

GRAPHIX
LASER MARKING

LASER

Marking & Traceability



TECHNO*mark*[®]

CREATIVE TRACEABILITY

**TECHNOMARK:
EXPERT IN PERMANENT
MARKING AND INDUSTRIAL
TRACEABILITY SOLUTIONS**



In 18 years*, TECHNOMARK has become a market leader in the permanent marking industry with a significant installed base of over 15,000 units. **.

CAPABILITY :

TECHNOMARK has evolved over the last few years: starting as a manufacturer of dot peen marking equipment, we are now offering total solutions for industrial traceability, led by laser technology.

TECHNOMARK offers a range of laser marking solutions:

- **Standard:** laser marking workstations with integrated fiber laser technology.
- **Custom:** industrial traceability solutions designed according to our customer's unique process requirements (bar code readers, vision systems, etc.)

Our systems are used in various industrial sectors:



AEROSPACE



MEDICAL



AUTOMOTIVE



NUCLEAR



DEFENSE



STEEL

* Since 2000 ** Data as of 01/01/2018, all technologies combined

QUALITY ASSURANCE

TECHNOMARK is the only French company to have obtained both the ISO 9001 version 2008 and the Investor in People certifications in the same year !

Certifications value:

- **Our know-how** and quality management
- **Our interpersonal skills** and quality of management



INVESTOR IN PEOPLE

GRAPHIX

LASER TECHNOLOGY BY TECHNOMARK

After eight years of experience working with our partners, TECHNOMARK has expanded its offering with a **complete laser range** designed to meet demanding needs in terms of production rate and marking quality.

The principle of laser marking is based on a high intensity, precision controlled beam focused and directed towards the part to be marked. The orientation of the beam is ensured by a galvanometric head composed of two mirrors. The marking is non-contact and universal on all types of materials, including : plastics, metals, ceramics etc.

GRAPHIX uses:

THE Yb FIBER

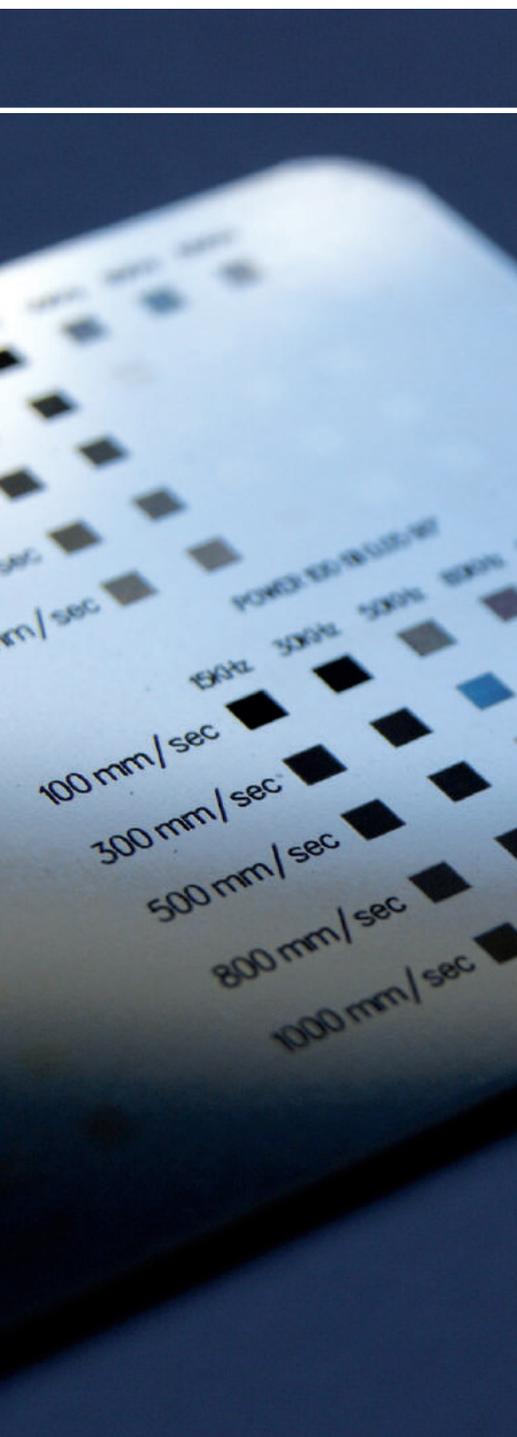
The optical fiber channels carry the laser beam. This high performance technology combines speed and marking depth. It is ideal for marking on metals including rough surfaces (castings, raw materials). Good results are also obtained on most plastics.

