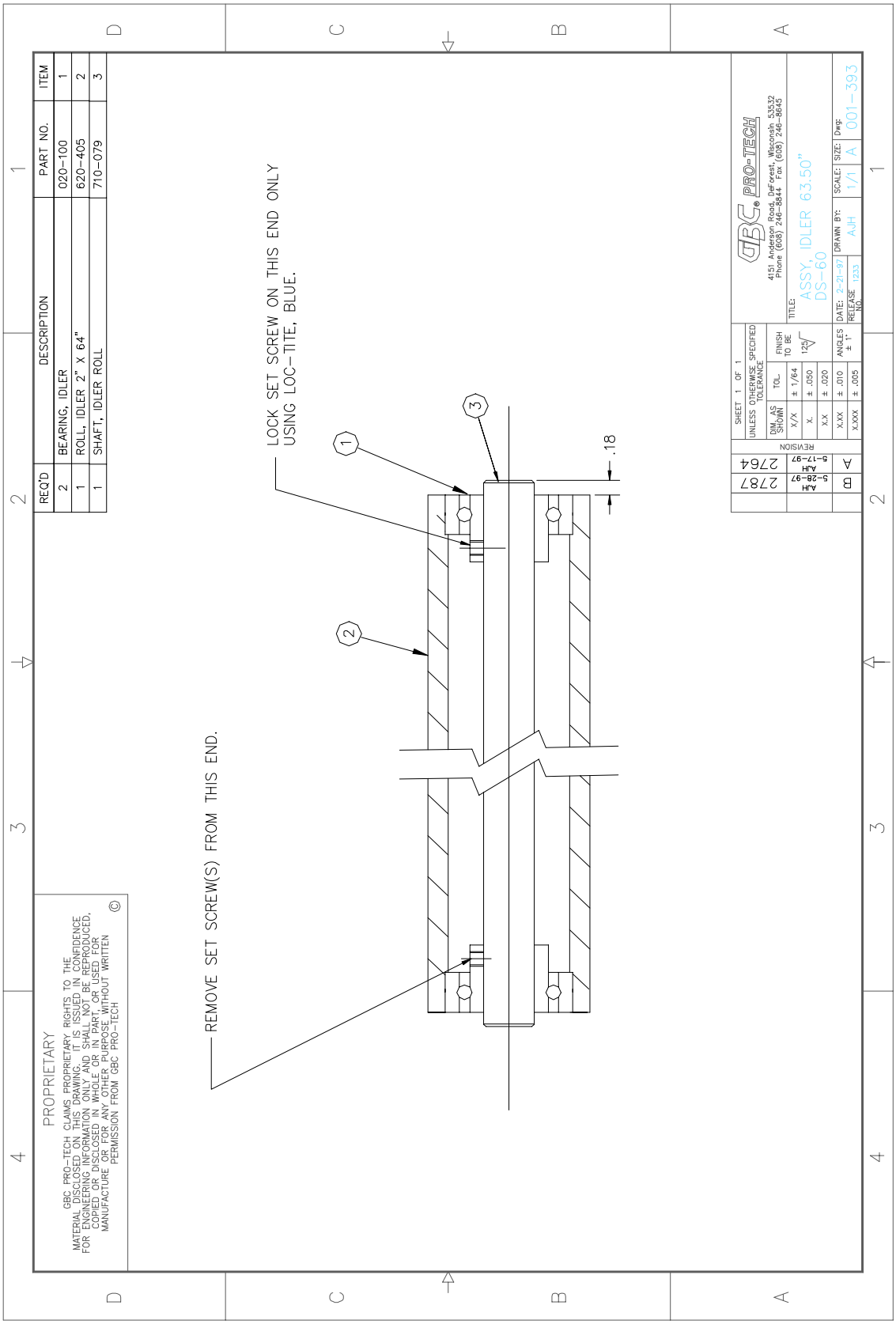
Hints:
- Increase chain tension, decrease unwind brake tension.

Section 9 : Illustrated Parts List

Part Name	Part Number
Accessory Pack *See page 3-4 for the list of included accessories.*	001-451
Safety Label Kit 	001-230
Power Cable Assembly 	001-173 (Assembly on page 9-4)
63.5" Idler Assembly 	001-393 (Assembly on page 9-5)
65" Idler Assembly 	001-394 (Assembly on page 9-6)
Brake Assembly 	001-396 (Assembly on page 9-7)

Pivot Rolls Assembly 	001-397 (Assembly on page 9-8)
Guard Assembly	001-409 (Assembly on page 9-9)
Front Panel Assembly 	001-421 (Assembly on page 9-10)
Adjustable Chain Idler Assembly 	001-428 (Assembly on page 9-11)
Drive Rewind Assembly 	001-432 (Assembly on page 9-12)
Force Sensor Assembly 	001-435 (Assembly on page 9-13)
Magnet/Force Sensor Assembly 	001-437 (Assembly on page 9-14)

Rewind Brake 	001-439 (Assembly on page 9-15)
Electrical Panel Assembly 	001-446 (Assembly on page 9-16)
Fan Assembly	001-453 (Assembly on page 9-17)
Core Chuck Quick Release Assembly 	001-457 (Assembly on page 9-18)
Lockout Cable 	130-001
Power Supply	245-205 (Assembly on page 9-19)


