



# LED CO EDUCATOR SERIES LAMINATOR TROUBLESHOOTING AND REPAIR GUIDE

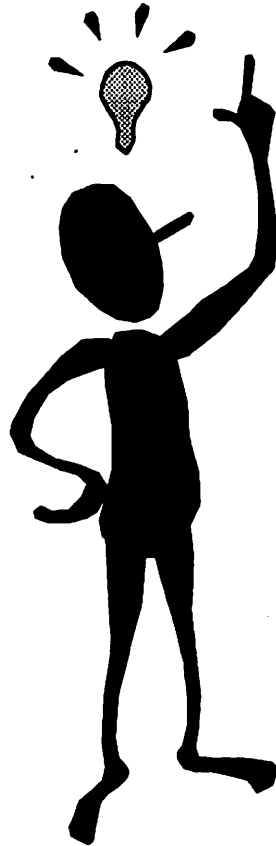
Laminating rollers do not operate	No power	Check power cord.	1	*
		Check drive switch position.	14	*
		Check drive motor fuse	15	*
		Check switch wires.	16	**
		Check drive motor wires	22	***
		Check drive switch	17	**
	Drivetrain failure	Check drive chain.	18	*
		Check drive sprockets.	19	*
		Check drive motor	23	***
		Check motor capacitor	24	***

## LEDCO EDUCATOR SERIES LAMINATOR QUICK REFERENCE TABLE FOR MOST FREQUENTLY ASKED QUESTIONS

1. "Why won't the laminator heat up?" ... page 1
2. "Why won't the laminator stop heating?" ... page 1
3. "Why is there no drive ?" ... page 1
4. "Why does it make a clunking/grinding sound when I laminate?" ... page 2
5. "Now that I have wrapped film around the

### LEDCO EDUCATOR 25" ROLL LAMINATOR PROBLEM DIAGNOSTIC CHARTS

Problem	Possible Cause	Repair Procedure	Procedure Number	Skill Level
Laminating rollers operate intermittently, sometimes with a clunking, skipping or grinding noise	Drivetrain failure	Check drive chain.	18	*
		Check drive sprockets.	19	*
		Check rubber roll gears	20	**
	Film "wrap-around"	Clear minor "wrap-around"	25	*
		Clear "wrap-around" of front laminating rolls	26	**
		Clear "wrap-around" of rear laminating rolls	27	**
		Clear "wrap-around" by removing and cleaning or replacing rolls	28	***
	Drive motor gear failure	Replace drive motor	29	***
	Cooling fan does not operate	No power	Check power cord.	1
Check drive switch position.			14	*
Check drive motor fuse			15	*
Check switch wires.			16	**
Check drive motor wires			22	***
Check drive switch		17	**	
Fan motor failure		Check fan motor	30	***
The lamination has wrinkles	Item being laminated has been folded, rolled, bent or wrinkled.	Smooth item on feed table as it is being laminated.		
	Laminating two pieces of unequal thickness side by side.	Only laminate items of the same thickness side by side.		
	Thicker material causes wrinkles on each side.	This is normal. Trim off material with wrinkles.		
	Inadequate supply roll tension.	Add tension to take wrinkles out of film before it gets past the heat shoes.		
		Check supply roll dog.	31	*
		Check supply roll spring pin.	32	*



**LEDCO EDUCATOR  
SERIES LAMINATOR  
TROUBLESHOOTING  
AND REPAIR GUIDE**

# LEDCO EDUCATOR SERIES LAMINATOR QUICK REFERENCE TABLE FOR MOST FREQUENTLY ASKED QUESTIONS

- 1."Why won't the laminator heat up?"... page 1
- 2."Why won't the laminator stop heating?"...page 1
- 3."Why is there no drive ?"...page 1
- 4."Why does it make a clunking/grinding sound when I laminate?"...page 2
- 5."Now that I have wrapped film around the rollers,how do I fix it?"...pages 9,10
- 6."Why does the laminator wrinkle the paper?"... page 2

We hope that this troubleshooting/repair guide(in conjunction with the owners/operators manual)will serve you well in identifying,diagnosing and rectifying any problem you may have with the Ledco Educator Laminator.If you have any questions pertaining to any part of this guide,please call our toll free service lines at 800-937-9697,800-937-9293 or e-mail us at [LEDCO@ledcoinc.com](mailto:LEDCO@ledcoinc.com)

