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Phoenix Electric Series Repair Guide

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THE NEW E4 EVANTAGE

This manual has been compiled as an aid to assist in the upkeep and repair of Phoenix E Series tape dispensers. No warranties implied or otherwise are given.



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Section1: General Maintenance for all Phoenix Dispensers

Please unplug the unit before servicing the machine.

E4-3 Top heater can reach temperatures of 150+F, use caution.

EM4-1K Shear Kit, use caution as cutting blades are extremely sharp

Phoenix© gummed tape dispensers require little maintenance.

However, to ensure trouble free tape feeding, superior moistening, and long cutter life, we recommend the following: Part # in ()

Moistening System –Once a month or as needed clean the moistening brushes.

Remove the water bottle and tank. Wash the water tank (**EM2-1**) and brushes (**E2-3**) in warm soapy water. The water tank is easily removed by lifting the front of the tank over the lip of the tank support Shelf (**EM6-2**). The moistening brushes, there are 3, can be “snapped” out of the tank for easier cleaning and replacement. Note that the brushes are cut on an angle to allow the tape to travel over the full width of each brush, for superior moistening.

Shear Lubrication – (**E3-5**) Felt oiler pad, once a month or as needed

All Phoenix electronic tape dispensers feature chrome hardened “guillotine” style cutting shears (EM4-1K) for long life and superior cutting. Located just behind the upper or moveable shear is the felt oiler (**E3-5K**). Place a few drops of light machine oil (3 in 1) on the felt pad. This prevents glue build up on the shears, the most common reason for poor cutting. If glue build up does occur, you can clean the glue off. See section 2 poor tape cutting.

Tape Path – Clean lower tape plate, heater plate once a quarter or as needed

The lower tape plate (**E3-2**) can after some time get a buildup of glue and paper debris. The stainless steel plate can be easily cleaned with warm water or in severe a light cleaner. Remove the upper tape plate (**EM3-1**) and wipe away glue and built up paper dust. The bottom of the heater (**E4-3**) can also get a buildup of glue. Glue is water- soluble and can be easily cleaned with warm water. Do not scrape heater on any part of the dispenser with a knife or other sharp objects.



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Section2: Troubleshooting for E Series Phoenix Dispensers

Please note some tips and repairs will not apply to your unit, best efforts are made to call out differences between models.

Machine will not dispense tape (fuse)

- Ensure the power is on and power switch is illuminated on E1
- For the E4 ensure lcd display is lit, power cord **(E1-8.2)** is firmly seated inside **(E1-8PPI.4)** power entry module and switch assembly.
- After establishing power is good and connected, unplug unit.
- Check for a blown fuse
 - E4 models fuse is found on the power entry module **(E1-8PPI.4)** use a slotted screwdriver to remove the tray and check that fuse is intact. Replace blown fuses with **(FUSE.4)**
 - All other Electronic models, locate fuse on circuit board. Remove screws from CPU unit side plate **(E1-4AP)**; fuse holder is near the rear of the cabinet. If fuse is blown replace with proper fuse **(FUSE)** or **(FUSE.2)**

Fuses continually trips when unit is powered up

- The most frequent cause is a short in one of the electrical appliances. Check in this order heater – unplug heater **(E4-3, E4-3.2)** from side of unit and test. Motor **(E5-1, E5-1DC)** – remove black motor wires from wire nuts and test. Solenoid (very rare) if the motor and heater are ok it is the solenoid **(E5-5)**.
- Bad drive board **(E1-4CB, E1-4CB.2, E1-4CB.4)** you will need to plug all of the connections into a working drive board to check if your board has gone bad, if another board works then remove the four philips screws to dismount the board and replace.

HINT: E1-4CB.4 has 6 mounting pegs and are difficult to service without breaking lcd, if you are not comfortable with this set up please return for service.

Machine hums when activated but does not dispense tape.

- Worn motor brushes **(E5-2, E5-2.2)** remove brush cap located at top and bottom of motor housing, replace with proper brush ensuring angle runs along armature of motor.