Our fiber lasers deliver high quality precision marking. Fiber lasers also offer no maintenance and are easy to set up and use which ensures a comparative low cost of ownership.



GRAPHIX RANGE BENEFITS

- **Innovative solutions:**
with the «all in one» laser marking concept
- **Fast and high quality marking:**
Also suitable for precious metals (gold, silver, etc.)
- **Low energy consumption:**
air cooling
- **Guaranteed safety:**
to meet industry standards





APPLICATIONS AND CAPABILITY

- (1) Datamatrix code and serial number marking
- (2) Tinted marking on PVC/TPR



Configuration CLASS 1* OR 4* IN FIXED VERSION

GRAPHIX FIBER SERIE

* according to EN 60825-1 standard

Accessories and options

- Standard and Heavy Duty Rotary axis
- Fume extractor (dust and carbon filters)
- Plate support
- Holding tools for specific parts
- Screen support
- Focusing lens adapted to the marking field
- Reading system (readers and cameras)
- Solution for bars or long parts

GRAPHIX

Work station

COMPACT

«All in one», the work station includes the laser source, the lens, the galvo head and the electronic control system.

FLEXIBLE

The X and Y multi-position placement of the marking head ensures a working area of 9.84 x 9.84 inches*.

SMART

An assisted opening door with 2 positions allows quick access to the parts. As an option, a side opening to mark bars and long parts.

INTELLIGENT

The motorized Z axis (maximum stroke of 11.81 inches**) allows the marking of all your parts. The rotary axis, as an option, enables 360° marking.

*with a focal length of 5.51 x 5.51 inches

** with a focal length of 3.9 x 3.9 inches

Customer benefits

- **Ergonomically Designed:** space-saving and easy to use in a workshop
- **Large loading volume:** parts with dimensions up to 19.68 x 19.68 x 11.81 inches
- **4 marking zones:** 2 positions in X and Y
- **3D mark function** with the digitally driven Z axis
- **Economic** best quality/price/performance ratio in its market

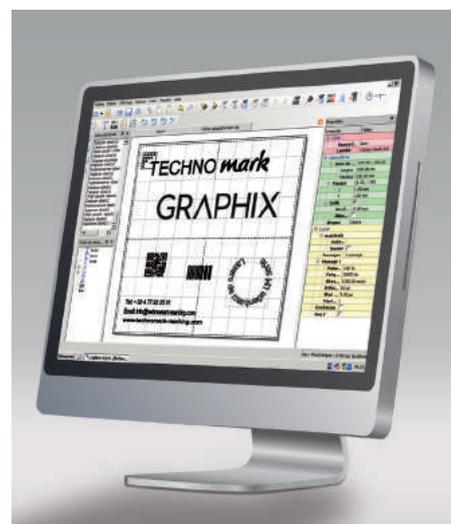
Powerful Software SIMPLE, INTUITIVE AND COMPLETE