# LED CO EDUCATOR 25" ROLL LAMINATOR PROBLEM DIAGNOSTIC CHARTS

Problem	Possible Cause	Repair Procedure	Procedure Number	Skill Level
Laminator will not Heat Up	No power	Check power cord	1	*
		Check heat switch position	2	*
		Check heat control fuse	4	*
		Check for wires that are disconnected, broken or shorting out	5	**
		Check heat switch	6	**
	Heater failure	Check heaters	7	**
	Heat sensor failure	Check heat sensor	8	***
	Heat control board transformer failure	Check the heat control board transformer	9	***
	Heat control board relay coil failure	Check the heat control board relay coil	10	***
	Laminator heat cannot be controlled	Heat control knob installed improperly	Check heat control knob.	11
Heat sensor failure		Check heat sensor wires.	12	**
		Check heat sensor.	8	***
Heat control board relay switch failure.		Check heat control board relay switch	13	***
Laminating rollers do not operate	No power	Check power cord.	1	*
		Check drive switch position.	14	*
		Check drive motor fuse	15	*
		Check switch wires.	16	**
		Check drive motor wires	22	***
		Check drive switch	17	**
	Drivetrain failure	Check drive chain.	18	*
		Check drive sprockets.	19	*
		Check drive motor	23	***
		Check motor capacitor	24	***

Skill Level Index: \* Basic,End-User \*\* Intermediate or Dealer \*\*\* Advanced or Servicing Dealer/Technician

# LEDCO EDUCATOR 25" ROLL LAMINATOR PROBLEM DIAGNOSTIC CHARTS

Problem	Possible Cause	Repair Procedure	Procedure Number	Skill Level
Laminating rollers operate intermittently, sometimes with a clunking, skipping or grinding noise	Drivetrain failure	Check drive chain.	18	*
		Check drive sprokets.	19	*
		Check rubber roll gears	20	**
	Film "wrap-around"	Clear minor "wrap-around"	25	*
		Clear "wrap-around" of front laminating rolls	26	**
		Clear "wrap-around" of rear laminating rolls	27	**
		Clear "wrap-around" by removing and cleaning or replacing rolls	28	***
	Drive motor gear failure	Replace drive motor	29	***
Cooling fan does not operate	No power	Check power cord.	1	*
		Check drive switch position.	14	*
		Check drive motor fuse	15	*
		Check switch wires.	16	**
		Check drive motor wires	22	***
	Check drive switch	17	**	
Fan motor failure	Check fan motor	30	***	
The lamination has wrinkles	Item being laminated has been folded, rolled, bent or wrinkled.	Smooth item on feed table as it is being laminated.		
	Laminating two pieces of unequal thickness side by side.	Only laminate items of the same thickness side by side.		
	Thicker material causes wrinkles on each side.	This is normal. Trim off material with wrinkles.		
	Inadequate supply roll tension.	Add tension to take wrinkles out of film before it gets past the heat shoes.		
		Check supply roll dog.	31	*
		Check supply roll spring pin.	32	*
Improper rubber roll pressure	Check rubber roll dwell line.	33	*	
	Adjust rubber rolls	35	**	
	Replace rubber rolls	34	***	

Skill Level Index: \* Basic, End-User \*\* Intermediate or Dealer \*\*\* Advanced or Servicing Dealer/Technician

\*\*\*\*\*TROUBLESHOOTING AND REPAIR GUIDE UPDATE\*\*\*\*\*  
 PLEASE USE THIS INSERT TO REPLACE PAGE 3 IN YOUR EDUCATOR  
 SERIES LAMINATOR TROUBLESHOOTING AND REPAIR GUIDE  
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<b>Problem</b>	<b>Possible Cause</b>	<b>Repair Procedure</b>	<b>Procedure Number</b>	<b>Skill Level</b>
The film does not adhere to the document	Thicker documents absorb the heat.			
	Thin (1.5 mil) films lose heat from heat shoe to the roller nip.	Run at a higher temperature not to exceed 340 degrees		
	Thicker films do not absorb enough heat.			
	Film between heat shoe and nip cool while idle.	Run a few inches of film before inserting sheets to be laminated.		
	Inkjet print still wet.	Let inkjet prints dry at least 2 hours.		
	Incompatible inkjet print media and inks.	Test samples before laminating many pieces.		
Film shrinks as it passed over heat shoe.	Excessive supply roll tension	Reduce supply roll tension.		
	Excessive heat.	Reduce heat.		
Laminated item has "oily" spot near the leading edge.	Excess adhesive is created when machine left hot and idle for a few minutes.	Run a few inches of film before inserting sheets to be laminated.		
Milky, hazy line appears after initial warm-up	Rollers not evenly heated.	When warming up the machine, keep the rollers moving slowly.		
The machine squeals when laminating	Dirty heat shoes.	Clean heat shoes.		
	Excessive heat.	Reduce heat.		
	Excessive supply roll tension.	Reduce supply roll tension.		
	Coating on film	Try different type or different brand of film.		

