Control the temperature of end lining compound for increased productivity and cost savings.

Features and Benefits

- **Constant temperature control within the compound by +/- 2°F**, resulting in stable and consistent material viscosity.
- **Consistent, repeatable compound application** for reduced material usage and better product quality.
- **Significant reduction in process variability** for better control of operations.
- **Works with the Ecoliner compound gun** for optimum performance.
- **Fully-integrated system and compact size** for easy installation and maintenance.

System Components

The Ecoliner Temperature Control System consists of the thermal-electric heating/cooling unit, jacketed hose, temperature control panel, piping assembly, heat exchanger assembly, and mounting bracket. Its compact size provides easy installation and minimizes space requirements.

It is available in two models:

- **Ecoliner 1000 Single gun control** – for single-lane compound liners.
- **Ecoliner 2000 Dual gun control** – for dual-lane compound liners.

The Nordson Ecoliner Temperature Control System provides precision and accuracy in end-lining compound applications for metal cans. By minimizing variances in temperature, the Ecoliner unit stabilizes applied compound weights. As a result, end manufacturers can reduce material waste, decrease operating costs and eliminate blistering and inaccurate placement of compound for better product quality.

The Ecoliner Temperature Control System controls the temperature of the compound by +/- 2°F. This results in weight variances as low as 5 percent – or five times less than alternative methods.
Reduce Coating Variations up to 15 Percent

Evaluations of typical production operations have shown that in compound lining operations not using the Ecoliner Temperature Control Systems, applied weights varied as much as 15 percent. These temperature changes occurred over a 24 hour period, day to night (and day to day). They also occurred when the guns were idle, with the temperature of compound at the nozzle actually increasing approximately 5°F. This fluctuation was due to residual heat within the gun caused by friction from the needle moving through the seals.

Consistent Temperatures Yield Higher Efficiency

During can end manufacturing, compound material weights increase as the temperature increases. In general, a 1°F change in temperature results in a 1.2mg change in weight. Thus, if temperature increases 10°F, the applied compound weight will increase 12mg.

Such weight increases cause greater material consumption, material waste and higher operating costs. Also, at the higher material temperatures, the compound has a tendency to sling out into the curl further, resulting in placement issues. Excess weights can also cause blistering during the drying process.

The Nordson Ecoliner System is a thermo-electric unit combined with PLC controls that heat or cool the material using proprietary tube-lined jacketed hoses (shown).

These hoses use liquid heat transfer media (glycol) circulating within isolated, internal tubing to closely control the temperature of the compound within the hydraulic system. The thermo-electric unit includes a small, low pressure pump to deliver the transfer media and provide temperature control where it is most needed – at the point of application.

Temperature is controlled based upon feedback from a sensor carefully located within the hydraulic path. An easy-to-use operator interface provides an ongoing view of system parameters and enables authorized personnel to easily adjust or modify the settings.

In the above example, without the Nordson Ecoliner Temperature Control system, the compound lining machine ran continuously for more than 90 minutes when it paused. Friction from the gun needle moving in the seals drove the nozzle temperature up by nearly 5°F. When the lining operation resumed operation, fresh compound being sent to the gun pulled the nozzle temperature back down, actually overshooting the original temperature (because of ambient cooling upstream), before coming back up and stabilizing. Though the pause was less than 90 seconds in duration, the disturbance lasted nearly 8 minutes. At production rates as low as 250 ends per minute, this is equivalent to 2000 ends being made with the process not in control.
The Ecoliner Temperature Control System provides optimum performance when used with the Nordson Ecoliner Compound Gun. The electro-pneumatic gun provides precise cut-off and adjustable flow control for accurate material deposition and consistency shot to shot. Its compact size enables efficient heat transfer for superior temperature control. A full array of nozzle sizes is available to meet many different application requirements.

Other features include:

- **Fast air-powered opening and closing** delivers accurate, repeatable application with clean cutoff.
- **Tapered, concave nozzle design** ensures precise placement of material.
- **Variety of nozzle orifice sizes available.**
- **Integrated needle stroke adjustment** to achieve optimum material deposition.
- **Pre-mounted solenoid** provides superior open-close performance and easy installation.
- **Corrosion-resistant parts** compatible with waterborne compounds.

