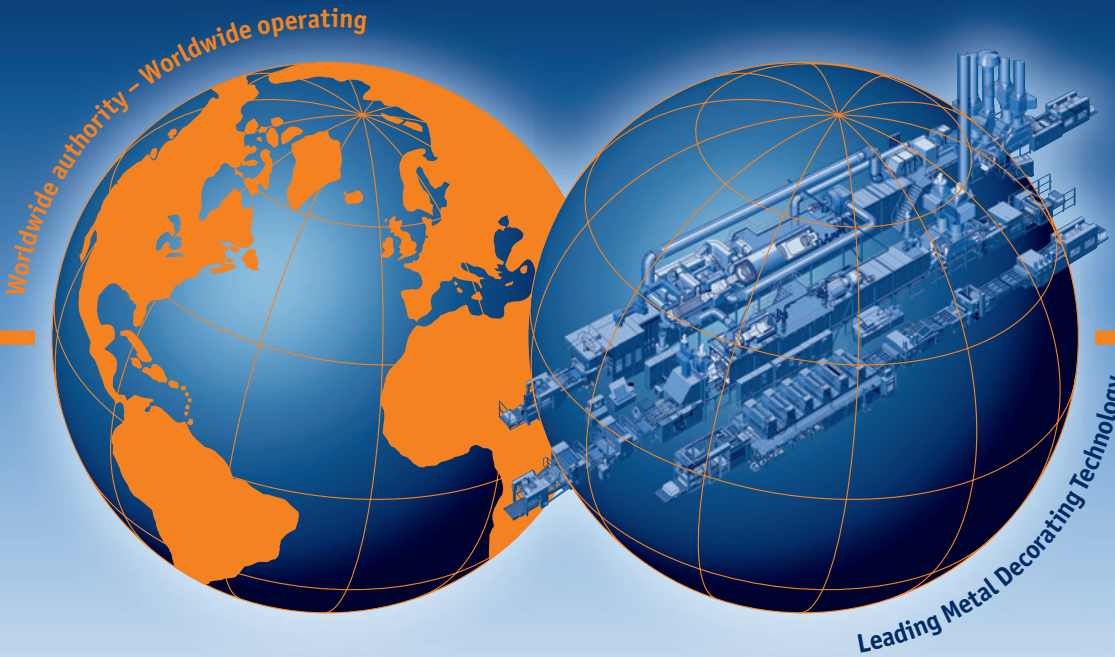


INNOVATIVE SYSTEMS FOR PRINTING, COATING AND DRYING OF METAL SHEETS MADE OF TINPLATE, ALUMINIUM OR STEEL

KBA-MetalPrint

GB

DRYING TECHNOLOGY

Drying Technology

70 years of experience in the field of drying technology for the metal packaging industry and more than 2 500 LTG sheet drying ovens worldwide, demonstrate the quality and reliability of our equipment.
A continual programme of development has resulted in high speed high quality production combined with the lowest possible energy consumption.

KBA-MetalPrint air purification systems will meet all known emission standards when using solvent based lacquers and coatings on the line.

Linear Transport

The new linear conveyor design replaces the old system using perpendicular hinged support for the chain guiding rails. This results in easier installation and reduces the need for spare parts.

Wickets

KBA-MetalPrint now uses I-beam steel as standard in the manufacture of wickets (see picture). This guarantees a consistent wicket shape, greater stability and more accurate positioning of the supporting ears. As an optional extra the wickets can also be chromium plated or supplied in the "K-wickets" configuration which optimizes performance on thin sheets below 0.14 mm.

LTG metal sheet drying oven

Linear transport assembly

I-beam wicket

Technical Data

type	max. capacity	max. sheet size	min. sheet size	sheet gauge	pitch	weight
DB 3000	9 000 sheets/hour	1 000 x 1 250 mm	510 x 710 mm	0,12 - 0,6 mm	1 "	up to 3 kg
DBP	7 000 sheets/hour	1 000 x 1 250 mm	510 x 710 mm	0,14 - 1,0 mm	1,25 "	up to 9 kg
DBN	3 500 sheets/hour	980 x 1 850 mm	510 x 710 mm	0,30 - 1,5 mm	1,5 "	up to 20 kg

Exhaust Air Cabin

- Effective extraction of solvent laden fumes from the oven infeed and coating machine area
- Additional movable hood which can be lowered directly over the coater for efficient capture of solvents
- Sliding doors enable easy access to the loading machine
- The extracted solvents will be purified by the oven incinerator system
- Optional motorised lifting device incorporated in the cabin for easy coating cylinder change-over

DRYING TECHNOLOGY

Thermal Drying

Optimised air circulation and temperature control.