Access to the Motor

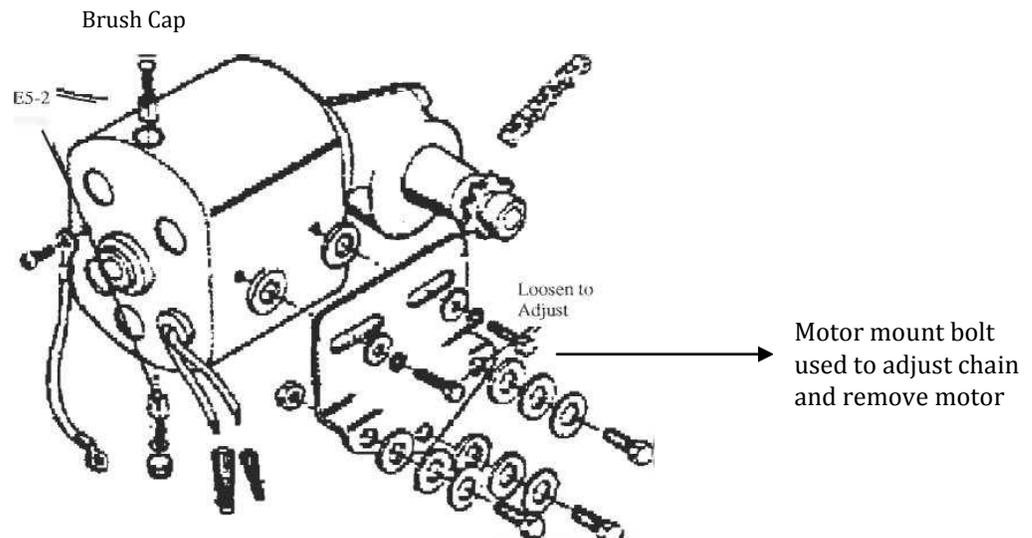
- Remove three phillips head screws around Motor Cover (E1-3)
- Please note that the screws are all of differing lengths, shortest screw mounts rear of cover below water bottle bracket, middle screw holds front of cover and heater cord retaining clip, longest screw is on bottom of cover.



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Motor Adjustments and Replacement

- Remove water bottle (**EM2-2**) and water tank (**E2-1**); remove motor cover (**E3-1**).
- Ensure that both sprockets are securely fastened (**E3-4SP**, **E5-1SP**).
- Ensure proper fit of chain (**E5-4**), pinch the chain with the thumb and fore finger if chain doesn't move it needs to be relaxed, if chain touches itself it needs to be tightened. If needed loosen motor mounting bolts on back of motor housing (between motor and side frame) pull the motor back until chain has just a slight amount of slack. Retighten bolts.
- If the above fails a motor replacement may be necessary
 - Remove green ground from motor
 - For E5-1 (pictured) remove motor wires from wire nuts (replace wire nuts on existing wires)
 - For E5-1DC (not pictured) remove motor wires from DC bridge (note location)
 - Remove motor mount bolts and hardware (save)
 - Replace with new motor, place chain around sprocket before mounting motor on bracket
 - Replace mounting bolts, and round wire
 - For E5-1 place one lead wire into each wire nut
 - For E5-1DC reattach motor wire into proper position on DC bridge





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Machine will not dispense – All appliances are fine

Pilot light/Screen illuminated Heater working

- The issue is most likely the keypad.
- For all units to replace the keypad - remove the five screws holding the access plate **(E1-4AP)**
- E1 unplug keypad and remove, replace with new Keypad **(E1-4KP)**. Make sure that all 8 pins on the board are plugged in to keypad connector
- E4 unplug **(E1-4ICH.4)** interconnect cable, remove the six nuts holding the **(E1-4KPB)** keypad board into the chassis, replace with new part and return nuts. NOTE the LCD is soldered to the board and is not a serviceable part, rubberized keyboard **(E1-4KP.4)** is held on with push pins **(E1-4KPPIN)**.

No Pilot light/ Screen or Heater

- The issue is most likely the power cord **(E1-8, E1-8.2)**
- Make sure there are no kinks or breaks in the power cord
- For the E1-8 make sure ends are securely fastened and they are fully seated on the power switch **(E1-5)**

Machine dispensing short lengths

- All lengths are shorter than called for (i.e. 45" dispenses 35" and 12" dispenses 9").
- Adjust the lower feed wheel **(E7-1)**, remove tape from machine, locate 1 inch diameter hole in the tie plate **(EM6-5)**, inside that hole you will locate a set screw. With a long handle allen wrench 3/32" or 2.5mm turn the set screw clockwise to tighten lower feed wheel.

HINT turn the screw 90° and test lengths – over tightening will cause tape to jam. A quick way to make sure measurement is correct is to feed tape and dispense a 24" piece, fold it in half and then dispense a 12" piece, if the tape lines up to within ¼", your adjustment is correct.



