



# **Model BP555e Tape Dispenser**



# **BP555e SERVICE MANUAL**

BETTER
PACKAGES®

255 Canal Street Shelton, CT 06484 Web Site: <a href="https://www.betterpackages.com">www.betterpackages.com</a>

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#### SAFETY PRECAUTIONS

Must read before servicing equipment.

Always unplug the machine before performing any maintenance or repair. Line voltages may be present even with power switch in Off position.

- This machine is designed for sealing cartons with water activated tape. Any other use will void all warranties and any responsibility or liability of *Better Packages*, *Inc.*
- Read all Safety Precautions and Operating Instructions before powering on and using the machine.
- Any operator of this machine must be fully trained in the operation and safety.
- In the event of a malfunction or breakdown, grounding provides a low resistance path for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
- Before connecting the machine to the power mains verify that the electrical ratings of the machine match the electrical supply intended for connection, otherwise do not connect. If the correct power is not available contact the reseller.
- Before maintenance or repair, disconnect the power cords from the electrical supply and protect the cables from any possible accidental connection carried out by unauthorised personnel.
- Keep the machine away from children and from personnel who are not authorised or adequately instructed in the use of it.

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## **TECHNICAL DATA**

**Size:** 20"Lx12.5"Wx12"H (51 x 32 x 30 cm)

**Dispensing Speed:** Up to 45" (114 cm) per second

Water Bottle Capacity: 2 pints 2 oz. (1 liter)

Shipping Weight: 32 lbs. (15 kg)

**Power Requirements:** 555es, eSA, eL, eLA – 115 volts, 60 Hz, 4 Amps

555eMA, eFA - 220/240v, 50 Hz, 2 Amps

555eJA - 100V, 50/60 Hz, 4 Amps

**Tape Width:** 1-1/2" to 3" (3.8 to 7.7 cm) wide

Maximum Roll Size: Up to 1000 ft. of tape

Up to 10" diameter roll(25 cm)

All specifications subject to change without notice

## MAINTENANCE AND REPAIR

The machine is designed for easy maintenance. Regular maintenance will insure a long dependable machine life.

#### **Recommended Preventative Maintenance**

# Clean Brushes and Tank - Weekly

Clean the brushes on a weekly basis or when glue build up effects proper moistening of the tape. The glue can prevent sufficient and even water flow to the tape causing poor moistening of the tape. Regular cleaning will extend the life of the brushes and insure that glue build up will not cause tape jams or poor tape moistening.

#### Procedure:

Unplug power from the machine! Remove the water bottle and water tank.
 Twist the tank up over the lip on the tank shelf that prevents it from sliding out of the machine.

#### Caution: Heater may stay hot for a period after machine is off.

Remove the brushes from the tank to remove any dried adhesive. You will need to tilt the brushes to clear the retaining bracket. Notice how the brushes are positioned in the tank because the must be replace correctly.

- 2. Wash the brushes and tank with warm water and soap.
- 3. Place the brushes back into the water tank. It is extremely important that they are positioned correctly. Brushes must be sloped toward the front of the dispenser in order to work properly. The top of the brushes are cut at an angle. Shorter brushes go in the back. The longer length bristles must be toward the front of the machine (tank).

Notice: Installing the brushes backwards will cause excessive tape jams.

Never cut the brush tips to remove glue as they are cut at a specific angled and flagged to facilitate proper moistening and cutting will most likely cause tape jams.

# **Lubricating the Felt Blade Oiler - Monthly**

The blade oiler is a felt pad soaked with oil that presses lightly on the back of the shear blade. The oil will keep your shear blades lubricated for clean, fast cutting and prolong the life of the blades. It also extends the time between blade cleanings.

#### 1. Unplug power from the machine!

- 2. Pull back gently on the blade oiler to move it away from the shear blade.
- 3. Keep the felt pad slighly moist by adding several drops of light machine oil,e.g. 3-in-1 oil, at weekly or monthly intervals depending on use. Do <u>not</u> over oil.

Notice: If the felt pad is missing, contact you Better Pack representative for a new oiler Better Pack P/N SA10XX

# **Cleaning the Shear Blades**

When using reinforced tapes laminated with glue or resin, this material can accumulate on the blades and interfere with cutting the tape. Even paper tape with no reinforcement can cause an accumulation of dust and glue on the blades.

