



6.0 Troubleshooting

INTRODUCTION

Table 6-1 provides a logical sequence of tests that are designed to isolate problems with the Bliss Box Former machines. This table includes a list of probable causes and remedies. Referring to Section 5.0 will aid in understanding the operation and functions of various components and systems of the Bliss Box Former machines and help in diagnosing and repair of the machine.

SAFETY PROCEDURES

As with all machinery, injury can result if safety procedures are not adhered to. The following are some of the safety rules that should be incorporated into your plant safety program and put into practice by all of your maintenance and operating personnel:

1. Always lock out machine before doing maintenance or adjustments on equipment.
2. Never run the machine without the guards in place.
3. This machine is equipped with hot melt glue applicators, always wear protective equipment when working around hot melt units.
4. Always check machine for worn or loose parts and replace and tighten as needed before starting.
5. This machine operates on high voltage and only qualified electricians should work on electrical components.
6. Always be aware that this machine can start automatically when in the auto position and downstream control contact and/or time delay attachment is used.
7. Always wear proper clothing and protective equipment.
8. This machine should be operated by trained and qualified personnel only.

6.1 Troubleshooting Chart

See Next Page.

Table 6-1: Troubleshooting Chart

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
1. Blanks will not feed out of hopper.	A. Dull pick needles.	A. Replace needles.
	B. Pick pawls push blanks back in hopper when blank supply is low.	B. Spring tension is too tight on pick pawl. With pawl in down position, remove spring tension bolt. To adjust spring tension, reinstall bolt by turning approximately 3 revolutions. This is a good starting point. Do not try to run less than 2 inches of blanks in hopper.
	C. Improper gate clearance.	C. Adjust hopper blades (See Figure 5-14).
	D. Body blanks too wide.	D. Vertical guides are set at the factory with spacer bars, check with corrugated supplier.
	E. Warped body blank.	E. If warp is more than 1/4 inch per foot, break blank opposite of warp or replace blanks.
	F. Blank cut outs not stripped of trash, causing blanks to interlock.	F. Clean cutouts.
2. Blanks will not slide down in hopper.	A. Loading ramp dirty or rusty.	A. Polish ramp (0013602) with scotch brite.
	B. Hopper ramps not adjusted to correct height.	B. Adjust hoppers (See Figure 5-14).
	C. Hoppers dirty or rusty	C. Polish Hoppers (0019004 R/L) with scotch brite
3. Bottom of blanks not sliding between vertical guide bars.	A. Lower blank guides not adjusted correctly.	A. Adjust blank hopper lower guide (0018902 R/L) as low as possible on body blank. Make sure inside edge of guide is even with inside edge of vertical guide bar. (0017904)
	B. Body blanks too wide.	B. Adjust vertical guides or change blanks (See Figure 5-6) and changing shims at bottom of vertical guides. (0029100)
4. Machine stops suddenly. (Continued on the next page.)	A. Blanks jammed in hoppers.	A. Clear jam and reset blank pick safety by pulling down on the blank pick pawls.
	B. Weak spring tension on detent ball.	B. Tighten spring plug. If this still doesn't remedy the situation, add one (1) 1/4 inch lock washer to the spring for additional tension.



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Table 6-1: Troubleshooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
4. Machine stops suddenly (Continued)	C. Detent hole worn out in detent rod (0016000).	C. Replace rod.
	D. Detent hole worn out in detent rod (0016000).	D. Bend tang welded to blank pick safety con rod (0016100), toward micro switch until button is held in "normally open" position. CAUTION: When blank pick safety breaks turn switch to off position before resetting blank pick.
5. No glue on sealing flanges	A. Back up rollers too loose	A. Adjust back up roll (See Figure 5-17).
	B. Problem with glue pump.	B. See No. 21 Adhesive will not feed, in Trouble Shooting Section, Page 6-6.
	C. Body blanks too narrow.	C. Wheel not touching sealing flange on one side. Adjust vertical guide bars or replace body blanks.
6. Blanks will not feed straight down.	A. Backup rollers too tight.	A. It is possible to have one or both too tight. Readjust backup rolls until good teeth marks show on blank.
	B. Blank feed idle roller not aligned.	B. Angle of roller may be changed by loosening the bolts holding the plates (0016400: See Figure 5-16), and rotating them until the roller lines up with feed roller.
7. Body blanks hit forming mandrel.	A. Blank pick timing too early.	A. Retime cam (See Figure 5-15).
	B. Body blanks have excessive warp.	B. Adjust blank guides on vertical bars as needed. If not enough, to remedy problem break blanks on score opposite warp. In some cases special guides have to be designed.
8. Body blank hits end guides.	A. Body blanks have excessive warp.	A. Install spring loaded blank guides. Or break blanks on score opposite to warp.
9. End picks not returning enough to get behind box ends.	A. Mandrel stroke too short.	A. Readjust mandrel stroke (See Figure 5-9A, and 5-9B).