Skill Level Index: \* Basic, End-User \*\* Intermediate or Dealer \*\*\* Advanced or Servicing Dealer/Technician

# LEDCO EDUCATOR 25" ROLL LAMINATOR PROBLEM DIAGNOSTIC CHARTS

Problem	Possible Cause	Repair Procedure	Procedure Number	Skill Level
The film does not adhere to the document	Thicker documents absorb the heat.	Run at a higher temperature 320° to 340°		
	Thin (1.5 mil) films lose heat from heat shoe to the roller nip.	Increase the speed of the machine.		
	Thicker films do not absorb enough heat.	Reduce the speed of the machine to allow more heat transfer.		
	Film between heat shoe and nip cool while idle.	Run a few inches of film before inserting sheets to be laminated.		
	Inkjet print still wet.	Let inkjet prints dry at least 2 hours.		
	Incompatible Inkjet print media and inks.	Test samples before laminating many pieces.		
Film shrinks as it passed over heat shoe.	Excessive supply roll tension	Reduce supply roll tension.		
	Excessive heat.	Reduce heat.		
Laminated item has "oily" spot near the leading edge.	Excess adhesive is created when machine left hot and idle for a few minutes.	Run a few inches of film before inserting sheets to be laminated.		
Milky, hazy line appears after initial warm-up	Rollers not evenly heated.	When warming up the machine, keep the rollers moving slowly.		
The machine squeals when laminating	Dirty heat shoes.	Clean heat shoes.		
	Excessive heat.	Reduce heat.		
	Excessive supply roll tension.	Reduce supply roll tension.		
	Coating on film	Try different type or different brand of film.		

Skill Level Index: \* Basic,End-User \*\* Intermediate or Dealer \*\*\* Advanced or Servicing Dealer/Technician



# LEDKO EDUCATOR 25" ROLL LAMINATOR PROBLEM DIAGNOSTIC CHARTS

<b>Problem</b>	<b>Possible Cause</b>	<b>Repair Procedure</b>	<b>Procedure Number</b>	<b>Skill Level</b>
Laminated item has pitted, irregular surface.	Adhesive build-up or dirt on rollers.	Clean the rollers.		
	Cuts or other damage to the rubber rollers	Replace rubber rolls.	34	***
General haziness or cloudiness in film after lamination	Not enough heat.	Increase the temperature.		
Bubbles in the center of the web and/or film not sticking to center	Excessive laminating roll pressure	Adjust rubber rolls	35	**
	Worn rollers	Check rubber roll dwell line.	33	*
		Replace rubber rolls.	34	***
		Adjust rubber rolls	35	**

**Skill Level Index: \* Basic,End-User \*\* Intermediate or Dealer \*\*\* Advanced or Servicing Dealer/Technician**

# LEDCO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 1. Check power cord.

- a. Power cord must be securely inserted into the wall outlet (110v AC).
  - b. Power cord must be securely inserted into the receptical on the back of the laminator.
- 

### 2. Check heat switch position.

Heat switch must be in the up or "I" position as denoted by the label markings next to switch.

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### 3. Remove right or left plastic housing

- a. Disconnect the power cord.
  - b. Gently pop out the heat control knob on the right housing.
  - c. Remove the 11 screws from the plastic housing using a phillips head screw driver.
  - d. Remove the plastic housing.
- 

### 4. Check heat control fuse.

The heat switch will illuminate red when engaged, indicating power is getting to the system.

If the switch does not light up, check the heat control fuse as follows:

- a. Remove the right plastic housing as described in 3 above.
  - b. The right fuse supplies power to the heat control.
  - c. If the fuse appears discolored and the element inside is broken, replace it with a new 1.5 amp fuse.
- 

### 5. Check for heating wires that are disconnected, broken or shorting out.

- a. Remove the right plastic housing as described in 3 above.
  - b. Examine all wires and connectors for the heat system.
    - (1.) Power cord to terminal block
      - #14 Black wire from power cord to terminal block.
      - #14 White wire from power cord to terminal block.
    - (3.) Heat Control Switch Light
      - #18 Brown wire from terminal block to heat switch.
      - #18 Gray wire from heat switch to terminal block.
    - (4.) Heat Control Switch
      - #18 Yellow wire from terminal block to fuse.
      - #18 Yellow wire from fuse to heat switch.
      - #18 Orange wire from switch to heat control.
    - (5.) Heat Control
      - #18 Orange wire from switch to heat control.
      - #18 Black from #14 white terminal block to heat control.
      - Thin black heat sensor wires (2) from heat sensor to heat control.
      - #14 Orange wire from the heat control to terminal block.
      - #14 Red wire from #14 black terminal block to heat control.
    - (6.) Heaters
      - Orange wires (2) from Top Heater Cartridge to terminal block.
      - Orange wires (2) from Bottom Heater Cartridge to terminal block.
  - c. If a wire is disconnected, re-connect exactly as shown in the wiring schematic.
- 

