Coating Equipment

For the Label Industry

Top-quality linerless labels and laminates

The Coating Equipment from Maan Engineering stands for high-quality finished material, a unique top speed and smart controls. This enables label producers to distinguish themselves in the market through the use of their own coating techniques. The innovative equipment from Maan Engineering enables producers to manufacture unique materials, such as linerless and clear-to-clear labels, in a single pass. The coating equipment can be operated both as a stand-alone solution and integrated into existing printing and converting lines. With the new HYBRID Maan technology, label producers can produce laminate and linerless on a single machine.

MAAN ENGINEERING

EXPLORE
DESIGN
CONFIGURE
PROVIDE

The advantages of Maan Engineering:

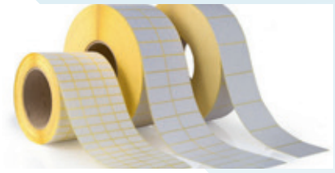
- *Linerless labels*
- *High-quality label material*
- *Unique top-speed*
- *Smart control*

Maan Engineering wants to guarantee continuity in the production process and the best product quality. We achieve that through market-oriented innovation, offering services that stand out from the crowd and delivering customer-specific configurations based on a standardised product range. The goal is to have a leading position in hot-melt coating equipment for the building & construction and labelling industries.

MAAN ENGINEERING'S MISSION

Applications

Maan Engineering serves a wide range of companies in the Printing Industry with its Roll-2-Roll Coating Equipment. Coating techniques are applied worldwide in labels, tape and packaging industries. We have extensive experience with the following applications.



Traditional Labels
Paper, PE foil, PP foil
Many combinations of materials, labels and carriers are possible, with the type of adhesive and release coating being determined for each individual application. The basic materials are processed into a self-adhesive label in a single pass.

Linerless labels
Paper, PE foil, PP foil
Linerless labels are self-adhesive labels, without the traditional backing. Linerless labels will reduce waste by 100%. They are made from all types of materials, such as paper and foil, with the type of adhesive and release coating being determined per application.

Clear-to-clear labels
PE foil, PP foil
Transparent labels are increasingly being used on product packaging, such as transparent packaging. With clear-2-clear labels, it is necessary that both the carrier and the coating used are fully transparent.

WHAT IS YOUR APPLICATION?

Is your end product not featured here, but are you looking for equipment to apply release or hotmelt coatings on flexible materials? We love a challenge, so please get in touch for some advice, free of obligation.

The smartest way to Linerless

Although the Label Industry has been using linerless labels for some 10 years now, use has grown dramatically in recent times. The quality of the label, and the awareness and availability of application equipment are the key reasons for the growth of the 'green' label of the future. For more information on linerless, go to maan-engineering.com.

Waste reduction

Lower CO_2 emissions

Storage and transport savings

Maan Engineering gives you

the in progress

Optimal process control, undisturbed production and end products of the highest quality. We're delighted to contribute to the success of your company with our Roll-2-Roll coating machines.

Knowledge and expertise

We understand the demands that the market places on the end product. Nobody knows the properties of hotmelt and silicone coatings better than the people at Maan, who work closely with the best material suppliers.

Research & Development

Maan Group is the company behind Maan. The group has its own successful R&D department; the brain behind all Maan's innovations based on hotmelt and silicone coatings.

Rooted in coating technology

Maan is a Dutch family business that has grown into a recognized coating and conversion specialist with machines that have proven their reliability over more than 20 years.

International service

Customers around the world know that Maan Engineering can always be relied on to stick to its promises. To ensure optimum performance, we look beyond our own products, and take into account the entire process.

Top-grade components

We are strong believers in the configure-to-order principle. Maan Engineering supplies solutions specifically adapted to customers' needs based on high-quality standard products, and the components to build the machines are also top-grade.

Research and testing facilities

Maan Engineering is happy to go that extra mile for its customers, and this commitment is reflected in our offer to conduct a free feasibility test or to use the research laboratory.

