

REA JET

INDUSTRIAL CODING AND
MARKING SOLUTIONS -
MADE IN GERMANY

REA JET RPS

Non contact marking for tire and rubber



Coding and marking in the tire and rubber industry

Modern production and logistic operations in rubber processing create increased demands for the automated marking of products. Manufacturers and retailers are facing new challenges in terms of realizing the need for traceability and secure identification of semi finished or finished products. The integration of coding and marking systems into digital production processes, also known as industry 4.0, has to be ensured by modern IT interfaces.

Innovative marking solutions by REA JET cover the requirements of coding during every stage of production, from the compound mixing manufacturing semi finished products up to the finished product.

The ink jets of the REA JET DOD product family have proven dependable for over 30 years and mark products reliably and with low maintenance costs in harsh environments. For the purpose of marking raw rubber and semi finished products, the REA JET RPS (Rubber Printing System) was developed in dialogue with the tire industry. Specific inks, which are created for the rubber industry, mark products with constant high quality and without leaving any residues in the forms after the vulcanization.

In addition, REA JET provides ink jet systems for high-resolution marking, for captive marking by laser and specific labeling solutions designed for the requirements of the tire industry.

The advantages of the REA JET systems:

- Decrease of production costs by avoiding incorrect markings and therefore scrap reduction.
- Increase the level of automation at low maintenance efforts (large character inkjets, laser) or maintenance-free with high resolution systems.
- High quality markings ensure improvement of product quality and production processes.
- The REA JET RPS system is based on the proven REA JET print head technology: high availability during low maintenance costs.
- Reduction of downtimes and costs thanks to modular design, which allows easy and fast replacement of system components in case of service.
- Encouraging new and innovative production processes, eg. Track & Trace by 2D codes.
- High flexibility due to a wide range of marking systems and ink products.
- Modern interfaces provide fast access to production control.
- Integrative IT and operating concept of all systems offers easy handling.
- REA JET RPS is optimized for use of specific inks in the rubber industry.



Alphanumeric marking on raw rubber tread



Coded tire after vulcanization

REA JET Special Inks:

- Reduced level of unwanted chemical compounds in the air—high protection of environment and industrial safety
- Negligible VOC-content (< 2 %).
- Easy and safe handling and storage.
- No ghost prints in the mold during the vulcanisation process
- Fast drying and no dissolving of inks in the cooling section
- Environmentally friendly water-based inks



The REA JET TITAN Platform:
Once learned, all can be operated - the single operating concept for all REA JET technologies.

The advantages of the REA JET TITAN Platform:

- Full Unicode support: all global languages can be printed for companies with international customers
- Support of all True Type Fonts (TTFs): maximum design flexibility for your print text
- XML-based data structure and communication protocol
- Integrated VNC Server: remote maintenance tool for diagnosis and support when required
- Uniform communication protocol for conditions monitoring
- Integrated webserver enables print system operation via tablet or smartphone

Application	REA JET Large Character Ink Jet Systems (DOD)	REA JET High Resolution Ink Jet Systems (HR)	REA JET CL CO ₂ Laser Systems	REA JET Spray Mark Technology Systems
Alphanumeric markings	●	●	●	
Barcodes: 1D & 2D codes	●	●	●	
Graphics and brand logos		●	●	
Dot- and linemarking		●		●
Captive marking			●	
Codes in medium printing resolution	●			
Codes in high printing resolution		●	●	

Innovative marking solutions for the rubber and tire industry

Tire manufacturing process



Mixing

- High resolution coding of the packed ingredients on the outside of the bags
- Print batch- and lot number on rubber compound



Semi-finished products and components

- Alphanumeric product codes
- 2D codes for advanced tracking & tracing
- Apply process additives
- Scrap marking
- Color striping



Examples of application



Alphanumeric marking, 2D code and barcode on EVA bags

1D & 2D codes on EVA bags

To achieve a quality-assured mixing process, the bags are marked with the individual ingredients using 1D or 2D codes. The REA JET system automatically receives the recipe data from the master production computer and applies the according codes to the EVA bags.

Scanning the bar- and data matrix codes before the mixing process ensures that always the correct raw materials enter the mixture.



Quality assurance and Logistics

- Color striping on the finished product
- High point marking
- 2D codes for advanced tracking & tracing
- Laser engraving for captive marking requirements
- EU Tire Label
- Customized labels



Production code applied to rubber compound

Production code on rubber compound

For identification of each rubber compound, the raw felts are marked with a code prior to the batch off. The REA JET specialized inks are fast drying and available in several colors for better legibility (e.g. yellow, red or orange).

