Product Information Note

Honeywell

Calcoil CW Induction Heating System

The Honeywell Model 9710 Calcoil® is the industry's premier choice in induction technology for calendering and cross direction (CD) caliper profiling results.

The Calcoil® actuator system uses superior induction heating technology to provide efficient calender roll heating for cross direction (CD) caliper profile control and advanced sheet finishing. Induction energy improves CD caliper profile by selectively heating the roll surface in individually controlled, narrow zones to adjust localized calender nip loading. Improved CD profile control reduces rejects at the calender, coater and winder and improves machine runnability.

In addition to CD caliper profile control, the Calcoil is powerful enough to provide additional roll surface heating for improving sheet finish properties. Smoothness, gloss, sheet strength and printability can be improved to enhance paper quality.

Calcoil® HT is a high temperature Calcoil induction heating system ideal for combined calender roll heating and CD control of calenders where the roll surface temperature exceeds 130ºC (266ºF). The high power Calcoil HT is particularly well suited for soft-nip calender applications where more power output is required. A high power system with off machine power modules has been specially designed for control of Yankee dryer, MG cylinder or gloss calender applications.

Calcoil's unique, continuous wave induction heating technology delivers fast, precisely controlled heating energy to calender roll surfaces, and with an overall energy efficiency up to 94%, Calcoil has the lowest operating costs and highest heat transfer rates of any calender roll heating system.

Embedded CDWeb™ communication delivers superior CD control performance through fast, local control of intelligent power modules, as well as network communications to the Quality Control System (QCS).

Honeywell has been the leader in induction technology for the paper industry for over 25 years, with nearly 800 Calcoil installations worldwide, in all applications.

Features and Benefits

- Compact single beam structure with integrated Power Modules
- Optimal thermal footprint with advanced custom work coils
- More uniform ripple-free thermal footprint for optimum CD caliper and roll mass heating.
- Improve sheet finish properties
- Large control range
- Fast control response
- Reduce CD caliper profile variations by up to 90%
- Reduce break recovery times by 50-75%
- Reduce rejects
- Reduce operating costs

Compact Beam

Compact, on-machine beam combines work coil support beam, power module cabinet* and retraction mechanism into one structure. The beam is designed to allow easy access to work coils, work coil to roll gap adjustment and power modules.

*Off machine power modules are available if required.

Custom Work Coils

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.

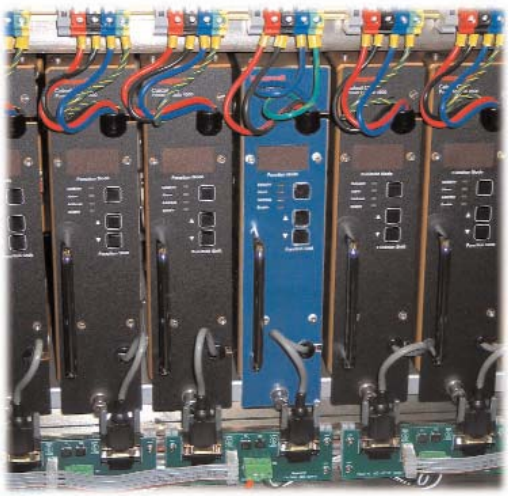
Individually controlled work coils are custom-contoured to the roll and sealed in protective epoxy. A unique feature of Calcoil work coils is their orientation to the roll. They are positioned at a slight angle to eliminate cold spots and streaking between CD profiling zones. This increases Calcoil efficiency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

High temperature work coils are water-cooled to allow operation at roll surface temperatures of up to 300°C (572°F). 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.

For high temperature applications, power modules are available in 4500 W or 6000 W output. A 4500 W Calcoil HT can be easily upgraded to a high power Calcoil HT by changing individual power modules. A combination of 4500 W and 6000 W power modules can easily be designed for specific applications, allowing more heat to be applied to the sheet edges or problem areas.



Calcoil CW4500 Power Module (black) CW6000 Power Module (blue)

CDWeb

CDWeb technology is incorporated into the interface communications with the Quality Control System. It reduces cabling, commissioning time and simplifies diagnostics. Actual power setpoints are transmitted by the CDWeb to each module, plus it supports continuous monitoring of input current and advanced diagnostics.

Calcoil Model 9710-S with off-machine power module cabinet

Specifications

Category	Specification – Calcoil Model 9710, 9710-S
Beam Dimensions Height Depth	 520 mm (20.5 inches) 600 mm (23.6 inches)
Power Module Output Power Model 9710 Output Power Model 9710-S Input Power Input Voltage Input Frequency	 4500 W 4500 W 5 kVA 3 phase 208 VAC 50 or 60 Hz
Work Coil	High Temperature Epoxy
Maxiumum Roll Surface Temperature	130° C (266° F)
Actuator Zone Width	75 mm (2.95 inches)
Maximum Overall Energy Efficiency	94%

Power Module Cabinet Model 9710 Model 9710-S	 On machine Off machine
Mounting and Retraction (included)	Epoxy coated mild steel standard. Available as slide or pivot (up to 100mm/ 4 inches standard retraction).
Standards Compliance	UL, CSA, CE

Category	**Specification – Calcoil HT Model 9710-10, 9710-20, 9710-20-S**
Beam Dimensions Height Depth	 520 mm (20.5 inches) 600 mm (23.6 inches)
Power Module Output Power Model 9710-10 Input Power Input Voltage Input Frequency	 4500 W 5 kVA 3 phase 208 VAC 50 or 60 Hz
Power Module Model 9710-20, 9710-20-S Input Power Input Voltage Input Frequency	 6000 W 6.7 kVA 3 phase 220 VAC 50 or 60 Hz
Power Module Cooling Air Requirements	Flow: 1.2-1.4 Nm3/min (42-48 Scfm)
Power Module Cooling Air Requirements Per Module	- Temperature: 20-40°C (68-104°F) - Inlet Pressure: 50-90 mm (2-3.5 inches) of water
Work Coil	High Temperature Epoxy Water Cooled
Maxiumum Roll Surface Temperature	300° C (572° F)
Actuator Zone Width	75 mm (2.95 inches)
Power Module Cabinet Model 9710-10, 9710-20 Model 9710-20-S	 On machine Off machine
Mounting and Retraction (included)	Epoxy coated mild steel standard. Available as slide or pivot (up to 100mm/ 4 inches standard retraction).
Standards Compliance	UL, CSA, CE

More Information

For more information on Calcoil, visit www.honeywell.com/ps or contact your Honeywell account manager or field service leader.

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