Aerosol Can Labeling

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Aerosol Can Labeling
Agenda – Labeling Technology

- Contiroll
- Multireel
- Linadry
Enter number of decorated cans/month: 

<table>
<thead>
<tr>
<th>Materials</th>
<th>Preprinted</th>
<th></th>
<th>Labeled</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost Per Unit</td>
<td>Total Cost</td>
<td>Cost Per Unit</td>
<td>Total Cost</td>
</tr>
<tr>
<td>Brite Can</td>
<td>$</td>
<td>-</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>4-Color Decoration</td>
<td>$</td>
<td>-</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$</td>
<td>-</td>
<td>$</td>
<td>-</td>
</tr>
</tbody>
</table>

**Monthly | Annually | % Savings
---|---|---
**Material Savings** | $ - | $ - | **Reduced Warehouse Space Requirements**
| Square Feet | $ - | - | **Dollar Value** | $ - | - | $ |

**Warehouse/Inventory Cost Comparison**

<table>
<thead>
<tr>
<th>Preprinted Aerosol Cans</th>
<th>Labeled Aerosol Cans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Can Inventory</td>
<td># Sq. Ft. Required</td>
</tr>
<tr>
<td>Brite Can Inventory</td>
<td># Sq. Ft. Required</td>
</tr>
</tbody>
</table>

Cans: $ - $ - $ - $ -
Labels: $ - $ - $ - $ -
Totals: $ - $ - $ - $ -

NOTE: The number of brite cans held in inventory will vary greatly depending upon whether can deliveries are daily (125,000) or other. The advantage is that brite cans are a commodity item which can be turned over quickly.

**Potential Savings Using Roll-Fed Labeling**

<table>
<thead>
<tr>
<th>Material Savings</th>
<th>Monthly</th>
<th>Annually</th>
<th>% Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced Warehouse Space Requirements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Square Feet</td>
<td>$ -</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Dollar Value</td>
<td>$ -</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Miscellaneous Facts**

<table>
<thead>
<tr>
<th></th>
<th>PrePrinted</th>
<th>Labeled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum order requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average delivery (cans/labels)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial decoration plate charges for 4-color</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Contiroll

- Field-tested rotary type machine for high-speed applications
- Container decoration with reel-fed wrap-around labels (film or paper)
- Precise label cut
- Depending on the design, the machine output is between 6000 and 54,000 containers per hour
Figures, data, facts

Layout variants

1 Linear arrangement  
2 Parallel arrangement  
3 Angular arrangement  
4 Frontal arrangement
Contiroll HS

- System Advantages

- High output implemented through a compact machine
- A wide variety of label lengths can be processed
- Precise labeling guaranteed by positive container positioning via centering bell and centering plate
- Low glue consumption due to gluing of leading and trailing edges
- Less personnel operation due to large label supply on the reel and automatic splicing
- Short change-over times for container or label change
Method of Operation

- Label web is continuously picked up by a feed roller
- The newly developed cutting unit precisely cuts the labels
- Hotmelt strips are applied on label leading and trailing edges by a heated glue roller
- With the leading edge glue strip, the label is transferred to the container and tightly pulled over it
- The trailing edge gluing ensures proper bonding

1. Infeed worm
2. Infeed starwheel
3. Labeling station
4. Hotmelt unit
5. Cutting unit
6. Label reels
7. Autom. splicing unit
8. Container table
9. Discharge starwheel
### Contiroll HS – Performance Data

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Label length max.</th>
<th>Vacuum cylinder</th>
<th>Cutter drum</th>
<th>speed max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>810</td>
<td>720-18</td>
<td>600 (23.62 inch)</td>
<td>2 units</td>
<td>1</td>
<td>250 BPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>425 (16.73 inch)</td>
<td>3 units</td>
<td>2</td>
<td>366 BPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>370 (14.57 inch)</td>
<td>4 units</td>
<td>2</td>
<td>733 BPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>240 (9.45 inch)</td>
<td>6 units</td>
<td>3</td>
<td>900 BPM</td>
</tr>
</tbody>
</table>

#### Advancement through Flexibility

Previously, maximum label length handled and the fastest required machine speed were factors which determined machine design. The machines had to be oversized to meet both factors.

The introduction of the *Contiroll HS* definitely eliminates this disadvantage. The possibility of individual cutting unit control in connection with flexible pitch diameter of the vacuum-assisted cylinder allows for exact configuration of the machine adapted to requirements.