Quick and consistent heating of the metal sheets in the oven is achieved by a special injection nozzle system (illustration 1). Once the drying temperature is reached, the metal sheets are consistently baked at the temperature within +/- 1.5 % (illustration 2).

Tunnel Walls

As an optional extra, perforated tunnel walls designed to minimise reflected noise which in turn can help to reduce the factory noise level by up to 3 dB(A) (illustration 3).

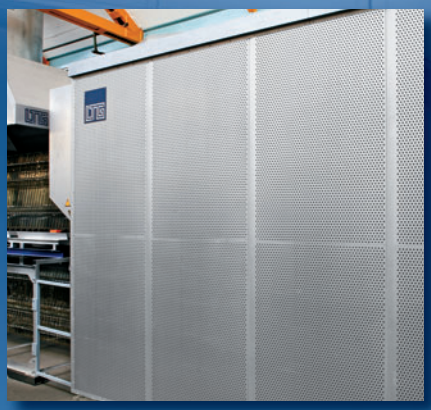


Illustration 3: perforated tunnel walls

Total curing times

speed	tunnel length									
	18 m	21 m	24 m	27 m	30 m	33 m	36 m	39 m	42 m	
5 000 sheets/hour	8,6	10,0	11,5	13,0	14,4	15,8	17,3	18,7	20,1	[min.]
6 000 sheets/hour	7,2	8,4	9,6	10,8	12,0	13,2	14,4	15,6	16,8	[min.]
7 000 sheets/hour	6,1	7,2	8,2	9,2	10,2	11,3	12,3	13,3	14,4	[min.]
8 000 sheets/hour	5,3	6,2	7,1	8,0	8,8	9,7	10,6	11,5	12,4	[min.]

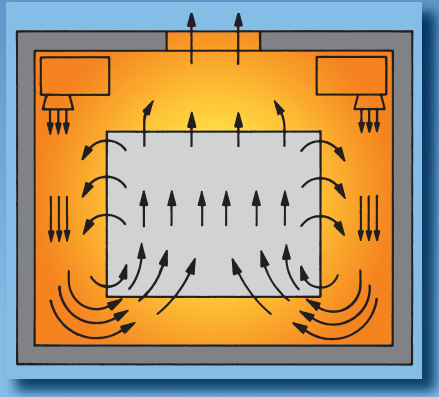


Illustration 1 : air circulation within the oven

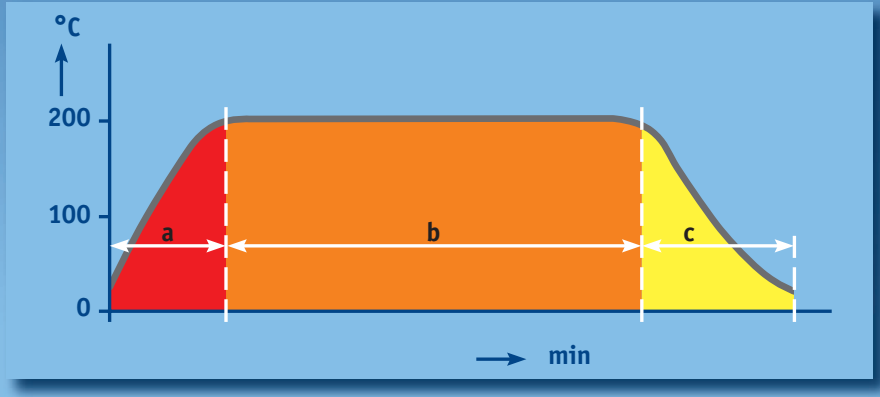


Illustration 2: metal temperature curve

BELT OVENS

Belt Ovens

Accurate uniform temperature control, preassembled compact design

Belt Dryer for the curing of:

- Twist off cap and closure compound
- Internal coatings for food and beverage cans
- Welded can side stripe lacquers
- General industrial coatings

Dryer Specification

Total tunnel length:	3 - 30 m
Cooling zone length:	1 - 5,2 m
Belt width:	1 - 2,5 m
Number of heating units:	1 - 3

Conveyor Belt

- Woven steel or flat wire belts
- Energy saving synthetic belt systems
- Automatic tracking systems

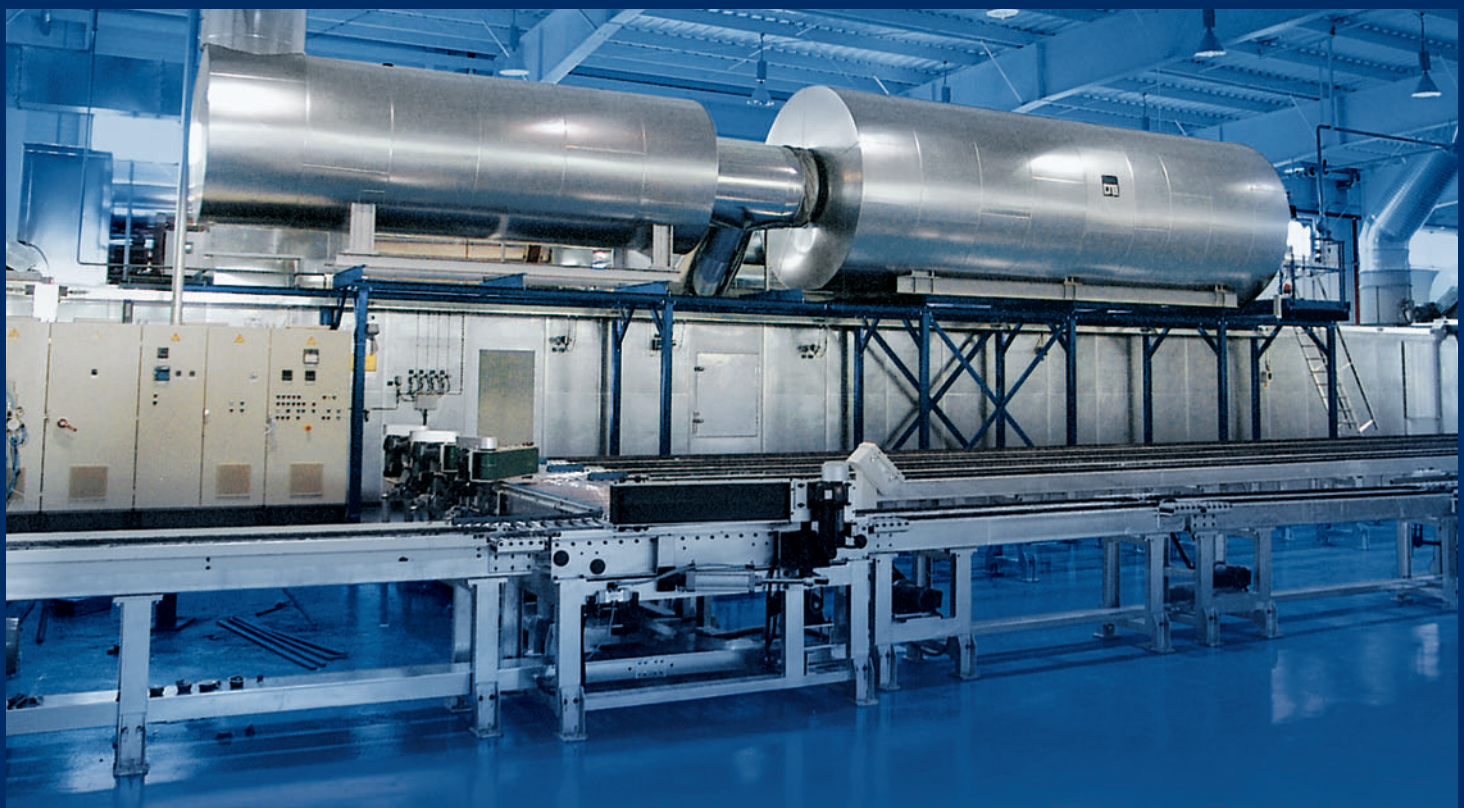
Optional Equipment

- Cooling zone
- Air purification (integrated or add on)
- Perforated tunnel walls (for noise reduction)
- Energy saving split conveyor between the oven and cooler