Use a small brush and a suitable solvent to remove accumulation.

Never scrap the cutting edge with a hard object because the blade may become dull and need replacement.

Warning: Be sure the dispenser is UNPLUGGED before performing any cleaning procedures.

# **General Machine Cleaning**

The feed wheel pushes tape through the machine. Obstructions such as dirt or dried glue can divert the tape and cause it to jam. Periodical cleaning the tape path will mitigate tape jams.

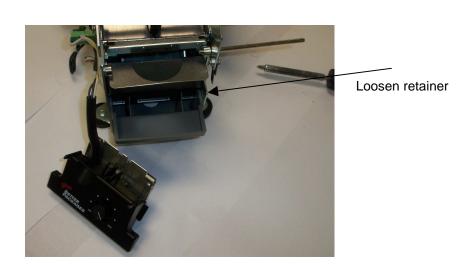
- 1. Remove the upper tape plate that sets on the tape next to the feed wheel. Pull tape off from the lower tape plate if it hasn't already been removed. Clean any dirt and glue from the upper and lower tape plates.
- 2. Lift the heater up and clean the bottom of it.

#### Heater

It is recommended that the Heater be replaced by a Better Packages supplied Heater to maintain safety compliance.

(Note: Always unplug machine when performing service to machine)

- 1. Remove the water bottle and tank and brushes.
- 2. Remove the right side cover from the machine by the (5) screws that fasten cover to the side frame.
- 3. Remove left side cover from machine by removing (5) screws that fasten cover to frame. When removing this cover lift gently and remove the membrane switch from the pc board.
- 4. On the right side frame loosen the screw that locks the bracket onto the shaft that goes through the heater assembly.
- 5. Cut the tie-rap that fastens heater to frame. Remove heater plug from pc board.
- 6. From the right side remove the shaft holding the heater in place. Remove your old heater and take off the lower heater plate.
- 7. Place the lower plate on your new heater and reinstall your heater back onto machine. Be sure to lock the bracket back into the groove in the shaft and tighten screw on bracket.
- 8. Plug your heater back into the pc board and tie-rap the heater back onto frame.
- 9. Replace membrane switch back onto pc board and fasten left cover back onto frame with (5) screws.
- 10. Replace right side cover back onto frame with (5) screws.
- 11. Replace tank, water bottle and plug machine back in.

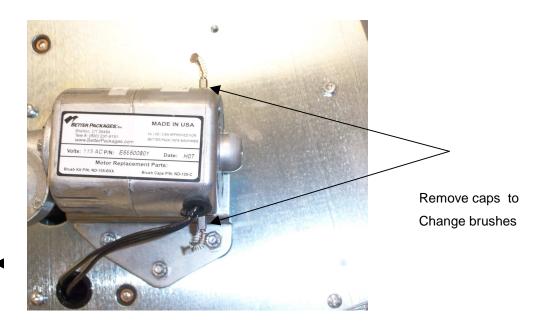


#### **Motor Brush**

The motor brushes will last a long time but usually not as long as the rest of the machine. If the motor stops working or runs excessively slow, the motor brushes may need replacing.

(Note: Always unplug machine when performing service to machine)

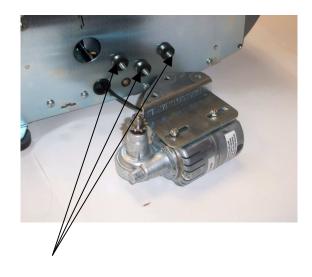
- 1. Remove the water bottle, tank and brushes
- 2. Remove the right side cover from the machine by removing the (5) screws that fasten the cover to the frame.
- 3. The motor should now be visible. Locate the (2) black slotted brush caps on the top and bottom of the motor. Remove them with a flat screwdriver by turning them counterclockwise.
- 4. Pull the brushes out of the motor. Attached to the cover is a spring, which is attached to a small rectangular shaped carbon brush. Make sure the brush comes out before inserting the new brush in. Usually the brush will come right out, but if it doesn't, insert a small object, e.g. a paper clip into the hole to free it up. If necessary tip the machine up so that the brush will fall out. If you have compressed air now is a good time to blow the residual carbon dust out of the motor. If air is not available, just tap on the motor with it positioned so the dust can fall out of the brush holder.
- 5. If either brush is less than ¼" long, both brushes should be replaced. Insert the brush into the brush holder being sure to match the concave of the brush with the motor. Screw the brush caps back onto the motor.