ITEM
PART NO.
DESCRIPTION
REQ'D
1
020-100
BEARING, IDLER
2
2
620-405
ROLL, IDLER 2" X 64"
1
3
710-079
SHAFT, IDLER ROLL
1
LOCK SET SCREW ON THIS END ONLY
USING LOC-TITE, BLUE.
REMOVE SET SCREW(S) FROM THIS END.
.18
1
2
3
GBC PRO-TECH
4151 Anderson Road, Dufrest, Wisconsin 53532
Phone (608) 246-8844 Fax (608) 246-8845
TITLE:
ASSY, IDLER 63.50"
DS-60
DRAWN BY:
AJH
SCALE:
1/1
SIZE:
A
Dwg:
001-393
DATE:
2-21-97
RELEASE NO.
1233
SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED TOLERANCE
DIM. AS SHOWN
TOL.
X/X
± 1/64
X.
± .050
X.X
± .020
X.XX
± .010
X.XXX
± .005
ANGLES
± 1°
FINISH TO BE
125
REVISION
A
5-17-97
AJH
2764
B
5-28-97
AJH
2787
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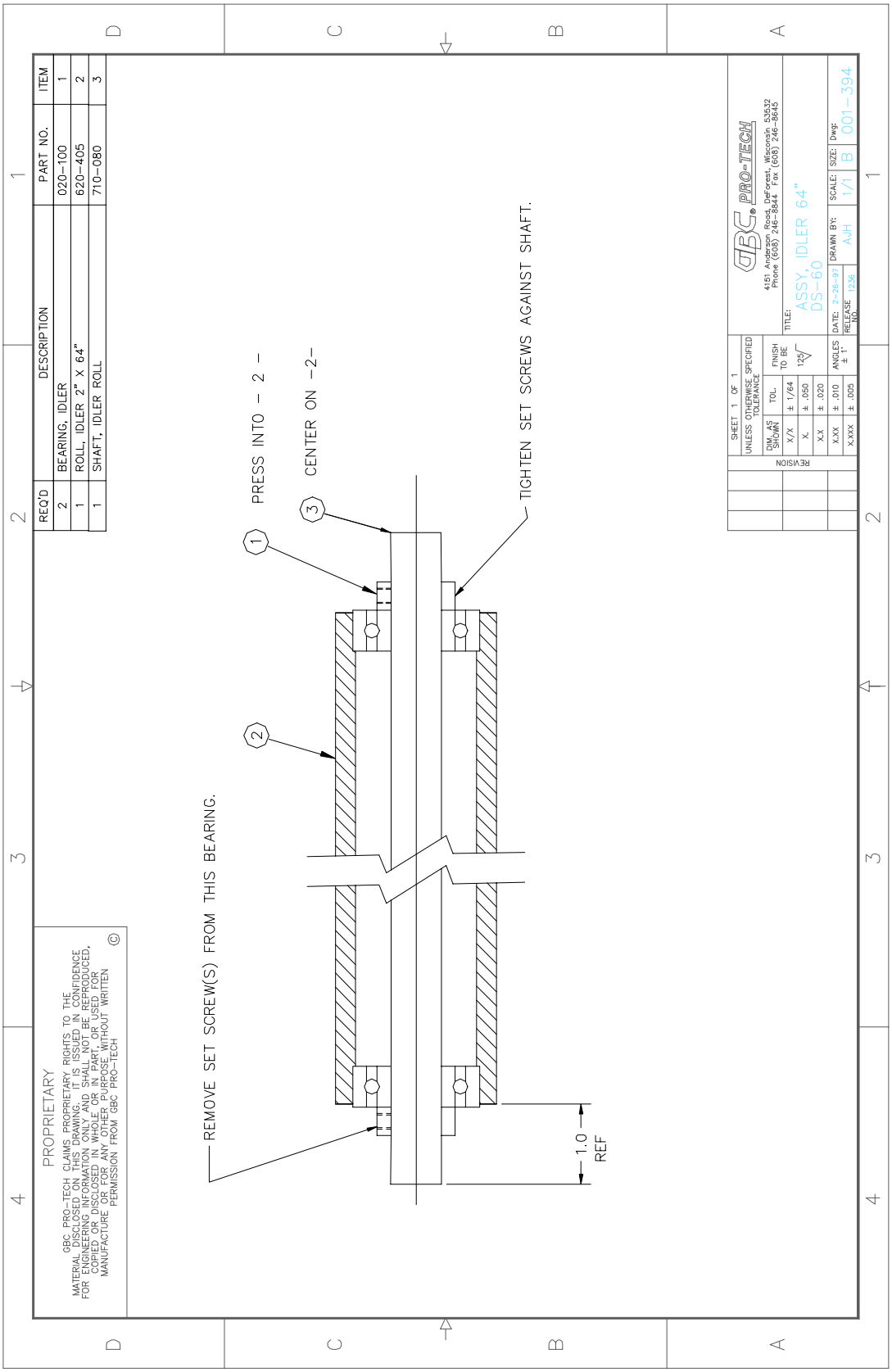
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DESCRIPTION
REQ'D
2
BEARING, IDLER
020-100
1
ROLL, IDLER 2" X 64"
620-405
2
SHAFT, IDLER ROLL
710-080
3
PRESS INTO - 2 -
CENTER ON -2-