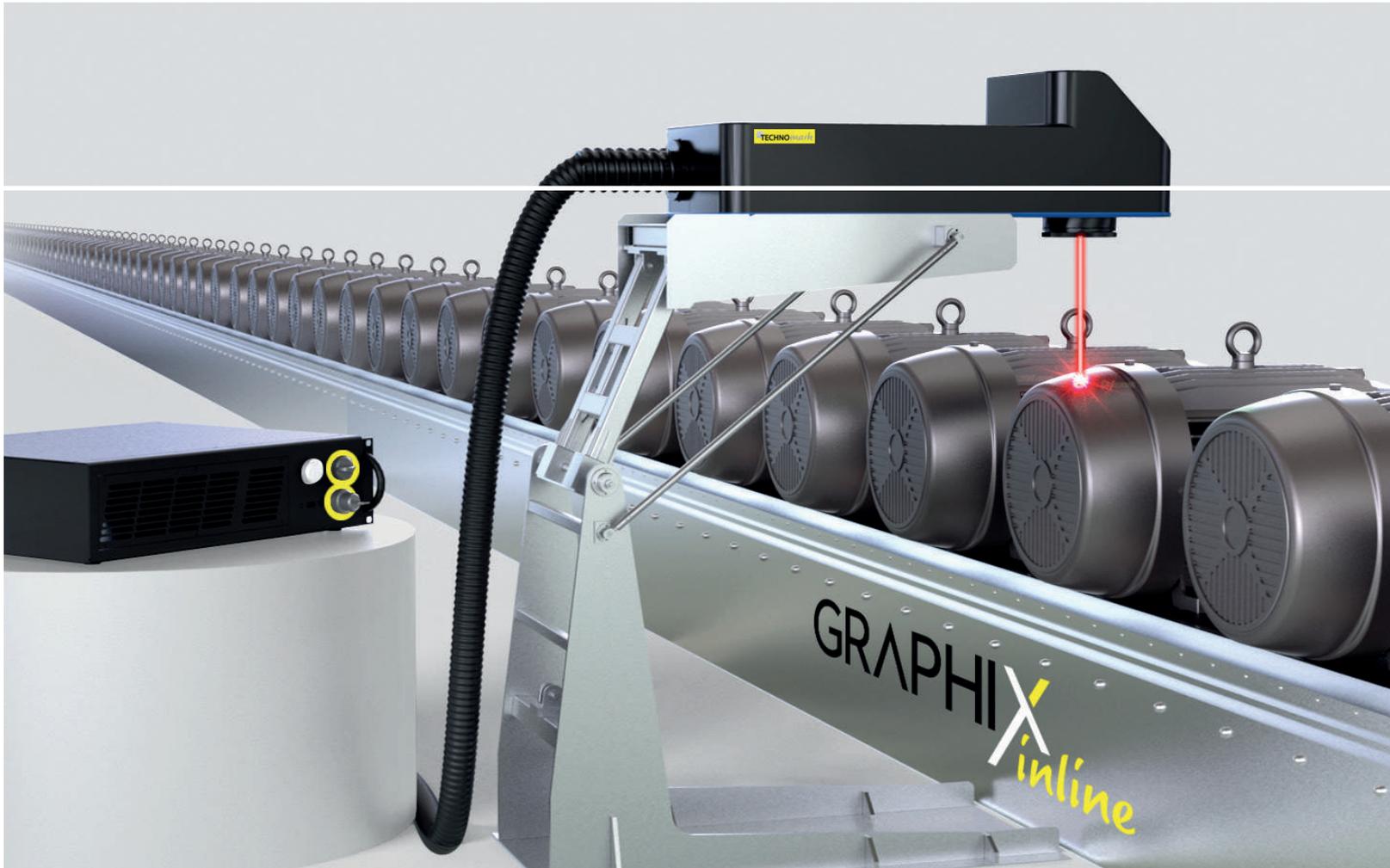
GRAPH
pro

Multiple marking capabilities:

- Alphanumeric characters
- Wide range of features: drawings, logos, geometric shapes
- Integrated Windows font library
- Creation of type 39, 128, 2/5, PDF 417, UPC barcodes, Data-matrix® ECC 200 (2D), QR code etc.
- Linear, angular and radial text
- Import files (vector, bitmap)
- Includes axis management (rotary axes, Z axes)

Note: the combination of frequency, power and speed parameters will give you the marking you need, light or moderated, contrasted, nuanced or tinted





APPLICATIONS

- (1) Marking on a stainless steel parts
- (2) Contrast marking on white plastic



Configuration CLASS 4* IN FIXED VERSION

GRAPHIX INLINE FIBER SERIE

* according to EN 60825 -1 standard

Accessories and options

- Fume extractor (dust and carbon filters)
- Standard and heavy duty rotary axis
- Focusing lens adapted to the marking field
- Reading system (readers and cameras)

Integrated laser

SIMPLE

Simplified implementation with its two positioning diodes.

ROBUST

Reduced service and maintenance with long life diodes.

PRODUCTIVE

High marking speed, ideal for medium to large production runs.

FLEXIBLE

A wide variety of marks, contrasts and finishes can be achieved on a selection of different materials.

