

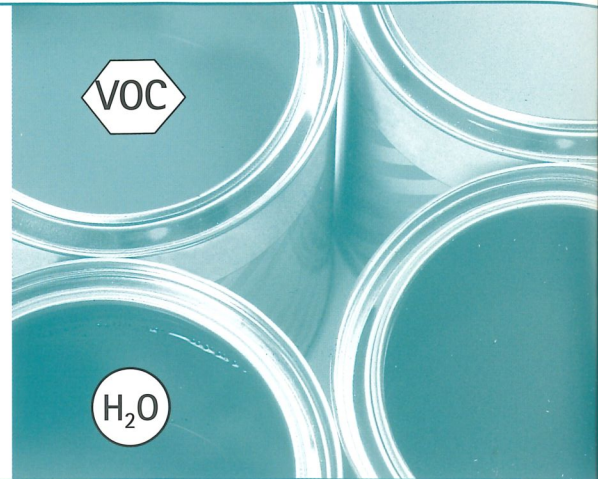


Venjakob[®]

PERFECT RESULTS IN THE
DRYING OF LACQUER

VEN DRY

Venjakob®



EXPERTISE IN ALL LACQUERING SYSTEMS

The quality of the drying process significantly determines the subsequent finished surface result. It is important, after lacquer application, that the substrate should be gently but also quickly dried. Dependant upon the coating material used, the transformation of the wet lacquer film takes place via physical drying or chemical curing. Automated production processes often result in additional challenges due to cramped space conditions or the fast availability of dried workpieces.

As a globally operating system manufacturer we know what is required to optimally take all terms and conditions as well as legal obligations such as the VOC stipulations into account and to ensure perfect surface quality. With the development of special drying technologies we cater for specific factors: from accelerated continuous flow drying if required with high air speed, space-saving solutions right through to infrared, UV and microwave driers – as a single piece of equipment or integrated in an assembly line.

ENERGY-EFFICIENT

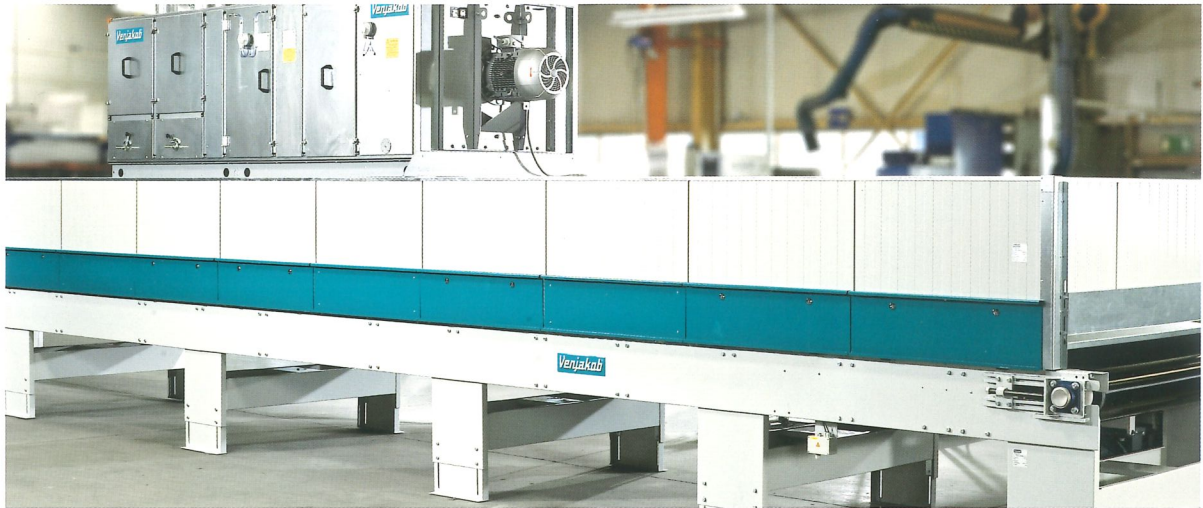
The efficiency of exceptionally effective drying processes often results from a combination of different technologies. The conception of individual finishing line solutions with a high degree of environment-friendliness is matched with customer-specific requirements.