TIGHTEN SET SCREWS AGAINST SHAFT.
REMOVE SET SCREW(S) FROM THIS BEARING.
1.0 REF
GBC PRO-TECH
4151 Anderson Road, DeForest, Wisconsin 53532
Phone (608) 246-8844 Fax (608) 246-8645
TITLE:
ASSY, IDLER 64"
DS-60
DRAWN BY: AJH
SCALE: 1/1
SIZE: B
Dwg: 001-394
DATE: 2-28-97
RELEASE NO. 1736
SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED TOLERANCE
DIM. AS SHOWN
X/X ± 1/64
X. ± .050
X.X ± .020
X.XX ± .010
X.XXX ± .005
ANGLES ± 1°
FINISH TO BE 125
REVISION
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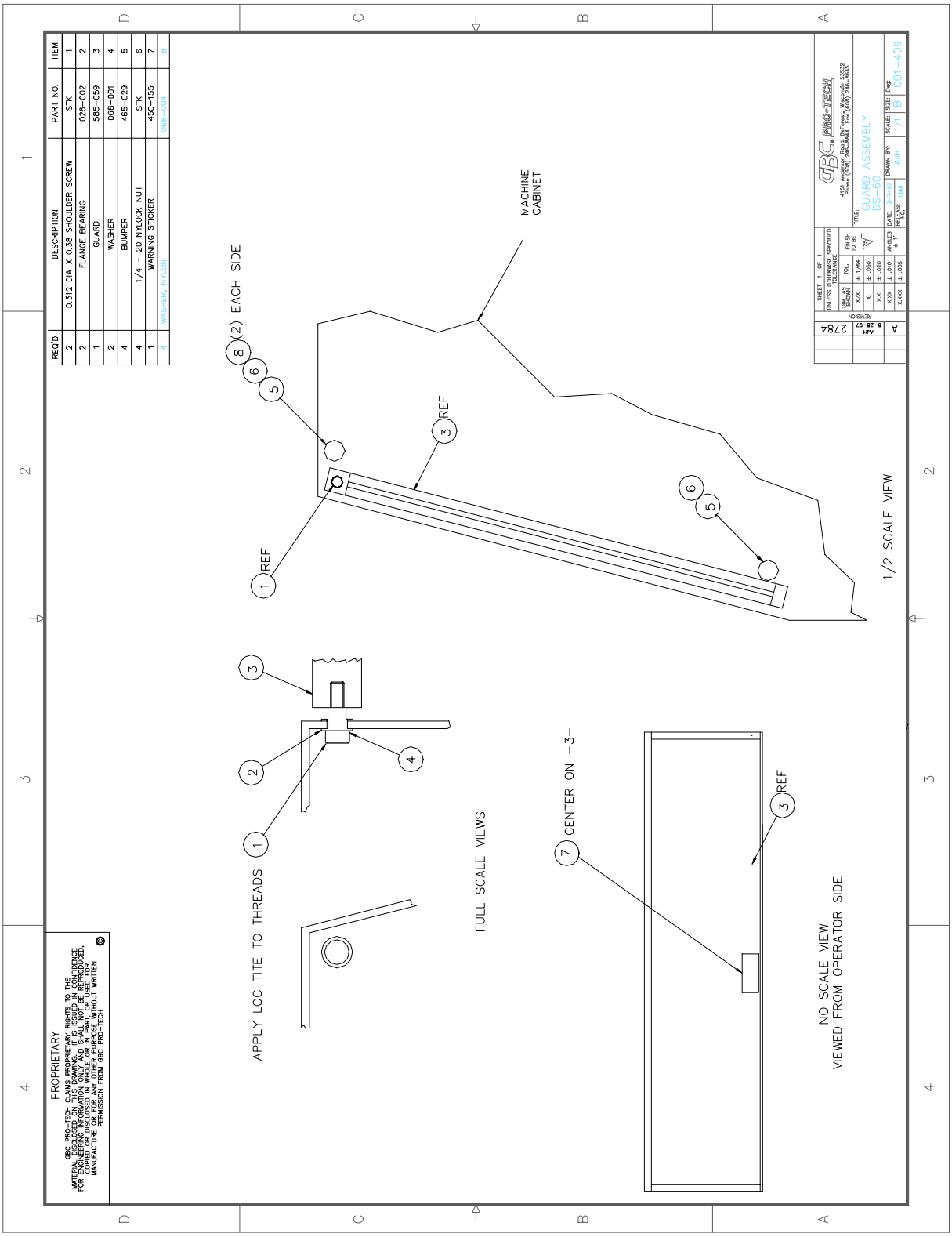
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REQ'D
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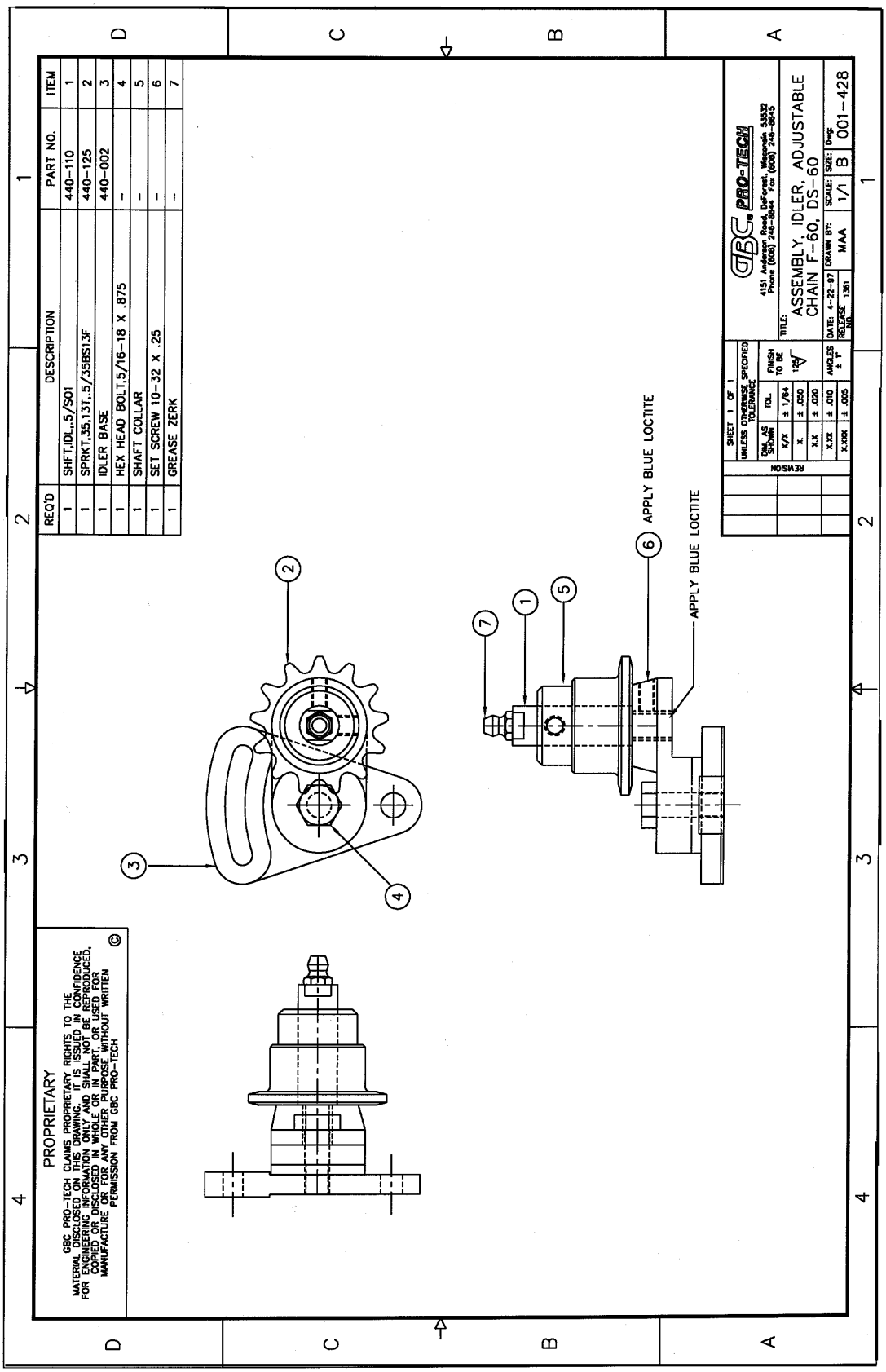
2 026-002 FLANGE BEARING 2
3 585-059 GUARD 1
4 068-001 WASHER 2
5 465-029 BUMPER 4
6 STK 1/4 - 20 NYLOCK NUT 4
7 450-155 WARNING STICKER 1
8 068-004 WASHER, NYLON 4
(2) EACH SIDE
MACHINE CABINET
REF
1/2 SCALE VIEW