Customer benefits

- **Compact** : the compact marking head makes integration easier
- **Compatible** : with every reading systems on the market
- **Auto diagnostic system** : real time management of the laser operating state
- **Remote monitoring** using a robot for simple functions (start, stop, end of marking, marking in progress etc.)
Communication through Ethernet and RS232 port
- **Best TCO in its market** (total cost of ownership)

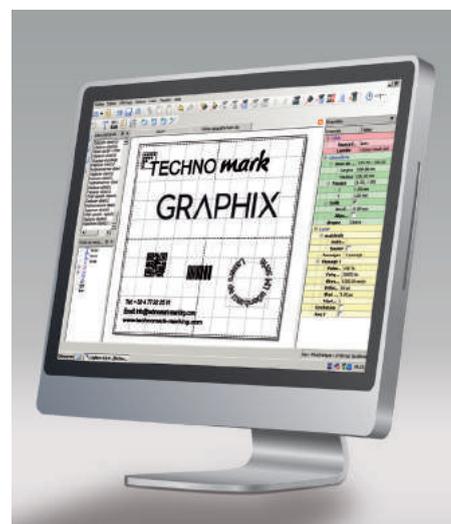
Software SIMPLE, INTUITIVE AND VERSATILE

GRAPH_{pro}

Multiple marking capabilities:

- Alphanumeric characters
- Wide range of features: drawings, logos, geometric shapes
- Integrated Windows font library
- Creation of type 39, 128, 2/5, PDF 417, UPC barcodes, Data-matrix® ECC 200 (2D), QR codes...
- Linear, angular and radial text
- Import files (vector, bitmap)
- Complementary axis management (rotary axes, Z axes)

Note: the combination of frequency, power and speed parameters will give you the marking you need, light or moderated, contrasted, nuanced or tinted



INNOVATION & SERVICES

R&D AND CUSTOM MADE ENGINEERING DEPARTMENT



Investment in research

10% of our turnover in R&D and 25% of our workforce are dedicated to continuous innovation.

All new products developed must meet **4 criteria:**

- Quality
- Technological or technical innovation
- Quality / price / performance ratio
- Eco conception

A PERSONALISED OFFER

TO ADVISE AND GUIDE YOU

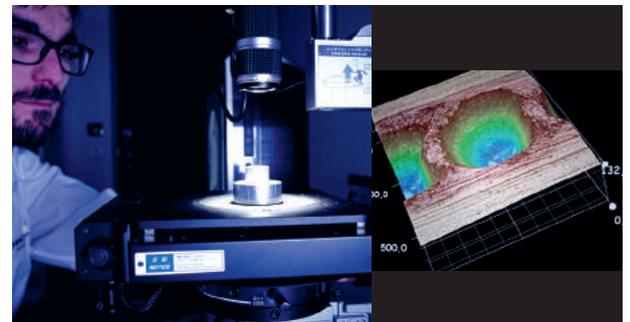
Technomark helps you build a cost effective laser marking solution adapted to your needs.

Relevant advice through pragmatic expertise:

- Feasibility study & site evaluation
- Sample marking
- Test reports
- Technical studies
- Associated services (finance options, maintenance etc.)

INTERNAL TEST LABORATORY

A full range of the latest test equipment enable a variety of tests to be carried out to ensure all your marking application needs can be met.



CASE STUDY MECACHROME

- **Activity:** Global leader in the design, engineering, machining and assembling of pieces and high precision assemblies, intended for aerospace, automotive, motor sport, defence and energy industries
- **Specification:** integration of 7 autonomous laser marking stations (manual operation or semiautomatic) in production processes.
- **Chosen solution:** 7 custom made systems fitted with the GRAPHIX 10W Fiber laser.



WORK STATION

Marking turbine blades for the aerospace industry to ensure their traceability through the entire manufacturing process. Marking stations are loaded manually or by robot and are equipped with a fume extractor. Turbine blades are held in a fixture and positioned on specific automated or manual rotary tables.

These stations are equipped with a high definition touch screen interface, customized and dedicated to each application. The software integrates manual, automatic and maintenance modes for automatic defect diagnoses.

An integrated reading camera allows you to instantly check the marking quality.

CASE STUDY LINAMAR

- **Activity:** manufacturing company powering vehicles.
- **Specification:** the traceability of camshaft cases in cast aluminum
- **Chosen solution:** Three marking stations composed of GRAPHIX Inline 20W laser marking equipment and DATALOGIC Matrix 300N are installed on production lines at the LINAMAR France Company.



WORK STATION

This equipment creates markings for the traceability of camshaft cases in cast aluminum. Each station is designed with:

- A protective housing positioned above a conveyor with an access door reachable from below.
- Brake camshaft gear are conveyed on pallets and stopped under the laser station.
- A cylinder (raises and lowers) positions the part in the station. As the station is secure the part is marked.

If the marking is validated after the 2D code reading, the part is removed.