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All keys dispensed are the same length

- Encoder Disc missing, sensor not seeing encoder disc
- Remove access plate (**E1-4AP**) locate encoder disc (**E1-4D**) ensure it is seated on feed wheel shaft (**E3-4**). Replace with new encoder by placing on shaft and tightening set screw
- Ensure that the sensor (**E1-4SEN**) is seated around encoder disc, both shoulders of sensor should be level and cover the due south facing slot in the encoder disc. If same length persists sensor must be replaced. Unplug sensor (note direction of connector) remove two mounting screws and replace.

Tape Lengths are too long (i.e. 6" dispenses 15")

- Sensor is out of adjustment, loosen two screws on sensor bracket, square sensor to the encoder disc and test lengths, once proper length is achieved fully tighten screws

Frequent Tape jams

- Generally caused by buildup of debris either on the brush or the lower tape plate, simply use warm water to dissolve gum buildup.
- Can be caused by a misshaped upper tape plate (**EM3-1**). remove upper tape plate and inspect that both sides are level, replace if necessary.
- Lower tape plate out of alignment (infrequent). using a slotted screwdriver place the tip under the brass rollers and turn the screwdriver towards the center of the machine. This will increase the space between the heater base plate and the lower tape plate.

Theory of Operation: When you select a tape length, the power energizes the solenoid and motor. Solenoid plunges and sends the moveable shear upward. The motor then begins to turn and the two feed wheels "pinch the tape and drive it forward. On the left side of the Upper Feed Wheel Shaft (under the Key Pad) is the Encoder Disc, which is slotted. The Sensor reads the number of slots to determine the correct tape length. When that length is reached, the power is shut off to the Solenoid, & the Upper Shear is pulled back down, cutting the tape.



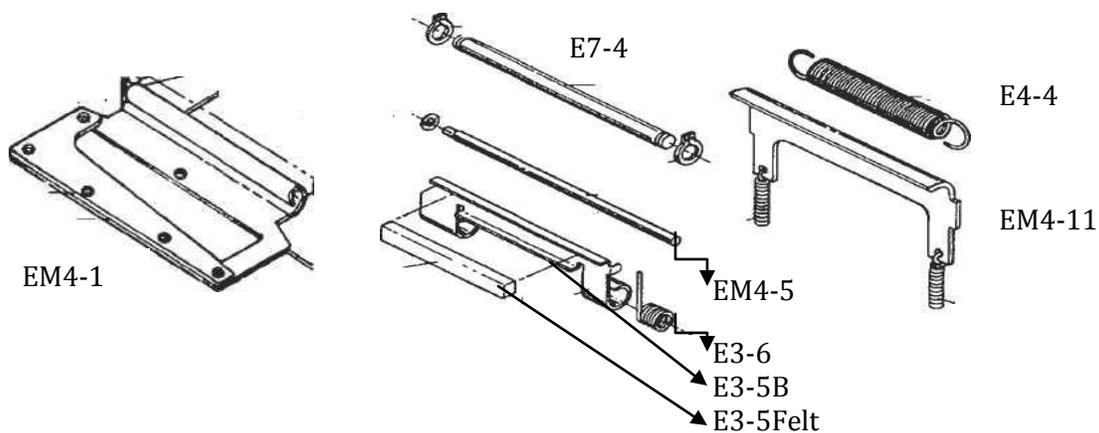
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Poor Tape Cutting

- On new machines, poor cutting can be caused by misaligned or dirty shears.
- Oil Felt behind upper shear – use light machine oil (3in1, wd40 etc.) in extreme cases you may need to scrape debris from the shears
- Alignment – lower shear should have a small gap on the left hand side (1/4")
- Lower shear (pic below) touches the upper shear nearest the right side frame and opens slightly nearest the left side frame. To adjust shear loosen the Phillips head screw located on right side frame directly below the feed wheel shaft sprocket, lift up to increase gap push down to decrease gap.
- On older machines if shear is clean and aligned it may be necessary to replace the shear kit (**EM4-1K**).