APPLY LOC TITE TO THREADS
FULL SCALE VIEWS
CENTER ON -3-
NO SCALE VIEW
VIEWED FROM OPERATOR SIDE
PROPRIETARY
GBC PRO-TECH 1997 October 9-9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PART NO.
DESCRIPTION
REQ'D
1 440-110 SHFT,IDL,.5/SO1
2 440-125 SPRKT,35,13T,.5/35BS13F
3 440-002 IDLER BASE
4 - HEX HEAD BOLT,5/16-18 X .875
5 - SHAFT COLLAR
6 - SET SCREW 10-32 X .25
7 - GREASE ZERK
APPLY BLUE LOCTITE
APPLY BLUE LOCTITE
PROPRIETARY
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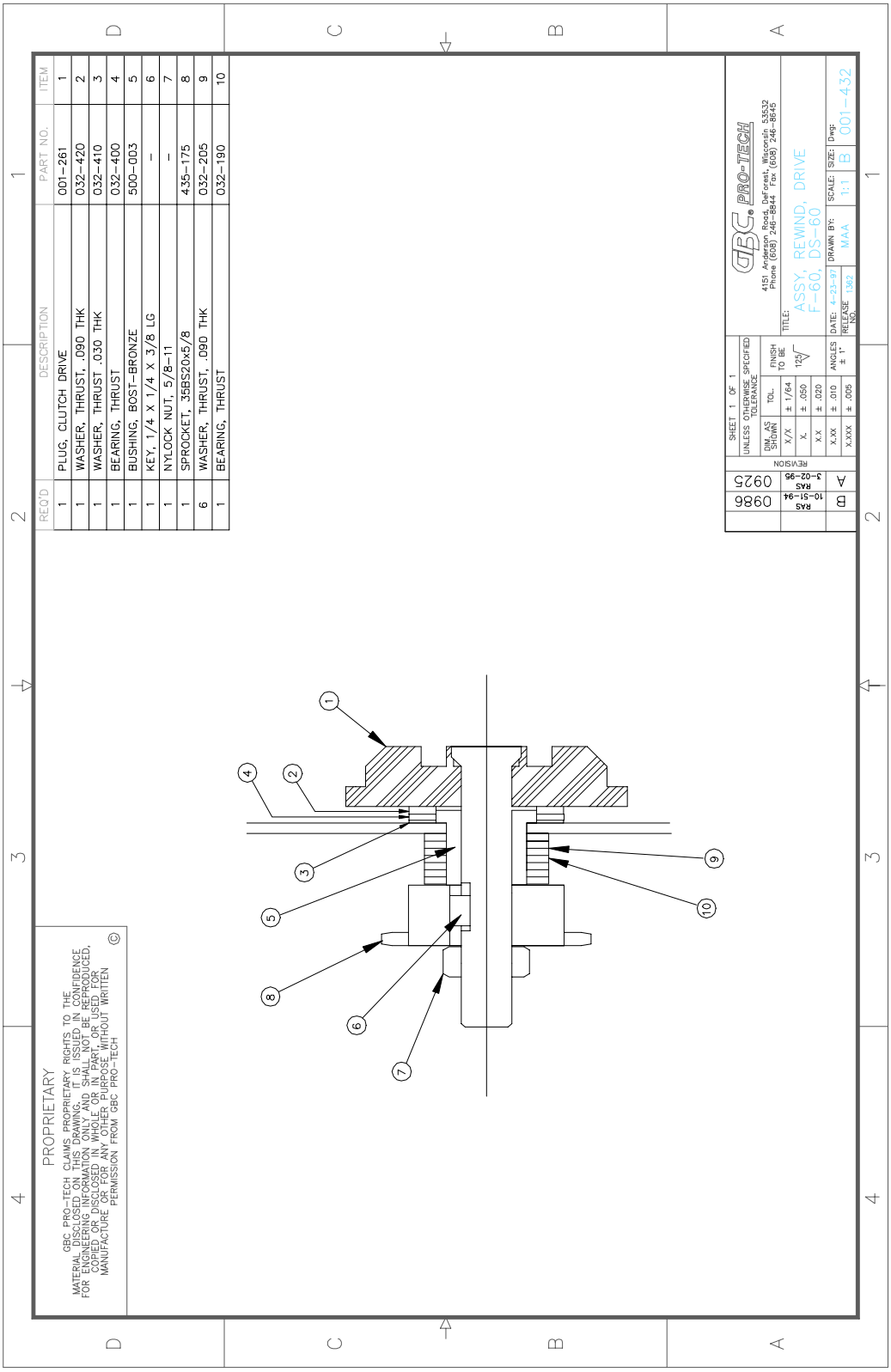
GBC PRO-TECH
4151 Anderson Road, DeForest, Wisconsin 53532
Phone (608) 246-8844 Fax (608) 246-8845
TITLE: ASSEMBLY, IDLER, ADJUSTABLE CHAIN F-60, DS-60
DATE: 4-22-97
DRAWN BY: MAA
SCALE: 1/1
SIZE: B
Dwg: 001-428
RELEASE NO. 1361
SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED TOLERANCE
DIM. AS SHOWN
X/X ± 1/64
X. ± .050
X.X ± .020
X.XX ± .010
X.XXX ± .005
ANGLES ± 1°
FINISH TO BE 125
REVISION