Internal bake oven curing party drums

Single zone belt oven curing twist-off cap compound using a synthetic conveyor belt

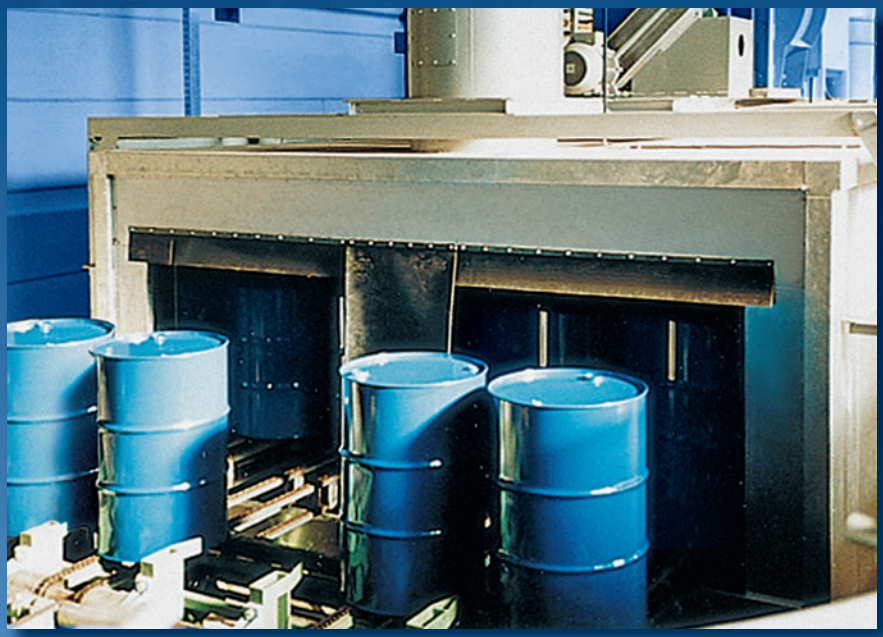
DRUM DRYING OVENS



Drum Drying Ovens

KBA-MetalPrint offers drying systems for drums from 20 to 250 litres in size

- Ovens for curing the outside paint and inside coatings of steel drums, drum bodies and intermediates
- Flat sheet metal drying ovens type DBN for printed and/or coated drum body sheets in sizes up too 1 000 x 1 840 mm
- Drying ovens for coated discs, drum ends or drum lids
- Exhaust air purification systems to treat the exhaust air from both drying ovens and spray booths



2 x 2 row-double tunnel

4 row cooling tunnel

DBN oven infeed

End drying oven with integrated air purification system

CONVECTION DRYERS

Convection Dryers

Apart from the metal packaging industry, KBA-MetalPrint can supply a complete range of drying and curing systems suitable for general industrial applications. Ovens can be supplied for all types of part finishing processes including solvent, water and powder based coatings.

The units can be designed in a variety of sizes andorientations to meet the specific needs of the process and our products are based on our wealth of experience from the supply of over 3 000 ovens worldwide.

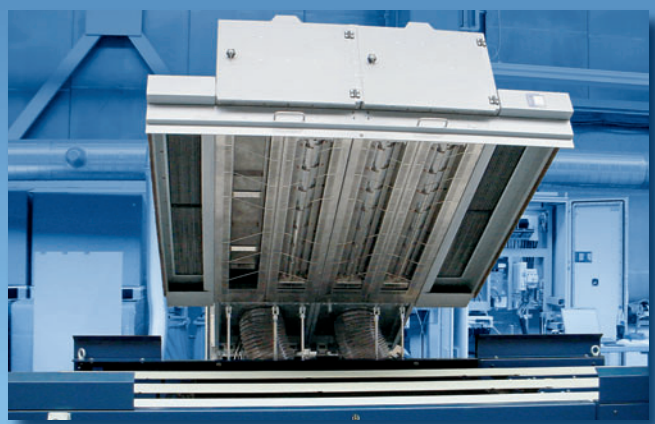
UV DRYING SYSTEMS

UV Drying Systems

KBA-MetalPrint supplies UV lines for the curing of UV inks and varnishes in the following configurations:

- UV final dryers (2 to 6 lamps)
- UV interdeck dryers for SPRINT, MAILÄNDER and METALSTAR printing machines
- UV interdeck dryers with doped lamps for white inks
- UV sheet underside drying ovens (UV varnish)
- The UV lamps can be delivered in power levels from 120 to 200 W/cm depending on the configuration

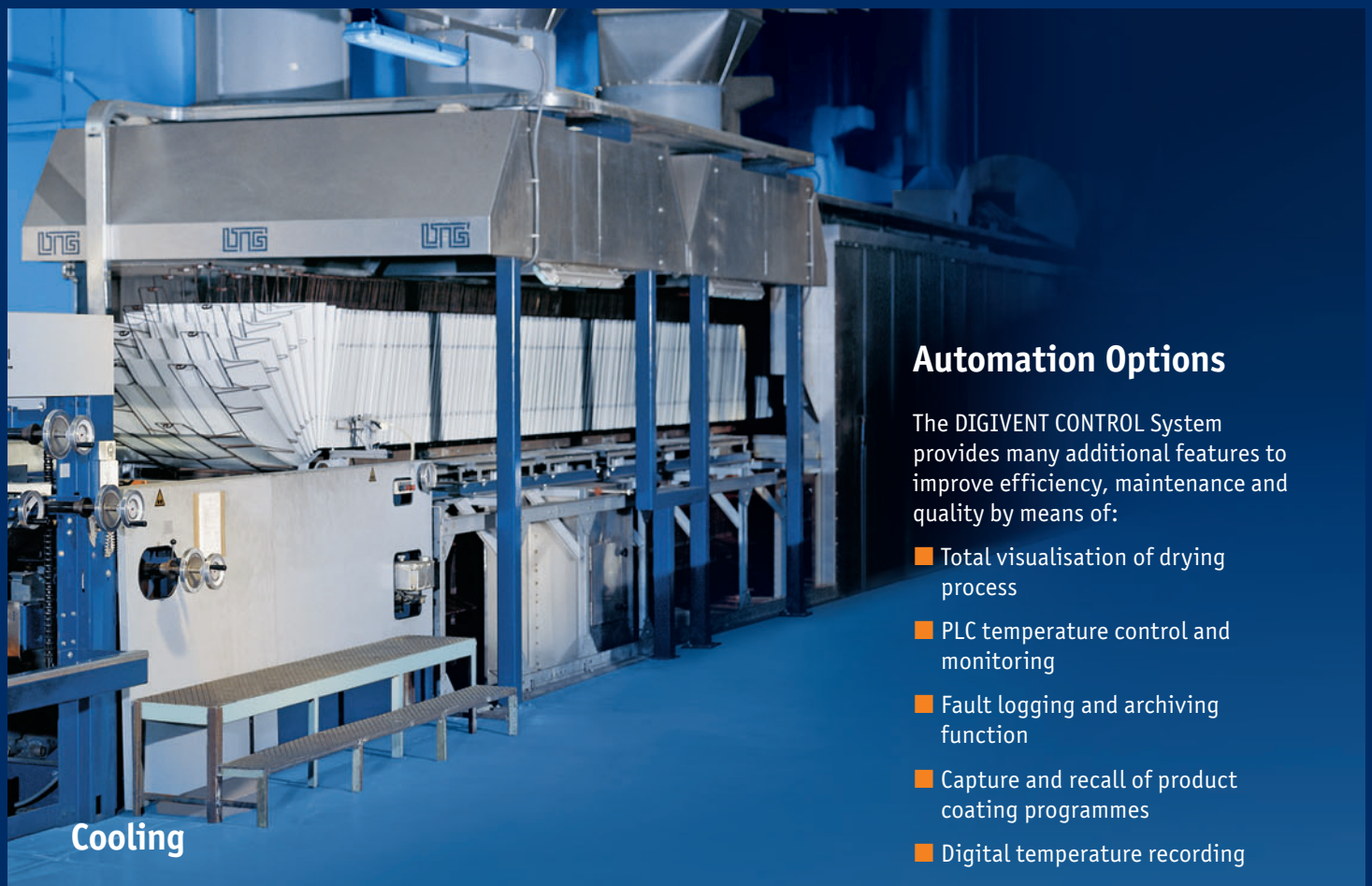
Interchangeable UV interdeck drying modules are available for our SPRINT and METALSTAR models of print machine.