### 6. Check Heat Switch

- a. Remove the right plastic housing as described in 3 above.
  - b. Engage the switch.
  - c. Check continuity of the switch with a multimeter.
    - (1.) Place one probe on the #18 yellow wire from fuse to heat switch.
    - (2.) Place one probe on the #18 orange wire from the switch to heat control.
  - d. If there is no continuity, replace the switch (Part #PRS311) and rewire exactly as shown in the schematic.
-

# LEDCO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 7. Check Heaters

- a. Remove the right plastic housing as described in 3 above.
  - b. Check continuity of the top heater with a multimeter by placing a probe on each wire lead of the top heater.
  - c. Check continuity of the bottom heater with a multimeter by placing a probe on each of the wire leads of the bottom heater.
  - d. If there is no continuity, replace the heater (Part #PRH147) and rewire exactly as shown in the schematic.
- 

### 8. Check heat sensor

- a. Remove the right plastic housing as described in 3 above.
  - b. Disconnect the heat sensor wires from the heat control.
  - c. Check the resistance of the heat sensor using a multimeter. The sensor should have an approximate resistance of 1.089 at room temperature.
  - d. If the sensor has no resistance (or reads open line or circuit) replace the sensor (Part # PRC212S) and rewire exactly as shown in the schematic.
- 

### 9. Check the heat control board transformer.

- a. Remove the right plastic housing as described in 3 above.
  - b. Remove the orange and black wires from terminals T1, T2 and T3 respectively.
  - c. For 110v, check the resistance of the transformer with a multimeter by placing a probe on terminals T2 and T3. The resistance should read 1.342 ohms.
  - d. For 220v, check the resistance of the transformer with a multimeter by placing a probe on terminals T1 and T3. The resistance should read 2.960 ohms.
  - e. If the reading shows an open circuit, replace the heat control board.
- 

### 10. Check the heat control board relay coil.

- a. Remove the right plastic housing as described in 3 above.
  - b. Remove one of the heat sensor wires from either terminal T4 or T5.
  - c. Check the resistance of the relay coil with a multimeter by placing a probe on terminals T4 and T5. The resistance should read 42.4 ohms.
  - d. If the reading shows an open or closed circuit, replace the heat control board.
- 

### 11. Check heat control knob.

- a. If the white line on the knob aligns with the 350 degree mark when turned fully to the left (counter clockwise), the actual temperature would be in excess of 450 degrees when set to the normal operating temperature of 250 to 300 degrees.
  - b. With the heat control knob turned fully to the left (counter clockwise), remove the heat control knob and replace it with the white line on the knob aligning with the black line below the 200 degree mark on the temperature label.
- 

### 12. Check heat sensor wires.

- a. Remove the right plastic housing as described in 3 above.
  - b. Examine the thin black wires (2) from the heat sensor connected to terminals T4 and T5 on the heat control board.
  - c. Reconnect or replace any disconnected or broken/shorted wires exactly as shown on the schematic.
- 

### 13. Check heat control board relay switch..

- a. Remove the right plastic housing as described in 3 above.
  - b. Remove the orange and red wires from terminals T6 and T7 respectively.
  - c. Check the resistance of the power switch with a multimeter by placing a probe on terminals T6 and T7.
  - d. With no power, there should be an open reading.
  - e. If you get a closed circuit reading with no power, replace the heat control board.
-

# LEDCO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 14. Check drive switch position.

Move the Forward/Reverse Jog switch to the forward position. The drive motor should be on.