The basis for a good coating layer

INTRODUCTION TO THE BASIC RANGE

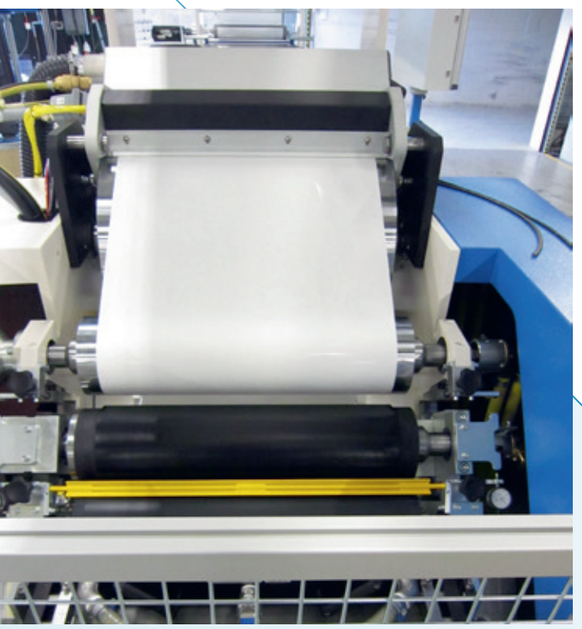
Silicone Coating Station

The Maan Silicone Coating Station has been developed for extremely precise application of silicone coatings on paper and foils. The coating layers are cured extremely quickly by means of an innovative inert gas chamber in combination with a UV lamp.

INDIVIDUAL DRIVEN ROLLERS

For optimum control

The rolls of the Silicone Coating Station are individual driven and their speed can be individually controlled. This ensures an optimum distribution of the silicone on the substrate and prevents pinholes. The temperature is precisely monitored and controlled during the process.



3-ROLLER SYSTEM

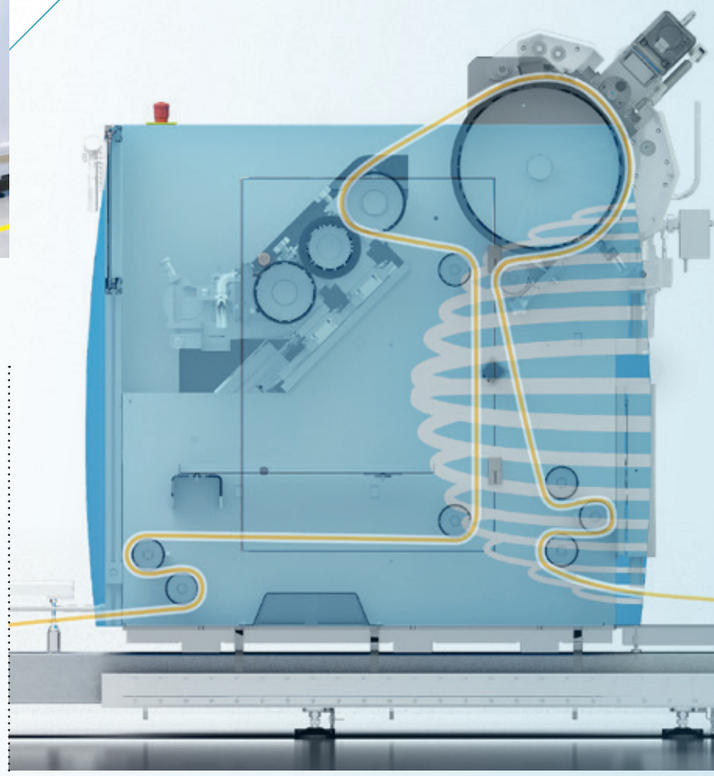
Optionally with 5 rollers

The Silicone Coating Station is available as a 3-roller or 5-roller system. In the 3-roller system, the anilox roll applies the silicone from the buffer to the coating roll with exactly the right thickness. The coating roll then applies the silicone to the substrate. For specific applications, a 5-roller system is available for extremely low coating weights.

Sleeve technologie

The coating roller in the Silicone Coating Station is fitted with a sleeve. The silicone is transferred to the substrate via this easily replaceable sleeve, making it simple to vary the coating width and coating pattern.

Unwind Station



HIGH-PERFORMANCE INERT CHAMBER

Unique technology

In the high-performance inert chamber, the coating is dried extremely quickly by UV radiation. The oxygen content in this high-performance inert chamber, with oxygen levels below 50 ppm, is continuously monitored. This results in high-quality hardening and optimised nitrogen consumption.