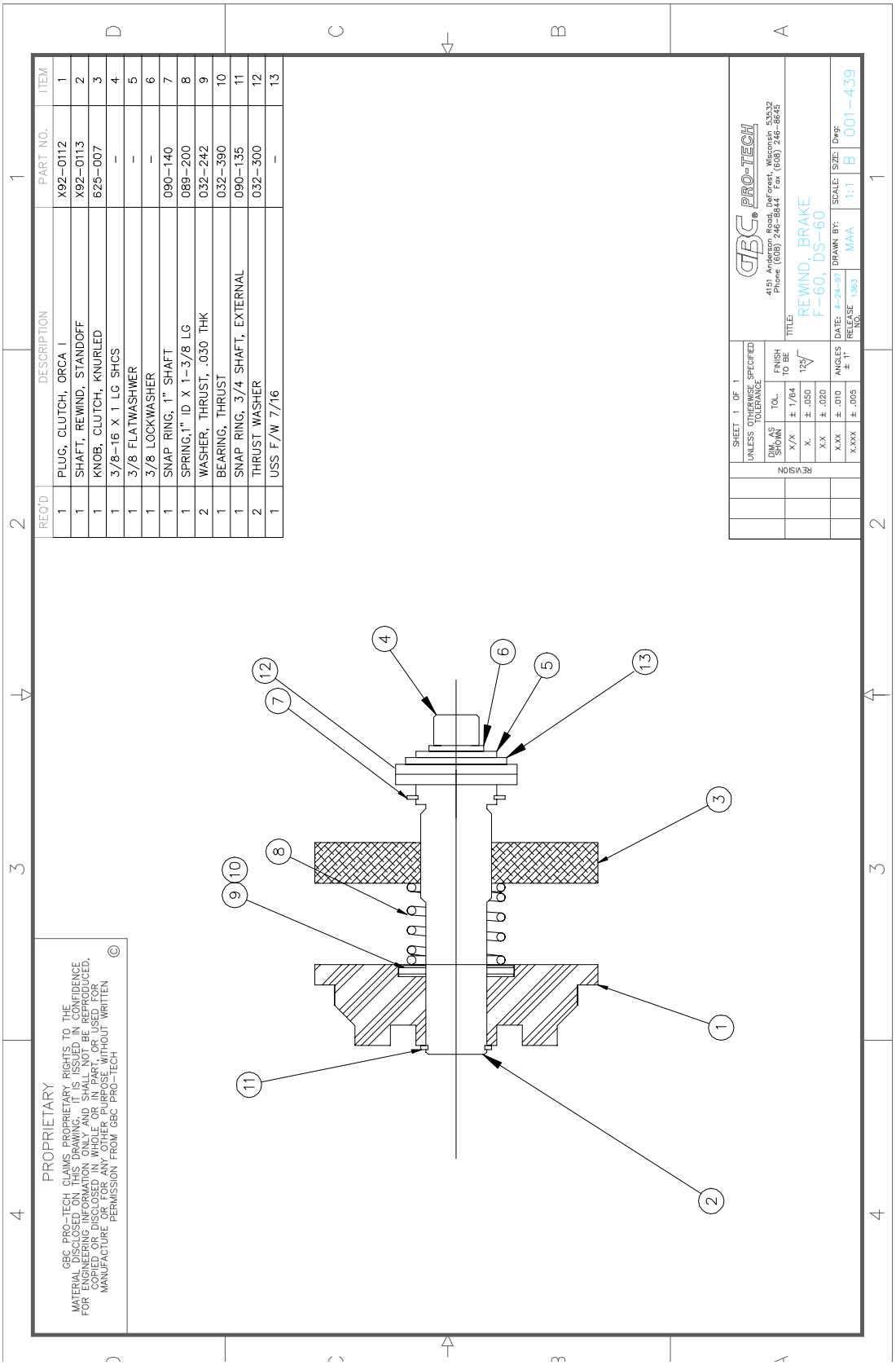
ITEM	PART NO.	DESCRIPTION	REQ'D
1	001–261	PLUG, CLUTCH DRIVE	1
2	032–420	WASHER, THRUST, .090 THK	1
3	032–410	WASHER, THRUST .030 THK	1
4	032–400	BEARING, THRUST	1
5	500–003	BUSHING, BOST–BRONZE	1
6	–	KEY, 1/4 X 1/4 X 3/8 LG	1
7	–	NYLOCK NUT, 5/8–11	1
8	435–175	SPROCKET, 35BS20x5/8	1
9	032–205	WASHER, THRUST, .090 THK	6
10	032–190	BEARING, THRUST	1