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### 15. Check drive motor fuse

- a. Remove the right plastic housing as described in 3 above.
  - b. The left fuse supplies power to the drive motor.
  - c. If the fuse appears discolored and the element inside is broken, replace it with a new 3.0 amp fuse.
- 

### 16. Check switch wires.

- a. Remove the right plastic housing as described in 3 above.
  - b. Examine all wires and connectors for the drive system.
    - (1.) Power cord to terminal block
      - #14 Black wire from power cord to terminal block.
      - #14 White wire from power cord to terminal block.
    - (2.) Drive control switch
      - #18 Blue wire from terminal block to fuse.
      - #18 Black wire from fuse to switch
      - #18 Red wire from switch to motor capacitor.
      - #18 White wire from switch to motor capacitor.
- 

### 17. Check drive switch.

- a. Remove the right plastic housing as described in 3 above.
  - b. Check continuity of the forward switch with a multimeter
    - (1.) Move the switch to the forward position.
    - (2.) Place one probe on the middle (common) terminal.
    - (3.) Place one probe on the lower terminal.
  - c. Check continuity of the reverse jog switch with a multimeter
    - (1.) Hold the switch to the reverse jog position.
    - (2.) Place one probe on the middle (common) terminal.
    - (3.) Place one probe on the upper terminal.
  - d. If there is no continuity on either switch element, replace the switch (Part #PRS312) and rewire exactly as shown in the schematic.
- 

### 18. Check drive chain.

- a. Remove the left plastic housing as described in 3 above.
  - b. If the connecting link is missing or damaged, replace the connecting link (Part # PRC 084).
  - c. If the drive chain is damaged, replace the drive chain (Part # PRC083A).
- 

### 19. Check drive sprockets.

- a. Remove the left plastic housing as described in 3 above.
  - b. If the sprocket is not tight on its shaft:
    - (1.) Rotate the sprocket until the set screw will tighten on the flat surface of the shaft.
    - (2.) Align the sprocket with the drive chain 13/16" from the side panel.
    - (3.) Tighten the sprocket with a 1/8" allen wrench.
  - c. If the sprocket is broken or excessively worn, they must be replaced:
    - (1.) Remove the chain at the connecting link.
    - (2.) Remove the sprockets noting that the 18 tooth sprocket is installed on the front laminating roll and the 17 tooth sprocket is installed on the rear pull roll. (1/8" allen wrench)
    - (3.) Replace the sprockets (part # PRS247, PRS251, PRS2455)
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# LEDCO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 20. Check rubber roll gears.

- a. Remove the left plastic housing as described in 3 above.
  - b. If the rubber roll gears are broken or excessively worn, they must be replaced as follows:
    - (1.) Remove the chain at the connecting link.
    - (2.) Remove the sprockets noting that the 18 tooth sprocket is installed on the front laminating roll and the 17 tooth sprocket is installed on the rear pull roll. (1/8" allen wrench)
    - (3.) Remove the rubber roll gear retaining clip rings using clip ring pliers.
    - (4.) Replace the rubber roll gears (part # LC25 PRG131).
- 

### 21. Access the rolls, drive motor, fan motor, capacitor and related wiring.

- a. Remove the left and right plastic housings as described in 3 above.
  - b. On the right side of the machine:
    - (1.) Remove the stop collars from the ends of the top laminating and pull rollers. (1/8" allen wrench)
    - (2.) Loosen the socket head cap screw that runs through the orange rubber roll pressure spring so the bottom shoulder of the socket head capscrew is barely touching the spring washer. (5/32" allen wrench)
    - (3.) Remove the rubber roll spring holder (part # LC25 032.4). (5/32" allen wrench)
    - (4.) Remove the rubber roll pressure bar, spring holder, pressure spring and screw by gently sliding them off the ends of their respective shafts.
    - (5.) Remove the safety plate (part # LC25 034.4) covering the roll change openings with a phillips head screwdriver.
    - (6.) Remove the four small mounting screws from the heat control board and gently swing away.
  - c. On the left side of the machine:
    - (1.) Remove the chain at the connecting link.
    - (2.) Remove the sprockets (1/8" allen wrench)
    - (3.) Remove the rubber roll gear retaining clip rings using clip ring pliers.
    - (4.) Remove the rubber roll gears (part # LC25 PRG131).
    - (5.) Loosen the socket head cap screw that runs through the orange rubber roll pressure spring so the bottom shoulder of the socket head capscrew is barely touching the spring washer. (5/32" allen wrench)
    - (6.) Remove the rubber roll spring holder (part # LC25 032.4). Use the 5/32" allen wrench to to remove the two socket head cap screws and acorn nuts.
    - (7.) Remove the rubber roll pressure bar, spring holder, pressure spring and screw by gently sliding them off the ends of their respective shafts.
    - (8.) Remove the safety plate (part # LC25 034.4) covering the roll change openings with a phillips head screwdriver.
  - d. Remove the top anti-wrap shield (part # LC25 012.4) by unscrewing the two phillips head screws on each side.
  - e. Remove the top motor cover (part # LC25 092.4) by unscrewing the two phillips head screws on each side.
  - f. Remove rear rubber rolls by moving the roll to the roll change opening and pulling through the left side.
  - g. Reassemble in reverse order of disassembly noting the following:
    - (1.) The 18 tooth sprocket is installed on the front laminating roll and the 17 tooth sprocket is installed on the rear pull roll.
    - (2.) Reinstall the spring holder assembly by tightening the sockethead cap screws, then back off one complete turn ( the flat washers between the cap screws and the spring holder should be just barely loose). This allows the rubber rolls to "float" under the prescribed spring pressure and to accommodate substrates up to 1/8" thick. The acorn nuts can now be tightened.
    - (3.) Adjust the rubber roll spring pressure:
      - (a.) Turn the socket head cap screw running through the spring clockwise until the bottom shoulder of the cap screw is just barely touching the flat washer at the top of the spring.
      - (b.) Using a 5/32" allen wrench, turn the cap screws 5 complete clockwise turns on the right side and 6 complete clockwise turns on the left side. This will return the rubber roll pressure spring adjustments to factory specifications.
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# LEDKO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 22. Check Drive Motor wires.

