KOENIG & BAUER

we're on it.

MetalCoat

MetalCoat –
The Right Solution to Your Challenges

The MetalCoat meets the highest conceivable requirements in terms of quality and productivity. With its proven coating application system, the MetalCoat is up to any challenge. Both problematic coatings and demanding substrate qualities are handled reliably and at high speeds.

The sheer diversity of coating types is one of the greatest challenges for coating machines. We at Koenig & Bauer MetalPrint, however, can offer a solution that has been carefully tailored for every application.

The right machine for every requirement

- **MetalCoat 470**
  with three-roller system – in widespread use with over 200 installations. Most settings on the stable and reliable machine are made manually.
- **MetalCoat 483**
  with three-roller system and direct drive technology – high degree of automation with settings primarily made electronically. It is the right choice for growing markets that make even higher demands of quality, productivity and sophisticated coatings.
- **MetalCoat 480**
  with anilox system – the perfect solution for UV or UV-LED coating applications. It is an ideal choice for incorporation into a UV or UV-LED printing line where protective coatings are required.

Control panel MetalCoat 470

MetalCoat 470

The most widely used coating machine in the metal packaging market with over 200 installations. The MetalCoat 470 is compatible with conventional solvent-based lacquers as well as UV or UV-LED coatings.

The three-roller coating application system guarantees straightforward handling and processes for both conventional and UV or UV-LED coatings. The MetalCoat 470 is available as a free-standing coating machine with sheet feeder for internal and exterior coating applications, or as an inline coater for clear varnishing after printing. It can be supplied with the VacuMatic front register infeed table for high-precision cross or longitudinal stencilling and spot coating.

Key facts
- Designed for high speed and large sheet formats
- Suitable for tinplates, TFS as well as aluminium sheets (optional)
- Coater is available with the VacuMatic infeed table with electronic format settings and gripper drum for high-precision cross or longitudinal stencilling and spot coating
- Upon customer request, the infeed table can be delivered as a belt infeed table for solid coating only
- Accurate film weight and low lacquer consumption with precise three-roller coating head
- Easy setting of film thickness by means of wheels with scales
- Pneumatically controlled scraper blade system for the impression cylinder
- Easy access for washing, operator can stand upright
- Fast roll-out for coating cylinder change
- Delivery with round belts for fast format change
- The delivery table is optionally available in the Venturi design for contact-reduced sheet guidance without the need for format adjustments
- Robust design with low maintenance requirements
- Electronic synchronisation between coater and other line components
- Straightforward operating console for MetalCoat 470 with push buttons