Removal of Shears:

1. Remove Water Bottle & Moistening Tank
2. Locate Retaining Bracket (**EM4-6**) on the outside right frame and holds two pivot rods (**EM4-5**).
3. Loosen the screw holding retaining bracket and push up.
4. Remove both rods. remember to keep all hardware for the heater and felt kit, brass rollers can fall through tape plate when heater is removed.
5. Stand machine upright (on it's back cover)
6. Remove the cutter spring (**E4-4**) Remove upper shear. hold nut with pliers on left side of slotted pin, on right side use a slotted screwdriver to turn and remove the pin.
7. Remove the upper shear. the lower shear may impeded removal simply push it towards the rear of the machine.
8. The lower shear sets on top of two shoulders and has 2 small springs attached to frame mounted spring posts.
9. Remove lower shear. You are now ready to mount new shear kit. Shear kit will include EM4-1 Upper Shear, EM4-11 Lower Shear, EM4-1 Pin & hardware





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Installing New Shears

1. Insert lower shear into shoulders located on each side frame.
2. Pull the lower shear springs down and slide them over the spring posts.
3. Replace upper shear, align bottom of shear with holes in cutter yoke. Slide pin through hole in frame, cutter yoke and shear.

HINT: Push the lower shear back slightly so the upper shear seats easily, allow threads of pin to show before placing nut on pin. When pin no longer threads and nut is secure reverse the pin without holding nut to lock the pin in place.

4. Reattach the cutter spring to the bottom of the yoke and solenoid shelf.
5. Replace all other components removed to mount new shears. See above for proper alignment.

Poor Tape Adhesion

- Generally caused by the tape dispenser and not the tape!
- Tape can be either too wet or too dry

Tape Not Adhering – Too Dry

- Most frequent cause is dirty or worn out moistening brushes **(E2-3)**
- Brushes can be cleaned by soaking in hot water, do not cut water brushes. Brushes are manufactured with a shear cut angle that allows for maximum draw of water, cut brushes do not retain angle and will cause jamming.
- Remember you should also clean water tank **(EM2-1)** when you clean the brush excessive build up of gum can cause brushes to fail.
- Always remember to place brushes into tank with the round pin on brush set under the brass clip on tank, reversing this can cause a jam and cause poor results.
- Clean tank and brush and still not adhering – water level may be off or bottle is not present. The tank and bottle act as a system, many users fill the tank manually this allows for improper water level. The thumb screw on the tank adjusts the water level, water level should be approximately ½” from the top of the tank.

Tape Not Adhering – Too Wet

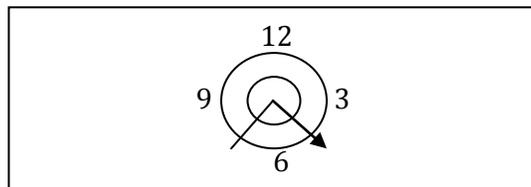
- Tape will eventually set up but in high volume operations it may not be quick enough
- This is rare, heater is not on or broken see heater trouble shooting below
- Too much water in the tank, raise thumb screw.



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Heater Issues (Poor Adhesion Continued)

- Phoenix tape machines come with two styles of heater, an adjustable thermostat and a fixed thermostat. The reason for the switch to the new fixed thermostat is to ensure the proper heat transfer to the tape. The optimum heat range is 105-115°F.
- Tape that has initial tack but then releases from the carton is generally too dry and has too much heat applied.
- Tape that has no initial tack but then sets well is generally too wet and has no heat applied.
- All current formulations of WAT available today use the same type of glue, a 110°F target is optimal heat setting.
- For units with adjustable heaters the 12 o'clock setting is desirable, when setting heat output if you are uncomfortable touching the base of the heater it is too hot!



- Pictured above is the range of the heater thermostat where the line indicates the off position and the arrow indicates maximum heat.

Solenoid Troubleshooting

- Very rare – coils have a normal operating life of 25+ years
- Check the linkage (**E5-5Ears**) as they can wear.
- In the event the solenoid (**E5-5**) needs to be replaced simply remove the 4 screws from the solenoid shelf, drop the solenoid and remove wires from wire nuts as discussed in motor replacement. Solenoid has 2 black wires order does not matter. Replace.

HINT: If you hear a humming noise from the solenoid remove the two front screws and swing solenoid down (unit is on rear cover) and clean out paper build up. Replacement solenoid comes mounted; remember to align plunger before mounting new solenoid. Always check the ears and hardware when solenoid is open.

Conclusion – Phoenix Tapers are built for longevity, minimum maintenance is required. We have installed thousands of units since 1996 and most are still in operation today. Thanks for buying a Phoenix, your best choice for safe, reliable, secure carton sealing! Please contact us for any additional service inquiries.