- a. Obtain access to the drive motor as described in procedure 21.
  - b. Check wiring for disconnected, broken or shorted wires.
    - (1.) #18 Red wire from switch to motor capacitor.
    - (2.) #18 White wire from switch to motor capacitor.
    - (3.) Red (110) or Gray (220v) wire from the motor capacitor to the motor.
    - (4.) Black (110v) or Blue (220v) wire from the motor capacitor to the motor.
    - (5.) Wire from the motor capacitor to the fan motor.
    - (6.) White wire from the motor to the terminal T3 on the heat control board.
  - c. If a wire is disconnected, re-connect exactly as shown in the wiring schematic.
- 

### 23. Check drive motor .

- a. Obtain access to the drive motor as described in procedure 21.
  - b. Trace the Red and Black (110v) or Gray and Blue (220v) wires to the capacitor and remove them.
  - c. Check for continuity in the motor using a multimeter.
    - (1.) Trace the white wire from the motor to the wire cap connection and place one probe of the multimeter in this connection.
    - (2.) Hold the Red and Black (110v) or the Gray and Blue(220v) wires together and place the other probe of the multimeter on these wires.
  - d. If the motor has no continuity, the motor must be replaced
    - (1.) Use a 1/8" allen wrench to remove the 4 mounting screws of the left of the machine.
    - (2.) Replace the drive motor and gearbox (part # PRM229).
- 

### 24. Check motor capacitor.

- a. Obtain access to the drive motor capacitor as described in procedure 21.
  - b. Remove all the leads from the capacitor.
  - c. Check for continuity in the capacitor using a multimeter.
    - (1.) Place one probe on the body of the capacitor.
    - (2.) Place the other probe on any lead from the capacitor.
  - d. If the test shows continuity, the capacitor must be replaced (part # PRM 216A) exactly as shown on the schematic.
- 

### 25. Clear minor "wrap-around".

- a. Visually check all four rolls for any film wraparound or foreign objects.
  - b. Carefully remove foreign objects.
  - c. If a "wrap-around" occurs while the laminator is cold, reverse the direction of the rubber rolls, permitting the laminator to release the film from the rolls.
  - d. If a "wrap-around" occurs while the laminator is hot,  
**WARNING: Be very careful not to touch the heat shoes when the machine is hot.**
    - (1.) Leave the heat on so that the adhesive does not harden.
    - (2.) Remove the feed tray.
    - (3.) Cut the film on the top and bottom, just in front of the idler bars.
    - (4.) Loosen the film from the heat shoes and grip the two loose ends, holding them together.
    - (5.) Turn the drive switch to the reverse jog position and allow the laminator to back out the film that is wrapped around the rolls. Pull the film off the roller.
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# LEDCO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 26. Clear "wrap-around" of front laminating rolls.

- a. Remove the left plastic housing as described in 3 above.
  - b. Remove the heat shoe(s) to gain access to the "wrap-around"
    - (1.) Using a 9/64" allen wrench, remove the 4 socket head cap screws that secure either the top or the bottom heat shoe.
    - (2.) Swing away the heat shoes (without necessarily disconnecting them).
  - c. Create a free end of film and use the reverse jog to unwind.
- 

### 27. Clear "wrap-around" of rear laminating rolls.

- a. Obtain access to rolls as described in procedure 21.
  - b. Create a free end of film and pull off of the roller(s).
- 