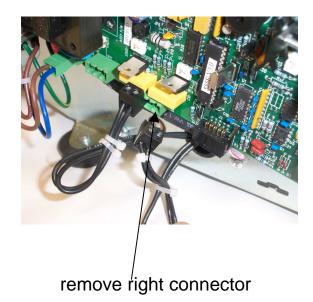
#### Motor

(Note: Always unplug machine when performing service to machine)

- 1. Remove the water bottle, tank and brushes
- 2. Remove the right side cover from the machine by removing the (5) screws that fasten the cover to the frame.
- 3. The motor should now be visible. Loosen the 3 nuts that are fastening the motor to the frame.
- 4. Remove the 5 screws from the left side cover. Be sure not to let the cover fall off because the keypad cable will break off. Once the cover is off, take the keypad cable off the board and remove the connector from the board that is marked mtr. Now run the new motor wire through the machine and connect it to the board. Fasten the motor chain to the sprocket and fasten the motor to the frame.
- 5. Get the motor snug and tighten the 2 screws on the motor bracket.
- 6. Connect the keypad cables and put left side cover back on.
- 7. Put right side cover back on .
- 8. Add tank, water bottle and plug cord back into machine.







#### **Shear Blade**

(Note: Always unplug machine when performing service to machine)

- 1. Remove the water bottle, tank and brushes
- 2. Remove the right side cover from the machine by removing the (5) screws that fasten the cover to the frame
- 3. Remove the left side cover from the machine by removing the (5) screws that fasten the cover onto the machine. Gently lift the cover and remove the membrane switch from the pc board.
- 4. Remove the (2) screws that hold the baffle plate onto the machine. Take the baffle plate out.
- 5. Loosen the screw on the right side frame that locks in the shaft holding the heater and blade oilier in place.
- 6. Remove the heater and blade oiler by pulling out the shaft from the right side.
- 7. Remove tank shelf by inserting flathead screwdriver in-between tank shelf and frame.
- 8. Remove the spring that is fastened to the cutter yoke.
- Loosen the pin that holds the blade in place by turning it counter clockwise with a flathead screwdriver. If the pin doesn't turn loosen the pin with a pair of vise grip pliers. Once the pin is loose remove it and remove the blade.
- 10. Remove the spring from the upper blade by unhooking the springs from the pins. Remove the blade.
- 11. Replace the upper blade and hook the springs back onto the pins.
- 12. Replace the lower blade with the new shaft.
- 13. Replace spring back onto yoke assembly.
- 14. Replace tank shelf back onto machine.
- 15. Replace baffle plate back onto machine and fasten with (2) screws.
- 16. Replace heater assembly and blade oiler and lock pins back on right side frame.
- 17. Replace membrane switch back into pc board.
- 18. Replace left side cover with (5) screws.
- 19. Replace right side cover with (5) screws
- 20. Replace tank, water bottle and plug in machine





## Feed Wheel / Blade Height Adjustment

When a dispense key is pressed the tape cutter blade and the lower feed wheel lift up.

The machine has an adjustment set screw that sets the height of the blade and lower feed wheel. The adjustment sets the amount of pinch force between the upper and lower feed wheels. If the feed wheel does not grip the tape sufficiently, the tape can slip. When the tape slips an inaccurate measurement of the tape length occurs, resulting in a shorter than normal tape piece. If short or erratic tape lengths occur, the adjustment described below may need to be performed to correct the problem.

#### **Procedure**

- 1. Unplug! the power cord from the back of the machine.
- 2. Open the top cover then remove the roll of tape and tape guides.
- 3. Insert a **3/32**" **Allen wrench** through the access hole in the in the plate (Vertical Tie Plate) at the front of the tape basket area and into the adjustment set screw.

Note: The set screw is located about 2-1/4" in front of the access hole and can be hard to locate. The set screw can be partially seen by viewing through the slots from back of the tape machine between the rear cover and the side of the machine.

- 4. Turn the set screw clockwise ½ turn to tighten the feed wheel.
- 5. Reassemble and test machine, repeat if still slips.