Direct drives on the MetalCoat 483

Control panel MetalCoat 480/483
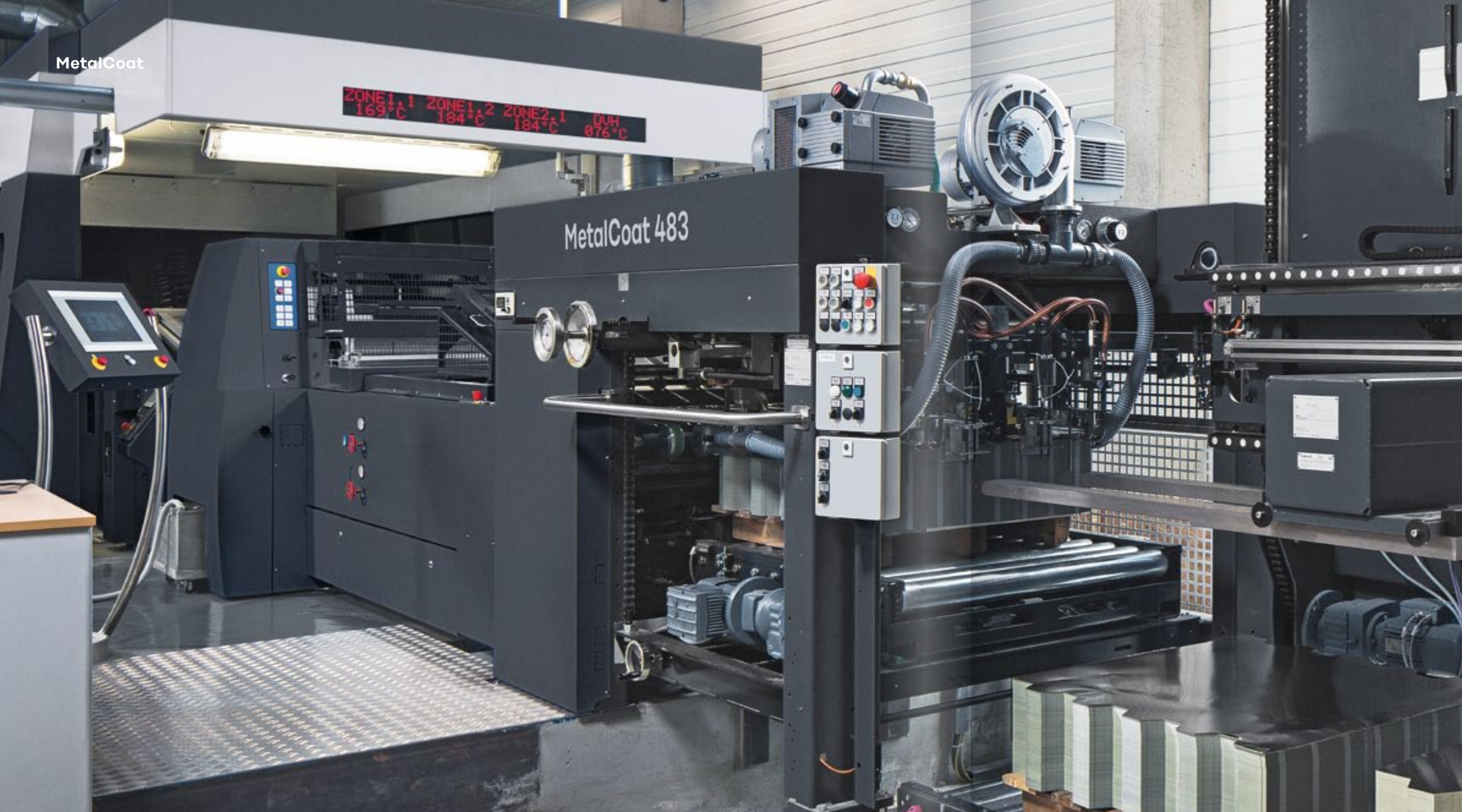
MetalCoat 483

Dedicated drives, touch panels with memory function, laser-assisted machine makeready: these and other cutting-edge technologies are available with this coating machine. The MetalCoat 483 meets the highest conceivable demands in terms of quality and productivity. Both problematic coatings and demanding substrate qualities are handled reliably and at high speeds.

The MetalCoat 483 is available as a free-standing coating machine with a fully automatic sheet feeder for internal and exterior coating applications, or as an inline coater for clear varnishing after printing. It is compatible with conventional solvent-based lacquers as well as UV or UV-LED coatings. The direct drive technology allows

delta settings for speed, which helps to reduce contamination or to improve coating quality. All electronic settings can be stored and used for similar jobs. The MetalCoat 483 can be supplied with the VacuMatic front register infeed table for high-precision cross or longitudinal stencilling and spot coating.

Key facts

- Designed for high speed and large sheet formats
- Suitable for tinplates, TFS as well as aluminium sheets (optional)
- Clear operating console layout
- Individual drive technology
- Motorised coating cylinder, metering roller and forme roller settings
- Delta settings between the application roller and coating cylinder to reduce contamination in the event of cross spot coating
- Delta settings between metering and application roller for improved appearance when using difficult lacquers
- Pneumatic coupling for fast coating cylinder change

- Laser-assisted rapid zero setting of the coating cylinder
- Coater is available with the VacuMatic infeed table with electronic format settings and gripper drum for high-precision cross or longitudinal stencilling and spot coating
- Upon customer request, the infeed table can be delivered as a belt infeed table for solid coating only
- Pneumatically controlled scraper blade system for impression cylinder
- Easy access for washing, operator can stand upright
- Fast roll-out for coating cylinder change

- Delivery with round belts for fast format change
- The delivery is optionally available in the Venturi design for contact-reduced sheet guidance without the need for format adjustments
- Electronic synchronisation between coater and other line components
- Adjustable sheet arrival while machine is operating for optimised sheet conveyance to the infeed table
- Extraction of solvent-laden air integrated into the coater as part of the EcoTNV or HighEcon thermal oven concept
- Modern console with intuitive touch operation and user guidance
- Storage of settings

MetalCoat 480 with cylinder for coating plates

MetalCoat 480

The perfect solution for UV or UV-LED coatings. It is an ideal choice for incorporation into a printing line where protective coatings are required. The anilox roller technology ensures uniform application quality.