REVISION: A 0925 RAS 3–02–95; B 0986 RAS 10–31–94

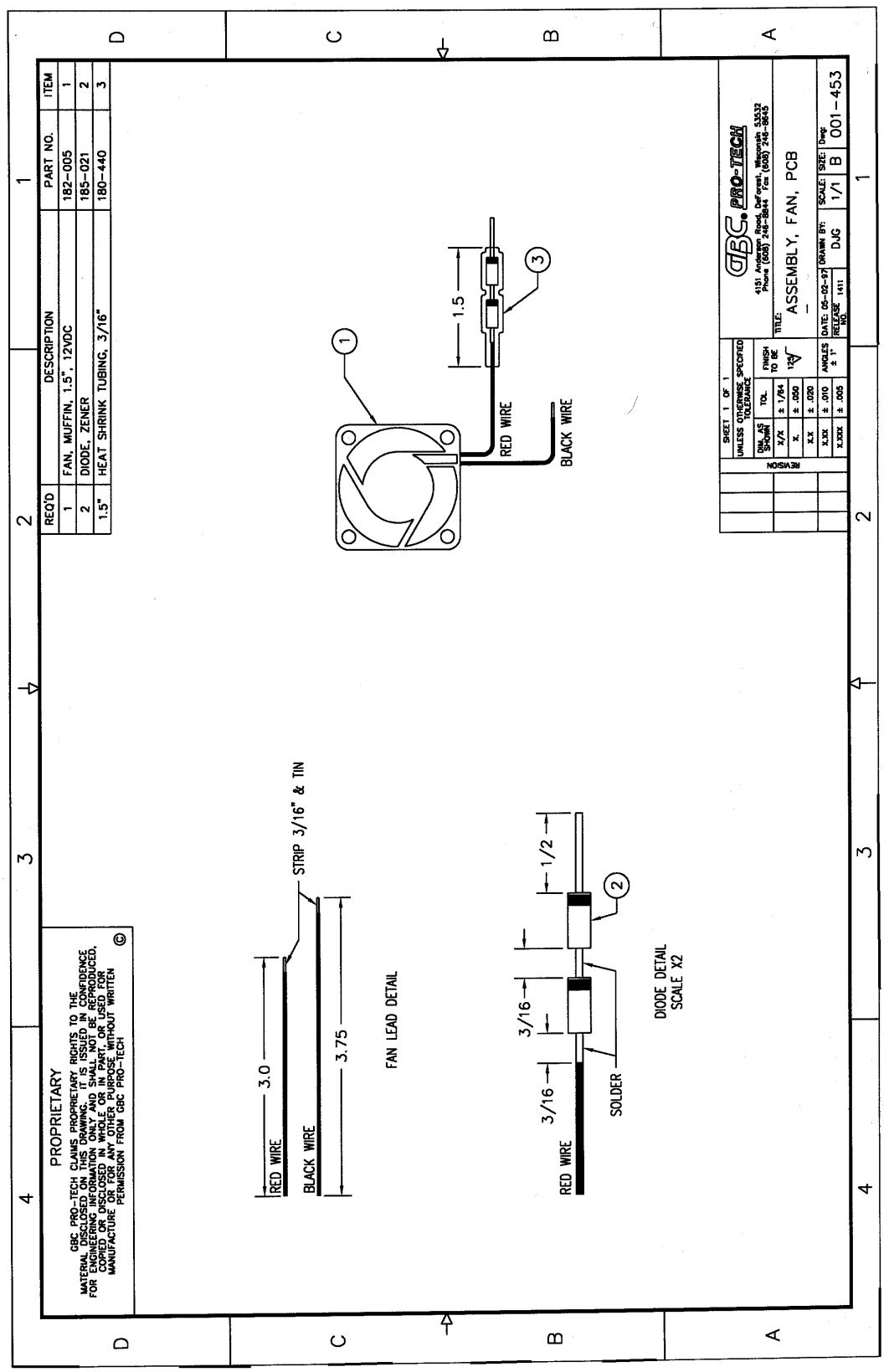
SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED TOLERANCE
DIM. AS SHOWN
X/X ± 1/64
X. ± .050
X.X ± .020
X.XX ± .010
X.XXX ± .005
FINISH TO BE 125
ANGLES ± 1°