Examples of application

Production code on steel and texture cord

For identification purposes, the components are marked with a production code. The composition of the REA JET inks ensure that the connection of the individual components in the tire is not impaired.



Alphanumeric productcode on texture cord

Marking of extruded rubber

The REA JET DOD inkjet systems replace indenting wheels and mark products contact-free and automated via data connection. This eliminates incorrect prints and lowers the reject rate. Furthermore, there are water-based inks available which support an environmentally friendly production.



Alphanumeric printing on tire tread

High-resolution printing on non-vulcanized rubber

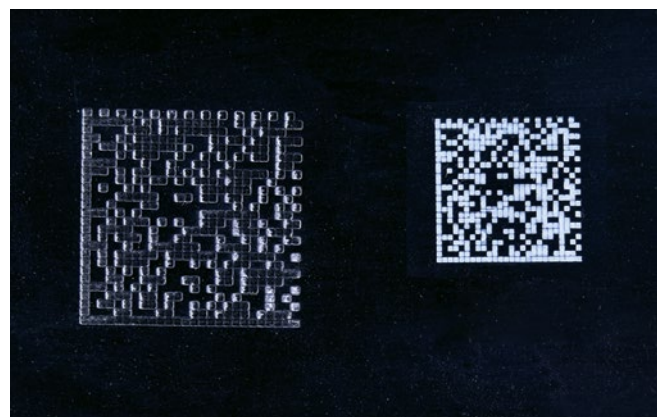
In order to create a high-quality marking (logos and graphics), stencils are still being used today. The cost-intensive change of stencils and the unflexible use are just two disadvantages. The REA JET high-resolution marking systems are able to print brand logos, 2D codes or other markings in high quality.



2D code on non-vulcanized rubber, printed with large character ink jet system

Tracking & Tracing using 2D codes

To improve quality, the tracking of components throughout the whole production process is becoming more and more important. 2D codes are able to accommodate a much larger amount of data in a small space than plain text and can be applied at many stages of the production process. Both raw rubber and on vulcanized products.



High-resolution marking of a 2D code on non-vulcanized rubber

Dot marking

The REA JET spray mark technology systems are applicable in multiple ways in the tire and rubber industry. Some examples are the application of colored dots, high points or marks for quality identification.



High point marking

Color line marking

The coding of components or finished products with colored lines is a commonly used method for type-identification. REA JET offers various alternative coding and marking technologies for automated line marking on raw material, pre-products or the finished tires.



Colored stripe marking of finished tire

The maintenance-free REA JET HR is especially suitable for lines, logos or symbols with particularly sharp edges. The high-resolution cartridge-based system enables previously unknown possibilities of tire marking.



Line marking

Captive marking by laser

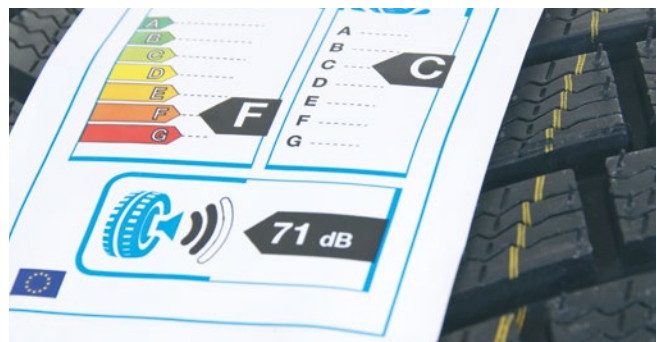
If a permanent marking of the product throughout its entire lifecycle is required, then laser marking is the first choice. By minimal material removing (engraving) a captive identification with text and graphics is achieved. A 2D code applied to the sidewall of a tire can be automatically read and can provide a history report for traceability purposes. REA JET Laser Systems can be characterized by long service life, low maintenance costs and a consumable-free operation.



Captive marking by laser on finished tire with 2D code

Labeling in the rubber industry

REA LABEL dispensers are designed to apply pre-printed labels onto the finished tire. With special adhesive labels an optimal bonding to the tire tread is ensured. By request, multicolored labels can be individually designed, printed and applied using a turn key print and apply solution from REA JET. To apply labels onto pallets, REA JET offers customized pallet labeling solutions from single source.



EU tire label

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