

Cut and Stack Labels Roller Applied Hot Melt Troubleshooting Guide



APPLICATION OVERVIEW

Application Quantity

- There is no specific recommended quantity of adhesive. It is highly dependent on various factors, including equipment settings, temperature set points, 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

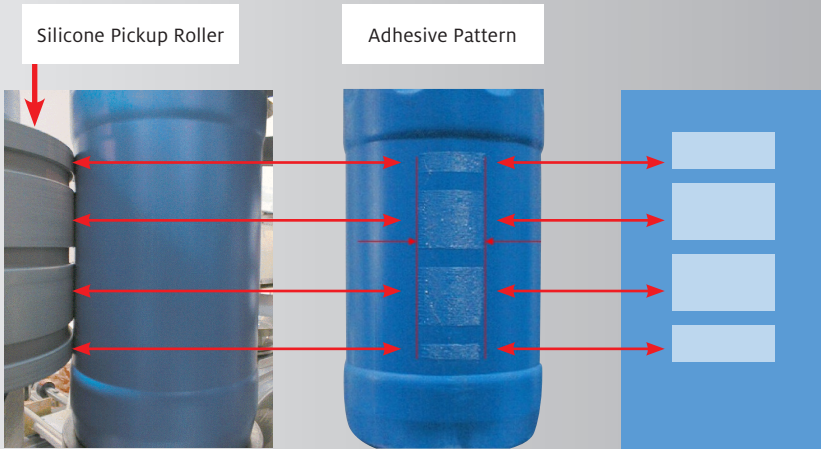
- Check the pickup adhesive pattern on the container is full/complete by removing multiple containers in a row from the production line at standard line speed. Application quantity will vary as the line speed changes, typically applying more adhesive at lower speeds.

Standard Application Temperature

- Actual settings may vary for specific application needs.
- Pickup tank - typically it is 275°F – 315°F, adjust as needed.
- Overlap tank – typically 10°F – 15°F higher than pickup tank.

Pickup Application

The pickup pattern is primarily in place to pull the label out of the magazine and begin the wrap around process. In general, the adhesive application should be adjusted down to the point where labels fail to pick, then slightly increased. This minimizes adhesive usage and build-up while maintaining application quality. The pickup width can be adjusted by increasing or decreasing contact time/pressure with the silicone roller, while the adhesive quantity can be adjusted by opening or closing the scraper blade.



Pickup pattern on the container should match the expected pattern of the silicone application roller.

Overlap Application

The overlap pattern on the trailing edge of the label should have full coverage and extend to the edge of the label. (Figure 1.0). The overlap application provides the bulk of the label adhesion, including both label to bottle and label to label bonds. The overlap adhesive quantity being transferred is determined by the scraper blade on the adhesive roller, while the overlap application width is controlled by the roller inset distance on the label/magazine.

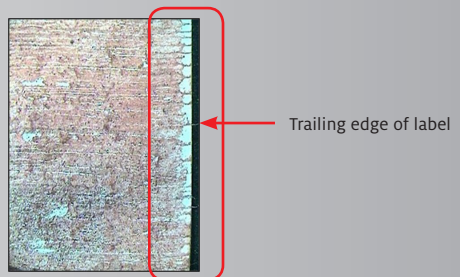


Figure 1.0 Trailing Edge Example

ISSUE: MISSING LABELS (LABELS NOT BEING PULLED FROM MAGAZINE)

- Check application temperature. The recommended range is 275°F – 315°F, adjust as needed.
 - Typically lower temperatures will apply more adhesive and increase adhesive tack.
- Check the pickup adhesive pattern on the container is full/complete by removing multiple containers in a row, at standard line speed, from the production line.

Possible Causes	Solutions
Insufficient adhesive on the silicone roller	Verify the scraper on the silicone roller is removing the adhesive evenly; adjust as necessary.
Poor adhesive transfer/application	<ul style="list-style-type: none">■ Verify container is making correct contact with silicone adhesive application roller and that adhesive is transferring to the bottle.■ Verify the container is perpendicular to the silicone roller.<ul style="list-style-type: none">○ Adjust container or roller to make even contact if it is not sufficient.○ Increase contact between metal roller and silicone roller. This will transfer more adhesive to the silicone application roller.
Insufficient adhesive is being pumped up on the metal supply roller.	Adhesive scraped off roller should be seen flowing back down into the tank. If it is not, increase adhesive flow to roller. <ul style="list-style-type: none">■ Adjust set screw on top of pump, clockwise increases adhesive flow; counterclockwise decreases adhesive flow.■ There should be a constant stream of adhesive returning into the tank from the bottom of the scraper blade.

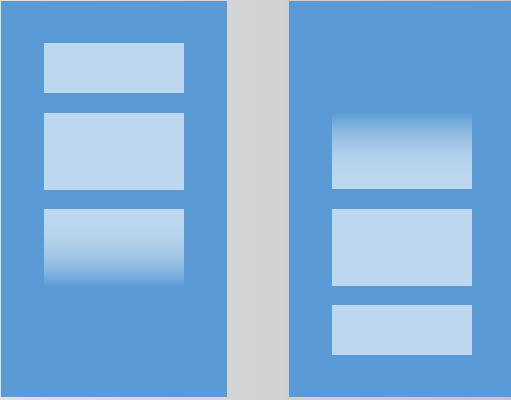
Once a complete pattern is verified on the container, check that the adhesive pickup pattern makes contact with the leading edge of the label. If not, loosen the adjustment clamp and rotate label basket to the correct location. (Figure 3.0)



Figure 3.0

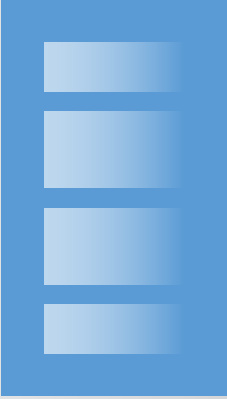
1. Leading edge label basket fingers are movable forwards and backwards.
2. When adjusted, always allow at least 1-2mm of free movement remaining on the fingers.
3. The leading edge of the adhesive band should line up, as close as possible, with the leading edge of the label.