# **Keypad and Membrane Switch**

(Note: Always unplug machine when performing service to machine)

## **Procedure**

- 1. Remove the water bottle ,tank and brushes
- 2. Remove the (5) screws that fasten the left side cover onto the frame. Gently lift the cover and remove the membrane switch from the pc board.
- 3. Remove the keypad bezel by inserting a thin flathead screwdriver in-between the keypad bezel and the cover. Lift the bezel up and remove it from the cover. Remove the keypad and membrane switch.
- 4. Place new membrane switch assembly and keypad back in and replace bezel back on cover.
- Connect the membrane switch back into the pc board and replace left side cover back onto the frame using the (5) screws.
- 6. Replace tank, water bottle and plug machine back in.

Remove keypad membrane From board \square



# Replace Keypad Only

- 1. Unplug machine and remove water bottle.
- 2. Insert a thin flathead screwdriver in-between the keypad bezel and the cover. Lift the bezel up with your fingers and remove the old keypad and replace it with the new keypad.

3. Place the bezel back onto the cover and lock it in replace tank, water bottle and plug machine back in





# **Connector Plate Assembly**

(Note: Always unplug machine when performing service to machine)

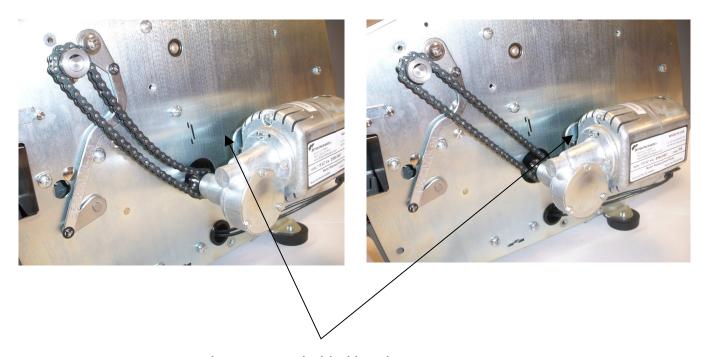
- 1. Remove the 5 screws holding the left side cover on
- 2. Remove keypad membrane and remove the 2 screws holding the connector to the frame
- 3. Remove the connectors from the board
- 4. Place new assembly back onto the frame and fasten with the 2 screws
- 5. Replace the wire connectors back onto the board
- 6. Replace the keypad membrane back onto the board
- 7. Replace the cover back onto machine with the 5 screws
- 8. Plug machine back in



# **Motor Chain Adjustment**

( Note: Always unplug machine when performing service to machine)

- 1. Remove water bottle and water tank assembly
- 2. Remove the left side cover
- 3. Loosen the 2 nuts that hold the motor onto the motor bracket (Be sure not to remove the nut completely)
- 4. Push the motor towards the rear of the bracket until there is no more slack on the motor chain
- 5. Tighten the nuts on the motor chain bracket until snug. Do not over tighten
- 6. Replace cover, tank and water bottle.

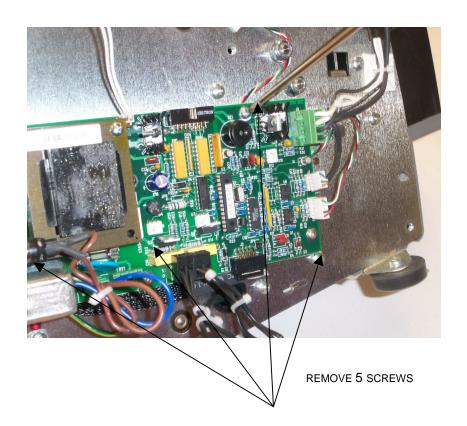


Loosen nuts behind bracket
To adjust

#### **Control Board**

( Note: Always unplug machine when performing service to machine)

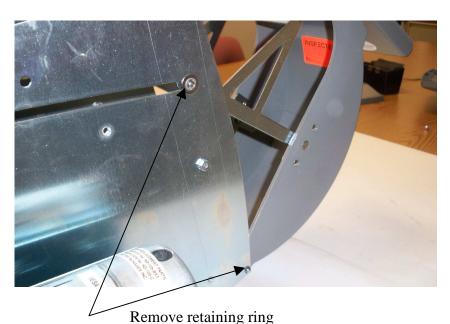
- 1. Remove bottle, tank and brushes
- 2. Lay machine onto right side
- 3. Remove the 5 screws from the left side cover, lift the cover and remove the keypad membrane from the board
- 4. Lay the cover down and remove all the connectors from the board
- 5. Remove the 5 screws holding the board to the frame and place the new board in its place and fasten with the 5 screws
- Replace the connectors back onto the board (the solenoid and motor both have black wires so when replacing these back on the shinier wire connected to the motor)
- 7. Connect the keypad membrane and close the cover. Be sure that no wires are being pinched
- 8. Fasten cover with the 5 screws
- 9. Replace the water tank and brushes and the water bottle
- 10. Plug in machine



