

HOW TO SOLVE CONTAINER LABELLING PROBLEMS

LABELS CURLING AWAY FROM BOTTLES

CAUSES	RECOMMENDATIONS
1. Application of too much glue.	1. Apply the thinnest possible even film by adjusting the scraper close to the glue roller.
2. Inefficient wiper action.	2. Adjust wipers so proper pressure is applied slightly beyond all edges of the labels.
3. Use of stiff, springy labels that are vertically grained.	3. "Riffle" or flex the labels without folding or creasing before running them by bending label stacks sharply in the direction of application. (Make sure, however, that they lie flat in the label hopper of the machine.
4. Use of glue with insufficient tack.	4. a. Apply a highly concentrated glue a very thin film. b. Ask glue supplier for a tackier grade.
5. Labelling wet bottles.	5. a. Humidify or stipple the labels b. Change to jelly-type labelling gum. c. Install an air blower on the conveyor line leading to the labelling machine to blow off excess water.
6. Diluted adhesive with ammonia/water.	6. Ammonia reduces wet tack as well as thins product.
7. Poorly positioned pallet pattern position.	7. Adhesive pattern should be 1/32" from edge of label stock.
8. Poorly conditioned labels.	8. Condition to plant relative humidity-ideal is 50% RH.
9. Use of labels that are too old.	9. Some paper stock self-size with age becoming less water absorbent. Use high tack adhesive.
10. Too much air or foam in adhesive.	10. Reduce foamed adhesive from pump. Keep reservoir at high level with "fresh" adhesive so foamed adhesive is not able to feed pump intake.
11. Too large a glue sausage.	11. Too much volume feeding roll causes aeration of product and shear thinning as it goes through pump.

DISCOLOURATION OR STAINING OF LABELS

CAUSES	RECOMMENDATIONS
1. Use of label stocks coloured with water sensitive or alkali-sensitive dyes.	1. a. If plain water causes discolouration consult the label supplier. b. If the colour does not change with plain water but does with the type of adhesive you are using, test a chemically neutral grade.
2. Use of thin, translucent labels.	2. a. Test a light coloured or transparent labelling adhesive. b. Change to a heavier, more opaque label stock.
3. Use of highly absorbent labels.	3. a. Test a cohesive labelling gum that does not penetrate excessively. b. Change to a moderately hard sized and calendared stock.
4. Oil or grease on bottles in filling or capping machine.	4. Clean filters and cappers and make necessary repairs or adjustments to prevent a recurrence.
5. Use of glue contaminated by foreign matter.	5. a. Use only clean utensil, clean and refill glue pot regularly. b. Clean all metal gluing parts of the machine as well as mixing paddles scoops, glue pails, etc., with boiling water and antiseptic. Rubber rollers and wipers should be washed with luke warm water.
6. Use of a hygroscopic (moisture-absorbent) adhesive.	c. Use only clean water for diluting the adhesive. d. Keep glue barrel covered when not in use. 6. Switch to a non-hygroscopic (moisture-resistant) adhesive.
7. Storage of labelled containers under excessively damp conditions.	7. Use a moisture-resistant adhesive.

SMEARING OF BOTTLES OR LABELS

CAUSES	RECOMMENDATIONS
1. Application of too much adhesive.	1. Tighten the scrapers close to the glue roll.
2. Excessive pressure of flap type wipers.	2. Lighten the pressure slightly to make sure enough pressure is exerted to prevent labels from curling away after application.
3. Use of an adhesive that dries to a cloudy film.	3. Test adhesives that dry to a clean film.
4. Use of freshly printed labels.	4. Age labels until inks are perfectly dry.
5. Poor quality ink used in printing labels.	5. If ink smears on labels with normal handling consult label supplier.
6. Tendency of adhesive to build up on pressure pad.	6. Put damp cloth over face of pad.

WRINKLING OR BLISTERING OF LABELS

CAUSES	RECOMMENDATIONS
1. Use of a glass package having a two directional spherical curve of the labelling surface.	1. a. Design labels to conform as snugly as possible with the contour of the labelling surface. b. Humidify or stipple automatically applied labels or prolong the tempering time of hand applied labels.
2. Application of too much glue.	2. Apply the thinnest possible film of glue by adjusting the scraper close to the glue roller.
3. Use of vertically grained labels.	3. a. Humidify or stipple the labels before gluing. b. Specify horizontal graining on future label orders.
4. Uneven absorbency of label paper due to spotty sizings or offset of inks and varnish coatings.	4. a. Humidify the labels before gluing. b. Use a slow drying labelling glue to provide time for uniform penetration of the labelstock.
5. Too much moisture in machine labelling glue.	5. Use a labelling adhesive with high solids, as concentrated as possible.
6. Use of fast drying glue on labels of high moisture sensitivity.	6. a. Use a tacky but slow drying glue to permit shrinkage of the labels as moisture evaporates. b. If labels have been stored in a warm, dry location and have consequently dried out, they should be humidified before running.
7. Applying glue to all but a small portion of the label.	7. Use picker pads or centre gummer pads of the proper size for the labels being applied by machines operating on the stencil principle.
8. Inefficient wiper action.	8. Adjust wipers to apply proper and even pressure throughout the label area.
9. Bottles wet when labelled.	9. a. Humidify the labels. b. Change to a jelly-type labelling gum. c. Install an air-blower on the conveyor line leading to the labelling machine to blow off excess water.
10. Glue on grip-finger of the machine.	10. Wash grip-finger thoroughly and dry.

FAILURE TO PICK LABELS OUT OF HOPPER

CAUSES	RECOMMENDATIONS
1. Pickers, pads or bottles not properly contacting labels.	1. a. Check to see that the label follower is riding freely and the follower plate is covering the entire label area.
	b. Adjust pickers to the same plane of level.
	c. Keep the label hopper spring clean and smooth.
2. Application of inadequate or excessive glue to the pickers, pads, labels or bottles.	2. Adjust scraper to apply a thin, even film.
3. Glue lacking sufficient tack to pick labels out of hopper.	3. Run concentrated glue in a minimum, even even film.
4. Prongs or hooks of label hopper gripping labels too tightly.	4. a. Check adjustment of prongs so the stack rides freely.
	b. Wash dried glue from prongs and hooks.
5. Insufficient supply of labels in the label hopper.	c. If prong hooks are rough, slant them and smooth with fine emery cloth.
	5. Maintain a cushion of labels in the hopper to insure a proper spring tension of the follower plate.
6. Adhesive drying too rapidly.	6. Obtain slower drying glue.

SPOTTY ADHESION

CAUSES	RECOMMENDATIONS
1. Pickers not on the same level or bent.	1. Level the pickers to the plane and straighten out any surface irregularities.
2. Transfer roller and glue roller not in proper contact.	2. Adjust the glue roller or transfer roller to provide a flush meeting.
3. Uneven transfer of labelling glue.	3. a. If the glue is too viscous to transfer evenly, dilute it with a thin mixture of the same glue. b. Adjust the scraper to provide a uniform clearance of the glue roller. c. Adjust transfer roller to apply glue evenly to the pickers.
4. Use of labels having uneven absorption qualities.	4. a. Use a high solids type labelling gum or a fast tacking slow-drying glue. b. Humidify the labels. c. Switch to a uniformly absorbent label stock.
5. Water not thoroughly incorporated into the glue.	5. a. Water should be added slowly and mixed into glue thoroughly before placing in the glue pot. b. When diluting glue already in the pot of the machine, use a thin glue mixture and stir in well.

TEARING OF LABELS OUT OF MAGAZINE

CAUSES	RECOMMENDATIONS
1. Glue accumulating and setting on the transfer rollers, picker, prongs, wipers, etc.	1. a. Wash all gluing parts with warm water. b. Dilute all the glue as prescribed by instructions from the lab. c. Keep the machine in steady operation or clean all gluing parts if labelling is interrupted. d. Use slower drying adhesive.
2. One or both pickers or pads not receiving an adequate glue film.	2. Be sure pickers are on the same level so both will receive identical glue films.
3. Faulty adjustment of label hopper unit.	3. a. Adjust prongs so label stack rides freely. b. See that there is sufficient spring tension on the label follower and that the follower plate presses labels evenly but not too tightly against prong hooks. c. Smooth label prong hooks with fine emery cloth and adjust evenly.
4. Wipers engaging labels.	4. Clean the wipers with warm water of accumulated and hardened glue.
5. Thin, soft paper with low tear resistance.	5. Use adhesive at thinner consistency to get more slide on picker plates.

LABELS FALLING OFF BOTTLES

CAUSES	RECOMMENDATIONS
1. Application of too much adhesive.	1. a. Adjust the scrapers so a thin film is applied. b. Test a label adhesive that dries to a more continuous film.
2. Use a hard-sized, resistant paper stock.	2. a. Use a tacky, slow-drying label adhesive. b. Change to a softer, more absorbent label stock.
3. Remoistening of label glue on bottles stored in a damp location.	3. Use a non-hygroscopic (moisture-resistant) labelling adhesive.
4. Glue partially dry on label or container before the label is applied as often experienced in delayed running operations.	4. a. Apply labels to bottles promptly after gluing. b. Use slower drying labelling adhesive. c. Use damp cloth when hand labelling.

MODERN LABELLING MACHINES

INLINE LABELLERS

A typical inline type consists essentially of a screw feed label magazine, adhesive roller, transfer comb and compression section. The glue coated back of the label is placed on the bottle as the bottle is conveyed past the labelling station. A vacuum system can be used for the transfer of the label from the magazine to the glue applicator.

ROTARY LABELLERS

The rotating design removes the bottles from the conveyer line and while they circle on a turret revolving table or spoked wheel the glue coated labels are applied. In a typical model, the process is as follows:

1. the bottles approach the machine in single file,
2. the bottles pass a blocking star wheel to ascertain proper spacing,
3. the bottles are then moved by the infeed worm to a star wheel which places the bottles on the bottle plates of the revolving turret,
4. the bottles are then clamped with centering bells and moved through the labelling station.

The station consists of a glue-roller which applies a thin film of glue on a pallet which in turn rotates past the label magazine where the glued surface picks out a label. A gripping device finger on the gripper cylinder then grabs the glue coated label. The padded gripper cylinder revolves depositing its labels on the rotating bottles. Brushes or wipers secure the labels on the moving bottles.

If neck foil or a second label is to be applied the labelling station operation is repeated before the bottles are moved to the discharge star wheel and on to the conveyer. Before discharge the labelling machine can be equipped with a dating device to print or emboss a code. An electronic scanner can even be installed to check the legibility.

Provided that a labelling machine is properly adjusted, maintained and operated; is engineered for an adequate bottle supply, and is free of discharge jams, the performance will depend largely on items described in this article, e.g. the container surface, glue and paper.

Although the following list may need revision for a particular machine and operation, it can serve as a guide for ferreting out the more prevalent mechanical trouble spots.

MECHANICAL TROUBLE SPOTS

- aspects of the glue film on the roller
- the glue film on the pallet
- timing of pallet to glue roller
- damage to some critical part
- a hidden label under the glue blade
- misalignment of labels to pallets
- gripper cylinder defect
- label magazine too tight or too loose
- the way the labels fit in the magazine
- malfunction of code dating device
- wipers too tight or too loose (worn)
- poor lubrication
- gripper timing
- bent gripper fingers
- machine not clean