| Recommendations | Solvent-based paints | Water-based paints | Water-based UV lacquers | Solvent-based UV lacquers |
|---------------------|----------------------|--------------------|-------------------------|---------------------------|
| VEN DRY AIR | ☺ | ☹ | ☺ | ☹ |
| VEN DRY AIR JET | ☺ | ☺ | ☺ | ☺ |
| VEN DRY OIR | ☹ | ☺ | ☺ | ☹ |
| VEN DRY MICRO | ☹ | ☺ | ☺ | ☹ |
| VEN DRY UV SURROUND | ☹ | ☹ | ☺ | ☺ |
| VEN DRY COLLECT | ☺ | ☹ | ☺ | ☹ |
| VEN DRY VERTICAL | ☺ | ☹ | ☺ | ☹ |
| VEN DRY PAL | ☺ | ☹ | ☺ | ☹ |

☺ recommended

☹ possible

☹ not possible



VEN DRY AIR JET – the high air speed in the jet chamber produces exceptionally intensive drying.



PROFESSIONAL: The temperature and air speed settings, as well as the supply and exhaust air, are carried out manually on the drier or if required by frequency control. Flowmeters monitor the exhaust air values and thus the correct function of the drying process.

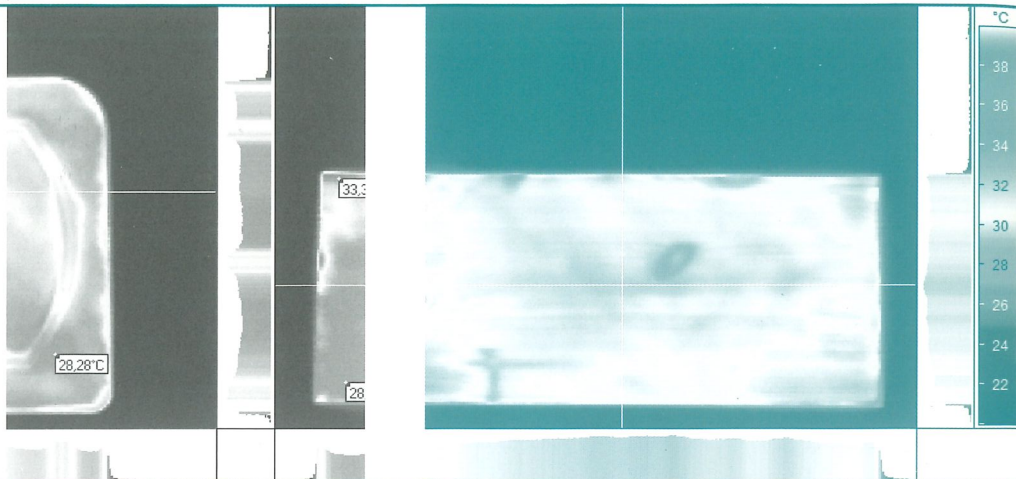
VEN DRY
AIR



INNOVATIVE: Newly designed slit nozzles along the total operating width ensure consistent air flow conditions in the drying chamber. The air is heated according to the coating material over hot water, thermal oil or steam in special heating elements.

VEN DRY
AIR JET

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EFFECTIVE AND PERFECT DRYING PROCESSES

Each project commences with an extensive analysis of all customer-specific requirements. Which finishing systems are in use, which formats result from it, what are the local environment & building conditions? Based on the current status quo, the assessment for eventual future modifications are of great importance. Profound detailed information and insight on the individual assignment is gained by complementing the calculation of the drying length (s) from the planned feed rate (v_f) multiplied by the drying time (t) needed by the paint. ($v_f \times t = s$)

Accelerated drying technologies such as VEN DRY *OIR* or VEN DRY *MICRO* provide the best surface results in water-based paints, water-based stains and dispersions. In particular the innovative VEN DRY *OIR* process attains a gentle drying result with high efficiency through the activation of the water molecules in the wet paint film and the targeted input of heat into the interior of the paint film. The paint dries evenly and quickly from the inside out. This particularly gentle drying process prevents the premature sealing of the surface.