The Ecoliner gun is ideal for a variety of end and closure applications. It is used to apply waterborne compound and plastisol materials onto food, aerosol and general purpose can ends.

### Technical Specifications

#### CEC System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>100-240VAC</td>
</tr>
<tr>
<td>Current</td>
<td>5A – 2.5A</td>
</tr>
<tr>
<td>Frequency</td>
<td>50-60Hz</td>
</tr>
<tr>
<td>Thermal Capacity</td>
<td>600 BTUH @ 77°F (25°C)</td>
</tr>
<tr>
<td>Control Temperature Range</td>
<td>65°F - 120°F (18°C - 49°C)</td>
</tr>
<tr>
<td>Ambient Temperature Range</td>
<td>50°F – 105°F (10°C - 40°C)</td>
</tr>
<tr>
<td>Thermal Fluid</td>
<td>Propylene Glycol</td>
</tr>
<tr>
<td>TE Module</td>
<td>16&quot; (40cm) L x 14.5&quot; (37cm) W x 12.5&quot; (32cm) H / 31 lbs (14Kg)</td>
</tr>
<tr>
<td>Panel</td>
<td>16&quot; (40cm) W x 16&quot; (51cm) H x 10&quot; (25cm) D / 45 lbs (20Kg)</td>
</tr>
</tbody>
</table>

#### Ecoliner Gun

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working hydraulic pressure</td>
<td>0-500 psi (0-35 bar)</td>
</tr>
<tr>
<td>Maximum hydraulic pressure</td>
<td>500 psi (35 bar)</td>
</tr>
<tr>
<td>Operating air pressure</td>
<td>55 – 90 psi (4 – 6 bar)</td>
</tr>
<tr>
<td>Minimum cycle time*</td>
<td>13.3 msec.</td>
</tr>
<tr>
<td>Nozzle diameter range</td>
<td>0.018in.; .024in.; .028in.; .031in.; .039in.; .042in.; .051in.; and .060in. (0.6mm to 1.50mm)</td>
</tr>
<tr>
<td>Electrical service</td>
<td>24VDC</td>
</tr>
<tr>
<td>Nozzle diameter range</td>
<td>0.88lbs (0.4kg)</td>
</tr>
</tbody>
</table>

* Cycle time with material viscosity of 900 centipoise. Actual time will vary depending upon material.
Container Systems' Best Practices Pledge
At Nordson, our technology, equipment and expertise work together to offer the best solutions to our customers for their applications. This may result in better quality, improved manufacturing efficiency, less downtime, reduced coating material consumption, faster line speeds, or combinations of these and other factors that enable manufacturers to produce a better product at a lower cost. We work with our customers to improve their spray and manufacturing processes overall. It is with this continuous focus on Best Practices, that we partner with customers to find successful solutions for improved quality and productivity.

Nordson Package of Values®
Our exclusive Package of Values backs every Nordson product and system in every region and locale. The Nordson Package of Values includes: production testing, system engineering, installation assistance, customer service and operator training.

The combination of these features provides added value that is unmatched in the container manufacturing industry.

Why choose Nordson
In highly competitive manufacturing markets, productivity is vital and performance is essential. That's why we apply both to everything we do, whether it's our products, expertise or outstanding customer service. We'll always be there to help maintain the new standards you've set, with expert service and support delivered through our teams working across the globe.

This unique Nordson approach helps you reach new levels of production, while working more accurately, efficiently and competitively than ever. Precisely why manufacturers who demand quality, can rely on Nordson.

Nordson Industrial Coating Systems
100 Nordson Drive
Amherst, OH 44001
USA
Phone: +1.440.985.4000
www.nordson.com/ics

Twitter: /Nordson_Coating
Facebook: /NordsonICS
LinkedIn: /company/nordson-industrial-coating-systems

Find your local Nordson office: www.nordson.com/icslocations

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