



Natgraph

Perfecting drying solutions

Reel-to-Reel Drying and Curing

Built on decades of success supporting the most demanding applications, Natgraph bring exceptional drying capabilities and significant new levels of energy efficiency to the Reel-to-Reel (R2R) coating and printing sector through excellent control and product design which reduces energy loss. Three key features have been added to Natgraph's new Reel-to-Reel machines so that energy consumption can be reduced by amounts exceeding 50%.



What is Reel-to-Reel?

It refers to any process of applying coating, printing, **drying/curing** or performing other processes starting with a **roll of a flexible material and re-winding after** the process to create an output roll.

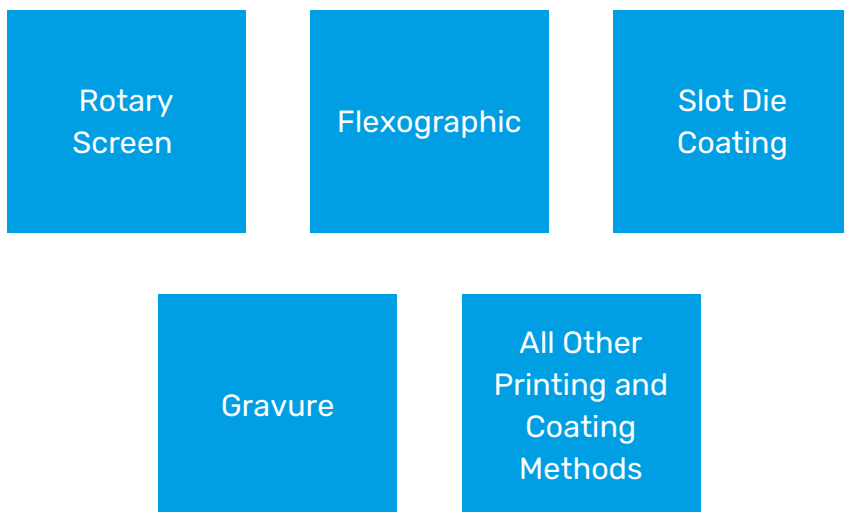
When the rolls of material have been coated, laminated or printed and dried/cured they can be subsequently slit to their finished size on a slitter re-winder. Reel-to-Reel (R2R) processing is a process which is used widely across the globe.

Built on decades of success supporting the most demanding applications, Natgraph bring exceptional drying capabilities and significant new levels of energy efficiency to the R2R coating and printing sector through excellent control and product design which reduces energy consumption.



The industry is very well served by innovators and suppliers of UV curing technology but much less so for **water and solvent drying** options. This is the market segment that Natgraph will bring innovative, high-performance solutions to.

Applications



We can save you money

Energy saving

Three key energy saving features have been added to Natgraph's new Reel-to-Reel machines **reducing energy usage by amounts exceeding 50% leading to huge cost savings.**

- 1 Air recirculation and optimised exhaust flow rates** ensure that every kW of energy is efficiently utilised.
- 2 Natgraph's Intelligent Energy Control System** aligns dryer energy consumption with process activity. If the press, for example, is in a standby or make ready condition the dryers will go into a low power hibernation mode awaiting a signal to instantaneously recommence.
- 3 Heat exchangers** preheat the intake air using energy from the exhaust which minimises the new energy required to bring the fresh air up to temperature.

Main Heating Module

Features & Benefits

- Stand alone unit ensures easy installation.
- Main recirculation fan controlled by Variable Control Drives optimise energy used to match required performance of dryer.
- Dedicated exhaust fan controlled by Variable Control Drives optimise process conditions for maximum efficiency.
- Exhaust pressure monitoring to optimise performance.
- Over temperature capillary thermostat prevents temperature overshoot.
- Heat exchanger to recover energy from the exhaust air and used to preheat make up air. Estimated 6-8kW energy savings.
- Power connection onto local isolator.
- Safety connection from external remote safety relay.
- Numerical labelling of all cables at termination points.
- Fast cool down feature, in the event of an unexpected web stop, the temperature is reduced very quickly to prevent unwanted web deformation. This greatly aids quick job changes requiring different process parameter.
- Air speed adjustable between 60 & 100% of maximum for improved control on air effects of webs used.
- Mild steel construction finished in RAL colours 7035 & 7037. Optional custom colours are available on request.



Web widths available:

- 350mm
- 430mm
- 510mm
- 650mm
- 760mm
- Custom wide web formats are available on request.

Control

- Stand alone *PLC for integration to the master *PLC/**GUI.
- Or Local independent ***HMI control of drying units.

Options



Infrared

Six medium wave twin emitter fast response infrared lamps with variable % control.



Infrared Pyrometer

Non contact infrared pyrometer for monitoring web temperature with over temperature alarm.



Intake Filter

Intake air is filtered to ensure that clean air is used in the process.

Hot Air Delivery Hood

Features

- Hot Air Delivery Hoods easily mounted on customer frame. Easy installation to suit customer frame, idler and chiller rollers.
- High velocity air with variable control by Variable Control Drive. 130°C max temperature.
- Exhaust path optimised to recirculate the process air efficiently.
- Five metres of flexible high temperature hose for inlet and exhaust air. Custom lengths are available on request.
- Supplementary infrared is available (as in this image).



Available as 1m or 2m unit.

*PLC- Programmable Logic Control **GUI- Graphical User Interface ***HMI- Human Machine Interface

Main Heating Module



Web widths available:

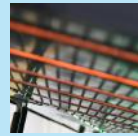
- 350mm
- 430mm
- 510mm
- 650mm
- 760mm
- Custom wide web formats are available on request.

Features

- Free standing construction.
- Contains the main recirculation fan controlled by Variable Control Drives which reuses energy whilst maintaining optimal curing conditions.
- Central ducting system to distribute to local heads. 1 metre sections.
- Exhaust pressure monitoring to optimise performance.
- Over temperature capillary thermostat prevents temperature overshoot.
- Power connection onto local isolator.
- Safety connection from external master safety relay (Natgraph = slave).
- Numerical labelling of all cables at termination points.
- Air speed adjustable between 60 & 100% of maximum for improved control on air effects of webs used.
- Each base can support up to 4x Hot Air Delivery Hoods.

Control

- Stand alone PLC for integration to the master PLC/**GUI.
- Or Local independent ***HMI control of drying units.



Infrared

Three medium wave twin emitter fast response Infrared lamps with variable % control.

Options

Hot Air Delivery Hood

Features

- Hot Air Delivery Hoods easily mounted on customer frame.
- High velocity air with variable control by Variable Control Drive. 130°C max temperature.
- Exhaust path optimised to recirculate the process air efficiently.
- Two metres of flexible high temperature hose for heating and exhaust air. Custom lengths are available on request.



400mm unit

*PLC- Programmable Logic Control **GUI- Graphical User Interface ***HMI- Human Machine Interface

Infrared Delivery Hood



Features

- Dryer Hoods easily mounted on customer supplied frame.
- Six medium wave twin emitter fast response infrared lamps.
- Fans mounted to infrared hoods to direct air to web for optimum performance.
- Infrared controlled with variable power 0-10V controlled by External Machine.

Web widths available:

- 350mm
- 430mm
- 510mm
- 650mm
- 760mm
- Custom wide web formats are available on request.

For more information or if you have a specialist project in mind contact our team today who will be happy to assist you: