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Roll Fed Labels
Roller Applied Hot Melt
Troubleshooting Guide

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APPLICATION OVERVIEW

Application Quantity

- There is no standard recommended adhesive quantity. It is highly dependent on various factors including equipment settings, temperature, label substrate, and adhesive.
- All adjustments should be made when adhesive is at application temperature and has been stable at that temperature for at least 30 minutes.

Pattern check

Check that the pickup adhesive pattern on the container is full/complete by removing multiple containers in a row from the production line at standard line speed. The number of containers should match the number of vacuum/transfer drum “stations”. Application quantity will vary as the line speed changes, typically applying more adhesive at lower speeds.

Standard Application Temperature – Actual settings may vary for specific needs

- Adhesive tank – typically it is 275°F – 315°F, adjust as needed
- Adhesive roller – typically 5°F – 10°F higher than the tank

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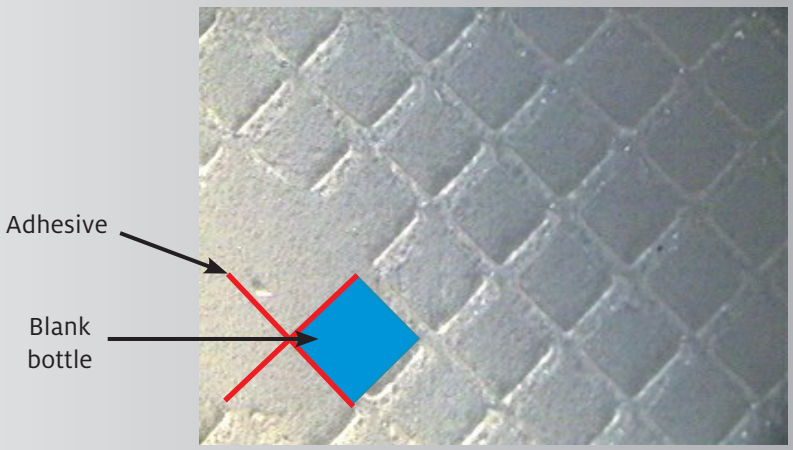
Pickup/Overlap Application

The pickup pattern is primarily in place to pull the label off of the vacuum drum and begin the wrap around process. The overlap application provides the majority of bond strength including label to label and label to bottle bonds.
The application should have clearly defined diamonds across the entire pattern to assure consistent adhesion. Application quantity can be adjusted by shifting the vacuum drum closer or further from the adhesive roller – closer to increase adhesive transfer, further to reduce adhesive transfer.



*Alternative patterns can be cut/gravured into the adhesive roller.
Adhesive pattern should reflect roller pattern. Diamond pattern is the most common.

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ISSUE: MISSING LABELS
(LABELS NOT BEING PULLED FROM VACUUM DRUM)

Possible Causes	Solutions
Insufficient or missing adhesive on the label	■ Check the pickup adhesive pattern on the container and label is full/complete by removing, from the production line, multiple containers in a row at standard line speed. ■ Check application temperature: ❍ Recommended is 275°F-315°F, adjust as needed. ❍ Typically lower temperatures will apply more adhesive and increase adhesive tack/accelerate set speed.
Poor contact between vacuum drum and container	■ Clean vacuum drum holes, using approved tools. Confirm buildup is not pushed further into the vacuum holes. Check machine capability for reverse blow out and use, if equipped. ■ Bring vacuum drum closer to containers, if necessary.
Label won't release or stick to the bottle	■ Confirm air knives are in place and functional to remove excess moisture from the bottle. ■ Confirm vacuum drum is clear of adhesive buildup/residue preventing the label from transferring to the bottle.

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ISSUE: INCORRECT APPLICATION PATTERN (DIAMOND)

Maintaining the target adhesive pattern assures clean machining, application quality, and minimize adhesive usage.

Possible Causes	Solutions
Looks like adhesive “Dots” or filled in diamonds	■ Check the scraper blade is parallel and close enough to the adhesive roller. ■ Check the secondary scraper blade is also parallel and close enough to the adhesive roller. ❍ There should be minimal adhesive on the surface of the roller, primarily in the diamond (or other pattern) cut grooves. ■ Adjust vacuum drum closer to the adhesive roller to assure consistent adhesive transfer.
Incomplete diamond lines	■ Increase adhesive flow to the roller by turning up the tank pump. ■ Bring vacuum drum and pads closer to the adhesive roller to increase adhesive transfer from the grooves. ■ Turn temperatures down in 5°F increments, allow 30 minutes for equilibration, to increase adhesive transfer. ■ Verify adhesive roller is clean and free of char. ■ Confirm scraper blades are metering correctly and no blockages exist to prevent consistent adhesive supply to the roller.

The pattern shown has filled in “diamonds” of adhesive, rather than lines outlining a diamond pattern.

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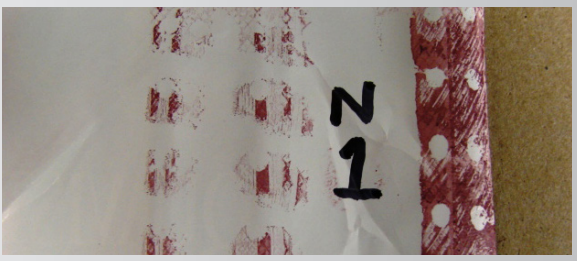
ISSUE: OTHER
(FOAMING AND EXTRA ADHESIVE PATTERN)

Possible Causes	Solutions
Foaming is caused by water in the adhesive tank	■ Drain the tank of the foaming adhesive and refill to remove moisture. A flush may also be necessary. ■ Confirm air knives are in place and working to help reduce the likelihood of moisture getting in the adhesive tank.
Multiple adhesive patterns on the label/ bottle	■ Check vacuum suction – weak suction does not hold the label properly in place as it rotates around the vacuum drum. ■ Adhesive usage and label application quality is impacted.



The example shows an adhesive pattern outside of the intended vacuum pad area.

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ISSUE: BUILDUP
(ADHESIVE AND CHAR)

Possible Causes	Solutions
Adhesive Buildup ■ Assure proper adhesive pattern on bottle and label. ■ Reduce adhesive amount if possible. Over applying adhesive results in unnecessary buildup.	■ Vacuum drum ❍ Check label alignment on the vacuum pads to assure adhesive is not directly contacting a pad. ❍ Check label is cut correctly and slightly larger than the pad sizes. ■ Verify and adjust temperature as needed: ❍ For stringing, increase temperature in 5°F increments, allow 30 minutes to equilibrate. ❍ For slinging, decrease temperature in 5°F increments, allow 30 minutes to equilibrate.
Char Buildup ■ Typically caused by contamination in the adhesive tank ■ Adhesive sitting at temperature for extended periods	■ Use proper PPE and Lock Out Tag Out procedures. ■ Drain the hot melt tanks and wipe clean if char is present. ■ For preventative measures, drain and clean tank monthly to prevent char buildup. There are typically dead zones where adhesive experiences minimal movement and flow, encouraging char. ■ Turn off or reduce tank and roller temperature by 100°F below application temperature when not in use.

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