Table 6-1: Troubleshooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
10. Sealing flanges rip off as box is being formed.	A. Side compression plate not opening all the way.	A. Check compression cable assembly for binding, make necessary adjustment (See Figure 5-10A). Check compression actuating linkage and shaft for binding (See Figure 5-10B). Remove all excess paper that might be lodged in compression linkage. Lubricate all moving parts of compression.
11. Boxes being pulled out of compression by mandrel.	A. Mandrel stroke too short.	A. Readjust mandrel stroke (See Figure 5-9A and 5-9B).
	B. Top compression shoes too tight.	B. Readjust compression (See Figure 5-11).
	C. Dirty mandrel.	C. Clean off all foreign material and scrape off excess glue.
12. Box ends pulling back with mandrel.	A. Mandrel wrong size.	A. Alter mandrel.
	B. End too thick or too thin.	B. Change ends.
	C. Too much glue or too hot.	C. See Adhesive Section.
13. Forming mandrel hits blank before blank hits bottom stops	A. Blanks too wide.	A. Adjust vertical guides or replace body.
	B. Blank feed idle roller too loose.	B. Adjust roller (See Figure 5-16).
	C. Timing of blank feed too late.	C. Readjust blank pick cam (See Figure 5-15).
	D. Backup rollers too tight.	D. Readjust clearance (See Figure 5-17).
14. Body blanks bounce off bottom stops and mandrel hits it.	A. Misaligned rebound stop.	A. Readjust rebound stop (See Figure 5-7). Or add one if not already present.
	B. Timing of blank feed too late.	B. Readjust blank pick cam (See Figure 5-15).
15. Box end will not feed. (Continued on next page.)	A. Insufficient clearance in end hoppers.	A. Adjust end hoppers (See Figure 5-8B). Do not run with less than 4" of end.
	B. Upper end hopper too low (0013401 R/L).	B. Adjust hopper (See Figure 5-8A).
	C. Ends have excessive warp causing end picks to miss head.	C. Replace ends or back break the ends. If ends not printed run backwards. If printed and has lid flap break on score so lid flap is leaning toward mandrel. If no lid flaps, back break ends.



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Table 6-1: Troubleshooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
15. Box end will not feed. (Continued)	D. Wrong size end picks.	D. Replace with end picks to fit corrugated thickness (See Figure 5-2).
16. Box has tear in bottom corners.	A. Mandrel too large for box.	A. Check blank and end to mandrel, correct one or the other. (Check fit: remove mandrel from machine and set on blank. Place ends in and fold box around mandrel. Should be a snug fit.)
	B. Bottom stops not adjusted correctly.	B. Readjust bottom stops (See Figure 5-6).
17. Bottom of box has round corners.	A. Wrong mandrel size.	A. Change mandrel size or change corrugated.
	B. Top compression too tight.	B. Readjust top compression (See Figure 5-11)
	C. Adhesive bond breaks on one corner.	C. Glue too hot or too cold, check temperature. Incorrect compression, readjust per blank thickness.
	D. Blank scores not centered on mandrel.	D. Adjust bottom stops (See Figure 5-6).
	E. Variation in length of blanks.	E. Check with corrugator.
18. Mandrel does not stop at "cycle start" position.	A. Mandrel stop brake worn.	A. Machine "coasts" through the "cycle start" position. Adjust brake (See Figure 5-19).
	B. Stop micro switch cam out of adjustment.	B. Adjust cam (See Figure 5-18).
19. Blank pick cam slips on shaft.	A. Cam set screw not tightened securely.	A. Tighten and retune the cam (See Figure 5-15).
	B. Blank safety con rod dry or rusty inside slide area.	B. Clean and oil.
	C. Blank safety too tight.	C. The spring in the detent housing should be set only tight enough to insure picking a blank under normal conditions. Back off spring adjustment if necessary.
20. Box falls apart after compression. (Continued on the next page.)	A. No glue.	A. Fill pot. Keep glue level over the halfway point.
	B. Improper clearance between backup rollers and pump drive gear.	B. Readjust back up rollers to proper clearance. (See Figure 5-17)

