Paper Industry

Drying, Curing, Cooling and Non-Contact Web Handling
A thorough understanding of heat transfer and air flotation technology allows the company to design bespoke solutions to a growing range of industries and processes.

Spooner’s team of specialist engineers carry out everything from concept design through to manufacture. Full ‘turnkey’ installation, commissioning, training and preventative maintenance programmes are available.

Offering over 4,500 m² of purpose built manufacturing space, Spooner also offers sophisticated in-house Test and R&D facilities for product development, customer trials and testing.

The head office is based in Ilkley, West Yorkshire, UK with a subsidiary in Shanghai, China in addition to agents and representatives across the globe providing a local point of contact for almost every client, wherever the location.
Paper Industry

Spooner provides the paper industry with custom built solutions for the **drying**, **cooling** and **non-contact web handling** of a wide range of base papers, coated papers and sized paper grades.

Decades of experience ensures in-depth knowledge and understanding of specific web coating and drying processes, which allows Spooner to design and engineer the optimal solution for your needs.

Spooner’s in-house test and development centre offers a high speed coating machine and hand sample machinery to enable you to evaluate and develop your product and your process.

**Paper Grades Utilising Spooner Equipment:**

- Copy Paper
- Art Paper
- Carbonless Paper
- LWC Paper
- Corrugated medium
- Linerboard
- Testliner
- MG Paper
- Folding boxboard
- Liquid packaging board
- Art board
- Kraft papers
- Décor paper
- Banknote & Security paper
- Glassine paper
- Plug wrap paper
- Teabag paper
- Filter papers
- Tissue
- Photographic paper
- Thermal paper
- Bible paper

Spooner is able to provide turnkey solutions directly to the mills or, work in conjunction with a network of OEM partners.
Spooner has developed a range of air flotation nozzle systems to satisfy the requirements of a wide variety of paper applications. Spooner air flotation systems deliver high heat transfer rates and ensure uniform heat transfer, stable web transportation and non-contact operation.

- **Flotation nozzle design** – Non-contact, highly efficient heat transfer, very stable flotation, no vibration or web flutter
- **Porous webs** – Specifically developed flotation systems for highly porous non-woven webs
- **Wide width capability** – Expertise in designing dryers & Air Turns for up to 10m web widths
- **Web types** – Lightweight paper through to heavy board can be successfully handled using a range of flotation nozzle designs
- **Compact design** – Integrated fans and heaters – ideal when space off the machine is limited
- **Horizontal, inclined or vertical orientation**
- **Retraction systems** – Various options available, including clamshell and parallel
- **Air system location** – A range of bespoke internal and external designs to suit the application
- **Heat source** – Gas, electric, thermal oil, steam, recovered energy
- **High performance drying – HPC™** nozzle system delivering a +30% increase in heat transfer reduces dryer lengths – ideal for rebuilds where space is limited
- **Simultaneous web turning and drying – ModuleDryer™** – to reduce machine footprint and maximise drying capacity in the available space
High Performance Flotation Drying

Spooner’s bespoke range of high performance air flotation drying systems includes the patented High Performance Compact (HPC™) Dryer and ModuleDryer™.

HPC™ Dryer

• Very high heat transfer
• Compact dryer resulting in smaller footprint
• Non-contact and stable web handling

ModuleDryer™

• Simultaneous non-contact turning and drying
• Drying, curing or cooling
• Maximises drying capacity in the available space
Air Impingement Dryers

Spooner offers a range of air impingement systems, custom-designed to provide the required heat transfer characteristics.

- Hole or slot nozzle technology
- Flat-bed or arched design
- Single or double side impingement
- Horizontal, inclined or vertical orientation
- Roller support

Web Stabilisers and Coolers

- Flotation technology to stabilise webs in long unsupported draws
- High performance flotation and impingement systems
- Cooling of paper webs before coaters or pope reel
- Ambient or chilled air

Air Turn

The Air Turn was developed by Spooner to provide non-contact turning of wet coated webs.

- Non-contact operation
- Suitable for heavy or lightweight grades
- Stable operation – no web edge flutter or vibrations
- Web spreading effect
- Wrinkle free operation
- Special design available for porous webs
- Wide web tension range capability
- Bespoke design to suit any machine layout
Dryer Section Impingement Hoods

- Boosts dryer section capacity
- Reduces machine length
- Improved runnability when installed after press section
- High performance impingement air drying
- New machines or retrofits

Yankee Hoods

- For tissue and MG grades
- Very high performance – up to 600° air temperature
- Internal air systems available

Heat Recovery Systems

- Reduces energy consumption
- Retrofits possible
- Both air-to-air and air-to-water systems available
- Primary and secondary systems
Pilot Facility

Spooner’s extensive in-house test and development centre boasts a comprehensive range of pilot machinery to evaluate and develop new equipment and processes. The test centre is available for hire for customer trials, testing and product development. Equipment includes:

- Reel-to-Reel high speed coating and laminating line equipped with air flotation drying
- Hand sample pilot dryer
- Through Air (TAD) pilot dryer

Spares & Service

**Spooner Plus** combines essential process skills and machine building knowledge in order to maximise the performance of existing process equipment. The Spooner Plus team offers a range of services to help new and existing customers achieve this.

- Process inspections
- Reduce downtime
- Benchmarking
- In-house test facilities
- Energy efficiency and reduced running costs
- Energy surveys
- Remote interrogation
- Bespoke training packages
- PPM (Planned preventative maintenance)

- On-site maintenance engineering support
- Emergency breakdown cover – 24 hour emergency helpline
- Burner servicing
- Plant refurbishment
- Plant relocation

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01 Schematic drawing of High Speed Coating Line
02 High Speed Coating Line