### 28. Clear "wrap-around" by removing and cleaning or replacing rolls.

- a. Obtain access to rolls as described in procedure 21.
  - b. Remove the top heat shoe to gain access to the laminating rolls.
    - (1.) Using a 9/64" allen wrench, remove the 4 socket head cap screws that secure the heat shoe.
    - (2.) Swing away the heat shoe (without necessarily disconnecting them).
  - c. Remove the rolls by sliding them to the roll change openings and pulling them through.
  - d. If the "wrap-around" prevents the roll from fitting through the opening, some of the film must be removed **being very careful not to damage the rolls**.
  - e. After the rolls are removed, remove the remaining film and clean the rolls thoroughly.
  - f. If the rolls are damaged, they must be replaced (part # 0500-040.4).
- 

### 29. Replace drive motor.

- a. Obtain access to drive motor as described in procedure 21.
  - b. Use a 1/8" allen wrench to remove the 4 mounting screws of the left of the machine.
  - c. Replace the drive motor and gearbox (part # PRM229).
- 

### 30. Check cooling fan.

- a. Obtain access to the cooling fan as described in procedure 21.
  - b. Disconnect the small disconnect plug from the fan housing.
  - c. Check voltage being received at the fan motor with a multimeter.
    - (1.) Place the multimeter probes into the two recessed plug leads.
    - (2.) Set the Multimeter to volts AC.
    - (3.) Connect the power cord.
    - (4.) Engage the forward drive switch.
  - d. If the reading is approximately 120v, the fan must be replaced (part # PRF 133) and rewired exactly as shown on the schematic.
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### 31. Check supply roll dog.

- a. Check to see if the brass supply roll dog located in the center of the supply roll mandrel is missing or loose.
  - b. If the brass supply roll dog is missing, replace it (part # 0285-015.4).
  - c. If the brass supply roll dog is loose, tighten the retaining screw with a phillips head screwdriver.
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# LEDCO EDUCATOR 25" ROLL LAMINATOR

## REPAIR PROCEDURES

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### 32. Check supply roll spring pin.

- a. The supply roll hex adapter (part # 0285 023.4) on the supply roll opposite the black knob is secured to the round supply roll shaft with a spring pin.
  - b. If you can turn the supply roll hex adapter without turning the round supply roll shaft, the spring pin has sheared, making it impossible to put any tension on the supply roll mandrel.
  - c. Replace the supply roll mandrel.
- 

### 33. Check rubber roll dwell line.

- a. Create a "dwell line". The "dwell line" is the imprint the front laminating rolls leave in the web of a threaded and heated laminating machine after being stationary for 90 seconds.
  - b. Thread the laminator with a good quality film.
  - c. Warm up the laminator.
  - d. After the laminator is warm, run a short length of film and stop the drive motor for at least 90 seconds.
  - e. Advance the film 12 to 15 inches and look at the impression the laminating rollers left on the film.
  - f. This impression, "dwell line" should be two parallel lines running the full width of the film measuring approximately 3/16" to 1/4" in width.
    - (1.) If the dwell line is very narrow, the rubber roll pressure may not be great enough to grip and pull the film taut, resulting in wrinkles in the web that can't be corrected with supply roll tension.
    - (2.) If the dwell line is over 1/4" wide, there is too much pressure resulting in shifting of the film towards the path of least resistance, adding wrinkling in the area with less pressure.
    - (3.) If the dwell line is narrow on one side and much wider on the other, the roll pressure is not adjusted correctly, contributing to wrinkling problems.
    - (4.) If the dwell line has an hour glass appearance (wide on both ends and much narrower in the middle), there is either too much pressure on both ends or the rubber rolls are worn excessively.
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### 34. Replace rubber rolls.