The MetalCoat 480 is ideally suited for the application of protective coatings within a UV or UV-LED printing line. Electronic synchronisation of the overall line and a consistent focus on maximising speed allows the MetalCoat 480 to keep pace with the high production outputs of modern presses like the MetalStar 4 and Mailänder 283.

Key facts

- Individual drive technology for optimised machine settings
- Rubber-lined coating cylinder
- Optional coating cylinder for coating plates for the use of rubber or photopolymer plates for UV coating
- Memory function for machine settings for reduced make-ready times

- Designed for tinplates, TFS as well as aluminium sheets (optional)
- High precision cross or longitudinal stencilling and spot coating
- Electronic synchronisation with other line components
- Modern console with intuitive touch operation and user guidance

Maximum Flexibility – Choose the Right Solution for Your Requirements

The right machine equipment for the sheet feeding area.

VacuMatic infeed table
- For solid and spot coating
- Perfect register
- Electronic format settings
- Demand-oriented vacuum settings, adapted to the table weight
- Stable sheet transportation with reduced maintenance requirements

VacuMatic infeed table

Gripper drum for solid and spot coating
- Exact sheet transfer by magnets
- Option: perfect registration by vacuum for aluminium sheets

Gripper drum

Infeed table for solid coating
- Straightforward feed table with wide belts
- Scratch-free transport
- Without format settings
- For solid coating only
- Little space required (700 mm shorter than VacuMatic)

Infeed table for solid coating

Smooth and Safe Sheet Transport throughout the Entire Coating Line

Innovative solutions with fewer contact points.

Round belt delivery table
- Safe conveyance of tinplate using round belts
- Small contact surfaces between the round belt and the sheet
- Fast format adjustments
- Low cleaning requirements

Round belt delivery

NEW – The innovative Venturi technology for highest productivity
The innovative Venturi sheet transportation system is available for the delivery, transport, loading and unloading machine. Air nozzles generate a uniform air cushion on which the sheet can move. Only two narrow vacuum belts, positioned in the middle of the table, are required to ensure precise sheet transport. The result: stable production even at high production speed. This is especially advantageous when processing challenging substrates such as scroll sheets. Finally, the set-up times can be shortened, as there is no longer any need for format adjustments.
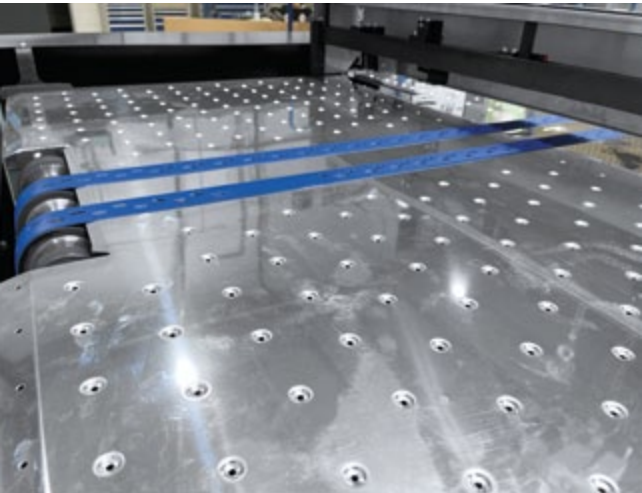
Additional advantages of using the Venturi-technology
- Extremely reliable and precise sheet transport using vacuum belts
- Fewer contact points between the sheet and transport table due to air cushion transportation
- Reduced set-up times – no adaptations to sheet size necessary
- Easy to clean

Venturi delivery table

Stacker logistics
Customer-specific solutions
- Roller conveyor for motorised removal of the pallets
- Chain conveyor for motorised removal of pallets to the side – has advantages where space is at a premium
- Turntable for space-saving pallet removal and customised material transport
- Inline pile turner for inline preparation of the stacks for the next process step
- Offline pile turner for offline preparation of the stacks for the next process step

Stacker
Absolutely reliable and scratch-free stacking
- Dynamic vacuum or magnetic overhead brake
- Configurations with single, double or triple box
- Non-stop operation possible with double or triple box unit
- Automatic ejection of waste sheets with double or triple box unit

