



# Ovens for the Drum Industry

Tailor-made Installations



# Drying Oven Program for the Drum Industry

- Ovens for spray-painted or lined drums, respectively intermediates or pails in 1 to 4 row design
- Double tunnel ovens for curing of inside lined and outside painted drums at the same time
- Wicket ovens, type DBN, for drum sheets
- Wicket ovens for drum ends
- Ovens for drum ends in racks
- Integrated ECO-TNV air purification system with flexible main heat-exchanger to clean the exhaust air of oven and corresponding spray booths by using the excess energy for the drying process itself
- RTO Regenerative Oxidiser System for purification of exhaust air from complete drum plants

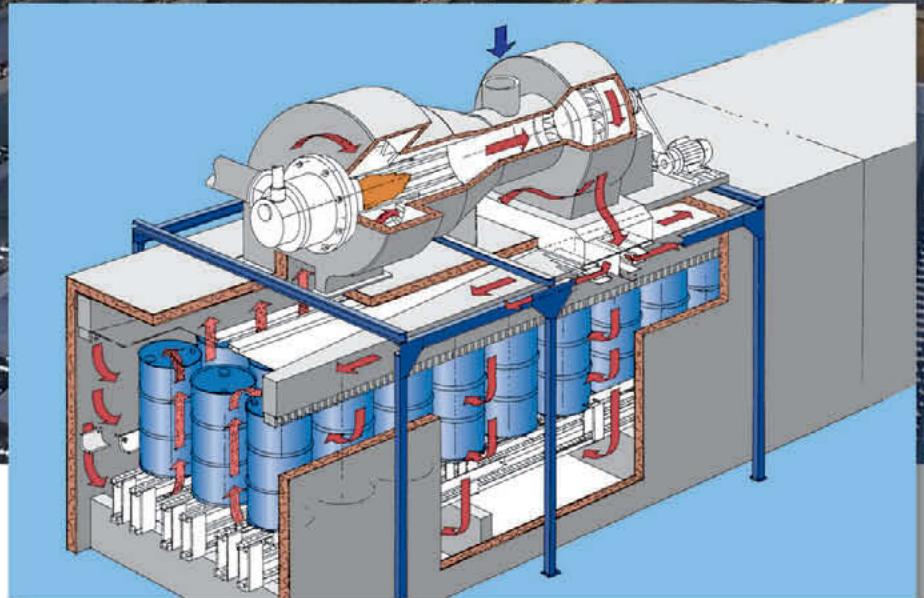


Drum oven for waterbased paint

## Drying System

**Maintaining a precise drying temperature is essential for drying of solvent-based or water-based paints or lacquers.**

To achieve this, LTG drum ovens utilise a hot air convection drying system. Special injection nozzles introduce the hot air into the interior of the drying tunnel. With this injection principle, the amount of hot air circulated between the drums is several times higher than the capacity delivered by the hot air fans. This produces a strong air circulation between the drums while at the same time smaller fans with lower power consumption than normally used are required. The high amount of circulating air and the resulting higher air velocity, achieves a better heat transfer and faster heat up of the drums.



Airflow inside a 3 row drum oven

## Heating System

**Depending on customers requirements and available fuel, LTG drying ovens can be designed for either direct gas heating, direct oil heating or for heating by hot purified exhaust air from a fume incineration system.**

Depending on the size or capacity of the installation, as well as type of paints and lacquers to be used (solvent-based or water-based paints, high bake or low

bake lacquers), LTG drying ovens can be equipped with one or several heating units. This ensures that the drying of the drums and/or drum ends at different temperatures in the individual heating zones of the oven will be done with a high degree of temperature accuracy, providing an optimal temperature curve.



## Drum Ovens

The drum drying ovens may be designed with 1, 2, 3 or 4 rows of drums or as double tunnel with 2 x 1 or 2 x 2 rows. Usually the conveyor system for the standard 55 gallon drums will be a chain conveyor with 2 chains for each drum row. For intermediates and pails alternatively there are also traverse conveyors available.



2 x 2 row double tunnel oven



Drying Oven for heavy sheets, type DBN

## Wicket Oven for Drum Sheets

If drums are not spray-painted, but will be roller coated, wicket ovens for heavy drum sheets are required. KBA-MetalPrint delivers special ovens, type DBN, with 3 conveyor chains and extra large wickets for this purpose.



# Drum End Ovens

**KBA-MetalPrint offers two different types of drying ovens for drum ends or lids.**

One type is a wicket drying oven where the drum ends will be conveyed in 1 row standing almost vertically in wickets. The other type is a drying oven for drum ends that are placed in racks.

Each rack contains up to 15 drum ends. Loading and unloading the racks may be done either manually, or upon request automatically.

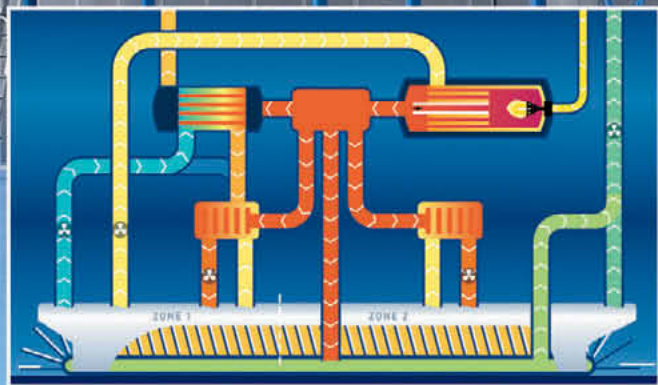


Adaptable unloader for lids

Rack with 14 lids

## ECO-TNV

The energetically most economic system is the ECO-TNV with its flexible main heat-exchanger. The size of the heat-exchanger automatically adapts to the individual production situation and thus always provides the max. possible heat recovery also during changeover times. An ECO-TNV system is required for each individual line.



Schematic view of ECO-TNV

## Thermal Regenerative Air Purification

This type of exhaust air purification is recommended for high exhaust air volumes with low solvent concentrations. Especially when the exhaust air from

complete factories has to be purified this solution is of advantage, as it can be installed while the production lines are running.



3-canister RTO system, size 20 000 m<sup>3</sup>n/h

## Cooling of the Drums

Good cooling is essential for outside painted drums, since usually after leaving the paint line, the drum will be closed and shipped to the filler. If the cooling was not adequate, a vacuum builds up inside the drum creating major problems at the filling stations. This is the reason KBA-MetalPrint offers single step as well as multi-step coolers that provide very high air circulation. Cooling time and cooling capacity are designed according to the climatic conditions on site.



Enclosure between spray booth and oven



Cooling zone for drums

### Optional Equipment

- Enclosures (with or without air circulation) for the area between the spray booth and oven. These are usually only required together with air purification, but also to avoid smell inside the factory hall
- Compressed air operated emergency exhaust fan for ventilating enclosed areas in case of electricity failure
- Digital remote thermometers
- Automatic shut-down and switching on of cooling zone fans
- Sand filters for cooling zone
- Silencers for fans
- Tunnel walls in perforated design for noise absorption.
- Automatic start of oven before shift begin and automatic shut-down program for air circulation fans at shift end.

# KBA-MetalPrint GmbH

**KBA-MetalPrint's high level of competence in drying technology for the metal decorating industry results from over 80 years of experience in the field.**

With more than 100 installations delivered to the drum industry within the last 2 decades, KBA-MetalPrint knows about the specific requirements when curing drums, drum sheets or drum ends.



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