3 lamps UV end dryer

UV end dryer behind a MAILÄNDER printing machine

CONTROL / COOLING



Cooling

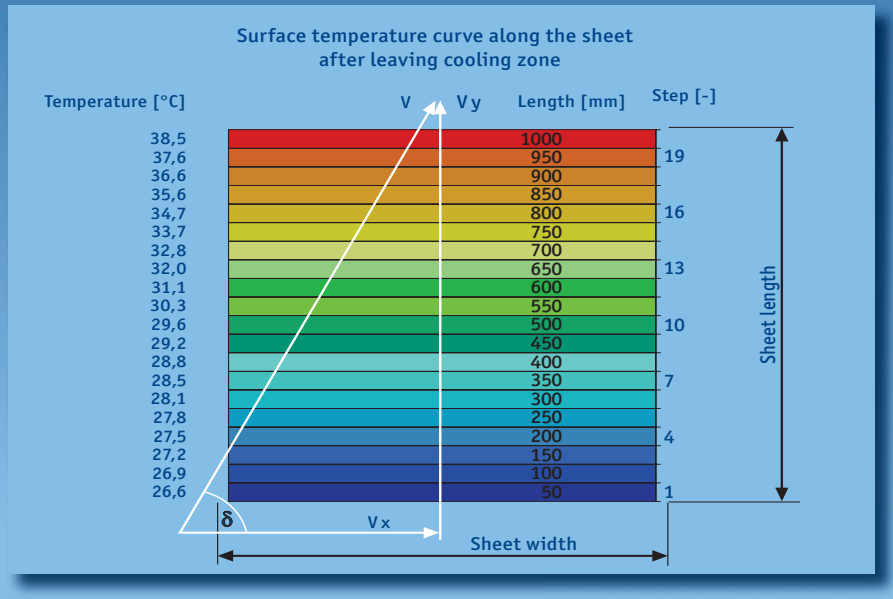
Effective cooling by means of high cooling air volume

Optional extras

- Frequency controlled fans
- Outside temperature controlled cooling capacity performance
- Louver damper system
- Active cooling (air conditioning supported)
- Silencers

The effectiveness of the cooling zone depends on different parameters such as length of the cooling zone, direction of air flow, specific air volume, temperature of the cooling air, sheet gauge and size, speed etc.

KBA-MetalPrint uses specially developed simulation software based on a large range of gathered data to obtain the most effective possible cooling in real production situations.

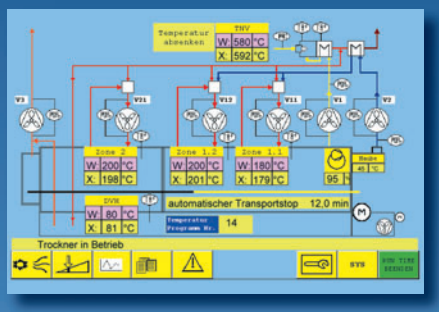


Temperature distribution on the sheet

Automation Options

The DIGIVENT CONTROL System provides many additional features to improve efficiency, maintenance and quality by means of:

- Total visualisation of drying process
- PLC temperature control and monitoring
- Fault logging and archiving function
- Capture and recall of product coating programmes
- Digital temperature recording
- Automatic start and shutdown sequences



Touch panel view of the oven process

DIGIVENT PQS Production and Quality Information System

With this optional extra you have the direct internet link to your production line. The system employs a PC which records the process information and analyses your orders and capacity using the following program modules

- Production Management
- Quality Management
- Order Management
- Job Management