



Mark'n Read™

by technifor

The **DATA MATRIX™** solution for
Automotive



A MARK WHICH DEFIES TIME

Why use permanent marking ?

Traceability and Identification of parts and products have become crucial points of the Automotive production process.

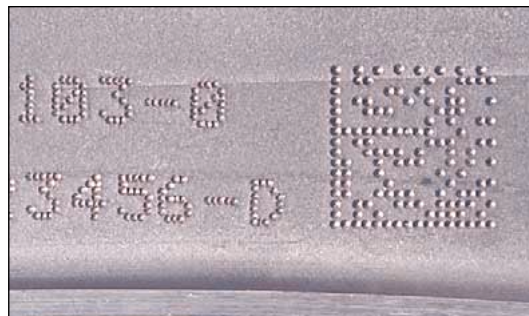
- Obtain reliable and rigorous **traceability** of **defective parts**
- Ensure **match-fit** of the parts at the assembly stage
- Record characteristics of each part after measurement or testing
- **Easily exchange data** between customer and supplier sites

All these processes demand an **automatic, efficient, reliable and economical identification solution.**

Standards organizations and automotive industry professional groups recommend a direct, permanent and legible marking solution :

- **AIAG** (Automotive Industry Action Group) standards B-4 and B-17
- **ISO** standard ISO 15459, EN1572 and NF Z 63-100

The search for a simple, compact and error-free code leads to the Data Matrix™ symbology. It is the most commonly used 2D code throughout industry (Automotive, Electronics and semiconductor, Aerospace and Pharmaceutical industries, etc...).



Micro-percussion marking



Laser marking

THE DATA MATRIX™ SOLUTION AND BENEFITS

Data Matrix™ is an industry leading, **compact 2D symbology** used for **Direct Part Marking** identification.

- **Unique 2D machine readable symbol**
- **High density data storage:** large number of characters encoded within a very compact space
- **Accuracy:** human error is removed as code is machine readable
- **Robustness:** built-in error correction – **ECC200** – allows decoding even when the symbol is partially damaged

Marked with Laser or Micro-percussion, Data Matrix™ ensures a permanent, robust and machine readable ID on your part for increased security and quality control at every level:

- **Component manufacturing plants**
- **Engine and vehicle assembly plants**
- **Maintenance centers for spare parts**



Data Matrix™ code on tube



Technifor, your key part

Technifor has developed an unmatched knowledge base and

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Using Vision t
processed just



MARKING MARKING

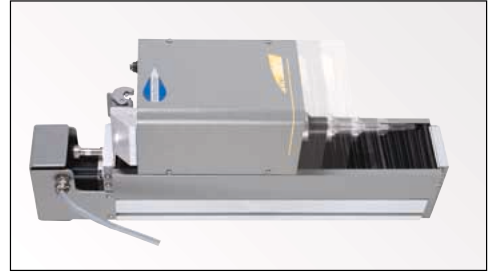
Marking with Micro percussion: profitability and efficiency secured

CN312Cm, Sm and Dm Machines

- High precision guides for reliable high speed marking
- Electromagnetic stylus provides highly repeatable marking
- Several marking areas to suit the application (up to 100x180mm)

Tungsten carbide stylus reduces maintenance and allows very consistent quality of the Data Matrix™ codes.

Digitally controlled AutoSense with surface sensing feature: the positioning repeatability of the marking head (accurate to 10 µm) is assured to meet with the most demanding applications



Digitally controlled AutoSense



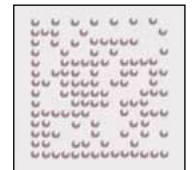
Marking with Laser: unparalleled speed and marking quality

The TL400, lamp-pumped laser, combines power and speed for the marking of metal

The TD410, diode-pumped laser, is a compact version allowing an optimum integration for those applications requiring high quality and precision.



TD410 diode-pumped laser



Application Example: C



Permanent identification of each component and verification of each code's quality



Component conform at the assembly

Partner for Mark'n Read™

and expertise in supplying marking equipment suitable to the application:

VERIFYING

Tools developed by Technifor's partners, the Mark'nRead™ solution provides **complete quality control of the marked codes**. This real-time verification, after the marking stage, insures a precise analysis of the marking quality and of its evolution:

- Individual traceability of each part coupled with data registration
- Marking quality verification based on AIM and AIAG standards
- Set up of customized alarms for a preventive maintenance plan



LED lighting modules



Verification software



CCD camera on-line



Handheld reader

READING

Reading stations provide **easy, reliable retrieval of the information** encoded in the **Data Matrix™** symbol:

- At different stages of the production process
- On sub-assemblies
- At final assembly and for quality control
- On after-sales service calls

Mark'n Read™ includes the vision devices suited to the application and to the process environment