UNWIND STATION

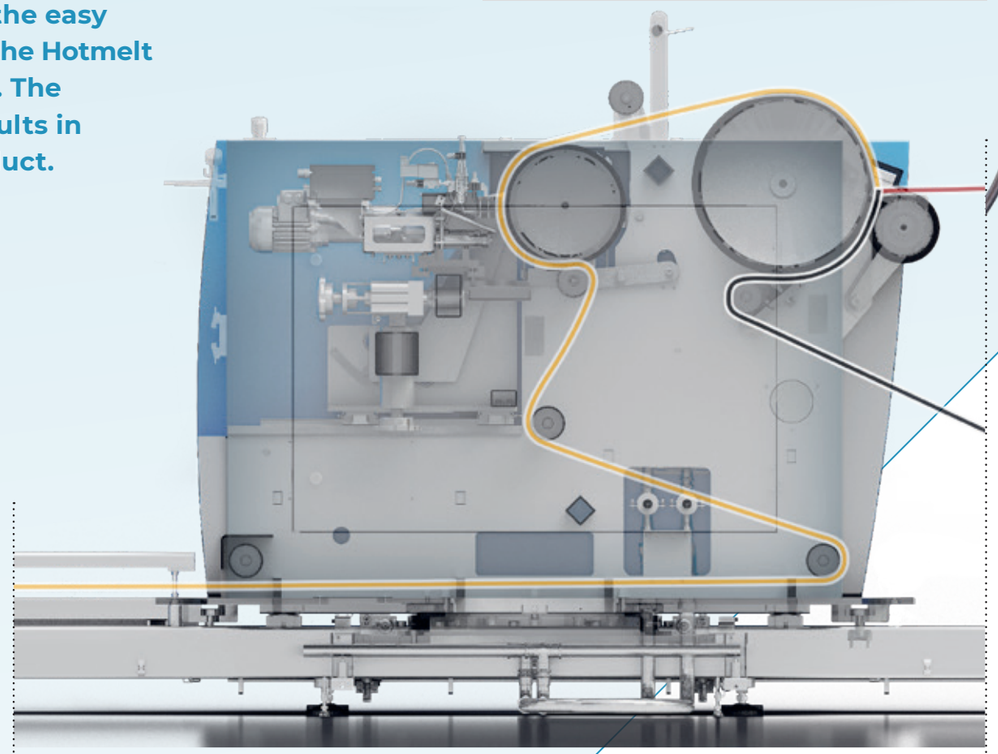
Controlled infeed and web tension

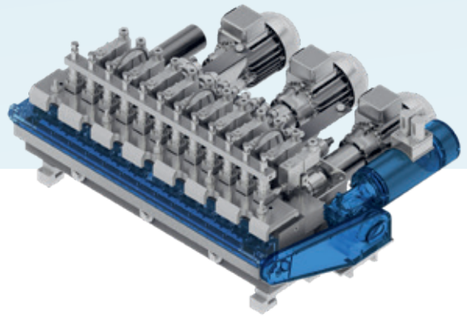
After the infeed unit, the substrate web is gripped by the infeed station that directs the web and measures and controls the web tension in the other process steps. The corona pretreatment to improve the adhesion of the silicone coating also takes place in this station.

Hotmelt Coating Station

The Hotmelt Coating Station applies high-quality hotmelt coatings to paper and foils at high speed. Due to the easy change of coating thickness and coating patterns, the Hotmelt Coating Station has a broad range of applications. The controlled glueing process around the station results in the highest coating quality and the best end product.

Sleeve technologie
The coating roller in the Hotmelt Coating Station is fitted with a sleeve. The hotmelt is transferred to the substrate via this easily replaceable sleeve, making it simple to vary the coating width and coating pattern.