First time it is possible to handle small containers at high speeds and larger containers at an accordingly slower speed on one machine -- at the same conveyor speed. This corresponds to the possibilities of common filling systems and optimizes the line.
Container Table

- Belt table with Servodrive
  - Can be used for round containers
  - Rotational speed infinitely variable and precisely adjustable through servodrive
  - No handling parts for different container diameters
  - Rotational speed can be displayed on the Touch screen.

- Container table with turnstile control
  - Can be used with specially-shaped containers
  - Can be used for orientation
  - Can be used for combined labeling
  - Fast and simple change of the curved section in the case of deviating container contours.

- Container table with servomotors
  - Can be used for special applications
  - Can be used for camera alignment
  - Can be used for photoelectric orientation
Contiroll ED – technical details

- Ergonomic, easily accessible design
- Reel holder, feed roller, cutting unit, vacuum-grip cylinder and hotmelt unit are driven by computer-controlled servo motors
- Reel holder with integrated access aid
- Quickly replaceable cutters in cutting unit
- Service life approx. 120 million cuts per set of cutters
- New, very economic glue application system

1. Label reels
2. Automatic splicing unit
3. Label web guider
4. Incline adjustment system
5. Feed roller
6. Cutting unit
7. Vacuum-grip cylinder
8. Hotmelt gluing unit
9. Glue reservoir
Overview of the functional improvements

- More compact auto. splicing unit
- Encapsulated gluing unit with new glue roller and glue scraper design
- Separate glue bowl
- Reel holders with integrated height adjustment and access aid
- Cutting unit with servo-driven counter-cutter drum
- Inclination adjustment for correcting the overlap
- Ergonomic design

KRONES
Film carrier
Central height adjustment system

Customer benefits
- Height-adjustable reel holders
- Central height-adjustment system with register for both film carriers and label web guider
- Integrated spring-loaded aid for simple reel change-over without risk of injury
**Contiroll "Ergonomic Design" labeling station**

... the details

- **New compact splicing unit for automatic reel splicing without a production stop.**
  - New: One-hand locking and reduced compressed air consumption

- **New reel holder unit with integrated access aid for convenient reel change.**
  - New: Spring-loaded access aid and central height adjustment

- **Further developed cutting system,**
  - variable cutting position, hidden direct drive, integrated controls and display elements.
  - High cutting output (120 mn cuts)

- **Unique glue applicator with insulated gluing unit.**
  - Novel glue roller design with chamber structure for a precisely defined glue application and controlled glue removal.

**Optimised reel splicing**

Reduced changeover time up to 20%
Reduction energy consumption up to 15 %
Shorter heating up time up to 20 %
Inclination adjustment system
Overlap correction

Customer benefits
- Fast and easy overlap correction
- The labeling station's inclination can be adjusted during production to compensate offset overlaps

Inclination adjustment
Vacuum Aupply / Vacuum Pump Frequency Regulated (810)

**Product Information**
- Frequency-controlled vacuum pump
- Mounted above the labeling unit

**Benefit**
- Higher production safety and process stability
- Improved suction power
- Longer lifetime
Mechanical Improvements

**Vacuum Supply – Standard**

- Central control valve fixed at the aggregate
- Integrated bypass function
- Short pipe sections to the vacuum cylinder and cutting unit
- Use of low friction tubes
Mechanical Improvements

**Vacuum Supply – Reproducibility of Settings**

- New pressure gauges improve the reproducibility of settings
- All throttle valves are combined at one point
  - Blowing air, vacuum cylinder – bottle
  - Blowing air, label tension unit
  - Blowing air, cutting unit – vacuum cylinder
Newly designed cutting unit
Servo-controlled drives

Customer benefits

- Servo drive installed with cover for the rotary cutter
- Optimized guard with integrated control elements
- Separate servo drive for the counter-cutter drum for simple adjustment of the cutter position
- Easier adjustment of different label lengths without the complex dismantling of the vacuum-grip cylinder
Mechanical Improvements

Pinch Roller

- Counter pinch roller with 14 mm wide counterblade bars with a vacuum hole row in the middle of the bars (instead of 5 mm wide counterblade bars)
Mechanical Improvements

Cutting unit variant DB1 - System

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rotary cutter</td>
</tr>
<tr>
<td>2</td>
<td>Compressed air channel</td>
</tr>
<tr>
<td>3</td>
<td>Diaphragm</td>
</tr>
<tr>
<td>4</td>
<td>Cutting support</td>
</tr>
<tr>
<td>5</td>
<td>Cutter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Hard metal bar</td>
</tr>
<tr>
<td>7</td>
<td>DB1- base plate package</td>
</tr>
<tr>
<td>8</td>
<td>Compressed air – rotary distributor</td>
</tr>
<tr>
<td>9</td>
<td>Anti-torsion support</td>
</tr>
<tr>
<td>10</td>
<td>Shaft seal</td>
</tr>
</tbody>
</table>
Mechanical Improvements