# Front and Rear Cover Assembly

(Note: Always unplug machine when performing service to machine)

- 1. Remove bottle, tank and brushes
- 2. Remove right cover. Remove left cover and remove keypad membrane from board
- 3. Remove the 2 retaining rings holding the bracket assembly to the right and left frame. Be sure not to lose the washers and retaining rings
- 4. Remove the retaining ring from the pin holding the rear cover in place. Slide the pin to the left and remove from machine.
- 5. Remove the spring from the cover and put it on the new cover
- 6. Replace the new cover on machine and push the pin through the frame and cover until it gets through to the other side and than fasten the retaining ring back onto pin
- 7. Attach the brackets back onto the side frames using the washers and retaining ring that were taken off
- 8. Replace the keypad membrane onto the pc board
- 9. Replace the right and left side covers
- 10. Replace the tank, brushes and water bottle



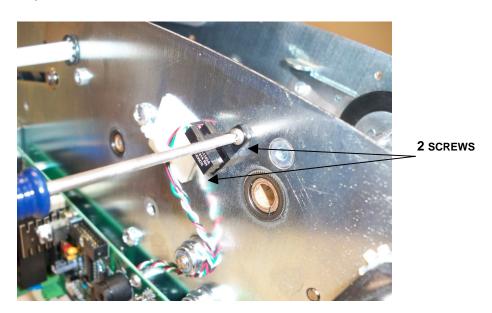
For upper ring remove from both side frames

# **Length Sensor**

(Note: Always unplug machine when performing service to machine)

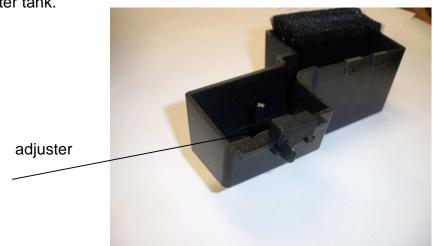
### **Procedure**

- 1. Remove left side cover. Remove the keypad membrane from the control board and lay the cover on the bench
- 2. Remove the 2 screws holding the sensor in place and remove connector from board
- 3. Place new sensor on machine and fasten with the screws and replace the connector to the board
- 4. Replace the keypad membrane back onto the board
- 5. Replace the cover back onto machine



# **Water Level Adjustment**

To adjust the water in the tank to the desired level slide the water level adjuster to the left to decrease the water level and slide adjuster to the right to increase the water level in the water tank.



## **Tape Sensor**

(Note: Always unplug machine when performing service to machine)

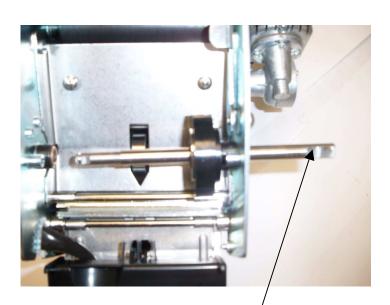
- 1. Remove left side cover
- 2. Remove sensor from back of heater assembly and remove connector from board
- 3. Replace sensor onto the back of the heater assembly
- 4. Replace connector back onto board
- 5. And fasten with a cable tie
- 6. Replace cover back onto machine



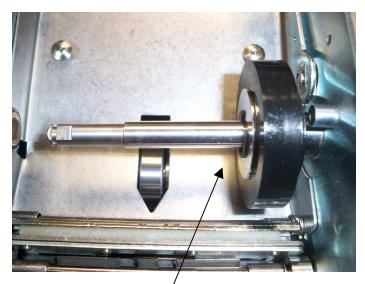
#### **Feed Wheel**

( Note: Always unplug machine when performing service to machine)