VEN DRY
OIR



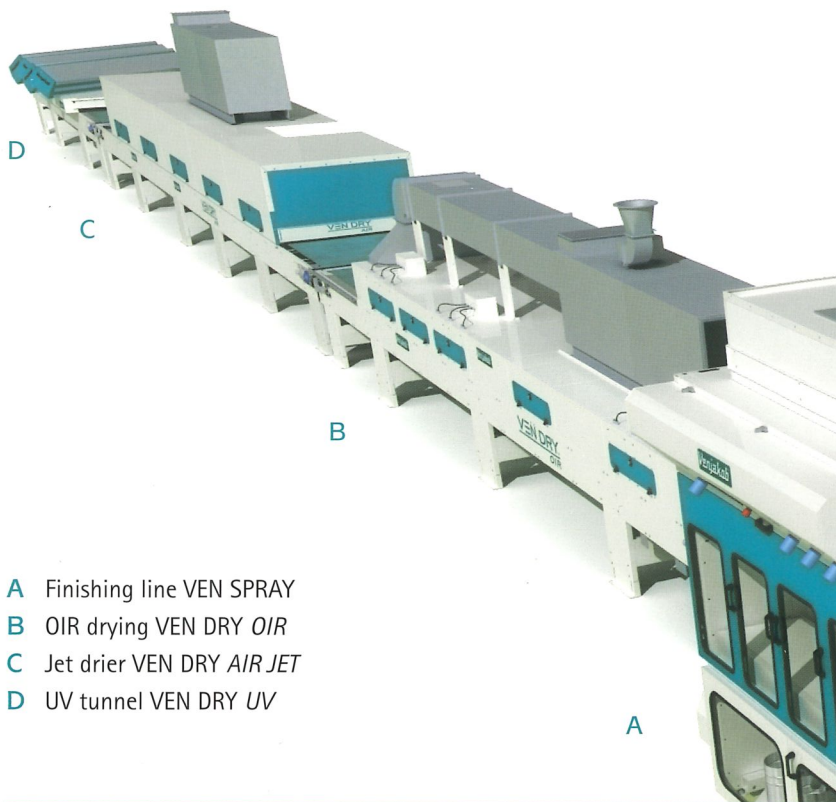
FLEXIBLE: The modular design of the *OIR* horizontal flow flash-off tunnel with belt conveyor optimally fulfils all requirements. Standard features are three infrared radiating modules, each equipped with two radiators and easily reachable through inspection hatches on the sides.

VEN DRY
MICRO



RELIABLE: As in VEN DRY *OIR* the activation of the water in VEN DRY *MICRO* takes place through high-frequency radiation. The drying results depend on the material as well as on the number of painted parts. Internationally applicable frequency restrictions regulate its efficiency.

OPTIMAL ENERGY TRANSFER ENSURES FAST DRYING OF PAINT



- A Finishing line VEN SPRAY
- B OIR drying VEN DRY OIR
- C Jet drier VEN DRY AIR JET
- D UV tunnel VEN DRY UV

■ VEN DRY UV-SURROUND

Additionally to conventional UV-drying, the new UV-SURROUND technology operates even more energy-efficiently. Reduced heat emission and the resulting lower work piece temperature are further advantages of the space saving and for 3D-components applicable concept.



HIGHLY EFFICIENT: Energy-efficient UV lamps with emission spectrums exactly aligned with the relevant paint ensure perfect drying. The sophisticated transformer technology is characterised by its two as well as three-dimensional applications.

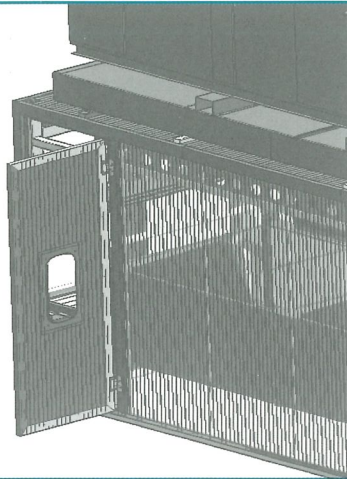
VEN DRY
UV



EFFECTIVE: This process brings about very fast and efficient cooling-off of workpieces. If it is required to package or stack parts immediately, VEN DRY COOL modules can be added to all Venjakob drying technologies at any time.

VEN DRY
COOL

Venjakob®

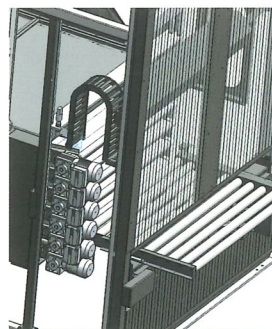


PRODUCING SPACE-SAVING, LONG DRYING TIMES

Great surface quality is especially achieved in the use of solvent-based lacquer systems from a long and gentle drying process. There is often not enough space for interim storage in the production process. In addition, high costs and the risk of damage are associated with the transportation of parts. To avoid these factors, Venjakob has developed innovative drying technologies with a variety of conveying systems. Basically all are based on the principle of convection drying.