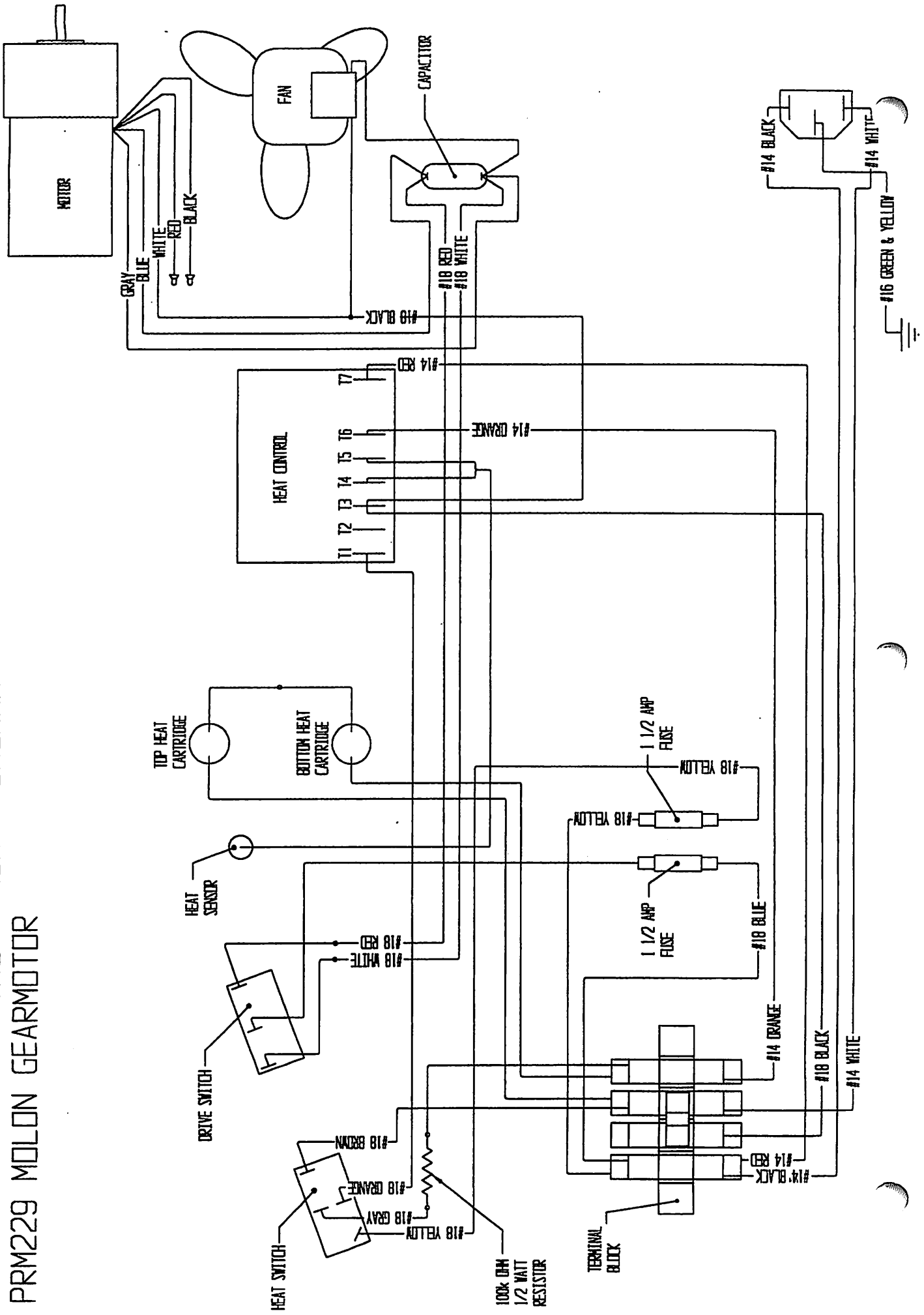
- a. If the rubber rolls have been damaged or produce an hour glass dwell line that can not be corrected with adjustments to the pressure as outlined in procedure 35, the rolls need to be replaced.
  - b. Obtain access to rolls as described in procedure 21.
  - c. Remove the top heat shoe to gain access to the laminating rolls.
    - (1.) Using a 9/64" allen wrench, remove the 4 socket head cap screws that secure the heat shoe.
    - (2.) Swing away the heat shoe (without necessarily disconnecting them).
  - d. Remove the rolls by sliding them to the roll change openings and pulling them through.
  - e. Replace the rubber rolls (part # 0500-040.4).
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### 35. Adjust rubber rolls.

- a. Remove the left plastic housing as described in 3 above.
  - b. If the spring holder assembly is tightened hard against the side panel, adjust by tightening the sockethead capscrews, then backing off one complete turn. The flat washers between the cap screws and the spring holder should be just barely loose. This allows the rubber rolls to "float" under the prescribed spring pressure and to accommodate substrates up to 1/8" thick. The acorn nuts can now be tightened.
  - c. Adjust the rubber roll spring pressure:
    - (a.) Turn the socket head cap screw running through the spring clockwise until the bottom shoulder of the cap screw is just barely touching the flat washer at the top of the spring.
    - (b.) Using a 5/32" allen wrench, turn the cap screws 5 complete clockwise turns on the right side and 6 complete clockwise turns on the left side. This will return the rubber roll pressure spring adjustments to factory specifications.
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# EDUCATOR 208/240 VAC WIRING DIAGRAM PRM229 MOLON GEARMOTOR



# EDUCATOR 120 VAC WIRING DIAGRAM PRM229 MOLON GEARMOTOR