- Remove bottle, tank and brushes. Than remove the right and left side covers
- 2. Loosen set screw on feed wheel shaft sprocket
- 3. Remove encoder disc from shaft
- 4. Remove retaining ring from shaft on backside of the feed wheel
- 5. Slide feed wheel to the right and remove the pin holding the feed wheel in place
- 6. Remove feed wheel and place new feed wheel on
- 7. Place pin in hole and slide feed wheel to left into the pin. Add the washer to back of wheel and place the retaining ring back on
- 8. Replace your encoder disc back on
- Replace the sprocket back onto the feed shaft and tighten the set screw (be sure that the set screw is tighten onto the flat part of the shaft)
- 10. Replace the right and left side covers back on
- 11. Turn on machine and replace the tank, brushes and bottle back on







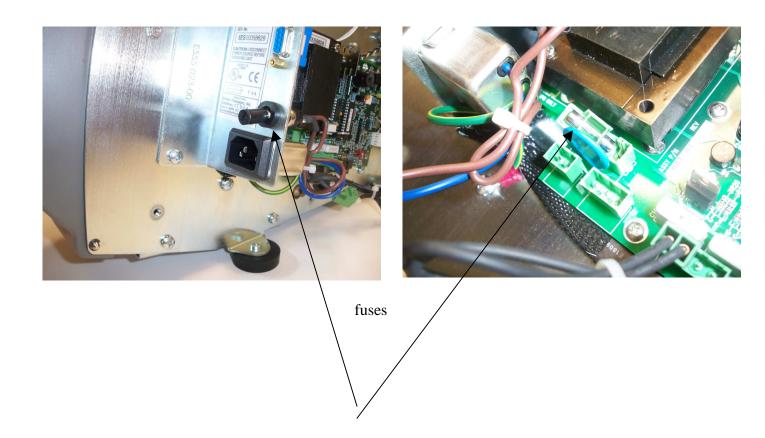
Remove retaining ring

#### **Fuses**

(Note: Always unplug machine when performing service on machine)

There are 2 fuses in this machine.1 is on the control board and 1 is in the connector plate

- 1. To change the fuse in the connector plate unscrew fuse holder on the plate above where the machine is plugged in.
- 2. Remove the fuse and replace with a new one (pn 2341)
- 3. To change the fuse on the board remove the left side cover.
- 4. The fuse is located below the transformer. Remove the fuse and replace with a new one(pn2128)
- 5. Replace the left cover back onto machine



# **Solenoid Replacement**

( Note: Always unplug machine when performing service to machine)

- 1. Remove the water bottle and tank assembly
- 2. Remove the right cover
- 3. Remove the left cover being careful not to pull the cover off before removing the keypad membrane from the PCboard
- 4. Remove the baffle plate
- 5. Remove the spring that is connected to the solenoid and yoke
- 6. Remove the tank shelf
- 7. Remove the 4 screws (2 on left frame, 2 on right frame) that hold the solenoid in place
- 8. Unhook solenoid connector from the PC board and reconnect the new solenoid connector to the board, screw the solenoid into place. Be sure that the solenoid plunger is in the solenoid before proceeding to reassemble the machine. If this is done start reassembling the machine by reconnecting the spring to the yoke and the solenoid. Replace the tank shelf ,baffle plate, left and right covers and the water tank and bottle





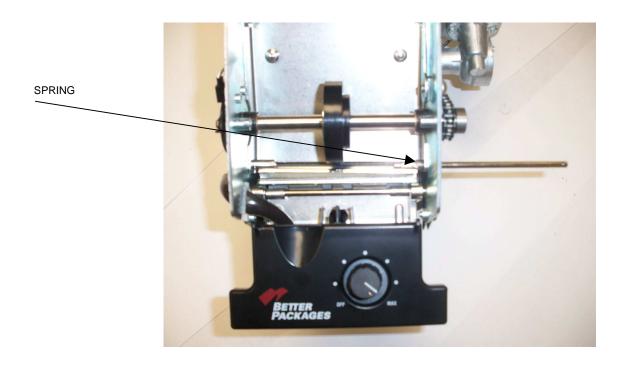
Left connector

#### Solenoid connector to pc board

#### **Blade Oiler**

(Note: Always unplug machine when performing service on machine)