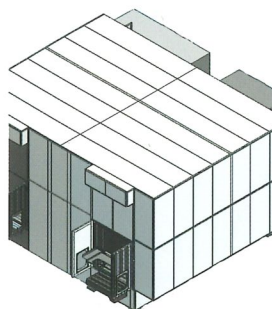
After detailed research of the customer-related requirements, determining the most effective technology takes place depending on the part sizes and the quantities to be dried. The balanced cross ventilation in the VEN DRY COLLECT 6-level drier provides for an optimal drying process. The VEN DRY VERTICAL belt pallet high drier can be subdivided into zones, thus making very individual drying possible. In the VEN DRY PAL paternoster (cyclic) drier the parts are arranged on grids or metal pallets.

VEN DRY
COLLECT

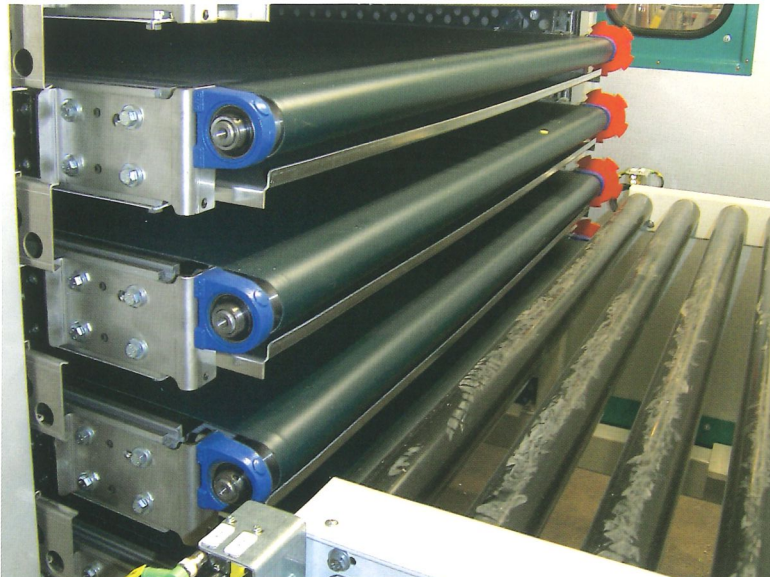


PRECISE: The innovative and consistent cross ventilation in the VEN DRY COLLECT 6-level drier provides for optimal drying results. Should pure solvents be in use, the cost-effective model with longitudinal ventilation is available as an alternative.

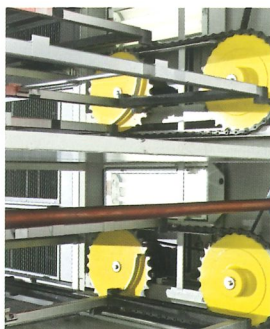
VEN DRY
VERTICAL



POWERFUL: The high drier consists of a determined number of belt pallets. At the end of the paint process the parts are conveyed into the drier, stopping on a pallet that is then raised one level without the aid of chains. The improved ventilation system ensures optimal ventilation.



- Belt pallets with separate drives for gentle handling of workpieces.



PERFECT: The multilevel pallet drier optimises the gentle drying of painted workpieces up to a maximum of 250° C. The warm air fed diagonally to the conveying direction of the workpieces prevents dust and airflow influences. Heating medium: gas, steam, electric power, warm water or oil.

VEN DRY
PAL



INDIVIDUAL: The painted workpieces are sorted onto rack trollies. There are three possible drying processes, completely dependent upon the client's requirements and the type of paint. Either directly in the room, in an existing heated room or in a special rack trolley tunnel.

VEN DRY
RACK

Venjakob®



SURFACE COMPETENCE WITH KNOW-HOW

As an internationally renowned system manufacturer Venjakob has been designing innovative surface coating machines for more than 40 years. Individual machine line solutions, optimisation of production processes as well as development of innovative system technologies are devised and realised on the basis of many years of experience and the profound expert knowledge of our employees. Our daily work is characterised by individuality, close dialog with our partners in the various lines of industry and a concept-referenced way of thinking and acting.



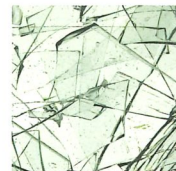
Wood



Plastic



Metal



Glass

VEN BRUSH
BRUSHING | SANDING

VEN CLEAN
CLEANING

VEN MOVE
HANDLING

VEN TRANS
CONVEYOR TECHNIQUE

VEN SPRAY
COATING

VEN DRY
DRYING

VEN CLEAN AIR
EXHAUST AIR PURIFICATION

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