Unloading machine
Dynamic sheet accelerator
- Precise sheet transfer from wickets to the following conveyor by vacuum belts
- Fewer sheet contact points with the Venturi option
- Stable production at high speed

Thermal drying oven
Cost-effective with low gas consumption
- Perfect temperature distribution
- Special air flow solution available for thin sheets
- Highest efficiency and low gas consumption with the EcoTNV and HighEcon purification system
- Exhaust air cabin available in different versions and lengths
- High-performance cooling zone
- Wicket pre-heating
- Further savings possible through waste heat recovery

MetalCure systems
Efficient and powerful
- Inline MetalCoat after a UV or UV-LED coating machine
- Backside and final dryer for reliable production
- MetalCure UV or energy-saving UV-LED curing technology

Loading machine
Dynamic sheet control
- Slippage-free and precise positioning of the sheets
- Fewer sheet contact points with the Venturi option
- Transportation bridge available in different lengths
- Round belt delivery or new Venturi delivery for contact-reduced sheet transportation
- Stable production at high speed

MetalCoat
Reliable high-performance coating
- Excellent coating results with three-roller coating unit and flexible adjustment of the coating thickness, or anilox version available for UV applications
- Infeed table with electronic format settings and high precision for spot coating, or belt conveyor for solid coating
- Round belt delivery or new Venturi delivery for contact-reduced sheet transportation
- Extraction of solvent-laden air

Feeder
High-performance single sheet feeder
- Continuous pile lifting
- Suitable for tinplates, TFS as well as aluminium sheets (optional)
- Fast lifting and lowering of pile frame
- Double sheet ejection system
- Straightforward format setting and pile centring by handwheel
- Option: Stop&Turn functionality

Customised feeder logistics
A range of solutions tailored to your individual needs
- Roller conveyor extensions for motorised delivery of pallets
- Facilities for pallet loading
- Side chain conveyors for motorised delivery of pallets from the side – advantageous where space is at a premium
- Turntables for space-saving material loading and customised material transport

Line configurations
Great flexibility – Customer-specific solutions
- Free-standing single coater – the universal coating line for a wide range of applications
- Tandem coating line with pre-drying oven after the first coating machine and main drying oven after the second coating machine: incredibly productive due to application of the internal and external coating in one pass
- Double coating line with one main drying oven: meet high quality demands with unparalleled efficiency by applying two internal coatings in one pass
- Printing line with an inline coater with thermal drying oven or UV or UV-LED curing system

Fast Make-Ready —
Designed for Easy Operation

Fast coating cylinder change in upright position
- Pneumatic clutch for a change of coating cylinder within just two minutes
- Fast roll-out on rails
- Coating cylinder lifting device integrated into the oven exhaust air cabin

Rollout on rails

Drip tray for MetalCoat 483
- Support device with drip tray installed on the infeed table
- Easy cleaning of the third roller

Drip tray (MetalCoat 483)

QuickChange kit
- Faster coating changes
- Final cleaning of parts that convey coatings completed outside the machine

QuickChange kit

Quick release for varnish pump
- The pump is easily accessible
- Varnish pump is installed on a platform
- Fast removal using quick release clamps

**Quick release for varnish pump**

Laser-assisted zero setting

Laser-assisted rapid zero setting of the coating cylinder
- Fast make-ready of high-precision cross coating jobs
- Less waste as the basic setting is made without sheets

Flexo scraping system

Standard scraping system
- Uniform distribution of force across the width
- Good scraping performance
- Fast cleaning
- Additional varnish pan and scraper bar available for fast change-over

Flexo scraping system
- Fast scraper blade change in about two minutes
- The scraper blade is secured in a quick clamp assembly
- Uniform distribution of force across the width
- Optimal scraping performance
- Longer blade service life
- Minimises washing time by means of special shape of the coating pan