Cutting unit DB1 - System

- 3D-illustration rotary cutter
  magnet holder for cutter bar
Mechanical Improvements

Light Weight Vacuum Drum

- Reduced weight of the vacuum drum by open architecture
- Increased suction force in connection with new vacuum supply
- Full possibility of pad adjustment
- Wear resistant vacuum pads made from aluminum with special coating incl. Teflon
Quick-Change Suction Rails

Advantage:

- Special surface treading for easy cleaning (self-cleaning lotus effect)
- To change the suction rail, no screw needs be removed, which saves time.
- The suction rails can be changed simply by pulling them off.
- Extensive re-adjustment is not required afterwards.
- Changing the suction rails makes it possible to handle different label heights with the same label length.
Upgrade Automatic Reel Splicing

Product information
- Device for automatic reel splicing for wrap-around labels at Contiroll labeling stations
- Can be installed on all Contiroll labeling stations (usual labeling stations, HS-labeling stations, modular labeling stations)

Benefit
- No production stop during splicing
- Flexible timing during reel change-over
- Less time investment for the operating personnel
- Fully-automatic start of splicing
- User friendly by simple handling
- Low space requirements
Automatic reel splicing unit
New splicing system

Customer benefits

- Locking device with twistlock
- Smaller label overlap (approx. 12mm) during splicing (depending on the customer's requirements, the bottle with the spliced label may not need to be rejected)
- Reduction in the compressed-air consumption (vacuum is switched off after splicing)
- Simplified operation
Operation

- Display of all current production data such as machine speed, production status and operating hours
- Easy touch-screen operation
- Personalized access authorization via transponder
- All texts displayed in the language of the respective country
- Production data can be transmitted via an interface to the production data acquisition (PDA) system
## Operation Level Transponder

<table>
<thead>
<tr>
<th>Role</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operator “green“</strong></td>
<td>operator with authorization, autologin</td>
</tr>
<tr>
<td></td>
<td>basic functions, set-up, changing setpoint temporarily</td>
</tr>
<tr>
<td><strong>Technician in charge of setting up the machine “black“</strong></td>
<td>works electrician, shift boss, technician in charge of setting up the machine</td>
</tr>
<tr>
<td></td>
<td>changing type and machine parameters temporarily, set-up, saving parameters</td>
</tr>
<tr>
<td><strong>Maintenance technician “yellow“</strong></td>
<td>service functions for customer, creating new product types, saving product type and machine parameters</td>
</tr>
<tr>
<td><strong>Administrator “red“</strong></td>
<td>managers, management, administrator</td>
</tr>
<tr>
<td></td>
<td>management functions for customer, saving customer administrator parameters</td>
</tr>
<tr>
<td><strong>Krones “blue“</strong></td>
<td>Krones customer service, tele-service, emergency login</td>
</tr>
<tr>
<td></td>
<td>Krones service functions, eliminating serious faults, set-up functions (retrofitting)</td>
</tr>
</tbody>
</table>
Contiroll "Ergonomic Design" labeling station
... applying the glue like print

Advantages of the gluing system:

— Significantly reduced glue consumption

— Reduction of the glue vapors thanks to minimization of the glue quantity on the surface of the glue roller

— Adjustment of the glue film thickness is not required. No faulty adjustment and resulting glue carry-over in the labeling station

— Reduced cleaning times
  The glue application is composed of micro dots. During glue application to the label, it is not necessary to interrupt a continuous glue film. This prevents glue splatters.

— Constant glue temperature; reduced energy consumption thanks to the improved encapsulation of the gluing unit. Allows consistent glue viscosity; no scorching, no glue splatters.
Contiroll "Ergonomic Design" labeling station
... applying the glue like print

The method of operation of our novel glue application system is based on the well-proven model of a printing mechanism.

Accurately defined glue receptacles are engraved into the surface of the glue application roller by means of laser.

A main glue scraper removes excessive glue like a printing squeegee. The surface of the glue application roller is almost free of glue. The glue remains in the glue receptacles.

The quantity of the glue applied is determined accurately by the dip volume of the roller surface.

The vacuum cylinder presses the label against the glue roller and applies the glue that is contained in the receptacles.