Stand alone reading system

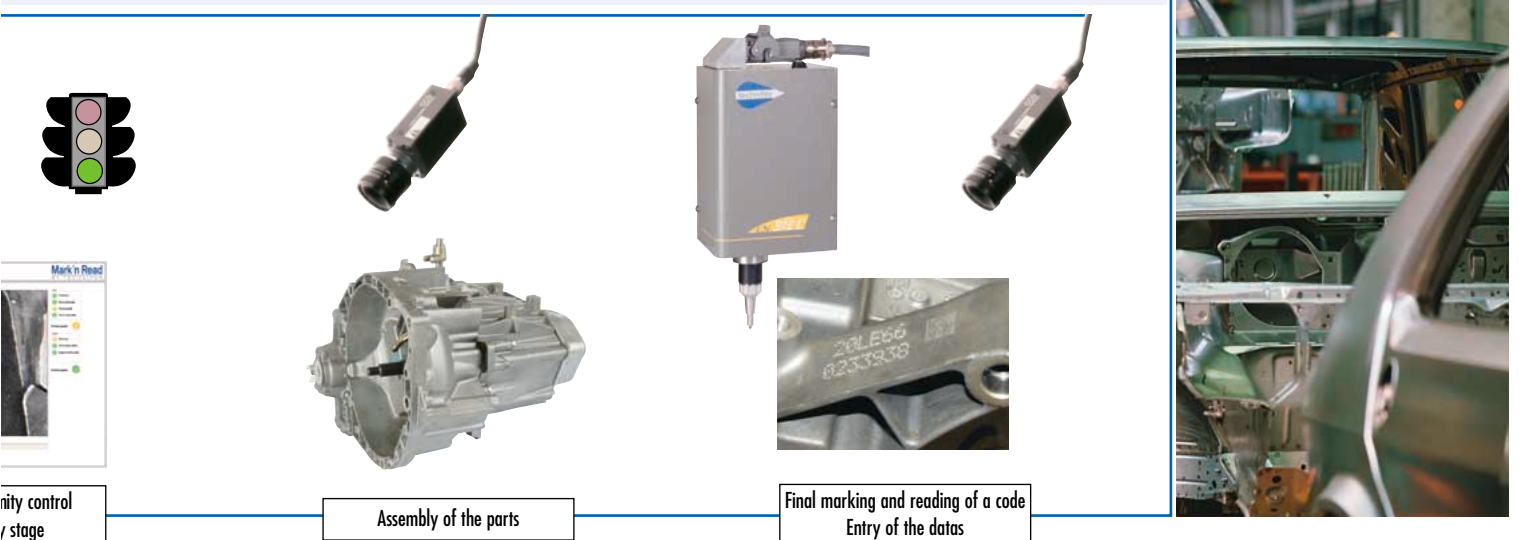
- On-line integrated camera
- Interface to the environment (RS232, ethernet...)
- Remote configuration and set-up

Portable hand-held reading system

- Decoding symbols at manual assembly / inspection stations
- Optional battery for complete autonomy

All the components (Marking, Verification and Reading) can be linked to the industrial environment (PC, PLC or database...).

Gear boxes assembly



Applications

Engine parts

The unique identification of each component allows complete traceability and optimize a quality control

- Camshaft
- Connecting rod
- Cylinder head
- Cylinder block
- Crankshaft
- Piston...



Gear boxes components

The identification is performed at the machining stage and allows, even after heat treatment, a rigorous control at the assembly stage

- Gear
- Bearing
- Torque convertor
- Gear box casing
- Clutch...



Exhaust parts and safety elements

The Data Matrix™ identification of these components, critical in terms of security, allows complete traceability during their entire life

- Steering part
- Transmission component
- Brake
- Exhaust line
- Fuel tank
- Particle filter (FAP)...



Plastic parts

The permanent identification by laser of a Data Matrix™ code allows the customer and supplier to automatically exchange information without removal risk

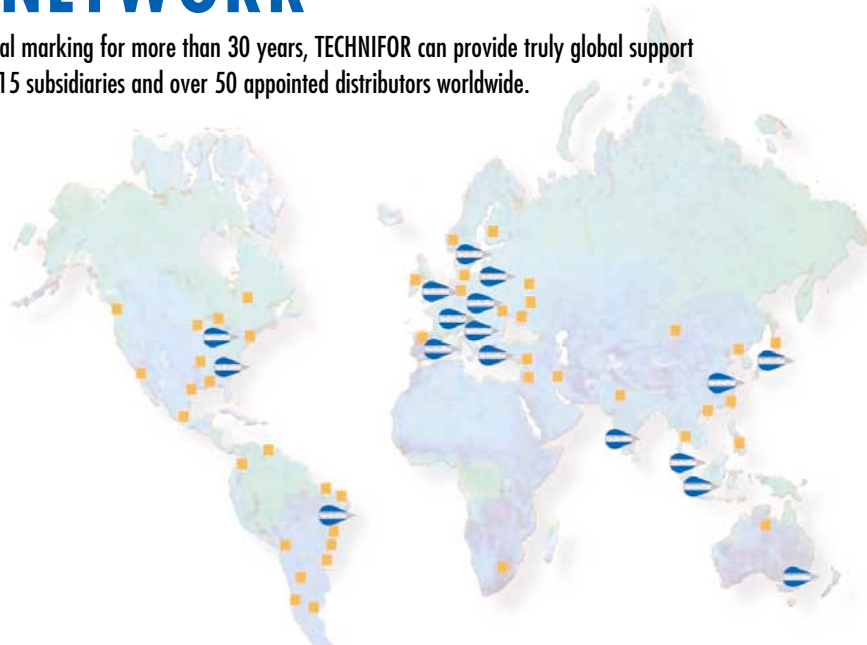
- Sensor / Injector
- Fuel level sensor
- Sump
- Flywheel
- Seat belt element
- Airbag part...





SALES NETWORK

As an expert in industrial marking for more than 30 years, TECHNIFOR can provide truly global support through its network of 15 subsidiaries and over 50 appointed distributors worldwide.



WE ARE YOUR GLOBAL PARTNER

- Experience: Technifor has gained invaluable experience in collaboration with experts in industrial vision to incorporate marking and verification.
- In-depth analysis of your requirements.
- Feasibility study and validation on-site.
- Customised solutions and full integration.
- Specific software.

Our multi-skilled Design Department and our qualified application engineers assist you from the design and development of your traceability solution through to the installation and technical advice. Maintenance contracts are also tailored to meet your needs.

Technifor is a registered training centre.

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