- 1. Remove bottle, tank and brushes
- 2. Remove right and left side covers.
- 3. Loosen the screw on the upper right side frame holding the retainer bracket in place
- 4. Lift the bracket and remove the 2<sup>nd</sup> shaft out to remove the used oiler
- 5. To install the new one, put the shaft in from the left side. As the shaft is being inserted place the new oiler in and be sure that the shaft is going through the oiler
- 6. Do not put shaft all the way through. Place the oiler spring at the right side holding it with a pair of needle nose pliers.
- 7. The spring has to lay flat on the lower tape plate. Than you can get the shaft to go through the spring. Now take the upper part of the spring that is being held with the pliers and bring it to the left of the oiler bracket where the bracket has a bend on it. Let the spring go.
- 8. Lock the shaft back into place with the bracket and tighten the screw.
- 9. Replace the left and right side covers
- 10. Replace the tank, brushes and water bottle



# **TROUBLESHOOTING**

# **Tape Feed Problems**

- Tape Jams
- Tape Strips too short
- Tape Lengths too Long or constant feed.
- Tape Feeds too slowly
- No Tape Feed
- Tape Hits Blade or Left Hand Corner of Tape Folded

# **Tape Jams**

- Tape path dirty
- Tape pieces stuck in machine
- Brushes positioned incorrectly
- Upper tape plate missing
- Roll Guide Misadjusted
- J-Plate bent
- Heater Plate Bent
- Blade height needs adjusting
- Tape damaged or frayed

# **Tape Strips to Short**

The machines measures the tape length by counting the number of pulses from the length encoder. Each time one of the small cutouts in the encoder wheel passes in front of the optical switch a pulse is produced. When the programmed number of pulses is reached the machine turns off the motor and cuts the tape. The most likely cause for a short lengths is the feed wheel slipping on the tape.

#### Slippage

If the blade height is not adjusted correctly sufficient pressure may not be exerted on the tape by the feed wheel. Adjust blade height if needed. Reference the section Feed Wheel / Blade Height Adjustment for instructions

A dirty or oily feed wheel may slip on the tape. Clean the surface of the feed wheel that contacts the tape with a mild cleaner and a clean cloth.

# **Tape Strips to Long**

If the controller board does not see all the encoder pulses the tape produced will be long

#### Encoder Problem

Verify the length encoder is plugged into the controller board and none of the wires are broken.

If a bad encoder sensor (optical switch) is suspected, swap in a known good one to confirm it.

#### Controller Board

If the encoder is good, then the controller board is suspect.

Swap in a known good controller board to confirm it.

# **Constant Feed or Extremely Tape Piece**

- Length Encoder
- Controller Board Failure

# **Tape Feeds Slowly**

If the tape roll is free to turn and there is no tape jammed in the machine, the most likely reason for the tape to dispense slowly is bad brushes.

#### Motor Brushes Worn

Brushes will supply years of use under normally conditions, but may eventually wear out and need replacing.

#### Motor Defective

If the brushes are found to be good, then the motor may need to be replaced.

#### CodeTaper

If a CodeTaper is being used, verify tape is not binding in it and that tape can be pulled freely through it.

# • Low Line Voltage

Low line voltage can slow the motor speed down as much as 20% but it will still dispense quickly. Usually the solenoid will chatter or the machine will stop dispensing all together by the time the line voltage is low enough to cause the tape to feed extremely slow.

# No Tape Feed

If the power indicator lamp is illuminated but the motor does not start check the following:

#### Interlock Circuit

The interlock circuit disables the motor and solenoid from operating when the top cover is open. When the cover is closed, it actuates a switch that applies power to the controller board for motor and solenoid only. If the interlock circuit is defective both the motor and the solenoid will not energize, so if the solenoid can be heard the problem is most likely not in the interlock circuit.

## - Top Cover open

Verify that the top cover is closed completely.

#### - Magnet missing

Verify that the small magnet located in the top cover is present. It should be found located in the cover at the spot that aligns with the magnet reed switch (1/2" dia. circular disc) in the left side frame when the cover is fully closed.

## - Interlock Switch circuit not plugged in.

Verify that the Interlock reed switch is plugged into the Controller board at the connector marked interlock.

# **Left Hand Corner of Tape Folded Over**

Blade not high enough for tape to pass under it unobstructed.

Adjust the blade height.

## **WIRING DIAGRAMS**

- BP555e Wiring Diagram
- Power Switch Assy
- Length Sensor Assy
- Tape Sensor Assy
- Heater Wiring Diagram
- Keyboard Schematic