TITLE: ASSY, REWIND, DRIVE F–60, DS–60
DATE: 4–23–97
DRAWN BY: MAA
RELEASE NO: 1362
SCALE: 1:1
SIZE: B
Dwg: 001–432

GBC PRO–TECH
4151 Anderson Road, DePere, Wisconsin 54532
Phone (608) 246–8644 Fax (608) 246–8645



ITEM	PART NO.	DESCRIPTION	REQ'D
1	X92-0112	PLUG, CLUTCH, ORCA I	1
2	X92-0113	SHAFT, REWIND, STANDOFF	1
3	625-007	KNOB, CLUTCH, KNURLED	1
4	–	3/8-16 X 1 LG SHCS	1
5	–	3/8 FLATWASHER	1
6	–	3/8 LOCKWASHER	1
7	090-140	SNAP RING, 1" SHAFT	1
8	089-200	SPRING,1" ID X 1-3/8 LG	1
9	032-242	WASHER, THRUST, .030 THK	2
10	032-390	BEARING, THRUST	1
11	090-135	SNAP RING, 3/4 SHAFT, EXTERNAL	1
12	032-300	THRUST WASHER	2
13	–	USS F/W 7/16	1


ITEM
PART NO.
DESCRIPTION
REQ'D
1
182-005
FAN, MUFFIN, 1.5", 12VDC
1
2
185-021
DIODE, ZENER
2
3
180-440
HEAT SHRINK TUBING, 3/16"
1.5"
GBC PRO-TECH
4151 Anderson Road, DeForest, Wisconsin 53532
Phone (608) 246-8844 Fax (608) 246-8645
TITLE:
ASSEMBLY, FAN, PCB
SCALE: 1/1
SIZE: B
DWG NO. 001-453
DRAWN BY: DJG
DATE: 05-02-97
RELEASE NO. 1411
SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED TOLERANCE
DIM. AS SHOWN
TOL.
X/X ± 1/64
X. ± .050
X.X ± .020
X.XX ± .010
X.XXX ± .005
ANGLES ± 1°
FINISH TO BE
125
REVISION
PROPRIETARY
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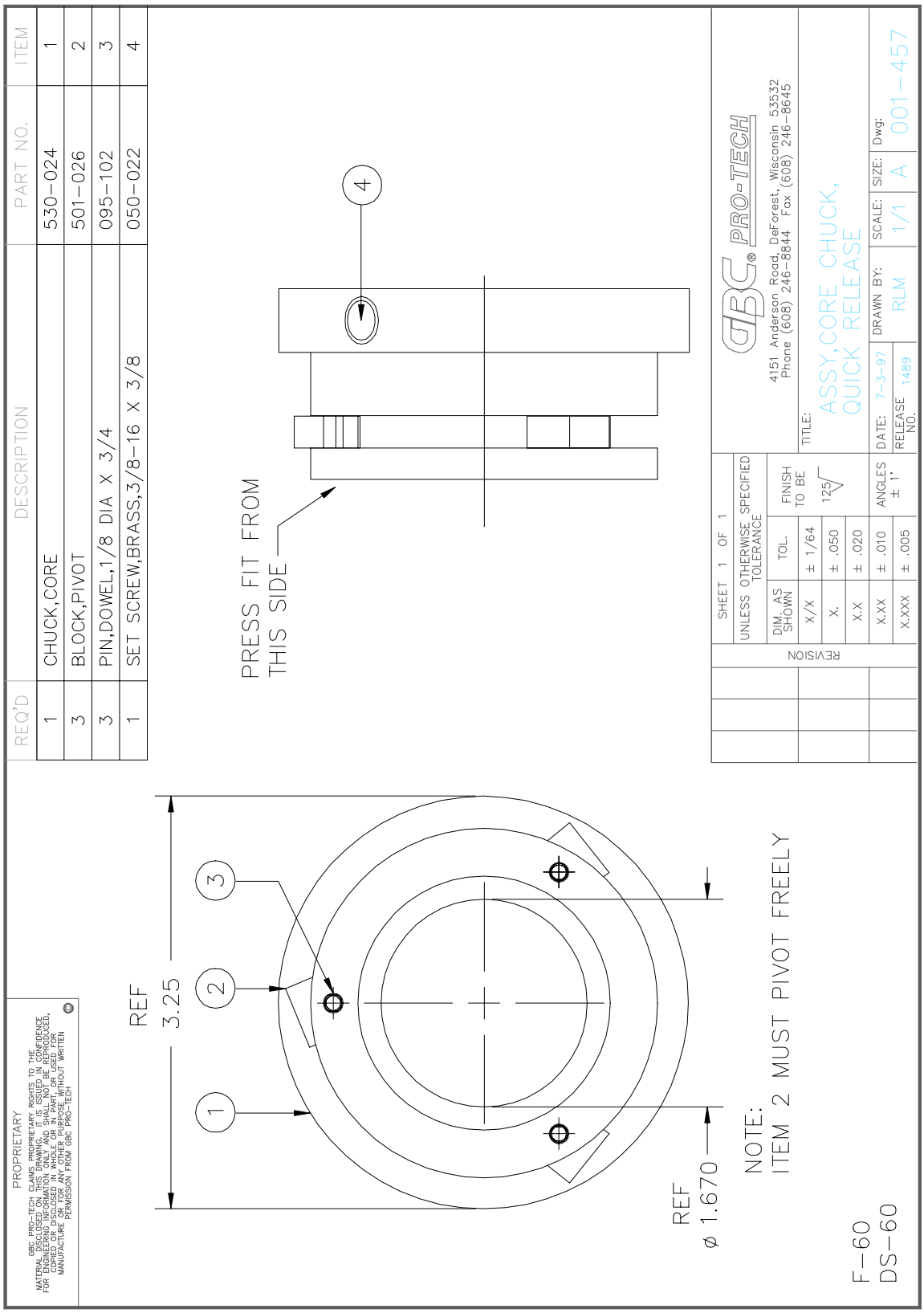
©
1.5
RED WIRE
BLACK WIRE
STRIP 3/16" & TIN
3.0
3.75
RED WIRE
BLACK WIRE
FAN LEAD DETAIL
1/2
3/16
3/16
SOLDER
DIODE DETAIL
SCALE X2