ISSUE: MISSING ADHESIVE PATTERN ON TOP/BOTTOM OF CONTAINER (PICKUP APPLICATION)



Possible Causes	Solutions
The container is not perpendicular to the silicone roller or the silicone roller is not parallel to the adhesive roller.	Adjust container or roller to make even contact.
Insufficient adhesive on the silicone roller	Verify the scraper on the silicone roller is removing the adhesive evenly; adjust as necessary.
Insufficient adhesive flow	Increase adhesive flow to roller, adjust set screw on top of pump, clockwise increases adhesive flow; counterclockwise decreases adhesive flow.
Poor contact with metal roller and silicone roller	Increase contact between metal roller and silicone roller (bring silicone closer to metal). This will transfer more adhesive to the silicone application roller.

ISSUE: PATTERN IS COMPLETE WITH INSUFFICIENT PICKUP



Possible Causes	Solutions
Poor contact between silicone roller and container	Use the adjustment knob on the adhesive station to move the roller in or out to increase or decrease pressure on the container and the amount of adhesive transferred.
Not enough adhesive transfer	If adhesive flow is insufficient to roller, adjust set screw on top of pump, clockwise increases adhesive flow; counterclockwise decreases adhesive flow.
Insufficient quantity of adhesive	Adjust scraper to increase adhesive on roller.

ISSUE: ADHESIVE PATTERN (OVERLAP)

Missing Top or Bottom of Adhesive Pattern

Possible Causes	Solutions
The label is not making contact with the metal roller.	Adjust label basket or roller to make even contact.
Insufficient adhesive on the metal overlap roller	<ul style="list-style-type: none">■ Verify the scraper on the metal roller is removing the adhesive evenly; adjust as necessary.■ Clean back of scraper blade to avoid unintended metering of adhesive.
Insufficient quantity of adhesive	<ul style="list-style-type: none">■ If adhesive flow is insufficient, increase adhesive flow to roller. Adjust set screw on top of pump - clockwise increases adhesive flow and counterclockwise decreases adhesive flow.■ Increase contact between metal roller and label. This will transfer more adhesive to the label application roller.

Missing Trailing Edge of Adhesive Pattern

Possible Causes	Solutions
Insufficient adhesive	<ul style="list-style-type: none">■ Adjust/open the scraper on the metal supply roller to apply more adhesive on the label.■ Increase the adhesive being pumped onto the roller. If adhesive flow is insufficient, increase adhesive flow to roller. Adjust set screw on top of pump - clockwise increases adhesive flow and counterclockwise decreases adhesive flow.
Poor adhesive transfer	<ul style="list-style-type: none">■ Increase contact between metal roller and label. This will transfer more adhesive to the label application roller.

ISSUE: FLAGGING

Flagging labels on overlap – prior to case packing:

- Verify overlap station application temperature, overlap station is typically 10°-15°F higher than the pickup station temperatures.
- Verify overlap adhesive pattern is full/complete by removing, from the production line, multiple bottles in a row at standard line speed.

Flagging can be caused by:

- Insufficient amount of adhesive being applied
 - There is insufficient adhesive on the metal overlap roller.
 - Verify the scraper on the metal roller is removing the adhesive evenly; adjust as necessary. Adjust/open the scraper on the metal supply roller to apply more adhesive on the label.
 - If adhesive flow is insufficient, increase adhesive flow to roller. Adjust set screw on top of pump - clockwise increases adhesive flow and counterclockwise decreases adhesive flow.
 - Increase contact between metal roller and label. This will transfer more adhesive to the label application roller.
- Poor overlap pattern on trailing edge of the label
 - The label is not making contact good contact with the metal roller. Adjust the label magazine and metal roller to increase contact, which will increase the adhesive amount.
- Poor compression with brushes
 - Verify compression brushes are clean and in complete contact with container.
 - Confirm containers are not wet and air knives are properly placed/functional.
 - Verify bottle “plates” that are rotating the bottles are aligned and rotating correctly, holding the bottles firmly in place.
 - Verify adequate downward pressure from top support above bottle plates.

ISSUE: BUILD-UP

Adhesive Buildup

Confirm proper adhesive pattern on bottle and label. Reduce adhesive amount if possible. Over applying adhesive will cause unnecessary buildup.

- If adhesive build-up is on basket fingers, check bottle alignment to assure adhesive makes contact with the label in the correct location.
- 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

Adhesive char is typically caused by contamination in the adhesive tank or the adhesive sitting at temperature for extended periods.

- Use proper PPE and Lock-Out/Tag-Out procedures.
- If char is present, drain the hot melt tanks and wipe clean.
- For preventative measures, drain and clean tank monthly to prevent char build up inside tanks.
- Turn off or reduce tank and roller temperature by 100°F below application temperature when not in use.

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