Table 6-1: Troubleshooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
20. Box falls apart after compression. (Continued)	C. Glue too hot.	C. Stringy look. Turn down temperature.
	D. Glue too cold.	D. Glue bead not spreading out in compression. Raise temperature.
	E. Improperly adjusted compression.	E. Readjust (See Figure 5-10A, and 5-10B and 5-10C)
	F. Corrugated too thin.	F. Check with corrugator supplier or readjust compression. (See Figure 5-10A, 5-10B, 5-10C, and 5-11) New spacer bars may have to be made.
21. Adhesive will not feed (Continued on the next page.)	A. No adhesive in pot.	A. Fill pot to at least halfway mark.
	B. Improper clearance between backup roller and pump drive gear.	B. Readjust to proper clearance (See Figure 5-17)
	C. Worn or broken teeth on drive gear.	C. Replace gear.
	D. Plugged applicator jet (0024500)	D. Use a paper clip or piano wire to clean the jets. (NOTE: The orifice diameter is 0.040"). WARNING: Glue pumps and pots are extremely hot, use safety goggles, heat resistant gloves and protective clothing and take your time when performing any adjustments relating to the glue system.
	E. Volume control needle valve not adjusted correctly.	E. Using 1/16" allen wrench, adjust needle valve in (clockwise) for more adhesive, and out (counterclockwise) for less adhesive. Adhesive bead size should be approximately 3/32" wide. Except on some wax boards which may need full flow.
	F. Heating element burned out.	F. Replace element.
	G. Thermostat out of calibration.	G. Recalibrate. Make sure glue is up to operating temperature before calibrating thermostat. (Give about 2 hours warm up time). Using a surface probe pyrometer measure the temperature just above one of the glue jets (0024500). Remove thermostat knob. Using a small screwdriver, turn the screw inside knob shaft until light goes on. Then turn in opposite direction until the light goes off. Set both thermostats and recheck in an hour.



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Table 6-1: Troubleshooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
21. Adhesive will not feed. (Continued)	H. Adhesive burned around drive wheel shaft. Pump wheel hard to turn.	H. Drain adhesive, remove end cap from pump. Remove drive wheel from pump. Push out gear from pump housing being careful not to damage gear. Using #120 grit emery cloth, polish gear shaft to bare metal. Using a "V" drill by hand, run through the shaft hole to remove burned adhesive. Lubricate with "Never Seize" or similar lubricant and reinstall. Make sure drive wheel set screw is in counter-bored hole in drive gear shaft, and is tight.
	I. Air in adhesive.	I. Skippy adhesive pattern or no adhesive on leading edge of body blank, also drooling from nozzles. Moisture in adhesive, air in adhesive, or temperature too hot. Take special care not to get water in the pots when washing down machine. Change glue manufacturer if air is found. The Pearson's adhesive system is gravity fed and will not run adhesive containing air.
	J. Debris in adhesive system or burned adhesive.	J. Clean glue system in accordance with maintenance Section 7.0.
22. Thermostat light is on, but melt pot fails to heat glue to operating temperature.	A. Loose wires.	A. Check for loose terminal connections or broken wires.
	B. Defective thermostat.	B. Replace.
	C. Defective heating element.	C. Check element with an Ohmmeter for an open circuit. If defective, replace. Warm melt pot assembly to about 250°F. Loosen the two bolts holding the pump assembly to the melt pot. Remove the thermostat cover (0016602 or 0054700). Disconnect wires from heater element and pull it out, (00203XX). Slide new heater in. Check voltage and wattage requirements on new heaters.

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Table 6-1: Troubleshooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
23. Adhesive constantly running from nozzles.	A. Air in system.	A. See trouble shooting guide (Glue System), No.21-1, Page 6-7.
	B. Foreign matter under ball check valve.	B. Follow cleaning instructions in maintenance Section F. If this fails, pump will have to be removed and disassembled. Pump body may be cleaned with a torch or oven. All charred adhesive must be burned off body. Reinstall ball check valve using a piece of 1/4" round steel approximately 6 inches long, lightly tap on ball. Reassemble. (Always use new check ball and spring).
	C. Jelly in pot.	C. Adhesive has been heated too long for life span of glue. Mixing glue types will cause this condition. Clean adhesive system.