ITEM	PART NO.	DESCRIPTION	REQ'D
1	530-024	CHUCK,CORE	1
2	501-026	BLOCK,PIVOT	3
3	095-102	PIN,DOWEL,1/8 DIA X 3/4	3
4	050-022	SET SCREW,BRASS,3/8-16 X 3/8	1

PROPRIETARY
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REVISION

SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED TOLERANCE

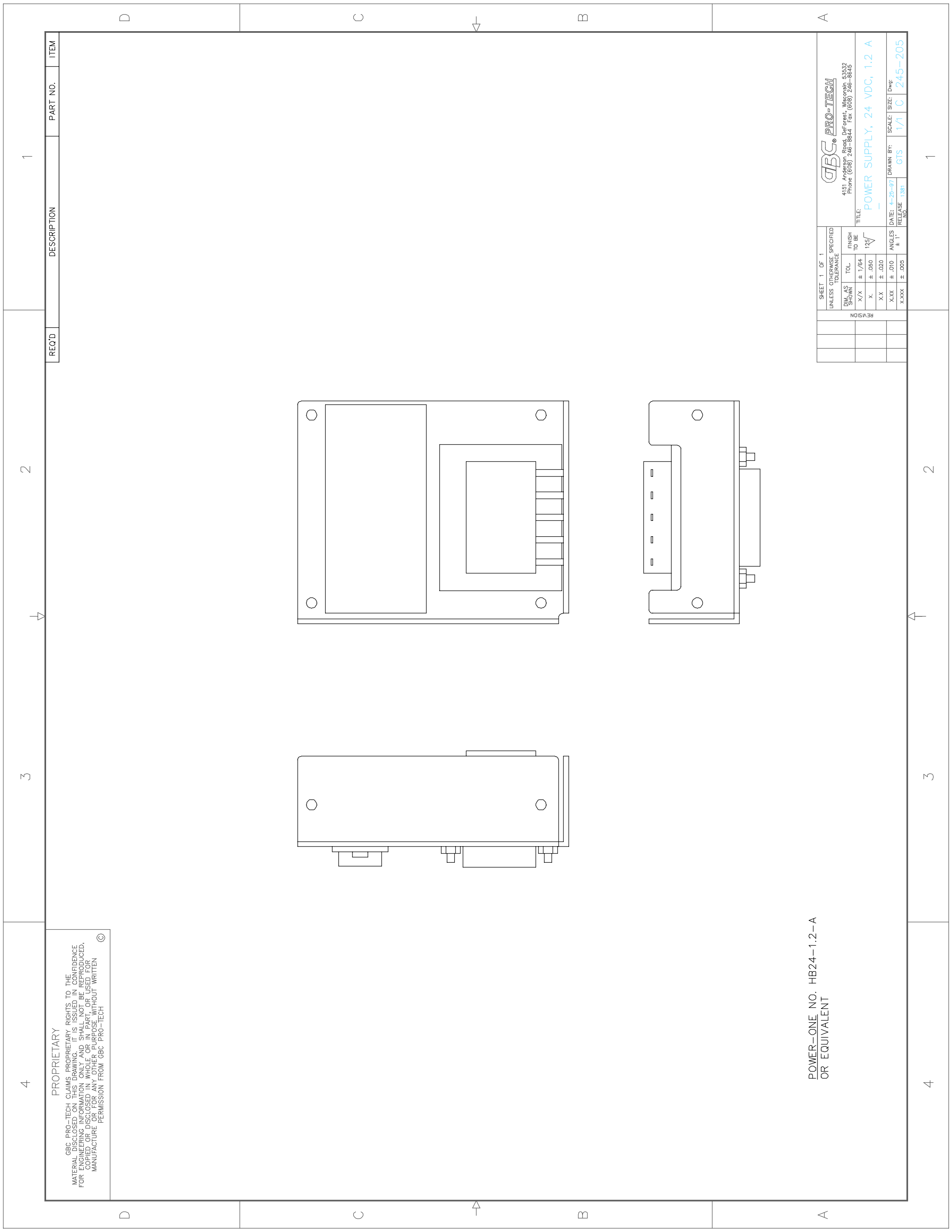
DIM. AS SHOWN	TOL.
X/X	± 1/64
X.	± .050
X.X	± .020
X.XX	± .010
X.XXX	± .005

FINISH TO BE 125√
ANGLES ± 1°

GBC® PRO-TECH
4151 Anderson Road, DeForest, Wisconsin 53532
Phone (608) 246-8844 Fax (608) 246-8645

TITLE: ASSY,CORE CHUCK, QUICK RELEASE

DATE: 7-3-97 DRAWN BY: RLM SCALE: 1/1 SIZE: A Dwg: 001-457
RELEASE NO. 1489


POWER SUPPLY, 24 VDC, 1.2 A
245-205
POWER-ONE NO. HB24-1.2-A
OR EQUIVALENT
PROPRIETARY

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Section 10 : Addenda

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Section 11 : Index

P

R

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