Otherwise, the marking is deleted by covering by the laser and marked again.

The laser is driven via the TCP-IP Ethernet communication control. The complete cycle is managed by a PLC

Other case studies have been recorded, for example Dolex: semi automatic station with a loading drawer for the marking of locking pliers, Elcom: Station with an automatic door opening to mark conveyor range components, SEA: integration of a laser with a reading system for the marking of engine blocks...

TECHNICAL FEATURES

TECHNICAL DATASHEET EXTRACTS
detailed for each power level

- GRAPHIX FIBER series from 10 W to 50 W

GRAPHIX FIBER SERIE

- Laser power: 20 W
- Technology: pulsed fiber
- Wave length: 1060-1080 nm
- Cooling: by air
- Electric consumption: 300 W
- Focus lens*: F-160S (3.91 x 3.91 inches)
- Operating temperature: from 41°F to 122°F
- Non operating temperature: 14°F to 140°F
- Head sizes: 3.54 x 4.41 x 11.73 inches
- Head weight: 4,41 lb
- Unit control weight: 35,27 lb
- Standards: 2004/108/EEC, 2006/95/EEC
- Diode life time (expressed in MTBF): 100 000 hours (tested)
- Repetition rate: 20 to 100 KHz

* Exist in 2.56 x 2.56 inches, 5.51 x 5.51 inches, 7.08 x 7.08 inches versions...

MATERIALS*	GRAPHIX FIBER series
METALS	
Treated or untreated steel	●
Carbide	●
Aluminum	●
Copper	●
Brass	●
Titanium	●
Cast iron	●
PRECIOUS METALS	
Gold	●
Silver	●
PLASTICS	
Polyamides (PA)	●
Acrylonitrile butadiene styrene (ABS)	●
POM	○
Polycarbonate (PC)	○
Polyethylene (PE)	○
Acrylic (coloured)	●
Epoxy	○
VARIOUS	
Ceramics	●
Glass**	-
Wood	-
Paper	-

* Non exhaustive table

** Requires a different wavelength

● Excellent ○ Good - Not recommended

INTELLIGENT TECHNOLOGY

3D MARK

The management of X, Y, Z axis (up to 11.8 inches maximum in Z axis) allows marking in 3 dimensions. The multi-level marking is carried out in a line-by-line sequence.

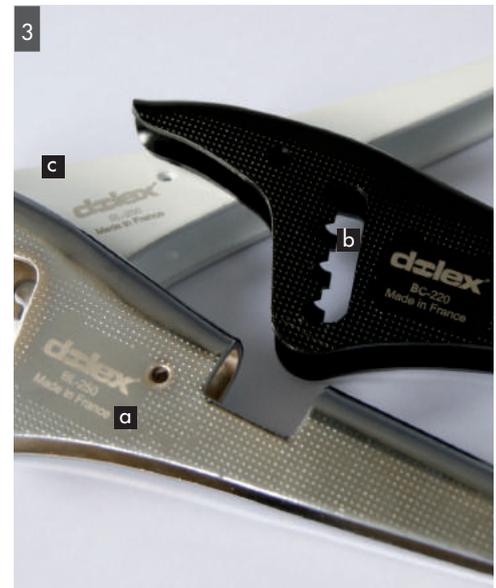
This solution is ideal for complex and various shaped parts.

(1) Multi-level marking with a 4.13 inches run, realised with the 3D mark function.



APPLICATION EXAMPLES

- (1) Alphanumerical and 2D marking
- (2) Marking of a logo and a serial number on steel
- (3) Example of contrasted marking on steel:
 - a - chromium plating
 - b - cataphoresis
 - c - painted



ECO DESIGN

TECHNOMARK has always been concerned for the respect of the environment

For this reason, the company set up an action plan to reduce the environmental impact, like the use of recyclable materials, the realisation of a building certified BREEAM Very Good, respectful of the control of the environment and energies



TECHNOMARK global presence

Our distribution network is established in 47 countries, including 5 Technocenters.



TECHNOMARK services

Pre sales

- Feasibility study and testing
- Sample making
- Validation of solutions (speed, quality etc.)
- Financing options

After sales

- Phone support
- Service
- Factory or onsite maintenance contract
- Product training
- Loans of equipment



98%

Average satisfaction rate of our customers over 3 years*

96%

Average recommendation rate of our customers over 3 years*

*source Cabinet Prestance, France study, january 2018.

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