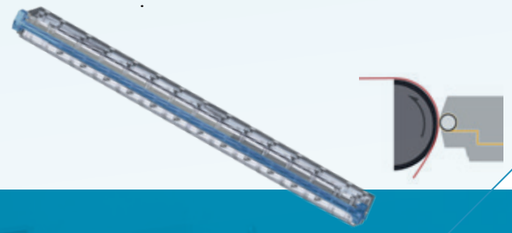


COATING HEAD

Precise and versatile
The basis of the Hotmelt Coating Station is the Coating Head. Three individual driven pumps guarantee extremely precise dosing. The Coating Head can hold various types of nozzle, such as the DieRect Roller Nozzle and the SlotNozzle.

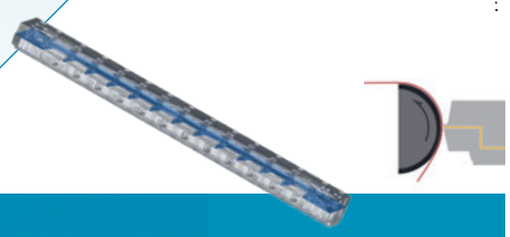
UNIQUE - 3 INDIVIDUAL PUMPS

Uniform dosing
The glue head has three individually driven pumps, allowing the glue to be applied faster and more homogeneously over the whole width. This facilitates adjustment of the glueing pattern. The setting of the coating weight is coupled to the web speed. The coating weight remains constant, even with changing web speeds.



DIERECT ROLLER

Patented application technology
The DieRect Roller Nozzle has a hardened roller that eliminates hard contaminants from the glue. The glue is extruded directly onto the substrate and spread on the substrate with the roller, resulting in extremely thin coating without streaks or thickness tolerances. The simple changing of nozzles means that patterns can be very easily adjusted.



SLOTNOZZLE

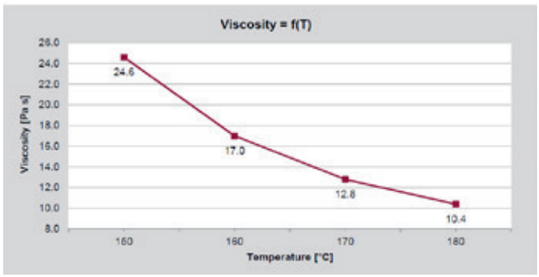
Quick pattern changing
Standard and simple principle for hotmelt extrusion. Via the pre-melter and heated hose, the glue is extruded onto the substrate via the SlotNozzle. The glue patterns from the SlotNozzle are determined by “shim plates”. These are easily changed and allow patterns to be quickly modified or exchanged.

GLUE CIRCUIT TEMPERATURE CONTROL

Controlled glue supply
The Hotmelt Coating Station is combined as standard with a melt-on-demand Drum Melter 200 and a Tank Melter 65 glue buffer upline of the Coating Head. This combination ensures a controlled supply of glue at the right application temperature. A slight deviation in the processing temperature of the glue has a significant influence on its viscosity, and hence on the coating quality.

DRUM MELTER

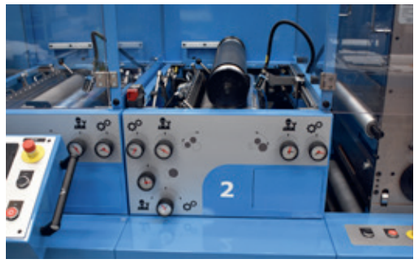
Smart melt-on-demand pre-melter
The DM20 and DM200 are luxury hotmelt Drum Melters for melt-on-demand applications. Fitted with Siemens control system, automatic venting valve and glue pressure sensor. The smart integration of these three components ensures a controlled production process.



Influence of temperature on viscosity

Additional techniques

Based on its high-quality basic range, Maan Engineering facilitates the application of top-grade coatings. The coating techniques of Maan Engineering are developed in-house and are being refined continuously. In order to offer our clients total label solutions, we work together with respected partners for the additional techniques.



Printing Station – LEMU Group, Spain

The standard printing station is a rotary flexo-printing station based on UV. This station is a doctor blade system with an enclosed chamber. The system is servo-driven and is equipped with a second-pass photocell. The printing station has an ink-recirculation system.
The station is equipped with a UV curing system based on an air-cooled UV lamp. The ventilation system of the UV drying system is equipped with air supply and extraction modules.