Solvent scraping device
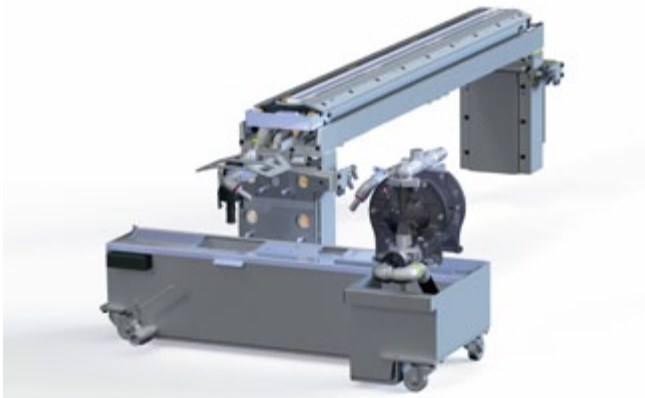
Solvent scraping device
- Secondary scraper device for more production flexibility
- Additional impression cylinder cleaning after main scraper
- Straightforward operation and adjustment as the solvent blade is adjusted pneumatically

Blade grinding device and burr remover
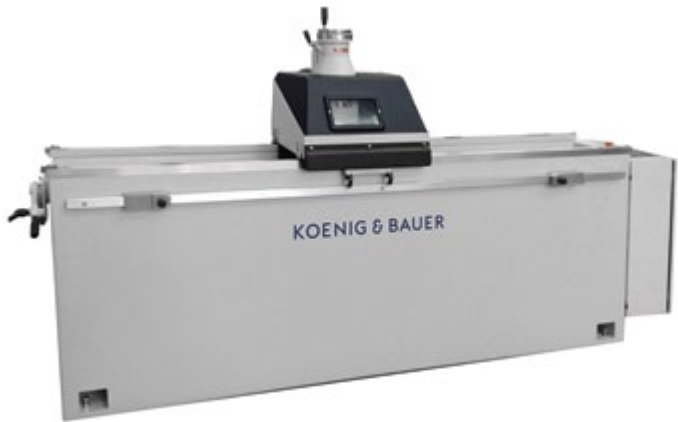
Blade grinding device
- Wet grinding unit suitable for sharpening industrial blades
- Carriage and grinding head with automatic infeed
- Automatic burr removal from blades
- Mechanical clamping kit included

Quality Control –
Stable Production with
Inline Measuring Devices

© Dan Kray

Inline sheet position control

Inline sheet position control

The system can be integrated into Koenig & Bauer MetalPrint coating lines. It is positioned above the coating machine delivery and detects any twisted and misregistered sheets during the coating process. Data transfer is possible via OPC-UA Ethernet and USB port. Intuitive operation is ensured with the clear touch display.

Versions

- Detection of skewed sheets
- Detection of skewed sheets and lateral offset
- Detection of skewed sheets, lateral and longitudinal offset

Coating thickness measurement

The Specmetrix system can be integrated into Koenig & Bauer MetalPrint coating lines. The exclusive ruggedised optical interference technology is the best technique available for real-time non-contact measurement for coating thicknesses or film weights in a wet or dry state.

Details and advantages of an inline coating thickness measurement system

- Continuous production control
- Integration of measuring equipment behind coating machine delivery
- Measurement of wet film weight or thickness using two probes, monitoring left and right-side variance to maintain consistency
- Improved coating process control with continuous real-time film weight data
- Significant cost savings with more stringent control processes and optimised coating application
- Improved production efficiency, no need to wait for offline results
- Recording of all data in real time and storage of data collected for quality reports
- External, internal and protective coatings measured as single or dual layers
- Faster set-up times
- Less rework and waste

**Inline coating thickness measurement system**

NEW – Inline coating gap control

- Integrated coating film weight measurement and control system for MetalCoat 483
- Automatic adjustment of the coating gap based on run data
- Faster set-up times
- Consistent production quality
- Plant cost and labour savings

Best Solution for Digitalisation in Metal Decoration

Real-time data collection: machine data, sensor data and messages — basis for process analysis & optimisation