The bond strength of the labels is determined by the width of the glue application. It can be determined by the design of the glue application webs on the vacuum cylinder.
Separate glue bowl
Insulated glue bowl with glue pump

Customer benefits

- Insulated glue bowl
- With non-stick coating for easier cleaning
- Easy access thanks to its lateral arrangement
- No burn hazard
- Reduced energy consumption

New glue pump
- Dynamically controlled supply speed
- Gentle glue treatment
Multireel
Additional equipment

Markless sensor
- Processing labels with no register mark
- System-guided teaching of new graphics

Multifunctional clamping starwheel
- Application as infeed, discharge, and distribution starwheels
- Starwheels can be used for several container types, with diameters which can differ by up to 20 mm
- Use as a rejection system after label inspection possible
Additional equipment

Container orientation system
- Label orientation to emblems or lettering on the container wall
- Contact-free through camera technology
- No wear

Absolute end-of-reel detection
- Sensor for detecting the mark at the end of the reel
- Minimizes amount of labels remaining on the reel
Additional equipment

System expansion to include the Checkmat inspection unit

- Checks if labels have been provided and if they are correct
- Checks position and orientation of labels
- Checks printed data, such as best-before dates or product codes, to ensure they are present and correct
- Recognizes bar codes
- Detects splicing positions on label reel
- Rejects faulty containers using a retaining starwheel, clamping starwheel, or pusher
Additional equipment

**Multireel C**

- Supports four label reels, six available as an option (label height of 30 – 150 mm)
- Production duration up to eight hours without user intervention
- Splices label reels automatically without any reduction in output
- Can be retrofitted onto previously installed Contiroll labelers
- Space-saving and ergonomic design
- Output of up to 60,000 containers per hour
1. Drawer system, cpl.
With label reel drive and intermediate magazine

2. Moveable cutting table
For preparing the leading end of the reel

3. Vacuum station
For placing and positioning the leading end of the label reel

4. Moveable cutting/splicing unit

5. Driven linear system
For moving the cutting unit

6. Base frame

7. Housing, cpl.
With control cabinet and pneumatic component cabinet, hinged door, 5.7” touch-screen

8. Label supply unit
Layout Variants

Layout configurations
Design Features  Multireel C

- Stand-alone storage system for reel-fed labels
- Space-saving and ergonomic design thanks to the vertical arrangement of the label reels
- Integral label buffer allowing splicing to be performed without speed reduction
- Ensures an exact splicing position
- Freely programmable splicing sequence
- Large label supply, up to 6 label reels ($\approx 37,000$ meters)
- Reel diameters that can be handled: up to 650 mm (international standard)
- Label widths that can be handled: 30 - 150 mm
- Maximum speed : 60,000 cph

E.g. max. capacity for label length 230 mm = 175,600 labels corresponds to 4.3 hours at 40,000 cph
Linadry 890
Container dryer
Linadry – container dryer for perfect decoration

**Concept**
- Compact drying module for containers made of glass. PET or cans
- Flexibly adjustable nozzles for systematic air guidance
- Robust and low-maintenance design in stainless steel
- Automatic blowing power regulation depending on ambient conditions
- Visualisation and operation on the main machine's touch-screen
Facts and figures

**Output range:**
Up to 72,000 containers per hour

**Layout variants:**
Containers are to be optimally prepared for labeling. Therefore, after checking all critical parameters such as filling temperature, ambient temperature and air humidity, the modules are selected according to the determined requirements.

<table>
<thead>
<tr>
<th>Number of modules</th>
<th>Length [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.600</td>
</tr>
<tr>
<td>2</td>
<td>4.100</td>
</tr>
<tr>
<td>3</td>
<td>5.600</td>
</tr>
</tbody>
</table>
Additional equipment

**Noise protection**
- Reduced noise emission
- Can be retrofitted without problems

**Housing**
- For downstream conveyor section and machine
- Supply with cool and dry air
- No formation of condensation water on the containers

**Foam cleaning system**
- Connection to an external hygiene center
Positive enviro aspects

**Energy efficiency**
- Regulation of the blower performance depending on the container flow, the container type, and the required degree of drying
- Total degree of efficiency of the blower is 58 %

**Media efficiency**
- Lubricants meet the enviro criteria

**Environmental compatibility**
- Noise protection tunnel at the infeed and discharge and noise protection housing
- 80 dB(A) with basic setting (180 Hz)
- 82 dB(A) with maximum output (200 Hz)

**Consumption data:**
The indicated values refer to the production mode at an output of 40,000 containers per hour. Indications for 1 module and 1,000 containers.*

| Electrical power | 0.3 kWh max. |

* under specified basic conditions
Thank You!

Aerosol Can Labeling
Contiroll
High Speed Labeler