Diecutting Station – LEMU Group, Spain

The perforation station is based on a rotating punch. The system can be used to apply repeat dimension perforation zones on the material. The system is driven by an independent servo system. It makes use of hydraulic load cells for pressure regulation. The system has a simple die-swapping system featuring a nylon plate guide with adjustable angle.

Turret Rewind Station – LEMU Group, Spain

The Turret Rewind Station is used in-line or standalone for roll slitting, after which the rolls are processed into to smaller rolls with the required core diameter. The Turret Rewinding Station can be made suitable for processing linerless material. The Turret Rewinding Station is equipped with an automatic core loader.

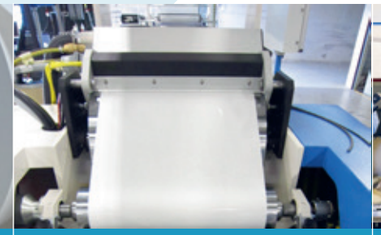
Layer thickness measurement

The Layer Thickness Measurement system continually measures the coating weight of the hotmelt coating. The IR scanner is mounted to a driven linear guide that moves automatically over the width of the web. The scanner is equipped with sensors to automatically adjust to the web width. The information about the coating weight is shown on a monitor placed beside the coating station, so that the coating can be adjusted where necessary. The system is supplied with a 15-inch HMI showing a coating profile with the weight of the hotmelt layer across the width of the web.

COATING LINE SPECIFICATION

	Coating Line 530	Coating Line 660
Web width (mm)	330-530 (13”-20”)	530-660 (21”-26”)
Mechanical speed (m/min)	150 (500 f/min) OPTIONAL 225 (750 f/min)	
Web thickness (um)	40-200	40-200
Web tension (N)	40-250	40-250
Maximum roll diameter (inch)	40	40
Core diameter (inch)	3 - 6	3 - 6
Silicone Coating Station	**3-Roller system**	**OPTIONAL 5-Roller system**
Silicone coating weight (g/m^3)	0.8 - 1.5 g/m^2	0.5 - 1.0 g/m^2
Hotmelt Coating Station	**DieRect Roller Nozzle**	**SlotNozzle**
Hotmelt coating weight (g/m^3)*	10 - 50	20 - 300

*Depending on type of materials and glue



OPTIONS

① **High-speed option**

The high-speed option for the coating lines has a mechanical speed of 225 m/min.

② **5-roll system**

5 rolls on the Silicone Coating Station. For the application of extremely thin silicone coatings.

③ **HYBRID technology**

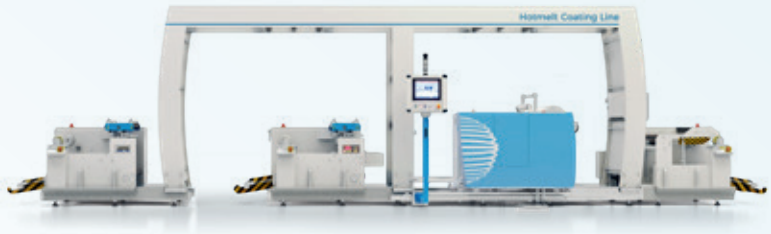
Rotating Hotmelt Coating Station for quick change of the web passage for the production of linerless labels and laminates.

HYBRID TECHNOLOGY

New, innovative technology for the production of both linerless labels and laminates on one production line. The HYBRID coating technology enables the production of both linerless and laminate on a single machine. Rotate the Hotmelt Coating Station to be able to apply hotmelt to both sides of the paper or foil web. By contrast with other alternatives, changing takes only 15 minutes.

Standard Configurations

HYBRID Lamination Coating Line



Hotmelt Coating Line

Linerless Coating Line

MORE INFORMATION?
Check out the
Maan Engineering website at:
maan-engineering.com

Maan activities worldwide:

MAAN ENGINEERING

Coating Equipment for the Building & Construction and Label industries

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FIND OUT MORE?

If you'd like to find out more about Maan Engineering's Roll-2-Roll Coating Equipment, you can find more information on our website at www.maan-engineering.com. You're also very welcome to visit our demonstration and test centre in the Dutch town of Raalte. Please contact our account manager without obligation.