ModEX brings Industry 4.0 to your metal decorating production environment. Capturing a variety of data sources such as machine data, sensor data and process data in real time creates the basis for process analysis, optimisation and automation. While ModEX Base integrates the necessary acquisition into your production line in real time and transfers the collected data to the MES, communication between MES and line(s) can take place through the ModEX Pro extension. The digitalisation of production processes realised this way creates the opportunity to save time and costs, increase efficiency and improve the quality of your products.
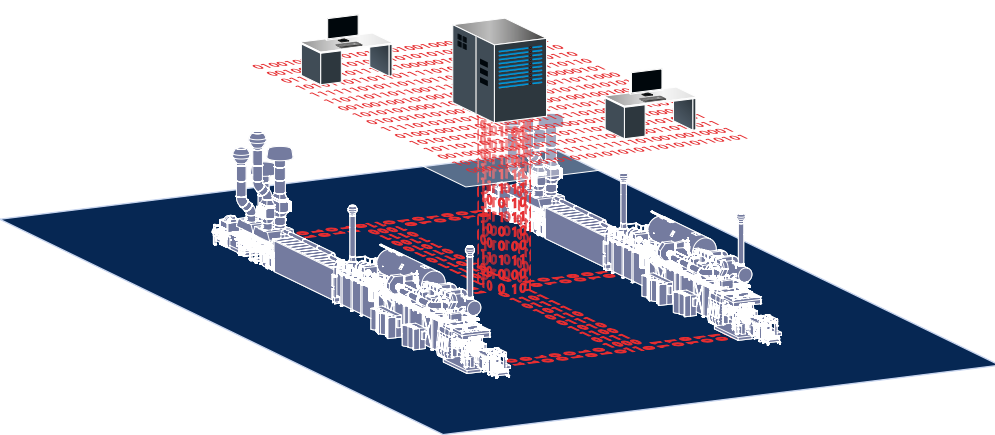
ModEX Base

Uni-directional link to the MES:
Current values, error messages, status messages

ModEX Pro

Bi-directional link to the MES:
Current values, error messages, status messages
+ job-specific parameters

ModEX Optional Features

Energy consumption acquisition

Retrofits:
In principle, existing lines built in 1999 or later can also be retrofitted with ModEX Base (incl. optional features). Some requirements must be clarified in advance (machine control, sensors installed, etc.). Our experts will support you with this.

New lines:
ModEX Base (incl. optional features) and ModEX Pro can be implemented without limitations for your new production line. Our experts will support you with this.

VisuEnergy X — Energy Management System for the Metal Packaging Market

Whether it's a coating machine, a printing machine with inline coating or a can press — we make maximum energy efficiency possible for your production in the metal packaging sector.

One overall concept and three product components:

Measure

Using corresponding sensor technology, we create the basis for successful energy management. Digitalisation means that energy metre data no longer has to be processed manually, but can be automatically collected and recorded using modern sensor technology. New machines can be optionally equipped with the corresponding sensors; for retrofits, we recommend the measuring devices available from our external partners.

Visualise

The heart of the product is that the collected data can be visualised in a software. The relationship between produced sheets and consumed energy is displayed in a truly unique way. In addition to ModEX or EnergyView (Logotronic), other data sources, IoT sensors or metres can also be integrated into it (e.g. for recording data from third-party aggregates). Everything displayed can be exported and archived.

Energy Management
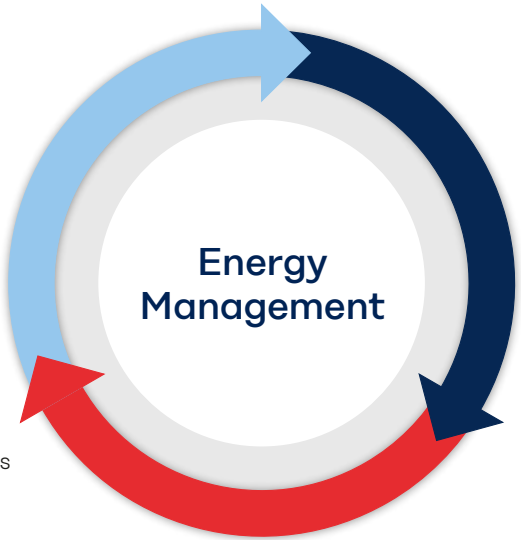
Realise

Measurement and visualisation alone are not the final goal. Therefore, the evidence created is consistently used to identify potential savings. The result is a customised concept that highlights concrete measures to exploit the potential identified. This is made possible by our globally active and experienced energy partner. They will also carry out a free, initial assessment of the potential before the recording and visualisation process.

