MetalsMaster™ Calcoil
Edge Flatness Control
Product Information Note

Honeywell’s Calcoil CW is the aluminum rolling industry’s best choice in induction technology for edge flatness control.

Experion MetalsMaster Calcoil CW-AE actuators use superior induction heating technology to provide efficient work roll heating for precise control at the strip edges. Induction energy improves flatness control by selectively heating the roll surface in individually controlled narrow zones, at or near the strip edges where less friction heat is generated. This results in precise thermal expansion of the work roll at the critical strip edge, reducing edge tension, which in turn reduces strip breaks and enables increased mill speed.

FEATURES & BENEFITS

- Over 94% power efficiency
- Compact work coils with remote power modules
- Optimal thermal footprint, designed for compact spaces in rolling mills
- Angled heaters eliminating cold spots between heaters
- Controls over a full range of power, from 0 to 100%
- Significant economic savings in power versus hot oil sprays
- Increase mill speed by 10%
- Improve edge tension by 20%
- Litz power cable for greater efficiency
- More uniform ripple-free thermal characteristics for consistent and uniform heating
- Smoother transition of coil widths, no more waiting for the work roll profiles to stabilize
- Large control range, fast control response
- Reduce strip breaks by 75%
Description
Calcoil work coils create a continuous-wave, alternating magnetic field inducing eddy currents in the metal calender roll. The eddy currents induce heat within 0.05 mm of the roll surface.

Individually controlled work coils are custom-contoured to the roll and sealed in protective epoxy. A unique feature of Calcoil work coils is their orientation to the roll. They are positioned at a slight angle to eliminate cold spots and streaking between CD profiling zones. This increases Calcoil efficiency and improves flatness control. In addition, prevention of circulating electrical currents in the work roll which can damage unprotected equipment.

The integrated closed loop Calcoil Cooling Unit supplied with high temperature systems ensures the work coils cannot overheat.

Intelligent Power Modules
Highly efficient power modules generate continuous sine-wave current output to the work coils. The front panel with LED display provides easy visual access to zone number, power level, alarm and configuration information. Power modules are easily accessible, and field replaceable in minutes. Manual control of output power is also available through the front panel.

Summary
Tight edges of rolled strip are often not adequately countered by existing actuators like roll bending and cooling sprays. Coolant sprays are designed to remove excess heat from the mill, but aren’t so effective in adding heat at the strip edges where there exists a step change in heat flow. This has an impact

Calcoil CW induction heating actuators give you precise dynamic control of work roll thermal expansion exactly where you need it.

Calcoil design has been optimized for each of the four factors that matter most for accurate flatness control – thermal response width, thermal response shape, actuator spacing and response magnitude (range).

Calcoil and Experion MetalsMaster are supported by Honeywell’s local project and service teams, and backed by Honeywell’s global Technical Support group.
### Specifications

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<thead>
<tr>
<th>PARAMETER</th>
<th>SPECIFICATION</th>
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<tbody>
<tr>
<td><strong>Input power per zone CD zone width</strong></td>
<td>4.5 kVA - 75 mm</td>
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<tr>
<td></td>
<td>208 VAC 3-phase, 50 or 60 Hz</td>
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<tr>
<td><strong>Efficiency</strong></td>
<td>Over 94%</td>
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<tr>
<td><strong>Net power transfer to roll</strong></td>
<td>2.0 – 3.5 kW per zone</td>
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<tr>
<td><strong>Roll surface temperature</strong></td>
<td>130 °C</td>
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<tr>
<td><strong>Power module cooling air</strong></td>
<td>1.2-1.4Nm3/min per zone</td>
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<tr>
<td></td>
<td>20-40 °C</td>
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<tr>
<td></td>
<td>5 – 9 mbar</td>
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<tr>
<td><strong>Workcoil cooling</strong></td>
<td>0.4 – 0.6 l/min/zone</td>
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<tr>
<td></td>
<td>20- 50 °C</td>
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<tr>
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<td>2 – 3 bar</td>
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**For More Information**

Learn more about Honeywell’s MetalsMaster™ at www.honeywellprocess.com, or contact your Honeywell Account Manager, Distributor, or System Integrator.

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