Your Flexible Coating Machine — Equip Your MetalCoat according to Your Needs

Standard and optional features — availability for each MetalCoat*

Standard equipment

Availability for MetalCoat version	MetalCoat 470 (3-roller)	MetalCoat 483 (3-roller)	MetalCoat 480 (Anilox)
VacuMatic infeed table with electronic settings	■	■	■
Gripper drum (with magnets)	■	■	■
Round belt delivery	■	■	■
Standard scraping system	■		
Quick release for varnish pump		■	■
Storage of electronic settings		■	■
Direct drive for coating cylinder		■	■
Direct drive for coating application roller		■	
Laser-assisted zero setting		■	■

Optional equipment

| Availability for MetalCoat version	MetalCoat 470 (3-roller)	MetalCoat 483 (3-roller)	MetalCoat 480 (Anilox)
Infeed for solid coating only	■	■	■
Aluminium package (gripper drum with vacuum)	■	■	■
Venturi delivery	■	■	■
Quick-Change kit	■	■	■
Flexo scraping system	■	■	■
Solvent scraping device	■	■	■
Blade grinding device and burr remover	■	■	■
Inline coating thickness measurement system	■	■	■
Inline coating control		■	
Sheet position control	■	■	■
Varnish heating device	■	■	■
Coating cylinder for full-solid or spot coating	■	■	■
Coating cylinder for coating plates		■	■
ModEX — uni or bidirectional connection to the MES system	■	■	■

*The table lists a range of options. Your contact partner at Koenig & Bauer MetalPrint will be happy to inform you about other possibilities.

MetalCoat 470: Technical data

Sheet format

Maximum	1 000 x 1 200	mm	39.37 x 47.24	inch
Minimum	510 x 710	mm	20.08 x 27.95	inch
Thickness	0.12 – 0.50	mm	0.0047 – 0.0197	inch

Cylinder diameter

Spot coating	Ø 328.7	mm	Ø 12.94	inch
Plain coating	Ø 324 – 339	mm	Ø 12.76 – 13.35	inch

Production speed [1]

Maximum mechanical speed	up to 8 000	sheets/h	up to 133	spm

Feeder pile

Maximum weight	3 500	kg	7716.18	lbs

Connected load (depending on accessories)

without feeder	15 – 25	kW
with feeder	27 – 40	kW

Compressed air

6 bar/80 psi	4	m³/h

| Dimensions	MetalCoat 470
Height of machine (A)	1 489 mm 58.62"
Width of machine	2 400 mm 94.49"
Length of machine (B) [2]	3 750 mm 147.64"
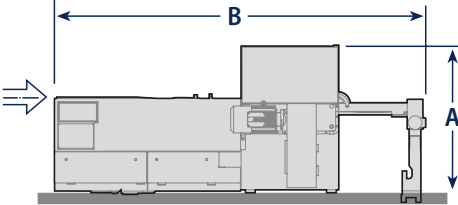
[1] Dependent on individual processing parameters, e.g. the lacquer and substrates used.
[2] The additional length of the corresponding feeder is approx. 2 475 mm.

MetalCoat 483 ▪ MetalCoat 480: Technical data

Sheet format

Maximum	1 000 x 1 200	mm	39.37 x 47.24	inch
Minimum	510 x 710	mm	20.08 x 27.95	inch
Thickness	0.12 – 0.50	mm	0.0047 – 0.0197	inch

Cylinder diameter

Spot coating	Ø 328.7	mm	Ø 12.94	inch
Plain coating	Ø 324 – 339	mm	Ø 12.76 – 13.35	inch

Production speed [1]

Maximum mechanical speed	up to 8 000	sheets/h	up to 133	spm
Maximum mechanical speed as inline version	up to 9 000	sheets/h	up to 150	spm

Feeder pile

Maximum weight	3 500	kg	7716.18	lbs

Connected load (depending on accessories)

without feeder	20 – 30	kW
with feeder	33 – 43	kW

Compressed air

6 bar/80 psi	4	m³/h

Dimensions	MetalCoat 483 / 480
Height of machine (A)	1 675 mm 65.94"
Width of machine	3 020 mm 118.90"
Length of machine (B) [2]	3 750 mm 147.64"
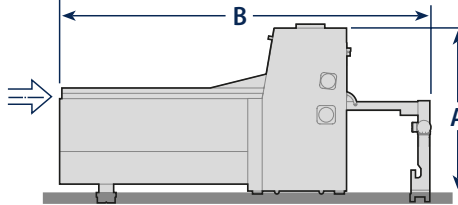
[1] Dependent on individual processing parameters, e.g. the lacquer and substrates used.
[2] The additional length of the corresponding feeder is approx. 2 475 mm.

The illustrations and descriptions may depict or refer in part to special versions and options. Subject to technical and design modifications. Country-specific variants may apply. More detailed information can be obtained from your local Koenig & Bauer representative.